

MR HH300 / 400 ALIGNMENT PROCEDURE

The transceiver is completely aligned at the factory and does not require any adjustments for installation. However, it is considered as good practice to verify that none of the adjustments have changed.

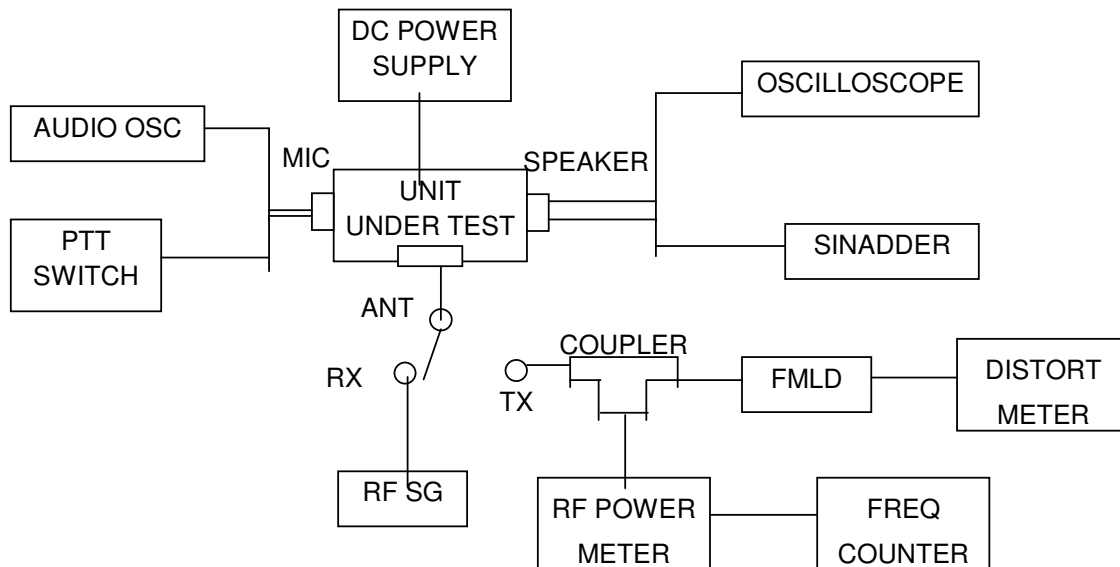
The test equipment listed below is used for the test setup shown in Fig. 3.1.

This test setup used either partially or totally during the following adjustments.

A. TEST EQUIPMENT

- | | |
|--|---------------------------------|
| 1) DC Power Supply (7.2V DC) | 0 - 15V 3A max. |
| 2) RF Power Meter | 10 W 50 Ohm 100-200 MHz |
| 3) RF Signal Generator | 100-200 MHz, 50 ohm termination |
| 4) FM Linear Detector (FMLD) | 100-200 MHz |
| 5) Frequency Counter | 1-500 MHz |
| 6) Oscilloscope | 20 MHz |
| 7) Distortion Meter | |
| 8) SINADDER | |
| 9) Audio Oscillator | |
| 10) Toggle Switch (for use as PTT switch). | |

Fig. 3.1



ADJUSTMENT PROCEDURE

Step	Adjustment	Test Point	Procedure
1	L22 Receive	TP1	<ol style="list-style-type: none"> 1. Connect digital voltmeter to TP1 on RF PCB. 2. Set CH01 USA. 3. Adjust L22. 4. TP1 voltage 0.8~1.4V DC.
2	L23 Transmit	TP1	<ol style="list-style-type: none"> 1. Connect a digital voltmeter to TP1 on RF PCB. 2. Set CH01 USA. 3. Adjust L23. 4. TP1 voltage 1.8~2.4V DC.
3	VC1		<ol style="list-style-type: none"> 1. Connect the antenna coupler output to a frequency counter. 2. Set channel to CH01 (156.050 MHz). 3. Adjust VC1 to obtain a frequency reading 156.050 MHz \pm 200 Hz.
4	VR3 Modulation		<ol style="list-style-type: none"> 1. Connect the antenna coupler output to an FM linear detector. 2. Connect Audio Oscillator to Microphone pad. 3. Set unit to transmit mode. 4. Set audio oscillator output to -23dBm 1 kHz. 5. Adjust VR3 to obtain \pm4.5 kHz deviation.
5	VR6, VR1 RF power output		<ol style="list-style-type: none"> 1. Connect a RF power meter to antenna connector through antenna coupler. 2. Set unit to transmit mode. 3. Adjust VR6 to obtain: High power 4.5~5.5W. 4. Adjust VR1 to obtain: Low power 0.8~1.2W
6	T1		<ol style="list-style-type: none"> 1. Connect a VHF signal generator to the antenna connector. 2. Connect a SINADDER to speaker pad. 3. Set signal generator to output 1 kHz with \pm 3 kHz deviation. 4. At frequency 156.050 MHz, adjust T1 to get maximum voltage and minimum distortion.