



# **4: TROUBLESHOOTING MANUAL**

# **GV20/GV15**

# **TRANSMITTER**

Document ID:	NHB-GV15-GV20-TRB
Version:	0.2
Issue Date:	2014-07-23
Status:	Preliminary





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## RELEASE CONTROL RECORD

ISSUE	DATE	REASON
0.1	2013-12-01	Preliminary Release of GV20/GV15 (NARF73A/02)
0.2	2014-07-23	Section 1: RF Power Module Replacement and Controller Replacement sections: added step to initiate Xmtr PA Bias routine





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## SECTION 4.1: RESPONDING TO ALARMS

This section provides instructions you need when performing troubleshooting on the GV20/GV15 transmitter. This section includes the following topics:

- [Corrective Maintenance](#)
- [Electrostatic Protection - see page 4.1.3](#)
- [Identifying an Alarm - see page 4.1.4](#)
- [Accessing the Inside of the Transmitter - see page 4.1.28](#)
- [Troubleshooting Tips - see page 4.1.29](#)
- [Replacement Procedures - see page 4.1.39](#)

If none of the procedures and alarms described in this section address your problem, contact Nautel for assistance. See [“Technical support” on page ix](#).

### Corrective Maintenance

Corrective maintenance procedures consist of identifying and correcting defects or deficiencies that arise during transmitter operation. Local and/or remote alarm signals are generated when a malfunction occurs. If an alarm condition is caused by a malfunction in the RF power stage, the transmitter may maintain operation at a reduced RF output level. The nature of the fault – and station policy – will dictate whether an immediate maintenance response is necessary. Fault analysis and rectification may be conducted from three different levels, with a different technical competence level required for each: on-air troubleshooting, remote or local, and off-air troubleshooting.

**CAUTION!** The transmitter contains many solid state devices that may be damaged if subjected to excessive heat or high voltage transients. Take every effort to ensure that circuits are not overdriven or disconnected from their loads while turned on.

### On-Air Troubleshooting

On-air troubleshooting can be performed from a remote location, or locally at the transmitter site.

## Remote Troubleshooting

Remote on-air troubleshooting consists of monitoring the transmitter's radiated signal using an on-air monitor or via a LAN connection, and observing the status of each remote fault alarm indicator. Information obtained from these sources should enable an operator to decide whether an alarm response may be deferred to a more convenient time, an immediate corrective action must be taken, or if a standby transmitter must be enabled (if one is available). It is recommended that the significance of remote indications, and the appropriate responses, be incorporated into a station's standard operating procedures. Refer to ["Identifying an Alarm" on page 4.1.4](#) to determine the remedial action required for a given fault.

## Local Troubleshooting

Local on-air troubleshooting consists of monitoring the transmitter's integral meters and fault alarm indicators. Analysis of this data will normally identify the type of fault, and in most cases will determine what corrective action must be taken. Refer to ["Identifying an Alarm" on page 4.1.4](#) to determine the remedial action required for a given fault.

The power amplifier stage contains an integral modular reserve (IMR) feature. This feature permits the transmitter to operate at a reduced RF output level when a malfunction occurs in one of its power modules. Station operating procedures will dictate whether a reduced RF output level is acceptable. When a reduced RF output level can be tolerated, replacement of the defective RF power module may be deferred to a convenient time.

A defective RF power module may be removed from the transmitter for servicing, while the transmitter is operating, provided that the conditions in the removal instructions detailed in ["Removing an RF Power Module" on page 4.1.40](#) are met.

## Off-Air Troubleshooting

Off-air troubleshooting must be performed when the replacement of a defective RF power amplifier module, or routine on-air calibration adjustments, will not restore operation.

It is recommended that the transmitter's output be connected to a precision 50  $\Omega$  resistive dummy load (rated for at least the maximum transmitter power rating) before starting off-air troubleshooting procedures. If an appropriate dummy load is not available, troubleshooting for a majority of faults can be performed with RF power stage turned off. The transmitter may remain connected to its antenna system for these procedures.

**NOTE:** Reduce the RF output level to a minimal value when troubleshooting faults in the power amplifier stage while the transmitter's RF output is connected to the antenna system.

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## Electrostatic Protection

The transmitter's assemblies contain semiconductor devices that are susceptible to damage from electrostatic discharge. The following precautions must be observed when handling an assembly which contains these devices.

**CAUTION!** Electrostatic energy is produced when two insulating materials are rubbed together. A person wearing rubber-soled shoes, walking across a nylon carpet or a waxed floor, can generate an extremely large electrostatic charge. This effect is magnified during periods of low humidity. Semiconductor devices such as integrated circuits, field-effect transistors, thyristors and Schottky diodes may be damaged by this high voltage unless adequate precautions are taken.

### Electrical Discharging of Personnel

Personnel should be electrically discharged by a suitable grounding system (e.g., anti-static mats, grounding straps) when removing an assembly from the transmitter, and while handling the assembly for maintenance procedures.

### Handling/Storage

An assembly should be placed in an anti-static bag when it is not installed in a host transmitter, or when it is not undergoing maintenance. Electronic components should be stored in anti-static materials.

### Tools/Test Equipment

Testing and maintenance equipment – including soldering and unsoldering tools – should be suitable (i.e., grounded tip) for contact with static sensitive semiconductor devices.

### Stress Current Protection

Every precaution should be taken to ensure the static sensitive semiconductor devices are protected from unnecessary stress current. This is achieved by ensuring that current is not flowing when an electrical connection is broken, and that voltages are not present on external control/monitoring circuits when they are connected.

## Identifying an Alarm

You can identify an alarm locally by viewing the local or remote AUI's Transmitter Status page (see ["AUI Transmitter Status Page Checks"](#)). As a backup option, you can also view the front panel of the controller module (A4) (see ["Controller Module Front Panel Alarm Checks"](#) on page 4.1.7).

### AUI Transmitter Status Page Checks

If an alarm exists and is being recognized by the transmitter (i.e., the Status button at the bottom of the AUI display will be red), it is displayed on the transmitter status page (see [Figure 4.1.1 on page 4.1.5](#)). The Device name indicates the sub-system origin of the alarm. The sub-systems that can be displayed are:

- ❖ Controller: All alarms in this sub-system apply to the controller.
- ❖ Exciter A or B: All alarms in this sub-system apply to an exciter (A or B).
- ❖ Rack #: All alarms in this sub-system apply to a rack (cabinet) (2 for GV20/GV15).
- ❖ RF Module #: All alarms in this sub-system apply to a specific RF power module (1 through 8)

Figure 4.1.1: Transmitter Status Page

The screenshot displays the Transmitter Status page with the following data:

Date & Time	Transmitter	Exciter
Mon Jul 29 2013	<b>0 kW</b>	Active Exciter: A
13:16:26	Reflected: 1.00 W	98.00 MHz
Scheduler: Off	Set Point: 5.00 kW	FM Modulation: 9.00 %
	Preset: Preset 1	

Device	Alarm	Level
Controller	External Interlock Open	⚠️⚠️
Exciter A	Analog Left Audio Low	⚠️
Exciter A	Analog Right Audio Low	⚠️

Bottom banner: RF On, RF Off, Logged in as: Nautel, Menu, Status, Logs, Local/Remote, Reset, Log Out

1. Click the Status button to go to the Transmitter Status page (see [Figure 4.1.1](#)). View the list of active faults. Alarms are listed by their origin (Device column), then by name (Alarm column), and then by severity (Level column) [single orange ! indicates low severity (RF output not affected); single red ! indicates medium severity (RF output is reduced); two red ! indicates high severity (RF output is inhibited)].
2. Attempt to clear any latching alarms by pressing the Reset button on the bottom banner of the page. If the alarm persists, it will not be cleared from the display.
3. Locate the alarm name in [Table 4.1.1 on page 4.1.9](#) to determine the cause of the alarm and perform any recommended procedures in the Description and Troubleshooting Action column. This may also lead to replacing a suspect PWB, power supply or fan, as detailed in ["Replacement Procedures" on page 4.1.39](#).

**NOTE:** [Table 4.1.1 on page 4.1.9](#) contains a column for most **Alarms** that can occur, sorted alphanumerically for each sub-system, including both the names displayed on the AUI and, if different, the controller UI (in parentheses). The **Description and Troubleshooting Action** column provides a brief description of the alarm, troubleshooting tips and a cross-reference to more detailed troubleshooting, as applicable.

4. If troubleshooting and subsequent replacement of a suspect PWB or module causes the alarm to disappear from the Transmitter Status page, the alarm has been successfully cleared. If the fault condition does not clear, contact Nautel.

**NOTE:** Before undertaking any troubleshooting, record all AUI meter readings and note if any other alarms are displayed on the Transmitter Status page. Record all alarms. The most convenient way to do this is by using the remote AUI's User Settings -> Critical Parameters page to capture and copy all alarms (see "[Capturing Critical Parameters](#)" on [page 3.2.147](#) of the Operations & Maintenance Manual). Another method is to use a web browser over a LAN connection to save screen shots of critical status, meter and alarm pages. From the Meter List View page, press the information (i) button for each sub-device (Controller, Exciter, Rack and Modules) to view (and save) detailed information (see "[Viewing Real-Time Meters - using the AUI](#)" on [page 3.2.51](#) of the Operations & Maintenance Manual).

## Controller Module Front Panel Alarm Checks

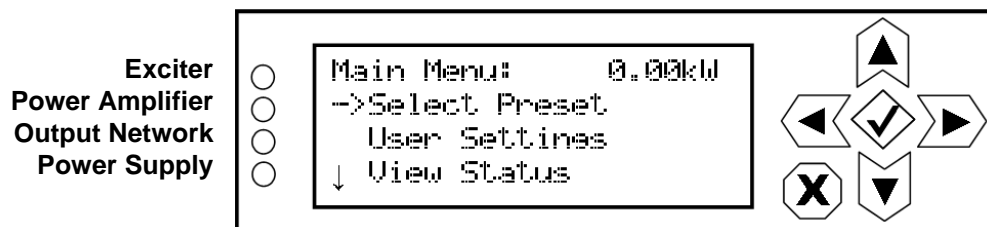
There two ways to check for alarms on the front panel:

- [Alarm/Status LEDs](#)
- [View Alarms Screen](#) - see page 4.1.8

### Alarm/Status LEDs

There are four LEDs on the left-hand side of the LCD display that provide information about the operational status of various sections of the transmitter - Exciter, Power Amplifier, Output Network and Power Supply (see [Figure 4.1.2](#)). The LEDs can glow green, amber or red. Typically, green indicates normal operation, amber indicates a warning, and red indicates a fault or error.

*Figure 4.1.2: Controller Module Alarm/Status LEDs*



When an LED is:

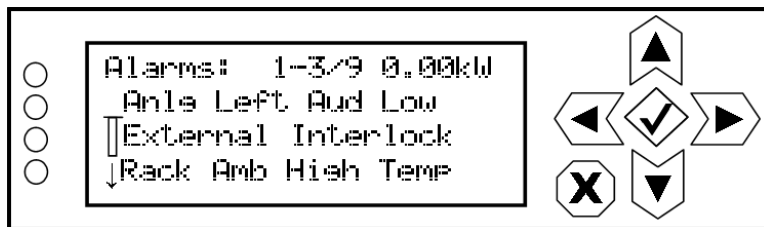
- Green - transmitter is on, with no known faults.
- Amber - a fault is present that may cause a reduction in RF power, but the transmitter is still producing RF power.
- Red - a fault is present and the transmitter is not producing RF power.

When a fault is present, the transmitter may still produce an RF output. In this case, or if the transmitter has shut down, you should schedule and commence more in-depth fault diagnosis. See "[View Alarms Screen](#)" on page 4.1.8.

## View Alarms Screen

If an alarm exists and is currently being recognized by the transmitter system, it is displayed in the View Alarms screen (Main Menu -> View Status -> View Alarms) of the controller UI display (see [Figure 4.1.3](#)).

Figure 4.1.3: View Alarms Screen



1. Scroll through the View Alarms screen to view the active faults.
2. Attempt to clear any latching alarms by pressing the checkmark button in the Main Menu -> Reset Alarms screen. If the alarm persists, it will not clear from the display.
3. Locate the alarm name in [Table 4.1.1 on page 4.1.9](#) to determine the cause of the alarm and perform any recommended procedures in the Description and Troubleshooting Action column. This may also lead to replacing a suspect PWB, power supply or fan, as detailed in "[Replacement Procedures](#)" on [page 4.1.39](#).

**NOTE:** Before undertaking any troubleshooting, record all meter readings and note if any other alarms are displayed on the View Alarms page. Record all alarms.

**NOTE:** [Table 4.1.1 on page 4.1.9](#) contains a column for most **Alarms** that can occur, sorted alphanumerically for each sub-system, including both the names displayed on the AUI and, if different, the controller UI (in parentheses). The **Description and Troubleshooting Action** column provides a brief description of the alarm, troubleshooting tips and a cross-reference to more detailed troubleshooting, as applicable.

4. If troubleshooting and subsequent replacement of a suspect PWB or module causes the alarm to disappear from the View Alarms screen, the alarm has been successfully cleared. If the fault condition does not clear, contact Nautel.



Table 4.1.1: Troubleshooting Alarms

Device and Alarm Name (AUI, UI)	Controller Front Panel LED (color)	Description and Troubleshooting Action
Controller: AC Summary (AC Summ)	-	This alarm occurs if there are any ac input related alarms present. Check for other specific ac fault alarms.
Controller: All PAs Inactive	Power Amplifier (red)	This alarm indicates that all of the transmitter's power amplifiers are inactive due to external conditions such as ac loss, removal of power supply modules or RF power modules, or faults in the power supply modules or RF power modules. If there are power supply module or RF power module related alarms present, follow the associated troubleshooting procedure.
Controller: Audio Loss Summary (Audio Loss Summ)	Exciter (red)	This alarm occurs if there are any audio loss alarms present. Check for specific audio loss alarms and troubleshoot accordingly. Ensure the preset audio settings agree with the audio being applied to the exciter.
Controller: Audio Player Digital Low	Exciter (red)	This alarm occurs if the audio player is in use on the SBC, but no digital audio is detected by the controller.
Controller: Auto Changeover Occurred (Auto Changeover)	Exciter (amber)	This alarm occurs when the controller has initiated an exciter changeover to the standby exciter, due to a possible fault with the main exciter.
Controller: Changeover in Progress (In Changeover)	Exciter (red)	This alarm occurs only while an exciter changeover is in progress. It will clear once the changeover is complete.
Controller: Combiner Current Imbalance	Output Network (red)	This alarm occurs if the Combiner Match alarm occurs due to a PA current imbalance in the RF power modules
Controller: Combiner Match	Output Network (red)	This alarm occurs if there is an excessive amount of power in the transmitter combining stage that cannot be accounted for. This may be the result of a fault in the combiner.
Controller: Config File Not Found (Cfg File Not Found)	Exciter (red)	This alarm occurs when the controller does not find a valid configuration file to load at power-up. This alarm is unlikely, but may occur during replacement of a controller module. It clears when the correct settings are entered.
Controller: CPLD Version Mismatch (CPLD Ver Mismatch)	Exciter (red)	This alarm occurs when there is an incompatible software release in the controller module's CPLD. Update the software to clear the fault.

Device and Alarm Name (AUI, UI)	Controller Front Panel LED (color)	Description and Troubleshooting Action
Controller: Cutback Active	Output Network (amber)	This alarm occurs whenever the transmitter experiences a cutback. A cutback (reduction in power) occurs when repeated shutback alarms occur within a prescribed time period. Shutbacks occur when the transmitter's peak reflected power exceeds 2:1 due to a transient SWR condition (arc or lightning) within the output transmission line or antenna system. The transmitter shuts back and recovers to a series of cutback levels (depending on the severity of the alarm), with each level being a 15% reduction in power from the power attained before the last shutback. Inspect the output transmission line for punctures or damage. After repairing damage, or if no damage is found, attempt to reset the latched condition.
Controller: Discharging PA Volts (Discharging PA V)	PS (red)	This alarm occurs when the transmitter has initiated a shutback sequence, and residual PA voltage energy stored in the capacitors in the power supplies and PAs is being discharged. During a shutback sequence, the RF drive to the PAs is turned off immediately after the event, and this occurs faster than the power supply modules can be inhibited. Therefore, PA voltage is still being applied to the capacitors with no drive to discharge the energy. To discharge the stored energy from the capacitors, the PA bias is increased to a discharge level after the power supplies have been inhibited. This causes the stored energy to be dissipated through dc current in the FET. This alarm should only occur with a Residual PA Volts Present alarm. See Residual PA Volts Present alarm for more information.
Controller: Door Open	Exciter (amber)	This alarm occurs if the transmitter's front door is open, which inhibits the monitor cooling fans.
Controller: Entered Firmware Upgrade (Entr Firmware Upgr)	Exciter (red)	This alarm occurs when the transmitter is in "firmware upgrade" mode. It should only be displayed during a transmitter software upgrade.
Controller: Exciter A or B Offline	Exciter (red)	This alarm occurs if the serial communication fails between the controller and the exciter, or a problem has occurred with the exciter. Check all connections to the exciter and make sure that its controller front panel power LED is on.
Controller: Exciter Summary (Exciter Summ)	Exciter (amber)	This alarms occurs if there are any exciter related alarms present. Check for specific exciter related alarms.
Controller: External Interlock Open (External Interlock)	Exciter (red)	The external interlock input wired to the controller (A4) or optional remote interface PWB (A16), if used, is open. Check the interlock connection between REMOTE I/O-A pins 19 and 20 on the controller (verify a ground potential at pin 19) or optional remote interface PWB J2 pins 19 and 20 or TB1-1 and 2. If the interlock is intact, check all external interlock switches. Otherwise, suspect a problem with the interlock circuitry on the controller or optional remote interface PWB.

Device and Alarm Name (AUI, UI)	Controller Front Panel LED (color)	Description and Troubleshooting Action
Controller: External Summary (External Summ)	-	This alarm occurs if there are any external related alarms present. Check for specific external related alarms and troubleshoot accordingly.
Controller: Fan 1/2 Fail (Splitter Fan1/2 Fail)	Output Network (amber)	This alarm occurs if the splitter's fan 1/2 (B1/B2) speed is too low. This alarm occurs if the RF drive splitter's cooling fan has been enabled, but the fan tachometer measurement is below 2000 RPM. The fan will be enabled if an RF power module is removed, or the splitter reject power exceeds an acceptable level. Inspect the fan and, if necessary, replace it (see <a href="#">"Cooling Fan Replacement"</a> on page 4.1.52).
Controller: Final Reject Fan 1 - 4 Fail (Final Rej Fan1-4 Fail)	Output Network (amber)	This alarm occurs if the final reject load (A13) cooling fans are enabled and the speed of a cooling fan [A13B1 (1) or A13B2 (2)] is below 2000 RPM. Final reject load cooling fans are enabled only when the reject load power is greater than 300 W, possibly due to an RF power module removal or failure. Inspect the fan and, if necessary, replace it (see <a href="#">"Cooling Fan Replacement"</a> on page 4.1.52).
Controller: Forward Power Limiting (Fwd Power Limiting)	Output Network (amber)	When the High Forward Power alarm is active, this alarm occurs if the high forward power limiting threshold is exceeded [1.063 times the maximum power setting for all modes; e.g., 23,386 W (GV20) or 17,540 W (GV15) for FM mode]. The transmitter will fold back the forward power each time the threshold is exceeded. This alarm occurs only if the controller ALC cannot respond fast enough to transmitter load changes. Suspect the module control/interface PWB (A3).
Controller: Forward Power Shutdown (Fwd Power Shutdown)	Output Network (red)	This alarm occurs if the transmitter tries to reduce the forward power below minimum due to repeated Forward Power Limiting alarms. The transmitter latches off. See Controller: Forward Power Limiting for troubleshooting tips.
Controller: High Forward Power (High Fwd Power)	Output Network (amber)	This alarm occurs if the transmitter's average forward power exceeds the high forward power threshold [1.036 times the maximum power setting for all modes; e.g., 22,792 W (GV20) or 17,094 W (GV15) for FM mode]. This alarm occurs only if the controller ALC cannot respond fast enough to transmitter load changes. Suspect the module control/interface PWB (A3).
Controller: High Reflected Summary (High Refld Summ)	Output Network (amber)	This alarm occurs if there are alarms present that are related to high reflected power on the transmitter's RF output. Check for specific reflected power related alarms and troubleshoot accordingly.
Controller: High Reject Power (High Reject)	Output Network (amber)	This alarm occurs if any of the transmitter's reject loads' average power exceeds the high reject power threshold (1200 W). Typically, high reject power is a result of RF power module failure or removal.

Device and Alarm Name (AUI, UI)	Controller Front Panel LED (color)	Description and Troubleshooting Action
Controller: High RF Drive	Exciter (red)	This alarm occurs if the RF drive power from the exciter is greater than the high threshold (30% above the setpoint). This may be the result of a calibration problem with either the exciter or the transmitter RF drive sample. Check all connections to the exciter.
Controller: High SWR	Output Network (amber)	This alarm occurs if the transmitter's average reflected power exceeds the high SWR threshold (280 W). The GV20/GV15 takes no action on this alarm. Inspect the antenna and transmission line system for damage or de-tuning.
Controller: High SWR Shutdown	Output Network (red)	This alarm occurs if the transmitter tries to reduce the forward power below a level that is equivalent to a 3:1 VSWR (user-configurable) at the SWR Foldback threshold due to a gradually degrading load match. This alarm causes the transmitter to latch off. Inspect the antenna and transmission line system for damage or de-tuning.
Controller: High Temperature Summary (High Temp Summ)	-	This alarms occurs if there are high temperature related alarms occurring. Check for specific temperature related alarms and troubleshoot accordingly.
Controller: Local UI Failure (UI Failure)	Exciter (red)	This alarm occurs if there is a fault with the LCD user interface (UI), preventing it from being used to control the transmitter. The transmitter will automatically switch to remote control mode to allow use of the AUI or digital I/O.
Controller: Low AC Operation	Power Supply (red)	This alarm occurs if the ac input voltage is less than 175 V ac, but greater than 90 V ac. Transmitter RF output power will be limited to approximately 33% of maximum power or to the current setpoint, whichever is less.
Controller: Low Battery	Exciter (amber)	This alarm occurs if the backup battery voltage falls below an acceptable level (2.7 V). The GV20/GV15 takes no action on this alarm. Use a digital multimeter to measure the battery voltage (with ac power on). If the battery voltage is low, replace the battery. If battery voltage is OK, cycle ac power (off, then on). If the alarm does not clear, check the controller PWB (A4A2).
Controller: Low Battery/Memory Summary (Low Batt/Mem Summ)	Power Supply (red)	This alarms occurs if there is a specific battery or memory related alarm present. Check for specific alarms and troubleshoot accordingly.
Controller: Low Efficiency	Output network (amber)	This alarm occurs in conjunction with the Combiner Match alarm to indicate that the transmitter is exhibiting low dc-RF efficiency.
Controller: Low Forward Power (Low Fwd Power)	Output Network (amber)	This alarm occurs if the transmitter's average forward power is below the low forward power threshold (defaulted to 50% of the setpoint and is user adjustable). Check for associated alarms and follow the associated troubleshooting procedure, if applicable.

Device and Alarm Name (AUI, UI)	Controller Front Panel LED (color)	Description and Troubleshooting Action
Controller: Low RF Drive	Exciter (red)	This alarm occurs if the RF drive power from the exciter is less than the low threshold (70% of the setpoint). This may be the result of a calibration problem with either the exciter or the transmitter RF drive sample. Check all connections to the exciter. Check the RF drive connection between the exciter RF output and the RF drive splitter input.
Controller: LVPS Fail	Power Supply (red)	This alarm occurs if the LVPS voltage is less than 32 V or greater than 53 V. This may be a result of an ac power failure or an LVPS fault. Check the dc output voltage of the suspect LVPS. If the dc voltage is out of tolerance, replace the LVPS module (see <a href="#">"LVPS Module Replacement" on page 4.1.46</a> ). If the dc voltage is acceptable, suspect the controller.
Controller: Maintenance Required Summary (Maint Req Summ)	-	Check for related alarms and troubleshoot accordingly.
Controller: Missing Preset	Exciter (red)	This alarm indicates that there are no presets programmed into the transmitter. The user will not be able to enable RF without first programming a preset.
Controller: Mode/Frequency Mismatch (Mode/Freq Mismatch)	Exciter (red)	This alarm occurs if there is a mismatch between the operating mode or carrier frequency of the transmitter and one or more of the associated exciters. Suspect a possible communication problem between the controller and exciter(s). The alarm should clear once the transmitter transfers the preset settings to the exciter.
Controller: Monitor Fan Fail	Exciter (amber)	This alarm occurs if one or both of the monitor cooling fans' tachometer measurement is below 2000 RPM. The front door must be closed (i.e., fans enabled) for this alarm to display.
Controller: No External 10MHz	Exciter (amber)	This alarm occurs if there is a fault with the current 10 MHz source being used to clock the exciter. Check the external 10 MHz source. Check the 'Use External 10MHz' setting in the AUI's User Settings menu.
Controller: No Internal 10MHz	Exciter (amber)	This alarm occurs if there is a fault with the current 10 MHz source being used to clock the exciter. Check the oscillator on the exciter.
Controller: Off-Air Summary (Off-Air Summ)	-	This alarm occurs if there are any alarms present that cause the transmitter to be in an RF off state. Check for associated alarms, and follow the associated troubleshooting procedure, if present.
Controller: Output Network Summary (O/P Network Summ)	Output Network (amber)	This alarm occurs if there are any alarms present that are related to the output network of the transmitter. Check for associated alarms, and follow the associated troubleshooting procedure, if present.

Device and Alarm Name (AUI, UI)	Controller Front Panel LED (color)	Description and Troubleshooting Action
Controller: Overall Summary	-	This alarms occurs if there are any controller related alarms present. Check for associated alarms, and follow the associated troubleshooting procedure, if present.
Controller: PA Pwr Foldback (Per PA Foldback)	Output Network (amber)	This alarm occurs if the control system determines that the calculated dissipation in any FET on a PA is above the high dissipation threshold (350 W), or the forward power being requested from an individual PA [calculated as output power - combiner losses] is greater than the PA output high threshold (850 W). The forward power of the transmitter will be limited to a level such that neither of these thresholds are exceeded. Check for associated alarms. Typically, the assertion of this alarm is the result of a PA failure or RF power module removal, or a high SWR condition.
Controller: Power Amplifier Summary (PA Summ)	Output Network (amber)	This alarms occurs if there are any alarms present that are related to the power amplifiers. Check for associated alarms, and follow the associated troubleshooting procedure, if present.
Controller: Power Discrepancy	Output Network (amber)	This alarms occurs in conjunction with the Combiner Match alarm to indicate unaccounted for RF power in the combiner.
Controller: Power Supply Summary (PS Summ)	-	This alarms occurs if there are any alarms present that are related to the power supplies. Check for associated alarms, and follow the associated troubleshooting procedure, if present.
Controller: PS Current Foldback (PS Curr Foldback)	Power Supply (amber)	This alarm occurs if the transmitter is limiting its output power to avoid drawing excessive current (48 A per supply) from the power supply modules. This may occur when there are PA failures and the transmitter is attempting to compensate to attain the setpoint level. Check for associated alarms, and follow the associated troubleshooting procedure if present.
Controller: Rack # Fault	Power Amplifier (red)	This alarm indicates that a critical fault has occurred in the associated rack, resulting in the transmitter's RF output being inhibited. Check for associated alarms to continue troubleshooting.
Controller: Rack # Not Responding (Rack # Offline)	Power Amplifier (red)	This alarm occurs if serial communication is lost with the associated rack controller (module control/interface PWB). This will inhibit the transmitter's RF output, since this connection is used for monitoring power and adjusting the PA voltage. Check all connections between the controller and the rack. If the alarm persists, suspect a fault with the associated rack's controller (module control/interface PWB).
Controller: Rebooted Exciter	Exciter (red)	This is an informational alarm only that is displayed when the watchdog timer reboots the controller module's main microcontroller (DSP) or on an ac power interruption.

Device and Alarm Name (AUI, UI)	Controller Front Panel LED (color)	Description and Troubleshooting Action
Controller: Reboot Required (Need Reboot for Settings)	Exciter (red)	This alarm indicates that exciter setup changes have been made, typically via the System Settings page of the AUI. Typically, the DSP will reboot itself automatically; however, if this alarm persists for more than five minutes, cycle the transmitter's ac power (off, then on) to store the changes.
Controller: Reduced Power Summary (Reduced Power Summ)	Output Network (amber)	This alarms occurs if there are any alarms present that caused the transmitter's RF output power to be reduced. Check for associated alarms, and follow the associated troubleshooting procedure, if present.
Controller: Reject Foldback (Split Rej Foldback)	Output Network (amber)	This alarm occurs if any of the transmitter's reject load's' average power exceeds its reject power foldback threshold (1500 W). The transmitter's forward power will be reduced each time the alarm occurs, until the fault clears. Typically, high reject power is a result of RF power module failure or removal. Check for associated alarms, and follow the associated troubleshooting procedure if present.
Controller: Reject Shutback	Output Network (red)	This alarm occurs if any of the transmitter's reject load's' average power exceeds its reject power shutback threshold (1800 W). The transmitter will be shut back and attempt to find a safe operating power level by entering reject foldback mode. Typically, high reject power is a result of RF power module failure or removal. Check for associated alarms, and follow the associated troubleshooting procedure if present.
Controller: Residual PA Volts Present (Residual PA V Pres)	Exciter (red)	This alarm indicates that after the transmitter has turned off its RF output, it is unable to discharge the PA volts to a level that is below 10 V. This condition will not allow the transmitter to turn on its RF output; however the condition will be cleared once the PA volts reaches a level that is below 10 V. If the condition cannot be cleared automatically, the transmitter will still be allowed to turn on. This condition will typically occur with a failed PA or power supply module. Check for associated alarms and follow the associated troubleshooting procedure.
Controller: SCA 1 (or 2) Audio Low	Exciter (amber)	This alarm indicates the SCA 1 or 2 input level is too low or is not applied. The threshold and timing for this alarm can be adjusted in the Audio Low menu in the user interface (see <a href="#">"Setting Low Audio Thresholds"</a> on <a href="#">page 3.2.110</a> ) of the Operations & Maintenance Manual.
Controller: SC1 Interlock	Exciter (red)	This alarm occurs, for combined systems only, if the system controller (SC1) has inhibited the transmitter's RF output due to a system interlock fault. See the SC1 Technical Instruction Manual for more information.
Controller: Spectral Mask Foldback	Output Network (amber)	This alarm occurs if the HD optimizer has decreased the transmitter's RF output power to ensure the spectrum passes the mask. Typically caused by a degrading load impedance, PA or PS failures.

Device and Alarm Name (AUI, UI)	Controller Front Panel LED (color)	Description and Troubleshooting Action
Controller: Standby Exciter Test (Standby Exc Test)	Exciter (amber)	This alarm occurs when a standby exciter test has been initiated by the user. Exciter changeovers are inhibited during a standby exciter test.
Controller: SWR Foldback	Output Network (amber)	This alarm occurs if the transmitter's average reflected power exceeds the SWR foldback threshold (400 W) due to a gradually degrading load match. The forward power of the transmitter will be limited to a level such that this threshold is not exceeded. If the load match improves while the transmitter is producing RF output, the forward power will increase. If the transmitter encounters a 3:1 VSWR (user-configurable) while in SWR foldback mode, an SWR Shutdown alarm occurs. Inspect the antenna and transmission line system for damage or de-tuning.
Controller: SWR Shutback	Output Network (red)	This alarm occurs if the transmitter's reflected power exceeds the SWR shutback threshold (2400 W). The transmitter will shut back and attempt to find a safe operating point by entering its SWR foldback mode. This may be the result of a transient SWR condition (arc or lightning) within the output transmission line or antenna system. Attempt to reset the latched condition by pressing Reset [using the AUI's Reset button (see <a href="#">"Reset:"</a> on page 1.2.14 of the Operations and Maintenance Manual) or using the controller UI (see <a href="#">"Resetting alarms"</a> on page 1.2.65 of the Operations and Maintenance Manual)]. Inspect the output transmission line and antenna for punctures or damage. If no damage can be found, suspect the output power probe (A15). See also Cutback Active alarm.
Controller: Turn On Delay (Delaying Turn On)	Exciter (red)	This alarm occurs, if the turn-on delay function is enabled, and transmitter is not permitted turn-on until the delay period elapses. The turn-on delay function is enabled upon an ac power failure and is typically used to add delay for use with an external generator.
Controller: Very Low Forward Power (Very Low Fwd Power)	Output Network (amber)	This alarm occurs if transmitter's average forward power is below the low forward power threshold (defaulted to 12.5% of the setpoint and is user adjustable). Check for associated alarms, and follow the associated troubleshooting procedure, if present.
Controller: +1.2V Fail	Power Supply (red)	This alarm occurs if the +1.2 V supply in the controller is 10% higher or 10% lower than its desired value. Check the output voltage of the LVPS module. If necessary, replace the LVPS (see <a href="#">"LVPS Module Replacement"</a> on page 4.1.46). There may also be a problem with the controller's power supply PWB.



Device and Alarm Name (AUI, UI)	Controller Front Panel LED (color)	Description and Troubleshooting Action
Controller: +1.8V Fail	Power Supply (red)	This alarm occurs if the +1.8 V supply in the controller is 10% higher or 10% lower than its desired value. Check the output voltage of the LVPS module. If necessary, replace the LVPS (see <a href="#">“LVPS Module Replacement” on page 4.1.46</a> ). There may also be a problem with the controller’s power supply PWB.
Controller: +3.3V Fail	Power Supply (red)	This alarm occurs if the +1.2 V supply in the controller is 10% higher or 10% lower than its desired value. Check the output voltage of the LVPS module. If necessary, replace the LVPS (see <a href="#">“LVPS Module Replacement” on page 4.1.46</a> ). There may also be a problem with the controller’s power supply PWB.
Controller: 10kW Reject Fan 1 - 3 Fail (10kW Rej Fan1-3 Fail)	Output Network (red)	This alarm occurs if the 10 kW reject load (A27) cooling fans are enabled and the speed of a cooling fan [B2 (1) or B3 (2)] is below 2000 RPM. 10 kW reject load cooling fans are enabled only when the reject load power is greater than 300 W, possibly due to an RF power module removal or failure. Inspect the fan and, if necessary, replace it (see <a href="#">“Cooling Fan Replacement” on page 4.1.52</a> ).
Controller: +12V A Fail	Power Supply (red)	This alarm occurs if the +12 V supply in the controller is 10% lower or 10% higher than the desired value. Check the output voltage of the LVPS module. If necessary, replace the LVPS (see <a href="#">“LVPS Module Replacement” on page 4.1.46</a> ). There may also be a problem with the controller’s power supply PWB.
Controller: +12V B Fail	Power Supply (red)	This alarm occurs if the secondary +12 V supply in the controller is 10% lower or 10% higher than the desired value. Check the output voltage of the LVPS module. If necessary, replace the LVPS (see <a href="#">“LVPS Module Replacement” on page 4.1.46</a> ). There may also be a problem with the controller’s power supply PWB.
Controller: +15V Fail	Power Supply (red)	This alarm occurs if the +15 V power supply in the controller is 2 V higher or 2 V lower than the desired value. There may also be a problem with the controller’s power supply PWB.
Controller: -15V Fail	Power Supply (red)	This alarm occurs if the -15 V power supply in the controller is 2 V higher or 2 V lower than the desired value. There may also be a problem with the controller’s power supply PWB.
Controller: +48V Fail	Power Supply (red)	This alarm occurs if the +48 V power supply in the controller is 2 V higher or 2 V lower than the desired value. Check the output voltage of the LVPS module. If necessary, replace the LVPS (see <a href="#">“LVPS Module Replacement” on page 4.1.46</a> ).

Device and Alarm Name (AUI, UI)	Controller Front Panel LED (color)	Description and Troubleshooting Action
Controller: 5kW Reject Fan 1 - 6 Fail (5kW Rej Fan1-6 Fail)	Output Network (red)	This alarm occurs if the 5 kW reject load (A29) cooling fans are enabled and the speed of a cooling fan [B4 (1), B5 (2) or B6 (3)] is below 2000 RPM. 5 kW reject load cooling fans are enabled only when the reject load power is greater than 300 W, possibly due to an RF power module removal or failure. Inspect the fan and, if necessary, replace it (see <a href="#">"Cooling Fan Replacement"</a> on page 4.1.52).
Controller: +5V A Fail	Power Supply (red)	This alarm occurs if the +5 V supply in the controller is 10% lower or 10% higher than the desired value. Check the output voltage of the LVPS module. If necessary, replace the LVPS (see <a href="#">"LVPS Module Replacement"</a> on page 4.1.46).
Controller: +5V B Fail	Power Supply (red)	This alarm occurs if the secondary +5 V supply in the controller is 10% lower or 10% higher than the desired value. Check the output voltage of the LVPS module. If necessary, replace the LVPS (see <a href="#">"LVPS Module Replacement"</a> on page 4.1.46). There may also be a problem with the controller's power supply PWB.
Exciter A/B: Analog Left (or Right) Audio Low (Anlg L or R Aud Low)	Exciter (amber)	This alarm indicates the analog left or right audio input level is too low or is not applied. The threshold and timing for this alarm can be adjusted in the Audio Low menu in the user interface (see <a href="#">"Setting Low Audio Thresholds"</a> on page 3.2.110) of the Operations & Maintenance Manual.
Exciter A/B: Audio Processor Offline (Audio Proc Offline)	Exciter (amber)	This alarm occurs if the exciter is configured to include an Orban Inside audio processor, but it is not communicating with the processor on the internal serial bus. Check all connections to the Orban Inside audio processor card.
Exciter A/B: Audio Processor Output Fail (Audio Proc O/P Fail)	Exciter (amber)	This alarm occurs if the exciter is configured to include an Orban Inside audio processor, but it is not detecting audio from the processor. Check all connections to the Orban Inside audio processor card.
Exciter A/B: Audio Shutdown	Exciter (red)	This alarm occurs if the exciter's audio processing and FM modulation code is shut down. Should display only during a software upgrade.
Exciter A/B: AES Digital 1 Audio Low (Dig 1 Aud Low)	Exciter (amber)	This alarm indicates the Digital 1 input level is too low or is not applied. The threshold and timing for this alarm can be adjusted in the Audio Low menu in the user interface (see <a href="#">"Setting Low Audio Thresholds"</a> on page 3.2.110) of the Operations & Maintenance Manual.
Exciter A/B: AES Digital 2 Audio Low (Dig 2 Aud Low)	Exciter (amber)	This alarm indicates the Digital 2 input level is too low or is not applied. The threshold and timing for this alarm can be adjusted in the Audio Low menu in the user interface (see <a href="#">"Setting Low Audio Thresholds"</a> on page 3.2.110) of the Operations & Maintenance Manual.

Device and Alarm Name (AUI, UI)	Controller Front Panel LED (color)	Description and Troubleshooting Action
Exciter A/B: Entered Firmware Upgrade (Firmware Upgr)	Exciter (red)	This alarm occurs when the exciter is in "firmware upgrade" mode. It should only be displayed during a transmitter software upgrade.
Exciter A/B: External Mute (Ext Mute)	-	This alarm occurs if the exciter has been muted (0 W) by the transmitter. This is typical when the transmitter is in an 'Rf off' condition, or any other condition that causes the RF drive to be inhibited (external interlock open, etc.). If this alarm persists and there are no other causing conditions present, check the transmitter link cable on the exciter.
Exciter A/B: Fan Fail	Exciter (red)	This alarm occurs if the exciter's cooling fan speed is too low. This alarm does not directly inhibit the exciter's RF output, but may result in a High PA Temperature alarm, which will inhibit the output. This alarm occurs if the PA's cooling fan has been enabled, but the fan tachometer measurement is below 2000 RPM. Inspect the fan and, if necessary, replace it.
Exciter A/B: FPGA Test Failed (FPGA Fail)	Exciter (red)	This alarm occurs if the FPGA on the main exciter card is not responding. This alarm prevents the exciter from producing modulation or RF power, and may be the result of a failed software upgrade or a hardware failure on the exciter/control PWB.
Exciter A/B: High PA Temperature (High PA Temp)	Power Amplifier (red)	This alarm occurs if the heatsink temperature sensed within the exciter's power stage exceeds 85°C (185°F). This alarm will clear when the heatsink temperature decreases to 75°C (167°F).
Exciter A/B: High SWR	Exciter (amber)	This alarm occurs if the exciter is experiencing high reflected power (greater than 17.5 W). Check the connection and the RF load at the exciter's output.
Exciter A/B: Licensing Mismatch	Exciter (red)	This alarm should only occur if there is a fault with the memory on the exciter. It indicates that the exciter has not been licensed for the current mode of operation.
Exciter A/B: Missing Preset	Exciter (red)	Visible only when replacing an exciter. This alarm occurs when there are no presets programmed into the exciter. The transmitter should automatically correct this.
Exciter A/B: Modulation Loss (Mod Loss)	Exciter (red)	This alarm, enabled by the user, indicates that the exciter's audio modulation level is below the level specified in the audio loss settings of the active preset (see "Mod Loss" on page 3.2.66 of the Operations & Maintenance Manual to enable/disable this alarm and to configure the resulting action). Depending on the setting, this alarm could trigger a preset change, inhibit the RF or have no effect (alarm only). Check the appropriate program input(s) and the mod loss setting for the preset.

Device and Alarm Name (AUI, UI)	Controller Front Panel LED (color)	Description and Troubleshooting Action
Exciter A/B: MPX Audio Low (MPX Aud Low)	Exciter (amber)	This alarm indicates the MPX input level is too low or is not applied. The threshold and timing for this alarm can be adjusted in the Audio Low menu in the user interface (see <a href="#">"Setting Low Audio Thresholds"</a> on page 3.2.110) of the Operations & Maintenance Manual .
Exciter A/B: No Active 10MHz (No Act 10MHz)	Exciter (red)	This alarms occurs if there is a fault with the current 10 MHz source being used to clock the exciter. Check the external 10 MHz source or suspect the oscillator on the exciter.
Exciter A/B: No Exgine 10 MHz	-	This alarms occurs, in FM+HD or HD mode, if no 10 MHz clock is being detected from the Exgine PWB. Check the cable between the Exgine PWB and J13 of the exciter PWB. Check that the Exgine PWB is powered up.
Exciter A/B: No External 10MHz (No Ext 10MHz)	Exciter (red)	This alarms occurs if there is a fault with the external 10 MHz source being used to clock the exciter. Check the external 10 MHz source.
Exciter A/B: No Transmitter Communication (No Xmtr Comms)	Exciter (red)	This alarm occurs if the exciter is not detecting communication over the serial bus from the transmitter controller. This alarm is typically only visible in the Events Log, since it will not be transmitted when communication is interrupted.
Exciter A/B: No 1PPS	Exciter (amber)	This alarm occurs if the pilot output locking to 1 PPS is enabled and the 1 PPS signal is not present.
Exciter A/B: PA Voltage Fail (PA Volts Fail)	Power Supply (red)	This alarm occurs if the power supply voltage for the exciter PA is below 20 V. Check for a blown fuse inside the exciter. Check LVPS module's output voltage.
Exciter A/B: Pilot Unsync	Exciter (amber)	This alarm occurs if the pilot output locking to 1 PPS is enabled, but the exciter has not yet locked onto the incoming signal (if present). It may indicate that the GPS receiver is not detecting a signal. Check the GPS receiver and antenna.
Exciter A/B: PLL Unlock	Exciter (red)	This alarm occurs when the internal PLL of the exciter in unable to lock to the selected 10 MHz reference. Possible causes are an out-of-range 10 MHz input or a hardware failure on the exciter/control PWB (A1).
Exciter A/B: Preamp Voltage Fail (Preamp V Fail)	Power Supply (red)	This alarm occurs if the power supply voltage for the pre-amplifier is below 20 V. Check for a blown fuse inside the exciter. Check LVPS module's output voltage.
Exciter A/B: Rebooted Exciter (Rebooted Exc)	Exciter (red)	This is an informational alarm only that is displayed when the watchdog timer reboots the exciter's main microcontroller (DSP) or after an ac power interruption.

Device and Alarm Name (AUI, UI)	Controller Front Panel LED (color)	Description and Troubleshooting Action
Exciter A/B: Reboot For Settings Needed (Need Reboot)	Exciter (red)	This alarm indicates that exciter setup changes have been made, typically via the AUI. Typically, the DSP will reboot itself automatically. If the alarm persists for more than five minutes, cycle the ac power (turn off, then on) to store the changes.
Exciter A/B: Reduced IBOC Injection	Exciter (red)	This alarm occurs if the HD optimizer has decreased the transmitter's HD injection level to ensure the output spectrum passes the mask. Typically caused by a degrading output load impedance or PA or PS failures.
Exciter A/B: Running Bias Routine	-	This is an informational alarm only that is displayed when the bias routine has been initiated.
Exciter A/B: SCA 1 (or 2) Audio Low (SCA 1 or 2 Aud Low)	Exciter (amber)	This alarm indicates the SCA 1 or 2 input level is too low or is not applied. The threshold and timing for this alarm can be adjusted in the Audio Low menu in the user interface (see <a href="#">"Setting Low Audio Thresholds"</a> on <a href="#">page 3.2.110</a> ) of the Operations & Maintenance Manual.
Exciter A/B: SRC1 Unlock	Exciter (amber)	This alarm indicates that no valid AES/EBU stream data is being detected on the selected AES/EBU input. Check audio input cables. The GV20/GV15 takes no action on this alarm.
Exciter A/B: SRC2 Unlock	Exciter (amber)	This alarm indicates that no valid AES/EBU stream data is being detected on the selected AES/EBU input. Check audio input cables. The GV20/GV15 takes no action on this alarm.
Exciter A/B: SWR Foldback	Exciter (amber)	This alarm occurs if the exciter reduces its output power due to a high SWR. The exciter will attempt to maintain a reflected power level of 25 W at all times. Check the connection and the RF load at the exciter's output.
Exciter A/B: SWR Shutback	Exciter (red)	This alarm occurs if there is a sudden increase in the reflected power sensed by the exciter due to an external condition (e.g., open or shorted RF drive cable). The exciter's RF output is reduced to 0 W. The threshold for this alarm is typically set to 75 W. Check the connection and the RF load at the exciter's output.
Exciter A/B: Unsigned DSP Image (Bad DSP Image)	Exciter (red)	This alarm indicates that the exciter is operating with 'unsigned code', but is otherwise operational. This alarm may only be displayed if the transmitter is operating with a 'beta' version of factory software.
Exciter A/B: Unsigned FPGA Image (Bad FPGA Image)	Exciter (red)	This alarm indicates that the exciter is operating with 'unsigned code', but is otherwise operational. This alarm may only be displayed if the transmitter is operating with a 'beta' version of factory software.
Exciter A/B: Using Audio Backup (On Audio Backup)	Exciter (red)	This alarm occurs if the main audio source has been lost, and the exciter has switched to the backup source as configured by the user.

Device and Alarm Name (AUI, UI)	Controller Front Panel LED (color)	Description and Troubleshooting Action
Exciter A/B: +15V Fail, -15V Fail	Power Supply (red)	This alarm occurs if the +15 V or -15 V power supply in the controller is 2 V higher or 2 V lower than the desired value.
Exciter A/B: +5V A or B Fail, +3.3V Fail, +1.8V Fail, +1.2V Fail	Power Supply (red)	This alarm occurs if the associated power supply in the exciter is 10% higher or 10% lower than the desired value.
Module #: Fan 1-6 Fail	Power Amplifier (amber)	This alarm occurs if the module fans have been enabled, but the fan tachometer measurement is below 2200 RPM. Inspect the affected fan and, if necessary, replace it (see <a href="#">"Module Cooling Fan Replacement"</a> on page 4.1.45).
Module #: Fan Fail Shutdown	Power Amplifier (red)	This alarm occurs when more than one of the module's six fans have failed. The module will shut down. Failed fans must be repaired or replaced before the module can operate. Check for associated Fan 1-6 Fail alarms and troubleshoot accordingly.
Module #: Fan Volts Fail (Fan V Fail)	Power Supply (red)	This alarm occurs if the associated module's cooling fan supply voltage is 10% high or 10% low. This may be the result of a circuit fault on the module control/interface PWB.
Module #: High Reject Power (High Rej)	Power Amplifier (red)	This alarm occurs if the associated module's reject load power exceeds 400 W. This may be the result of PA failures. Check for associated alarms and troubleshoot accordingly. This alarm may be accompanied by a Reject Foldback alarm, which means the transmitter power will be reduced to protect the reject load.
Module #: High RF Drive Power (RF Drv High)	Power Amplifier (red)	This alarm is indication only and occurs if the input RF drive (exciter power) is greater than 45 W. Check the exciter power setpoint to make sure it is correct for the transmitter.
Module #: High Temperature (High Temp)	Power Amplifier (red)	This alarm occurs if the associated module's heatsink temperature exceeds 85°C (185°F). This alarm is most likely caused by excessive ambient temperature, a module fan failure or blockage, or excessive power amplifier dissipation. This alarm will clear when the module's heatsink temperature decreases to 75°C (167°F).
Module #: Low RF Drive Power (RF Drv Low)	-	This alarm occurs if the input RF drive (exciter power) is less than <b>10 W</b> and the transmitter has not intentionally reduced it to that level. This may be the result of an exciter fault, excessive load variation on the active exciter output, or defective components on the RF drive splitter/changeover assembly.

Device and Alarm Name (AUI, UI)	Controller Front Panel LED (color)	Description and Troubleshooting Action
Module #: Missing	Power Amplifier (red)	This alarm occurs if the RF power module is removed. If the associated RF power module is present, and the alarm still occurs, try reseating the RF power module. If the alarm persists, suspect a fault with circuitry on the module control/interface PWB (A3). See also Rack #: Module Extraction Shutback alarm.
Module #: No PAs Operational (No PAs Op)	Power Amplifier (red)	This alarm occurs when all of the power amplifiers in the associated module are inactive due to external conditions such as ac power loss, removal of power supplies, or faults in the power supplies or power amplifiers. Check for associated alarms and troubleshoot accordingly.
Module #: PA Current Imbalance (PA Curr Imb)	Output Network (amber) Power Amplifier (red)	This alarm occurs when the maximum PA current on one side of the power module combiner exceeds 3.5 times the maximum PA current on the other side of the combiner. This will latch off the module, since it indicates a possible fault in the module combiner, transmitter combiner or output network. If more than one module has this alarm, the transmitter will shut down with a Combiner Match alarm.
Module #: PA Volts A (or B) Fail [PA V A (or B) Fail]	Power Supply (red)	This alarm indicates the PA voltage from the power supply does not match the requested setpoint. This is likely caused by a power supply failure. Check the associated power supply module (A or B).
Module #: PA 1-4 Fail	Power Amplifier (red)	This alarm occurs if the dc input current for the suspect PA has fallen below a preset threshold (typically less than 50% of the average PA current of the operational PAs). This may be caused by a cabling fault on the PA, loss of PA voltage, bias voltage or RF drive, or a defective FET. The transmitter's output power may be reduced, depending on the power setpoint.
Module #: PS A (or B) AC Fail	Power Supply (red)	This alarm occurs if one of the two module power supplies (1 or 2) is reporting an ac failure, indicating its ac input voltage is less than 175 V ac. If a bank of power supply modules are indicating an AC Fail alarm, it is possible that an ac phase loss has occurred. Check the ac voltage applied to the suspect power supply module. If the ac voltage is acceptable, replace the module (see <a href="#">"Power Supply Module Replacement"</a> on page 4.1.48).
Module #: PS A (or B) Current Limit	Power Supply (red)	This alarm occurs if one of the two module power supplies (1 or 2) is reporting a current limit, indicating that the power being delivered by the module has reached 2750 W. This may relate to the operating mode and/or the load impedance at the transmitter's RF output. Check for other transmitter related alarms.

Device and Alarm Name (AUI, UI)	Controller Front Panel LED (color)	Description and Troubleshooting Action
Module #: PS A (or B) Fail	Power Supply (red)	This alarm occurs if one of the two module power supplies (1 or 2) is reporting a PS failure, indicating its output voltage is outside its acceptable range, based on the control setting. Check the dc voltage output of the suspect power supply module. If the dc voltage is out of tolerance, replace the power supply module (see <a href="#">"Power Supply Module Replacement" on page 4.1.48</a> ). If the voltage is acceptable, suspect the PS interface PWB (A1).
Module #: PS A (or B) High Temperature [PS A (or B) Temp]	Power Supply (red)	This alarm occurs if one of the two module power supplies (1 or 2) is reporting a high temperature alarm, indicating its operating temperature has exceeded its internal threshold of 105°C (221°F). Both module power supplies are inhibited while this fault exists. This alarm is most likely caused by a module fan failure or blockage. Verify the module turns on and its fan is operational. If the fan is not operational, inspect it for possible blockage. If necessary, replace the power supply module (see <a href="#">"Power Supply Module Replacement" on page 4.1.48</a> ). If the alarm persist after replacing the module, suspect the PS interface PWB (A1).
Module #: PS A (or B) Low Line	Power Supply (red)	This alarm occurs if one of the two module power supplies (1 or 2) is reporting a low ac input voltage (less than 175 V ac, higher than 90 V ac). The power supply will limit its associated module's output.
Module #: PS A (or B) Missing	Power Supply (red)	This alarm occurs if the module power supply (A or B) is removed, or has not been detected on the serial bus. Install an operational power supply module. The alarm may persist for several seconds after replacing a power supply module, before the power supply module is recognized. If the alarm persists after one minute, try reseating the power supply module. This alarm may also be caused by an ac power loss to the power supply module.
Module #: Reject Power Shutback (Rej Shutback)	Output Network (amber)	This alarm occurs when the reject power in the power module's combiner suddenly exceeds 600 W, requiring a shutback. This may be the result of a PA failure or, under certain conditions, may indicate a fault in the transmitter's RF combiner/filter. The module will be latched off until a reset is initiated.
Module #: RF Drive Loss (RF Drv Loss)	Power Amplifier (red)	This alarm occurs if the input RF drive (exciter power) is less than 1 W when it is expected to be 2 W, based on the measurements from the remaining power modules. Check the RF drive cable between the splitter and the module control/interface PWB (A3).
Module #: Switch Inhibit (Switch Inh)	Power Amplifier (red)	This alarm occurs if the module's front panel switch is in the 'DISABLE (down)' position. Set the switch to its 'ENABLE (up)' position to enable the module.



Device and Alarm Name (AUI, UI)	Controller Front Panel LED (color)	Description and Troubleshooting Action
Rack #: AC Phase Loss A/B/C	Power Supply (red)	This alarm occurs if several power supply modules report a PS AC Fail alarm, indicating that one of the phases of the main ac power source may have been lost. Check the three amber LEDs in the bottom, rear of the transmitter. If the LEDs are off, there is likely a problem with the ac service. Measure the ac source voltage at the service entrance. Normally this should measure between 175 and 265 V ac line-line [for 3-phase (nominal 208 V ac) and 1-phase (nominal 240 V ac)] or between 303 and 459 V ac line-line [for 3-phase (nominal 400 V ac)]. While this alarm is active, the transmitter's ALC function will not allow an increase in output power.
Rack #: Communication Fail (Comm Fail)	-	This alarm occurs if communication with the controller has been interrupted. This alarm is typically only visible in the Events Log, since it will not be transmitted when communication is interrupted. Check cable connections between the associated module interface PWB and the controller.
Rack #: Discharging PA Volts (Discharging PA V)	PS (red)	This alarm occurs when the transmitter has initiated a shutback sequence, and residual PA voltage energy stored in the capacitors in the power supplies and PAs is being discharged. During a shutback sequence, the RF drive to the PAs is turned off immediately after the event, and this occurs faster than the power supply modules can be inhibited. Therefore, PA voltage is still being applied to the capacitors with no drive to discharge the energy. To discharge the stored energy from the capacitors, the PA bias is increased to a discharge level after the power supplies have been inhibited. This causes the stored energy to be dissipated through dc current in the FET. This alarm should only occur with a Residual PA Volts Present alarm. See Residual PA Volts Present alarm for more information.
Rack #: EEPROM Fail	-	This alarm occurs if the rack is unable to load its configuration from EEPROM. This is a non-critical fault, since all of the information is retrievable from the power supply modules and the controller.
Rack #: High Ambient Temperature (High Amb Temp)	-	This alarm is indication only and occurs if the transmitter's ambient temperature exceeds 60°C (140°F). Check the intake air filters or cooling system.
Rack #: LVPS Fail (+48 V Fail)	Power Supply (red)	This alarm occurs if the output voltage of LVPS A (U2) or LVPS B (U3) is outside of its acceptable voltage range (between +32 and +53 V). This may be a result of an ac failure or a fault with the LVPS module. If the ac voltage is acceptable, replace the LVPS module (see <a href="#">"LVPS Module Replacement"</a> on page 4.1.46).

Device and Alarm Name (AUI, UI)	Controller Front Panel LED (color)	Description and Troubleshooting Action
Rack #: LVPS A (or B) Fail	Power Supply (red)	This alarm occurs if LVPS module A (U2) or B (U3) is reporting a PS failure, indicating its output voltage is outside its acceptable range, based on the control setting. Check the dc output voltage of the suspect LVPS. If the dc voltage is out of tolerance, replace the LVPS module (see <a href="#">“LVPS Module Replacement” on page 4.1.46</a> ). If the dc voltage is acceptable, suspect the PS interface PWB (A1).
Rack #: LVPS A (or B) AC Fail	Power Supply (red)	This alarm occurs if LVPS module A (U2) or B (U3) is reporting an ac failure, indicating its ac input voltage is less than 175 V ac. Check the ac voltage applied to the suspect LVPS module. If the ac voltage is acceptable, replace the LVPS module (see <a href="#">“LVPS Module Replacement” on page 4.1.46</a> ).
Rack #: LVPS A (or B) High Temperature [LVPS A (or B) Temp]	Power Supply (red)	This alarm occurs if LVPS module A (U2) or B (U3) is reporting a high temperature alarm, indicating its operating temperature has exceeded its internal threshold of 105°C (221°F). This alarm is most likely caused by a module fan failure or blockage. Allow the module to cool and attempt to reset the alarm. Verify the module turns on and its fan is operational. If the fan is not operational, inspect it for possible blockage. If necessary, replace the LVPS module (see <a href="#">“LVPS Module Replacement” on page 4.1.46</a> ).
Rack #: LVPS A (or B) Low Line	Power Supply (red)	This alarm occurs if LVPS A (U2) or LVPS B (U3) is reporting a low ac input voltage (less than 175 V ac, higher than 90 V ac). The power supply will limit its associated module’s output.
Rack #: LVPS A (or B) Missing	Power Supply (amber)	This alarm occurs if LVPS module A (U2) or B (U3) has been removed. Install an operational LVPS module. The alarm may persist for several seconds after replacing an LVPS module, before the LVPS module is recognized. If the alarm persists after one minute, try reseating the LVPS module. This alarm may also be caused by an ac power loss to the LVPS module. This alarm only occurs if the system is configured to use LVPS A or B, as applicable (see <a href="#">“Configuring LVPS Hardware” on page 3.2.114</a> ) of the Operations & Maintenance Manual.
Rack #: Module Extraction Shutback	Power Amplifier (red)	This alarm occurs if the RF power module is removed without first being inhibited via its front panel switch. Try reseating the RF power module. If the alarm persists, suspect a fault with circuitry on the associated module control/interface PWB.
Rack #: Reject Fan Volts Fail (Rej Fan V Fail)	Power Supply (red)	This alarm occurs if the fan voltage for the module is 10% high or 10% low from the expected value. This may be the result of a fault with the associated circuit on the module control/interface PWB (A3).

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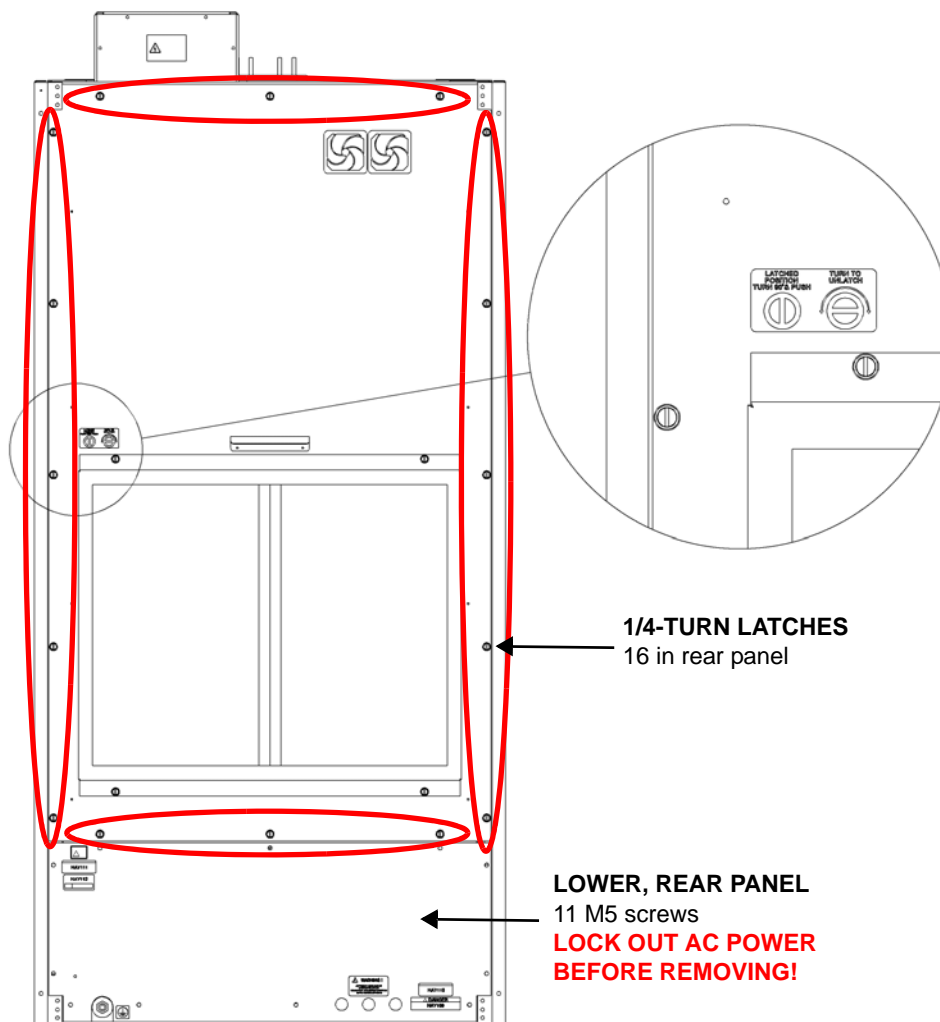
Device and Alarm Name (AUI, UI)	Controller Front Panel LED (color)	Description and Troubleshooting Action
Rack #: Residual PA Volts (Residual PA V)	Exciter (red)	This alarm indicates that after the transmitter has turned off its RF output, it is unable to discharge the PA volts to a level that is below 10 V. This condition will not allow the transmitter to turn on its RF output; however the condition will be cleared once the PA volts reaches a level that is below 10 V. If the condition cannot be cleared automatically, the transmitter will still be allowed to turn on. This condition will typically occur with a failed PA or power supply module. Check for associated alarms and follow the associated troubleshooting procedure.
Rack #: +15V Fail	Power Supply (red)	This alarm occurs if the +15 V supply on the module control/interface PWB (A3) is outside its acceptable voltage range (between +13.5 and +16.5 V).
Rack #: +3.3V Fail	Power Supply (red)	This alarm occurs if the +3.3 V supply on the module control/interface PWB (A3) is outside its acceptable voltage range (between +3.0 and +3.6 V).
Rack #: +5V Fail	Power Supply (red)	This alarm occurs if the +5 V supply on the module control/interface PWB (A3) is outside its acceptable voltage range (between +4.5 and +5.5 V).

## Accessing the Inside of the Transmitter

The front of the GV20/GV15 has a hinged door that provides access to the remote interface PWB (A16), RF power modules 1 through 8 (A8 through A11, A20 through A23), LVPS modules 1A (U2), 1B (U3), 2A (U12, if purchased) and 2B (U13, if purchased), power supply modules (U4 through U11, U14 through U21), controller module (A4) and exciters A (A5) and B (A6, if purchased).

The rear of the GV20/GV15 has two removeable access panels (see [Figure 4.1.4](#)). Removing the upper panel provides access to the ac input terminal block (TB1), the rear panel of the controller (A4), exciters A (A5) and B (A6, if purchased), reject load (A13), and various other PWBs and assemblies. Removing the lower panel provides access to the power supply interface PWBs (A1 and A17).

Figure 4.1.4: Rear Access Panels



## Troubleshooting Tips

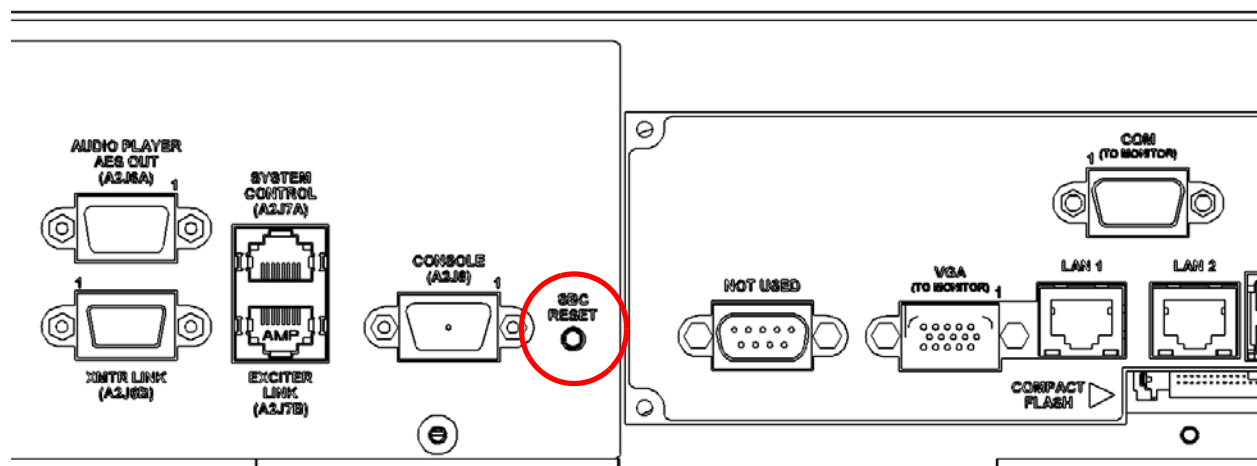
- [AUI Screen Lockup](#)
- [RF Power Module Faults](#)
- [Power Supply Module and LVPS Faults](#) - see page 4.1.34

### AUI Screen Lockup

If the local AUI screen locks up, perform the following steps to restore normal AUI operation:

1. If you also use a PC for remote AUI control/monitoring of the transmitter, use the PC to navigate to the System Settings page (from the Menu options). Select Reset and click the Reboot AUI button. If the local AUI is non-responsive (locked up) or this does not restore operation of the AUI, proceed to [Step 2](#).
2. Open the front door and use the controller's UI to navigate to the System Settings -> SBC Reset screen. Select Force SBC Reset and press accept to save the changes (see the GV20/GV15 Operations & Maintenance Manual). If this does not restore operation of the AUI, proceed to [Step 3](#)
3. Remove the rear panel to gain access to the rear of the controller module (A4). From the rear panel, use a suitable tool to activate the SBC RESET button (next to the CONSOLE A2J8 D-sub connector, see [Figure 4.1.6](#)) via the rear panel clearance hole.

Figure 4.1.5: SBC Reset Button (partial rear view of controller A4)



## RF Power Module Faults

There are many alarms on the AUI (local or remote) or controller UI, prefixed by the text RF Module, that indicate faults related to one or more of the RF power modules. The number that appears after RF Module (1-8) identifies the position of the affected module. Numbers correspond to modules in a left to right, top to bottom sequence, as viewed from the front of the transmitter.

1. Check the forward power reading on the UI or AUI. If it is less than the preset level, one or more RF power modules are defective. Proceed to [“RF Power Module Fault Validation”](#) on page 4.1.32.
2. If the forward power reading in [Step 1](#) is normal, go to the controller UI's Alarms screen or select the AUI's (local or remote) Status button on the remote AUI to check for other alarms that may have triggered the RF power module alarm.
3. From the remote AUI's Meter List View page (see [Figure 4.1.6](#)), click the **i** (information) button next to the RF Modules # folder in the Transmitter Layout section to view the status screen for all modules or click the right-hand arrow to expand the RF Modules folder to allow clicking on the **i** button for an individual RF Module (e.g., RF Module 1, see [Figure 4.1.7](#) on page 4.1.31). This screen displays critical parameters for all 8 RF power modules. As an aid in troubleshooting, compare parameters to isolate possible module faults.

Figure 4.1.6: AUI - Meter List View page

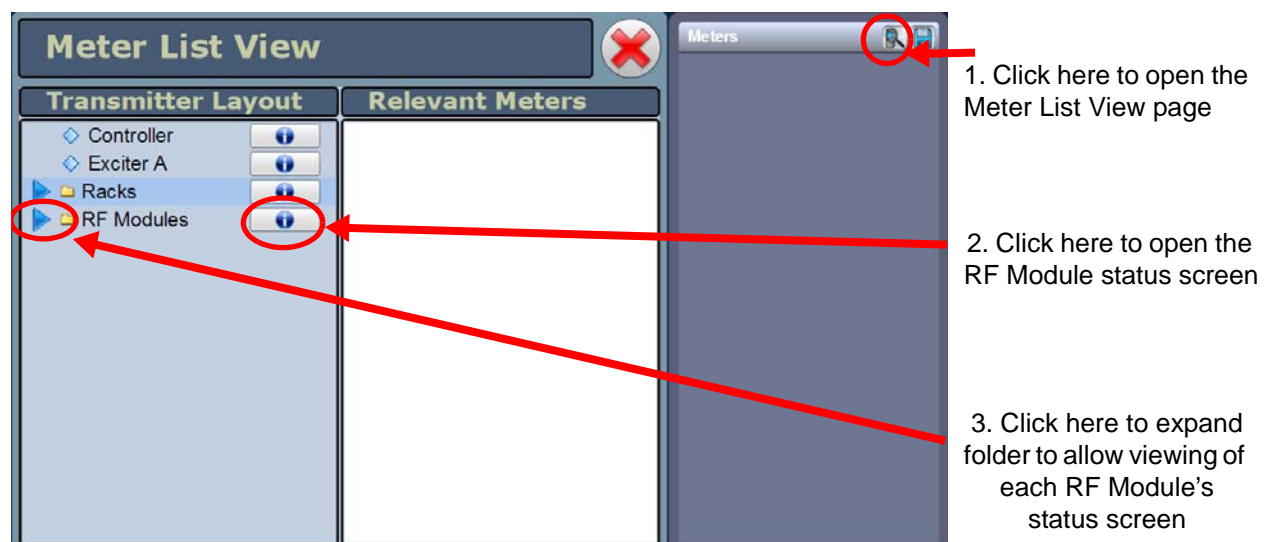
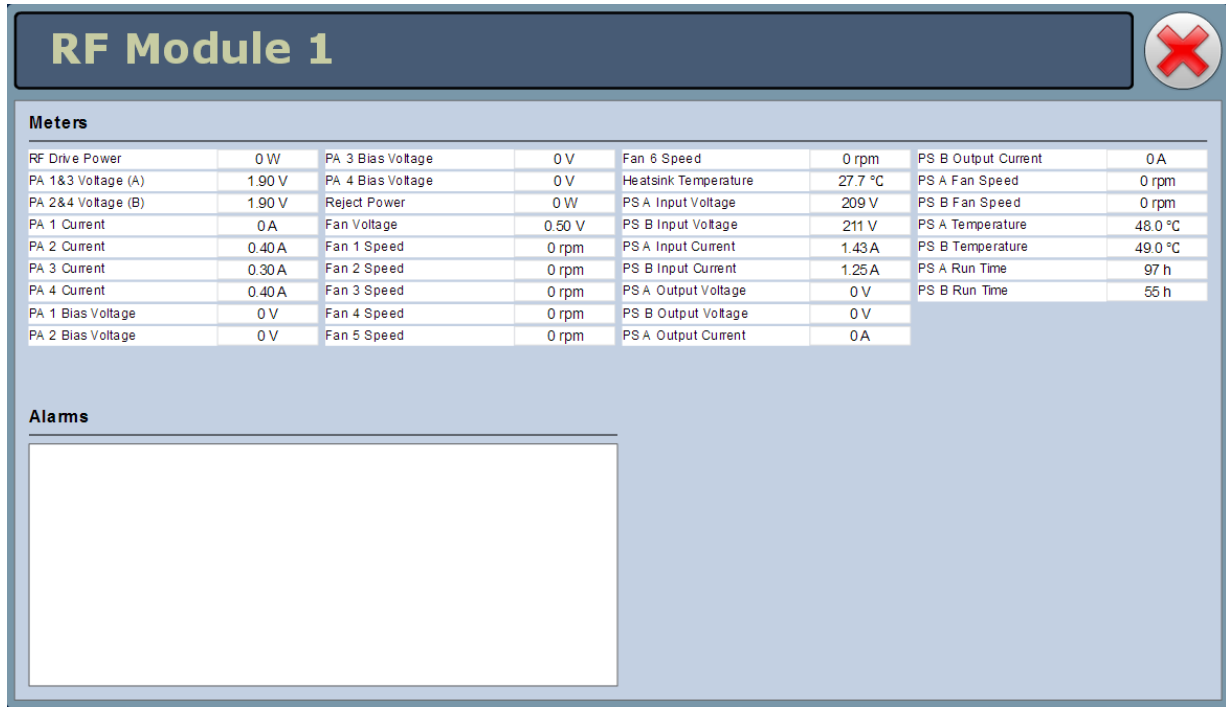


Figure 4.1.7: RF Module Status Screen



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## RF Power Module Fault Validation

Each RF power module has a multi-colour LED on its front panel, which can help in identifying a fault and allowing you to determine whether remedial action is required now or later.

Identify and isolate a defective RF power module, and verify the nature of the defect by checking the LED on the RF power module's front panel. Note which RF power module is not operating normally and producing RF power (i.e., LED is not solid green). Record which RF power modules are displaying an alarm and the state of its LED (see below).

- ❖ Green (solid): Module is operational
- ❖ Green/Amber (blinking): Module is operational, but has a non-critical fault.
- ❖ Green/Red (blinking): Module is operational, but has a critical fault.
- ❖ Amber (solid): Module is in a controlled inhibit state, but ready for operation (i.e., RF off).
- ❖ Amber/Red (blinking): Module is inhibited by a latching fault.
- ❖ Red (solid): Module is inhibited by a fault.

Attempt to reset an RF power module, by initiating a Reset on the AUI or controller UI. If you cannot reset the front panel LED alarm, see ["RF Power Module Troubleshooting"](#) on page 4.1.32.

## RF Power Module Troubleshooting

Refer to ["Operating with Defective or Missing RF Power Modules"](#) on page 4.1.32 for removal and installation instructions and then refer to ["Troubleshooting RF Power Modules"](#) on page 4.1.42 for detailed troubleshooting information.

**NOTE:** A defective RF power module can be removed for repair, without turning off the transmitter, as described in ["Removing an RF Power Module"](#) on page 4.1.40. The transmitter can be operated at a reduced output power level with an RF power module removed.

## Operating with Defective or Missing RF Power Modules

It is permissible to operate the transmitter with multiple defective or missing RF power module(s). [Table 4.1.2 on page 4.1.33](#) shows the approximate percentage of remaining output power (relative to original) when RF power modules, power amplifiers (PAs), or power supply modules fail or are removed.

**CAUTION!** Do not attempt to compensate for power reduction caused by an RF power module failure by adjusting the RF power level.



- ❖ If an RF power module has one or more defective PAs, as indicated by the AUI's Module Status screen (and suspect RF power module's front panel LEDs), but is still contributing to the transmitter's RF output, it may be left on. The transmitter will take necessary precautions to reduce the stress on components due to the failure, i.e., power reduction.
- ❖ If an RF power module must be removed, turn it off prior to disengaging its blind-mating connectors. Refer to "[RF Power Module Replacement](#)" on page 4.1.40 to disable a module with the transmitter on air. At all other times, turn off the switching power supplies by pressing the RF Off button, then switch off the ac power source at the service entrance.

**NOTE:** There are many possible combinations of PA/module failures or extractions. The best and worst case situations are shown in [Table 4.1.2](#) on page 4.1.33.

- ❖ When maintenance is complete and it is safe to return the transmitter to normal service, enable all RF power module supplies by setting the switch on the front of the associated RF power module(s) to its 'ENABLE (up)' position.

*Table 4.1.2: Output Power Level vs. PA/Module Failure/Removal*

PA/Module Failures/Removal	RF Output Power (% of original RF output power)	
	Best Case	Worst Case
1 RF Power Module	76.6	76.6
2 RF Power Modules	56.3	28.1
1 RF Power Amplifier	93.8	93.8
2 RF Power Amplifiers	87.9	85.8
3 RF Power Amplifiers	82.1	80.1
4 RF Power Amplifiers	76.6	72.6
5 RF Power Amplifiers	71.2	67.4
6 RF Power Amplifiers	66.0	60.5
1 Power Supply Module	87.9	87.9
2 Power Supply Modules	76.6	76.6

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## Power Supply Module and LVPS Faults

There are various power supply module and LVPS module related alarms on the AUI (local or remote) or controller UI.

Power supply module alarms are prefixed by the text RF Module and then PS. The number that appears after RF Module (1-8) identifies the position of the affected module. The letter that appears after PS (A or B) identifies the affected power supply module. There are two power supply modules for each RF power module.

Low voltage power supply (LVPS) alarms are prefixed by the text LVPS. The number and letter that appears after LVPS (1A or 1B, 2A or 2B, if installed) identifies the affected LVPS module.

1. Check the front panel LEDs of the power supply modules and LVPS modules. Normally, only the AC OK and DC OK LEDs should be on (solid green). If not, the associated power supply module or LVPS module may be defective. Proceed to [“Power Supply or LVPS Module Fault Validation” on page 4.1.37](#).
2. From the AUI's (local or remote) Meter List View page (see [Figure 4.1.8 on page 4.1.35](#)):
  - ❖ select the **i** (information) button next to the RF Modules # folder in the Transmitter Layout section to view the status screen for all modules or select the right-hand arrow to expand the RF Modules folder to allow clicking on the **i** button for an individual RF Module (e.g., RF Module 1, see [Figure 4.1.9 on page 4.1.35](#)). This screen displays critical parameters for the power supply modules. As an aid in troubleshooting, compare parameters to isolate possible faults.
  - ❖ select the **i** (information) button next to the Rack # folder in the Transmitter Layout section and then to view the Rack status screen (see [Figure 4.1.10 on page 4.1.36](#)). This screen displays LVPS meters.

Figure 4.1.8: AUI - Meter List View page

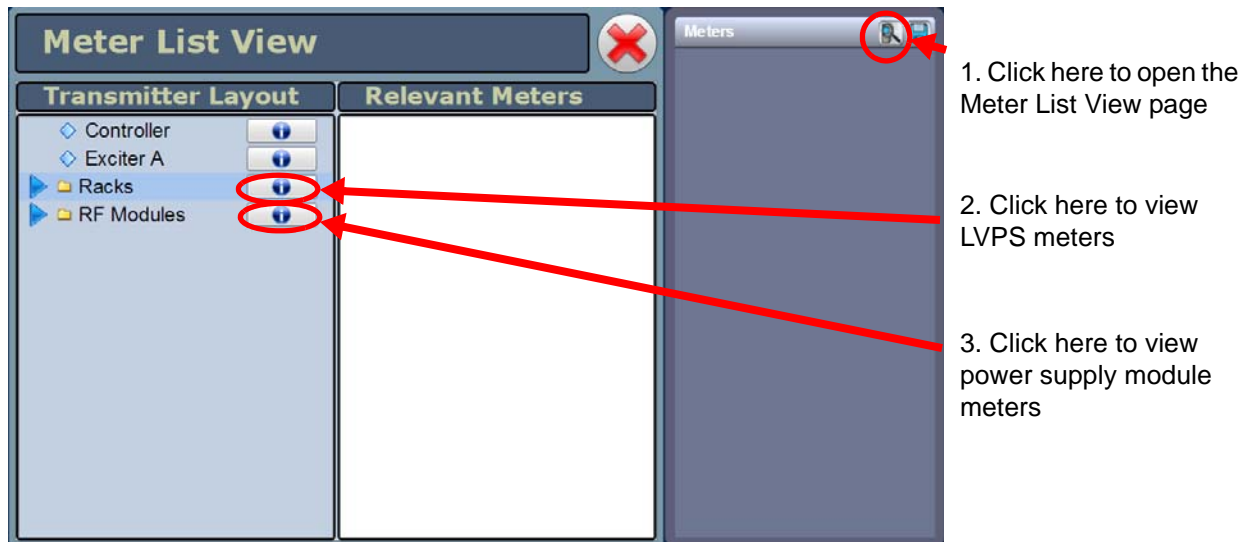


Figure 4.1.9: Module Status - Power Supply Meters

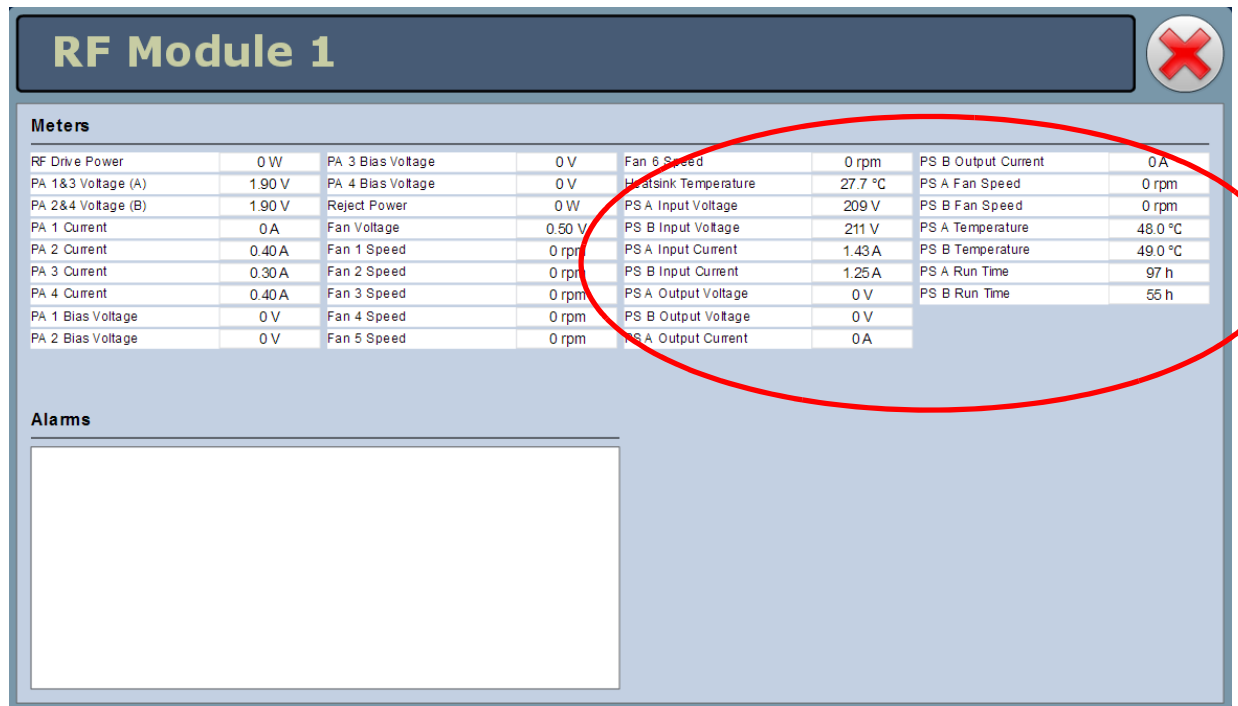


Figure 4.1.10: Rack Status - LVPS meters

## Rack 1

Firmware Version: 1.1.20.17

**Meters**

+15V	14.9 V	+3.3V	3.33 V	Ambient Temperature	33.0 °C
+5V	4.98 V	LVPS Input Voltage	39.3 V	Reject Load Fan Voltage	0.80 V

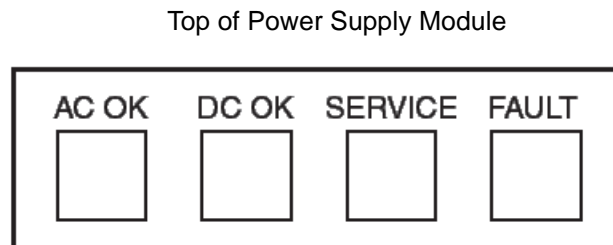
**Alarms**

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## Power Supply or LVPS Module Fault Validation

Each power supply and LVPS module has four LEDs on its front panel (see [Figure 4.1.11](#), which can help in identifying a fault and allowing you to determine whether remedial action is required now or later.

*Figure 4.1.11: Power Supply Module LEDs*



Record which power supply modules are displaying an alarm and the state of its LEDs (see below).

- AC OK LED
  - ❖ Green (solid): Ac voltage is present and within acceptable limits.
  - ❖ Green (blinking): Ac voltage is present, but outside acceptable limits.
- DC OK LED
  - ❖ Green (solid): Power supply is enabled and output regulated.
  - ❖ Green (blinking): Power supply is experiencing an over-current condition.
- SERVICE LED
  - ❖ Amber (solid): Power supply is experiencing a high temperature condition.
- FAULT LED
  - ❖ Red (solid): Module is experiencing an internal fault.
  - ❖ Red (blinking): Communication has been lost with the rack controller.

Other combinations of power supply module LEDs, and the corresponding power supply condition, are listed in [Table 4.1.3 on page 4.1.38](#).

Table 4.1.3: Other Power Supply LED States

Condition	Power Supply LED State			
	AC OK (green)	DC OK (green)	SERVICE (amber)	FAULT (red)
OK	On	On	Off	Off
Thermal alarm (5 degrees before shutdown)	On	On	On	Off
Thermal shutdown	On	Off	On	On
Defective fan, blown ac fuse, boost stage failure or over voltage latched shutdown	On	Off	Off	On
Ac present, but not within limits	Blinks	Off	Off	Off
Ac not present	Off	Off	Off	Off
Non-catastrophic internal failure	On	On	Off	On
Standby	On	Off	Off	Off
Service Request (PMBus mode)	On	On	Blinks	Off
Communications Fault	On	On	Off	Blinks

### Operating with Defective or Missing Power Supply or LVPS Modules

You can operate the transmitter - at normal desired power level - with one defective or missing LVPS module, assuming the transmitter was using dual LVPS modules. To replace an LVPS module, go to ["LVPS Module Replacement" on page 4.1.46](#).

You can operate the transmitter - at a reduced output power level - with multiple defective or missing power supply module(s) (see [Table 4.1.2 on page 4.1.33](#)). To replace a power supply module, go to ["Power Supply Module Replacement" on page 4.1.48](#).

## Replacement Procedures

Table 4.1.4 lists the procedures available in this manual for replacing modules, PWBs and cooling fans.

Table 4.1.4: Replacement Procedures

Module	Replacement Procedure
RF Power Module	See <a href="#">page 4.1.40</a>
Power Amplifier PWB	See <a href="#">page 4.1.43</a>
RF Module Cooling Fan	See <a href="#">page 4.1.45</a>
LVPS Modules	See <a href="#">page 4.1.46</a>
Power Supply Modules	See <a href="#">page 4.1.48</a>
Remote Interface PWB	See <a href="#">page 4.1.50</a>
Other Cooling Fans	See <a href="#">page 4.1.52</a>
Reject Load Assemblies or Reject Load/Splitter Interface Assembly	See <a href="#">page 4.1.79</a>
Controller Module	See <a href="#">page 4.1.58</a>
Single-Board Computer (SBC)	See <a href="#">page 4.1.73</a>
Controller PWB	See <a href="#">page 4.1.63</a>
Exciter Module	See <a href="#">page 4.1.65</a>
Exciter/Control PWB - Exciter	See <a href="#">page 4.1.67</a>
Module Control/Interface PWB	See <a href="#">page 4.1.70</a>
Power Supply Interface PWB	See <a href="#">page 4.1.72</a>

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## RF Power Module Replacement

### Removing an RF Power Module

1. Confirm the location of the RF power module that is being removed. Note the alarm text includes a Module number (1-8) that is not identified on the RF power module. See [Figure 4.1.12 on page 4.1.41](#) to determine the location for a given RF power module (1-8).
2. Open the transmitter's front door.
3. Set the ENABLE/DISABLE switch on the front of the suspect RF power module to its DISABLE (down) position. This inhibits the module's associated pair of power supply modules.
4. Remove and retain the two M5 securing screws in the front of the module. If necessary, remove the M8 shipping screw in the back of the module (the shipping screws do not need to be reinstalled, and may have already been removed during installation or previous maintenance).

**WARNING! Fans with rotating blades are present at the bottom of the RF power module. Take care when removing the module.**

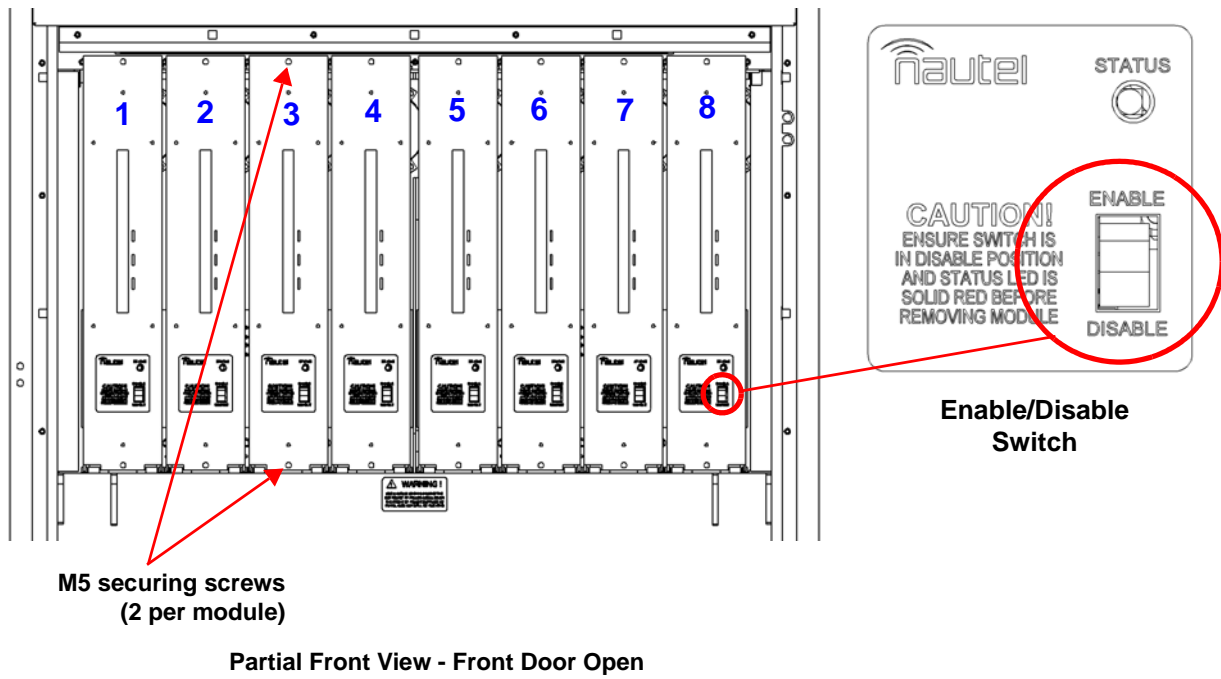
5. Grasp the handle on the front of the RF power module and carefully pull the RF power module out of the transmitter, noting that there are catches on the transmitter tray that will prevent the rear of the RF power module from being fully extracted. When the module reaches these catches, lift the rear of the module over the catches by tilting the module's front down and then lift by the rear handle. The module weighs 14.5 kg (32 lbs).

### Installing an RF Power Module

1. Grasp the front and rear handles on the RF power module and insert it into the transmitter, ensuring that the rear of the module clears the catches in the transmitter tray.
2. Carefully push the RF power module into place so that its edge-card connector mates with the transmitter.
3. Install both M5 securing screws in the RF power module's front panel.
4. Set the ENABLE/DISABLE switch on the front of the RF power module to its ENABLE position (see [Figure 4.1.12 on page 4.1.41](#)). This activates the module and its two associated power supplies.
5. With RF off and the system interlock circuit intact (closed), use the controller's front panel UI to initiate a Xmtr PA Bias routine (see Main Menu -> System Settings -> Factory Settings -> Calibration; refer to the Operations and Maintenance Manual for more detail).
6. Close the front door.



Figure 4.1.12: RF Power Module Numbers/Locations



## Troubleshooting RF Power Modules

### Maintenance Philosophy

Maintenance on an RF power module consists of replacing PA PWBs or cooling fans.

### Special Tools and Test Equipment

The following tools and test equipment are required to troubleshoot an RF power module.

- ❖ Digital multimeter
- ❖ Torque screwdriver, capable of torquing up to 0.67 N-m (6 in.-lbs). Required for installing attaching hardware for PA PWB FETs.
- ❖ Soldering iron and desoldering tool
- ❖ GV20/GV15 station spares kit, if purchased (contains replacement PA PWBs and cooling fans)
- ❖ GV20/GV15 site spares kit, if purchased (contains replacement cooling fans)
- ❖ Electrical schematics in Section 4 of this manual.
- ❖ Mechanical drawing in Section 5 of this manual.

### Electrostatic Precautions

The RF power module contains semiconductor devices that are susceptible to damage from electrostatic discharge. Be sure to follow the electrostatic precautions in [“Electrostatic Protection”](#) on page 4.1.3 at all times.

### Preparation for Troubleshooting

1. Follow the procedure in [“Removing an RF Power Module”](#) on page 4.1.40 to remove the RF power module from the transmitter.
2. Place the RF power module on a suitable work surface.
3. Based on the AUI (local or remote) or controller UI alarm that prompted RF power module troubleshooting, replace either the defective PA PWB (see [“PA PWB Replacement”](#) on page 4.1.43) or defective cooling fan (see [“Module Cooling Fan Replacement”](#) on page 4.1.45).

**NOTE:** If a failure occurs, you must replace the entire power amplifier PWB, rather than an individual FET. A spare power amplifier PWB (NAPA31C) is provided in the transmitter station spares kit, if purchased. To order a station spares kit or replacement power amplifier PWB contact Nautel. Failure to observe this recommendation may void your equipment warranty or cause further failures.

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## PA PWB Replacement

See Figures MD-13 and MD-17 in the Mechanical Drawings section (Section 5) of this manual.

1. Remove the RF power module's right-hand side cover (see [Figure 4.1.13 on page 4.1.45](#)) by removing 11 M3 countersunk screws. Retain hardware for re-installation.
2. Before replacing a suspect PA PWB, verify the fault is with the suspect PA PWB by performing the continuity and resistance checks detailed in "[PA Resistance Checks](#)" on page 4.1.44. If you are prompted to replace a PA PWB, return to [Step 3](#) of this procedure.
3. Unsolder and remove the four solder connections to the defective PA PWB. They include two 24 AWG links (to pads V and X), a white 12 AWG wire (to pad U) and a 16 AWG link (to pad D).
4. Remove the two #4 screws, split and flat washers securing the FET to the heat sink.
5. Remove the seven M3 screws securing the PA PWB to the heat sink.
6. Obtain the replacement NAPA31C PA PWB from the station spares kit, if purchased.

**NOTE:** FETs are static sensitive and must be handled in a static protected manner.

7. Spread a small amount of thermal compound (Nautel Part # HAG39, from the station spares kit), thinly and evenly, on the bottom of the FET flange on the new PA PWB.
8. Secure the PA PWB on the module's heat sink using the seven screws removed in [Step 5](#). Ensure correct orientation (same as the adjacent PWB). Do not tighten the four screws at this time.

**CAUTION!** When installing FET securing hardware, you can damage the FET case if you fully tighten one screw while the other is loose. Avoid this by alternately tightening the two screws.

9. Secure the FET (Q1) with two # 4 screws, a mini-flat washer and a new split washer. Using a torque screwdriver, alternate tightening the left and right screws on each FET, a quarter turn at a time, until 6 inch-pounds (0.67 Newton-meters) of torque has been applied.
10. Tighten the seven PWB screws.
11. Solder the wires removed in [Step 3](#).
12. Re-install the RF power module right-hand cover and return the module to the transmitter (see "[Installing an RF Power Module](#)" on page 4.1.40).

## PA Resistance Checks

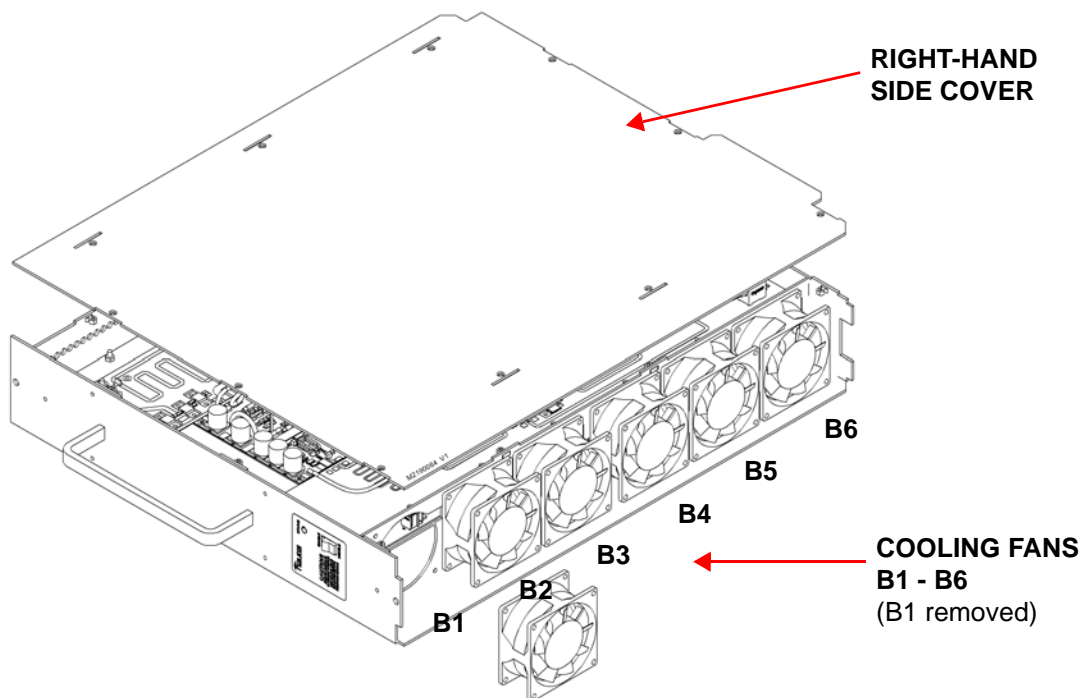
1. Using a digital multimeter, check the continuity across fuse F1 on the suspect PA PWB.
  - ❖ If the measurement is an open circuit, replace the PA PWB (see [“PA PWB Replacement” on page 4.1.43](#)).
  - ❖ If the measurement is short circuit (near 0  $\Omega$ ), proceed to [Step 2](#).
2. Using a digital multimeter, measure the resistance between each gate lead of the FET and the metal flange of the FET.
  - ❖ If the measurement is less than 8 k $\Omega$ , replace the PA PWB (see [“PA PWB Replacement” on page 4.1.43](#)).
  - ❖ If the measurement is between 8 k $\Omega$  and 17.5 k $\Omega$ , check the other PA PWBs for a failure. If none of the other PA PWBs have failed, replace the original suspect PA PWB.
  - ❖ If the measurement is greater than 17.5 k $\Omega$ , proceed to [Step 3](#).
3. Using a digital multimeter, check the continuity between each drain lead of the FET (positive meter probe) and the metal flange of the FET (negative meter probe).
  - ❖ If the measurement is open circuit, the PA PWB is OK and does not require replacement. Continue troubleshooting and suspect a problem with an associated PWB.
  - ❖ If the measurement is not open circuit, replace the PA PWB (see [“PA PWB Replacement” on page 4.1.43](#)).

## Module Cooling Fan Replacement

See [Figure 4.1.13](#).

1. Remove the RF power module's right-hand side cover by removing 11 M3 countersunk screws. Retain hardware for re-installation.
2. Disconnect the suspect cooling fan's mating plug (B1P1 through B6P1). Cut the tyrap that secures the fan wiring to the splitter PWB.
3. Remove and retain the cooling fan's two M3 captive screws that secure the fan to the module.
4. Obtain a replacement fan (Nautel Part # ZAP50) from the site spares kit or station spares kit or from a suitable equivalent (vendor part # is Minebea Motor Mfg. Corp. 3115RL-07W-B79-E51).
5. Install the replacement fan using retained screws. Torque hardware to 1.0 inch-pounds only to avoid cracking the fan's body. Reconnect the fan's mating plug and secure wiring using a tyrap (Nuatel Part # HT66) from the ancillary kit.
6. Re-install the right-hand side cover using retained hardware.
7. Return the RF power module to the transmitter (see ["Installing an RF Power Module" on page 4.1.40](#)).

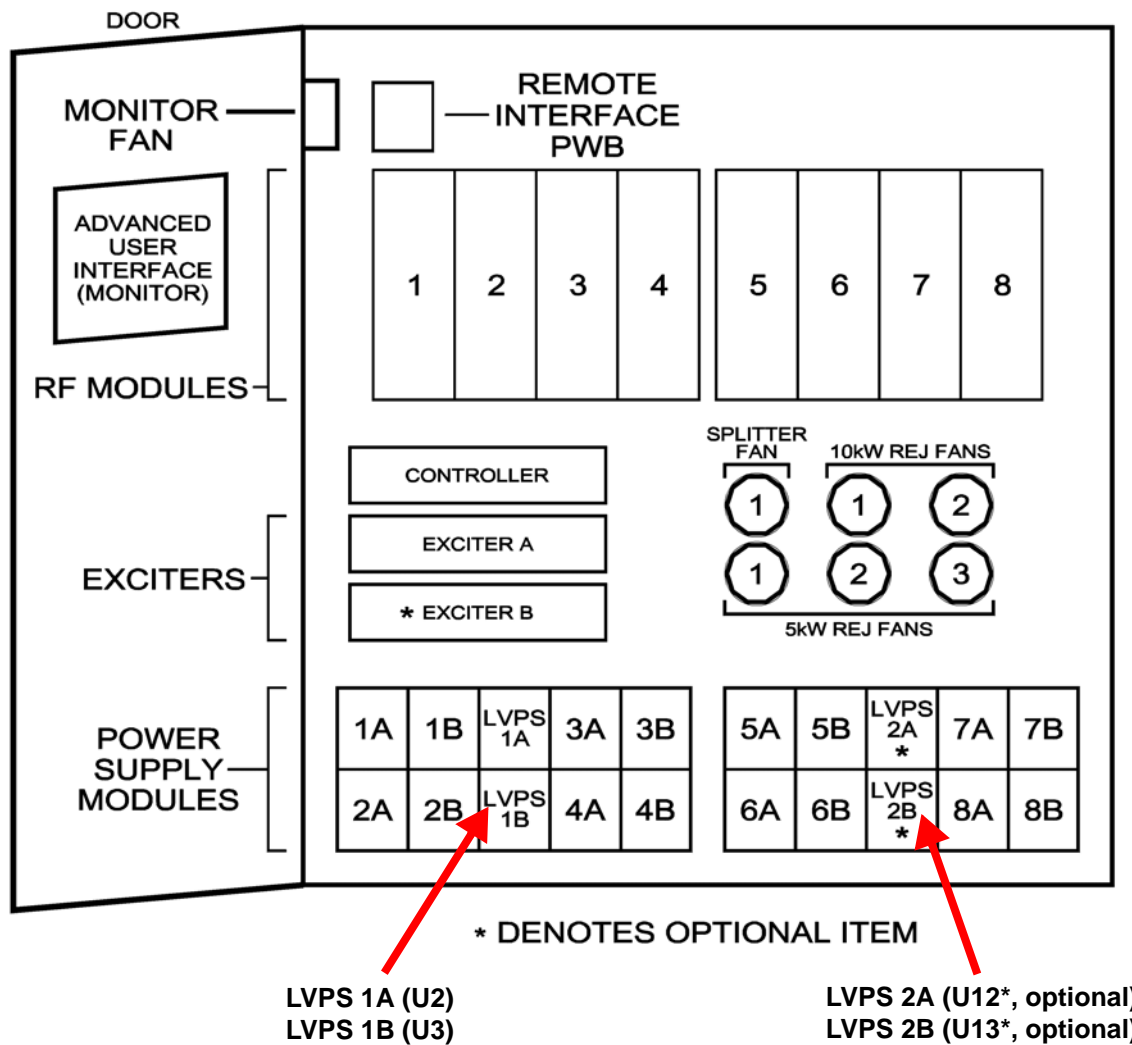
Figure 4.1.13: Replacing a Power Module Cooling Fan



# LVPS Module Replacement

**WARNING!** Lethal voltages exist inside the transmitter when the power is turned on. Follow replacement instructions carefully to ensure safety for maintenance personnel during power supply replacement.

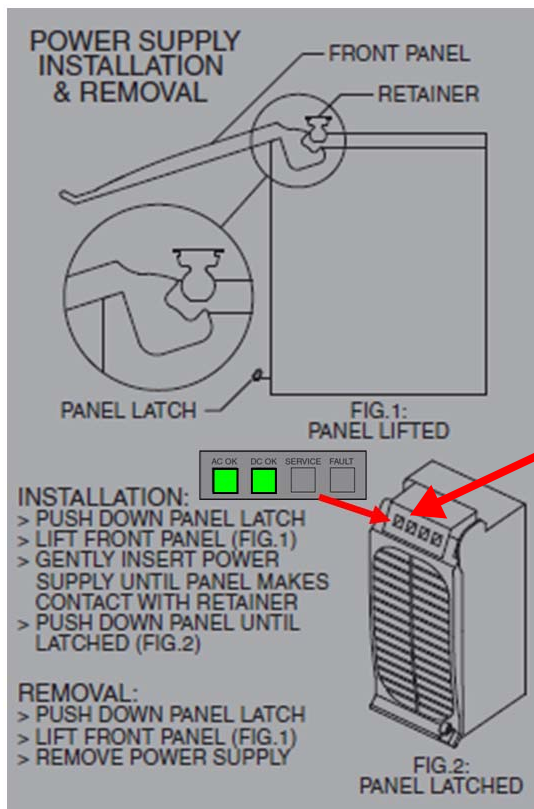
Figure 4.1.14: Location of LVPS Modules



Front door open for clarity

1. Use the transmitter's AUI (local or remote) or controller UI alarm status/logs to isolate the defective low voltage power supply (LVPS), noting there may be redundant (dual) supplies installed.
2. Open the transmitter front door and locate the suspect LVPS module. See [Figure 4.1.14 on page 4.1.46](#).
3. Using [Figure 4.1.15 on page 4.1.47](#) as a guide, remove the LVPS module from the front of the transmitter.
4. Locate or obtain a replacement LVPS module (Nautel Part # UG92B).
5. Using [Figure 4.1.15 on page 4.1.47](#) as a guide, reinstall the new LVPS module.

Figure 4.1.15: Removing/Installing LVPS Modules



**AC OK** and **DC OK** LEDs should be on (green) after successful power supply installation.

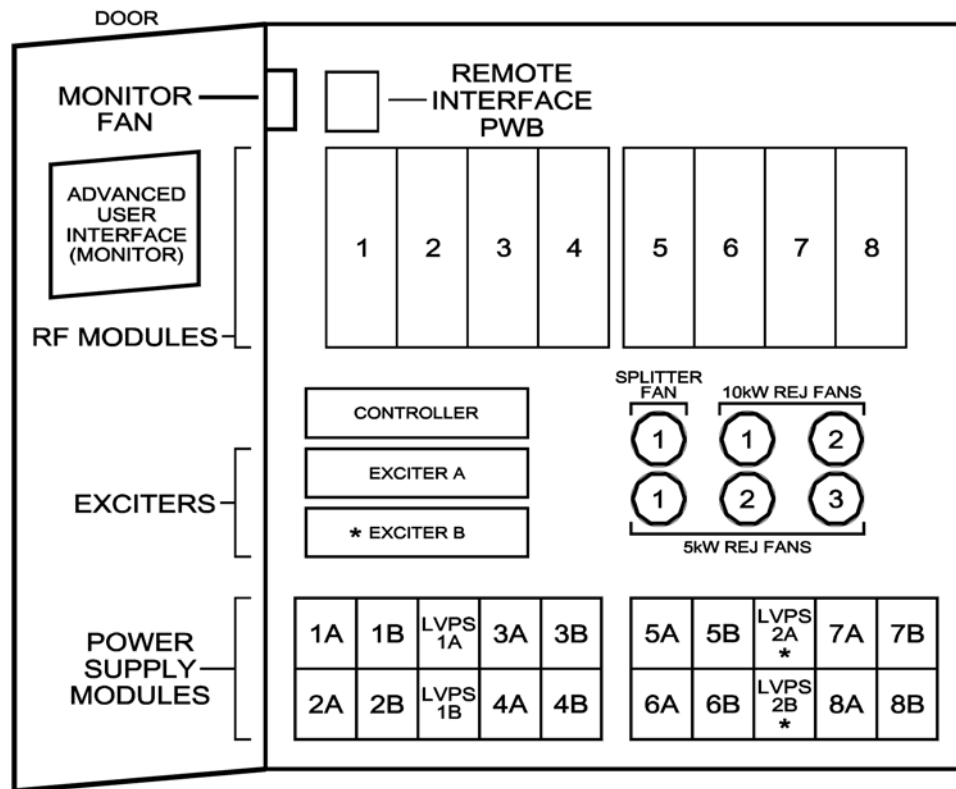
If the associated RF power module is disabled, the **DC OK** LED will not turn on until the module is enabled.

6. Verify that the AC OK and DC OK LEDs, on the front of the LVPS module, are solid green.
7. The transmitter should resume normal operation and the alarm should clear.
8. Close the transmitter's front door.

# Power Supply Module Replacement

**WARNING!** Lethal voltages exist inside the transmitter when the power is turned on. Follow replacement instructions carefully to ensure safety for maintenance personnel during power supply replacement.

Figure 4.1.16: Location of Power Supply Modules



\* DENOTES OPTIONAL ITEM

Front door open for clarity

**Power Supply Module**

- 1A (U4), 1B (U5)
- 2A (U6), 2B (U7)
- 3A (U8), 3B (U9)
- 4A (U10), 4B (U11)
- 5A (U14), 5B (U15)
- 6A (U16), 6B (U17)
- 7A (U18), 7B (U19)
- 8A (U20), 8B (U21)

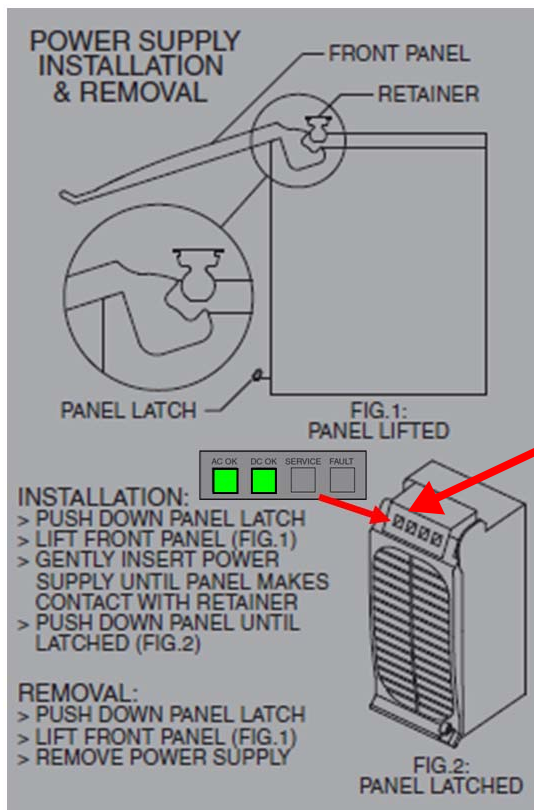
**Associated RF Power Module**

- 1 (A8)
- 2 (A9)
- 3 (A10)
- 4 (A11)
- 5 (A20)
- 6 (A21)
- 7 (A22)
- 8 (A23)



1. Open the transmitter front door and locate the suspect power supply module. See [Figure 4.1.16](#).
2. Using [Figure 4.1.17](#) as a guide, remove the power supply module from the front of the transmitter.
3. Locate or obtain a replacement power supply module (Nautel Part # UG92B).
4. Using [Figure 4.1.17](#) as a guide, reinstall the new power supply module.

Figure 4.1.17: Removing/Installing Power Supply Modules



**AC OK** and **DC OK** LEDs should be on (green) after successful power supply installation.

If the associated R F power module is disabled, the **DC OK** LED will not turn on until the module is enabled.

5. Verify that the AC OK and DC OK LEDs, on the front of the power supply module, are solid green. If the power supply's associated RF power module is disabled, the DC OK LED may not be on.

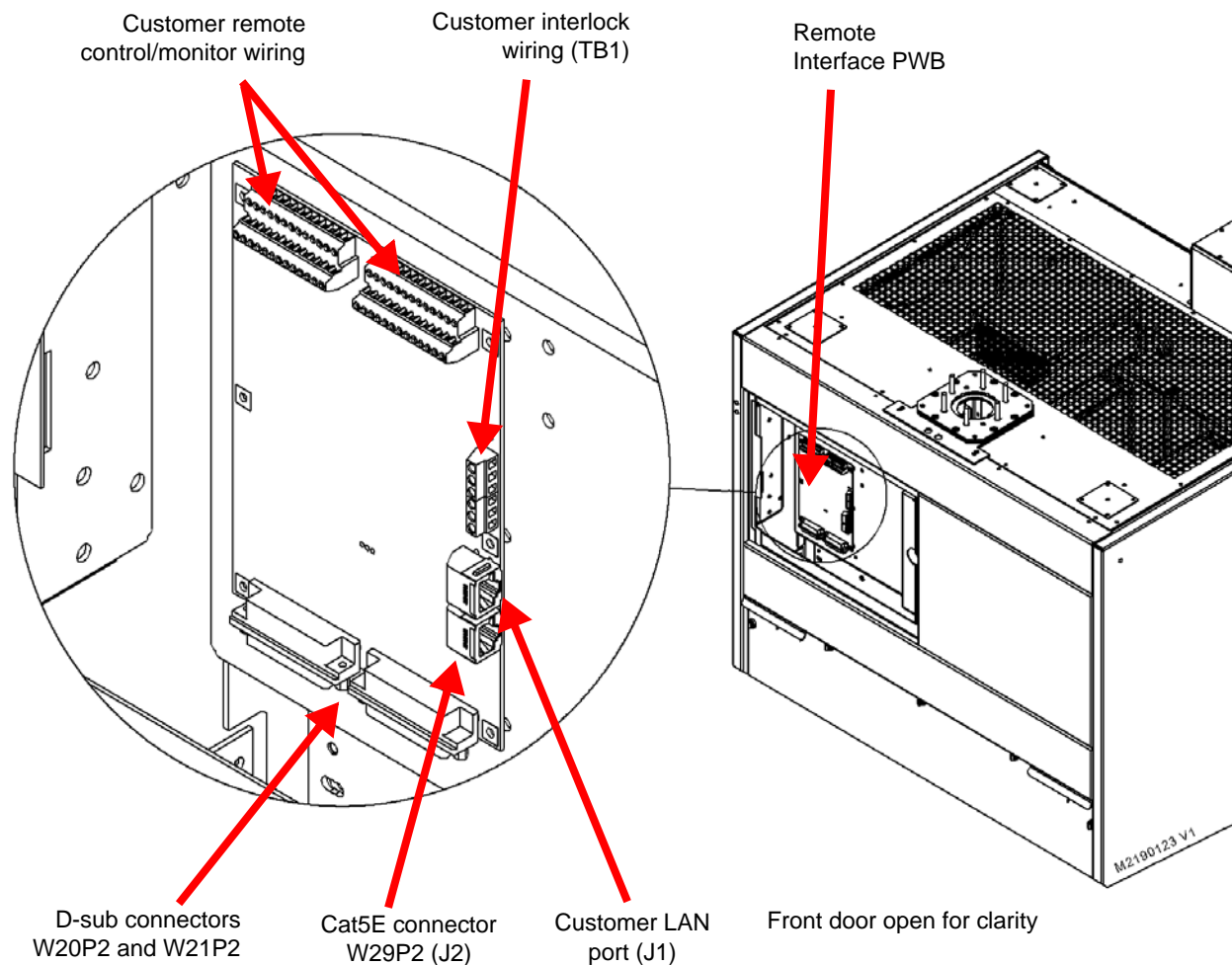
**NOTE:** The FAULT LED (red) may blink temporarily until communication is established between the power supply and the transmitter.

6. The transmitter should resume normal operation and the alarm should clear.
7. Close the transmitter's front door.

## Remote Interface PWB Replacement

Using [Figure 4.1.18](#) as a guide, replace the remote interface PWB as follows:

*Figure 4.1.18: Remote Interface PWB Location*



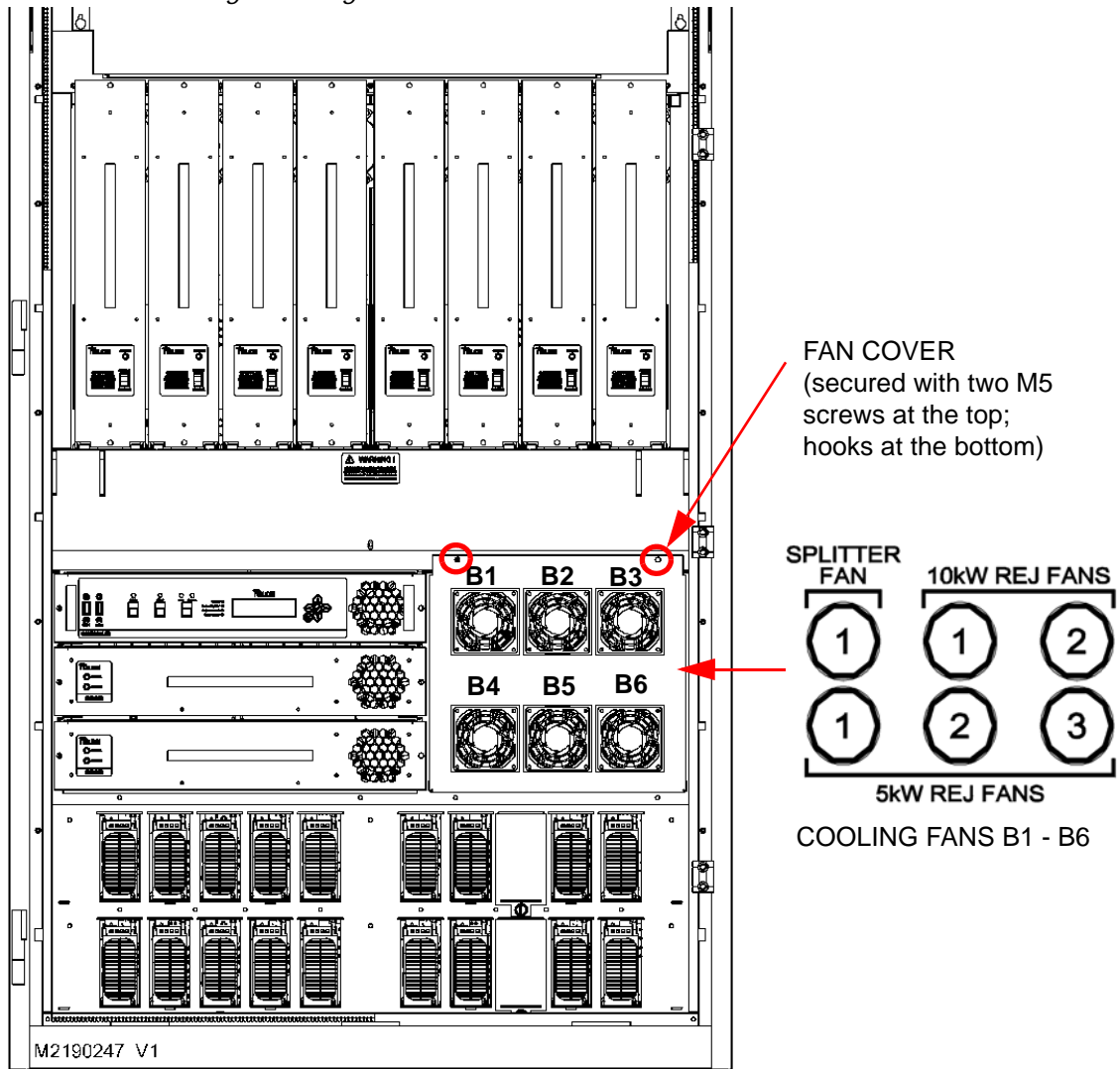
1. Turn off and lock out the transmitter's main ac power.
2. Open the front door to gain access to the remote interface PWB.
3. Remove all customer interface wiring from the remote interface PWB. Note the destination of each wire for ease of reconnecting.
4. Disconnect the two D-sub connectors (W20P2 and W21P2) from the bottom of the PWB and the Cat5E connector (W29P2) from the right-hand side of the PWB (mates with J2).

5. Remove and retain six sets of mounting hardware from the remote interface PWB. Remove the remote interface PWB from the transmitter.
6. Locate or obtain a replacement remote interface PWB (Nautel Part # NAPI143/02).
7. Set jumpers E1 and E2 on the new remote interface PWB to the same positions as the defective PWB.
8. As applicable, use an indelible marker to identify the LED and switch labels on the new remote interface PWB to match the labels on the defective PWB.
9. Install the new remote interface PWB using retained hardware.
10. Reconnect D-sub connectors W20P2 and W21P2, Cat5E connector W29P2 and all customer interface wiring to the new remote interface PWB.
11. Close the front door and return the transmitter to service.

# Cooling Fan Replacement

See [Figure 4.1.19](#).

Figure 4.1.19: Removing a Cooling Fan



Front door open for clarity

1. Open the transmitter's front door.
2. Identify the cooling fan(s) that is being replaced (see [Figure 4.1.19 on page 4.1.52](#)), noting the function of each fan (e.g., B1 is splitter fan 1, B2 is 10 kW reject load fan 1, B4 is 5 kW reject load fan 1, etc.).
3. Remove the fan cover by removing and retaining the two M5 screws at the top and lifting the panel out. The bottom of the panel has hooks that fit into slots.
4. Disconnect the suspect fan's mating plug (B1P1 through B6P1 from its associated mate on reject load/splitter interface PWB A28).
5. Remove the suspect fan (including connector) by removing and retaining the two M3 screws that secure the fan to the transmitter. Retain the fan's finger guard (Nautel Part # HAA63).
6. Obtain a replacement fan (Nautel Part # ZAP50) from the site spares kit or station spares kit, if purchased or a suitable equivalent (vendor part # is Minebea Motor Mfg. Corp. 3115RL-07W-B79-E51).
7. Install the replacement fan, and fan finger guard, using retained screws from [Step 5](#). Torque hardware to 1.0 inch-pounds only to avoid cracking the fan's body.
8. Connect the replacement fan's mating plug to the appropriate mate on reject load/splitter interface PWB A28.
9. Reinstall the fan cover using the retained screws from [Step 3](#).
10. Close the transmitter's front door.

---

## Reject Load or Reject Load/Splitter Interface Assembly Replacement

Using the appropriate [Figure 4.1.20](#) and [Figure 4.1.21](#) as a guide, replace one of the **three** reject load assemblies or the reject load/splitter interface assembly as detailed in this section. Identify the affected reject load, possibly named in an alarm reference and then replace it, as follows:

- 4-Input Reject Load (A29) - accepts the four 5 kW reject power inputs (RF power modules 1-2, 3-4, 5-6 and 7-8) (see ["5 kW or 10 kW Reject Load Replacement"](#))
- RF Drive Splitter (A27) - accepts the two 10 kW reject power inputs (RF power modules 1-4 and 5-8) (see ["5 kW or 10 kW Reject Load Replacement"](#))
- 1-Input Reject Load (A13) - accepts the final (20 kW) reject load input (RF power modules 1-8) (see ["Final Reject Load Replacement"](#) on page 4.1.56)
- Reject Load/Splitter Interface Assembly (A28) - see ["Reject Load/Splitter Interface Assembly Replacement"](#) on page 4.1.56

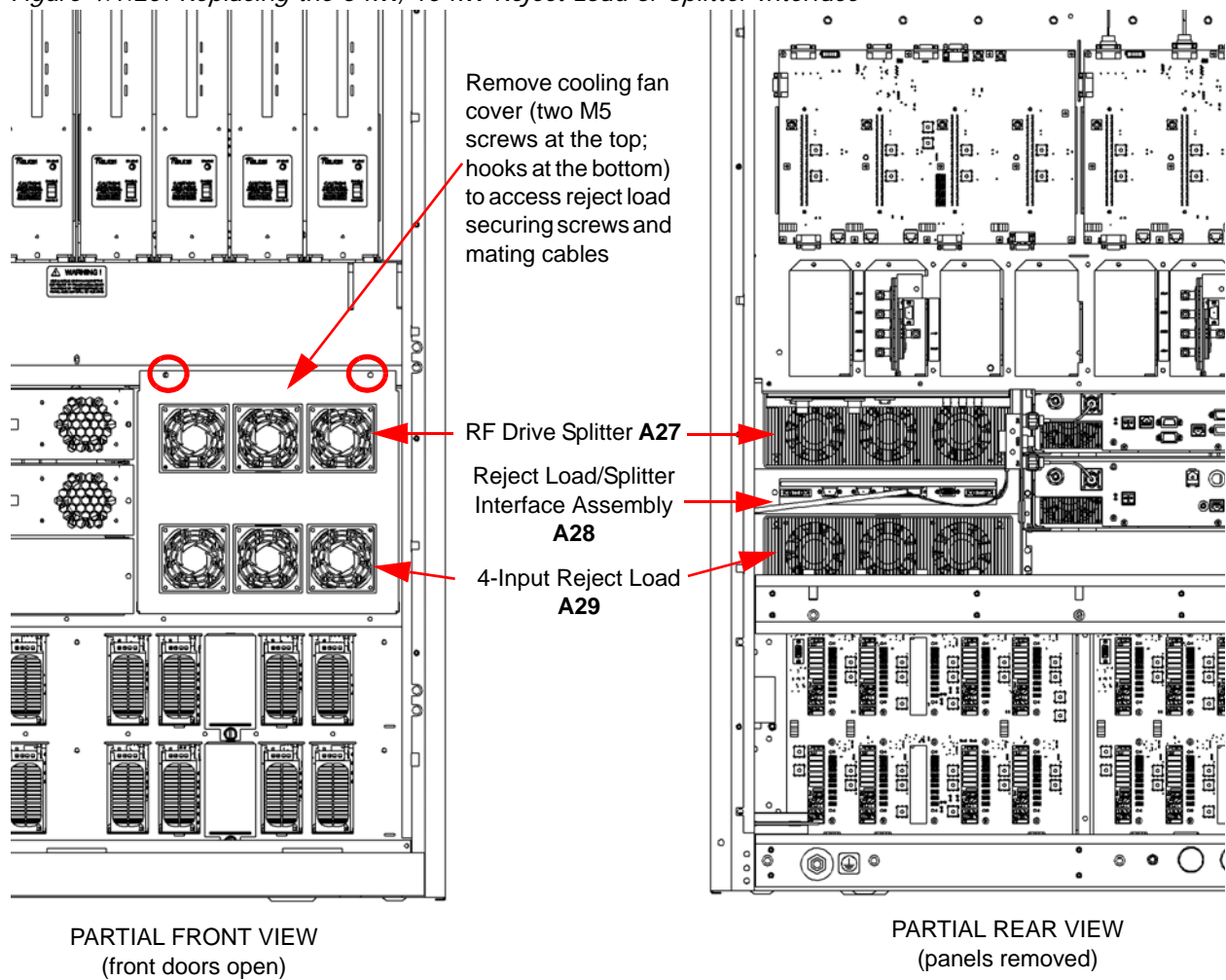
### 5 kW or 10 kW Reject Load Replacement

See [Figure 4.1.20](#) on page 4.1.55.

**NOTE:** 4-input reject load assembly A29 contains the 5 kW reject load circuits. The 10 kW reject load is part of 20 kW RF drive splitter assembly A27.

1. Open the transmitter's front door and remove the upper, rear panel.
2. From the front of the transmitter:
  - ❖ Gain access to the suspect reject load [A27 (10 kW) or A29 (5 kW)] by removing the fan cover (two M5 screws at the top and two hooks in the bottom) and lifting the panel out.
  - ❖ Temporarily remove the reject load/splitter interface assembly (see ["Reject Load/Splitter Interface Assembly Replacement"](#) on page 4.1.56)
  - ❖ Remove the four M4 screws that secure the reject load assembly to the transmitter.
3. From the rear of the transmitter:
  - ❖ Disconnect all of the reject load assembly's mating connectors.
  - ❖ Slide out the reject load assembly, noting there are hooks in the reject load that fit into slots of its support tray.
4. Obtain a replacement reject load assembly (Nautel Part # NAL17 for 4-input reject load assembly A29; NAI24 for 20 kW RF drive splitter assembly A27) and install by reversing the instructions in steps 1 through step 3.

Figure 4.1.20: Replacing the 5 kW, 10 kW Reject Load or Splitter Interface



## Final Reject Load Replacement

See [Figure 4.1.21 on page 4.1.57](#).

1. Open the transmitter's front fildoor and remove the upper, rear panel.
2. From the rear of the transmitter:
  - ❖ Disconnect the mating connectors (one coaxial cable, two fan plugs and one ribbon cable) from the 1-input reject load assembly (A13).
  - ❖ Remove the two M4 screws that secure the 1-input reject load assembly to the transmitter.
  - ❖ Slide the 1-input reject load assembly out of the transmitter.
3. Obtain a replacement reject load assembly (Nautel Part # NAL14/01) and install it by reversing the instructions in step 1 and step 2.

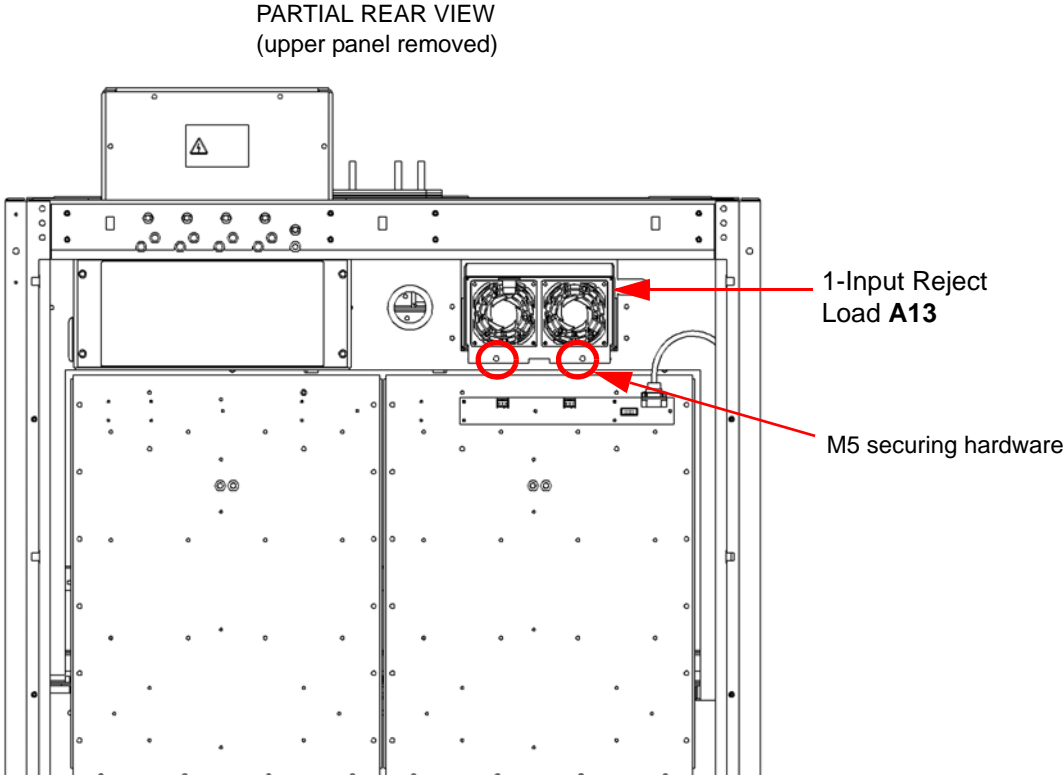
## Reject Load/Splitter Interface Assembly Replacement

See [Figure 4.1.20 on page 4.1.55](#).

1. Open the transmitter's front door and remove the upper, rear panel.
2. From the front of the transmitter:
  - ❖ Gain access to the reject load/splitter interface assembly (A28) by removing the fan cover (two M5 screws at the top and two hooks in the bottom) and lifting the panel out.
  - ❖ Remove the two M5 screws that secure the reject load/splitter interface assembly to the transmitter.
3. From the rear of the transmitter:
  - ❖ Disconnect the mating connectors from the reject load/splitter interface assembly (A13).
  - ❖ Pull out the reject load/splitter interface assembly.
4. Obtain a replacement reject load/splitter interface assembly (Nautel Part # NAX269) and install it by reversing the instructions in steps 1 through step 3.

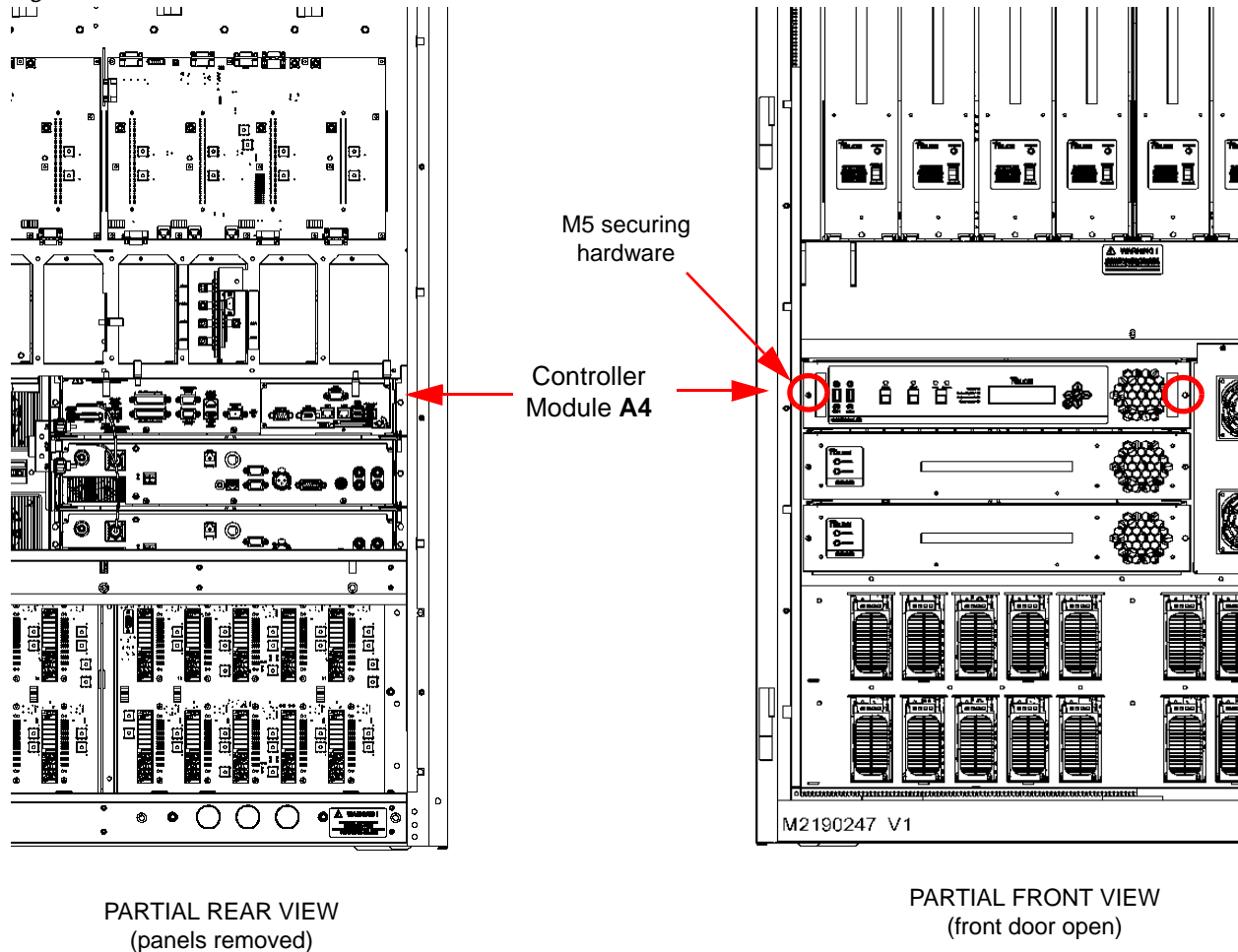


Figure 4.1.21: Replacing the Final Reject Load



## Controller Replacement

Figure 4.1.22: Location of Controller Module



1. If possible, use the controller's front panel UI and the remote AUI to record all custom user settings including: network settings, preset/audio settings, user accounts, logs, SNMP configuration, email configuration, time zone, notifications and playlists. It is recommended that all User Settings be logged prior to replacing the controller module and then restored upon completion of the change.
2. Press RF Off. Turn off and lock out the transmitter's main ac power.
3. Open the front door and remove the upper, rear panel.
4. From the rear of the transmitter, disconnect the mating connectors from the controller module (A4).

5. From the front of the transmitter, remove the two M5 screws that secure the controller module to the transmitter and pull out the controller module. If you are replacing the controller module's controller PWB (A2), see ["Controller PWB Replacement - Controller"](#) on page 4.1.63.
6. Obtain a replacement controller module (Nautel Part # NAC118 or newer) and install it by reversing the instructions in [Step 4](#) and [Step 5](#).
7. Enable and turn on ac power to the transmitter.

**CAUTION!** There are two possible configurations for the controller module being installed, each with a potential different effect on transmitter operation.

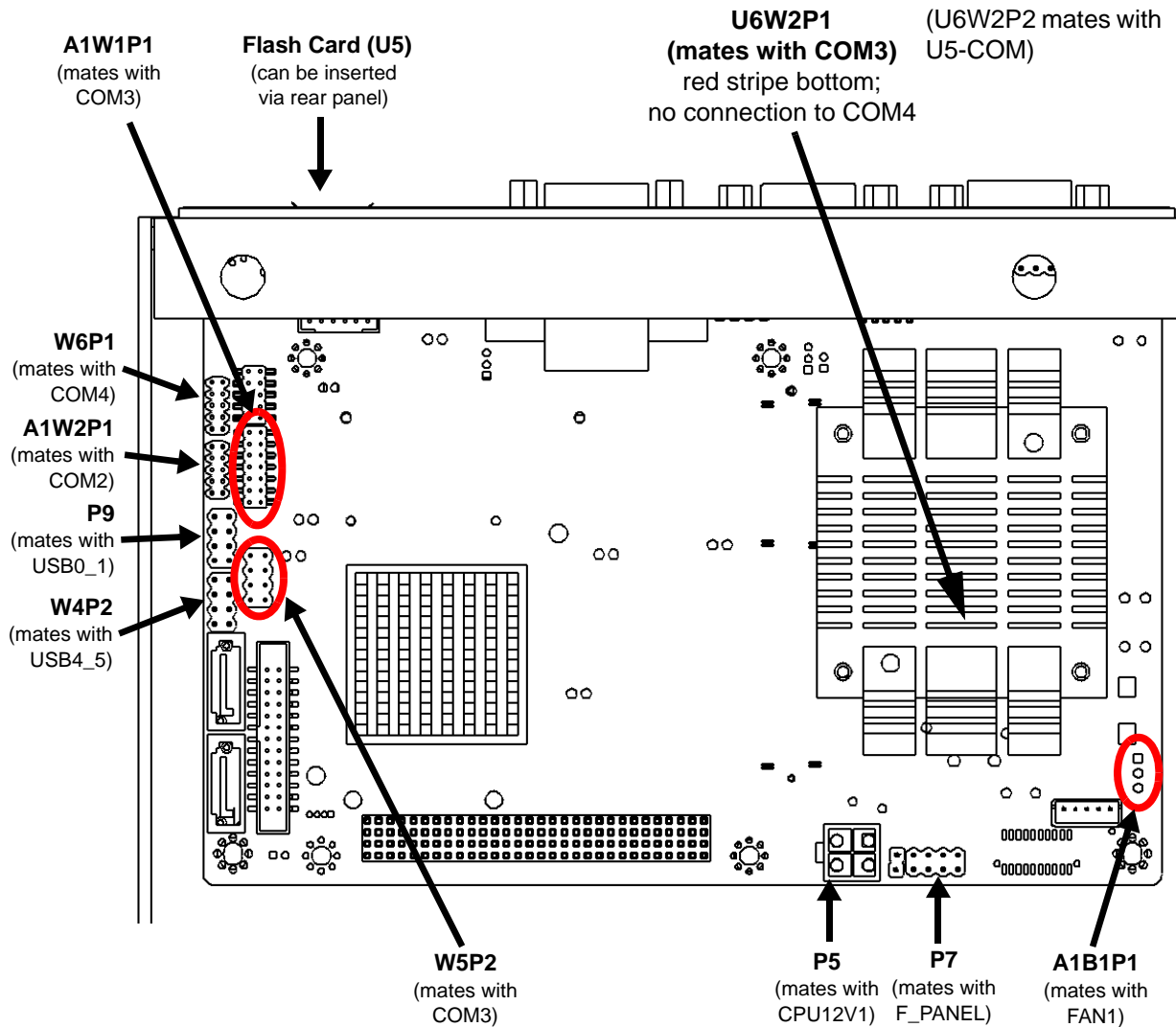
- A "blank" controller module, which is the typical configuration shipped by Nautel, will take on the transmitter's profile (transmitter type, calibration data, etc.) upon installation. It should require no additional configuration or setup.
- A "configured" controller module is one that has been configured for a specific customer's transmitter. Upon installation, the transmitter will take on the controller's profile. If this controller was not configured for the transmitter it was installed in, your transmitter's operational characteristics may change. If this occurs, CONTACT NAUTEL to restore proper operation.

8. Use the remote AUI's System Settings -> Upgrade Software page to view the Details of the installed software. Upgrade software as required. See the Operations & Maintenance Manual and any applicable Nautel-supplied Information Sheets for detailed instructions.
9. Restore all custom user settings that were recorded in [Step 1](#).
10. With RF off and the system interlock circuit intact (closed), use the controller's front panel UI to initiate a Xmtr PA Bias routine (see Main Menu -> System Settings -> Factory Settings -> Calibration; refer to the Operations and Maintenance Manual for more detail).
11. Close the transmitter's front door and install the upper, rear panel.
12. Restore the transmitter to the desired operational state.

## Single-Board Computer (SBC) Replacement

Using [Figure 4.1.23](#) as a guide, replace the controller module's single-board computer (SBC) (A4A2) as follows:

Figure 4.1.23: Single-Board Computer A4A1 (inside controller module A4)



Partial view of controller top shown

Refer to the Wiring /Connector Lists (section 4.3 of this manual) for detailed connector mating information for the controller module and SBC

1. Switch off (disable) the transmitter's ac power source.
2. Open the front door and remove the rear filter panel that provides access to the controller module (A4). Remove the controller module (A4) as detailed in ["Controller Replacement" on page 4.1.58](#), noting that some of the SBC's mating connectors are connected via the controller's rear panel.
3. Remove the controller's top cover to gain access to the SBC (see [Figure on page 4.1.60](#)). Disconnect the remaining mating connectors from the SBC. At the rear panel, remove any securing hardware for connectors that protrude through the rear panel. Retain all hardware for re-installation. Remove the SBC from the controller module by removing five M3 securing screws.
4. Locate or obtain the replacement SBC (Nautel Part # 206-8974). If the replacement SBC does not contain a compact flash card (U5) (see [Figure on page 4.1.60](#)), obtain the card from the SBC removed in [Step 3](#) and insert it into the replacement SBC.
5. Install the replacement SBC using five M3 securing screws. Use [Figure on page 4.1.60](#) to reconnect all mating connectors.
6. Switch on (enable) the transmitter's ac power source. Ensure RF is off.
7. From the AUI's System Settings page, select Upgrade Software and view the files in the *Select A Boot Image* list. These are the files on the compact flash card. Select the latest version of software from the list (e.g., V4\_0) and press the About button. Information about the transmitter device's current software versions and the selected upgrade file should appear (see [Figure 4.1.24 on page 4.1.62](#)).
8. For each device shown in [Figure 4.1.24 on page 4.1.62](#), compare the Current Version column with the Upgrade Version column. If the Upgrade Version value is a higher number, an upgrade is available for that device from the selected software upgrade file. If desired, close the Upgrade Information screen and upgrade the software by pressing Begin.

**NOTE:**

Pressing **Begin** initiates the software upgrade process. Contact Nautel if you are unsure if you should perform a software upgrade.

For more details on performing a software upgrade, refer to the ["Upgrading software" procedure in Section 4, "Non-standard maintenance" on page 4-1 of the Operations and Maintenance Manual.](#)

Figure 4.1.24: Upgrade Software - About screen

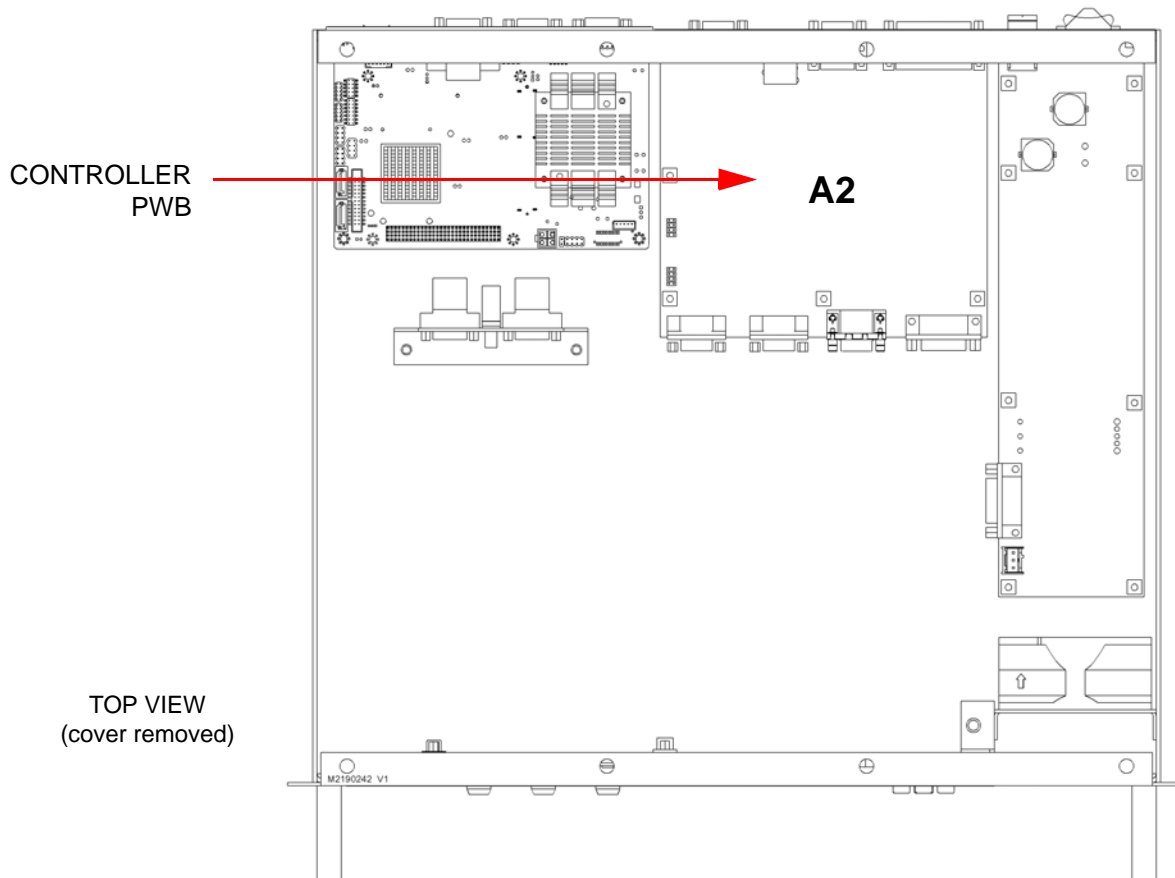
Device	Current Version	Upgrade Version
AUI	2.5.0.94	2.5.0.94
SERVER	2.0.0.1	2.0.0.1
CONTROLLER	2.5.0.19	2.7.0.7
EXCITER A	1.0.4.27	1.0.4.27
RF MODULES	1.2.0.3	1.0.0.50/1.1.0.10/1.2.0.3

indicates a controller upgrade is available in version 2.7

## Controller PWB Replacement - Controller

Using [Figure 4.1.25](#) as a guide, replace the controller module's controller PWB (A4A2) as follows:

*Figure 4.1.25: Controller PWB Location - Controller Module top view*



1. Remove the controller module (A4) as described in [“Controller Replacement”](#) on page 4.1.58.
2. Place the controller module on a suitable work surface. Remove the top cover. Retain hardware for re-installation.
3. Disconnect all mating plugs from the controller PWB (A2) inside the controller module.
4. At the rear panel, remove any securing hardware for connectors that protrude through the rear panel. Retain all hardware for re-installation.
  - Locate the two DB-25 connectors (J5A and J5B) and the three DB-9 connectors (J6A, J6B and J8) on the rear panel. Using a 5 mm nut driver or socket, remove the mounting nuts.

5. Remove the three small Phillips screws, which mount the front of the controller PWB to the chassis, located along the edge of the controller PWB. Retain hardware for re-installation.
6. Slightly lift the front edge of the controller PWB and pull towards the front of the controller.
7. Locate or obtain a replacement controller PWB (Nautel Part # NAPC163).

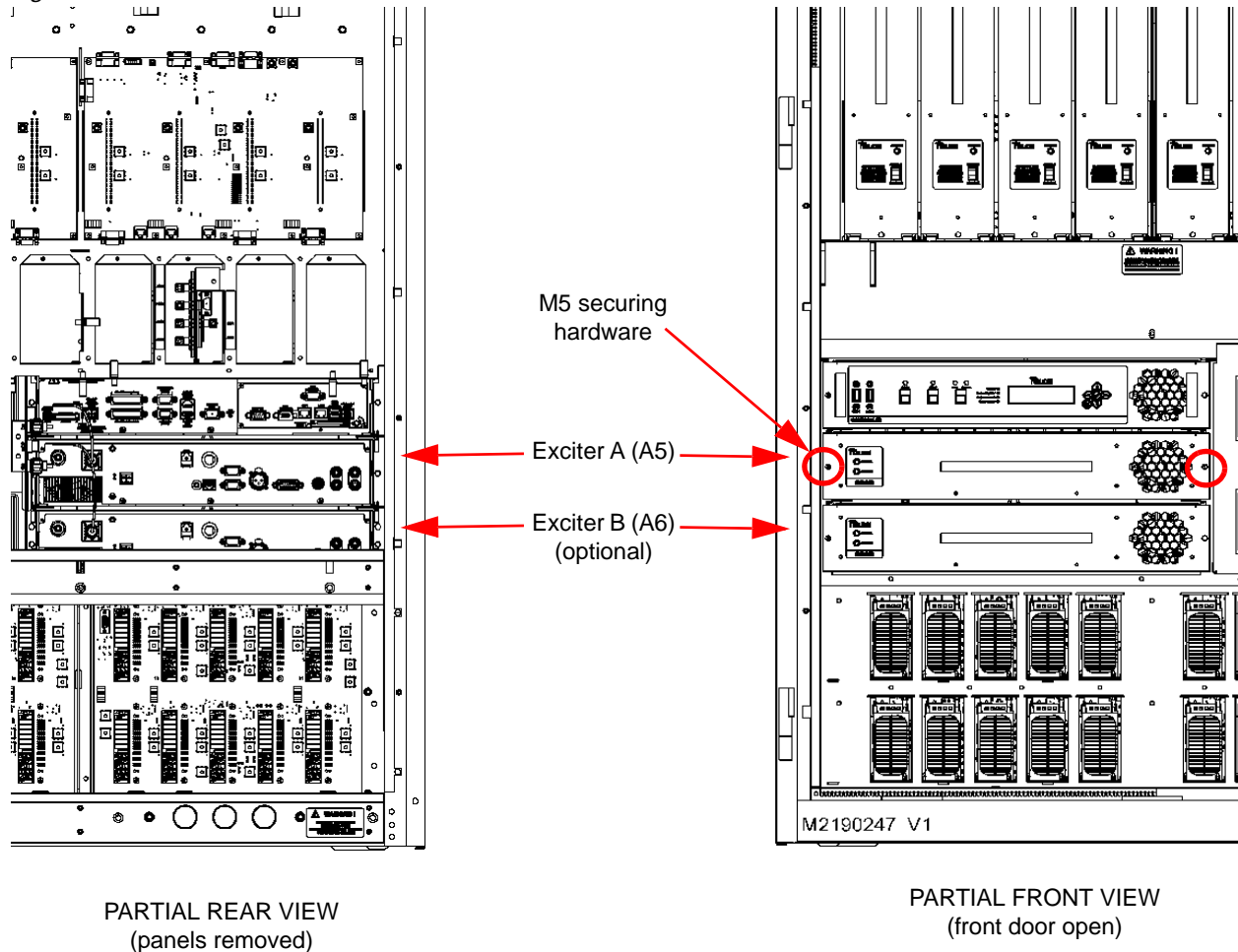
**CAUTION!** When re-installing the controller PWB, lift the PWB high enough so that the mounting pillars do not damage parts on the underside of the PWB.

8. Install the replacement controller PWB. Replace all hardware for the through-chassis connectors.
9. Install the three Philips screws that mount the front of the controller PWB to the chassis.
10. Reconnect all internal cables to the controller PWB. If necessary, refer to Section 4.3 (Wiring/ Connector Lists) of this manual for connector mating details for A2.
11. Reinstall the controller's top cover.
12. Remove the "Interlock" jumper, if applicable, from J5A of the original controller PWB and reinstall it on the new controller PWB between J5A pins 19 and 20.
13. Re-install the controller in the transmitter and reconnect all external mating connectors, removed previously. Restore all previous settings as described in ["Controller Replacement"](#) on page 4.1.58.



## Exciter Replacement

Figure 4.1.26: Location of Exciter Module



1. For dual exciter transmitters, ensure the other exciter (A5 or A6) is operating as the main RF drive source and disable automatic changeover (see the Operations & Maintenance Manual).

**NOTE:** If it is not possible to operate the other exciter or your transmitter is single-exciter only, press RF Off and turn off the transmitter's main ac power source.

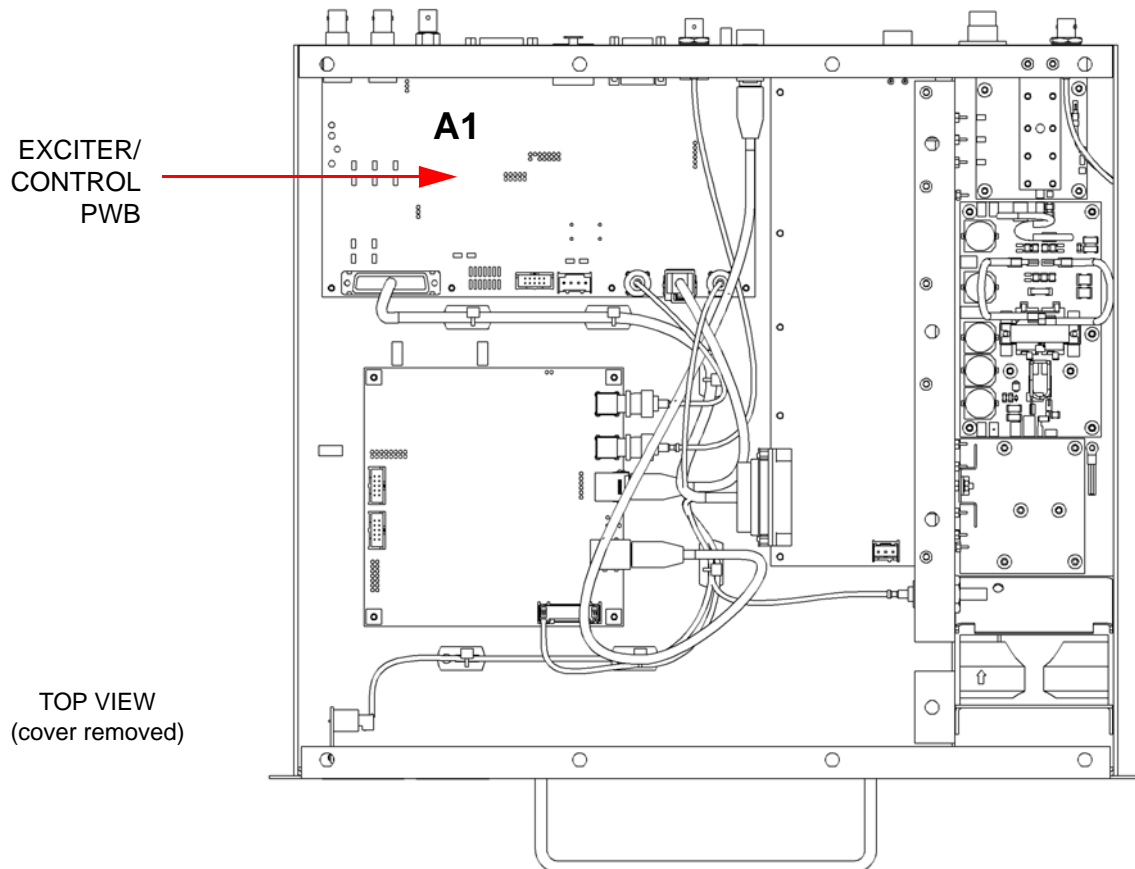
2. Open the transmitter's front door and remove the upper, rear panel.
3. From the rear of the transmitter, disconnect the mating connectors from the appropriate exciter module (A5 or A6).

4. From the front of the transmitter, remove the two M5 screws that secure the exciter module to the transmitter and pull out the exciter module. If you are replacing the exciter module's exciter/control PWB (A1), see ["Exciter/Control PWB Replacement - Exciter"](#) on page 4.1.67.
5. Obtain a replacement exciter module (Nautel Part # NAE107A or newer) and install it by reversing the instructions in [Step 3](#) and [Step 4](#).
6. Close the transmitter's front door and re-install the upper, rear panel.
7. If it was necessary to turn RF off and disable ac power in [Step 1](#), enable and turn on ac power to the transmitter.
8. Restore the transmitter to the desired operational state. If the replacement exciter is intended to be the main RF drive source, use the Changeover menu to establish the main/active exciter. Restore the automatic changeover setting, if applicable.

## Exciter/Control PWB Replacement - Exciter

Using [Figure 4.1.27](#) as a guide, replace the exciter module's exciter/control PWB (A5A1 or A6A1) as follows:

*Figure 4.1.27: Exciter/Control PWB Location - Exciter*



1. Remove the exciter module (A5 or A6, as applicable) as described in ["Exciter Replacement"](#) on [page 4.1.65](#).
2. Place the exciter module on a suitable work surface. Remove the top cover. Retain hardware for re-installation.
3. Disconnect all mating plugs from the exciter/control PWB (A1), inside the exciter.

4. At the rear panel, remove any securing hardware for connectors that protrude through the rear panel. Retain all hardware for re-installation.
  - Locate the two DB-9 connectors (J3A and J3B) and the DB-15 connector (J5) on the rear panel. Using a 5 mm nut driver or socket, remove the mounting nuts.
  - Locate the AES/EBU XLR audio connector (J4) on the rear panel. Remove the two small pan-head Phillips screws.
  - Remove the silver push button connector lock ("push" lever) on the XLR connector. Locate the HAS78 removal tool from the ancillary kit, provided with the transmitter. Follow the manufacturer's instructions in [Figure 4.1.28 on page 4.1.69](#) to remove the push button. You will need access to the front and rear of the receptacle to remove it.
  - See [Figure 4.1.29 on page 4.1.69](#). Remove the locking rings from five BNC connectors (J6, J7A, J7B, J8A and J8B). To remove the locking rings, use small 4 - 6 inch slip-jaw pliers. In a counter-clockwise direction, gently loosen (do not tightly pinch or deform) each locking ring. Typically, half a turn with the pliers will loosen a locking ring enough to remove it by hand. Remove and retain the locking rings.
5. Remove the four small Phillips screws, which mount the front of the exciter/control PWB to the chassis, located along the edge of the exciter/control PWB. Retain hardware for re-installation.
6. Slightly lift the front edge of the exciter/control PWB and pull towards the front of the exciter.
7. Locate or obtain a replacement exciter/control PWB (Nautel Part # NAPE86A or newer). Remove the "push" lever from the XLR connector as detailed in [Step 4](#).

**CAUTION!** When re-installing the exciter/control PWB, lift the PWB high enough so that the mounting pillars do not damage parts on the underside of the PWB.

8. Install the replacement exciter/control PWB. Replace all hardware for the through-chassis connectors. Take care not to over-tighten the BNC connector locking rings.
9. Install the four Philips screws that mount the front of the exciter/control PWB to the chassis.
10. Install the "push" lever into the XLR connector. Align it with the slot located on the top section of the connector body and gently press it into position.
11. Reconnect all internal cables to the exciter/control PWB. If necessary, refer to Section 4.3 (Wiring/Connector Lists) of this manual for connector mating details for A1.
12. Reinstall the exciter's top cover.
13. Re-install the exciter in the transmitter and reconnect all external mating connectors, removed previously. Restore all previous settings as described in ["Exciter Replacement" on page 4.1.65](#).

Figure 4.1.28: Removing the XLR connector's "push" lever

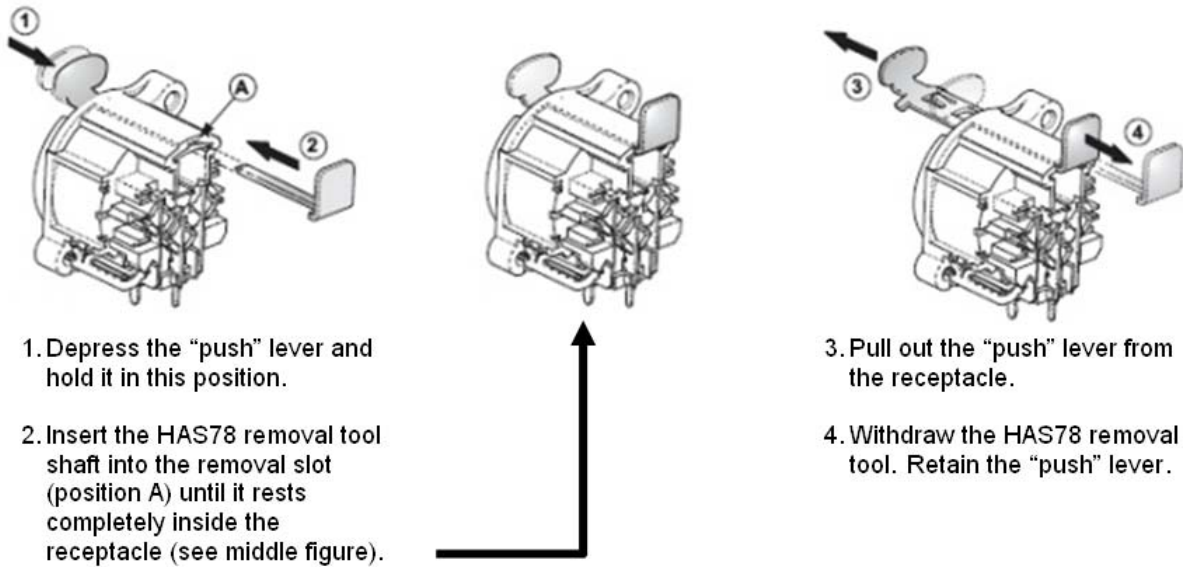


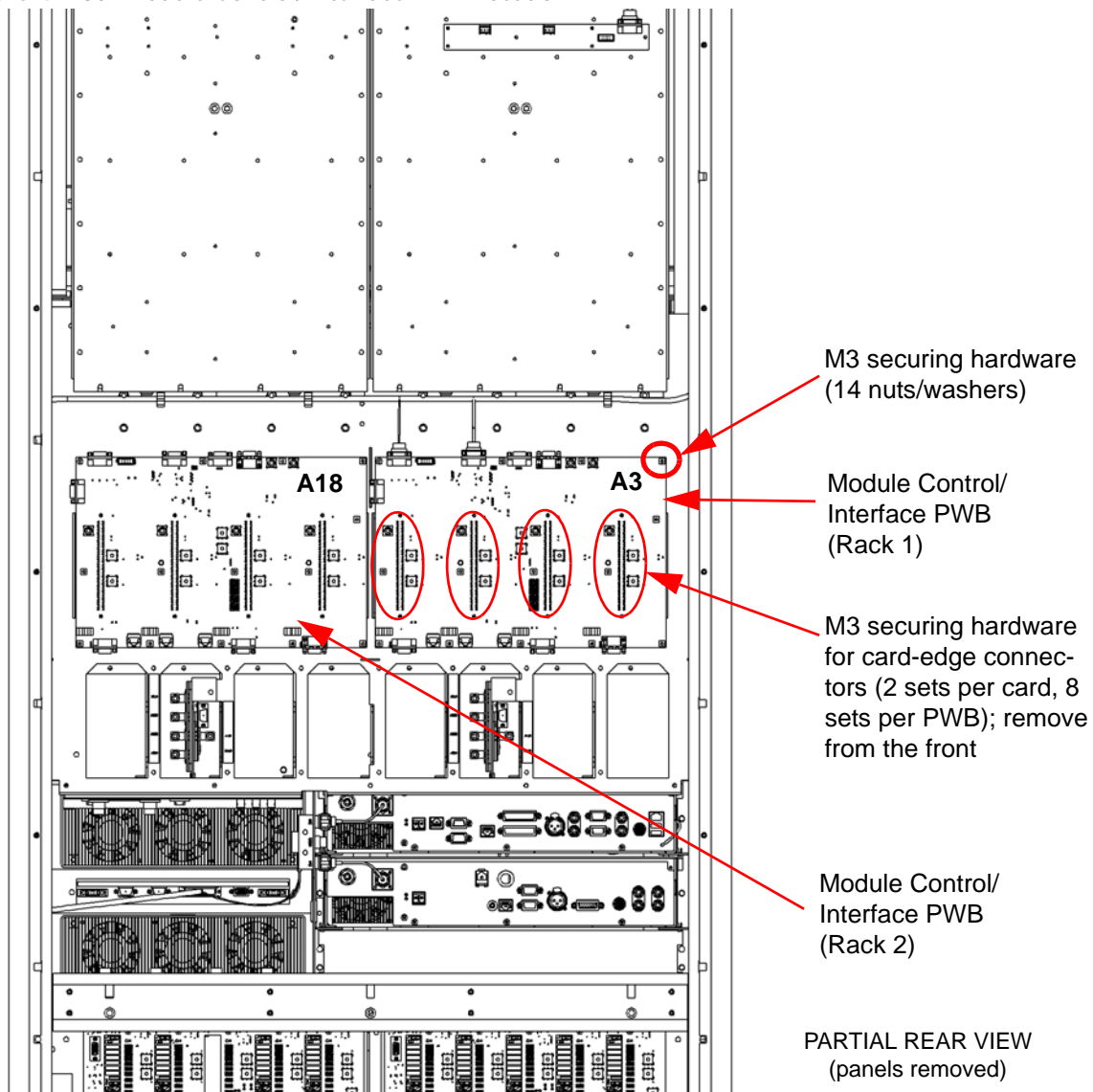
Figure 4.1.29: Loosening the BNC connector's locking ring



## Module Control/Interface PWB Replacement

Using [Figure 4.1.30](#) as a guide, replace one of the module control/interface PWBs (A3, A18) as follows:

Figure 4.1.30: Module Control/Interface PWB Location



1. Turn off (disable) and lock out the transmitter's ac power source, and UPS source (to LVPS), if applicable.
2. Identify the suspect module control/interface PWB, using the associated transmitter alarms, noting there are two [A3 (Rack 1) and A18 (Rack 2)]. Remove the transmitter's upper, rear panel and open the front door.
3. From the front of the transmitter, remove the RF power modules that are mated with the suspect module control/interface PWB.
4. Disconnect the mating connectors from the suspect module control/interface PWB.
5. Remove 14 sets of M3 nuts and washers that secure the module control/interface PWB to the transmitter. Remove eight M3 screws that connect the PWB's edge-card connectors to the transmitter. Pull out the module control/interface PWB.
6. Obtain a replacement module control/interface PWB (Nautel Part # NAPC158A) and install it by reversing the instructions in [Step 1](#) through [Step 5](#).
7. From the rear of the transmitter, set DIP switch S1 as follows:

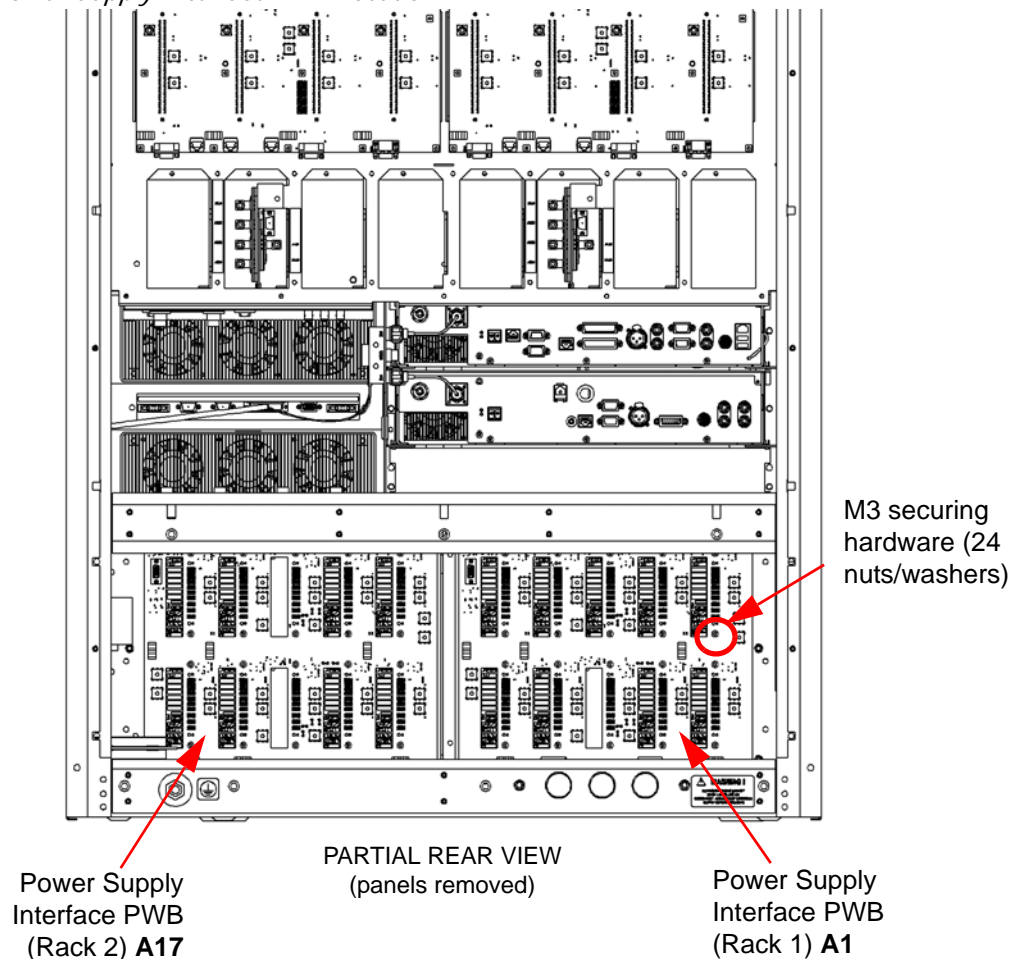
S1 Position	A18S1 Setting Rack 2)	A3S1 Setting (Rack 1)
6	OFF (right)	OFF (right)
5 (F BTLDR)	OFF (right)	OFF (right)
4 (RS485 TERM)	ON (left)	OFF (right)
3 (ADDR 1)	ON (left)	OFF (right)
2 (ADDR 2)	OFF (right)	OFF (right)
1	OFF (right)	OFF (right)

8. Re-install the RF power modules.
9. Enable and turn on ac power to the transmitter.
10. Return the transmitter to service.

## Power Supply Interface PWB Replacement

Using [Figure 4.1.31](#) as a guide, replace one of the power supply interface PWBs (A1, A17) as follows:

*Figure 4.1.31: Power Supply Interface PWB Location*



1. Turn off and lock out the transmitter's main ac power, and UPS source (to LVPS modules), if applicable.
2. Identify the suspect power supply interface PWB, using the associated transmitter alarms, noting there are two [A1 (Rack 1) and A17 (Rack 2)].
3. Remove the transmitter's lower, rear panel and open the front door.
4. From the front of the transmitter, pull the power supply modules that are mated with the suspect power supply interface PWB forward so that they disengage from the PWB.



5. From the rear of the transmitter, disconnect the mating connectors and wiring from the suspect power supply interface PWB. Record the placement of all wiring and jumpers to ensure the replacement PWB connections are identical.
6. Remove 24 sets of M3 nuts and washers that secure the power supply interface PWB to the transmitter and pull out the power supply interface PWB.
7. Obtain a replacement power supply interface PWB (Nautel Part # NAPI150A) and install it by reversing the instructions in [Step 1](#) through [Step 6](#).
8. Re-install the power supply modules.
9. Enable and turn on ac power to the transmitter.
10. Return the transmitter to service.



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## SECTION 4.2: PARTS LISTS

This section contains reference designation lists that provide descriptive and provisioning information for all electrical and mechanical parts that have an assigned reference designation and form a part of the subject equipment.

Topics in this section include

- [Family Tree on page 4.2.1](#)
- [How to Locate Information About a Specific Part on page 4.2.1](#)
- [Column Content on page 4.2.2](#)
- [OEM Code to Manufacturers Cross-Reference on page 4.2.4](#)
- [Common Abbreviations/Acronyms on page 4.2.4](#)

### Family Tree

[Figure 4.2.1 on page 4.2.7](#) through [Figure 4.2.3 on page 4.2.9](#) depict the family tree for the subject equipment. It is based on the descending order of the reference designation hierarchy and identifies all assemblies that have an assigned Nautel configuration control number.

### How to Locate Information About a Specific Part

To locate the information for a specific part, the assigned reference designation for the part must be known. In addition, the Nautel nomenclature (e.g., NAA61B) assigned to the assembly containing the part or the full reference designation, including the reference designation of all higher assemblies, must be known.

#### When the Nautel Nomenclature is Known:

- Refer to the family tree ([Figure 4.2.1 on page 4.2.7](#) through [Figure 4.2.3 on page 4.2.9](#)) and identify the block(s) associated with the Nautel nomenclature. Locate the part's reference designation in the identified reference designation list in this section, noting they are sorted alphanumerically.

### When the Reference Designation is Known:

- Refer to the family tree depicted in [Figure 4.2.1 on page 4.2.7](#) through [Figure 4.2.3 on page 4.2.9](#) with the full reference designation.
- Follow the family tree branches to the block that represents the lowest level assembly assigned a Nautel configuration control number. Then locate the part number index table for that Nautel configuration control number.
- Locate the part's reference designation in the specified table.

### Reference Designation Lists

Individual reference designation lists are provided for:

- assemblies that are assigned an alpha-prefixed Nautel nomenclature (e.g., NAA61B)
- cable harnesses that are assigned a numbered Nautel part (e.g., 219-8101-02)
- optional kits that are assigned a numbered Nautel part

To obtain the full reference designation for a specific part the Nautel configuration control number must be located in the family tree ([Figure 4.2.1 on page 4.2.7](#) through [Figure 4.2.3 on page 4.2.9](#)) to include the reference designation of all higher level assemblies. The reference designation lists, which are titled and presented in alphanumeric order, are divided into columns to aid in locating specific information.

## Column Content

The following paragraphs provide an explanation of the purpose and contents of each column in the part number indexes.

### Ref Des Column

The 'ref des' column contains the reference designation for a specific part. These designations are assigned in accordance with the requirements of American National Standard Specification ANSI Y32.16.

## Description Column

This column contains the name and descriptive information for each part. The key word is presented first, followed by the adjective identifiers. When the description is 'See Family Tree for Assembly Nomenclature', the associated part is subject to its own part index table or is contained in an optional kit's list. Look up the reference designation list title (nomenclature) and the reference designation of the associated part in the family tree ([Figure 4.2.1 on page 4.2.7](#) through [Figure 4.2.3 on page 4.2.9](#)) to determine where to locate its part information.

## Nautel # Column

This column contains the Nautel number assigned to each part. This number is Nautel's drawing number for Nautel manufactured parts, Nautel's configuration control number for assemblies that are under configuration control management, or Nautel's inventory management number for purchased parts. When a Nautel configuration control number (e.g. NAPC\*) is referenced in this column, the associated ref des item is subject to its own part index table.

## Vendor # Column

This column contains an original equipment manufacturer's part number for a part. A single part number is listed for each part, even though there may be more than one known manufacturer. The listed number is Nautel's usual or preferred choice. The use of this number does not restrict Nautel from selecting and using commercial equivalents during manufacture, where their use will not degrade circuit operation or reliability.

## OEM Code Column

This column typically contains a five digit coded group as the original equipment manufacturer's (OEM) identifier. The code was extracted from Cataloging Handbook H4/H8 Commercial and Government Entity (Cage) Code. Manufacturers that were not listed in the catalog when this listing was compiled have been assigned a unique five-letter code. This code is assigned arbitrarily and has no other significance. The manufacturers identified for parts that have JAN or MIL part numbers are Nautel's normal supply source for that part.

**NOTE:** OEM code 37338 is listed for parts manufactured by Nautel or to a Nautel control drawing. United States of America customers should refer all replacement part orders to Nautel Maine Incorporated (OEM code 57655).

## OEM Code to Manufacturers Cross-Reference

The OEM (CAGE) codes listed in the reference designation lists are representative of the original equipment manufacturers of those parts. To determine a specific part's manufacturer contact information, enter the five-character OEM (CAGE) code for that part in the following website:

[https://www.bpn.gov/bincs/begin\\_search.asp](https://www.bpn.gov/bincs/begin_search.asp)

After entering the OEM (CAGE) code number, manufacturer pertinent information (address, telephone number, fax number, etc.) will be displayed. Please contact Nautel if a part cannot be obtained (see also "On-Line Part Quotes" in the Warranty section of this manual).

## Manufacturers Index

For customers without web access, [Table 4.2.1 on page 4.2.5](#) provides a cross-reference from the original equipment manufacturer's (OEM) codes to the manufacturer's name. The listing is sorted alphanumerically by the OEM code.

## Common Abbreviations/Acronyms

The following abbreviations/acronyms may appear in the Description of Part column:

- SMT  
Denotes item is designed to be installed using Surface Mount Technology.
- MTA  
Denotes item is a Mass Termination Assembly connector.
- SIP  
Single In-line Package
- DIP  
Dual In-line Package
- IDC  
Denotes item is an Insulation Displacement connector for ribbon cable.

Table 4.2.1: OEM Codes/ Manufacturers

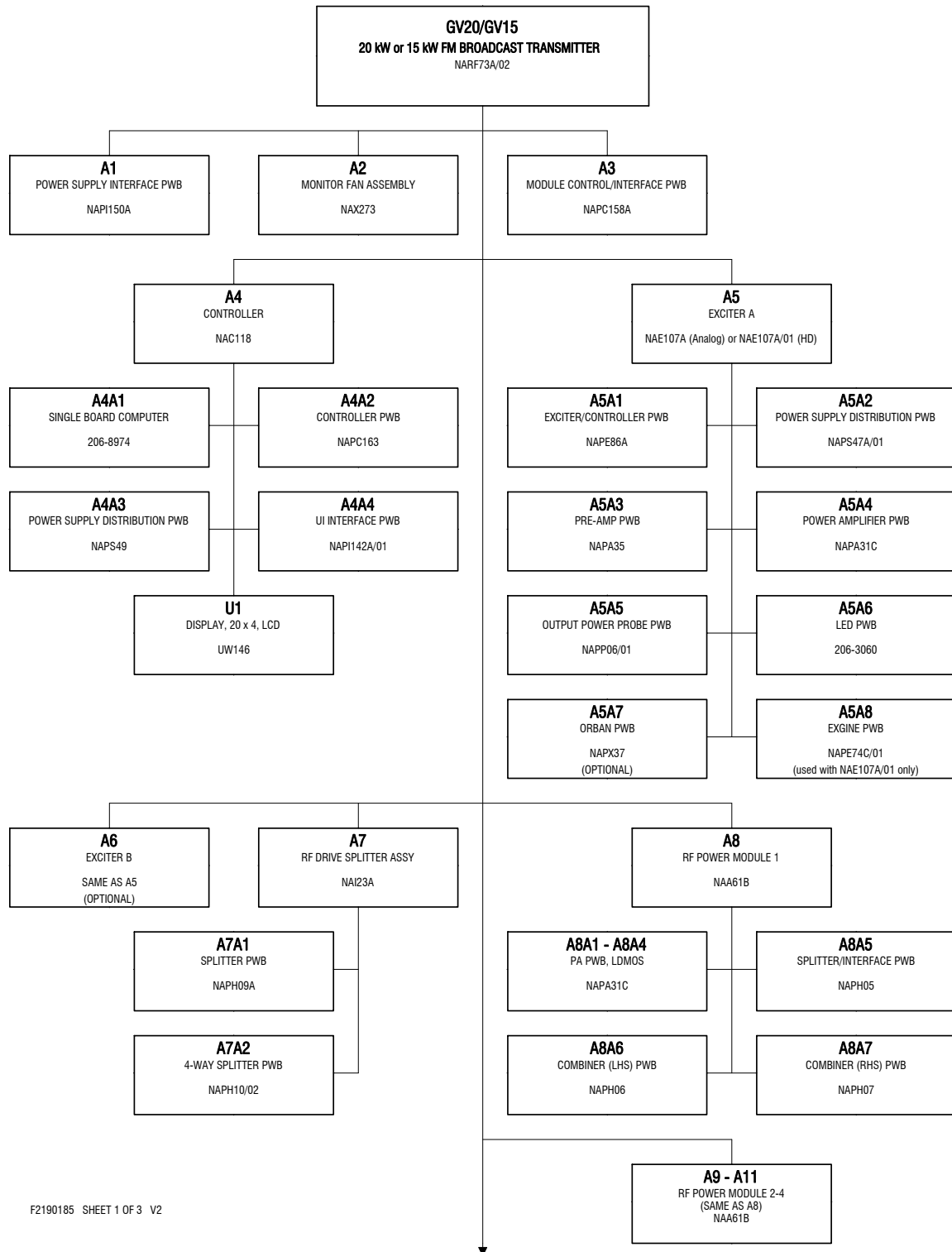
OEM CODE	MANUFACTURER	OEM CODE	MANUFACTURER
00779	CTS Company Incorporated	0DY74	Microsemi Corp-Power Products Grp
01295	Texas Instruments Incorporated	0FMA6	Neutrik USA Inc
01961	Pulse Engineering Inc.	0G343	Huffman Manufacturing Co.
02660	Amphenol Corp., Spectra-Strip/ITD	0GP12	Radiall Inc.
03LB0	Sandisk Corporation	0P2J5	Kingston Technology Company Inc.
04713	Motorola Incorporated	12060	Diodes Inc.
06090	Raychem Corporation	13919	Burr-Brown Corp.
07263	Fairchild Semiconductor Corp	14655	Cornell Dubilier Electronics
07933	Fairchild Semiconductor Corp	15542	Scientific Components Corp.
07EN1	Advanced Monolythic Ceramics	1AA44	Collmer Semiconductor Inc
08779	Signal Transformer Co. Inc.	1E4C5	SEI Electronics Inc.
09482	Amp of Canada Limited	1FN41	Atmel Corporation
09581	3M Canada Incorporated	1JRT7	Epson Electronics American Inc.
0A5K5	IXYS Corporation	1KK13	ITT Industries Incorporated
0AG18	Hirose Electric / USA / Inc.	1MQ07	ZRG Incorporated
0B0A9	Dallas Semiconductor Corporation	1N3T0	Semikron Inc.
0CVK3	Allegro Microsystems Inc.	1W344	United Chemi-Con Mfg Inc.
22421	Thomas and Betts Limited	79942	Intel Corp Sales Office
23598	Ross Engineering Corp.	7D893	Fairchild Semiconductor Corporation
23875	M-Tron Industries Incorporated	80294	Bourns Instrument Incorporated
24355	Analog Devices Incorporated	83330	Dialight Corporation, DBA Dialight
27014	National Semiconductor Corporation	90201	Hammond Mfg. Co. Ltd.
27264	Molex Incorporated	91833	Keystone Electronics Corporation
2D829	Cornell Dubilier Electronics Corp.	91929	Honeywell Incorporated
31433	Kemet Electronics Corporation	95146	Alco Electronic Products Inc.
31781	Edac Incorporated	96095	AVX Ceramics, Div of AVX Corp
33062	Ferronics Incorporated	AMP/TYCO	Tyco Electronics Corporation
35005	Dale Electronics	ANALOG D	Analog Devices
37338	Nautel Limited	ASTEC	Astec Power
3CYG3	Sanyo Denki America Inc.	AVAGO	Avago Technologies
3DX59	Citizen America Corporation	AVX CORP	AVX Corporation
3EH09	Murata Electronics North America Inc	C3057	Conec Elektronische Bauelemente
3USB5	Startech.com USA LLP	C4751	Epcos AG

Table 4.2.1: OEM Codes/ Manufacturers

OEM CODE	MANUFACTURER	OEM CODE	MANUFACTURER
3WCG0	Ferraz Shawmut Incorporated	C & D	C & D Technologies
45496	Digital Systems	COMET	
48862	GC Electronics	Comp Corp	Components Corporation
49588	S B E Incorporated	CORNELL	See 2D829
4G927	Raychem Corporation	CREE INC	Cree Inc.
4TKQ5	UPE Inc.	ER737	Texas Instruments
54473	Matsushita Electric Corp of America	HYPERTR	Hypertronics Corporation
54583	TDK Electronics Corp.	IDT	Integrated Device Technology, Inc.
56289	Sprague Electric Company	ITT INDUS	See 1KK13
56699	BC Components	KEYSTONE	See 91833
56845	Vishay Dale Electronics Inc.	KYCON	Kycon Cable & Connector Inc.
59124	KOA Speer Electronics Inc.	LINEAR	See 64155
59993	International Rectifier Corp.	LITEON	Vishay-Liteon Power Semiconductor
5Y407	Phoenix Contact Inc.	L3845	Circuit-Test Electronics Ltd.
63590	Premier Industrial Corp.	MARKTEC	Marktech Optoelectronics
64155	Linear Technology Corporation	MICRON	Micron Technology, Inc.
65786	Cypress Semiconductor Corp.	MINI-CIRC	Mini-Circuits
71400	Cooper Bussman Inc.	MOLEX	Molex Inc.
71468	ITT Corporation	NATIONAL	See 27014
75042	TRW Incorporated	NXP SEMI	NXP Semiconductors
75915	Littelfuse World Headquarters	ON-SEMI	ON Semiconductor
PANAS	Panasonic	SL575	Meanwell Sales Information
PHOENIX	See 5Y407	TDK	See 54583
SARONIX	Saronix	TEXAS	See ER737
SAW84	IEI Technology Corp.	U3040	ST Microelectronics
SB ELE	SB Electronics Incorporated	VENKEL	Venkel Ltd
SCT30	Fairchild	WANJIA	Wanjia

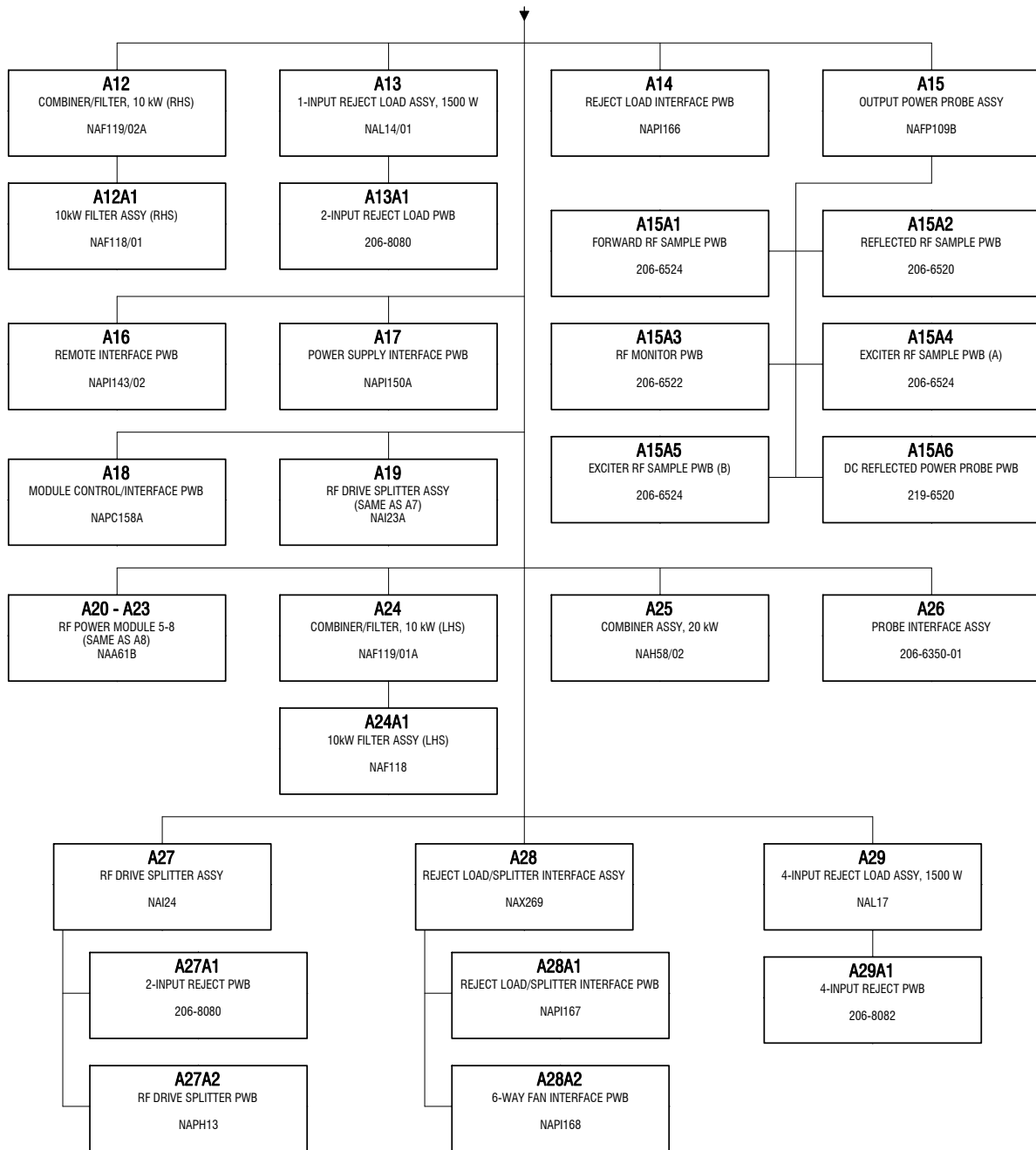


Figure 4.2.1: GV20/GV15 Family Tree



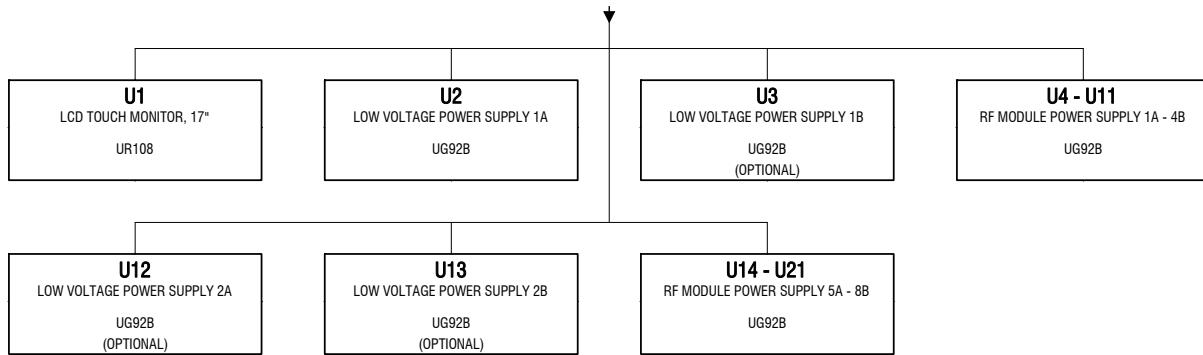
F2190185 SHEET 1 OF 3 V2

Figure 4.2.2: GV20/GV15 Family Tree (continued)



F2190185 SHEET 2 OF 3 V1

Figure 4.2.3: GV20/GV15 Family Tree (continued)



F2190185 SHEET 3 OF 3 V1



206-5062

## NAPE86\* Audio Breakout Cable Assy

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
J01	Conn, 3-Pin, Straight, AudioFemale	JN47	A3F	82389
J02	Conn, 3-Pin, Straight, AudioFemale	JN47	A3F	82389
J03	Conn, 3-Pin, Straight, AudioFemale	JN47	A3F	82389
J04	Conn, 3-Pin, Straight, AudioFemale	JN47	A3F	82389
J05	Conn, 3-Pin, Straight, AudioFemale	JN47	A3F	82389
P01	Conn, Socket, D-Sub, 15-pin,solder cup	JS102	162 A 10029 X	
P01	Conn, Shell, D-Sub, 15-pin	JS103	DA115339-21(RoHS)	

206-5068

## USB Backup Audio Patch CableAssy

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
P01	Conn, Plug, D-Sub, 9 pin	JS29	DEM-9P	71468
P01	Conn, Shell, D-Sub, 9 pin	JS33	DE115339-20	71468
P01	Conn, Lock Screw, D-Sub, Male	JT16	205980-1	09482
P02	Conn, 3-Pin, Strght, Audio	JN02	A3M	82389
P03	Conn, 3-Pin, Strght, Audio	JN02	A3M	82389

206-6272-01

## Ribbon Cable Assy-NAL17

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
W1P01	Conn, Recept, Ribbon Cable, 10 pin	JP50	746285-1	00779
W1P02	Conn, Recept, Ribbon Cable, 10 pin	JP50	746285-1	00779
W1P03	Conn, Recept, Ribbon Cable, 10 pin	JP50	746285-1	00779

206-6272-02

## Ribbon Cable Assy - NAI24

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
W1P01	Conn, Recept, Ribbon Cable, 10 pin	JP50	746285-1	00779
W1P02	Conn, Recept, Ribbon Cable, 10 pin	JP50	746285-1	00779
W1P03	Conn, Recept, Ribbon Cable, 10 pin	JP50	746285-1	00779



206-6520

## Reflid Power Probe PWB Assy

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
J01	Conn, Receptacle, Right Angle, SMA, PWB Mount	JN60	132203(RoHS)	02660
R01	Resistor,2512 SMT,100 ohms,1%,1W,	RAD52	ERJ-1TYF101U	PANAS
R02	Not Used	-	NOT USED	37338
R03	Resistor,2512 SMT,100 ohms,1%,1W,	RAD52	ERJ-1TYF101U	PANAS

206-6522

## RF Monitor Probe PWB Assy

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
J01	Conn, Receptacle, Right Angle, SMA, PWB Mount	JN60	132203(RoHS)	02660
R01	Resistor,2512 SMT,100 ohms,1%,1W,	RAD52	ERJ-1TYF101U	PANAS
R02	Resistor, SMT, MF, 681 Ohms,1% 1/4W	RAD23	MCR18EZHF6810(RO HS)	ROHM
R03	Resistor,2512 SMT,100 ohms,1%,1W,	RAD52	ERJ-1TYF101U	PANAS

206-6524

## Fwd Power/RF Sample Probe PWB Assy

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
J01	Conn, Receptacle, Right Angle, SMA, PWB Mount	JN60	132203(RoHS)	02660
R01	Resistor,2512 SMT,100 ohms,1%,1W,	RAD52	ERJ-1TYF101U	PANAS
R02	Resistor, SMT, MF, 681 Ohms,1% 1/4W	RAD23	MCR18EZHF6810(RO HS)	ROHM
R03	Resistor,2512 SMT,100 ohms,1%,1W,	RAD52	ERJ-1TYF101U	PANAS



REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C01	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C02	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
CR01	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR02	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
J01	Conn, Header, Ribbon Cbl, 10-Pin	JQ54	103308-1	00779
R01	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R02	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R03	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R04	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R05	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R06	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R07	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R08	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R09	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R10	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R11	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R12	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R13	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R14	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R15	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R16	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R17	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R18	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R19	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R20	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R21	Resistor, SMT, MF, 3320 Ohms,1% 1/4W	RAD31	RK73H2BL3321F	59124
R22	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R23	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R24	Resistor, SMT, MF, 3320 Ohms,1% 1/4W	RAD31	RK73H2BL3321F	59124

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C01	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C02	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C03	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C04	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
CR01	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR02	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR03	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR04	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
J01	Conn, Header, Ribbon Cbl, 10-Pin	JQ54	103308-1	00779
J02	Conn, Header, Ribbon Cbl, 10-Pin	JQ54	103308-1	00779
R01	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R02	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R03	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R04	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R05	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R06	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R07	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R08	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R09	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R10	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R11	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R12	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R13	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R14	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R15	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R16	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R17	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R18	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R19	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R20	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124



206-8082

## 4 Input Reject PWB Assy

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R21	Resistor, SMT, MF, 3320 Ohms,1% 1/4W	RAD31	RK73H2BL3321F	59124
R22	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R23	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R24	Resistor, SMT, MF, 3320 Ohms,1% 1/4W	RAD31	RK73H2BL3321F	59124
R25	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R26	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R27	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R28	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R29	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R30	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R31	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R32	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R33	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R34	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R35	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R36	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R37	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R38	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R39	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R40	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R41	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R42	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R43	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R44	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R45	Resistor, SMT, MF, 3320 Ohms,1% 1/4W	RAD31	RK73H2BL3321F	59124
R46	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R47	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R48	Resistor, SMT, MF, 3320 Ohms,1% 1/4W	RAD31	RK73H2BL3321F	59124



206-8974

## Single Board Computer Assy, NV Series (with UB97)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
B01	Fan, Intel ATOM CPU, 12V, 90mA	ZAP55	31100-000327- RS(RoHS)	SAW84
U01	Motherboard, EPIC, ATOM D525,12V	UB97	NANO-PV-D5251- R10(STATIC)(RoHS)IE I	SAW84
U02	Not Used	-	NOT USED	37338
U03	Memory, 2G, DDR3. 1333MHz,SODIMM	UX145	KVR1333D3S9/2G(Ro HS)	0P2J5
U04	Not Used	-	NOT USED	37338
U05	Memory, Compact Flash Card,4GB	UB76	SDFH-004G- A11(STATIC) SanDisk Corporation	03LB0



REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
P01	Conn, Contact, Pin, HDP-20Strip	JQ17	66506-4	09482
P01	Conn, Plug, D-Sub, 9 pin	JR28	205204-1	09482
P01	Conn, Lock Screw, D-Sub, Male	JT16	205980-1	09482
P02	Conn, 16 Pin, Dual Row Crimp	JN61	DF11-16DS-2C(RoHS)	0AG18
P02	Conn, Contact for Socket DF11, 22AWG	JU58	DF11-22SC	0AG18
P03	Conn, Contact, Pin, HDP-20Strip	JQ17	66506-4	09482
P03	Conn, Plug, D-Sub, 15 pin	JR26	205206-1	09482
P03	Conn, Lock Screw, D-Sub, Male	JT16	205980-1	09482
P04	Conn, Contact, Socket, HDP-20Strip	JQ18	66504-4	09482
P04	Conn, Socket, D-Sub, 15 pin	JR29	205205-1	09482
P04	Conn, Lock Screw, D-Sub, Male	JT16	205980-1	09482
P05	Conn, Recept, Mini-Fit dualrow, 4-pin	JP59	39-01-2045	MOLEX
P05	Contact, Pin, 18-24AWG, Mini-fit (Crimp)	JQ49	39-00-0039	27264
P06	Conn, Housing, Dual Row, 8 pin, .100 Grid	JU72	104482-3(RoHS)	
P06	Conn, Socket for JU72, 22-26AWG, 15AU Crimp	JU73	1-104480-2(RoHS)	
P07	Conn, Housing, Dual Row, 8 pin, .100 Grid	JU72	104482-3(RoHS)	
P07	Conn, Socket for JU72, 22-26AWG, 15AU Crimp	JU73	1-104480-2(RoHS)	
P08	Conn, Housing, Dual Row, 8 pin, .100 Grid	JU72	104482-3(RoHS)	
P08	Conn, Socket for JU72, 22-26AWG, 15AU Crimp	JU73	1-104480-2(RoHS)	
P09	Conn, Housing, Dual Row, 8 pin, .100 Grid	JU72	104482-3(RoHS)	
P09	Conn, Socket for JU72, 22-26AWG, 15AU Crimp	JU73	1-104480-2(RoHS)	
W01	Cable, 1ft, 9-pin, D-sub, M/F, Straight-Through	UA196	CBG25211(RoHS) Cables To Go	
W02	Cable, 1ft, 9-pin, D-sub, M/F, Straight-Through	UA196	CBG25211(RoHS) Cables To Go	
W03	Cable 2.5ft, D-Sub 15 HD, M/M	UA258	CHD15MM-2.5(RoHS)	43321
W04	Cable, 2ft, USB Panel Mt. to4 Pin Header	UA257	1490-02C	
W05	Cable, 2ft, USB Panel Mt. to4 Pin Header	UA257	1490-02C	
W06	Cable Assy, Serial Port, 10pin(2x5) 2mm pitch & DE9M, 20cm	UA267	32200-000049-RS	

219-5065

## Exciter Cableset Assy, GV HP

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
W23	Cable, Ethernet, 36", Shld, Black, 28AWG, 80degC, with guard	UA204	PCF-S36I-UA204G(RoHS)	
W24	Cable, Ethernet, 48", Shld, Black, 28AWG, 80degC, with guard	UA208	PCF-S48I-UA208G(RoHS)	
W25	Cable, Ethernet, 48", Shld, Black, 28AWG, 80degC, with guard	UA208	PCF-S48I-UA208G(RoHS)	
W26P1	Conn, Plug, D-Sub, 9 pin	JS29	DEM-9P	71468
W26P1	Conn, Shell, D-Sub, 9 pin	JS33	DE115339-20	71468
W26P1	Conn, Lock Screw, D-Sub, Male	JT16	205980-1	09482
W26P2	Conn, Socket, D-Sub, 15-pin,solder cup	JS102	162 A 10029 X	
W26P2	Conn, Shell, D-Sub, 15-pin	JS103	DA115339-21(RoHS)	
W26P2	Conn, Lock Screw, D-Sub, Male	JT16	205980-1	09482
W26P3	Conn, Socket, D-Sub, 15-pin,solder cup	JS102	162 A 10029 X	
W26P3	Conn, Shell, D-Sub, 15-pin	JS103	DA115339-21(RoHS)	
W26P3	Conn, Lock Screw, D-Sub, Male	JT16	205980-1	09482
W27P1	Conn, Coax, N, Plug, Crimp, RG142	JT12	11-N-50-3-29/133	0GZ58
W27P2	Conn, Coax, N, Plug, Crimp, RG142	JT12	11-N-50-3-29/133	0GZ58
W28P1	Conn, Coax, N, Plug, Crimp, RG142	JT12	11-N-50-3-29/133	0GZ58
W28P2	Conn, Coax, N, Plug, Crimp, RG142	JT12	11-N-50-3-29/133	0GZ58

219-5210

## Fan Assy, ZA55 (GV Monitor)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
P01	MTA, Standard Dust Cover, 4 pin	JU02	640551-4	09482
P01	MTA, Keyed Closed End Housing,4 pin,22AWG	JU27	3-644463-4(ROHS) AMP	00779

219-5250

## Fuse Bracket Assy, GV MonitorFan

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
F01	Fuse, 5A, 250V, Fast, 3AB	FC54	0314005HXP(RoHS)	75915
XF01	Fuseholder, Panel, 20A, 250V,Type 3AG	BAP30	342012	75915

219-6252-01

## Ribbon Cable Assy - NAL14/01

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
W1P01	Conn, Recept, Ribbon Cable, 10 pin	JP50	746285-1	00779
W1P02	Conn, Recept, Ribbon Cable, 10 pin	JP50	746285-1	00779



219-6520

## DC Refld Power Probe PWB Assy

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C01	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
CR01	Diode, SMT, Shottky, 70V, 15mA, SOD-123	QK53	1N5711W-7-F(STATIC)(RoHS)	12060
J01	Conn, Receptacle, Right Angle, SMA, PWB Mount	JN60	132203(RoHS)	02660
R01	Resistor,2512 SMT,100 ohms,1%,1W,	RAD52	ERJ-1TYF101U	PANAS
R02	Not Used	-	NOT USED	37338
R03	Resistor,2512 SMT,100 ohms,1%,1W,	RAD52	ERJ-1TYF101U	PANAS
R04	Resistor, SMT, MF, 3320 Ohms,1% 1/4W	RAD31	RK73H2BL3321F	59124

219-8104

## AC Present LED Assy NVLT/GV

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
DS01	LED, Pilot Light, Amber, 230Vac	BAP44	LEDTECA220AC	
DS02	LED, Pilot Light, Amber, 230Vac	BAP44	LEDTECA220AC	
DS03	LED, Pilot Light, Amber, 230Vac	BAP44	LEDTECA220AC	



REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
W01	Cable, 6.5ft, 15-pin, HD, D-Sub, M/M, Str-Thru	UA183	AK532-2-R(RoHS)	
W02	Cable, 3ft, 9-pin D-sub, M/F Straight-Through	UA129	PCM-2100-03	
W03	Cable, 6.5ft, 15-pin, HD, D-Sub, M/M, Str-Thru	UA183	AK532-2-R(RoHS)	
W04	Not Used	-	NOT USED	37338
W05	Not Used	-	NOT USED	37338
W06P1	Conn, Coax, SMA, Plug, Crimp, RG58	JT104	132113(RoHS)	07JE4
W06P2	Conn, Coax, BNC, Plug, 50ohm, Crmp, RG58/303	JF33	31-4320	02660
W07P1	Conn, Coax, SMA, Plug, Crimp, RG58	JT104	132113(RoHS)	07JE4
W07P2	Conn, Coax, BNC, Plug, 50ohm, Crmp, RG58/303	JF33	31-4320	02660
W08J1	Conn, Coax, Jack, BNC, Crimp	JT13	24-BNC-50-3-1C/133 NE	0GZ58
W08P1	Conn, Coax, SMA, Plug, Crimp, RG58	JT104	132113(RoHS)	07JE4
W09P1	Conn, Coax, SMA, Plug, Crimp, RG58	JT104	132113(RoHS)	07JE4
W09P2	Conn, Coax, SMA, Plug, Crimp, RG58	JT104	132113(RoHS)	07JE4
W10P1	Conn, Coax, SMA, Plug, Crimp, RG58	JT104	132113(RoHS)	07JE4
W10P2	Conn, Coax, SMA, Plug, Crimp, RG58	JT104	132113(RoHS)	07JE4
W11	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
W12P1	Conn, Coax, BNC, Plug, 50ohm, Crmp, RG58/303	JF33	31-4320	02660
W12P2	Conn, Coax, BNC, Plug, 50ohm, Crmp, RG58/303	JF33	31-4320	02660
W13P1	Conn, Coax, BNC, Plug, 50ohm, Crmp, RG58/303	JF33	31-4320	02660
W13P2	Conn, Coax, BNC, Plug, 50ohm, Crmp, RG58/303	JF33	31-4320	02660
W14P1	Conn, Coax, BNC, Plug, 50ohm, Crmp, RG58/303	JF33	31-4320	02660
W14P2	Conn, Coax, BNC, Plug, 50ohm, Crmp, RG58/303	JF33	31-4320	02660
W15P1	Conn, Coax, BNC, Plug, 50ohm, Crmp, RG58/303	JF33	31-4320	02660
W15P2	Conn, Coax, BNC, Plug, 50ohm, Crmp, RG58/303	JF33	31-4320	02660
W16P1	Conn, Coax, N, Plug, Crimp, RG142	JT12	11-N-50-3-29/133	0GZ58
W16P2	Conn, Coax, N, Plug, Crimp, RG142	JT12	11-N-50-3-29/133	0GZ58
W17P1	Conn, Coax, N, Plug, Crimp, RG142	JT12	11-N-50-3-29/133	0GZ58
W17P2	Conn, Coax, N, Plug, Crimp, RG142	JT12	11-N-50-3-29/133	0GZ58
W18P1	Conn, Coax, N, Plug, Crimp, RG142	JT12	11-N-50-3-29/133	0GZ58
W18P2	Conn, Coax, N, Plug, Crimp, RG142	JT12	11-N-50-3-29/133	0GZ58
W19	Not Used	-	NOT USED	37338
W20	Cable, 6ft, 25-pin, D-sub, M/F, Straight-Through	UA188	C192B	
W21	Cable, 6ft, 25-pin, D-sub, M/F, Straight-Through	UA188	C192B	
W22	Not Used	-	NOT USED	37338
W23	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
W24	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
W25	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338

## 219-8201-01 Cableset Assy, 20kW NVLT/GV

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
W26	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
W27	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
W28	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
W29	Cable, Ethernet,10ft, Shld, Black, 28AWG, 80degC, with guard	UA211	PCF-S10-UA211G(RoHS)	
W30P1	Conn, Coax, SMA, Plug, Crimp, RG58	JT104	132113(RoHS)	07JE4
W30P2	Conn, Coax, SMA, Plug, Crimp, RG58	JT104	132113(RoHS)	07JE4
W31P1	Conn, ferrule, 8mm, non insul, for 18AWG	JQ67	F77-8-M	
W31P1	Plug, Mini, 2-pole,Screw Clamp	JU32	AKZ1550/2	0DV12
W31P2	Cable 12ft, 5.5mm/2.1mm M to F, 18 AWG	UA254	310-812-18A	L3845
W32	Cable 10ft Serial DB9F to DB9F	UA255	52149	
W33	Cable, 10ft, VGA, Dsub15 M/M	UA259	ZH-VGA-10F(RoHS)	
W34	Not Used	-	NOT USED	37338
W35	Cable, 6.5ft, 15-pin, HD, D-Sub, M/M, Str-Thru	UA183	AK532-2-R(RoHS)	
W36	Cable, 6 ft.,9-pin D-Sub,M/F,Straight-Through	UA82	MXT100	3USB5
W37	Cable, 6.5ft, 15-pin, HD, D-Sub, M/M, Str-Thru	UA183	AK532-2-R(RoHS)	
W38	Cable, 6 ft.,9-pin D-Sub,M/F,Straight-Through	UA82	MXT100	3USB5
W39	Cable, 6 ft.,9-pin D-Sub,M/F,Straight-Through	UA82	MXT100	3USB5
W40	Not Used	-	NOT USED	37338
W41P1	Conn, Coax, N, Plug, Crimp, RG142	JT12	11-N-50-3-29/133	0GZ58
W41P2	Conn, Coax, BNC, Plug, 50ohm,Crimp,RG142	JDP41	36875	02660
W42P1	Conn, Coax, BNC, Plug, 50ohm,Crimp,RG142	JDP41	36875	02660
W42P2	Conn, Coax, BNC, Plug, 50ohm,Crimp,RG142	JDP41	36875	02660
W43P1	Conn, Coax, BNC, Plug, 50ohm,Crimp,RG142	JDP41	36875	02660
W43P2	Conn, Coax, BNC, Plug, 50ohm,Crimp,RG142	JDP41	36875	02660
W44P1	Conn, Coax, BNC, Plug,50ohm,Crmp,RG58/303	JF33	31-4320	02660
W44P2	Conn, Coax, BNC, Plug,50ohm,Crmp,RG58/303	JF33	31-4320	02660
W45P1	Conn, Coax, BNC, Plug,50ohm,Crmp,RG58/303	JF33	31-4320	02660
W45P2	Conn, Coax, BNC, Plug,50ohm,Crmp,RG58/303	JF33	31-4320	02660
W46P1	Conn, Coax, BNC, Plug,50ohm,Crmp,RG58/303	JF33	31-4320	02660
W46P2	Conn, Coax, BNC, Plug,50ohm,Crmp,RG58/303	JF33	31-4320	02660
W47P1	Conn, Coax, BNC, Plug,50ohm,Crmp,RG58/303	JF33	31-4320	02660
W47P2	Conn, Coax, BNC, Plug,50ohm,Crmp,RG58/303	JF33	31-4320	02660
W48P1	Conn, Coax, N, Plug, Crimp, RG142	JT12	11-N-50-3-29/133	0GZ58
W48P2	Conn, Coax, N, Plug, Crimp, RG142	JT12	11-N-50-3-29/133	0GZ58
W49P1	Conn, Coax, N, Plug, Crimp, RG142	JT12	11-N-50-3-29/133	0GZ58
W49P2	Conn, Coax, N, Plug, Crimp, RG142	JT12	11-N-50-3-29/133	0GZ58
W50P1	Conn, Coax, N, Plug, Crimp, RG142	JT12	11-N-50-3-29/133	0GZ58



## 219-8201-01 Cableset Assy, 20kW NVLT/GV

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
W50P2	Conn, Coax, N, Plug, Crimp, RG142	JT12	11-N-50-3-29/133	0GZ58
W51P1	Conn, Coax, N, Plug, Crimp, RG142	JT12	11-N-50-3-29/133	0GZ58
W51P2	Conn, Coax, N, Plug, Crimp, RG142	JT12	11-N-50-3-29/133	0GZ58
W52	Not Used	-	NOT USED	37338
W53	Not Used	-	NOT USED	37338





REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
P01	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
P02	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
P03	Connector,Plug, 2 pos, Socket,20A, 600V, 7.62mm, 12AWG max	JT149	1804904	
P04	Connector,Plug, 2 pos, Socket,20A, 600V, 7.62mm, 12AWG max	JT149	1804904	
P05	Connector,Plug, 2 pos, Socket,20A, 600V, 7.62mm, 12AWG max	JT149	1804904	
P06	Conn, Contact, Socket, HDP-20Strip	JQ18	66504-4	09482
P06	Conn, Socket, D-Sub, HDP-20, 25 pin	JR38	205207-1	09482
P06	Conn, Shell, D-Sub, 25 pin	JS35	DB115339-22	71468
P06	Conn, Lock Screw, D-Sub, Male	JT16	205980-1	09482
P07	Conn, Contact, Socket, HDP-20Strip	JQ18	66504-4	09482
P07	Conn, Socket, D-Sub, 9 pin	JR27	205203-1	09482
P07	Conn, Shell, D-Sub, 9 pin	JS33	DE115339-20	71468
P07	Conn, Lock Screw, D-Sub, Male	JT16	205980-1	09482
P08	Conn, Contact, Pin, HDP-20Strip	JQ17	66506-4	09482
P08	Conn, Plug, D-Sub, 9 pin	JR28	205204-1	09482
P08	Conn, Shell, D-Sub, 9 pin	JS33	DE115339-20	71468
P08	Conn, Lock Screw, D-Sub, Male	JT16	205980-1	09482
P09	Conn, Contact, Socket, HDP-20Strip	JQ18	66504-4	09482
P09	Conn, Socket, D-Sub, 9 pin	JR27	205203-1	09482
P09	Conn, Shell, D-Sub, 9 pin	JS33	DE115339-20	71468
P09	Conn, Lock Screw, D-Sub, Male	JT16	205980-1	09482
P10	Connector, Quick-Dis, F,3/16 Tab (22-18AWG)	HAM04	2-520182-2	09482
P11	Connector, Quick-Dis, F,3/16 Tab (22-18AWG)	HAM04	2-520182-2	09482
P12	Conn,Quick-Dis,F,1/4 Tab 14-16Shrink	HAM69	B-106-3632	06090
P13	Conn,Quick-Dis,F,1/4 Tab 14-16Shrink	HAM69	B-106-3632	06090
P14	Not Used	-	NOT USED	37338
P15	Not Used	-	NOT USED	37338
P16	Not Used	-	NOT USED	37338
P17	Not Used	-	NOT USED	37338
P18	Not Used	-	NOT USED	37338
P19	Connector, Quick-Dis, F,3/16 Tab (22-18AWG)	HAM04	2-520182-2	09482
P20	Conn, Contact, Socket, HDP-20Strip	JQ18	66504-4	09482
P20	Conn, Socket, D-Sub, 9 pin	JR27	205203-1	09482
P20	Conn, Shell, D-Sub, 9 pin	JS33	DE115339-20	71468
P20	Conn, Lock Screw, D-Sub, Male	JT16	205980-1	09482
P21	Connector, Quick-Dis, F,3/16 Tab (22-18AWG)	HAM04	2-520182-2	09482
P22	Connector, Quick-Dis, F,3/16 Tab (22-18AWG)	HAM04	2-520182-2	09482

## 219-8208-01 AC/LV Cable Set Assy, 20kWNVLT/GV

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
P23	Conn, Contact, Socket, HDP-20Strip	JQ18	66504-4	09482
P23	Conn, Socket, D-Sub, 9 pin	JR27	205203-1	09482
P23	Conn, Shell, D-Sub, 9 pin	JS33	DE115339-20	71468
P23	Conn, Lock Screw, D-Sub, Male	JT16	205980-1	09482
P24	Not Used	-	NOT USED	37338

## NAA61B RF Power Module Assy, LDMOS

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
A01	PA PWB Assy,LDMOS	NAPA31C	211-1190-03	37338
A02	PA PWB Assy,LDMOS	NAPA31C	211-1190-03	37338
A03	PA PWB Assy,LDMOS	NAPA31C	211-1190-03	37338
A04	PA PWB Assy,LDMOS	NAPA31C	211-1190-03	37338
A05	Splitter/Interface PWB Assy	NAPH05	219-6150	37338
A05U1	Coupler, Hybrid, 90 degrees,3dB, 600W, Caseless	UX158	H88-108-600(RoHS)	
A06	Combiner PWB Assy (LHS)	NAPH06	219-6160	37338
A06R1	Res, (BeO), 50 ohms, 5%, 250W, Fling Mt w/stress relief	RT69	31A2027505F	
A06R2	Res, (BeO), 50 ohms, 5%, 250W, Fling Mt w/stress relief	RT69	31A2027505F	
A06R3	Res, (BeO), 50 ohms, 5%, 250W, Fling Mt w/stress relief	RT69	31A2027505F	
A06R4	Res, (BeO), 50 ohms, 5%, 250W, Fling Mt w/stress relief	RT69	31A2027505F	
A06R5	Res, (BeO), 50 ohms, 5%, 250W, Fling Mt w/stress relief	RT69	31A2027505F	
A06R6	Res, (BeO), 50 ohms, 5%, 250W, Fling Mt w/stress relief	RT69	31A2027505F	
A07	Combiner PWB Assy (RHS)	NAPH07	219-6170	37338
A07R1	Res, (BeO), 50 ohms, 5%, 250W, Fling Mt w/stress relief	RT69	31A2027505F	
A07R2	Res, (BeO), 50 ohms, 5%, 250W, Fling Mt w/stress relief	RT69	31A2027505F	
B01	Fan, 80mm, Brushless, 48Vdc,EMI Caps, Tach w/conn	ZAP50	3115RL-07W-B79-E51(RoHS)	
B02	Fan, 80mm, Brushless, 48Vdc,EMI Caps, Tach w/conn	ZAP50	3115RL-07W-B79-E51(RoHS)	
B03	Fan, 80mm, Brushless, 48Vdc,EMI Caps, Tach w/conn	ZAP50	3115RL-07W-B79-E51(RoHS)	
B04	Fan, 80mm, Brushless, 48Vdc,EMI Caps, Tach w/conn	ZAP50	3115RL-07W-B79-E51(RoHS)	
B05	Fan, 80mm, Brushless, 48Vdc,EMI Caps, Tach w/conn	ZAP50	3115RL-07W-B79-E51(RoHS)	
B06	Fan, 80mm, Brushless, 48Vdc,EMI Caps, Tach w/conn	ZAP50	3115RL-07W-B79-E51(RoHS)	
J01	Conn, Coax, Recept, 7/16 DIN,Panel,50ohm	JA44	23-716-50-0-3 HUBER & SUHNER AG	
RT01	Thermistor,-30/105°C,10Kohms@25°C,Neg,Bvalue 3435K	RX49	EC2F103A2-07U002	

## NAC118

## Controller Assy, GV

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
A01	Single Board Computer Assy, NV Series (with UB97)	206-8974	206-8974	37338
A02	Controller PWB Assy, GV Series	NAPC163	219-2060	37338
A03	Power Supply Distribution PWB Assy, GV	NAPS49	219-7350	37338
A04	UI Interface PWB Assy (GV)	NAPI142A/01	219-4070-02	37338
B01	Fan, 80mm, Brushless, 48Vdc,EMI Caps, Tach w/conn	ZAP50	3115RL-07W-B79-E51(RoHS)	
U01	Display, 20x4 LCD, 3.3 - 5V,-20/+70	UW146	CFA735-TFK-KR(STATIC)(RoHS)	1E566

## NAF118

## Filter Assy, 10kW (LHS)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
L02	Inductor Assy	206-6102	206-6102	37338

## NAF118/01

## Filter Assy, 10kW (RHS)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
L02	Inductor Assy	206-6102	206-6102	37338

## NAF119/01A

## Combiner/Filter Assy, 10kW (LHS)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
A01	Filter Assy, 10kW (LHS)	NAF118	206-6100	37338
J01	Conn, 7/16 DIN, Plug, 19.51mmFerrule, Flange Mt.	JA82	73134-2351	
J02	Conn, 7/16 DIN, Plug, 14.73mmFerrule, Flange Mt.	JA83	73134-2350	
J03	Conn, 7/16 DIN, Plug, 14.73mmFerrule, Flange Mt.	JA83	73134-2350	
J04	Conn, 7/16 DIN, Plug, 19.51mmFerrule, Flange Mt.	JA82	73134-2351	
J05	Conn, Coax, N, Recept, 50 ohm	JA52	KN-79-93	11636
J05	Conn, Coax, BNC, Recept, 50ohm	JDP26	UG1094/U	02660
J06	Conn, Coax, N, Recept, 50 ohm	JA52	KN-79-93	11636
J06	Conn, Coax, BNC, Recept, 50ohm	JDP26	UG1094/U	02660
J07	Conn, Coax, N, Recept, Panel,50ohm	JDP21	UG58A/U	02660



## NAF119/02A Combiner/Filter Assy, 10kW (RHS)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
A01	Filter Assy, 10kW (RHS)	NAF118/01	206-6100-01	37338
J01	Conn, 7/16 DIN, Plug, 19.51mmFerrule, Flange Mt.	JA82	73134-2351	
J02	Conn, 7/16 DIN, Plug, 14.73mmFerrule, Flange Mt.	JA83	73134-2350	
J03	Conn, 7/16 DIN, Plug, 14.73mmFerrule, Flange Mt.	JA83	73134-2350	
J04	Conn, 7/16 DIN, Plug, 19.51mmFerrule, Flange Mt.	JA82	73134-2351	
J05	Conn, Coax, N, Recept, 50 ohm	JA52	KN-79-93	11636
J05	Conn, Coax, BNC, Recept, 50ohm	JDP26	UG1094/U	02660
J06	Conn, Coax, N, Recept, 50 ohm	JA52	KN-79-93	11636
J06	Conn, Coax, BNC, Recept, 50ohm	JDP26	UG1094/U	02660
J07	Conn, Coax, N, Recept, Panel,50ohm	JDP21	UG58A/U	02660

## NAFP109B Power Probe Assy, NVLT/GV (DCREFLD)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
A01	Fwd Power/RF Sample Probe PWB Assy	206-6524	206-6524	37338
A02	Refld Power Probe PWB Assy	206-6520	206-6520	37338
A03	RF Monitor Probe PWB Assy	206-6522	206-6522	37338
A04	Fwd Power/RF Sample Probe PWB Assy	206-6524	206-6524	37338
A05	Fwd Power/RF Sample Probe PWB Assy	206-6524	206-6524	37338
A06	DC Refld Power Probe PWB Assy	219-6520	219-6520	37338

## NAH58/02 Combiner Assy, 20kW (LHS)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
J01	Conn, Coax, N, Recept, Panel,50ohm	JDP21	UG58A/U	02660



# NAI23A

## RF Drive Splitter Assy, 10kWNVLT/GV

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
A01	RF Drive Splitter PWB Assy,NVLT-HP	NAPH09A	219-8160-02	37338
A02	4-Way RF Drive Splitter/AttenPWB Assy (NVLT HP)	NAPH10/02	219-8170-02	37338
A1R3	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1U1	Coupler, Hybrid, 90 degrees,3dB, 600W, Caseless	UX158	H88-108-600(RoHS)	
A2R1	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A2R2	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A2U1	Coupler, Hybrid, 90 degrees,3dB, 600W, Caseless	UX158	H88-108-600(RoHS)	
A2U2	Coupler, Hybrid, 90 degrees,3dB, 600W, Caseless	UX158	H88-108-600(RoHS)	
RT01	Not Used	-	NOT USED	37338



REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
A01	2 Input Reject PWB Assy	206-8080	206-8080	37338
A02	RF Drive Splitter PWB Assy -NV20LT	NAPH13	219-6370	37338
A1R01	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R02	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R03	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R04	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R05	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R06	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R07	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R08	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R09	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R10	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R11	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R12	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R13	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R14	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R15	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R16	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R17	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R18	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A2R7	Res, (BeO), 100 ohms, 5%, 250W FIng Mt w/stress relief	RT70	31A20271005F	
A2R8	Res, (BeO), 100 ohms, 5%, 250W FIng Mt w/stress relief	RT70	31A20271005F	
A2U1	Coupler, Hybrid, 90 degrees,3dB, 600W, Caseless	UX158	H88-108-600(RoHS)	
J01	Conn, Coax, N, Recept, Panel,50ohm	JDP21	UG58A/U	02660
J02	Conn, Coax, N, Recept, Panel,50ohm	JDP21	UG58A/U	02660

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
A01	2 Input Reject PWB Assy	206-8080	206-8080	37338
A1R01	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R02	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R03	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R04	Not Used	-	NOT USED	37338
A1R05	Not Used	-	NOT USED	37338
A1R06	Not Used	-	NOT USED	37338
A1R07	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R08	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R09	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R10	Not Used	-	NOT USED	37338
A1R11	Not Used	-	NOT USED	37338
A1R12	Not Used	-	NOT USED	37338
A1R13	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R14	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R15	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R16	Not Used	-	NOT USED	37338
A1R17	Not Used	-	NOT USED	37338
A1R18	Not Used	-	NOT USED	37338
B01	Fan, 80mm, Brushless, 48Vdc,EMI Caps, Tach w/conn	ZAP50	3115RL-07W-B79-E51(RoHS)	
B02	Fan, 80mm, Brushless, 48Vdc,EMI Caps, Tach w/conn	ZAP50	3115RL-07W-B79-E51(RoHS)	
J01	Conn, Coax, N, Recept, Panel,50ohm	JDP21	UG58A/U	02660

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
A01	4 Input Reject PWB Assy	206-8082	206-8082	37338
A1R01	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R02	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R03	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R04	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R05	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R06	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R07	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R08	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R09	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R10	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R11	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R12	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R13	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R14	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R15	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R16	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R17	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R18	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R25	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R26	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R27	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R28	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R29	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R30	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R31	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R32	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R33	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R34	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R35	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R36	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R37	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R38	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R39	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R40	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R41	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
A1R42	Res, (BeO), 50 ohms, 5%, 250W, FIng Mt w/stress relief	RT69	31A2027505F	
J01	Conn, Coax, N, Recept, Panel,50ohm	JDP21	UG58A/U	02660
J02	Conn, Coax, N, Recept, Panel,50ohm	JDP21	UG58A/U	02660



NAL17

## Reject Load Assy, 4-Input 1500W, NVLT/GV HP

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
J03	Conn, Coax, N, Recept, Panel,50ohm	JDP21	UG58A/U	02660
J04	Conn, Coax, N, Recept, Panel,50ohm	JDP21	UG58A/U	02660



## NAPA31C

## PA PWB Assy,LDMOS

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C01	Cap, SMT, Electrolytic, 470uF,20%, 63VDC, Low ESR	CT75	AFK477M63P44T-F(RoHS)	93790
C02	Cap, SMT, Electrolytic, 470uF,20%, 63VDC, Low ESR	CT75	AFK477M63P44T-F(RoHS)	93790
C03	Cap, SMT, Electrolytic, 470uF,20%, 63VDC, Low ESR	CT75	AFK477M63P44T-F(RoHS)	93790
C04	Cap, SMT, Electrolytic, 470uF,20%, 63VDC, Low ESR	CT75	AFK477M63P44T-F(RoHS)	93790
C05	Cap, SMT, Electrolytic, 470uF,20%, 63VDC, Low ESR	CT75	AFK477M63P44T-F(RoHS)	93790
C06	Capacitor, SMT, Ceramic, 0.1uF 10%, 100V	CT66	C1206C104K1RACTU(RoHS) Kemet	31433
C07	Not Used	-	NOT USED	37338
C08	Capacitor,SMT,Ceramic,0.001uF,50V,10%	CT53	ATC100B102KW50X	29990
C09	Not Used	-	NOT USED	37338
C10	Capacitor,SMT,Ceramic,0.001uF,50V,10%	CT53	ATC100B102KW50X	29990
C11	Capacitor, SMT, Ceramic,0.01uF 50V, 10%	CT79	ATC200B103KW50XT	29990
C12	Capacitor,SMT,Ceramic,0.001uF,50V,10%	CT53	ATC100B102KW50X	29990
C13	Capacitor, SMT, Ceramic,0.01uF 50V, 10%	CT79	ATC200B103KW50XT	29990
C14	Capacitor, SMT, Porcelain, 2pF 500V, +/-0.1pF	CS96	1111P2R0BW501X(RoHS)	5KE93
C15	Capacitor, SMT, Porcelain,15pF 500V, 2%	CS95	1111P150GW501X(RoHS)	5KE93
C16	Capacitor,SMT,Ceramic,0.001uF,50V,10%	CT53	ATC100B102KW50X	29990
C17	Capacitor,SMT,Ceramic,470pF,200V,10%	CT52	ATC100B471KW200X	29990
C18	Capacitor, SMT, Porcelain,36pF 500V, 2%	CS94	1111P360GW501X(RoHS)	5KE93
C19	Not Used	-	NOT USED	37338
C20	Capacitor, SMT, Ceramic, 0.1uF 10%, 100V	CT66	C1206C104K1RACTU(RoHS) Kemet	31433
C21	Cap, SMT, Ceramic, 10uF, X7R,100V, Stacked	CT74	CKG57NX7R2A106M(RoHS)	54583
C22	Cap, SMT, Ceramic, 10uF, X7R,100V, Stacked	CT74	CKG57NX7R2A106M(RoHS)	54583
CR01	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR02	Diode,SMT,Zener,5.1V,5%,3W,SMB	QDZS01	1SMB5918BT3	04713
F01	Fuse, SMT, 125VAC, VDC, 30A,Fast Acting	FA64	0456030(RoHS)	75915
L01	Inductor, SMT, 5nH, 5%, MiniSpring	LS40	A02TJL(RoHS)	02113
L02	Inductor, SMT, 100nH, 5%, MidiSpring	LS41	1812SMS-R10JLC(RoHS)	02113
L03	Inductor, SMT, 5nH, 5%, MiniSpring	LS40	A02TJL(RoHS)	02113
L04	PA Inductor	211-1192	211-1192	37338
L05	Inductor, SMT, 82nH, 2%, 2.5A,4.20mm H x 4.95mm	LS26	1812SMS-82NGLC	02113
Q01	Transistor, FET, LDMOS, Dual,Ruggedized	QAP66	MRFE6VP61K25H(STATIC)(RoHS)	
R01	Resistor, SMT, MF, 47.5K Ohms, 1% 1/4W	RAD45	RK73H2BL4752F	59124

NAPA31C

PA PWB Assy,LDMOS

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R02	Resistor,SMT,MF,10ohms,1%,2W	RAD49Z	CR2512-2W-10R0F-SP	VENKEL
R03	Resistor, SMT,10k Ohms, 1%, 1W 2512	RAD80	RK73H3ATTE1002F	59124
R04	Resistor,SMT,4.7 ohms,5%,2W	RAD54Z	CR2512-2W-4R7JT-SP	VENKEL
R05	Resistor,SMT,4.7 ohms,5%,2W	RAD54Z	CR2512-2W-4R7JT-SP	VENKEL
T01	Cable, Coax, 50 Ohm, 70% VP,150C, PTFE, 11mm Min B. Rad	WE56	SUCOFORM_141	
T02A	Cable, Coax, 12 Ohm, 600V, 200C, TFE	WE54	TC-12	
T02B	Cable, Coax, 12 Ohm, 600V, 200C, TFE	WE54	TC-12	
T03	Transformer, Gate Drive, VHF,3T/1 Turn	TZ118	TUI-9	

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C001	Cap, SMT, Electrolytic, 470uF,20%, 63VDC, Low ESR	CT75	AFK477M63P44T-F(RoHS)	93790
C002	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C003	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C004	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C005	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C006	Not Used	-	NOT USED	37338
C007	Not Used	-	NOT USED	37338
C008	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C009	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C010	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C011	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C012	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C013	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C014	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C015	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C016	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C017	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C018	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C019	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C020	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C021	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C022	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C023	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C024	Not Used	-	NOT USED	37338
C025	Not Used	-	NOT USED	37338
C026	Capacitor, SMT, Ceramic, 2.2uF 10%, 100V, X7R, 1812	CT64	GRM43ER72A225KA01L	72982
C027	Capacitor, SMT, Ceramic, 2.2uF 10%, 100V, X7R, 1812	CT64	GRM43ER72A225KA01L	72982
C028	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C029	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C030	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C031	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C032	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C033	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C034	Capacitor,SMT,Ceramic,0.01uF,100V,10%	CT50	C1206C103K1RAC	91929
C035	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C036	Cap,SMT,Ceramic,0.001uF,10%,100V,X7R,0805	CCFS61	C0805C102K1RACTU	31433

## NAPC158A

## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C037	Capacitor,SMT,Ceramic,0.01uF,100V,10%	CT50	C1206C103K1RAC	91929
C038	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C039	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C040	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C041	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C042	Cap,SMT,Ceramic,0.001uF,10%,100V,X7R,0805	CCFS61	C0805C102K1RACTU	31433
C043	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C044	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C045	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C046	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C047	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C048	Cap,SMT,Ceramic,1uF,10%,25V,,X7R,1206	CCFS10	C1206C105K3RAC	31433
C049	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C050	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C051	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C052	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C053	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C054	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C055	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C056	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C057	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C058	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C059	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C060	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C061	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C062	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C063	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C064	Cap,SMT,Ceramic,1uF,10%,25V,,X7R,1206	CCFS10	C1206C105K3RAC	31433
C065	Cap, SMT, Electrolytic, 470uF,20%, 63VDC, Low ESR	CT75	AFK477M63P44T-F(RoHS)	93790
C066	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C067	Capacitor, SMT, Ceramic, 2.2uF 10%, 100V, X7R, 1812	CT64	GRM43ER72A225KA01L	72982
C068	Capacitor, SMT, Ceramic, 2.2uF 10%, 100V, X7R, 1812	CT64	GRM43ER72A225KA01L	72982
C069	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C070	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C071	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C072	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C073	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433

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REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C074	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C075	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C076	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C077	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C078	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C079	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C080	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C081	Cap, SMT, Electrolytic, 470uF,20%, 63VDC, Low ESR	CT75	AFK477M63P44T-F(RoHS)	93790
C082	Cap,SMT,Ceramic,1uF,10%,25V,,X7R,1206	CCFS10	C1206C105K3RAC	31433
C083	Cap, SMT, Electrolytic, 470uF,20%, 63VDC, Low ESR	CT75	AFK477M63P44T-F(RoHS)	93790
C084	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C085	Cap,SMT,Ceramic,1uF,10%,25V,,X7R,1206	CCFS10	C1206C105K3RAC	31433
C086	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C087	Capacitor, SMT, Ceramic, 2.2uF 10%, 100V, X7R, 1812	CT64	GRM43ER72A225KA01L	72982
C088	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(ROHS)	AVX CORP
C089	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C090	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C091	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C092	Capacitor, SMT, Ceramic, 2.2uF 10%, 100V, X7R, 1812	CT64	GRM43ER72A225KA01L	72982
C093	Capacitor, SMT, Ceramic, 2.2uF 10%, 100V, X7R, 1812	CT64	GRM43ER72A225KA01L	72982
C094	Capacitor, SMT, Ceramic, 2.2uF 10%, 100V, X7R, 1812	CT64	GRM43ER72A225KA01L	72982
C095	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C096	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C097	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C098	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C099	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C100	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C101	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C102	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C103	Cap,SMT,Ceramic,18pF,2%,50V,C0G,0603	CCFS23	C0603C180G5GAC	31433
C104	Cap,SMT,Ceramic,18pF,2%,50V,C0G,0603	CCFS23	C0603C180G5GAC	31433
C105	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C106	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C107	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C108	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433

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REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C109	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C110	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C111	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C112	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C113	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C114	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C115	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C116	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C117	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C118	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C119	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C120	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C121	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C122	Capacitor,SMT,Ceramic,0.01uF,100V,10%	CT50	C1206C103K1RAC	91929
C123	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C124	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C125	Cap,SMT,Ceramic,0.001uF,10%,100V,X7R,0805	CCFS61	C0805C102K1RACTU	31433
C126	Capacitor,SMT,Ceramic,0.01uF,100V,10%	CT50	C1206C103K1RAC	91929
C127	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C128	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C129	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C130	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C131	Cap,SMT,Ceramic,0.001uF,10%,100V,X7R,0805	CCFS61	C0805C102K1RACTU	31433
C132	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C133	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C134	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C135	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C136	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C137	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C138	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C139	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C140	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C141	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C142	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C143	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C144	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C145	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C146	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433



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REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C147	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C148	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C149	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C150	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C151	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C152	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C153	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C154	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C155	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C156	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C157	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C158	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C159	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C160	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C161	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C162	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C163	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C164	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C165	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C166	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C167	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C168	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C169	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C170	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C171	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C172	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C173	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C174	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C175	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C176	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C177	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C178	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C179	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C180	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C181	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C182	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C183	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C184	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C185	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433



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REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C186	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C187	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C188	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C189	Cap,SMT,Ceramic,390pF,2%,50V,C0G,0603	CCFS37	C0603C391G5GAC	31433
C190	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C191	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C192	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C193	Cap,SMT,Ceramic,1000pF,2%,50V,C0G,0805	CCFS42	C0805C102G5GAC	31433
C194	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C195	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C196	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C197	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C198	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C199	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C200	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C201	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C202	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C203	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C204	Capacitor,SMT,Ceramic,0.01uF,100V,10%	CT50	C1206C103K1RAC	91929
C205	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C206	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C207	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C208	Cap,SMT,Ceramic,1000pF,2%,50V,C0G,0805	CCFS42	C0805C102G5GAC	31433
C209	Cap,SMT,Ceramic,0.001uF,10%,100V,X7R,0805	CCFS61	C0805C102K1RACTU	31433
C210	Capacitor,SMT,Ceramic,0.01uF,100V,10%	CT50	C1206C103K1RAC	91929
C211	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C212	Cap,SMT,Ceramic,0.001uF,10%,100V,X7R,0805	CCFS61	C0805C102K1RACTU	31433
C213	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C214	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C215	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C216	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C217	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C218	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C219	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C220	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C221	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C222	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C223	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433

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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C224	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C225	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C226	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C227	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C228	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C229	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C230	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C231	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C232	Cap, SMT, Ceramic,47uF,20%,6.3V, 1210	CCFS53	C3225X5R0J476M(RoHS)	56289
C233	Cap, SMT, Electrolytic, 470uF,20%, 63VDC, Low ESR	CT75	AFK477M63P44T-F(RoHS)	93790
C234	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C235	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C236	Cap,SMT,Ceramic,390pF,2%,50V,C0G,0603	CCFS37	C0603C391G5GAC	31433
C237	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C238	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C239	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C240	Cap,SMT,Ceramic,10uF,20%,6.3V,X5R,0805	CCFS57	C2012X5R0J106M	54583
C241	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C242	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C243	Cap,SMT,Ceramic,1000pF,2%,50V,C0G,0805	CCFS42	C0805C102G5GAC	31433
C244	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C245	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C246	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C247	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C248	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C249	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C250	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C251	Cap,SMT,Ceramic,1000pF,2%,50V,C0G,0805	CCFS42	C0805C102G5GAC	31433
C252	Cap, SMT, Electrolytic, 470uF,20%, 63VDC, Low ESR	CT75	AFK477M63P44T-F(RoHS)	93790
C253	Cap,SMT,Ceramic,1uF,10%,25V,,X7R,1206	CCFS10	C1206C105K3RAC	31433
C254	Cap,SMT,Ceramic,1uF,10%,25V,,X7R,1206	CCFS10	C1206C105K3RAC	31433
C255	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C256	Capacitor, SMT, Ceramic, 2.2uF 10%, 100V, X7R, 1812	CT64	GRM43ER72A225KA01L	72982
C257	Capacitor, SMT, Al Electrolytic330uF, 25VDC,ESR 0.8ohm	CT57	AVS337M25G24T	2D829
C258	Capacitor, SMT, Al Electrolytic330uF, 25VDC,ESR 0.8ohm	CT57	AVS337M25G24T	2D829
C259	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(ROHS)	AVX CORP

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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C260	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C261	Cap, SMT, Ceramic, 10uF, 10%,25V	CCFS62	C3225X5R1E106K	
C262	Cap, SMT, Ceramic,47uF,20%,6.3V, 1210	CCFS53	C3225X5R0J476M(Ro HS)	56289
C263	Capacitor, SMT, Ceramic, 2.2uF 10%, 100V, X7R, 1812	CT64	GRM43ER72A225KA0 1L	72982
C264	Capacitor, SMT, Tantalum, 47uF 10%, 25V	CX36	TR3D476K025C0100( RoHS) VISHAY	
C265	Cap, SMT, Ceramic,47uF,20%,6.3V, 1210	CCFS53	C3225X5R0J476M(Ro HS)	56289
C266	Capacitor, SMT, Ceramic, 2.2uF 10%, 100V, X7R, 1812	CT64	GRM43ER72A225KA0 1L	72982
C267	Capacitor, SMT, Ceramic, 2.2uF 10%, 100V, X7R, 1812	CT64	GRM43ER72A225KA0 1L	72982
C268	Cap,SMT,Ceramic,220pF,2%,50V,C0G,0603	CCFS34	C0603C221G5GAC	31433
C269	Cap,SMT,Ceramic,220pF,2%,50V,C0G,0603	CCFS34	C0603C221G5GAC	31433
C270	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C271	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C272	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C273	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C274	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C275	Cap,SMT,Ceramic,0.022uF,10%,50V,X7R,0603	CCFS05	C0603C223K5RAC	31433
C276	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C277	Cap,SMT,Ceramic,0.022uF,10%,50V,X7R,0603	CCFS05	C0603C223K5RAC	31433
C278	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C279	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C280	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C281	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C282	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C283	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C284	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C285	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C286	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C287	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C288	Cap,SMT,Ceramic,330pF,2%,50V,C0G,0603	CCFS36	C0603C331G5GAC	31433
C289	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C290	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C291	Cap,SMT,Ceramic,330pF,2%,50V,C0G,0603	CCFS36	C0603C331G5GAC	31433
C292	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C293	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C294	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433

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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C295	Capacitor, SMT, Ceramic, 2.2uF 10%, 100V, X7R, 1812	CT64	GRM43ER72A225KA0 1L	72982
C296	Cap,SMT,Ceramic,0.022uF,10%,50V,X7R,0603	CCFS05	C0603C223K5RAC	31433
C297	Capacitor, SMT, Ceramic, 2.2uF 10%, 100V, X7R, 1812	CT64	GRM43ER72A225KA0 1L	72982
C298	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C299	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C300	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C301	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C302	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C303	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C304	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C305	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C306	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C307	Capacitor,SMT,Ceramic,0.01uF,100V,10%	CT50	C1206C103K1RAC	91929
C308	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C309	Cap,SMT,Ceramic,0.001uF,10%,100V,X7R,0805	CCFS61	C0805C102K1RACTU	31433
C310	Capacitor,SMT,Ceramic,0.01uF,100V,10%	CT50	C1206C103K1RAC	91929
C311	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C312	Cap,SMT,Ceramic,0.001uF,10%,100V,X7R,0805	CCFS61	C0805C102K1RACTU	31433
C313	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C314	Capacitor, SMT, Ceramic, 2.2uF 10%, 100V, X7R, 1812	CT64	GRM43ER72A225KA0 1L	72982
C315	Capacitor, SMT, Ceramic, 2.2uF 10%, 100V, X7R, 1812	CT64	GRM43ER72A225KA0 1L	72982
C316	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C317	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C318	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C319	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C320	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C321	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C322	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C323	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C324	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C325	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C326	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C327	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C328	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C329	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C330	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433

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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C331	Not Used	-	NOT USED	37338
C332	Cap, SMT, Electrolytic, 470uF,20%, 63VDC, Low ESR	CT75	AFK477M63P44T-F(RoHS)	93790
C333	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C334	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C335	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C336	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C337	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C338	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C339	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C340	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C341	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C342	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C343	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C344	Cap,SMT,Ceramic,0.001uF,10%,100V,X7R,0805	CCFS61	C0805C102K1RACTU	31433
C345	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C346	Capacitor,SMT,Ceramic,0.01uF,100V,10%	CT50	C1206C103K1RAC	91929
C347	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C348	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C349	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C350	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C351	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C352	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C353	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C354	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C355	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C356	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C357	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C358	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C359	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C360	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C361	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C362	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C363	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C364	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C365	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C366	Capacitor,SMT,Ceramic,0.01uF,100V,10%	CT50	C1206C103K1RAC	91929
C367	Capacitor,SMT,Ceramic,0.01uF,100V,10%	CT50	C1206C103K1RAC	91929
C368	Capacitor,SMT,Ceramic,0.01uF,100V,10%	CT50	C1206C103K1RAC	91929



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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C369	Capacitor,SMT,Ceramic,0.01uF,100V,10%	CT50	C1206C103K1RAC	91929
C370	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C371	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C372	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C373	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C374	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C375	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C376	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C377	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C378	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C379	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C380	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C381	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C382	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C383	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C384	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C385	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C386	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C387	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C388	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C389	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C390	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C391	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C392	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C393	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C394	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C395	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C396	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C397	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C398	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C399	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C400	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C401	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C402	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C403	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C404	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C405	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C406	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C407	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433



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REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C408	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C409	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C410	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C411	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C412	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C413	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C414	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C415	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C416	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C417	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C418	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C419	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C420	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C421	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C422	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C423	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C424	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C425	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C426	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C427	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C428	Capacitor,SMT,Ceramic,0.01uF,100V,10%	CT50	C1206C103K1RAC	91929
C429	Capacitor,SMT,Ceramic,0.01uF,100V,10%	CT50	C1206C103K1RAC	91929
C430	Capacitor,SMT,Ceramic,0.01uF,100V,10%	CT50	C1206C103K1RAC	91929
C431	Capacitor,SMT,Ceramic,0.01uF,100V,10%	CT50	C1206C103K1RAC	91929
C432	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C433	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C434	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C435	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C436	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C437	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C438	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C439	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C440	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C441	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C442	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C443	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C444	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C445	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C446	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433



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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C447	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C448	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C449	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C450	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C451	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C452	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C453	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C454	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C455	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C456	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C457	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C458	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C459	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C460	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C461	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C462	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C463	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C464	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C465	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C466	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C467	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C468	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C469	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C470	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C471	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C472	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C473	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C474	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C475	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C476	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C477	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C478	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C479	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C480	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C481	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C482	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C483	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C484	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C485	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433



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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C486	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C487	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C488	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C489	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C490	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C491	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C492	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C493	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C494	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C495	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C496	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C497	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C498	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C499	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C500	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C501	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C502	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C503	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C504	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C505	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C506	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C507	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C508	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C509	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C510	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C511	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C512	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C513	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C514	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C515	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C516	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C517	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C518	Cap,SMT,Ceramic,10uF,20%,6.3V,X5R,0805	CCFS57	C2012X5R0J106M	54583
C519	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C520	Capacitor,SMT,Ceramic,0.01uF,100V,10%	CT50	C1206C103K1RAC	91929
C521	Capacitor,SMT,Ceramic,0.01uF,100V,10%	CT50	C1206C103K1RAC	91929
C522	Capacitor,SMT,Ceramic,0.01uF,100V,10%	CT50	C1206C103K1RAC	91929
C523	Capacitor,SMT,Ceramic,0.01uF,100V,10%	CT50	C1206C103K1RAC	91929
C524	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433

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REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C525	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C526	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C527	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C528	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C529	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C530	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C531	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C532	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C533	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C534	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C535	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C536	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C537	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C538	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C539	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C540	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C541	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C542	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C543	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C544	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C545	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C546	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C547	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C548	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C549	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C550	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C551	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C552	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C553	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C554	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C555	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C556	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C557	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C558	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C559	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C560	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C561	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C562	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C563	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433

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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C564	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C565	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C566	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C567	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C568	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C569	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C570	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C571	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C572	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C573	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C574	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C575	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C576	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C577	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C578	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C579	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C580	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C581	Not Used	-	NOT USED	37338
C582	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C583	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C584	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C585	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C586	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C587	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C588	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C589	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C590	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C591	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C592	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C593	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C594	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C595	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C596	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C597	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C598	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C599	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C600	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C601	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C602	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433

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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C603	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C604	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C605	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C606	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C607	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C608	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C609	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C610	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C611	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C612	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C613	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C614	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C615	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C616	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C617	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C618	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C619	Capacitor,SMT,Ceramic,0.01uF,100V,10%	CT50	C1206C103K1RAC	91929
C620	Capacitor,SMT,Ceramic,0.01uF,100V,10%	CT50	C1206C103K1RAC	91929
C621	Capacitor,SMT,Ceramic,0.01uF,100V,10%	CT50	C1206C103K1RAC	91929
C622	Capacitor,SMT,Ceramic,0.01uF,100V,10%	CT50	C1206C103K1RAC	91929
C623	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C624	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C625	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C626	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C627	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C628	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C629	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C630	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C631	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C632	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C633	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C634	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C635	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C636	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C637	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C638	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C639	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C640	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C641	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433

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REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C642	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C643	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C644	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C645	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C646	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C647	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C648	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C649	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C650	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C651	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C652	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C653	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C654	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C655	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C656	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C657	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C658	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C659	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C660	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C661	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C662	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C663	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C664	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C665	Cap,SMT,Ceramic,0.1uF,10%,25V,X7R,0603	CCFS52	C0603C104K3RAC	31433
C666	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C667	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C668	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C669	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C670	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C671	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C672	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C673	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C674	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C675	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C676	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C677	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C678	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C679	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C680	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433



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REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C681	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C682	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C683	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C684	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C685	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C686	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C687	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C688	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C689	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C690	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C691	Cap,SMT,Ceramic,0.001uF,10%,100V,X7R,0805	CCFS61	C0805C102K1RACTU	31433
C692	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C693	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C694	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C695	Cap,SMT,Ceramic,0.001uF,10%,100V,X7R,0805	CCFS61	C0805C102K1RACTU	31433
C696	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C697	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C698	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C699	Cap,SMT,Ceramic,0.001uF,10%,100V,X7R,0805	CCFS61	C0805C102K1RACTU	31433
C700	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C701	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C702	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C703	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C704	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C705	Not Used	-	NOT USED	37338
CR01	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR02	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR03	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR04	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR05	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR06	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR07	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR08	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR09	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR10	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR11	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR12	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400

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REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
CR13	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR14	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR15	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR16	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR17	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR18	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR19	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR20	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR21	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR22	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR23	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR24	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR25	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR26	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR27	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR28	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR29	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR30	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR31	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR32	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR33	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR34	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR35	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR36	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR37	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR38	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR39	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR40	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR41	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR42	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR43	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400

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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
CR44	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR45	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR46	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR47	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR48	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR49	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR50	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR51	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR52	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR53	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR54	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR55	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR56	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR57	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR58	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR59	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR60	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR61	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR62	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR63	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR64	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR65	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR66	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR67	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR68	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR69	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR70	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR71	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR72	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR73	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR74	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713



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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
CR75	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR76	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR77	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR78	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR79	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR80	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR81	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR82	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR83	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR84	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR85	Diode, SMT, Schottky, 40V, 3A,SMA	QDSS03	MBRA340T3G(STATIC)(RoHS)	
CR86	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR87	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR88	Diode, SMT, Schottky, 40V, 3A,SMA	QDSS03	MBRA340T3G(STATIC)(RoHS)	
CR89	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR90	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
DS01	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS02	Diode, SMT, LED, Green,(560nm), 0603	QDLS01	597-5312-402F(STATIC)(RoHS)	83330
DS03	Diode, SMT, LED, Green,(560nm), 0603	QDLS01	597-5312-402F(STATIC)(RoHS)	83330
DS04	Diode, SMT, LED, Green,(560nm), 0603	QDLS01	597-5312-402F(STATIC)(RoHS)	83330
DS05	Diode, SMT, LED, Green,(560nm), 0603	QDLS01	597-5312-402F(STATIC)(RoHS)	83330
E01	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E02	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E03	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E04	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E05	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E06	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E07	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E08	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E09	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E10	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
F01	Fuse, SMT, Fuse Block, 7A VeryFast Acting Installed	FA56	0154007(RoHS)	75915
F02	Fuse, SMT, Fuse Block, 7A VeryFast Acting Installed	FA56	0154007(RoHS)	75915
F03	Fuse, SMT, Fuse Block, 10A,Very Fast Acting, Installed	FA69	0154010(RoHS)	75915
F04	Fuse, SMT, Fuse Block, 10A,Very Fast Acting, Installed	FA69	0154010(RoHS)	75915



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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
F05	Fuse, SMT, Fuse Block, 7A VeryFast Acting Installed	FA56	0154007(RoHS)	75915
F06	Fuse, SMT, Fuse Block, 7A VeryFast Acting Installed	FA56	0154007(RoHS)	75915
F07	Fuse, SMT, Fuse Block, 10A,Very Fast Acting, Installed	FA69	0154010(RoHS)	75915
F08	Fuse,SMT,Fuse Block,3A VeryFast Acting,Installed	FA46	154 003(ROHS)	75915
J01	Conn, Plug, D-Sub, 9 pin, PWB Mt	JQ33	K22-E9P-NJ	31781
J02	Conn, Header, Ribbon Cbl, 10-Pin	JQ54	103308-1	00779
J03	Conn, Socket, D-Sub, 9 pin, PWB Mt	JQ34	K22-E9S-NJ	KYCON
J04	Conn, Plug, D-Sub, 9 pin, PWB Mt	JQ33	K22-E9P-NJ	31781
J05	Conn, Socket, D-Sub, HD15pin,90deg, PWB	JS129	ICD15S13E6GV00LF( RoHS) FCI	
J06	Conn, BNC, Recept, PWB Mt	JF35	R141426161	0GP12
J07	Conn, BNC, Recept, PWB Mt	JF35	R141426161	0GP12
J08	Conn, Socket, D-Sub, 9 pin, PWB Mt	JQ34	K22-E9S-NJ	KYCON
J09	Conn, Header,Square Post,Gold,Dual,40-pin	JF47	4-102973-0	09482
J10	Conn, Header, SIP,12 Pin Breakaway, .10 Ctr	JQ16	1-103185-2	09482
J11	Conn, BNC, Recept, PWB Mt	JF35	R141426161	0GP12
J12	Conn, BNC, Recept, PWB Mt	JF35	R141426161	0GP12
J13	Conn, BNC, Recept, PWB Mt	JF35	R141426161	0GP12
J14	Conn, BNC, Recept, PWB Mt	JF35	R141426161	0GP12
J15	Conn, Plug, D-Sub, 9 pin, PWB Mt	JQ33	K22-E9P-NJ	31781
J16	Connector, Modular, RJ45, Vert, PWB, Shld, 50u Au	JMT01	MODS-E-8P8C-U-S- R(RoHS)	55322
J17	Connector, Modular, RJ45, Vert, PWB, Shld, 50u Au	JMT01	MODS-E-8P8C-U-S- R(RoHS)	55322
J18	Connector, Modular, RJ45, Vert, PWB, Shld, 50u Au	JMT01	MODS-E-8P8C-U-S- R(RoHS)	55322
J19	Conn, Socket, D-Sub, 9 pin, PWB Mt	JQ34	K22-E9S-NJ	KYCON
J20	Conn, Socket, D-Sub, HD15pin,90deg, PWB	JS129	ICD15S13E6GV00LF( RoHS) FCI	
J21	Conn, Edge Card, 72 Contacts,Dual Row, 30u, Gold, M3	JN86	346-072-620-207	
J22	Conn, Edge Card, 72 Contacts,Dual Row, 30u, Gold, M3	JN86	346-072-620-207	
J23	Conn, Edge Card, 72 Contacts,Dual Row, 30u, Gold, M3	JN86	346-072-620-207	
J24	Conn, Edge Card, 72 Contacts,Dual Row, 30u, Gold, M3	JN86	346-072-620-207	
J25	Conn, SMA, Straight, PWB Mt	JT160	142-0701-201(RoHS)	4HFW6
L001	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L002	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L003	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L004	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L005	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845

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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
L006	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L007	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L008	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L009	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L010	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L011	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L012	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L013	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L014	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L015	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L016	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L017	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L018	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L019	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L020	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L021	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L022	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L023	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L024	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L025	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L026	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L027	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L028	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L029	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L030	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L031	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L032	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L033	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845



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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
L034	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L035	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L036	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L037	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L038	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L039	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L040	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L041	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L042	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L043	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L044	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L045	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L046	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L047	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L048	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L049	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L050	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L051	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L052	Inductor, SMT, Shielded, 33uH, 3.3A RMS	LS45	DR125-330-R(RoHS)	005K5
L053	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L054	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L055	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L056	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L057	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L058	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L059	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L060	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L061	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L062	Choke, SMT, Common Mode, 2200 ohm, 200mA, 1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09

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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
L063	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L064	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L065	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L066	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L067	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L068	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L069	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L070	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L071	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L072	Inductor, SMT, Shielded, 15uH,5A RMS	LS47	DR127-150-R(RoHS)	005K5
L073	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L074	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L075	Inductor, SMT, Shielded, 15uH,5A RMS	LS47	DR127-150-R(RoHS)	005K5
L076	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L077	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L078	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L079	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L080	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L081	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L082	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L083	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L084	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L085	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L086	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L087	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L088	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L089	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L090	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845



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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
L091	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L092	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L093	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L094	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L095	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L096	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L097	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L098	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L099	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L100	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L101	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L102	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L103	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L104	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L105	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L106	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L107	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L108	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L109	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L110	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L111	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L112	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L113	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L114	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L115	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L116	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L117	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L118	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845





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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
L119	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L120	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L121	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L122	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L123	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L124	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L125	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L126	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L127	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L128	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L129	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L130	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L131	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L132	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L133	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L134	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L135	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L136	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L137	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L138	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L139	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L140	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L141	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L142	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L143	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L144	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L145	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L146	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L147	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845

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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
L148	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L149	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L150	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L151	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L152	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L153	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L154	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L155	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L156	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L157	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L158	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L159	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L160	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L161	Inductor, SMT, Shielded, 15uH,5A RMS	LS47	DR127-150-R(RoHS)	005K5
L162	Inductor, SMT, Shielded, 15uH,5A RMS	LS47	DR127-150-R(RoHS)	005K5
L163	Inductor, SMT, Shielded, 33uH, 3.3A RMS	LS45	DR125-330-R(RoHS)	005K5
L164	Inductor, SMT, Shielded, 33uH, 3.3A RMS	LS45	DR125-330-R(RoHS)	005K5
L165	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L166	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L167	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L168	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L169	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L170	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L171	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L172	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L173	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L174	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L175	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L176	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L177	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L178	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845



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REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
L179	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L180	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L181	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L182	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L183	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L184	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L185	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L186	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L187	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L188	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L189	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L190	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L191	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L192	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L193	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L194	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L195	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L196	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L197	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L198	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L199	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L200	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L201	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L202	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L203	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L204	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L205	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L206	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845

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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
L207	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L208	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L209	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L210	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L211	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L212	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L213	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L214	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L215	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L216	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L217	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L218	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L219	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L220	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L221	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L222	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L223	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L224	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L225	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L226	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L227	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L228	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L229	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L230	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L231	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L232	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L233	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845

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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
L234	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L235	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L236	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L237	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L238	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L239	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L240	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L241	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L242	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L243	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L244	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L245	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L246	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L247	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L248	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L249	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L250	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
Q01	Transistor,SMT,NPN,Switch/Amp,SOT-23	QBNS01	MMBT4401LT1(STATIC C)	04713
Q02	Diode, SMT, Schottky, 3.5Ax2,100V DPAK	QDS02	6CWQ10FN(STATIC)	81483
Q03	Transister, FET, SMT, N-ch,100V, DPAK	QMN01	FDD3672(STATIC)(Ro HS)	07263
Q04	Transister, FET, SMT, N-ch,100V, DPAK	QMN01	FDD3672(STATIC)(Ro HS)	07263
Q05	Diode, SMT, Schottky, 3.5Ax2,100V DPAK	QDS02	6CWQ10FN(STATIC)	81483
Q06	Transistor,SMT,NPN,Switch/Amp,SOT-23	QBNS01	MMBT4401LT1(STATIC C)	04713
Q07	Transistor,SMT,NPN,Switch/Amp,SOT-23	QBNS01	MMBT4401LT1(STATIC C)	04713
Q08	Transistor,SMT,NPN,Switch/Amp,SOT-23	QBNS01	MMBT4401LT1(STATIC C)	04713
Q09	Transistor,SMT,NPN,Switch/Amp,SOT-23	QBNS01	MMBT4401LT1(STATIC C)	04713
Q10	Transister, FET, SMT, N-ch,100V, DPAK	QMN01	FDD3672(STATIC)(Ro HS)	07263

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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
Q11	Diode, SMT, Schottky, 3.5Ax2,100V DPAK	QDS02	6CWQ10FN(STATIC)	81483
Q12	Diode, SMT, Schottky, 3.5Ax2,100V DPAK	QDS02	6CWQ10FN(STATIC)	81483
Q13	Diode, SMT, Schottky, 3.5Ax2,100V DPAK	QDS02	6CWQ10FN(STATIC)	81483
Q14	Diode, SMT, Schottky, 3.5Ax2,100V DPAK	QDS02	6CWQ10FN(STATIC)	81483
Q15	Transistor,SMT,NPN,Switch/Amp,SOT-23	QBNS01	MMBT4401LT1(STATI C)	04713
Q16	Transistor,SMT,NPN,Switch/Amp,SOT-23	QBNS01	MMBT4401LT1(STATI C)	04713
Q17	Transistor,SMT,NPN,Switch/Amp,SOT-23	QBNS01	MMBT4401LT1(STATI C)	04713
R001	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R002	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R003	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R004	Resistor,SMT,MF,18.2Kohms,1%,1/10W,0603	RFFS53	RK73H1JLTD1822F	59124
R005	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R006	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R007	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R008	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R009	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R010	Resistor,SMT,MF,475Kohms,1%,1/10W,0603	RFFS70	RK73H1JLTD4753F	59124
R011	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R012	Resistor,SMT,MF,27.4Kohms,1%,1/10W,0603	RFFS55	RK73H1JLTD2742F	59124
R013	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R014	Resistor,SMT,MF,18.2Kohms,1%,1/10W,0603	RFFS53	RK73H1JLTD1822F	59124
R015	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R016	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R017	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R018	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R019	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R020	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R021	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R022	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R023	Resistor,SMT,MF,18.2Kohms,1%,1/10W,0603	RFFS53	RK73H1JLTD1822F	59124
R024	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R025	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R026	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ- 8GEYJ2R0V(STATIC)( RoHS)	
R027	Resistor, SMT, 0.002 ohms, 1%,5W	RFCS04	OARS- XPR002FLF(RoHS)	
R028	Resistor, SMT, 0.002 ohms, 1%,5W	RFCS04	OARS- XPR002FLF(RoHS)	

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REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R029	Resistor, SMT, 0.002 ohms, 1%,5W	RFCS04	OARS- XPR002FLF(RoHS)	
R030	Resistor, SMT, 0.002 ohms, 1%,5W	RFCS04	OARS- XPR002FLF(RoHS)	
R031	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R032	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R033	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R034	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R035	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R036	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R037	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R038	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R039	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R040	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R041	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R042	Resistor,SMT,MF,20ohms,1%,2W	RAD50Z	CR2512-2W-20R0F- SP	VENKEL
R043	Resistor,SMT,MF,18.2Kohms,1%,1/10W,0603	RFFS53	RK73H1JLTD1822F	59124
R044	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R045	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R046	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ- 8GEYJ2R0V(STATIC)( RoHS)	
R047	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R048	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R049	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R050	Resistor, SMT, MF, 22.1K Ohms, 1% 1/4W	RAD41	RK73H2BL2212F	59124
R051	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R052	Resistor,SMT,MF,825ohms,1%,1/10W,0603	RFFS37	RK73H1JLTD8250F	59124
R053	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R054	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R055	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R056	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R057	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R058	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R059	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R060	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R061	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R062	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R063	Resistor,SMT,MF,2210ohms,1%,1/10W,0603	RFFS42	RK73H1JLTD2211F	59124
R064	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R065	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124



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REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R066	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R067	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R068	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R069	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R070	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R071	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R072	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R073	Resistor,SMT,MF,681ohms,1%,1/10W,0603	RFFS36	RK73H1JLTD6810F	59124
R074	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R075	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R076	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R077	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R078	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R079	Resistor,SMT,MF,681ohms,1%,1/10W,0603	RFFS36	RK73H1JLTD6810F	59124
R080	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R081	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R082	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R083	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R084	Resistor, SMT, MF, 22.1K Ohms, 1% 1/4W	RAD41	RK73H2BL2212F	59124
R085	Resistor,SMT,MF,49.9R,1%,1/10W0603	RAE34	RK73H1JT49R9F	59124
R086	Resistor,SMT,MF,1500ohms,1%,1/10W,0603	RFFS40	RK73H1JLTD1501F	59124
R087	Resistor,SMT,MF,18.2Kohms,1%,1/10W,0603	RFFS53	RK73H1JLTD1822F	59124
R088	Resistor,SMT,MF,1.21Mohms,1%,1/10W,0603	RFFS75	RK73H1JLTD1214F	59124
R089	Resistor,SMT,MF,681Kohms,1%,1/10W,0603	RFFS72	RK73H1JLTD6813F	59124
R090	Resistor,SMT,MF,681Kohms,1%,1/10W,0603	RFFS72	RK73H1JLTD6813F	59124
R091	Resistor,SMT,MF,1.21Mohms,1%,1/10W,0603	RFFS75	RK73H1JLTD1214F	59124
R092	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R093	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R094	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R095	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R096	Resistor,SMT,MF,825ohms,1%,1/10W,0603	RFFS37	RK73H1JLTD8250F	59124
R097	Resistor,SMT,MF,49.9R,1%,1/10W0603	RAE34	RK73H1JT49R9F	59124
R098	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
R099	Resistor,SMT,MF,49.9R,1%,1/10W0603	RAE34	RK73H1JT49R9F	59124
R100	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R101	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R102	Resistor,SMT,MF,49.9R,1%,1/10W0603	RAE34	RK73H1JT49R9F	59124
R103	Resistor,SMT,MF,22.1ohms,1%,1/10W,0603	RFFS18	RK73H1JLTD22R1F	59124



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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R104	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R105	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R106	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R107	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R108	Resistor,SMT,MF,1.21Mohms,1%,1/10W,0603	RFFS75	RK73H1JLTD1214F	59124
R109	Resistor,SMT,MF,681Kohms,1%,1/10W,0603	RFFS72	RK73H1JLTD6813F	59124
R110	Resistor,SMT,MF,681Kohms,1%,1/10W,0603	RFFS72	RK73H1JLTD6813F	59124
R111	Resistor,SMT,MF,1.21Mohms,1%,1/10W,0603	RFFS75	RK73H1JLTD1214F	59124
R112	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R113	Resistor,SMT,MF,15.0Kohms,1%,1/10W,0603	RFFS52	RK73H1JLTD1502F	59124
R114	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R115	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R116	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R117	Not Used	-	NOT USED	37338
R118	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R119	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R120	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R121	Resistor,SMT,MF,12.1Kohms,1%,1/10W,0603	RFFS51	RK73H1JLTD1212F	59124
R122	Not Used	-	NOT USED	37338
R123	Resistor,SMT,MF,825Kohms,1%,1/10W,0603	RFFS73	RK73H1JLTD8253F	59124
R124	Resistor,SMT,MF,15.0Kohms,1%,1/10W,0603	RFFS52	RK73H1JLTD1502F	59124
R125	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R126	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R127	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R128	Resistor,SMT,MF,825Kohms,1%,1/10W,0603	RFFS73	RK73H1JLTD8253F	59124
R129	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R130	Resistor,SMT,MF,22.1ohms,1%,1/10W,0603	RFFS18	RK73H1JLTD22R1F	59124
R131	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R132	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R133	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R134	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R135	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R136	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R137	Not Used	-	NOT USED	37338
R138	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R139	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R140	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
R141	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124

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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R142	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R143	Resistor,SMT,MF,15.0Kohms,1%,1/10W,0603	RFFS52	RK73H1JLTD1502F	59124
R144	Resistor,SMT,MF,825Kohms,1%,1/10W,0603	RFFS73	RK73H1JLTD8253F	59124
R145	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R146	Resistor,SMT,MF,10.0ohms,1%,1/10W,0603	RFFS14	RK73H1JLTD10R0F	59124
R147	Not Used	-	NOT USED	37338
R148	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R149	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R150	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R151	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R152	Resistor,SMT,MF,12.1Kohms,1%,1/10W,0603	RFFS51	RK73H1JLTD1212F	59124
R153	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R154	Resistor,SMT,MF,12.1Kohms,1%,1/10W,0603	RFFS51	RK73H1JLTD1212F	59124
R155	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R156	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R157	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R158	Resistor,SMT,MF,681ohms,1%,1/10W,0603	RFFS36	RK73H1JLTD6810F	59124
R159	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R160	Resistor,SMT,MF,681ohms,1%,1/10W,0603	RFFS36	RK73H1JLTD6810F	59124
R161	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R162	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R163	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R164	Resistor,SMT,MF,12.1Kohms,1%,1/10W,0603	RFFS51	RK73H1JLTD1212F	59124
R165	Resistor,SMT,MF,12.1Kohms,1%,1/10W,0603	RFFS51	RK73H1JLTD1212F	59124
R166	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R167	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R168	Resistor,SMT,MF,27.4Kohms,1%,1/10W,0603	RFFS55	RK73H1JLTD2742F	59124
R169	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R170	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R171	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R172	Not Used	-	NOT USED	37338
R173	Not Used	-	NOT USED	37338
R174	Not Used	-	NOT USED	37338
R175	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R176	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R177	Resistor, SMT, 0.002 ohms, 1%,5W	RFCS04	OARS- XPR002FLF(RoHS)	
R178	Resistor, SMT, 0.002 ohms, 1%,5W	RFCS04	OARS- XPR002FLF(RoHS)	
R179	Resistor, SMT, 0.002 ohms, 1%,5W	RFCS04	OARS- XPR002FLF(RoHS)	



## NAPC158A

## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R180	Resistor, SMT, 0.002 ohms, 1%,5W	RFCS04	OARS- XPR002FLF(RoHS)	
R181	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R182	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R183	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R184	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R185	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R186	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R187	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R188	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R189	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R190	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R191	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R192	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R193	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R194	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R195	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R196	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R197	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R198	Resistor,SMT,MF,49.9R,1%,1/10W0603	RAE34	RK73H1JT49R9F	59124
R199	Resistor,SMT,MF,49.9R,1%,1/10W0603	RAE34	RK73H1JT49R9F	59124
R200	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R201	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R202	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R203	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R204	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R205	Not Used	-	NOT USED	37338
R206	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R207	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R208	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R209	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R210	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R211	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R212	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R213	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R214	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R215	Resistor, SMT, MF, 22.1K Ohms, 1% 1/4W	RAD41	RK73H2BL2212F	59124
R216	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R217	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R218	Not Used	-	NOT USED	37338

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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R219	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R220	Resistor,SMT,MF,5620ohms,1%,1/10W,0603	RFFS47	RK73H1JLTD5621F	59124
R221	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R222	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R223	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R224	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R225	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R226	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R227	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R228	Resistor,SMT,MF,150ohms,1%,1/10W,0603	RFFS28	RK73H1JLTD1500F	59124
R229	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R230	Resistor,SMT,MF,825ohms,1%,1/10W,0603	RFFS37	RK73H1JLTD8250F	59124
R231	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R232	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R233	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R234	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R235	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R236	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R237	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R238	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R239	Resistor,SMT,MF,681ohms,1%,1/10W,0603	RFFS36	RK73H1JLTD6810F	59124
R240	Resistor,SMT,MF,221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R241	Resistor,SMT,MF,1500ohms,1%,1/10W,0603	RFFS40	RK73H1JLTD1501F	59124
R242	Resistor,SMT,MF,18.2Kohms,1%,1/10W,0603	RFFS53	RK73H1JLTD1822F	59124
R243	Resistor,SMT,MF,1.21Mohms,1%,1/10W,0603	RFFS75	RK73H1JLTD1214F	59124
R244	Resistor,SMT,MF,681Kohms,1%,1/10W,0603	RFFS72	RK73H1JLTD6813F	59124
R245	Resistor,SMT,MF,681Kohms,1%,1/10W,0603	RFFS72	RK73H1JLTD6813F	59124
R246	Resistor,SMT,MF,1.21Mohms,1%,1/10W,0603	RFFS75	RK73H1JLTD1214F	59124
R247	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R248	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R249	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R250	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R251	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R252	Resistor,SMT,MF,681ohms,1%,1/10W,0603	RFFS36	RK73H1JLTD6810F	59124
R253	Resistor,SMT,MF,221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R254	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R255	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R256	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R257	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124

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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R258	Resistor, SMT, MF, 475 Ohms, 1% 1/4W	RAD21	RK73H2BL4750F	59124
R259	Resistor, SMT, MF, 0.0ohms, Jumper, 0603	RFFS01	RK73Z1JLTD	59124
R260	Resistor, SMT, MF, 10.0Kohms, 1%, 1/10W, 0603	RFFS50	RK73H1JLTD1002F	59124
R261	Resistor, SMT, MF, 10.0Kohms, 1%, 1/10W, 0603	RFFS50	RK73H1JLTD1002F	59124
R262	Resistor, SMT, MF, 475 Ohms, 1% 1/4W	RAD21	RK73H2BL4750F	59124
R263	Resistor, SMT, MF, 10.0Kohms, 1%, 1/10W, 0603	RFFS50	RK73H1JLTD1002F	59124
R264	Resistor, SMT, MF, 10.0Kohms, 1%, 1/10W, 0603	RFFS50	RK73H1JLTD1002F	59124
R265	Resistor, SMT, MF, 1.21Mohms, 1%, 1/10W, 0603	RFFS75	RK73H1JLTD1214F	59124
R266	Resistor, SMT, MF, 681Kohms, 1%, 1/10W, 0603	RFFS72	RK73H1JLTD6813F	59124
R267	Resistor, SMT, MF, 681Kohms, 1%, 1/10W, 0603	RFFS72	RK73H1JLTD6813F	59124
R268	Resistor, SMT, MF, 1.21Mohms, 1%, 1/10W, 0603	RFFS75	RK73H1JLTD1214F	59124
R269	Resistor, SMT, MF, 475 Ohms, 1% 1/4W	RAD21	RK73H2BL4750F	59124
R270	Resistor, SMT, MF, 27.4Kohms, 1%, 1/10W, 0603	RFFS55	RK73H1JLTD2742F	59124
R271	Resistor, SMT, MF, 10.0Kohms, 1%, 1/10W, 0603	RFFS50	RK73H1JLTD1002F	59124
R272	Resistor, SMT, MF, 0.0ohms, Jumper, 0603	RFFS01	RK73Z1JLTD	59124
R273	Resistor, SMT, MF, 10.0Kohms, 1%, 1/10W, 0603	RFFS50	RK73H1JLTD1002F	59124
R274	Resistor, SMT, MF, 12.1Kohms, 1%, 1/10W, 0603	RFFS51	RK73H1JLTD1212F	59124
R275	Resistor, SMT, MF, 1000ohms, 1%, 1/10W, 0603	RFFS38	RK73H1JLTD1001F	59124
R276	Not Used	-	NOT USED	37338
R277	Resistor, SMT, MF, 10.0Kohms, 1%, 1/10W, 0603	RFFS50	RK73H1JLTD1002F	59124
R278	Resistor, SMT, MF, 100ohms, 1%, 1/10W, 0603	RFFS26	RK73H1JLTD1000F	59124
R279	Resistor, SMT, MF, 0.0ohms, Jumper, 0603	RFFS01	RK73Z1JLTD	59124
R280	Resistor, SMT, MF, 10.0Kohms, 1%, 1/10W, 0603	RFFS50	RK73H1JLTD1002F	59124
R281	Resistor, SMT, MF, 10.0Kohms, 1%, 1/10W, 0603	RFFS50	RK73H1JLTD1002F	59124
R282	Resistor, SMT, MF, 475 Ohms, 1% 1/4W	RAD21	RK73H2BL4750F	59124
R283	Resistor, SMT, MF, 10.0Kohms, 1%, 1/10W, 0603	RFFS50	RK73H1JLTD1002F	59124
R284	Resistor, SMT, MF, 27.4Kohms, 1%, 1/10W, 0603	RFFS55	RK73H1JLTD2742F	59124
R285	Resistor, SMT, MF, 10.0Kohms, 1%, 1/10W, 0603	RFFS50	RK73H1JLTD1002F	59124
R286	Resistor, SMT, MF, 0.0ohms, Jumper, 0603	RFFS01	RK73Z1JLTD	59124
R287	Resistor, SMT, MF, 4750ohms, 1%, 1/10W, 0603	RFFS46	RK73H1JLTD4751F	59124
R288	Resistor, SMT, MF, 475 Ohms, 1% 1/4W	RAD21	RK73H2BL4750F	59124
R289	Not Used	-	NOT USED	37338
R290	Resistor, SMT, MF, 4750ohms, 1%, 1/10W, 0603	RFFS46	RK73H1JLTD4751F	59124
R291	Resistor, SMT, MF, 10.0Kohms, 1%, 1/10W, 0603	RFFS50	RK73H1JLTD1002F	59124
R292	Resistor, SMT, MF, 475 Ohms, 1% 1/4W	RAD21	RK73H2BL4750F	59124
R293	Not Used	-	NOT USED	37338
R294	Resistor, SMT, MF, 825Kohms, 1%, 1/10W, 0603	RFFS73	RK73H1JLTD8253F	59124
R295	Resistor, SMT, MF, 15.0Kohms, 1%, 1/10W, 0603	RFFS52	RK73H1JLTD1502F	59124
R296	Resistor, SMT, MF, 10.0Kohms, 1%, 1/10W, 0603	RFFS50	RK73H1JLTD1002F	59124

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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R297	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R298	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R299	Resistor,SMT,MF,49.9R,1%,1/10W0603	RAE34	RK73H1JT49R9F	59124
R300	Resistor,SMT,MF,49.9R,1%,1/10W0603	RAE34	RK73H1JT49R9F	59124
R301	Resistor,SMT,MF,49.9R,1%,1/10W0603	RAE34	RK73H1JT49R9F	59124
R302	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R303	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R304	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R305	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R306	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R307	Not Used	-	NOT USED	37338
R308	Resistor,SMT,MF,49.9R,1%,1/10W0603	RAE34	RK73H1JT49R9F	59124
R309	Resistor,SMT,MF,825Kohms,1%,1/10W,0603	RFFS73	RK73H1JLTD8253F	59124
R310	Resistor,SMT,MF,15.0Kohms,1%,1/10W,0603	RFFS52	RK73H1JLTD1502F	59124
R311	Resistor, SMT, 0.002 ohms, 1%,5W	RFCS04	OARS- XPR002FLF(RoHS)	
R312	Resistor, SMT, 0.002 ohms, 1%,5W	RFCS04	OARS- XPR002FLF(RoHS)	
R313	Resistor, SMT, 0.002 ohms, 1%,5W	RFCS04	OARS- XPR002FLF(RoHS)	
R314	Resistor, SMT, 0.002 ohms, 1%,5W	RFCS04	OARS- XPR002FLF(RoHS)	
R315	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R316	Not Used	-	NOT USED	37338
R317	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R318	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R319	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R320	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R321	Resistor,SMT,MF,274ohms,1%,1/10W,0603	RFFS31	RK73H1JLTD2740F	59124
R322	Resistor,SMT,MF,5620ohms,1%,1/10W,0603	RFFS47	RK73H1JLTD5621F	59124
R323	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R324	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R325	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R326	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R327	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R328	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R329	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R330	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R331	Resistor, SMT, 590 Ohms, 1%, 1W, 2512	RAD69	ERJ-1TNF5900U	
R332	Resistor,SMT,MF,82.5ohms,1%,1/10W,0603	RFFS25	RK73H1JLTD82R5F	59124
R333	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124

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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R334	Resistor,SMT,MF,475Kohms,1%,1/10W,0603	RFFS70	RK73H1JLTD4753F	59124
R335	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R336	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R337	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R338	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R339	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R340	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R341	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R342	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R343	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R344	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R345	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R346	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R347	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R348	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R349	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R350	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R351	Resistor, SMT, MF, 49.9 Ohms,1% 1/4W	RAE21	RK73H2BL49R9F	59124
R352	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R353	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R354	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R355	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R356	Resistor, SMT, MF, 10 Ohms, 1% 1/4W	RAD01	RK73H2BL10R0F	59124
R357	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R358	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R359	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R360	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R361	Resistor, SMT, MF, 22.1K Ohms, 1% 1/4W	RAD41	RK73H2BL2212F	59124
R362	Resistor, SMT, 590 Ohms, 1%, 1W, 2512	RAD69	ERJ-1TNF5900U	
R363	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R364	Resistor,SMT,MF,1500ohms,1%,1/10W,0603	RFFS40	RK73H1JLTD1501F	59124
R365	Resistor,SMT,MF,18.2Kohms,1%,1/10W,0603	RFFS53	RK73H1JLTD1822F	59124
R366	Resistor,SMT,MF,1.21Mohms,1%,1/10W,0603	RFFS75	RK73H1JLTD1214F	59124
R367	Resistor,SMT,MF,681Kohms,1%,1/10W,0603	RFFS72	RK73H1JLTD6813F	59124
R368	Resistor,SMT,MF,681Kohms,1%,1/10W,0603	RFFS72	RK73H1JLTD6813F	59124
R369	Resistor,SMT,MF,1.21Mohms,1%,1/10W,0603	RFFS75	RK73H1JLTD1214F	59124
R370	Resistor, SMT, MF, 150 Ohms,1% 1/4W	RAD15	RK73H2BL1500F	59124
R371	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R372	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124



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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R373	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R374	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R375	Resistor,SMT,MF,825ohms,1%,1/10W,0603	RFFS37	RK73H1JLTD8250F	59124
R376	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R377	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R378	Resistor,SMT,MF,274ohms,1%,1/10W,0603	RFFS31	RK73H1JLTD2740F	59124
R379	Resistor,SMT,MF,5620ohms,1%,1/10W,0603	RFFS47	RK73H1JLTD5621F	59124
R380	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R381	Resistor,SMT,MF,2210ohms,1%,1/10W,0603	RFFS42	RK73H1JLTD2211F	59124
R382	Resistor, SMT, 590 Ohms, 1%, 1W, 2512	RAD69	ERJ-1TNF5900U	
R383	Resistor,SMT,MF,82.5ohms,1%,1/10W,0603	RFFS25	RK73H1JLTD82R5F	59124
R384	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R385	Resistor,SMT,MF,475Kohms,1%,1/10W,0603	RFFS70	RK73H1JLTD4753F	59124
R386	Resistor,SMT,MF,1.21Mohms,1%,1/10W,0603	RFFS75	RK73H1JLTD1214F	59124
R387	Resistor,SMT,MF,681Kohms,1%,1/10W,0603	RFFS72	RK73H1JLTD6813F	59124
R388	Resistor,SMT,MF,681Kohms,1%,1/10W,0603	RFFS72	RK73H1JLTD6813F	59124
R389	Resistor,SMT,MF,1.21Mohms,1%,1/10W,0603	RFFS75	RK73H1JLTD1214F	59124
R390	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R391	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R392	Resistor,SMT,MF,475Kohms,1%,1/10W,0603	RFFS70	RK73H1JLTD4753F	59124
R393	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R394	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R395	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R396	Resistor,SMT,MF,12.1Kohms,1%,1/10W,0603	RFFS51	RK73H1JLTD1212F	59124
R397	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R398	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R399	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R400	Resistor, SMT, MF, 49.9 Ohms,1% 1/4W	RAE21	RK73H2BL49R9F	59124
R401	Resistor,SMT,MF,22.1ohms,1%,1/10W,0603	RFFS18	RK73H1JLTD22R1F	59124
R402	Resistor, SMT, MF, 10 Ohms, 1% 1/4W	RAD01	RK73H2BL10R0F	59124
R403	Resistor, SMT, 590 Ohms, 1%, 1W, 2512	RAD69	ERJ-1TNF5900U	
R404	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R405	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R406	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R407	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
R408	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R409	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R410	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124

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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R411	Resistor,SMT,MF,332ohms,1%,1/10W,0603	RFFS32	RK73H1JLTD3320F	59124
R412	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
R413	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R414	Resistor, SMT, MF, 56.2 Ohms,1% 1/4W	RAD10	RK73H2BL56R2F	59124
R415	Resistor,SMT,MF,475ohms,1%,1/10W,0603	RFFS34	RK73H1JLTD4750F	59124
R416	Resistor,SMT,MF,475ohms,1%,1/10W,0603	RFFS34	RK73H1JLTD4750F	59124
R417	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R418	Resistor, SMT, MF, 56.2 Ohms,1% 1/4W	RAD10	RK73H2BL56R2F	59124
R419	Resistor,SMT,MF,475ohms,1%,1/10W,0603	RFFS34	RK73H1JLTD4750F	59124
R420	Resistor,SMT,MF,10ohms,1%,2W	RAD49Z	CR2512-2W-10R0F-SP	VENKEL
R421	Resistor,SMT,MF,10ohms,1%,2W	RAD49Z	CR2512-2W-10R0F-SP	VENKEL
R422	Resistor,SMT,MF,475ohms,1%,1/10W,0603	RFFS34	RK73H1JLTD4750F	59124
R423	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R424	Resistor, SMT, 0.002 ohms, 1%,5W	RFCS04	OARS-XPR002FLF(RoHS)	
R425	Resistor, SMT, 0.002 ohms, 1%,5W	RFCS04	OARS-XPR002FLF(RoHS)	
R426	Resistor, SMT, 0.002 ohms, 1%,5W	RFCS04	OARS-XPR002FLF(RoHS)	
R427	Resistor, SMT, 0.002 ohms, 1%,5W	RFCS04	OARS-XPR002FLF(RoHS)	
R428	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R429	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R430	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R431	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R432	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R433	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R434	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R435	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R436	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R437	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R438	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R439	Resistor,SMT,MF,1210ohms,1%,1/10W,0603	RFFS39	RK73H1JLTD1211F	59124
R440	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R441	Resistor,SMT,MF,12.1Kohms,1%,1/10W,0603	RFFS51	RK73H1JLTD1212F	59124
R442	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R443	Resistor,SMT,MF,1820ohms,1%,1/10W,0603	RFFS41	RK73H1JLTD1821F	59124
R444	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R445	Resistor,SMT,MF,12.1Kohms,1%,1/10W,0603	RFFS51	RK73H1JLTD1212F	59124

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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R446	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R447	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R448	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R449	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R450	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R451	Resistor,SMT,MF,12.1Kohms,1%,1/10W,0603	RFFS51	RK73H1JLTD1212F	59124
R452	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R453	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R454	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R455	Resistor,SMT,MF,27.4Kohms,1%,1/10W,0603	RFFS55	RK73H1JLTD2742F	59124
R456	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R457	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R458	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R459	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R460	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R461	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R462	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R463	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R464	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R465	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R466	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R467	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R468	Resistor, SMT, MF, 22.1K Ohms, 1% 1/4W	RAD41	RK73H2BL2212F	59124
R469	Resistor,SMT,150 Ohms,,1%,2W	RAD55Z	CR2512-2W-1500F-SP	3EQW4
R470	Resistor,SMT,MF,825ohms,1%,1/10W,0603	RFFS37	RK73H1JLTD8250F	59124
R471	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R472	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R473	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R474	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R475	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R476	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R477	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R478	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R479	Resistor,SMT,MF,1500ohms,1%,1/10W,0603	RFFS40	RK73H1JLTD1501F	59124
R480	Resistor,SMT,MF,18.2Kohms,1%,1/10W,0603	RFFS53	RK73H1JLTD1822F	59124
R481	Resistor,SMT,MF,1.21Mohms,1%,1/10W,0603	RFFS75	RK73H1JLTD1214F	59124
R482	Resistor,SMT,MF,681Kohms,1%,1/10W,0603	RFFS72	RK73H1JLTD6813F	59124
R483	Resistor,SMT,MF,681Kohms,1%,1/10W,0603	RFFS72	RK73H1JLTD6813F	59124
R484	Resistor,SMT,MF,1.21Mohms,1%,1/10W,0603	RFFS75	RK73H1JLTD1214F	59124





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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R485	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R486	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R487	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R488	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R489	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R490	Resistor, SMT,10k Ohms, 1%, 1W 2512	RAD80	RK73H3ATTE1002F	59124
R491	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R492	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R493	Resistor, SMT,10k Ohms, 1%, 1W 2512	RAD80	RK73H3ATTE1002F	59124
R494	Resistor,SMT,MF,1.21Mohms,1%,1/10W,0603	RFFS75	RK73H1JLTD1214F	59124
R495	Resistor,SMT,MF,681Kohms,1%,1/10W,0603	RFFS72	RK73H1JLTD6813F	59124
R496	Resistor,SMT,MF,681Kohms,1%,1/10W,0603	RFFS72	RK73H1JLTD6813F	59124
R497	Resistor,SMT,MF,1.21Mohms,1%,1/10W,0603	RFFS75	RK73H1JLTD1214F	59124
R498	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R499	Resistor,SMT,MF,475Kohms,1%,1/10W,0603	RFFS70	RK73H1JLTD4753F	59124
R501	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R502	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R503	Resistor,SMT,MF,12.1Kohms,1%,1/10W,0603	RFFS51	RK73H1JLTD1212F	59124
R504	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R505	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R506	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R507	Resistor,SMT,MF,475Kohms,1%,1/10W,0603	RFFS70	RK73H1JLTD4753F	59124
R508	Resistor, SMT, MF, 22.1K Ohms, 1% 1/4W	RAD41	RK73H2BL2212F	59124
R509	Resistor,SMT,MF,825ohms,1%,1/10W,0603	RFFS37	RK73H1JLTD8250F	59124
R510	Resistor,SMT,MF,825ohms,1%,1/10W,0603	RFFS37	RK73H1JLTD8250F	59124
R511	Resistor, SMT, MF, 22.1K Ohms, 1% 1/4W	RAD41	RK73H2BL2212F	59124
R512	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R513	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R514	Resistor,SMT,MF,475Kohms,1%,1/10W,0603	RFFS70	RK73H1JLTD4753F	59124
R515	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R516	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R517	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R518	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R519	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R520	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R521	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R522	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R523	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R524	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124

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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R525	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R526	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R527	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R528	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R529	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R530	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R531	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R532	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
R533	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R534	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
R535	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R536	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R537	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R538	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R539	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R540	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R541	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R542	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R543	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R544	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R545	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R546	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R547	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R548	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R549	Resistor,SMT,MF,56.2ohms,1%,1/10W,0603	RFFS23	RK73H1JLTD56R2F	59124
R550	Resistor,SMT,MF,56.2ohms,1%,1/10W,0603	RFFS23	RK73H1JLTD56R2F	59124
R551	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R552	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R553	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R554	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R555	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R556	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R557	Resistor, SMT, MF, 22.1K Ohms, 1% 1/4W	RAD41	RK73H2BL2212F	59124
R558	Resistor,SMT,MF,825ohms,1%,1/10W,0603	RFFS37	RK73H1JLTD8250F	59124
R559	Resistor,SMT,MF,825ohms,1%,1/10W,0603	RFFS37	RK73H1JLTD8250F	59124
R560	Resistor, SMT, MF, 22.1K Ohms, 1% 1/4W	RAD41	RK73H2BL2212F	59124
R561	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124

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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R562	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R563	Resistor,SMT,MF,475Kohms,1%,1/10W,0603	RFFS70	RK73H1JLTD4753F	59124
R564	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R565	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R566	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R567	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R568	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R569	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R570	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R571	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R572	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R573	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R574	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R575	Not Used	-	NOT USED	37338
R576	Not Used	-	NOT USED	37338
R577	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R578	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R579	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R580	Not Used	-	NOT USED	37338
R581	Not Used	-	NOT USED	37338
R582	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R583	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R584	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R585	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R586	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R587	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R588	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R589	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R590	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
R591	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R592	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
R593	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R594	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R595	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R596	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R597	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R598	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124

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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R599	Resistor, SMT, MF, 475 Ohms, 1% 1/4W	RAD21	RK73H2BL4750F	59124
R600	Resistor, SMT, MF, 475 Ohms, 1% 1/4W	RAD21	RK73H2BL4750F	59124
R601	Resistor, SMT, MF, 475 Ohms, 1% 1/4W	RAD21	RK73H2BL4750F	59124
R602	Resistor, SMT, MF, 475 Ohms, 1% 1/4W	RAD21	RK73H2BL4750F	59124
R603	Resistor, SMT, MF, 825Kohms, 1%, 1/10W, 0603	RFFS73	RK73H1JLTD8253F	59124
R604	Resistor, SMT, MF, 15.0Kohms, 1%, 1/10W, 0603	RFFS52	RK73H1JLTD1502F	59124
R605	Resistor, SMT, MF, 10.0Kohms, 1%, 1/10W, 0603	RFFS50	RK73H1JLTD1002F	59124
R606	Resistor, SMT, MF, 4750ohms, 1%, 1/10W, 0603	RFFS46	RK73H1JLTD4751F	59124
R607	Resistor, SMT, MF, 4750ohms, 1%, 1/10W, 0603	RFFS46	RK73H1JLTD4751F	59124
R608	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
R609	Resistor, SMT, MF, 825Kohms, 1%, 1/10W, 0603	RFFS73	RK73H1JLTD8253F	59124
R610	Resistor, SMT, MF, 15.0Kohms, 1%, 1/10W, 0603	RFFS52	RK73H1JLTD1502F	59124
R611	Resistor, SMT, MF, 10.0Kohms, 1%, 1/10W, 0603	RFFS50	RK73H1JLTD1002F	59124
R612	Resistor, SMT, MF, 475 Ohms, 1% 1/4W	RAD21	RK73H2BL4750F	59124
R613	Resistor, SMT, MF, 475 Ohms, 1% 1/4W	RAD21	RK73H2BL4750F	59124
R614	Resistor, SMT, MF, 10.0Kohms, 1%, 1/10W, 0603	RFFS50	RK73H1JLTD1002F	59124
R615	Not Used	-	NOT USED	37338
R616	Resistor, SMT, MF, 10.0Kohms, 1%, 1/10W, 0603	RFFS50	RK73H1JLTD1002F	59124
R617	Resistor, SMT, MF, 10.0Kohms, 1%, 1/10W, 0603	RFFS50	RK73H1JLTD1002F	59124
R618	Resistor, SMT, MF, 10.0Kohms, 1%, 1/10W, 0603	RFFS50	RK73H1JLTD1002F	59124
R619	Resistor, SMT, MF, 49.9 Ohms, 1% 1/4W	RAE21	RK73H2BL49R9F	59124
R620	Resistor, SMT, MF, 475 Ohms, 1% 1/4W	RAD21	RK73H2BL4750F	59124
R621	Resistor, SMT, MF, 49.9 Ohms, 1% 1/4W	RAE21	RK73H2BL49R9F	59124
R622	Resistor, SMT, MF, 10.0Kohms, 1%, 1/10W, 0603	RFFS50	RK73H1JLTD1002F	59124
R623	Resistor, SMT, MF, 10.0Kohms, 1%, 1/10W, 0603	RFFS50	RK73H1JLTD1002F	59124
R624	Resistor, SMT, MF, 10.0Kohms, 1%, 1/10W, 0603	RFFS50	RK73H1JLTD1002F	59124
R625	Resistor, SMT, MF, 22.1K Ohms, 1% 1/4W	RAD41	RK73H2BL2212F	59124
R626	Resistor, SMT, MF, 22.1K Ohms, 1% 1/4W	RAD41	RK73H2BL2212F	59124
R627	Not Used	-	NOT USED	37338
R628	Not Used	-	NOT USED	37338
R629	Resistor, SMT, MF, 825ohms, 1%, 1/10W, 0603	RFFS37	RK73H1JLTD8250F	59124
R630	Resistor, SMT, MF, 825ohms, 1%, 1/10W, 0603	RFFS37	RK73H1JLTD8250F	59124
R631	Resistor, SMT, MF, 100ohms, 1%, 1/10W, 0603	RFFS26	RK73H1JLTD1000F	59124
R632	Resistor, SMT, MF, 100ohms, 1%, 1/10W, 0603	RFFS26	RK73H1JLTD1000F	59124
R633	Resistor, SMT, MF, 100ohms, 1%, 1/10W, 0603	RFFS26	RK73H1JLTD1000F	59124
R634	Resistor, SMT, MF, 100ohms, 1%, 1/10W, 0603	RFFS26	RK73H1JLTD1000F	59124
R635	Resistor, SMT, MF, 681ohms, 1%, 1/10W, 0603	RFFS36	RK73H1JLTD6810F	59124
R636	Resistor, SMT, MF, 221 Ohms, 1% 1/4W	RAD17	RK73H2BL2210F	59124

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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R637	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R638	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R639	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R640	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R641	Resistor,SMT,MF,475Kohms,1%,1/10W,0603	RFFS70	RK73H1JLTD4753F	59124
R642	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R643	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R644	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R645	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R646	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R647	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R648	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R649	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R650	Resistor,SMT,MF,681ohms,1%,1/10W,0603	RFFS36	RK73H1JLTD6810F	59124
R651	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R652	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R653	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R654	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R655	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R656	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R657	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R658	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R659	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R660	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R661	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R662	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R663	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R664	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R665	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R666	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R667	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R668	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R669	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
R670	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R671	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
R672	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R673	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124



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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R674	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R675	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R676	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R677	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R678	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R679	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R680	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R681	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R682	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R683	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R684	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R685	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R686	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R687	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R688	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R689	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R690	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R691	Not Used	-	NOT USED	37338
R692	Not Used	-	NOT USED	37338
R693	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R694	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R695	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R696	Resistor,SMT,MF,10.0ohms,1%,1/10W,0603	RFFS14	RK73H1JLTD10R0F	59124
R697	Resistor,SMT,MF,10.0ohms,1%,1/10W,0603	RFFS14	RK73H1JLTD10R0F	59124
R698	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R699	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R700	Resistor,SMT,MF,681ohms,1%,1/10W,0603	RFFS36	RK73H1JLTD6810F	59124
R701	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R702	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R703	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R704	Resistor,SMT,MF,10.0ohms,1%,1/10W,0603	RFFS14	RK73H1JLTD10R0F	59124
R705	Resistor,SMT,MF,681ohms,1%,1/10W,0603	RFFS36	RK73H1JLTD6810F	59124
R706	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R707	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R708	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R709	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R710	Resistor,SMT,MF,49.9R,1%,1/10W0603	RAE34	RK73H1JT49R9F	59124
R711	Resistor,SMT,MF,49.9R,1%,1/10W0603	RAE34	RK73H1JT49R9F	59124

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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R712	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
R713	Resistor, SMT, MF, 3320ohms, 1%, 1/10W, 0603	RFFS44	RK73H1JLTD3321F	59124
R714	Resistor, SMT, MF, 10.0Kohms, 1%, 1/10W, 0603	RFFS50	RK73H1JLTD1002F	59124
R715	Resistor, SMT, MF, 10.0Kohms, 1%, 1/10W, 0603	RFFS50	RK73H1JLTD1002F	59124
R716	Resistor, SMT, MF, 1500 Ohms, 1% 1/4W	RAD27	RK73H2BL1501F	59124
R717	Resistor, SMT, MF, 100ohms, 1%, 1/10W, 0603	RFFS26	RK73H1JLTD1000F	59124
R718	Not Used	-	NOT USED	37338
R719	Resistor, SMT, MF, 475 Ohms, 1% 1/4W	RAD21	RK73H2BL4750F	59124
R720	Resistor, SMT, MF, 100ohms, 1%, 1/10W, 0603	RFFS26	RK73H1JLTD1000F	59124
R721	Resistor, SMT, MF, 22.1K Ohms, 1% 1/4W	RAD41	RK73H2BL2212F	59124
R722	Resistor, SMT, MF, 825ohms, 1%, 1/10W, 0603	RFFS37	RK73H1JLTD8250F	59124
R723	Resistor, SMT, MF, 825ohms, 1%, 1/10W, 0603	RFFS37	RK73H1JLTD8250F	59124
R724	Resistor, SMT, MF, 22.1K Ohms, 1% 1/4W	RAD41	RK73H2BL2212F	59124
R725	Resistor, SMT, MF, 22.1ohms, 1%, 1/10W, 0603	RFFS18	RK73H1JLTD22R1F	59124
R726	Resistor, SMT, MF, 22.1ohms, 1%, 1/10W, 0603	RFFS18	RK73H1JLTD22R1F	59124
R727	Not Used	-	NOT USED	37338
R728	Resistor, SMT, MF, 0.0ohms, Jumper, 0603	RFFS01	RK73Z1JLTD	59124
R729	Resistor, SMT, MF, 475 Ohms, 1% 1/4W	RAD21	RK73H2BL4750F	59124
R730	Resistor, SMT, MF, 22.1ohms, 1%, 1/10W, 0603	RFFS18	RK73H1JLTD22R1F	59124
R731	Resistor, SMT, MF, 22.1ohms, 1%, 1/10W, 0603	RFFS18	RK73H1JLTD22R1F	59124
R732	Resistor, SMT, MF, 1000ohms, 1%, 1/10W, 0603	RFFS38	RK73H1JLTD1001F	59124
R733	Resistor, SMT, MF, 100ohms, 1%, 1/10W, 0603	RFFS26	RK73H1JLTD1000F	59124
R734	Resistor, SMT, MF, 475Kohms, 1%, 1/10W, 0603	RFFS70	RK73H1JLTD4753F	59124
R735	Resistor, SMT, MF, 10.0Kohms, 1%, 1/10W, 0603	RFFS50	RK73H1JLTD1002F	59124
R736	Resistor, SMT, MF, 100ohms, 1%, 1/10W, 0603	RFFS26	RK73H1JLTD1000F	59124
R737	Resistor, SMT, MF, 100ohms, 1%, 1/10W, 0603	RFFS26	RK73H1JLTD1000F	59124
R738	Resistor, SMT, MF, 100ohms, 1%, 1/10W, 0603	RFFS26	RK73H1JLTD1000F	59124
R739	Resistor, SMT, MF, 100ohms, 1%, 1/10W, 0603	RFFS26	RK73H1JLTD1000F	59124
R740	Resistor, SMT, MF, 100ohms, 1%, 1/10W, 0603	RFFS26	RK73H1JLTD1000F	59124
R741	Resistor, SMT, MF, 100ohms, 1%, 1/10W, 0603	RFFS26	RK73H1JLTD1000F	59124
R742	Resistor, SMT, MF, 100ohms, 1%, 1/10W, 0603	RFFS26	RK73H1JLTD1000F	59124
R743	Resistor, SMT, MF, 475 Ohms, 1% 1/4W	RAD21	RK73H2BL4750F	59124
R744	Resistor, SMT, MF, 22.1K Ohms, 1% 1/4W	RAD41	RK73H2BL2212F	59124
R745	Resistor, SMT, MF, 221 Ohms, 1% 1/4W	RAD17	RK73H2BL2210F	59124
R746	Resistor, SMT, MF, 475 Ohms, 1% 1/4W	RAD21	RK73H2BL4750F	59124
R747	Resistor, SMT, MF, 4750ohms, 1%, 1/10W, 0603	RFFS46	RK73H1JLTD4751F	59124
R748	Resistor, SMT, MF, 4750ohms, 1%, 1/10W, 0603	RFFS46	RK73H1JLTD4751F	59124
R749	Resistor, SMT, MF, 1000ohms, 1%, 1/10W, 0603	RFFS38	RK73H1JLTD1001F	59124

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REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R750	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R751	Resistor,SMT,MF,825ohms,1%,1/10W,0603	RFFS37	RK73H1JLTD8250F	59124
R752	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R753	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R754	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R755	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R756	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R757	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R758	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R759	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R760	Resistor,SMT,MF,10ohms,1%,2W	RAD49Z	CR2512-2W-10R0F-SP	VENKEL
R761	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R762	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
R763	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R764	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
R765	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R766	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R767	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R768	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R769	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R770	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R771	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R772	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R773	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R774	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R775	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R776	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R777	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R778	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R779	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R780	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R781	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R782	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R783	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R784	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R785	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124



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REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R786	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R787	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R788	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R789	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R790	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R791	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R792	Not Used	-	NOT USED	37338
R793	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R794	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
R795	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R796	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R797	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R798	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R799	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R800	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R801	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R802	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R803	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R804	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R805	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R806	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R807	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
RT01	Thermistor, PTC, 3.30-5.21 Ohms,.17A Hold	RT44	RXE017 RAYCHEM	4G927
RT02	Not Used	-	NOT USED	37338
RT03	Thermistor, PTC, SMT, 2920,500mA Hold	RX64	2920L050(RoHS)	75915
RT04	Thermistor, PTC, SMT, 2920,500mA Hold	RX64	2920L050(RoHS)	75915
S01	Switch, DIP, SMT, Recessed,6-way, SPST	SC52	97C06ST	
TP02	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP14	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP15	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP23	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP31	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP34	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP39	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	

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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
TP40	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP43	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP44	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP45	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP46	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP51	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP54	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP55	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP56	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
U01	IC,SMT,CMOS,8-Bit Shft Reg,Par I/P, SOIC-16	UDLS04	MC74HC165AD(STATI C)	04713
U02	IC,SMT,Opamp,Quad,Rail-To-Rail,SOIC-14	ULAS02	TLV2374ID(STATIC)	01295
U03	IC, Amplifier, Instrumentation	UT74	MAX4080SASA(STATI C)	1E566
U04	IC, Amplifier, Instrumentation	UT74	MAX4080SASA(STATI C)	1E566
U05	IC, Amplifier, Instrumentation	UT74	MAX4080SASA(STATI C)	1E566
U06	IC, Amplifier, Instrumentation	UT74	MAX4080SASA(STATI C)	1E566
U07	IC,SMT,RS-485 Transceiver,Sgl,SOIC-8	UDTS03	DS36C278TM(STATIC )	27014
U08	IC,SMT,Opamp,Quad,Rail-To-Rail,SOIC-14	ULAS02	TLV2374ID(STATIC)	01295
U09	IC,SMT,CMOS,8-Bit Shft Reg,Par I/P, SOIC-16	UDLS04	MC74HC165AD(STATI C)	04713
U10	IC,SMT,ADC,10-Bit,11-ch,SPI,SOIC-20	UMAS01	TLC1543IDW(STATIC)	01295
U11	IC,SMT,DAC,8-Bit,4-ch,SPI,SOIC-14	UMDS01	TLV5620ID(STATIC)	64155
U12	IC, SMT, High Side Gate Driver 4A, SO-8	UD90	FAN73711MX(STATIC) (RoHS)	07263
U13	IC,SMT,Opamp,Quad,Rail-To-Rail,SOIC-14	ULAS02	TLV2374ID(STATIC)	01295
U14	IC,SMT,ADC,10-Bit,11-ch,SPI,SOIC-20	UMAS01	TLC1543IDW(STATIC)	01295
U15	IC,SMT,Opamp,Quad,Rail-To-Rail,SOIC-14	ULAS02	TLV2374ID(STATIC)	01295
U16	IC,SMT,Quad RS-422 DIFF LineDriver	UD66	DS26C31T/DS26C31M (STATIC)	NATIONAL
U17	IC,SMT,Quad 2 to 1 DATA Sel/Mux 3 States Outputs,5V	UD67	SN74HC257PW(STATI C)(ROHS)	TEXAS
U18	IC,SMT,Opamp,Quad,Rail-To-Rail,SOIC-14	ULAS02	TLV2374ID(STATIC)	01295
U19	IC,SMT,Comparator,Quad,SOIC-14	ULCS01	MC3302D(STATIC)	04713

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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
U20	IC, SMT, High Side Gate Driver 4A, SO-8	UD90	FAN73711MX(STATIC) (RoHS)	07263
U21	IC,SMT,Low Voltage Temp SensorSO-8	UC62	TMP36FS(STATIC)	ANALOG D
U22	IC,SMT,Dual D Flip-Flop,TSSOP	UD59	SN74LVC74APW(STA TIC)	01295
U23	IC,SMT,Opamp,Quad,Rail-To-Rail,SOIC-14	ULAS02	TLV2374ID(STATIC)	01295
U24	IC,SMT,DAC,8-Bit,4-ch,SPI,SOIC-14	UMDS01	TLV5620ID(STATIC)	64155
U25	IC, SMT, CMOS, Quad And Gate, SOIC-14	US30	74VHCT08AM(STATIC )	07263
U26	IC,SMT,Quad 2 to 1 DATA Sel/Mux 3 States Outputs,5V	UD67	SN74HC257PW(STATI C)(ROHS)	TEXAS
U27	IC, SMT, CMOS, Quad Tri-State Buff, SOIC-14	US31	74VHC125M(STATIC)	07263
U28	IC,SMT,Quad RS-422 Receiver,16-SOIC	UT91	DS26C32ATM(STATIC )	NATIONAL
U29	IC,SMT,2.5V Reference,0.1%,SOT-23-6	UX83	LT1790BIS6- 2.5(STATIC)	64155
U30	IC, SMT, CMOS, Quad Tri-State Buff, SOIC-14	US31	74VHC125M(STATIC)	07263
U31	IC, SMT, Micro, 128K, 3.3V,100-CBGA	UX144	ATXMEGA128A1- CU(STATIC)(RoHS)	1FN41
U32	IC, Amplifier, Instrumentation	UT74	MAX4080SASA(STATI C)	1E566
U33	IC, Amplifier, Instrumentation	UT74	MAX4080SASA(STATI C)	1E566
U34	IC, Amplifier, Instrumentation	UT74	MAX4080SASA(STATI C)	1E566
U35	IC, Amplifier, Instrumentation	UT74	MAX4080SASA(STATI C)	1E566
U36	IC,CMOS,Hex Schmitt,Trigger Inverter,SOIC-14	UG35	MM74HC14M(STATIC)	07263
U37	IC,SMT,Opamp,Quad,Rail-To-Rail,SOIC-14	ULAS02	TLV2374ID(STATIC)	01295
U38	IC,SMT,CMOS,8-Bit Shft Reg,Par I/P, SOIC-16	UDLS04	MC74HC165AD(STATI C)	04713
U39	IC, SMT, CMOS, Quad And Gate, SOIC-14	US30	74VHCT08AM(STATIC )	07263
U40	IC, SMT, CMOS, Quad And Gate, SOIC-14	US30	74VHCT08AM(STATIC )	07263
U41	IC,SMT,DAC,8-Bit,4-ch,SPI,SOIC-14	UMDS01	TLV5620ID(STATIC)	64155
U42	IC,SMT,Opamp,Quad,Rail-To-Rail,SOIC-14	ULAS02	TLV2374ID(STATIC)	01295
U43	IC,SMT,ADC,10-Bit,11-ch,SPI,SOIC-20	UMAS01	TLC1543IDW(STATIC)	01295
U44	IC,SMT,Opamp,Quad,Rail-To-Rail,SOIC-14	ULAS02	TLV2374ID(STATIC)	01295
U45	IC, SMT, CMOS, Octal Latch,SOIC-20	UDLS02	SN74AHC573DW(STA TIC)	01295
U46	IC, SMT, CMOS, Octal Latch,SOIC-20	UDLS02	SN74AHC573DW(STA TIC)	01295
U47	IC, SMT, CMOS, Quad And Gate, SOIC-14	US30	74VHCT08AM(STATIC )	07263
U48	IC, SMT, SRAM, 32Kx8, 3.3V, 28-SOIC	UDMS14	CY62256VNLL- 70SNXI(STATIC)(RoH S) CYPRESS	65786

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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
U49	IC,SMT,RS-485 Transceiver,Sgl,SOIC-8	UDTS03	DS36C278TM(STATIC )	27014
U50	IC, SMT, CMOS, Quad Tri-State Buff, SOIC-14	US31	74VHC125M(STATIC)	07263
U51	IC, SMT, Power Shift Register,SOIC-16	US23	STPIC6C595MTR(STA TIC)(RoHS) ST	01295
U52	IC,SMT,RS-232 Transceiver,3.3V,SO-16	UDTS05	ADM3202ARN(STATIC )	45496
U53	IC, SMT, CMOS, Quad And Gate, SOIC-14	US30	74VHCT08AM(STATIC )	07263
U54	IC,SMT,Comparator,Quad,SOIC-14	ULCS01	MC3302D(STATIC)	04713
U55	IC, SMT, Full Duplex RS485RxTx, SOIC-8	UDTS07	SN65HVD31D(STATIC )(RoHS)	01295
U56	IC, SMT, TruPwr Detect, LF-2.5GHz, MSOP	UX110	AD8361ARM(Static)	
U57	IC, SMT, Digital Step Attenuator, QFN-20	US19	PE4302-01(STATIC)	
U58	IC, Amplifier, Instrumentation	UT74	MAX4080SASA(STATI C)	1E566
U59	IC, Amplifier, Instrumentation	UT74	MAX4080SASA(STATI C)	1E566
U60	IC, Amplifier, Instrumentation	UT74	MAX4080SASA(STATI C)	1E566
U61	IC, Amplifier, Instrumentation	UT74	MAX4080SASA(STATI C)	1E566
U62	IC,SMT,CMOS,8-Bit Shft Reg,Par O/P, SOIC-16	UDLS05	MC74HC595AD(STATI C)	04713
U63	IC,SMT,Opamp,Quad,Rail-To-Rail,SOIC-14	ULAS02	TLV2374ID(STATIC)	01295
U64	IC,SMT,Opamp,Quad,Rail-To-Rail,SOIC-14	ULAS02	TLV2374ID(STATIC)	01295
U65	IC,SMT,CMOS,8-Bit Shft Reg,Par I/P, SOIC-16	UDLS04	MC74HC165AD(STATI C)	04713
U66	IC,SMT,DAC,8-Bit,4-ch,SPI,SOIC-14	UMDS01	TLV5620ID(STATIC)	64155
U67	IC,SMT,Opamp,Quad,Rail-To-Rail,SOIC-14	ULAS02	TLV2374ID(STATIC)	01295
U68	IC,SMT,ADC,10-Bit,11-ch,SPI,SOIC-20	UMAS01	TLC1543IDW(STATIC)	01295
U69	IC,SMT,Opamp,Quad,Rail-To-Rail,SOIC-14	ULAS02	TLV2374ID(STATIC)	01295
U70	IC, SMT, TruPwr Detect, LF-2.5GHz, MSOP	UX110	AD8361ARM(Static)	
U71	IC, SMT, Digital Step Attenuator, QFN-20	US19	PE4302-01(STATIC)	
U72	IC, Voltage Regulator, 1.5A,ADJ, Low Drop	UT110	LP38500TS-ADJ(STATIC) National	27014
U73	IC,SMT,CMOS,8-Bit Shft Reg,Par O/P, SOIC-16	UDLS05	MC74HC595AD(STATI C)	04713
U74	IC, SMT, High Side Gate Driver 4A, SO-8	UD90	FAN73711MX(STATIC) (RoHS)	07263
U75	IC,SMT,RS-485 Transceiver,Sgl,SOIC-8	UDTS03	DS36C278TM(STATIC )	27014
U76	IC,SMT,RS-485 Transceiver,Sgl,SOIC-8	UDTS03	DS36C278TM(STATIC )	27014
U77	IC,SMT,RS-485 Transceiver,Sgl,SOIC-8	UDTS03	DS36C278TM(STATIC )	27014
U78	IC,SMT,RS-485 Transceiver,Sgl,SOIC-8	UDTS03	DS36C278TM(STATIC )	27014

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## Module Control/Interface PWB Assy NVLT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
U81	IC, SMT, Step Down Reg., 75V,3A, TSSOP-20	UP112	LM5576MH(STATIC)(R oHS) National	27014
U82	IC, SMT, Step Down Reg., 75V,3A, TSSOP-20	UP112	LM5576MH(STATIC)(R oHS) National	27014
U83	IC, Amplifier, Instrumentation	UT74	MAX4080SASA(STATI C)	1E566
U84	IC, Amplifier, Instrumentation	UT74	MAX4080SASA(STATI C)	1E566
U85	IC, Amplifier, Instrumentation	UT74	MAX4080SASA(STATI C)	1E566
U86	IC, Amplifier, Instrumentation	UT74	MAX4080SASA(STATI C)	1E566
U87	IC,SMT,RS-485 Transceiver,Sgl,SOIC-8	UDTS03	DS36C278TM(STATIC )	27014
U88	IC,SMT,Opamp,Quad,Rail-To-Rail,SOIC-14	ULAS02	TLV2374ID(STATIC)	01295
U89	IC,SMT,CMOS,8-Bit Shft Reg,Par I/P, SOIC-16	UDLS04	MC74HC165AD(STATI C)	04713
U90	IC,SMT,DAC,8-Bit,4-ch,SPI,SOIC-14	UMDS01	TLV5620ID(STATIC)	64155
U91	IC,SMT,Opamp,Quad,Rail-To-Rail,SOIC-14	ULAS02	TLV2374ID(STATIC)	01295
U92	IC,SMT,ADC,10-Bit,11-ch,SPI,SOIC-20	UMAS01	TLC1543IDW(STATIC)	01295
U93	IC,SMT,Opamp,Quad,Rail-To-Rail,SOIC-14	ULAS02	TLV2374ID(STATIC)	01295
Y01	Crystal,SMT,Fund,Par Res,32.768kHz	XFPS02N	MC20632.7680KA-A0: PURE SN(RoHS)	1JRT7

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C001	Cap,SMT,Ceramic,1uF,10%,25V,,X7R,1206	CCFS10	C1206C105K3RAC	31433
C002	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C003	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C004	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C005	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C006	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C007	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C008	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C009	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C010	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C011	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C012	Cap, SMT, Ceramic,47uF,20%,6.3V, 1210	CCFS53	C3225X5R0J476M(Ro HS)	56289
C013	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C014	Cap, SMT, Ceramic,47uF,20%,6.3V, 1210	CCFS53	C3225X5R0J476M(Ro HS)	56289
C015	Cap, SMT, Ceramic,47uF,20%,6.3V, 1210	CCFS53	C3225X5R0J476M(Ro HS)	56289
C016	Cap, SMT, Ceramic,47uF,20%,6.3V, 1210	CCFS53	C3225X5R0J476M(Ro HS)	56289
C017	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C018	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C019	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C020	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C021	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C022	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C023	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C024	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C025	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C026	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C027	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C028	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C029	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C030	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C031	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C032	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C033	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C034	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C035	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C036	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433



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## Controller PWB Assy, GV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C037	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C038	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C039	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C040	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C041	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C042	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C043	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C044	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C045	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C046	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C047	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C048	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C049	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C050	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C051	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C052	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C053	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C054	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C055	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C056	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C057	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C058	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C059	Not Used	-	NOT USED	37338
C060	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C061	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C062	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C063	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C064	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C065	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C066	Cap,SMT,Ceramic,1uF,10%,25V,,X7R,1206	CCFS10	C1206C105K3RAC	31433
C067	Cap,SMT,Ceramic,18pF,2%,50V,C0G,0603	CCFS23	C0603C180G5GAC	31433
C068	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C069	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C070	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C071	Cap,SMT,Ceramic,18pF,2%,50V,C0G,0603	CCFS23	C0603C180G5GAC	31433
C072	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C073	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C074	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C075	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433



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## Controller PWB Assy, GV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C076	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C077	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C078	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C079	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C080	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C081	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C082	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C083	Cap,SMT,Ceramic,1uF,10%,25V,,X7R,1206	CCFS10	C1206C105K3RAC	31433
C084	Cap,SMT,Ceramic,10uF,20%,6.3V,X5R,0805	CCFS57	C2012X5R0J106M	54583
C085	Cap,SMT,Ceramic,1uF,10%,25V,,X7R,1206	CCFS10	C1206C105K3RAC	31433
C086	Cap,SMT,Ceramic,18pF,2%,50V,C0G,0603	CCFS23	C0603C180G5GAC	31433
C087	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C088	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C089	Cap,SMT,Ceramic,1uF,10%,25V,,X7R,1206	CCFS10	C1206C105K3RAC	31433
C090	Cap,SMT,Ceramic,18pF,2%,50V,C0G,0603	CCFS23	C0603C180G5GAC	31433
C091	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C092	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C093	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C094	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C095	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C096	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C097	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C098	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C099	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C100	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C101	Cap,SMT,Ceramic,18pF,2%,50V,C0G,0603	CCFS23	C0603C180G5GAC	31433
C102	Cap,SMT,Ceramic,18pF,2%,50V,C0G,0603	CCFS23	C0603C180G5GAC	31433
C103	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C104	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C105	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C106	Not Used	-	NOT USED	37338
C107	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C108	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C109	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C110	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C111	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C112	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C113	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C114	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433





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## Controller PWB Assy, GV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C115	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C116	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C117	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C118	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C119	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C120	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C121	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C122	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C123	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C124	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C125	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C126	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C127	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C128	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C129	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C130	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C131	Cap, SMT, Ceramic, 0.001uF, 10%, 50V, X7R, 0603	CCFS01	C0603C102K5RAC	31433
C132	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C133	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C134	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C135	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C136	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C137	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C138	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C139	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C140	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C141	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C142	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C143	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C144	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C145	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C146	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C147	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C148	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C149	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C150	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C151	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C152	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C153	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433

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## Controller PWB Assy, GV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C154	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C155	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C156	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C157	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C158	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C159	Not Used	-	NOT USED	37338
C160	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C161	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C162	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C163	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C164	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C165	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C166	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C167	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C168	Cap,SMT,Ceramic,1uF,10%,25V,,X7R,1206	CCFS10	C1206C105K3RAC	31433
C169	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C170	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C171	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C172	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C173	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C174	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C175	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C176	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C177	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C178	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C179	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C180	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C181	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C182	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C183	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C184	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C185	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C186	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C187	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C188	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C189	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C190	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C191	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C192	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433

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## Controller PWB Assy, GV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C193	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C194	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C195	Not Used	-	NOT USED	37338
CR01	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR02	Not Used	-	NOT USED	37338
CR03	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR04	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR05	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR06	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR07	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR08	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR09	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR10	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR11	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR12	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR13	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR14	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR15	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR16	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR17	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR18	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR19	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR20	Not Used	-	NOT USED	37338
CR21	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR22	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR23	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR24	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR25	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR26	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR27	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR28	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR29	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR30	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400

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## Controller PWB Assy, GV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
CR31	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR32	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR33	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR34	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR35	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
CR36	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR37	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR38	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR39	Not Used	-	NOT USED	37338
CR40	Not Used	-	NOT USED	37338
CR41	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR42	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR43	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
DS01	Diode, SMT, LED, Green,(560nm), 0603	QDLS01	597-5312-402F(STATIC)(RoHS)	83330
DS02	Diode, SMT, LED, Green,(560nm), 0603	QDLS01	597-5312-402F(STATIC)(RoHS)	83330
DS03	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
E01	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
J01	Conn, Plug, D-Sub, 15 pin, PWB Mt	JS18	K22-A15P-NJ	63590
J02	Conn, Socket, D-Sub, HD15pin,90deg, PWB	JS129	ICD15S13E6GV00LF(RoHS) FCI	
J03	Conn, Socket, D-Sub, 9 pin, PWB Mt	JQ34	K22-E9S-NJ	KYCON
J04	Conn, Socket, D-Sub, 9 pin, PWB Mt	JQ34	K22-E9S-NJ	KYCON
J05	Connector,Dual,D-Sub,M/F,25-pin,Rt Agl,PWB	JT78	663-025-264-036(RoHS)	EDAC
J06	Conn, Dual, D-Sub, F/M, 9 pin, Rt. Angle, PWB	JT121	178-009-313R571(RoHS)	1L3S8
J07	Connector,Modular,Dual,RJ-45Jack Rt Agl, PWB	JT77	569381-1	09482
J08	Conn, Socket, D-Sub, 9 pin, PWB Mt	JQ34	K22-E9S-NJ	KYCON
J10	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
J11	Conn, Header,Square Post,Gold,Dual,40-pin	JF47	4-102973-0	09482
J12	Conn, Header,Square Post,Gold,Dual,40-pin	JF47	4-102973-0	09482
J13	Conn, Header,Square Post,Gold,Dual,40-pin	JF47	4-102973-0	09482
J14	Conn, Header,Square Post,Gold,Dual,40-pin	JF47	4-102973-0	09482
L01	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845

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## Controller PWB Assy, GV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
L02	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L03	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L04	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L05	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L06	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L07	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L08	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L09	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L10	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L11	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L12	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L13	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L14	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L15	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L16	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L17	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L18	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L19	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L20	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L21	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L22	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L23	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L24	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L25	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L26	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L27	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L28	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L29	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L30	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845

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## Controller PWB Assy, GV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
L31	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L32	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L33	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L34	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L35	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L36	Not Used	-	NOT USED	37338
L37	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L38	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L39	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L40	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L41	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L42	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L43	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L44	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L45	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L46	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L47	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L48	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L49	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L50	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L51	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L52	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L53	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L54	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L55	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L56	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L57	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L58	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09





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## Controller PWB Assy, GV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
L60	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoHS)	56845
L61	Not Used	-	NOT USED	37338
L62	Not Used	-	NOT USED	37338
L63	Not Used	-	NOT USED	37338
Q01	Transistor,SMT,NPN,Switch/Amp,SOT-23	QBNS01	MMBT4401LT1(STATIC)	04713
Q02	Transistor,SMT,NPN,Switch/Amp,SOT-23	QBNS01	MMBT4401LT1(STATIC)	04713
Q03	Transistor,SMT,NPN,Switch/Amp,SOT-23	QBNS01	MMBT4401LT1(STATIC)	04713
Q04	Transistor,SMT,NPN,Switch/Amp,SOT-23	QBNS01	MMBT4401LT1(STATIC)	04713
Q05	Transistor,SMT,NPN,Switch/Amp,SOT-23	QBNS01	MMBT4401LT1(STATIC)	04713
Q06	Transistor,SMT,NPN,Switch/Amp,SOT-23	QBNS01	MMBT4401LT1(STATIC)	04713
Q07	Transistor,SMT,NPN,Switch/Amp,SOT-23	QBNS01	MMBT4401LT1(STATIC)	04713
Q08	Transistor,SMT,NPN,Switch/Amp,SOT-23	QBNS01	MMBT4401LT1(STATIC)	04713
Q09	Transistor, SMT, P-Channel FET 130mA	QS26	BSS84LT1(Static)	04713
R001	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R002	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
R003	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R004	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R005	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R006	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R007	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R008	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R009	Resistor,SMT,MF,2210ohms,1%,1/10W,0603	RFFS42	RK73H1JLTD2211F	59124
R010	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R011	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R012	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R013	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R014	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R015	Resistor,SMT,MF,22.1Kohms,1%,1/10W,0603	RFFS54	RK73H1JLTD2212F	59124
R016	Resistor,SMT,MF,221Kohms,1%,1/10W,0603	RFFS66	RK73H1JLTD2213F	59124
R017	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R018	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R019	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R020	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R021	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124



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## Controller PWB Assy, GV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R022	Resistor,SMT,MF,150ohms,1%,1/10W,0603	RFFS28	RK73H1JLTD1500F	59124
R023	Resistor,SMT,MF,392ohms,1%,1/10W,0603	RFFS33	RK73H1JLTD3920F	59124
R024	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R025	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R026	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R027	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R028	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R029	Not Used	-	NOT USED	37338
R030	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R031	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R032	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R033	Not Used	-	NOT USED	37338
R034	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R035	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R036	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R037	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R038	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R039	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R040	Resistor,SMT,MF,2210ohms,1%,1/10W,0603	RFFS42	RK73H1JLTD2211F	59124
R041	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R042	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R043	Resistor,SMT,MF,475ohms,1%,1/10W,0603	RFFS34	RK73H1JLTD4750F	59124
R044	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R045	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R046	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R047	Not Used	-	NOT USED	37338
R048	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R049	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R050	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R051	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R052	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R053	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R054	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R055	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R056	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R057	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R058	Resistor,SMT,MF,825ohms,1%,1/10W,0603	RFFS37	RK73H1JLTD8250F	59124
R059	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R060	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124



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## Controller PWB Assy, GV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R061	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R062	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R063	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R064	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R065	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R066	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R067	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R068	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R069	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R070	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R071	Not Used	-	NOT USED	37338
R072	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R073	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R074	Not Used	-	NOT USED	37338
R075	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R076	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R077	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R078	Resistor, SMT, MF, 4750 Ohms,1%, 1/4W	RAD33	RK73H2BL4751F	59124
R079	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R080	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R081	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R082	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R083	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R084	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R085	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R086	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R087	Resistor,SMT,MF,12.1ohms,1%,1/10W,0603	RFFS15	RK73H1JLTD12R1F	59124
R088	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R089	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R090	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R091	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R092	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R093	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R094	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R095	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R096	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R097	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
R098	Resistor,SMT,MF,22.1ohms,1%,1/10W,0603	RFFS18	RK73H1JLTD22R1F	59124

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## Controller PWB Assy, GV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R099	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R100	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R101	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R102	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R103	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R104	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R105	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R106	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R107	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R108	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R109	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R110	Resistor,SMT,MF,221ohms,1%,1/10W,0603	RFFS30	RK73H1JLTD2210F	59124
R111	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R112	Resistor,SMT,MF,22.1ohms,1%,1/10W,0603	RFFS18	RK73H1JLTD22R1F	59124
R113	Resistor,SMT,MF,49.9R,1%,1/10W0603	RAE34	RK73H1JT49R9F	59124
R114	Resistor,SMT,MF,22.1ohms,1%,1/10W,0603	RFFS18	RK73H1JLTD22R1F	59124
R115	Resistor,SMT,MF,22.1ohms,1%,1/10W,0603	RFFS18	RK73H1JLTD22R1F	59124
R116	Resistor,SMT,MF,49.9ohms,1%,1/10W,0603	RAD53	RK73H1JLTD49R9F	59124
R117	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R118	Resistor,SMT,MF,49.9R,1%,1/10W0603	RAE34	RK73H1JT49R9F	59124
R119	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R120	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R121	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R122	Resistor,SMT,MF,49.9R,1%,1/10W0603	RAE34	RK73H1JT49R9F	59124
R123	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R124	Resistor,SMT,MF,221ohms,1%,1/10W,0603	RFFS30	RK73H1JLTD2210F	59124
R125	Resistor,SMT,MF,49.9R,1%,1/10W0603	RAE34	RK73H1JT49R9F	59124
R126	Resistor,SMT,MF,22.1ohms,1%,1/10W,0603	RFFS18	RK73H1JLTD22R1F	59124
R127	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R128	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R129	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R130	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R131	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R132	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R133	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R134	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R135	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R136	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R137	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124

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## Controller PWB Assy, GV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R138	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R139	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R140	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R141	Resistor,SMT,MF,2210ohms,1%,1/10W,0603	RFFS42	RK73H1JLTD2211F	59124
R142	Resistor,SMT,MF,22.1ohms,1%,1/10W,0603	RFFS18	RK73H1JLTD22R1F	59124
R143	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R144	Resistor,SMT,MF,2210ohms,1%,1/10W,0603	RFFS42	RK73H1JLTD2211F	59124
R145	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R146	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R147	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R148	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R149	Resistor,SMT,MF,56.2ohms,1%,1/10W,0603	RFFS23	RK73H1JLTD56R2F	59124
R150	Resistor,SMT,MF,56.2ohms,1%,1/10W,0603	RFFS23	RK73H1JLTD56R2F	59124
R151	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R152	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
R153	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R154	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R155	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R156	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R157	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R158	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R159	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R160	Resistor,SMT,MF,475ohms,1%,1/10W,0603	RFFS34	RK73H1JLTD4750F	59124
R161	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R162	Resistor, SMT, MF, 56.2 Ohms,1% 1/4W	RAD10	RK73H2BL56R2F	59124
R163	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R164	Resistor,SMT,MF,22.1ohms,1%,1/10W,0603	RFFS18	RK73H1JLTD22R1F	59124
R165	Resistor,SMT,MF,22.1ohms,1%,1/10W,0603	RFFS18	RK73H1JLTD22R1F	59124
R166	Resistor, SMT, MF, 56.2 Ohms,1% 1/4W	RAD10	RK73H2BL56R2F	59124
R167	Resistor,SMT,MF,49.9R,1%,1/10W0603	RAE34	RK73H1JT49R9F	59124
R168	Resistor,SMT,MF,49.9R,1%,1/10W0603	RAE34	RK73H1JT49R9F	59124
R169	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R170	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R171	Resistor,SMT,MF,475ohms,1%,1/10W,0603	RFFS34	RK73H1JLTD4750F	59124
R172	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R173	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R174	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R175	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124

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## Controller PWB Assy, GV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R176	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R177	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R178	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R179	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R180	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R181	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R182	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R183	Resistor,SMT,MF,150ohms,1%,1/10W,0603	RFFS28	RK73H1JLTD1500F	59124
R184	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R185	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R186	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R187	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R188	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R189	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R190	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R191	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R192	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R193	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R194	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R195	Not Used	-	NOT USED	37338
R196	Not Used	-	NOT USED	37338
R197	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R198	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R199	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R200	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R201	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R202	Resistor,SMT,MF,22.1ohms,1%,1/10W,0603	RFFS18	RK73H1JLTD22R1F	59124
R203	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R204	Not Used	-	NOT USED	37338
R205	Not Used	-	NOT USED	37338
R206	Resistor,SMT,MF,22.1ohms,1%,1/10W,0603	RFFS18	RK73H1JLTD22R1F	59124
R207	Resistor,SMT,MF,49.9R,1%,1/10W0603	RAE34	RK73H1JT49R9F	59124
R208	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R209	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R210	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R211	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R212	Resistor,SMT,MF,22.1ohms,1%,1/10W,0603	RFFS18	RK73H1JLTD22R1F	59124
R213	Resistor,SMT,MF,49.9R,1%,1/10W0603	RAE34	RK73H1JT49R9F	59124
R214	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124

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## Controller PWB Assy, GV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R215	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R216	Resistor,SMT,MF,475ohms,1%,1/10W,0603	RFFS34	RK73H1JLTD4750F	59124
R217	Resistor,SMT,MF,182ohms,1%,1/10W,0603	RFFS29	RK73H1JLTD1820F	59124
R218	Resistor,SMT,MF,22.1ohms,1%,1/10W,0603	RFFS18	RK73H1JLTD22R1F	59124
R219	Resistor,SMT,MF,22.1ohms,1%,1/10W,0603	RFFS18	RK73H1JLTD22R1F	59124
R220	Resistor,SMT,MF,475ohms,1%,1/10W,0603	RFFS34	RK73H1JLTD4750F	59124
R221	Resistor,SMT,MF,1.00Mohms,1%,1/10W,0603	RFFS74	RK73H1JLTD1004F	59124
R222	Resistor,SMT,MF,22.1ohms,1%,1/10W,0603	RFFS18	RK73H1JLTD22R1F	59124
R223	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R224	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R225	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R226	Resistor,SMT,MF,475ohms,1%,1/10W,0603	RFFS34	RK73H1JLTD4750F	59124
R227	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R228	Not Used	-	NOT USED	37338
R229	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R230	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R231	Resistor,SMT,MF,182ohms,1%,1/10W,0603	RFFS29	RK73H1JLTD1820F	59124
R232	Resistor,SMT,MF,1500ohms,1%,1/10W,0603	RFFS40	RK73H1JLTD1501F	59124
R233	Not Used	-	NOT USED	37338
R234	Resistor,SMT,MF,475ohms,1%,1/10W,0603	RFFS34	RK73H1JLTD4750F	59124
R235	Resistor,SMT,MF,1500ohms,1%,1/10W,0603	RFFS40	RK73H1JLTD1501F	59124
R236	Resistor,SMT,MF,22.1ohms,1%,1/10W,0603	RFFS18	RK73H1JLTD22R1F	59124
R237	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R238	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R239	Resistor,SMT,MF,12.1Kohms,1%,1/10W,0603	RFFS51	RK73H1JLTD1212F	59124
R240	Resistor,SMT,MF,15.0Kohms,1%,1/10W,0603	RFFS52	RK73H1JLTD1502F	59124
R241	Resistor,SMT,MF,22.1ohms,1%,1/10W,0603	RFFS18	RK73H1JLTD22R1F	59124
R242	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R243	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R244	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R245	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R246	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R247	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R248	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R249	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R250	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R251	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R252	Resistor, SMT, MF, 10.0Mohms,1%, 1/10W, 0603	RFFS88	RK73H1JLTD1005F(R oHS)	51924
R253	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124



## NAPC163

## Controller PWB Assy, GV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R254	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R255	Not Used	-	NOT USED	37338
R256	Not Used	-	NOT USED	37338
R257	Not Used	-	NOT USED	37338
R258	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R259	Resistor,SMT,MF,39.2Kohms,1%,1/10W,0603	RFFS57	RK73H1JLTD3922F	59124
R260	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R261	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R262	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R263	Resistor,SMT,MF,22.1ohms,1%,1/10W,0603	RFFS18	RK73H1JLTD22R1F	59124
R264	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R265	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R266	Not Used	-	NOT USED	37338
R267	Not Used	-	NOT USED	37338
R268	Not Used	-	NOT USED	37338
R269	Not Used	-	NOT USED	37338
R270	Not Used	-	NOT USED	37338
R271	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R272	Not Used	-	NOT USED	37338
R273	Not Used	-	NOT USED	37338
R274	Resistor,SMT,MF,39.2ohms,1%,1/10W,0603	RFFS21	RK73H1JLTD39R2F	59124
R275	Resistor,SMT,MF,22.1ohms,1%,1/10W,0603	RFFS18	RK73H1JLTD22R1F	59124
R276	Resistor,SMT,MF,39.2ohms,1%,1/10W,0603	RFFS21	RK73H1JLTD39R2F	59124
RT01	Thermistor, PTC, SMT, 2920,500mA Hold	RX64	2920L050(RoHS)	75915
RT02	Thermistor, PTC, SMT, 2920,500mA Hold	RX64	2920L050(RoHS)	75915
RT03	Thermistor, PTC, .15-.25 Ohms, 1.1A Hold	RT17	RXE110	06090
S01	Switch,SMt,Mom.,1PSTNO	SA60	KSC321G	ITT INDUST
S02	Switch, Right Angle, PCB, Momentary PB -40C, +85C	SD72	KSA0V311LFT(RoHS)	09353
T01	Transformer,SMT,50 ohms,0.03to 125MHz	TZ88	ADT1-6T+(ROHS)	MINI-CIRC
T02	Transformer,SMT,50 ohms,0.03to 125MHz	TZ88	ADT1-6T+(ROHS)	MINI-CIRC
TP03	Terminal, SMT, Test Point, PWB	HAJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP08	Terminal, SMT, Test Point, PWB	HAJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP11	Terminal, SMT, Test Point, PWB	HAJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP12	Terminal, SMT, Test Point, PWB	HAJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
U01	IC,SMT,Dual Optocoupler,SOIC-8	UDOS01	MOC223-M(STATIC)	7D893
U02	IC, Voltage Regulator, 1.5A,ADJ, Low Drop	UT110	LP38500TS- ADJ(STATIC) National	27014

## NAPC163

## Controller PWB Assy, GV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
U03	IC, Voltage Regulator, 1.5A,ADJ, Low Drop	UT110	LP38500TS-ADJ(STATIC) National	27014
U04	IC, Voltage Regulator, 1.5A,ADJ, Low Drop	UT110	LP38500TS-ADJ(STATIC) National	27014
U05	IC,SMT,Dual Optocoupler,SOIC-8	UDOS01	MOCD223-M(STATIC)	7D893
U06	IC,SMT,Dual Optocoupler,SOIC-8	UDOS01	MOCD223-M(STATIC)	7D893
U07	IC,SMT,Dual Optocoupler,SOIC-8	UDOS01	MOCD223-M(STATIC)	7D893
U08	IC, SMT, Power Shift Register,SOIC-16	US23	STPIC6C595MTR(STATIC)(RoHS) ST	01295
U09	Res, SMT Network, 0402x8, 4.7K, 5%	UW110	EXB-2HV472JV(RoHS)	
U10	IC,SMT,CMOS,8-Bit Shft Reg,Par I/P, SOIC-16	UDLS04	MC74HC165AD(STATIC) C)	04713
U11	IC,SMT,Dual Optocoupler,SOIC-8	UDOS01	MOCD223-M(STATIC)	7D893
U12	IC,SMT,2.5V Reference,0.1%,SOT-23-6	UX83	LT1790BIS6-2.5(STATIC)	64155
U13	IC, SMT, ADC, 11-ch, 10-bit, 3.3V, SPI, SSOP-20	US25	TLV1543CDB(STATIC) (RoHS)	01295
U14	IC, SMT, Power Shift Register,SOIC-16	US23	STPIC6C595MTR(STATIC)(RoHS) ST	01295
U15	IC,SMT,Dual Optocoupler,SOIC-8	UDOS01	MOCD223-M(STATIC)	7D893
U16	IC, SMT, SPI Flash, 32Mbit,SOIC8W	UW125	M25P32-VMW6P(STATIC)(RoHS)	
U17	IC,SMT,SPI UART,3.3V	UW91	SC16IS740IPW(STATIC) C)(ROHS)	NXP
U18	IC,SMT,DAC,8-Bit,4-ch,SPI,SOIC-14	UMDS01	TLV5620ID(STATIC)	64155
U19	IC,SMT,Opamp,Quad,Rail-To-Rail,SOIC-14	ULAS02	TLV2374ID(STATIC)	01295
U20	IC, SMT, CMOS, Quad XOR Gate SOIC-14	US41	SN74AHCT86DR(STATIC)(RoHS) Texas	01295
U21	IC,SMT,Quad 2 TO 1 DATA Sel/Mux 3 States Output,3.3V	UW90	74LVC257APW(STATIC) C)(ROHS) NXP SEMICONDUCTOR	NXP SEMI
U22	IC, SMT, Full Duplex RS485RxTx, SOIC-8	UDTS07	SN65HVD31D(STATIC) (RoHS)	01295
U23	IC, SMT, CMOS, Quad Tri-State Buff, SOIC-14	US31	74VHC125M(STATIC)	07263
U24	IC, SMT, CMOS, Quad And Gate, SOIC-14	US30	74VHCT08AM(STATIC)	07263
U25	IC, Temp, Sensor, 3.3V, 1-Wire MSOP-8	UC77	DS1825U+(STATIC)(RoHS) MAXIM	1E566
U26	IC, SMT, Dual SPI UART, 3.3V	UW114	SC16IS752IPW(STATIC) C)(RoHS)	HOH68
U27	IC, SMT, Full Duplex RS485RxTx, SOIC-8	UDTS07	SN65HVD31D(STATIC) (RoHS)	01295
U28	IC,SMT,SRC,Async,2-ch,TQFP-48	UW80	SRC4382IPFBR(STATIC) C)(ROHS)	TEXAS
U29	IC,SMT,RS-485 Transceiver,3.3V,SO-8	UDTS04	LTC1480IS8(STATIC)	64155
U30	IC, SMT, CPLD, 3.3V, 144 Macrocell, 100-TQFP	UX124	XC95144XL-10TQG100C(STATIC)(RoHS)	68994

## NAPC163

## Controller PWB Assy, GV Series

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
U31	IC, SMT, SDRAM, 16Mx16, 3.3V, TSOP-54	US13	MT48LC16M16A2TG-6A(STATIC)	
U32	IC, SMT, CMOS, Hex Schm, Trig, Inv, SOIC-14	UDLS03	SN74AHCT14D(STATIC)	01295
U33	IC, SMT, Full Duplex RS485RxTx, SOIC-8	UDTS07	SN65HVD31D(STATIC)(RoHS)	01295
U34	IC, SMT, Opamp, Quad, Rail-To-Rail, SOIC-14	ULAS02	TLV2374ID(STATIC)	01295
U35	Res, SMT Network, 0402x8, 39R	UW63	EXB2HV390J	54473
U36	Res, SMT Network, 0402x8, 39R	UW63	EXB2HV390J	54473
U37	Res, SMT Network, 0402x8, 39R	UW63	EXB2HV390J	54473
U38	IC, USB Stereo Audio DAC, SSOP28	UT129	PCM2705DB(STATIC)(RoHS) Texas Instruments	01295
U39	IC, SMT, Blackfin DSP, 500MHz, bga-316	US08	ADSP-BF538BBCZ-5A(STATIC)(RoHS) ANALOG	45496
U40	Res, SMT Network, 0402x8, 39R	UW63	EXB2HV390J	54473
U41	IC, SMT, RS-232 Transceiver, 3.3V, SO-16	UDTS05	ADM3202ARN(STATIC)	45496
U42	IC, SMT, RS-232 Transceiver, 3.3V, SO-16	UDTS05	ADM3202ARN(STATIC)	45496
U43	Res, SMT Network, 0402x8, 39R	UW63	EXB2HV390J	54473
U44	Res, SMT Network, 0402x8, 39R	UW63	EXB2HV390J	54473
U45	IC, SMT, Power Supervisor, Dual/P, 33/1.5V, MSOP	UX64	TPS3306-15DGK(STATIC)	01295
U46	Res, SMT Network, 0402x8, 39R	UW63	EXB2HV390J	54473
U47	IC, SMT, Battery Backup, SOIC-8	US09	ICL7673CBA(STATIC)	
XE01	Conn, Header, SIP, 12 Pin Breakaway, .10 Ctr	JQ16	1-103185-2	09482
Y01	Crystal, SMT, Fund, Par Res, 14.7456MHz	XFPS06	CM309S14.7456MABJ-UT(Static)(RoHS) Citizen	
Y02	Crystal, SMT, Fund, 12MHz, -40C to +85C	XFPS08	HCM49-12.000MABJ-UT(STATIC)(RoHS) Citizen	3DX59
Y03	Oscillator, SMT, 25MHz, 3.3V	UT100	S1613B-25.0000(STATIC)(ROHS)	SARONIX
Y04	Crystal, SMT, Fund, Par Res, 32.768kHz, 20ppm, 12.5pF, -40-85C	XFPS10	ABS07-32.768KHZ-T(STATIC)(RoHS) Abracon Corp	



REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C01	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C02	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C03	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C04	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C05	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C06	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C07	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C08	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C09	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C10	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C11	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C12	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C13	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C14	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C15	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C16	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C17	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C18	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C19	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C20	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C21	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C22	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C23	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C24	Capacitor,SMT,Ceramic,0.01uF,100V,10%	CT50	C1206C103K1RAC	91929
C25	Capacitor,SMT,Ceramic,0.01uF,100V,10%	CT50	C1206C103K1RAC	91929
C26	Capacitor,SMT,Ceramic,0.01uF,100V,10%	CT50	C1206C103K1RAC	91929
C27	Capacitor,SMT,Ceramic,0.01uF,100V,10%	CT50	C1206C103K1RAC	91929
C28	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C29	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C30	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C31	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C32	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C33	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C34	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C35	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C36	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C37	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C38	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C39	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433

## NAPH05

## Splitter/Interface PWB Assy

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C40	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C41	Not Used	-	NOT USED	37338
C42	Cap, SMT, Ceramic, 6.8pF, 50V, +/-0.25pF, 1206	CT65	12065A6R8CAT2A	56289
CR01	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
DS01	Diode,SMT,LED,Bicolor,Red/Green,1210	QDLS04	597-7701-507(STATIC)	83330
J01	MTA, Keyed Square Post HeaderAssy, 3 pin	JU60	647123-3	
J02	MTA, Keyed Square Post HeaderAssy, 3 pin	JU60	647123-3	
J03	MTA, Keyed Square Post HeaderAssy, 3 pin	JU60	647123-3	
J04	MTA, Keyed Square Post HeaderAssy, 3 pin	JU60	647123-3	
J05	MTA, Keyed Square Post HeaderAssy, 3 pin	JU60	647123-3	
J06	MTA, Keyed Square Post HeaderAssy, 3 pin	JU60	647123-3	
L01	Inductor, SMT, 28nH, 2%, 4A3.15mm H x 6.86mm L	LS34	B08TGLC	02113
R01	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R02	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R03	Resistor, SMT, AIN, 100 ohms,2%, 30W, 3725	RT57	CS13725TO100GBK(RoHS)	
R04	Resistor, Chip, AIN, 50 Ohm,2%, 30W	RT60	CS13725TO50GBK(RoHS)	
R05	Resistor, SMT, AIN, 100 ohms,2%, 30W, 3725	RT57	CS13725TO100GBK(RoHS)	
R06	Resistor, SMT, MF, 150 Ohms,1% 1/4W	RAD15	RK73H2BL1500F	59124
R07	Resistor, SMT, MF, 150 Ohms,1% 1/4W	RAD15	RK73H2BL1500F	59124
R08	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
RT01	Thermister, PTC, SMT, 2920,750mA Hold, 60V	RX65	2920L075/60(RoHS)	75915
RT02	Thermister, PTC, SMT, 2920,750mA Hold, 60V	RX65	2920L075/60(RoHS)	75915
RT03	Thermister, PTC, SMT, 2920,750mA Hold, 60V	RX65	2920L075/60(RoHS)	75915
RT04	Thermister, PTC, SMT, 2920,750mA Hold, 60V	RX65	2920L075/60(RoHS)	75915
RT05	Thermister, PTC, SMT, 2920,750mA Hold, 60V	RX65	2920L075/60(RoHS)	75915
RT06	Thermister, PTC, SMT, 2920,750mA Hold, 60V	RX65	2920L075/60(RoHS)	75915
S01	Switch, Rocker, Right Angle,SPDT, ON-ON	SD64	M2012TXG30-DA-RO	
TB01	Terminal Block, 4-Pos, Tri-Barrier, 30A, PWB Mount	JT139	8-1437657-0(RoHS)	
U01	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338

# NAPH06

## Combiner PWB Assy (LHS)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C01	Cap, SMT, Ceramic, 1000pF, 5%,100V, C0G, 1206	CCFS68	C1206C102J1GAC(RoHS)	31433
C02	Not Used	-	NOT USED	37338
C03	Not Used	-	NOT USED	37338
C04	Cap, SMT, Ceramic, 8.2 +/-0.25pF, 50V, COG, 0805	CX40	C0805C829C5GAC	
CR01	Diode, SMT, Shottky, 70V, 15mA, SOD-123	QK53	1N5711W-7-F(STATIC)(RoHS)	12060
CR02	Not Used	-	NOT USED	37338
L01	Inductor, SMT, 28nH, 2%, 4A3.15mm H x 6.86mm L	LS34	B08TGLC	02113
R01	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R02	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R03	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R04	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R05	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R06	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R07	Resistor, SMT, MF, 3320 Ohms,1% 1/4W	RAD31	RK73H2BL3321F	59124
R08	Resistor, SMT, MF, 150 Ohms,1% 1/4W	RAD15	RK73H2BL1500F	59124
R09	Resistor, SMT, MF, 150 Ohms,1% 1/4W	RAD15	RK73H2BL1500F	59124

# NAPH07

## Combiner PWB Assy (RHS)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C01	Not Used	-	NOT USED	37338
C02	Not Used	-	NOT USED	37338
C03	Not Used	-	NOT USED	37338
R01	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R02	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338



REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C01	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C02	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C03	Cap, SMT, Ceramic, 8.2 +/-0.25pF, 50V, COG, 0805	CX40	C0805C829C5GAC	
C04	Cap, SMT, Ceramic, 1000pF, 5%,100V, C0G, 1206	CCFS68	C1206C102J1GAC(Ro HS)	31433
C05	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C06	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
CR01	Not Used	-	NOT USED	37338
CR02	Diode, SMT, Shottky, 70V, 15mA, SOD-123	QK53	1N5711W-7-F(STATIC)(RoHS)	12060
J01	Conn, BNC, Recept, Rt Angle, PWB Mt	JS21	R141665161	0GP12
J02	Not Used	-	NOT USED	37338
J03	Conn, Socket, D-Sub, 9 pin, PWB Mt	JQ34	K22-E9S-NJ	KYCON
K01	Not Used	-	NOT USED	37338
L01	Inductor, SMT, 28nH, 2%, 4A3.15mm H x 6.86mm L	LS34	B08TGLC	02113
R01	Not Used	-	NOT USED	37338
R02	Resistor, SMT, MF, 0.0 Ohms,Jumper, 1206	RAD72	RK73Z2BTDD	
R03	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R04	Resistor, SMT, MF, 3320 Ohms,1% 1/4W	RAD31	RK73H2BL3321F	59124
R05	Resistor, SMT, MF, 332 Ohms,1% 1/4W	RAD19	RK73H2BL3320F	59124
R06	Resistor, SMT, MF, 121 Ohms,1% 1/4W	RAD14	RK73H2BL1210F	59124
U01	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
J01	Conn, BNC, Recept, Rt Angle, PWB Mt	JS21	R141665161	0GP12
J02	Conn, BNC, Recept, Rt Angle, PWB Mt	JS21	R141665161	0GP12
J03	Conn, BNC, Recept, Rt Angle, PWB Mt	JS21	R141665161	0GP12
J04	Conn, BNC, Recept, Rt Angle, PWB Mt	JS21	R141665161	0GP12
R01	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R02	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R03	Resistor, SMT,10k Ohms, 1%, 1W 2512	RAD80	RK73H3ATTE1002F	59124
R04	Not Used	-	NOT USED	37338
R05	Resistor, SMT,10k Ohms, 1%, 1W 2512	RAD80	RK73H3ATTE1002F	59124
R06	Resistor, SMT,10k Ohms, 1%, 1W 2512	RAD80	RK73H3ATTE1002F	59124
R07	Resistor, SMT, 1 Ohm, 1%, 1W,2512	RAD83	ERJ-1TRQF1R0U(RoHS)	59124
R08	Resistor, SMT, 1 Ohm, 1%, 1W,2512	RAD83	ERJ-1TRQF1R0U(RoHS)	59124
R09	Resistor, SMT, 1 Ohm, 1%, 1W,2512	RAD83	ERJ-1TRQF1R0U(RoHS)	59124
R10	Resistor, SMT, 1 Ohm, 1%, 1W,2512	RAD83	ERJ-1TRQF1R0U(RoHS)	59124
R11	Resistor, SMT, 1 Ohm, 1%, 1W,2512	RAD83	ERJ-1TRQF1R0U(RoHS)	59124
R12	Resistor, SMT, 1 Ohm, 1%, 1W,2512	RAD83	ERJ-1TRQF1R0U(RoHS)	59124
R13	Resistor, SMT,10k Ohms, 1%, 1W 2512	RAD80	RK73H3ATTE1002F	59124
R14	Resistor, SMT,10k Ohms, 1%, 1W 2512	RAD80	RK73H3ATTE1002F	59124
R15	Resistor, SMT,10k Ohms, 1%, 1W 2512	RAD80	RK73H3ATTE1002F	59124
R16	Not Used	-	NOT USED	37338
U01	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
U02	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C01	Not Used	-	NOT USED	37338
C02	Not Used	-	NOT USED	37338
C03	Not Used	-	NOT USED	37338
C04	Not Used	-	NOT USED	37338
C05	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C06	Not Used	-	NOT USED	37338
C07	Cap, SMT, Ceramic, 1000pF, 5%,100V, COG, 1206	CCFS68	C1206C102J1GAC(RoHS)	31433
C08	Not Used	-	NOT USED	37338
C09	Cap, SMT, Ceramic, 8.2 +/-0.25pF, 50V, COG, 0805	CX40	C0805C829C5GAC	
C10	Not Used	-	NOT USED	37338
C11	Not Used	-	NOT USED	37338
C12	Not Used	-	NOT USED	37338
CR01	Not Used	-	NOT USED	37338
CR02	Not Used	-	NOT USED	37338
CR03	Diode, SMT, Shottky, 70V, 15mA, SOD-123	QK53	1N5711W-7-F(STATIC)(RoHS)	12060
J01	Not Used	-	NOT USED	37338
J02	Conn, BNC, Recept, PWB Mt	JF35	R141426161	0GP12
J03	Conn, BNC, Recept, PWB Mt	JF35	R141426161	0GP12
J04	Conn, BNC, Recept, PWB Mt	JF35	R141426161	0GP12
J05	Not Used	-	NOT USED	37338
J06	Not Used	-	NOT USED	37338
J07	Not Used	-	NOT USED	37338
J08	Conn, Header, Ribbon Cbl, 10-Pin	JQ54	103308-1	00779
L01	Not Used	-	NOT USED	37338
L02	Not Used	-	NOT USED	37338
L03	Inductor, SMT, 28nH, 2%, 4A3.15mm H x 6.86mm L	LS34	B08TGLC	02113
R01	Not Used	-	NOT USED	37338
R02	Not Used	-	NOT USED	37338
R03	Not Used	-	NOT USED	37338
R04	Not Used	-	NOT USED	37338
R05	Not Used	-	NOT USED	37338
R06	Not Used	-	NOT USED	37338
R07	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R08	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
R09	Not Used	-	NOT USED	37338
R10	Not Used	-	NOT USED	37338
R11	Not Used	-	NOT USED	37338

NAPH13

## RF Drive Splitter PWB Assy -NV20LT

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R12	Not Used	-	NOT USED	37338
R13	Resistor, SMT, MF, 150 Ohms,1% 1/4W	RAD15	RK73H2BL1500F	59124
R14	Not Used	-	NOT USED	37338
R15	Resistor, SMT, MF, 150 Ohms,1% 1/4W	RAD15	RK73H2BL1500F	59124
R16	Not Used	-	NOT USED	37338
R17	Resistor, SMT, MF, 3320 Ohms,1% 1/4W	RAD31	RK73H2BL3321F	59124
U01	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
U02	Not Used	-	NOT USED	37338



# NAPI142A/01 UI Interface PWB Assy (GV)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C01	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C02	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C03	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C04	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C05	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C06	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C07	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C08	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C09	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C10	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C11	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C12	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C13	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C14	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C15	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C16	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C17	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C18	Cap, SMT, Ceramic, 10uF, 10%,25V	CCFS62	C3225X5R1E106K	
C19	Cap,SMT,Ceramic,0.47uF,10%,25V,X7R,0805	CCFS09	C0805C474K3RAC	31433
C20	Cap,SMT,Ceramic,0.47uF,10%,25V,X7R,0805	CCFS09	C0805C474K3RAC	31433
C21	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C22	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C23	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C24	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C25	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
CR01	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR02	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR03	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR04	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR05	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR06	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR07	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR08	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR09	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400





## NAPI142A/01 UI Interface PWB Assy (GV)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
DS01	Diode, LED, Amber	QK14	HLMP-3451	50434
DS02	Diode, LED, Amber	QK14	HLMP-3451	50434
DS03	Diode, LED, Amber	QK14	HLMP-3451	50434
DS04	Diode, LED, Amber	QK14	HLMP-3451	50434
J01	Conn, Socket, D-Sub, HD 15pin, Straight, PWB	JS130	10090929- S154VLF(RoHS)	22526
J02	Conn, Socket, D-Sub, 9-Pin, Vertical PWB	JS50	164A16669X	C3057
L01	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L02	Inductor, SMT, Choke, 600ohms, 2A, 0805	LCFS01	ILHB0805RK601V	56845
L03	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L04	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L05	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L06	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L07	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L08	Inductor, SMT, Choke, 600ohms, 2A, 0805	LCFS01	ILHB0805RK601V	56845
L09	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L10	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L11	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L12	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L13	Choke, SMT, Common Mode, 2200 ohm, 200mA, 1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L14	Choke, SMT, Common Mode, 2200 ohm, 200mA, 1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L15	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L16	Inductor, SMT, Choke, 600ohms, 2A, 0805	LCFS01	ILHB0805RK601V	56845
L17	Inductor, SMT, Choke, 600ohms, 2A, 0805	LCFS01	ILHB0805RK601V	56845
L18	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
R01	Resistor, SMT, MF, 475 Ohms, 1% 1/4W	RAD21	RK73H2BL4750F	59124
R02	Resistor, SMT, MF, 475 Ohms, 1% 1/4W	RAD21	RK73H2BL4750F	59124
R03	Resistor, SMT, MF, 475 Ohms, 1% 1/4W	RAD21	RK73H2BL4750F	59124
R04	Resistor, SMT, MF, 475 Ohms, 1% 1/4W	RAD21	RK73H2BL4750F	59124
R05	Resistor, SMT, MF, 475 Ohms, 1% 1/4W	RAD21	RK73H2BL4750F	59124
R06	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ- 8GEYJ2R0V(STATIC)( RoHS)	
R07	Resistor, SMT, MF, 332 Ohms, 1% 1/4W	RAD19	RK73H2BL3320F	59124



## NAPI142A/01 UI Interface PWB Assy (GV)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R08	Resistor, SMT, MF, 332 Ohms,1% 1/4W	RAD19	RK73H2BL3320F	59124
R09	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R10	Resistor,SMT,MF,49.9R,1%,1/10W0603	RAE34	RK73H1JT49R9F	59124
R11	Resistor,SMT,MF,49.9R,1%,1/10W0603	RAE34	RK73H1JT49R9F	59124
R12	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R13	Resistor, SMT, MF, 332 Ohms,1% 1/4W	RAD19	RK73H2BL3320F	59124
R14	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R15	Resistor,SMT,MF,49.9R,1%,1/10W0603	RAE34	RK73H1JT49R9F	59124
R16	Resistor,SMT,MF,49.9R,1%,1/10W0603	RAE34	RK73H1JT49R9F	59124
R17	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R18	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R19	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R20	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R21	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R22	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R23	Resistor, SMT, MF, 332 Ohms,1% 1/4W	RAD19	RK73H2BL3320F	59124
R24	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R25	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
S01	Switch, MOM, SPDT, PB, Black,No LED	SA70	5501M1BLKX	OUA4U
S02	Switch, MOM, SPDT, PB, REDNo LED	SA71	5501MREDX	OUA4U
S03	Switch, MOM, SPDT, PB, Black,No LED	SA70	5501M1BLKX	OUA4U
TP01	Terminal, SMT, Test Point, PWB	HAI66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
U01	IC,SMT,RS-485 Transceiver,Sgl,SOIC-8	UDTS03	DS36C278TM(STATIC )	27014
U02	IC,SMT,RS-485 Transceiver,Sgl,SOIC-8	UDTS03	DS36C278TM(STATIC )	27014
U03	IC,CMOS,Hex Schmitt,Trigger Inverter,SOIC-14	UG35	MM74HC14M(STATIC)	07263
U04	IC, SMT, Voltage Regulator,5V,1.5A, 150C, D2PAK	UT130	L4940D2T5-TR(STATIC)(RoHS)	

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C001	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C002	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C003	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C004	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C005	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C006	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C007	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C008	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C009	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C010	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C011	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C012	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C013	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C014	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C015	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C016	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C017	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C018	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C019	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C020	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C021	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C022	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C023	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C024	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C025	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C026	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C027	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C028	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C029	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C030	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C031	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C032	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C033	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C034	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C035	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C036	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C037	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C038	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433

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Remote Interface w/ TerminalBlock, PWB Assy (NVLT/GV  
HP)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C039	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C040	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C041	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C042	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C043	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C044	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C045	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C046	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C047	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C048	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C049	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C050	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C051	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C052	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C053	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C054	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C055	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C056	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C057	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C058	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C059	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C060	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C061	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C062	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C063	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C064	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C065	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C066	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C067	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C068	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C069	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C070	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C071	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C072	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C073	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C074	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433



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Remote Interface w/ TerminalBlock, PWB Assy (NVLT/GV  
HP)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C075	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C076	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C077	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C078	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C079	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C080	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C081	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C082	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C083	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C084	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C085	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C086	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C087	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C088	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C089	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C090	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C091	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C092	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C093	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C094	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C095	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C096	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C097	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C098	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C099	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C100	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C101	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C102	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C103	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C104	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C105	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C106	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C107	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C108	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C109	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C110	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C111	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C112	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433



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## Remote Interface w/ TerminalBlock, PWB Assy (NVLT/GV HP)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C113	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C114	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C115	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C116	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C117	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C118	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C119	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C120	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C121	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C122	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C123	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C124	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C125	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C126	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C127	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C128	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C129	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C130	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C131	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C132	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C133	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C134	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C135	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C136	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
CR01	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR02	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR03	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR04	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR05	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR06	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR07	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR08	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR09	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400





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Remote Interface w/ TerminalBlock, PWB Assy (NVLT/GV  
HP)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
CR10	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR11	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR12	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR13	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR14	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR15	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR16	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR17	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR18	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR19	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR20	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR21	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR22	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR23	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR24	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR25	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR26	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR27	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR28	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR29	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR30	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR31	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR32	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR33	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR34	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR35	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR36	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR37	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR38	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR39	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR40	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713



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HP)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
CR41	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR42	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA- TR1(RoHS)	71400
CR43	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA- TR1(RoHS)	71400
CR44	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR45	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR46	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA- TR1(RoHS)	71400
CR47	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA- TR1(RoHS)	71400
CR48	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR49	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR50	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR51	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR52	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA- TR1(RoHS)	71400
CR53	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA- TR1(RoHS)	71400
CR54	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR55	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR56	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA- TR1(RoHS)	71400
CR57	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA- TR1(RoHS)	71400
CR58	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR59	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR60	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR61	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR62	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA- TR1(RoHS)	71400
CR63	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA- TR1(RoHS)	71400
CR64	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR65	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
DS01	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112- 402(STATIC)	83330
DS02	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112- 402(STATIC)	83330
DS03	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112- 402(STATIC)	83330
DS04	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112- 402(STATIC)	83330
DS05	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112- 402(STATIC)	83330





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Remote Interface w/ TerminalBlock, PWB Assy (NVLT/GV  
HP)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
DS06	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112-402(STATIC)	83330
DS07	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112-402(STATIC)	83330
DS08	Diode, SMT, LED, Red, (660nm),0603	QDLS03	597-5112-402(STATIC)	83330
DS09	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS10	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS11	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS12	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS13	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS14	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS15	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS16	Diode, SMT, LED, Amber,(592nm), 0603	QDLS07	598-8040-107F(STATIC)(RoHS)	83330
DS17	Diode, SMT, LED, Green,(560nm), 0603	QDLS01	597-5312-402F(STATIC)(RoHS)	83330
DS18	Diode, SMT, LED, Green,(560nm), 0603	QDLS01	597-5312-402F(STATIC)(RoHS)	83330
E01	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E02	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
J01	Conn, Modular Jack, RJ45, Shld, Side, PWB, 50u	JM44	556591-1	09482
J02	Conn, Modular Jack, RJ45, Shld, Side, PWB, 50u	JM44	556591-1	09482
J03	Conn, Plug, D-Sub, 25 pin, PWB Mt	JS12	K22X-B25P-NJ	63590
J04	Conn, Socket, D-Sub, 25 pin, PWB Mt	JS13	K22-B25S-NJ	22421
L001	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L002	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L003	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L004	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L005	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L006	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L007	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L008	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L009	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845



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Remote Interface w/ TerminalBlock, PWB Assy (NVLT/GV  
HP)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
L010	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L011	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L012	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L013	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L014	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L015	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L016	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L017	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L018	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L019	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L020	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L021	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L022	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L023	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L024	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L025	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L026	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L027	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L028	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L029	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L030	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L031	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L032	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L033	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L034	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L035	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L036	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845



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Remote Interface w/ TerminalBlock, PWB Assy (NVLT/GV  
HP)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
L037	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L038	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L039	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L040	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L041	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L042	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L043	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L044	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L045	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L046	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L047	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L048	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L049	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L050	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L051	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L052	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L053	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L054	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L055	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L056	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L057	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L058	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L059	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L060	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L061	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L062	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845



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Remote Interface w/ TerminalBlock, PWB Assy (NVLT/GV  
HP)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
L063	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L064	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L065	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L066	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L067	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L068	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L069	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L070	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L071	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L072	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L073	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L074	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L075	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L076	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L077	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L078	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L079	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L080	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L081	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L082	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L083	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L084	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L085	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L086	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L087	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L088	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845



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Remote Interface w/ TerminalBlock, PWB Assy (NVLT/GV  
HP)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
L089	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L090	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L091	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L092	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L093	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L094	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L095	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L096	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L097	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L098	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L099	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L100	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L101	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L102	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L103	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L104	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L105	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L106	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L107	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L108	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L109	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L110	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L111	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L112	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L113	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L114	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845



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Remote Interface w/ TerminalBlock, PWB Assy (NVLT/GV  
HP)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
L115	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L116	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L117	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L118	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L119	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L120	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L121	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L122	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L123	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L124	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L125	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L126	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L127	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L128	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L129	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L130	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L131	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L132	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
R01	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R02	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R03	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R04	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R05	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R06	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R07	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R08	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R09	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R10	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R11	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R12	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124



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Remote Interface w/ TerminalBlock, PWB Assy (NVLT/GV  
HP)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R13	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R14	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R15	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R16	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R17	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R18	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R19	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R20	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R21	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R22	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R23	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R24	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R25	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R26	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R27	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R28	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R29	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R30	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R31	Not Used	-	NOT USED	37338
R32	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R33	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ- 8GEYJ2R0V(STATIC)( RoHS)	
R34	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ- 8GEYJ2R0V(STATIC)( RoHS)	
R35	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R36	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R37	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R38	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R39	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R40	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R41	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R42	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R43	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R44	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R45	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R46	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R47	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R48	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124





NAPI143/02

Remote Interface w/ TerminalBlock, PWB Assy (NVLTV/GV  
HP)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R49	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R50	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R51	Resistor,SMT,150 Ohms,,1%,2W	RAD55Z	CR2512-2W-1500F- SP	3EQW4
R52	Resistor,SMT,150 Ohms,,1%,2W	RAD55Z	CR2512-2W-1500F- SP	3EQW4
R53	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R54	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R55	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R56	Resistor, SMT, MF, 1500 Ohms,1% 1/4W	RAD27	RK73H2BL1501F	59124
R57	Resistor,SMT,MF,1500ohms,1%,1/10W,0603	RFFS40	RK73H1JLTD1501F	59124
R58	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ- 8GEYJ2R0V(STATIC)( RoHS)	
R59	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ- 8GEYJ2R0V(STATIC)( RoHS)	
R60	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R61	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R62	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R63	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R64	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R65	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R66	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R67	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R68	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R69	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R70	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R71	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R72	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R73	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R74	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R75	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R76	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R77	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R78	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R79	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R80	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R81	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R82	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R83	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124





NAPI143/02

Remote Interface w/ TerminalBlock, PWB Assy (NVLT/GV  
HP)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R84	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R85	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R86	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R87	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R88	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R89	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R90	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R91	Not Used	-	NOT USED	37338
R92	Resistor,SMT,MF,1500ohms,1%,1/10W,0603	RFFS40	RK73H1JLTD1501F	59124
S01	Switch, SMT, SPST, Momentary,w/ESD gnd	SD77	B3SN-3112P(RoHS)	34361
S02	Switch, SMT, SPST, Momentary,w/ESD gnd	SD77	B3SN-3112P(RoHS)	34361
S03	Switch, SMT, SPST, Momentary,w/ESD gnd	SD77	B3SN-3112P(RoHS)	34361
S04	Switch, SMT, SPST, Momentary,w/ESD gnd	SD77	B3SN-3112P(RoHS)	34361
S05	Switch, SMT, SPST, Momentary,w/ESD gnd	SD77	B3SN-3112P(RoHS)	34361
S06	Switch, SMT, SPST, Momentary,w/ESD gnd	SD77	B3SN-3112P(RoHS)	34361
S07	Switch, SMT, SPST, Momentary,w/ESD gnd	SD77	B3SN-3112P(RoHS)	34361
S08	Switch, SMT, SPST, Momentary,w/ESD gnd	SD77	B3SN-3112P(RoHS)	34361
S09	Switch, SMT, SPST, Momentary,w/ESD gnd	SD77	B3SN-3112P(RoHS)	34361
S10	Switch, SMT, SPST, Momentary,w/ESD gnd	SD77	B3SN-3112P(RoHS)	34361
TB01	Terminal Block,5mm,3-pos,PWBMt,Green	JR50	282836-3	5Y407
TB02	Terminal Block, 3.5mm, 2 level, 13pos/level, Pwb mount	JR63	1751507 MKKDS 1/13-3.5(RoHS) Phoenix	
TB03	Terminal Block, 3.5mm, 2 level, 13pos/level, Pwb mount	JR63	1751507 MKKDS 1/13-3.5(RoHS) Phoenix	
TP01	Terminal, SMT, Test Point, PWB	HAJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP02	Terminal, SMT, Test Point, PWB	HAJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP03	Terminal, SMT, Test Point, PWB	HAJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP04	Terminal, SMT, Test Point, PWB	HAJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP05	Terminal, SMT, Test Point, PWB	HAJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP06	Terminal, SMT, Test Point, PWB	HAJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
XE01	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482
XE02	Conn, Header, SIP,12 Pin Breakaway,.10 Ctr	JQ16	1-103185-2	09482

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C001	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C002	Cap,SMT,Tantalum,1uF,10%,35V,1411	CTFS02	T494B105K035AS	31433
C003	Not Used	-	NOT USED	37338
C004	Not Used	-	NOT USED	37338
C005	Not Used	-	NOT USED	37338
C006	Not Used	-	NOT USED	37338
C007	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C008	Not Used	-	NOT USED	37338
C009	Not Used	-	NOT USED	37338
C010	Not Used	-	NOT USED	37338
C011	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C012	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C013	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C014	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C015	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C016	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C017	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C018	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C019	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C020	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C021	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C022	Not Used	-	NOT USED	37338
C023	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C024	Not Used	-	NOT USED	37338
C025	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C026	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C027	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C028	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C029	Not Used	-	NOT USED	37338
C030	Not Used	-	NOT USED	37338
C031	Not Used	-	NOT USED	37338
C032	Not Used	-	NOT USED	37338
C033	Cap,SMT,Ceramic,10uF,20%,6.3V,X5R,0805	CCFS57	C2012X5R0J106M	54583
C034	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C035	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C036	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C037	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C038	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C039	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433

## NAPI150A

## Power Supply Interface PWB Assy NVLT/GV

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C040	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C041	Not Used	-	NOT USED	37338
C042	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C043	Not Used	-	NOT USED	37338
C044	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C045	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C046	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C047	Not Used	-	NOT USED	37338
C048	Not Used	-	NOT USED	37338
C049	Not Used	-	NOT USED	37338
C050	Not Used	-	NOT USED	37338
C051	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C052	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C053	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C054	Cap,SMT,Ceramic,10uF,20%,6.3V,X5R,0805	CCFS57	C2012X5R0J106M	54583
C055	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C056	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C057	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C058	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C059	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C060	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C061	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C062	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C063	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C064	Capacitor,SMT,Ceramic,0.01uF,100V,10%	CT50	C1206C103K1RAC	91929
C065	Capacitor,SMT,Ceramic,0.01uF,100V,10%	CT50	C1206C103K1RAC	91929
C066	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C067	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C068	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C069	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C070	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C071	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C072	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C073	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C074	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C075	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C076	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C077	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C078	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433

## NAPI150A

## Power Supply Interface PWB Assy NVLT/GV

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C079	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C080	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C081	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C082	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C083	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C084	Not Used	-	NOT USED	37338
C085	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C086	Not Used	-	NOT USED	37338
C087	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C088	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C089	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C090	Not Used	-	NOT USED	37338
C091	Not Used	-	NOT USED	37338
C092	Not Used	-	NOT USED	37338
C093	Not Used	-	NOT USED	37338
C094	Cap,SMT,Ceramic,10uF,20%,6.3V,X5R,0805	CCFS57	C2012X5R0J106M	54583
C095	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C096	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C097	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C098	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C099	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C100	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C101	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C102	Not Used	-	NOT USED	37338
C103	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C104	Not Used	-	NOT USED	37338
C105	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C106	Cap,SMT,Ceramic,0.001uF,10%,50V,X7R,0603	CCFS01	C0603C102K5RAC	31433
C107	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C108	Not Used	-	NOT USED	37338
C109	Not Used	-	NOT USED	37338
C110	Not Used	-	NOT USED	37338
C111	Not Used	-	NOT USED	37338
C112	Cap,SMT,Ceramic,10uF,20%,6.3V,X5R,0805	CCFS57	C2012X5R0J106M	54583
CR01	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR02	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR03	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400

## NAPI150A

## Power Supply Interface PWB Assy NVLT/GV

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
CR04	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR05	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR06	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR07	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR08	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR09	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
CR10	Suppressor, Transient Voltage,SMT 24vdc	QR70	0603ESDA-TR1(RoHS)	71400
DS01	Diode, SMT, LED, Green,(560nm), 0603	QDLS01	597-5312-402F(STATIC)(RoHS)	83330
DS02	Diode, SMT, LED, Green,(560nm), 0603	QDLS01	597-5312-402F(STATIC)(RoHS)	83330
E01	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E02	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E03	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E04	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E05	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E06	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E07	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E08	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E09	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E10	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E11	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E12	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E13	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E14	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E15	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E16	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E17	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E18	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E19	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E20	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E21	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E22	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E23	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E24	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E25	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E26	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE



## NAPI150A

## Power Supply Interface PWB Assy NVLT/GV

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
E27	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E28	Terminal,PC Screw 10-32,30 Amp	HAC55	7787	KEYSTONE
E29	Connector, Quick-Dis, M,1/4 Tab, PWB	HR26	1287	91833
E30	Connector, Quick-Dis, M,1/4 Tab, PWB	HR26	1287	91833
E31	Connector, Quick-Dis, M,1/4 Tab, PWB	HR26	1287	91833
E32	Connector, Quick-Dis, M,1/4 Tab, PWB	HR26	1287	91833
E33	Connector, Quick-Dis, M,1/4 Tab, PWB	HR26	1287	91833
E34	Connector, Quick-Dis, M,1/4 Tab, PWB	HR26	1287	91833
E35	Connector, Quick-Dis, M,1/4 Tab, PWB	HR26	1287	91833
E36	Connector, Quick-Dis, M,1/4 Tab, PWB	HR26	1287	91833
E37	Connector, Quick-Dis, M,1/4 Tab, PWB	HR26	1287	91833
E38	Connector, Quick-Dis, M,1/4 Tab, PWB	HR26	1287	91833
J01	Conn, Socket, D-Sub, HD 15pin, Straight, PWB	JS130	10090929- S154VLF(RoHS)	22526
J02	Conn, PwrBlade, 3ACP+4P+24S,Vertical Solder Recept	JA119	51940-226LF(RoHS)	22526
J03	Conn, PwrBlade, 3ACP+4P+24S,Vertical Solder Recept	JA119	51940-226LF(RoHS)	22526
J04	Conn, PwrBlade, 3ACP+4P+24S,Vertical Solder Recept	JA119	51940-226LF(RoHS)	22526
J05	Conn, PwrBlade, 3ACP+4P+24S,Vertical Solder Recept	JA119	51940-226LF(RoHS)	22526
J06	Conn, PwrBlade, 3ACP+4P+24S,Vertical Solder Recept	JA119	51940-226LF(RoHS)	22526
J07	Conn, PwrBlade, 3ACP+4P+24S,Vertical Solder Recept	JA119	51940-226LF(RoHS)	22526
J08	Conn, PwrBlade, 3ACP+4P+24S,Vertical Solder Recept	JA119	51940-226LF(RoHS)	22526
J09	Conn, PwrBlade, 3ACP+4P+24S,Vertical Solder Recept	JA119	51940-226LF(RoHS)	22526
J10	Conn, PwrBlade, 3ACP+4P+24S,Vertical Solder Recept	JA119	51940-226LF(RoHS)	22526
J11	Conn, PwrBlade, 3ACP+4P+24S,Vertical Solder Recept	JA119	51940-226LF(RoHS)	22526
L01	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L02	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L03	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L04	Not Used	-	NOT USED	37338
L05	Not Used	-	NOT USED	37338
L06	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L07	Not Used	-	NOT USED	37338
L08	Not Used	-	NOT USED	37338
L09	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L10	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L11	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L12	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L13	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845



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## Power Supply Interface PWB Assy NVLT/GV

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
L14	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L15	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L16	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L17	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L18	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L19	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L20	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L21	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L22	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L23	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L24	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L25	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L26	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L27	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L28	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoHS)	56845
L29	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoHS)	56845
L30	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L31	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L32	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L33	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L34	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L35	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L36	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L37	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L38	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L39	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L40	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
L41	Choke,SMT,Common Mode,2200 ohm,200mA,1206	LS22	DLW31SN222SQ2L(R OHS)	3EH09
P01	Conn,Quick-Dis,F,1/4 Tab 14-16Shrink	HAM69	B-106-3632	06090
P02	Conn,Quick-Dis,F,1/4 Tab 14-16Shrink	HAM69	B-106-3632	06090
P03	Conn,Quick-Dis,F,1/4 Tab 14-16Shrink	HAM69	B-106-3632	06090
P04	Conn,Quick-Dis,F,1/4 Tab 14-16Shrink	HAM69	B-106-3632	06090
P05	Conn,Quick-Dis,F,1/4 Tab 14-16Shrink	HAM69	B-106-3632	06090
P06	Conn,Quick-Dis,F,1/4 Tab 14-16Shrink	HAM69	B-106-3632	06090



## NAPI150A

## Power Supply Interface PWB Assy NVLT/GV

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
P07	Conn,Quick-Dis,F,1/4 Tab 14-16Shrink	HAM69	B-106-3632	06090
P08	Conn,Quick-Dis,F,1/4 Tab 14-16Shrink	HAM69	B-106-3632	06090
R001	Resistor,SMT,MF,475ohms,1%,1/10W,0603	RFFS34	RK73H1JLTD4750F	59124
R002	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R003	Not Used	-	NOT USED	37338
R004	Resistor,SMT,MF,56.2ohms,1%,1/10W,0603	RFFS23	RK73H1JLTD56R2F	59124
R005	Resistor,SMT,MF,56.2ohms,1%,1/10W,0603	RFFS23	RK73H1JLTD56R2F	59124
R006	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R007	Not Used	-	NOT USED	37338
R008	Resistor,SMT,MF,475ohms,1%,1/10W,0603	RFFS34	RK73H1JLTD4750F	59124
R009	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R010	Resistor,SMT,MF,475ohms,1%,1/10W,0603	RFFS34	RK73H1JLTD4750F	59124
R011	Resistor,SMT,MF,56.2ohms,1%,1/10W,0603	RFFS23	RK73H1JLTD56R2F	59124
R012	Resistor,SMT,MF,56.2ohms,1%,1/10W,0603	RFFS23	RK73H1JLTD56R2F	59124
R013	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R014	Resistor,SMT,MF,475ohms,1%,1/10W,0603	RFFS34	RK73H1JLTD4750F	59124
R015	Resistor,SMT,MF,221ohms,1%,1/10W,0603	RFFS30	RK73H1JLTD2210F	59124
R016	Resistor,SMT,MF,221ohms,1%,1/10W,0603	RFFS30	RK73H1JLTD2210F	59124
R017	Resistor,SMT,MF,475ohms,1%,1/10W,0603	RFFS34	RK73H1JLTD4750F	59124
R018	Resistor,SMT,MF,56.2ohms,1%,1/10W,0603	RFFS23	RK73H1JLTD56R2F	59124
R019	Resistor,SMT,MF,56.2ohms,1%,1/10W,0603	RFFS23	RK73H1JLTD56R2F	59124
R020	Resistor,SMT,MF,475ohms,1%,1/10W,0603	RFFS34	RK73H1JLTD4750F	59124
R021	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R022	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R023	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R024	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R025	Resistor,SMT,MF,475ohms,1%,1/10W,0603	RFFS34	RK73H1JLTD4750F	59124
R026	Resistor,SMT,MF,56.2ohms,1%,1/10W,0603	RFFS23	RK73H1JLTD56R2F	59124
R027	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R028	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R029	Resistor,SMT,MF,56.2ohms,1%,1/10W,0603	RFFS23	RK73H1JLTD56R2F	59124
R030	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R031	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R032	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R033	Resistor,SMT,MF,475ohms,1%,1/10W,0603	RFFS34	RK73H1JLTD4750F	59124
R034	Resistor,SMT,150 Ohms,,1%,2W	RAD55Z	CR2512-2W-1500F-SP	3EQW4
R035	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R036	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R037	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124





## NAPI150A

## Power Supply Interface PWB Assy NVLT/GV

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R038	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R039	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R040	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R041	Resistor,SMT,MF,39.2Kohms,1%,1/10W,0603	RFFS57	RK73H1JLTD3922F	59124
R042	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R043	Resistor,SMT,MF,27.4Kohms,1%,1/10W,0603	RFFS55	RK73H1JLTD2742F	59124
R044	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R045	Not Used	-	NOT USED	37338
R046	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R047	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R048	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R049	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R050	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R051	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R052	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R053	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R054	Resistor,SMT,MF,8250ohms,1%,1/10W,0603	RFFS49	RK73H1JLTD8251F	59124
R055	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R056	Resistor,SMT,150 Ohms,,1%,2W	RAD55Z	CR2512-2W-1500F-SP	3EQW4
R057	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R058	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R059	Resistor,SMT,MF,22.1Kohms,1%,1/10W,0603	RFFS54	RK73H1JLTD2212F	59124
R060	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R061	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R062	Not Used	-	NOT USED	37338
R063	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R064	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R065	Resistor,SMT,MF,39.2Kohms,1%,1/10W,0603	RFFS57	RK73H1JLTD3922F	59124
R066	Resistor,SMT,MF,8250ohms,1%,1/10W,0603	RFFS49	RK73H1JLTD8251F	59124
R067	Resistor,SMT,MF,27.4Kohms,1%,1/10W,0603	RFFS55	RK73H1JLTD2742F	59124
R068	Resistor,SMT,MF,22.1Kohms,1%,1/10W,0603	RFFS54	RK73H1JLTD2212F	59124
R069	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R070	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R071	Resistor,SMT,MF,27.4Kohms,1%,1/10W,0603	RFFS55	RK73H1JLTD2742F	59124
R072	Resistor,SMT,MF,18.2Kohms,1%,1/10W,0603	RFFS53	RK73H1JLTD1822F	59124
R073	Resistor,SMT,MF,12.1Kohms,1%,1/10W,0603	RFFS51	RK73H1JLTD1212F	59124
R074	Resistor,SMT,MF,8250ohms,1%,1/10W,0603	RFFS49	RK73H1JLTD8251F	59124
R075	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R076	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124

## NAPI150A

## Power Supply Interface PWB Assy NVLT/GV

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R077	Resistor,SMT,MF,27.4Kohms,1%,1/10W,0603	RFFS55	RK73H1JLTD2742F	59124
R078	Resistor,SMT,MF,18.2Kohms,1%,1/10W,0603	RFFS53	RK73H1JLTD1822F	59124
R079	Resistor,SMT,MF,12.1Kohms,1%,1/10W,0603	RFFS51	RK73H1JLTD1212F	59124
R080	Resistor,SMT,MF,8250ohms,1%,1/10W,0603	RFFS49	RK73H1JLTD8251F	59124
R081	Resistor,SMT,MF,3920ohms,1%,1/10W,0603	RFFS45	RK73H1JLTD3921F	59124
R082	Resistor,SMT,MF,5620ohms,1%,1/10W,0603	RFFS47	RK73H1JLTD5621F	59124
R083	Not Used	-	NOT USED	37338
R084	Resistor,SMT,MF,3920ohms,1%,1/10W,0603	RFFS45	RK73H1JLTD3921F	59124
R085	Resistor,SMT,MF,5620ohms,1%,1/10W,0603	RFFS47	RK73H1JLTD5621F	59124
R086	Not Used	-	NOT USED	37338
R087	Not Used	-	NOT USED	37338
R088	Not Used	-	NOT USED	37338
R089	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R090	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R091	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R092	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R093	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R094	Not Used	-	NOT USED	37338
R095	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R096	Not Used	-	NOT USED	37338
R097	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R098	Not Used	-	NOT USED	37338
R099	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R100	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R101	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R102	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R103	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R104	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R105	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R106	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R107	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R108	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R109	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R110	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R111	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R112	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R113	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R114	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R115	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124

## NAPI150A

## Power Supply Interface PWB Assy NVLT/GV

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R116	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R117	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R118	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R119	Resistor, SMT,10k Ohms, 1%, 1W 2512	RAD80	RK73H3ATTE1002F	59124
R120	Resistor, SMT,10k Ohms, 1%, 1W 2512	RAD80	RK73H3ATTE1002F	59124
R121	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R122	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R123	Resistor, SMT,10k Ohms, 1%, 1W 2512	RAD80	RK73H3ATTE1002F	59124
R124	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R125	Resistor, SMT,10k Ohms, 1%, 1W 2512	RAD80	RK73H3ATTE1002F	59124
R126	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R127	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R128	Not Used	-	NOT USED	37338
R129	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R130	Not Used	-	NOT USED	37338
R131	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R132	Not Used	-	NOT USED	37338
R133	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R134	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R135	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R136	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R137	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R138	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R139	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R140	Resistor,SMT,MF,15.0Kohms,1%,1/10W,0603	RFFS52	RK73H1JLTD1502F	59124
R141	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R142	Resistor,SMT,150 Ohms,,1%,2W	RAD55Z	CR2512-2W-1500F-SP	3EQW4
R143	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R144	Resistor,SMT,MF,221Kohms,1%,1/10W,0603	RFFS66	RK73H1JLTD2213F	59124
R145	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R146	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R147	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R148	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R149	Resistor,SMT,MF,39.2Kohms,1%,1/10W,0603	RFFS57	RK73H1JLTD3922F	59124
R150	Resistor,SMT,MF,15.0Kohms,1%,1/10W,0603	RFFS52	RK73H1JLTD1502F	59124
R151	Resistor,SMT,MF,27.4Kohms,1%,1/10W,0603	RFFS55	RK73H1JLTD2742F	59124
R152	Resistor,SMT,MF,221Kohms,1%,1/10W,0603	RFFS66	RK73H1JLTD2213F	59124
R153	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R154	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124

## NAPI150A

## Power Supply Interface PWB Assy NVLT/GV

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R155	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R156	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R157	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R158	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R159	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R160	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R161	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R162	Resistor,SMT,MF,33.2Kohms,1%,1/10W,0603	RFFS56	RK73H1JLTD3322F	59124
R163	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R164	Resistor,SMT,150 Ohms,,1%,2W	RAD55Z	CR2512-2W-1500F-SP	3EQW4
R165	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R166	Resistor,SMT,MF,332Kohms,1%,1/10W,0603	RFFS68	RK73H1JLTD3323F	59124
R167	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R168	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R169	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R170	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R171	Resistor,SMT,MF,39.2Kohms,1%,1/10W,0603	RFFS57	RK73H1JLTD3922F	59124
R172	Resistor,SMT,MF,33.2Kohms,1%,1/10W,0603	RFFS56	RK73H1JLTD3322F	59124
R173	Resistor,SMT,MF,27.4Kohms,1%,1/10W,0603	RFFS55	RK73H1JLTD2742F	59124
R174	Resistor,SMT,MF,332Kohms,1%,1/10W,0603	RFFS68	RK73H1JLTD3323F	59124
TP01	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP04	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP12	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP13	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP25	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP28	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
U01	IC,SMT,RS-485 Transceiver,Sgl,SOIC-8	UDTS03	DS36C278TM(STATIC )	27014
U02	IC,SMT,RS-485 Transceiver,Sgl,SOIC-8	UDTS03	DS36C278TM(STATIC )	27014
U03	IC,SMT,RS-485 Transceiver,Sgl,SOIC-8	UDTS03	DS36C278TM(STATIC )	27014
U04	IC,SMT,RS-485 Transceiver,Sgl,SOIC-8	UDTS03	DS36C278TM(STATIC )	27014
U05	IC, Programmable Shunt Ref,2.5V, TO-92	UR107	TL431AILP(STATIC)(RoHS)	12969
U06	IC,SMT,CMOS,8-Bit Shft Reg,Par I/P, SOIC-16	UDLS04	MC74HC165AD(STATIC)	04713

## NAPI150A

## Power Supply Interface PWB Assy NVLT/GV

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
U07	IC,SMT,CMOS,8-Bit Shft Reg,Par I/P, SOIC-16	UDLS04	MC74HC165AD(STATI C)	04713
U08	IC, SMT, 2-Input Logic, UHSUniv Config SC70-6	UD82	NC7SZ57P6X(Static)( RoHS)	07933
U09	IC, Programmable Shunt Ref,2.5V, TO-92	UR107	TL431AILP(STATIC)(R oHS)	12969
U10	IC, SMT, Power Shift Register,SOIC-16	US23	STPIC6C595MTR(STA TIC)(RoHS) ST	01295
U11	IC, SMT, Power Shift Register,SOIC-16	US23	STPIC6C595MTR(STA TIC)(RoHS) ST	01295
U12	IC,SMT,CMOS,8-Bit Shft Reg,Par I/P, SOIC-16	UDLS04	MC74HC165AD(STATI C)	04713
U13	IC,SMT,CMOS,8-Bit Shft Reg,Par I/P, SOIC-16	UDLS04	MC74HC165AD(STATI C)	04713
U14	IC, Programmable Shunt Ref,2.5V, TO-92	UR107	TL431AILP(STATIC)(R oHS)	12969
U15	IC,SMT,CMOS,8-Bit Shft Reg,Par I/P, SOIC-16	UDLS04	MC74HC165AD(STATI C)	04713
U16	IC,SMT,CMOS,8-Bit Shft Reg,Par I/P, SOIC-16	UDLS04	MC74HC165AD(STATI C)	04713
U17	IC, Programmable Shunt Ref,2.5V, TO-92	UR107	TL431AILP(STATIC)(R oHS)	12969

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C01	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C02	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C03	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C04	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C05	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C06	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C07	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C08	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C09	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C10	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C11	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C12	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C13	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C14	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C15	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C16	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C17	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C18	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
J01	MTA, Keyed Square Post Header Assy, 3 pin	JU60	647123-3	
J02	MTA, Keyed Square Post Header Assy, 3 pin	JU60	647123-3	
J03	Conn, Header, Ribbon Cbl, 10-Pin	JQ54	103308-1	00779
J04	Conn, Plug, D-Sub, 9 pin, PWBMt	JQ33	K22-E9P-NJ	31781
L01	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L02	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L03	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L04	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L05	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L06	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L07	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L08	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L09	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L10	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L11	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L12	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845



NAPI166

## Reject Load Interface PWB Assy

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
L13	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L14	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L15	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L16	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L17	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L18	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L19	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L20	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
R01	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R02	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
R03	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R04	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
R05	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R06	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R07	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R08	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R09	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R10	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
RT01	Thermister, PTC, SMT, 2920,750mA Hold, 60V	RX65	2920L075/60(RoHS)	75915
RT02	Thermister, PTC, SMT, 2920,750mA Hold, 60V	RX65	2920L075/60(RoHS)	75915
TP01	Terminal, SMT, Test Point, PWB	HAJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP02	Terminal, SMT, Test Point, PWB	HAJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C001	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C002	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C003	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C004	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C005	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C006	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C007	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C008	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C009	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C010	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C011	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C012	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C013	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C014	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C015	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C016	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C017	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C018	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C019	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C020	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C021	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C022	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C023	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C024	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C025	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C026	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C027	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C028	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C029	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C030	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C031	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C032	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C033	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C034	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C035	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C036	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C037	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C038	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433
C039	Cap,SMT,Ceramic,22pF,2%,50V,COG,0603	CCFS24	C0603C220G5GAC	31433



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## Reject Load/Splitter Interface Assy, NVLT HP

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C040	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C041	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C042	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C043	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C044	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C045	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C046	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C047	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C048	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C049	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C050	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C051	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C052	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C053	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C054	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C055	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C056	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C057	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C058	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C059	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C060	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C061	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C062	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C063	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C064	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C065	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C066	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C067	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C068	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C069	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C070	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C071	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C072	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C073	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C074	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C075	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C076	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C077	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C078	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433



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## Reject Load/Splitter Interface Assy, NVLT HP

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C079	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C080	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C081	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C082	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C083	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C084	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C085	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C086	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C087	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C088	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C089	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C090	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C091	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C092	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C093	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C094	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C095	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C096	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C097	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C098	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C099	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C100	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C101	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C102	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C103	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C104	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C105	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C106	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C107	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
CR01	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
J01	Conn, Header, Ribbon Cbl, Rt Angle,10 pin	JP53	499913-1	00779
J02	Conn, Plug, D-Sub, 9 pin, PWB Mt	JQ33	K22-E9P-NJ	31781
J03	Conn, Socket, D-Sub, 9 pin, PWB Mt	JQ34	K22-E9S-NJ	KYCON
J04	Conn, Plug, D-Sub, 25 pin, PWB Mt	JS12	K22X-B25P-NJ	63590
J05	Conn, Socket, D-Sub, HD15pin,90deg, PWB	JS129	ICD15S13E6GV00LF(RoHS) FCI	



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REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
J06	Conn, Header, Ribbon Cbl, Rt Angle,10 pin	JP53	499913-1	00779
J07	Conn, Socket, D-Sub, 9 pin, PWB Mt	JQ34	K22-E9S-NJ	KYCON
J08	Conn, Plug, D-Sub, 9 pin, PWB Mt	JQ33	K22-E9P-NJ	31781
L001	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L002	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L003	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L004	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L005	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L006	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L007	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L008	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L009	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L010	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L011	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L012	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L013	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L014	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L015	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L016	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L017	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L018	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L019	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L020	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L021	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L022	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L023	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L024	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L025	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845



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## Reject Load/Splitter Interface Assy, NVLT HP

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
L026	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L027	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L028	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L029	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L030	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L031	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L032	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L033	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L034	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L035	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L036	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L037	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L038	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L039	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L040	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L041	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L042	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L043	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L044	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L045	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L046	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L047	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L048	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L049	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L050	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L051	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L052	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L053	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L054	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845



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## Reject Load/Splitter Interface Assy, NVLT HP

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
L055	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L056	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L057	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L058	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L059	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L060	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L061	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L062	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L063	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L064	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L065	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L066	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L067	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L068	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L069	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L070	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L071	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L072	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L073	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L074	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L075	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L076	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L077	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L078	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L079	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L080	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845



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## Reject Load/Splitter Interface Assy, NVLT HP

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
L081	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L082	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L083	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L084	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L085	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L086	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L087	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L088	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L089	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L090	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L091	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L092	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L093	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L094	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L095	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L096	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L097	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L098	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L099	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L100	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L101	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L102	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L103	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L104	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L105	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L106	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L107	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L108	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L109	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L110	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845





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## Reject Load/Splitter Interface Assy, NVLT HP

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
L111	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L112	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L113	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L114	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L115	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L116	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
Q01	Transister, FET, SMT, N-ch,100V, DPAK	QMN01	FDD3672(STATIC)(Ro HS)	07263
R01	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R02	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R03	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R04	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R05	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R06	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R07	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R08	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R09	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R10	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R11	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R12	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R13	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R14	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R15	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R16	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R17	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R18	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R19	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R20	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R21	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R22	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R23	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R24	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R25	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R26	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R27	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R28	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R29	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124

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## Reject Load/Splitter Interface Assy, NVLT HP

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R30	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R31	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R32	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R33	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R34	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R35	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R36	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R37	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R38	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R39	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R40	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R41	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R42	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
R43	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
R44	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
R45	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
R46	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
R47	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R48	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R49	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R50	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R51	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R52	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R53	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R54	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R55	Resistor,SMT,4.7 ohms,5%,2W	RAD54Z	CR2512-2W-4R7JT-SP	VENKEL
R56	Resistor,SMT,4.7 ohms,5%,2W	RAD54Z	CR2512-2W-4R7JT-SP	VENKEL
R57	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R58	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R59	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	



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## Reject Load/Splitter Interface Assy, NVLT HP

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R60	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
R61	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R62	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R63	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R64	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R65	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R66	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
RT01	Thermistor, PTC, SMT, 2920,500mA Hold	RX64	2920L050(RoHS)	75915
TP01	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP02	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP03	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP04	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	



REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C01	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C02	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C03	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C04	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C05	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C06	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C07	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C08	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C09	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C10	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C11	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C12	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C13	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C14	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C15	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C16	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C17	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C18	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C19	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C20	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C21	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C22	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C23	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C24	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C25	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C26	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C27	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C28	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C29	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C30	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C31	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C32	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C33	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C34	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C35	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C36	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP

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## Fan Interface, 6-way, PWB Assy

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C37	Cap,SMT,Ceramic,22pF,2%,50V,C0G,0603	CCFS24	C0603C220G5GAC	31433
C38	Cap,SMT,Ceramic,470pF,2%,50V,C0G,0603	CCFS38	C0603C471G5GAC	31433
C39	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C40	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
J01	MTA, Keyed Square Post HeaderAssy, 3 pin	JU60	647123-3	
J02	MTA, Keyed Square Post HeaderAssy, 3 pin	JU60	647123-3	
J03	MTA, Keyed Square Post HeaderAssy, 3 pin	JU60	647123-3	
J04	MTA, Keyed Square Post HeaderAssy, 3 pin	JU60	647123-3	
J05	MTA, Keyed Square Post HeaderAssy, 3 pin	JU60	647123-3	
J06	MTA, Keyed Square Post HeaderAssy, 3 pin	JU60	647123-3	
J07	Conn, Socket, D-Sub, 9-Pin,Vertical PWB	JS50	164A16669X	C3057
J08	Connector,Plug,D-Sub,9-Pin,Vert., PWB	JPDT01	163 A 16259 X	C3057
L01	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L02	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L03	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L04	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L05	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L06	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L07	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L08	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L09	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L10	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L11	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L12	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L13	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L14	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L15	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L16	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L17	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L18	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L19	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L20	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L21	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845



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## Fan Interface, 6-way, PWB Assy

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
L22	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L23	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L24	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L25	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L26	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L27	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L28	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L29	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L30	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L31	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L32	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L33	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L34	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L35	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L36	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L37	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L38	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L39	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L40	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L41	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L42	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L43	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L44	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
R01	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
R02	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R03	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R04	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
R05	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
R06	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124

NAPI168

## Fan Interface, 6-way, PWB Assy

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R07	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R08	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
R09	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R10	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R11	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R12	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R13	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R14	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
R15	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
R16	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R17	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R18	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R19	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R20	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
R21	Resistor, SMT, MF, 475 Ohms,1% 1/4W	RAD21	RK73H2BL4750F	59124
R22	Resistor, SMT, 2 Ohms, 5%, 1/4W, 1206	RAD75	ERJ-8GEYJ2R0V(STATIC)(RoHS)	
RT01	Thermister, PTC, SMT, 2920,750mA Hold, 60V	RX65	2920L075/60(RoHS)	75915
RT02	Thermister, PTC, SMT, 2920,750mA Hold, 60V	RX65	2920L075/60(RoHS)	75915
RT03	Thermister, PTC, SMT, 2920,750mA Hold, 60V	RX65	2920L075/60(RoHS)	75915
RT04	Thermister, PTC, SMT, 2920,750mA Hold, 60V	RX65	2920L075/60(RoHS)	75915
RT05	Thermister, PTC, SMT, 2920,750mA Hold, 60V	RX65	2920L075/60(RoHS)	75915
RT06	Thermister, PTC, SMT, 2920,750mA Hold, 60V	RX65	2920L075/60(RoHS)	75915
TP01	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP02	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP03	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP04	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C01	Cap, SMT, Electrolytic, 68uF,20%, 63V	CT68	EEEFK1J680UP(RoHS )	0J4G8
C02	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C03	Cap,SMT,Ceramic,0.001uF,10%,100V,X7R,0805	CCFS61	C0805C102K1RACTU	31433
C04	Not Used	-	NOT USED	37338
C05	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C06	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C07	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C08	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C09	Cap, SMT, Ceramic, 10uF, 10%,25V	CCFS62	C3225X5R1E106K	
C10	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C11	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C12	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C13	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C14	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
CR01	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR02	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR03	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR04	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR05	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR06	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
CR07	Diode,SMT,Schottky,30V,0.2A,SOD-323	QDSS01	BAT54HT1(STATIC)	04713
J01	Connector,Plug,D-Sub,9-Pin,Vert., PWB	JPDT01	163 A 16259 X	C3057
J02	MTA, Keyed Square Post Header Assy, 4 pin	JU25	647123-4	00779
L01	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
L02	Inductor, SMT, Choke, 600ohms,2A, 0805	LCFS01	ILHB0805RK601V	56845
L03	Not Used	-	NOT USED	37338
L04	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoH S)	56845
Q01	Transistor,SMT,MOSFET,N-Channel,60V,115mA,SOT-23	QN53	2N7002LT1G(STATIC) (ROHS)	1MQ07
Q02	Transistor,SMT,MOSFET,N-Channel,60V,115mA,SOT-23	QN53	2N7002LT1G(STATIC) (ROHS)	1MQ07
R01	Resistor,SMT,MF,475Kohms,1%,1/10W,0603	RFFS70	RK73H1JLTD4753F	59124
R02	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R03	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R04	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R05	Resistor,SMT,MF,150Kohms,1%,1/10W,0603	RFFS64	RK73H1JLTD1503F	59124

NAPI172

## Monitor Fan Interface PWB Assy, GV

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R06	Resistor,SMT,MF,27.4Kohms,1%,1/10W,0603	RFFS55	RK73H1JLTD2742F	59124
R07	Resistor,SMT,MF,15.0Kohms,1%,1/10W,0603	RFFS52	RK73H1JLTD1502F	59124
R08	Resistor,SMT,MF,1.00Mohms,1%,1/10W,0603	RFFS74	RK73H1JLTD1004F	59124
R09	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R10	Resistor,SMT,MF,1.00Mohms,1%,1/10W,0603	RFFS74	RK73H1JLTD1004F	59124
R11	Resistor,SMT,MF,6810ohms,1%,1/10W,0603	RFFS48	RK73H1JLTD6811F	59124
R12	Resistor,SMT,MF,1.00Mohms,1%,1/10W,0603	RFFS74	RK73H1JLTD1004F	59124
R13	Resistor,SMT,MF,6810ohms,1%,1/10W,0603	RFFS48	RK73H1JLTD6811F	59124
R14	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R15	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R16	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
TP01	Terminal, SMT, Test Point, PWB	HAJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
U01	Power Supply, Dc-Dc, 18-75Vin,12Vout, 7A, Neg On/Off	UW167	EHW007A0B41Z(STA TIC)(RoHS)	



REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
BT01	Battery, Lithium, 3V,20mm Coin Cell	BBLT01	CR2032	PANAS
C02	Cap, SMT, Ceramic, 10uF, 10%,50V, 2220	CCFS72	22205C106KAT2A(Ro HS)	27604
C03	Capacitor, SMT, Al Electrolytic330uF, 25VDC,ESR 0.8ohm	CT57	AVS337M25G24T	2D829
C04	Capacitor, SMT, Al Electrolytic330uF, 25VDC,ESR 0.8ohm	CT57	AVS337M25G24T	2D829
C05	Cap,SMT,Tantalum,1uF,10%,35V,1411	CTFS02	T494B105K035AS	31433
C06	Cap,SMT,Ceramic,100pF,2%,50V,C0G,0603	CCFS32	C0603C101G5GAC	31433
C07	Not Used	-	NOT USED	37338
C08	Cap, SMT, Ceramic, 10uF, 10%,50V, 2220	CCFS72	22205C106KAT2A(Ro HS)	27604
C09	Capacitor, SMT, Ceramic, 2.2uF 10%, 100V, X7R, 1812	CT64	GRM43ER72A225KA0 1L	72982
C10	Cap, SMT, Ceramic,47uF,20%,6.3V, 1210	CCFS53	C3225X5R0J476M(Ro HS)	56289
C11	Capacitor,SMT,Ceramic,0.01uF,100V,10%	CT50	C1206C103K1RAC	91929
C12	Cap, SMT, Ceramic, 10uF, 10%,50V, 2220	CCFS72	22205C106KAT2A(Ro HS)	27604
C13	Capacitor, SMT, Al Electrolytic330uF, 25VDC,ESR 0.8ohm	CT57	AVS337M25G24T	2D829
C14	Cap, SMT, Ceramic,47uF,20%,6.3V, 1210	CCFS53	C3225X5R0J476M(Ro HS)	56289
C15	Capacitor,SMT,Ceramic,0.1uF,100V,10%	CT51	C1812C104K1RAC	91929
C16	Capacitor, SMT, Ceramic, 2.2uF 10%, 100V, X7R, 1812	CT64	GRM43ER72A225KA0 1L	72982
C17	Cap,SMT,Ceramic,0.001uF,10%,100V,X7R,0805	CCFS61	C0805C102K1RACTU	31433
C18	Cap, SMT, Electrolytic, 470uF,20%, 63VDC, Low ESR	CT75	AFK477M63P44T-F(RoHS)	93790
C19	Cap,SMT,Ceramic,220pF,2%,50V,C0G,0603	CCFS34	C0603C221G5GAC	31433
C20	Cap,SMT,Ceramic,1000pF,2%,50V,C0G,0805	CCFS42	C0805C102G5GAC	31433
C21	Cap,SMT,Ceramic,220pF,2%,50V,C0G,0603	CCFS34	C0603C221G5GAC	31433
C22	Cap,SMT,Ceramic,220pF,2%,50V,C0G,0603	CCFS34	C0603C221G5GAC	31433
C23	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C24	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C25	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C26	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C27	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C28	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C29	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C30	Cap, SMT, Electrolytic, 470uF,20%, 63VDC, Low ESR	CT75	AFK477M63P44T-F(RoHS)	93790
C31	Cap, SMT, Electrolytic, 68uF,63V, +/- 20%	CT84	AFK686M63G24T-F(RoHS)	
C32	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C33	Capacitor,SMT,Ceramic,0.1uF,100V,10%	CT51	C1812C104K1RAC	91929



## NAPS49

## Power Supply Distribution PWB Assy, GV

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C34	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C35	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C36	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C37	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C38	Cap,SMT,Ceramic,0.022uF,10%,50V,X7R,0603	CCFS05	C0603C223K5RAC	31433
C39	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C40	Cap,SMT,Ceramic,0.022uF,10%,50V,X7R,0603	CCFS05	C0603C223K5RAC	31433
C41	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C42	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C43	Cap,SMT,Ceramic,0.022uF,10%,50V,X7R,0603	CCFS05	C0603C223K5RAC	31433
C44	Capacitor, SMT, Ceramic, 2.2uF 10%, 100V, X7R, 1812	CT64	GRM43ER72A225KA0 1L	72982
C45	Capacitor,SMT,Ceramic,0.1uF,100V,10%	CT51	C1812C104K1RAC	91929
C46	Capacitor,SMT,Ceramic,0.1uF,100V,10%	CT51	C1812C104K1RAC	91929
C47	Cap,SMT,Ceramic,0.001uF,10%,100V,X7R,0805	CCFS61	C0805C102K1RACTU	31433
C48	Cap,SMT,Ceramic,0.001uF,10%,100V,X7R,0805	CCFS61	C0805C102K1RACTU	31433
C49	Cap,SMT,Ceramic,330pF,2%,50V,C0G,0603	CCFS36	C0603C331G5GAC	31433
C50	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C51	Cap,SMT,Ceramic,330pF,2%,50V,C0G,0603	CCFS36	C0603C331G5GAC	31433
C52	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C53	Cap,SMT,Ceramic,330pF,2%,50V,C0G,0603	CCFS36	C0603C331G5GAC	31433
C54	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C55	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C56	Cap,SMT,Ceramic,0.022uF,10%,50V,X7R,0603	CCFS05	C0603C223K5RAC	31433
C57	Capacitor, SMT, Ceramic, 2.2uF 10%, 100V, X7R, 1812	CT64	GRM43ER72A225KA0 1L	72982
C58	Cap,SMT,Ceramic,0.022uF,10%,50V,X7R,0603	CCFS05	C0603C223K5RAC	31433
C59	Capacitor, SMT, Ceramic, 2.2uF 10%, 100V, X7R, 1812	CT64	GRM43ER72A225KA0 1L	72982
C60	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C61	Cap,SMT,Ceramic,0.01uF,10%,50V,X7R,0603	CCFS04	C0603C103K5RAC	31433
C62	Capacitor, SMT, Ceramic, 2.2uF 10%, 100V, X7R, 1812	CT64	GRM43ER72A225KA0 1L	72982
C63	Capacitor, SMT, Ceramic, 2.2uF 10%, 100V, X7R, 1812	CT64	GRM43ER72A225KA0 1L	72982
C64	Capacitor, SMT, Ceramic, 2.2uF 10%, 100V, X7R, 1812	CT64	GRM43ER72A225KA0 1L	72982
C65	Capacitor, SMT, Ceramic, 2.2uF 10%, 100V, X7R, 1812	CT64	GRM43ER72A225KA0 1L	72982
C66	Capacitor,SMT,Ceramic,0.1uF,100V,10%	CT51	C1812C104K1RAC	91929
CR01	Diode,SMT,Switching,250V,0.2A,SOD-323	QDRS01	BAS21HT1(STATIC)	04713
DS01	LED, Bi-Level, PWB Mount, Thru-hole, Green/Green	QM66	553-0122F(RoHS)	

## NAPS49

## Power Supply Distribution PWB Assy, GV

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
DS02	Diode, SMT, LED, Green,(560nm), 0603	QDLS01	597-5312-402F(STATIC)(RoHS)	83330
DS03	Diode, SMT, LED, Green,(560nm), 0603	QDLS01	597-5312-402F(STATIC)(RoHS)	83330
DS04	Diode, SMT, LED, Green,(560nm), 0603	QDLS01	597-5312-402F(STATIC)(RoHS)	83330
DS05	Diode, SMT, LED, Green,(560nm), 0603	QDLS01	597-5312-402F(STATIC)(RoHS)	83330
F01	Fuse, SMT, Fuse Block, 5A, Fast Blow	FA75	0154005(RoHS)	75915
J01	Connector, Header, 2 pos, 90deg, PWB, 20A, 600V, 7.62mm	JT148	1804797	
J02	Terminal Block, 2-pos, PWB Mount	JR51	1803277(ROHS)	PHOENIX
J03	MTA, Keyed Square Post Header Assy, 3 pin	JU60	647123-3	
J04	Conn, Socket, D-Sub, 15 pin, PWB Mt	JS19	K22-A15S-NJ	63590
L01	Inductor, SMT, Choke, 600ohms, 2.5A, 1206	LCFS03	ILHB1206ER601V(RoHS)	56845
L02	Inductor, SMT, Choke, 600ohms, 2.5A, 1206	LCFS03	ILHB1206ER601V(RoHS)	56845
L03	Inductor, Choke, Toroid, 10uH, 10A	LA44	2101-V	JW MILLER
L04	Inductor, SMT, Shielded, 33uH, 3.3A RMS	LS45	DR125-330-R(RoHS)	005K5
L05	Inductor, SMT, Shielded, 33uH, 3.3A RMS	LS45	DR125-330-R(RoHS)	005K5
L06	Inductor, SMT, Shielded, 33uH, 3.3A RMS	LS45	DR125-330-R(RoHS)	005K5
L07	Inductor, SMT, Choke, 600ohms, 2.5A, 1206	LCFS03	ILHB1206ER601V(RoHS)	56845
L08	Inductor, SMT, Choke, 600ohms, 2.5A, 1206	LCFS03	ILHB1206ER601V(RoHS)	56845
L09	Inductor, SMT, Choke, 600ohms, 2.5A, 1206	LCFS03	ILHB1206ER601V(RoHS)	56845
L10	Inductor, SMT, Choke, 600ohms, 2.5A, 1206	LCFS03	ILHB1206ER601V(RoHS)	56845
L11	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoHS)	56845
L12	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoHS)	56845
L13	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoHS)	56845
L14	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoHS)	56845
L15	Choke. Common Mode, 170ohms@100MHz. 20A	LS46	CM3440Z171B-10(RoHS)	
L16	Inductor, SMT, Choke, 600ohms, 2A, 0805	LCFS01	ILHB0805RK601V	56845
L17	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoHS)	56845
L18	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoHS)	56845
L19	Inductor, SMT, Choke, 2000 ohms, 80mA, 0805	LCFS02	ILBB0805ER202V(RoHS)	56845
L20	Inductor, SMT, Choke, 600ohms, 2A, 0805	LCFS01	ILHB0805RK601V	56845

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## Power Supply Distribution PWBAssy, GV

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
L21	Inductor, SMT, Choke, 600ohms, 2.5A, 1206	LCFS03	ILHB1206ER601V(Ro HS)	56845
L22	Inductor, SMT, Choke, 600ohms, 2.5A, 1206	LCFS03	ILHB1206ER601V(Ro HS)	56845
Q01	Transistor, FET, P-channel,D2Pak	QR71	IRF9540NSPBF(STATIC)(RoHS)	
Q02	Transistor,SMT,NPN,Switch/Amp,SOT-23	QBNS01	MMBT4401LT1(STATIC)(C)	04713
Q03	Transistor,SMT,MOSFET,N-Channel,60V,115mA,SOT-23	QN53	2N7002LT1G(STATIC)(ROHS)	1MQ07
Q04	Transistor,SMT,MOSFET,N-Channel,60V,115mA,SOT-23	QN53	2N7002LT1G(STATIC)(ROHS)	1MQ07
Q05	Transistor,SMT,MOSFET,N-Channel,60V,115mA,SOT-23	QN53	2N7002LT1G(STATIC)(ROHS)	1MQ07
R01	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R02	Resistor,SMT,MF,1210ohms,1%,1/10W,0603	RFFS39	RK73H1JLTD1211F	59124
R03	Resistor, SMT, MF, 22.1K Ohms, 1% 1/4W	RAD41	RK73H2BL2212F	59124
R04	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R05	Resistor, SMT,10k Ohms, 1%, 1W 2512	RAD80	RK73H3ATTE1002F	59124
R06	Resistor, SMT,10k Ohms, 1%, 1W 2512	RAD80	RK73H3ATTE1002F	59124
R07	Resistor, SMT, MF, 82.5K Ohms, 1% 1/4W	RAD48	RK73H2BL8252F	59124
R08	Resistor,SMT,MF,1500ohms,1%,1/10W,0603	RFFS40	RK73H1JLTD1501F	59124
R09	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R10	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R11	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R12	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R13	Resistor,SMT,MF,392ohms,1%,1/10W,0603	RFFS33	RK73H1JLTD3920F	59124
R14	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R15	Resistor, SMT,10k Ohms, 1%, 1W 2512	RAD80	RK73H3ATTE1002F	59124
R16	Resistor,SMT,MF,10ohms,1%,2W	RAD49Z	CR2512-2W-10R0F-SP	VENKEL
R17	Resistor,SMT,MF,10ohms,1%,2W	RAD49Z	CR2512-2W-10R0F-SP	VENKEL
R18	Resistor, SMT,10k Ohms, 1%, 1W 2512	RAD80	RK73H3ATTE1002F	59124
R19	Resistor,SMT,MF,10ohms,1%,2W	RAD49Z	CR2512-2W-10R0F-SP	VENKEL
R20	Resistor,SMT,MF,1500ohms,1%,1/10W,0603	RFFS40	RK73H1JLTD1501F	59124
R21	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R22	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R23	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R24	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R25	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R26	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R27	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124

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## Power Supply Distribution PWB Assy, GV

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R28	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R29	Resistor,SMT,MF,1210ohms,1%,1/10W,0603	RFFS39	RK73H1JLTD1211F	59124
R30	Resistor,SMT,MF,15.0Kohms,1%,1/10W,0603	RFFS52	RK73H1JLTD1502F	59124
R31	Resistor,SMT,MF,15.0Kohms,1%,1/10W,0603	RFFS52	RK73H1JLTD1502F	59124
R32	Resistor,SMT,MF,1210ohms,1%,1/10W,0603	RFFS39	RK73H1JLTD1211F	59124
R33	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R34	Resistor,SMT,MF,15.0Kohms,1%,1/10W,0603	RFFS52	RK73H1JLTD1502F	59124
R35	Resistor,SMT,MF,1820ohms,1%,1/10W,0603	RFFS41	RK73H1JLTD1821F	59124
R36	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R37	Resistor,SMT,MF,15.0Kohms,1%,1/10W,0603	RFFS52	RK73H1JLTD1502F	59124
R38	Resistor,SMT,MF,3320ohms,1%,1/10W,0603	RFFS44	RK73H1JLTD3321F	59124
R39	Resistor,SMT,MF,47.5Kohms,1%,1/10W,0603	RFFS58	RK73H1JLTD4752F	59124
R40	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R41	Resistor,SMT,MF,18.2Kohms,1%,1/10W,0603	RFFS53	RK73H1JLTD1822F	59124
R42	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R43	Resistor,SMT,MF,18.2Kohms,1%,1/10W,0603	RFFS53	RK73H1JLTD1822F	59124
R44	Resistor,SMT,MF,4750ohms,1%,1/10W,0603	RFFS46	RK73H1JLTD4751F	59124
R45	Resistor,SMT,MF,39.2Kohms,1%,1/10W,0603	RFFS57	RK73H1JLTD3922F	59124
R46	Resistor,SMT,MF,100Kohms,1%,1/10W,0603	RFFS62	RK73H1JLTD1003F	59124
R47	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124
R48	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
RT01	Thermister, PTC, SMT, 2920,750mA Hold, 60V	RX65	2920L075/60(RoHS)	75915
TP01	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP02	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP03	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP04	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP05	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP06	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP07	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP08	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
TP09	Terminal, SMT, Test Point, PWB	H AJ66	TP-107-02-1-T(RoHS) COMPONENTS CORP	
U01	Power Supply, Dc-Dc, 18-75Vin,12Vout, 7A, Neg On/Off	UW167	EHW007A0B41Z(STA TIC)(RoHS)	
U02	Diode, SMT, Schottky, 3.5Ax2,100V DPAK	QDS02	6CWQ10FN(STATIC)	81483
U03	Diode, SMT, Schottky, 3.5Ax2,100V DPAK	QDS02	6CWQ10FN(STATIC)	81483

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## Power Supply Distribution PWB Assy, GV

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
U04	IC,SMT,CMOS,Hex Inverter,Unbuff,SO-14	UDLS09	MM74HCU04M(STATI C)	07263
U05	Diode, SMT, Schottky, 3.5Ax2,100V DPAK	QDS02	6CWQ10FN(STATIC)	81483
U06	IC, SMT, Step Down Reg., 75V,3A, TSSOP-20	UP112	LM5576MH(STATIC)(R oHS) National	27014
U07	IC, SMT, Step Down Reg., 75V,3A, TSSOP-20	UP112	LM5576MH(STATIC)(R oHS) National	27014
U08	IC,SMT,Microprocessor Supervisor, SC70	UDSS02	ADM803- MAKS(STATIC)	24355
U09	IC, SMT, Step Down Reg., 75V,3A, TSSOP-20	UP112	LM5576MH(STATIC)(R oHS) National	27014
U10	IC,SMT,CMOS,Dual D Flip-Flop,SO-14	UA96	74VHCT74AM(STATIC )	07263
XBT01	Battery Holder, SMT, 20mm Coin Cell	BBHT04	BHX1-2032- SM(RoHS)	

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
A01	Power Supply Interface PWBAssy NVLT/GV	NAPI150A	219-4080-01	37338
A02	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
A03	Module Control/Interface PWBAssy NVLT	NAPC158A	219-2050-01	37338
A04	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
A05	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
A06	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
A07	RF Drive Splitter Assy, 10kWNVLT/GV	NAI23A	219-8310-02	37338
A08	RF Power Module Assy, LDMOS	NAA61B	219-1000-02	37338
A09	RF Power Module Assy, LDMOS	NAA61B	219-1000-02	37338
A10	RF Power Module Assy, LDMOS	NAA61B	219-1000-02	37338
A100	See Sales Order	%	% SEE SALES ORDER	37338
A11	RF Power Module Assy, LDMOS	NAA61B	219-1000-02	37338
A12	Combiner/Filter Assy, 10kW (RHS)	NAF119/02A	206-6000-05	37338
A13	Reject Load Assy, 1-Input 1500W, 20kW NVLT/GV	NAL14/01	219-6250-01	37338
A14	Reject Load Interface PWB Assy	NAPI166	219-4065	37338
A15	Power Probe Assy, NVLT/GV (DCREFLD)	NAFP109B	206-6500-02	37338
A16	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
A17	Power Supply Interface PWBAssy NVLT/GV	NAPI150A	219-4080-01	37338
A18	Module Control/Interface PWBAssy NVLT	NAPC158A	219-2050-01	37338
A19	RF Drive Splitter Assy, 10kWNVLT/GV	NAI23A	219-8310-02	37338
A20	RF Power Module Assy, LDMOS	NAA61B	219-1000-02	37338
A21	RF Power Module Assy, LDMOS	NAA61B	219-1000-02	37338
A22	RF Power Module Assy, LDMOS	NAA61B	219-1000-02	37338
A23	RF Power Module Assy, LDMOS	NAA61B	219-1000-02	37338
A24	Combiner/Filter Assy, 10kW (LHS)	NAF119/01A	206-6000-04	37338
A25	Combiner Assy, 20kW (LHS)	NAH58/02	206-6300-02	37338
A26	Probe Interface Assy, NV20	206-6350-01	206-6350-01	37338
A27	RF Drive Splitter Assy, 20kW NVLT/GV	NAI24	219-6320	37338
A28	Reject Load/Splitter Interface Assy, NVLT HP	NAX269	219-4100	37338
A29	Reject Load Assy, 4-Input 1500W, NVLT/GV HP	NAL17	219-6240	37338
B01	Fan, 80mm, Brushless, 48Vdc,EMI Caps, Tach w/conn	ZAP50	3115RL-07W-B79-E51(RoHS)	
B02	Fan, 80mm, Brushless, 48Vdc,EMI Caps, Tach w/conn	ZAP50	3115RL-07W-B79-E51(RoHS)	
B03	Fan, 80mm, Brushless, 48Vdc,EMI Caps, Tach w/conn	ZAP50	3115RL-07W-B79-E51(RoHS)	
B04	Fan, 80mm, Brushless, 48Vdc,EMI Caps, Tach w/conn	ZAP50	3115RL-07W-B79-E51(RoHS)	

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## Final Assy, 20kW NVLT/GV(Basic)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
B05	Fan, 80mm, Brushless, 48Vdc,EMI Caps, Tach w/conn	ZAP50	3115RL-07W-B79-E51(RoHS)	
B06	Fan, 80mm, Brushless, 48Vdc,EMI Caps, Tach w/conn	ZAP50	3115RL-07W-B79-E51(RoHS)	
K01	Relay, Coaxial, SPDT, N type,12VDC	KB48	CZX3500	
L01	Ferrite Clamp Assy	219-8055	219-8055	37338
L02	Ferrite Clamp Assy	219-8055	219-8055	37338
L03	Ferrite Clamp Assy	219-8055	219-8055	37338
L04	Ferrite Clamp Assy	219-8055	219-8055	37338
L05	Ferrite Clamp Assy	219-8055	219-8055	37338
L06	Ferrite Clamp Assy	219-8055	219-8055	37338
L07	Ferrite Clamp Assy	219-8055	219-8055	37338
L08	Ferrite Clamp Assy	219-8055	219-8055	37338
L09	AC Ferrite Bracket Assy	219-8059	219-8059	37338
TB01	Pwr Dist block, 570A, 300kcmil-4 AWG x 2, 4-14 AWG x 12	JR55	PDBFS377	
TB01	Pwr Dist Block, 175A, 2/0-8AWG x 1, 4-14 AWG x 4	JR56	PDBFS220	
TB02	Pwr Dist Block, 175A, 2/0-8AWG x 1, 4-14 AWG x 4	JR56	PDBFS220	
TB03	Pwr Dist Block, 175A, 2/0-8AWG x 1, 4-14 AWG x 4	JR56	PDBFS220	
U01	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
U02	Power Supply, 18-53Vdc, 53A,2725W/1200W, 90-265Vac, CC	UG92B	CC109171542_Series2.2(RoHS)	
U03	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
U04	Power Supply, 18-53Vdc, 53A,2725W/1200W, 90-265Vac, CC	UG92B	CC109171542_Series2.2(RoHS)	
U05	Power Supply, 18-53Vdc, 53A,2725W/1200W, 90-265Vac, CC	UG92B	CC109171542_Series2.2(RoHS)	
U06	Power Supply, 18-53Vdc, 53A,2725W/1200W, 90-265Vac, CC	UG92B	CC109171542_Series2.2(RoHS)	
U07	Power Supply, 18-53Vdc, 53A,2725W/1200W, 90-265Vac, CC	UG92B	CC109171542_Series2.2(RoHS)	
U08	Power Supply, 18-53Vdc, 53A,2725W/1200W, 90-265Vac, CC	UG92B	CC109171542_Series2.2(RoHS)	
U09	Power Supply, 18-53Vdc, 53A,2725W/1200W, 90-265Vac, CC	UG92B	CC109171542_Series2.2(RoHS)	
U10	Power Supply, 18-53Vdc, 53A,2725W/1200W, 90-265Vac, CC	UG92B	CC109171542_Series2.2(RoHS)	
U11	Power Supply, 18-53Vdc, 53A,2725W/1200W, 90-265Vac, CC	UG92B	CC109171542_Series2.2(RoHS)	
U12	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
U13	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338
U14	Power Supply, 18-53Vdc, 53A,2725W/1200W, 90-265Vac, CC	UG92B	CC109171542_Series2.2(RoHS)	



## NARF73A Final Assy, 20kW NVLT/GV(Basic)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
U15	Power Supply, 18-53Vdc, 53A,2725W/1200W, 90-265Vac, CC	UG92B	CC109171542_Series2 .2(RoHS)	
U16	Power Supply, 18-53Vdc, 53A,2725W/1200W, 90-265Vac, CC	UG92B	CC109171542_Series2 .2(RoHS)	
U17	Power Supply, 18-53Vdc, 53A,2725W/1200W, 90-265Vac, CC	UG92B	CC109171542_Series2 .2(RoHS)	
U18	Power Supply, 18-53Vdc, 53A,2725W/1200W, 90-265Vac, CC	UG92B	CC109171542_Series2 .2(RoHS)	
U19	Power Supply, 18-53Vdc, 53A,2725W/1200W, 90-265Vac, CC	UG92B	CC109171542_Series2 .2(RoHS)	
U20	Power Supply, 18-53Vdc, 53A,2725W/1200W, 90-265Vac, CC	UG92B	CC109171542_Series2 .2(RoHS)	
U21	Power Supply, 18-53Vdc, 53A,2725W/1200W, 90-265Vac, CC	UG92B	CC109171542_Series2 .2(RoHS)	
W11	Installed at Next Higher Assy	+	INSTALLED AT NEXT HIGHER ASSY	37338

## NARF73A/02 Final Assy, GV20/GV15

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
A02	Monitor Fan Assy, GV	NAX273	219-5200	37338
A04	Controller Assy, GV	NAC118	219-2100	37338
A05	See Family Tree for Nomenclature	NAE*	NAUTEL	37338
A06	See Sales Order - Exciter	NAE%	NAE%	37338
A16	Remote Interface w/ TerminalBlock, PWB Assy (NVLT/GV HP)	NAPI143/02	219-4072-02	37338
U01	LCD Touch Monitor, 17" Rear Mt S.A.W	UR108	90-410-004-C(RoHS)	1JA77
U03	Power Supply, 18-53Vdc, 53A,2725W/1200W, 90-265Vac, CC	UG92B	CC109171542_Series2 .2(RoHS)	
U12	See Sales Order-Power Supply	UG%	UG%	37338
U13	See Sales Order-Power Supply	UG%	UG%	37338
W11	Not Used	-	NOT USED	37338

## NAX269 Reject Load/Splitter Interface Assy, NVLT HP

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
A01	Reject Load/Splitter Interface Assy, NVLT HP	NAPI167	219-4082	37338
A02	Fan Interface, 6-way, PWB Assy	NAPI168	219-4078	37338
W01	Cable, 1ft, 9-pin, D-sub, M/F, Straight-Through	UA196	CBG25211(RoHS) Cables To Go	
W02	Cable, 1ft, 9-pin, D-sub, M/F, Straight-Through	UA196	CBG25211(RoHS) Cables To Go	



NAX273

Monitor Fan Assy, GV

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
A01	Monitor Fan Interface PWBAssy, GV	NAPI172	219-4250	37338
B01	Fan Assy, ZA55 (GV Monitor)	219-5210	219-5210	37338
S01	Switch, Miniature, SPDT, Actuated	SD47	V-15G4-1C25-K	34361





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## SECTION 4.3: WIRING/CONNECTOR LISTS

This section contains the wiring information for the hard-wired assemblies of the transmitter, and applicable connector mating information.

### Wiring Lists Provided

Wiring lists are provided in tabular format. [Table 4.3.1 on page 4.3.2](#) lists the tables containing wiring information. These tables provide non-printed wiring pattern, point-to-point (source and destination) interconnection information.

### Wiring Lists Not Provided

Separate wiring lists are not provided for some assemblies, including:

- Assemblies that have a separate maintenance manual. Refer to the appropriate maintenance manual for detailed wiring information for these assemblies, if provided.
- Assemblies that have their wiring information shown in tables on their assembly detail drawing(s). Refer to the Mechanical Drawings section of this manual for detailed wiring information for these assemblies.

### Connector Mating Information

Where applicable, a connector mating table is provided after the corresponding wiring list. [Table 4.3.2 on page 4.3.2](#) identifies all provided connector information.

### Wire Colours

Every effort is made to manufacture assemblies using the wire colour shown in the **Colour** column of the wiring list tables. Sometimes, a white wire will be substituted for the listed colour. In such cases, wires must be identified by their assigned numbers.

### Printed Wiring Board Patterns

Printed wiring pattern information for printed wiring boards (PWBs) is beyond the scope of this manual, and therefore not provided.

*Table 4.3.1: Wiring Lists Provided*

<b>TABLE #</b>	<b>Description</b>
<a href="#">Table 4.3.3</a>	Wiring List - GV20/GV15 Transmitter ( <a href="#">page 4.3.3</a> )
<a href="#">Table 4.3.5</a>	Wiring List - NAC118 Controller ( <a href="#">page 4.3.11</a> )
<a href="#">Table 4.3.7</a>	Wiring List - NAE107A or NAE107A/01 Exciter ( <a href="#">page 4.3.13</a> )
<a href="#">Table 4.3.9</a>	Wiring List - Exciter Cablesset Assembly ( <a href="#">page 4.3.14</a> )
<a href="#">Table 4.3.11</a>	Wiring List - NAA61B RF Power Module ( <a href="#">page 4.3.16</a> )

*Table 4.3.2: Connector Mating Information Provided*

<b>TABLE #</b>	<b>Description</b>
<a href="#">Table 4.3.4</a>	Connector Mating Information - GV20/GV15 Transmitter ( <a href="#">page 4.3.8</a> )
<a href="#">Table 4.3.6</a>	Connector Mating Information - NAC118 Controller ( <a href="#">page 4.3.12</a> )
<a href="#">Table 4.3.8</a>	Connector Mating Information - NAE107A or NAE107A/01 Exciter ( <a href="#">page 4.3.14</a> )
<a href="#">Table 4.3.10</a>	Connector Mating Information - Exciter Cablesset Assembly ( <a href="#">page 4.3.15</a> )
<a href="#">Table 4.3.12</a>	Connector Mating Information - NAA61B RF Power Module ( <a href="#">page 4.3.16</a> )
<a href="#">Table 4.3.13</a>	Connector Mating Information - NAL17 Reject Load Assy ( <a href="#">page 4.3.17</a> )
<a href="#">Table 4.3.14</a>	Connector Mating Information - NAI24 Rf Drive Splitter ( <a href="#">page 4.3.17</a> )
<a href="#">Table 4.3.15</a>	Connector Mating Information - NAX269 Reject Load Splitter ( <a href="#">page 4.3.17</a> )

Table 4.3.3: Wiring List - GV20/GV15 Transmitter

Source	Destination	Wire #	Colour	Size	Remarks
TB1-1B1	TB2-1A1	1	Grey	6	
TB1-1B2	TB2-1A1	2	Grey	6	
TB1-1B3	TB3-1A1	3	Grey	6	
TB1-1B4	TB3-1A1	4	Grey	6	
TB1-2B1	TB2-2A1	5	Grey	6	
TB1-2B2	TB2-2A1	6	Grey	6	
TB1-2B3	TB3-2A1	7	Grey	6	
TB1-2B4	TB3-2A1	8	Grey	6	
TB1-3B1	TB2-3A1	9	Grey	6	
TB1-3B2	TB2-3A1	10	Grey	6	
TB1-3B3	TB3-3A1	11	Grey	6	
TB1-3B4	TB3-3A1	12	Grey	6	
TB1-4B1	TB2-4A1	13	Grey	6	
-	-	14	-	-	Not Used
TB1-4B2	TB3-4A1	15	Grey	6	
-	-	16	-	-	Not Used
-	-	17	-	-	Not Used
-	-	18	-	-	Not Used
-	-	19	-	-	Not Used
-	-	20	-	-	Not Used
TB2-1B1	A1E27--	21	Grey	10	3ph 208VAC
TB2-1B2	A1E1--	22	Grey	10	3ph 208VAC
TB2-1B3	A1E9--	23	Grey	10	3ph 208VAC
TB2-2B1	A1E28--	24	Grey	10	3ph 208VAC
TB2-2B2	A1E2--	25	Grey	10	3ph 208VAC
TB2-2B3	A1E12--	26	Grey	10	3ph 208VAC
TB2-3B1	A1E18--	27	Grey	10	3ph 208VAC
TB2-3B2	A1E15--	28	Grey	10	3ph 208VAC
TB3-1B1	A17E9--	29	Grey	10	3ph 208VAC
TB3-1B2	A17E12--	30	Grey	10	3ph 208VAC
TB3-2B1	A17E27--	31	Grey	10	3ph 208VAC
TB3-2B2	A17E15--	32	Grey	10	3ph 208VAC
TB3-2B3	A17E1--	33	Grey	10	3ph 208VAC
TB3-3B1	A17E28--	34	Grey	10	3ph 208VAC
TB3-3B2	A17E2--	35	Grey	10	3ph 208VAC

Table 4.3.3: Wiring List - GV20/GV15 Transmitter

Source	Destination	Wire #	Colour	Size	Remarks
TB3-3B3	A17E18--	36	Grey	10	3ph 208VAC
TB2-1B1	A1E27--	21	Grey	10	3ph 380Vac
TB2-1B2	A1E1--	22	Grey	10	3ph 380Vac
TB2-2B1	A1E9--	23	Grey	10	3ph 380Vac
TB2-4B1	A1E28--	24	Grey	10	3ph 380Vac
TB2-4B3	A1E2--	25	Grey	10	3ph 380Vac
TB2-3B1	A1E12--	26	Grey	10	3ph 380Vac
TB2-4B4	A1E18--	27	Grey	10	3ph 380Vac
TB2-4B2	A1E15--	28	Grey	10	3ph 380Vac
TB3-1B1	A17E9--	29	Grey	10	3ph 380Vac
TB3-2B1	A17E12--	30	Grey	10	3ph 380Vac
TB3-3B1	A17E27--	31	Grey	10	3ph 380Vac
TB3-4B1	A17E15--	32	Grey	10	3ph 380Vac
TB3-3B2	A17E1	33	Grey	10	3ph 380Vac
TB3-4B3	A17E28	34	Grey	10	3ph 380Vac
TB3-4B4	A17E2	35	Grey	10	3ph 380Vac
TB3-4B2	A17E18	36	Grey	10	3ph 380Vac
TB2-1B1	A1E27--	21	Grey	10	1ph 240VAC
TB2-1B3	A1E1--	22	Grey	10	1ph 240VAC
TB2-1B2	A1E9--	23	Grey	10	1ph 240VAC
TB2-2B1	A1E28--	24	Grey	10	1ph 240VAC
TB2-2B3	A1E2--	25	Grey	10	1ph 240VAC
TB2-1B4	A1E12--	26	Grey	10	1ph 240VAC
TB2-2B4	A1E18--	27	Grey	10	1ph 240VAC
TB2-2B2	A1E15--	28	Grey	10	1ph 240VAC
TB3-1B2	A17E9--	29	Grey	10	1ph 240VAC
TB3-1B4	A17E12--	30	Grey	10	1ph 240VAC
TB3-1B1	A17E27--	31	Grey	10	1ph 240VAC
TB3-2B2	A17E15--	32	Grey	10	1ph 240VAC
TB3-1B3	A17E1--	33	Grey	10	1ph 240VAC
TB3-2B1	A17E28--	34	Grey	10	1ph 240VAC
TB3-2B3	A17E2--	35	Grey	10	1ph 240VAC
TB3-2B4	A17E18--	36	Grey	10	1ph 240VAC
-	-	37	-	-	Not Used
-	-	38	-	-	Not Used

Table 4.3.3: Wiring List - GV20/GV15 Transmitter

Source	Destination	Wire #	Colour	Size	Remarks
TB1-5B1	E31--	39	Grn-Yel	6	
TB1-5B2	E31--	40	Grn-Yel	6	
E1--	E24--	41	Grn-Yel	2	
E1--	E24--	42	Grn-Yelw	2	
E14-	E15-	43	Grn-Yel	14	
-	-	44	-	-	Not Used
-	-	45	-	-	Not Used
A1E13--	E2--	46	White	10	
A1E14--	E3--	47	Black	10	
A1E16--	E4--	48	White	10	
A1E17--	E5--	49	Black	10	
A17E13--	E25--	50	White	10	
A17E14--	E26--	51	Black	10	
A17E16--	E27--	52	White	10	
A17E17--	E28--	53	Black	10	
E6--	A3E5--	54	White	14	
E7--	A3E6--	55	Black	14	
E8--	A18E5--	56	White	14	
E9--	A18E6--	57	Black	14	
E10--	P3-1	58	White	12	
E11--	P3-2	59	Black	12	
E12--	P4-1	60	White	12	
E13--	P4-2	61	Black	12	
E29--	P5-1	62	White	12	
E30--	P5-2	63	Black	12	
-	-	64	-	-	Not Used
-	-	65	-	-	Not Used
P6-1	P8-6	66	White	22	
P6-2	P8-7	67	White	22	
P6-3	P8-8	68	Black	22	
P6-4	P8-9	69	Black	22	
P6-10	P7-2	70	White	22	
P6-11	P7-3	71	White	22	
P6-18	P7-6	72	White	22	
P6-19	P7-9	73	White	22	
P6-17	P10--	74	White	22	



Table 4.3.3: Wiring List - GV20/GV15 Transmitter

Source	Destination	Wire #	Colour	Size	Remarks
P6-16	P11--	75	White	22	
-	-	76	-	-	Not Used
P9-1	P8-1	77	White	22	
P9-2	P8-2	78	White	22	
P9-6	P8-3	79	Black	22	
P9-7	P8-4	80	Black	22	
P9-5	P7-1	81	White	22	
P9-9	P7-7	82	White	22	
P9-8	P7-8	83	White	22	
-	-	84	-	-	Not Used
P12	P13	85	White	14	
-	-	86	-	-	Not Used
-	-	87	-	-	Not Used
A1E23	A3E9	101	White	10	
A1E24	E16	102	Black	10	
A1E19	A3E10	103	White	10	
A1E20	E16	104	Black	10	
A1E25	A3E7	105	White	10	
A1E26	E17	106	Black	10	
A1E21	A3E8	107	White	10	
A1E22	E17	108	Black	10	
A1E7	A3E3	109	White	10	
A1E8	E18	110	Black	10	
A1E3	A3E4	111	White	10	
A1E4	E18	112	Black	10	
A1E10	A3E1	113	White	10	
A1E11	E19	114	Black	10	
A1E5	A3E2	115	White	10	
A1E6	E19	116	Black	10	
-	-	117	Not Used		
-	-	118	Not Used		
-	-	119	Not Used		
-	-	120	Not Used		
A17E23	A18E9	121	White	10	
A17E24	E20	122	Black	10	
A17E19	A18E10	123	White	10	

Table 4.3.3: Wiring List - GV20/GV15 Transmitter

Source	Destination	Wire #	Colour	Size	Remarks
A17E20	E20	124	Black	10	
A17E25	A18E7	125	White	10	
A17E26	E21	126	Black	10	
A17E21	A18E8	127	White	10	
A17E22	E21	128	Black	10	
A17E7	A18E3	129	White	10	
A17E8	E22	130	Black	10	
A17E3	A18E4	131	White	10	
A17E4	E22	132	Black	10	
A17E10	A18E1	133	White	10	
A17E11	E23	134	Black	10	
A17E5	A18E2	135	White	10	
A17E6	E23	136	Black	10	
-	-	137	Not Used		
-	-	138	Not Used		
-	-	139	Not Used		
-	-	140	Not Used		
A1E27	DS1-X1	201	Grey	14	
A1E28	DS1-X2	202	Grey	14	
A1E12	DS3-X1	203	Grey	14	
A1E18	DS3-X2	204	Grey	14	
A1E9	DS2-X1	205	Grey	14	
A1E15	DS2-X2	206	Grey	14	

Table 4.3.4: Connector Mating Information - GV20/GV15 Transmitter

Connector	Mate	Remarks
A13B1P1	A14J1	
A13B2P1	A14J2	
A13W1P1	A14J3	
A27W1P1	A28A1J6	
A29W1P1	A28A1J1	
B1P1	A28A2J1	
B2P1	A28A2J2	
B3P1	A28A2J3	
B4P1	A28A2J4	
B5P1	A28A2J5	
B6P1	A28A2J6	
P1	A2J2	
P2	U1H1	
P3	A4 - DC INPUT	
P4	A5A2J1	If A5 installed, else tie back
P5	A6A2J1	If A6 installed, else tie back
P6	A28A1J4	
P7	A3J1	
P8	A3J3	
P9	A14J4	
P10	K1E1	
P11	K1E2	
P12	A1E29	
P13	A17E30	
W1P1	A3J5	
W1P2	A2J1	
W2P1	A4 - XMTR LINK	
W2P2	A3J19	
W3P1	A3J20	
W3P2	A1J1	
W4	N/A	Not Used
W5	N/A	Not Used
W6P1	A15A1J1	
W6P2	A3J6	
W7P1	A15A2J1	
W7P2	A3J7	

Table 4.3.4: Connector Mating Information - GV20/GV15 Transmitter

Connector	Mate	Remarks
W8P1	A15A3J1	
W9P1	A15A4J1	
W9P2	A5A1J1	If A5 installed, else tie back
W10P1	A15A5J1	
W10P2	A6A1J1	If A6 installed, else tie back
W11P1	A4J2	If single exciter, else not installed
W11P2	K1-N/C	If single exciter, else not installed
W12P1	A7A2J1	
W12P2	A3J14	
W13P1	A7A2J2	
W13P2	A3J13	
W14P1	A7A2J3	
W14P2	A3J12	
W15P1	A7A2J4	
W15P2	A3J11	
W16P1	A12J5)	
W16P2	A29J1)	
W17P1	A12J6)	
W17P2	A29J2)	
W18P1	A12J7)	
W18P2	A27J1)	
W19	N/A	Not Used
W20P1	A4 - REMOTE I/O-A	If A16 installed, else tie back
W20P2	A16J4	If A16 installed, else tie back
W21P1	A4 - REMOTE I/O-B	If A16 installed, else tie back
W21P2	A16J3	If A16 installed, else tie back
W22	N/A	Not Used
W23 - W28	N/A	See next higher assembly
W29P1	A4 - LAN	If A16 installed, else tie back
W29P2	A16J2	If A16 installed, else tie back
W30P1	A15A6J1	If A15A6J1 installed, else tie back
W30P2	A3J25	If A3J25 installed, else tie back
W31P1	N/A	Not Used
W31P2	N/A	Not Used
W32P1	N/A	Not Used
W32P2	N/A	Not Used
W33P1	N/A	Not Used

Table 4.3.4: Connector Mating Information - GV20/GV15 Transmitter

Connector	Mate	Remarks
W33P2	N/A	Not Used
W34	N/A	Not Used
W35P1	A18J20	
W35P2	A17J1	
W36P1	A3J4	
W36P2	A18J19	
W37P1	A18J5	
W37P2	A28A1J5	
W38P1	A28A1J3	
W38P2	A18J1	
W39P1	A18J3	
W39P2	A28A1J2	
W40	N/A	Not Used
W41P1	K1-COM	
W41P2	A27A2J4	
W42P1	A27A2J2	
W42P2	A7A1J1	
W43P1	A27A2J3	
W43P2	A19A1J1	
W44P1	A19A2J1	
W44P2	A18J14	
W45P1	A19A2J2	
W45P2	A18J13	
W46P1	A19A2J3	
W46P2	A18J12	
W47P1	A19A2J4	
W47P2	A18J11	
W48P1	A24J5	
W48P2	A29J3	
W49P1	A24J6	
W49P2	A29J4	
W50P1	A24J7	
W50P2	A27J2	
W51P1	A25J1	
W51P2	A13J1	
W52	N/A	Not Used
W53	N/A	Not Used

Table 4.3.5: Wiring List - NAC118 GV Controller

Source	Destination	Wire #	Colour	Size	Remarks
P1-1	P2-1	1	White	22	
P1-2	P2-2	2	White	22	
P1-3	P2-11	3	White	22	
P1-4	P2-12	4	White	22	
P1-5	P2-16	5	White	22	
P1-6	P2-15	6	Black	22	
P1-7	P2-10	7	White	22	
P1-8	P2-9	8	White	22	
P1-9	P2-13	9	White	22	
P3-1	P4-1	10	White	22	
P3-2	P4-2	11	White	22	
P3-3	P5-4	12	Conductor	22	A
P3-4	P5-2	12	Shield	-	A
P3-5	P4-5	13	White	22	
P3-6	P4-6	14	Black	22	
P3-7	P4-7	15	White	22	
P3-8	P4-8	16	Black	22	
P3-9	P4-9	17	White	22	
P3-10	P4-10	18	White	22	
P3-11	P4-11	19	White	22	
-	-	20	-	-	
-	-	21	-	-	
P3-14	P4-14	22	White	22	
P3-15	P4-15	23	Black	22	
P6-6	P7-6	24	White	22	B
P6-8	P7-8	25	Black	22	B
P8-1	P9-1	26	White	22	B
P8-3	P9-3	27	White	22	B
P8-5	P9-5	28	White	22	B
P8-7	P9-7	29	Black	22	B

Table 4.3.6: Connector Mating Information - NAC118 GV Controller

Connector	Mate	Remarks
P1	A4J2	UI Interface to Display
P2	U1H1	UI Interface to Display
P3	A3J4	Power Supply Distribution
P4	A2J1	Power Supply Distribution
P5	A1_CPU12V1	SBC Power
P6	A2J13	SBC Power
P7	A1_F_PANEL	SBC Power
P8	A2J14	USB
P9	A1_USB0_1	USB
A1B1P1	A1U1-FAN1	SBC Fan
A1W1P1	A1U1-COM3	SBC Streaming Bus
A1W1P2	W1P1	SBC Streaming Bus (
A1W2P1	A1U1-COM2	Monitor COM Port
W1P1	A1W1P2	SBC Streaming Bus
W1P2	A2J4	SBC Streaming Bus
W2P1	W6P2	SBC Serial Bus
W2P2	A2J3	SBC Serial Bus
W3P1	A2J2	Controller to UI Interface
W3P2	A4J1	Controller to UI Interface
W4P1	USB1	USB1 (Front Panel Mount)
W4P2	A1_USB4_5	SBC USB 4 (Red Wire Pin 1)
W5P1	USB2	USB2 (Front Panel Mount)
W5P2	A1_USB2_3	SBC USB 2 (Red Wire Pin 1)
W6P1	A1U1-COM4	SBC Serial Bus
W6P2	W2P1	SBC Serial Bus
B1P1	A3J3	Module Fan

Table 4.3.7: Wiring List - NAE107A or NAE107A/01 Exciter

Source	Destination	Wire #	Colour	Size	Remarks
P1-1	P2-1	1	White	22	
P1-5	P2-5	2	Black	22	
P1-11	P2-11	3	White	22	
P1-13	P2-24	4	Black	22	
P1-18	P2-4	5	White	22	
P1-17	P2-17	6	White	22	
P1-19	P2-15	7	White	22	
P1-22	P2-12	8	Black	22	
P1-23	P2-23	9	White	22	
P1-24	P2-13	10	White	22	
P1-25	P2-25	11	White	22	
P2-7	P4-4	12	White	22	
P2-16	P4-2	13	White	22	
P2-20	P4-3	14	White	22	
J1-Conductor	A5-M-	J1	Core		50 Ohm Coaxial
J1-Shield	A5-L-	J1	Shield		50 Ohm Coaxial
J3-Conductor	A3-A-	J3	Core		50 Ohm Coaxial
J3-Shield	A3-G-	J3	Shield		50 Ohm Coaxial
C1E1--	A2-A-	LINK		20	
A5-C-	C1E2--	LINK		20	
C2E1--	A2-B-	LINK		20	
A5-B-	C2E2--	LINK		20	
C3E1--	A2-C-	LINK		20	
A5-A-	C3E2--	LINK		20	
C4E1--	A2-D-	LINK	White	16	
A4-B-	C4E2--	LINK	White	16	
C5E1--	A2-E-	LINK		20	
A4-V-	C5E2--	LINK		20	
C6E1--	A2-F-	LINK		20	
A3-C-	C6E2--	LINK		20	
C7E1--	A2-G-	LINK		20	
C8E1--	A2-H-	LINK		20	
C9E1--	A2-J-	LINK		20	
A3-B-	C9E2--	LINK		20	
A3-D-	A4-X-	LINK		20	
A4-D-	A5-D-				



Table 4.3.7: Wiring List - NAE107A or NAE107A/01 Exciter

Source	Destination	Wire #	Colour	Size	Remarks
A5-F-	J2-Conductor	Link			
C8E2--	RT1-A	Black	22		Thermistor Lead
C7E2--	RT1-B	Black	22		Thermistor Lead

Table 4.3.8: Connector Mating Information - NAE107A or NAE107A/01 Exciter

Connector	Mate	Remarks
B1P1	A2J4	
P1	A2J3	
P2	A1J9	
P3	A8J5	
P4	A6J1	
W1P1	A1J15	
W1P2	J3	
W2P1	A1J13	
W2P1	A8J3	Used with Exgine systems only
W3P1	A1J14	Used with Exgine systems only
W3P2	A8J2	Used with Exgine systems only
W4P1	A8J1	Used with Exgine systems only
W4P2	U1J1	Used with Exgine systems only
W5P1	A1J11	Used with Exgine systems only
W5P2	A8J8	Used with Exgine systems only
W6P1	A1J13	Used with Exgine systems only
W6P2	A8J4	Used with Exgine systems only

Table 4.3.9: Wiring List - GV Exciter Cableset Assembly

Source	Destination	Wire #	Colour	Size	Remarks
W26P1-1	W26P2-1	1A	Red	24	
W26P1-2	W26P2-2	1B	Black	24	
W26P1-6	W26P2-9	1	Shield	24	
W26P1-4	W26P3-1	2A	Red	24	
W26P1-5	W26P3-2	2B	Black	24	
W26P1-9	W26P3-9	2	Shield	24	

Table 4.3.10: Connector Mating Information - GV Exciter Cableset Assembly

Connector	Mate	Remarks
W23P1	A4 - EXCITER LINK	
W23P2	A3J16	
W24P1	A3J17	
W24P2	A5A1J2	
W25P1	A3J18	
W25P2	A6A1J2	If A6 installed, else tie back
W26P1	A4 - AES OUT	
W26P2	A5A1J5	
W26P3	A6A1J5	If A6 installed, else tie back
W27P1	A5J2	
W27P2	K1-N/C	
W28P1	A6J2	If A6 installed, else tie back
W28P2	K1-N/O	

Table 4.3.11: Wiring List - NAA61B RF Power Module

Source	Destination	Wire #	Colour	Size	Remarks
A5TB1-1	A1-U	1	White	12	
A5TB1-3	A2-U	2	White	12	
A5TB1-2	A3-U	3	White	12	
A5TB1-4	A4-U	4	White	12	
A5-A	A1-V	-	-	24	Link
A5-D	A2-V	-	-	24	Link
A5-G	A3-V	-	-	24	Link
A5-K	A4-V	-	-	24	Link
A5-C	A1-X	-	-	24	Link
A5-F	A2-X	-	-	24	Link
A5-J	A3-X	-	-	24	Link
A5-M	A4-X	-	-	24	Link
A1-D	A6-F	-	-	16	Link
A2-D	A6-G	-	-	16	Link
A3-D	A7-D	-	-	16	Link
A4-D	A7-E	-	-	16	Link
A7-C	J1-Center	-	-	10	Link
A5-P	A6-C	5	Core	-	50 Ohm Coax
A5-N	A6-E	5	Shield	-	50 Ohm Coax

Table 4.3.12: Connector Mating Information - NAA61B RF Power Module

Connector	Mate	Remarks
B1P1	A5J1	Fan 1 Connection
B2P1	A5J2	Fan 2 Connection
B3P1	A5J3	Fan 3 Connection
B4P1	A5J4	Fan 4 Connection
B5P1	A5J5	Fan 5 Connection
B6P1	A5J6	Fan 6 Connection

*Table 4.3.13: Connector Mating Information - NAL17 Reject Load Assy*

Connector	Mate	Remarks
W1P1	W1P1	
W1P2	A1J1	
W1P3	A1J2	

*Table 4.3.14: Connector Mating Information - NAI24 Rf Drive Splitter*

Connector	Mate	Remarks
W1P1	W1P1	
W1P2	A1J1	
W1P3	A2J8	

*Table 4.3.15: Connector Mating Information - NAX269 Reject Load Splitter*

Connector	Mate	Remarks
W1P1	A1J7	
W1P2	A2J8	
W2P1	A2J7	
W2P2	A1J8	







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## SECTION 4.4: READING ELECTRICAL SCHEMATICS

This section contains electrical schematics and logic diagrams for the transmitter. Block diagrams, simplified electrical schematics, and logic diagrams may be included. Refer to [Table 4.4.1 on page 4.4.5](#) for an itemized listing.

### Component Values

Unless otherwise specified on the logic or schematic diagram, the following defaults apply:

-  5 Capacitor values are shown in microfarads (uF) (e.g. 5 uF)
-  10 Resistor values are shown in ohms (e.g. 10 ohms; K = 1,000 and M = 1,000,000)  
Resistor power ratings are not shown when less than 0.5 W
-  Unidentified diodes are part number BAS21HT1 (Nautel Part # QDRS01)
-  24V Unidentified transient suppressors are part number 0603E SDA-TR1 (Nautel Part # QR70)

### Graphic and Logic Symbols

The graphic symbols used on electrical schematics are in accordance with American National Standard ANSI Y32.2-1975 - Graphic Symbols for Electrical and Electronic Diagrams.

The logic symbols used on electrical schematics and logic diagrams are in accordance with American National Standard ANSI Y32.14-1975 - Graphic Symbols for Logic Diagrams.

### Reference Designations

Referenced designations were assigned in accordance with American National Standard ANSI Y32.16-1975 - Reference Designations for Electrical and Electronic Parts and Equipment.

Each electrical symbol is identified with its basic reference designation. To obtain the full reference designation for a specific part, prefix this basic identifier with the reference designation assigned to all higher assemblies. For example, the complete designation for a resistor (R1) on a printed wiring board (A1), that is part of a larger board (A2), would be A2A1R1.

## Unique Symbols

Nautel uses unique symbols on electrical schematics to describe logic (two-state) signals. These signals differ from single-state signals or analog signals that may have multiple values.

### Type of Inputs and Outputs

On electrical schematics, names used to describe logic (two-state) input and output signals are prefixed with a # symbol.

### Logic Level Convention

The # prefix identifies an input or output signal that has two distinct states: high and low.

The suffix on an input or output signal name identifies the active (true) state of the signal. The high suffix (+) indicates the more positive of the two levels used to represent the logic states. The low suffix (-) indicates the less positive of the two levels.

Two types of logic, positive and negative, may be represented on a particular schematic. In positive logic, high represents the active (true) state, and low represents the inactive (false) state. In negative logic, low represents the active (true) state, and high represents the inactive (false) state.

## Identifying Schematic Diagrams

Each electrical schematic in this section is identified by a number that is both the figure number and the page number. The numbers are assigned sequentially and are prefixed by the letters SD. The electrical schematics and logic diagrams included in this section are listed in [Table 4.4.1 on page 4.4.5](#).

---

## Structure of Schematics

The electrical schematics are structured in a hierarchical format that is based on function and signal flow. Wherever practical, the signal flow is from left to right. Normally, inputs originate on the left-hand side and outputs extend to the right-hand side. Exceptions are shown by an arrow indicating the direction of signal flow.

**NOTE:** The physical location of a part or assembly was not necessarily a factor during creation of the schematic. The full reference designation assigned to a part or assembly, in conjunction with the family tree (see [Section 4.2, "Parts Lists" on page 4.2.1](#)) and the assembly detail drawings (see [Section 4.5, "Mechanical Drawings" on page 4.5.1](#)), will identify its location.

Figures SD-1 through SD-4 identify each major stage and its detailed interconnection. Each stage contains cross-references that identify which blocks are the signal sources for inputs, or the destinations for outputs.

When a sub-function is treated as a block in figures SD-1 through SD-8, its detailed circuit information is included in its own schematic drawing(s), which is also included in this section.

## Locating Schematic Diagram(s) for a Functional Block

The text inside a functional block provides the key to locating its schematic diagram(s).

1. When a functional block is assigned a reference designation (e.g., A8A1), refer to the family trees in [Section 4.2, "Parts Lists" on page 4.2.1](#). Follow the family tree branches to the block that contains the desired reference designation, and associated Nautel nomenclature (e.g., NAPA31C Power Amplifier PWB). Note the reference designations and Nautel nomenclatures of all higher assemblies in the path.  
Example: A8 NAA61B RF Module Assy 1 -> A8A1 NAPA31C Power Amplifier PWB.
2. Refer to [Table 4.4.1 on page 4.4.5](#) and use the reference designation and Nautel nomenclature to identify the appropriate schematic diagram(s).  
Example: NAPA31C Power Amplifier PWB is shown on schematic SD-34.
3. If necessary, refer to the referenced figure in the schematics at the end of this section and locate the next, lower-level assembly. Then, repeat this procedure until the desired schematic diagram is found.



---

## Locating a Part or Assembly on a Schematic

The full reference designation assigned to a part or assembly is the key to physically locating that part or assembly.

**NOTE:** Full reference designations contain the assembly hierarchical coding. When the end item is divided into units (cabinets), the first coding is a unit number (1, 2, 3, etc.). When the end item is divided into assemblies, the first coding is an assembly number (A1, A2, A3, etc.). If a unit or an assembly is divided into sub-assemblies, assembly coding that identifies assembly relationship (1A1, A2A1, A2A1A1, etc.) is added.

1. Refer to the family trees in [Section 4.2, "Parts Lists" on page 4.2.1](#).
2. Follow the family tree branches to the block that contains the desired reference designation, while noting the Nautel nomenclatures and names of all higher assemblies in the path. Example: A8 NAA61B RF Module Assy 1 -> A8A1 NAPA31C Power Amplifier PWB.

**NOTE:** The drawings in the Mechanical Drawings section depict the assembly detail of the transmitter and its modules and assemblies

3. Refer to [Table 4.5.1 in Section 4.5, "Mechanical Drawings" on page 4.5.1](#). Use the Nautel nomenclature and name of each family tree block in the path, starting at the highest assembly – this is normally Figure MD-1 – to determine the figure number(s) for that assembly. Example: NAPA31C Power Amplifier PWB is shown on MD-8.
4. Refer to the referenced figure (e.g., MD-8) in [Section 4.5, "Mechanical Drawings" on page 4.5.1](#) to locate the desired part or assembly.

Table 4.4.1: List of Electrical Schematics

Figure #	Title
SD-1A	GV20/GV15 Transmitter - Ac-Dc Power Stage, 3-Phase, 175-265 V ac (Sheet 1 of 2)
SD-1B	GV20/GV15 Transmitter - Ac-Dc Power Stage, 3-Phase, 303-459 V ac (Sheet 1 of 2)
SD-1C	GV20/GV15 Transmitter - Ac-Dc Power Stage, 1-Phase, 175-265 V ac (Sheet 1 of 2)
SD-2	GV20/GV15 Transmitter - Ac-Dc Power Stage (Sheet 2 of 2)
SD-3	GV20/GV15 Transmitter - Control/Monitor Stage (Sheet 1 of 2)
SD-4	GV20/GV15 Transmitter - Control/Monitor Stage (Sheet 2 of 2)
SD-5	GV20/GV15 Transmitter - RF Drive Stage, Single (Sheet 1 of 2)
SD-6	GV20/GV15 Transmitter - RF Drive Stage, Dual (Sheet 2 of 2)
SD-7	GV20/GV15 Transmitter - RF Power Stage (Sheet 1 of 2)
SD-8	GV20/GV15 Transmitter - RF Power Stage (Sheet 2 of 2)
SD-9	NAPI150A Power Supply Interface PWB (Sheet 1 of 3)
SD-10	NAPI150A Power Supply Interface PWB (Sheet 2 of 3)
SD-11	NAPI150A Power Supply Interface PWB (Sheet 3 of 3)
SD-12	NAPI172 Monitor Fan Interface PWB
SD-13	NAPC158A Module Control/Interface PWB (Sheet 1 of 8)
SD-14	NAPC158A Module Control/Interface PWB (Sheet 2 of 8)
SD-15	NAPC158A Module Control/Interface PWB (Sheet 3 of 8)
SD-16	NAPC158A Module Control/Interface PWB (Sheet 4 of 8)
SD-17	NAPC158A Module Control/Interface PWB (Sheet 5 of 8)
SD-18	NAPC158A Module Control/Interface PWB (Sheet 6 of 8)
SD-19	NAPC158A Module Control/Interface PWB (Sheet 7 of 8)
SD-20	NAPC158A Module Control/Interface PWB (Sheet 8 of 8)
SD-21	NAC118 Controller
SD-22	NAPC163 Controller PWB (Sheet 1 of 6)
SD-23	NAPC163 Controller PWB (Sheet 2 of 6)
SD-24	NAPC163 Controller PWB (Sheet 3 of 6)
SD-25	NAPC163 Controller PWB (Sheet 4 of 6)
SD-26	NAPC163 Controller PWB (Sheet 5 of 6)
SD-27	NAPC163 Controller PWB (Sheet 6 of 6)
SD-28	NAPS49 Power Supply Distribution PWB
SD-29	NAPI142A/01 UI Interface PWB
SD-30	NAE107A or NAE107A/01 Exciter
SD-31	NAPS47A/01 Power Supply Distribution PWB (Sheet 1 of 2)
SD-32	NAPS47A/01 Power Supply Distribution PWB (Sheet 2 of 2)

*Table 4.4.1: List of Electrical Schematics*

Figure #	Title
SD-33	NAPA35 Pre-Amplifier PWB
SD-34	NAPA31C Power Amplifier PWB
SD-35	NAPP06/01 Output Power Probe PWB
SD-36	LED PWB (206-3060)
SD-37	NAI23A RF Drive Splitter Assembly
SD-38	NAA61B RF Power Module
SD-39	NAPI166 Reject Load Interface PWB
SD-40	NAFP109B Output Power Probe and Sample PWBs
SD-41	NAPI143/02 Remote Interface PWB
SD-42	NAI24 RF Drive Splitter Assembly
SD-43	NAX269 Reject Load/Splitter Interface Assembly
SD-44	NAPI167 Reject Load/Splitter Interface PWB
SD-45	NAPI168 6-Way Fan Interface PWB
SD-46	UPS Interface Assembly (Optional)

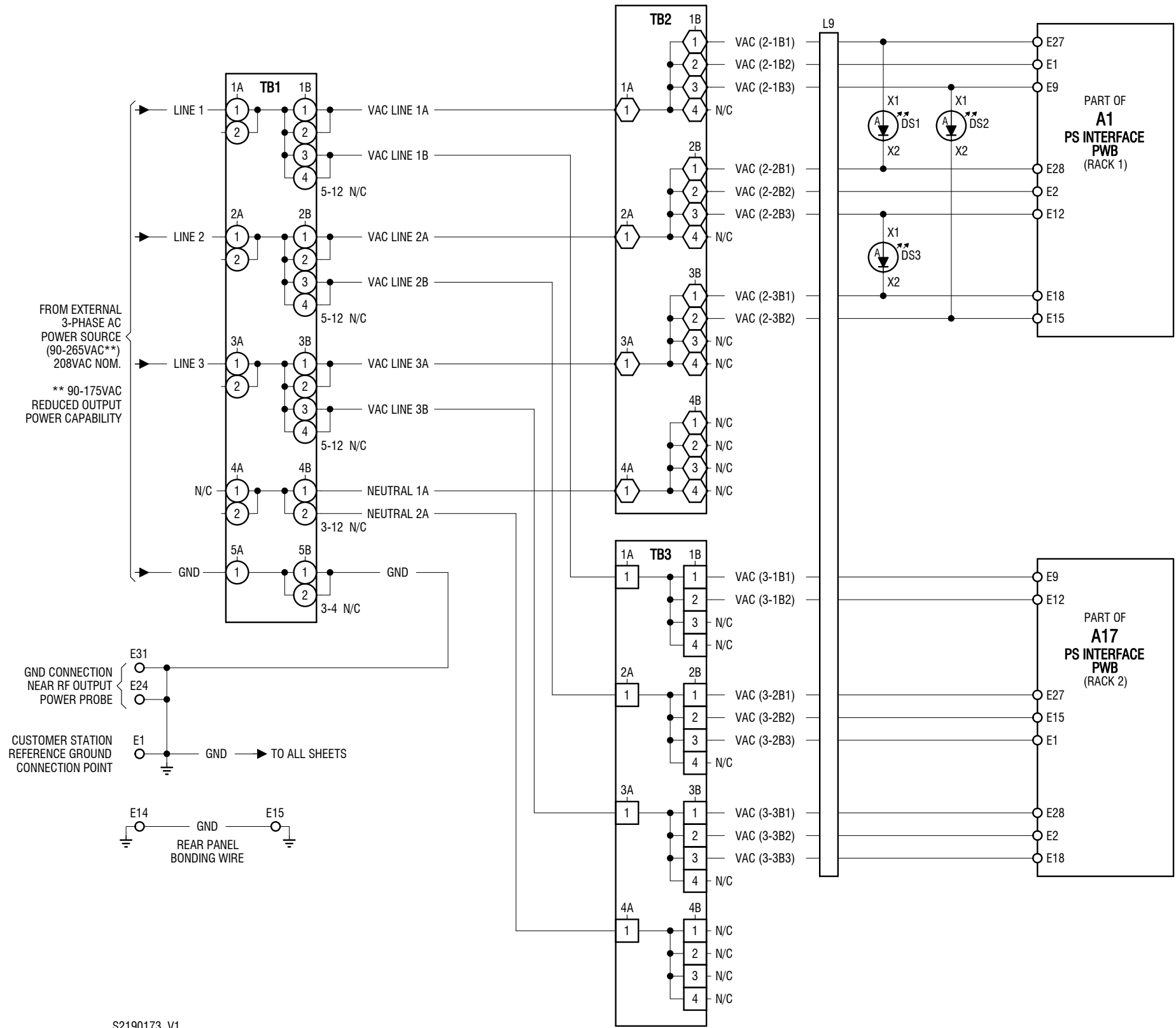


Figure SD-1A: GV20/GV15 Transmitter - Ac-Dc Power Stage, 3-Phase, 175-265 V ac (Sheet 1 of 2)

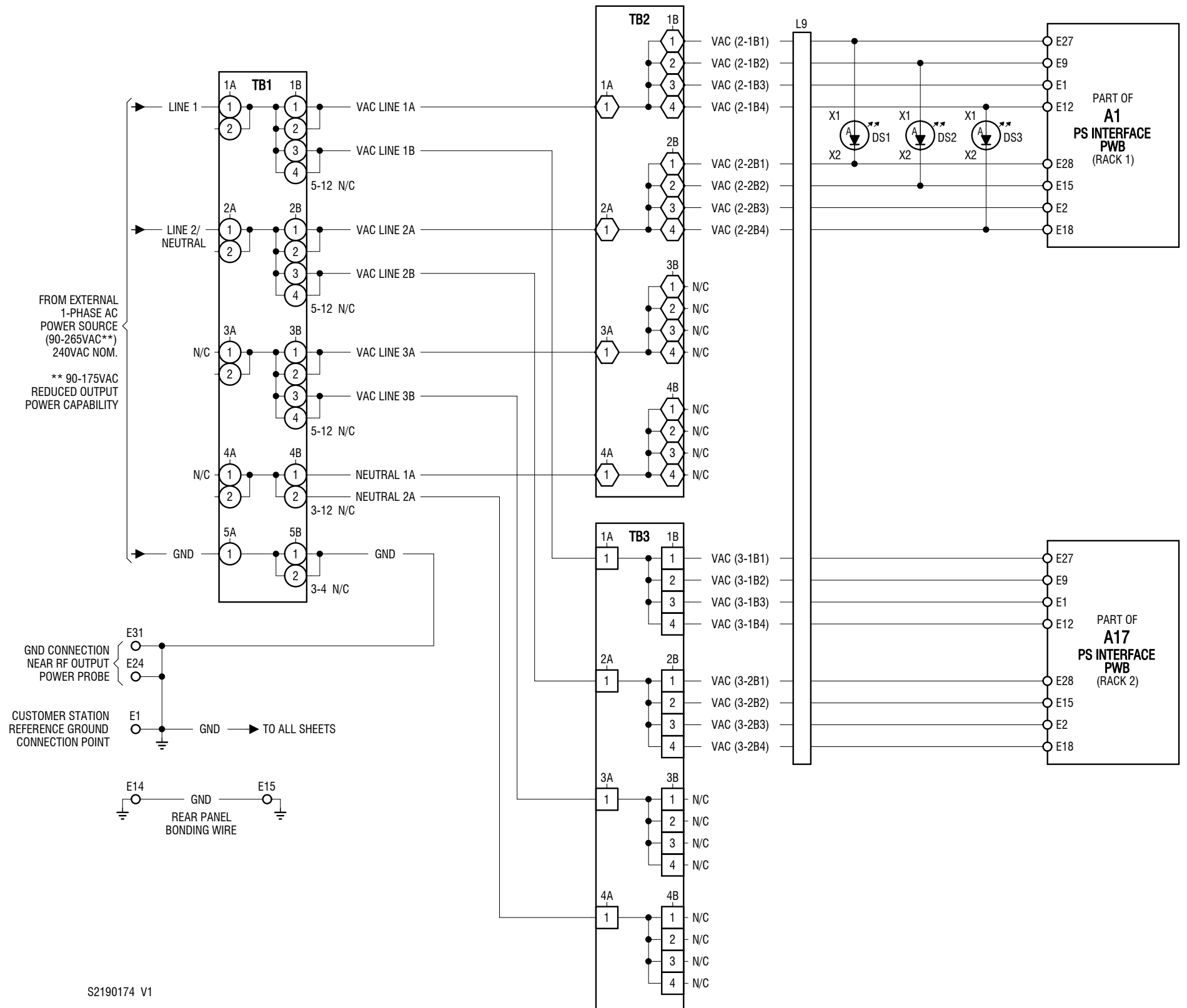
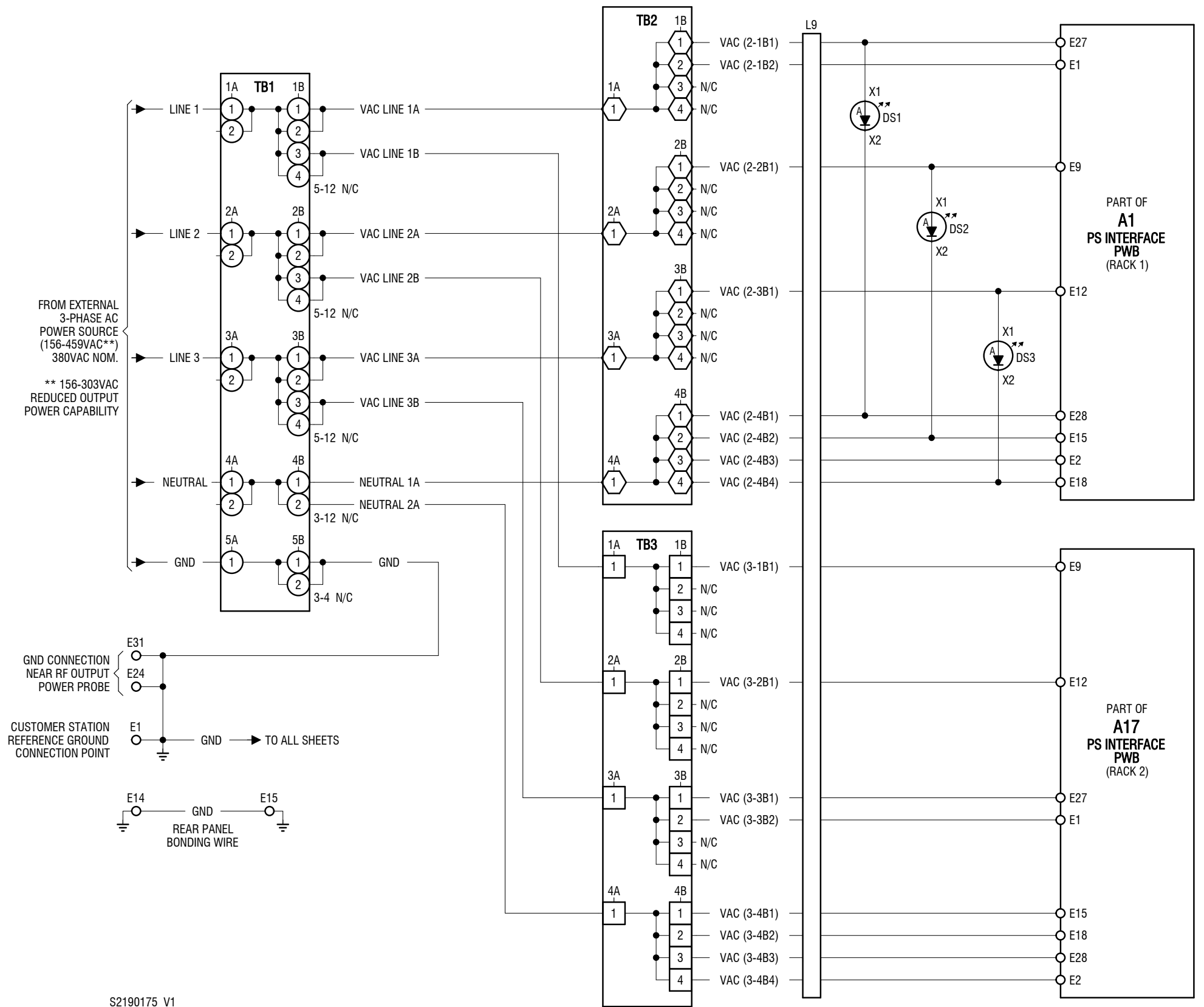
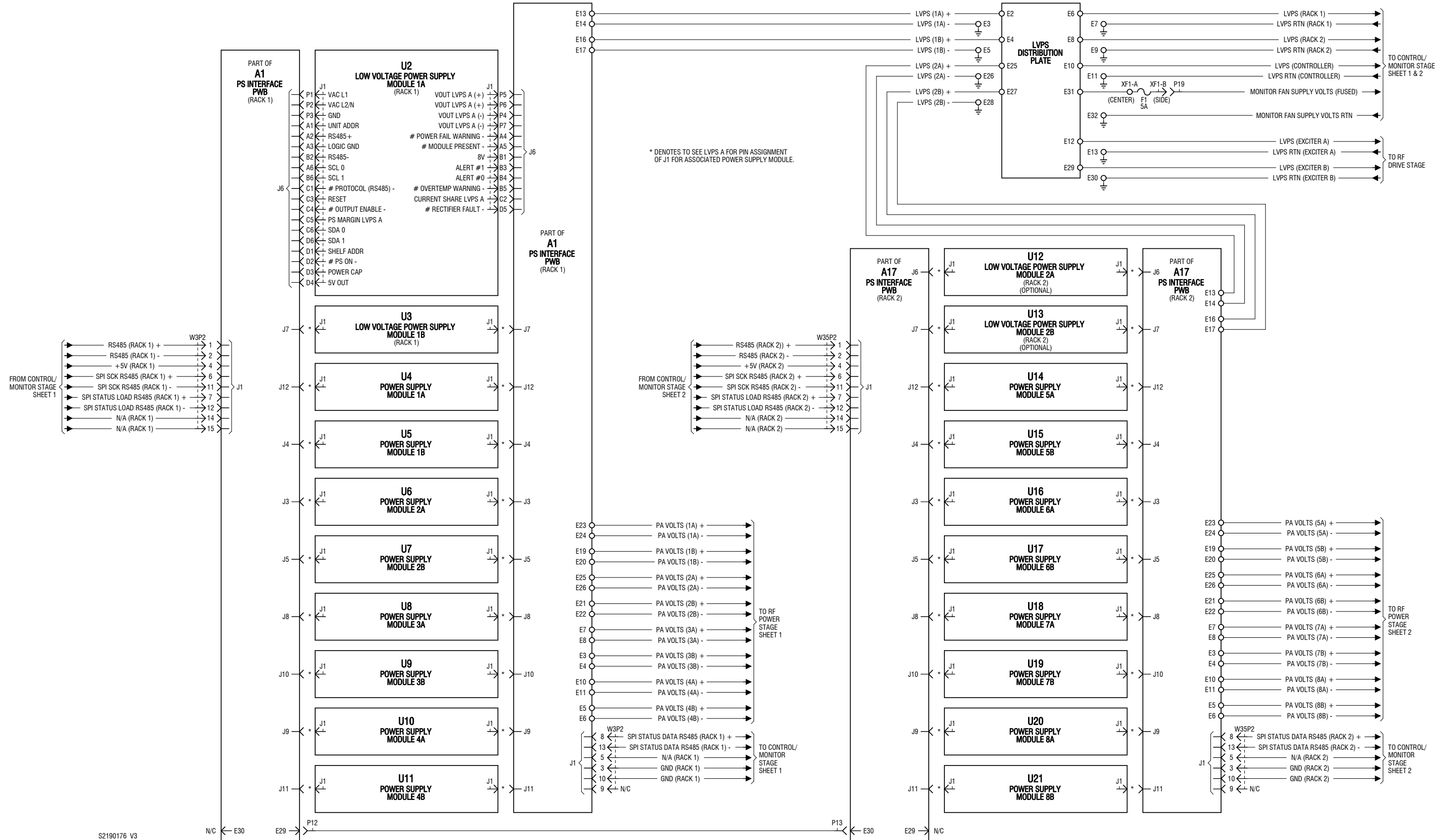


Figure SD-1B: GV20/GV15 Transmitter - Ac-Dc Power Stage, 3-Phase, 303-459 V ac (Sheet 1 of 2)



S2190175 V1

Figure SD-1C: GV20/GV15 Transmitter - Ac-Dc Power Stage, 1-Phase, 175-265 V ac (Sheet 1 of 2)



S2190176 V3

Figure SD-2: GV20/GV15 Transmitter - Ac-Dc Power Stage (Sheet 2 of 2)

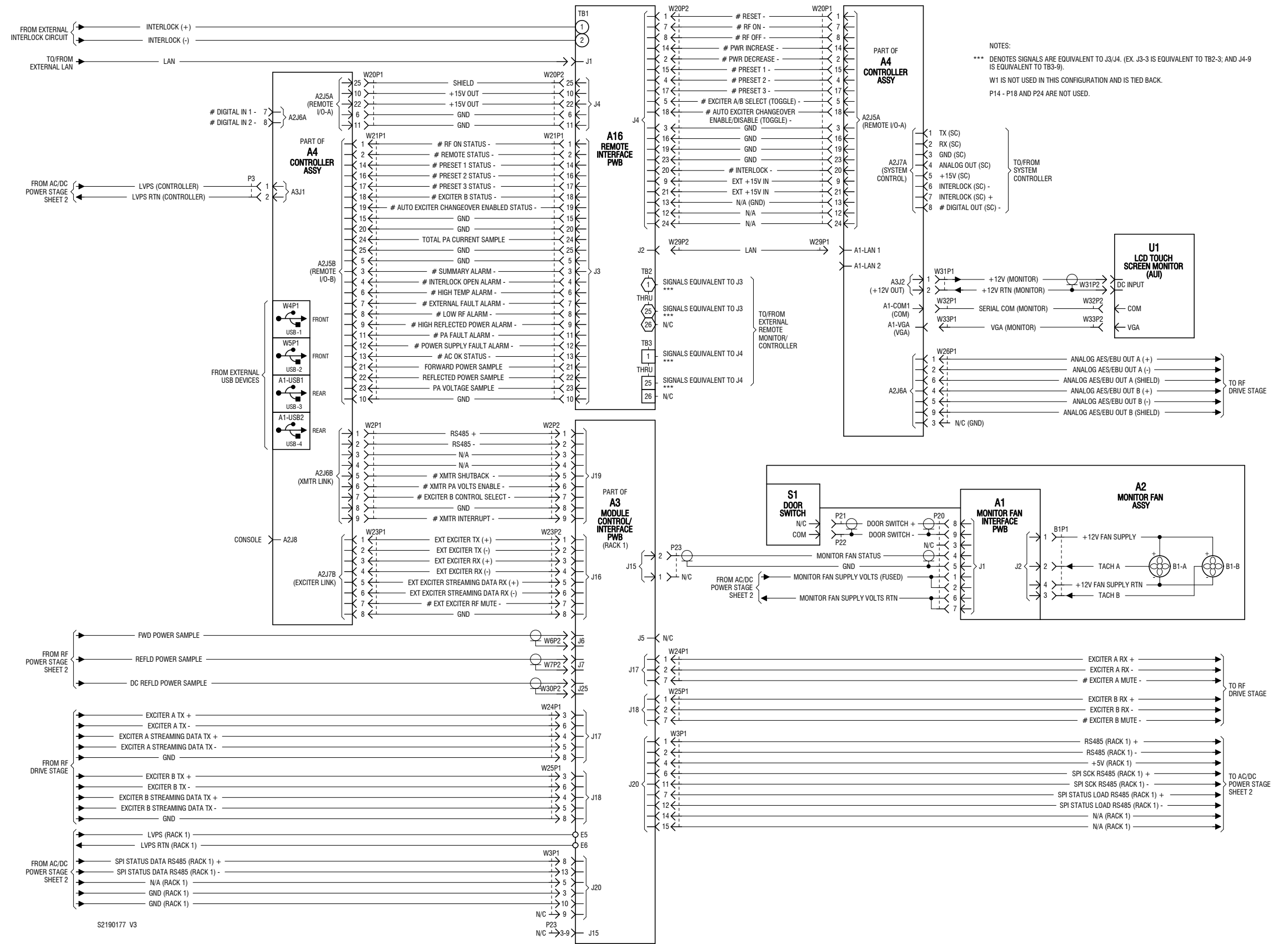
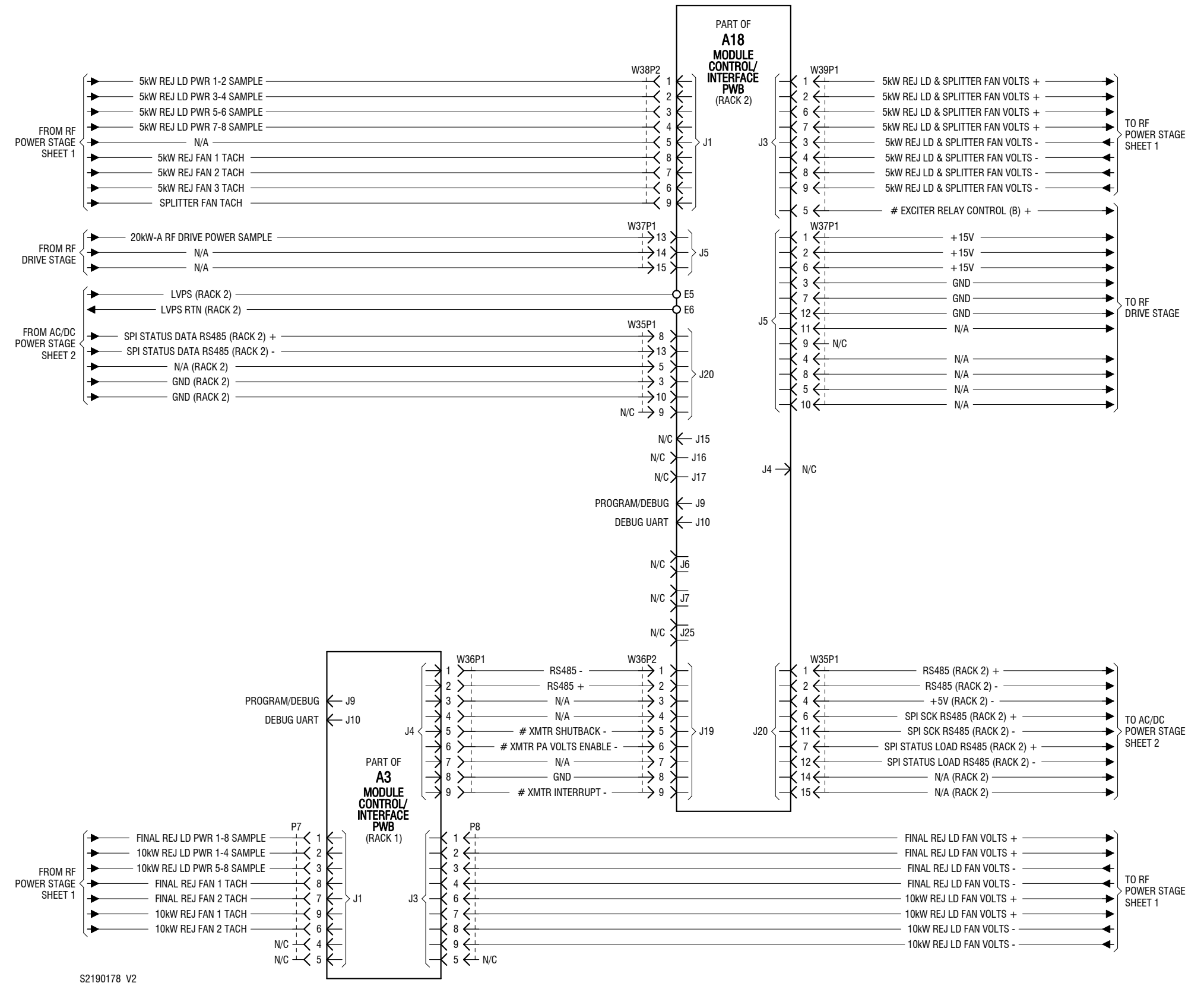


Figure SD-3: GV20/GV15 Transmitter - Control/Monitor Stage (Sheet 1 of 2)





S2190178 V2

Figure SD-4: GV20/GV15 Transmitter - Control/Monitor Stage (Sheet 2 of 2)

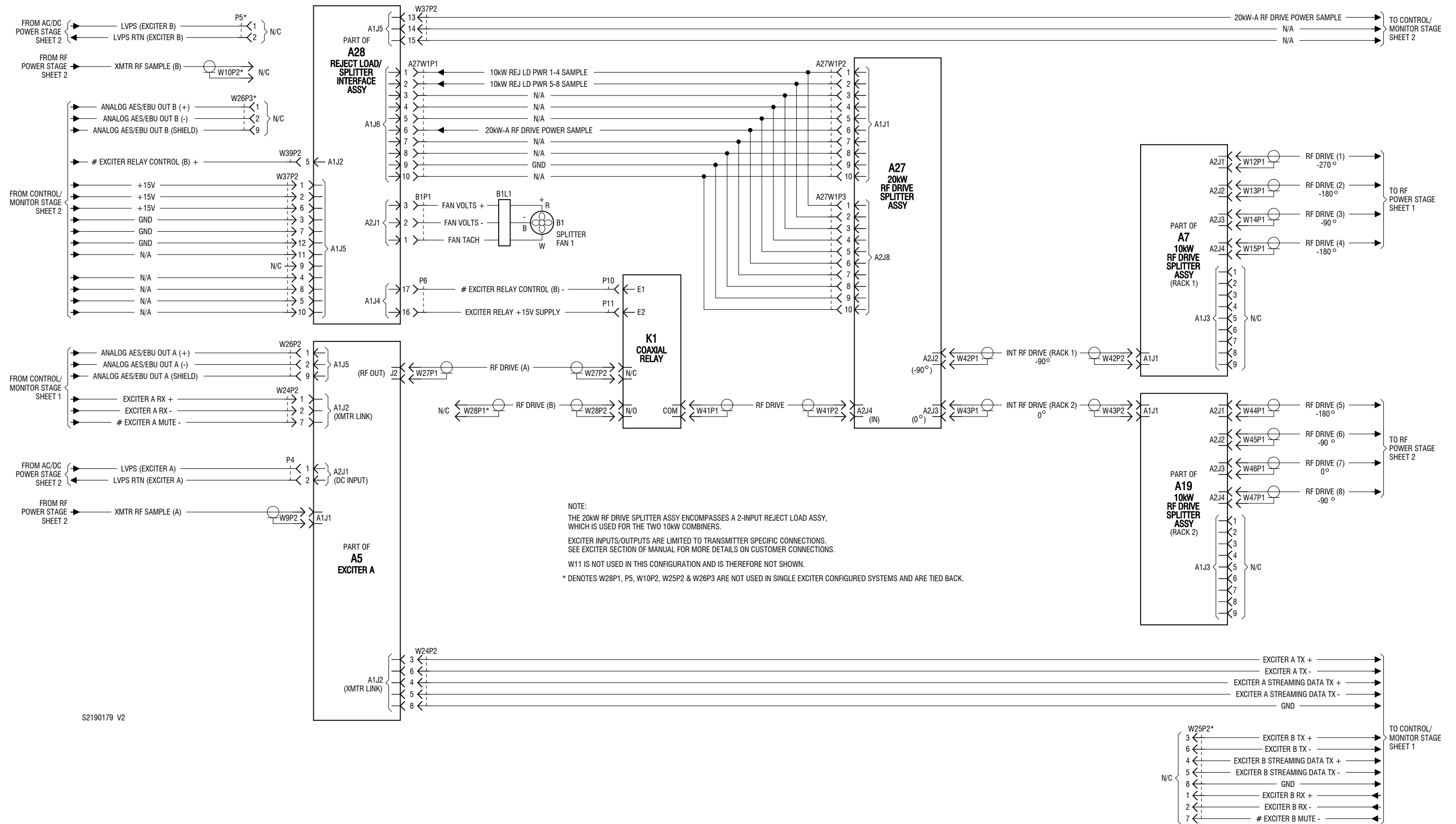
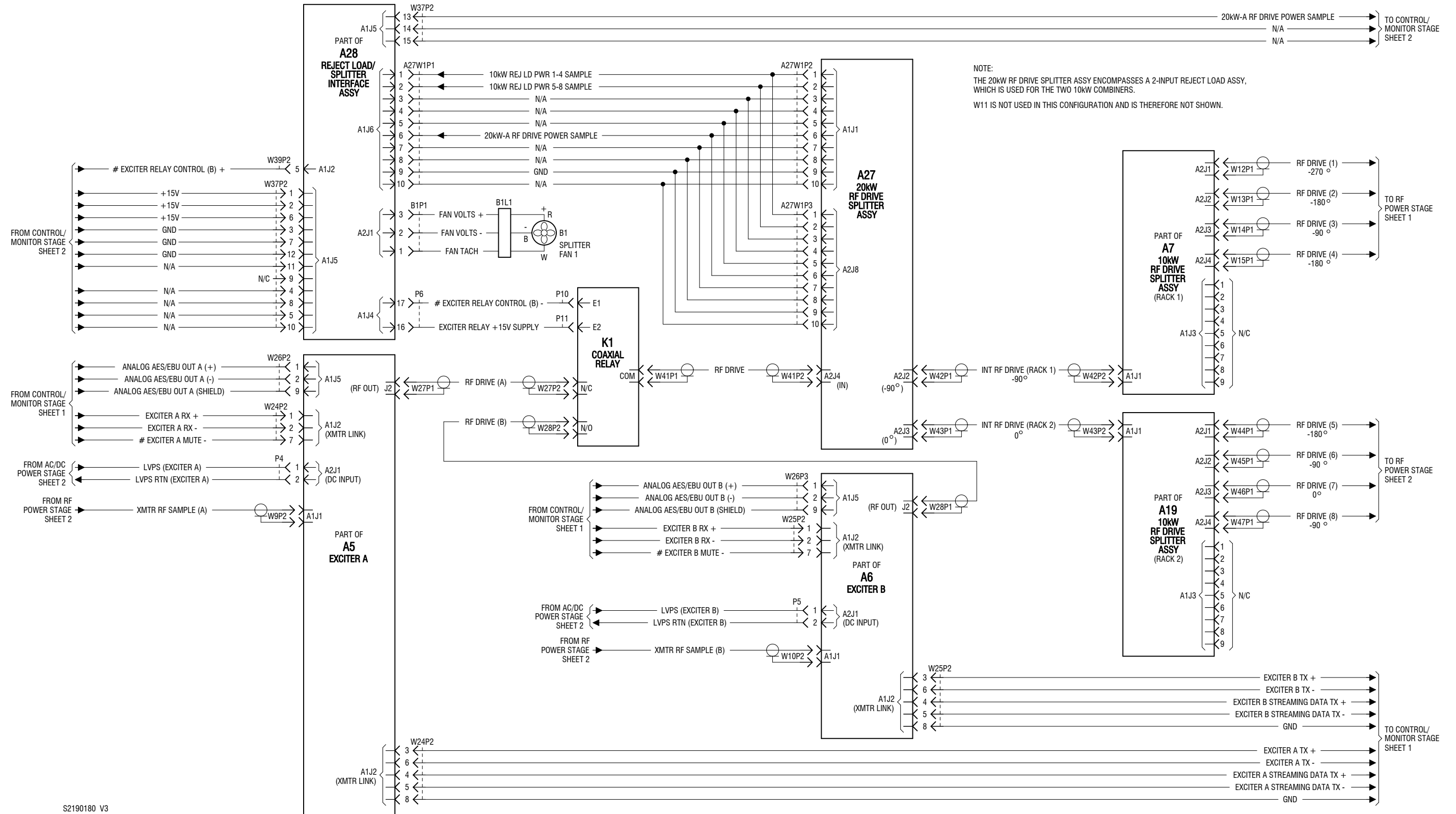
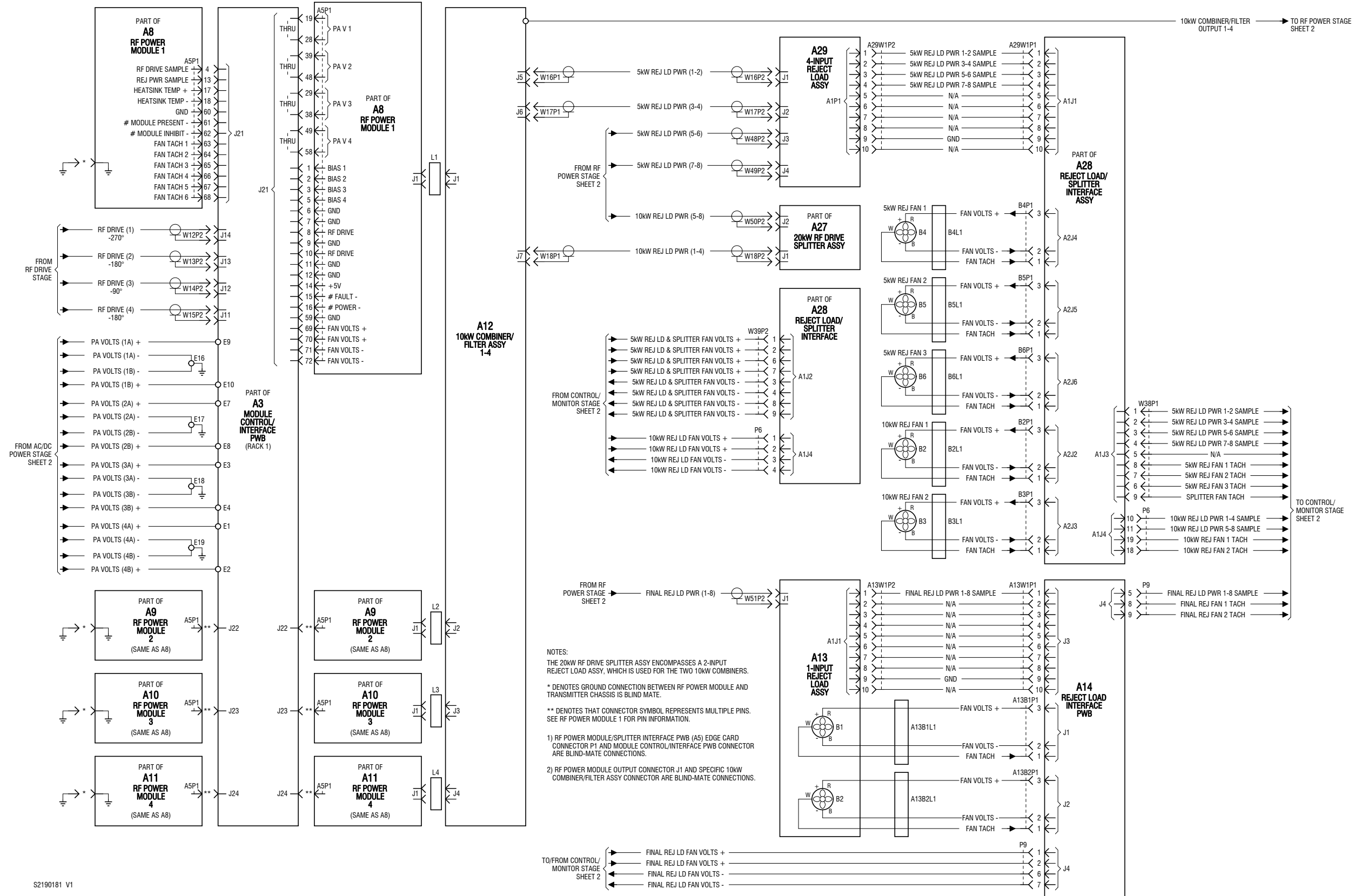


Figure SD-5: GV20/GV15 Transmitter - RF Drive Stage, Single (Sheet 1 of 2)



S2190180 V3

Figure SD-6: GV20/GV15 Transmitter - RF Drive Stage, Dual (Sheet 2 of 2)



S2190181 V1

Figure SD-7: GV20/GV15 Transmitter - RF Power Stage (Sheet 1 of 2)

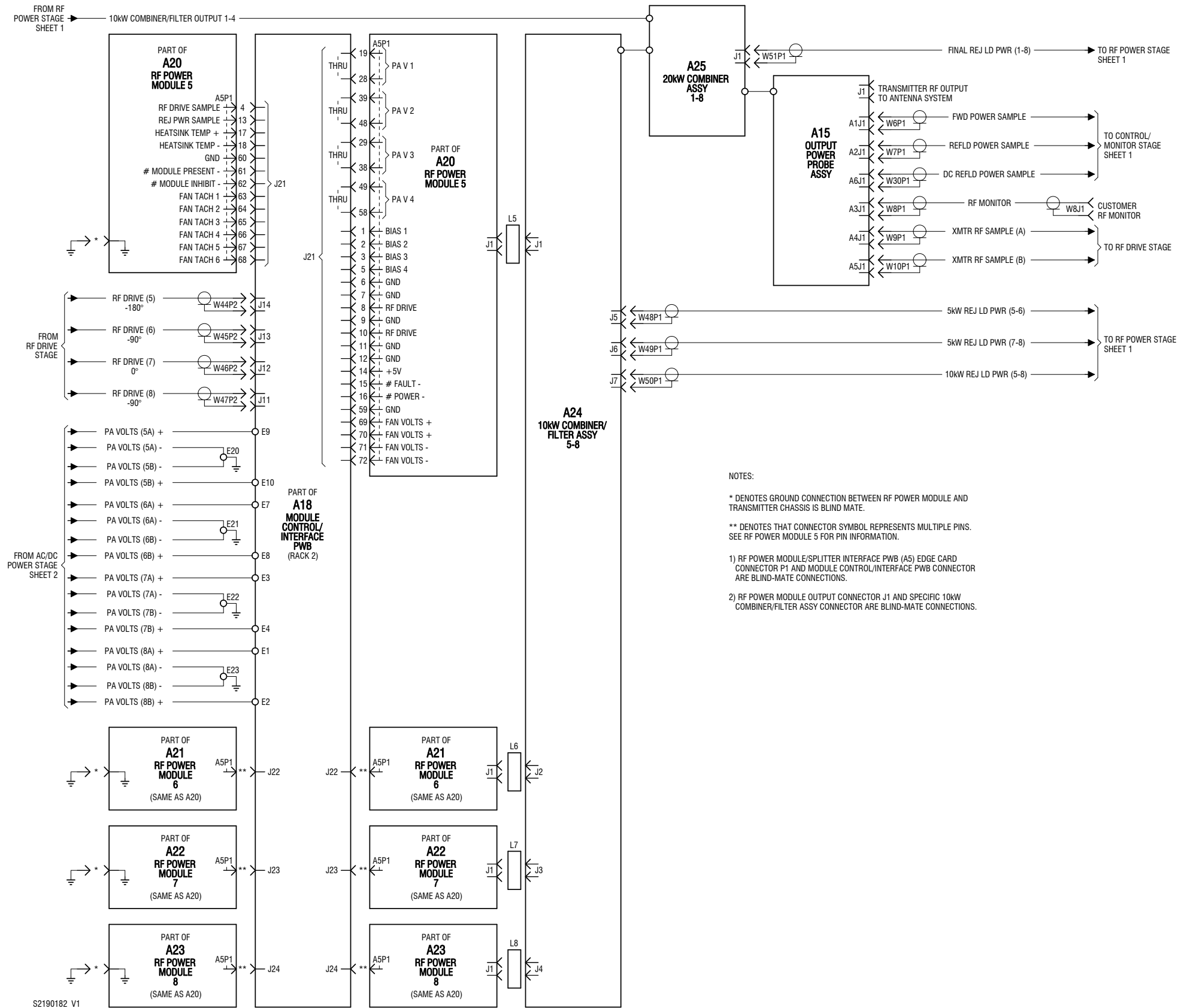
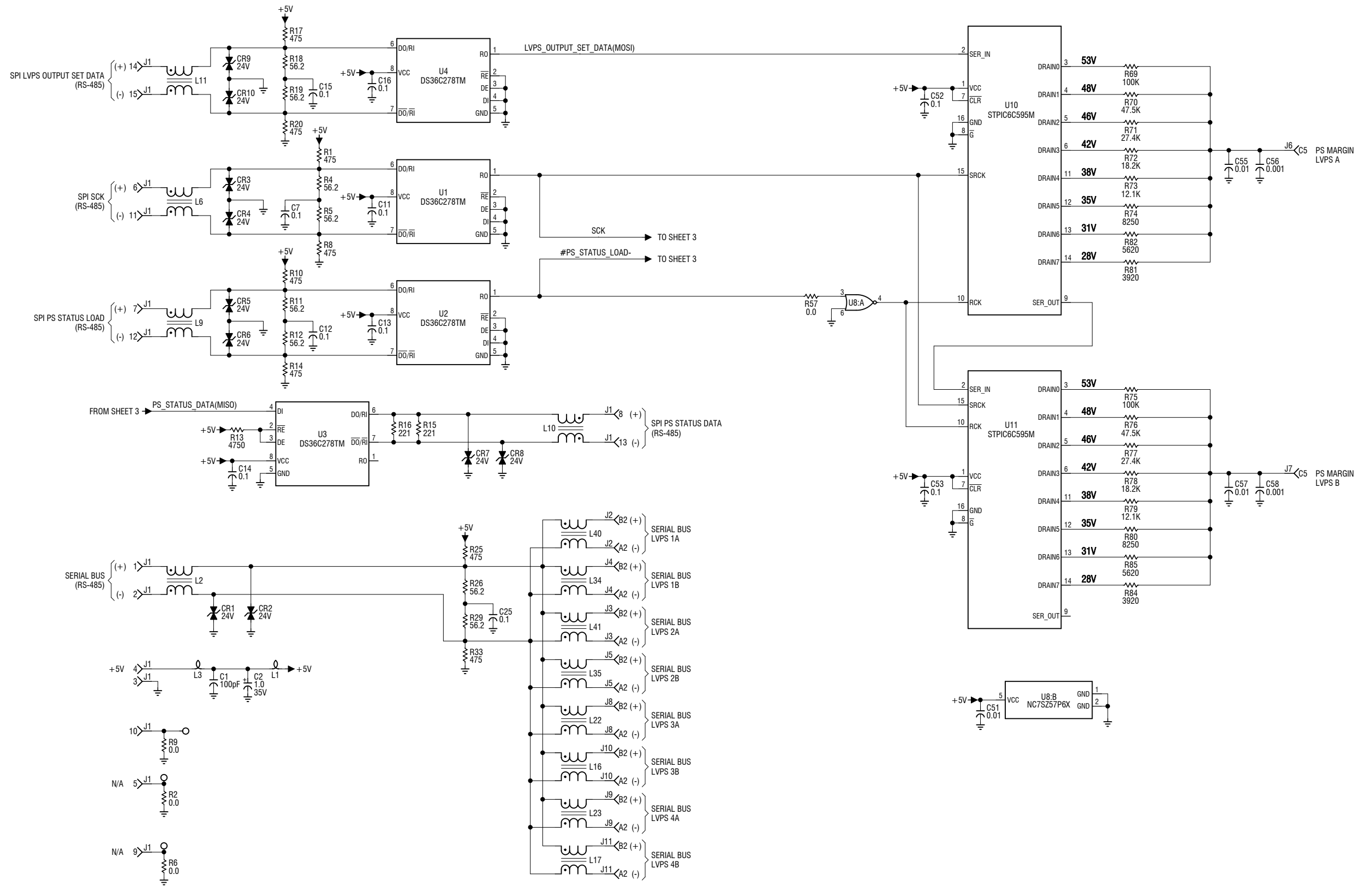
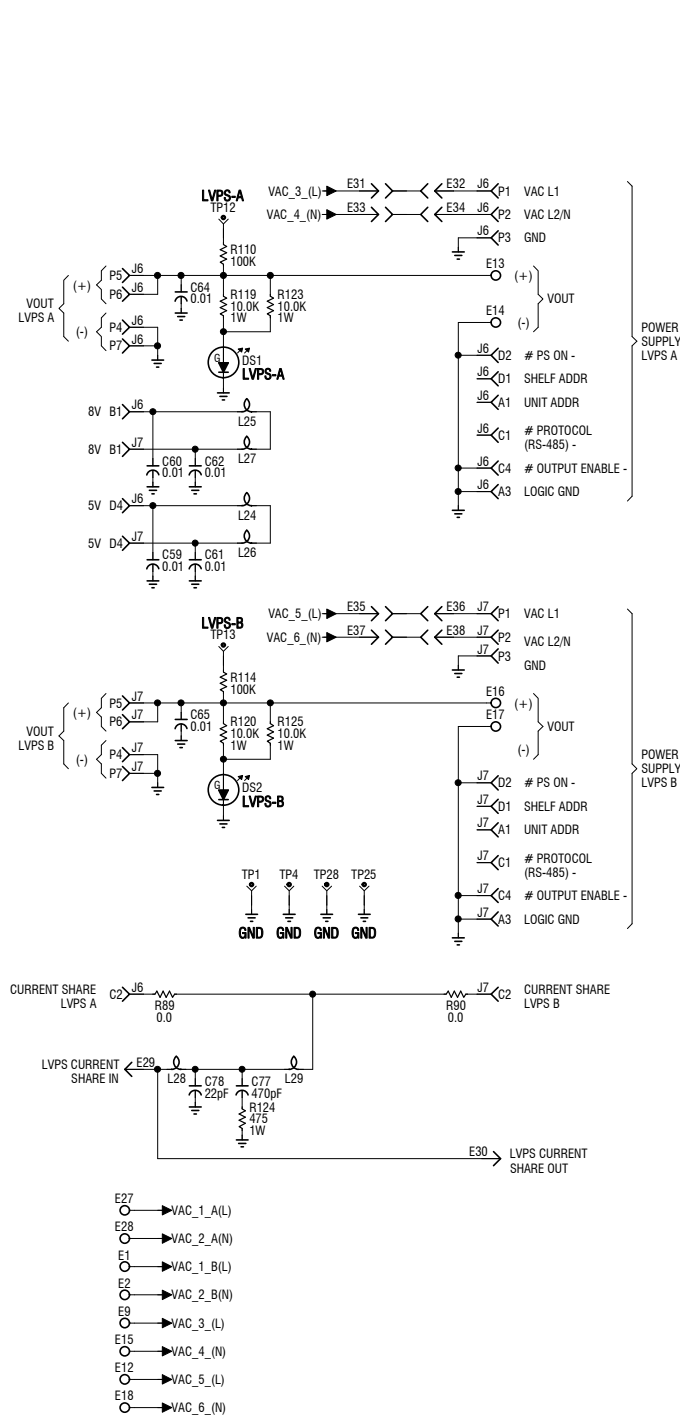


Figure SD-8: GV20/GV15 Transmitter - RF Power Stage (Sheet 2 of 2)



S2190071 SHEET 1 OF 3 V2

Figure SD-9: NAPI150A Power Supply Interface PWB (Sheet 1 of 3)



S2190071 SHEET 2 OF 3 V2

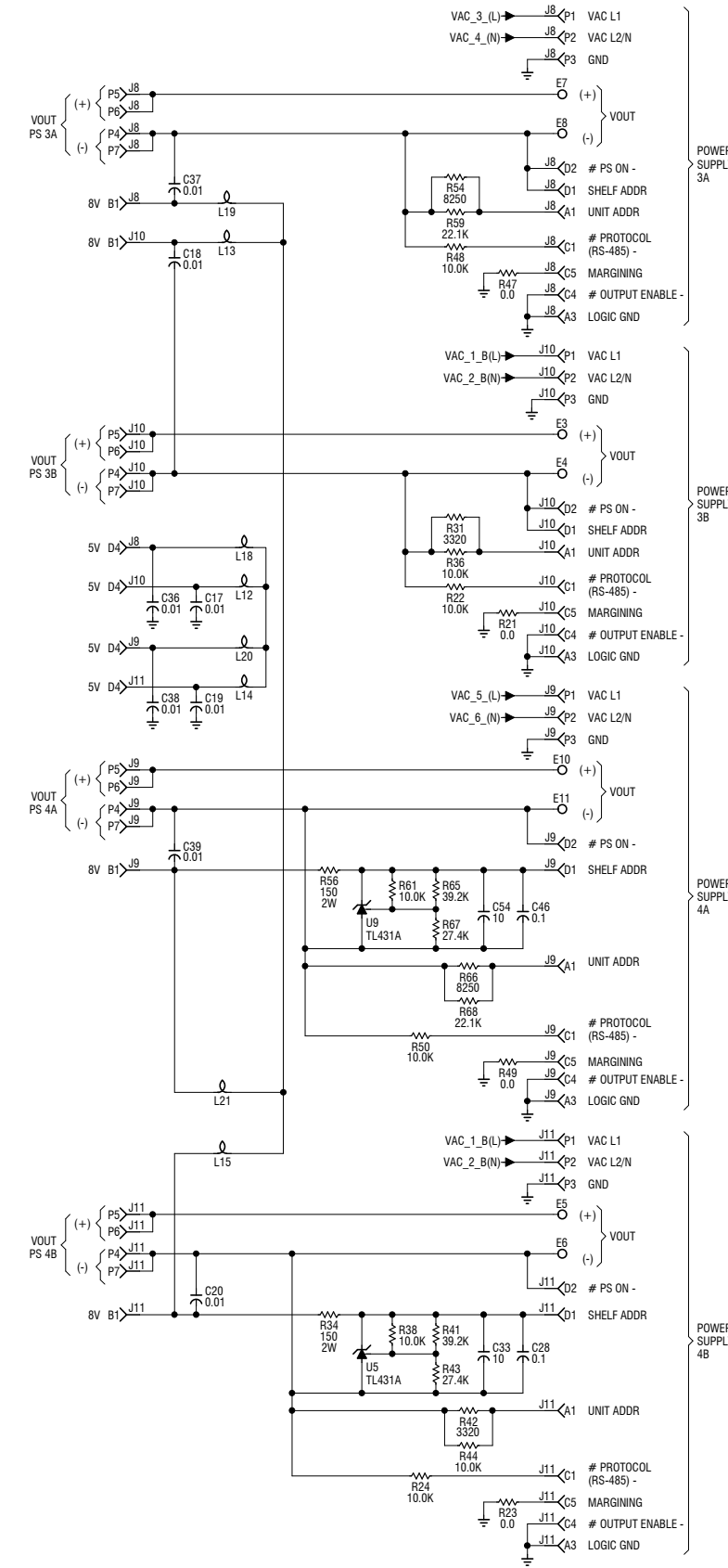
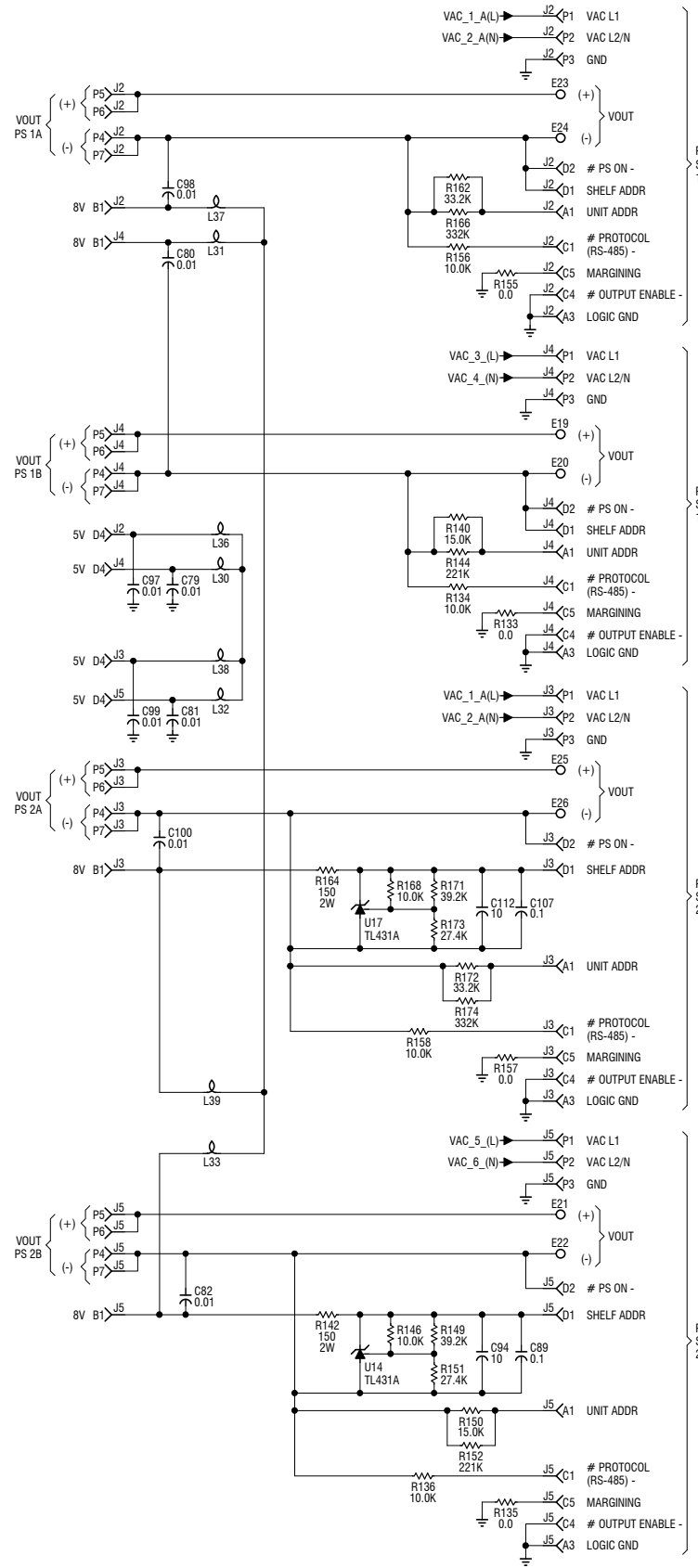
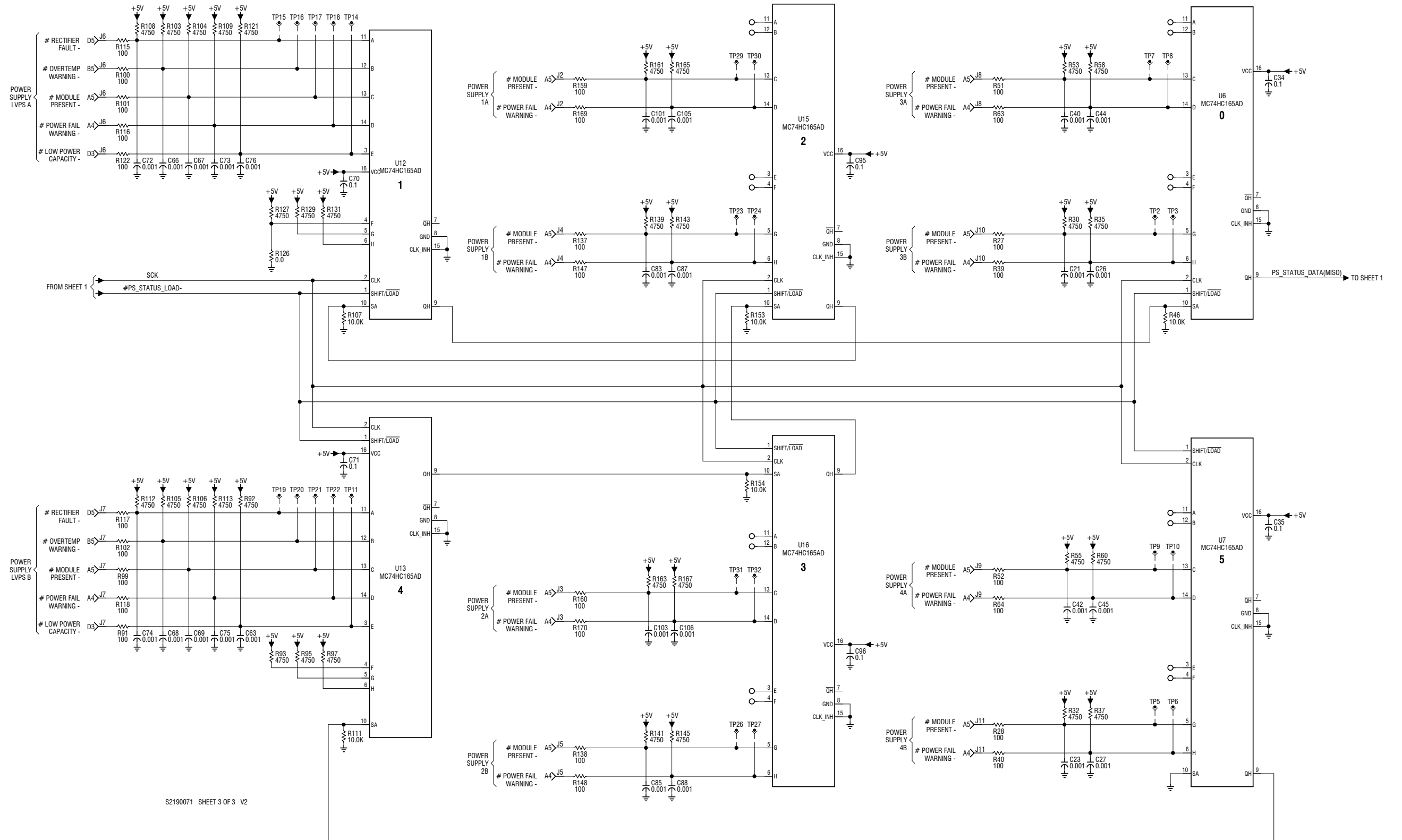


Figure SD-10: NAPI150A Power Supply Interface PWB (Sheet 2 of 3)





S2190071 SHEET 3 OF 3 V2

Figure SD-11: NAPI150A Power Supply Interface PWB (Sheet 3 of 3)



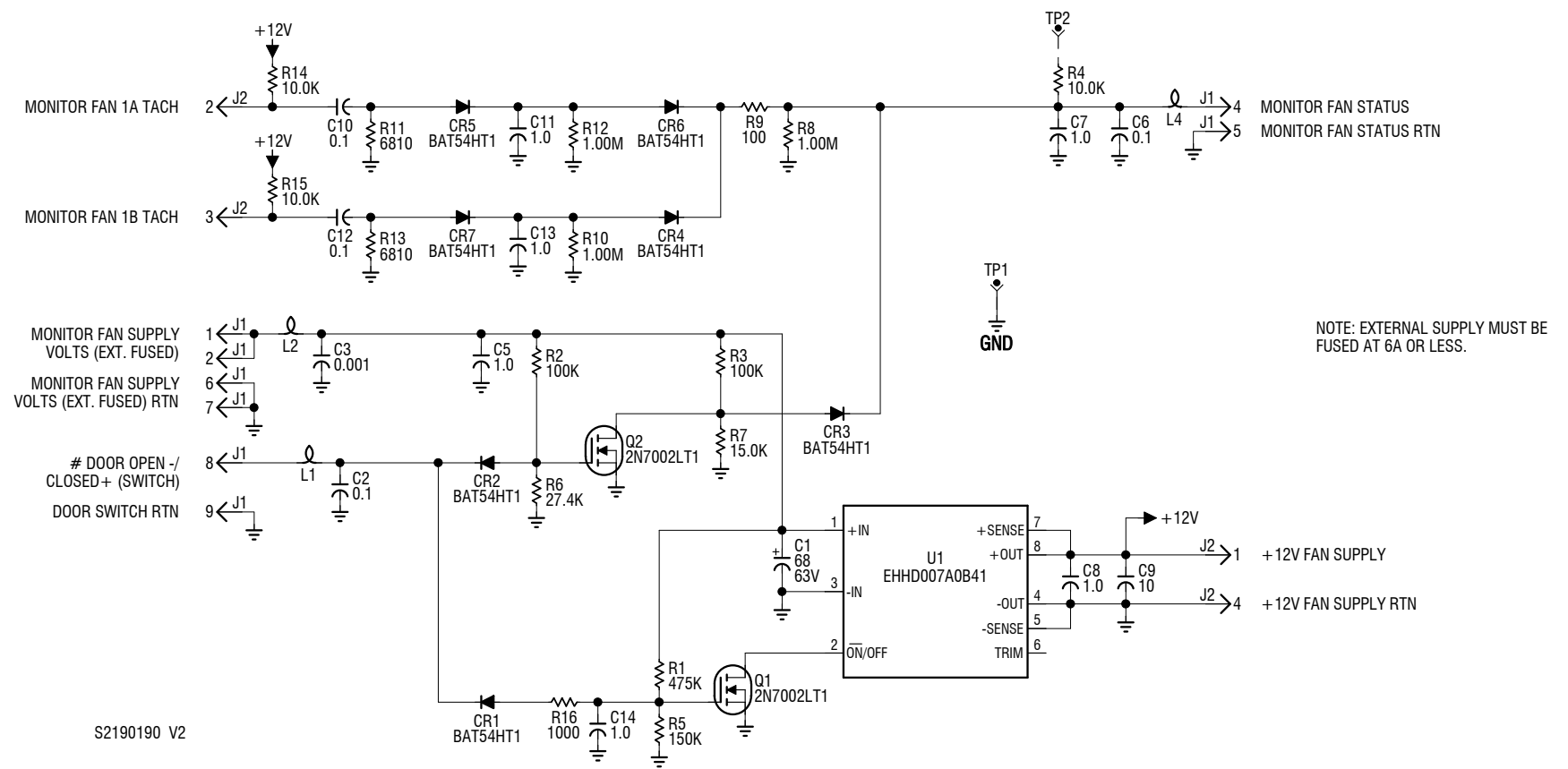


Figure SD-12: NAPI172 Monitor Fan Interface PWB

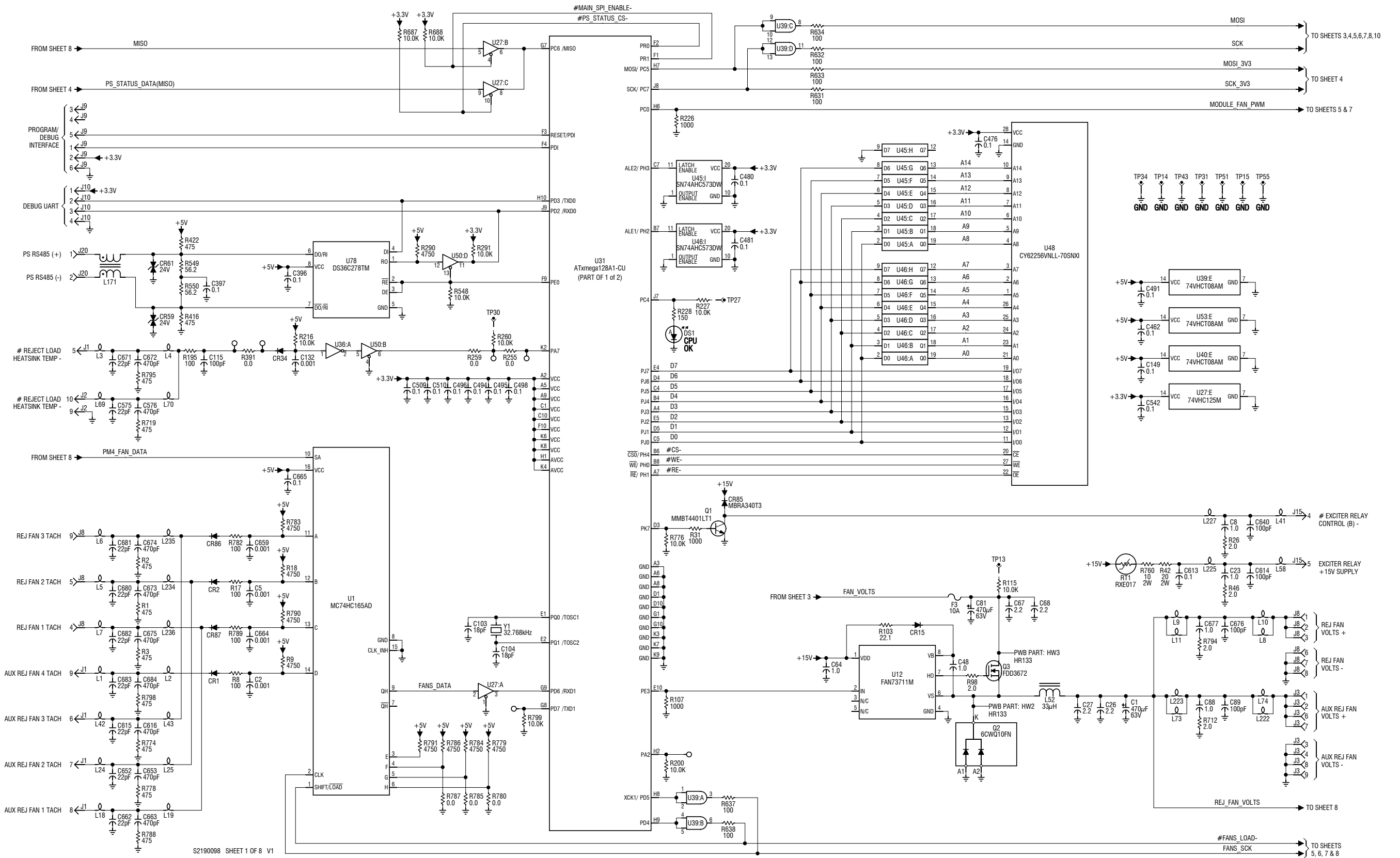


Figure SD-13: NAPC158A Module Control/Interface PWB (Sheet 1 of 8)

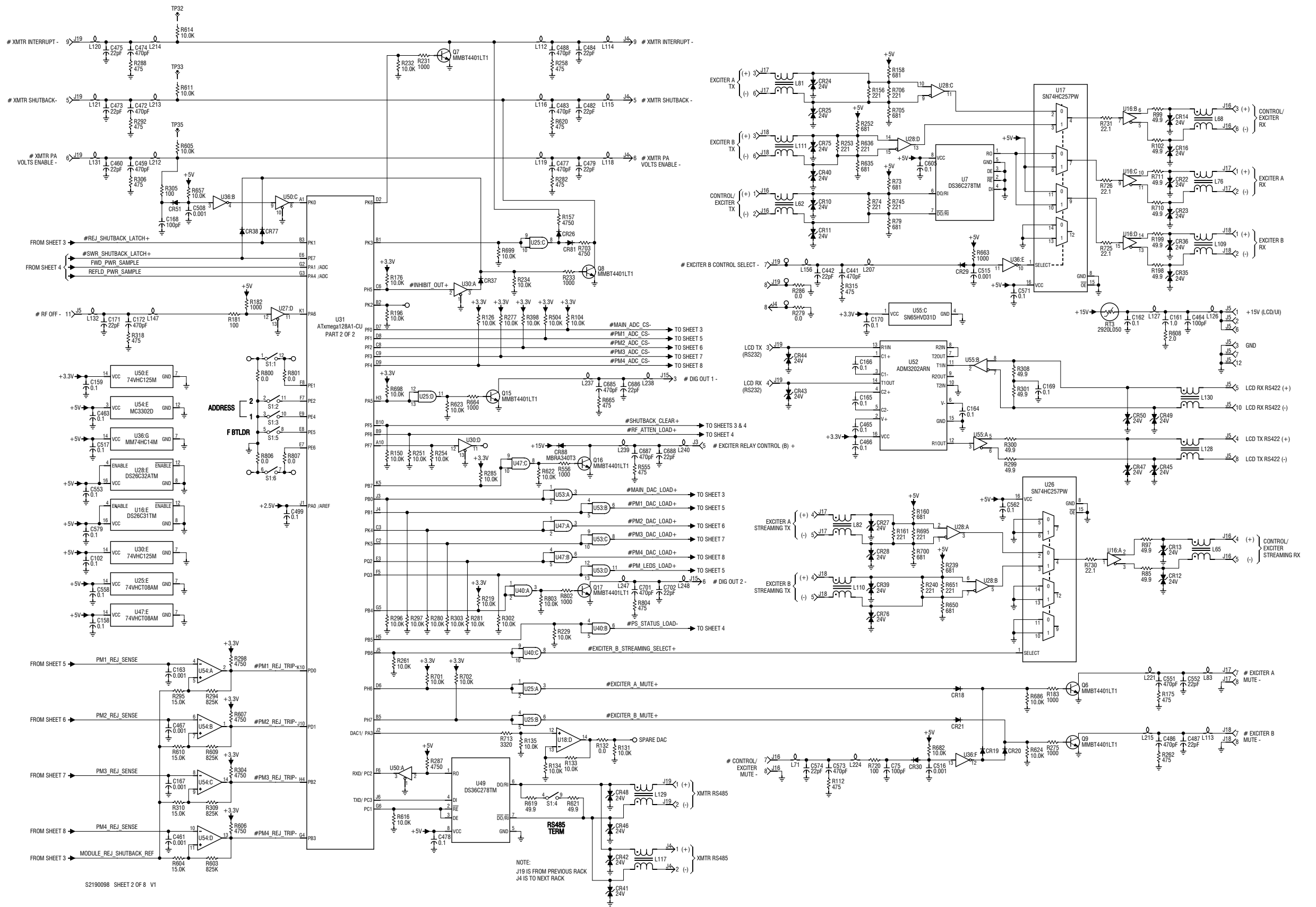
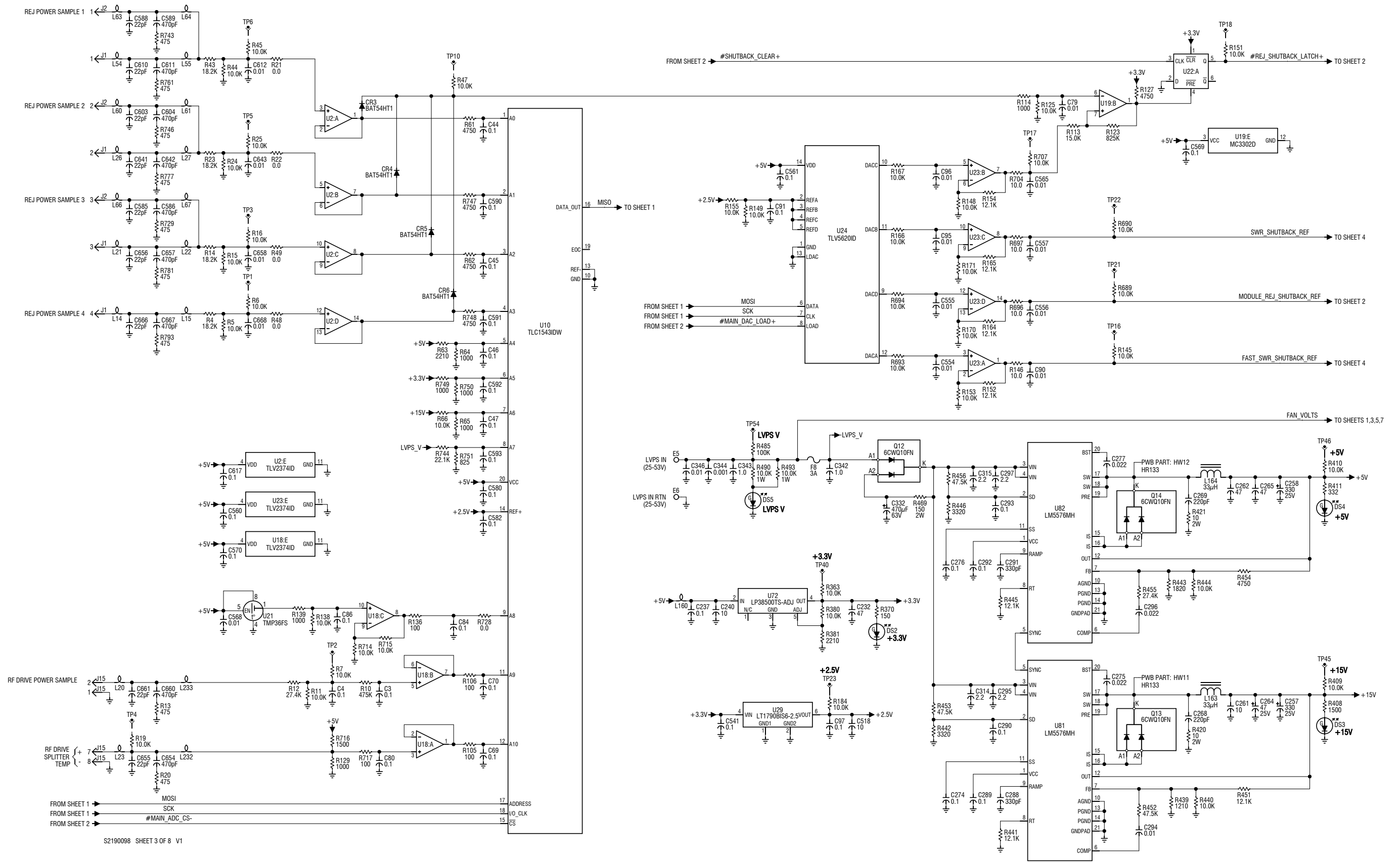
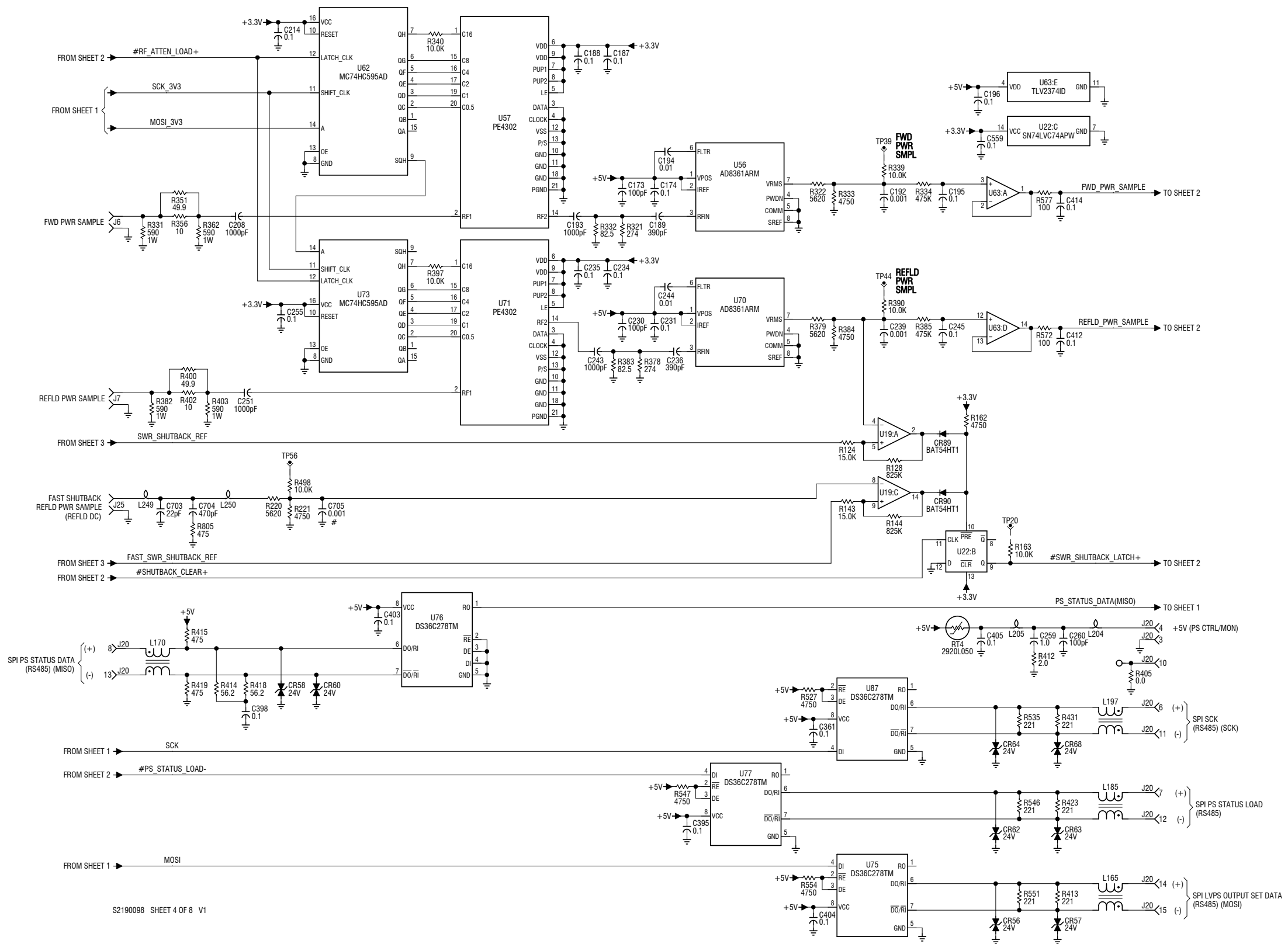


Figure SD-14: NAPC158A Module Control/Interface PWB (Sheet 2 of 8)



S2190098 SHEET 3 OF 8 V1

Figure SD-15: NAPC158A Module Control/Interface PWB (Sheet 3 of 8)



S2190098 SHEET 4 OF 8 V1

Figure SD-16: NAPC158A Module Control/Interface PWB (Sheet 4 of 8)

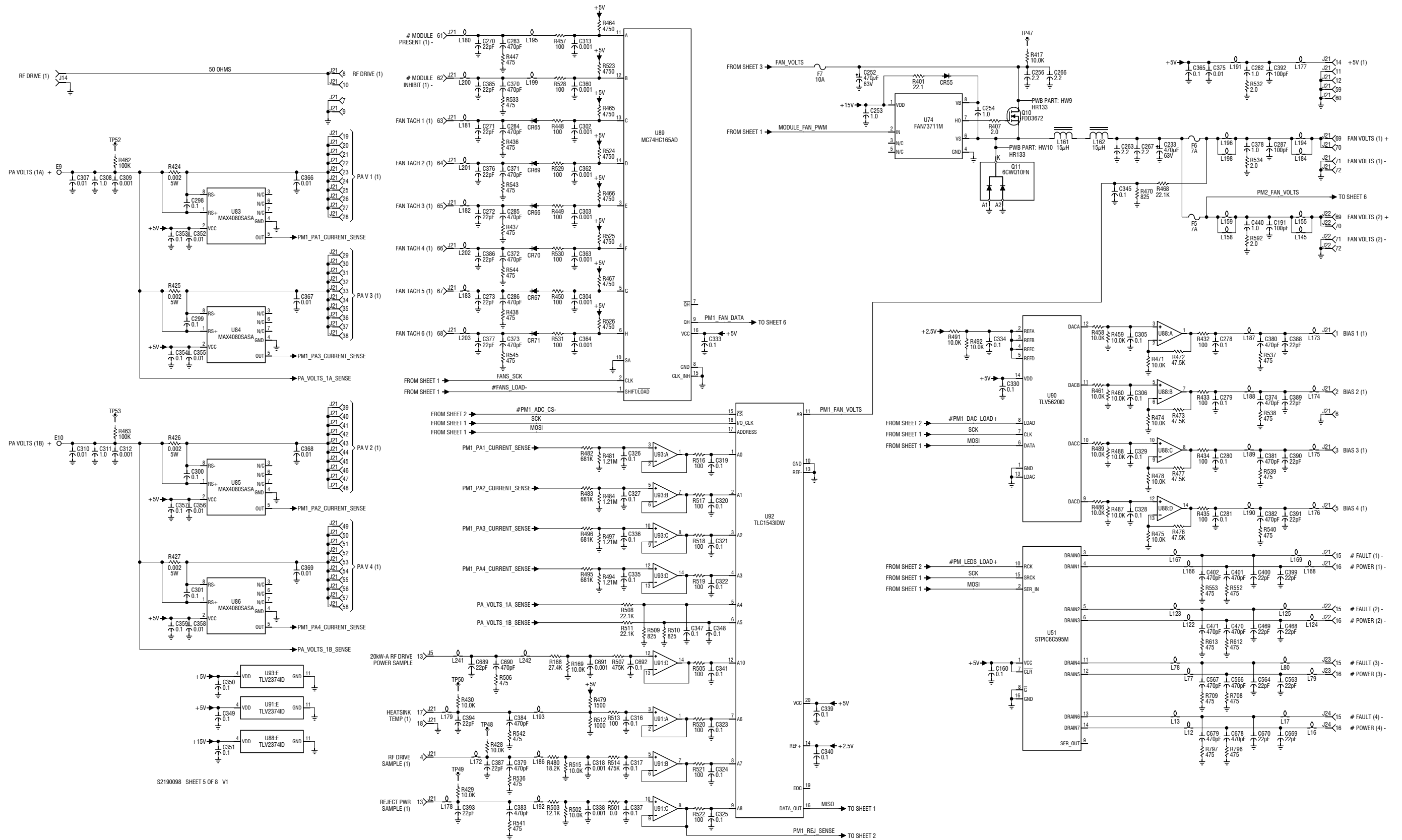


Figure SD-17: NAPC158A Module Control/Interface PWB (Sheet 5 of 8)



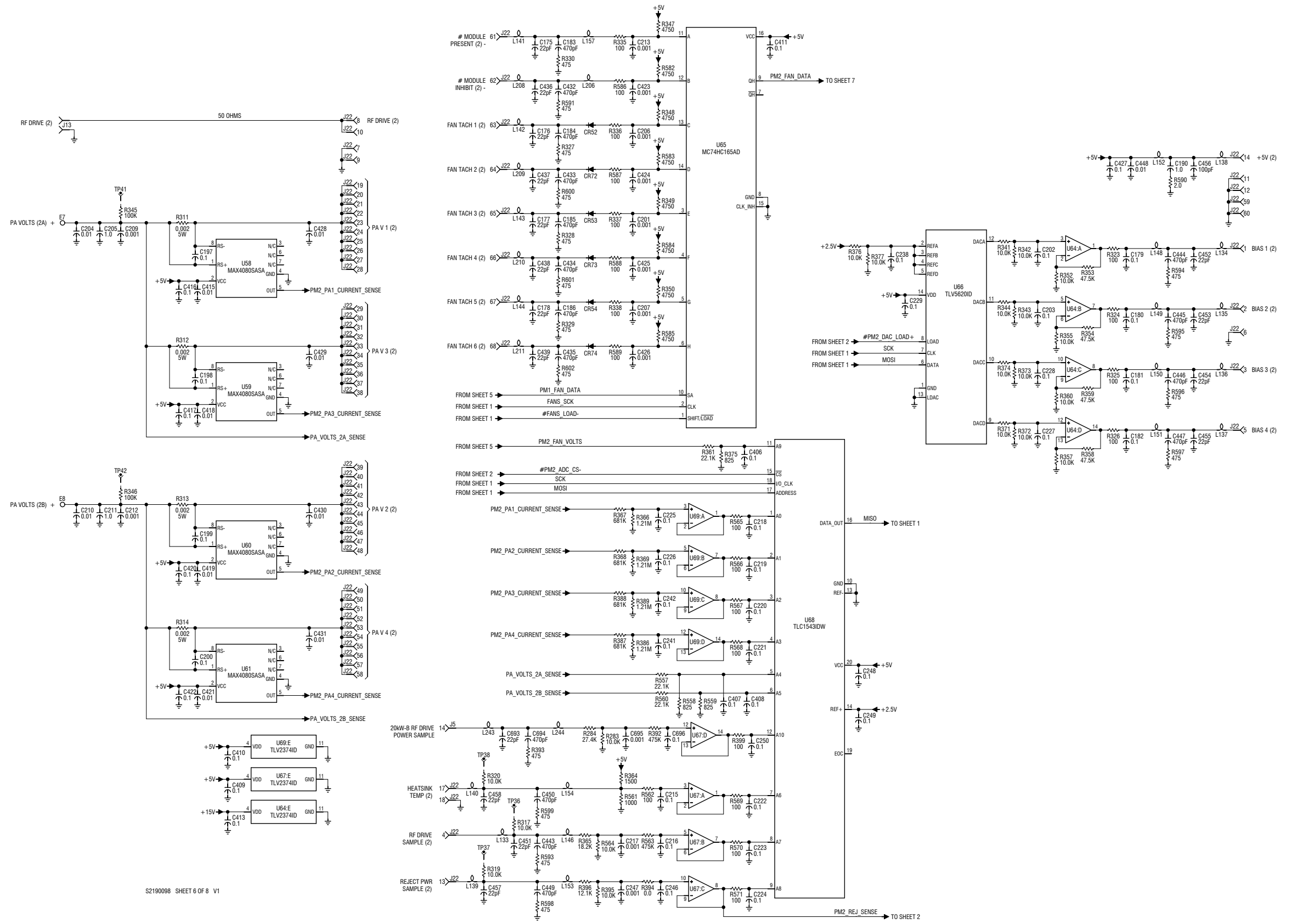
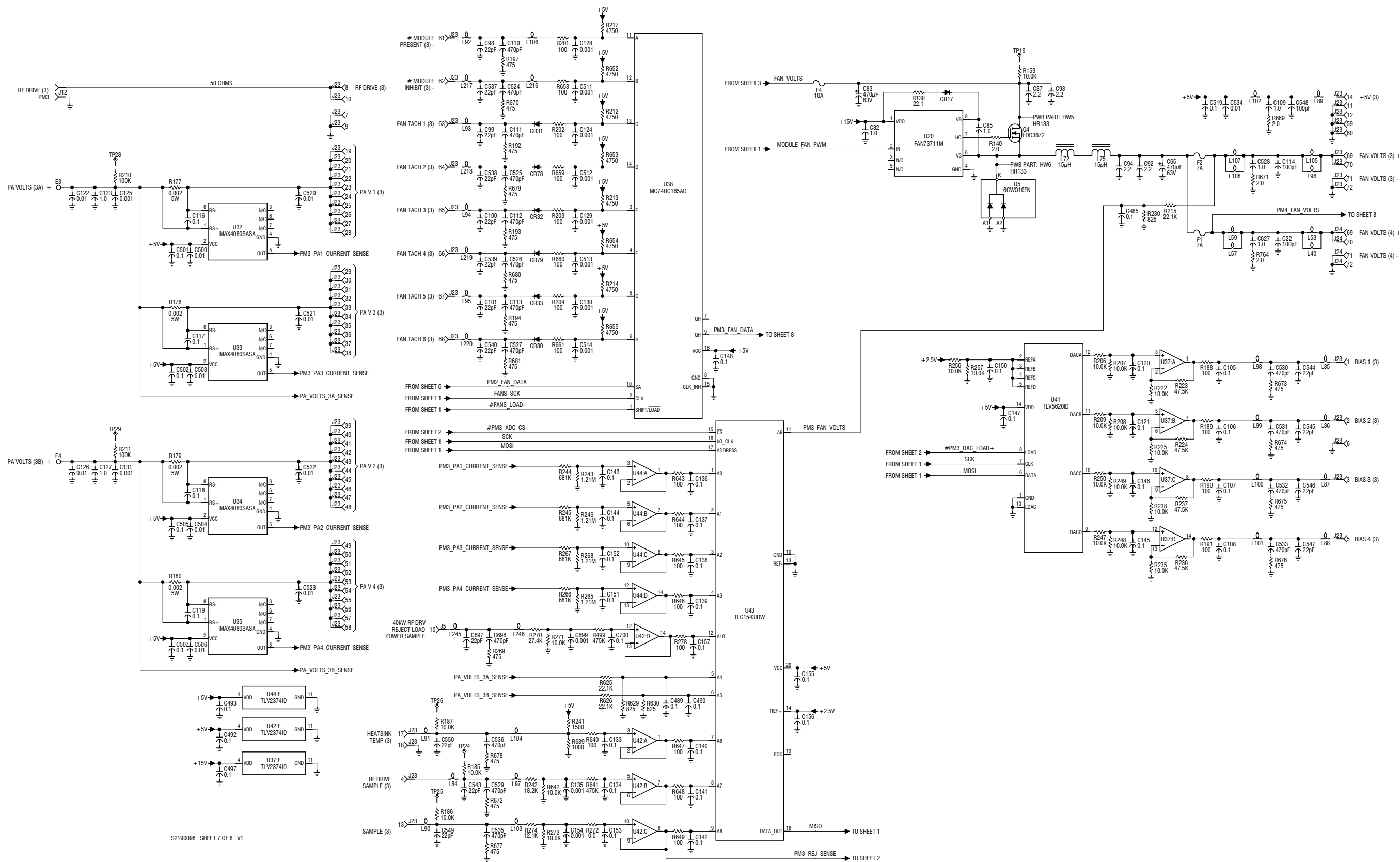


Figure SD-18: NAPC158A Module Control/Interface PWB (Sheet 6 of 8)



S2190098 SHEET 7 OF 8 V1

Figure SD-19: NAPC158A Module Control/Interface PWB (Sheet 7 of 8)



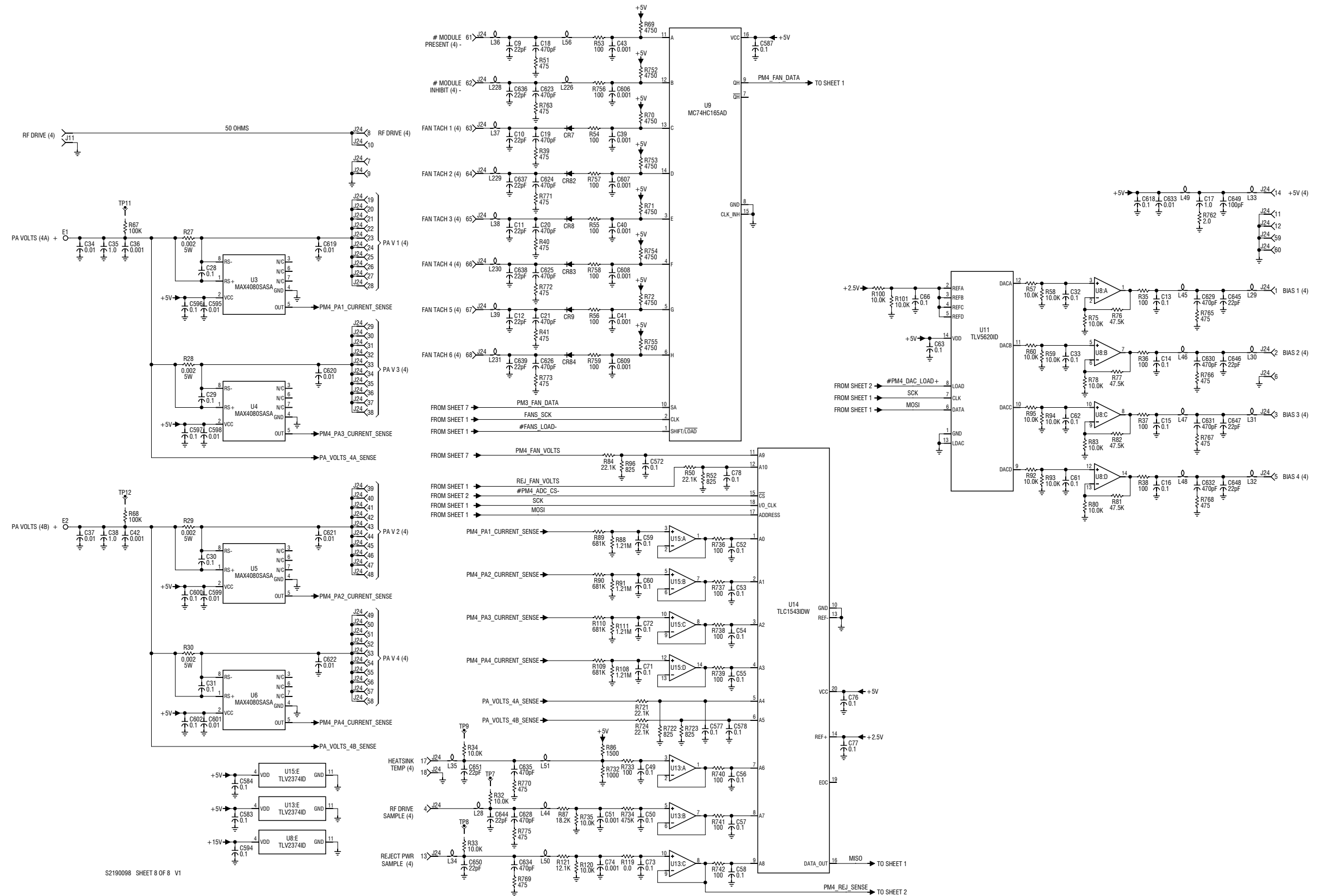
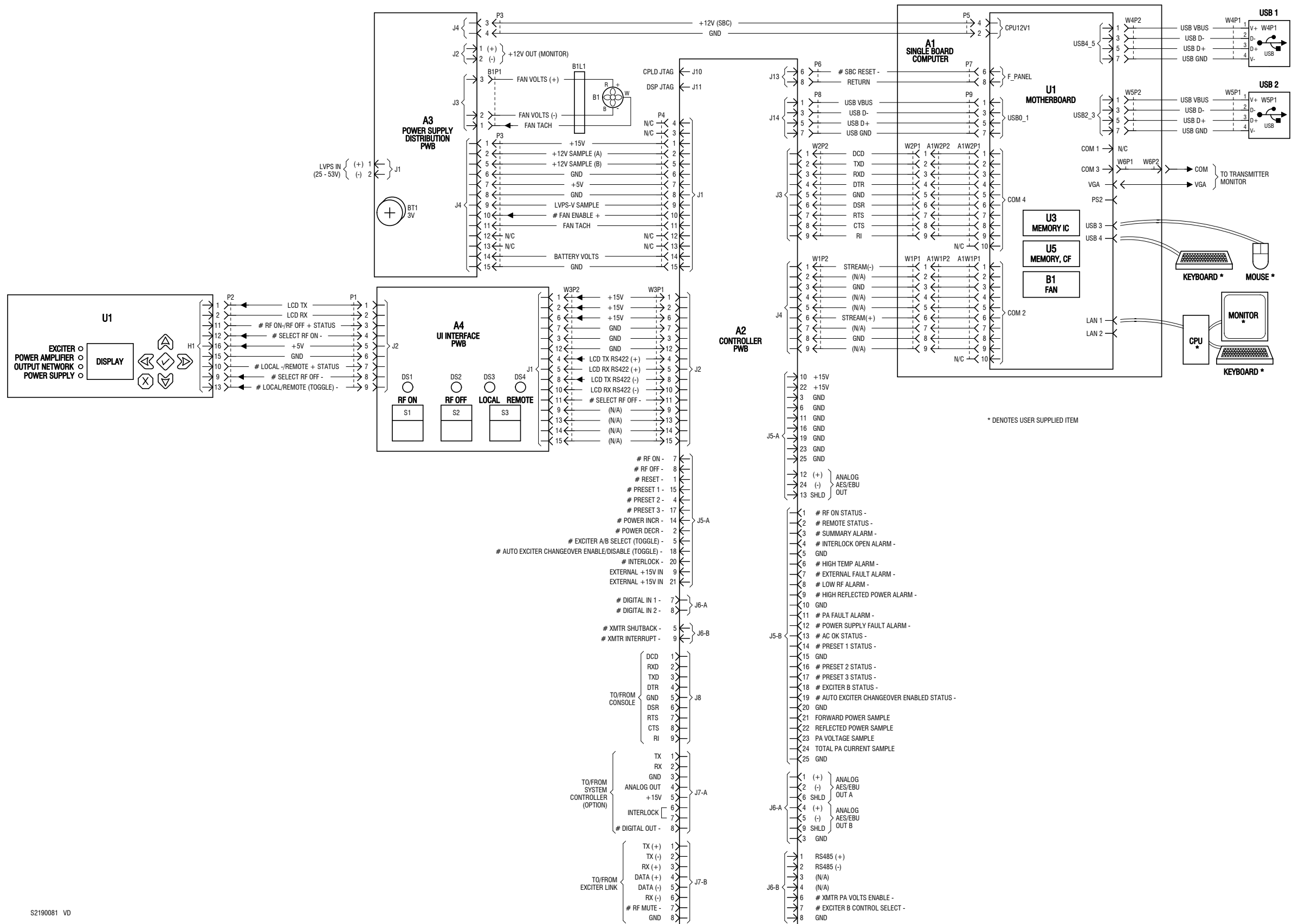
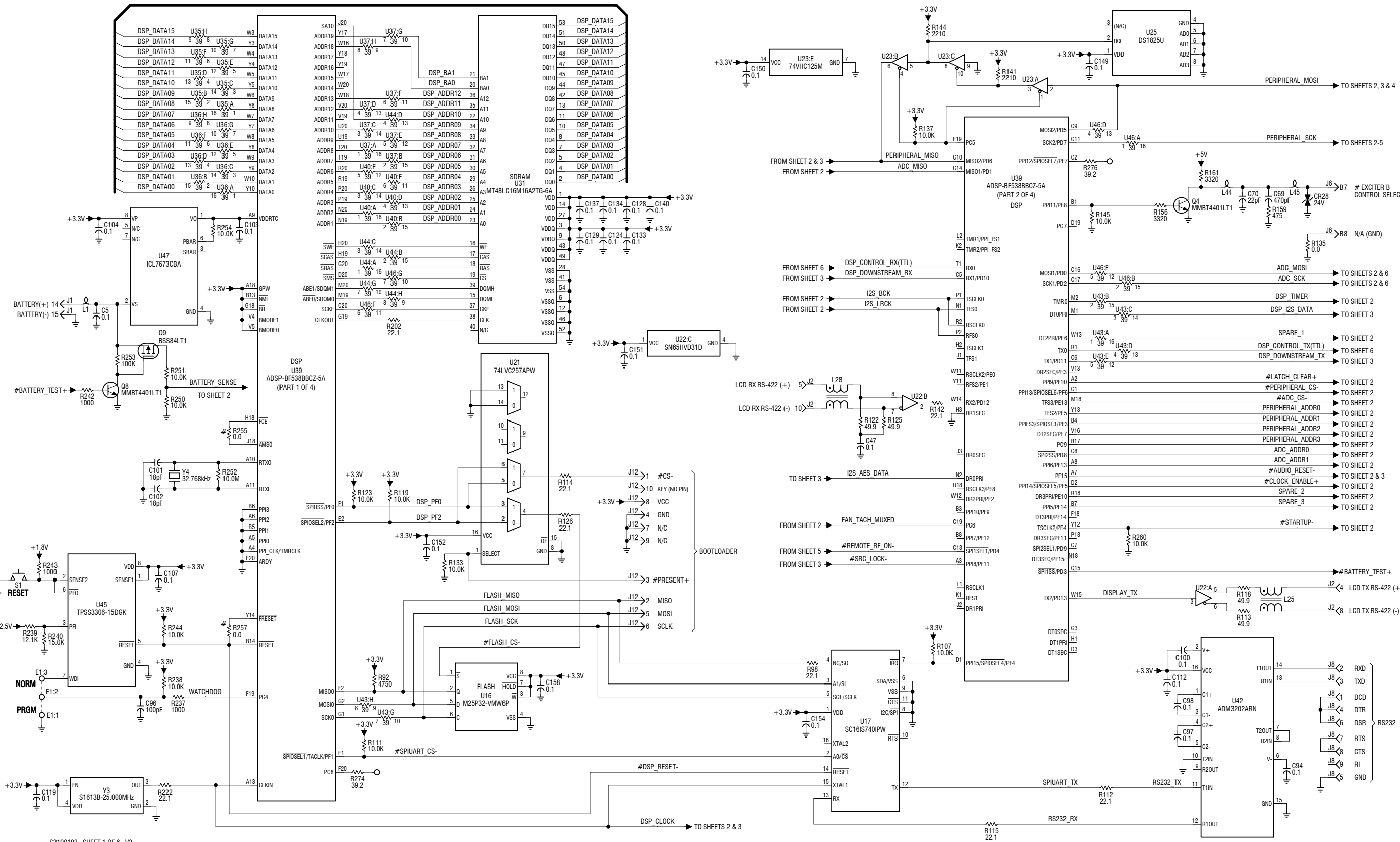


Figure SD-20: NAPC158A Module Control/Interface PWB (Sheet 8 of 8)



S2190081 VD

Figure SD-21: NAC118 Controller



S2190103 SHEET 1 OF 6 V2

Figure SD-22: NAPC163 Controller PWB (Sheet 1 of 6)

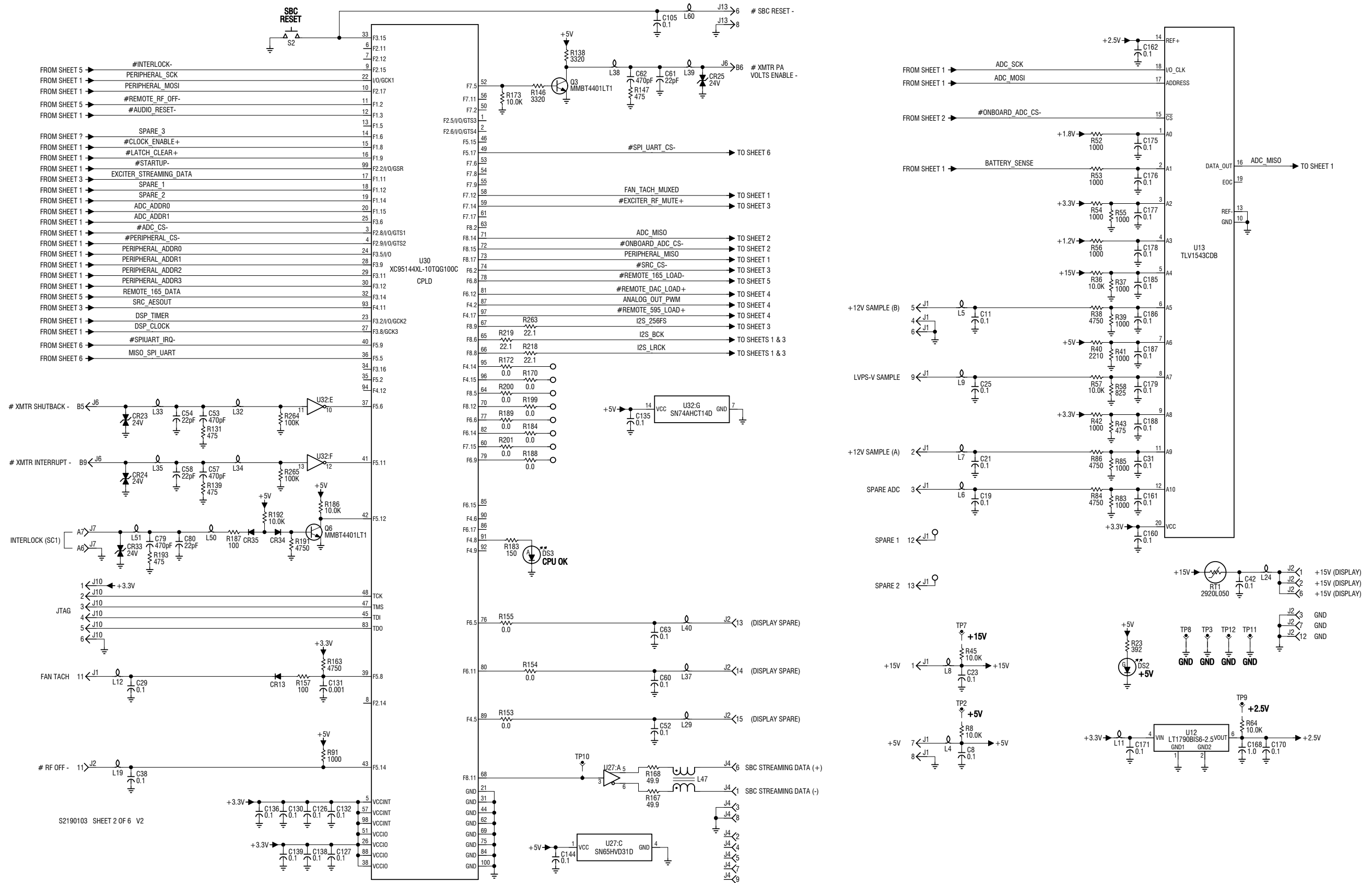
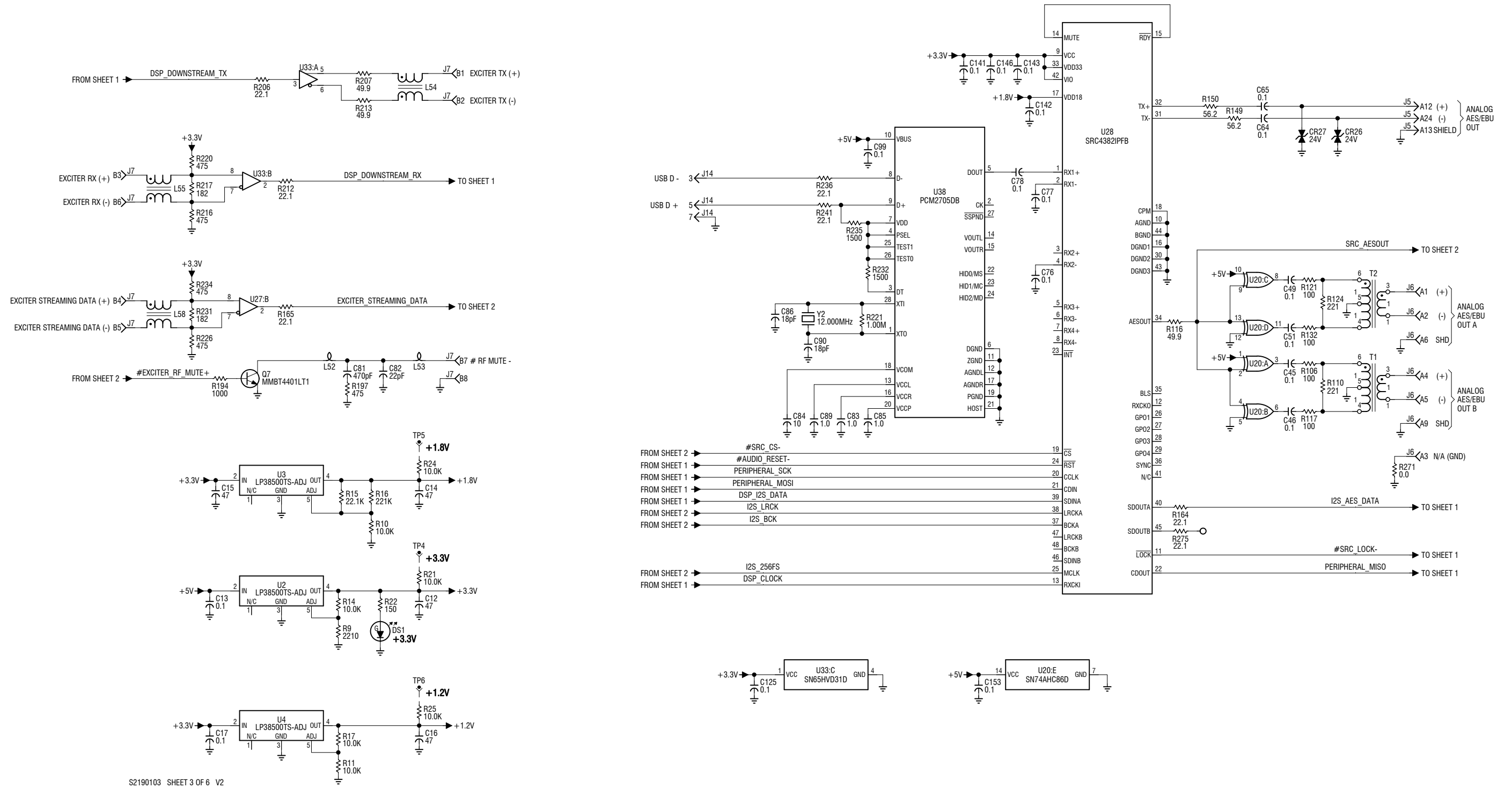
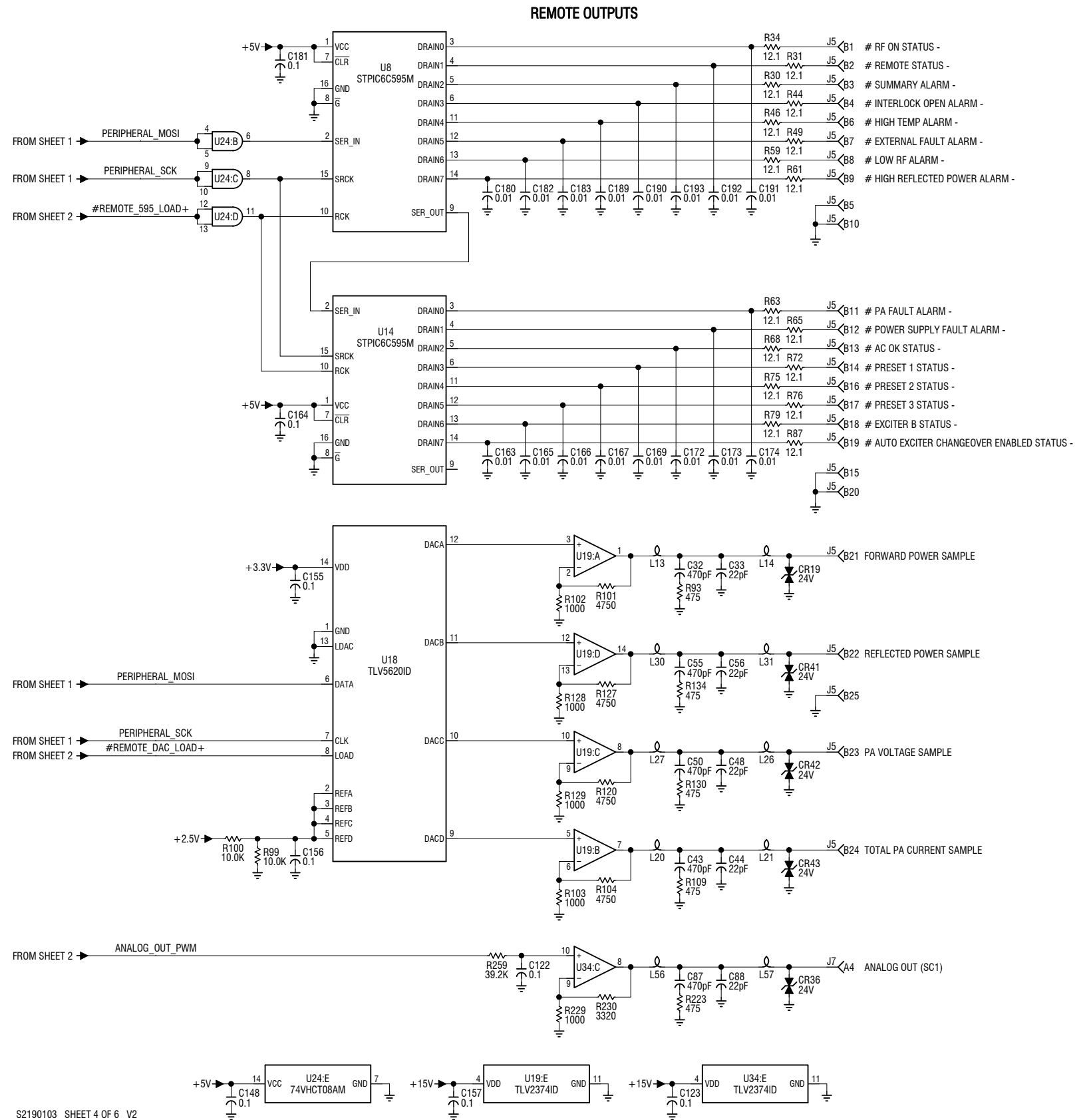


Figure SD-23: NAPC163 Controller PWB (Sheet 2 of 6)



S2190103 SHEET 3 OF 6 V2

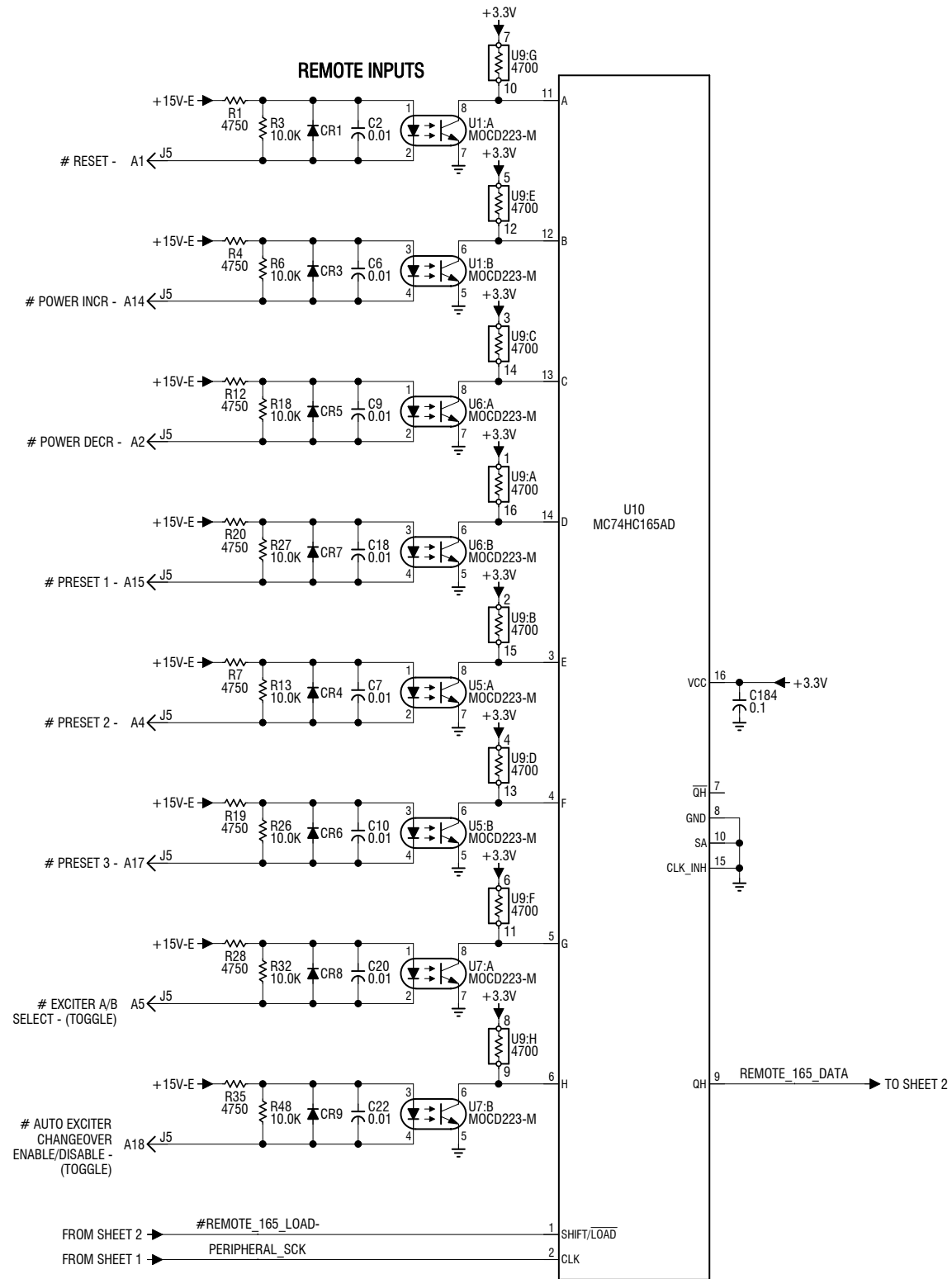
Figure SD-24: NAPC163 Controller PWB (Sheet 3 of 6)



S2190103 SHEET 4 OF 6 V2

Figure SD-25: NAPC163 Controller PWB (Sheet 4 of 6)





S2190103 SHEET 5 OF 6 V2

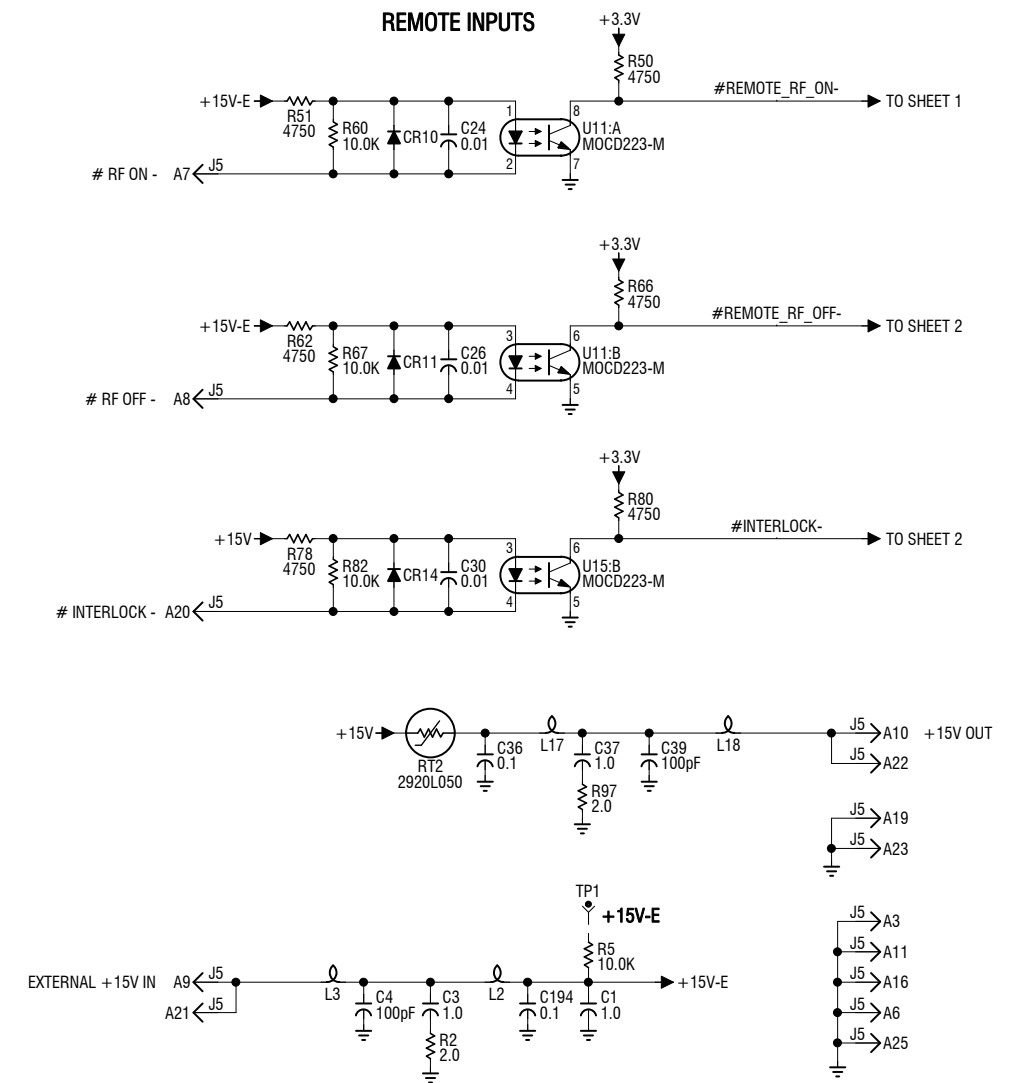


Figure SD-26: NAPC163 Controller PWB (Sheet 5 of 6)

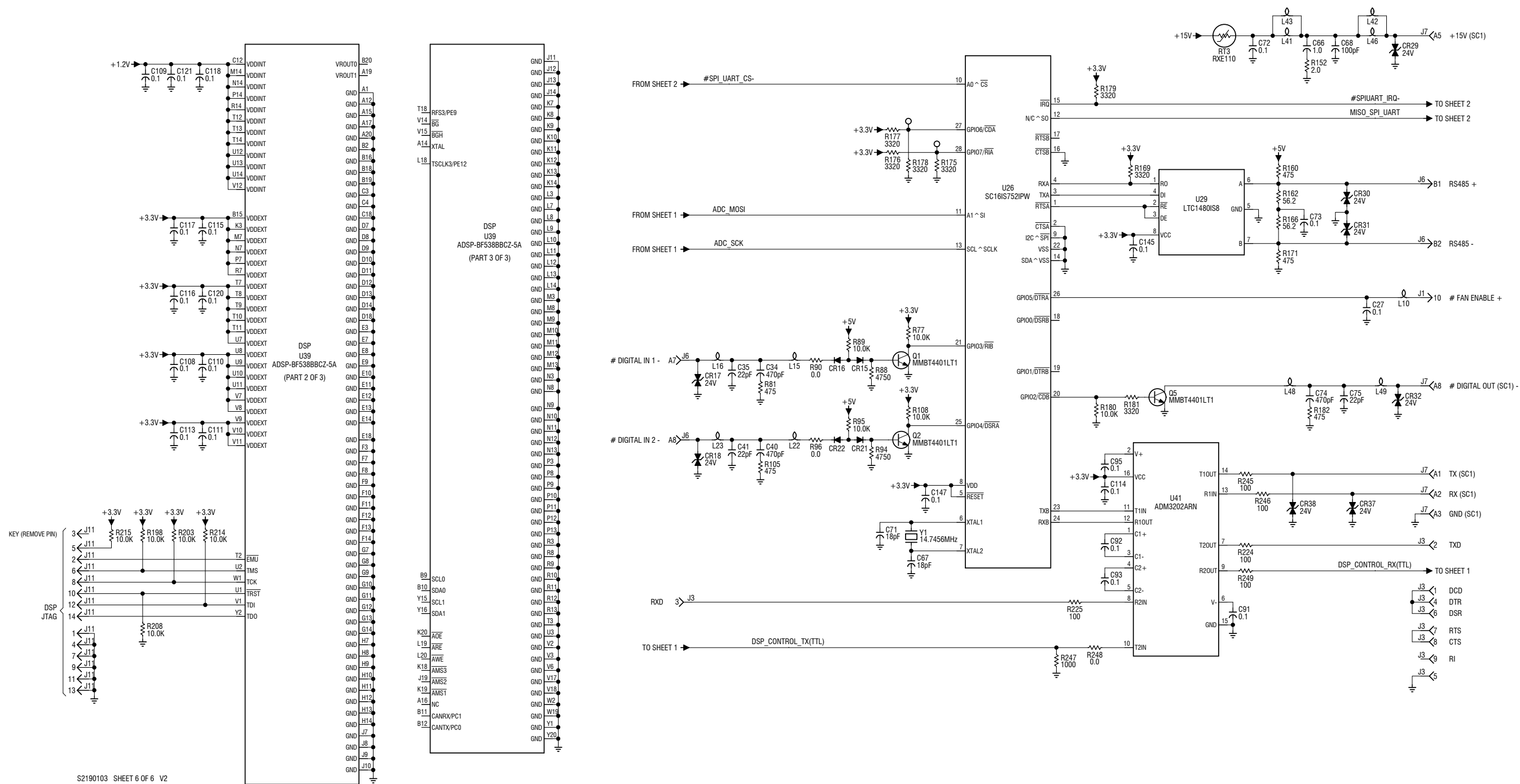


Figure SD-27: NAPC163 Controller PWB (Sheet 6 of 6)



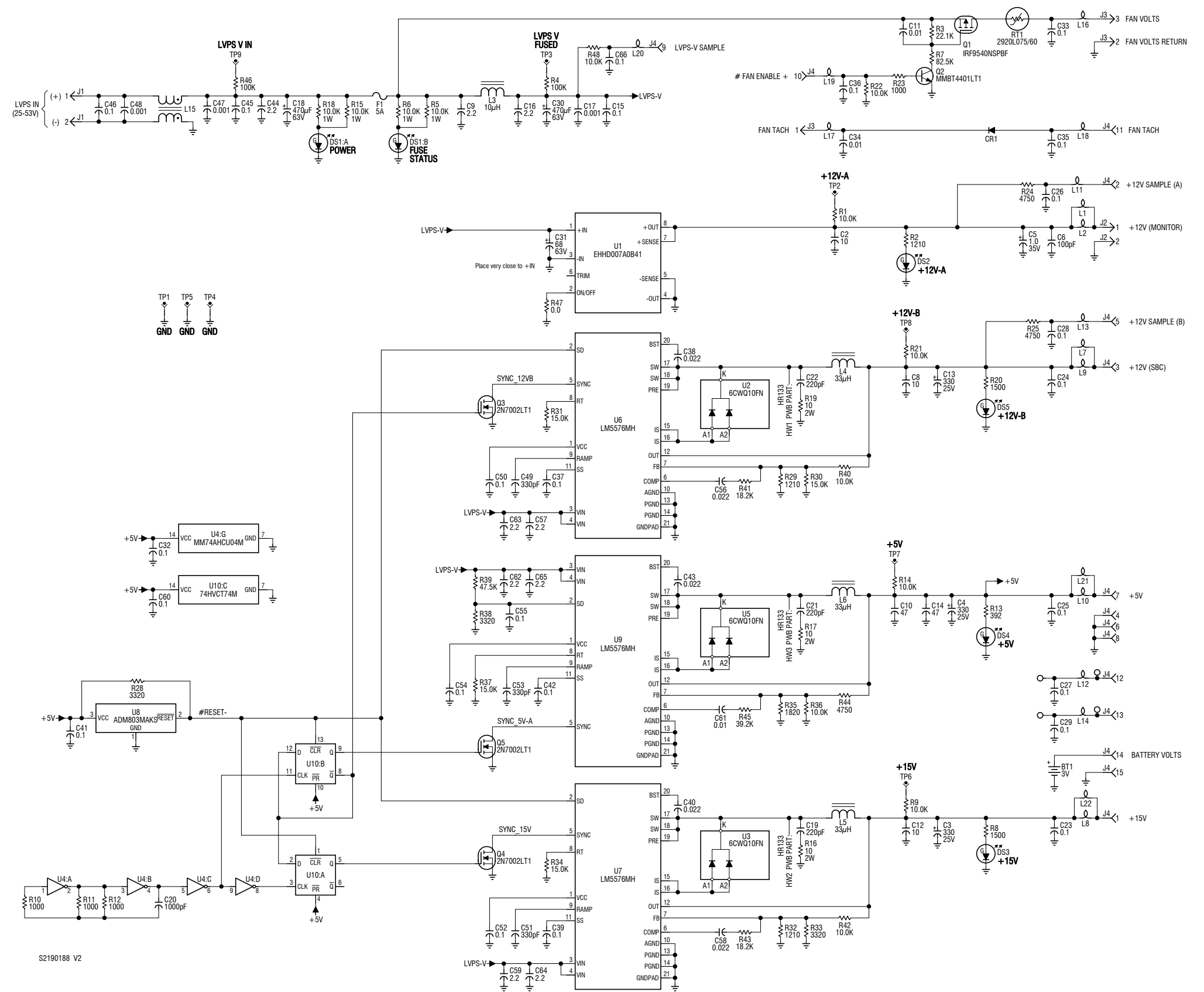


Figure SD-28: NAPS49 Power Supply Distribution PWB

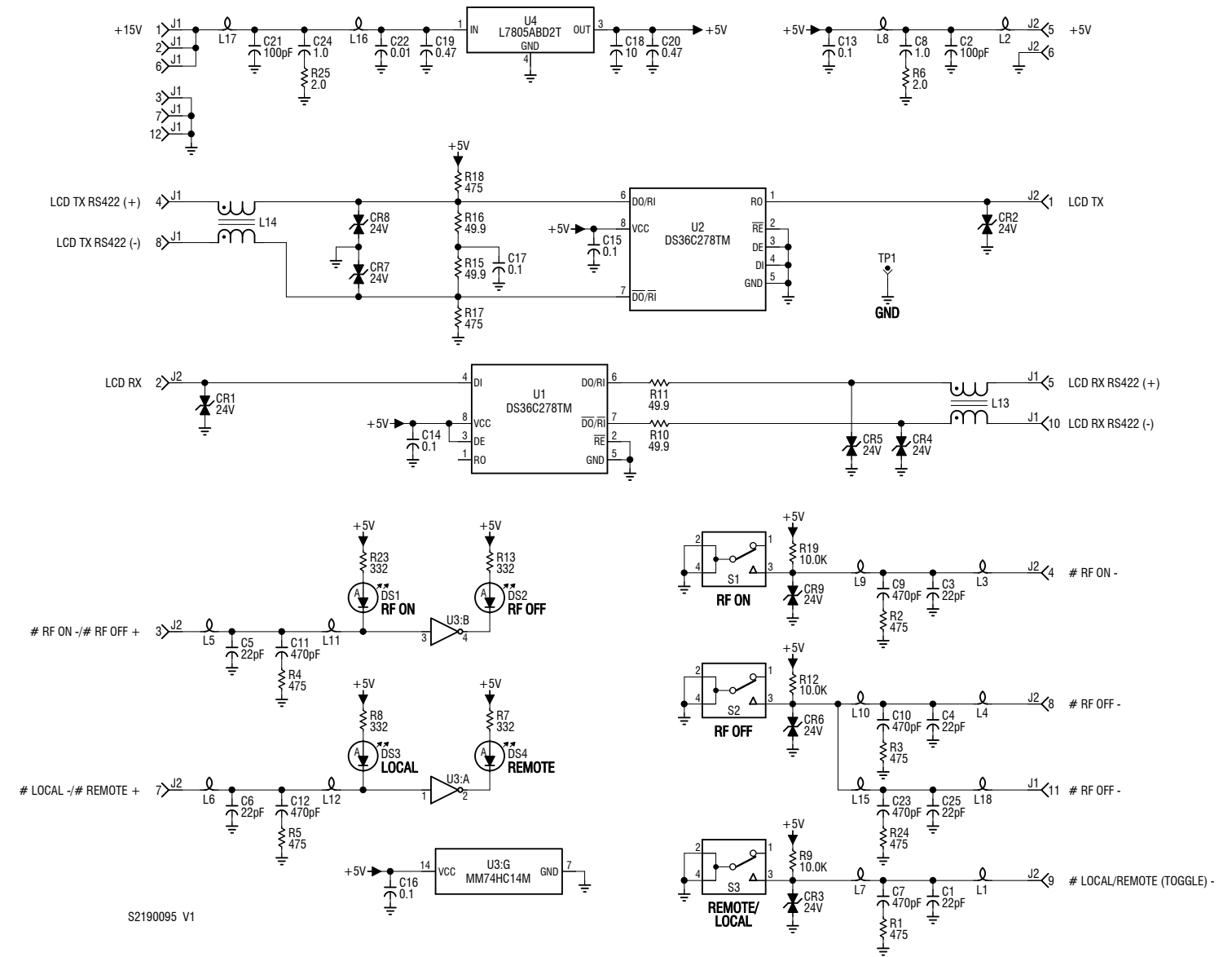


Figure SD-29: NAPI142A/01 UI Interface PWB

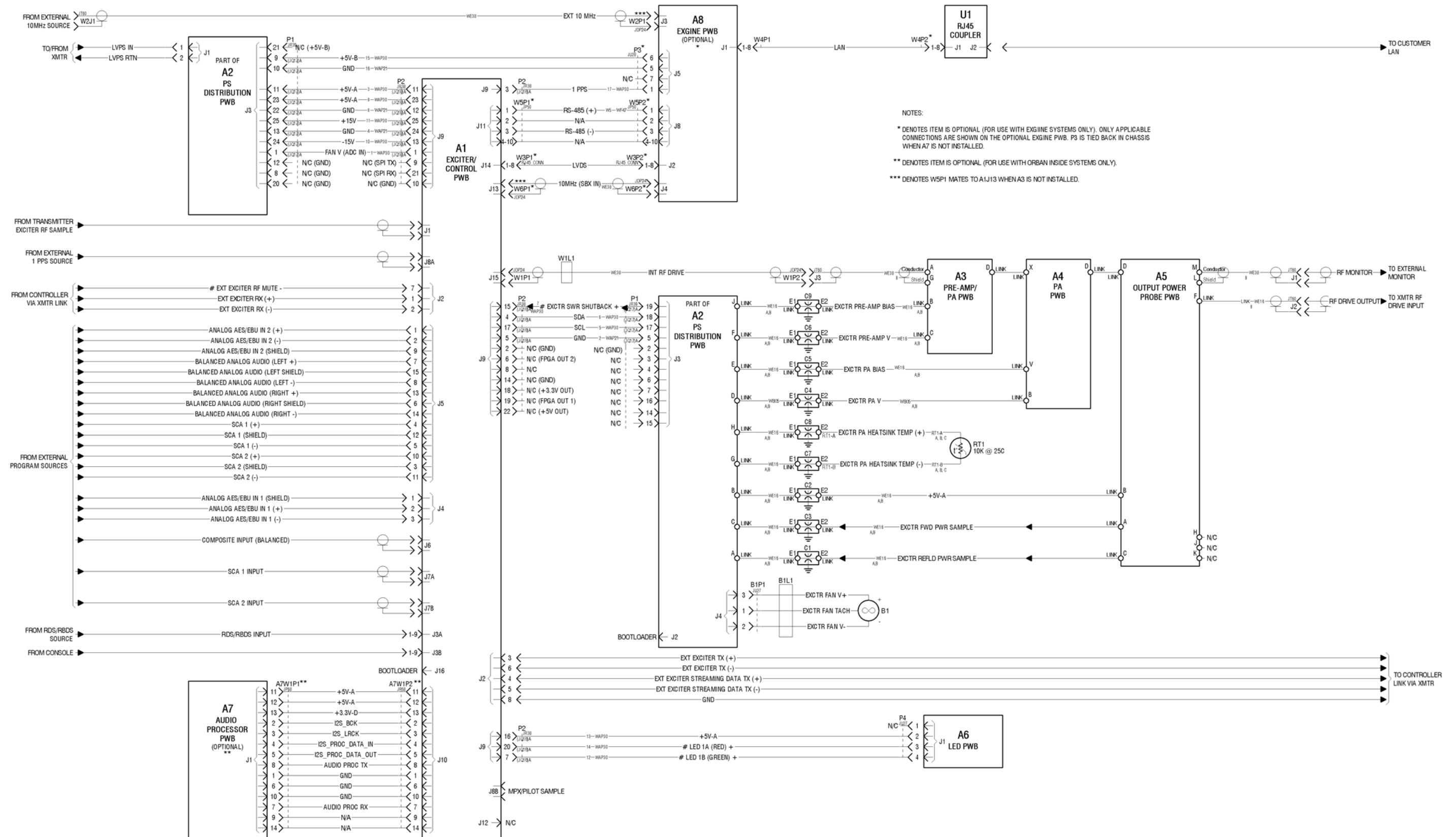


Figure SD-30: NAE107A or NAE107A/01 Exciter

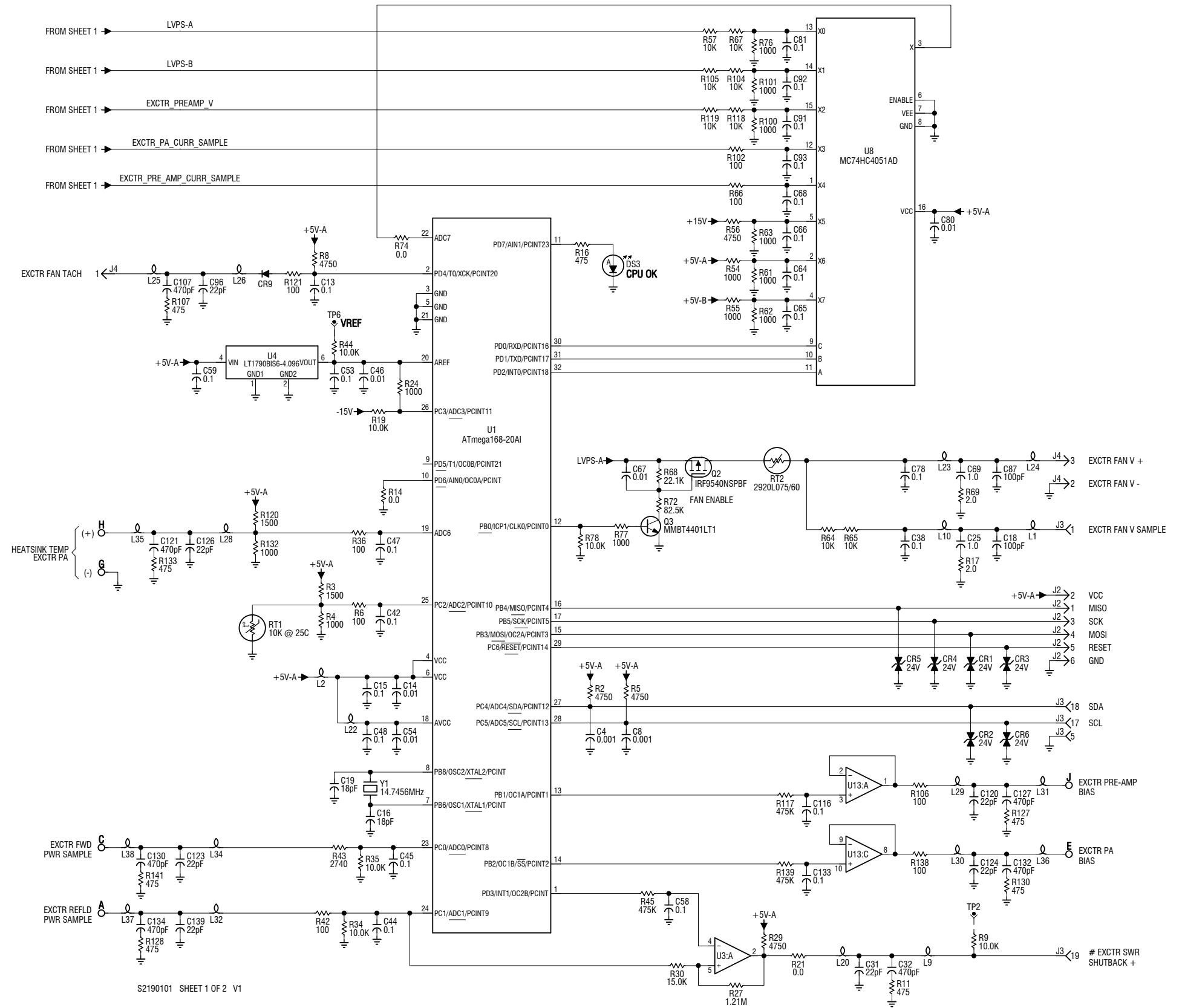
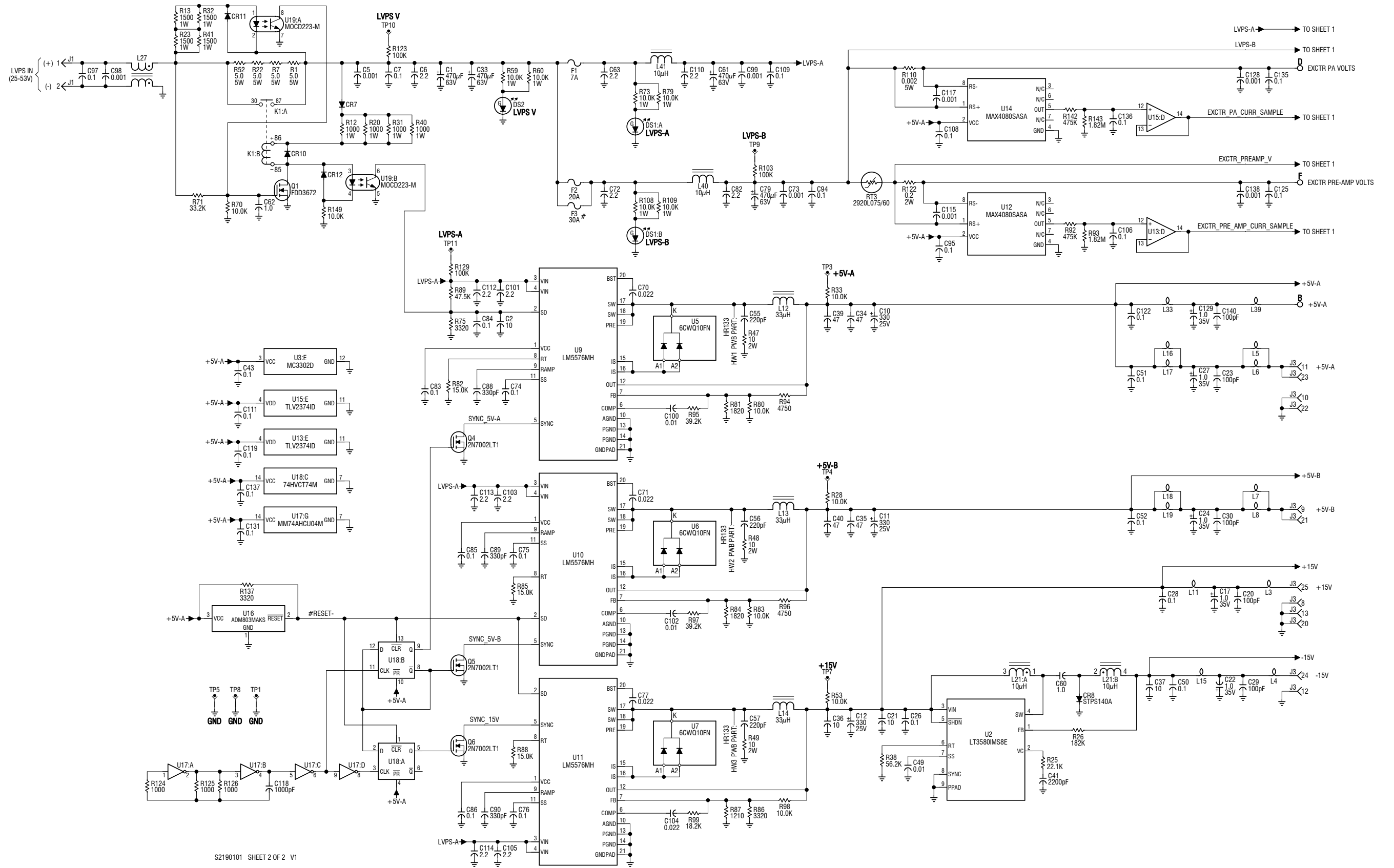


Figure SD-31: NAPS47A/01 Power Supply Distribution PWB (Sheet 1 of 2)



S2190101 SHEET 2 OF 2 V1

Figure SD-32: NAPS47A/01 Power Supply Distribution PWB (Sheet 2 of 2)

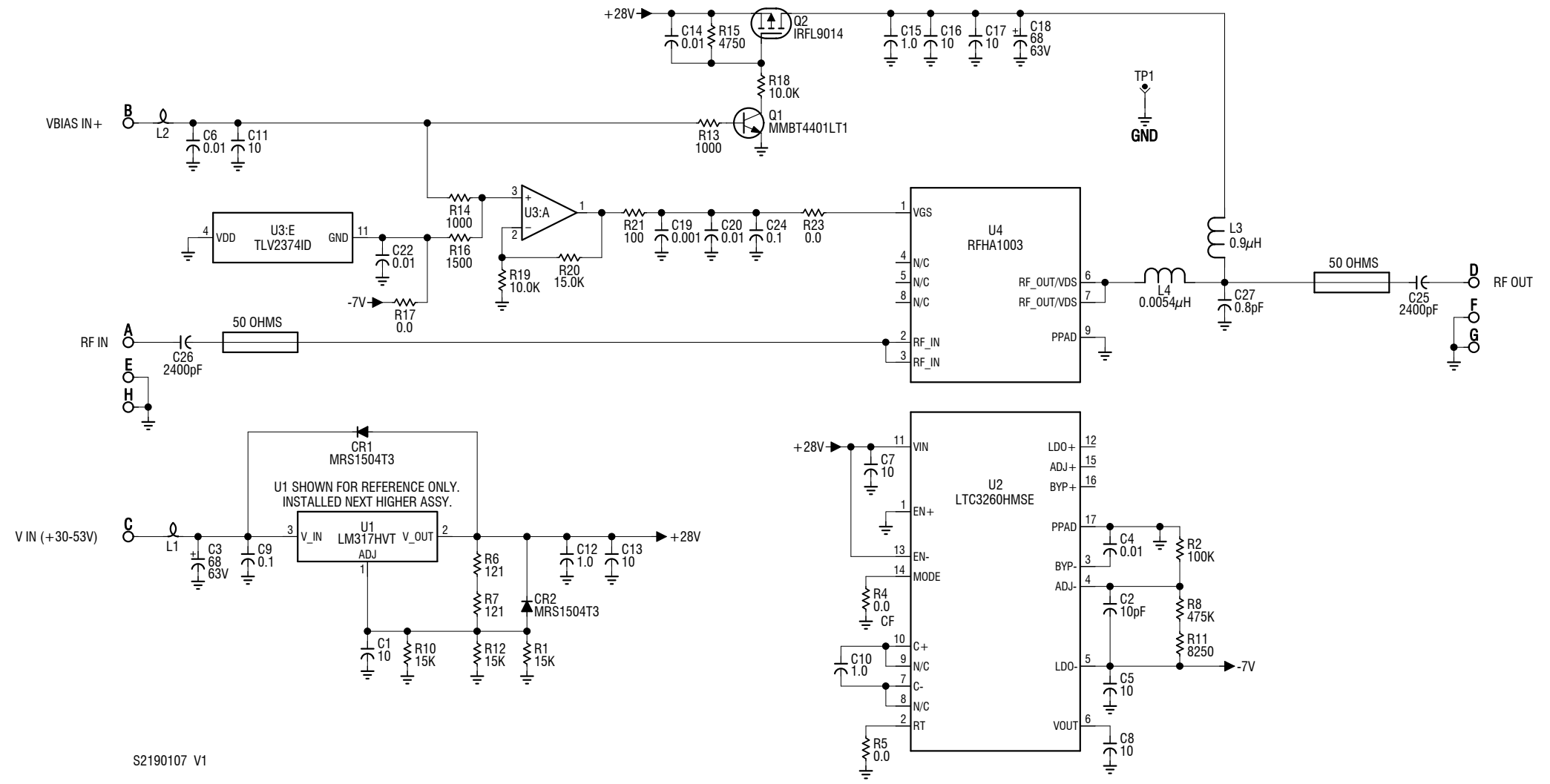


Figure SD-33: NAPA35 Pre-Amplifier PWB

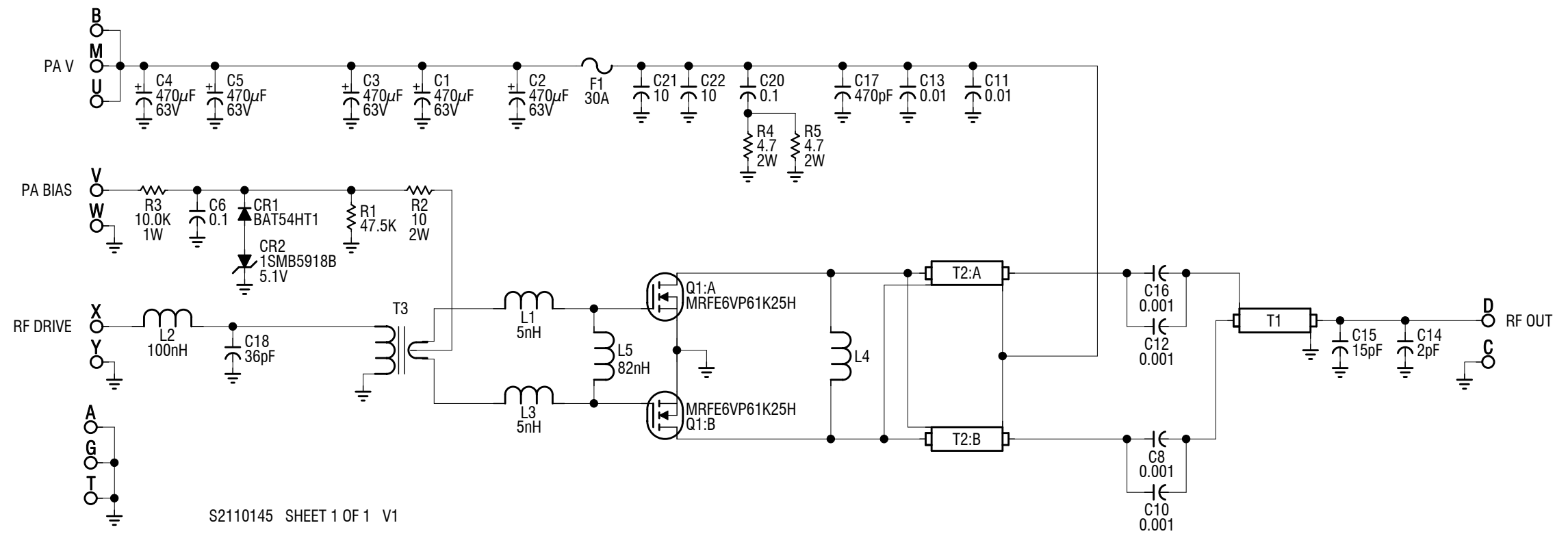


Figure SD-34: NAPA31C Power Amplifier PWB

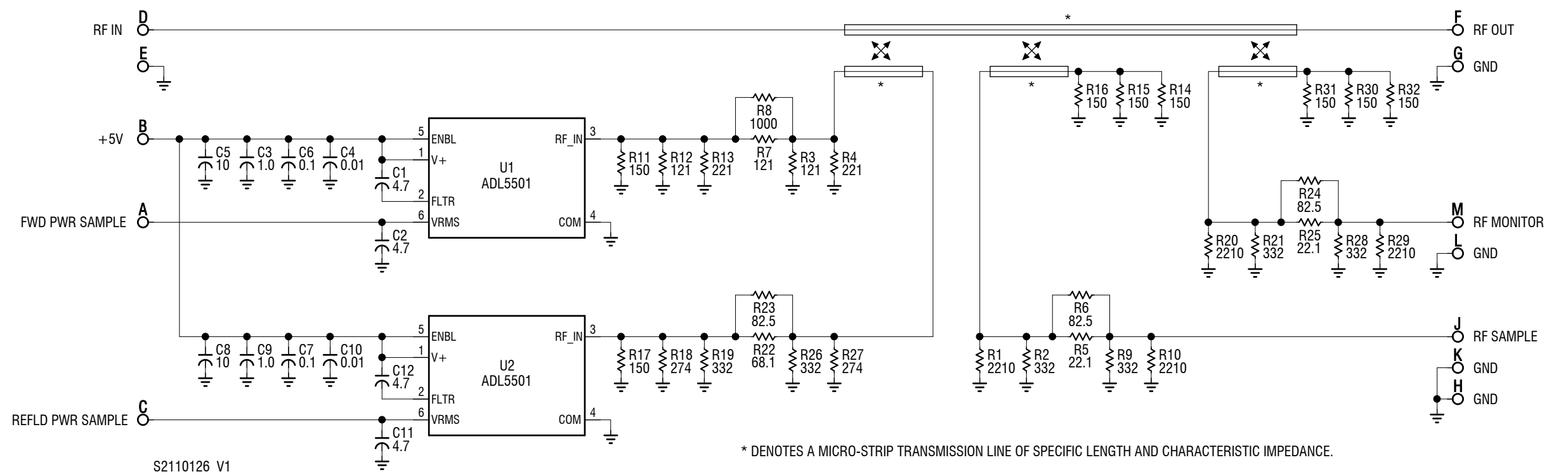
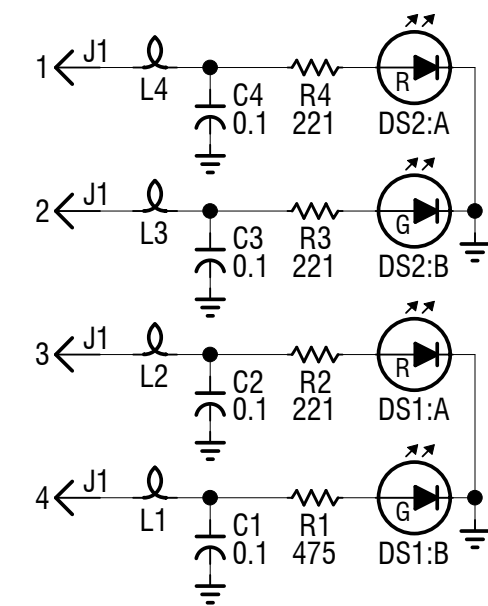


Figure SD-35: NAPP06/01 Output Power Probe PWB





S2060273 V1

Figure SD-36: LED PWB (206-3060)

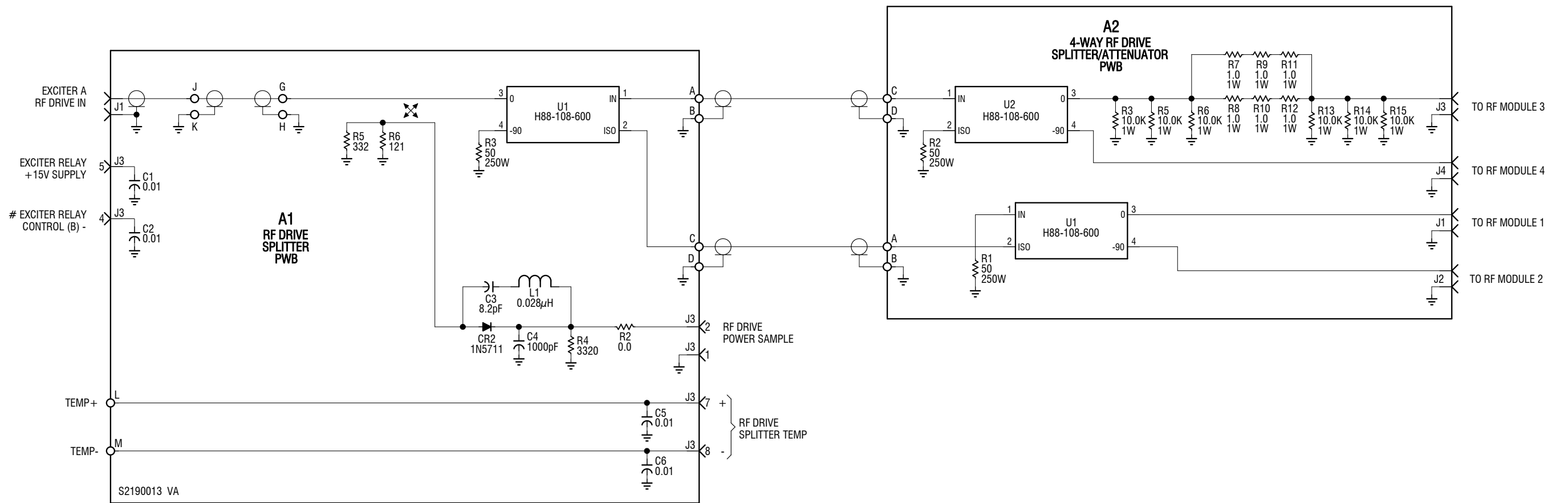


Figure SD-37: NAI23A RF Drive Splitter/Changeover Assembly

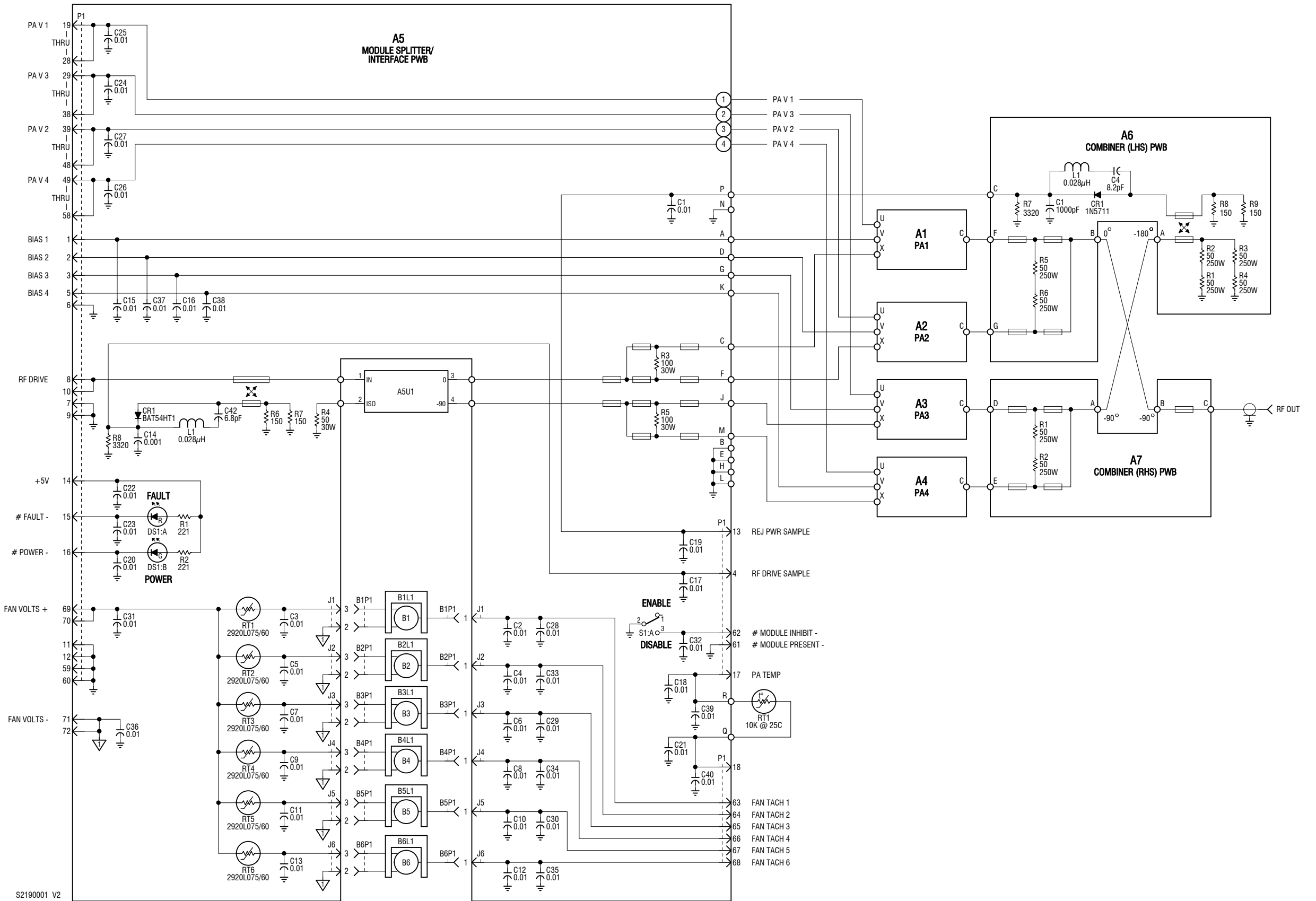


Figure SD-38: NAA61B RF Power Module

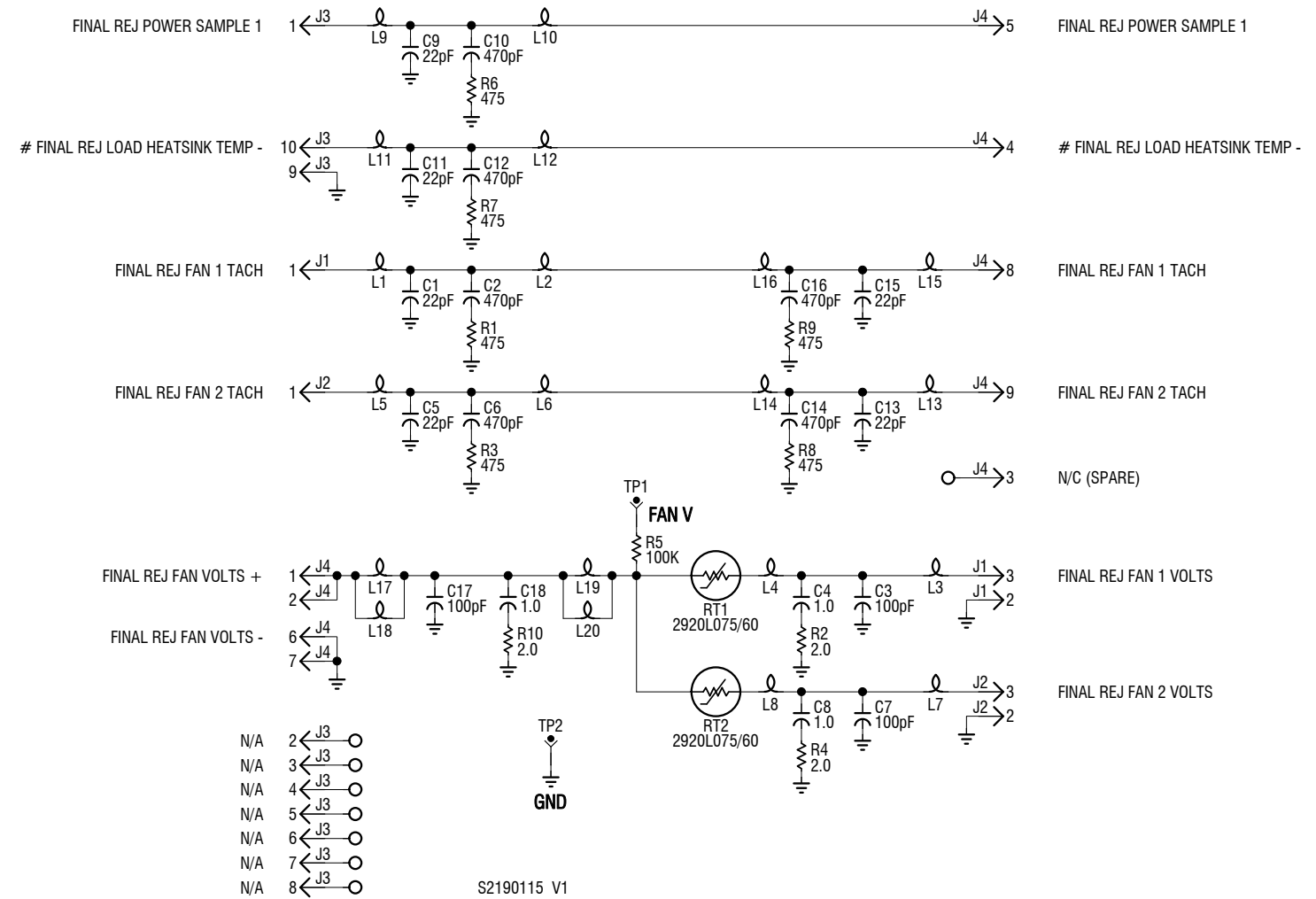


Figure SD-39: NAPI166 Reject Load Interface PWB

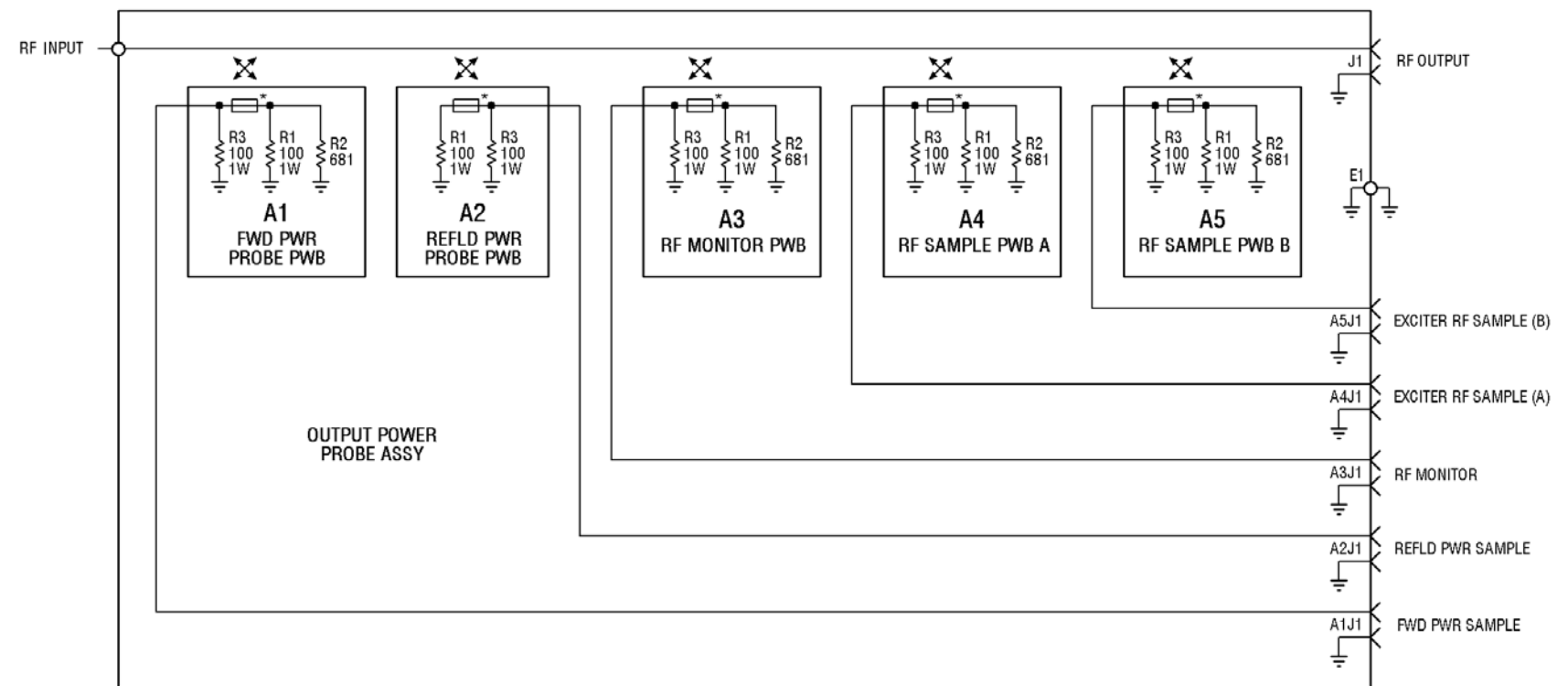
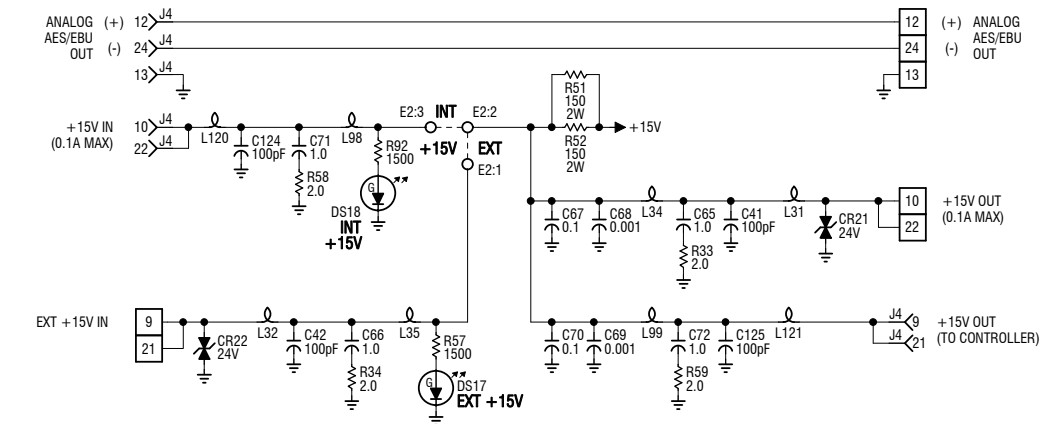
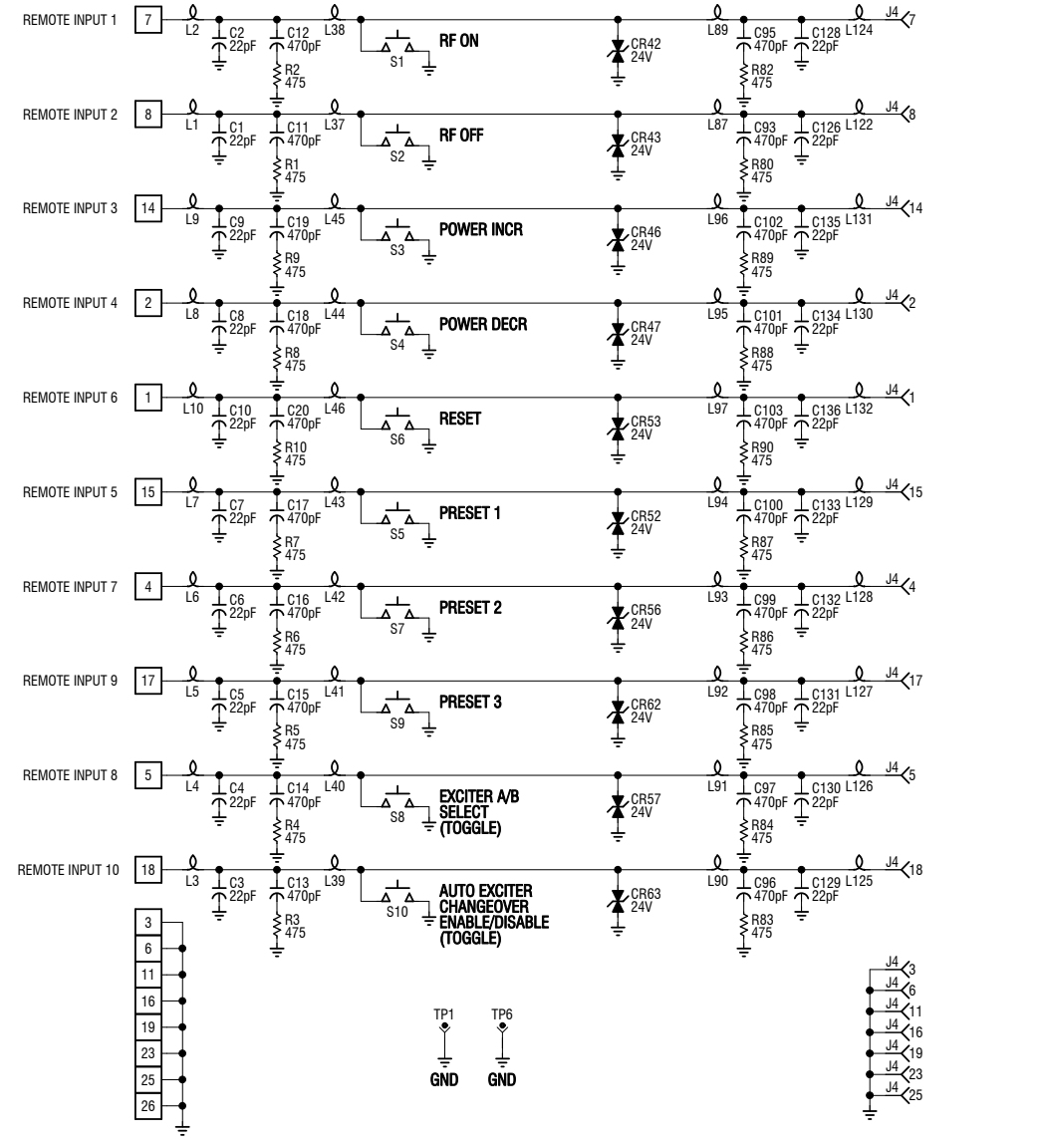
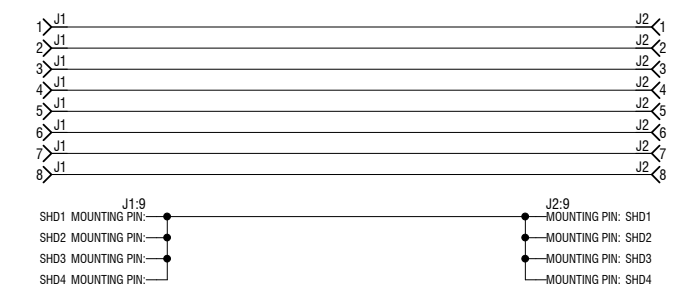
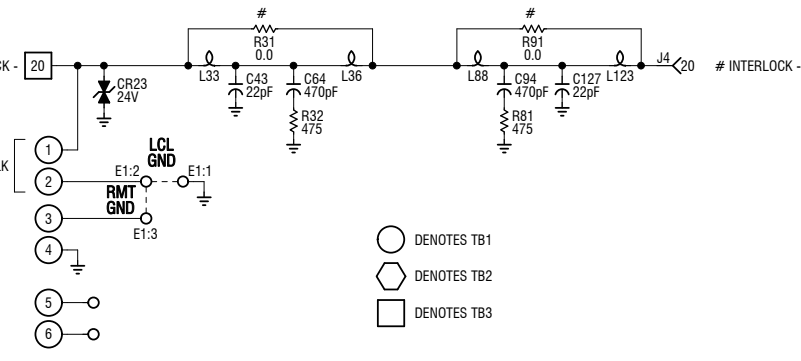
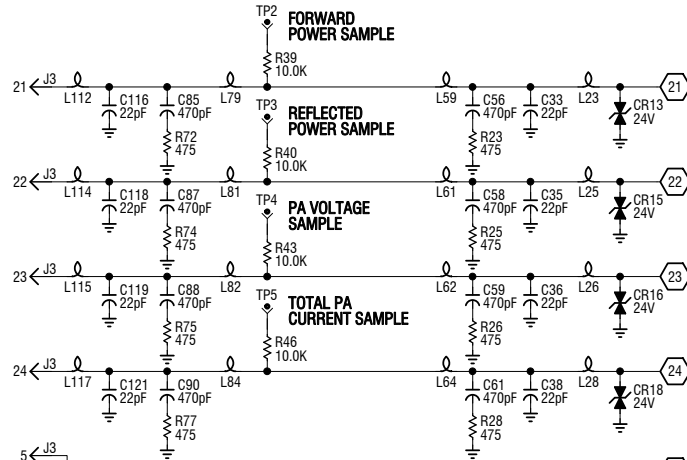
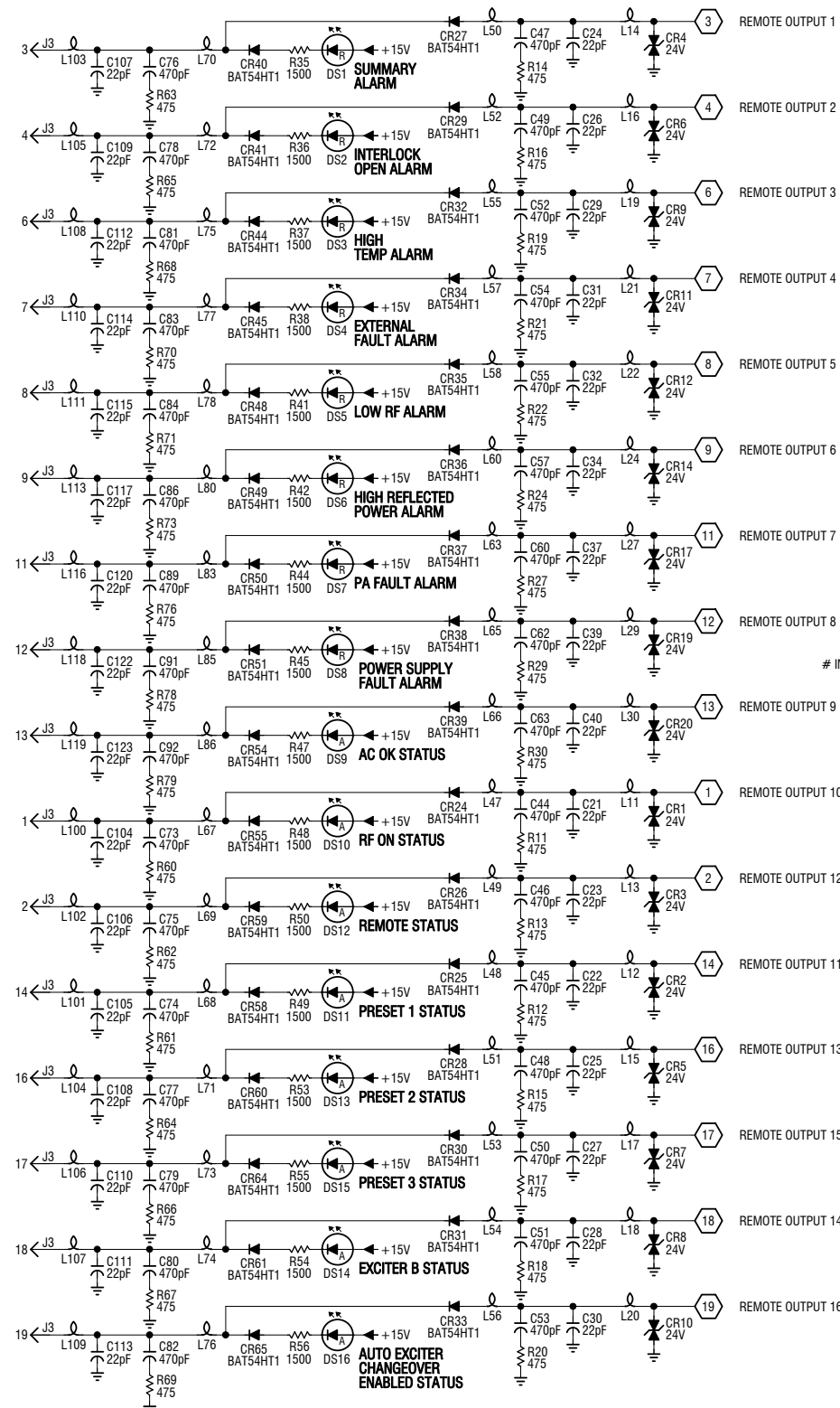


Figure SD-40: NA-FP109B Output Power Probe and Sample PWBs



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Figure SD-41: NAPI143/02 Remote Interface PWB

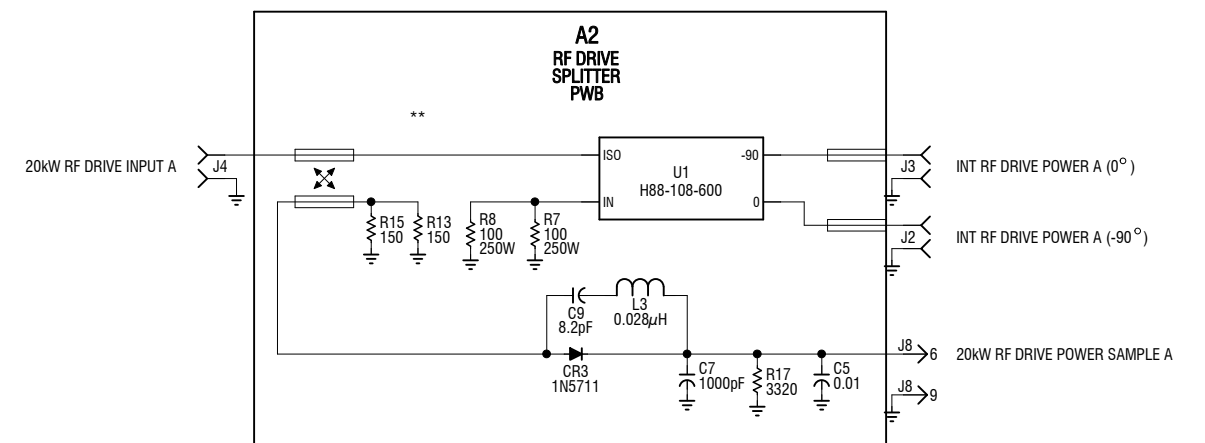
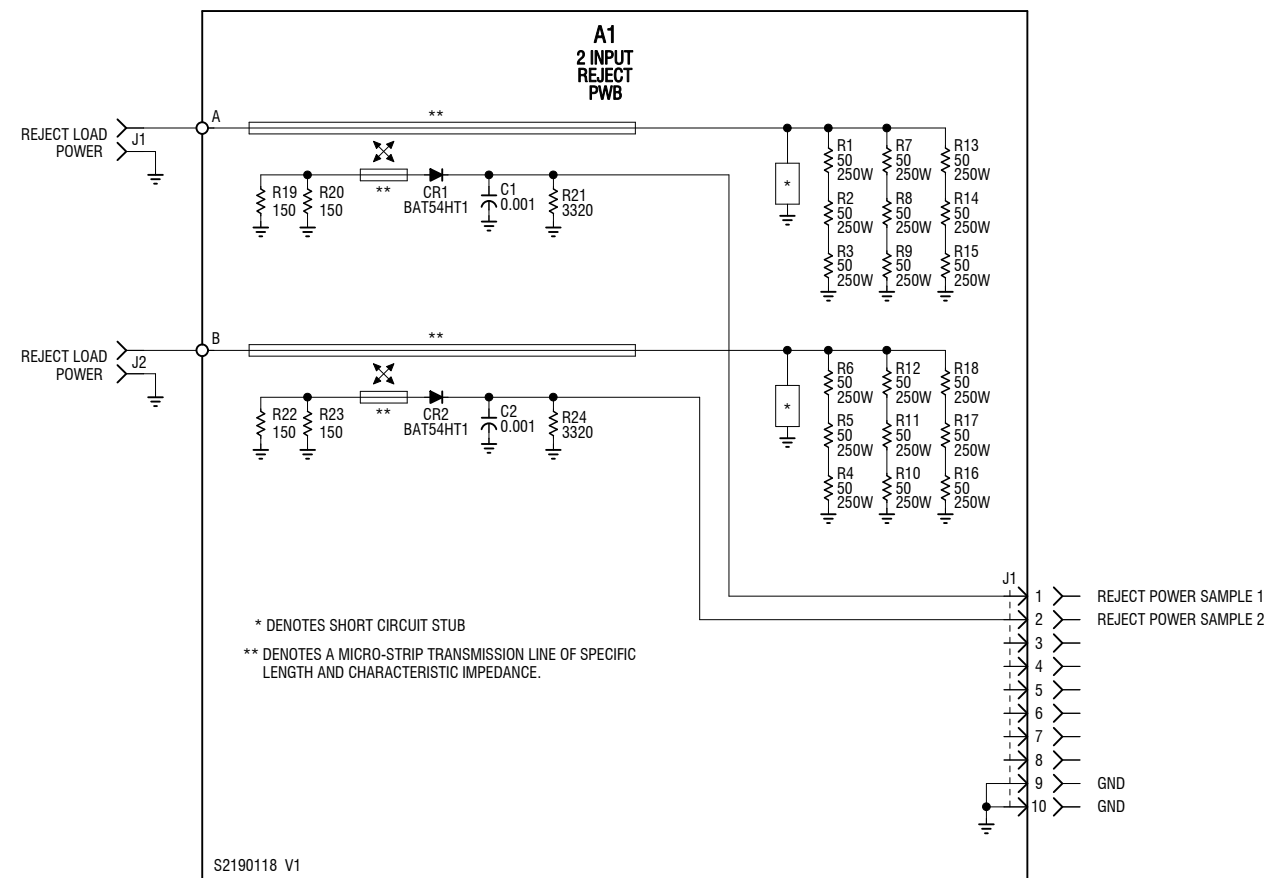
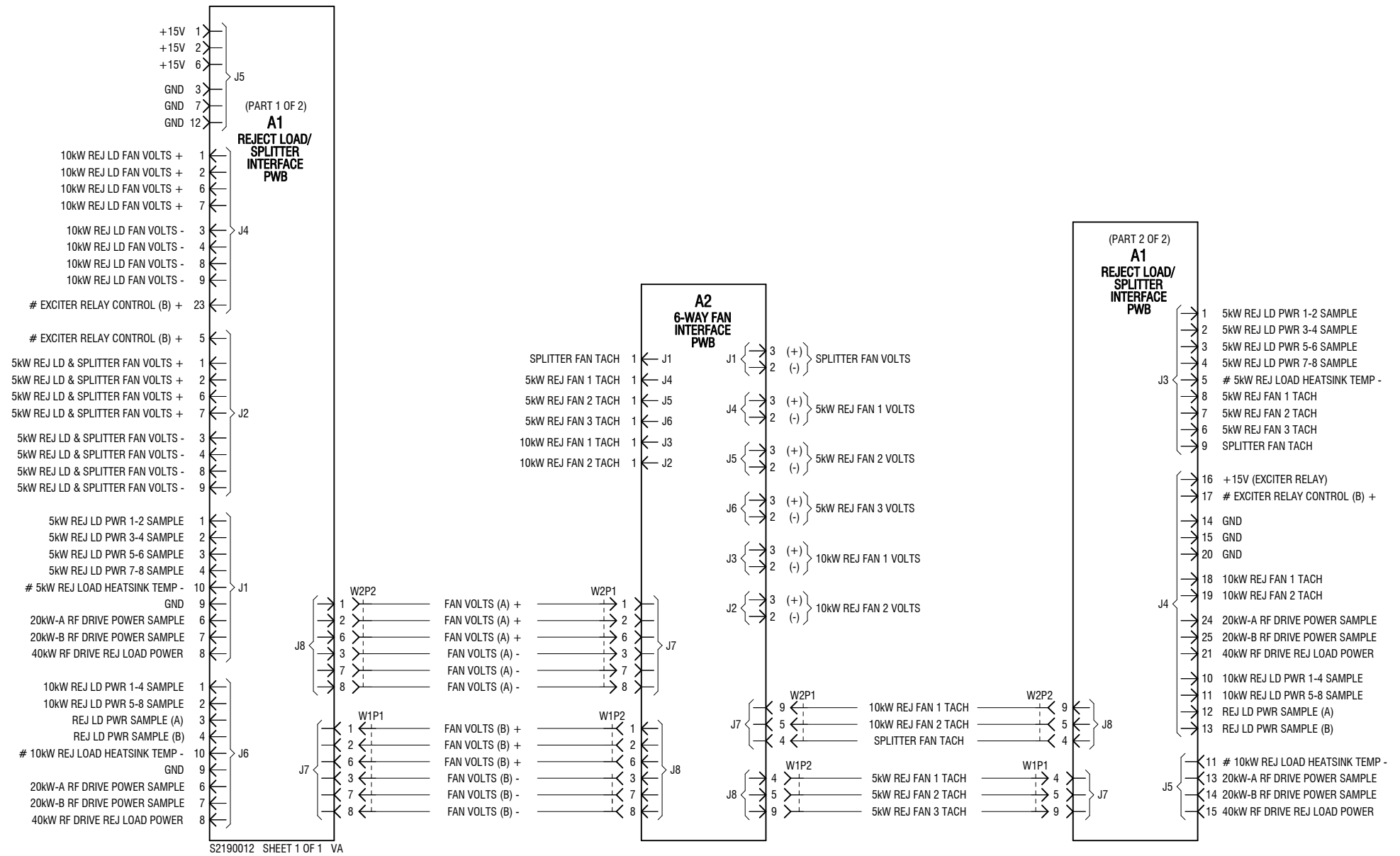


Figure SD-42: NAI24 RF Drive Splitter Assembly



S2190012 SHEET 1 OF 1 VA

Figure SD-43: NAX269 Reject Load/ Splitter Interface Assembly



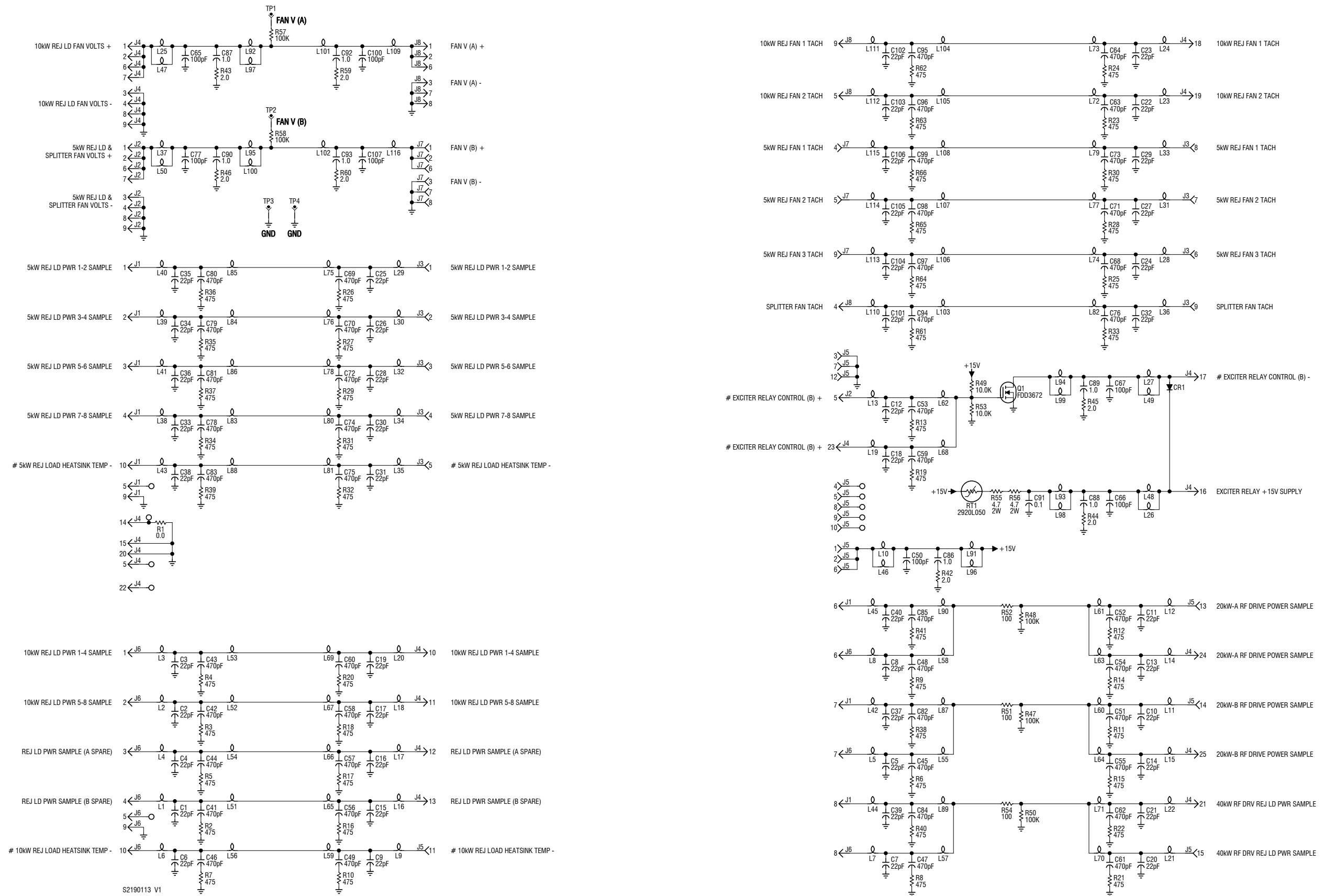


Figure SD-44: NAPI167 Reject Load/ Splitter Interface PWB

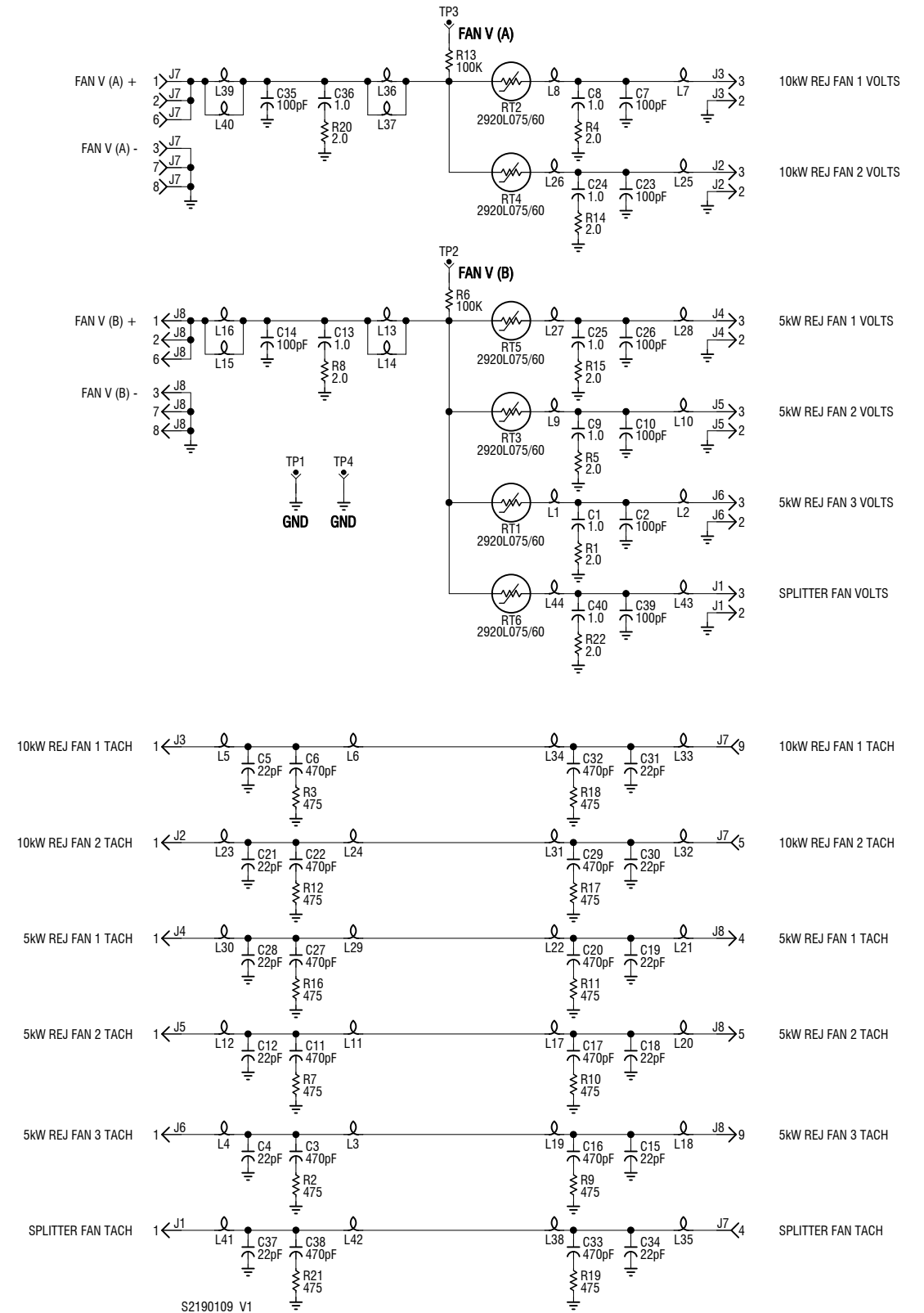


Figure SD-45: NAPI168 6-Way Fan Interface PWB

**Nautel Part # 219-5179**  
UPS Interface Upgrade Kit

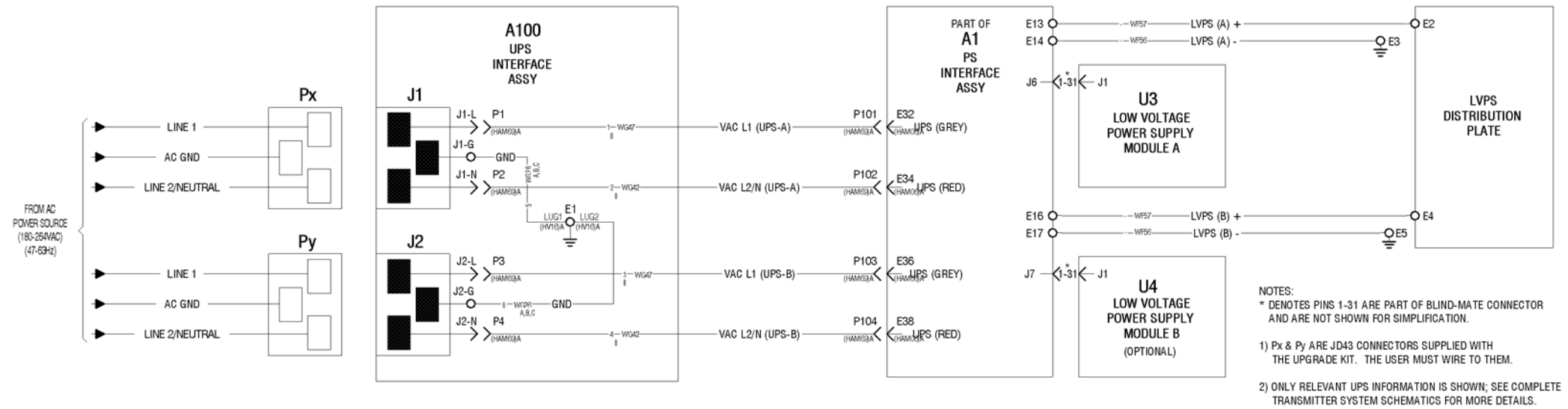


Figure SD-46: UPS Interface Assembly (Optional)

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## SECTION 4.5: MECHANICAL DRAWINGS

This section contains mechanical drawings for assemblies of the transmitter. Dimensional drawings may be included. Refer to [Table 4.5.1 on page 4.5.2](#) for an itemized list.

Assembly detail drawings for assemblies and modules that have separate manuals are not included. Refer to the appropriate maintenance manual for the assembly detail of these assemblies.

### Identifying Mechanical Drawings

Each mechanical drawing in this section is identified by a number that is both the figure number and the page number. The numbers are assigned sequentially and are prefixed by the letters MD. Drawings in this section are listed in [Table 4.5.1 on page 4.5.2](#).

### Content of Mechanical Drawings

Mechanical drawings are illustrations that depict the location of electrical components and show assembly outline detail. Dimensional information is included, where appropriate.

When a module or assembly is the subject of its own assembly detail drawing, and it is also shown in a higher level assembly, the detail depicted in the higher level assembly may have minor differences from the module or assembly actually installed. In this case, always refer to the assembly detail drawing of the module or assembly for detailed information.

## Locating a Part or Assembly on a Mechanical Drawing

1. When a part or assembly is assigned a reference designation (e.g., A2A1 or A2A1R1), refer to the family trees in [Section 4.2, "Parts Lists" on page 4.2.1](#). Follow the family tree branches to the block that contains the desired reference designation and Nautel nomenclature (e.g., NAPA31C Power Amplifier PWB). Note the reference designations and Nautel nomenclatures of all higher assemblies in the path.  
Example: A8 NAA61B RF Module 1 -> A8A1 NAPA31B Power Amplifier PWB.
2. Refer to [Table 4.5.1 on page 4.5.2](#). Use the reference designation and Nautel nomenclature to identify the appropriate mechanical drawing.  
Example: NAPA31C Power Amplifier PWB is shown on schematics MD-13.
3. If necessary, refer to the referenced figure (e.g., MD-13) in the mechanical drawings at the end of this section and locate the next, lower-level assembly. Then, repeat this procedure until the desired part or assembly is found.

*Table 4.5.1: List of Mechanical Drawings*

Figure #	Title
MD-1	GV20/GV15 Transmitter (Front View)
MD-2	GV20/GV15 Transmitter (Rear View)
MD-3	NAPI150A Power Supply Interface PWB
MD-4	NAX273 Monitor Fan Assembly
MD-5	NAPI172 Monitor Fan Interface PWB
MD-6	NAPC158A Module Control/Interface PWB
MD-7	NAC118 Controller
MD-8	NAPC163 Controller PWB
MD-9	NAPS49 Power Supply Distribution PWB
MD-10	NAPI142A/01 UI Interface PWB
MD-11	NAE107A and NAE107A/01 Exciter Assembly
MD-12	NAPS47A/01 Power Supply Distribution PWB
MD-13	NAPA35 Pre-Amplifier PWB
MD-14	NAPA31C Power Amplifier PWB
MD-15	NAPP06/01 Output Power Probe PWB
MD-16	LED PWB (206-3060)
MD-17	NAI23A RF Drive Splitter/Changeover Assembly
MD-18	NAA61B RF Power Module
MD-19	NAL14/01 1-Input Reject Load Assembly

---

*Table 4.5.1: List of Mechanical Drawings*

Figure #	Title
MD-20	NAP1166 Reject Load Interface PWB
MD-21	NAFP109B Output Power Probe Assembly
MD-22	NAP1143/02 Remote Interface PWB
MD-23	NAI24 RF Drive Splitter Assembly
MD-24	NAX269 Reject Load/Splitter Interface Assembly
MD-25	NAL17 4-Input Reject Load Assembly



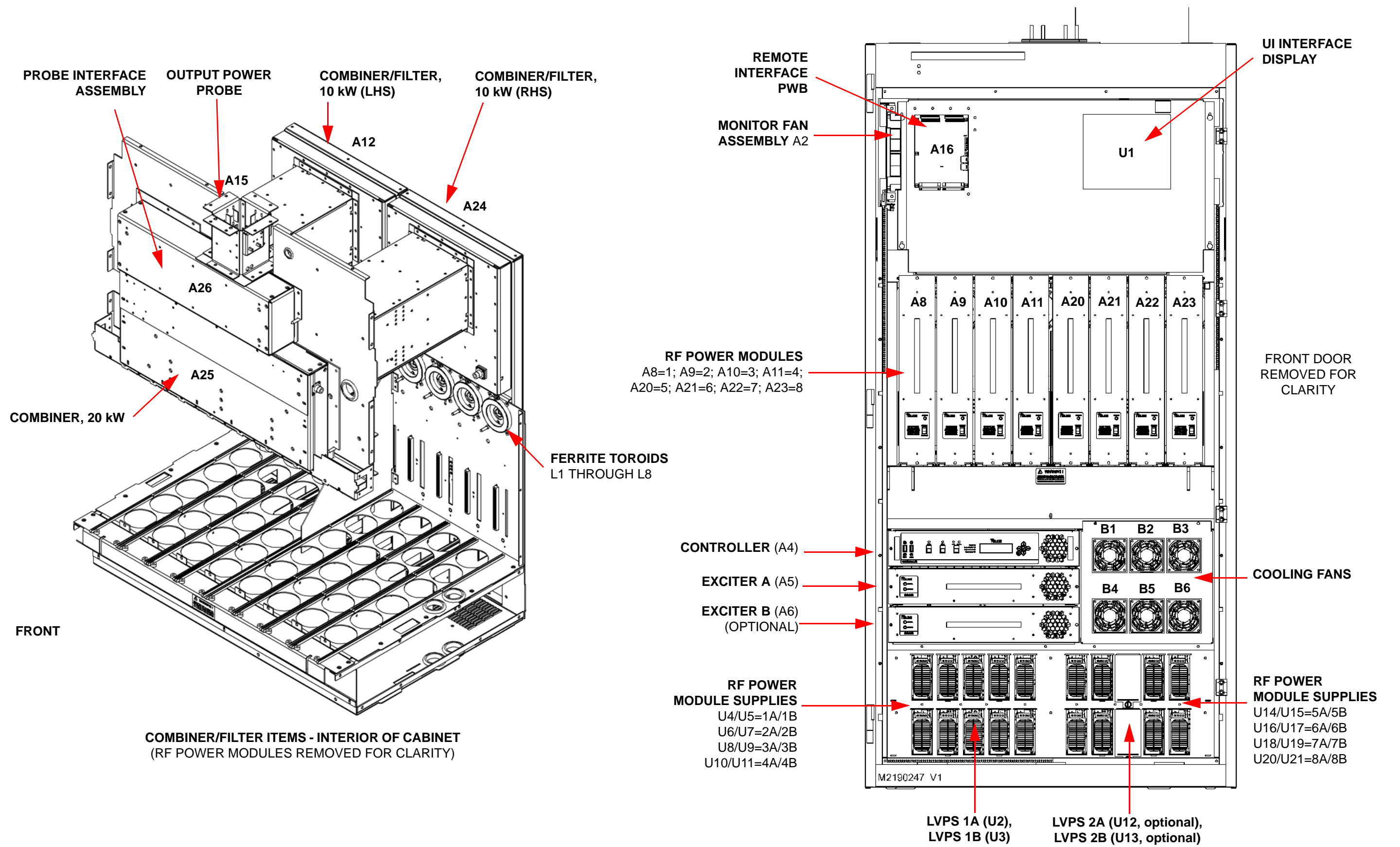


Figure MD-1: GV20/GV15 Transmitter (Front View)



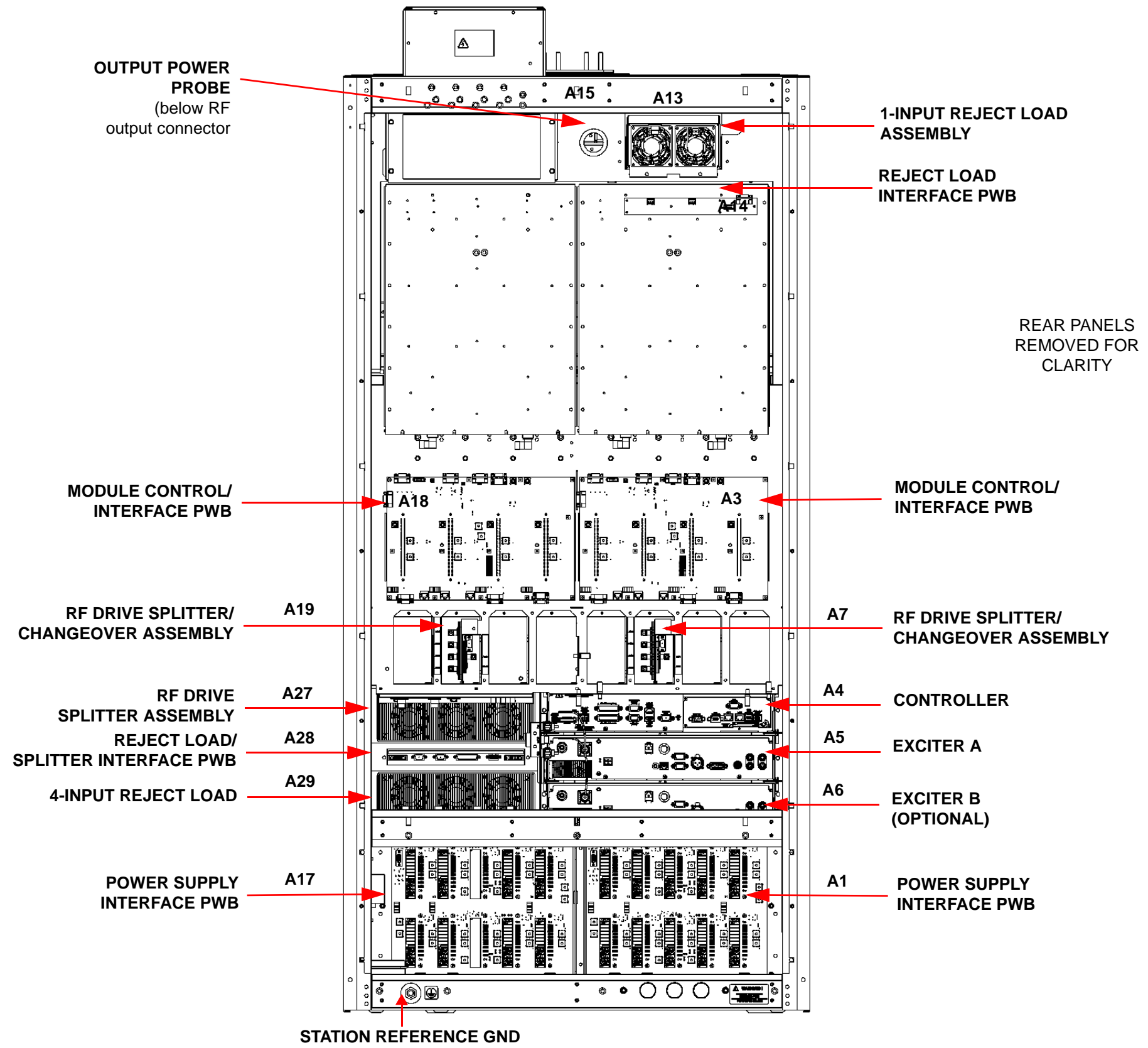


Figure MD-2: GV20/GV15 Transmitter (Rear View)

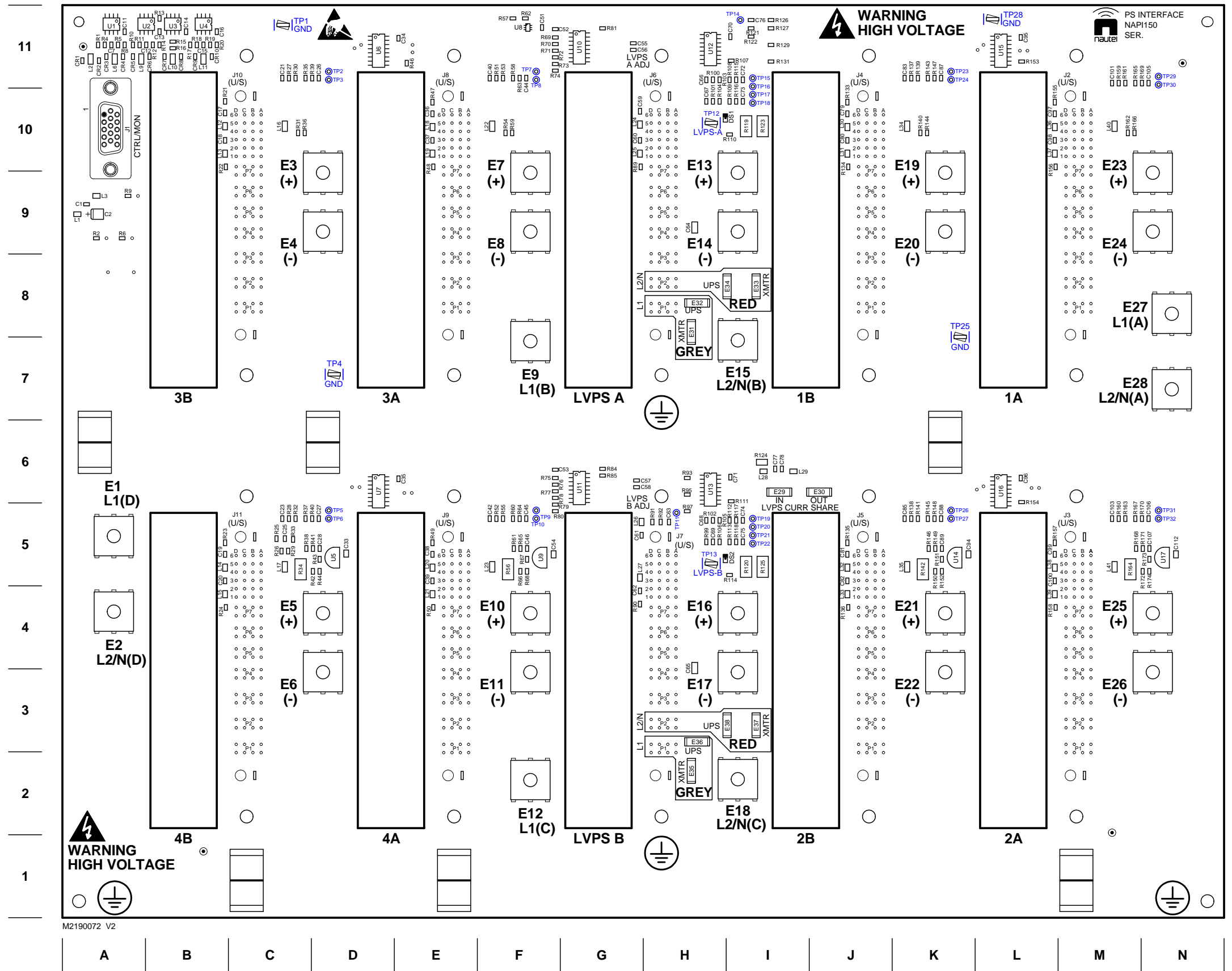


Figure MD-3: NAPI150A Power Supply Interface PWB

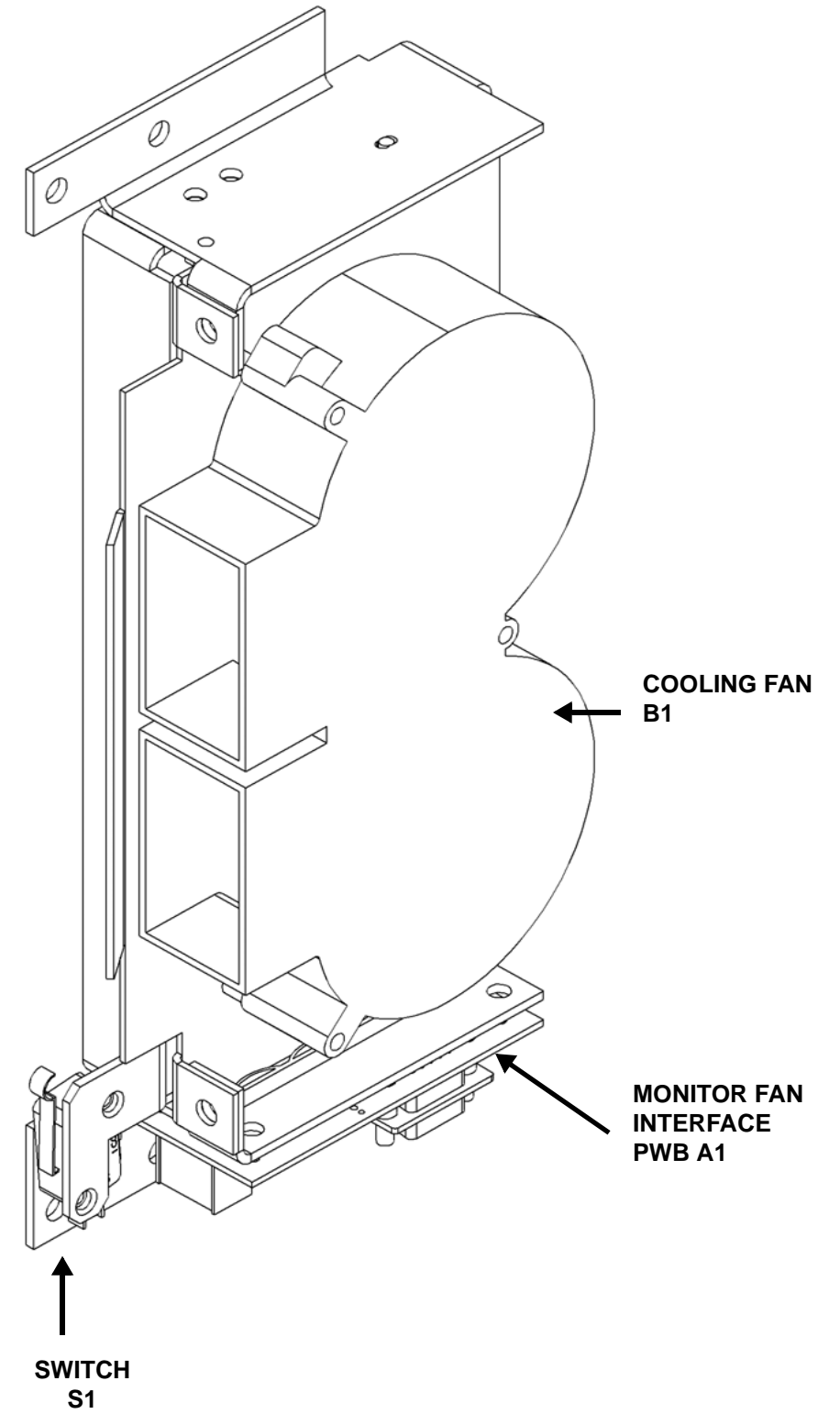
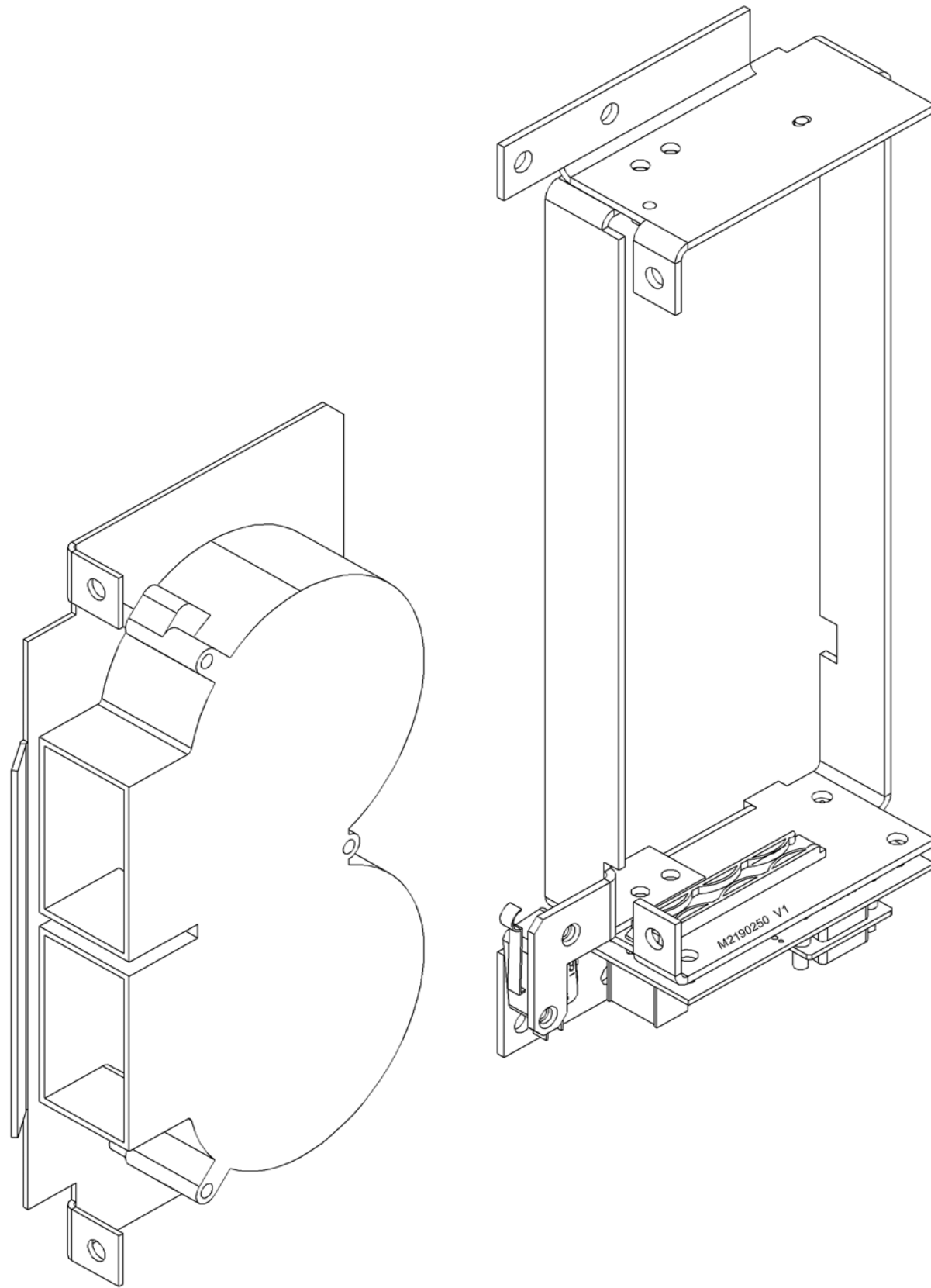


Figure MD-4: NAX273 Monitor Fan Assembly

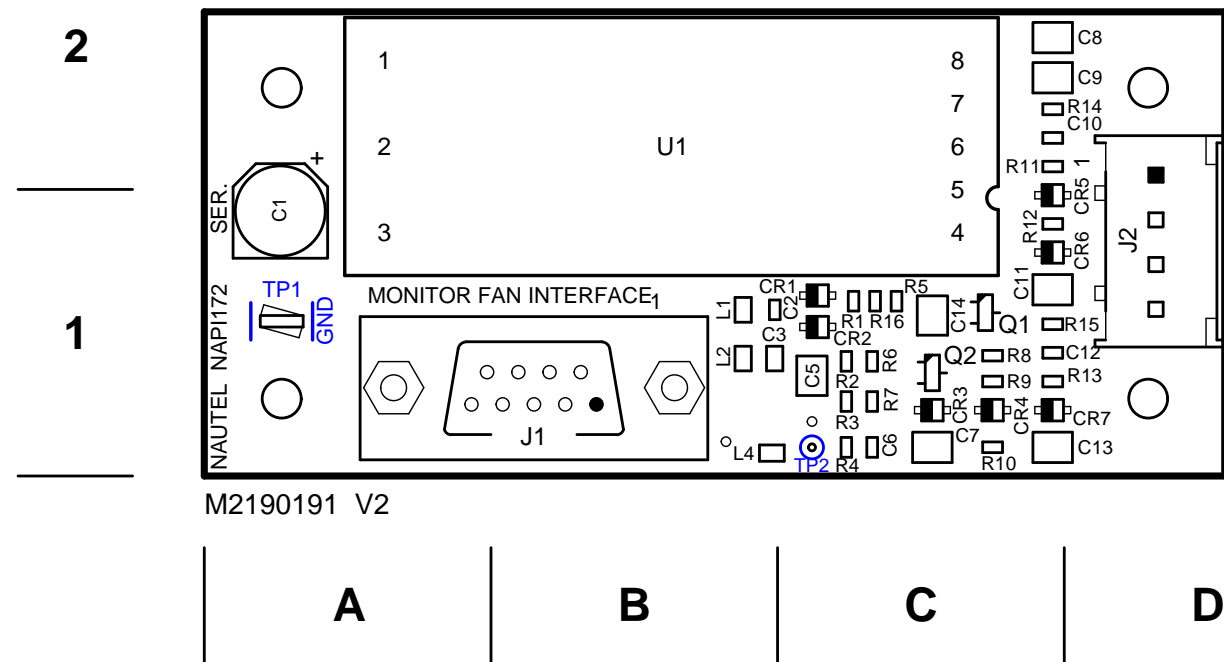


Figure MD-5: NAPI172 Monitor Fan Interface PWB

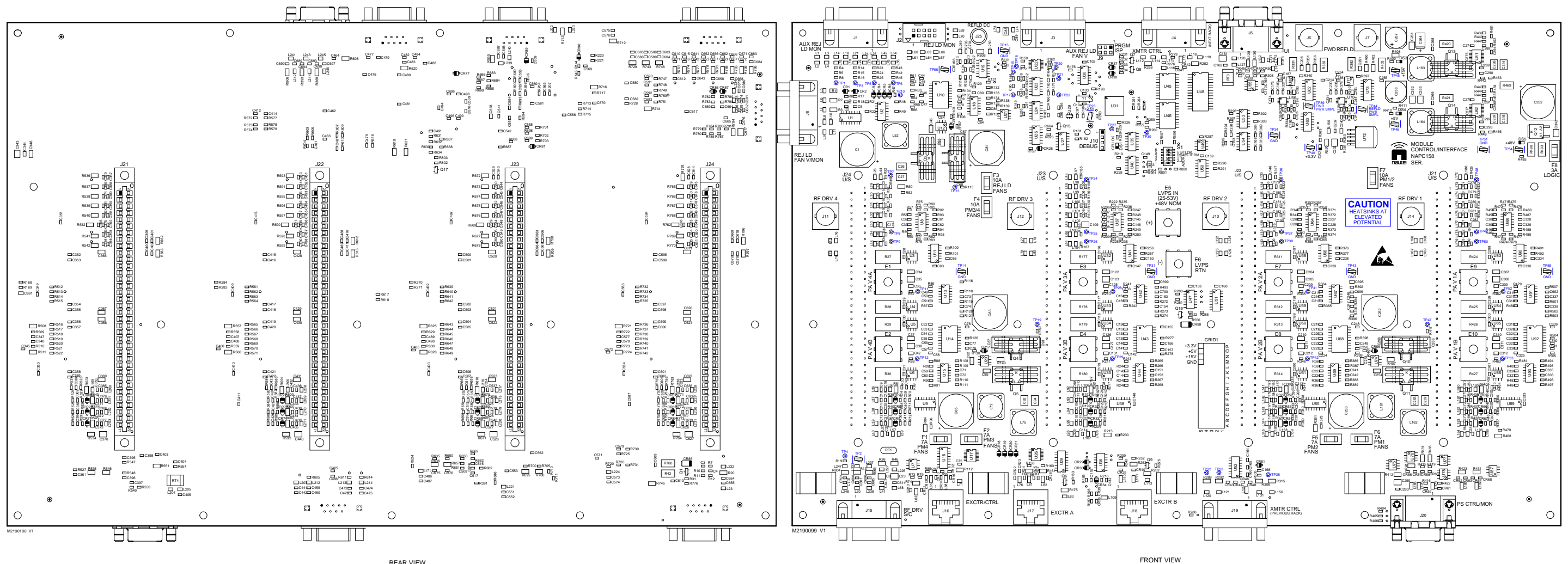


Figure MD-6: NAPC158A Module Control/Interface PWB

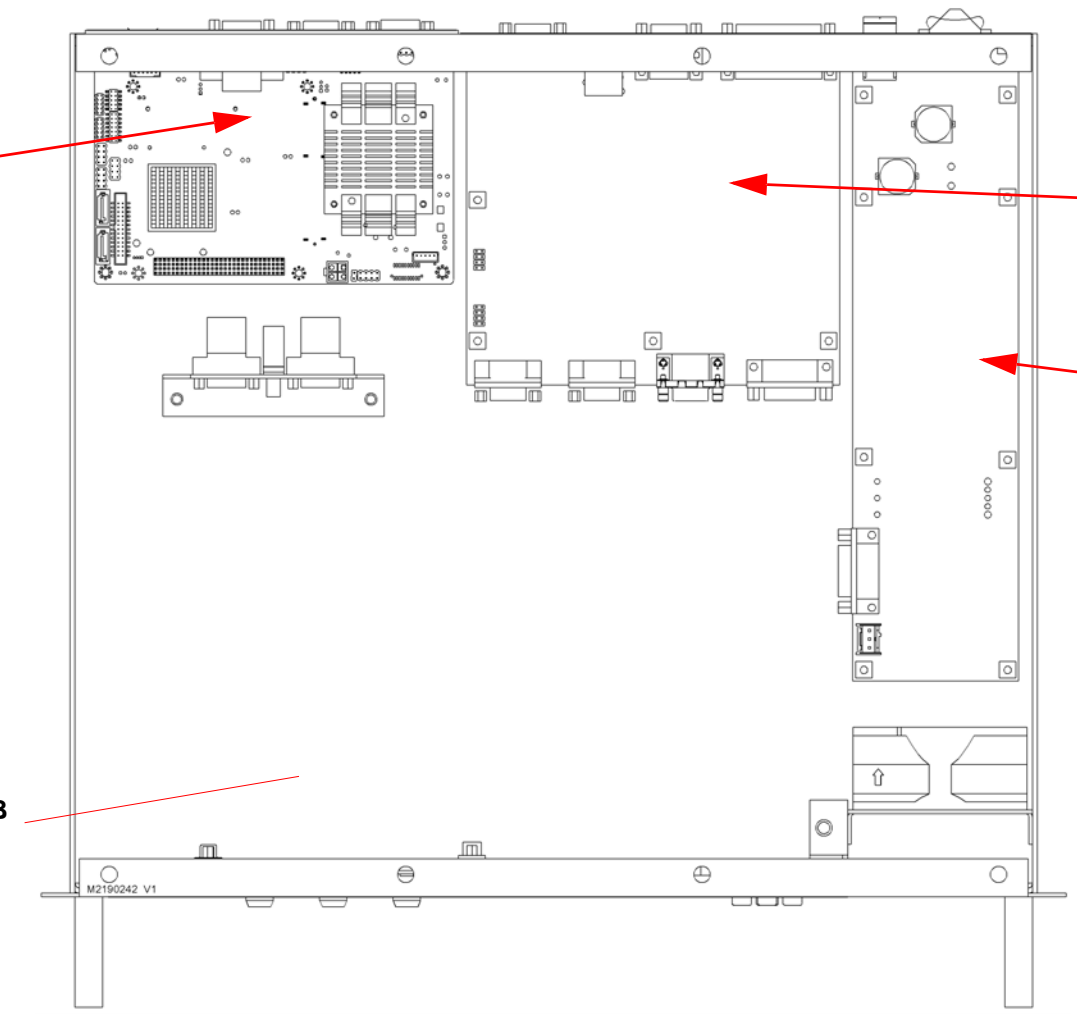
SINGLE BOARD  
COMPUTER

CONTROLLER  
PWB

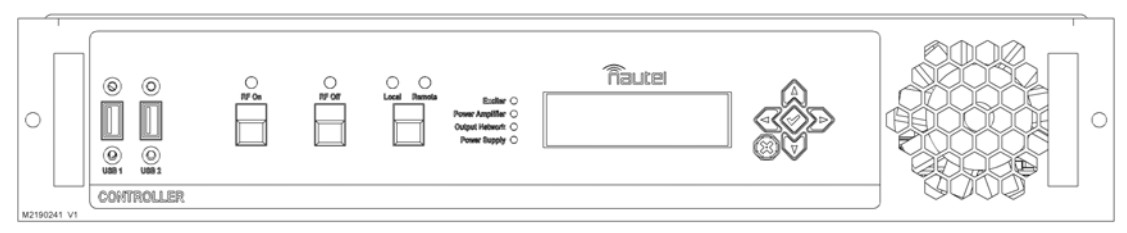
POWER SUPPLY  
DISTRIBUTION PWB

TOP VIEW

LED PWB



FRONT VIEW



REAR VIEW

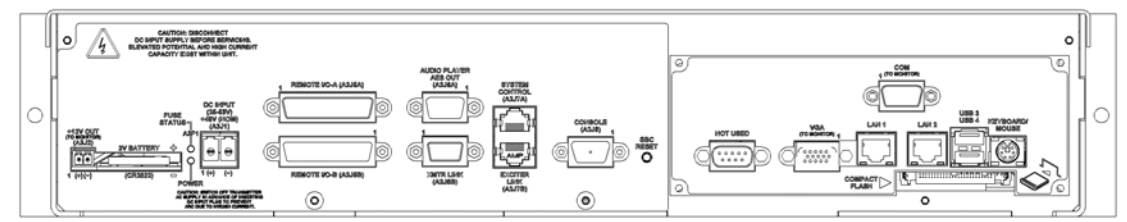


Figure MD-7: NAC118 Controller

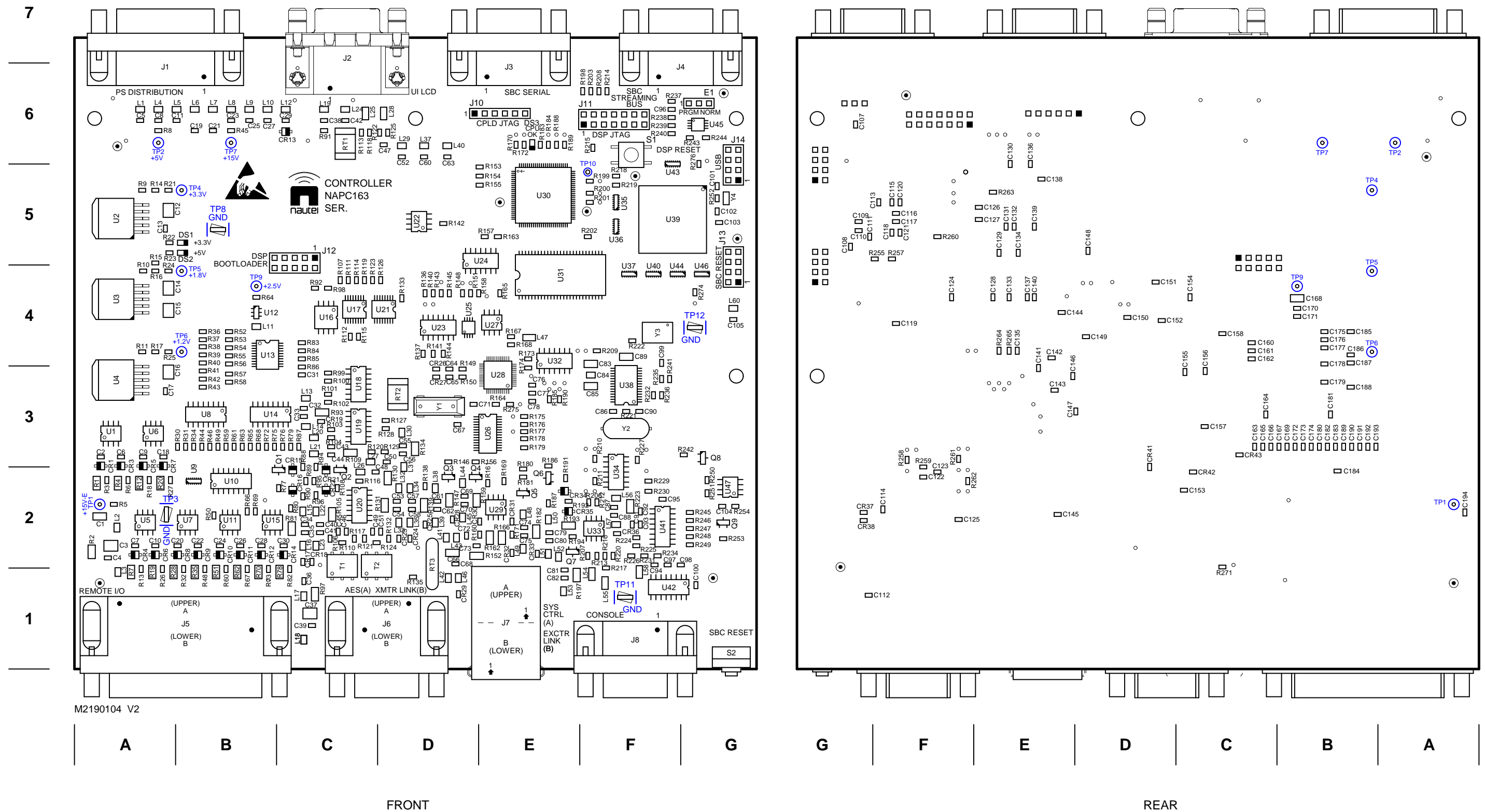


Figure MD-8: NAPC163 Controller PWB



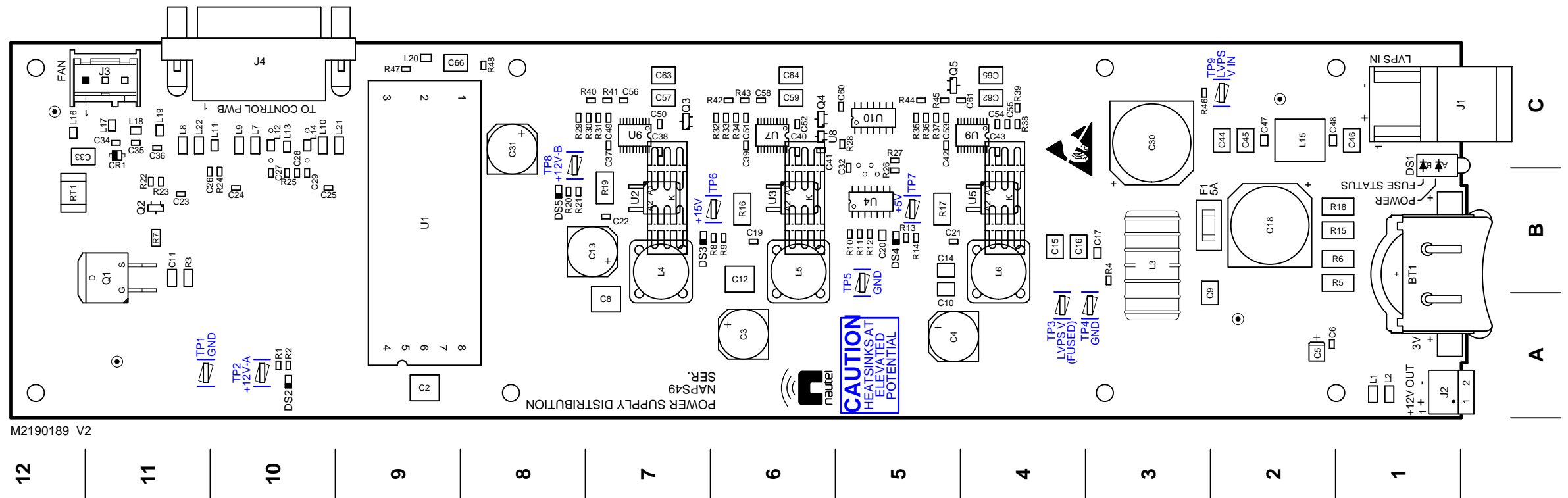
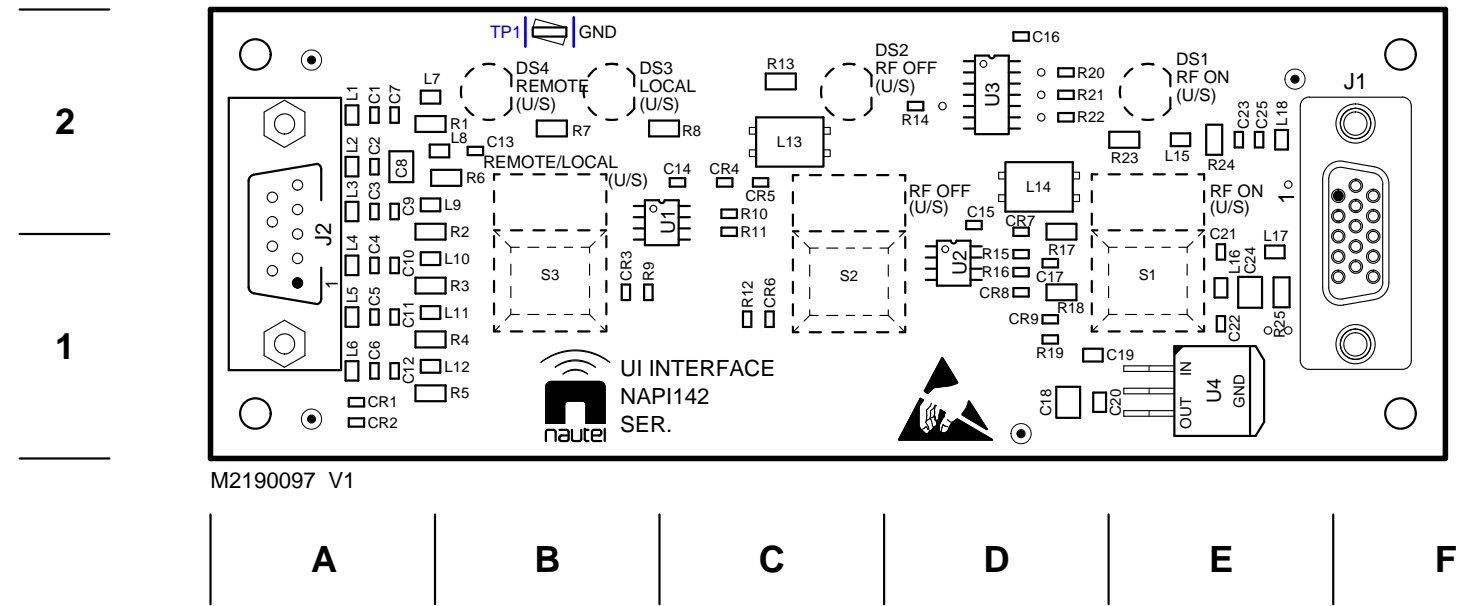


Figure MD-9: NAPS49 Power Supply Distribution PWB





M2190097 V1

Figure MD-10: NAPI142A/01 UI Interface PWB

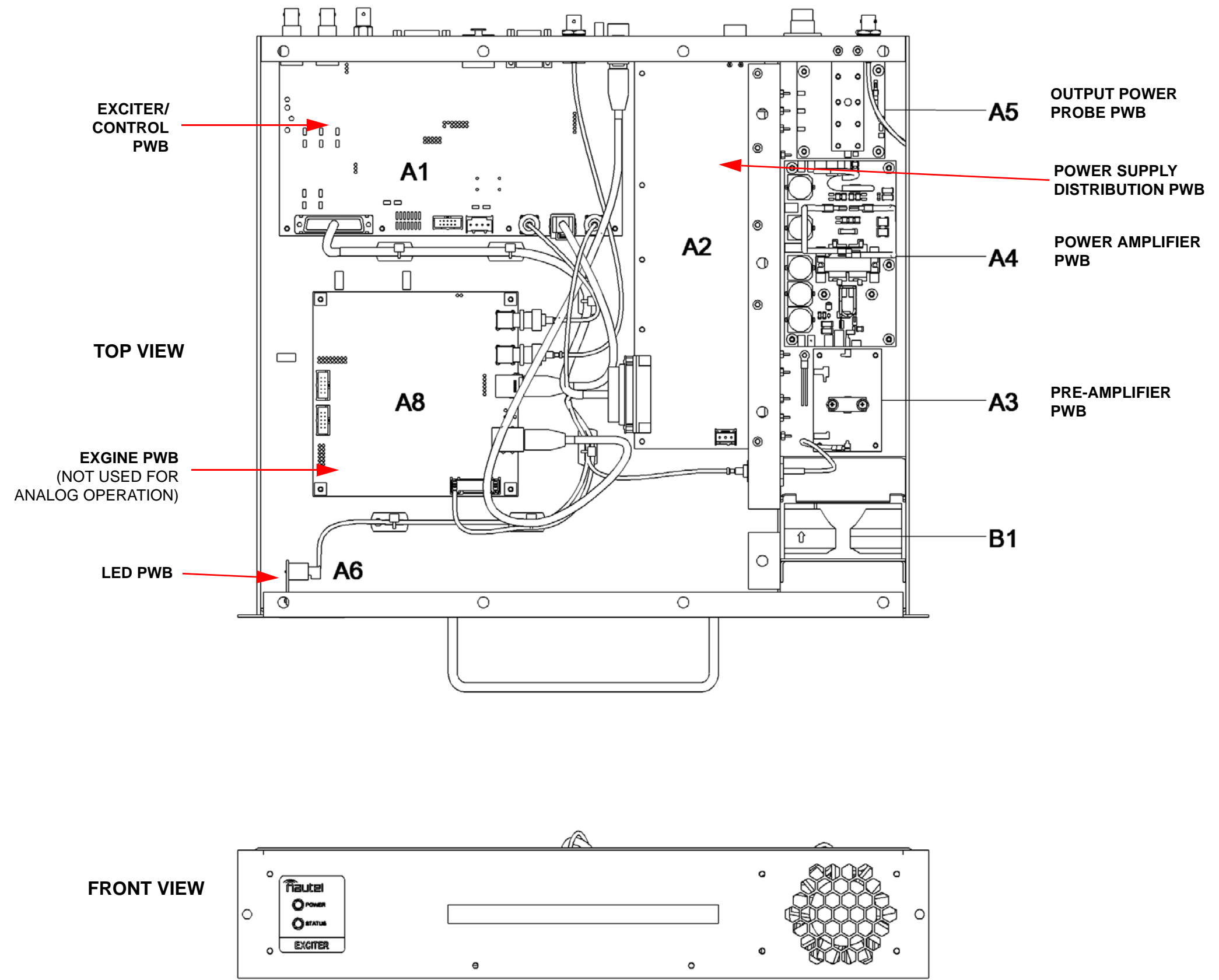


Figure MD-11: NAE107A and NAE107A/01 Exciter Assembly

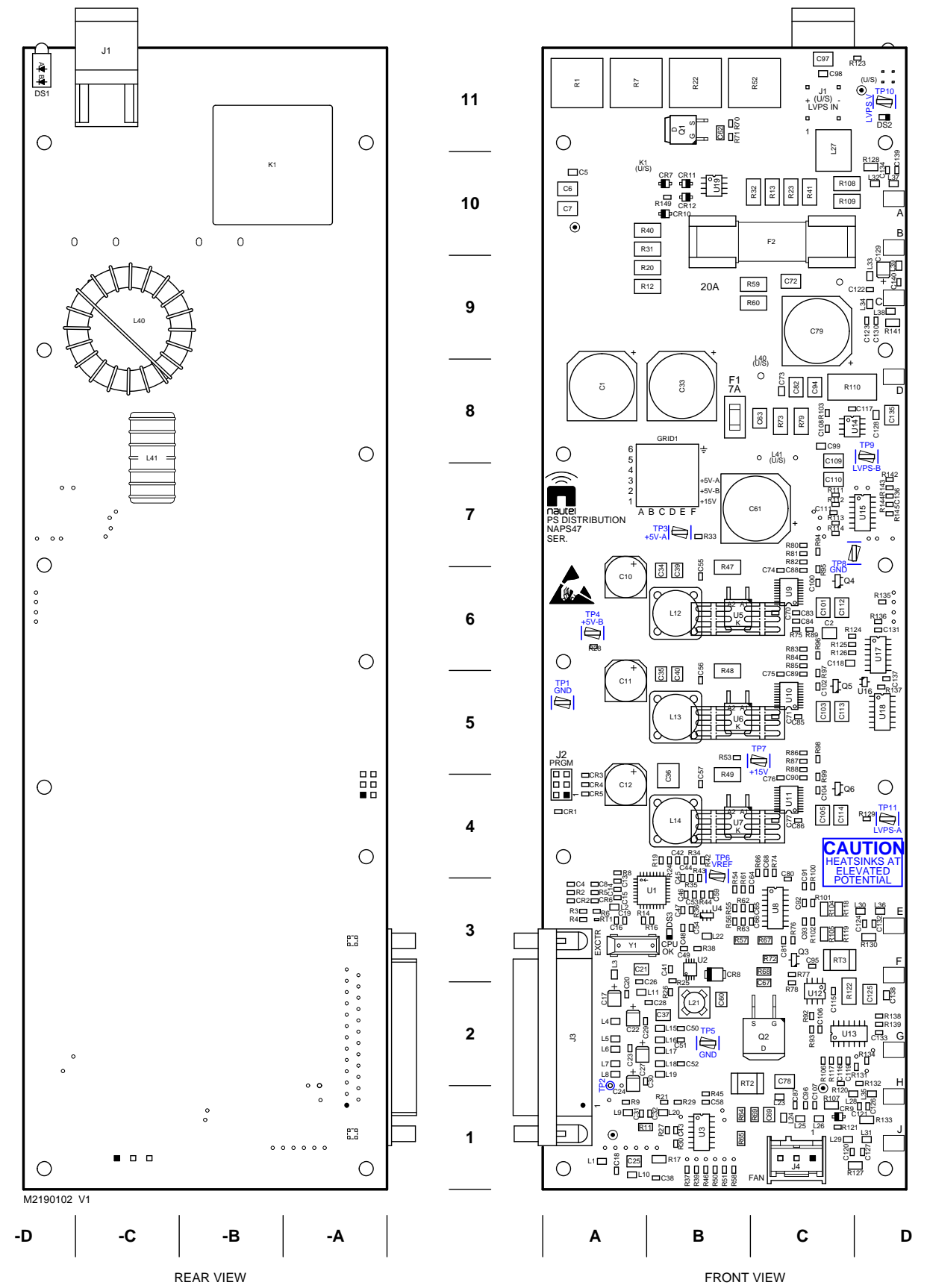


Figure MD-12: NAPS47A/01 Power Supply Distribution PWB

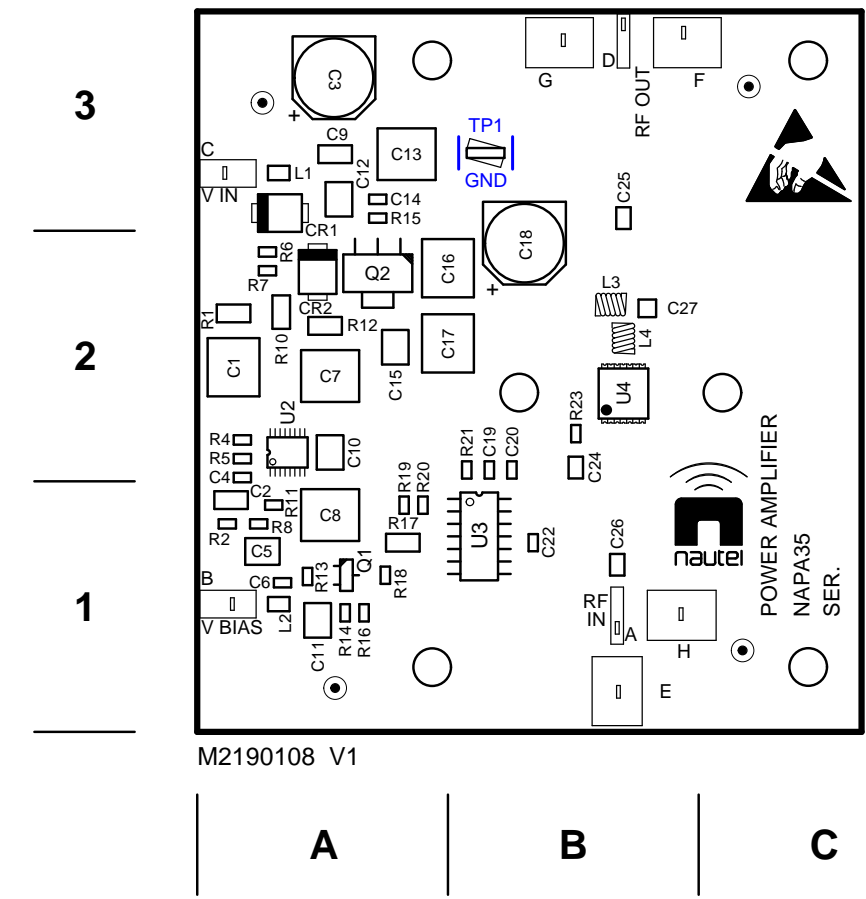


Figure MD-13: NAPA35 Pre-Amplifier PWB

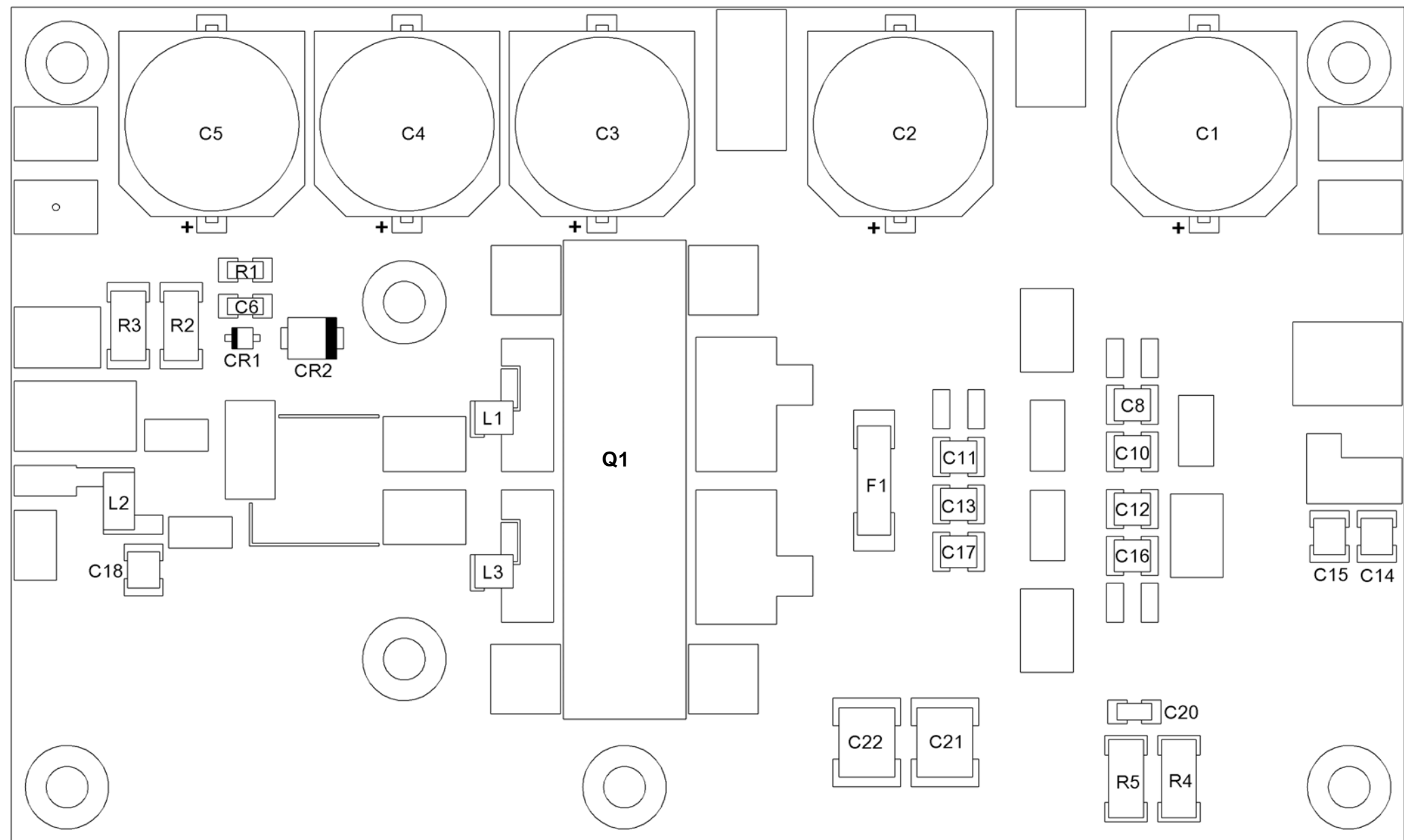


Figure MD-14: NAPA31C Power Amplifier PWB

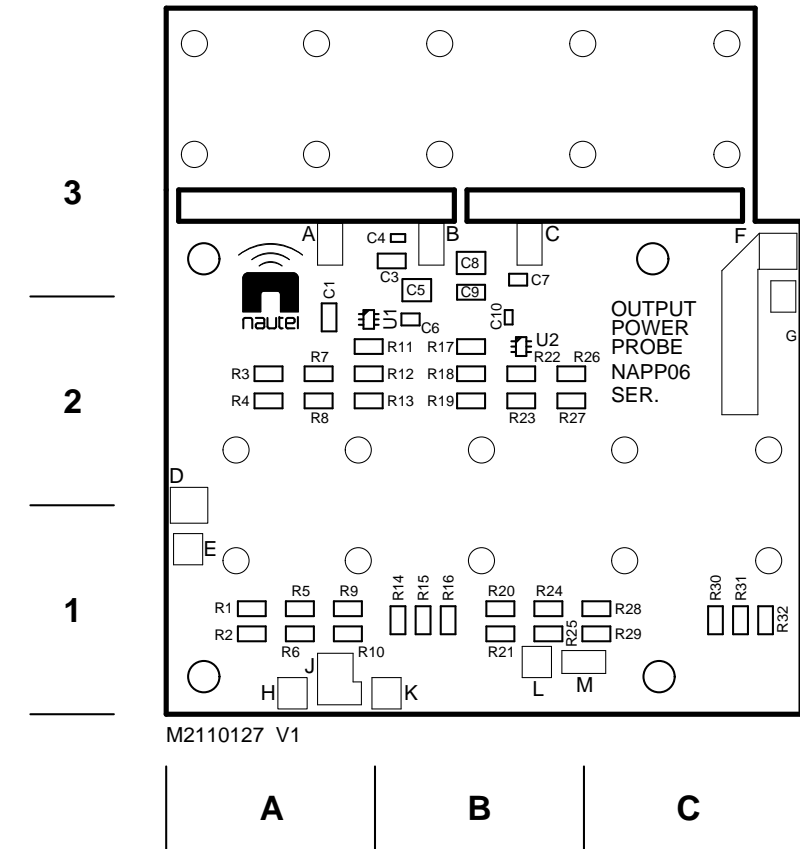
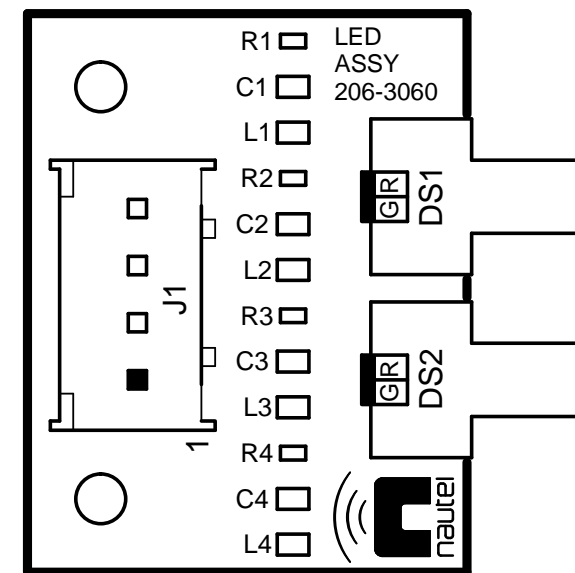


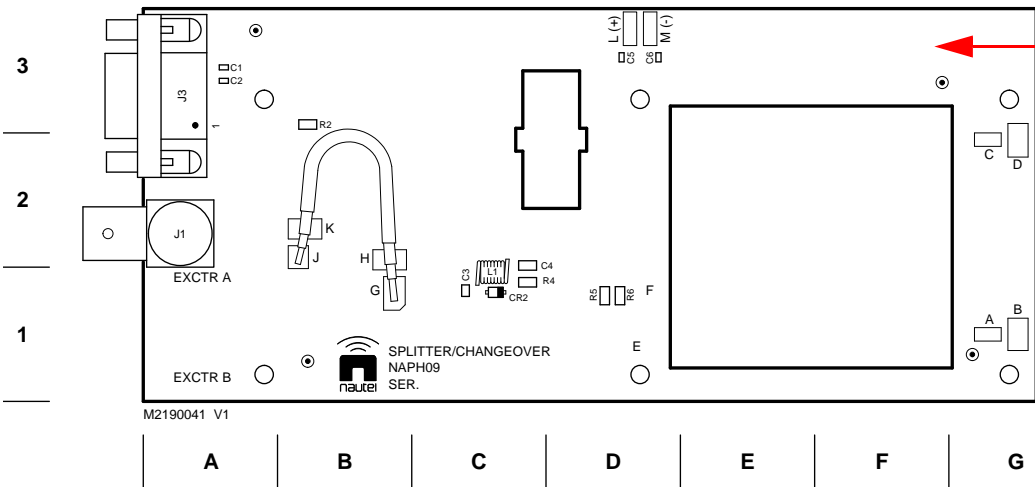
Figure MD-15: NAPP06/01 Output Power Probe PWB



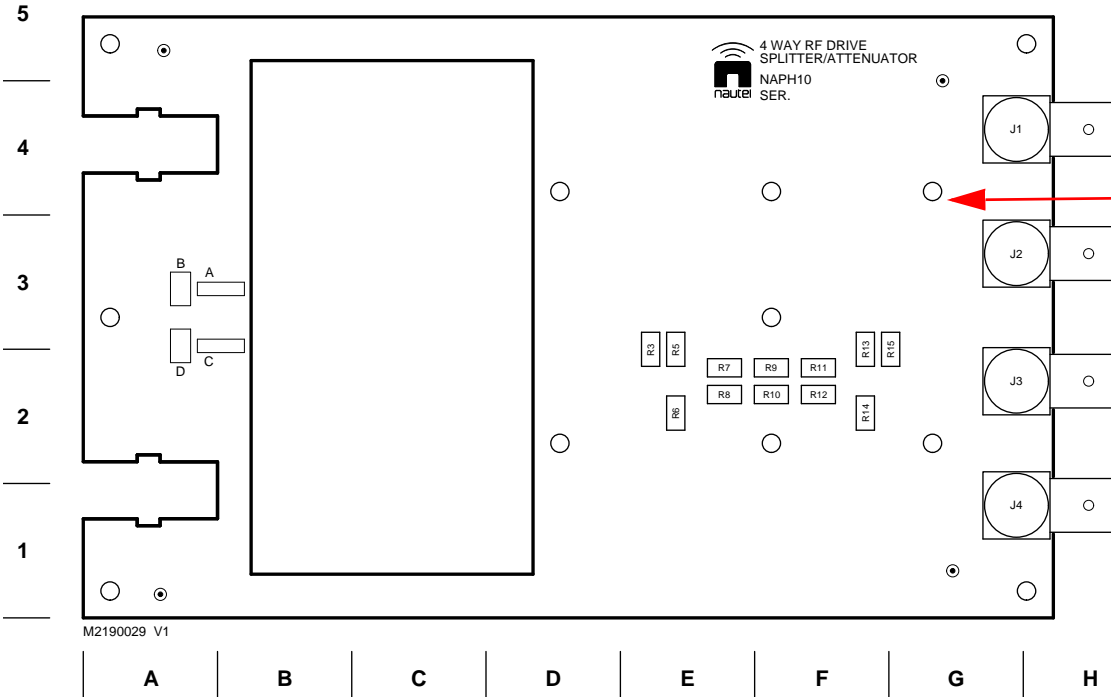
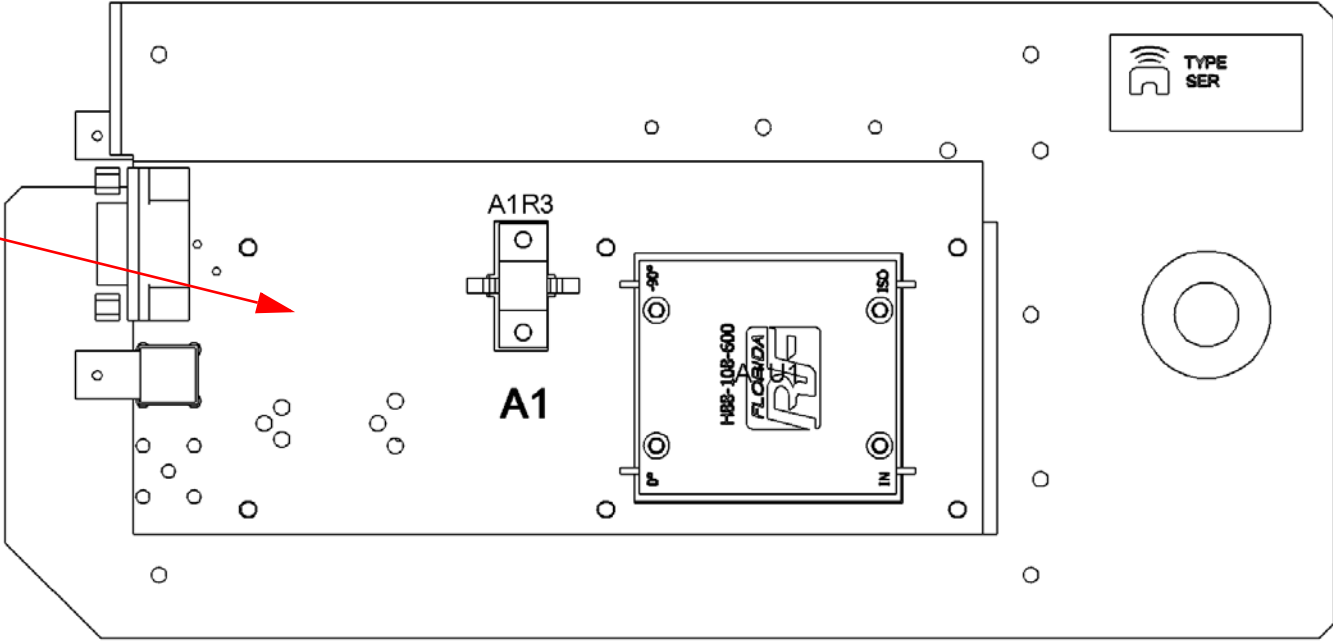
M2060067 V1

Figure MD-16: LED PWB (206-3060)

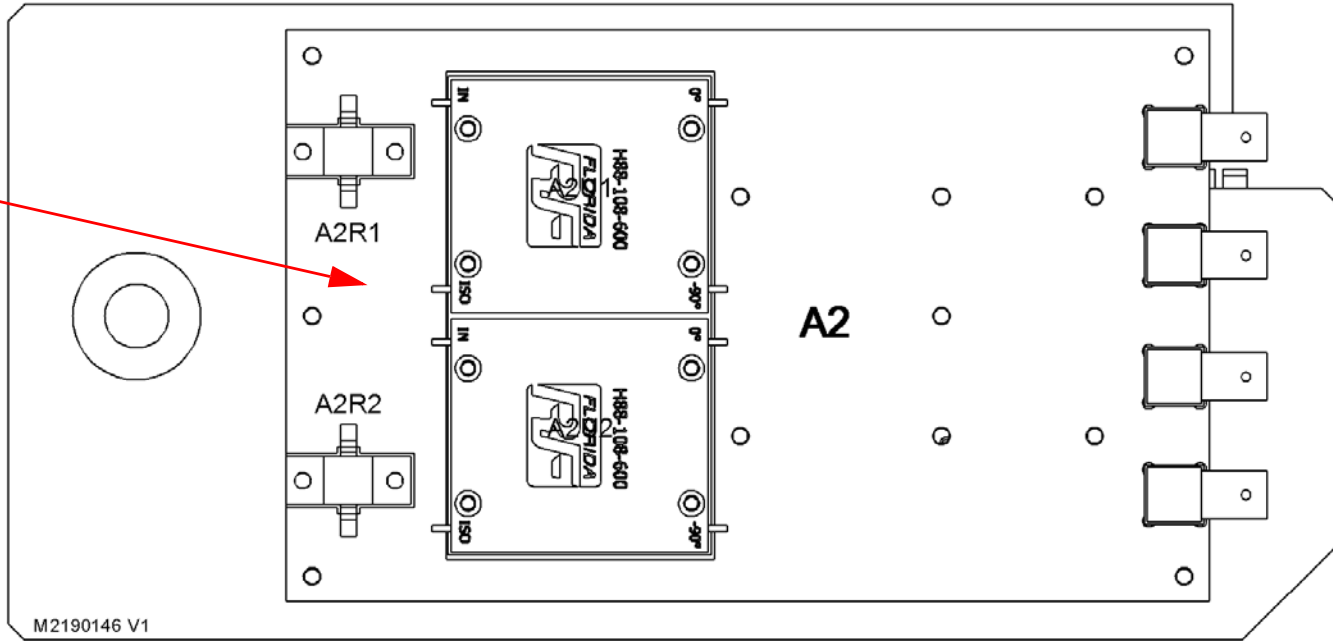
FRONT VIEW



SPLITTER/  
CHANGEOVER  
PWB



4-WAY  
SPLITTER  
PWB



REAR VIEW

Figure MD-17: NAI23A RF Drive Splitter/Changeover Assembly



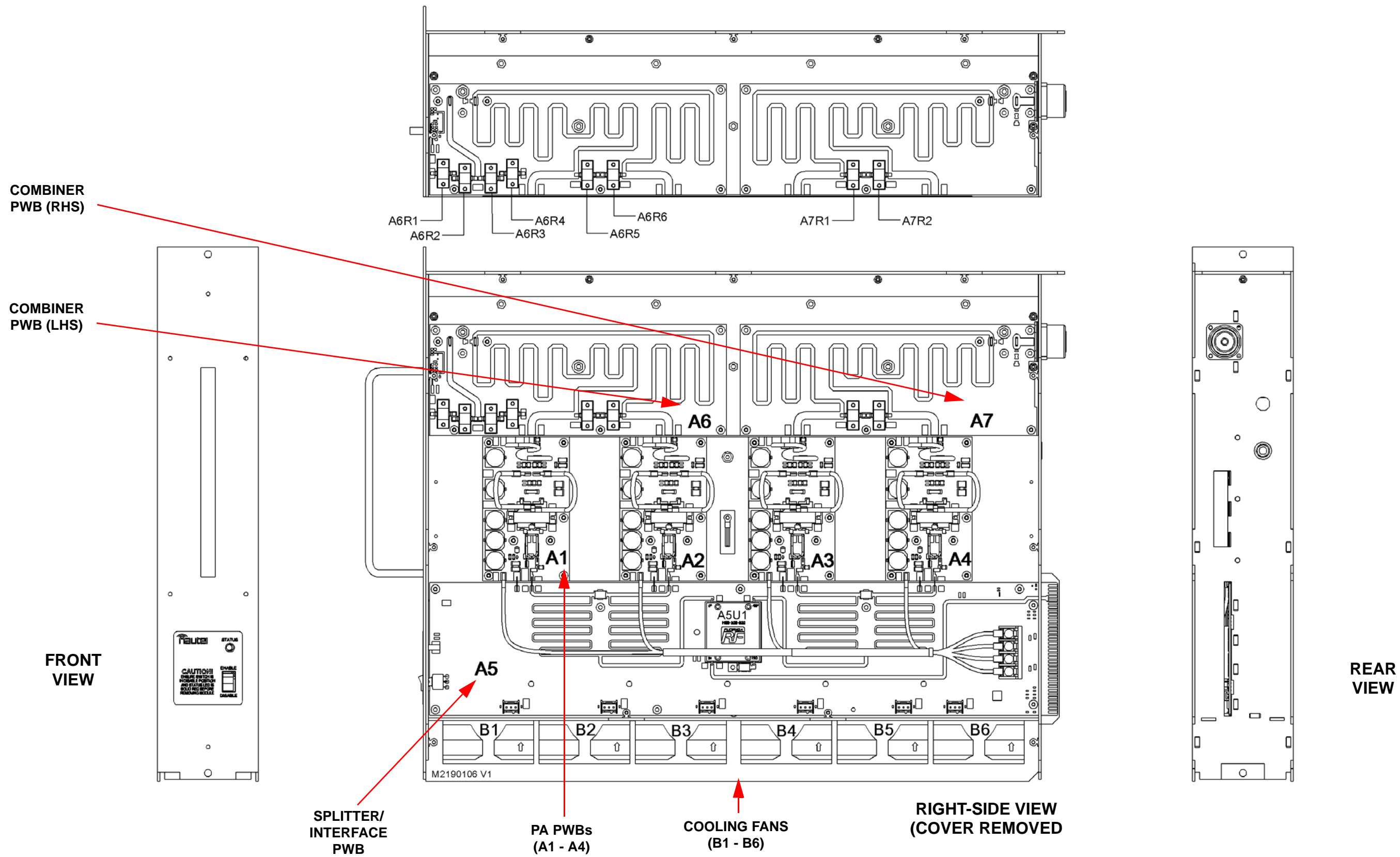
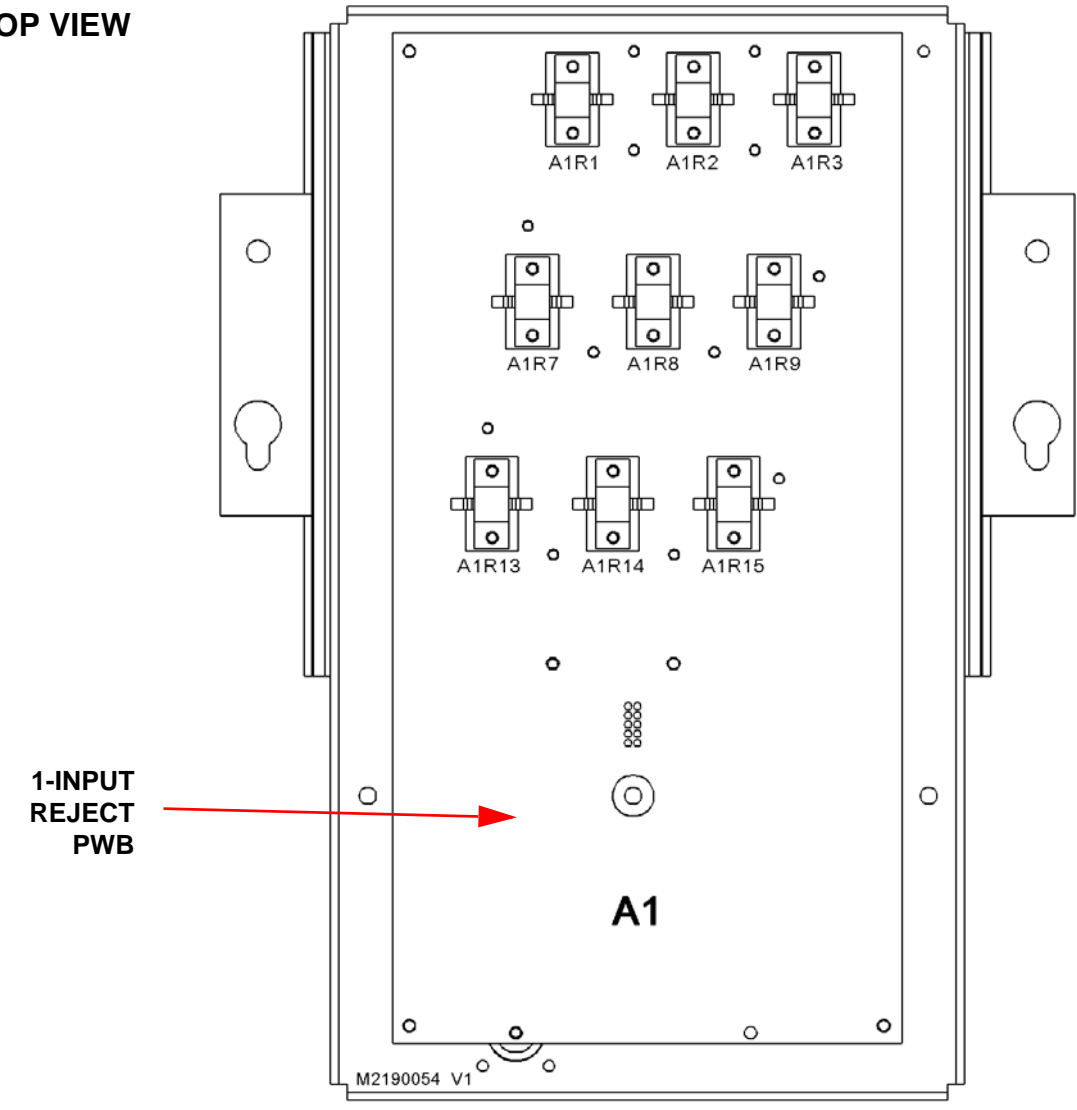


Figure MD-18: NAA61B RF Power Module

TOP VIEW



END VIEW

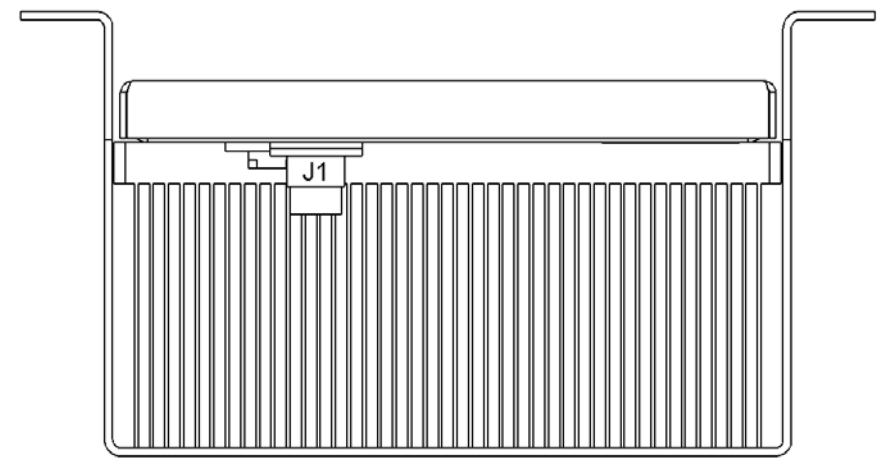


Figure MD-19: NAL14/01 1-Input Reject Load Assembly

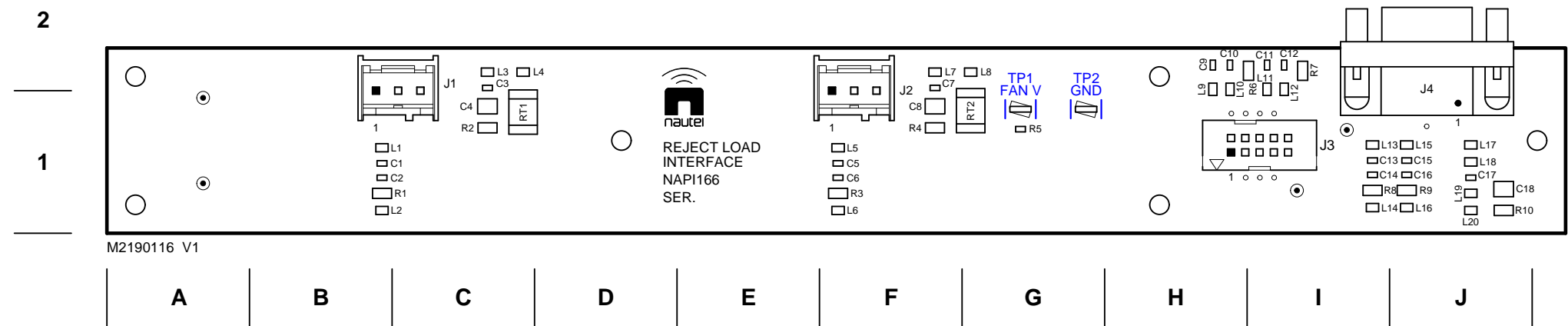


Figure MD-20: NAPI166 Reject Load Interface PWB

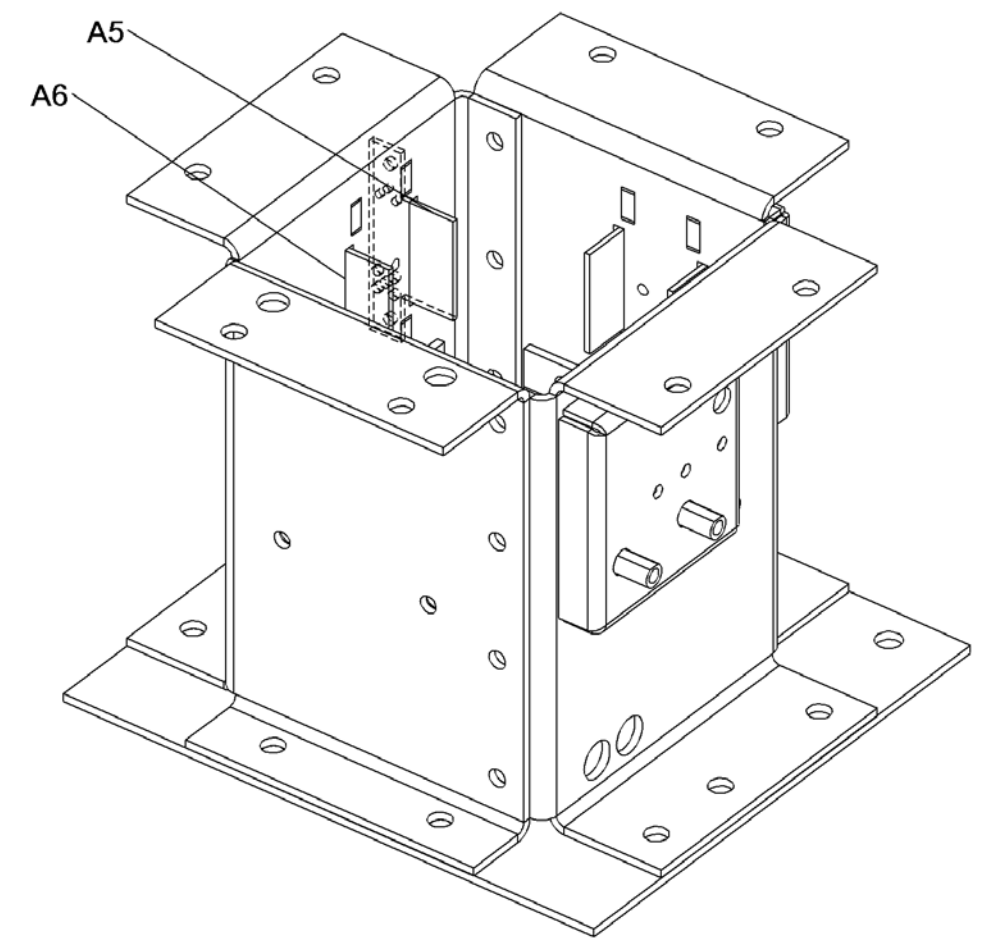
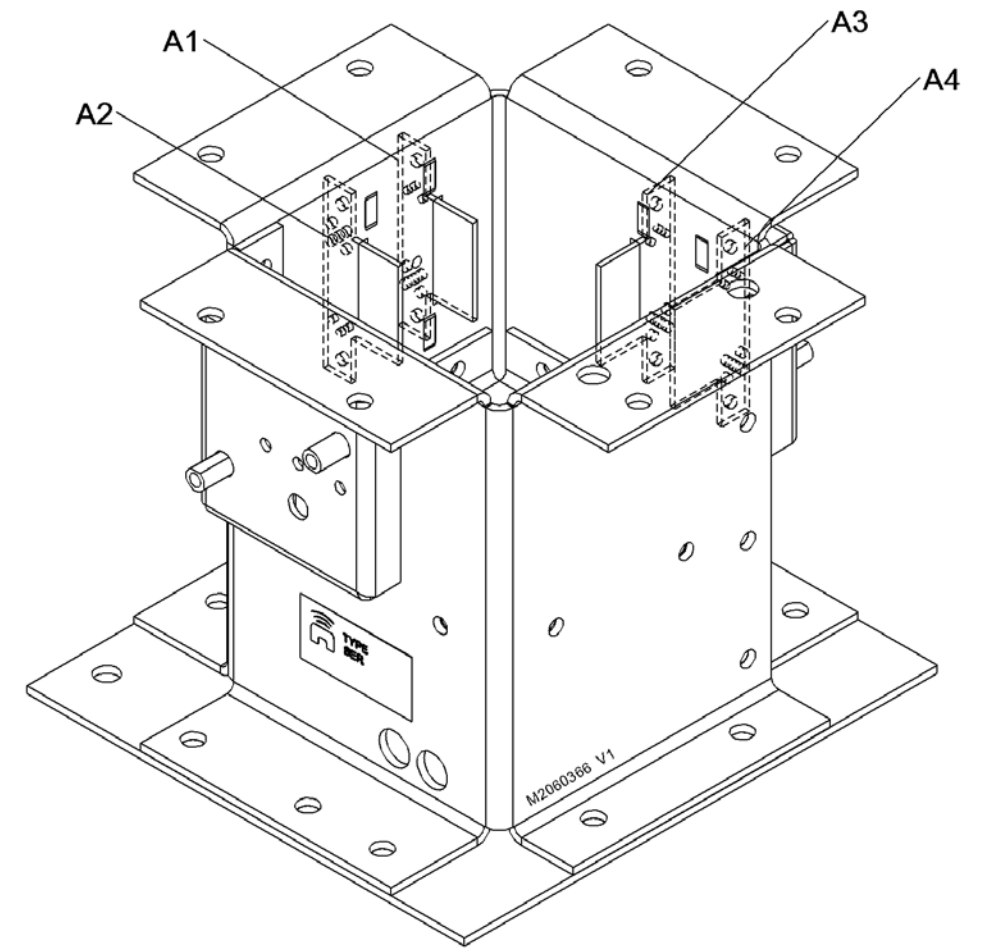
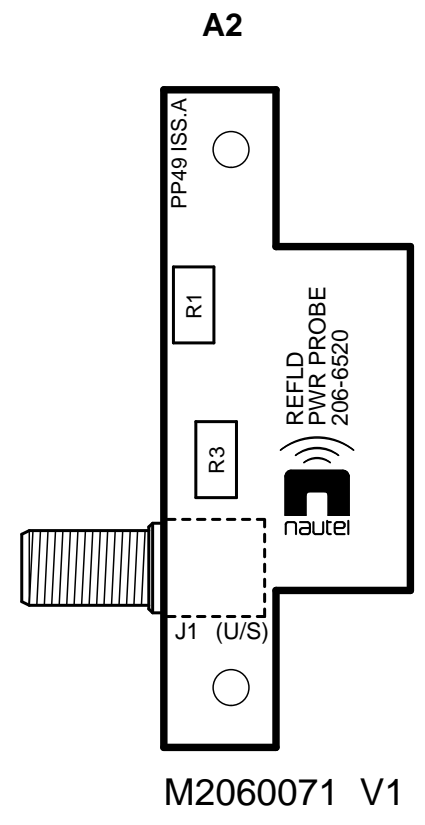
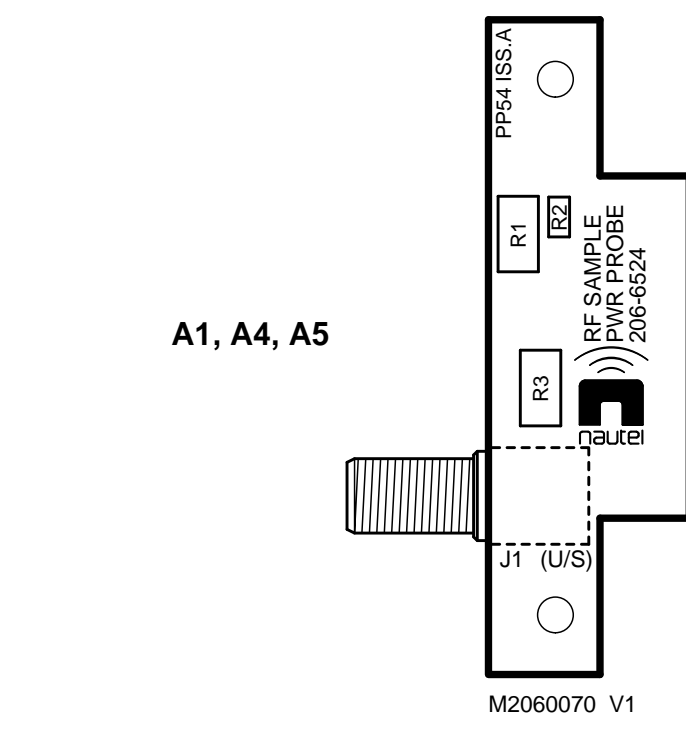
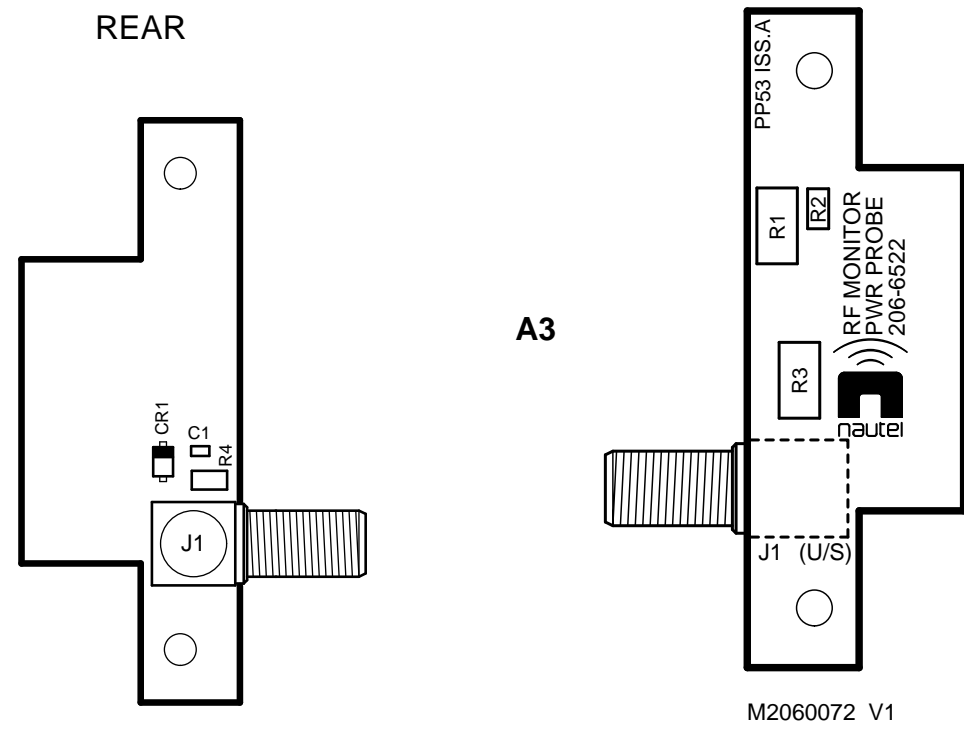
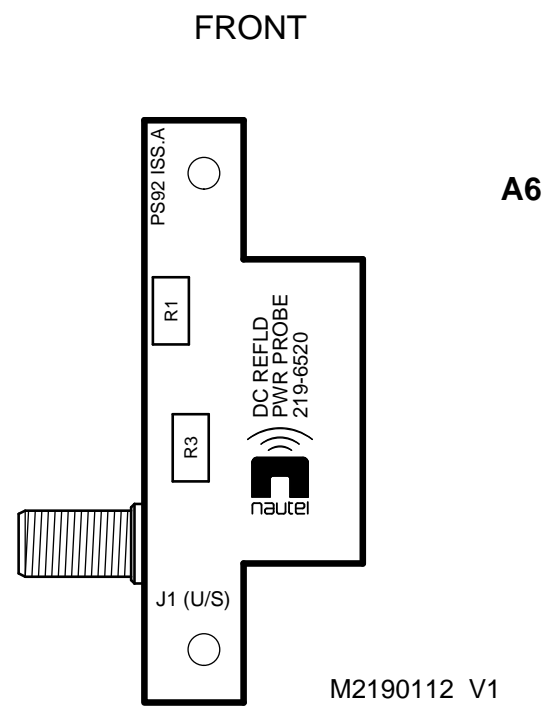
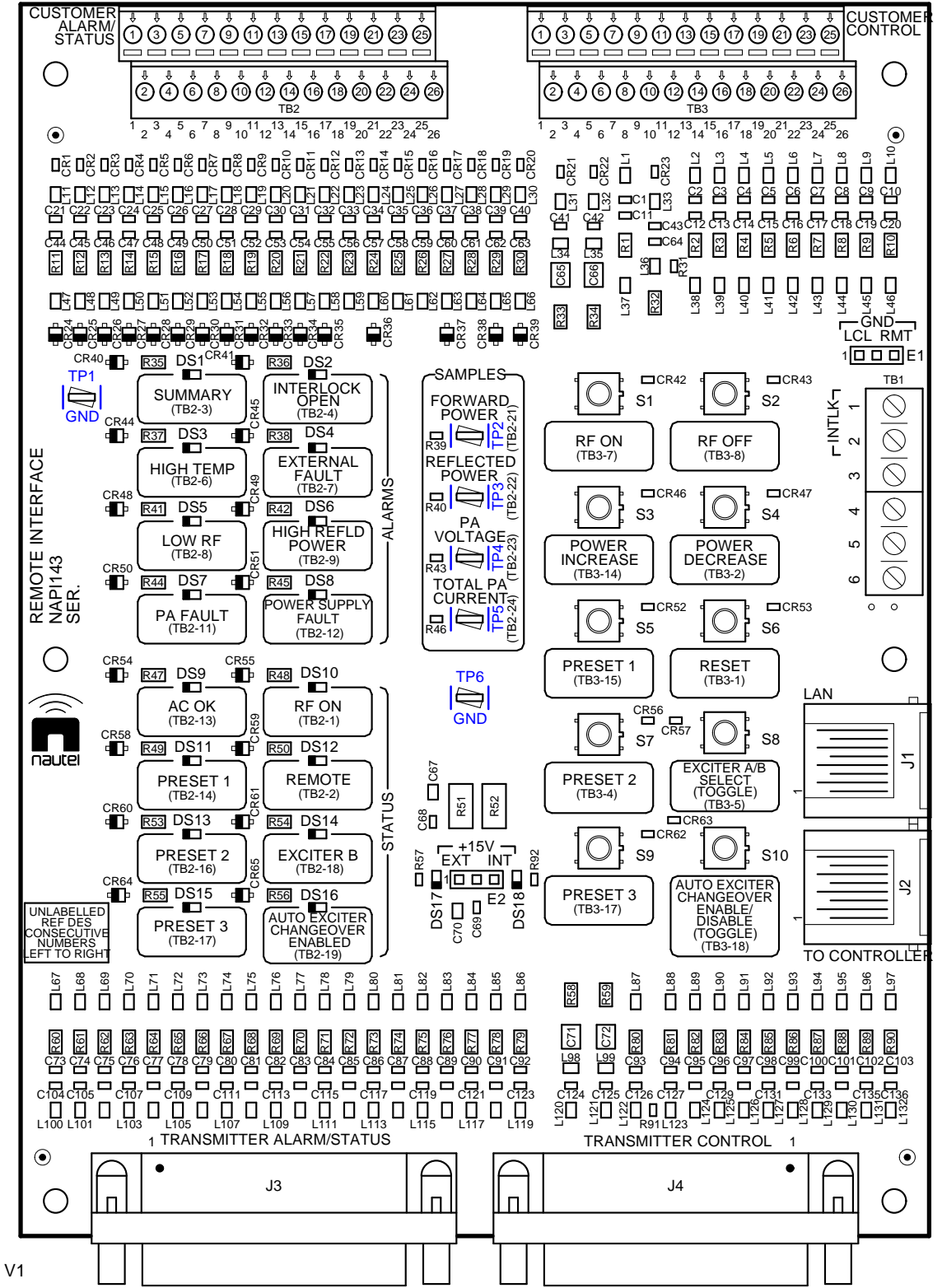


Figure MD-21: NAFP109B Output Power Probe

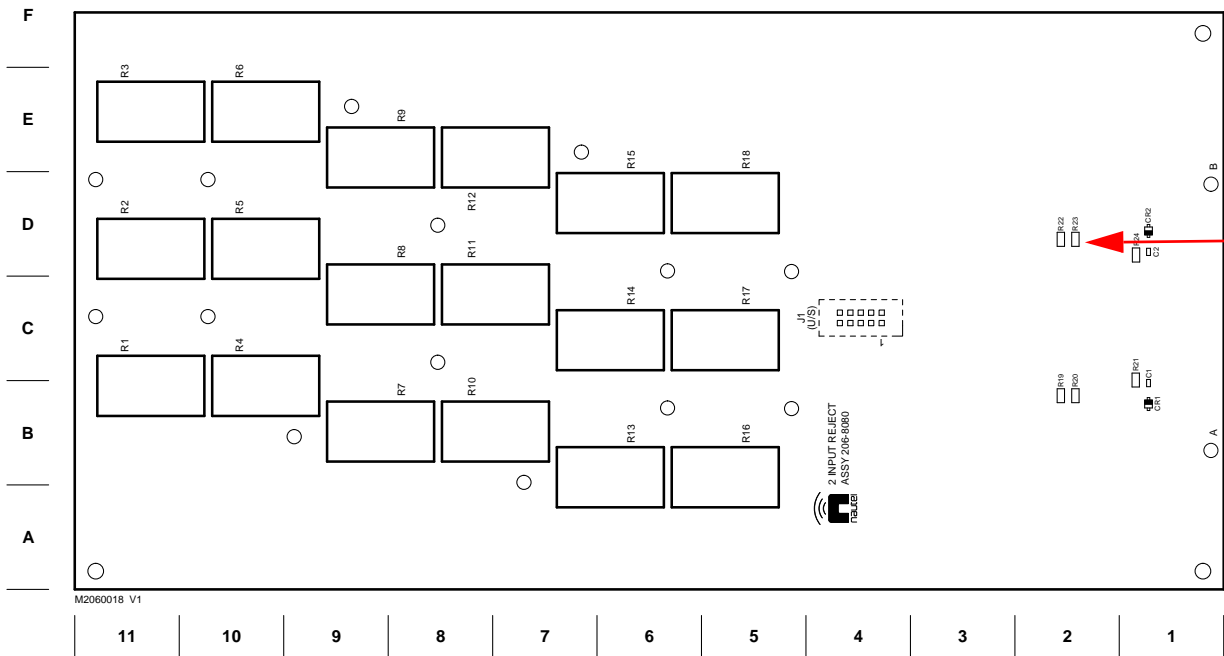
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6  
5  
4  
3  
2  
1



M2190094 V1

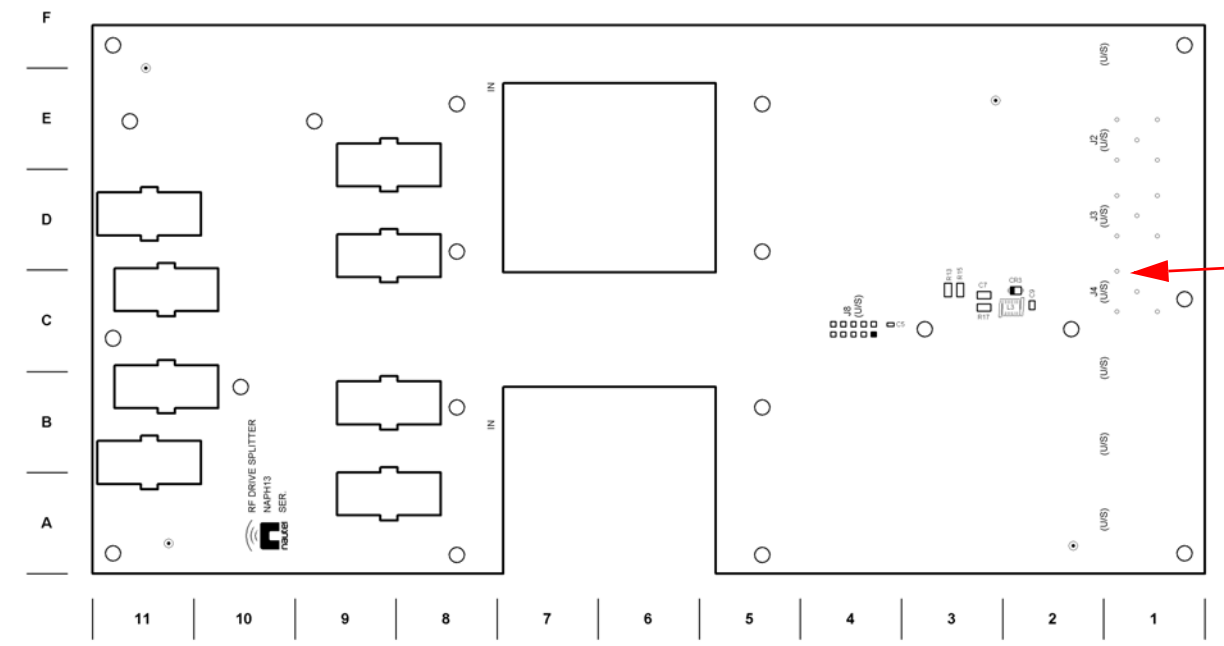
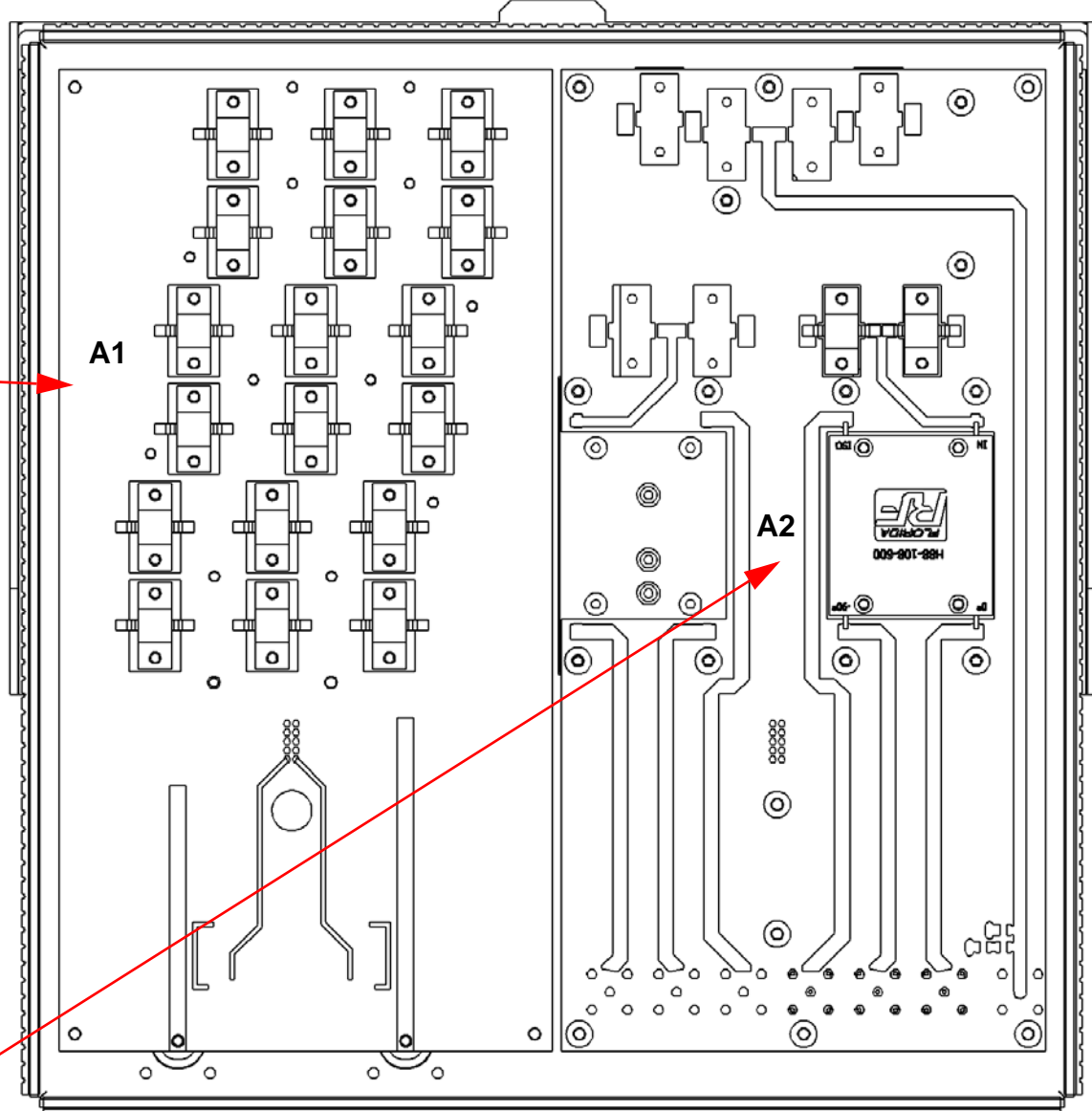
A B C D E F

Figure MD-22: NAPI143/02 Remote Interface PWB



TOP VIEW

2-INPUT REJECT PWB



RF DRIVE SPLITTER PWB

END VIEW

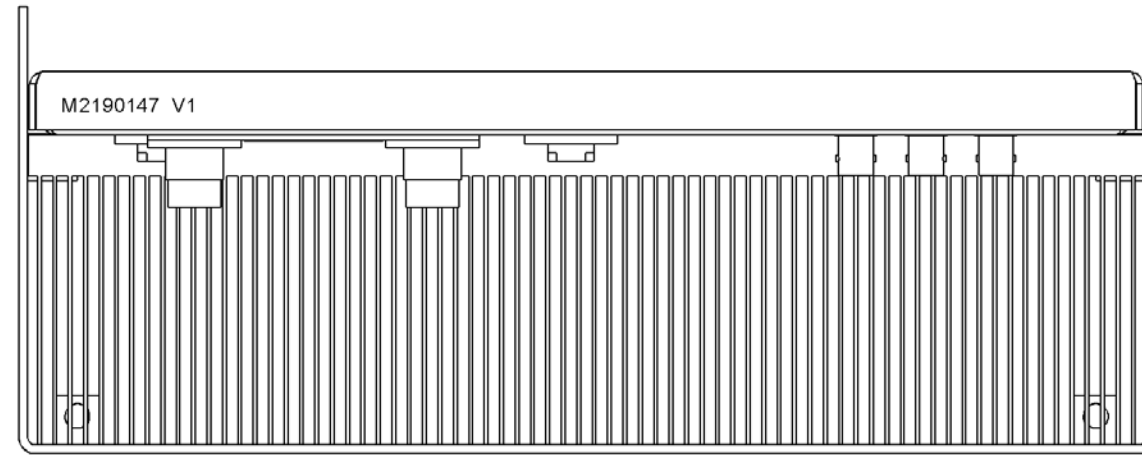


Figure MD-23: NAI24 RF Drive Splitter Assembly

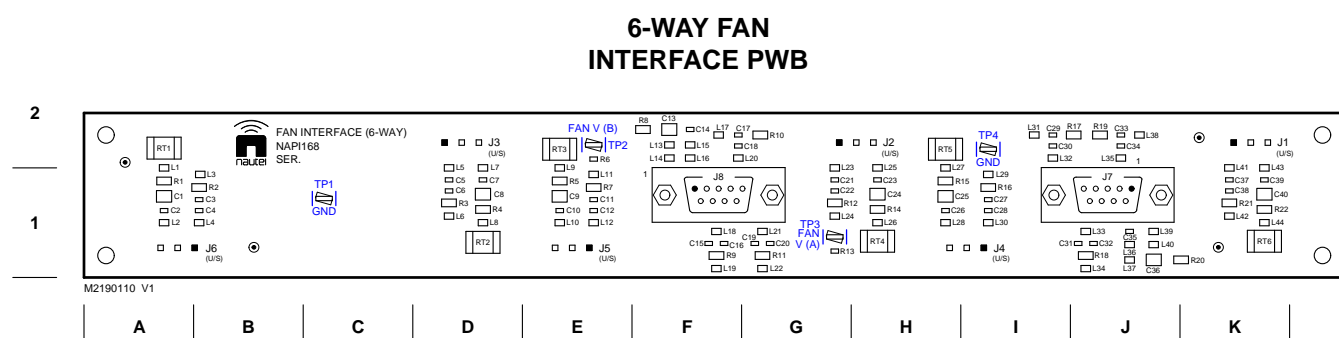
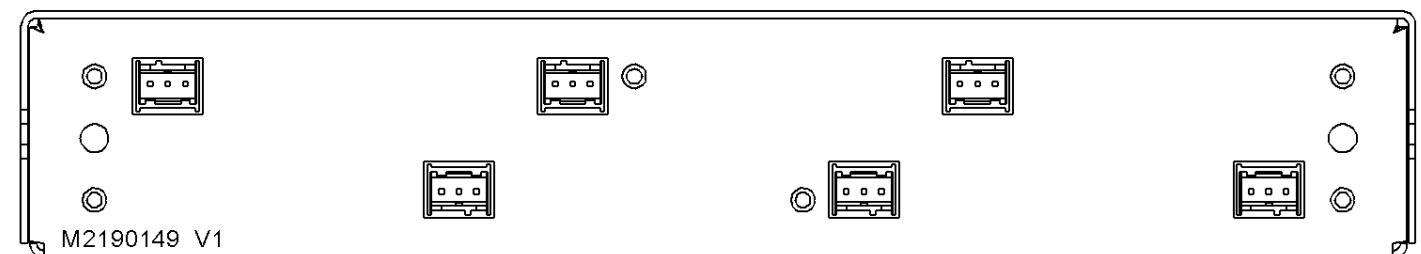
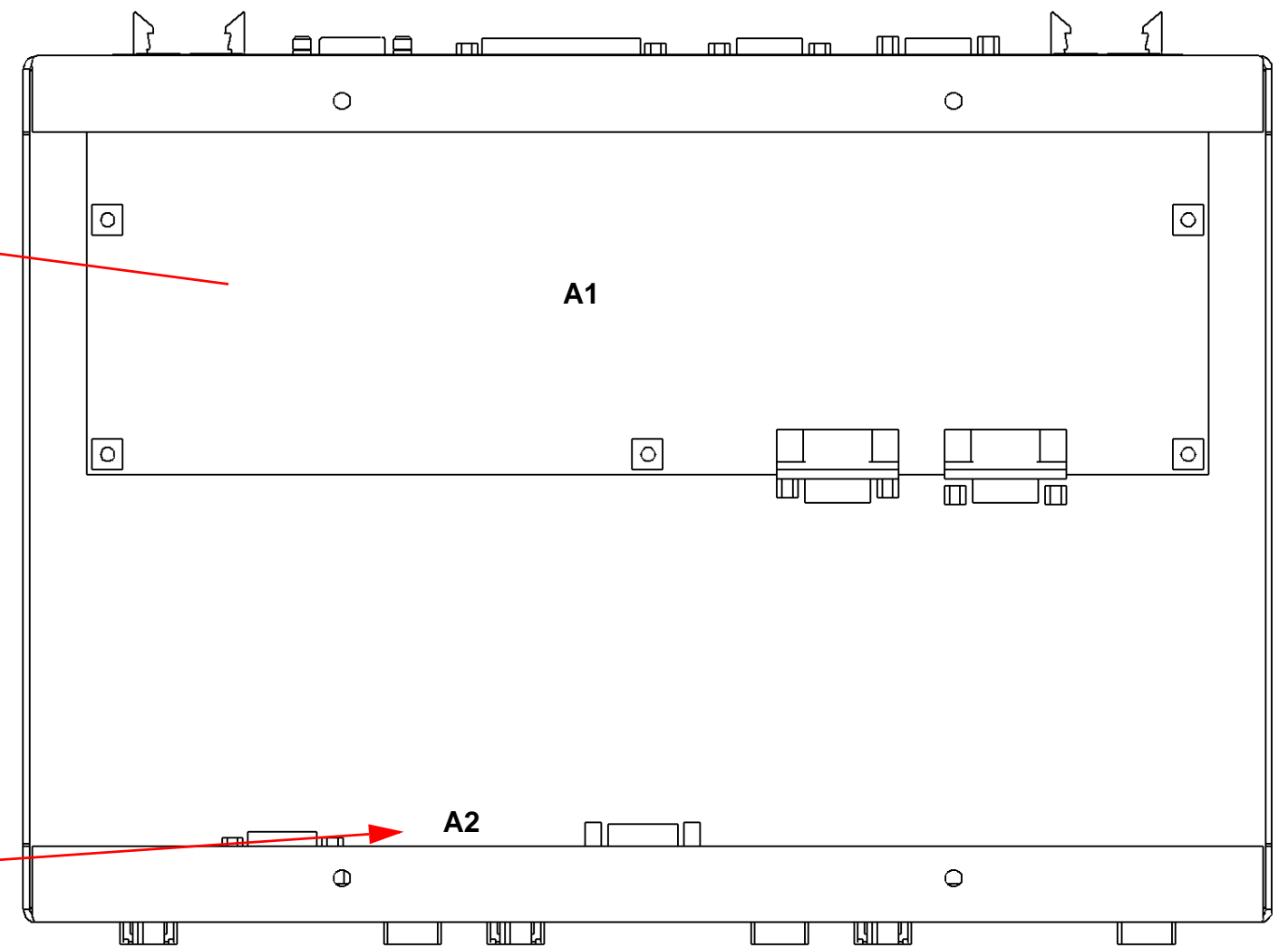
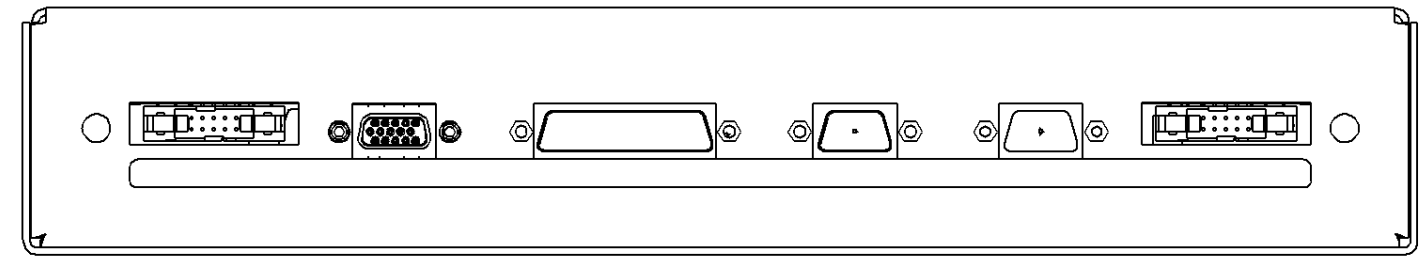
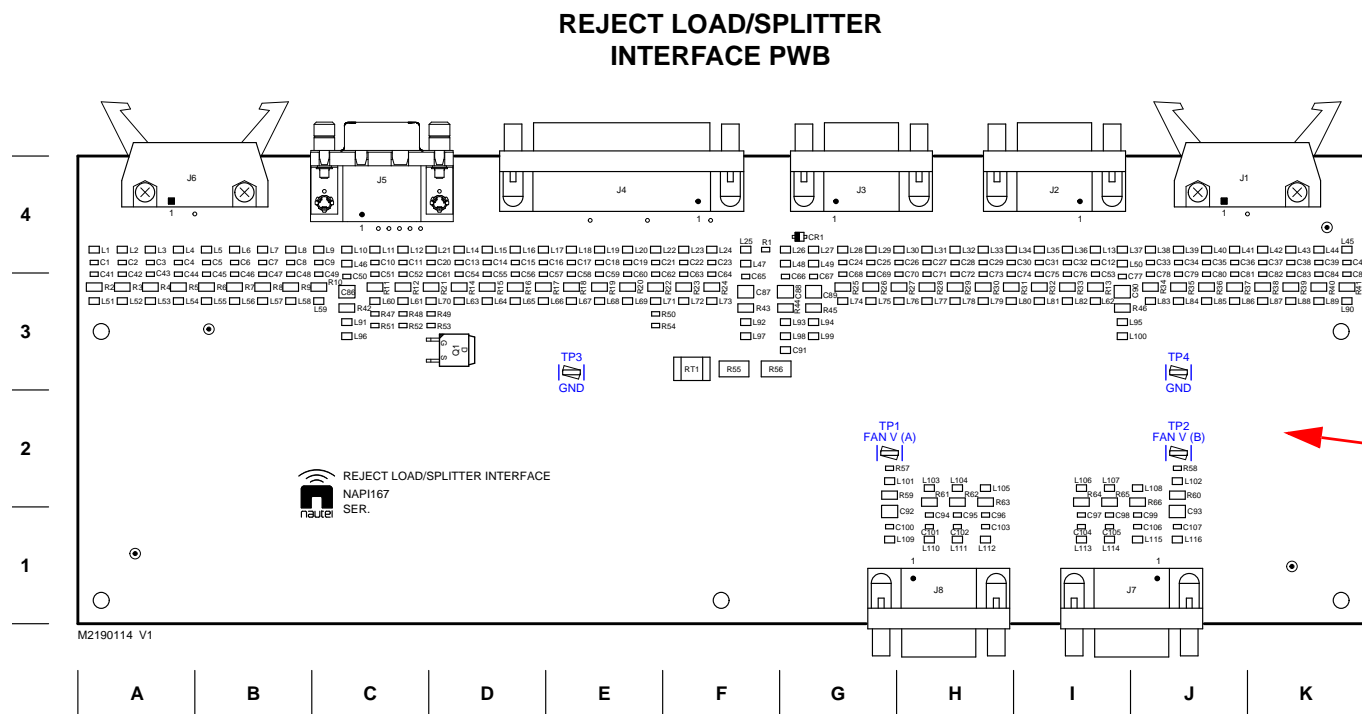
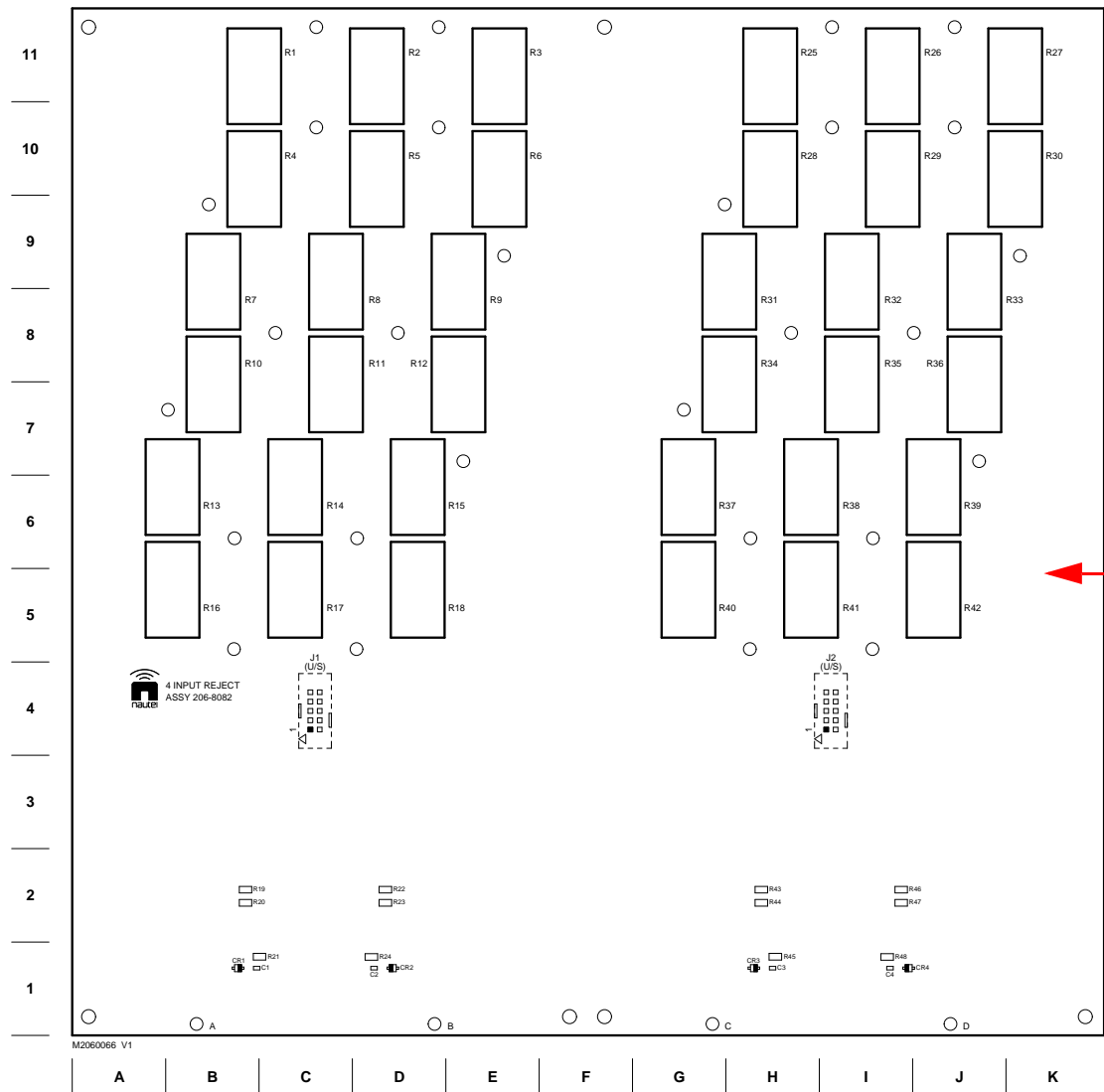
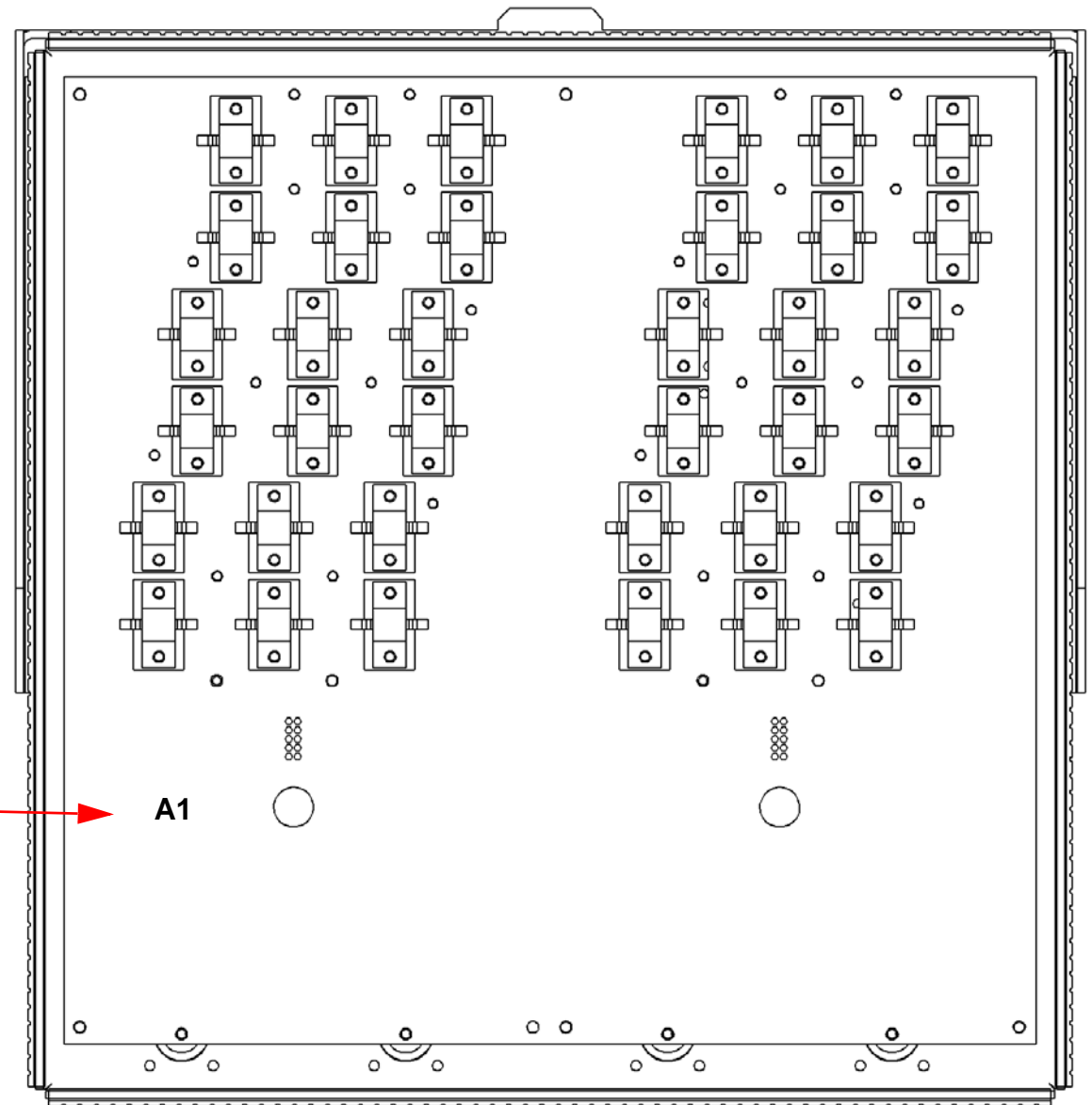


Figure MD-24: NAX269 Reject Load/ Splitter Interface Assembly



TOP VIEW



END VIEW

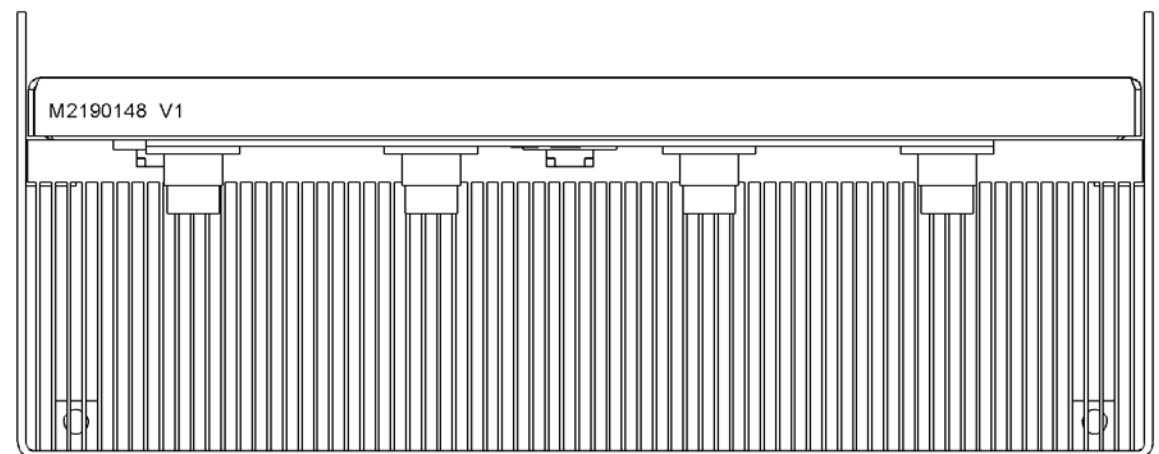


Figure MD-25: NAL17 4-Input Reject Load Assembly



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## SECTION 4.6: LIST OF TERMS

This section defines some of the terms that are used in Nautel documentation.

**AES/EBU.** Audio Engineering Society/European Broadcasting Union (AES/EBU) is the name of a digital audio transfer standard. The AES/EBU digital interface is usually implemented using 3-pin XLR connectors (the same type connector used in professional micros). One cable carries both left-channel and right-channel audio data to the receiving device.

**AUI.** The Advanced User Interface is the local touch screen on the front door and the advanced remote control/monitoring feature that allows for extensive remote control and monitoring of the transmitter.

**CUTBACK.** A reduction in RF output power, caused by the occurrence of multiple shutbacks within a pre-defined period.

**DHCP.** Dynamic Host Carrier Protocol.

**DSP.** Digital Signal Processing.

**EEPROM.** Electrically Erasable Programmable Read-Only Memory.

**FOLDBACK.** A reduction in RF output power, caused by adverse load conditions (high VSWR). No shutbacks or cutbacks have occurred.

**LED.** Light Emitting Diode (also referred to as lamp).

**LVPS.** Low Voltage Power Supply. A module or modules used in the ac-dc power stage that generates the low level dc supply voltage for the transmitter.

**PRESET.** A setting that controls power level, frequency and audio parameters. The GV20/GV15 allows you to pre-program multiple presets.

**PWB.** Printed Wiring Board.

**SHUTBACK.** A complete, but temporary loss of RF output power, caused by any one of a variety of faults, including high VSWR, high reject load power, RF drive failure, or an open external interlock.

**SHUTDOWN.** A complete and permanent loss of RF output power. Typically follows repeated cutback, foldback or shutback events.

**SURGE PROTECTION PANEL.** An electrical panel that protects equipment from electrical surges in the ac power supply, antenna or site ground caused by lightning strikes.

**UI.** The User Interface is the controller module's front panel LCD screen that allows for extensive local control and monitoring of the transmitter.

**VSWR.** Voltage standing wave ratio. This is an expression of the ratio of reverse voltage to forward voltage on the feedline and antenna system. An ideal VSWR of 1:1 provides maximum transmitter-antenna efficiency.





## GV20/GV15 TROUBLESHOOTING MANUAL

Document: NHB-GV15-GV20-TRB

Issue: 2014-07-23

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