TN175 MT-4E Firmware Upgrading

Codan Communications allows customers to upgrade the firmware of their MT-4E Receivers and Transmitters via the Firmware Flashing Software and Firmware Upgrade files. The Firmware Flashing Software and Firmware upgrade files are all available at the Codan website www.codancomms.com under Support - Software & Firmware.

It is not necessary to upgrade the firmware if the equipment is installed and is operating satisfactory. A firmware upgrade is typically only needed to fix minor software bugs or to upgrade the functionality of the equipment.

Firmware versions earlier than 1.6.0 must be returned to the factory for upgrading. Firmware version 1.6.0 and 1.7.0 may need to be returned to the factory for minor hardware upgrades. Contact the Codan service department for more information.

Instructions

Please read all of these instructions before beginning the Firmware Flashing process.

Download the Firmware Flashing Software and appropriate Firmware upgrading files to a PC running a Windows XP (or higher) operating system before beginning the upgrading procedure.

Choosing the Appropriate Firmware Upgrading Files

MT-4E Receivers and Transmitters can be purchased as an analog radio, or they can be purchased with the P25 Digital radio firmware package. If the radio is Analog only, download the Analog firmware upgrade, if it is P25 Digital (and Analog) capable, download the Digital firmware upgrade. To determine if the MT-4E Receiver or Transmitter is Analog only or P25 Digital, read the firmware version of the module using the Firmware Flashing Software or the Radio Service Software as shown in Figure 1. If the last digit of the firmware version is an "a" or "0", the firmware is Analog only, if the last digit is a "d" or "1", the firmware is P25 Digital and Analog.

NOTE: The Firmware Flashing Software will not allow you to program an MT-4E Receiver or Transmitter with the wrong firmware upgrade

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Figure 1: Version Number Examples

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Download the latest firmware version (Analog or Digital) from the website for both the receiver and transmitter. If the current firmware version of the MT-4E Receiver or Transmitter is 1.6.0 or 1.7.0, an additional Bootloader and Version 2.0.0 firmware (Analog or Digital) will also need to be downloaded.

Using the Firmware Flashing Software

Start the Firmware Flashing Software application and turn on the MT-4E Receiver or Transmitter. Using a USB type A to 5 pin mini-type B cable (the same USB cable used to program the modules), connect the USB port of the PC to the USB port on the front panel of the MT-4E Receiver or Transmitter module as shown in Figure 2.
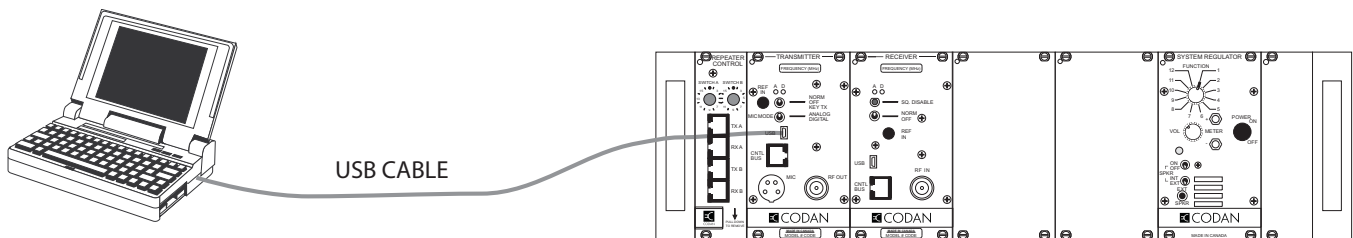
Figure 2: PC to Radio USB Connection

An information window will appear stating that the existing firmware in the radio is out of date and needs to be upgraded. Click OK to close this window.

If the current firmware version of the MT-4E Receiver or Transmitter is 1.6.0 or 1.7.0 a Bootloader dialog box will appear. See the section on upgrading Firmware version 1.6.0 and 1.7.0. If the current firmware version is 2.1.0 or higher, the Firmware Flashing Software can upgrade the firmware immediately to the next firmware version without the Bootloader.

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Flashing the Firmware

To apply the firmware upgrade (or Bootloader), click on File - Open and navigate to the directory where the firmware upgrades are stored on your PC. Load the appropriate update file (Transmitter / Receiver; Analog only / Digital and Analog; Bootloader / Firmware Version) as shown in Figure 3.
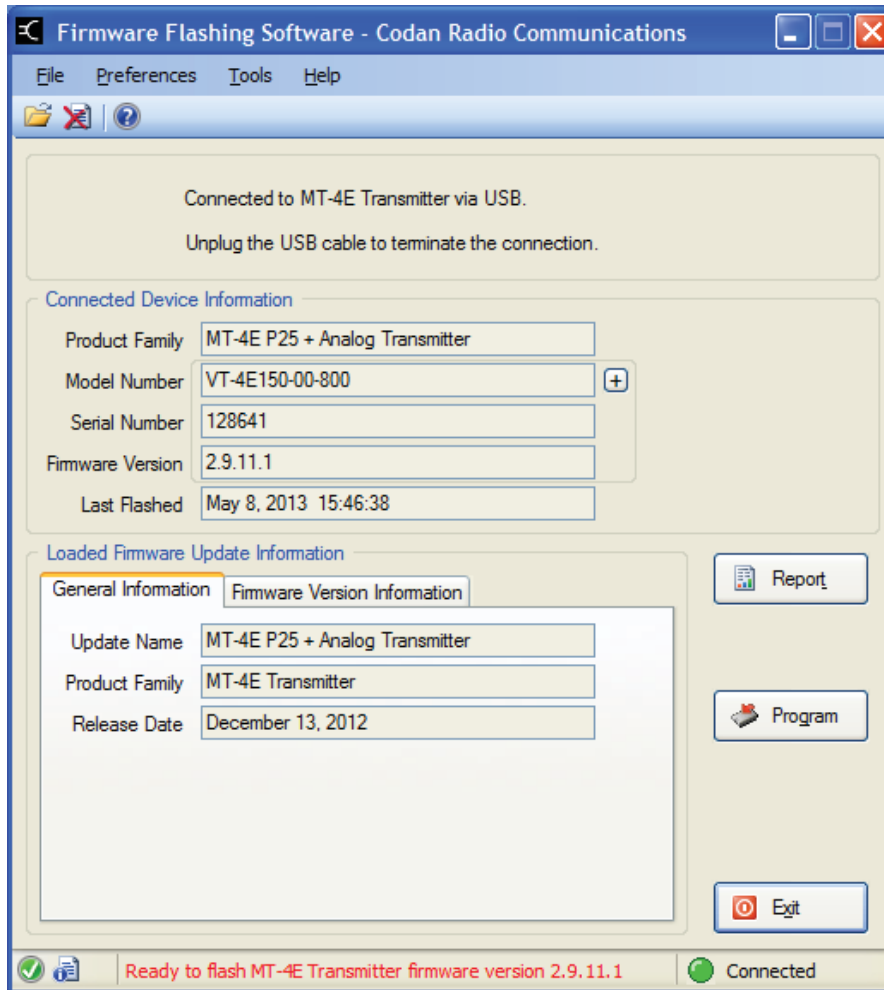

Figure 3: Firmware Flashing Software Example.

Click on the Program button to start the firmware update process. A dialog box will appear asking confirmation to proceed with the firmware update. A dialog box will also appear cautioning against interrupting the flashing process in any way while the firmware is being updated. This is very important as any interruptions could cause the firmware in the radio to be corrupted. Click on OK to proceed with the firmware update.

At the conclusion of the update the radio may need to be manually reset by cycling power to the module.

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Upgrading Firmware version 1.6.0 and 1.7.0

If the current firmware version of the MT-4E Receiver or Transmitter is 1.6.0 or 1.7.0, a dialog box will appear as shown in Figure 4, warning that the firmware is out of date and will require the Bootloader.

Figure 4: Version 1.6.0 and 1.7.0 Warning Dialog Box

Once the Bootloader is applied, the module's firmware will appear as version 0.0.0. Firmware Version 2.0.0 is required to be installed next and a dialog box will appear as shown in Figure 5.

Figure 5: Bootloader Warning Dialog Box

When installing Version 2.0.0, another dialog box will appear as shown in Figure 6, warning that the Bootloader must have been applied before proceeding.
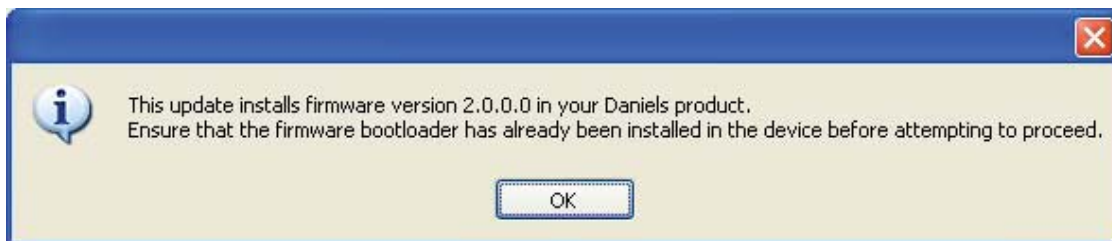

Figure 6: Version 2.0.0 Warning Dialog Box

Bringing the MT-4E Receiver or Transmitter module up to Firmware Version 2.0.0 is a two-step process, which is required in order to apply any further firmware upgrades. Once this two-step process is completed, it will not be required again. Firmware Version 2.0.0 is a "blank" firmware version and must be upgraded to the latest firmware in order for the module to operate.