Annex D
TRANSMITTER TUNE UP PROCEDURE

RULE PART NUMBER: 2.1033 c (9)

The output power is controlled by a digital potentiometer which controls the supply voltage to the 250mW buffer/amp. The MDP Transceiver has a tuning procedure built into the software. The following instructions summarize the procedure for tuning the output power.

1. Connect the transceiver to be aligned to a DC power source capable of supplying 10 amps. Connect the output of the transceiver through a watt meter capable of measuring 50 Watts (10W for low power unit) and into a 50 ohm dummy load.

2. From the **Utilities** menu of the MDP 6000 Programmer software select **Tune Radio**. This brings up a box listings all possible tune-up parameters. Click in the box next to **Power Out Adjust**.

3. The transmitter keys up at the low end of the band and prompts the user to use the page-up and page-down keys to set the power between 25 – 27 Watts. The page-up, page-down keys vary the DAC value of the digital potentiometer. When complete the user clicks on OK, the DAC value is automatically stored. The software loads the next frequency to be set.

4. This process is repeated at two points across the band. Once the DAC value is determined for these two frequencies the processor interpolates the DAC value for frequencies in between the calibrated frequencies. This ensures equal power output across the entire RF band from 896-902MHz.

Deviation is controlled by a digital potentiometer which adjusts the amplitude of the modulating signal. The MDP Transceiver has a tuning procedure built into the software. The following instructions summarize the procedure for tuning the frequency deviation.

1. Connect the transceiver to be aligned to a DC power source capable of supplying 10 amps. Connect the output of the transceiver through a 50 ohm dummy load and into a modulation analyzer. Input a 880 mVrms, 1 KHz sine wave into the TX Mod input.

2. From the **Utilities** menu of the MDP 6000 Programmer software select **Tune Radio**. This brings up a box listings all possible tune-up parameters. Click in the box next to **Deviation Adjust**.

3. The transmitter keys up at the low end of the band and prompts the user to use the page-up and page-down keys to set the deviation to 5 KHz. The page-up, page-down keys vary the DAC value of the digital potentiometer. When complete the user clicks on OK, the DAC value is automatically stored. The software loads the next frequency to be set.

4. This process is repeated at two points across the band. Once the DAC value is determined for these two frequencies the processor interpolates the DAC value for frequencies in between the calibrated frequencies. This ensures constant deviation across the entire RF band from 896-902 MHz.

Note: The final deviation adjust is set on the Gemini modem which also has a digital potentiometer controlling the amplitude of the modulating signal before it reaches the MDP board.