COMMCHOICE

PRODUCTION TEST PROCEDURE

BASE

Resistances: Vin to GND = 800 to 1200 ohms _____
+6V to GND = 200 to 250 ohms _____
+5V to GND = 2000 to 3000 ohms _____
+2.5V to GND = 3000 + ohms _____

Power: total current drain with "Vin" = 9V _____mA
"+5V" _____ VDC
"+2.5V" _____ VDC
"+6V" _____ VDC

TRANSMITTER:

RF

1. Connect the transmitter output to a frequency counter, apply power and adjust C6T (which sets the frequency of the 6.4 Mhz PLL reference oscillator) for the precise transmitted frequency (see the pre-assigned label on the unit). The transmitted frequency must be within +/-.001%.

_____

2. Vary the slug in L2T to set the control voltage (TP14) to: 1.8 to 3.2 VDC. _____

3. Measure the switched 6 volts (SW+6V) @ Q3T drain to verify it is within .1V of "+6V". _____

4. Connect the transmitter output to a spectrum analyzer (SA) and/or a power meter and peak the output by varying C30. The output should be +14 to +16 dBm (output power switch open or to High). Check that there are no harmonics or spurious emissions greater than -44dBc.

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5. Turn the power on and off 3 to 4 times and verify that the PLL locks up within 3 seconds. The RF output must be stable upon lock up. _____

6. Set the power swith to "Low" (short the two pins of the PL connector) and verify the RF output drops approx. 3 dBm

SUBCARRIER/SQUELCH TONE

1. Verify that the squelch tone is the correct frequency (40 KHz) - measure at pin 4 of U17. Adjust to 40KHz +/- 200Hz withR69 _____

2. Adjust R72 for a subcarrier audio/squelch tone amplitude of -20dBc as indicated on the spectrum analyzer _____

AUDIO/DEVIATION

1. Apply .75v peak to peak, 400 Hz to the Background Music in (J8) and set the transmitter output FM deviation to +/- 25 Khz (spectrum analyzer or deviation meter) with R49T. Slowly increase the frequency from 400 Hz to 20Khz (or use a sweep generator) and verify that the deviation does not exceed + and - 95 Khz at a level above -44dBc. _____

2. Repeat 2 above while also increasing the input voltage from .75v to 4v peak to peak. The same limits apply. _____

3. Verify there is approx. 5 VDC at the microphone input (pin 3 of the headset connector J3). _____

4. Apply .75v peak to peak, 400 Hz to the Background Music in (J8) and set the transmitter output FM deviation to +/- 25 Khz (spectrum analyzer or deviation meter) with the mic. Gain control, R35 . Slowly increase the frequency from 400 Hz to 20Khz (or use a sweep generator) and verify that the deviation does not exceed + and - 95 Khz at a level above -44dBc. _____

5. Repeat 2 above while also increasing the input voltage from .75v to 4v peak to peak. The same limits apply. _____

RECEIVERS (Total of 6 Receivers – repeat for each):

RF

1. Using a high impedance, low capacitance probe and frequency counter, verify that the local oscillator frequency (listed on a production control document) is correct at the emitter of Q2T _____

2. Vary L2T to produce a control voltage of 1.8 to 3.2 VDC at TP6 _____

3. Apply the correct receive signal (-40dBm at a freq. from prod. control with squelch tone modulation at a level of -22dBc). See the frequency chart on the Remote Transmitter for a list of crystal controlled squelch tones. Or, table 1 on the Base Rcvr schematic can be used.. Adjust C125 and L8 for the best (least noisy) squelch tone at U25, pin2. Monitor the RSSI voltage (TP1) while tuning to ensure that the RSSI is also within 95% of its peak. The "channel active" LED must be "on". _____

4. With the above setup, reduce the RF level until the receiver squelches, that is, the voltage at U25-5 goes high. The RF level from the generator should be less than -93dBm (receiver sensitivity). The "channel active" LED must extinguish when U25-5 goes high.

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5. Apply a high quality music signal to the FM mod. input of the RF source and verify (with headphones) the quality and loudness of the receiver's audio. Adjust the level of the music for best results. _____

6. AGC – record the AGC voltage at the Q12 side of R148 at RF input levels of – 30, -50 and –70 dBc>

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CONTROL TONE GENERATION/AUDIO QUALITY:

1. Control tones are transmitted to the remotes when the mode switch (for any channel) is set to "PHONE"
Or "AUX". The receiving remote then receives audio from the phone or Base mic. via the frequency modulated 40KHz squelch tone, and its received audio at the Base is routed to the phone connection or Base headphone. Both a fixed and a momentary duration tone are sent. Verify the correct tone frequency and amplitude at the outputs of U9 and U10. Then switch each channel in turn and verify with a SA that the tones appear at the RF output at a level of approx. --20dBc.

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2. Switch each channel in turn to "AUX" and verify the audio quality using test remotes.

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3. Connect a PBX phone (or simulated or single line non PBX) to the phone jack and verify each channel's
audio quality when in the "phone" mode.

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End of Base tests.