

DX-979

ALIGNMENT (EPT092910Z)

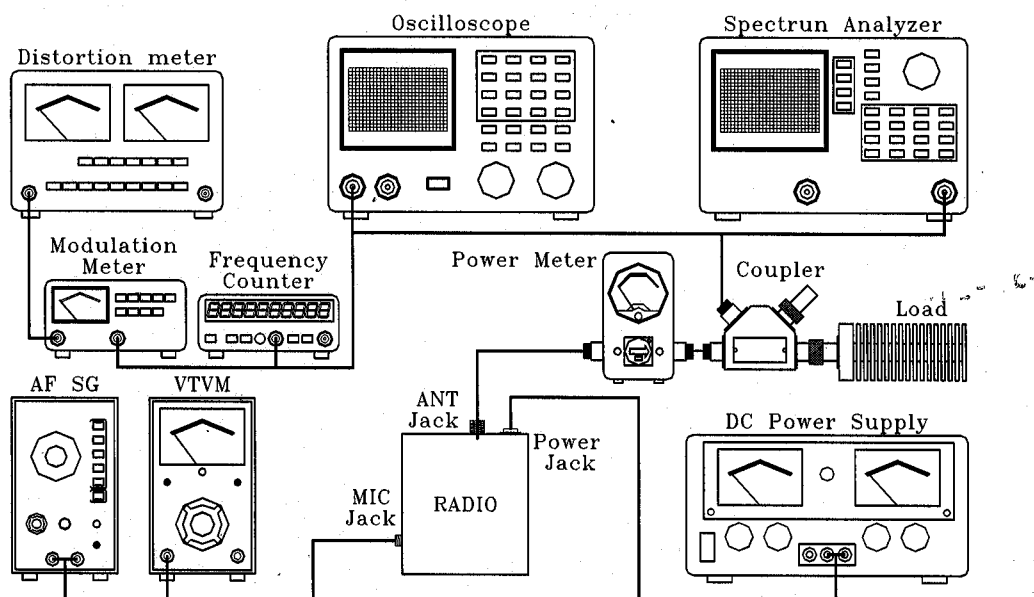
1.0 TEST EQUIPMENT

1. Oscilloscope (50MHz)
2. DC Power Supply (13.8V, 10A)
3. Deviation Meter
4. Audio Signal Generator
5. RF Signal Generator
6. Frequency Counter (100MHz)
7. Multi Meter (digital)
8. Distortion Meter
9. Spectrum Analyzer
10. RF Power Meter (100MHz, 25W)

1.1 PLL SYNTHESIZER / OSCILLATOR FREQUENCY ALIGNMENT

ITEM	CONNECTS & SETTING	ADJUST	MEASUREMENT
VCO VOLTAGE	Disconnect the "short PCB" from TP7, TP8 and TP9. Set Radio to CH 1 AM RX mode. Voice Lock Setting in 12 0' clock. Connect Oscilloscope to TP3 Set radio to CH 1 AM RX mode Connect Frequency counter Pin8	L14 L15 VC1	2.5VDC \pm 0.1 Maximum Output 10.24000MHz \pm 20Hz
AM FREQ	Set Radio to CH 1 AM RX mode Connect Frequency counter to TP3	L20	16.27000MHz \pm 20Hz
USB FREQ	Set Radio to CH 1 USB mode Connect Frequency counter to TP3	L21	16.27250MHz \pm 20Hz
LSB FREQ	Set Radio to CH 1 LSB mode Connect Frequency counter to TP3	L22	16.26750MHz \pm 20Hz
TX FREQ	Set Radio to CH 1 AM TX mode Connect Frequency counter to TP3	VR7	16.27000MHz \pm 20Hz
AM OSC	Set Radio to CH 1 AM TX mode Connect Frequency counter to TP5	L23	10.69500MHz \pm 20Hz
USB OSC	Set Radio to CH 1 USB TX mode and short the Q84 E & C Connect Frequency counter to TP5	L24	10.69250MHz \pm 20Hz
LSB OSC	Set Radio to CH 1 LSB TX mode Connect Frequency counter to	L25	10.69750MHz \pm 20Hz

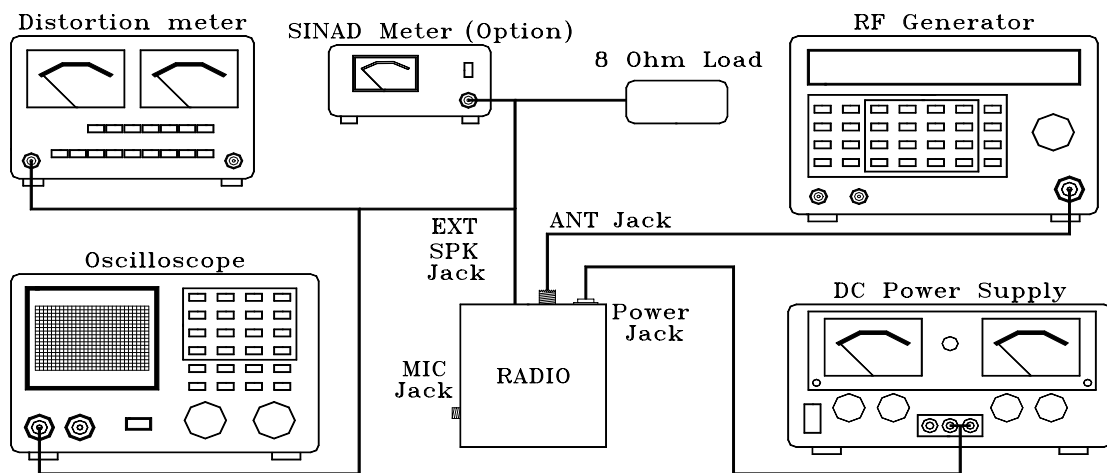
1.2 TRANSMITTER ALIGNMENT



ITEM	CONNECTS & SETTING	ADJUST	MEASUREMENT
BIAS	Set Radio CH 19, USB TX mode	VR12	100mA
CURRENT	MOD off Connect Current meter To TP7 (+) and TP9 (-)	VR10	50mA
SSB	Set Radio CH 19 USB TX mode		MAX <u>12W</u>
TX POWER	Connect "short PCB" to TP7 and TP9	L43, 44, 42, 40	Spurious Emission Min
	Connect RF Power meter to ANT		
	Set radio to CH 40. USB TX mode		
	Set radio to CH 1. USB TX mode		
	Set radio to CH 19. USB TX	VR13	11.5 Watts
	Mode	VR6	Spurious Emiss
	Set radio to CH 19. USB mode	VR17	DC 12.5V
	MOD off . Connect Volt meter to		

ITEM	CONNECTS & SETTING	ADJUST	MEASUREMENT
AM	Set Radio to CH19 AM TX mode	VR17	3.8W
TX POWER	No MOD	VR18	0.3W±0.2W
AM	Set Radio to CH19 AM TX mode	VR16	90%
MODULATION	Audio signal 30mV, 1KHz to MIC	VR15	Meter 95%
TX	Set Radio to CH19 AM TX mode	VR9	Meter needle to the top
S/RF METER	Meter switch to S/RF position.. MIC Gain at minimum position		in green RF

1.3 RECEIVER ALIGNMENT



ITEM	CONNECTS & SETTING	ADJUST	MEASUREMENT
AM	Set Radio CH 19 AM RX mode		Audio output >2V
SENSITIVITY	Voice Lock setting in 12 O'clock	L5,6,7,8,9 10,2,3	S/N 10dB

RF gain fully clockwise, SQ at MIN, VOL control at 20'clock.
Connect RF SG to ANT jack
Frequency 27.185MHz MOD 30%
Set radio to CH40, AM mode
RF SG setting 27.405MHz
Set radio to CH1, AM mode
RF SG setting 26.965MHz

ITEM	CONNECTS & SETTING	ADJUST	MEASUREMENT
USB	Set Radio to CH19 USB mode	L11,12	Audio output > 2V
SENSITIVITY	VOL control at fully clockwise		S/N > 10db
	RF SG setting 27.186MHz MOD		
LSB	Set radio to CH19 LSB mode	L11,12	Audio output > 2v
SENSITIVITY	VOL control at fully clockwise		S/N > 10db
	RF SG setting 27.184MHz MOD		
NB	Set Radio to CH19 AM mode	L1	DC voltage to Max
ADJUST	RF SG setting 27.205MHz MOD		MAX (>2.0V)
	30%, 100uV, NB/ANL switch		
AM	Set Radio to CH19 AM mode	VR4	Adjust very slowly
SQUELCH	SQ control st fully		Slowly until
	Clockwise. RF SG setting		squelch just open
SSB	Set Radio to CH19 USB mode	VR3	Adjust very slowly
	SQ control st fully		Slowly until
SQUELCH	clockwise. RF SG setting		squelch just open
AM	Set Radio to CH19 AM mode	VR1	Meter needle to S9
S/RF METER	Meter switch at S/RF position.		on
	RF SG setting 27.185Mhz MOD		the S scale.
SSB	Set Radio to CH19 USB mode	VR2	Meter needle to S9
S/RF METER	S/RF switch at S/RF position		on
	S/RF SG setting 27.186MHz.		the S scale.
	MOD		