SUN FU CHEONG ELECTRONICS CO.LTD.

ENGINEERING DEPARTMENT

ALIGNMENT PROCEDURE

1. Alignment Equipment

a) Frequency Counter (> 200MHz)
b) DC Voltmeter
c) Distortion Meter (8 ohm Load)
d) RF Power Meter (50 ohm Load)
e) FM Modulation Meter
f) Audio Signal Generator
g) RF Signal Generator (> 156MHz)
h) RF VTVM
i) AF VTVM
j) Oscilloscope
k) 8 ohm Dummy load

2. VCO and Phase-lock loop Alignment

1. Connect DC Voltmeter to TP3.
2. Connect RF VTVM and Frequency counter to TP1.
3. Set the unit to the receiver mode with channel16 selected.
4. Adjust T7,9 to obtain 1.2 DC V at TP3.
5. Adjust VC100 until frequency reading of 135.2 MHz is obtained.
6. Select channel INT 39.
7. DC voltage at TP3 should be less than 1.8 V.
8. Set the unit to transmitter mode with channel-01 selected.
9. DC voltage at TP3 should be more than .9 V.

3. Receiver Alignment

1. Connect 8 ohm dummy load, Distortion Meter, AF VTVM and Oscilloscope all in parallel to the External speaker Jack.
2. Connect RF Signal Generator to Antenna Connector.
3. Set the Receiver to channel 16 and adjust the Signal Generator to provide 1 mV, +/- 3 KHz deviation at 1 KHz.
4. Adjust Volume Control and T8 until AF VTVM reads 4 V.
5. Connect RF VTVM to ANT1.
6. Adjust T1, T2, T3, T4, T5 and T6 to obtain Maximum voltage at ANT1.
7. Set the unit to channel WX01. Adjust T5, T4, T1 and T2 in order to obtain the Maximum voltage at ANT1.

8. Disconnect RF VTVM from ANT1 and measure 12 dB SINAD sensitivity. (It should be less than 0.35 uV.)
9. Set the unit to channel 16 and measure 12 dB SINAD sensitivity.

4. Transmitter Alignment

1. Connect RF Power Meter, FM Linear Detector and Frequency Counter to Antenna Connector.
2. Connect Oscilloscope and Distortion Meter to FM Linear Detector Output Terminal.
3. Select the unit to channel 16.
4. Set the unit to low power mode and adjust VR1 so that RF power output of 0.8 W is obtained.
5. Set the unit to high power mode and adjust VR2 so that RF power output of 25 W is obtained.
6. Supply 1 KHz audio sound to the microphone.
7. Adjust VR3 until FM Linear Detector indicates a deviation of +\- 4.8 KHz.