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## TG2000 Firmware Upgrades via the USB Port 05 April 06

Only instruments currently running V1.04 or later can have their firmware upgraded via the USB port. Earlier versions will have to be returned to the factory for the upgrade and to have the PLD reprogrammed; this will allow future upgrades to be uploaded via the USB port.

To upgrade the firmware, the Boot Sector's firmware upgrade menu must be entered. This is done by switching on the unit while holding down the MAN TRIG key until this message appears after a few seconds:-

```
FIRMWARE UPGRADE
      are you sure?
◆ RS232          yes◇
◇ USB            no◇
```

At this stage the process may safely be aborted by pressing the **no** soft key, and the previously loaded firmware will not have been overwritten.

The two soft keys on the left select between the RS232 port and the USB port. Once the correct port has been selected, pressing **yes** starts the upload, and the message will change to the following:-

```
FIRMWARE UPGRADE
                                     exit◇
```

Now the unit is ready to receive the Intel Hex file. There are various ways to transmit the file; any method that sends it as a **text file** using the correct serial port parameters will do.

The serial comms parameters are fixed at 9600 baud, 8 data bits, no parity, and one stop bit (9600, 8, N, 1).

From a PC running Windows XP, one way is to use HyperTerminal. From the Start menu, click on **All Programs>Accessories>Communications>HyperTerminal** to launch it. Enter a name for the connection (it is not needed unless you intend to save its settings, but HyperTerminal will not allow you to proceed without entering a name). In the **Connect Using** drop-down box select the serial link (which may be a USB port) you wish to use. Then when the port settings dialogue box opens, enter 9600 baud, 8 data bits, no parity, 1 stop bit (9600, 8, N, 1), and no flow control.

Now select and send the file. It must be sent as a text file, **not** using the various file transfer protocols HyperTerminal uses when you select **Send File**. Click on **Transfer>Send Text File** and browse for the file TG2000.HEX. Opening the file will start the upload and the message on the TG2000 display changes to show the progress, as a percentage and also as a progress bar. OK appears at the bottom left to indicate there have been no transmission errors. For example, this is the display when the upload is 24% complete:-

```
FIRMWARE UPGRADE
      24%
██████
OK                                     exit◇
```

Once the upgrade has started you may terminate it by pressing the **exit** soft key, but be warned that once loading has started this will leave the firmware in a partially updated state and the instrument will not start up until the procedure has been repeated from the start and allowed to complete.

When the entire file has been loaded the unit will restart automatically. During the start-up self-test period the firmware version number of the newly installed version should appear.