# MX920 Firmware Flash Upgrade Procedure

## INTRODUCTION

This technical note ountlines the firmware flash upgrade procedure for Spectra Engineering's Flash upgradable products. This will allow the user to take advantage of the latest features available in the MX920. This procedure only upgrades the firmware and not the bootloader. The procedure to upgrade the firmware and bootloader is covered in the application note AN-MX920-003.

## EQUIPMENT LIST

Here is a list of software and tools required to complete this procedure:

- PC with HyperTerminal installed

- MX920

- MX920 serial communications cable

- 13.8V DC power supply

## PROCEDURE

The MX920 has a bootloader program that is activated on power-up of the MX920. Depending on the state of the ACCESSORY switch, the bootloader selects between MX920 firmware and monitor mode operation. The program HyperTerminal which comes with installed on PCs is used for the firmware upgrade process.

1. Set up HyperTerminal with the following, 57600 bps, 8 data bits, 1 stop bit and no parity, on the desired COM port.

2. Under HyperTerminal settings → 'Properties' → 'Settings' tab → 'ASCII setup' → 1mS character delay.

3. Connect to the MX920 to verify the communications settings.

Once communications has been verified and established, perform the following steps for the firmware upgrade. All MX920 serial commands are terminated with a carriage return (ENTER key).

1. Press and hold down the ACCESSORY button while either cycling the power or entering the command 'RESET'. The radio will enter the bootloader monitor mode and the 'MxMon >' prompt will be displayed.

2. Type in the command 'LOADE'. The bootloader will prompt the user to send the firmware file. Use the HyperTerminal menu → 'Transfer' → 'Send file …' to upload the file to the MX920.

3. Select the 'Xmodem' protocol for the transfer and enter the name of the file containing the firmware. The user will have approximately 15 seconds to complete this step. If the character 'C' is received before the file transfer starts, hit the 'ESC' key after the Xmodem file transfer dialog box appears. This will cancel the file transfer but should preserve the file location. Steps 2 through 3 can be repeated to initiate a successful file transfer. The 'RX' and the 'TONE' LEDs will flash as the file transfer progresses.

4. Once the transfer is completed, the user will be shown the file transfer status and returned to the bootloader monitor command prompt. Enter the 'RESET' command or cycle the power to begin operation with the uploaded firmware.

Steps 2 through 4 can be repeated if the user could not complete the file transfer process in the allotted time. If the user is very confident the alternate command 'LOADER' could be used. The bootloader will automatically reset the MX920 once the Xmodem file transfer is completed.

5. Press and hold down the ACCESSORY button while either cycling the power or entering the command 'RESET'. The radio will enter the bootloader monitor mode and the 'MxMon >' prompt will be displayed.

6. Type in the command 'LOADER. The bootloader will prompt the user to send the firmware file. Use the HyperTerminal menu → 'Transfer' → 'Send file …' to upload the file to the MX920.

7. Select the 'Xmodem' protocol for the transfer and enter the name of the file containing the firmware. The user will have approximately 15 seconds to complete this step. If the character 'C' is received before the file transfer starts, hit the 'ESC' key after the Xmodem file transfer dialog box appears. This will cancel the file transfer but should preserve the file location. Steps 5 through 7 can be repeated to initiate a successful file transfer. The 'RX' and the 'TONE' LEDs will flash as the file transfer progresses.

8. Once the transfer is completed, the bootloader will reset the MX920 to begin operation with the uploaded firmware.

The user will be able to change to versions of firmware that will best suit the user's purpose.