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1.0 GENERAL

Model	TR-936 / TR-966
Frequency Range	26.965 ~ 27.405MHz.
Emission Modes	TR-936 : AM. TR-966 : AM/SSB.
Frequency Control	Phase Lock Loop (PLL) synthesizer.
Frequency Tolerance	± 0.005 %
Frequency Stability	± 0.001 %
Operating Temperature Range	-30°C to +50°C
Microphone	Plug-in dynamic; with push-to-talk switch and coiled cord.
Input Voltage	13.8V DC nominal ±15%.
Current Drain : Transmit (AM full mod.)	<3.5A.
Current Drain : Receiver (Squelched)	<0.5A.
(Max. audio output)	<1.0A.
Antenna Connector	UHF, SO239.
Dimensions	7 7/8”(W) x 9 1/4” (D) x 2 3/8”(H).
Weight	5 lbs.

1.1 TRANSMITTER

RF Power Output	AM : 4W ; SSB : 12W PEP (TR-966).
RF Transmit Modes	AM/SSB (TR-966).
Modulation	High and low level Class B, Amplitude Modulation: AM and SSB (TR-966).
Spurious Emissions	-55 dB.
Carrier Suppression	-55 dB.
Audio Frequency Response	300 to 3000 Hz.
Antenna Impedance	50 Ohms.
Output Indicators	Meter shows relative RF output power. Transmit LED glows red when transmitter is in operation.

1.2 RECEIVER

Sensitivity For 10dB S/N	< 1.0 μV.
Sensitivity For 10dB S/N (SSB)	< 0.5 μV.
IF Frequency	AM : 10.695 MHz 1st IF, 455 KHz 2nd IF.
Image Rejection Ratio	> -65 dB.
Adjacent Channel Selectivity	> -55 dB.
RF Gain Control	45 dB adjustable for optimum signal reception.
Automatic Gain Control (AGC) Figure Of Merit	100 mV for 10 dB Change in Audio Output.
Squelch	Adjustable; threshold less than 0.5 μV.
Noise Blanker	RF type.
Audio Output Power	2W @ 10% THD.
Audio Frequency Response	AM and SSB : 300 to 3000 Hz.
Built-in Speaker	8 Ohms, 4 Watts.
External Speaker (Not Supplied)	8 Ohms; 4 Watts.

(SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE)

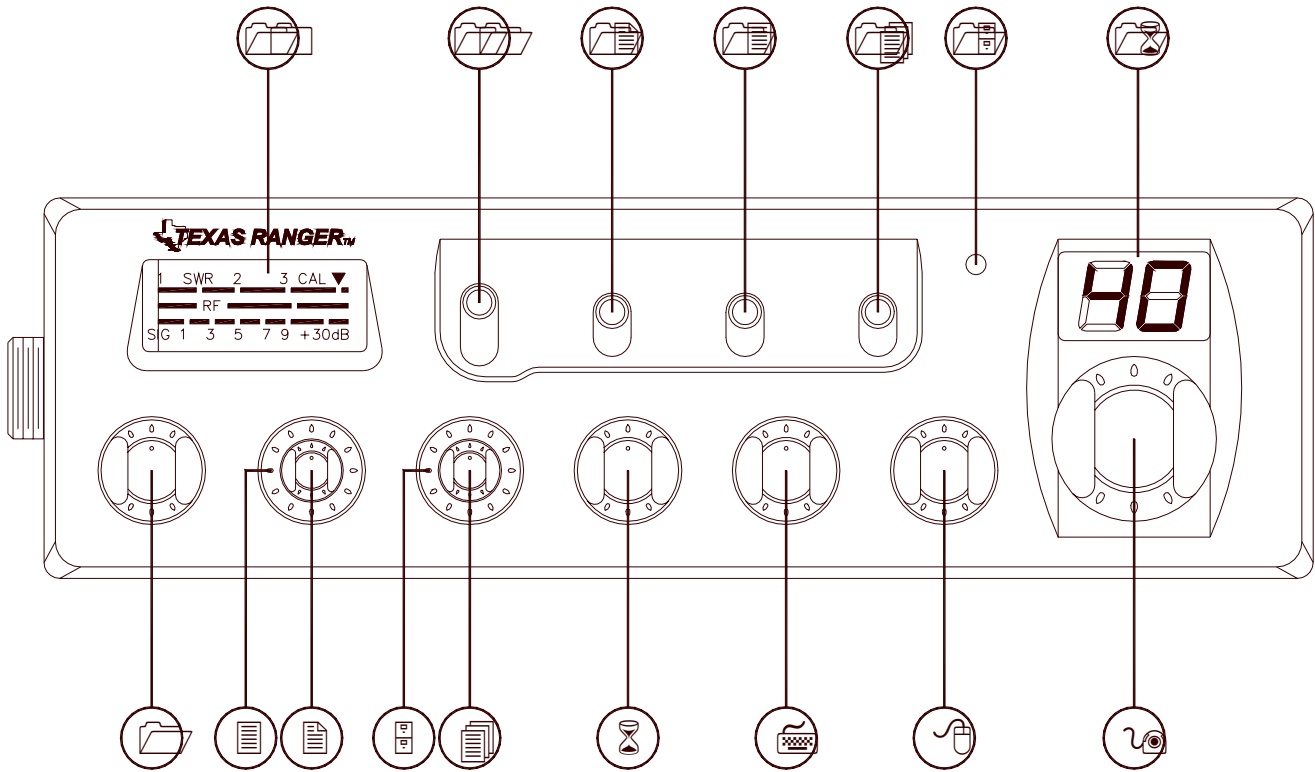


Figure 2-1 Front Panel

2.0 INTRODUCTION

This section explains the basic operating procedures for the TEXAS RANGER TR-936 / TR-966 mobile transceiver.

2.1 CONTROL AND CONNECTIONS

2.1.1 FRONT PANEL

Refer to the above Figure 2-1 for the location of the following controls.

1. MIC GAIN/ANF CONTROL

Adjust the microphone gain in the transmit and PA modes. This controls the gain to the extent that full talk power is available several inches away from the microphone. In the Public Address (PA) mode, the control functions as the volume control. Pull this switch to activate the ANF (Advanced Noise Filter) filter circuit. This feature improves the signal to noise ratio of the receiver's audio when receiving a marginal signal.

2. ON/OFF VOLUME CONTROL

Turn clockwise to apply power to the radio and to set the desired listening level.

3. SQUELCH CONTROL

This switch is used to eliminate background noise being heard through the receiver which can be disturbing when no signal is being received. To use this feature of your radio, gently turn the switch

fully counterclockwise, and then turn clockwise until the background noise is just eliminated. Further clockwise rotation will increase the threshold level and only strong signals will be heard.

4. RF GAIN CONTROL

This control is used to reduce the gain of the RF amplifier under strong signal conditions.

5. SWR CAL CONTROL

This SWR CAL control allows the user to calibrate the SWR meter.

6. S-RF/CAL/SWR SWITCH

In the S-RF position, the meter will indicate the strength of the signal being received, as well as the relative RF output of transmission. When calibrating the SWR meter, you need to put this switch in the CAL position. To use the meter to measure the standing wave ratio, turn the switch to the SWR position.

7. DIMMER CONTROL (TR-936)

This knob controls the level of brightness for the meter lamp and channel display.

MODE CONTROL (TR-966)

This control allows you to select one of the following operating modes: PA/LSB/AM/USB. In the CB position, the PA function is disabled and the unit will transmit and receive on the speaker that is connected. In the PA position, the transceiver acts as a public address amplifier. Before operating in the PA mode, you must first connect an external PA speaker to the PA. SP. Jack on the rear panel.

8. TONE CONTROL (TR-936)

This control changes the tone quality in receive only. In clockwise rotation, treble is increased and in counter clockwise rotation, bass is increased.

CLARIFIER CONTROL (TR-966)

Allows tuning of the receive frequency above or below the channel frequency by up to 1.5 KHz. Although this control is intended primarily to tune in SSB signals, it may be used to optimize AM signals.

9. CHANNEL SELECTOR

This control is used to select a desired transmit and receive channel.

10. FRONT PANEL METER

The Front Panel Meter allows the user to monitor signal strength, RF output power and SWR level.

11. NB/ANL/OFF SWITCH

This is a three position switch. Move the switch all the way up to active the Noise Blanker (NB) and Automatic Noise Limiter (ANL). The Noise Blanker is very effective in eliminating repetitive impulse noise such as ignition interference. When the switch is moved to the middle position, only the Automatic Noise Limiter (ANL) is engaged. Move the switch to the bottom position to turn off the ANL and NB.

12. PA/CB SWITCH (TR-936)

Select the mode of operation. In the PA position, the radio acts as public address amplifier. Your voice will come out of the speaker that is plugged into PA. SP. jack on the rear panel. The radio

does not operate when you are in the PA mode. In the CB position, the PA function is disabled and the radio will transmit and receive on the speaker that is connected.

CH19/OFF (TR-966)

The Channel 19 switch is used for instant access to Channel 19, which is often used by truckers for transmission of traffic and weather conditions.

13. R.B./OFF SWITCH (TR-936)

In the Roger Beep position, the radio transmits an audio tone at the end of your transmission to indicate that transmission has ended. As a courtesy to others, use the Roger Beep only when necessary.

TONE SWITCH HI/LO (TR-966)

This switch changes tone quality in receives only. In LO position, bass is increased and HI position, treble is increased.

14. CH19/OFF SWITCH (TR-936)

The Channel 19 switch is used for instant access to Channel 19, which is often used by truckers for transmission of traffic and weather conditions.

BRIGHT/ DIM SWITCH (TR-966)

This switch controls the level of brightness for the meter lamp and channel display LED.

15. TX/RX LED

The red LED indicates the unit is in the transmit mode. The green LED indicates the unit is in the receive mode.

2.1.2 REAR PANEL

Figure 2-2 represents the location of the following connections:

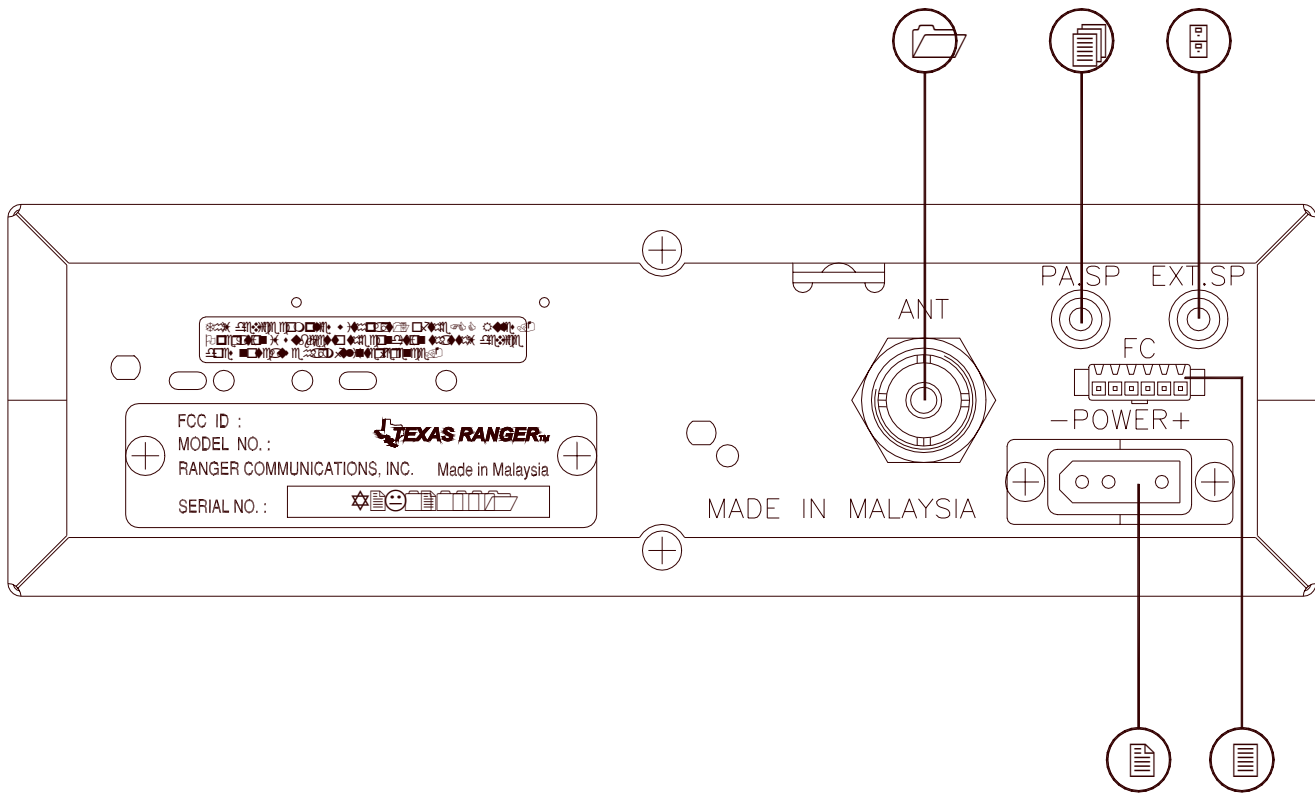


Figure 2-2 Rear Panel

1. ANTENNA

This jack accepts 50 ohms coaxial cable with a PL-259 type plug.

2. POWER

This accepts a 13.8V DC power cable with built-in fuse. The power cord provided with the radio has a black and red wire. The black goes to negative and the red goes to positive.

3. FREQUENCY COUNTER CONNECTOR

This F.C connector is used for the FC-390 external frequency counter which indicates the frequency of the selected channel.

4. PA. SP.

This jack is for PA operation. Before operating, you must first connect a PA speaker (8 ohms, 4W) to this jack.

5. EXT. SP.

This jack accepts a 4 to 8 ohms, 4 watt external speaker. When the external speaker is connected to this jack, the built-in speaker will be disabled.

2.1.3 FREQUENCY CHART

CHANNEL	CHANNEL FREQUENCY (MHz)	CHANNEL	CHANNEL FREQUENCY (MHz)
1	26.965	21	27.215
2	26.975	22	27.225
3	26.985	23	27.255
4	27.005	24	27.235
5	27.015	25	27.245
6	27.025	26	27.265
7	27.035	27	27.275
8	27.055	28	27.285
9	27.065	29	27.295
10	27.075	30	27.305
11	27.085	31	27.315
12	27.105	32	27.325
13	27.115	33	27.335
14	27.125	34	27.345
15	27.135	35	27.355
16	27.155	36	27.365
17	27.165	37	27.375
18	27.175	38	27.385
19	27.185	39	27.395
20	27.205	40	27.405

2.2 MICROPHONE

The receiver and transmitter are controlled by the push-to-talk switch on the microphone. Press the switch and the transmitter is activated, release the switch to receive. When transmitting, hold the microphone two inches from your mouth and speak clearly in a normal voice. The radio comes complete with a low impedance (500 ohm) dynamic microphone.

2.3 OPERATION

2.3.1 PROCEDURE TO RECEIVE

1. Be sure that power source, microphone and antenna are connected to the proper connectors before going to the next step.
2. Turn **VOL** knob clockwise to apply power to the radio.
3. Set the **VOL** to a comfortable listening level.
4. Set the **MODE** switch to the desired mode.
5. Listen to the background noise from the speaker. Turn the **SQ (SQUELCH)** knob slowly clockwise until the noise just disappears. The **SQ** is now properly adjusted. The receiver will remain quiet until a signal is actually received. Do not advance the control too far or some of weaker signals will not be heard.
6. Set the **CHANNEL** selector switch to the desired channel.
7. Set the **RF GAIN** control fully clockwise for maximum RF gain.
8. Adjust the **CLARIFIER** control to clarify the SSB signals or to optimize AM signals. (TR-966 only)

2.3.2 PROCEDURE TO TRANSMIT

1. Select the desired channel of transmission
2. Set the **MIC GAIN** control fully clockwise.
3. If the channel is clear, depress the push-to-talk switch on the microphone and speak in a normal voice.

2.4 ALTERNATE MICROPHONES AND INSTALLATION

For best results, the user should select a low impedance dynamic type microphone or a transistorized microphone. Transistorized type microphones have a low output impedance characteristic. The microphones must be provided with a four-lead cable. The audio conductor and its shielded lead comprise two of the leads. The third lead is for transmit control and the fourth is for receiving control. The microphone should provide the functions shown in schematic below (Figure 2-3).

4 WIRE MIC CABLE

Pin Number	Mic Cable Lead
1	Audio Shield
2	Audio Lead
3	Transmit Control
4	Receive Control

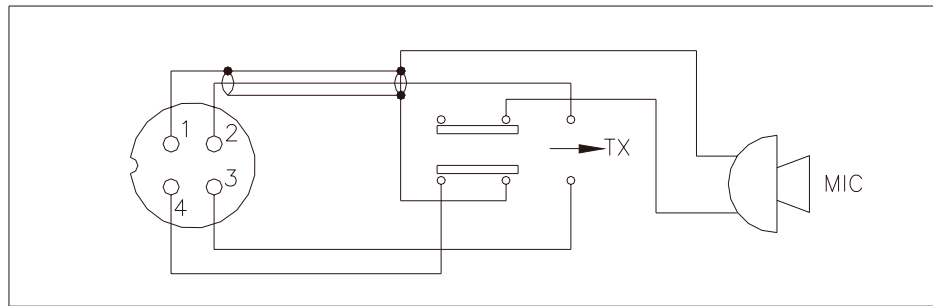


Figure 2-3 Your Transceiver Microphone Schematic

3.0 INTRODUCTION

This section explains the technical theory of operation for the Texas Ranger TR-936 / TR-966 mobile transceiver.

3.1 PLL CIRCUIT

The Phase Lock Loop (PLL) circuit is responsible for developing the receiver's first local oscillator signal and the transmitter's exciter signal. The PLL circuit consists primarily of IC2, IC3, Q25, Q27, Q28 and Q29. The PLL circuit is programmed by the rotary channel switch GPS-0501. The GPS-0501 communicates the correct binary data information to the programmable divider inside of IC3. IC3 then controls the VCO (Voltage Controlled Oscillator), to oscillate on the correct frequency. This signal is fed either into the receiver's first mixer (for receive operation) or the transmitter's mixer (for transmit operation).

3.2 RECEIVER CIRCUIT

The incoming RF signal comes into the radio via the antenna and into the front-end pre-amp, Q17. The RF signal is fed into the dual mosfet mixer circuit of Q18/Q19 and then into the AM/SSB IF section of the receiver (depending on the mode of operation). The signal is then detected by either the AM detector then product detector and then fed to the audio amplifier section of the receiver and finally out to the speaker.

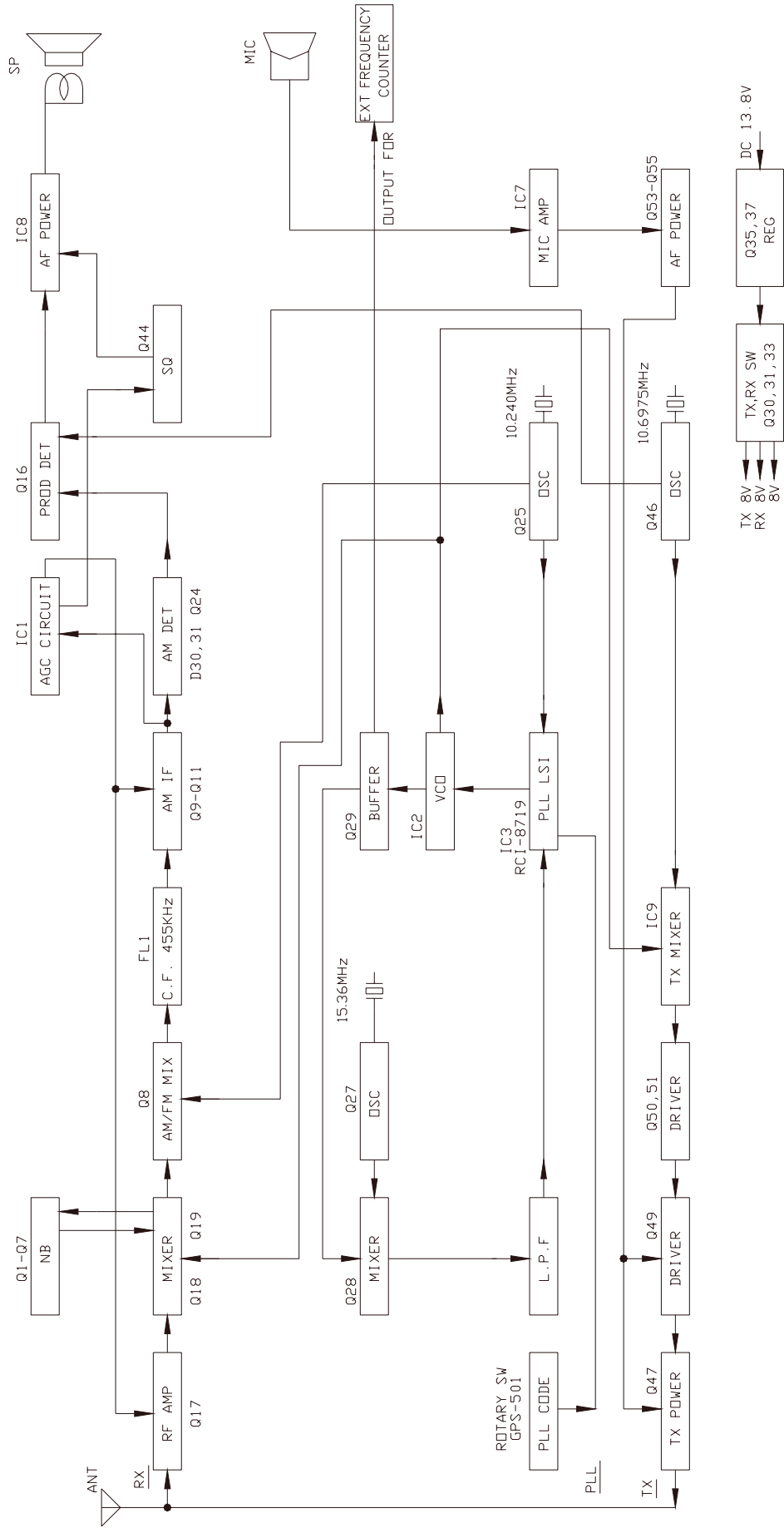
3.3 TRANSMITTER MODULATION CIRCUIT

- (i) The transmitter modulation circuit modulates the low-level RF signal from the PLL exciter circuit with the user's audio voice signal from the microphone. The audio from the microphone is then amplified and fed into the transmit amplifier circuit.
- (ii) If the transceiver is in the AM mode, the AF Power amplifier modulates the last RF amplifier, which produces a true amplitude modulated RF signal.
- (iii) If the transceiver is in the SSB mode, the audio signal is mixed with 10.6975MHz oscillator in IC6. (SSB function only for TR-966)

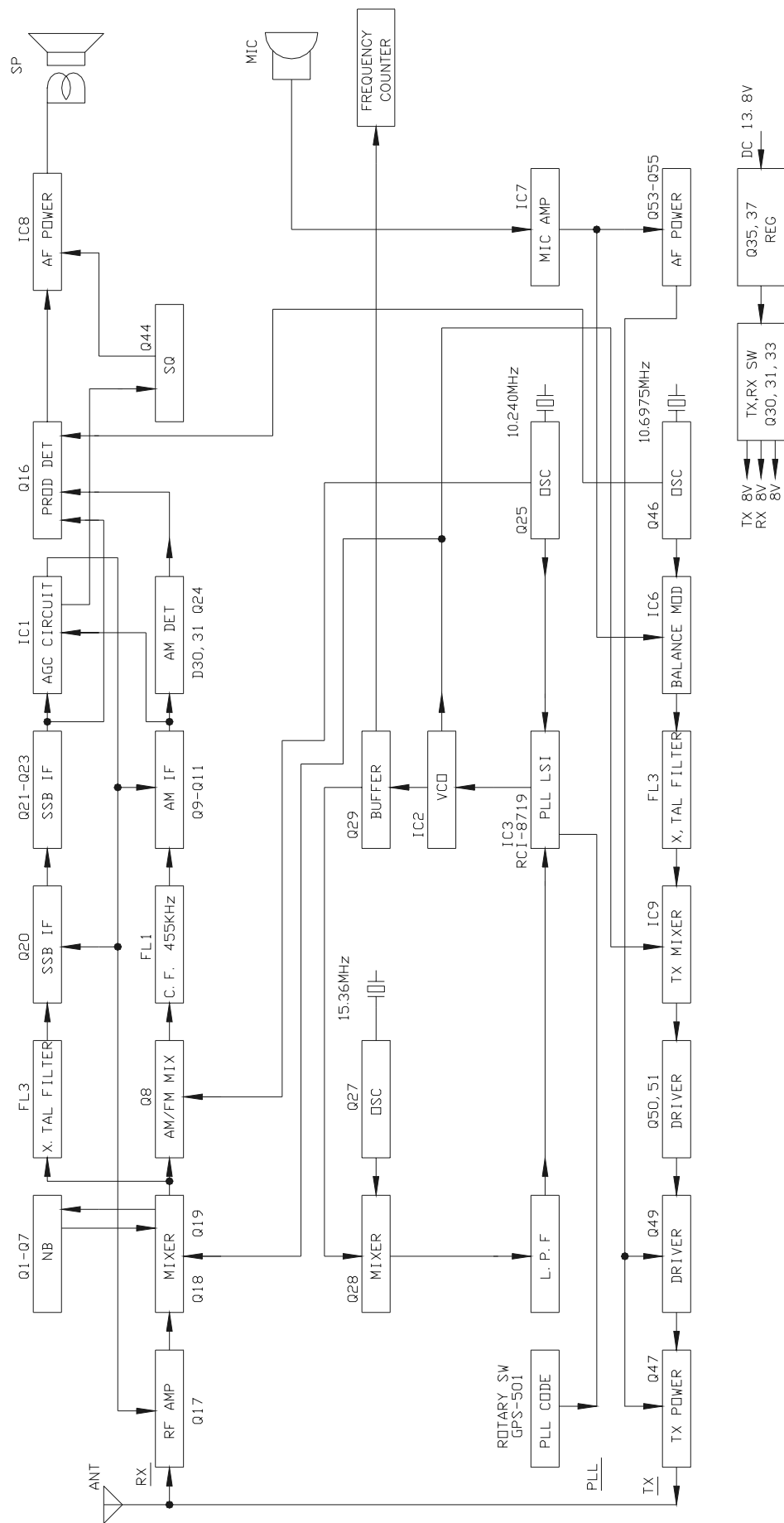
3.4 TRANSMITTER AMPLIFIER CIRCUIT

The transmitter takes the basic exciter signal from the TX mixer and amplifies it through a series of amplifiers consisting of Q50, Q51, Q49 and Q47 where it is sent out to the antenna connector.

TR-936 BLOCK DIAGRAM



TR-966 BLOCK DIAGRAM



4.0 REQUIRED TEST EQUIPMENT

- | | |
|----------------------------------|---------------------------------|
| ① DC Power Supply (13.8VDC, 10A) | ⑥ Frequency Counter (100 MHz) |
| ② RF Wattmeter (25~60 MHz, 25W) | ⑦ RF Signal Generator (100 MHz) |
| ③ Multimeter (Digital) | ⑧ Automatic Distortion Meter |
| ④ Automatic Modulation Meter | ⑨ Oscilloscope (50 MHz) |
| ⑤ Audio Signal Generator | ⑩ Sinad Meter |

4.1 ALIGNMENT PROCEDURES

This transceiver has been aligned at the factory and does not require any adjustments at installation. The required test equipment listed is used for the test setup or alignment shown in Figure 4-1 Transmitter Test Setup and Figure 4-2 Receiver Test Setup. This test setup is used in part or total during the following adjustments and refer to Page 16 for adjustment location.

4.1.1 PLL ALIGNMENT

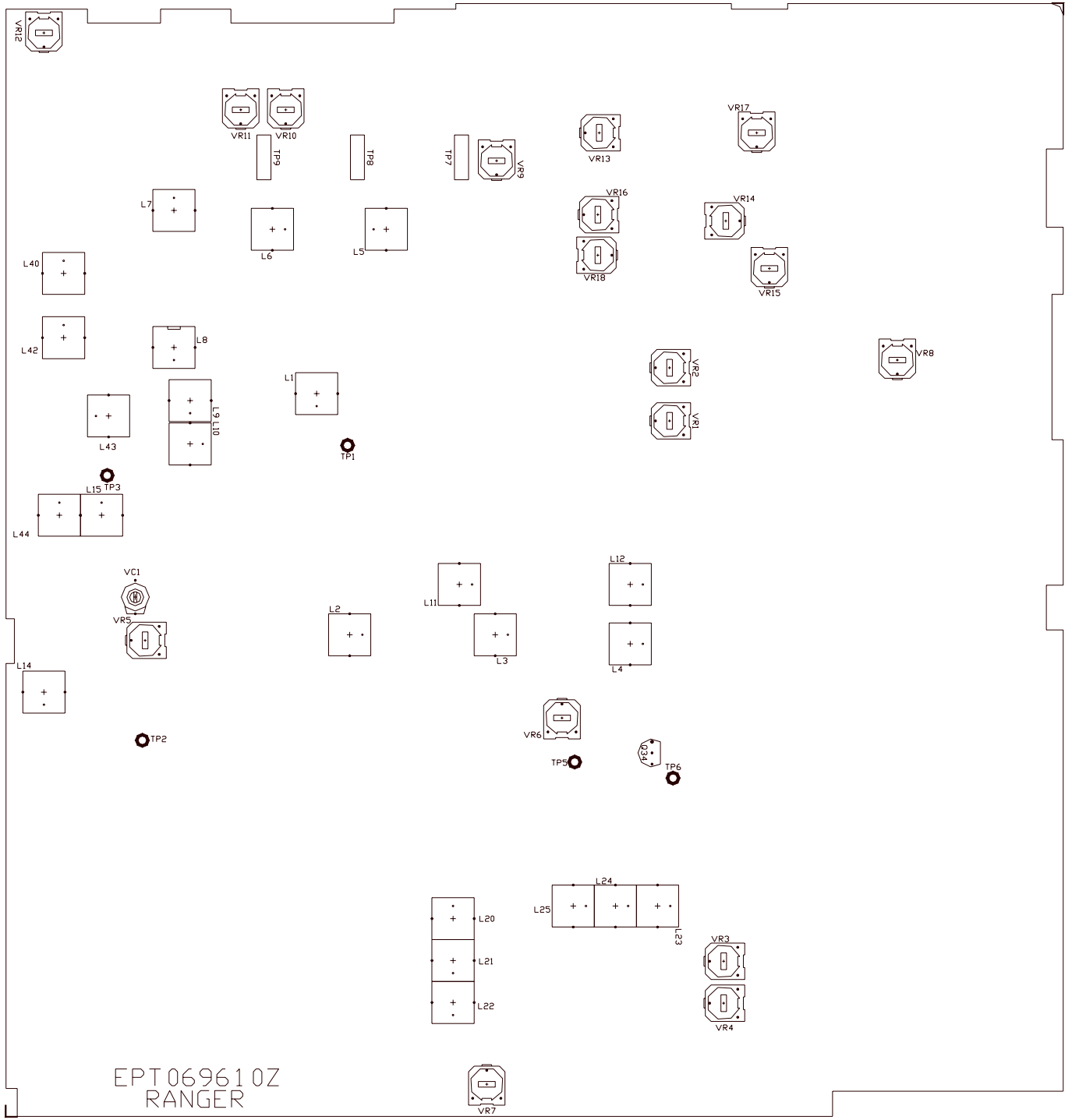
ITEM	U.U.T. SETTING	ADJUST POINT	MEASUREMENT
VCO	Disconnect 'Short PCB' from TP7, TP8 & TP9. Set radio to CH 1 AM RX mode. Connect Voltmeter to TP2.	L14	2.5 VDC \pm 0.1
	Set CLARIFIER Control to 12 o'clock. (TR-966) Connect Oscilloscope to TP3.	L15	Adjust for max.
	Connect Frequency Counter to IC3 (Pin 8).	VC1	10.2400MHz \pm 20Hz
AM Frequency	Set radio to CH 1 AM RX mode. Connect Frequency Counter to TP3.	L20	16.2700MHz \pm 20Hz
USB Frequency (TR-966)	Set radio to CH 1 USB RX mode. Connect Frequency Counter to TP3.	L21	16.2725MHz \pm 20Hz
LSB Frequency (TR-966)	Set radio to CH 1 LSB RX mode. Connect Frequency Counter to TP3.	L22	16.2675MHz \pm 20Hz
TX Offset Frequency	Set radio to CH 1 AM TX mode. Connect Frequency Counter to TP3.	VR7	16.2675MHz \pm 20Hz
AM OSC	Set radio to CH 1 AM TX mode. Connect Frequency Counter to TP5.	L23	10.6950MHz \pm 10Hz
USB OSC (TR-966)	Set radio to CH 1 USB TX mode. Connect Frequency Counter to TP6.	L24	10.6925MHz \pm 10Hz
LSB OSC (TR-966)	Set radio to CH 1 LSB TX mode. Connect Frequency Counter to TP6.	L25	10.6975MHz \pm 10Hz

4.1.2 TRANSMITTER ALIGNMENT

ITEM	U.U.T. SETTING	ADJUST POINT	MEASUREMENT
BIAS Current (TR-966)	Set radio to CH 19 USB TX mode. Modulation Off. Connect current meter to TP7(+) and TP9 (-). Connect current meter to TP7 (+) and TP8 (-).	VR12 VR10	100 mA 50 mA
SSB APC (TR-966)	Set radio to CH 19 USB RX mode. Connect Multimeter to TP7.	VR17	12.5 VDC
SSB TX Power (TR-966)	Connect "short PCB" to TP7, TP8 and TP9. Connect RF Power Meter to antenna jack. Set radio to CH 19 USB TX mode. AF signal 30mV, 1 KHz to microphone. Set MIC GAIN Fully Clockwise.	L40,L42, L43,L44	Maximum Output Spurious Emission Minimum. Balance Power Between CH1 and CH40.
TX Power (TR-936)	Connect RF power Meter to antenna jack. Set radio to CH19 AM TX mode. Modulation off.	L40,L42, L43,L44	Maximum Output Spurious Emission Minimum. Balance Power Between CH1 and CH40.
SSB ALC (TR-966)	Set radio to CH 19 USB TX mode. AF signal 30mV, 1 KHz to microphone.	VR13	11.5 W
SSB Carrier Balance (TR-966)	Set radio to CH 19 USB TX mode. Set MIC GAIN Fully Counter Clockwise. Connect Oscilloscope to antenna connector.	VR6	Spurious Emission to Minimum.
AM TX Power	Set radio to CH 19 AM TX mode. Modulation Off.	VR14	3.8 W
RF Power Meter	Set radio to CH 19 AM TX mode. Modulation Off. Set S-RF/CAL/SWR Switch to S-RF position.	VR9	Adjust RF Power meter needle until it is in-between the green and red bar on TX PWR scale.
AM Modulation	Set radio to CH 19 AM TX mode. AF signal 30mV, 1 KHz to microphone. Set MIC Gain fully Clockwise.	VR16	90%

4.1.3 RECEIVER ALIGNMENT

ITEM	U.U.T. SETTING	ADJUST POINT	MEASUREMENT
AM Sensitivity	Set radio to CH 19 AM RX mode. Set RF GAIN Fully Clockwise. Set SQ Fully Counter Clockwise. Set VOL Control at 2 o'clock. Set NB/ANL/OFF switch to OFF position. Set TONE Fully Clockwise. Set CLARIFIER Control to 12 o'clock. (TR-966) Connect RF SG to antenna jack Frequency 27.185 MHz, 1uV. Mod 30%.	L2,L3,L5,L6, L7,L8,L9,L10	Audio Output > 2V S/N > 10 dB.
	Set radio to CH 40 AM RX mode. RF SG setting 27.405 MHz. Set radio to CH 1 AM RX mode. RF SG setting 26.965 MHz.	L5,L6	For Balance Between CH 1 and CH 40.
USB Sensitivity (TR-966)	Set radio to CH19 USB RX mode. Set VOL Control Fully Clockwise. RF SG setting 27.186 MHz, 0.5uV. Mod off.	L11,L12	Audio Output > 2V S/N > 10dB.
LSB Sensitivity (TR-966)	Set radio to CH19 LSB RX mode. Set VOL Control Fully Clockwise. RF SG setting 27.184 MHz, 0.5uV. Mod off.	L11,L12	Audio Output > 2V S/N >10dB.
NB Adjust	Set radio to CH 19 AM RX mode RF SG setting 27.185 MHz, 1000uV. Mod off. Set NB/ANL/OFF switch to NB/ANL position. Connect Multimeter to TP1 (D2 cathode).	L1	DC Voltage to max. (> 2.0V)
AM Squelch	Set radio to CH 19 AM RX mode. Set SQ Control Fully Clockwise. RF SG setting 27.185 MHz, 1mV. Mod 30%.	VR4	Adjust very slowly until squelch just open.
SSB Squelch (TR-966)	Set radio to CH 19 USB RX mode. Set SQ Control Fully Clockwise. RF SG setting 27.186 MHz, 1 mV. Mod off.	VR3	Adjust very slowly until squelch just open.
AM S-Meter	Set radio to CH 19 AM RX mode. RF SG setting 27.185 MHz, 100uV. Mod 30%.	VR1	For a reading of "9" on the "S" scale.
SSB S-Meter (TR-966)	Set radio to CH 19 USB RX mode. RF SG setting 27.186 MHz, 100uV. Mod off.	VR2	For a reading of "9" on the "S" scale



Main PCB Adjustment Location

Figure 4-1 Transmitter test setup

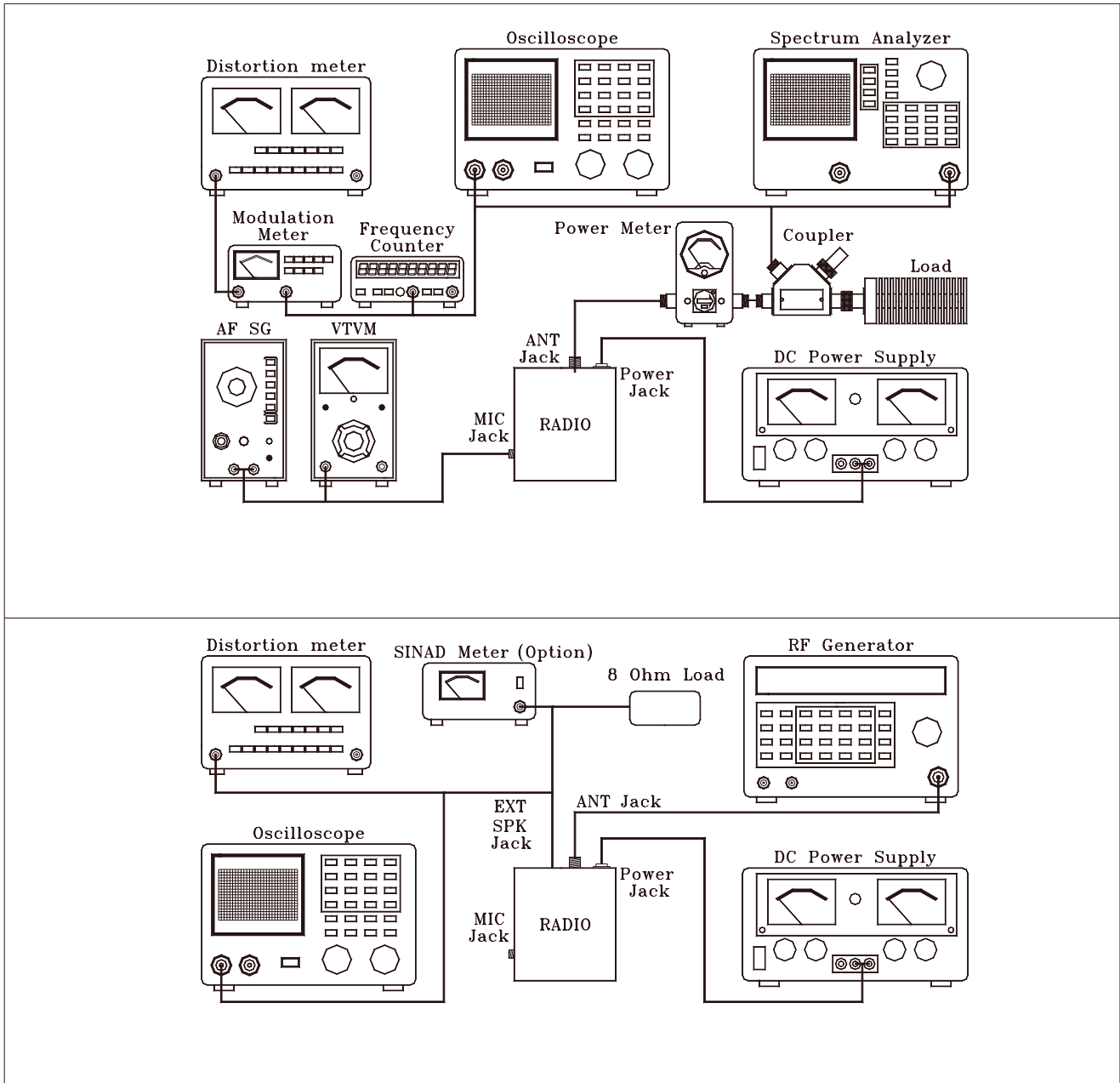


Figure 4-2 Receiver test setup

5.0 PRECAUTIONS

The inherent quality of the solid-state components used in this transceiver will provide many years of continuous use. Taking the following precautions will prevent damage to the transceiver.

- (i) Never key the transmitter unless an antenna or suitable dummy load is connected to the antenna receptacle.
- (ii) Ensure that the input voltage does not exceed 16 VDC or fall below 11 VDC.
- (iii) During alignment, do not transmit for more than 10 seconds at a time. Transmitting over long periods can cause heat built-up and cause transmitter damage.

5.1 PERIODIC INSPECTION

This unit is aligned at the factory to deliver maximum performance. However, continued performance cannot be expected without periodic inspection and maintenance. Important points to be checked regularly are as follows;

Check Item	Action
Whip antenna (option)	If cracked or broken, replace it.
Coaxial cable	If sheath is cracked, seal with vinyl tape. If immersed with water, install new coaxial cable.
Coaxial & power plug connections	If loosened, reconnect. If corroded, clean contacts.
Battery connection	If corroded, clean power terminals.
Ground terminal	If corroded, clean terminal.

5.2 FUSE REPLACEMENT

To protect the equipment from serious damage, a fuse is provided on the power supply lines. The fuses protect against over voltage / reverse polarity or internal fault of the equipment. If the fuse has blown, first find out the cause of the trouble before replacing it. A fuse rated for more than the transceiver requirement should not be used, since it may permanently damage the equipment. Damage due to over fusing is not covered by the warranty.

6.0 GENERAL

Information on most electrical and mechanical parts is included in the parts list. The reference designators are in alphanumeric order.

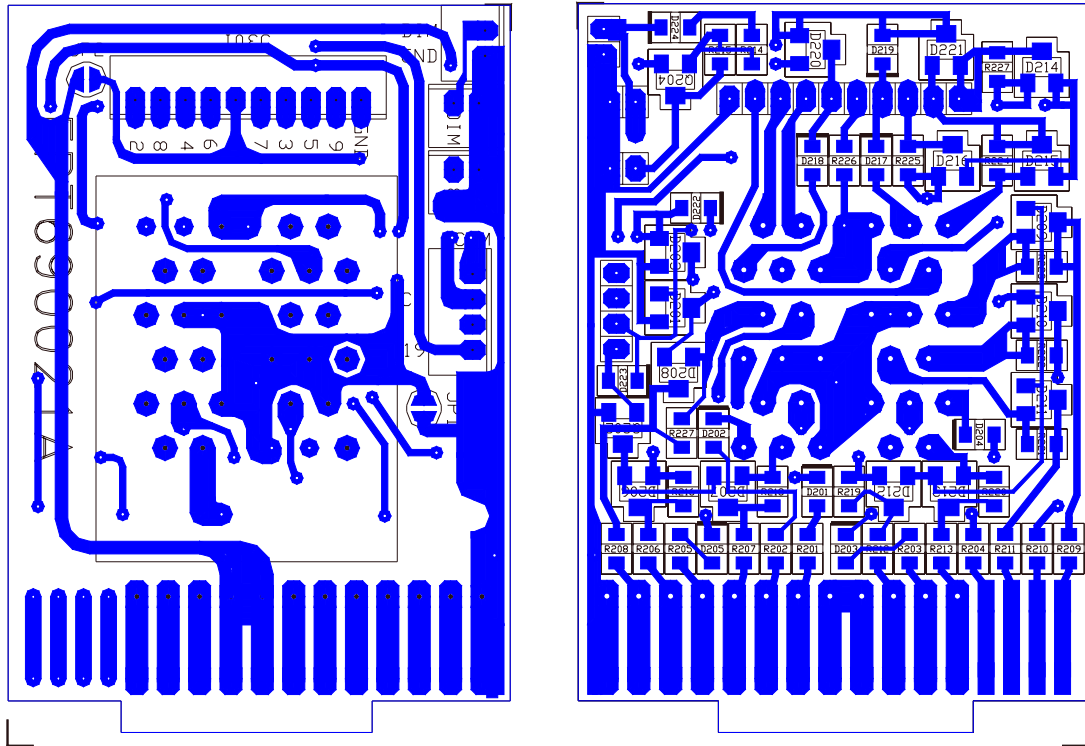
6.1 ORDERING REPLACEMENT PARTS

Parts orders should be referred to the parts department at:

- Ranger Communications, Inc.
401 W. 35TH ST, # B
NATIONAL CITY, CA 91950-7909

Tel: (619) 426-6440

Fax: (619) 426-3788



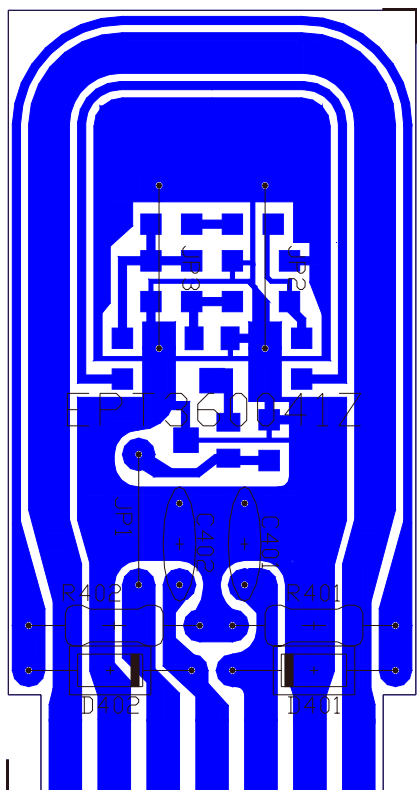
PART LIST:

TR-936 / TR-966 ROTARY SW P.C.B

ITEM	REFERENCE NUMBER	RANGER PART NUMBER	DESCRIPTION	REMARK
1		EPT690021A	ROTARY SW PCB	
2	R201,R206-R213	RCY011021Z	1K Ω 0.1W	TR-936
3	R201	RCY014714Z	470 Ω 0.1W	TR-966
4	R202-R205,R214	RCY012224Z	2.2K Ω 0.1W	TR-936
5	R214	RCY013324Z	3.3K Ω 0.1W	TR-966
6	R215	RCY015624Z	5.6K Ω 0.1W	
7	R202-R205,R206-R213	RCY011024Z	1K Ω 0.1W	TR-966
8	D223	RCY010004Z	0 Ω 0.1W	
9	D201-D205,D217-D219,D222,D225	EDSS00355Y	DIODE 1SS355	TR-936
10	D201-D205,D217-D219,D224,D225	EDSS00355Y	DIODE 1SS355	TR-966
11	D206-D213,D221	EDSS00181Y	DIODE 1SS181	
12	D214,D215,D220	EDSS00184Y	DIODE 1SS184	
13	Q204	TY2SC2712G	TR 2SC2712GR	
14	Q201-Q203	TYZRN1403Z	TR RN1403	
15	J303,J304,J305	EX07N48223	PCB CONN/S 2PIN	
16	J302	EX07N48490	PCB CONN/S 4PIN	
17	J301	EX07N48209	PCB CONN/S 10PIN	
18	S301	EWRT32000S	ROTARY SW	

REMARK:

COPPER SIDE (BLUE)



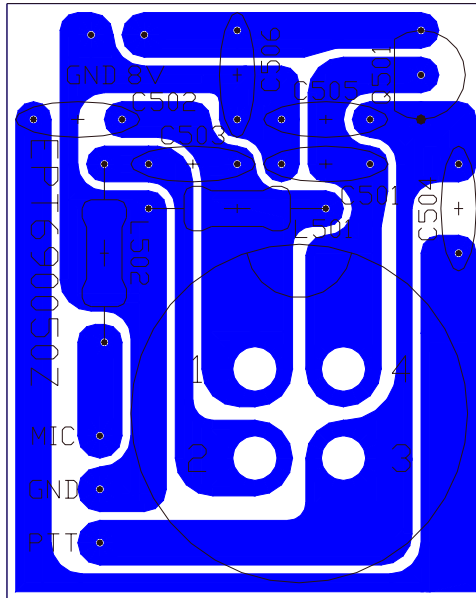
PART LIST:

TR-936 / TR-966 SWR P.C.B

ITEM	REFERENCE NUMBER	RANGER PART NUMBER	DESCRIPTION
1		EPT360041Z	SWR PCB
2	R401	RCP141214Z	120 Ω ¼ W
3	R402	RCP141014Z	100 Ω ¼ W
4	C401,C402	CC0501037L	0.01uF 50WV
5	D401,D402	ED1N00060P	DIODE 1N60P
6	JP2,JP3	WX01070710	JUMPER WIRE

REMARK:

COPPER SIDE (BLUE)



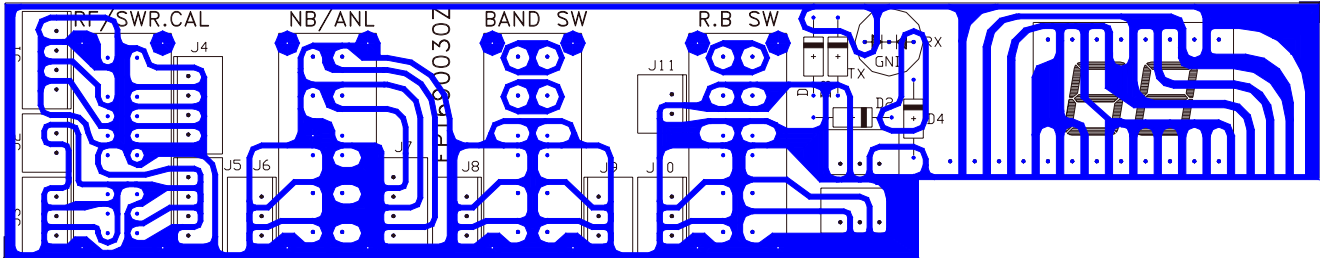
PART LIST:

TR-936 / TR-966 MIC PCB

ITEM	REFERENCE NUMBER	RANGER PART NUMBER	DESCRIPTION
1		EPT690050Z	MIC PCB
2	C502,C503,C504,C501	CC0501027L	0.001uF 50WV
3	C505,C506	CC0501037L	0.01uF 50WV
4	Q501	TDTA0124ES	TR DTA124ES
5	L501	ECCHK16001	CHOKE COIL
6	L502	ECBAD18526	BEAD COIL
7	1-4	EX06N41020	MIC JACK
8	MIC-MAIN (J12)	EX07N48903	WIRE CONN/S 3PIN
9	MIC-MAIN (J26)	EX07N48233	WIRE CONN/S 2PIN

REMARK:

COPPER SIDE (BLUE)



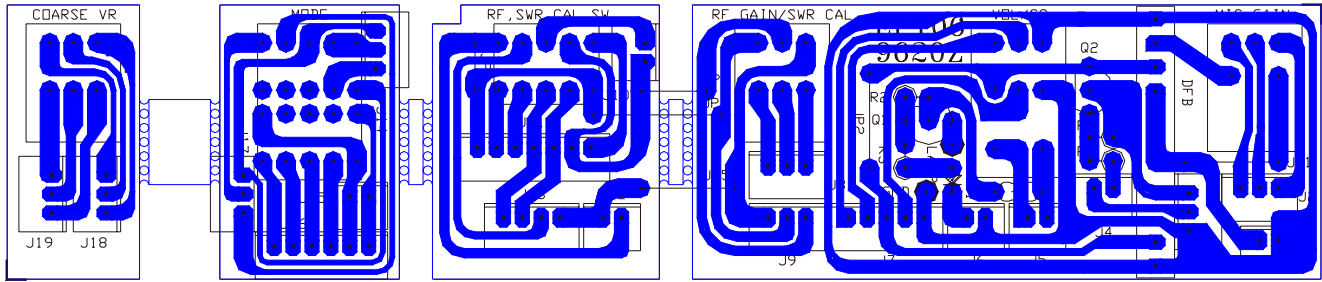
PART LIST:

TR-936 / TR-966 MODE SW P.C.B

ITEM	REFERENCE NUMBER	RANGER PART NUMBER	DESCRIPTION	REMARK
1		EPT690030Z	MODE SW PCB	
2	J8	EX07N48223	PCB CONN/S 2PIN	TR-936
3	J8, J10	EX07N48233	PCB CONN/S 2PIN	TR-966
4	J6, J10, J13	EX07N48350	PCB CONN/S 3PIN	TR-936
5	J6, J13	EX07N48350	PCB CONN/S 3PIN	TR-966
6	J4, J7	EX07N48490	PCB CONN/S 4PIN	TR-936
7	J4	EX07N48490	PCB CONN/S 4PIN	TR-966
8	D3,D4	WX01070708	JUMPER WIRE	
9	NB/ANL,BAND SW, RB SW	EWSL31026K	SLIDE SW	
10	RF/SWR-CAL	EWSL31027K	SLIDE SW	
11	TX/RX	EX01N40004	LED RED/GREEN	
12	DISPLAY	EX03N40419	LED DISPLAY	

REMARK:

COPPER SIDE (WHITE)



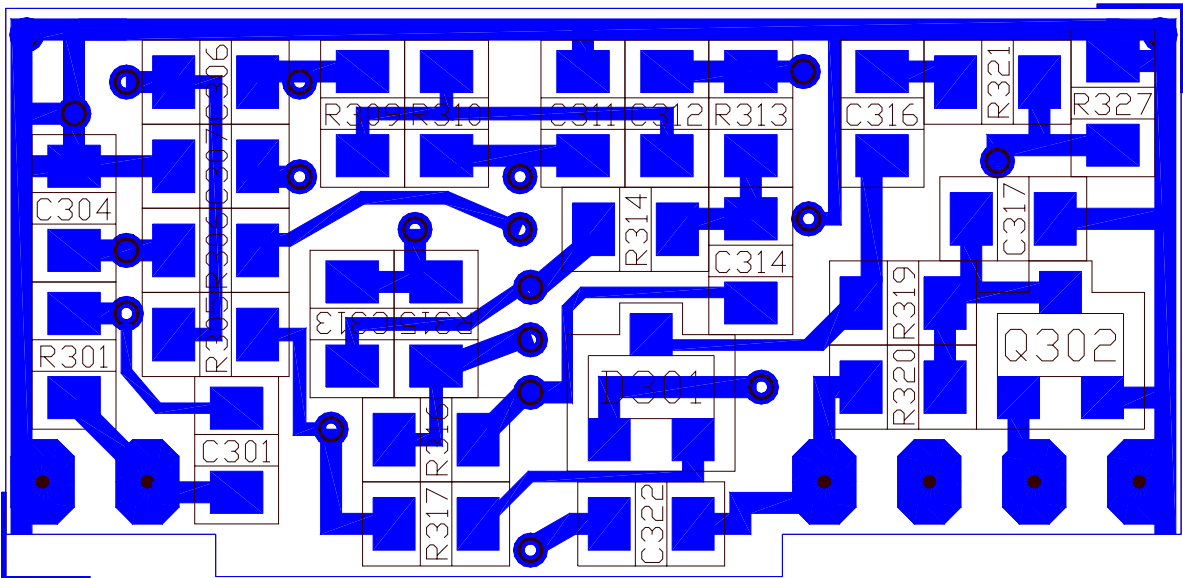
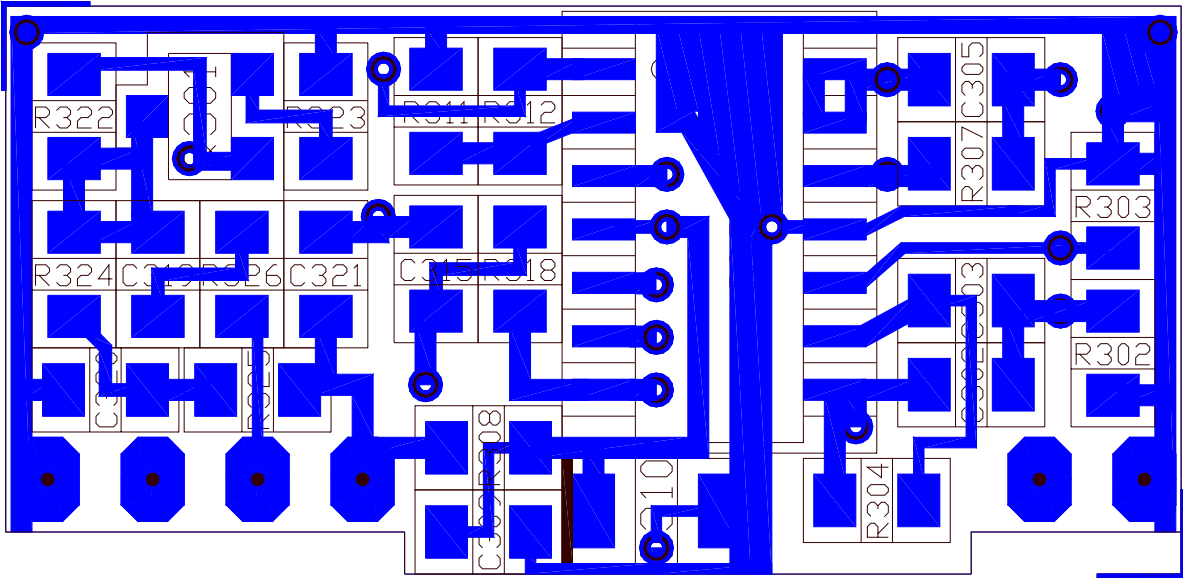
PART LIST:

TR-936 / TR-966 BAND P.C.B

ITEM	REFERENCE NUMBER	RANGER PART NUMBER	DESCRIPTION	REMARK
1		EPT069620Z	BAND PCB	
2	R1	RCP164704Z	47 Ω 1/16W	
3	R3, R2	RCP161024Z	1K Ω 1/16W	TR-936
4	R3	RCP162234Z	22K Ω 1/16W	TR-966
5	R2	RCP162734Z	27K Ω 1/16W	TR-966
6	VOL/SQ	RV50303522	VR 50KB/50KA	
7	MODE	RV50203525	VR 5KB	TR-936
8	COARSE VR	RV50303532	VR 50KB	TR-936
9	RF GAIN/SWR CAL	RV50203530	VR 5KB/1KB	
10	MIC GAIN	RV10203531	VR 1KA	
11	COARSE VR	RV10203528	VR 1KB	TR-966
12	MODE	EWRT32088S	ROTARY SW 4N	TR-966
13	RF,SWR,CAL SW	EWRT32087S	ROTARY SW 3N	
14	DFB	ENRG0IC080	IC080	
15	Q1	T2SC00945P	TR 2SC945P	
16	D1	ED1N04148Z	DIODE 1N4148	
17	J10	WX01070703	JUMPER WIRE	
18	JP3	WX01070707	JUMPER WIRE	
19	JP1,JP5	WX01070710	JUMPER WIRE	
20	J1, J5, J6, J12, J14, J18	EX07N48223	PCB CONN/S 2 PIN	TR-936
21	J1, J5, J6, J12	EX07N48223	PCB CONN/S 2 PIN	TR-966
22	J2,J8	EX07N48350	PCB CONN/S 3 PIN	TR-936
23	J2, J8, J17, J18	EX07N48350	PCB CONN/S 3 PIN	TR-966
24	J13	EX07N48490	PCB CONN/S 4 PIN	
25	J7	EX07W48826	PCB CONN/S 5 PIN	
26	JP4	WX01070713	JUMPER WIRE	TR-936
27	JP6	WX01070705	JUMPER WIRE	TR-966
28	JP4	WX01070714	JUMPER WIRE	TR-966
29	D3,D4	WX01070708	JUMPER WIRE	TR-966
30	J16	EX07N48222	PCB CONN/S 5 PIN	TR-966

REMARK:

COPPER SIDE (BLUE)



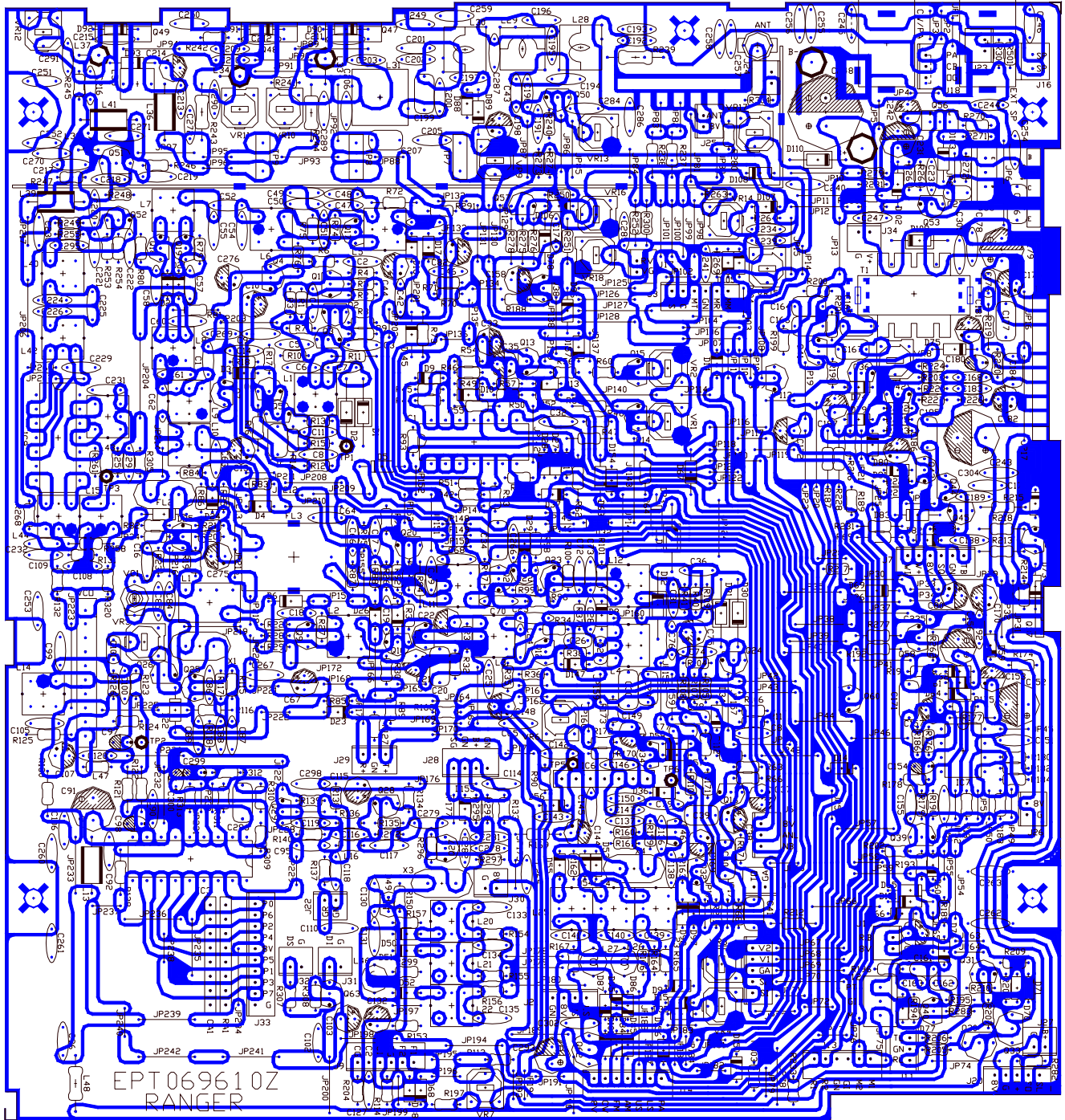
PART LIST:

TR-936 / TR-966 DFB P.C.B

ITEM	REFERENCE NUMBER	RANGER PART NUMBER	DESCRIPTION
1		EPT009830Z	DFB PCB
2	R312	RCY011004Z	10 Ω 0.1W
3	R308	RCY011014Z	100 Ω 0.1W
4	R316	RCY012714Z	270 Ω 0.1W
5	R323	RCY012224Z	2.2K Ω 0.1W
6	R324	RCY014724Z	4.7K Ω 0.1W
7	R325	RCY011024Z	1K Ω 0.1W
8	R309, R310, R311, R313-R315, R318-R312, R326	RCY011034Z	10K Ω 0.1W
9	R305, R307, R317	RCY011534Z	15K Ω 0.1W
10	R302, R327, R301	RCY014734Z	47K Ω 0.1W
11	R303, R304, R306, R322	RCY011044Z	100K Ω 0.1W
12	C302	CK1101AB5L	100PF 50WV
13	C301, C307	CK1561AB5L	560PF 50WV
14	C303, C304, C316, C319, C320	CK2104AB7R	0.1uF 25WV
15	C309, C311, C317, C321, C322	CK1103AB6U	0.01uF 50WV
16	C315	CK133AB6U	0.033uF 50WV
17	C312, C314	CK1473AB7R	0.04uF 50WV
18	C313	CK1332AB7R	0.0033uF 50WV
19	C305, C306	CK1472AB5X	0.0047UF 50WV
20	C310	CTY164756Z	4.7UF 16WV
21	IC301	YNJR00324M	IC NJM324M
22	Q302	TYZRN1403Z	TR RN1403
23	Q301	TY2SC2712G	TR 2SC2712GR
24	D301	EDSS00226Y	DIODE 1SS226

REMARK:

COPPER SIDE (BLUE)



TR-936 / TR-966 MAIN PCB

REMARK:
COPPER SIDE (BLUE)

PART LIST
TR-936 MAIN PCB

REFERENCE NUMBER	RANGER PART NO.	DESCRIPTION
R246	EPT069610Z	MAIN PCB
R267	RCP161004Z	10 \odot 1/16W
R133, 213, 253, 282	RCP161504Z	15 \odot 1/16W
R130, 215, 220, 249	RCP164704Z	47 \odot 1/16W
R11	RCP165604Z	56 \odot 1/16W
R3, 5, 8, 30, 33, 76, 81, 174, 260, 263	RCP166804Z	68 \odot 1/16W
R32	RCP161014Z	100 \odot 1/16W
R23	RCP161514Z	150 \odot 1/16W
R140, 163, 177	RCP161814Z	180 \odot 1/16W
R31	RCP162214Z	220 \odot 1/16W
R6, 10, 16, 24, 248, 254, 300	RCP162714Z	270 \odot 1/16W
R188, 268, 293, 154	RCP163314Z	330 \odot 1/16W
R258, 266, 209	RCP164714Z	470 \odot 1/16W
R4, 50, 89	RCP165614Z	560 \odot 1/16W
R74	RCP166814Z	680 \odot 1/16W
R62, 64, 67, 72, 115, 116, 118, 122, 123, 136-138, 160, 164, 179, 186, 189, 205, 206, 214, 252, 232, 237, 238, 261, 291, 292, 295, 303, 320	RCP168214Z	820 \odot 1/16W
R192	RCP161024Z	1K \odot 1/16W
R47, 117, 135, 139, 194	RCP161224Z	1.2K \odot 1/16W
R49, 55, 176	RCP162244Z	220K \odot 1/16W
R15, 111, 183	RCP162744Z	270K \odot 1/16W
R48	RCP164744Z	470K \odot 1/16W
R106	RCP168244Z	820K \odot 1/16W
R193	RCP161054Z	1M \odot 1/16W
R124	RCP161554Z	1.5M \odot 1/16W
R239	RCP161064Z	10M \odot 1/16W
C218	RCP121034Z	10K \odot 1/2W
C1, 49, 108	CC0500301L	3PF 50WV
C287	CC0501004L	10PF 50WV
C8	CC0503304L	33PF 50WV
C4	CC0508204L	82PF 50WV
C137	CC0501015L	100PF 50WV
C31, 136	CC0501515L	150PF 50WV
C11, 14	CC0502715L	270PF 50WV
C23	CC0503315L	330PF 50WV
C225	CC0505615L	560PF 50WV
C52, 197	CC0500591A	0.5PF 50WV
C61, 62, 90	CC0500101A	1PF 50WV
C84, 89, 190	CC0500501A	5PF 50WV
C43	CC0501504A	15PF 50WV
C54, 55	CC0501804A	18PF 50WV
C119, 226, 279	CC0502204A	22PF 50WV
C195	CC0503304A	33PF 50WV
C202, 224	CC0503904A	39PF 50WV
C88, 116, 117	CC0504704A	47PF 50WV
C192, 194	CC0506804A	68PF 50WV
C196, 295	CC0501515A	150PF 50WV
C139	CC0501815A	180PF 50WV
C281	CC0503904D	39PF 50WV
C282	CC0501015G	100PF 50WV
C220	CC0501815G	180PF 50WV
C86	CC0502215G	220PF 50WV
C85, 201, 203	CC0502715G	270PF 50WV
	CC0503915G	390PF 50WV

C210, 216	CC0504715G	470PF 50WV
C199	CD3005614Z	560P 300WV
C7, 47, 50, 74, 95, 99, 110, 118, 120, 174, 183, 244, 245, 100, 246	CC0501027L	0.001uF 50WV
C81, 173, 193, 206, 207, 213, 234, 250, 256, 259, 272, 249, 302, 304, 236, 270, 177	CC0501047L	0.1uF 50WV
C5, 18, 20, 48, 65, 87, 92, 96, 102, 105, 106, 257, 151, 160, 233, 240, 251, 252, 253, 258, 260, 261, 263, 217	CC0504737L	0.047uF 50WV
C32, 42, 45, 46, 162, 163, 221	CC0504727L	0.0047uF 50WV
C155	CC0502237L	0.022uF 50WV
C200	CC1001037L	0.01uF 100WV
C2, 3, 6, 9, 15, 16, 17, 19, 51, 57, 58, 60, 109, 114, 133, 138, 205, 161, 189, 247, 219, 229, 230, 232, 254, 255, 265, 267, 269, 271, 278, 285, 298, 188	CC0501037L	0.01uF 50WV
C154	CT0162246Z	0.22uF 16WV
C97	CT0161046Z	0.1uF 16WV
C98, 180, 299, 300	CT0162256Z	2.2uF 16WV
C40, 178, 296, 171, 235	CM0501045Z	0.1uF 50WV
	CM0501024Z	0.001uF 50WV
C41, 78, 184	CM0501035Z	0.01uF 50WV
C39, 185	CM0502235Z	0.022uF 50WV
C176	CM0504725Z	0.0047uF 50WV
C34	CM0504735Z	0.047uF 50WV
C12	CM0502225Z	0.0022uF 50WV
C198	CE0501047Z	0.1uF 50WV
C10	CE0504747Z	0.47uF 50WV
C67, 75, 153, 157, 170, 186, 187	CE0501057Z	1uF 50WV
C159, 214	CE0502257Z	2.2uF 50WV
C103, 182, 38	CE0504757Z	4.7uF 50WV
C13, 21, 22, 44, 82, 115, 158, 275, 276	CE0251067Z	10uF 25WV
VC1	CV038200AZ	TRIMMER/C
C80, 181	CE0252267Z	22uF 25WV
C37, 175	CE0254767Z	47uF 25WV
C156, 238, 293, 107	CE0161077Z	100uF 16WV
C152, 179	CE0163377Z	330uF 16WV
C91	CE0104777Z	470uF 10WV
C243, 248	CE0251087Z	1000uF 25WV
C35	CEM254767Z	47uF 25WV
FL1	EFCFW455HT	CERAMIC FILTER
FL2	EFCFE107MX	CERAMIC FILTER
X1	EYCAB10240	10.240MHZ
X3	EYCAA15360	15.360MHZ
X4	EYBAE10697	10.6975MHZ
IC1	ENSS00324Z	IC KA324
IC3	ENRG871997	IC RCI-8719A
IC7	ENR004558Z	I.C BA4558
IC9	ENSM06130Z	I.C 14P
VCO	ENNOHIC07A	I.C 10P
Q8, 17	T2SC01674L	TR 2SC1674L
Q51	T2SC02314F	TR 2SC2314F
Q52	T2SC01906Z	TR 2SC1906
Q36	TDTC0124ES	TR DTC124ES
Q24, 43	TDTC0114ES	TR DTC114ES
Q60	TDTA0124ES	TR DTA124ES
Q30, 33, 62	T2SA01282E	TR 2SA1282E
Q1, 2, 9, 10, 11, 25, 28, 29, 46, 27	T2SC01675L	TR 2SC1675L
Q3, 4, 5, 7, 14, 16, 31, 35, 39, 40, 42, 44, 53, 57	T2SC00945P	TR 2SC945P
Q6, 38	T2SA00733P	TR 2SA733P

Q55	T2SA01869Z	TR 2SA1869	226, 232, 233, 234, 235,		
Q18, 19	FZZJ00310Z	F.E.T J310	236, 239, 241, 242, L36,		
D3-5, 7, 9, 10, 13, 14,	ED1N04148Z	DIODE	IC6		
20, 21, 95, 96, 32-35,		1N4148	JP74	WX01070712	JUMPER WIRE
37, 53, 60-65, 69, 75-			JP54, 67-70, 89, 127,	WX01070713	JUMPER WIRE
81, 88, 89, 102, 106,			172		
107, 141, 150, 108, 97,			JP6, 11, 17, 140, 204,	WX01070716	JUMPER WIRE
82, 155			223		
D1, 2, 11, 12, 30, 31	ED1N00060P	DIODE 1N60P	J4, 10, 22, 26	EX07N48223	P/C/S 2P
D110	ED1N04003Z	DIODE	J6, 11, 18	EX07N48350	P/C/S 3P
		1N4003	J3, 14, 21, 28	EX07N48490	P/C/S 4P
D109	ED1N04007Z	DIODE	J5, 20	EX07N48222	P/C/S 5P
		1N4007	J13	EX07N48331	P/C/S 6P
D16, 17	EDSS00053Z	DIODE 1SS53	J33	EX07N48209	P/C/S 10P
D59, 72	EDMA00027W	DIODE	J12	EX07N41227	P/C/S 3P
		MA27W-A	SP (J16)	EX07N41330	P/C/S 2P
D71, 145, 156	EDMA00027T	DIODE	TP2, 3	EX07N48612	P/C/S 1P
		MA27T-A	DC	CC0501037L	0.01uF 50WV
D70	EDZD05519Z	ZENER DIODE	IC8	ENTA07222A	I.C 10P
D73	EDZD05759Z	ZENER DIODE	Q54	T2SB00754Y	TR 2SB754Y
L2, 3	ECIFT12002	I.F.T	Q49	T2SC02166C	TR 2SC2166C
L6	ECIFT12290	I.F.T	Q47	T2SC01969C	TR 2SC1969C
L20	ECIFT12012	I.F.T	Q37	T2SA01869Z	TR 2SA1869
L23	ECIFT12016	I.F.T			
L1	ECIFT12252	I.F.T			
L44	ECIFT12255	I.F.T			
L9, 10	ECIFT12256	I.F.T			
L15, 43	ECIFT12258	I.F.T			
L40	ECIFT12262	I.F.T			
L14	ECIFT12558	I.F.T			
L5	ECIFT12253	I.F.T			
L7, 42	ECIFT12440	I.F.T			
L8	ECIFT12492	I.F.T			
L48	ECCHK16096	CHOKE COIL			
L503, 504	ECCHK16000	CHOKE COIL			
T1	ECCHK16004	CHOKE COIL			
L33, 37	ECCHK16070	CHOKE COIL			
L47	ECCHK16176	CHOKE COIL			
L16	ECCHK16246	CHOKE COIL			
L28, 30	ECS PG18003	SPRING COIL			
L29	ECS PG18075	SPRING COIL			
L31	ECS PG18365	SPRING COIL			
L35	ECS PG18001	SPRING COIL			
L38	ECRFZ10048	RF COIL			
L13, 39, 41	ECBAD18526	BEAD COIL			
VR16	RE10200041	S/F/R 1K			
VR1	RE10300031	S/F/R 10K			
VR9	RE10400043	S/F/R 100K			
VR14	RE50200042	S/F/R 5K			
VR4	RE50400087	S/F/R 500K			
RA1	RCS0870028	RESISTOR			
		ARRAY			
CA1	CCS0873000	CAPACITOR			
		ARRAY			
D25	WX01070708	JUMPER WIRE			
JP1-4, 21, 24, 25, 28,	WX01070705	JUMPER WIRE			
33, 34, 45, 49, 50, 52,					
55, 56, 58, 63, 64, 71,					
75-77, 79, 82-84, 88,					
95, 96, 102, 104, 109,					
110, 111, 114, 117, 118,					
121, 129, 132-136, 145,					
147, 149, 150, 153,					
160 (B), 165, 168, 169,					
173, 175, 177, 182, 183,					
185, 191-193, 196, 197,					
199, 201, 202, 207, 211,					
214-218, 220, 221, 228-					
231, 237, 238, 240,					
C142, D84, D85, D50,					
DC131, C130, R19, R305,					
R245, R241, TP8, J14					
JP65, 73, 119, 122	WX01070707	JUMPER WIRE			
JP12, 15, 16, 29, 30, 31,	WX01070710	JUMPER WIRE			
32, 35, 36, 37, 38, 40,					
41, 46, 47, 48, 57, 59,					
78, 87, 90, 92, 93, 94,					
97, 98, 100, 101, 106,					
107, 120, 126, 128, 130,					
131, 138, 142, 144, 124,					
157, 163, 166, 176, 178,					
189, 190, 194, 198, 203,					
206, 208, 209, 212, 225,					

TR-936 MISC. PARTS

REFERENCE NUMBER	RANGER PART NO.	DESCRIPTION
-	PT9000010R	FRONT PANEL
-	PT9000020E	CH KNOB
-	PT9000070E	BAND KNOB
-	PT9000040E	INNER KNOB
-	PT9000050E	OUTER KNOB
-	PT3600060A	LED DISPLAY HOLDER
-	PT3600070A	WINDOW LED DISPLAY
-	PT3600080A	METER HOLDER
-	MT3600011X	FRONT CHASSIS
-	MT3600041S	CHANNEL BRACKET
-	MT3600061X	TOP HOUSING
-	MT3600071X	BOTTOM HOUSING
-	MT3600030S	HANDLER
-	MT3600080T	D SPRING A
-	MT3600090T	D SPRING B
-	MT3600100T	D SPRING D
-	PT3600090A	KNOB WASHER
-	XZZZ90296A	MASK PLATE
-	GZZZ50171Z	LED SUPPORT
-	LZZZ60082Z	SHIELD CLOTH
TOP HOUSING	XZZZ90021Z	FOAM
-	XZZZ90064Z	INSULATING PLATE
-	WA0012185A	DC CORD
MICROPHONE	EX04N40704	MIC
-	EX02N40206	FUSE 125V 4A
-	EX06T41019	ANT SOCKET
-	EX06T40007	DC SOCKET
DC SOCKET	EDLT6A400Z	DIODE
-	MT3001024M	MAIN CHASSIS
DC SOCKET	MT3600050X	DC SOCKET HOLDER
2SB754Y	XZZZ90020Z	INSULATING PLATE
ANT JACK, MIC JACK	XZZZ90098Z	SOLDER PLATE
Q47, 49	XZZZ90003Z	INSULATING RING
Q47, 49	XZZZ90358Z	INSULATING PLATE
IC8	LZZZ61008Z	IC SHIELD B
DC (2)	JS053008MN	SET SCREW
Q37	JS052006MN	SET SCREW
Q47, 49	JS052012MN	SET SCREW
IC8	JS013006MV	SET SCREW
Q54	JS052010MN	SET SCREW
Q47, 49	JN242012ZS	NUT
FRONT PANELx4	JS033008MN	SET SCREW
SWR SW, TONE, CH9, WB/ANL	JS052604MN	SET SCREW
CH BKT, CHASSIS	JS053006MN	SET SCREW
SPKx4	JS053006MN	SET SCREW
MAIN PCBx6	JS053006TN	SET SCREW
-	JW323006CN	IN TOOTH WASHER
SPK	JN263035ZS	NUT WITH WASHER
-	XZZZ90008Z	MIC STOPPER
-	XZZZ90007Z	MOUNTING SCREW
-	JS015010WH	SET SCREW
-	JS013508TH	SET SCREW
-	JW315510CN	OUT-TOOTH

PART LIST TR-966 MAIN PCB

REFERENCE NUMBER	RANGER PART NO.	DESCRIPTION
	EPT069610Z	MAIN PCB
TP7-TP9	EPT120060Z	P.C.B
R246	RCP161004Z	10 \emptyset 1/16W
R267	RCP161504Z	15 \emptyset 1/16W
R241	RCP162204Z	22 \emptyset 1/16W
R113,133,213,253,282	RCP164704Z	47 \emptyset 1/16W
R130,215,220,249	RCP165604Z	56 \emptyset 1/16W
R11,101	RCP166804Z	68 \emptyset 1/16W
R3,5,8,30,33,76,81,95,169,174,260,263	RCP161014Z	100 \emptyset 1/16W
R32,100,245	RCP161514Z	150 \emptyset 1/16W
R23	RCP161814Z	180 \emptyset 1/16W
R140,163,177	RCP162214Z	220 \emptyset 1/16W
R31,99	RCP162714Z	270 \emptyset 1/16W
R6,10,16,24,248,254,300	RCP163314Z	330 \emptyset 1/16W
R188,250,268,280,293,299,154,155,156	RCP164714Z	470 \emptyset 1/16W
R258,266	RCP165614Z	560 \emptyset 1/16W
R4,50,89,94,209	RCP166814Z	680 \emptyset 1/16W
R74	RCP168214Z	820 \emptyset 1/16W
R62,64,67,72,98,116,118,136-138,261,223,123,270,271,160,164,166,167,179,186,205,206,214,232,189,238,240,237,291,292,295,303,115,320	RCP161024Z	1K \emptyset 1/16W
R88,192	RCP161224Z	1.2K \emptyset 1/16W
R54,87,97,132,207,233,247,251,255,273,79,80,223	RCP161524Z	1.5K \emptyset 1/16W
R226	RCP161824Z	1.8K \emptyset 1/16W
R20,27,71,73,75,114,134,162,197,279,283,313,259	RCP162224Z	2.2K \emptyset 1/16W
R9,25,28,121,153	RCP162724Z	2.7K \emptyset 1/16W
R18,22,58,60,66,110,128,171,191,219,274,73,252	RCP163324Z	3.3K \emptyset 1/16W
R52,57	RCP163924Z	3.9K \emptyset 1/16W
R26,84,131,165,190,195,196,VR18	RCP164724Z	4.7K \emptyset 1/16W
R83,92,264,265	RCP165624Z	5.6K \emptyset 1/16W
R14,40,41,70,82,312	RCP166824Z	6.8K \emptyset 1/16W
R90,275	RCP168224Z	8.2K \emptyset 1/16W
R1,13,17,56,65,68,86,159,161,175,181,202,210,216,227-231,272,276,296,297,173,262	RCP161034Z	10K \emptyset 1/16W
R178,310	RCP161234Z	12K \emptyset 1/16W

R180	RCP161534Z	15K \emptyset 1/16W
R91,109,187,208	RCP162234Z	22K \emptyset 1/16W
R309,311,2	RCP163334Z	33K \emptyset 1/16W
R46	RCP163934Z	39K \emptyset 1/16W
R7,29,61,63,96,126,150,157,185,218,222,224	RCP164734Z	47K \emptyset 1/16W
R21,105,107	RCP166834Z	68K \emptyset 1/16W
R45	RCP168234Z	82K \emptyset 1/16W
R12,42,43,44,51,53,104,108,112,182,184,225,278,221	RCP161044Z	100K \emptyset 1/16W
R47,117,135,139,194	RCP162244Z	220K \emptyset 1/16W
R49,55,170,172,176	RCP162744Z	270K \emptyset 1/16W
R15,111,183	RCP164744Z	470K \emptyset 1/16W
R48	RCP168244Z	820K \emptyset 1/16W
R106	RCP161054Z	1M \emptyset 1/16W
R193	RCP161554Z	1.5M \emptyset 1/16W
R124	RCP161064Z	10M \emptyset 1/16W
R244	RCP121514Z	150 \emptyset 1/16W
R239	RCP121034Z	10K \emptyset 1/16W
C218	CC0500301L	3PF 50WV
C79	CC0500501L	5PF 50WV
C1,49,108,147	CC0501004L	10PF 50WV
C76	CC0501804L	18PF 50WV
C36	CC0502704L	27PF 50WV
C287	CC0503304L	33PF 50WV
C8	CC0508204L	82PF 50WV
C4,70,284	CC0501015L	100PF 50WV
C137	CC0501515L	150PF 50WV
C31,136	CC0502715L	270PF 50WV
C11,14	CC0503315L	330PF 50WV
C23	CC0505615L	560PF 50WV
C225	CC0500591A	0.5PF 50WV
C52,197	CC0500101A	1PF 50WV
C61,62,90,190	CC0500501A	5PF 50WV
C84,89	CC0501504A	15PF 50WV
C43	CC0501804A	18PF 50WV
C54,55	CC0502204A	22PF 50WV
C119,226,279	CC0503304A	33PF 50WV
C202,224	CC0504704A	47PF 50WV
C88,116,117	CC0506804A	68PF 50WV
C150,191	CC0501015A	100PF 50WV
C194,192	CC0501515A	150PF 50WV
C195	CC0503904A	39PF 50WV
C196,295	CC0501815A	180PF 50WV
C139,141	CC0503904D	39PF 50WV
C140	CC0501515D	150PF 50WV
C130	CC0502004G	20PF 50WV
C281	CC0501015G	100PF 50WV
C282	CC0501815G	180PF 50WV
C220	CC0502215G	220PF 50WV
C86	CC0502715G	270PF 50WV
C85,201,203	CC0503915G	390PF 50WV
C216,210	CC0504715G	470PF 50WV
VC1	CV050200AZ	TRIMMER/C
C199	CD3005614Z	560PF 300WV
C7,47,50,74,95,99,100,118,120,110,174,183,244,246,245	CC0501027L	0.001uF 50WV
C81,173,193,206,207,213,211,249,250,256,259,272,292,302,304,215,236,270,234,177	CC0501047L	0.1uF 50WV
C5,18,20,48,65,68,72,87,92,96,102,105,106,143,151,160,233,240,251,252,253,257,258,260,261,263,266,	CC0504737L	0.047uF 50WV

217			D110	ED1N04003Z	DIODE
C32, 42, 45, 46, 162, 163, 221, 64	CC0504727L	0.0047uF			1N4003
C155	CC0502237L	50WV	D109	ED1N04007Z	DIODE
		0.022uF			1N4007
C200	CC1001037L	50WV	D16, 17	EDSS00053Z	DIODE 1SS53
		0.01uF	D59, 72	EDMA00027W	DIODE
		100WV			MA27W-A
C2, 3, 6, 9, 15, 16, 17, 19, 131, 51, 57, 58, 60, 63, 66, 69, 73, 109, 114, 161, 127, 133, 188, 134, 135, 138, 142, 145, 146, 189, 205, 262, 278, 305, 219, 229, 230, 232, 285, 247, 298, 254, 255, 265, 267, 269, 271	CC0501037L	0.01uF 50WV	D71, 103, 145, 156	EDMA00027T	DIODE
C97, 149	CT0161046Z	0.1uF 16WV			MA27T-A
C154	CT0162246Z	0.22uF 16WV	D49	EDSV00251Z	DIODE SVC-251SPA
C98, 180, 299, 300	CT0162256Z	2.2uF 16WV	D70	EDZD05519Z	ZENER DIODE
C40, 178, 296, 171, 235	CM0501045Z	0.1uF 50WV	D73	EDZD05759Z	ZENER DIODE
C77, 237	CM0501024Z	0.001uF	L2, 3	ECIFT12002	I.F.T
		50WV	L6	ECIFT12290	I.F.T
C78, 184	CM0501035Z	0.01uF 50WV	L20, 21, 22	ECIFT12012	I.F.T
C39, 185, 41	CM0502235Z	0.022uF	L25	ECIFT12013	I.F.T
		50WV	L23, 24	ECIFT12016	I.F.T
C176	CM0504725Z	0.004uF	L1, 11	ECIFT12252	I.F.T
		50WV	L44	ECIFT12255	I.F.T
C34	CM0504735Z	0.047uF	L9, 10	ECIFT12256	I.F.T
		50WV	L12	ECIFT12257	I.F.T
C12	CM0502225Z	0.0022uF	L15, 43	ECIFT12258	I.F.T
		50WV	L40	ECIFT12262	I.F.T
C198	CE0501047Z	0.1uF 50WV	L14	ECIFT12558	I.F.T
C10	CE0504747Z	0.47uF 50WV	L5	ECIFT12253	I.F.T
C67, 75, 153, 157, 170, 186, 187	CE0501057Z	1uF 50WV	L7, 42	ECIFT12440	I.F.T
C159, 214, 242	CE0502257Z	2.2uF 50WV	L8	ECIFT12492	I.F.T
C103, 182, 38	CE0504757Z	4.7uF 50WV	L48	ECCHK16096	CHOKO COIL
C13, 21, 22, 44, 82, 115, 132, 158, 275, 276	CE0251067Z	10uF 25WV	L503, 504	ECCHK16000	CHOKO COIL
C80, 181	CE0252267Z	22uF 25WV	L26, 27, 46	ECCHK16003	CHOKO COIL
C33, 37, 144, 175	CE0254767Z	47uF 25WV	T1	ECCHK16004	CHOKO COIL
C156, 238, 293, 107	CE0161077Z	100uF 16WV	L33, 37	ECCHK16070	CHOKO COIL
C152, 179	CE0163377Z	330uF 16WV	L47	ECCHK16176	CHOKO COIL
C91	CE0104777Z	470uF 10WV	L16	ECCHK16246	CHOKO COIL
C243, 248	CE0251087Z	1000uF 25WV	L28, 30	ECSPG18003	SPRING COIL
C35	CEM254767Z	47uF 25WV	L29	ECSPG18075	SPRING COIL
FL1	EFCFW455HT	CERAMIC	L31	ECSPG18365	SPRING COIL
		FILTER	L35	ECSPG18001	SPRING COIL
FL2	EFCFE107MX	CERAMIC	L38	ECRFZ10048	RF COIL
		FILTER	L39, 41, 13	ECBAD18526	BEAD COIL
FL3	EFX8106952	CERAMIC	VR7, 12, 16	RE10200041	S/F/R 1K
		FILTER	VR13, 14	RE50200042	S/F/R 5K
X1	EYCAB10240	10.240MHZ	VR1, 2, 6, 17	RE10300031	S/F/R 10K
X3	EYCAA15360	15.360MHZ	VR9	RE10400043	S/F/R 100K
X4	EYBAE10697	10.6975MHZ	VR3, 4	RE50400087	S/F/R 500K
IC1	ENSS00324Z	I.C KA324	VR10	RE10100074	S/F/R 100 Ω
IC6	ENMA00612Z	I.C AN-612	RA1	RCS0870028	RESISTOR
IC3	ENRG871997	I.C	CA1	CCS0873000	ARRAY
		RCI-8719A			CAPACITOR
IC7	ENR004558Z	I.C BA4558	JP65, 73, 119, 122	WX01070707	ARRAY
IC9	ENSM06130Z	I.C TDA6130	J9	WX01070707	JUMPER WIRE
VCO	ENNOHIC07A	I.C UHIC07A	JP1-4, 8, 21, 24, 25, 28, 33, 34, 45, 49-52, 55, 56, 58, 60, 63, 64, 71, 75-77, 79, 80, 82-84, 88, 95, 96, 102, 104, 109-111, 114, 117, 118, 121, 129, 132-137, 139, 145-150, 152-156, 160, 168-175, 182, 183, 185, 191-197, 199, 201, 202, 207, 211, 214-218, 220, 221, 227-231, 237, 238, 240, R19, R305, JP160B, 177, 165	WX01070705	JUMPER WIRE
Q8, 17, 20	T2SC01674L	TR 2SC1674L			JUMPER WIRE
Q51	T2SC02314F	TR 2SC2314F			JUMPER WIRE
Q23, 52	T2SC01906Z	TR 2SC1906			JUMPER WIRE
Q36	TDTC0124ES	TR DTC124ES			JUMPER WIRE
Q24, 43	TDTC0114ES	TR DTC114ES			JUMPER WIRE
Q60	TDTA0124ES	TR DTA124ES			JUMPER WIRE
Q30, 33, 55, 62	T2SA01282E	TR 2SA1282E			JUMPER WIRE
Q1, 2, 9, 10, 11, 21, 22, 25, 28, 29, 46, 50, 27	T2SC01675L	TR 2SC1675L			JUMPER WIRE
Q3, 4, 5, 7, 13, 14, 15, 16, 31, 34, 35, 39, 40, 42, 44, 53, 56, 57	T2SC00945P	TR 2SC945P			JUMPER WIRE
Q6, 38	T2SA00733P	TR 2SA733P			JUMPER WIRE
Q18, 19	FZZJ00310Z	F.E.T			JUMPER WIRE
D3, 4-7, 9, 10, 13-15, 20, 21, 24-29, 32-38, 50-57, 60-65, 68, 69, 75-81, 85-90, 92, 93, 102, 106-108, 141, 150, 155, 95-98, 82	ED1N04148Z	DIODE			JUMPER WIRE
D1, 2, 11, 12, 30, 31	ED1N00060P	DIODE 1N60P			JUMPER WIRE

JP6,11,17,140,143, 204,223	WX01070716	JUMPER WIRE
J4,22,26,30	EX07N48223	P/C/S 2P
J6,9,11,18	EX07N48350	P/C/S 3P
J3,21,28	EX07N48490	P/C/S 4P
J5,20	EX07N48222	P/C/S 5P
J13	EX07N48331	P/C/S 6P
J14	EX07N48224	P/C/S 7P
J33	EX07N48209	P/C/S 10P
J12	EX07N41227	P/C/S 3P
SP	EX07N41330	P/C/S 2P
TP2,3,5,6	EX07N48612	P/C/S 1P
TP7,8,9	XZZZ90006Z	PCB STOPPER
DC	CC0501037L	0.01uF 50WV
IC8	ENTA07222A	I.C 10P
Q54	T2SB00754Y	TR 2SB754Y
Q49	T2SC02166C	TR 2SC2166C
Q47	T2SC01969C	TR 2SC1969C
Q37	T2SA01869Z	TR 2SA1869
R1,10	RCY011004Z	10 Ω 0.1W
R3	RCY011014Z	100 Ω 0.1W
R6	RCY015614Z	560 Ω 0.1W
R7	RCY013324Z	3.3K Ω 0.1W
R5	RCY016824Z	6.8K Ω 0.1W
R2,4	RCY011034Z	10K Ω 0.1W
R9	RCY012244Z	220K Ω 0.1W
C5,6	CK1100AB2A	10PF 50WV
C4	CK1181AB5L	180PF 50WV
C3	CK1391AB5L	390PF 50WV
C10	CK1102AB7L	0.001uF 50WV
C2	CK1103AB6U	0.01uF 50WV
C7	CK1330AB4A	33PF 50WV
C8	CK1680AB4A	68PF 50WV
C1	CTY161056Z	1uF 16WV
Q1	TY2SC2712G	TR 2SC2712G
Q2,3	TY2SC3123Z	TR 2SC3123
D2	ED1V00217Y	1SV217-TP

TR-966 MISC. PARTS

REFERENCE NUMBER	RANGER PART NO.	DESCRIPTION
-	PT9000010S	FRONT PANEL
-	PT9000020E	CH KNOB
-	PT9000070E	BAND KNOB
-	PT9000040E	INNER KNOB
-	PT9000050E	OUTER KNOB
-	PT3600060A	LED DISPLAY HOLDER
-	PT3600070A	WINDOW
-	PT3600080A	DISPLAY METER HOLDER
-	PT3600090A	KNOB WASHER
-	MT3600011X	FRONT CHASSIS CHANNEL
-	MT3600041S	BRACKET
-	MT3600061X	TOP HOUSING
-	MT3600071X	BOTTOM HOUSING
-	MT3600080T	D SPRING A
-	MT3600090T	D SPRING B
-	MT3600100T	D SPRING D
SWR	XZZZ90004Z	FOAM
-	XZZZ90021Z	FOAM
-	XZZZ90296A	MASK PLATE
-	GZZZ50171Z	LED SUPPORT
TOP HOUSING, BOTTOM HOUSING	LZZZ60082Z	SHIELD CLOTH
PCB, FRONT CHASSIS, CH SW BKT	JW323006CN	IN-TOOTH WASHER
FRONT PANEL	JS033008MN	SET SCREW
SWR SW, TONE, CH19, WE/ANL	JS052604MN	SET SCREW
CHASSIS	JS053006MN	SET SCREW
-	JF413206ZX	BLIND RIVET
SPK	JS053008MN	SET SCREW
MAIN PCB	JS053006TN	SET SCREW
-	JN263035ZS	NUT WITH WASHER
-	EX06T41019	ANT SOCKET
-	EX06T40007	DC SOCKET
-	EDLT6A400Z	DIODE
-	MT3001024M	MAIN CHASSIS
-	MT3600050X	DC SOCKET HOLDER
2SB754Y	XZZZ90020Z	INSULATING PLATE
ANT JACK, MIC JACK	XZZZ90098Z	SOLDER PLATE
Q47, 49	XZZZ90003Z	INS. RING
Q47, 49	XZZZ90358Z	INS. PLATE
IC8	LZZZ61008Z	IC SHIELD 8
DC	JS053008MN	SET SCREW
Q37	JS052006MN	SET SCREW
Q47, 49	JS052012MN	SET SCREW
IC8	JS013006MV	SET SCREW
Q54	JS052010MN	SET SCREW
Q47, 49	JN242012ZS	NUT
-	MT3600030S	HANDLER
-	EX04N40704	MIC
-	WA0012185A	DC CORD
-	EX02N40210	FUSE
-	UDT360003Z	STOPPER
-	XZZZ90008Z	MIC STOPPER
-	XZZZ90007Z	MOUNTING SCREW
-	JS015010WH	SET SCREW
-	JS013508TH	SET SCREW

-	JW315510CN	OUT-TOOTH WASHER	WASHER
-	JW324008CN	IN-TOOTH WASHER	
-	XZZZ90188Z	FIBER	