

220 MHz RF DECK GENERAL TUNING INSTRUCTIONS

Frequency Adjustment

Y100 (Reference Osc) – Adjust for minimum frequency error while monitoring transmitter at the test tuning frequency. The frequency error will be the same for the RX mode as well. The RX first injection frequency will be 45 MHz below the desired RX channel. The second RX injection oscillator runs at 44.545 MHz and is PLL controlled, there is no independent adjustment for this, as it is also based from the Reference oscillator Y100.

Receiver Sensitivity L304, 305, 306, 307, 309

With unit in receive mode, set RF generator at -100dBm on desired test frequency. Monitor the RSSI test point (TP-6 on the MRF board and M840 encoder). Adjust for MAXIMUM RSSI.

RX Discriminator L310

Set RF signal generator to desired test frequency, set output at -80 dBm. Set generator deviation level to 2.4 kHz with a 2 kHz tone. Monitor TP2 on MRF board (TP7 on M840E) and adjust L310 for maximum amplitude. Peak symmetry should also occur at this point. The typical audio level upon completion is 600mVp-p.

Modulation Level

The modulation to the reference oscillator comes from the MRF or M840E, depending on the configuration. It is adjusted by R192 on the MRF board (R23 on the 816 encoder that is mounted on the M840E). The VCO modulation adjustment is R104 on the 220 deck.

Method of adjustment- Enter TX diagnostic mode, 1221 pattern. Monitor TX modulation on IFR. Adjust R192 (or R23) for a deviation level of 2.4 kHz. Balance the modulation (best symmetry, minimum overshoots) by adjusting R104 of the 220 MHz deck. Repeat until level is 2.4 kHz.

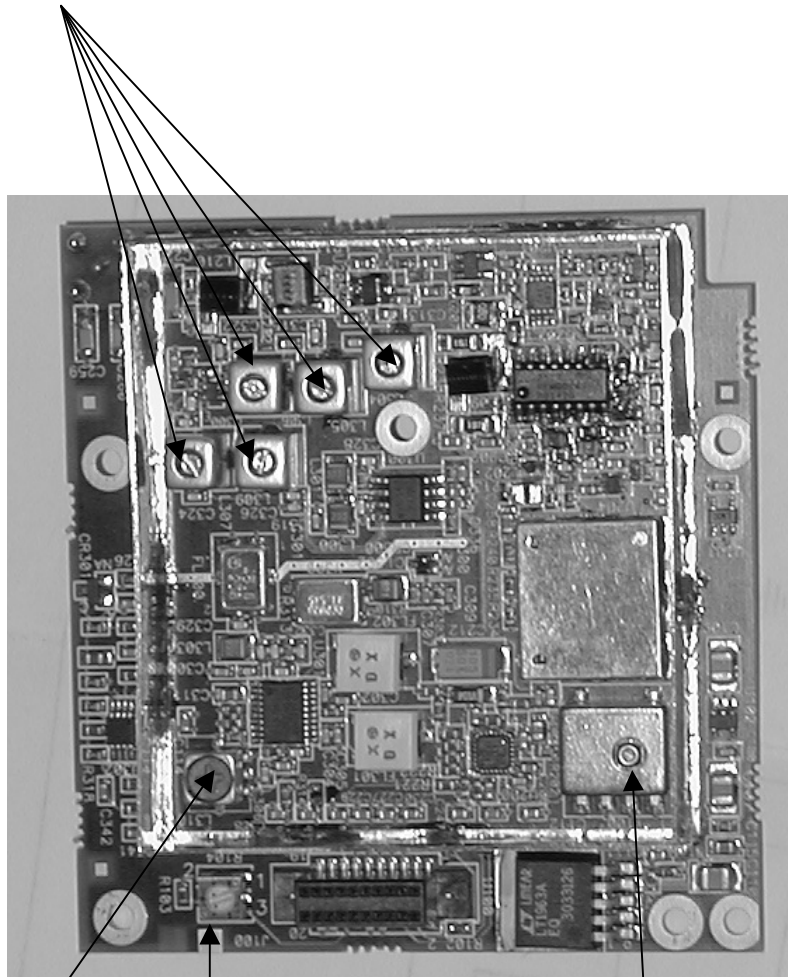
It may be necessary to slightly re adjust the REF OSC (Y100) after setting mod levels. Check for freq error to verify.

TX Output Power

Selectable via the “PWR ADJ” logic input line. 500mW or 2 W are the options. There are no tuning adjustments for power.

220 MHz RF DECK ADJUSTMENT LOCATIONS

Receiver Front End (L304, 305, 306, 307, 309)



Discriminator
L310

Mod IN level
R104

Reference oscillator
Y100