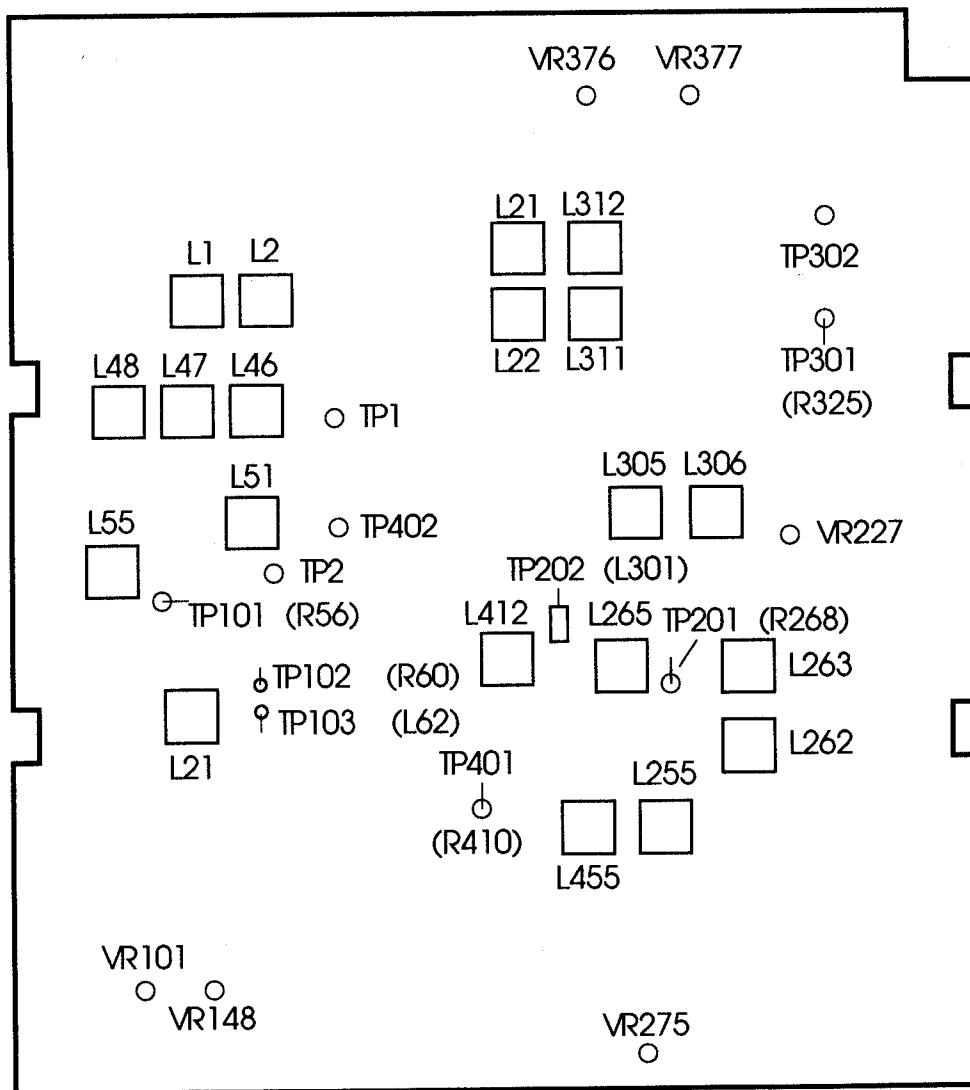


# Transmitter Alignment Procedures

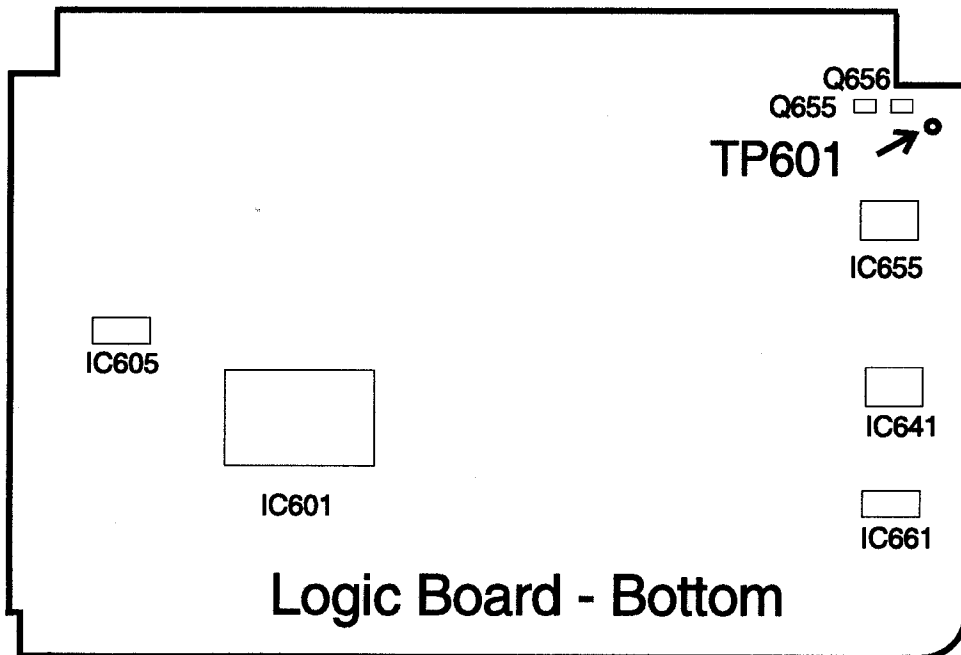
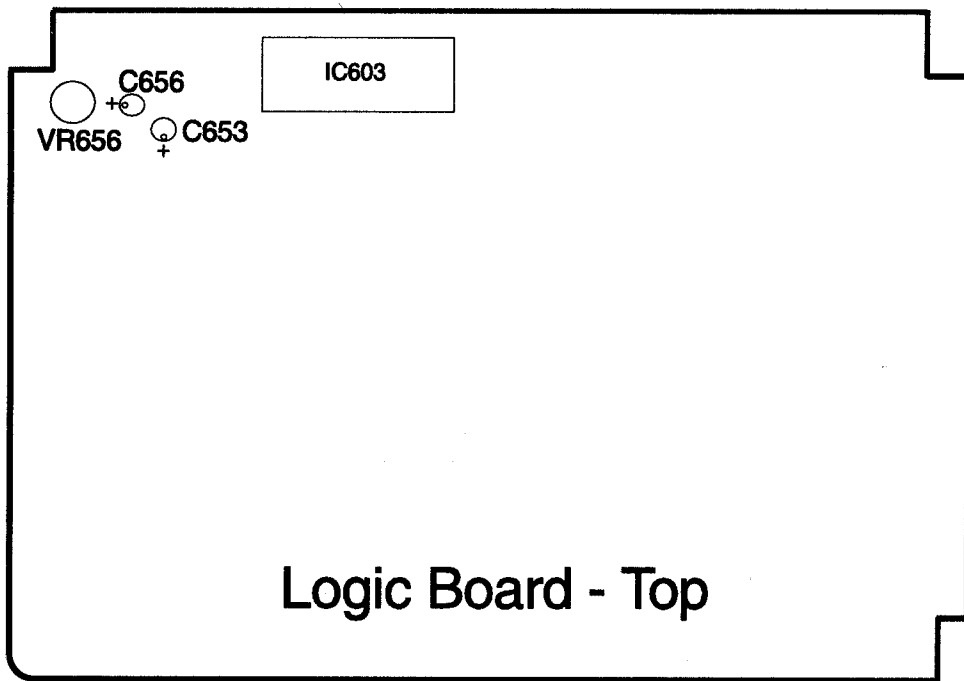
Step	Channel	Connect	Adjust	Remarks
1	3	DC voltmeter to TP401	L412	PTT off. Adjust voltage to 6.5 V
2 (VCO output adjustment)	3	Frequency counter to TP402	L455	PTT off. Adjust frequency to 233.8 MHz $\pm$ 100 Hz
3	3	DC voltmeter to TP201	L262 L263	No modulation.
4 (Tracking bandpass filter adjustment for maximum power transfer)	3	Power meter to antenna terminal	L265 L305 L306 L311 L312	No modulation. PTT on. Adjust for maximum power output
5	3	Frequency counter to antenna terminal	L255	No modulation.
6	3	DC current meter	VR377	PTT on.
7	2	Power meter to antenna terminal	VR376	PTT on. Adjust to 42 W. If power is less than 42 W, set radio to channel 2 and perform step 4.
8	1	Frequency counter to antenna terminal	-----	TAC on. Verify TX frequency: 160.050 MHz
9	4	FM linear detector to antenna terminal	VR275	PTT on.
10	1	FM linear detector to antenna terminal	VR227	PTT on. Apply 1 kHz tone at 30 mV to pin 2 of J101 Adjust deviation to $\pm$ 4 kHz (maximum deviation)
11	5	FM linear detector to antenna terminal	-----	PTT on. Speak into the microphone Verify that maximum deviation is less than $\pm$ 5 kHz

# MAIN PCB ALIGNMENT POINTS



Main PCB Top View (PD-575AA)

# LOGIC PCB ALIGNMENT POINTS



## Receiver Alignment Procedures

Step	Channel	Connect	Adjust	Remarks
1	3	Frequency counter to TP101	L55 (2nd LO frequency)	No modulation Adjust frequency to 59.395 MHz $\pm$ 100 HZ
2	3	DC voltmeter to TP103	L61 (quadrature detector output)	Set SG to 1 mV and no modulation Adjust DC volts to read 3.5 V $\pm$ 0.1 V.
3	3	AF voltmeter to P01, P02 (external speaker) 4 $\Omega$ load	VR148 (audio gain limiter)	Set SG to 1 mV Modulation 1 kHz Deviation $\pm$ 1.5 kHz Volume CW maximum Adjust AF level to 5.4 Vrms, $\pm$ 0.1 Vrms
4	3	SINAD meter to P01, P02 (external speaker)	L1 L2 L21 L22 L51 (receiver sensitivity)	Set SG for 0.3 $\mu$ V Modulation 1 kHz Deviation $\pm$ 3.0 kHz Adjust for maximum SINAD reading
5	3	Oscilloscope to P01, P02 (external speaker)	VR101 (squelch sensitivity)	Set SG for 0.6 $\mu$ V Modulation 1 kHz Deviation $\pm$ 3 kHz Squelch volume, CW maximum VR101, CW maximum, Slowly adjust until the waveform appears on the AF oscilloscope or squelch opens
6	4	Oscilloscope to TP601	VR656 (CTCSS decoder sensitivity)	Set SG for 1 mVrms or -47dbm Modulation 167.9 Hz Deviation $\pm$ 700 Hz Adjust AF voltage to 0.9 V p-p $\pm$ 0.1 V



