IC-M502 Alignment Procedure

PLL lock voltage

- Connect multi-meter between CP1 and ground
- Apply 13.8V to DC connector on radio, and turns radio on
- Select CH16, and receive
- Adjust L13 for 2.5V
- Transmit
- Adjust L10 for 2.5V

Transmitter

- Connect RF power meter to ANT connector
- Apply 13.8V to DC connector on radio, and turns radio on
- Select CH16, and high power setting
- Transmit
- Adjust R84 for 26W

PLL Reference crystal

- Connect 50 ohms dummy load to ANT connector
- Apply 13.8V to DC connector on radio, and turns radio on
- Loosely couples probe on frequency counter
- Select CH16
- Transmit
- Adjust C70 for 156.8000MHz

Transmit Modulation

- Connect transmit modulation analyzer to ANT connector
- Connect audio generator to mic terminal
- Apply 13.8V to DC connector on radio, and turns radio on
- Apply 1Khz/150mV signals to mic terminal
- Select CH16, and high power setting
- Transmit
- Adjust R172 for 4.3KHz
- Adjust audio signal generator for 3.5Kz deviation
- Verify audio output signals is between 10mV and 21mV
- Verify signal to noise ratio for better than 40dB

Transmit Sprious

- Connect spectrum analyzer to ANT connector
- Apply 13.8V to DC connector on radio, and turns radio on
- Select CH16, and high power setting
- Transmit
- Verify the harmonic for better than –70dB

Receiver

- Connect RF signal generator to ANT connector
- Connect AC voltmeter with 4 ohm load to speaker jack
- Apply 13.8V to DC connector on radio, and turns radio on
- Select CH16
- Apply 156.800MHz with 1KHz/3,5KHz deviation / -96dBm signal to ANT connector
- Receive
- Adjust L1, L2, L3 and L4 for maximum voltage
- Verify receive sensitivity is –117dBm or better

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- Connect RF signal generator to ANT connector
- Connect DC volt meter to CP5
- Apply 13.8V to DC connector on radio, and turns radio on
- Select CH16
- Apply 156.800MHz with 1KHz/3,5KHz deviation / -122dBm signal to ANT connector
- Receive
- Adjust R33 for 2V