

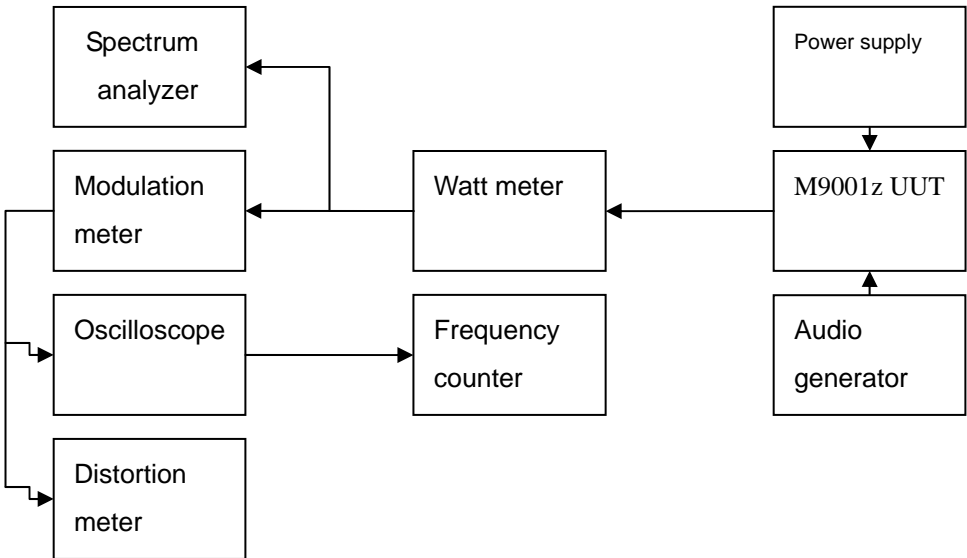
**ALIGNMENT PROCEDURES
MIDLAND 9001Z**

1.0 TEST CONDITION

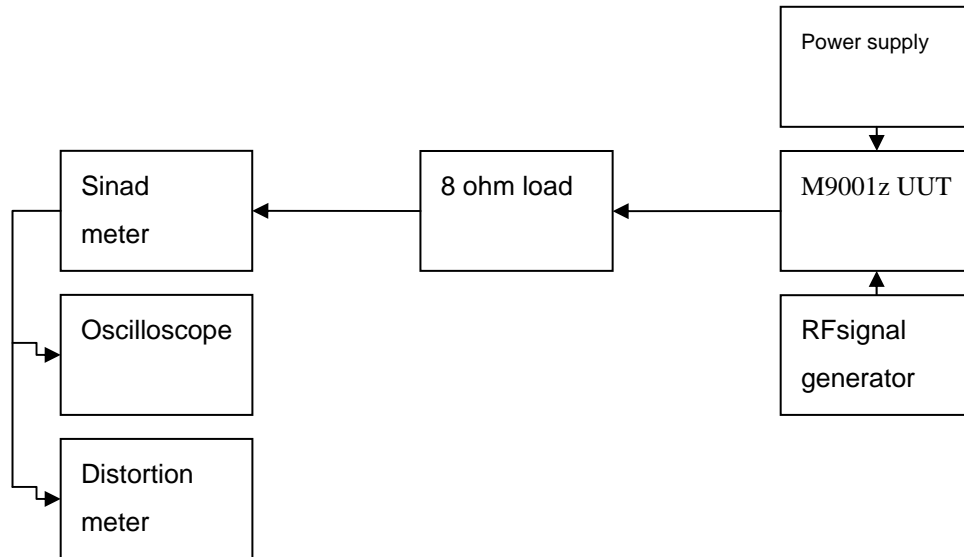
- STANDARD DC POWER SUPPLY 13.8 VDC**
- MEASUREMENT CHANNEL CB CH19(27.185MHZ),WX CH4(162.475MHZ)**
- STANDARD AUDIO LOADING 8 OHM**
- ANTENNA IMPEDANCE 50 OHM**
- STANDARD REF.MODULATION 30 %(AM),WX 3.3KHZ(FM)**
- STANDARD REF.AUDIO OUTPUT 0.5W**

2.0 EQUIPMENT SETUP AS BELOW.

2.1 TX TEST SETUP



2.2 RX TEST SETUP



3.0 VCO ADJUST

CONNECT U.U.T(UNIT UNDER TEST) M9001Z IN TX SETUP
CH1 USE VOLTMETER MEASURE RX VCO AT TP1
ADJUST L401 ABOUT 1.8-1.9 V PRESS PTT AND
TX VCO 1.8 – 1.9V SWITCH TO CH40 RX VCO AROUND 2.1 –
2.3V AND TX VCO AROUND 2.1 – 2.3V

4.0 TX FREQUENCY ADJUST

CH20 PRESS PTT CHECK TX FREQUENCY AT FREQUENCY
COUNTER 27.205 MHZ +/- 300 Hz ADJUST TO CENTER BY
ADJUST CT1 AND CHECK CH1 AND CH40

5.0 TX POWER OUTPUT ADJUST

CONNECT U.U.T(UNIT UNDER TEST) M9001Z IN TX SETUP
CH20 PRESS PTT CHECK TX POWER OUTPUT AT WATT
METER 4.0W BY ADJUST RV6 AND CHECK CH1 AND CH40
MUST BE IN SPEC 3.6 – 4.4 W

6.0 TX MODULATION ADJUST

CONNECT U.U.T(UNIT UNDER TEST) M9001Z IN TX SETUP
SET AUDIO GENERATOR 50MV GO TO CH20 PRESS PTT
ADJUST PEAK TX MODULATION BY ADJUST RV5 95 % AM MOD
AND CHECK CH1 AND CH40 MUST BE IN SPEC 90% – 100%

7.0 TX HARMONIC AND BALANCE MOD ADJUST

CONNECT U.U.T(UNIT UNDER TEST) M9001Z IN TX SETUP
SET AUDIO GENERATOR OFF GO TO CH1 SEE SPECTRUM
ANALYZER PRESS PTT SEE HARMONIC LINE 13MHZ ADJUST
L10 AND L11 UNTIL HARMONIC 13MHZ IS MINIMUM AND
GO TO CH40 PRESS PTT SEE HARMONIC LINE 13MHZ MUST
BE IN SPEC LESS THAN 60dBc IF STILL OUT WILL ADJUST
L10 AND L11 AGAIN UNTIL IN SPEC AND RECHECK CH1
BOTH

8.0 TX POWER S- METER ADJUST

CONNECT U.U.T(UNIT UNDER TEST) M9001Z IN TX SETUP
GO TO PRESS PTT ADJUST RV1 UNTIL RED PIN = 7
AT S9-METER

9.0 ANTENNA RED LAMP ADJUST

DISCONNECT ANTENNA AND U.U.T M9001Z PRESS PTT
ADJUST RV 8 UNTIL RED LAMP ON THEN CONNECT ANTENNA
PRESS PTT RED LAMP MUST BE OFF

10.0 RX SENSITIVITY ADJUST

CONNECT U.U.T(UNIT UNDER TEST) M9001Z IN RX SETUP
SET RF SIGNAL GENERATOR FREQUENCY 27.185MHZ
MOD AM 30% AMPLITUDE -107dBm GO TO CH19 MAX
VOLUME ADJUST RX MAXIMUM SENSITIVITY FIRST AT L1,L2,L3
AND L4 MORE THAN 12 dB SINAD AT SINADER METER.

11.0 SQUELCH ADJUST

CONNECT U.U.T(UNIT UNDER TEST) M9001Z IN RX SETUP
SET RF SIGNAL GENERATOR FREQUENCY 27.185MHZ
MOD AM 30% AMPLITUDE -47dBm GO TO CH19 MAX
VOLUME ADJUST , MAX SQUELCH AND MAX RF GAIN
ADJUST RV2 TURN OFF AND TURN ON SIGNAL
INCREASE SIGNAL AMPLITUDE UNTIL SQUELCH OFF AND
DECREASE SIGNAL AMPLITUDE UNTIL SQUELCH ON IN SPEC
-53 TO -41 dBm

12.0 S-9 METER ADJUST

SET RF SIGNAL GENERATOR FREQUENCY 27.185MHZ
MOD AM 30% AMPLITUDE -67dBm GO TO CH19 MAX
VOLUME ADJUST RV7 UNTIL RED PIN = 9 AT S9-METER

13.0 WX VCO ADJUST

SET RF SIGNAL GENERATOR FREQUENCY 162.4 MHZ
MOD FM 3.3 KHZ AMPLITUDE -47dBm SELECT SWITCH
TO WX MODE USE VOLTMETER MEASURE WX VCO
AT TP1 CH1 ADJUST L201 ABOUT 2.5 V
GO TO CH7 CHECK WX VCO AROUND 2.6 V

14.0 WX AUDIO & SENSITIVITY ADJUST

SET RF SIGNAL GENERATOR FREQUENCY 162.4 MHZ
MOD FM 3.3 KHZ AMPLITUDE -47dBm CH2 SET AUDIO
MAXIMUM ADJUST L5 UNTIL AUDIO MAXIMUM AND
CHANGE AMPLITUDE TO -107dBm CONTROL VOLUME 2 VOLT
AND ADJUST L204 AND L205 TO MAXIMUM SENSITIVITY AND
CHECK WX SENSITIVITY CH2 MUST BE $>0.5\mu\text{v}@ 12\text{dBsinad}$
AND RECHECK CH2 MUST BE $>0.5\mu\text{v}@ 12\text{dBsinad}$

15.0 WX SQUELCH ADJUST

SET RF SIGNAL GENERATOR FREQUENCY 162.4 MHZ
MOD FM 3.3 KHZ ADJUST UNTIL WX SENSITIVITY
= 12dBsinad ADJUST RV10 TO TURN OFF SQUELCH
AND TURN ON AGAIN

