Exgine Software Upgrade (V1.2 and newer to V2.x)

IS08011C

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INFORMATION SHEET

1 INTRODUCTION
This document describes how to perform an Exgine software upgrade from version 1.2 or newer to version 2.x.

2 PREREQUISITES
The following items are required in order to perform the software upgrade:

- Windows PC with a TFTP server application installed (see paragraph 3). The importer can be used as the TFTP server. This procedure can be performed remotely over a WAN. However, Nautel recommends you establish a local connection – direct or through a switch – between the PC and Exgine device.

Exgine Devices:

- A Release 2 or 3 M50 exciter with Exgine [reference either by serial number (H276 to present) or by Nautel Part # (NAE87B/01 or NAE87C/01)] with M50 software version 2.3 or higher
- An NV series transmitter with Exgine in the NVE300 or NVE50 Exciter
- An NX series transmitter with Exgine
- AM IBOC exciter with Exgine
- A VSHD exciter (Nautel Part # NAE103)
- A GV series exciter with Exgine (Nautel Part # NAE107A/01)
- A Reliable HD Transport Unit (Nautel Part # NAX241)

NOTE

Throughout the Exgine software upgrade, the Exporter (or Exporter Plus) should either be turned off or be disconnected from the LAN.

NOTE

Before re-enabling the Exporter (or Exporter Plus), refer to the HD Radio Tech Bulletin attached at the end of this document to ensure all other HD equipment has a compatible software version.

3 TFTP SERVER INSTALLATION

Exgine software updates are accomplished with TFTP. This requires that a TFTP server be installed on a PC on the same Ethernet subnet as Exgine. Various TFTP server implementations are available for Windows. SolarWinds Network Management provides a free TFTP server at:

http://www.solarwinds.com/products/ freetools/free_tftp_server.aspx

Refer to your TFTP server's software package for specific installation instructions. TFTP servers require a designated folder to act as the TFTP server's root directory (e.g., C:\TFTP-Root). Ensure that the TFTP server is configured to both receive and transmit files to avoid TFTP timeout conditions.

4 EXGINE SOFTWARE UPGRADE

A software update will result in a **No HD Data** situation. Therefore, IBOC service will be temporarily unavailable. If the transmitter has a standby exciter, ensure that the exciter being updated is not the active exciter. Mute the exciter's RF output during this upgrade.

Perform the following steps to upgrade the Exgine firmware:

(a) Record the Exgine's IP address using the transmitter UI or AUI menus. Repeat for a second exciter, as applicable in an NV or GV series transmitter.

(b) Either turn off your Exporter (or Exporter Plus) or disconnect it from the Exgine device.

(c) Connect the Windows PC to the Exgine's Ethernet port and configure the PC's IP address according to your Exgine's subnet. Verify the connection by pinging the Exgine's IP address.

- On an M50, connect to the **LAN/EXPORTER** port on its rear panel.
- On an NV exciter(s), connect to the **LAN (U4J2)** port on its rear panel.
- On an AM IBOC exciter, connect to the **LAN** port on its rear panel.
- When the Exgine is installed in the NX series transmitter, connect directly to the Exgine's **Ethernet** (J1) port.
- On a VSHD exciter, connect to the **LAN** port (U4J2) on its rear panel.
- On a GV HD exciter(s), connect to the **LAN** port (U1J2) on its rear panel.
- On a Reliable HD Transport unit, connect to the **ETHERNET** port on its rear panel.

(d) Copy the Exgine firmware update files into the TFTP-Root directory of the Windows PC. The Exgine firmware should consist of the following files:

exgine_vx_x.tar.gz
install.sh
update.sh

These files may have been distributed in a ZIP file archive and may have to be extracted directly into the TFTP Root directory first.

(e) Launch the TFTP server and ensure it is Started.

NOTE

If you are having trouble starting the TFTP Server, we have found that disabling firewalls will allow the TFTP Server to start and continue running. The Exgine device should also be turned on at this time to allow for a connection.

(f) In another window launch a web browser (e.g., Internet Explorer) and enter the Exgine IP address in the address bar. Figure 1 shows the Status window of the Exgine that will open.

(g) Select Network Configuration under the Configuration tab. Record all network settings for re-entering in step 4 (p). Also record the settings in the FM Exgine System Parameters, AM Exgine System Parameters and E2X Transport Configuration tabs.

(h) Select the Maintenance tab of the Exgine's web page. Figure 2 shows the Maintenance window of the Exgine that will open.

(i) In the Exgine Firmware Upload section of this page, enter the IP address of the TFTP Server (the IP address of your PC). Press the Update button. A new screen, with a series of text, will open (see Figure 3). Wait until "Update Complete" is displayed before navigating from this window. This may take several minutes. You may also have to scroll down the window to see the complete message.

NOTE

Failure to wait for the completion of the update could leave the exgine in a non-recoverable condition, resulting in the requirement to return the Exgine card to the factory for updating.

(j) Step (i) results in the Exgine IP address reverting to 10.10.10.100 after the next reboot. To set the current IP address, select Network Configuration under the Configuration tab and enter the appropriate IP and network parameters. Accept the changes before proceeding.

(k) Reselect the Maintenance tab. At the bottom of the web page click the **RESTART Exgine** link. Exgine will reboot.

(l) Refresh your web browser after one (1) minute because the "Exgine Rebooting…" message does not refresh.

(m) Verify in the top line of the Status screen that the "Exgine Server Version" matches the file sent to you.

- An example file name is: Exgine_v2_2.tar.gz
- An example Server version number is: 4.2_2.2
- The last 2 digits of the version should match the file name.

(n) Click the Configuration tab.

(o) Click the Platform Configuration link.

(p) In the drop down menu, select your current setup (see Figure 4). **NOTE:** For VS, NV and GV series transmitters, select Nautel NV FM Exciter (with HD Power Boost). Once your setup is selected, press the **Configure Exgine** button.

(q) In the Configuration tab, re-enter the network settings recorded in step 4 (g).

(r) At the top of this tab a note will appear indicating that a reboot is required. Click the **reboot** link to reboot the Exgine. See Figure 5.

(s) Refresh your web browser after one (1) minute because the “Exgine Rebooting…” message does not refresh.

(t) Repeat steps (f) through (s) for the second exciter, as applicable, for NV and GV series transmitters.

5 RETURN THE SYSTEM TO SERVICE

(a) Reconnect the Exporter (or Exporter Plus) to the Exgine device and restart the Exporter (or Exporter Plus).

(b) The system should now be operating with HD carriers.

(c) Please contact Nautel’s customer service department (via support@nautel.com) and report that you have completed Information Sheet IS08011C and provide your transmitters model, serial number and software version.

(d) If you wish to turn off (disable) Enhance Carriers (as in the case of certain AM broadcast transmitters), proceed to paragraph 6.

6 DISABLING ENHANCED CARRIERS (for AM transmitters only)

NOTE

Disabling Enhanced Carriers applies only to AM transmitters with Exgine software version 2.3 or newer.

(a) Click the Configuration tab.

(b) Click the AM Exgine System Parameters link (see Figure 6).

(c) Set Enhanced Carriers to **disabled**.

(d) The upgrade is complete.

If you have any questions or require additional assistance, please contact Nautel’s Customer Service Department at:

Telephone: 1-902-823-5100

Email: support@nautel.com

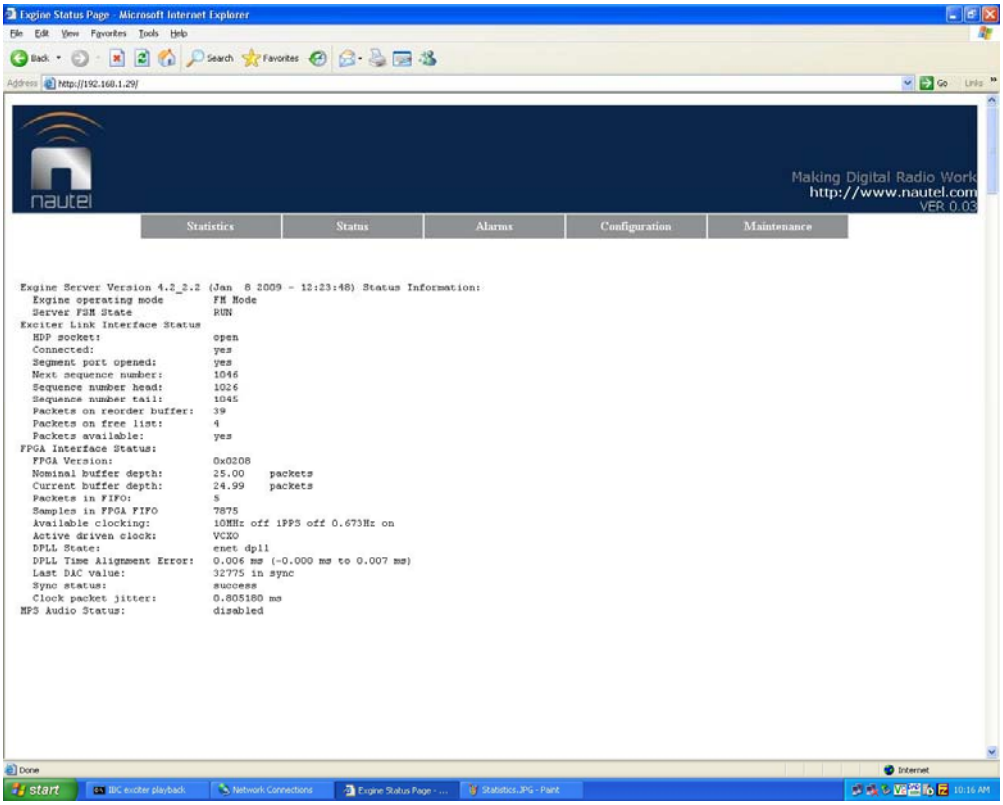

Figure 1: Exgine Web Page – Status Screen

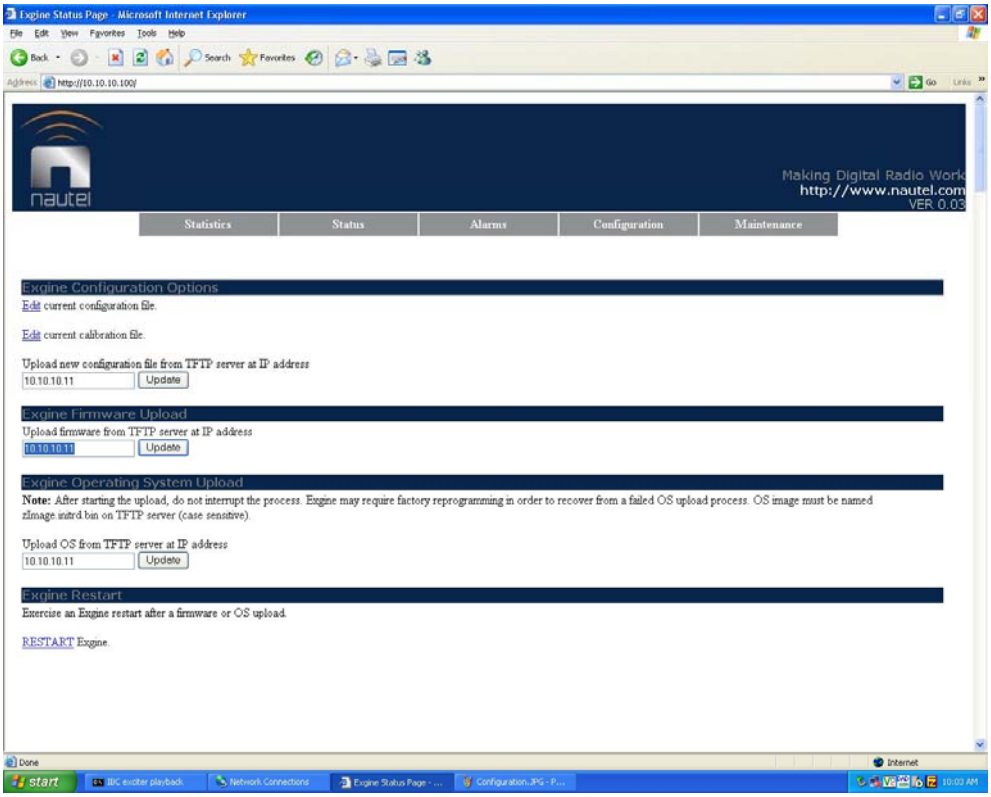

Figure 2: Exgine Web Page – Maintenance

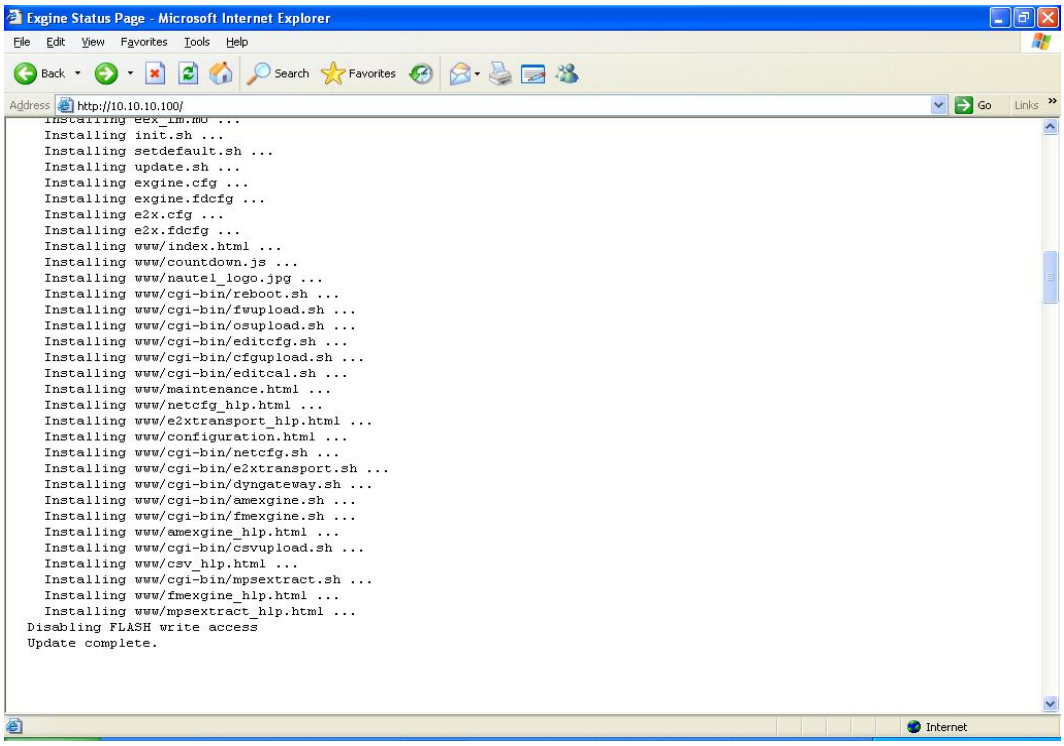

Figure 3: Exgine Web Page – Software Installation Complete

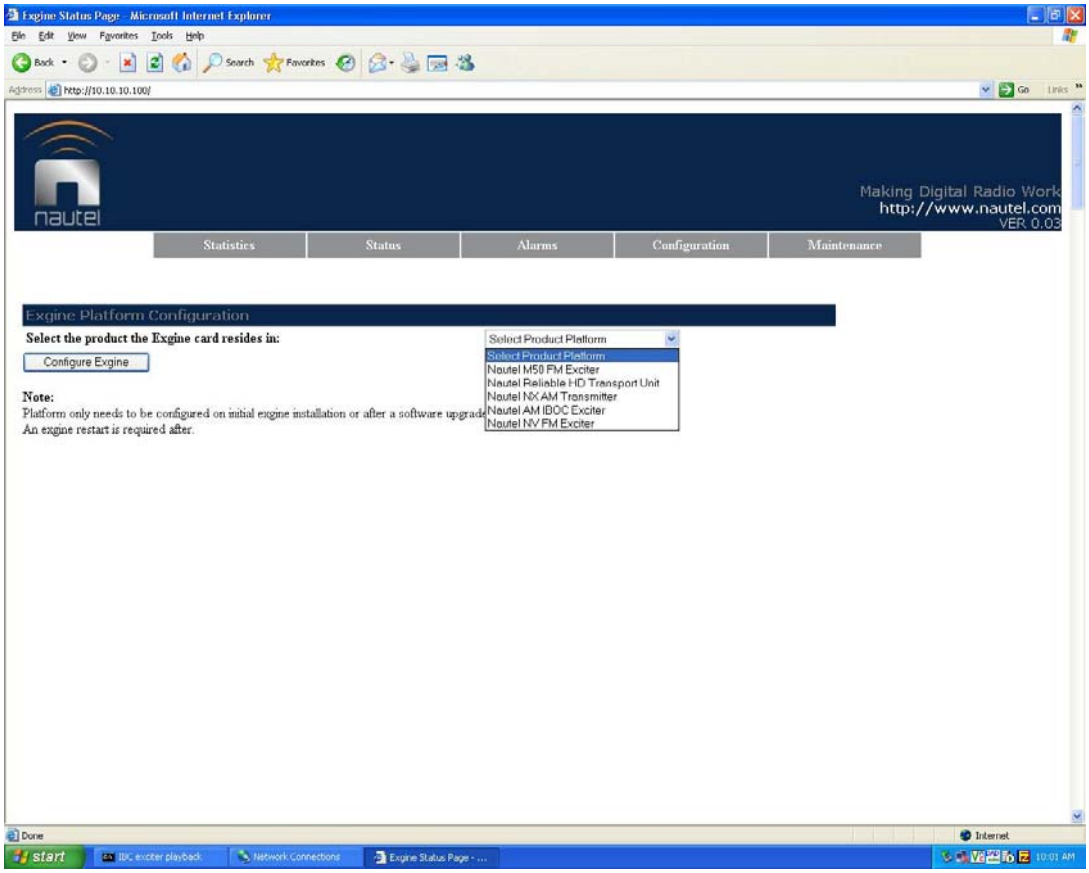

Figure 4: Exgine Web Page – Configuration – Exgine Platform Configuration

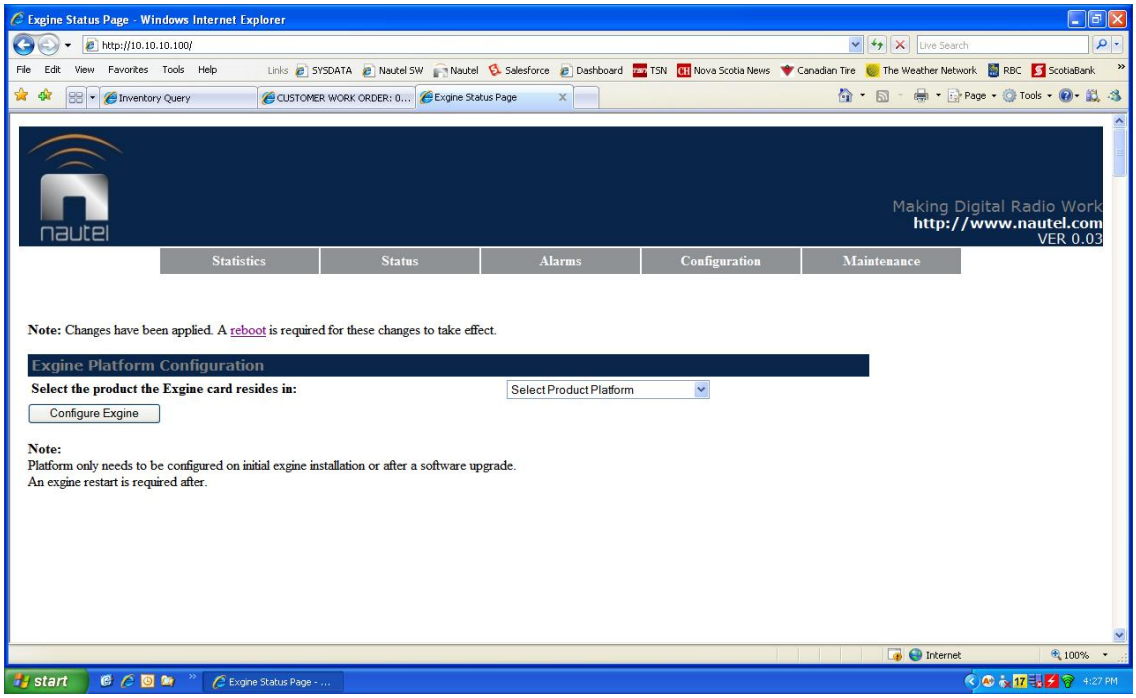

Figure 5: Exgine Web Page – Configuration – Reboot Message

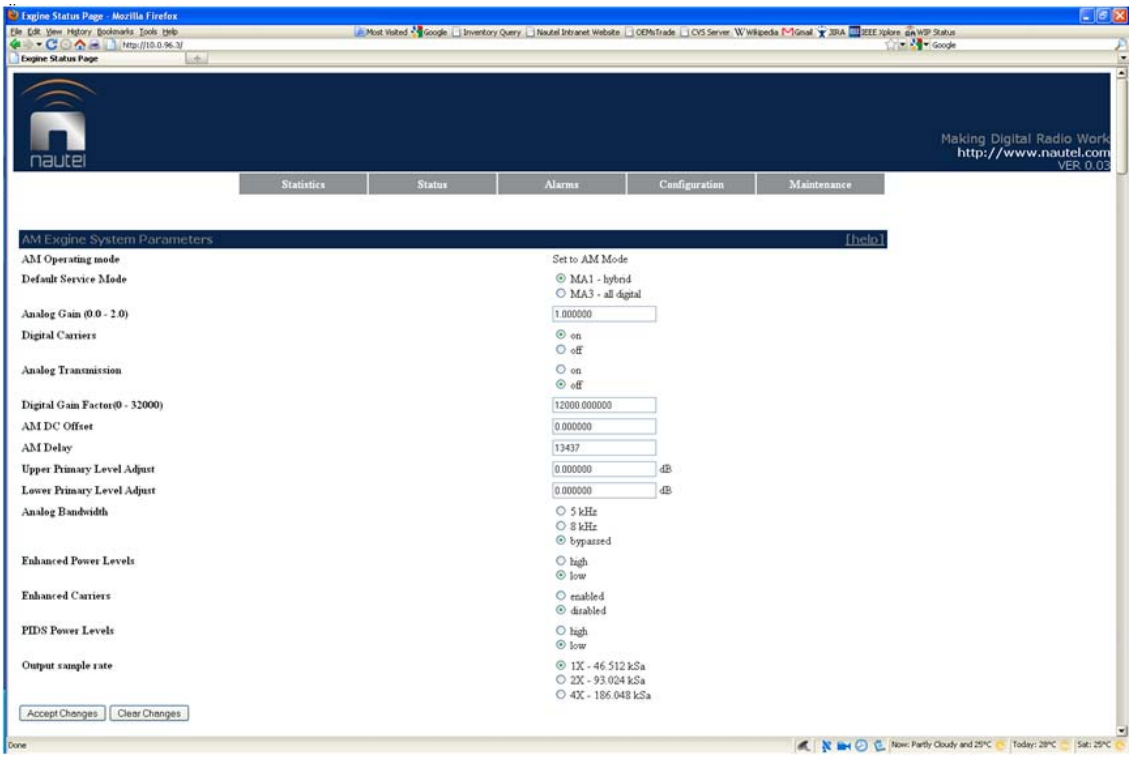

Figure 6: AM Exgine System Parameters Page – Disabling Enhanced Carriers