

# TDFM-9100 SOFTWARE UPGRADE PROCEDURE

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## INTRODUCTION:

From time to time it may be necessary to update the operational software for the TDFM-9100 radios. This document describes the procedure to load new software in to the TDFM-9100. There two pieces of SW that need to be loaded when upgrading. All TDFM-9100s are field upgradeable and only require a PC, programming cable and terminal software to load the FW.

## EQUIPMENT REQUIRED:

- 1) PC with Windows XP or higher.
- 2) PC-9000 programming cable 127499
- 3) Terminal program such as Tera Term V 4.75 or higher.
- 4) 28 V power supply.

## SETTING UP THE USB TO SERIAL DRIVER ON THE PC:

The TDFM-9100 radios have a built in USB to serial adaptor. When the radio is connected to a PC in Bootload Mode, it will create a Virtual Serial Port. The virtual serial port may require a driver to be installed in some Windows operating systems. The driver can be downloaded here:

<http://www.ftdichip.com/Drivers/VCP.htm>

Load the latest version for Windows 32 and 64 bit: 2.12.00 WHQL Certified or newer.

Run the driver installer.

Determining the serial port:

- 1) Power up the radio and invoke the bootloader mode by holding the 7, 2, 3 & 0 keys and pushing the knob. Hold the keys until the Bootloader screen comes up on the display.
- 2) Connect the programming cable PC-9000 to the radio and a USB port on the computer.
- 3) The PC will detect new hardware and finish installing the USB to serial driver.
- 4) Navigate the PC to the Device manager. Open my computer in explorer. Then right click and select Properties.

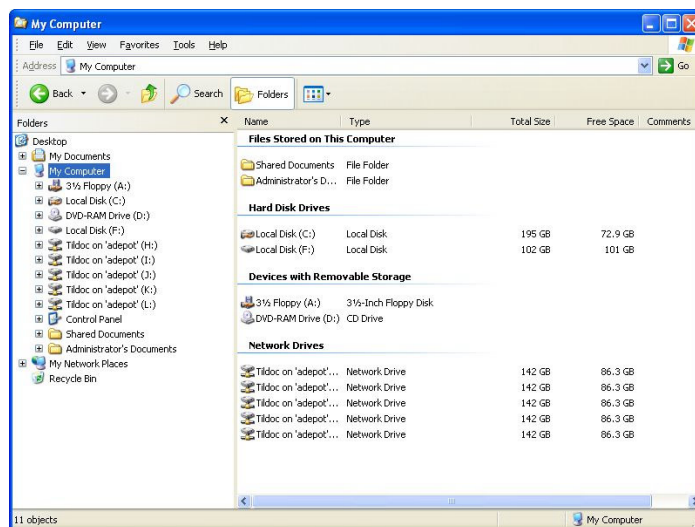


FIGURE 1: My Computer in Explorer

Click on the Hardware Tab:



Figure 2: System Properties Tile

Then select Device Manager, and click on the “Ports (COM & LPT)”. There should be a USB to serial port listed. Mark it down, as it is needed for the next step.

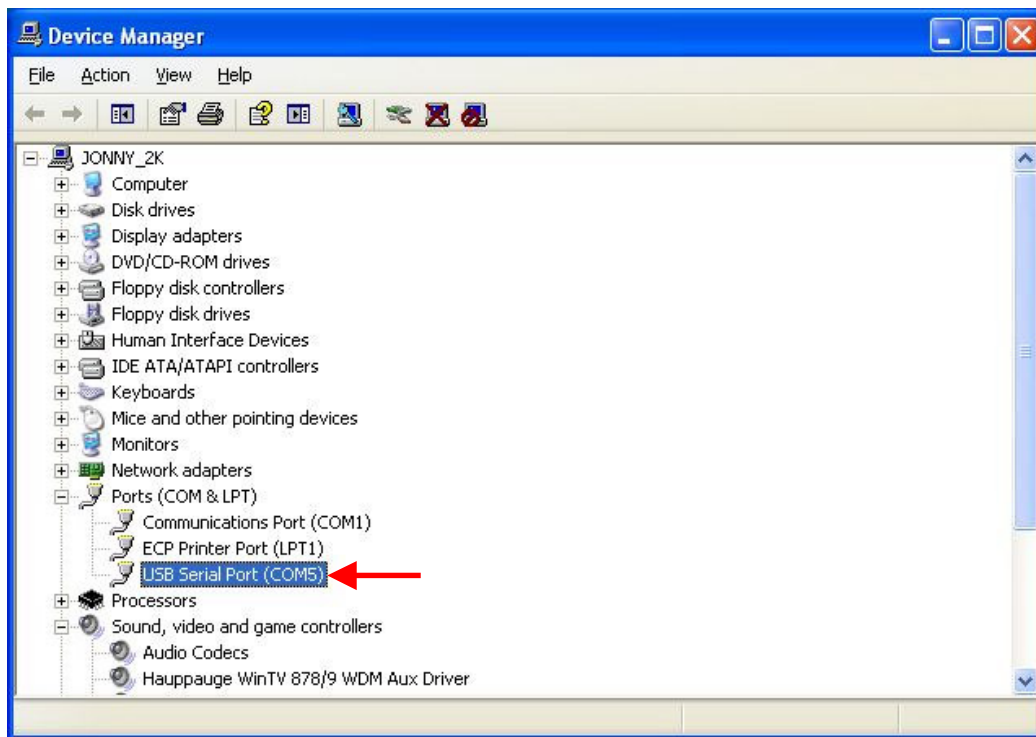


FIGURE 3: USB to Serial Port “COM 5” listed in device Manager

## INSTALLING TERA TERM:

Bootloading the TDFM-9100 series radios requires a terminal program with Y modem.

You can download free version of Tera Term V4.75 here:

<http://en.sourceforge.jp/projects/ttssh2/downloads/56762/teraterm-4.75.exe/>

Install the terminal program. The first time you run Tera Term a new connection box will pop up.

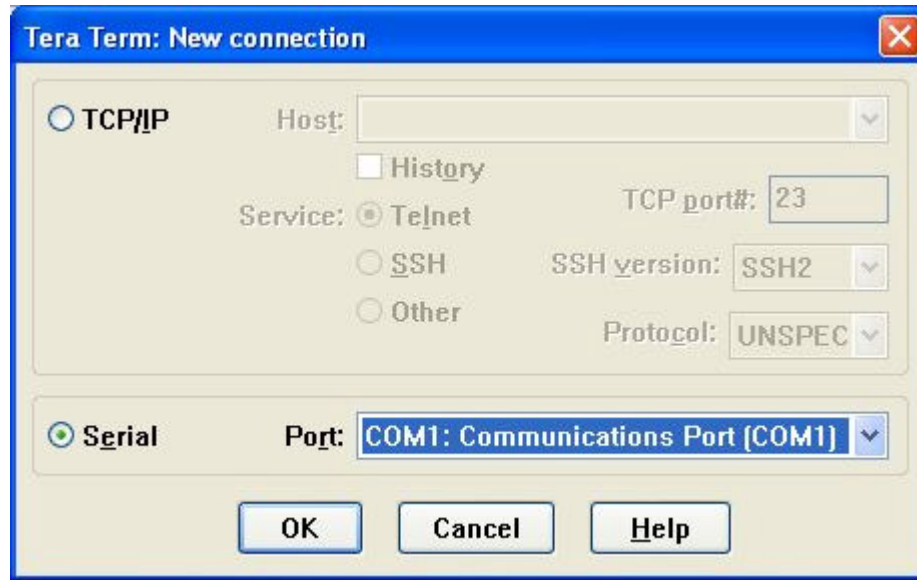


FIGURE 4: New Connection Window

Select "Serial" and in the pull down box, select the USB to Serial port as determined in the previous section. Click on OK. The Main window will be displayed.

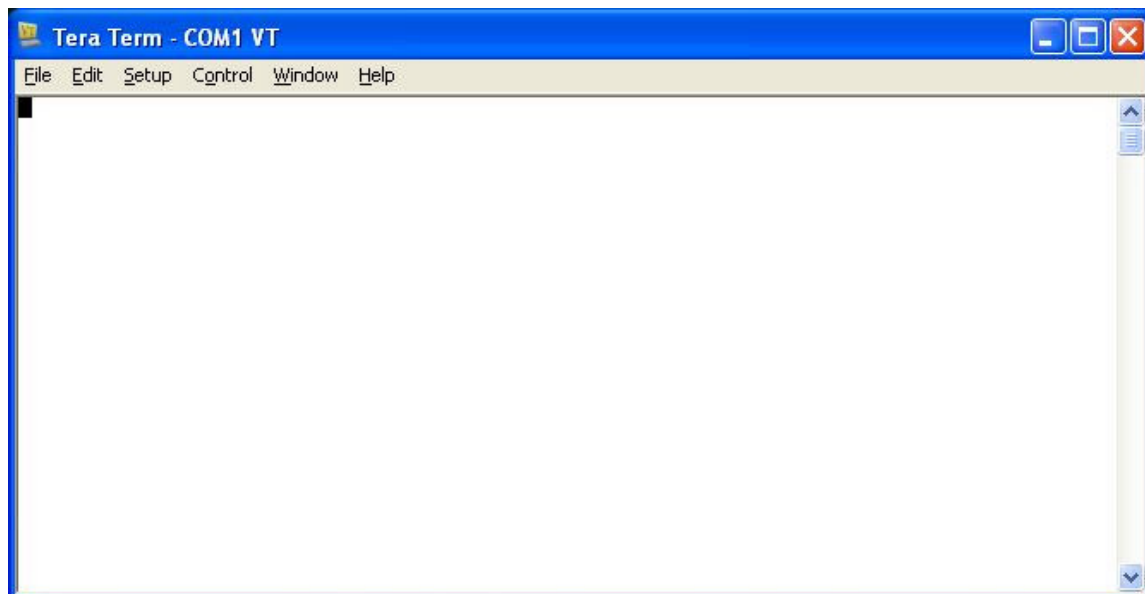


FIGURE 5: Main Tera Term Screen

Select SETUP> SERIAL PORT from the top menus. Set the Baud Rate and other parameters as show below:

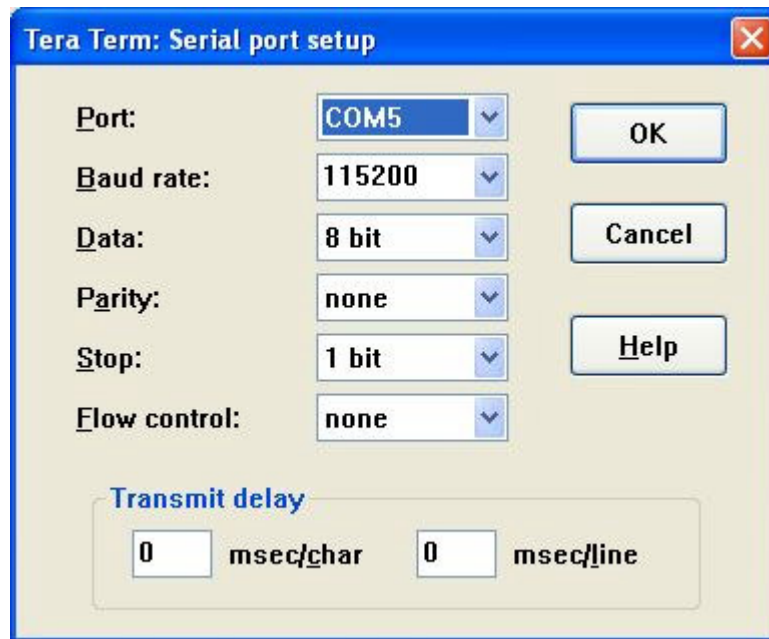


FIGURE 6: Port Setup

Click ok. Select SETUP>SAVE SETUP. Save the "TERATERM.INI" file. Then close Tera Term.

## PUTTING THE RADIO INTO BOOTLOAD MODE:

To update the software in the TDFM-9100 the unit must be put into Bootload mode.

To put the radio in to Bootload Mode, press and hold down the 7, 2, 3 & 0 keys together while pressing the knob. Hold all keys until the "Bootloader" screen comes up.

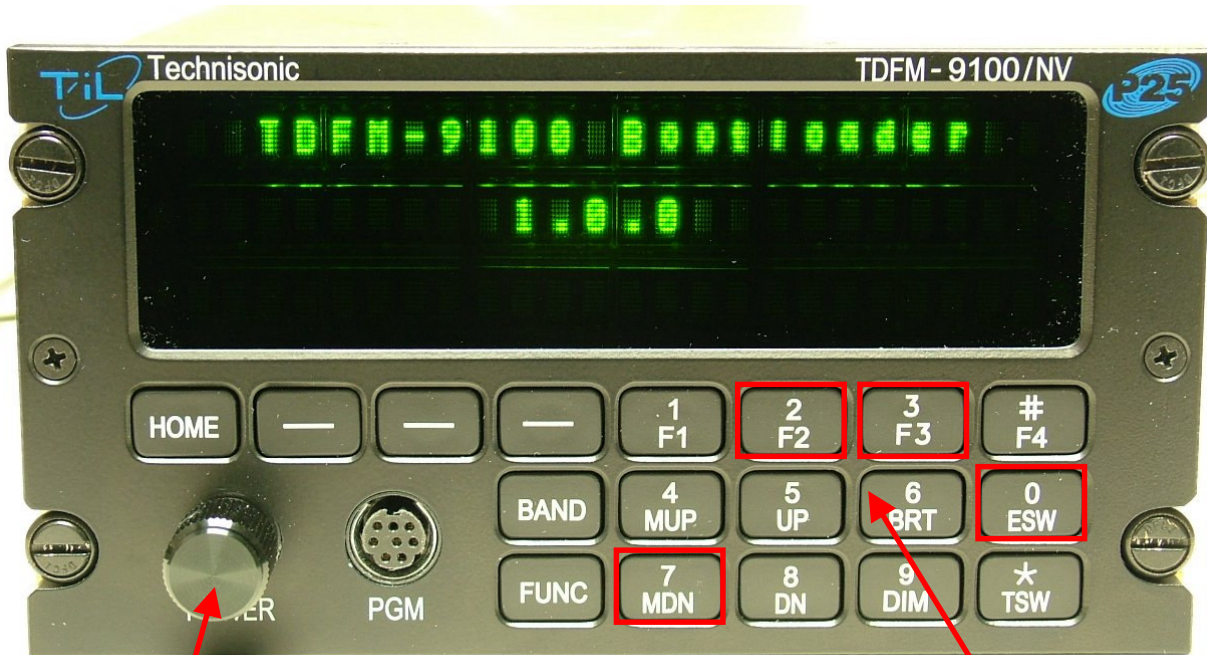


FIGURE 7: Invoking The Bootloader Mode

PUSH KNOB TO  
POWER UP

HOLD KEYS TO  
ENTER  
BOOTLOAD  
MODE





FIGURE 8: The Bootloader Screen

#### CONNECTING THE RADIO TO THE PC:

Connect the radio to the PC with the PC-9000 programming cable (P/N 127499). Plug the - 8 pin mini din connector into the front of the TDFM-9100 and the other end into a USB port on the PC. Wait for the USB cable to enumerate. See Figure 9 below:



FIGURE 9: Typical Hook Up To PC

## TDFM-9100 SOFTWARE:

There are two pieces of software that are required for the TDFM-9100 radios:

TDFM-9100 SOFTWARE		
SOFTWARE	PART NUMBER	VERSION
TDFM-9100 MAIN SW	13S173	V1.0.4
TDFM-9100 JM60 INTERFACE SW	15S189	V2.0.2

TABLE 1

Software upgrades may require one or both files to be updated. If updating both, then update the JM 60 interface software first, then the main software.

## UPDATING THE SOFTWARE:

With the radio in Bootload Mode and connected to the PC, start Tera Term. The terminal program should recognize the radio serial port.

Hit <ENTER> to confirm connection and to bring up the bootloading menu.

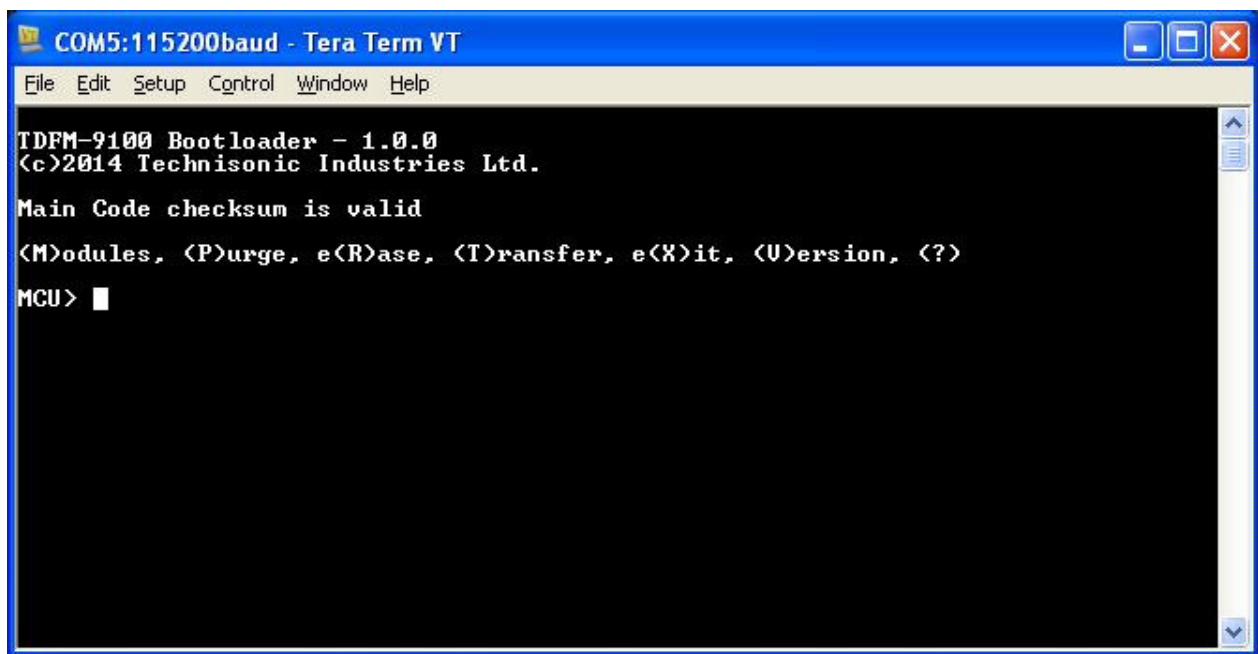


FIGURE 10: Bootloader Menu



Type “m” and <ENTER> to display the current software versions installed in the TDFM-9100.

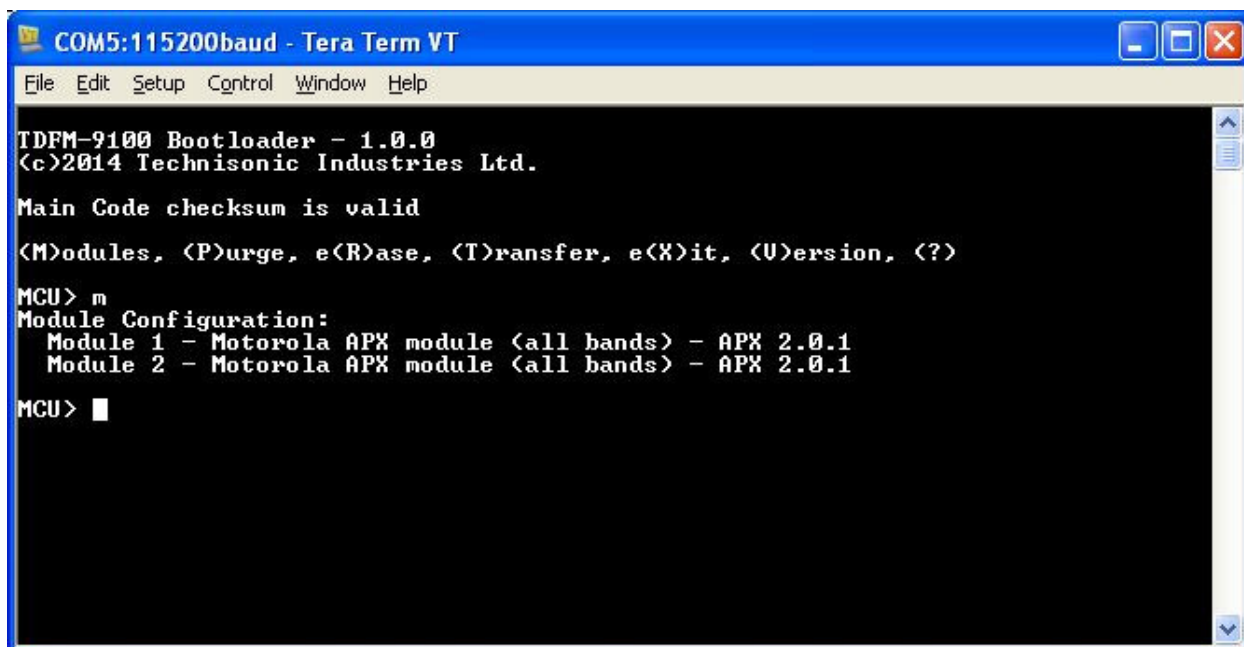


FIGURE 11: Interface Software Installed In The Radio

To upload the interface JM 60 software press “t” on the terminal, then click on FILE>TRANSFER>Y MODEM>SEND.

Navigate to the interface software on the PC and select the file. Refer to Table 1 for the correct file name.

On the terminal window a transfer screen will come up with a progress bar. The radio display will also show a progress bar on the bottom of the screen as the data is transferred. See Figures 12 and 13.

Repeat the procedure for loading the Main software.

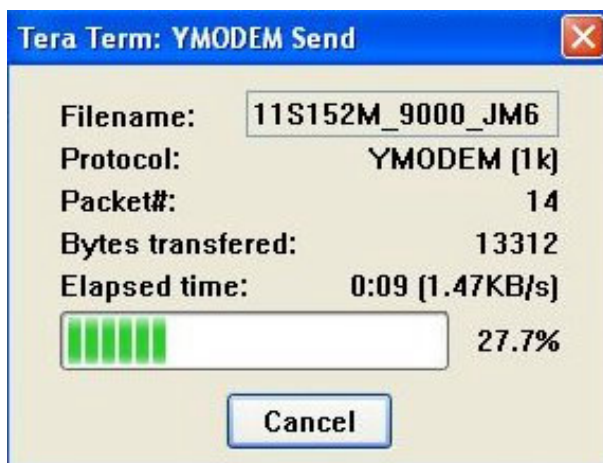


FIGURE 12: Y-Modem Transfer Screen



FIGURE 13: Radio Progress Screen

When the download is complete the radio shows "Done".



FIGURE 14: Download Complete

Occasionally it may be necessary to “flush” the memory space for the main SW. To do this Press “p” on the terminal to “Purge” the memory. Then load the main SW as above. This should only be done if the Main software is corrupt or if instructed to do it from the support team. Purging the memory will reset the configuration settings back to factory defaults. Normal Main software upgrades do not require a purge as it is desirable to preserve the radios current settings.

After all the software has been loaded in to the radio, the terminal program can be disconnected. From the menu select FILE>DISCONNECT. Then close Tera Term. Disconnect the programming cable from the radio and PC.

Reboot the radio and watch the startup screen to see if the software was updated. It will be displayed as it boots up. See Figure 15.



FIGURE 15: Start Up Screen



FIGURE 16: Radio Main Display



**FINAL CHECKS:**

It is highly recommended to go into the configuration menu and check all the settings.  
It may be necessary to readjust settings that might have defaulted from the user preferences.

Verify that all bands transmit and receive on the correct frequencies.

Verify that all the controls are function correctly as per normal operation.

**Obtaining The Latest Software:**

Technisonic is always improving the products. Software may be revised from time to time. Contact Technisonic customer support to obtain the latest software for the TDFM-9100 series.

Please note that TDFM-9100 series units are airworthiness approved on a non-hazard, non-interference basis and that the firmware is E-level which does not have to be controlled. Hence it is not mandatory to install the latest version of firmware.