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## SECTION 3.3: ROUTINE MAINTENANCE

This section provides instructions for performing routine maintenance on the NX10 transmitter. This section includes the following topics:

- [Upgrading Software](#)
- [Scheduled Maintenance - see page 3.3.5](#)
- [Replacing the Air Filter - see page 3.3.6](#)
- [Performing On-Air Checks - see page 3.3.8](#)
- [Replacing the Control/Interface PWB Battery - see page 3.3.9](#)
- [Inspecting Lightning Protection Systems - see page 3.3.11](#)

### Upgrading Software

Periodically, enhancements or improvements to the operating system are identified and made available. Perform a software upgrade as follows:

#### Interval

As required.

#### Parts and Tools

- ❖ Laptop (i.e., local computer for direct connection) or network computer with Windows and Internet Explorer Web browser
- ❖ CAT5 Ethernet cable
- ❖ Upgrade software (\*.tgz file), provided via email, web download or flash card

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## Preliminary Checks

1. Determine the current software revision installed using the front panel UI's Main Menu -> User Settings-> Firmware -> FW Version screen or the remote AUI's Menu -> System Settings -> Upgrade Software page. Select the \*.tgz file in the Select Upgrade File list (should highlight in blue) and click Details. Note the current software revision for Audio Player, AUI, Controller, Exciter, Rack and PM.
2. Using a web browser go to [ftp://www3.nautel.com/NX\\_Series/](ftp://www3.nautel.com/NX_Series/) to make sure your software version is the latest available. Check the existing software version. Contact Nautel for the most recent software revision and download \*.tgz file to a laptop or network location.

## Transferring Upgrade File

The following steps assume either the laptop will be used to connect directly to the transmitter OR the transmitter and network computer are currently connected to the same network.

### Transmitter IP Configuration

1. Go to the network settings page using the local front panel UI (Main Menu -> User Settings -> Network Settings) or the remote AUI (Menu -> User Settings -> Network Setup).
2. Record your current network settings (IP Address, Subnet Mask, Default Gateway).
3. If connecting to the transmitter directly with a laptop, you must set a static IP address. Set as follows:
  - ❖ Disable DHCP: From the remote AUI, press the Static IP radio button. From the front panel UI, enter the DHCP sub-menu and set to DISABLE.
  - ❖ Set the IP Address: 10.10.10.2
  - ❖ Set the Netmask: 255.255.255.0
4. Set the transmitter for Remote enabled control (i.e., local plus remote).

### Laptop IP Setup

The following steps assume the operating system is Windows XP. Adapt as required for computers with different operating systems.

1. On the laptop go to Start Menu/Control Panel/Network Connections/Local Area Network.
2. In the Local Area Network Status, open the General tab and choose Properties. Scroll down and highlight Internet Protocol (TCP/IP). Choose Properties.
3. In the Internet Protocol (TCP/IP) Properties window, select Use the following IP address.

4. Enter the following settings:
  - ❖ IP Address: 10.10.10.1
  - ❖ Subnet Mask: 255.255.255.0
  - ❖ Default Gateway: 192.168.1.2
5. In the Internet Protocol (TCP/IP) Properties window, select OK.
6. In the Local Area Connection Properties window, select OK.
7. In the Local Area Connection Status window, select Close.
8. Close the Network Connections window.

### **Transfer Software Upgrade File to Transmitter**

1. If using a laptop, connect the laptop network interface card to J3A of the control/interface PWB (A4) on the exciter panel using a CAT5 Ethernet cable. Open Internet Explorer and search for 10.10.10.2. The transmitter login screen should appear.
2. If using a network computer, open Internet Explorer and search for the IP address recorded in [Step 2 of "Transmitter IP Configuration" on page 3.3.2](#). The transmitter login screen should appear.
3. At the transmitter login screen enter:
  - ❖ User: "Nautel" or "\*\*\*\*\*", where \*\*\*\*\* is the user assigned user name
  - ❖ Password: leave blank (default) or "\*\*\*\*\*", where \*\*\*\*\* is the user assigned password
4. Navigate through the remote AUI to Menu -> System Settings -> Upgrade Software, select the Manage Files button and press Browse. Locate the software update \*.tgz file stored on the laptop or network computer, and press Upload to load the file into the transmitter upload file list. Allow this operation to complete.

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## Installing New Software

1. Set the transmitter to RF Off and for Remote enabled control (i.e., local plus remote). If the transmitter is already in Remote enabled mode, turn off the transmitter using the remote AUI on the laptop. Perform the following steps remotely using the AUI on the laptop.
2. Go to the AUI Menu -> System Settings -> Upgrade Software screen and select the update \*.tgz file from the Select Upgrade File list (should highlight in blue) and press Start Upgrade.

**CAUTION!** Do not leave this page until the flash process is complete.

3. After a successful load (status is 100% complete and a message indicates a successful load), cycle the ac power (turn off, then on) on the NX10.
4. This completes the software upgrade. Restore the former network settings on the transmitter and laptop as required (see [Step 2](#) of "[Transmitter IP Configuration](#)" on [page 3.3.2](#)).

**NOTE:** Make sure to clear the cache of every web browser used to remotely connect to the transmitter's AUI to ensure that the remote AUI displays correctly after the software upgrade.

5. Login and repeat [Step 1](#) of "[Preliminary Checks](#)" on [page 3.3.2](#) to determine if the current version is the same as the upgrade version - this confirms the upgrade was successful.
6. If the upgrade was not successful, repeat [Step 1](#) through [Step 5](#). If still unsuccessful, contact Nautel.