VR-Link
RCMS Interface Unit

NAX245/01 and /02

Technical Instruction Manual

Issue 0.8 ....29 May 2019

Warranty

by Nautel Limited/Nautel Inc. (herein after referred to as **Nautel**)

Nautel guarantees all mechanical and electrical parts of Nautel Transmitters for a period of twenty-four months, and all other Nautel manufactured equipment for a period of twelve months from date of shipment, provided the equipment has been installed, operated and maintained in accordance with Nautel's recommendations, and the equipment has not been misused, neglected or modified. Nautel's liability is limited, at the absolute discretion of Nautel, to repairing or replacing returned equipment that to the satisfaction of Nautel has been found defective.

1. Properly qualified technical personnel must install, maintain, and repair the equipment in accordance with Nautel recommendations and good engineering practice.

2. A "Part Failure" shall be deemed to have occurred when the part has become defective, or does not have the characteristics required for the specified equipment performance:

    a. when the equipment is operated within the design parameters, and
    b. when the equipment is installed and adjusted according to Nautel's prescribed procedures as stated in the instruction manual.

3. Nautel shall provide replacements for all "Parts" to the Buyer when they become defective during the warranty period, and upon the return of the defective part. Replacement parts warranty to be 90 days or end of original warranty; whichever comes first.

4. If the Buyer receives a replacement module, as part of Nautel's module exchange program, the old module must be returned to Nautel within 30 days of receipt of the new module, at the buyers expense. If the old module is not received after 30 days, the customer will be invoiced. The buyer is responsible for installing the replacement/repaired module in the transmitter.

5. In the event that a "Part" fails during the warranty period and causes damage to a subassembly which cannot be readily repaired in the field, the entire subassembly so damaged may be returned to Nautel for repair. The repairs will be made without charge to the Buyer.

6. Written authorization must be obtained before returning any equipment or goods for any reason. Equipment or goods returned under this warranty shall be delivered to Nautel's premises at the Buyer's expense. Where no-charge warranty replacements or repairs are provided under items 2, 3, 4, or 5, Nautel will pay that part of the shipping costs incurred in returning the part/assembly to the Buyer. Note: the Buyer is responsible for any and all import fees, duties or taxes.

7. Nautel does not warrant or guarantee, and will not be liable for:

    a. defects or failures caused in whole or in part by abuse, misuse, unauthorized repair attempts, unauthorized alteration or modification of the equipment;
    b. equipment built to customer specifications that is later found not to meet customer needs or expectation;
    c. performance of equipment when it is used in combination with other equipment not purchased, specified, or approved by Nautel;
    d. damages and performance limitations due to outside forces such as lightning, excessive heat or cold, excessive AC surges or high corrosive environments;
    e. changes made by personnel other than Nautel authorized personnel, including charges incurred; and
    f. for any costs for labor performed by the customer without Nautel's prior written approval.

8. Nautel does not warrant that software:

    a. is free of errors, bugs or defects;
    b. will be compatible with third party software;
    c. results, output or data provided through or generated by the software are accurate, complete, or reliable; and
    d. errors found will be corrected.

9. Nautel shall have the right and shall be provided full access to investigate whether failures have been caused by factors beyond its control.

10. In no event shall Nautel be liable for any consequential damages arising from the use of this equipment

11. This warranty is in lieu of all other express warranties of Nautel, whether express or implied, and Nautel does not assume, nor is any other person authorized to assume on Nautel's behalf, any other obligation or liability.

12. Third party items ordered, the guarantee/warranty of these items will be from the manufacturer of these items. Exercise of such warranty shall be between the Buyer and the third party provider.

13. Nautel provides telephone and email support for its products for the life of the product at no charge. After the warranty period, parts and on-site support for the equipment are offered at a rate to be determined upon request.

Customer Service Notice

A 'Technical Assistance' and 'Plug-in Module Exchange' service is available to Nautel users.

All equipment being returned to Nautel and all requests for repairs or replacements should be marked with a Nautel provided RMA number and addressed to the appropriate Nautel facility:

Nautel Limited
10089 Peggy's Cove Road
Hackett's Cove, NS, Canada B3Z 3J4
Tel: 902-823-2233/Fax: 902-823-3183

Nautel Inc.
201 Target Industrial Circle
Bangor, ME, USA 04401
Tel: 207-947-8200/Fax: 207-947-3693

24 Hour Answering Service (902) 823-3900

Toll Free (877) 662-8837

Factory Support

TECHNICAL ASSISTANCE

Nautel's field service department provides telephone technical assistance on a 24 hour, seven days a week basis. Requests by other media (facsimile or e-mail) will be responded to the next working day if received after Nautel's normal working hours. Contact the appropriate field service centre from the following:

U.S.A. customers use: nautel (628835)	Nautel Incorporated	T. +1.207.947.8200 (24 hours) or 877 6
	201 Target Industrial Circle Bangor, Maine 04401	F. +1.207.947.3693
All other customers use: nautel (628835)	Nautel Limited	T. +1.902.823.3900 (24 hours) or 877 6
	10089 Peggy's Cove Road, Hackett's Cove, NS, Canada B3Z 3J4	F. +1.902.823.3183 E-Mail support@nautel.com Web www.nautel.com

MODULE EXCHANGE SERVICE

In order to provide Nautel customers with a fast and efficient service in the event of a problem, Nautel operates a factory rebuilt, module exchange service which takes full advantage of the high degree of module redundancy in Nautel equipment. This module exchange service is operated from Nautel's factory in Bangor, Maine and Hackett's Cove, Nova Scotia. These two locations allow us to provide a quick turn around service to keep our customers on the air. During the transmitter's warranty period, up to 18 months from shipment, repair and exchange of modules is at no charge to the customer. When the warranty has expired, a charge of 80% of the list price for all exchanged modules is made. If the faulty module is returned to Nautel within 30 days, a credit is issued reducing this charge by one half to 40% of the list price. U.S.A. customers are required to contact our Bangor, Maine facility. Canadian and overseas customers should contact our Nova Scotia, Canada facility.

EQUIPMENT BEING RETURNED TO NAUTEL

For all equipment being returned to Nautel and all requests for repairs or replacements:

- Obtain an RMA number from Nautel (you must have an RMA number to return equipment)
- Mark the item as 'field return'
- Mark the item with the RMA number assigned by Nautel
- Address the item to the appropriate Nautel facility

Complete and accurate information regarding the equipment being returned will ensure prompt attention and will expedite the dispatch of replacements. Refer to the nameplate on the transmitter and/or the appropriate module/assembly to obtain name, type, part and serial number information. Refer to the parts list of this manual or the appropriate service instruction manual for additional ordering information.

The following information should accompany each request:

*	Model of Equipment
*	Serial number of Equipment
*	Name of Part/Assembly
	Serial number of Part/Assembly
*	Complete reference designation of Part/Assembly
*	Nautel's part number of Part/Assembly
*	OEM's part number of Part/Assembly
	Number of hours in Use
	Nature of defect
*	Return shipping address

* Denotes minimum information required to order spare/replacement parts

VR-Link Technical Instruction Manual May 29.19

Contents   Page

Contents   Page

**8   ELECTRICAL SCHEMATICS AND ASSEMBLY
         DETAIL DRAWINGS**

APPENDIX A – SNMP TABLES

List of Tables

List of Figures/Drawings

nautel

List of Figures/Drawings (continued)

Release Control Record

Issue	Date	Reason
0.1	01 March 2010	NAX245/01 and /02 VR-Link: initial release of manual
0.2	04 May 2010	Paragraph 2.6.1: added statement to describe Status Refresh Interval setting
		Replaced Figure 2-12 Paragraph 3.3.1: incorporated Status Refresh Interval setting
0.3	24 August 2010	Incorporated Engineering review comments
0.4	15 April 2012	Added SNMP Table as Appendix A
0.5	16 Sept 2013	Added Vector NAVTEX references
0.6	19 January 2016	Updated 195-5205 and 195-5207 Part Lists, Table 7.2 Wiring List and Electrical Schematics Figures 8-1a to 8-1c
0.7	19 April 2016	Update Ac supply's reference to 100 – 240 V ac nominal ± 10%
0.8	29 May 2019	Section 1: Added paragraph 1.1.1 for SNMP support; Appendix A: added instructions to perform SNMP get and set. Also added SNMP table to support Vector-Navtex

nautel

VR-Link
TECHNICAL INSTRUCTIONS

Section 1   GENERAL INFORMATION

1.1   INTRODUCTION

The RCMS interface unit, or VR-Link, is a remote device that interfaces a Vector series transmitter with multiple extended control/monitor panels (ECMPs) and web-based control and monitoring ability via an internal Netburner module.

The Netburner module is a serial to Ethernet module that provides control and monitoring of the transmitter through audible alarms and status indicators in the form of a web page.

The web page can be accessed directly over a local area network (LAN) through an Ethernet connection on the VR-Link. If a single board computer (SBC) option with modem is installed the web page can also be accessed directly over a wide area connection (WAN) and over a dialup connection.

The ECMP is a remote-control device used to monitor – visibly or audibly – and control the inputs and outputs of a Vector series transmitter. The VR-Link allows for connections with up to three external ECMPs and one internal ECMP via RS-485 serial communication.

Connection options between the VR-Link and Vector series transmitter include RS-232, RS-422 and optional leased line modem.

The combination of the available connections allows for control/monitor capabilities at multiple locations and virtually any distance from the transmitter.

1.1.1   SNMP Support

The VR-Link and its associated equipment can be controlled and monitored using SNMP Version 1 management software. See Appendix A of this manual for setup and SNMP tables and how to perform an SNMP Get and SNMP Set.

1.2   FACTORY SUPPORT

Nautel provides after sales factory support. Technical assistance is available on a 24 hour, seven days a week basis. A factory service facility for repair of modules/ assemblies is also available. Refer to the *Factory Support* portion of the *Warranty* pages at the front of this manual for additional information.

1.3   PURPOSE AND SCOPE OF MANUAL

This manual provides the information required to install and operate the VR-Link.

1.4   PURPOSE OF EQUIPMENT

The VR-Link is intended to be used with Vector NDB or Vector NAVTEX systems.

1.5 MECHANICAL DESCRIPTION

The VR-Link is a standard 19" rack mountable unit, secured with four panel mount screws (See Figure 1-1). It measures 19 inches (482 mm) wide, 5.22 inches (132.6 mm) high, and 15.5 inches (394 mm) deep.

The front panel has a removable faceplate that can be replaced with an ECMP. There is also a removable plate on the back of the unit when the optional modem is not installed. Figures 8-3 through 8-5 identify the location of all electrical parts. All user connections are on the back of the unit, except for parallel control/monitor points when an optional internal ECMP is installed and a RJ45 LAN connection on the front when an SBC option is installed.
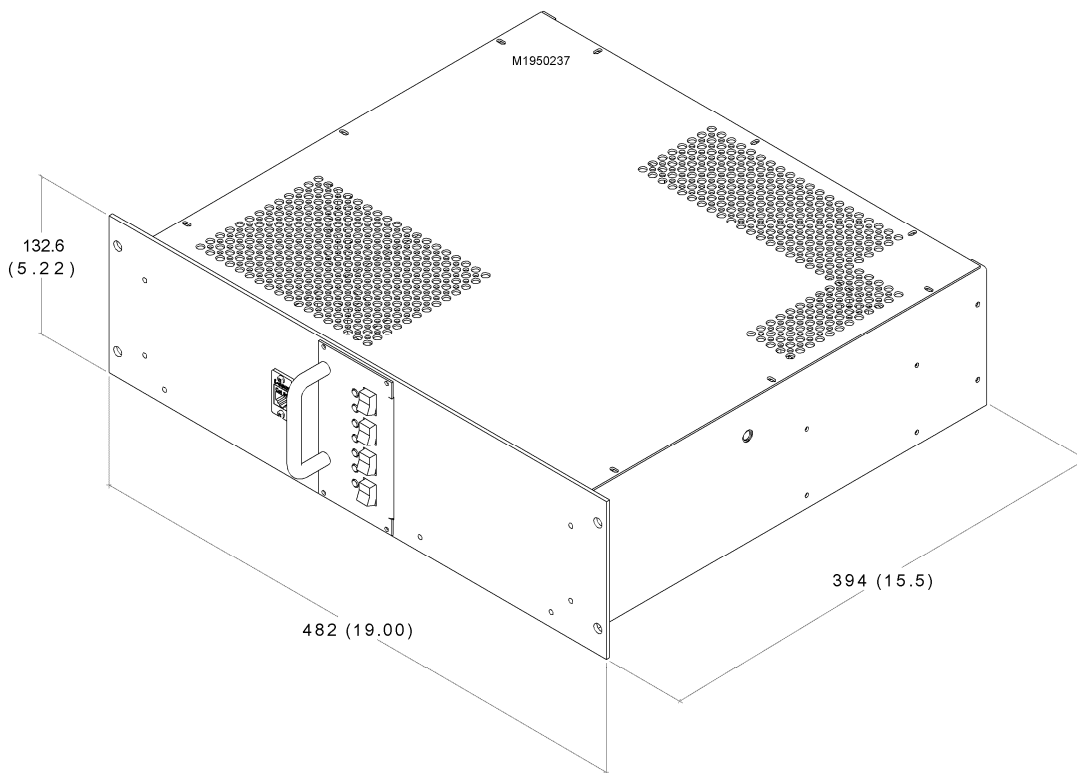
Figure 1-1: VR-Link RCMS Interface Unit

VR-Link
TECHNICAL INSTRUCTIONS

Section 2   PRE-INSTALL, INSTALLATION, SETUP & CONFIGURATION

2.1 ENVIRONMENT REQUIREMENTS
Consider the following environment requirements when preparing the VR-Link for installation.

2.1.1 Dimensions
The VR-Link is an enclosed EIA standard cabinet mount assembly. See Figure 1-1 for dimensions.

2.1. Clearances
If mounting the unit in a standard 19-inch equipment cabinet, allow a minimum of two inches at the top of the unit for adequate air circulation. Allow sufficient rear clearance for interconnections between the VR-Link and other components of the transmitter system.

2.1.3 Cooling
The maximum chassis temperature of the VR-Link must not exceed 55°C (131°F). To satisfy this requirement:

- Do not allow the room's ambient temperature to exceed 55°C (131°F) at sea level. Derate 3°C (5.4°F) per 500 m – or 2°C (3.6°F) per 1,000 ft – above sea level.

  Example:
  At 1,600 m (1 mile) above sea level, maximum ambient temperature should not exceed 45.4°C (113.7°F). Cooler temperatures are recommended for better equipment reliability.

- Do not install the VR-Link next to other warm equipment.

2.1.4 Work Area
Provide a suitable work area with an adequate table surface adjacent to the VR-Link or host cabinet to permit bench adjustment/repair.

2.2 PRE-INSTALLATION CHECKS
On delivery of the VR-Link, complete the following:

NOTE
Pre-installation procedures do not require technical knowledge of circuitry or their operation to complete.

2.2.1 Accepting the Shipment
Inspect all shipments for transit damage prior to acceptance.

2.2.2 Unpacking/Visual Inspection
Adhere to any warnings or instructions posted on the shipping container. Packing lists provide detailed listings of shipment contents. Remove the VR-Link from the shipping container and verify there is no obvious damage.
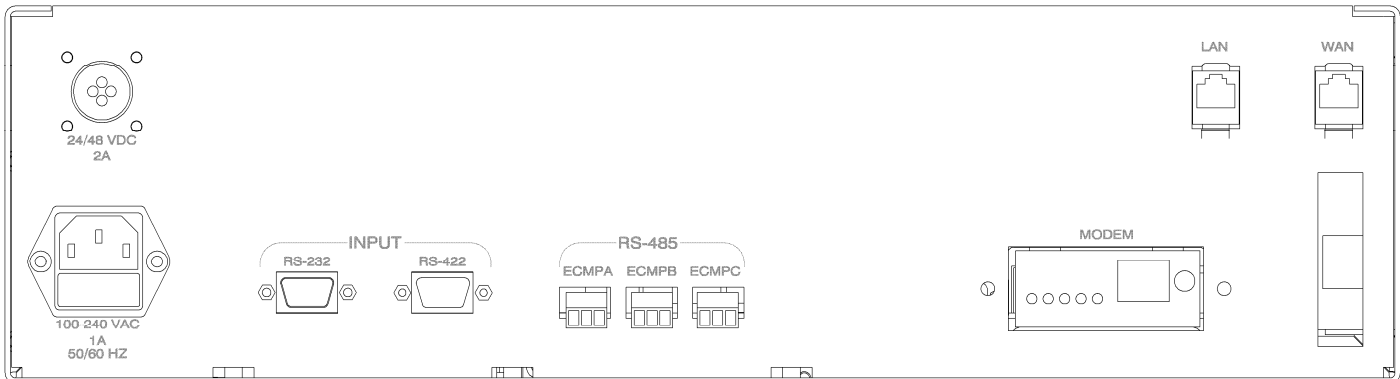
Figure 2-1: VR-Link/ECMP External Connections (Rear View of VR-Link)

2.3 INSTALLATION
Install the VR-Link for operation as follows:

NOTE

An ancillary kit (Nautel Part # 195-5195-02) is provided with the VR-Link. Items from this kit are referenced throughout the following installation paragraphs.

Figure 2-1 shows the rear panel of the VR-Link, which contains most of the interfacing connections required for installation.

2.3.1 Mounting in a Cabinet
Panel mounting screws are provided in the ancillary kit.

2.3.2 Electrical Power
The VR-Link uses a universal input ac-dc power supply (U1) and is connected to using a C14 style plug on the rear of the VR-Link.

AC Input Specifications

    NAX245/01: 100 - 240 V ac nominal ± 10% @ 1 A maximum
    NAX245/02: 100 - 240 V ac nominal ± 10% @ 1 A maximum

The VR-Link can also be supplied from a dc or backup battery supply. The dc option is intended to be used when the VR-Link is installed in a Vector cabinet using battery backup. The dc supply is connected to the VR-Link using a CPC male plug (not supplied).

DC Input Specifications

    J1-1: Positive
    J1-4: Negative

    NAX245/01: +24 V dc @ 2 A maximum
    NAX245/02: +48 V dc @ 2 A maximum

NOTE

The VR-Link ancillary kit contains an ac line cord (Nautel Part # JN50). The user may be required to replace the connector end.

2.3.3 Installing Interconnect Wiring

Install the wiring between the VR-Link and the transmitter system as described in 2.3.3.1 through 2.3.3.3, noting the following:

- Connections between the VR-Link and external remote ECMPs are to be made using a shielded twisted pair cable (STP), 16 to 24 AWG. Cat5 (STP) cable is recommended although other cable can be used. Recommended cabling specs for RS-485 are shunt capacitance of 16 pF/ft. and 100 Ω characteristic impedance. Maximum cable length for RS-485 is typically listed as 4,000 ft (1,219 m), but should be kept less than 3,280 ft (1,000 m) to ensure reliability. Repeaters can be used if needed.

- Cables should also pass through a ferrite toroid (not provided) a minimum of two turns near the VR-Link.

2.3.3.1 VR-Link/ECMP Connection

The VR-Link has available connections for up to three external ECMPs and one internal ECMP.

All external ECMPs are connected to the back of the VR-Link at locations **ECMPA**, **ECMPB** and **ECMPC** using removable mini-plugs (Nautel Part # JU59) which are provided in the ancillary kit. See Figure 2-2 for a connection diagram.

NOTE
Do not connect any external ECMPs until requested in paragraph 3.5.2.

The optional internal ECMP is connected to the serial interface PWB (A1) internal to the VR-Link. See Figure 2-3 for a connection diagram.

While the VR-Link provides a serial communication interface between the ECMPs and the transmitter, parallel communication on the ECMP is available to further expand the ECMPs' capabilities. Connection to the internal ECMP for parallel control and monitoring is made using 25-pin D-sub connectors fed through the back of the VR-Link. Refer to the ECMP Technical Instruction Manual for further details on this type of connection.

NOTE
Each external ECMP requires its own power supply (Nautel Part # UG59,) located in the ECMP ancillary kit (Nautel Part # 195-5165). Refer to the ECMP Technical Instruction Manual for more information.

RS-485

ECMPA   ECMPB   ECMPC

1 2 3   1 2 3   1 2 3
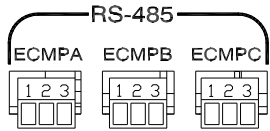
1 – INT BUS +
2 – INT BUS –
3 – GND

CONNECTIONS

Back of VR-Link	**ECMP (A/B/C)**
ECMP (A/B/C) – 1	TB1–6
ECMP (A/B/C) – 2	TB1–5
ECMP (A/B/C) – 3	TB1–4

Figure 2-2: VR-Link/ECMP External Connections

TB3	TB4
1 2 3	1 2 3
+5V +12V GND	+ - GND
ECMP SUPPLY	RS-485 ECMP D
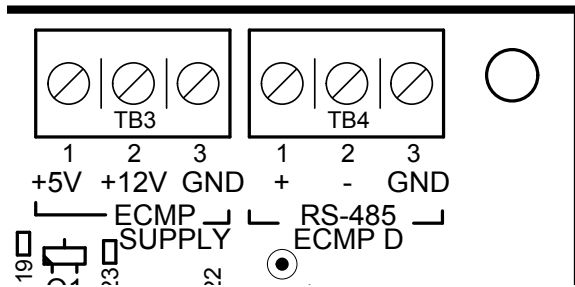
CONNECTIONS

VR-Link-A1	**ECMPD**
TB4–1	TB1–6
TB4–2	TB1–5
TB4–3	TB1–4
TB3–2	TB1–1
TB3–3	TB1–2

Figure 2-3: VR-Link/ECMP Internal Connections

nautel

2.3.3.2 VR-Link/Host PC Connection

There are two main configurations of the VR-Link. One configuration contains only a Netburner (see 2.3.3.2.1) while the other contains a Netburner along with the SBC option (see 2.3.3.2.2).

2.3.3.2.1 VR-Link with Netburner only

IMPORTANT

Unless otherwise requested the VR-Link is factory set to a default static IP address as shown below. Before connecting the VR-Link to any network, verify with your network administrator that there will not be an IP address conflict on the network as this could potentially result in a network crash.

IP Address: 192.168.1.93
Network Mask: 255.255.255.0
Gateway: 192.168.1.254
DNS Server: 192.168.1.254

NOTE

When the VR-Link is configured to use a static IP address it is required that the host PC be configured with the same Network Mask and Gateway addresses as the VR-Link. These can be set under Network Connections on the PC as outlined in section 2.4.3. This applies for both direct and LAN connections. A DHCP address setting can only be used if the connection is across a network using DHCP. If a change in any of the addresses is required, follow the steps outlined in section 2.4.1.

Connect the VR-Link's **LAN** port to a host PC using one of the following two methods (see Figure 2-4a and sub-paragraphs 1 and 2).
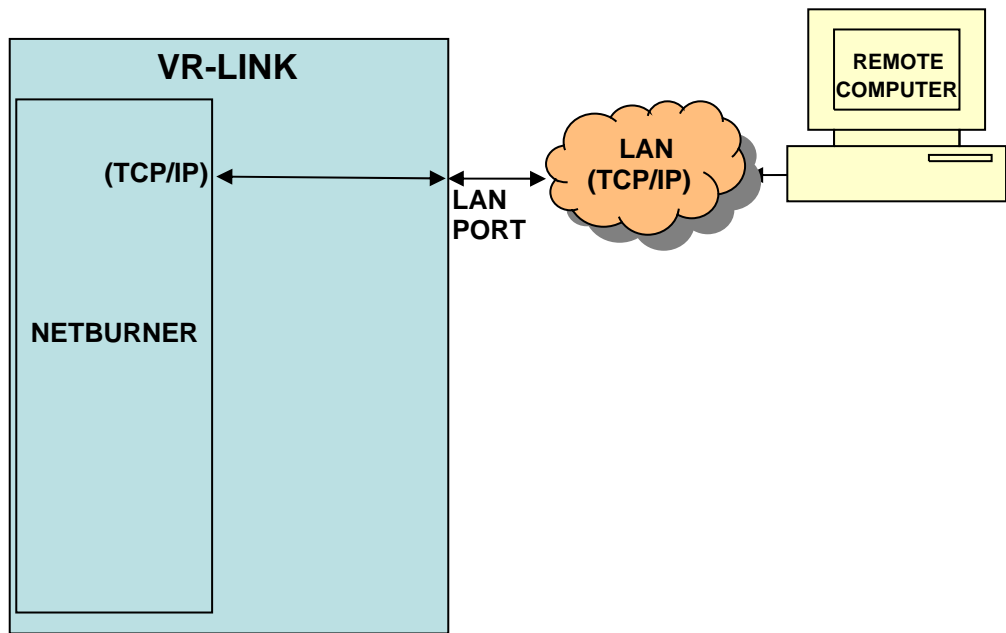
Figure 2-4a: VR-Link/Host PC Connections

1. Direct Connection:

   • Using a crossover Cat5 cable (not supplied), connect one end to the LAN port on the rear of the VR-Link. Connect the other end to the Ethernet port on the host PC. When using a direct connection with a standard VR-Link, the VR-Link must have a static IP address.

   NOTE
   Instead of a crossover Cat5 cable, you may also use a router that is not connected to a network. A LAN port is available on the front of the VR-Link. By default, this port is not connected for this type of setup. This port can be used by disconnecting the cable mated (internally) to the rear LAN port and connecting it (internally) to the front LAN port.

2. Network Connection:

   NOTE
   Connection type 2 may require further assistance from the network provider and/or, device manufacturer to achieve correct operation.

   • Using a Cat5 cable (not supplied), connect the VR-Link's rear LAN port (see Figure 2-1) to an available wired or wireless network device (router, hub or GSM/CDMA modem). When connecting the VR-Link to a network, a static IP address or DHCP address may be used depending on the how the network is setup.

   • To find the VR-Link on the network, navigate to the discovery tool at the following web page:

      http://www.netburner.com/support/publicdownloads.html
      (NetBurner IPSetup Tool) (see Figure 2-6).

   • Open the application. It should automatically search and find the VR-Link. If not, click **Search Again**. Once found, click on the unit in the **Select a Unit** screen. This will provide you with the VR-Link's IP address.

2.3.3.2.2 VR-Link with Netburner and SBC option (Nautel Part # 195-5199).

Ethernet switch option (Nautel Part # 195-5169) may also be installed

IMPORTANT
Unless otherwise requested the VR-Link's WAN port is factory set for DHCP. The VR-Link's LAN port is a default static IP address as shown below. With this configuration, the LAN port acts as a DHCP Server. DO NOT connect this port to your network if it already has a DHCP Server. Before connecting the VR-Link to any network, verify with your network administrator that there will not be an IP address conflict on the network as this could potentially result in a network crash.

IP Address: 192.168.254.2

When the VR-Link's WAN port is configured to use a static IP address it is required that the host PC be configured with the same Network Mask and Gateway addresses as the VR-Link. These can be set under Network Connections on the PC as outlined in paragraph 2.4.3. A DHCP address setting can only be used if the connection is across a network using DHCP. When connecting to the VR-Link's LAN port, the host PC can be set for either static as above or DHCP. If setting the host PC to DHCP the VR-Link will assign it an IP address. If a change in any of the addresses is required, follow the steps outlined in paragraph 2.4.1.

The VR-Link may also be configured without the Ethernet switch option. If this is the case, the LAN connection will not be available and the WAN port will be defaulted to the port on the front of the VR-Link.

Connect the VR-Link to a host PC using one of the following three methods (see Figure 2-4b and sub-paragraphs 1, 2 and 3).
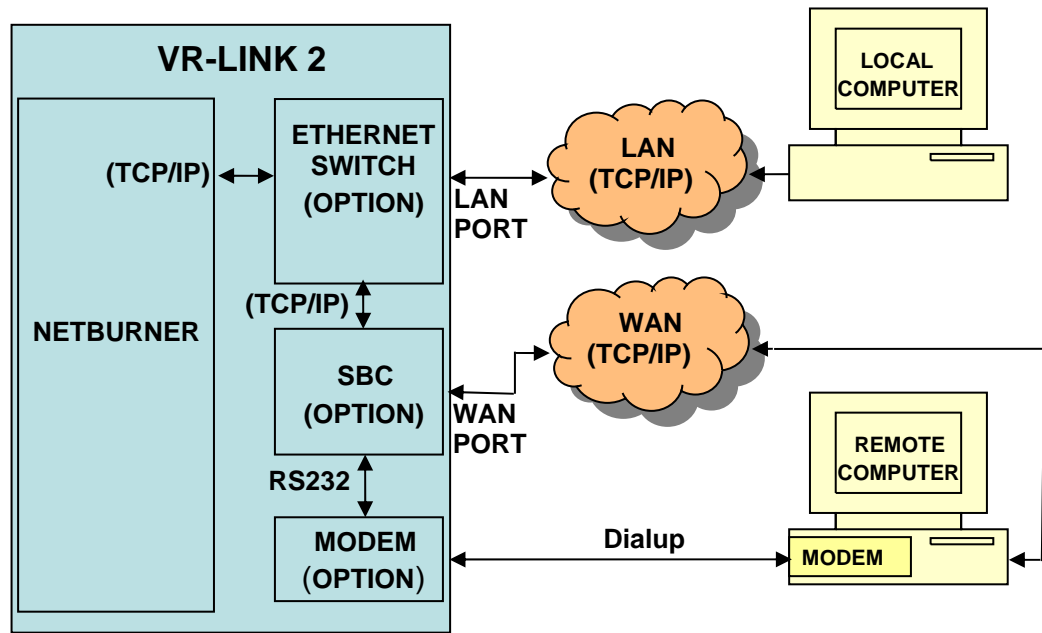
Figure 2-4b: VR-Link/Host PC Connections

1. Direct Connection:

    *   Connect a PC directly to the LAN port on the VR-Link (see Figure 2-1) using a standard Ethernet cable. With the SBC option installed, the host computer is set for DHCP. The IP address for the host computer will be assigned by the SBC while the IP address of the VR-Link is defaulted to 192.168.254.2

2. Network Connection: [see (a) LAN Connection or (b) WAN Connection]

NOTE

Connection type 2 may require further assistance from the network provider and/or, device manufacturer to achieve correct operation.

    (a) LAN Connection:

    *   Using a standard Ethernet cable, connect the VR-Link's LAN port (see Figure 2-1) to an available wired or wireless network or network device (router, hub or GSM/CDMA modem). When connecting the VR-Link to a network through the LAN port, the VR-Links SBC will attempt to assign any other devices on the network an IP address, if they are set for DHCP. If connecting the LAN port to a local network, ensure the network does not already have a DHCP server enabled.

    *   To connect to the VR-Link, open a web browser and enter the IP address of the VR-Link as below.

        IP Address: 192.168.254.2

    (b) WAN Connection:

    *   Using a standard Ethernet cable, connect the VR-Link's WAN port (see Figure 2-1) to an available wired or wireless network or network device (router, hub or GSM/CDMA modem). The WAN port can be set to either static or DHCP depending on how the network is setup (See paragraph 2.4.2 for IP configuration setup). Consult your network administrator for correct IP configuration.

    *   To connect to the VR-Link, open a web browser and enter the IP address of the VR-Link that it was assigned.

NOTE

When connecting to the VR-Links WAN port, you will not be able to use the NetBurner IPSetup tool to discover the VR-Link on the network.

3. Dialup Connection: An optional modem can be installed to provide a dialup connection between the VR-Link and host computer. This option requires the installation of the SBC (Nautel Part # 195-5199) and modem kit (Nautel Part # 195-5192-01). Using a phone cord (not supplied), connect between the modem on the back of the VR-Link (see Figure 2-1) and an available phone jack. The web page will be accessed by setting up a dialup network connection on the host computer (see paragraph 2.4.2).

2.3.3.3 VR-Link/Vector Connection

Connect the VR-Link to the Vector transmitter using one of the following options (see Figure 2-5):
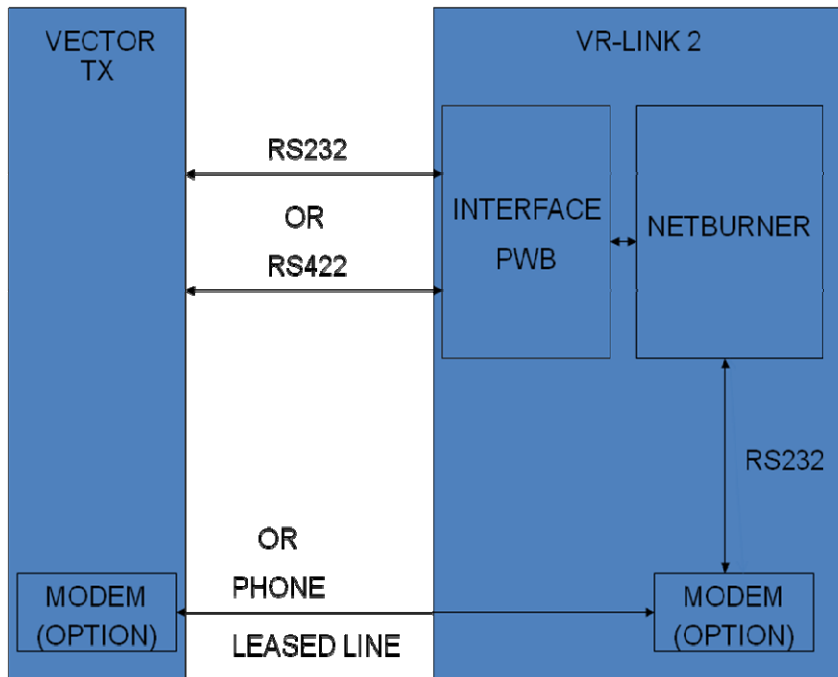
Figure 2-5: VR-Link/Vector Connections

1. <u>RS-232:</u> The simplest solution is to connect the VR-Link directly to the Vector series transmitter using a straight-through 9-pin M-F D-sub cable (not provided). Connect the female end of the cable to the Vector's RS-232 connector located on its remote interface PWB. Connect the male end of the cable to the RS-232 connector on the back of the VR-Link (see Figure 2-1).

   RS-232 connections have a maximum length of 15 m and should only be used if the VR-Link is in close proximity to the Vector transmitter.

<u>NOTE</u>
For RS-232 operation, jumpers E1 and E2 on A1 must be set in the **RS-232** *position. See Figure 8-4.*

2. RS-422: Using a straight through 9-pin M-F D-sub cable (not provided) connect the male end of the cable to the Vector's RS-422 connector located on its remote interface PWB. Connect the female end of the cable to the RS-422 connector on the back of the VR-Link (see Figure 2-1).

    RS-422 connections have a maximum length of 1,000 m.

    NOTE
    For RS-422 operation, jumpers E1 and E2 on A1 must be set in the **RS-422** *position. See Figure 8-4.*

3. Modem: An optional modem kit (Nautel Part # 195-5192-01) can be installed in the VR-Link and configured for leased line operation. Connect a dedicated leased line jack to the VR-Link modem jack on the back of the VR-Link (see Figure 2-1) using a standard phone cord.

    This type of connection requires that the modem option be purchased for the Vector series transmitter. The transmitter's modem must also be setup as leased line.

4. Wired/Wireless Serial Server: This type of connection will once again use RS-232 on both the VR-Link and the Vector. Connect your wired/wireless device to the Vector series transmitter using a 9-pin D-sub cable. Connect a second device to the VR-Link RS-232 port (see Figure 2-1). Consult the wired/wireless device's operation manual to determine if a null modem cable should be used.

    The wired/wireless modems will be connected to a local area network (LAN) or wide area network (WAN). These types of serial-to-Ethernet solutions include direct connection NPORT using Cat5 cable or GSM/CDMA wireless modems.

    NOTE
    Connection type 4 may require further assistance from the network provider and/or device manufacturer to achieve correct operation.

2.4 VR-LINK INITIAL SETUP

2.4.1 Setting IP Address

(a) Obtain an IP address, Gateway address, Network mask and DNS Server address from your network administrator. If the network is configured for DHCP, the IP address will be automatically assigned by the network. To assign a new static IP address or set the VR-Link to DHCP, use either Method 1 **[step (b)]** or Method 2 **[step (c)]** outlined below.

<u>**NOTE**</u>

The standard VR-Link is factory set with a static IP address (see 2.3.3.2.1). The VR-Link with SBC option is factory set with DHCP (see 2.3.3.2.2). This section describes how to change the LAN port IP settings for the standard VR-Link. See section 2.4.2 for configuring the WAN port if the SBC and Ethernet options are installed. It is recommended that the VR-Link is NOT connected to the network until the desired IP Configuration has been setup.

(b) **Method 1: LAN Port Configuration**

Using a PC, start up a terminal program (e.g., Hyperterminal). Set the COM settings to:

Bits per second: 115200
Data bits: 8
Parity: None
Stop bits: 1
Flow Control: None

Remove the VR-Link's top cover. Remove connector W1P1 from Port 0 of the Netburner (U3). Plug the serial port of the PC into Port 0 of the Netburner using a 9-pin null modem (cross-over) serial cable.

To proceed with assigning a new static IP address or setting the VR-Link to DHCP, perform the following**:**

Apply power to the VR-Link. From the PC terminal program, press 'A' when the message "Waiting 10 seconds to start 'A' to abort" appears. The following should appear:

Netburner SB72EX Monitor Vx.x date time
HELP for help
nb>

Type "setup" at the nb> prompt. The setup menu should appear. Type "7" and press Enter. When the message "Wait?" appears, type "10" and press Enter. The following settings should display:

IP Address: 192.168.1.93
IP Mask: 255.255.255.0
IP Gateway: 192.168.1.254
Wait: 10
DNS Server: 192.168.1.254

Enter "1" to set the IP Address.
Enter "2" to set the IP Mask.
Enter "3" to set the IP Gateway.
Enter "A" to set the DNS server address.
Once the addresses have been correctly set, enter "S" to save and then "X" to exit. Wait 20 s and the IP address should appear on the screen and repeat every 10 s after that.

To set the VR-Link for DHCP, set the addresses as follows:

IP Address: 0.0.0.0
IP Mask: 0.0.0.0
IP Gateway: 0.0.0.0
DNS Server: 0.0.0.0

Connect the host PC to the VR-Link using one of the methods previously described in section 2.3.3.2, ensuring that the PC's gateway and network mask are appropriately set (see 2.4.2).

Open a web browser on the host PC and enter the URL of the Netburner. For example, if the IP address was 192.168.1.93, then use http://192.168.1.93 for the Netburner address in the browser. To use single column, simply append '\pda' to the Netburner IP address.

Verify that the page in Figure 2-10 appears. Reconnect W1P1 to Port 0 of the Netburner module and proceed to paragraph 2.5 – Configuration.

(c) **Method 2: LAN Port Configuration**

Connect a PC directly to the VR-Link LAN port (see 2.3.3.2).

Navigate to the discovery tool at the following web page:

http://www.netburner.com/support/public_downloads.html
(NetBurner IPSetup Tool) (see Figure 2-6).

Open the application. It should automatically search and find the VR-Link. If not, click **Search Again**. Once found, click on the unit in the **Select a Unit** screen.

The **NDK Settings** will display the IP address, etc. of the VR-Link. At this point the IP address should be 192.168.1.93.

Change the **NDK Settings** to the required addresses and press **Set**:

To set the VR-Link for DHCP, set the addresses as follows:

IP Address: 0.0.0.0
IP Mask: 0.0.0.0
IP Gateway: 0.0.0.0
DNS Server: 0.0.0.0
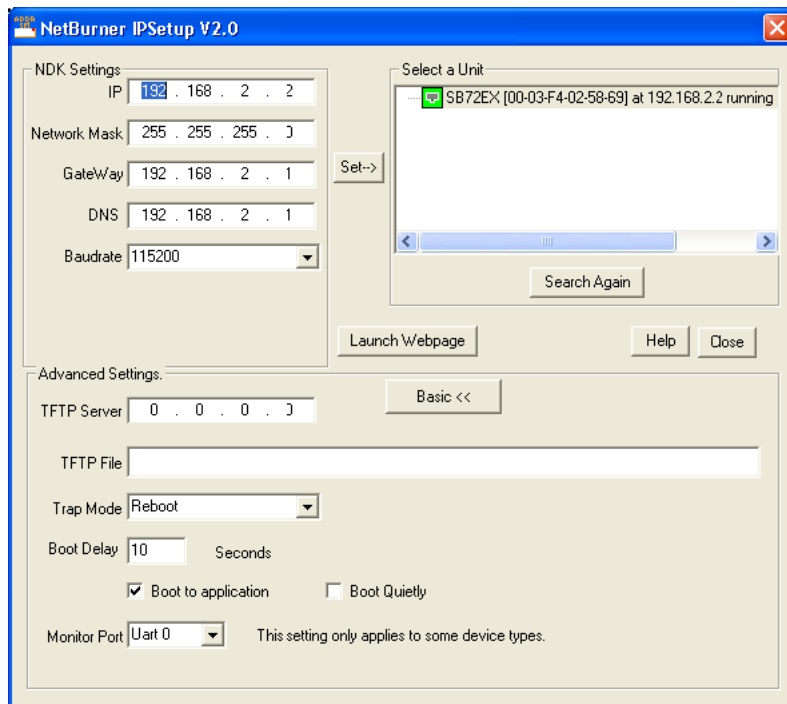
Figure 2-6: VR-Link IP Setup Page

Press search again to find the VR-Link. It should now show the new address.

Connect the VR-Link to the host PC using one of the methods outlined in 2.3.3.2. ensuring that the PC's gateway and network mask are appropriately set (see 2.4.2).

Open a web browser on the host PC and enter the URL of the Netburner. For example, if the IP address was 192.168.1.93, then use http://192.168.1.93 for the Netburner address in the browser. To use single column, simply append '\pda' to the Netburner IP address.

Verify that the page in Figure 2-10 appears.

NOTE
You may also use IPSetup on the host PC to locate the VR-Link on the network. This is particularly useful when the VR-Link is configured for DHCP.

If a dialup connection is being used to connect the host PC [see 2.3.3.2.2, sub-paragraph 3 and 2.4.3, step (b)] to the VR-Link, the IP address does not require changing.

Verify that the page in Figure 2-10 appears.

2.4.2 WAN IP Configuration

The WAN IP configuration only applies when the dialup option is installed (see 2.3.3.2).

With a computer connected to the LAN port on the VR-Link or with a dialup connection established see 2.3.3.2.2, sub-paragraph 3 and 2.4.3, step (b)], open a web browser and enter http://nxlink.nautel:8080 in the address bar.

The web browser should display the "Welcome to VR Link" page. Select **Click here** to setup the WAN IP configuration.

From the screen shown in Figure 2-7, set the DHCP Enabled to **No**. Enter the following IP configuration information provided by your network administrator and click **Submit**.
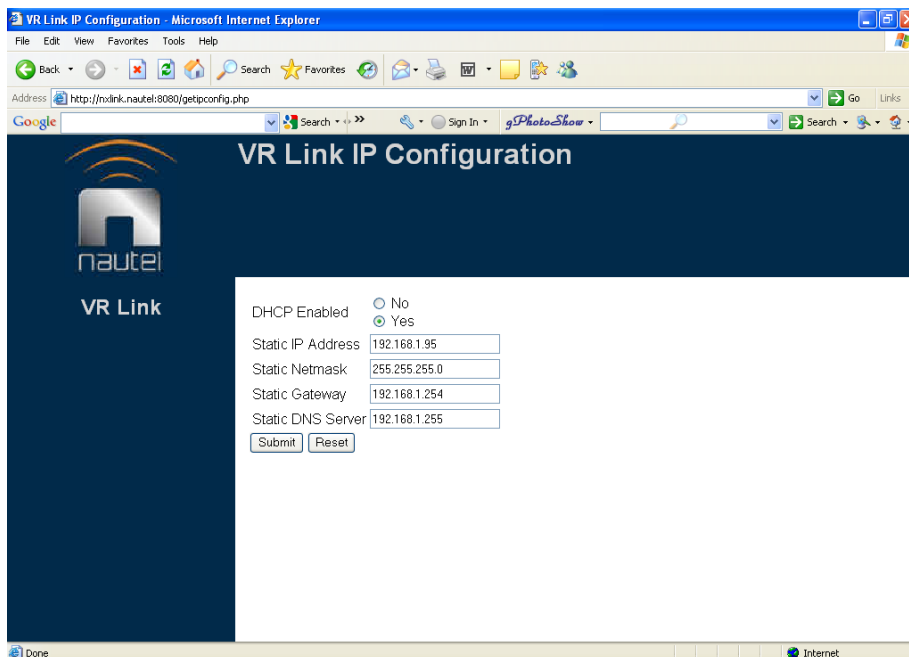
Figure 2-7: WAN IP Configuration

2.4.3 Host PC Setup
Perform the following procedures to set up the host PC.

(a) DHCP and Static IP address configuration:

Ensure the PC is not connected to the network.

On your PC, navigate to the Internet Protocol (TCP/IP) Properties page (see Figure 2-8).

• In Windows XP, click on Start, Control Panel, and Network Connections.

• Right click on the local area connection and select Properties in the pop-up menu.

- On the Local Area Connections Properties page scroll down and click on Internet Protocol (TCP/IP) then select Properties.

  If using a DHCP connection ensure that "Obtain an IP address automatically" and "Obtain DNS server address automatically" is selected.

  If using a static IP address, select "*Use the following IP address"* and configure addresses as required.

  If using the standard VR-Link's default static IP address, configure the host PC as follows.

  IP address: 192.168.1.95
  Subnet mask: 255.255.255.0
  Default gateway: 192.168.1.254
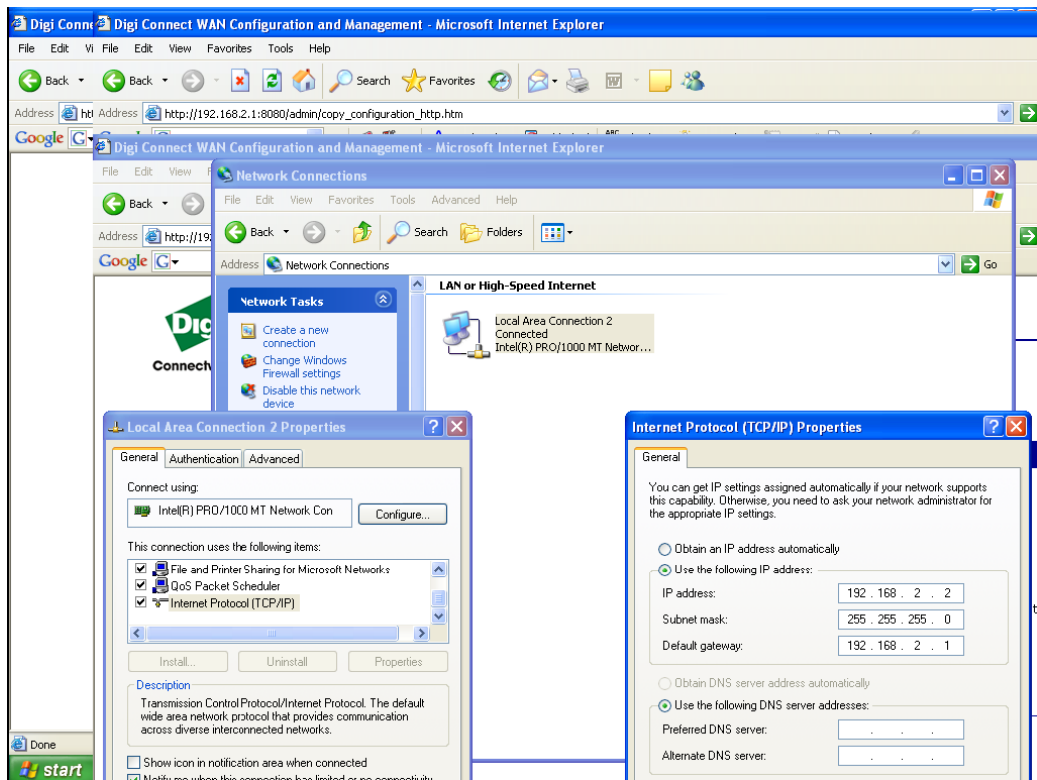
Figure 2-8: Internet Protocol (TCP/IP) Properties

<u>NOTE</u>
Ensure the Subnet mask and Default gateway are the set the same as the VR-Link. The host PCs IP address does not need to be the same as above.

(b) Dialup Network Connection:

Open Network Connections under Control Panel. Click **Create a new connection** and then **NEXT**. Select **Connect to the Internet** and click **NEXT**.

In the next screen choose **Set up my connection manually** and click **NEXT**.

Select **Connect using dial-up modem** and click **NEXT**.

Enter an ISP name (e.g., "VRLINK")

Enter the phone number of the location the VR-Link is connected to,

Click **NEXT** and **NEXT** again.

In the Internet Account Information screen, enter the following;

User Name: nautel
Password: NautelVRLink
Confirm Password: NautelVRLink

Uncheck the bottom two boxes. Click **NEXT**.

In the next screen select create desktop shortcut and then click **FINISHED**.

Once the connection has been setup, a "Connect VR Link" screen should appear, (see Figure 2-9). Click **Dial**. The modem should connect after its dialling and password verification processes are complete.

Open a web browser on the host PC and enter http://nxlink.nautel.com in the address bar.
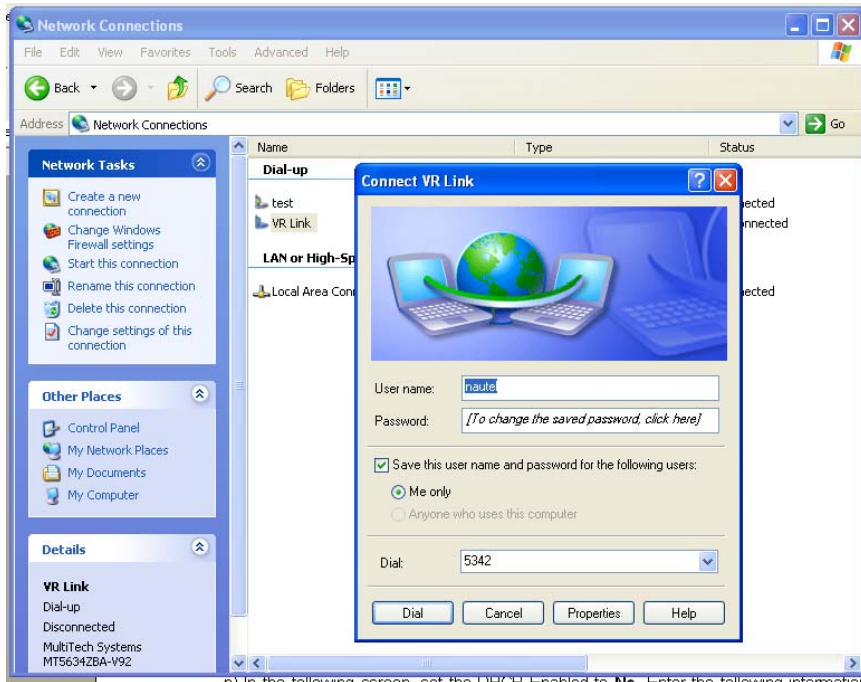
Figure 2-9: Dialup Connection

2.5 VR-LINK CONFIGURATION

(a) Click Login and use a username/password that provides full control of the VR-Link. If this is the first time that the VR-Link is being configured, use the default username (root) and password (nautel). This account has full permissions and can be used for initial setup.

NOTE
For security purposes, Nautel strongly recommends you change your password (see paragraph 2.7 - Users Link).

(b) Once logged in (see Figure 2-11), the left-hand side of the screen will change to show administrative links. Click Site Configuration to select and set up the connected equipment (see 2.6.1) and also to set up the outgoing email parameters (see 2.6.2). Click User Administration to add users and to modify user properties (see 2.7).

Figure 2-10: VR-Link Main Page
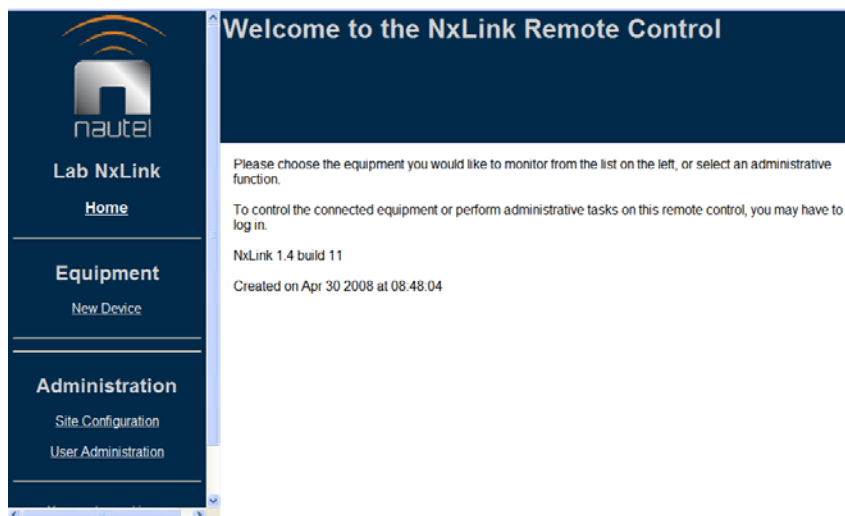
Figure 2-11: VR-Link Main Page – Logged In

2.6 SETUP LINK

2.6.1 Connected Equipment Settings

See Figure 2-12. All equipment which is to be controlled and monitored by the VR-Link must be set up in this dialog. The primary device MUST be the transmitter or system controller that the VR-Link is connected to.

Select Vector or Vector NAVTEX from the Primary Device drop-down menu (depending on the transmitter being used). Click **Submit** to add the device.

When equipment (or new device) is added, it is assigned a tab in the navigation bar and a hyperlink under Equipment on the left-hand side of the page. Clicking on the device's assigned tab allows it to be configured using the dialog illustrated in Figure 2-13.

Enter the Status Refresh Interval (between 5 and 255 seconds). This setting determines how often the VR-Link updates the Status pages. Ensure that connection speeds are sufficient for the desired refresh rate.

There are eight configurable information pages available (scroll down to see all pages), and each page can contain up to 16 channels of equipment data.

Selecting the Customize link on any page in the list allows modification of the channel data, as shown in Figure 2-14.

Selecting the device hyperlink under Equipment displays this information in a page by page format using selectable tabs (e.g., System Summary, Presets, Meters, etc.).

Each page of equipment data can be named, and any available equipment data can be assigned to any channel. There are factory default page names that are linked to the tabs and channel names (e.g., RF Power, System Control, Active Faults).

Choose the drop-down box on any channel to see the list of available equipment data. Some data are complex (indicated in bold text) in that they can be selected as a single type but will show as multiple data. An example is Active Faults, which will show any and all faults.

Click on **Submit** (bottom of screen) to save changes or **Reset** (bottom of screen) to restore previously saved settings.

Figure 2-12: Device Setup Page
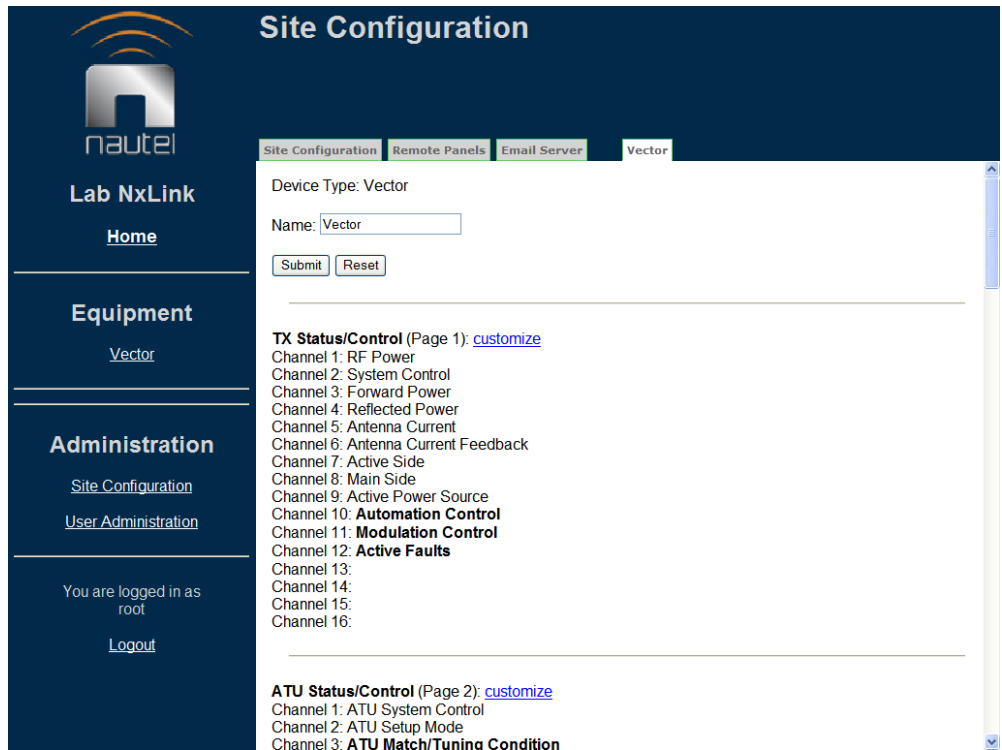
Figure 2-13: Setup Equipment Page - Configure
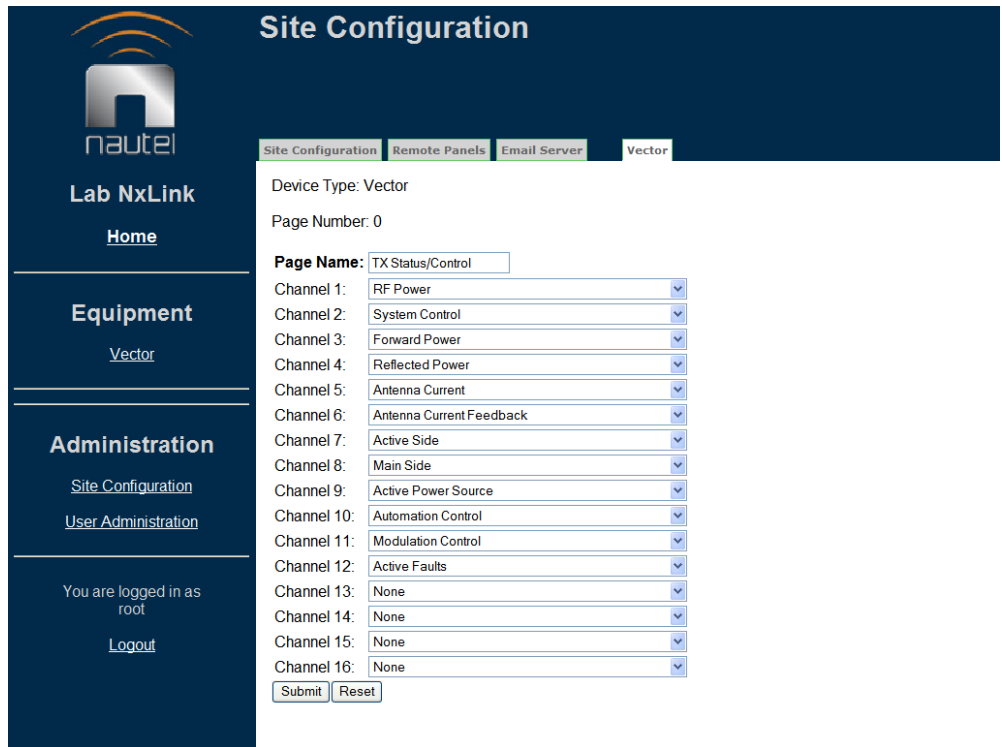
Figure 2-14: Setup Equipment Page – Configure, Customize
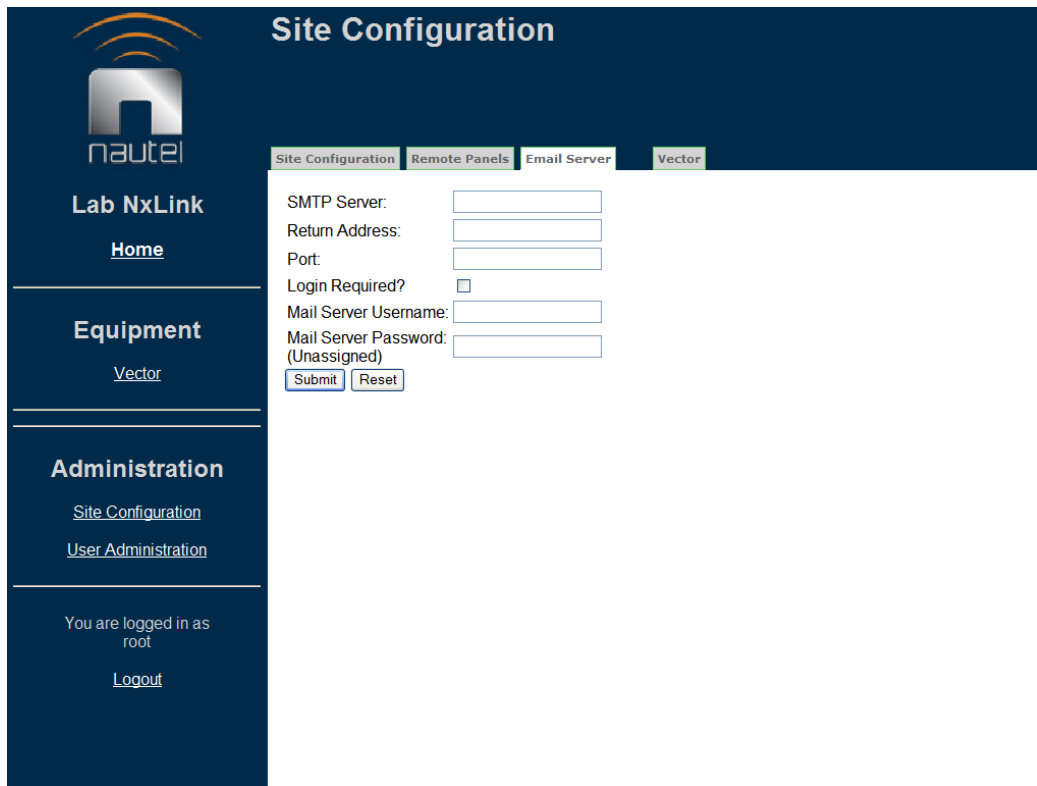
2.6.2 Email Configuration

The dialog in Figure 2-15 is accessed by selecting the **Email Server** tab at the top of the page. Use it to set up the outgoing email parameters.

In order to use the VR-Link's feature to send emails when requested, the email server must be configured. Enter the server name and an email address (which will appear in emails from the VR-Link as the sender). If the email server requires login, check the Login Required? box and enter a username and password to the email server.

Click **Submit** (bottom of screen) to save any changes. Click **Reset** (bottom of screen) to restore original settings.

Figure 2-15: Device Setup Page – Email Configuration

2.7 USERS LINK

Selecting the User Administration link will bring up a page that displays, as a minimum, the registered users. Depending on permissions assigned to the logged-on user, other information may be presented. As shown in Figure 2-16, the logged in user is 'root', who has full permissions. As a result, this user is allowed to add new users. Adding a new user requires entering username, password and permissions.

There are four levels of permissions, each with their own specific function: User Administration, Site Configuration, Equipment Control and none. They can be selected in any combination. If none are selected, no permission is granted. Any user, regardless of permission level, can change their own password and email parameters.

User Administration: Only level that can add, remove and modify other users. No site configuration or equipment control functions.

Site Configuration: Allowed to do all Setup link functions (see 2.6.1). No administrative or equipment control functions.

Equipment Control: Equipment can be monitored and controlled. No administrative or site configuration functions.

None (no permission boxes checked): Only allowed to monitor equipment data.

NOTE
In order to perform software upgrades (see 3.6), a user must have both User Administration and Site Configuration permissions checked.

With User Administration permissions, all registered users will show as an active hyperlink. Any other permission level will only show the logged in user as an active hyperlink. Clicking on a user hyperlink allows user configuration to be modified as shown in Figures 2-17 and 2-18.

User Administration

Lab NxLink

Home

Equipment

Vector

Administration

Site Configuration

User Administration

You are logged in as root

Logout

Registered users:

- root : User Administration, Site Configuration, Equipment Control
- Luke : User Administration, Site Configuration, Equipment Control
- Robert : User Administration, Site Configuration, Equipment Control
- test : Site Configuration, Equipment Control

Add user:

New user name: [ ]

New user password: [ ]

Re-type password: [ ]

Permissions:
☐ User Administration   ☐ Site Configuration   ☐ Equipment Control
[Add]

Figure 2-16: User Administration Page

A logged in user without User Administration permission will see a page similar to that shown in Figure 2-17. The user may change their password and email address.

Figure 2-17: User Administration Page – Registered User Settings (Minimum)

A user logged in with Administration permission, who selects another user, will see the information described previously, plus options to change the selected user's password or to remove the selected user.

In the example shown in Figure 2-18, Robert has been selected. All functions (Remove User, Set Permissions, Change Password and Change Email Settings) would apply to Robert.
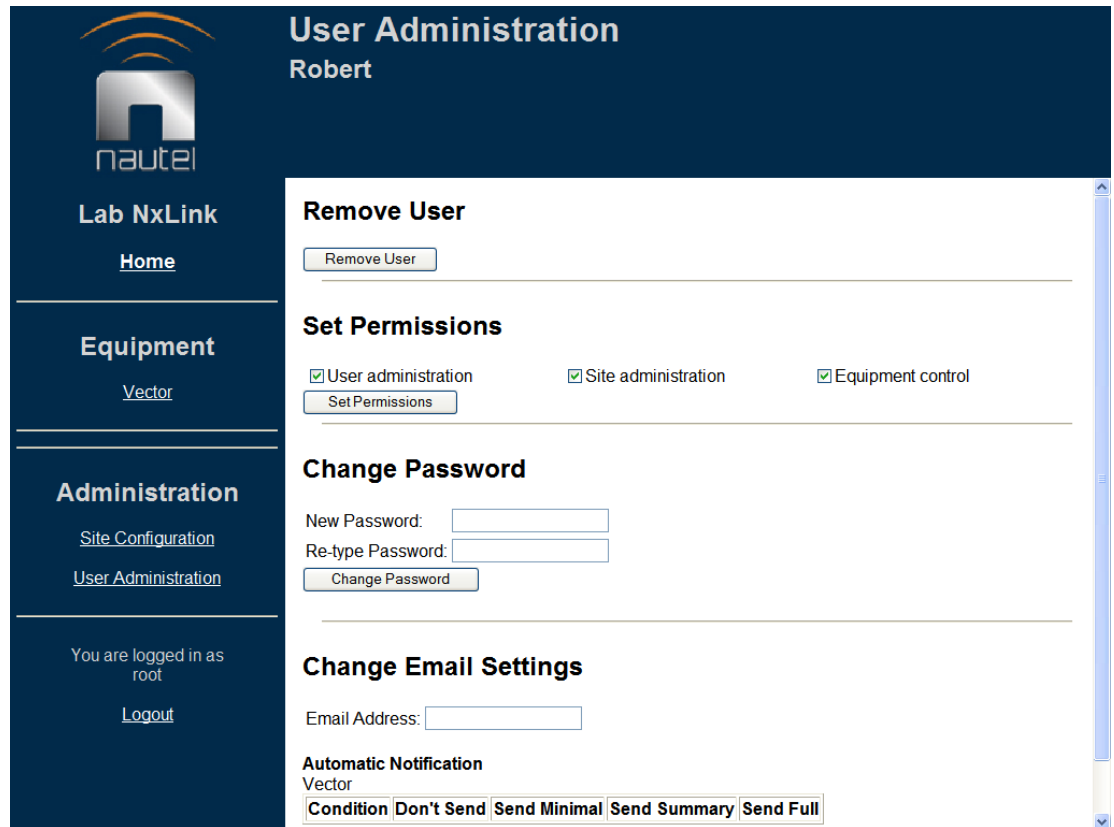
Figure 2-18: User Administration Page – Registered User Settings (Full)

2.8 OPERATION

Installation, setup and configuration of the VR-Link are complete. Refer to section 3 for complete operating instructions for the VR-Link and how to use it with your transmitter system.

VR-Link
TECHNICAL INSTRUCTIONS

Section 3   OPERATING INSTRUCTIONS

3.1 INTRODUCTION

This section contains operating instructions for the VR-Link, including:

- ECMP Controls and Indicators (see 3.2)
- VR-Link Controls and Settings (see 3.3)
- VR-Link Software Upgrade (see 3.4)
- SBC Option Software Upgrade (see 3.5)

3.2 ECMP CONTROLS AND INDICATORS

Nautel recommends that the operator/ maintainer be familiar with the controls and indicators of the extended control/monitor panel before operating or attempting to perform fault diagnostics.

ECMPs for the VR-Link are optional components. The VR-Link has provision to connect up to three external ECMPs and one internal ECMP. See the ECMP Technical Instruction Manual for details on ECMP operation. Information that is exclusive to VR-Link operation is included in this section.

3.2.1 Front Panel

See the ECMP manual. The ECMP front panel, if installed, is the primary local user interface.

Switches and LED indicators can be reconfigured to suit the user's needs via the VR-Links web page. Nautel configures the VR-Link for the most common controls and indications. See section 3.3.2 for more information on reconfiguring the ECMP.

3.2.1.1 ECMP Control Switches

There are four control switches available on the front of each ECMP.

RF ON – This switch gives the user the capability of turning the Vector series transmitter on or off from a remote location. As with all control switches, the Vector must be set in remote operation for the control switch to function.

Also, if there is more than one ECMP connected to the VR-Link then all ECMPs must have the **RF ON** switch set to the **ON** position before the transmitter can turn on. This only applies while the transmitter is in remote operation. It prevents someone from turning the transmitter on if someone else has turned it off at another location.

TIMER – The **TIMER** switch allows the user to turn off the output power of the transmitter after a given amount of time. The timer settings are set within the Vectors GUI (see Vector Technical Instruction Manual, sections 3.3, 3.4, 3.5).

For proper operation all ECMPs must be set to **RF ON**. When the **TIMER** switch is set to the **ON** state on any ECMP, the transmitter will count down from the set time and then turn off. In order to turn the transmitter back on, **RF POWER** must be toggled **OFF** (wait a second or two) and then **ON** again. This can be done on any ECMP, VR-Link web page or locally at the transmitter. Be sure to turn the timer back off or the counter will begin again.

SPARE SWITCH – The last switch is not preconfigured and is a spare for user configuration.

3.2.1.2 ECMP Indicators

There are seven LEDs on the front of each ECMP that are used to give indications of alarms and the state of the transmitter. Unlike the control switches the transmitter can be in local or remote for the indicators to function.

RF ON – Indicates that the transmitter's RF power is turned on.

TIMER – Indicates that the timer is enabled. In other words, at some location the **TIMER** has been set to the **ON** position. This will give the user two indications.

- If the RF power is off and the **TIMER** LED is on, then the transmitter has most likely been turned off due to a timed shutdown.

- If the above case is true and the user attempts to turn the transmitter back on by toggling the **RF ON** switch **OFF** and **ON** as indicated earlier, then the transmitter will shut down again due to a timed shutdown unless the **TIMER** switch is set to **OFF**.

LOW AC – Indicates the ac supply has dropped below the Vector's set threshold.

CHANGEOVER – Indicates a changeover has occurred.

SHUTDOWN – Indicates a shutdown has occurred.

ANTENNA FAULT – Indicates an antenna fault has occurred. The antenna fault is preconfigured to alarm when there is a communication failure between the Vector transmitter and the ATU.

TX COMMS – Indicates a communications failure has occurred between the VR-Link and the Vector series transmitter.

If a communications failure occurs, the ECMPs and Netburner will indicate the last known state of the Vector as well as the communications failure. The cause of the communications failure and state of the transmitter should be determined as soon as possible (see 4.2.1).

ATU COMMS – Indicates a communications failure has occurred between the ATU and the Vector.

NOTE

Information on ECMP controls and indicators is subject to change. Refer to the ECMP Technical Instruction Manual for the most current information.

3.3 VR-Link CONTROLS AND SETTINGS

This section outlines the pages and controls of the web page and how to setup the VR-Link when used with ECMPs. This will focus on the preconfigured settings and indicate some of the other available options.

3.3.1 VR-Link Vector Configuration

Open and logon to the VR-Link web page by typing its IP address in the web browser and selecting login.

Default Login:

 USERNAME: root
 PASSWORD: nautel

Select Site Configuration in the left menu. In the main screen enter a name for the Vector.

Click the link to the equipment from the list on the left side of the page to view its information. If you are not logged in, or do not have sufficient account privileges, then it is only possible to view information.

Figure 3-1 shows the first page of status as a logged in user with privileges to control the equipment. The available controls are dependant on the transmitter being connected and the options that are installed. The page to be viewed is chosen by selecting the appropriate tab at the top of the page. Any equipment information that may be modified (i.e., controlled) is shown with a drop box, buttons or a data entry box on the right side of the page. If you are not logged in or have insufficient privilege, then the status information is shown but controls are not.

It is possible to customize the information and title of each page (see Figure 2-14).

The information line shows the time that the data shown was collected from the equipment. Whenever a control is attempted, the information line will indicate success or failure (and why it failed). For example, if the equipment is in Local mode, some controls will not be allowed.

When viewing any of the Status pages, the VR-Link will automatically refresh them based on the Status Refresh Interval setting (see 2.6.1), or whenever a change is submitted. Pages are also refreshed when a control is selected (e.g., On, Off, or when the browser refresh is selected.

The automatic refresh on status pages means that a user will only be logged off by selecting the Logout link on the left side of the page (or if a user at another site logs in using the same username/password). On any other page, lack of user activity of 30 minutes will cause an automatic logout.
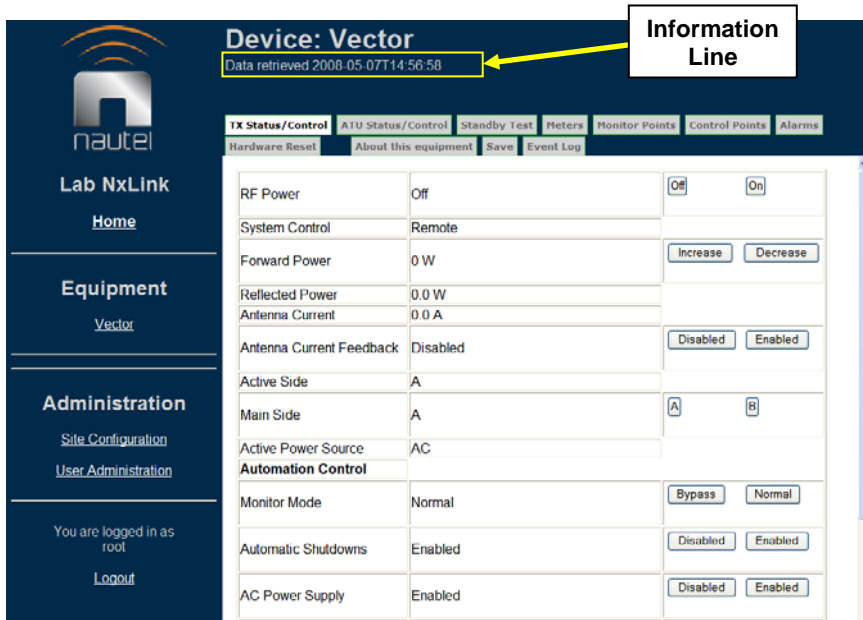
Figure 3-1: Device Status Page

Selecting the "Event Log" tab displays the equipment events log (see Figure 3-2). Each log in the list shows the timestamp and type. Clicking on a log changes all of the data on the status pages to show logged data instead of live data.

When viewing log data, another tab will appear, labelled 'Live Status'. Clicking this tab will change the data in the status pages to live data.

The information line above the status page tabs will indicate that logged data is being shown along with log timestamp and type.

<u>NOTE</u>
Controls cannot be used when logged data is shown.

Figure 3-2: Event Log Page

Selecting the "Save" tab takes a snapshot of the current state of the event log (see Figure 3-3). The file may be saved as plain text on the disk of the machine being used to browse the device, or alternatively, be sent to an email recipient.

Figure 3-3: Save Page

Selecting "About this equipment" displays information about the device being monitored (see Figure 3-4).

Information includes equipment type, software version(s) and calibration data.

Figure 3-4 About This Equipment
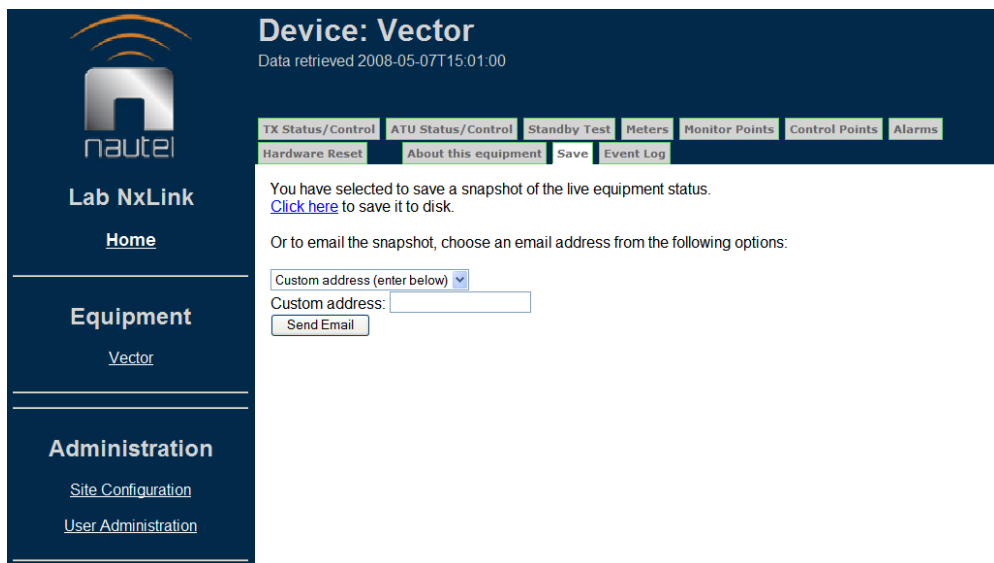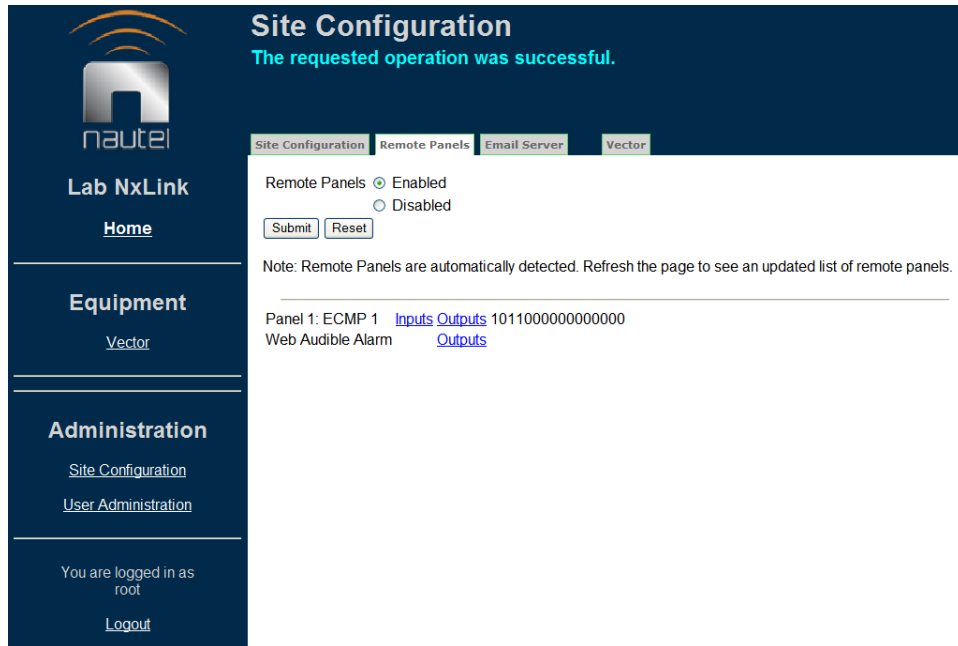
Figure 3-5: Remote Panels Menu

3.3.2. Remote Panel Configuration
This section describes how to configure the VR-Link for use with ECMPs.

DO NOT connect any ECMPs to the VR-Link until requested. If there are ECMPs connected to **ECMPA**, **ECMPB**, or **ECMPC** at the back of the VR-Link, disconnect them.

Select the Remote Panels tab (see Figure 3-5). Enable the remote panels and select **Submit**. The VR-Link's internal ECMP, if installed, will be automatically detected and listed.

Connect one external ECMP to the back of the VR-Link (see section 2.3.3.1) and refresh the Remote Panels page. The external ECMP will be automatically detected and listed. Repeat this for each additional external ECMP.

There are two configuration options for each ECMP:

- Inputs are used to configure the ECMP control switches (see 3.3.2.1).

- Outputs are used to configure the ECMP indicators (see 3.3.2.2).

3.3.2.1 Input Configuration
Select **Inputs** from the Remote Panels menu on one of the ECMPs. The Configure Inputs menu (see Figure 3-6) allows the user to configure any one of the 16 inputs.

While the ECMP's functions can be expanded using its parallel connections (see the ECMP Technical Instruction Manual), this manual only describes setting up the preconfigured settings.

Enter a name for the ECMP being configured in the Panel Name field. This will allow the user to better identify which ECMP they are configuring.

By setting the input to the appropriate channel the user will be able to control that function of the Vector transmitter. The available Channels include Control Functions and Control Points.

Refer to the ECMP Technical Instruction Manual to determine which inputs correspond to the front panel switches.
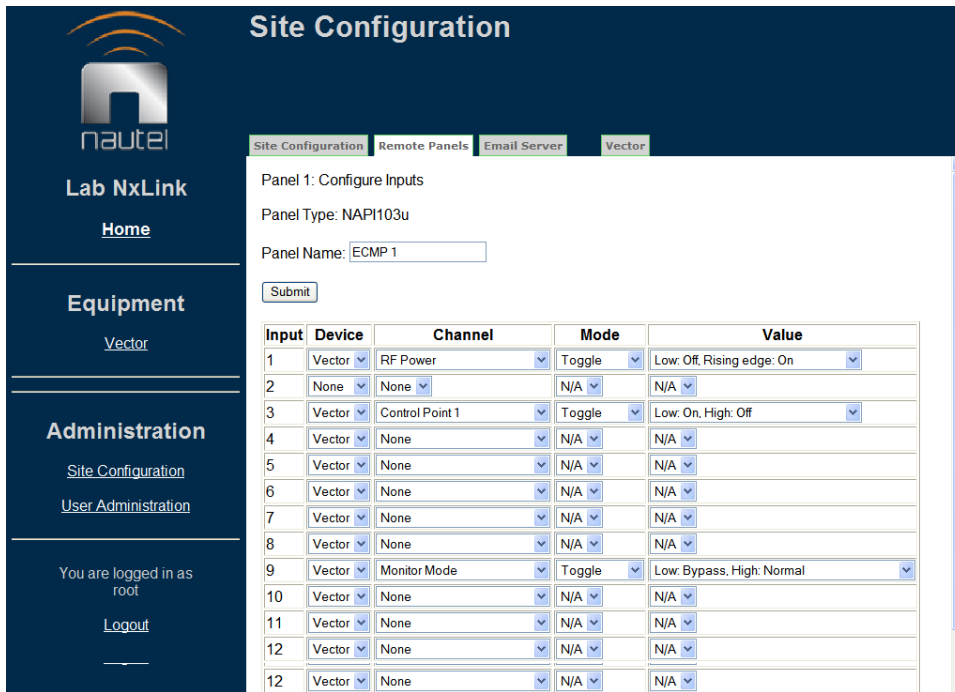
Figure 3-6: Configure Inputs Menu

Table 3-1: Input Configuration Table

Input	Device	Channel	Mode	Value
1	New Device	RF Power	Toggle	Low: Off; Rising edge: On
2	New Device	Timer	Toggle	Falling edge: Off; High: On

Each Channel has a Mode option and a Value option that is dependent on the Channel selection.

The Mode options are Toggle, Momentary or N/A. Toggle refers to either a hard 'on' or hard 'off' state. Momentary refers to a brief 'on' or 'off' state.

The Value options available are dependent on the Mode option selected and determine how the Modes are viewed (see examples 1 and 2 below).

Example 1:
For Input 5, set Channel to Power Supply Test, Mode to Momentary and Value to Run Tests. This indicates that when a momentary switch on input 5 (i.e., Control Point 5 on the ECMP) momentarily grounds the input, the transmitter will conduct a power supply test.

Example 2:
For Input 1, set Channel to RF Power, Mode to Toggle and Value to Low: Off, Rising Edge: On. This indicates that when switch 1 is open, the Vector will turn on when the rising edge of the high input is detected. In this example the 'on' state is only determined by the change from low to high, yet it also must not be in a low state. This setup ensures that all switches must be switched on before the Vector can be turned on, while preventing the Vector from turning back on after being shut off due to a timed shutdown.

Use Table 3-1 to set up the Configure Inputs page.

All Inputs are user configurable.

Device setting will indicate the equipment's name (e.g., Vector).

Press **Submit** when configuration is complete.

3.3.2.2 Output Configuration
Select **Outputs** from the Remote Panels menu on one of the ECMPs. The Configure Outputs menu (see Figure 3-7) allows the user to configure any one of the 16 outputs.

While the ECMPs functions can be expanded using its parallel connections (see ECMP Technical Instruction Manual) this manual only describes setting up the preconfigured settings.

By setting the outputs to the appropriate channel the user will be able to monitor the state of the Vector transmitter. The available Channels include Alarm, Control Points, Monitor Points and State indications.

Refer to the ECMP Technical Instruction Manual for which output correspond to the front panel LEDs.

Each Channel has a Value option and a Sense option that is dependent on the Channel selected.

The Value options include the available state of a channel, for example; On or Off, Enabled or Disabled, Side A or Side B. Alarm channels do not have a Value selection since they are either present or not present.

The Sense options are either Pull-down to assert or Open circuit to assert. These settings determine which state will turn on the indicator.
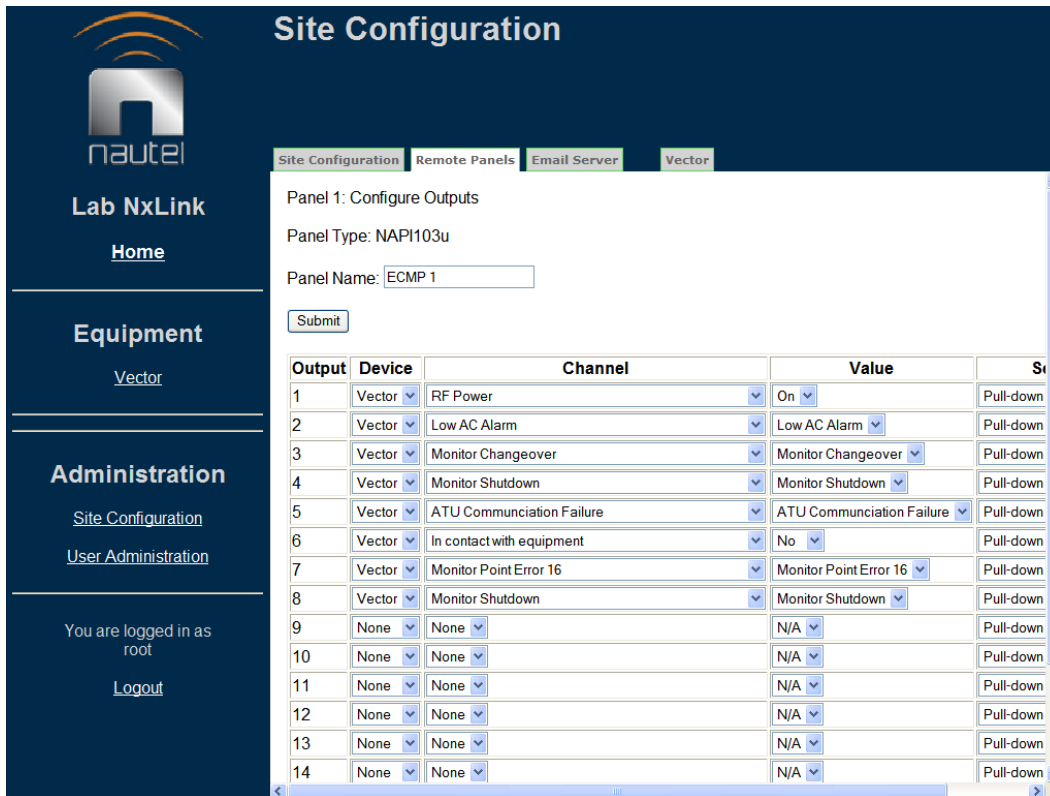
Figure 3-7: Configure Outputs Menu

Table 3-2: Output Configuration Table

Output	Device	Channel	Value	Sense
1	New Device	RF Power	On	Pull-down to assert
2	New Device	RF Power	Off	Pull-down to assert
3	New Device	Monitor Changeover	Monitor Changeover	Pull-down to assert
4	New Device	Timed Shutdown	On	Pull-down to assert
5	None	None	N/A	N/A
6	None	None	N/A	N/A
7	New Device	Low AC Alarm	Low AC Alarm	Pull-down to assert
8	None	None	N/A	N/A
9	New Device	Monitor Changeover	Monitor Changeover	Pull-down to assert
10	None	None	N/A	N/A
11	New Device	Monitor Shutdown	Monitor Shutdown	Pull-down to assert
12	New Device	In contact with equipment	Yes	Pull-down to assert
13	New Device	In contact with equipment	No	Pull-down to assert
14	New Device	ATU Communications Failure	ATU Communications Failure	Open circuit to assert
15	New Device	ATU Communications Failure	ATU Communications Failure	Pull-down to assert
16	None	None	N/A	N/A
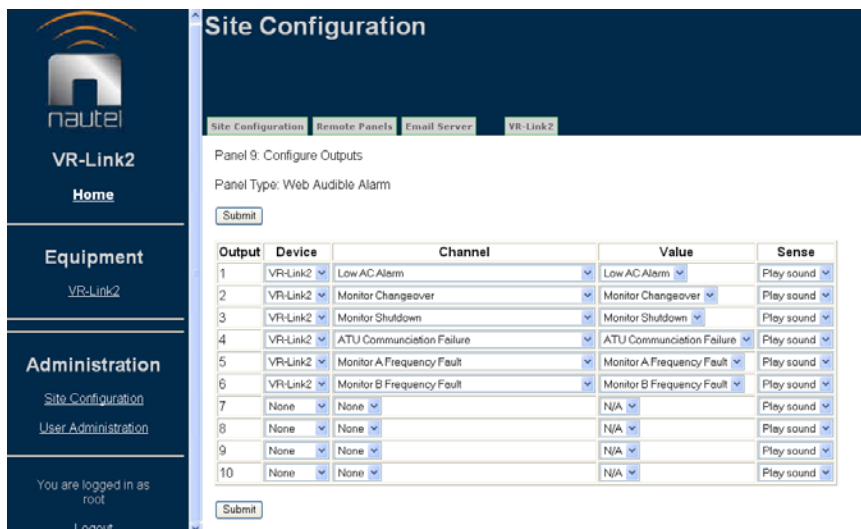
Figure 3-8: Web Audible Alarm Menu

Example:
For Output 1, set Channel to 'RF Power', Value to 'On' and Sense to 'Pull-down to assert'. In this case when RF power is on the Value is true and will pull-down to assert. This turns on the LED associated with this output.

Use Table 3-2 to set up the Configure Outputs page.

Device setting will indicate the equipment's name (e.g., Vector).

3.3.2.3 Audible Alarm
The web audible alarm is a configurable alarm that allows the user to tie up to ten separate channels to a single audible alarm. Unlike the Panels configuration, the Web Audible Alarm is always available.

From the Remote Panels page, select the Outputs link next to Web Audible Alarm. The Web Audible Alarm menu should be displayed (see Figure 3-8).

Configuring the outputs for the Web Audible Alarm is accomplished in the same manner as configuring the outputs for an ECMP (see 3.5.2.2). The user can select up to ten separate channels consisting of Alarm, Control Points, Monitor Points and State Indications.

Each Channel has a Value option that is dependent on the Channel selected.

As with the Panel outputs the Value options include the available state of a channel, for example; On or Off, Enabled or Disabled, Side A or Side B. Alarm channels do not have a Value selection since they are either present or not present.

The Sense is always 'Play sound'. If the channel is found to be in a true state then the web page will open a media player and sound an alarm.

Example:
For Output 1, set Channel to 'In contact with equipment' and the Value to 'No'. In this case, if the equipment is not in contact with the Vector, a media player is displayed at the bottom of all pages. The player loops the alarm until the condition is corrected.

Using Internet Explorer the media player should automatically open. Firefox will require a quick time plug-in to be installed.

Speakers will also be required in order to hear the audio alarm.

Use Table 3-3 to set up the Web Audible Alarm page.

Table 3-3: Web Audible Alarm Configuration Table

Output	Device	Channel	Value	Sense
1	New Device	Low AC Alarm	Low AC Alarm	Play sound
2	New Device	Monitor Changeover	Monitor Changeover	Play sound
3	New Device	Monitor Shutdown	Monitor Shutdown	Play sound
4	New Device	ATU Communications Failure	ATU Communications Failure	Play sound

3.4 VR-Link SOFTWARE UPGRADE

The VR-Link software is upgradeable using the following procedure:

<u>**NOTE**</u>

The logged in user must have <u>both</u> Administration and Site permissions to perform a software upgrade.

Obtain the appropriate software upgrade file from Nautel.

Open an FTP session between the computer with the upgrade file and the VR-Link module. Follow the steps shown in the typical FTP session (see Figure 3-9, use the IP address programmed into the VR-Link).

Upload the file to the Netburner.
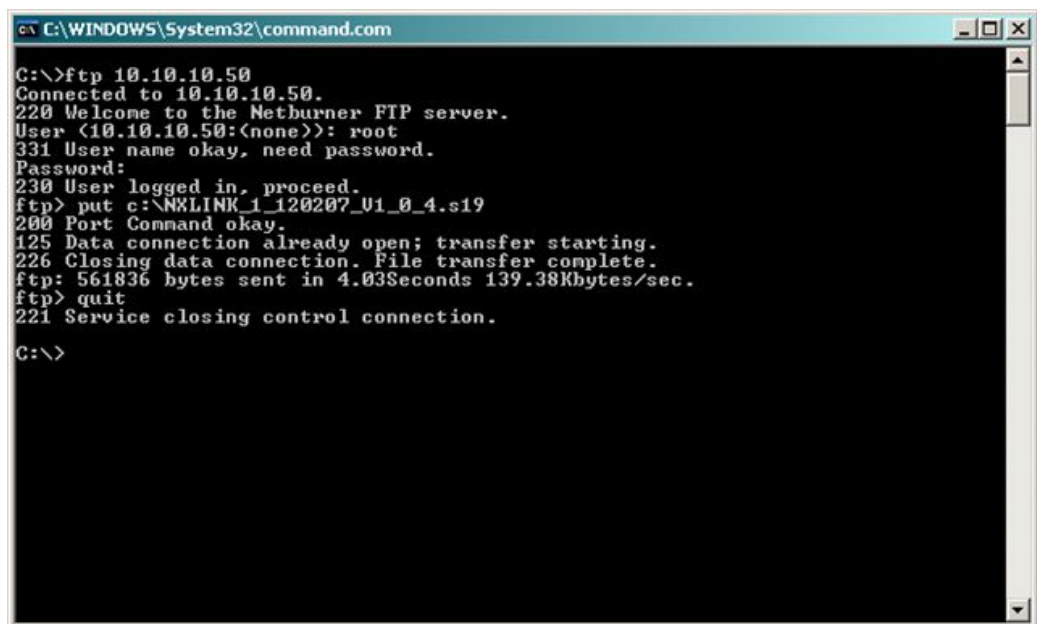
Close the FTP session.

Figure 3-9 illustrates a typical FTP session run from the Windows command line.

Other FTP clients such as Ipswitch WSFTP (see Figure 3-10) may be used instead of the command line type FTP application.

The VR-Link will re-boot upon closing the FTP session and will restart running the upgraded software.

Unless specifically mentioned in Nautel's release notes, a software upgrade will not result in the loss of any previously entered equipment or user information.


```
C:\WINDOWS\System32\command.com                                    _ |□| x|

C:\>ftp 10.10.10.50
Connected to 10.10.10.50.
220 Welcome to the Netburner FTP server.
User (10.10.10.50:(none)): root
331 User name okay, need password.
Password:
230 User logged in, proceed.
ftp> put c:\NXLINK_1_120207_V1_0_4.s19
200 Port Command okay.
125 Data connection already open; transfer starting.
226 Closing data connection. File transfer complete.
ftp: 561836 bytes sent in 4.03Seconds 139.38Kbytes/sec.
ftp> quit
221 Service closing control connection.

C:\>
```

Figure 3-9: Typical FTP Session
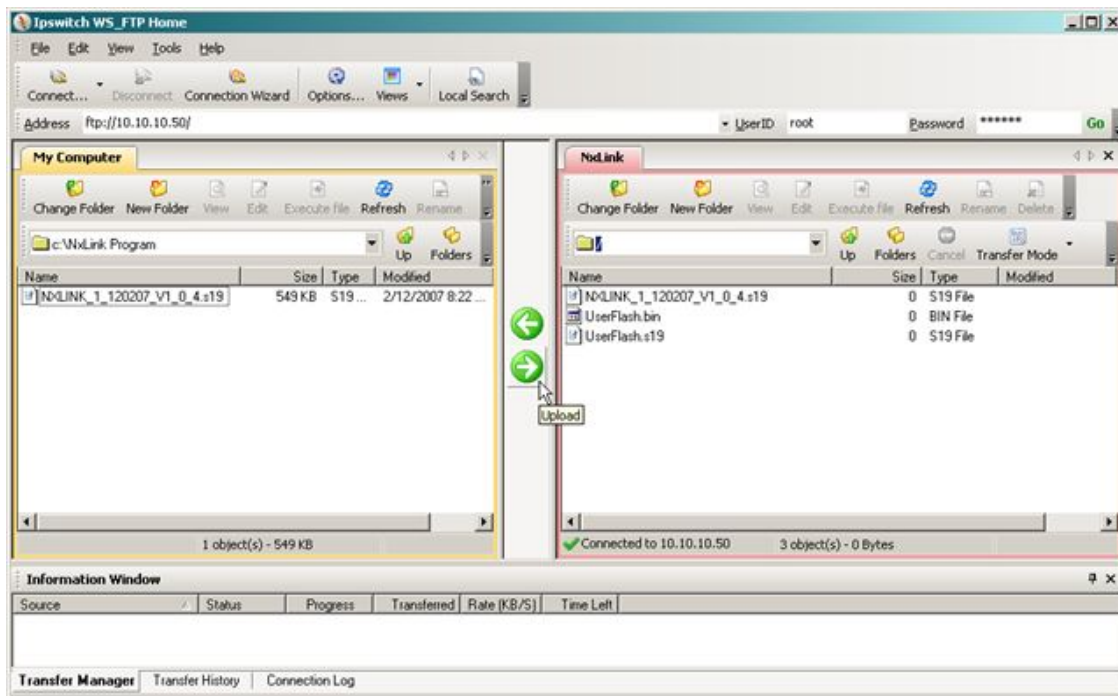
Figure 3-10: Ipswitch WSFTP Client

3.5 SBC OPTION SOFTWARE UPGRADE

If the SBC option is installed, upgrade the software as follows:

NOTE

If a software upgrade is required, a pre-programmed flash card will be provided.

Disable power to the VR-Link and remove the top cover. Remove the flash card installed in the underside of the SBC (A3) (see Figure 3-11). You do not need to remove A3 to do this.

Install the new pre-programmed flash card in the slot with label side facing down. Ensure the flash card is fully inserted. Reinstall the top cover and reapply power to the VR-Link.

NOTE

When handling or working around electronics be sure to wear a grounding strap to help prevent static discharge that could damage the equipment.

UB84 – RAM

**Insert
UB83 – Flash Card
Underside of A3**
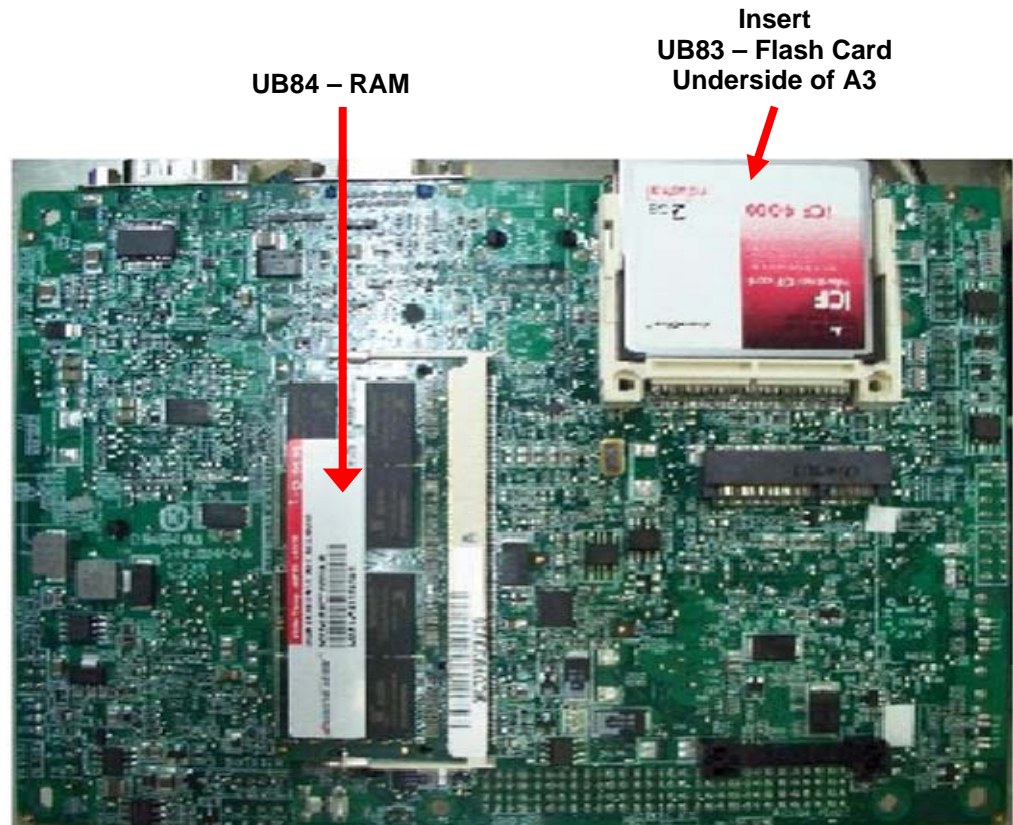
Figure 3-11: SBC Flash Card Location

VR-Link
TECHNICAL INSTRUCTIONS

Section 4   TROUBLESHOOTING

4.1 INTRODUCTION

If the VR-Link or associated equipment becomes non-operational, some simple troubleshooting procedures can be followed to return the unit to operational status.

NOTE

For troubleshooting directly related to either the Vector series transmitter or the ECMP refer to the corresponding Technical Instruction Manual.

4.2 TROUBLESHOOTING

If there is an issue with the VR-Link that requires troubleshooting, it will most likely fall into one of four categories.

- no contact (see 4.2.1)
- no control/monitor response (see 4.2.2)
- power supply voltages (see 4.2.3)
- VR-Link web page will not open (see 4.2.4)

4.2.1 No Contact

It can be easily determined if there is a connection problem between the VR-Link and the Vector series transmitter.

Open the VR-Link web page and enter the New Device (or Vector) page found under the Equipment heading in the left menu.

If there is no contact, the top of the page will display 'Not In Contact With the Device' in yellow letters. If there are any ECMPs connected to the VR-Link and they are configured as described in Section 3 of this manual, the TX Comms LED down on the front of the ECMP will be on, indicating a connection failure.

Troubleshoot a connection failure as follows:

(a) Check all cables between the VR-Link and the Vector transmitter for loose connections.

(b) If the VR-Link is connected to the Vector using a modem, check to see if the modems are communicating. The modem display at each site should indicate CD as well as flashing TD and RD. If not, there may be a bad connection between the modems, or the modems initialization strings may be bad. Disconnect and reconnect the phone cable and/or serial cable from the modem to attempt to re-establish the connection.

(c) Ensure the transmitter's power has not been disrupted.

(d) Disconnect power from the VR-Link and check for loose cables inside the unit.

(e) Ensure that the maximum distance between the VR-Link and Vector has not been exceeded. This is dependent on the connection type being used (see 2.3.3.3).

(f) Reboot the VR-Link and/or Vector to attempt to re-establish the connection.

(g) If you cannot establish contact between the VR-Link and Vector immediately after installation, check the following:

- Ensure serial interface PWB (A1) jumpers are set to the correct positions for the type of connection (see 2.3.3.3)

- Ensure the Vector's RCMS settings are correct (see Vector manual). For RS-232, RS422 and leased line, the Vector GUI RCMS must be set for DIRECT connection.

4.2.2 No Control/Monitor Response
If the Vector transmitter is not responding to user commands or incorrect information is being displayed via the VR-Link, there are three possible causes.

(a) There is no connection between the VR-Link and the Vector transmitter (see 4.2.1).

(b) A connection is established but neither the VR-Link web page or ECMPs can control the Vector. If this is the case, the information on the ECMPs and/or VR-Link web page should be accurate. It is most likely that the Vector has been left in **LOCAL** command.

If all controls seem to work except the **RF ON** command, it is likely that the RF has been switched **OFF** at a remote location. This will only apply if the ECMPs are connected and configured as described in section 3 of this manual.

(c) A connection is established and the VR-Link web page is functioning but the ECMP is not. Check the following:

- Ensure the correct supply voltage (9 -15 V dc) is applied to the ECMP.

- Ensure the proper connections are made between the VR-Link and any attached ECMPs (see 2.3.3.1).

- Verify that the ECMP is configured correctly in the VR-Link web page.

- Verify that the ECMP is programmed with the correct firmware. The ECMP should have a programming sticker on it.

If all the above are OK, there may be board level fault. See the ECMP Technical Instruction Manual for more troubleshooting information.

4.2.3 Power Supply Voltages
If there is a suspected supply problem for any component of the VR-Link, check the followings:

(a) Look through the back of the VR-Link. The Netburner module (U3) LEDs should be turned on. If not, verify that its power plug (W3P1) is connected.

(b) Check that ac power (U2) and or dc power (J1) is connected to the VR-Link and the correct voltage is being applied. The VR-Link is rated for 100 – 240 V ac nominal ± 10% and dc voltages of 24 V dc (NAX245/01) or 48 V dc (NAX245/02).

(c) Remove ac and dc power and check the fuse located in power entry module U2. If the fuse is blown replace the fuse. Make sure the new fuse is the same rating (2 A, 250 V). Also, measure the resistance on ac/dc power supply's U1's ac input to ground and dc output to ground to check for possible shorts. Visually inspect for loose wires or burnt/ damaged components before reapplying power to the VR-Link.

(d) Remove the top cover from the VR-Link and check for loose or disconnected wires. With ac power applied, measure the +5 V and +12 V dc at A1TP2 and A1TP3 respectively. If there is no voltage at A1TP3, measure the dc voltage outputs of U1 at A1TB1-1 and A1TB1-5, then measure the ac input to U1. If there is ac input but no dc output, replace U1.

(e) If a dc supply is being used disconnect the ac supply and reconnect the dc supply. With dc power applied, measure the +5 V and +12 V dc at A1TP2 and A1TP3 respectively. If there is no voltage at A1TP3, measure the dc voltage at A1TB1-3 and then measure the dc input to J1. If a dc voltage is present at A1TB1-3, check fuse A1F1, replace fuse with same rating only (4 A, 250 V). If no dc input is present, check the wiring to the dc supply.

(f) If a voltage is present at A1TP3 but not at A1TP2 or if a voltage is present at A1TB1-3 and A1F1 is ok, suspect a board level fault.

(g) If the SBC and dialup options are installed, verify that power indicators are on for each of the units (SBC A3, modem U4 and Ethernet switch U5). If the power indicators are not on, check the wiring and supply voltages from serial interface PWB A1 [between terminals 2 (+12 V) and 3 (ground) of terminal blocks A1TB2 (for A3), A1TB5 (for U5) and A1TB7 (for U4).

4.2.4 VR-Link Web Page Will Not Open
If you are unable to open the VR-Link web page, check the following:

(a) Verify power is being applied to the VR-Link (see 4.2.3).

(b) Verify the VR-Link is connected to the host PC (see 2.3.3.2).

(c) Verify the correct IP address is being used and that the Host PC is setup correctly (see 2.4)

(d) Remove the top cover from the VR-Link and verify all Cat5e Ethernet cables are connected and seated correctly

(e) If the web page freezes try refreshing the web page or re-booting the VR-Link (disconnect and reconnect the VR-Link's ac and dc power supply).

(f) If a default Netburner page is loaded in place of the Nautel VR-Link page, or there is no Audible Alarm configuration option, the VR-Link needs re-programming.

VR-Link
TECHNICAL INSTRUCTIONS

Section 5   THEORY OF OPERATION

5.1 INTRODUCTION

This section is intended to explain unique or non-obvious circuits and familiarize operators and maintainers with various components contained in the VR-Link. See Figures 8-1a, 8-1b, 8-1c, 8-2, 8-3 and 8-4 for electrical schematics and assembly detail drawings.

NOTE

For theory of operation pertaining to the Vector transmitter or ECMP, see the associated Technical Instruction Manual.

5.2 VR-LINK

The VR-Link is essentially an interface that allows for communications between multiple ECMPs and a Vector series transmitter while also providing remote control and monitoring through a web page interface. The variety of connection methods between the Vector and VR-Link and between the VR-Link and host PC combined with the possibility of connecting multiple ECMPs at various locations allows for greater capabilities, expansion and flexibility of the overall system.

In the standard unit the VR-Link consists of ac-dc power supply U1, dc input connector J1, serial interface PWB A1 and Netburner module U3. Optional components include modem U4, single-board computer (SBC) A3, Ethernet switch U5 and internal ECMP A2 (see ECMP Technical Instruction Manual).

5.3 AC-DC POWER SUPPLY

The ac-dc power supply (U1) receives an ac input of between 100 - 240 V ac ± 10% and provides outputs of +5 V dc and +12 V dc to the serial interface PWB (A1).

5.4 NETBURNER MODULE

The Netburner module (U3) provides an embedded web page that allows control and monitor capabilities of the Vector transmitter. The web page also allows for configuring of ECMPs for use with the VR-Link. The Netburner module has three ports:

Port 1 is an RS-232 compatible port used for communicating with the Vector transmitter, either through the serial interface PWB (A1) or the optional modem (U4).

Port 0 is an RS-232 compatible port that is used for device configuration (network parameters) and to communicate to any attached ECMPs through the serial interface PWB.

The Ethernet (RJ45) port connects the Netburner module to a host PC (via the rear of the VR-Link) through a network or direct connection using a crossover cable (see 2.3.3.2). This port has two indicators. The **Speed** indicator is on when connected to a 100 Mb LAN. The **Link** indicator flashes with LAN activity.

The Netburner software can be easily upgraded over the LAN using an FTP client, or with a direct serial connection to the device, using a terminal program (see 3.6).

5.5 MODEM (OPTIONAL)

The optional modem (U4) is connected to Port 1 of the Netburner module and communicates with the Vector's modem. The modems communicate over a leased line connection. The modems must be properly initialized for connection to occur (performed during factory testing).

If the modem is being used for the dialup option to allow connection between the VR-Link and host PC, the modem is connected to the SBC (A3) COM3. The modem is not initialized in this configuration.

5.6 SERIAL INTERFACE PWB

The serial interface PWB (A1) has three main functions: power distribution, transmitter communication and ECMP communication.

The power distribution circuit is used to supply +12 V dc to the Netburner module (U3), optional modem (U4), optional SBC (A3), optional Ethernet Switch (U5) and optional internal ECMP (A2). All components on the serial interface PWB require +5 V dc.

The serial interface PWB has three dc inputs at A1TB1. A +5V and +12V dc input are supplied from the ac-dc supply (U1). In this case the +5V is only used for proper regulation of the ac-dc supply. A +24V or +48V dc input is used when a dc supply or batter backup is connected to the VR-Link. In this case the dc supply is regulated down to +12V dc by A1U1. There are two versions of the VR-Link; NAX245/01 which accepts +24V dc and NAX245/02 which accepts +48V dc. The difference between these two units is A1U1, where one accepts +24V dc and the other +48V dc. Please ensure the correct supply is used for your unit.

The transmitter communication circuit consists of an RS-422 external input (J2) that is converted to RS-232, as well as an RS-232 external input (J1). Both of these inputs feed into the RS-232 internal output (J6) via a cross-over network and RS-232/RS-422 selection jumpers. The RS-232 internal output is connected to Port 1 of the Netburner module (U3).

The ECMP communication circuit consists of four parallel RS-485 lines to ECMP A through D (J3, J4, J5 and TB4). The RS-485 is converted from RS-232, which is connected to the Netburner module (Port 0) through the RS-232 internal input (J7).

The RS-485 to ECMP is a serial communication which allows multiple ECMPs to communicate with the Netburner module in a parallel configuration.

5.7 SBC (OPTIONAL)

The single board computer or SBC (A3) is primarily installed only when a dialup option is required. The SBC is used as an interface between the web page and phone system so that the web page can be viewed over a dialup connection.

The SBC is connected to the Netburner module U3 from its LAN port (LAN1) through the Ethernet switch U5, or directly if Ethernet switch U5 is not installed. It is also connected to modem U4 through a serial cable connected to COM3.

The SBC also provides a WAN port (LAN2) which is directly connected to the rear of the VR-Link, when U5 is installed, or to the front of the VR-Link if U5 is not installed.

5.8 ETHERNET SWITCH (OPTIONAL)

Ethernet switch U5 is primarily used only when the dialup option is used. It provides the Ethernet ports required to interface the Netburner module U3 to SBC A3 and to the VR-Link's available LAN ports on the front and rear of the VR-Link.

VR-Link
TECHNICAL INSTRUCTIONS

Section 6   PARTS LISTS

6.1 PART INDEX TABLES

Part index table(s) for all electrical and mechanical parts that have been assigned a reference designation are provided. Refer to the preamble in the Parts List section, of the host transmitter's instruction manual, for explanation of list contents. Individual part number indexes are provided for all assemblies that have been assigned a Nautel configuration control number (e.g., NAX245/01). The part number indexes, which are presented in alphanumeric order, are divided into columns to aid in locating specific information.

6.2 MANUFACTURERS' CODE INDEX

Table 6-1 provides a cross-reference from the original equipment manufacturers (OEM) codes to the manufacturer's name.

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

Upon entering the OEM (CAGE) code number, manufacturer pertinent information (address, telephone number, fax number, etc.) shall be displayed. Please contact Nautel if a part cannot be obtained.

Table 6-1: Manufacturers' Code Index

Code	Manufacturer	Code	Manufacturer
00779	Tyco Electronics Corporation	59124	KOA Speer Electronics Inc.
04713	Motorola Incorporated	5Y407	Phoenix Contact Inc.
09482	AMP of Canada	62959	Multi-Tech Systems Inc.
27014	National Semiconductor Corporation	75915	Littelfuse World Headquarters
31433	Kemet Electronics Corporation	CIRCUIT	Circuit-Test
31781	Edac Inc.	KYCON	Kycon Cable & Connector Inc.
33062	Ferronics Inc.	MEAN WEL	Mean Well
37338	Nautel Limited	NETBURN	Netburner Inc.
45496	Digital Systems	ROHM	ROHM Co., Ltd.
57655	Nautel Maine Inc.	SCHURTE	Schurter Inc.

195-5169   Ethernet Switch Kit, VR-Link2

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
U05	Switch, Ethernet, unmanaged, 8-port 10/100, WT	UB85	iCON-32008-00-1-A	

195-5181-01   Cableform - VR-LINK2 (NAX245)

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
P01	MTA, Closed End Housing, 3 pin, 22 AWG	JU46	3-640433-3(ROHS)	TYCO
P01	MTA, Standard Dust Cover, 3 pin	JU47	640551-3(ROHS)	TYCO
P02	MTA, Standard Dust Cover, 8 pin	JU07	640551-8	09482
P02	MTA, Keyed Closed End Housing, 8 pin, 22AWG	JU28	644463-8	00779
W01	Cable, RS232 Null Modem, DB9F-DB9F, 6ft	JN77	03044	0VVY7
W02	Cable, 3ft, 9-pin D-sub, M/FStraight-Through	UA129	PCM-2100-03	
W03	Cable, 6ft 22 AWG, 2.1x5.5mmplug/jack	UB62	310-806	CIRCUIT
W05	Cable, Cat5e, SuperFlat, 2feetGray	UA111	Cat5e-sf-2-gray	

195-5192-01   Modem Kit, VR-Link2

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
U04	Modem, Industrial, V.92 Data/Fax	UW66	MT5634IND	62959

195-5199   Single Board Computer Assy, VR-LINK 2

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
A03	Motherboard, EPIC, 945GSE, ATOM N270 1.6GHz, 12V, WT	UB86	NANO-945GSE-N270W2-R10(STATIC) EPIC	
U01	IC, Memory, 2GB, DDR2 533, SO-DIMM, WT	UB84	M2SJ-2GPF2WH4-B(STATIC) ProMOS Technologies	
U02	Memory, Compact Flash Card, 2GB, WT	UB83	DC1M-02GD31WXD(STATIC) (RoHS)	

195-5205   Cable Set, SBC, VR-LINK2

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
W12	Cable, Cat5e, 2', Booted	UA74	DCA3148	70903
W13P1	Conn, Socket, D-Sub, 9-pin	JS46	747303-4	09482
W13P2	Conn, Plug, D-Sub, 9-pin	JS47	747321-4	09482
W7P1	Conn, Recept, Mini-Fit dualrow, 4-pin	JP59	39-01-2045	MOLEX
W7P1	Contact, Pin, 18-24AWG, Mini-fit (Crimp)	JQ49	39-00-0039	27264

195-5207   Cableform, Ethernet Switch VR-LINK2

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
W06	Cable, Cat5e, 2', Booted	UA74	DCA3148	70903
W09	Cable, Cat5e, 2', Booted	UA74	DCA3148	70903
W11	Cable, Cat5e, 2', Booted	UA74	DCA3148	70903

205-8070   NxLink - Vector

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
U14	Board Assy, Serial to EthernetModule, dual port, w/case	UB63	SB72-EX-100CR	NETBURNE

NAPI135   Serial Interface PWB Assy, VR-Link2 24V to 12V converter

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
C01	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(ROHS)	AVX CORP
C02	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C03	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C04	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(ROHS)	AVX CORP
C05	Cap,SMT,Tantalum,10uF,10%,35V,2917	CTFS03	T494D106K035AS	31433
C06	Cap,SMT,Ceramic,1uF,10%,25V,,X7R,1206	CCFS10	C1206C105K3RAC	31433
C07	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C08	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C09	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	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,1uF,10%,25V,,X7R,1206	CCFS10	C1206C105K3RAC	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, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C19	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C20	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C21	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C22	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C23	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
E01	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E02	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
F01	Fuse, 4A, 250V, Fast, 3AG	FC11	312004	75915
J01	Conn, Socket, D-Sub, 9 pin, PWB Mt	JQ34	K22-E9S-NJ	KYCON
J02	Conn, Plug, D-Sub, 9 pin, PWBMt	JQ33	K22-E9P-NJ	31781
J03	Terminal Block, 3-pos, PWBmount	JP75	1803280(RoHS)	
J04	Terminal Block, 3-pos, PWBmount	JP75	1803280(RoHS)	
J05	Terminal Block, 3-pos, PWBmount	JP75	1803280(RoHS)	
J06	Conn, Socket, D-Sub, 9 pin, PWB Mt	JQ34	K22-E9S-NJ	KYCON
J07	Conn, Plug, D-Sub, 9 pin, PWBMt	JQ33	K22-E9P-NJ	31781
L01	Inductor, Choke, 2.5 Turns, JMtl	LA16	82-152-J	33062
Q01	Transistor,SMT,NPN,Switch/Amp,SOT-23	QBNS01	MMBT4401LT1(STATIC)	04713
R01	Resistor, MF, 681K Ohms, 1%1/4W	RAC11	MF1/4DL6813F	59124
R02	Resistor, MF, 681K Ohms, 1%1/4W	RAC11	MF1/4DL6813F	59124
R03	Not Used	-	NOT USED	37338

NAPI135   Serial Interface PWB Assy, VR-Link2 24V to 12V converter

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R04	Resistor, Wirewound, 3.9 Ohms, 5%, 5W	RT34	PW-5 3.9 5%	75042
R05	Resistor, Wirewound, 3.9 Ohms, 5%, 5W	RT34	PW-5 3.9 5%	75042
R06	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R07	Resistor, SMT, MF, 681 Ohms,1% 1/4W	RAD23	MCR18EZHF6810(ROHS)	ROHM
R08	Resistor, SMT, MF, 681 Ohms,1% 1/4W	RAD23	MCR18EZHF6810(ROHS)	ROHM
R09	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R10	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R11	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R12	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R13	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R14	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R15	Resistor, SMT, MF, 681 Ohms,1% 1/4W	RAD23	MCR18EZHF6810(ROHS)	ROHM
R16	Resistor, SMT, MF, 681 Ohms,1% 1/4W	RAD23	MCR18EZHF6810(ROHS)	ROHM
R17	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R18	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R19	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R20	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R21	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R22	Resistor, SMT, MF, 100 Ohms,1% 1/4W	RAD13	RK73H2BL1000F	59124
TB01	Terminal Block, 6-Pos, Dual Barrier, 20A	JT48	1-1437667-2	TYCO
TB02	Terminal Block,5mm,3-pos,PWBMt,Green	JR50	282836-3	5Y407
TB03	Terminal Block,5mm,3-pos,PWBMt,Green	JR50	282836-3	5Y407
TB04	Terminal Block,5mm,3-pos,PWBMt,Green	JR50	282836-3	5Y407
TB05	Terminal Block,5mm,3-pos,PWBMt,Green	JR50	282836-3	5Y407
TB06	Terminal Block,5mm,3-pos,PWBMt,Green	JR50	282836-3	5Y407
TB07	Terminal Block,5mm,3-pos,PWBMt,Green	JR50	282836-3	5Y407
TP01	Terminal, Test Point, PWB,Yellow	HR10	TP-106-01-04	COMP-C
TP02	Terminal, Test Point, PWB,Yellow	HR10	TP-106-01-04	COMP-C
TP03	Terminal, Test Point, PWB,Yellow	HR10	TP-106-01-04	COMP-C
TP04	Terminal, Test Point, PWB,Yellow	HR10	TP-106-01-04	COMP-C
U01	Board, DC-DC Converter 24V to12V, 4.2A	UT117	ULE-12/4.2-D24P-C(STATIC)(RoHS)	72982
U02	Diode, SMT, Dual Schottky, 30V, 7.5Ax2 DPAK	QDSS02	STPS15L30CB	
U03	IC,SMT,Voltage Regulator,5V,1A, D2PAK	UT93	L7805ABD2T-TR(STATIC)(ROHS)	ST MICRO
U04	IC,SMT,RS-485 Transceiver,Sgl,SOIC-8	UDTS03	DS36C278TM(STATIC)	27014
U05	IC,SMT,RS-485 Transceiver,Sgl,SOIC-8	UDTS03	DS36C278TM(STATIC)	27014

nautel

NAPI135   Serial Interface PWB Assy, VR-Link2 24V to 12V converter

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
U06	IC,SMT,RS-232 Transceiver,3.3V,SO-16	UDTS05	ADM3202ARN(STATIC)	45496
U07	IC,SMT,RS-232 Transceiver,3.3V,SO-16	UDTS05	ADM3202ARN(STATIC)	45496
U08	IC,SMT,RS-485 Transceiver,Sgl,SOIC-8	UDTS03	DS36C278TM(STATIC)	27014
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
XF01	Fuseholder, PWB Mount, Type 3AG	FA31	4245	91833

NAPI135/01 Serial Interface PWB Assy, VR-Link2 48V to 12V converter

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,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C03	Cap,SMT,Ceramic,0.1uF,10%,50V,X7R,0805	CCFS07	C0805C104K5RAC	31433
C04	Cap,SMT,Ceramic,1uF,10%,100V,X7R,1210	CCFS60	12101C105KAT2A(RO HS)	AVX CORP
C05	Cap,SMT,Tantalum,10uF,10%,35V,2917	CTFS03	T494D106K035AS	31433
C06	Cap,SMT,Ceramic,1uF,10%,25V,,X7R,1206	CCFS10	C1206C105K3RAC	31433
C07	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C08	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C09	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	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,1uF,10%,25V,,X7R,1206	CCFS10	C1206C105K3RAC	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, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C19	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C20	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C21	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C22	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
C23	Cap, SMT, Ceramic, 0.1uF, 10%25V X7R, 0603	CCFS52	C0603C104K3RAC	31433
E01	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
E02	Conn, Post Shunt, 2 Pos, .10 Centreline	JQ15	390088-2	09482
F01	Fuse, 4A, 250V, Fast, 3AG	FC11	312004	75915
J01	Conn, Socket, D-Sub, 9 pin, PWB Mt	JQ34	K22-E9S-NJ	KYCON
J02	Conn, Plug, D-Sub, 9 pin, PWBMt	JQ33	K22-E9P-NJ	31781
J03	Terminal Block, 3-pos, PWBmount	JP75	1803280(RoHS)	
J04	Terminal Block, 3-pos, PWBmount	JP75	1803280(RoHS)	
J05	Terminal Block, 3-pos, PWBmount	JP75	1803280(RoHS)	
J06	Conn, Socket, D-Sub, 9 pin, PWB Mt	JQ34	K22-E9S-NJ	KYCON
J07	Conn, Plug, D-Sub, 9 pin, PWBMt	JQ33	K22-E9P-NJ	31781
L01	Inductor, Choke, 2.5 Turns, JMtl	LA16	82-152-J	33062
Q01	Transistor,SMT,NPN,Switch/Amp,SOT-23	QBNS01	MMBT4401LT1(STATIC)	04713
R01	Resistor, MF, 681K Ohms, 1%1/4W	RAC11	MF1/4DL6813F	59124
R02	Resistor, MF, 681K Ohms, 1%1/4W	RAC11	MF1/4DL6813F	59124
R03	Resistor,SMT,MF,0.0ohms,Jumper,0603	RFFS01	RK73Z1JLTD	59124

NAPI135/01   Serial Interface PWB Assy, VR-Link2 48V to 12V converter

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
R04	Resistor, Wirewound, 3.9 Ohms, 5%, 5W	RT34	PW-5 3.9 5%	75042
R05	Resistor, Wirewound, 3.9 Ohms, 5%, 5W	RT34	PW-5 3.9 5%	75042
R06	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R07	Resistor, SMT, MF, 681 Ohms,1% 1/4W	RAD23	MCR18EZHF6810(ROHS)	ROHM
R08	Resistor, SMT, MF, 681 Ohms,1% 1/4W	RAD23	MCR18EZHF6810(ROHS)	ROHM
R09	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R10	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R11	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R12	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R13	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R14	Resistor, SMT, MF, 221 Ohms,1% 1/4W	RAD17	RK73H2BL2210F	59124
R15	Resistor, SMT, MF, 681 Ohms,1% 1/4W	RAD23	MCR18EZHF6810(ROHS)	ROHM
R16	Resistor, SMT, MF, 681 Ohms,1% 1/4W	RAD23	MCR18EZHF6810(ROHS)	ROHM
R17	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R18	Resistor,SMT,MF,100ohms,1%,1/10W,0603	RFFS26	RK73H1JLTD1000F	59124
R19	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R20	Resistor,SMT,MF,10.0Kohms,1%,1/10W,0603	RFFS50	RK73H1JLTD1002F	59124
R21	Resistor,SMT,MF,1000ohms,1%,1/10W,0603	RFFS38	RK73H1JLTD1001F	59124
R22	Resistor, SMT, MF, 100 Ohms,1% 1/4W	RAD13	RK73H2BL1000F	59124
TB01	Terminal Block, 6-Pos, Dual Barrier, 20A	JT48	1-1437667-2	TYCO
TB02	Terminal Block,5mm,3-pos,PWBMt,Green	JR50	282836-3	5Y407
TB03	Terminal Block,5mm,3-pos,PWBMt,Green	JR50	282836-3	5Y407
TB04	Terminal Block,5mm,3-pos,PWBMt,Green	JR50	282836-3	5Y407
TB05	Terminal Block,5mm,3-pos,PWBMt,Green	JR50	282836-3	5Y407
TB06	Terminal Block,5mm,3-pos,PWBMt,Green	JR50	282836-3	5Y407
TB07	Terminal Block,5mm,3-pos,PWBMt,Green	JR50	282836-3	5Y407
TP01	Terminal, Test Point, PWB,Yellow	HR10	TP-106-01-04	COMP-C
TP02	Terminal, Test Point, PWB,Yellow	HR10	TP-106-01-04	COMP-C
TP03	Terminal, Test Point, PWB,Yellow	HR10	TP-106-01-04	COMP-C
TP04	Terminal, Test Point, PWB,Yellow	HR10	TP-106-01-04	COMP-C
U01	Board, DC-DC Converter 48V to12V, 4.2A	UT118	ULE-12/4.2-D48P-C(STATIC)(RoHS)	72982
U02	Diode, SMT, Dual Schottky, 30V, 7.5Ax2 DPAK	QDSS02	STPS15L30CB	
U03	IC,SMT,Voltage Regulator,5V,1A, D2PAK	UT93	L7805ABD2T-TR(STATIC)(ROHS)	ST MICRO
U04	IC,SMT,RS-485 Transceiver,Sgl,SOIC-8	UDTS03	DS36C278TM(STATIC)	27014
U05	IC,SMT,RS-485 Transceiver,Sgl,SOIC-8	UDTS03	DS36C278TM(STATIC)	27014

NAPI135/01 — Serial Interface PWB Assy, VR-Link2 48V to 12V converter

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
U06	IC,SMT,RS-232 Transceiver,3.3V,SO-16	UDTS05	ADM3202ARN(STATIC)	45496
U07	IC,SMT,RS-232 Transceiver,3.3V,SO-16	UDTS05	ADM3202ARN(STATIC)	45496
U08	IC,SMT,RS-485 Transceiver,Sgl,SOIC-8	UDTS03	DS36C278TM(STATIC)	27014
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
XF01	Fuseholder, PWB Mount, Type 3AG	FA31	4245	91833

NAX245/01 — RCMS Interface Unit (VR LINK2)24VDC

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
A01	Serial Interface PWB Assy, VR-Link2 24V to 12V converter	NAPI135	205-5180	37338
A02	Extended Control/Monitor Panel	NAC116/01	See ECMP Manual	37338
A03	**Single Board Computer (SBC) Assembly**	**195-5199**	**195-5199**	**37338**
U01	Pwr Sply, 85-264Vac, 70W, 5V & 12V	UG81	REL-70-2002-WT(RoHS)	
U02	Conn,Power Entry,C14,c/w fuseholder	JT91	6200.2300(ROHS)	SCHURTE
U03	NxLink - Vector	205-8070	205-8070	37338
U04	Modem Kit	195-5192-01	195-5192-01	37338
U05	**Ethernet Switch Kit**	**195-5169**	**195-5169**	**37338**
U06	Conn,Coupler,RJ45,Feed-Thru,Shielded	JA76	ORDER 133421(ROHS)	ERNI
U07	Conn,Coupler,RJ45,Feed-Thru,Shielded	JA76	133421(ROHS)	ERNI
U08	Conn, Coupler, RJ45, Feed-Thru, Sheilded, Panel	JA102	ECF504-SC5E(RoHS)	
XF01	Fuse, 2A 250V, 5x20mm, Anti-surge	FA39	215 002	75915

NAX245/02   RCMS Interface Unit (VR LINK2) 48VDC

REFDES	DESCRIPTION	NAUTEL #	VENDOR #	OEM CODE
A01	Serial Interface PWB Assy, VR-Link2 48V to 12V converter	NAPI135/01	205-5180-01	37338
A02	Extended Control/Monitor Panel	NAC116/01	See ECMP Manual	37338
A03	**Single Board Computer (SBC) Assembly**	**195-5199**	**195-5199**	**37338**
U01	Pwr Sply, 85-264Vac, 70W, 5V & 12V	UG81	REL-70-2002-WT(RoHS)	
U02	Conn,Power Entry,C14,c/w fuseholder	JT91	6200.2300(ROHS)	SCHURTE
U03	NxLink - Vector	205-8070	205-8070	37338
U04	Modem Kit	195-5192-01	195-5192-01	37338
U05	**Ethernet Switch Kit**	**195-5169**	**195-5169**	**37338**
U06	Conn,Coupler,RJ45,Feed-Thru,Shielded	JA76	133421(ROHS)	ERNI
U07	Conn,Coupler,RJ45,Feed-Thru,Shielded	JA76	133421(ROHS)	ERNI
U08	Conn, Coupler, RJ45, Feed-Thru, Sheilded, Panel	JA102	ECF504-SC5E(RoHS)	
XF01	Fuse, 2A 250V, 5x20mm, Anti-surge	FA39	215 002	75915

VR-Link
TECHNICAL INSTRUCTIONS

Section 7   WIRING LISTS

7.1 INTRODUCTION
This section contains wiring information for hard-wired assemblies of the subject unit. Refer to Table 7-1 for an itemized listing of assemblies that have wiring lists.

7.2 WIRING LISTS NOT PROVIDED
Separate wiring lists are not provided for some assemblies. These assemblies include:

Assemblies that have separate maintenance manuals are not provided. Refer to the associated maintenance manual for detailed wiring information of these assemblies.

Assemblies that have their wiring information adequately depicted/ tabulated on their assembly detail drawings are not provided. Refer to the associated assembly detail drawing for detailed wiring information of these assemblies.

7.3 PRINTED WIRING PATTERNS
The need for printed wiring pattern information is beyond the scope of this manual, therefore, detailed printed wiring patterns for printed circuit boards are not included.

7.4 WIRE COLOURS
Every effort is made to manufacture the assemblies using wire that is the colour tabulated in the 'Code' column of the wiring list tables. In some instances, a white wire will be substituted. In this case identification must be determined by locating the assigned identification number.

7.5 WIRING LISTS PROVIDED
The wiring lists tabulated in Table 7-1 are provided. These lists provide, non-printed wiring pattern, point-to-point (source/ destination) inter-connecting information.

Table 7-1: Wiring Lists Provided

TABLE	TITLE
Table 7-2	Wiring List – NAX245/01 & /02 VR-Link RCMS Interface Unit
Table 7-3	Connector Mating Information – VR-Link

Table 7-2: Wiring List – NAX245/01 & /02 VR-Link RCMS Interface Unit

SOURCE	DESTINATION		CODE	SIZE	REMARKS
U2-L	P01-03	1	Grey	22	
U2-N	P01-01	2	Grey	22	
U2-G	SFTY GND	-	Grn/Yel	14	
SFTY GND	U1-GND	-	Grn/Yel	14	
J01-1	A1TB1-3	-	White	18	
J01-4	A1TB1-4	-	Black	18	
P02-06	A1TB1-1	5	White	22	
P02-06	A1TB1-1	6	White	22	
P02-05	A1TB1-2	7	Black	22	
P02-05	A1TB1-2	8	Black	22	
P02-08	A1TB1-5	9	White	22	
P02-08	A1TB1-5	10	White	22	
P02-07	A1TB1-6	11	Black	22	
P02-07	A1TB1-6	12	Black	22	
W1P1	W1P2	-	-		
W2P1	W2P2	-	-		Serial Cable
W3P1	A1TB6-2	-	-		U3 Power Cable
W3P1	A1TB6-3	-	-		"
W4P1	A1TB7-2	-	-		U4 Power Cable
W4P1	A1TB7-3	-	-		"
A1TB3-2	A2TB1-1	-	White	22	ECMP
A1TB3-3	A2TB1-2	-	Black	22	ECMP
A1TB4-1	A2TB1-6	-	White	22	ECMP
A1TB4-2	A2TB1-5	-	White	22	ECMP
A1TB4-3	A2TB1-4	-	Black	22	ECMP
W5P1	W5P2	-	-		CAT5e Cable
W6P1	W6P2	-	-		CAT5e Cable
W7P1	W7P2	-	Black	18	A3 Power Cable
W7P1	W7P3	-	Black	18	"
W7P1	W7P4	-	White	18	"
W7P1	W7P5	-	White	18	"
W8P1	W8P2	-	-		Serial Cable
W9P1	W9P2	-	-		CAT5e Cable
W10P3	W10P1	-	White	18	U5 Power Cable
W10P4	W10P2	-	Black	18	"
W11P1	W11P2	-	-		CAT5e Cable
W12P1	W12P2	-	-		CAT5e Cable
W13P1	W13P2	-	-	28	Ribbon Cable

Table 7-3: Connector Mating Information – VR-Link

CONNECTOR	MATE
P1	U1P1
P2	U1P2
W1P1	U3 Port 0
W1P2	A1J7
W2P1♠	A1J6♠
W2P1♥	U4-DB9♥
W2P2	U3-Port 1
W3P1	U3-DC
W4P1	U4-DC
W5P1	U3-RJ45
W5P2♦	U6-Inside♦
W5P2♣	A3-LAN1♣
W5P2■	U5-LAN7■
W6P1	A3-LAN1
W6P2	U5-LAN5
W7P1	A3-CN1
W7P2	A1TB2-3
W7P3	A1TB2-3
W7P4	A1TB2-2
W7P5	A1TB2-2
W8P1	A3-COM3
W8P2	W13P1
W9P1	U5-LAN6
W9P2	U6-Inside
W10P1	A1TB5-2
W10P2	A1TB5-3
W10P3	U5TB1-1 (PWR1)
W10P4	U5TB1-2 (GND)
W11P1	U5-LAN8
W11P2	U8-Inside
W12P1	A3LAN2
W12P2●	U7-Inside●
W12P2○	U8-Inside○
W13P1	W8P2
W13P2	U4-DB9

NOTES:

♠ If U4 is not installed or U4 and A3 are installed together, connect W2P1 to A1J6
♥ If only U4 option is installed, connect W2P1 to U4-DB9
♦ W5P2 connects to U6-Inside when A3 and U5 are not installed
♣ W5P2 connects to A3-LAN1 when A3 is installed and U5 is not installed
■ W5P2 connects to U5-LAN7 when A3 and U5 are installed
● W12P2 connects to U7-Inside when A3 and U5 are installed
○ W12P2 connects to U8-Inside when A3 is installed and U5 is not installed

VR-Link
TECHNICAL INSTRUCTIONS

Section 8   **ELECTRICAL SCHEMATICS AND ASSEMBLY DETAIL DRAWINGS**

8.1 INTRODUCTION
This section contains electrical schematics / logic diagrams and assembly drawings for the subject equipment. Block diagrams, simplified electrical schematics, logic diagrams and/or mechanical drawings may be included. Assembly detail drawings for assemblies / modules that have separate maintenance manuals are not included. Refer to the appropriate maintenance manual for the assembly detail of these assemblies.

8.2 COMPONENT VALUES
Unless otherwise specified on the diagram, the following applies:

- Resistor values are shown in ohms.
  (K = 1000 and M = 1 000 000).
- Resistor power ratings are not shown when less than 0.5 W.
- Capacitor values are shown in microfarads (uF).
- Unidentified diodes are part number 1N4938.

8.3 GRAPHIC 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.

8.4 LOGIC SYMBOLS
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.

8.5 REFERENCE DESIGNATIONS
Reference 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, this basic identifier must be prefixed with the reference designation assigned to all higher assemblies.

8.6 UNIQUE SYMBOLOGY
Nautel utilizes unique symbology on electrical schematics to describe two-state (logic) inputs/outputs that differ from those inputs/ outputs having only one distinct state or multiple states (analog).

8.6.1 Type of Inputs/Outputs On electrical schematics, names used to describe two-state (logic) inputs/outputs are prefixed by a '#'. Those inputs/outputs representing a one-state or analog signal will have no prefix.

8.6.2 Logic Level/Convention

The '#' prefix identifies an input/output that has two distinct states - 'high' and 'low'. A suffix, '+' or '-', identifies the active (true) state of the input/output. The 'high' (+) is the more positive of the two levels used to represent the logic states. The 'low' (-) is the less positive of the two levels used to represent the logic states. 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 state and 'high' represents the inactive state.

8.7 IDENTIFICATION OF DIAGRAMS AND DRAWINGS

A number that is both the figure number and the page number identifies each illustration in this section. The numbers are assigned sequentially.

Table 8-1: List of Drawings

Figure	Description
Figure 8-1a	Electrical Schematic – NAX245/01 & /02 VR-Link RCMS Interface Unit (with optional SBC, modem and Ethernet switch)
Figure 8-1b	Electrical Schematic – NAX245/01 & /02 VR-Link RCMS Interface Unit (with optional modem only; no SBC and Ethernet switch)
Figure 8-1c	Electrical Schematic – NAX245/01 & /02 VR-Link RCMS Interface Unit (with optional SBC and modem; no Ethernet switch)
Figure 8-2	Electrical Schematic – NAPI135 Serial Interface PWB
Figure 8-3	Assembly Detail – NAX245/01 & /02 VR-Link RCMS Interface Unit
Figure 8-4	Assembly Detail – NAPI135 Serial Interface PWB

Electrical Schematic – NAX245/01 and /02 VR-Link RCMS Interface Unit

(with optional SBC, modem and Ethernet switch)

| Issue 0.8 | Not to Scale | Figure 8-1a | Sheet 1 of 1 |

S1950240 V2

ıs = mm (inches)

nautel

DC INPUT (+) 1 / (-) 4 / J1

U2

U1
AC/DC SUPPLY

SFTY
GND

U3
NETBURNER

U6

U7

U8

FROM MODEM U4
** OR
RS232 INTERNAL
* OUTPUT

W2P2

CD 1
RX 2
TX 3
DTR 4
GND 5
DSR 6
RTS 7
CTS 8
RI 9

PORT 0
PORT 1

A1
SERIAL
INTERFACE PWB

* DENOTES CONNECTION TO U3-PORT 1 WHEN U4 IS NOT INSTALLED.
** DENOTES CONNECTION TO U3-PORT 1 WHEN U4 IS INSTALLED.

RS-232
MODEM
OUTPUT
**

W2P1

DCD 1
RXD 2
TXD 3
DTR 4
GND 5
DSR 6
RTS 7
CTS 8
N/C 9

U4
MODEM
(OPTIONAL)

DB9

TELEPHONE
LINE

PHONE

SUPPLY

W4P1

+12V
GND

DENOTES TB1
DENOTES TB2
DENOTES TB3
DENOTES TB4
DENOTES TB5
DENOTES TB6
DENOTES TB7

S1950239 V2

A2
ECMP D
(OPTIONAL)

MONITOR POINT 1 through MONITOR POINT 16
CONTROL POINT 1 through CONTROL POINT 16
EXT CONTROL POINT 1 through EXT CONTROL POINT 8

RS-485 SERIAL BUS (ECMP A) (EXTERNAL)
RS-485 SERIAL BUS (ECMP B) (EXTERNAL)
RS-485 SERIAL BUS (ECMP C) (EXTERNAL)

RS-232 INTERNAL OUTPUT *

Dimensions = mm (inches)

Electrical Schematic – NAX245/01 and /02 VR-Link RCMS Interface Unit

(with optional modem only; no SBC or Ethernet switch)

| Issue 0.8 | Not to Scale | Figure 8-1b | Sheet 1 of 1 |

nautel

Electrical Schematic – NAX245/01 and /02 VR-Link RCMS Interface Unit
(with optional SBC and modem; no Ethernet switch)

| Issue 0.8 | Not to Scale | Figure 8-1c | Sheet 1 of 1 |

Dimensions = mm (inches)

S1950252 V2

nautel

Electrical Schematic – NAPI135 Serial Interface PWB)

| Issue 0.8 | Not to Scale | Figure 8-2 | Sheet 1 of 1 |

Dimensions = mm (inches)

S2050039 SHEET 1 OF 1 V2

ECMP
(OPTIONAL)

SBC
(OPTIONAL)

ETHERNET SWITCH
(OPTIONAL)

U5

A2

A3

NETBURNER

U3

U1

AC/DC POWER SUPPLY

A1

U4

SERIAL INTERFACE PWB

MODEM
(OPTIONAL)

U3

U4

A1

A2

U5

M1950238 V1

Dimensions = mm (inches)

Assembly Detail – NAX245/01 or /02 VR-Link RCMS Interface Unit			
Issue 0.8	Not to Scale	Figure 8-3	Sheet 1 of 1

nautel

TP1
GND

TB2
1 2 3
+5V +12V GND
SBC SUPPLY

J6
1   RS-232 OUTPUT

J7
RS-232 INPUT   1

TP3
+12V

TB3
1 2 3
+5V +12V GND
ECMP
SUPPLY

TB4
1 2 3
+ - GND
RS-485
ECMP D

R1
R2

TB1

8 7 6 5 4

C19
C17

U7
R19
Q1 C23

R20 R22
R21

U8

HUB
SUPPLY
GND +12V +5V
3   2   1

TB5

12V
SUPPLY
+ 1

- 2

RS-422

RS-232

TP2
+5V

C5

C20 C21 C22

C6
C7

C12 C14
R11
R12
R17

U6

R18

TP4
GND

24V/48V
SUPPLY
+ 3

- 4

U1

U2
A1
K
A2

F1

GND
U3
IN OUT

C1 C2   C3 C4

L1

C13

C15 C16 C18

C9
C10

U4

R7

SERIAL INTERFACE
NAPI135
nautel   SER.

NETLINK
SUPPLY
GND +12V +5V
3   2   1

TB6

5V
SUPPLY
+ 5

- 6

RS-232   1

3   2   1

R3

R4

R5

R6

C8 C11
U5

R8

1 RS-422

RS-485

ECMP A
+ - GND
1 2 3

J3

ECMP B
+ - GND
1 2 3

J4

ECMP C
+ - GND
1 2 3

J5

MODEM
SUPPLY
GND +12V +5V
3   2   1

TB7

J1

J2

M2050040   V1

A   B   C   D   E   F   G   H

Dimensions = mm (inches)

Assembly Detail – NAPI135 Serial Interface PWB			
Issue 0.8	Not to Scale	Figure 8-4	Sheet 1 of 1

nautel

Appendix A

SNMP TABLES

For use with VR-Link RCMS
Interface Unit

Issue 0.2 .... 29 May 2019

A1.0 INTRODUCTION
The VR-Link (SW VR 2.9 and later) supports the use of Simple Network Management Protocol (SNMP) for externally managing and monitoring the VR-Link over a network.

A2.0 SNMP TABLES
Table A1 (Vector transmitters) and Table A2 (Vector Navtex transmitters) highlight the SNMP variables; providing read/write indication, get and set values as well as a short description for each.

A3.0 PERFORMING SNMP GET AND SNMP SET

A3.1 Setup

(a) Download the iReasoning MIB Browser from http://ireasoning.com/.

(b) Download the two SNMP MIB files for your type of transmitter (NDB or Navtex):

Management Information Base (**.mib)** files can be downloaded from Nautel's FTP server at the following address: ftp://www3.nautel.com/VRLink/MIB%20FILES/

- For Vector NDB transmitters, both the **NAUTEL-NXLINK-MIB** and **NAUTEL-VECTOR-NXLINK-MIB** are required.

- For Vector Navtex transmitters, both the **NAUTEL-NXLINK-MIB** and **NAUTEL-VECTOR-NAVTEX-NXLINK-MIB** are required

(c) In the MIB browser, under **File**, select **Load MIBs**.

(d) Search for the downloaded MIB files and click **Open**. Verify that the nxlinkVectorNavtexEntry (e.g., for Navtex transmitters) appears under iso.org.dod.internet.private.enterprises.nautel.products.nxlink.nxlinkVectorNavtexTable.

(e) In the **Address** field, enter the VR-Link's IP address.

(f) Click **Advanced**. Set the fields as follows:

- Port: 161
- Read Community: public
- Write Community: private
- SNMP Version: 1

A3.2 Performing an SNMP Get

(a) Search for the OID to 'Get' and double-click it.

(b) The Value of the OID will show up in the Result Table.

A3.3 Performing an SNMP Set

(a) Set the transmitter into Remote-Only mode.

(b) Search for the OID to 'Set' and click on it to highlight it.

(c) Hold **Ctrl** and press **S**. The SNMP SET window will appear.

(d) Add '.1' after the OID in the OID field.

(e) Enter the appropriate value in the Value field. Click **OK** and verify that the Set was successful.

Table A1: SNMP TABLE -Vector Transmitters

NAME/OID	Read/Write	TYPE	VALUE			DESCRIPTION
nxlinkVectorDeviceId	Read-Only	Value (Integer)	Vector (16384)			Transmitter ID
nxlinkVectorDeviceType	Read-Only	Value (OctetString)	Vector			Transmitter Type
nxlinkVectorDeviceDescription	Read-Only	Value (OctetString)	Vector NDB 250			Transmitter Model
nxlinkVectorFirmwareVersion	Read-Only	Value (OctetString)	rev 2 .9.0.2			Transmitter Firmware Version
nxlinkVectorFirmwareDate	Read-Only	Value (OctetString)	Jun 27 2011			Transmitter Firmware Compiled Date
nxlinkVectorManufacturer	Read-Only	Value (OctetString)	Nautel			Transmitter Manufacturer
nxlinkVectorIncontactwithequipment	Read-Only	Value (Integer)	yes (1)		no (0)	VR-Link In Contact With Transmitter
nxlinkVectorSystemControl	Read-Only	Value (Integer)	remote (1)		local (0)	Transmitter Control
nxlinkVectorRFPower	Read-Write	Value (Integer)	on (1)		off (0)	RF Power
nxlinkVectorActiveSide	Read-Only	Value (Integer)	b (1)		a (0)	Active Side
nxlinkVectorMainSide	Read-Write	Value (Integer)	b (1)		a (0)	Main Side
nxlinkVectorActivePowerSource	Read-Only	Value (Integer)	ac (1)	dc (2)	none (0)	Active Power Source
nxlinkVectorMonitorMode	Read-Write	Value (Integer)	normal (1)		bypass (0)	Monitor Mode
nxlinkVectorAutomaticShutdowns	Read-Write	Value (Integer)	enabled (1)		disabled (0)	Automatic Shutdowns
nxlinkVectorACPowerSupply	Read-Write	Value (Integer)	enabled (1)		disabled (0)	AC Power Supply
nxlinkVectorDCPowerSupply	Read-Write	Value (Integer)	enabled (1)		disabled (0)	DC Power Supply
nxlinkVectorModulatorEnable	Read-Write	Value (Integer)	on (1)		off (0)	Modulation Enabled
nxlinkVectorKeyerEnable	Read-Write	Value (Integer)	on (1)		off (0)	Keyer Enabled
nxlinkVectorATUSystemControl	Read-Only	Value (Integer)	remote (1)		local (0)	ATU System Control
nxlinkVectorATUSetupMode	Read-Only	Value (Integer)	on (1)		off (0)	ATU Setup Mode
nxlinkVectorResistiveMatchStatus	Read-Only	Value (Integer)	normal (1)	high (2)	low (0)	Resistive Match Status
nxlinkVectorInductiveTuningStatus	Read-Only	Value (Integer)	normal (1)	high (2)	low (0)	Inductive Tuning Status
nxlinkVectorAutomaticResistiveMatch	Read-Write	Value (Integer)	enabled (1)		disabled (0)	Automatic Resistive Match
nxlinkVectorAutomaticInductiveTuning	Read-Write	Value (Integer)	enabled (1)		disabled (0)	Automatic Inductive Tuning
nxlinkVectorAntennaCurrentFeedback	Read-Write	Value (Integer)	enabled (1)		disabled (0)	Antenna Current Feedback
nxlinkVectorStandbySideTestResults	Write-Only	Value (Integer)	enabled (1)			Run Standby Side Tests

Table A1: SNMP TABLE -Vector Transmitters (continued)

NAME/OID	Read/Write	TYPE	VALUE		DESCRIPTION
nxlinkVectorPowerSupplyTest	Read-Only	Value (Integer)	notestperformed (0), testresultpending (1), testpassed (2), psovervoltage (3), psovercurrent (4), psovertemperature (5), psnotseatedcorrectly (6), pscommunciationfailure (7), pdmdrivefail (8), modulatorfail (9), pdmlatch (10), paalarm (11), rffail (12), runtests (13)		Power Supply Test
nxlinkVectorModulatorTest	Read-Only	Value (Integer)			Modulator Test
nxlinkVectorRFDriveTest	Read-Only	Value (Integer)			RF Drive Test
nxlinkVectorHardwareReset	Read-Write	Value (Integer)	0		Hardware Reset
nxlinkVectorAnalogInputs	Write-Only	Value (Integer)	increase (1)	decrease (0)	Transmitter Power Level
nxlinkVectorForwardPower	Read-Only	Value (Integer)	0		Forward Power
nxlinkVectorReflectedPower	Read-Only	Value (Integer)	0		Reflected Power
nxlinkVectorAntennaCurrent	Read-Only	Value (Integer)	0		Antenna Current
nxlinkVectorAverageBPlusVoltageA	Read-Only	Value (Integer)	0		Average B+ Voltage (Side A)
nxlinkVectorAverageBPlusVoltageB	Read-Only	Value (Integer)	0		Average B+ Voltage (Side B)
nxlinkVectorAveragePAVoltageA	Read-Only	Value (Integer)	0		Average PA Voltage (Side A)
nxlinkVectorAveragePAVoltageB	Read-Only	Value (Integer)	0		Average PA Voltage (Side B)
nxlinkVectorTotalDCCurrentA	Read-Only	Value (Integer)	0		Total DC Current (Side A)
nxlinkVectorTotalDCCurrentB	Read-Only	Value (Integer)	0		Total DC Current (Side B)
nxlinkVectorACSupplyVoltage	Read-Only	Value (Integer)	0		AC Supply Voltage
nxlinkVectorBatterySupplyVoltage	Read-Only	Value (Integer)	0		Battery Voltage
nxlinkVectorBatterySupplyCurrent	Read-Only	Value (Integer)	0		Battery Current
nxlinkVectorBatteryChargerCurrent	Read-Only	Value (Integer)	0		Charger Current
nxlinkVectorPlus24V	Read-Only	Value (Integer)	0		+24V Voltage
nxlinkVectorPlus15V	Read-Only	Value (Integer)	0		+15V Voltage
nxlinkVectorPlus5V	Read-Only	Value (Integer)	0		+5V Voltage
nxlinkVectorMinus15V	Read-Only	Value (Integer)	0		- 15V Voltage
nxlinkVectorAmbientTemperature	Read-Only	Value (Integer)	0		Ambient Temperature
nxlinkVectorAverageModuleTemperatureA	Read-Only	Value (Integer)	0		Average Module Temperature (Side A)
nxlinkVectorAverageModuleTemperatureB	Read-Only	Value (Integer)	0		Average Module Temperature (Side B)
nxlinkVectorAverageModuleFan1TachA	Read-Only	Value (Integer)	0		Average Fan 1 Spead (Side A)

Table A1: SNMP TABLE -Vector Transmitters (continued)

NAME/OID	Read/Write	TYPE	VALUE	DESCRIPTION
nxlinkVectorAverageModuleFan2TachA	Read-Only	Value (Integer)	0	Average Fan 2 Spead (Side A)
nxlinkVectorAverageModuleFan1TachB	Read-Only	Value (Integer)	0	Average Fan 1 Spead (Side B)
nxlinkVectorAverageModuleFan2TachB	Read-Only	Value (Integer)	0	Average Fan 2 Spead (Side B)
nxlinkVectorATUTemperature	Read-Only	Value (Integer)	0	ATU Temperature
nxlinkVectorPDMA	Read-Only	Value (Integer)	0	PDM Duty Percentage (Side A)
nxlinkVectorPDMB	Read-Only	Value (Integer)	0	PDM Duty Percentage (Side B)
nxlinkVectorVSWR	Read-Only	Value (Integer)	0	VSWR Level
nxlinkVectorModulationPercentA	Read-Only	Value (Integer)	0	Modulation Percentage (Side A)
nxlinkVectorModulationPercentB	Read-Only	Value (Integer)	0	Modulation Percentage (Side B)
nxlinkVectorModule1SideABPlusVoltage	Read-Only	Value (Integer)	0	B+ Voltage Module 1 (Side A)
nxlinkVectorModule1SideAPAVoltage	Read-Only	Value (Integer)	0	PA Voltage Module 1 (Side A)
nxlinkVectorModule1SideADCCurrent	Read-Only	Value (Integer)	0	DC Current Module 1 (Side A)
nxlinkVectorModule1SideAFan1Tach	Read-Only	Value (Integer)	0	Fan 1 Spead Module 1 (Side A)
nxlinkVectorModule1SideAFan2Tach	Read-Only	Value (Integer)	0	Fan 2 Spead Module 1 (Side A)
nxlinkVectorModule1SideATemperature	Read-Only	Value (Integer)	0	Temperature Module 1 (Side A)
nxlinkVectorModule1SideBBPlusVoltage	Read-Only	Value (Integer)	0	B+ Voltage Module 1 (Side B)
nxlinkVectorModule1SideBPAVoltage	Read-Only	Value (Integer)	0	PA Voltage Module 1 (Side B)
nxlinkVectorModule1SideBDCCurrent	Read-Only	Value (Integer)	0	DC Current Module 1 (Side B)
nxlinkVectorModule1SideBFan1Tach	Read-Only	Value (Integer)	0	Fan 1 Spead Module 1 (Side B)
nxlinkVectorModule1SideBFan2Tach	Read-Only	Value (Integer)	0	Fan 2 Spead Module 1 (Side B)
nxlinkVectorModule1SideBTemperature	Read-Only	Value (Integer)	0	Temperature Module 1 (Side B)
nxlinkVectorModule2SideABPlusVoltage	Read-Only	Value (Integer)	0	B+ Voltage Module 2 (Side A)
nxlinkVectorModule2SideAPAVoltage	Read-Only	Value (Integer)	0	PA Voltage Module 2 (Side A)
nxlinkVectorModule2SideADCCurrent	Read-Only	Value (Integer)	0	DC Current Module 2 (Side A)
nxlinkVectorModule2SideAFan1Tach	Read-Only	Value (Integer)	0	Fan 1 Spead Module 2 (Side A)
nxlinkVectorModule2SideAFan2Tach	Read-Only	Value (Integer)	0	Fan 2 Spead Module 2 (Side A)
nxlinkVectorModule2SideATemperature	Read-Only	Value (Integer)	0	Temperature Module 2 (Side A)
nxlinkVectorModule2SideBBPlusVoltage	Read-Only	Value (Integer)	0	B+ Voltage Module 2 (Side B)
nxlinkVectorModule2SideBPAVoltage	Read-Only	Value (Integer)	0	PA Voltage Module 2 (Side B)
nxlinkVectorModule2SideBDCCurrent	Read-Only	Value (Integer)	0	DC Current Module 2 (Side B)
nxlinkVectorModule2SideBFan1Tach	Read-Only	Value (Integer)	0	Fan 1 Spead Module 2 (Side B)
nxlinkVectorModule2SideBFan2Tach	Read-Only	Value (Integer)	0	Fan 2 Spead Module 2 (Side B)
nxlinkVectorModule2SideBTemperature	Read-Only	Value (Integer)	0	Temperature Module 2 (Side B)
nxlinkVectorModule3SideABPlusVoltage	Read-Only	Value (Integer)	0	B+ Voltage Module 3 (Side A)

Table A1: SNMP TABLE -Vector Transmitters (continued)

NAME/OID	Read/Write	TYPE	VALUE		DESCRIPTION
nxlinkVectorModule3SideAPAVoltage	Read-Only	Value (Integer)	0		PA Voltage Module 3 (Side A)
nxlinkVectorModule3SideADCCurrent	Read-Only	Value (Integer)	0		DC Current Module 3 (Side A)
nxlinkVectorModule3SideAFan1Tach	Read-Only	Value (Integer)	0		Fan 1 Spead Module 3 (Side A)
nxlinkVectorModule3SideAFan2Tach	Read-Only	Value (Integer)	0		Fan 2 Spead Module 3 (Side A)
nxlinkVectorModule3SideATemperature	Read-Only	Value (Integer)	0		Temperature Module 3 (Side A)
nxlinkVectorModule3SideBBPlusVoltage	Read-Only	Value (Integer)	0		B+ Voltage Module 3 (Side B)
nxlinkVectorModule3SideBPAVoltage	Read-Only	Value (Integer)	0		PA Voltage Module 3 (Side B)
nxlinkVectorModule3SideBDCCurrent	Read-Only	Value (Integer)	0		DC Current Module 3 (Side B)
nxlinkVectorModule3SideBFan1Tach	Read-Only	Value (Integer)	0		Fan 1 Spead Module 3 (Side B)
nxlinkVectorModule3SideBFan2Tach	Read-Only	Value (Integer)	0		Fan 2 Spead Module 3 (Side B)
nxlinkVectorModule3SideBTemperature	Read-Only	Value (Integer)	0		Temperature Module 3 (Side B)
nxlinkVectorModule4SideABPlusVoltage	Read-Only	Value (Integer)	0		B+ Voltage Module 4 (Side A)
nxlinkVectorModule4SideAPAVoltage	Read-Only	Value (Integer)	0		PA Voltage Module 4 (Side A)
nxlinkVectorModule4SideADCCurrent	Read-Only	Value (Integer)	0		DC Current Module 4 (Side A)
nxlinkVectorModule4SideAFan1Tach	Read-Only	Value (Integer)	0		Fan 1 Spead Module 4 (Side A)
nxlinkVectorModule4SideAFan2Tach	Read-Only	Value (Integer)	0		Fan 2 Spead Module 4 (Side A)
nxlinkVectorModule4SideATemperature	Read-Only	Value (Integer)	0		Temperature Module 4 (Side A)
nxlinkVectorModule4SideBBPlusVoltage	Read-Only	Value (Integer)	0		B+ Voltage Module 4 (Side B)
nxlinkVectorModule4SideBPAVoltage	Read-Only	Value (Integer)	0		PA Voltage Module 4 (Side B)
nxlinkVectorModule4SideBDCCurrent	Read-Only	Value (Integer)	0		DC Current Module 4 (Side B)
nxlinkVectorModule4SideBFan1Tach	Read-Only	Value (Integer)	0		Fan 1 Spead Module 4 (Side B)
nxlinkVectorModule4SideBFan2Tach	Read-Only	Value (Integer)	0		Fan 2 Spead Module 4 (Side B)
nxlinkVectorModule4SideBTemperature	Read-Only	Value (Integer)	0		Temperature Module 4 (Side B)
nxlinkVectorMonitorPointError1	Read-Only	Value (Integer)	true (1)	false (0)	Monitor Point Error 1
nxlinkVectorMonitorPointError2	Read-Only	Value (Integer)	true (1)	false (0)	Monitor Point Error 2
nxlinkVectorMonitorPointError3	Read-Only	Value (Integer)	true (1)	false (0)	Monitor Point Error 3
nxlinkVectorMonitorPointError4	Read-Only	Value (Integer)	true (1)	false (0)	Monitor Point Error 4
nxlinkVectorMonitorPointError5	Read-Only	Value (Integer)	true (1)	false (0)	Monitor Point Error 5
nxlinkVectorMonitorPointError6	Read-Only	Value (Integer)	true (1)	false (0)	Monitor Point Error 6
nxlinkVectorMonitorPointError7	Read-Only	Value (Integer)	true (1)	false (0)	Monitor Point Error 7
nxlinkVectorMonitorPointError8	Read-Only	Value (Integer)	true (1)	false (0)	Monitor Point Error 8

Table A1: SNMP TABLE -Vector Transmitters (continued)

NAME/OID	Read/Write	TYPE	VALUE			DESCRIPTION
nxlinkVectorMonitorPointError9	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Point Error 9
nxlinkVectorMonitorPointError10	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Point Error 10
nxlinkVectorMonitorPointError11	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Point Error 11
nxlinkVectorMonitorPointError12	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Point Error 12
nxlinkVectorMonitorPointError13	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Point Error 13
nxlinkVectorMonitorPointError14	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Point Error 14
nxlinkVectorMonitorPointError15	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Point Error 15
nxlinkVectorMonitorPointError16	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Point Error 16
nxlinkVectorMonitorPointError17	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Point Error 17
nxlinkVectorMonitorPointError18	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Point Error 18
nxlinkVectorMonitorPointError19	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Point Error 19
nxlinkVectorMonitorPointError20	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Point Error 20
nxlinkVectorMonitorPointError21	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Point Error 21
nxlinkVectorMonitorPointError22	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Point Error 22
nxlinkVectorMonitorPointError23	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Point Error 23
nxlinkVectorMonitorPointError24	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Point Error 24
nxlinkVectorMonitorPointError25	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Point Error 25
nxlinkVectorMonitorPointError26	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Point Error 26
nxlinkVectorMonitorPointError27	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Point Error 27
nxlinkVectorMonitorPointError28	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Point Error 28
nxlinkVectorMonitorPointError29	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Point Error 29
nxlinkVectorMonitorPointError30	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Point Error 30
nxlinkVectorMonitorPointError31	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Point Error 31
nxlinkVectorMonitorPointError32	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Point Error 32
nxlinkVectorMonitorPointError33	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Point Error 33
nxlinkVectorMonitorPointError34	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Point Error 34
nxlinkVectorMonitorPointError35	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Point Error 35
nxlinkVectorMonitorPointError36	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Point Error 36
nxlinkVectorMonitorPointError37	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Point Error 37
nxlinkVectorMonitorPointError38	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Point Error 38
nxlinkVectorMonitorPointError39	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Point Error 39
nxlinkVectorMonitorPointError40	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Point Error 40
nxlinkVectorControlPoint1	Read-Write	Value (Integer)	on (1)		off (0)	Control Point 1
nxlinkVectorControlPoint2	Read-Write	Value (Integer)	on (1)		off (0)	Control Point 2
nxlinkVectorControlPoint3	Read-Write	Value (Integer)	on (1)		off (0)	Control Point 3

Table A1: SNMP TABLE -Vector Transmitters (continued)

NAME/OID	Read/Write	TYPE	Value		Description
nxlinkVectorControlPoint4	Read-Write	Value (Integer)	on (1)	off (0)	Control Point 4
nxlinkVectorControlPoint5	Read-Write	Value (Integer)	on (1)	off (0)	Control Point 5
nxlinkVectorControlPoint6	Read-Write	Value (Integer)	on (1)	off (0)	Control Point 6
nxlinkVectorControlPoint7	Read-Write	Value (Integer)	on (1)	off (0)	Control Point 7
nxlinkVectorControlPoint8	Read-Write	Value (Integer)	on (1)	off (0)	Control Point 8
nxlinkVectorControlPoint9	Read-Write	Value (Integer)	on (1)	off (0)	Control Point 9
nxlinkVectorControlPoint10	Read-Write	Value (Integer)	on (1)	off (0)	Control Point 10
nxlinkVectorControlPoint11	Read-Write	Value (Integer)	on (1)	off (0)	Control Point 11
nxlinkVectorControlPoint12	Read-Write	Value (Integer)	on (1)	off (0)	Control Point 12
nxlinkVectorControlPoint13	Read-Write	Value (Integer)	on (1)	off (0)	Control Point 13
nxlinkVectorControlPoint14	Read-Write	Value (Integer)	on (1)	off (0)	Control Point 14
nxlinkVectorControlPoint15	Read-Write	Value (Integer)	on (1)	off (0)	Control Point 15
nxlinkVectorControlPoint16	Read-Write	Value (Integer)	on (1)	off (0)	Control Point 16
nxlinkVectorControlPoint17	Read-Write	Value (Integer)	on (1)	off (0)	Control Point 17
nxlinkVectorControlPoint18	Read-Write	Value (Integer)	on (1)	off (0)	Control Point 18
nxlinkVectorControlPoint19	Read-Write	Value (Integer)	on (1)	off (0)	Control Point 19
nxlinkVectorControlPoint20	Read-Write	Value (Integer)	on (1)	off (0)	Control Point 20
nxlinkVectorControlPoint21	Read-Write	Value (Integer)	on (1)	off (0)	Control Point 21
nxlinkVectorControlPoint22	Read-Write	Value (Integer)	on (1)	off (0)	Control Point 22
nxlinkVectorControlPoint23	Read-Write	Value (Integer)	on (1)	off (0)	Control Point 23
nxlinkVectorControlPoint24	Read-Write	Value (Integer)	on (1)	off (0)	Control Point 24
nxlinkVectorControlPoint25	Read-Write	Value (Integer)	on (1)	off (0)	Control Point 25
nxlinkVectorControlPoint26	Read-Write	Value (Integer)	on (1)	off (0)	Control Point 26
nxlinkVectorControlPoint27	Read-Write	Value (Integer)	on (1)	off (0)	Control Point 27
nxlinkVectorControlPoint28	Read-Write	Value (Integer)	on (1)	off (0)	Control Point 28
nxlinkVectorControlPoint29	Read-Write	Value (Integer)	on (1)	off (0)	Control Point 29
nxlinkVectorControlPoint30	Read-Write	Value (Integer)	on (1)	off (0)	Control Point 30
nxlinkVectorControlPoint31	Read-Write	Value (Integer)	on (1)	off (0)	Control Point 31
nxlinkVectorControlPoint32	Read-Write	Value (Integer)	on (1)	off (0)	Control Point 32
nxlinkVectorControlPoint33	Read-Write	Value (Integer)	on (1)	off (0)	Control Point 33
nxlinkVectorControlPoint34	Read-Write	Value (Integer)	on (1)	off (0)	Control Point 34
nxlinkVectorControlPoint35	Read-Write	Value (Integer)	on (1)	off (0)	Control Point 35
nxlinkVectorControlPoint36	Read-Write	Value (Integer)	on (1)	off (0)	Control Point 36

Table A1: SNMP TABLE -Vector Transmitters (continued)

NAME/OID	Read/Write	TYPE	VALUE			DESCRIPTION
nxlinkVectorControlPoint37	Read-Write	Value (Integer)	on (1)		off (0)	Control Point 37
nxlinkVectorControlPoint38	Read-Write	Value (Integer)	on (1)		off (0)	Control Point 38
nxlinkVectorControlPoint39	Read-Write	Value (Integer)	on (1)		off (0)	Control Point 39
nxlinkVectorControlPoint40	Read-Write	Value (Integer)	on (1)		off (0)	Control Point 40
nxlinkVectorActiveFaults	Read-Only	Value (Null)		null		Active Faults
nxlinkVectorPDMLatchB	Read-Only	Value (Integer)	true (1)		false (0)	PDM Latch (Side B)
nxlinkVectorPDMLatchA	Read-Only	Value (Integer)	true (1)		false (0)	PDM Latch (Side A)
nxlinkVectorRFOverCurrent	Read-Only	Value (Integer)	true (1)		false (0)	RF Over Current
nxlinkVectorReflectedPowerShutback	Read-Only	Value (Integer)	true (1)		false (0)	Reflected Power Shutback
nxlinkVectorLowACAlarm	Read-Only	Value (Integer)	true (1)		false (0)	Low AC Alarm
nxlinkVectorBatteryBackupLow	Read-Only	Value (Integer)	true (1)		false (0)	Battery Backup Low
nxlinkVectorPushtoTalk	Read-Only	Value (Integer)	true (1)		false (0)	Push To Talk Active
nxlinkVectorInterlockOpen	Read-Only	Value (Integer)	true (1)		false (0)	External Interlock Open
nxlinkVectorMSKAlarmB	Read-Only	Value (Integer)	true (1)		false (0)	MSK Alarm (Side B)
nxlinkVectorMSKAlarmA	Read-Only	Value (Integer)	true (1)		false (0)	MSK Alarm (Side A)
nxlinkVectorLVPSFaultB	Read-Only	Value (Integer)	true (1)		false (0)	LVPS Fault (Side B)
nxlinkVectorLVPSFaultA	Read-Only	Value (Integer)	true (1)		false (0)	LVPS Fault (Side A)
nxlinkVectorRFFailB	Read-Only	Value (Integer)	true (1)		false (0)	RF Fail Alarm (Side B)
nxlinkVectorRFFailA	Read-Only	Value (Integer)	true (1)		false (0)	RF Fail Alarm (Side A)
nxlinkVectorChargerAlarm	Read-Only	Value (Integer)	true (1)		false (0)	Charger Alarm
nxlinkVectorMonitorFaultB	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Fault (Side B)
nxlinkVectorMonitorFaultA	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Fault (Side A)
nxlinkVectorMonitorChangeover	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Changeover
nxlinkVectorMonitorShutdown	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Shutdown
nxlinkVectorOvermodulationProtection	Read-Only	Value (Integer)	true (1)		false (0)	Over Modulatoin Protection
nxlinkVectorStandbyCode2Active	Read-Only	Value (Integer)	true (1)		false (0)	Standby Code 2 Active
nxlinkVectorStandbyCode1Active	Read-Only	Value (Integer)	true (1)		false (0)	Standby Code 1 Active
nxlinkVectorMonitorFault	Read-Only	Value (Integer)	true (1)		false (0)	Monitor Fault
nxlinkVectorRemoteRFOff	Read-Only	Value (Integer)	true (1)		false (0)	Remote RF Off
nxlinkVectorModule1SideAOverVoltage	Read-Only	Value (Integer)	true (1)		false (0)	Over Voltage Module 1 (Side A)
nxlinkVectorModule2SideAOverVoltage	Read-Only	Value (Integer)	true (1)		false (0)	Over Voltage Module 2 (Side A)
nxlinkVectorModule3SideAOverVoltage	Read-Only	Value (Integer)	true (1)		false (0)	Over Voltage Module 3 (Side A)
nxlinkVectorModule4SideAOverVoltage	Read-Only	Value (Integer)	true (1)		false (0)	Over Voltage Module 4 (Side A)

Table A1: SNMP TABLE -Vector Transmitters (continued)

NAME/OID	Read/Write	TYPE	VALUE		DESCRIPTION
nxlinkVectorModule1SideBOverVoltage	Read-Only	Value (Integer)	true (1)	false (0)	Over Voltage Module 1 (Side B)
nxlinkVectorModule2SideBOverVoltage	Read-Only	Value (Integer)	true (1)	false (0)	Over Voltage Module 2 (Side B)
nxlinkVectorModule3SideBOverVoltage	Read-Only	Value (Integer)	true (1)	false (0)	Over Voltage Module 3 (Side B)
nxlinkVectorModule4SideBOverVoltage	Read-Only	Value (Integer)	true (1)	false (0)	Over Voltage Module 4 (Side B)
nxlinkVectorModule1SideAOverCurrent	Read-Only	Value (Integer)	true (1)	false (0)	Over Current Module 1 (Side A)
nxlinkVectorModule2SideAOverCurrent	Read-Only	Value (Integer)	true (1)	false (0)	Over Current Module 2 (Side A)
nxlinkVectorModule3SideAOverCurrent	Read-Only	Value (Integer)	true (1)	false (0)	Over Current Module 3 (Side A)
nxlinkVectorModule4SideAOverCurrent	Read-Only	Value (Integer)	true (1)	false (0)	Over Current Module 4 (Side A)
nxlinkVectorModule1SideBOverCurrent	Read-Only	Value (Integer)	true (1)	false (0)	Over Current Module 1 (Side B)
nxlinkVectorModule2SideBOverCurrent	Read-Only	Value (Integer)	true (1)	false (0)	Over Current Module 2 (Side B)
nxlinkVectorModule3SideBOverCurrent	Read-Only	Value (Integer)	true (1)	false (0)	Over Current Module 3 (Side B)
nxlinkVectorModule4SideBOverCurrent	Read-Only	Value (Integer)	true (1)	false (0)	Over Current Module 4 (Side B)
nxlinkVectorModule1SideAOverTemperature	Read-Only	Value (Integer)	true (1)	false (0)	Over Temperature Module 1 (Side A)
nxlinkVectorModule2SideAOverTemperature	Read-Only	Value (Integer)	true (1)	false (0)	Over Temperature Module 2 (Side A)
nxlinkVectorModule3SideAOverTemperature	Read-Only	Value (Integer)	true (1)	false (0)	Over Temperature Module 3 (Side A)
nxlinkVectorModule4SideAOverTemperature	Read-Only	Value (Integer)	true (1)	false (0)	Over Temperature Module 4 (Side A)
nxlinkVectorModule1SideBOverTemperature	Read-Only	Value (Integer)	true (1)	false (0)	Over Temperature Module 1 (Side B)
nxlinkVectorModule2SideBOverTemperature	Read-Only	Value (Integer)	true (1)	false (0)	Over Temperature Module 2 (Side B)
nxlinkVectorModule3SideBOverTemperature	Read-Only	Value (Integer)	true (1)	false (0)	Over Temperature Module 3 (Side B)
nxlinkVectorModule4SideBOverTemperature	Read-Only	Value (Integer)	true (1)	false (0)	Over Temperature Module 4 (Side B)
nxlinkVectorModule1SideAPAAlarm	Read-Only	Value (Integer)	true (1)	false (0)	PA Alarm Module 1 (Side A)
nxlinkVectorModule2SideAPAAlarm	Read-Only	Value (Integer)	true (1)	false (0)	PA Alarm Module 2 (Side A)
nxlinkVectorModule3SideAPAAlarm	Read-Only	Value (Integer)	true (1)	false (0)	PA Alarm Module 3 (Side A)
nxlinkVectorModule4SideAPAAlarm	Read-Only	Value (Integer)	true (1)	false (0)	PA Alarm Module 4 (Side A)
nxlinkVectorModule1SideBPAAlarm	Read-Only	Value (Integer)	true (1)	false (0)	PA Alarm Module 1 (Side B)
nxlinkVectorModule2SideBPAAlarm	Read-Only	Value (Integer)	true (1)	false (0)	PA Alarm Module 2 (Side B)
nxlinkVectorModule3SideBPAAlarm	Read-Only	Value (Integer)	true (1)	false (0)	PA Alarm Module 3 (Side B)
nxlinkVectorModule4SideBPAAlarm	Read-Only	Value (Integer)	true (1)	false (0)	PA Alarm Module 4 (Side B)
nxlinkVectorModule1SideAModulatorFail	Read-Only	Value (Integer)	true (1)	false (0)	Modulator Fail Module 1 (Side A)
nxlinkVectorModule2SideAModulatorFail	Read-Only	Value (Integer)	true (1)	false (0)	Modulator Fail Module 2 (Side A)
nxlinkVectorModule3SideAModulatorFail	Read-Only	Value (Integer)	true (1)	false (0)	Modulator Fail Module 3 (Side A)
nxlinkVectorModule4SideAModulatorFail	Read-Only	Value (Integer)	true (1)	false (0)	Modulator Fail Module 4 (Side A)
nxlinkVectorModule1SideBModulatorFail	Read-Only	Value (Integer)	true (1)	false (0)	Modulator Fail Module 1 (Side B)

Table A1: SNMP TABLE -Vector Transmitters (continued)

NAME/OID	Read/Write	TYPE	VALUE			DESCRIPTION
nxlinkVectorModule2SideBModulatorFail	Read-Only	Value (Integer)	true (1)		false (0)	Modulator Fail Module 2 (Side B)
nxlinkVectorModule3SideBModulatorFail	Read-Only	Value (Integer)	true (1)		false (0)	Modulator Fail Module 3 (Side B)
nxlinkVectorModule4SideBModulatorFail	Read-Only	Value (Integer)	true (1)		false (0)	Modulator Fail Module 4 (Side B)
nxlinkVectorATUResistiveServoEndstopLow	Read-Only	Value (Integer)	true (1)		false (0)	ATU Resistive Tuning Minimum
nxlinkVectorATUResistiveServoEndstopHigh	Read-Only	Value (Integer)	true (1)		false (0)	ATU Resistive Tuning Maximum
nxlinkVectorATUInductiveServoEndstopLow	Read-Only	Value (Integer)	true (1)		false (0)	ATU Inductive Tuning Minimum
nxlinkVectorATUInductiveServoEndstopHigh	Read-Only	Value (Integer)	true (1)		false (0)	ATU Inductive Tuning Maximum
nxlinkVectorModule1SideACommunciationFailure	Read-Only	Value (Integer)	true (1)		false (0)	Communciation Failure Module 1 (Side A)
nxlinkVectorModule2SideACommunciationFailure	Read-Only	Value (Integer)	true (1)		false (0)	Communciation Failure Module 2 (Side A)
nxlinkVectorModule3SideACommunciationFailure	Read-Only	Value (Integer)	true (1)		false (0)	Communciation Failure Module 3 (Side A)
nxlinkVectorModule4SideACommunciationFailure	Read-Only	Value (Integer)	true (1)		false (0)	Communciation Failure Module 4 (Side A)
nxlinkVectorModule1SideBCommunciationFailure	Read-Only	Value (Integer)	true (1)		false (0)	Communciations Failure Module 1 (Side B)
nxlinkVectorModule2SideBCommunciationFailure	Read-Only	Value (Integer)	true (1)		false (0)	Communciation Failure Module 2 (Side B)
nxlinkVectorModule3SideBCommunciationFailure	Read-Only	Value (Integer)	true (1)		false (0)	Communciation Failure Module 3 (Side B)
nxlinkVectorModule4SideBCommunciationFailure	Read-Only	Value (Integer)	true (1)		false (0)	Communciation Failure Module 4 (Side B)
nxlinkVectorSiteIFBoardCommunciationFailure	Read-Only	Value (Integer)	true (1)		false (0)	Communciation Failure Site Interface PWB
nxlinkVectorATUCommunciationFailure	Read-Only	Value (Integer)	true (1)		false (0)	Communciations Failure ATU
nxlinkVectorExciterMonitorGeneratorACommunciationFailure	Read-Only	Value (Integer)	true (1)		false (0)	Communciation Failure Excitor Monitor Generator (Side A)
nxlinkVectorExciterMonitorGeneratorBCommunciationFailure	Read-Only	Value (Integer)	true (1)		false (0)	Communciation Failure Excitor Monitor Generator (Side B)
nxlinkVectorATUFan1Fail	Read-Only	Value (Integer)	true (1)		false (0)	ATU Fan 1 Fail
nxlinkVectorATUFan2Fail	Read-Only	Value (Integer)	true (1)		false (0)	ATU Fan 2 Fail
nxlinkVectorATUFan1On	Read-Only	Value (Integer)	true (1)		false (0)	ATU Fan 1 On
nxlinkVectorATUFan2On	Read-Only	Value (Integer)	true (1)		false (0)	ATU Fan 2 On
nxlinkVectorATUOverheated	Read-Only	Value (Integer)	true (1)		false (0)	ATU Overheated
nxlinkVectorBatteryBoostSupplyAlarm	Read-Only	Value (Integer)	true (1)		false (0)	Battery Boost Supply Alarm
nxlinkVectorPDMInhibitA	Read-Only	Value (Integer)	true (1)		false (0)	PDM Inhibit (Side A)
nxlinkVectorPDMInhibitB	Read-Only	Value (Integer)	true (1)		false (0)	PDM Inhibit (Side B)
nxlinkVectorPDMDriveFailA	Read-Only	Value (Integer)	true (1)		false (0)	PDM Drive Fail (Side A)
nxlinkVectorPDMDriveFailB	Read-Only	Value (Integer)	true (1)		false (0)	PDM Drive Fail (Side B)
nxlinkVectorATURFOff	Read-Only	Value (Integer)	true (1)		false (0)	ATU RF OFF
nxlinkVectorUserRFOff	Read-Only	Value (Integer)	true (1)		false (0)	User RF OFF
nxlinkVectorMonitorAOutputPowerFault	Read-Only	Value (Integer)	true (1)		false (0)	Output Power Fault Monitor A

Table A1: SNMP TABLE -Vector Transmitters (continued)

NAME/OID	Read/Write	TYPE	VALUE			DESCRIPTION
nxlinkVectorMonitorBOutputPowerFault	Read-Only	Value (Integer)	true (1)		false (0)	Output Power Fault Monitor B
nxlinkVectorMonitorAROMIntegrityFault	Read-Only	Value (Integer)	true (1)		false (0)	ROM Integrity Fault Monitor A
nxlinkVectorMonitorBROMIntegrityFault	Read-Only	Value (Integer)	true (1)		false (0)	ROM Integrity Fault Monitor B
nxlinkVectorMonitorAModulationFault	Read-Only	Value (Integer)	true (1)		false (0)	Modulation Fault Monitor A
nxlinkVectorMonitorBModulationFault	Read-Only	Value (Integer)	true (1)		false (0)	Modulation Fault Monitor B
nxlinkVectorMonitorAKeyerFault	Read-Only	Value (Integer)	true (1)		false (0)	Keyer Fault Monitor A
nxlinkVectorMonitorBKeyerFault	Read-Only	Value (Integer)	true (1)		false (0)	Keyer Fault Monitor B
nxlinkVectorEEPROMFailSettings	Read-Only	Value (Integer)	true (1)		false (0)	EEPROM Fail Setting
nxlinkVectorEEPROMFailUserThresholds	Read-Only	Value (Integer)	true (1)		false (0)	EEPROM Fail User Thresholds
nxlinkVectorEEPROMFailFactoryThresholds	Read-Only	Value (Integer)	true (1)		false (0)	EEPROM Fail Factory Thresholds
nxlinkVectorEEPROMFailUserMeterCalibration	Read-Only	Value (Integer)	true (1)		false (0)	EEPROM Fail Meter Calibration
nxlinkVectorEEPROMFailFactoryMeterCalibration	Read-Only	Value (Integer)	true (1)		false (0)	EEPROM Fail Factory Meter Calibration
nxlinkVectorEEPROMFailUserPowerCalibration	Read-Only	Value (Integer)	true (1)		false (0)	EEPROM Fail User Power Calibration
nxlinkVectorEEPROMFailFactoryPowerCalibration	Read-Only	Value (Integer)	true (1)		false (0)	EEPROM Fail Factory Power Calibration
nxlinkVectorEEPROMFailConfiguration	Read-Only	Value (Integer)	true (1)		false (0)	EEPROM Fail Configuration
nxlinkVectorFirmwareUpdateDetected	Read-Only	Value (Integer)	true (1)		false (0)	Firmware Update Detected
nxlinkVectorEEPROMFaimAutoReset	Read-Only	Value (Integer)	true (1)		false (0)	EEPROM Fail Auto Reset
nxlinkVectorEEPROMFailModemInit	Read-Only	Value (Integer)	true (1)		false (0)	EEPROM Fail Modem Initialization
nxlinkVectorCutbackLevel1	Read-Only	Value (Integer)	true (1)		false (0)	Cutback Level 1
nxlinkVectorCutbackLevel2	Read-Only	Value (Integer)	true (1)		false (0)	Cutback Level 2
nxlinkVectorCutbackLevel3	Read-Only	Value (Integer)	true (1)		false (0)	Cutback Level 3
nxlinkVectorCutbackLevel4	Read-Only	Value (Integer)	true (1)		false (0)	Cutback Level 4
nxlinkVectorCutbackLevel5	Read-Only	Value (Integer)	true (1)		false (0)	Cutback Level 5
nxlinkVectorCutbackLevel6	Read-Only	Value (Integer)	true (1)		false (0)	Cutback Level 6
nxlinkVectorCutbackLevel7	Read-Only	Value (Integer)	true (1)		false (0)	Cutback Level 7
nxlinkVectorCutbackLevel8	Read-Only	Value (Integer)	true (1)		false (0)	Cutback Level 8
nxlinkVectorCutbackLevel9	Read-Only	Value (Integer)	true (1)		false (0)	Cutback Level 9
nxlinkVectorCutbackLevel10	Read-Only	Value (Integer)	true (1)		false (0)	Cutback Level 10
nxlinkVectorCutbackLevel11	Read-Only	Value (Integer)	true (1)		false (0)	Cutback Level 11
nxlinkVectorCutbackLevel12	Read-Only	Value (Integer)	true (1)		false (0)	Cutback Level 12
nxlinkVectorCutbackLevel13	Read-Only	Value (Integer)	true (1)		false (0)	Cutback Level 13

Table A1: SNMP TABLE -Vector Transmitters (continued)

NAME/OID	Read/Write	TYPE	VALUE		DESCRIPTION
nxlinkVectorCutbackLevel14	Read-Only	Value (Integer)	true (1)	false (0)	Cutback Level 14
nxlinkVectorCutbackLevel15	Read-Only	Value (Integer)	true (1)	false (0)	Cutback Level 15
nxlinkVectorCutbackLevel16	Read-Only	Value (Integer)	true (1)	false (0)	Cutback Level 16
nxlinkVectorCutbackLevel17	Read-Only	Value (Integer)	true (1)	false (0)	Cutback Level 17
nxlinkVectorCutbackLevel18	Read-Only	Value (Integer)	true (1)	false (0)	Cutback Level 18
nxlinkVectorEEPROMFailPowerPresets	Read-Only	Value (Integer)	true (1)	false (0)	EEPROM Fail Power Presets
nxlinkVectorMonitorAFrequencyFault	Read-Only	Value (Integer)	true (1)	false (0)	Frequency Fault Monitor A
nxlinkVectorMonitorBFrequencyFault	Read-Only	Value (Integer)	true (1)	false (0)	Frequency Fault Monitor B
nxlinkVectorTimedShutdown	Read-Write	Value (Integer)	on (1)	off (0)	Time Shutdown Active
nxlinkVectorMeasuredFrequencyA	Read-Only	Value (Integer)	0		Frequency (Side A)
nxlinkVectorMeasuredFrequencyB	Read-Only	Value (Integer)	0		Frequency (Side B)

Table A2: SNMP TABLE -Vector Navtex Transmitters

NAME/OID	Read/Write	TYPE	VALUE			DESCRIPTION
nxlinkVectorNavtexDeviceId	Read-Only	Value (Integer)	vectornavtex (16385)			Transmitter ID
nxlinkVectorNavtexDeviceType	Read-Only	Value (Octet String)	Vector Navtex			Transmitter Type
nxlinkVectorNavtexDeviceDescription	Read-Only	Value (Octet String)	Vector TT			Transmitter Description
nxlinkVectorNavtexFirmwareVersion	Read-Only	Value (Octet String)	rev x. y. z. a			Transmitter Firmware Version
nxlinkVectorNavtexFirmwareDate	Read-Only	Value (Octet String)	Month Day Year			Transmitter Firmware Compiled Date
nxlinkVectorNavtexManufacturer	Read-Only	Value (Octet String)	Nautel			Transmitter Manufacturer
nxlinkVectorNavtexIncontactwithequipment	Read-Only	Value (Integer)	no (0)	yes (1)		VR-Link In Contact with Transmitter
nxlinkVectorNavtexSystemControl	Read-Only	Value (Integer)	local (0)	remote (1)		System Control
nxlinkVectorNavtexRFPower	Read-Write	Value (Integer)	off (0)	on (1)		RF Power
nxlinkVectorNavtexMonitorMode	Read-Write	Value (Integer)	bypass (0)	normal (1)		Monitor Mode
nxlinkVectorNavtexAutomaticShutdowns	Read-Write	Value (Integer)	disabled (0)	enabled (1)		Automatic Shutdowns
nxlinkVectorNavtexATUSystemControl	Read-Only	Value (Integer)	local (0)	remote (1)		ATU System Control
nxlinkVectorNavtexATUSetupMode	Read-Only	Value (Integer)	off (0)	on (1)		ATU Setup Mode
nxlinkVectorNavtexResistiveMatchStatus	Read-Only	Value (Integer)	low (0	normal (1)	high (2)	Resistive Match Status
nxlinkVectorNavtexInductiveTuningStatus	Read-Only	Value (Integer)	low (0)	normal (1)	high (2)	Inductive Tuning Status
nxlinkVectorNavtexAutomaticResistiveMatch	Read-Write	Value (Integer)	disabled (0)	enabled (1)		Automatic Resistive Match
nxlinkVectorNavtexAutomaticInductiveTuning	Read-Write	Value (Integer)	disabled (0)	enabled (1)		Automatic Inductive Tuning
nxlinkVectorNavtexAntennaCurrentFeedback	Read-Write	Value (Integer)	disabled (0)	enabled (1)		Antenna Current Feedback
nxlinkVectorNavtexHardwareReset	Read-Write	Value (Integer)	hardwarereset (1)			Hardware Reset
nxlinkVectorNavtexForwardPower	Read-Only	Value (Integer)	0			Forward Power (W)
nxlinkVectorNavtexReflectedPower	Read-Only	Value (Integer)	0			Reflected Power (0.1 W)
nxlinkVectorNavtexAntennaCurrent	Read-Only	Value (Integer)	0			Antenna Current (0.1 A)
nxlinkVectorNavtexAverageBPlusVoltage	Read-Only	Value (Integer)	0			Average B+ Voltage (0.1 V)
nxlinkVectorNavtexAveragePAVoltage	Read-Only	Value (Integer)	0			Average PA Voltage (0.1 V)
nxlinkVectorNavtexTotalDCCurrent	Read-Only	Value (Integer)	0			Total DC Current (0.01 A)
nxlinkVectorNavtexACSupplyVoltage	Read-Only	Value (Integer)	0			AC Supply Voltage (0.1 V)
nxlinkVectorNavtexPlus24V	Read-Only	Value (Integer)	0			+24V (0.1 V)
nxlinkVectorNavtexPlus15V	Read-Only	Value (Integer)	0			+15V (0.1 V)
nxlinkVectorNavtexPlus5V	Read-Only	Value (Integer)	0			+5V (0.01 V)
nxlinkVectorNavtexMinus15V	Read-Only	Value (Integer)	0			-15V (0.1 V)

Table A2: SNMP TABLE -Vector Navtex Transmitters (continued)

NAME/OID	Read/Write	TYPE	VALUE	DESCRIPTION
nxlinkVectorNavtexAmbientTemperature	Read-Only	Value (Integer)	0	Ambient Temperature (C)
nxlinkVectorNavtexAverageModuleTemperature	Read-Only	Value (Integer)	0	Average Module Temperature (C)
nxlinkVectorNavtexAverageModuleFan1Tach	Read-Only	Value (Integer)	0	Average Module Fan 1 Tach (RPM)
nxlinkVectorNavtexAverageModuleFan2Tach	Read-Only	Value (Integer)	0	Average Module Fan 2 Tach (RPM)
nxlinkVectorNavtexATUTemperature	Read-Only	Value (Integer)	0	ATU Temperature (C)
nxlinkVectorNavtexPDM	Read-Only	Value (Integer)	0	PDM (0.01 %)
nxlinkVectorNavtexVSWR	Read-Only	Value (Integer)	0	VSWR (0.01)
nxlinkVectorNavtexModule1BPlusVoltage	Read-Only	Value (Integer)	0	Module 1 B+ Voltage (0.1 V)
nxlinkVectorNavtexModule1PAVoltage	Read-Only	Value (Integer)	0	Module 1 PA Voltage (0.1 V)
nxlinkVectorNavtexModule1DCCurrent	Read-Only	Value (Integer)	0	Module 1 DC Current (0.01 A)
nxlinkVectorNavtexModule1Fan1Tach	Read-Only	Value (Integer)	0	Module 1 DC Current (0.01 A)
nxlinkVectorNavtexModule1Fan2Tach	Read-Only	Value (Integer)	0	Module 1 Fan 2 Tach (RPM)
nxlinkVectorNavtexModule1Temperature	Read-Only	Value (Integer)	0	Module 1 Temperature (C)
nxlinkVectorNavtexModule2BPlusVoltage	Read-Only	Value (Integer)	0	Module 2 B+ Voltage (0.1 V)
nxlinkVectorNavtexModule2PAVoltage	Read-Only	Value (Integer)	0	Module 2 PA Voltage (0.1 V)
nxlinkVectorNavtexModule2DCCurrent	Read-Only	Value (Integer)	0	Module 2 DC Current (0.01 A)
nxlinkVectorNavtexModule2Fan1Tach	Read-Only	Value (Integer)	0	Module 2 Fan 1 Tach (RPM)
nxlinkVectorNavtexModule2Fan2Tach	Read-Only	Value (Integer)	0	Module 2 Fan 2 Tach (RPM)
nxlinkVectorNavtexModule2Temperature	Read-Only	Value (Integer)	0	Module 2 Temperature (C)
nxlinkVectorNavtexModule3BPlusVoltage	Read-Only	Value (Integer)	0	Module 3 B+ Voltage (0.1 V)
nxlinkVectorNavtexModule3PAVoltage	Read-Only	Value (Integer)	0	Module 3 PA Voltage (0.1 V)
nxlinkVectorNavtexModule3DCCurrent	Read-Only	Value (Integer)	0	Module 3 DC Current (0.01 A)
nxlinkVectorNavtexModule3Fan1Tach	Read-Only	Value (Integer)	0	Module 3 Fan 1 Tach (RPM)
nxlinkVectorNavtexModule3Fan2Tach	Read-Only	Value (Integer)	0	Module 3 Fan 2 Tach (RPM)
nxlinkVectorNavtexModule3Temperature	Read-Only	Value (Integer)	0	Module 3 Temperature (C)
nxlinkVectorNavtexModule4BPlusVoltage	Read-Only	Value (Integer)	0	Module 4 B+ Voltage (0.1 V)
nxlinkVectorNavtexModule4PAVoltage	Read-Only	Value (Integer)	0	Module 4 PA Voltage (0.1 V)
nxlinkVectorNavtexModule4DCCurrent	Read-Only	Value (Integer)	0	Module 4 DC Current (0.01 A)
nxlinkVectorNavtexModule4Fan1Tach	Read-Only	Value (Integer)	0	Module 4 Fan 1 Tach (RPM)
nxlinkVectorNavtexModule4Fan2Tach	Read-Only	Value (Integer)	0	Module 4 Fan 2 Tach (RPM)
nxlinkVectorNavtexModule4Temperature	Read-Only	Value (Integer)	0	Module 4 Temperature (C)

Table A2: SNMP TABLE -Vector Navtex Transmitters (continued)

NAME/OID	Read/Write	TYPE	VALUE		DESCRIPTION
nxlinkVectorNavtexMonitorPointError1	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 1
nxlinkVectorNavtexMonitorPointError2	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 2
nxlinkVectorNavtexMonitorPointError3	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 3
nxlinkVectorNavtexMonitorPointError4	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 4
nxlinkVectorNavtexMonitorPointError5	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 5
nxlinkVectorNavtexMonitorPointError6	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 6
nxlinkVectorNavtexMonitorPointError7	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 7
nxlinkVectorNavtexMonitorPointError8	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 8
nxlinkVectorNavtexMonitorPointError9	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 9
nxlinkVectorNavtexMonitorPointError10	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 10
nxlinkVectorNavtexMonitorPointError11	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 11
nxlinkVectorNavtexMonitorPointError12	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 12
nxlinkVectorNavtexMonitorPointError13	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 13
nxlinkVectorNavtexMonitorPointError14	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 14
nxlinkVectorNavtexMonitorPointError15	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 15
nxlinkVectorNavtexMonitorPointError16	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 16
nxlinkVectorNavtexMonitorPointError17	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 17
nxlinkVectorNavtexMonitorPointError18	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 18
nxlinkVectorNavtexMonitorPointError19	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 19
nxlinkVectorNavtexMonitorPointError20	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 20
nxlinkVectorNavtexMonitorPointError21	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 21
nxlinkVectorNavtexMonitorPointError22	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 22
nxlinkVectorNavtexMonitorPointError23	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 23
nxlinkVectorNavtexMonitorPointError24	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 24
nxlinkVectorNavtexMonitorPointError25	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 25
nxlinkVectorNavtexMonitorPointError26	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 26
nxlinkVectorNavtexMonitorPointError27	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 27
nxlinkVectorNavtexMonitorPointError28	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 28
nxlinkVectorNavtexMonitorPointError29	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 29
nxlinkVectorNavtexMonitorPointError30	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 30
nxlinkVectorNavtexMonitorPointError31	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 31
nxlinkVectorNavtexMonitorPointError32	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 32
nxlinkVectorNavtexMonitorPointError33	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 33
nxlinkVectorNavtexMonitorPointError34	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 34

Table A2: SNMP TABLE -Vector Navtex Transmitters (continued)

NAME/OID	Read/Write	TYPE	VALUE		DESCRIPTION
nxlinkVectorNavtexMonitorPointError35	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 35
nxlinkVectorNavtexMonitorPointError36	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 36
nxlinkVectorNavtexMonitorPointError37	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 37
nxlinkVectorNavtexMonitorPointError38	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 38
nxlinkVectorNavtexMonitorPointError39	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 39
nxlinkVectorNavtexMonitorPointError40	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Point Error 40
nxlinkVectorNavtexControlPoint1	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 1
nxlinkVectorNavtexControlPoint2	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 2
nxlinkVectorNavtexControlPoint3	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 3
nxlinkVectorNavtexControlPoint4	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 4
nxlinkVectorNavtexControlPoint5	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 5
nxlinkVectorNavtexControlPoint6	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 6
nxlinkVectorNavtexControlPoint7	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 7
nxlinkVectorNavtexControlPoint8	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 8
nxlinkVectorNavtexControlPoint9	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 9
nxlinkVectorNavtexControlPoint10	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 10
nxlinkVectorNavtexControlPoint11	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 11
nxlinkVectorNavtexControlPoint12	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 12
nxlinkVectorNavtexControlPoint13	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 13
nxlinkVectorNavtexControlPoint14	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 14
nxlinkVectorNavtexControlPoint15	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 15
nxlinkVectorNavtexControlPoint16	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 16
nxlinkVectorNavtexControlPoint17	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 17
nxlinkVectorNavtexControlPoint18	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 18
nxlinkVectorNavtexControlPoint19	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 19
nxlinkVectorNavtexControlPoint20	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 20
nxlinkVectorNavtexControlPoint21	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 21
nxlinkVectorNavtexControlPoint22	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 22
nxlinkVectorNavtexControlPoint23	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 23
nxlinkVectorNavtexControlPoint24	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 24
nxlinkVectorNavtexControlPoint25	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 25
nxlinkVectorNavtexControlPoint26	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 26
nxlinkVectorNavtexControlPoint27	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 27

Table A2: SNMP TABLE -Vector Navtex Transmitters (continued)

NAME/OID	Read/Write	TYPE	VALUE		DESCRIPTION
nxlinkVectorNavtexControlPoint28	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 28
nxlinkVectorNavtexControlPoint29	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 29
nxlinkVectorNavtexControlPoint30	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 30
nxlinkVectorNavtexControlPoint31	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 31
nxlinkVectorNavtexControlPoint32	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 32
nxlinkVectorNavtexControlPoint33	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 33
nxlinkVectorNavtexControlPoint34	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 34
nxlinkVectorNavtexControlPoint35	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 35
nxlinkVectorNavtexControlPoint36	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 36
nxlinkVectorNavtexControlPoint37	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 37
nxlinkVectorNavtexControlPoint38	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 38
nxlinkVectorNavtexControlPoint39	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 39
nxlinkVectorNavtexControlPoint40	Read-Write	Value (Integer)	off (0)	on (1)	Control Point 40
nxlinkVectorNavtexActiveFaults	Read-Write	Value (Null)	null		Active Faults
nxlinkVectorNavtexPDMLatch	Read-Only	Value (Integer)	false (0)	true (1)	PDM Latch
nxlinkVectorNavtexRFOverCurrent	Read-Only	Value (Integer)	false (0)	true (1)	RF Over Current
nxlinkVectorNavtexReflectedPowerShutback	Read-Only	Value (Integer)	false (0)	true (1)	Reflected Power Shutback
nxlinkVectorNavtexLowACAlarm	Read-Only	Value (Integer)	false (0)	true (1)	Low AC Alarm
nxlinkVectorNavtexBatteryBackupLow	Read-Only	Value (Integer)	false (0)	true (1)	Battery Backup Low
nxlinkVectorNavtexInterlockOpen	Read-Only	Value (Integer)	false (0)	true (1)	Interlock Open
nxlinkVectorNavtexMSKAlarm	Read-Only	Value (Integer)	false (0)	true (1)	MSK Alarm
nxlinkVectorNavtexLVPSFault	Read-Only	Value (Integer)	false (0)	true (1)	LVPS Fault
nxlinkVectorNavtexRFFail	Read-Only	Value (Integer)	false (0)	true (1)	RF Fail
nxlinkVectorNavtexMonitorFaultB	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Fault B
nxlinkVectorNavtexMonitorFaultA	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Fault A
nxlinkVectorNavtexMonitorChangeover	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Changeover
nxlinkVectorNavtexMonitorShutdown	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Shutdown
nxlinkVectorNavtexKeyingActive	Read-Only	Value (Integer)	false (0)	true (1)	Keying Active
nxlinkVectorNavtexMonitorFault	Read-Only	Value (Integer)	false (0)	true (1)	Monitor Fault
nxlinkVectorNavtexRemoteRFOff	Read-Only	Value (Integer)	false (0)	true (1)	Remote RF Off
nxlinkVectorNavtexModule1OverVoltage	Read-Only	Value (Integer)	false (0)	true (1)	Module 1 Over Voltage
nxlinkVectorNavtexModule2OverVoltage	Read-Only	Value (Integer)	false (0)	true (1)	Module 2 Over Voltage
nxlinkVectorNavtexModule3OverVoltage	Read-Only	Value (Integer)	false (0)	true (1)	Module 3 Over Voltage
nxlinkVectorNavtexModule4OverVoltage	Read-Only	Value (Integer)	false (0)	true (1)	Module 4 Over Voltage

Table A2: SNMP TABLE -Vector Navtex Transmitters (continued)

NAME/OID	Read/Write	TYPE	VALUE		DESCRIPTION
nxlinkVectorNavtexModule1OverCurrent	Read-Only	Value (Integer)	false (0)	true (1)	Module 1 Over Current
nxlinkVectorNavtexModule2OverCurrent	Read-Only	Value (Integer)	false (0)	true (1)	Module 2 Over Current
nxlinkVectorNavtexModule3OverCurrent	Read-Only	Value (Integer)	false (0)	true (1)	Module 3 Over Current
nxlinkVectorNavtexModule4OverCurrent	Read-Only	Value (Integer)	false (0)	true (1)	Module 4 Over Current
nxlinkVectorNavtexModule1OverTemperature	Read-Only	Value (Integer)	false (0)	true (1)	Module 1 Over Temperature
nxlinkVectorNavtexModule2OverTemperature	Read-Only	Value (Integer)	false (0)	true (1)	Module 2 Over Temperature
nxlinkVectorNavtexModule3OverTemperature	Read-Only	Value (Integer)	false (0)	true (1)	Module 3 Over Temperature
nxlinkVectorNavtexModule4OverTemperature	Read-Only	Value (Integer)	false (0)	true (1)	Module 4 Over Temperature
nxlinkVectorNavtexModule1PAAlarm	Read-Only	Value (Integer)	false (0)	true (1)	Module 1 PA Alarm
nxlinkVectorNavtexModule2PAAlarm	Read-Only	Value (Integer)	false (0)	true (1)	Module 2 PA Alarm
nxlinkVectorNavtexModule3PAAlarm	Read-Only	Value (Integer)	false (0)	true (1)	Module 3 PA Alarm
nxlinkVectorNavtexModule4PAAlarm	Read-Only	Value (Integer)	false (0)	true (1)	Module 4 PA Alarm
nxlinkVectorNavtexModule1ModulatorFail	Read-Only	Value (Integer)	false (0)	true (1)	Module 1 Modulator Fail
nxlinkVectorNavtexModule2ModulatorFail	Read-Only	Value (Integer)	false (0)	true (1)	Module 2 Modulator Fail
nxlinkVectorNavtexModule3ModulatorFail	Read-Only	Value (Integer)	false (0)	true (1)	Module 3 Modulator Fail
nxlinkVectorNavtexModule4ModulatorFail	Read-Only	Value (Integer)	false (0)	true (1)	Module 4 Modulator Fail
nxlinkVectorNavtexATUResistiveServoEndstopLow	Read-Only	Value (Integer)	false (0)	true (1)	ATU Resistive Servo Endstop Low
nxlinkVectorNavtexATUResistiveServoEndstopHigh	Read-Only	Value (Integer)	false (0)	true (1)	ATU Resistive Servo Endstop High
nxlinkVectorNavtexATUInductiveServoEndstopLow	Read-Only	Value (Integer)	false (0)	true (1)	ATU Inductive Servo Endstop Low
nxlinkVectorNavtexATUInductiveServoEndstopHigh	Read-Only	Value (Integer)	false (0)	true (1)	ATU Inductive Servo Endstop High
nxlinkVectorNavtexModule1CommunciationFailure	Read-Only	Value (Integer)	false (0)	true (1)	Module 1 Communciation Failure
nxlinkVectorNavtexModule2CommunciationFailure	Read-Only	Value (Integer)	false (0)	true (1)	Module 2 Communciation Failure
nxlinkVectorNavtexModule3CommunciationFailure	Read-Only	Value (Integer)	false (0)	true (1)	Module 3 Communciation Failure
nxlinkVectorNavtexModule4CommunciationFailure	Read-Only	Value (Integer)	false (0)	true (1)	Module 4 Communciation Failure
nxlinkVectorNavtexSiteIFBoardCommunciationFailure	Read-Only	Value (Integer)	false (0)	true (1)	Site I/F Board Communciation Failure
nxlinkVectorNavtexATUCommunciationFailure	Read-Only	Value (Integer)	false (0)	true (1)	ATU Communciation Failure
nxlinkVectorNavtexExciterMonitorGeneratorACommunciationFailure	Read-Only	Value (Integer)	false (0)	true (1)	Exciter Monitor/Generator A Communication Failure
nxlinkVectorNavtexExciterMonitorGeneratorBCommunciationFailure	Read-Only	Value (Integer)	false (0)	true (1)	Exciter Monitor/Generator B Communication Failure
nxlinkVectorNavtexATUFan1Fail	Read-Only	Value (Integer)	false (0)	true (1)	ATU Fan 1 Fail
nxlinkVectorNavtexATUFan2Fail	Read-Only	Value (Integer)	false (0)	true (1)	ATU Fan 2 Fail
nxlinkVectorNavtexATUFan1On	Read-Only	Value (Integer)	false (0)	true (1)	ATU Fan 1 On
nxlinkVectorNavtexATUFan2On	Read-Only	Value (Integer)	false (0)	true (1)	ATU Fan 2 On
nxlinkVectorNavtexATUOverheated	Read-Only	Value (Integer)	false (0)	true (1)	ATU Overheated
nxlinkVectorNavtexPDMInhibit	Read-Only	Value (Integer)	false (0)	true (1)	PDM Inhibit
nxlinkVectorNavtexPDMDriveFail	Read-Only	Value (Integer)	false (0)	true (1)	PDM Drive Fail

Table A2: SNMP TABLE -Vector Navtex Transmitters (continued)

NAME/OID	Read/Write	TYPE	VALUE		DESCRIPTION
nxlinkVectorNavtexATURFOff	Read-Only	Value (Integer)	false (0)	true (1)	ATU RF Off
nxlinkVectorNavtexUserRFOff	Read-Only	Value (Integer)	false (0)	true (1)	User RF Off
nxlinkVectorNavtexMonitorAOutputPowerFault	Read-Only	Value (Integer)	false (0)	true (1)	Monitor A Output Power Fault
nxlinkVectorNavtexMonitorBOutputPowerFault	Read-Only	Value (Integer)	false (0)	true (1)	Monitor B Output Power Fault
nxlinkVectorNavtexMonitorAROMIntegrityFault	Read-Only	Value (Integer)	false (0)	true (1)	Monitor A ROM Integrity Fault
nxlinkVectorNavtexMonitorBROMIntegrityFault	Read-Only	Value (Integer)	false (0)	true (1)	Monitor B ROM Integrity Fault
nxlinkVectorNavtexMonitorAModulationFault	Read-Only	Value (Integer)	false (0)	true (1)	Monitor A Modulation Fault
nxlinkVectorNavtexMonitorBModulationFault	Read-Only	Value (Integer)	false (0)	true (1)	Monitor B Modulation Fault
nxlinkVectorNavtexMonitorAKeyerFault	Read-Only	Value (Integer)	false (0)	true (1)	Monitor A Keyer Fault
nxlinkVectorNavtexMonitorBKeyerFault	Read-Only	Value (Integer)	false (0)	true (1)	Monitor B Keyer Fault
nxlinkVectorNavtexEEPROMFailSettings	Read-Only	Value (Integer)	false (0)	true (1)	EEPROM Fail: Settings
nxlinkVectorNavtexEEPROMFailUserThresholds	Read-Only	Value (Integer)	false (0)	true (1)	EEPROM Fail: User Thresholds
nxlinkVectorNavtexEEPROMFailFactoryThresholds	Read-Only	Value (Integer)	false (0)	true (1)	EEPROM Fail: Factory Thresholds
nxlinkVectorNavtexEEPROMFailUserMeterCalibration	Read-Only	Value (Integer)	false (0)	true (1)	EEPROM Fail: User Meter Calibration
nxlinkVectorNavtexEEPROMFailFactoryMeterCalibration	Read-Only	Value (Integer)	false (0)	true (1)	EEPROM Fail: Factory Meter Calibration
nxlinkVectorNavtexEEPROMFailUserPowerCalibration	Read-Only	Value (Integer)	false (0)	true (1)	EEPROM Fail: User Power Calibration
nxlinkVectorNavtexEEPROMFailFactoryPowerCalibration	Read-Only	Value (Integer)	false (0)	true (1)	EEPROM Fail: Factory Power Calibration
nxlinkVectorNavtexEEPROMFailConfiguration	Read-Only	Value (Integer)	false (0)	true (1)	EEPROM Fail: Configuration
nxlinkVectorNavtexFirmwareUpdateDetected	Read-Only	Value (Integer)	false (0)	true (1)	Firmware Update Detected
nxlinkVectorNavtexEEPROMFailAutoReset	Read-Only	Value (Integer)	false (0)	true (1)	EEPROM Fail: Auto Reset
nxlinkVectorNavtexEEPROMFailModemInit	Read-Only	Value (Integer)	false (0)	true (1)	EEPROM Fail: Modem Init
nxlinkVectorNavtexCutbackLevel1	Read-Only	Value (Integer)	false (0)	true (1)	Cutback Level 1
nxlinkVectorNavtexCutbackLevel2	Read-Only	Value (Integer)	false (0)	true (1)	Cutback Level 2
nxlinkVectorNavtexCutbackLevel3	Read-Only	Value (Integer)	false (0)	true (1)	Cutback Level 3
nxlinkVectorNavtexCutbackLevel4	Read-Only	Value (Integer)	false (0)	true (1)	Cutback Level 4
nxlinkVectorNavtexCutbackLevel5	Read-Only	Value (Integer)	false (0)	true (1)	Cutback Level 5
nxlinkVectorNavtexCutbackLevel6	Read-Only	Value (Integer)	false (0)	true (1)	Cutback Level 6
nxlinkVectorNavtexCutbackLevel7	Read-Only	Value (Integer)	false (0)	true (1)	Cutback Level 7
nxlinkVectorNavtexCutbackLevel8	Read-Only	Value (Integer)	false (0)	true (1)	Cutback Level 8
nxlinkVectorNavtexCutbackLevel9	Read-Only	Value (Integer)	false (0)	true (1)	Cutback Level 9
nxlinkVectorNavtexCutbackLevel10	Read-Only	Value (Integer)	false (0)	true (1)	Cutback Level 10
nxlinkVectorNavtexCutbackLevel11	Read-Only	Value (Integer)	false (0)	true (1)	Cutback Level 11
nxlinkVectorNavtexCutbackLevel12	Read-Only	Value (Integer)	false (0)	true (1)	Cutback Level 12
nxlinkVectorNavtexCutbackLevel13	Read-Only	Value (Integer)	false (0)	true (1)	Cutback Level 13

Table A2: SNMP TABLE -Vector Navtex Transmitters (continued)

NAME/OID	Read/Write	TYPE	VALUE		DESCRIPTION
nxlinkVectorNavtexCutbackLevel14	Read-Only	Value (Integer)	false (0)	true (1)	Cutback Level 14
nxlinkVectorNavtexCutbackLevel15	Read-Only	Value (Integer)	false (0)	true (1)	Cutback Level 15
nxlinkVectorNavtexCutbackLevel16	Read-Only	Value (Integer)	false (0)	true (1)	Cutback Level 16
nxlinkVectorNavtexCutbackLevel17	Read-Only	Value (Integer)	false (0)	true (1)	Cutback Level 17
nxlinkVectorNavtexCutbackLevel18	Read-Only	Value (Integer)	false (0)	true (1)	Cutback Level 18
nxlinkVectorNavtexEEPROMFailPowerPresets	Read-Only	Value (Integer)	false (0)	true (1)	EEPROM Fail: Power Presets
nxlinkVectorNavtexMonitorAFrequencyFault	Read-Only	Value (Integer)	false (0)	true (1)	Monitor A Frequency Fault
nxlinkVectorNavtexMonitorBFrequencyFault	Read-Only	Value (Integer)	false (0)	true (1)	Monitor B Frequency Fault
nxlinkVectorNavtexTransmitterReady	Read-Only	Value (Integer)	false (0)	true (1)	Transmitter Ready
nxlinkVectorNavtexTransmitterEnabled	Read-Only	Value (Integer)	false (0)	true (1)	Transmitter Enabled
nxlinkVectorNavtexATUChannelChangeFail	Read-Only	Value (Integer)	false (0)	true (1)	ATU Channel Change Fail
nxlinkVectorNavtexAlarm161	Read-Only	Value (Integer)	false (0)	true (1)	Alarm 16_1
nxlinkVectorNavtexAlarm162	Read-Only	Value (Integer)	false (0)	true (1)	Alarm 16_2
nxlinkVectorNavtexAlarm163	Read-Only	Value (Integer)	false (0)	true (1)	Alarm 16_3
nxlinkVectorNavtexAlarm164	Read-Only	Value (Integer)	false (0)	true (1)	Alarm 16_4
nxlinkVectorNavtexAlarm165	Read-Only	Value (Integer)	false (0)	true (1)	Alarm 16_5
nxlinkVectorNavtexAlarm166	Read-Only	Value (Integer)	false (0)	true (1)	Alarm 16_6
nxlinkVectorNavtexAlarm167	Read-Only	Value (Integer)	false (0)	true (1)	Alarm 16_7
nxlinkVectorNavtexAlarm170	Read-Only	Value (Integer)	false (0)	true (1)	Alarm 17_0
nxlinkVectorNavtexAlarm171	Read-Only	Value (Integer)	false (0)	true (1)	Alarm 17_1
nxlinkVectorNavtexAlarm172	Read-Only	Value (Integer)	false (0)	true (1)	Alarm 17_2
nxlinkVectorNavtexAlarm173	Read-Only	Value (Integer)	false (0)	true (1)	Alarm 17_3
nxlinkVectorNavtexAlarm174	Read-Only	Value (Integer)	false (0)	true (1)	Alarm 17_4
nxlinkVectorNavtexAlarm175	Read-Only	Value (Integer)	false (0)	true (1)	Alarm 17_5
nxlinkVectorNavtexAlarm176	Read-Only	Value (Integer)	false (0)	true (1)	Alarm 17_6
nxlinkVectorNavtexAlarm177	Read-Only	Value (Integer)	false (0)	true (1)	Alarm 17_7
nxlinkVectorNavtexTimedShutdown	Read-Write	Value (Integer)	off (0)	on (1)	Timed Shutdown
nxlinkVectorNavtexMeasuredFrequencyA	Read-Only	Value (Integer)	0		Measured Frequency A (Hz)
nxlinkVectorNavtexMeasuredFrequencyB	Read-Only	Value (Integer)	0		Measured Frequency B (Hz)
nxlinkVectorNavtexFrequency	Read-Only	Value (Integer)	518khz (0)	490khz (1)	Frequency
nxlinkVectorNavtexMode	Read-Write	Value (Integer)	fib (0)	cwtest (1)	Mode
nxlinkVectorNavtexActivePreset	Read-Write	Value (Integer)	1, 2, 3, 4, 5, 6		Active Preset
nxlinkVectorNavtexPreset1Power	Read-Only	Value (Integer)	0		Preset 1 Power (W)

Table A2: SNMP TABLE -Vector Navtex Transmitters (continued)

NAME/OID	Read/Write	TYPE	VALUE		DESCRIPTION
nxlinkVectorNavtexPreset2Power	Read-Only	Value (Integer)	0		Preset 2 Power (W)
nxlinkVectorNavtexPreset3Power	Read-Only	Value (Integer)	0		Preset 3 Power (W)
nxlinkVectorNavtexPreset4Power	Read-Only	Value (Integer)	0		Preset 4 Power (W)
nxlinkVectorNavtexPreset5Power	Read-Only	Value (Integer)	0		Preset 5 Power (W)
nxlinkVectorNavtexPreset6Power	Read-Only	Value (Integer)	0		Preset 6 Power (W)
nxlinkVectorNavtexPreset1Frequency	Read-Only	Value (Integer)	518khz (0)	490khz (1)	Preset 1 Frequency
nxlinkVectorNavtexPreset2Frequency	Read-Only	Value (Integer)	518khz (0)	490khz (1)	Preset 2 Frequency
nxlinkVectorNavtexPreset3Frequency	Read-Only	Value (Integer)	518khz (0)	490khz (1)	Preset 3 Frequency
nxlinkVectorNavtexPreset4Frequency	Read-Only	Value (Integer)	518khz (0)	490khz (1)	Preset 4 Frequency
nxlinkVectorNavtexPreset5Frequency	Read-Only	Value (Integer)	518khz (0)	490khz (1)	Preset 5 Frequency
nxlinkVectorNavtexPreset6Frequency	Read-Only	Value (Integer)	518khz (0)	490khz (1)	Preset 6 Frequency