Raptor & Raptor II Alignment Guide

PLL:

Supply Voltage: 14.5VDC

Specification:

Vco Voltage @ Ch.1 A —— 0.8 to 1V Rx mode
Ch.40 F——— 3.7V to 4V Rx Mode
Reference frequency————10.695MHz
Oscillator frequency————10.240MHz

Alignment Method:

1. Turn On the unit
2. Place the test probe of DVM to test point R157, then align Vco voltage of Ch. 1A and Ch.40F to the given Vco Voltage specification in Rx mode by turning L15
3. Check back up power, 7 Segment display and all other function
4. Apply paraffin to the VCO IFT L15
5. Place the test probe of Frequency counter to test point C153 then align Reference Frequency to the given specification TX mode by turning L16
6. Place the test probe of frequency counter to test point C100 then align oscillator frequency to the given specification RX mode by turning T2

TX:

AUDIO GEN. 1KHZ 30mV

Check following: RB, Echo sound, AMT, CAL, SWR

Specification:

Power: **AM/FM no modulation**
Center: 14 to 18W
Side band: 8W up
Low power: 2 to 3W
AM with modulation
High Mod. ———80W PEP
Low Mod. ———25W PEP
Mod: Maximum 100%
Dev.: 1.8 to 2.6 KHz
Freq.: +/- 400 Hz
Ch. 40D——— 27.405MHz
Ch. 01D——— 26.965MHz
Meter: High power————full bars
Low power————1 to 3 bar

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Alignment Method:

1. Set the unit to Ch. 1 band D AM mode and adjust L17, L46, L18, L13 to maximum RF power
2. Check the power balancing of Ch.1D and Ch.40D and side band Ch. 40F & 1A
3. Check the power of Ch. 1D, Ch. 40D and Side band in both AM and FM mode
4. Align High power AM/FM mode to the given specification by adjusting RV14
5. Align Low power AM/FM mode to the given specification by adjusting RV7
6. Align Modulation to the given specification by adjusting RV15
7. Align AM Low Modulation PEP power to the given specification by adjusting RV13
8. Align Deviation to the given specification by adjusting RV5
9. Align Meter to the given specification by adjusting RV9

RX:

Supply Voltage: 14.5VDC **SSG:** AM 30% FM 1 KHz

Specification:

Sensitivity:	2V up @ 6dBuVemf AM mode
	2V up @ 0dBuVemf FM mode
S/N:	10dB up @ 6dBuVemf AM mode
	10dB up@ 0dBuVemf FM mode
	Side band 10dB up @ 9dBuVemf AM mode
	10dB up @ 3dBuVemf Fm mode
Distortion:	66dBuVemf AM/FM——10% below @ 3V
Squelch:	56 to 76dBuVemf ON
	46 to 56dBuVemf OFF
Meter:	46dBuVemf 9 bars
	66dBuVemf Full bars

Alignment method:

1. Set the unit to Ch. 3 band D AM mode
2. Align L6, L7, L8, L9, L11, L12, L1, L2, L3, L4 to maximum
3. Check the balance sensitivity of Ch.38F and Ch.3A, if not balance. re-align L7
4. Check the balance sensitivity of Ch.3D and Ch.38D
5. Check FM sensitivity and adjust L5 to maximum
6. Check 66dB distortion of both AM and FM mode, if not in range with the given spec. adjust L4 for AM mode and L5 for FM mode
7. Align RV4 for squelch to the given specification
8. Align RV1 for meter to the given specification