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# SS-3900EGHP

## CHAPTER 1 SPECIFICATIONS

### 1.0 GENERAL

Model	SS-3900EGHP
Frequency Range	10 Meter: 28.015 ~ 28.465MHz
Emission Modes	AM(A3)/FM(F3)/LSB,USB(A3J)/CW(A1)
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 (4 pin), Dynamic PTT, 500 Ω
Meter Function	Meter shows relative signal strength, RF output power and SWR level.
Input Voltage	13.8V DC nominal ±15%
Transmit Current Drain:	AM Full Mod. < 5A
Receive Current Drain:	Squelched < 0.6A
	Max. Audio Output < 1.2A
Antenna Connector	UHF, SO239
Dimensions	7-7/8”(W) x 10-3/4”(D) x 2-3/8”(H)
Weight	5 lb.

### 1.1 TRANSMITTER

RF Power Output	AM/FM/CW: 9W RMS ; SSB: 25W PEP
RF Transmit Modes	AM/FM/SSB/CW
Modulation	A3E/16F3/J3E/A1A
Harmonics And Spurious Emissions	> -50 dB
Carrier Suppression	> -35 dB
Audio Frequency Response	300 to 2500 Hz
Antenna Impedance	50 Ohms

### 1.2 RECEIVER

Sensitivity	AM: < 1.0 μV For 10dB S+N/N FM: < 0.5 μV For 12dB S+N/N SSB/CW: < 0.5 μV For 10dB S+N/N
Intermediate Frequency	10.695 MHz (AM-1 <sup>st</sup> , SSB), 455 KHz (AM-2 <sup>nd</sup> )
Image Rejection	> 50 dB
Adjacent Channel Selectivity	> 60 dB
RF Gain Control	45 dB adjustable for optimum signal reception
Automatic Gain Control (AGC) Figure Of Merit	>70 dB for 50 mV for 10 dB Change in Audio Output
Squelch	Adjustable; threshold less than 0.5 μV
Noise Blanker	RF type
Audio Output Power	2.5W @ 10% THD
Audio Frequency Response	300 to 2500 Hz
Built-in Speaker	8 Ohms, 4 Watts
External Speaker (Not Supplied)	8 Ohms, 4 Watts

(SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE)

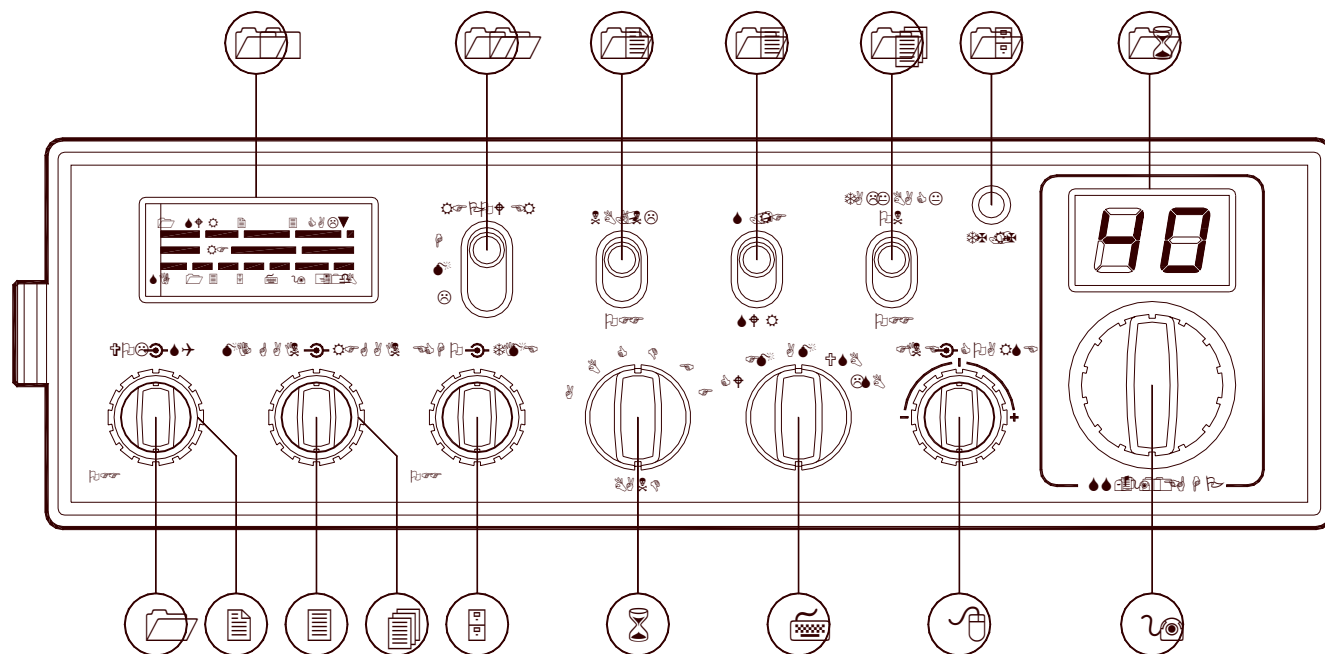


Figure 2-1 Front Panel

## 2.0 INTRODUCTION

This section explains the basic operating procedures for the SS-3900EGHP Amateur 10 meter 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. ON/OFF VOLUME CONTROL

This knob controls the volume and power to the radio. To turn radio on, rotate the knob clockwise. Turning the knob further will increase the volume of the receiver.

#### 2. SQUELCH CONTROL

This knob is used to eliminate background noise being heard through the receiver, which can be disturbing when no transmissions are being heard through the receiver. To use this feature, turn the knob fully counterclockwise and then turn clockwise slowly until the background noise is just eliminated. Further clockwise rotation will increase the threshold level which a signal must overcome in order to be heard. Only strong signals will be heard at a maximum clockwise setting.

#### 3. MIC GAIN CONTROL

Adjusts the microphone gain in the transmit modes. This controls the gain to the extent that full talk power is available several inches away from the microphone.

#### **4. RF GAIN CONTROL**

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

#### **5. ECHO/TIME CONTROL**

This control is used to control the echo effects.

#### **6. BAND SELECTOR**

This switch is used to select the band.

#### **7. MODE SWITCH**

This switch allows you to select one of following operating modes: CW/FM/AM/LSB/USB.

#### **8. COARSE/FINE CONTROL**

Allows tuning of the receive or transmit frequency above or below the channel frequency. Although this control is intended primarily to tune in SSB/CW signals, it may be used to optimize AM/FM signals as described in the Operating Procedure paragraphs. Coarse operates both TX/RX but Fine only in RX.

#### **9. CHANNEL SELECTOR**

This control is used to select the 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. RF POWER H/M/L SWITCH**

This switch allows the user to select HI, MID or LO RF power output.

#### **12. NB-ANL/OFF SWITCH**

When the switch is place in the NB/ANL position, the Automatic Noise Limiter (ANL) in the audio circuits and the RF Noise Blanker (NB) is also activated. The RF Noise Blanker is very effective in eliminating repetitive impulse noise such as ignition interference.

#### **13. S-RF/SWR SWITCH**

In the S-RF position, the meter swings proportionally to the strength of the received signal. When transmitting, the meter indicates relative RF output power. When in the SWR position, the Standing Wave Ratio (SWR) of your antenna. There are no adjustment because the SWR circuit in this radio calibrates itself automatically.

#### **14. TALKBACK (TB) SWITCH**

This switch is used to monitor the sound feedback effects.

#### **15. RX/TX LED**

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

#### **16. CHANNEL DISPLAY**

The channel display indicates the current selected channel.

### **2.1.2 REAR PANEL**

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

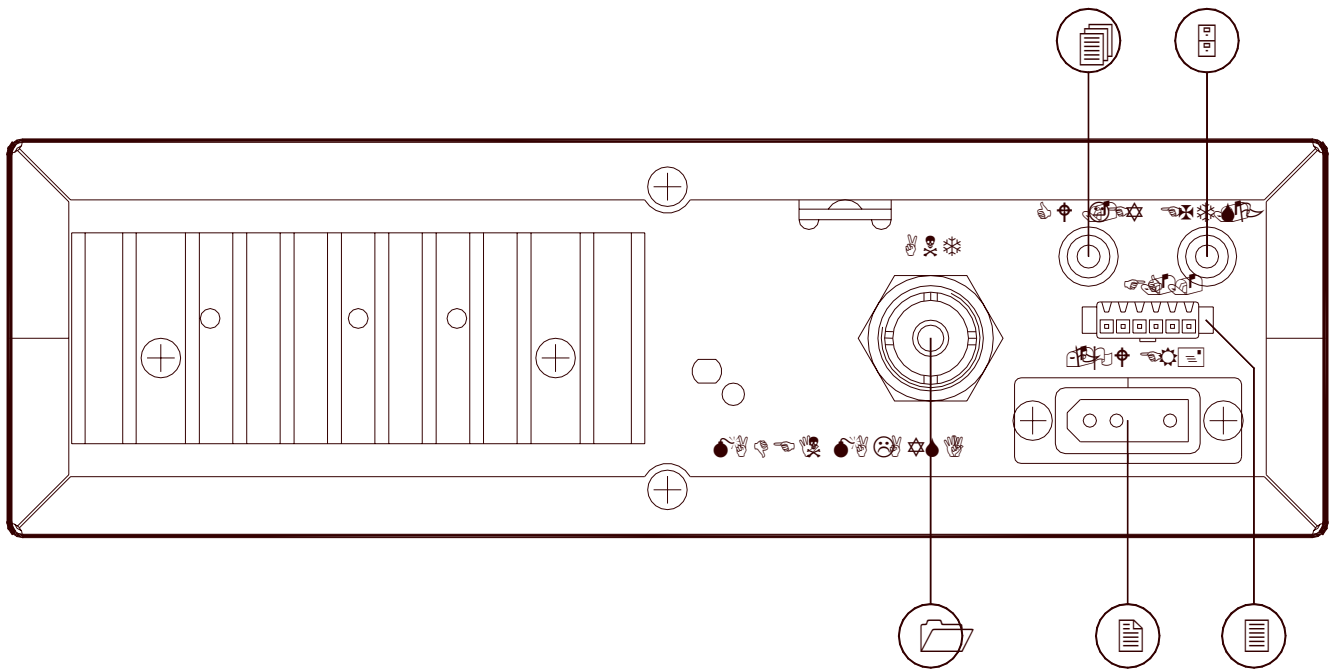


Figure 2-2 Rear Panel

### 1. ANTENNA

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

### 2. POWER

This accepts 13.8 VDC 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. F.C.

This connector is used for an external frequency counter which indicates the frequency of the selected channel.

### 4. CW KEY

The CW key is used for Morse Code operation. To operate this mode, connect a CW key to this jack, and place the MODE switch in the CW position.

### 5. EXTERNAL SPEAKER

This jack accepts a 4 - 8 ohm, 5watt external speaker. When the external speaker is connected to this jack, the built-in speaker will be disabled.

## 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 switch to receive. When transmitting, hold the microphone two inches from your mouth and speak clearly in a normal voice. This transceiver comes complete with a low impedance 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 unit on by turning the **VOL** knob clockwise.
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** 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 **COARSE/FINE** control to clarify the SSB signals or to optimize AM/FM signals.

### **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 low output impedance characteristics. 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 fourth is for receiving control. The microphone should provide the functions shown in the 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

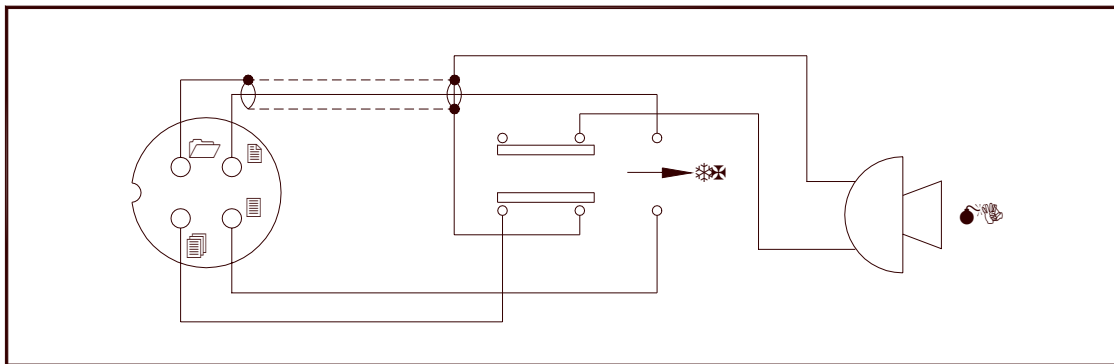


Figure 2-3 Your Transceiver Microphone Schematic

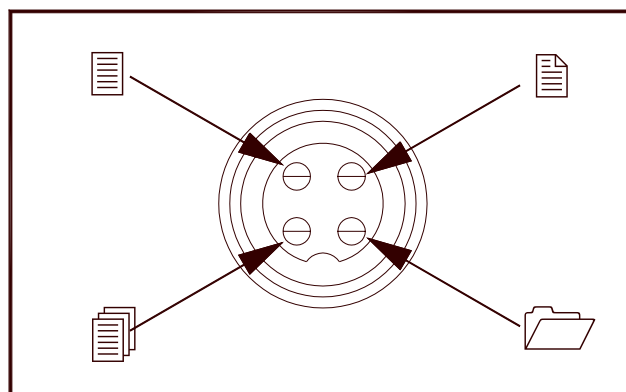


Figure 2-4 Microphone plug pins numbers viewed from rear of pin receptacle.

**3.0 INTRODUCTION**

This section explains the technical theory of operation for the SS-3900EGHP Amateur 10 meter 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 IC5, IC10, TR24, TR25 and TR26. 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 IC5. IC5 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**

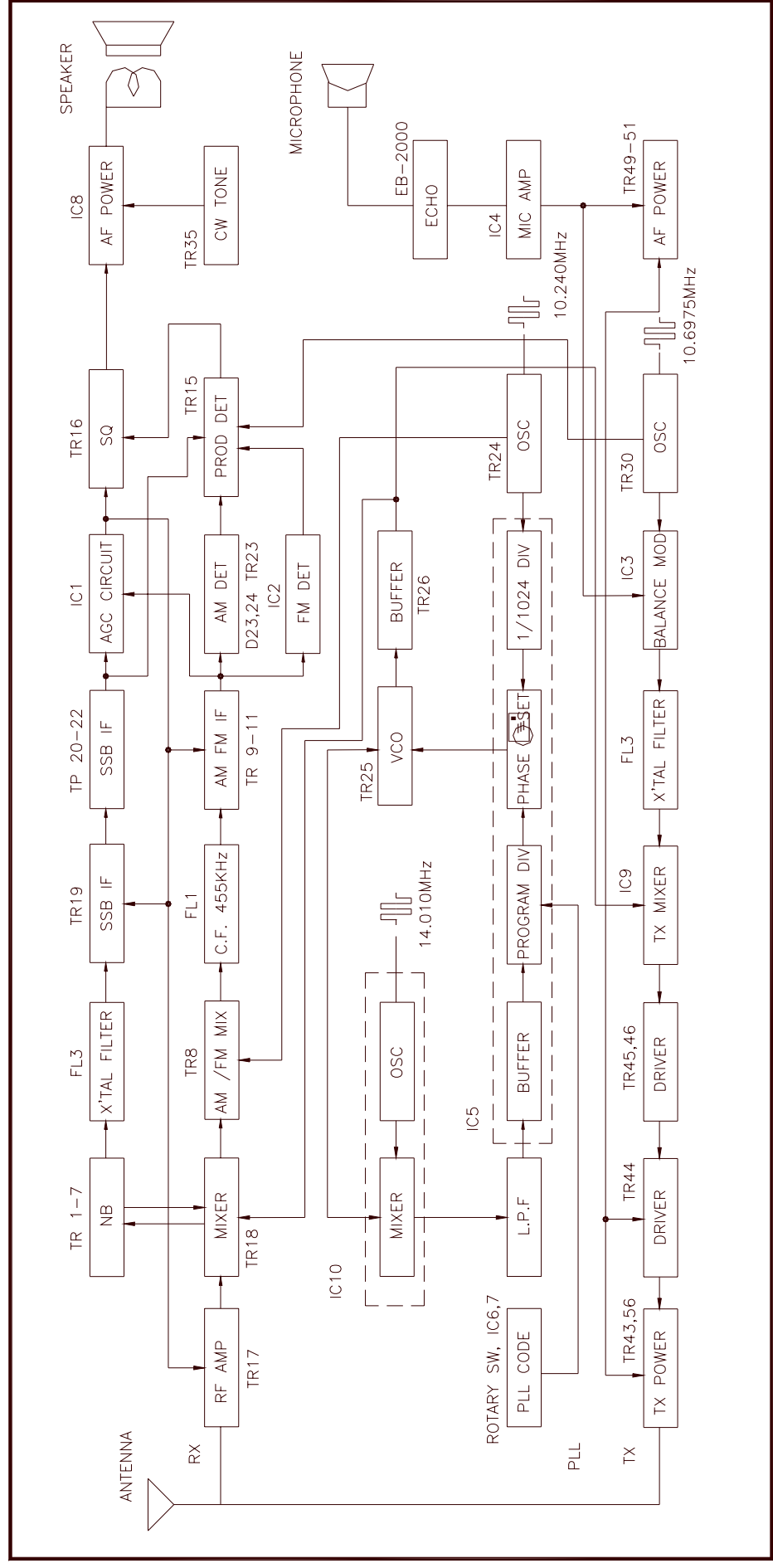
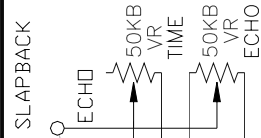
The incoming RF signal comes into the radio via the antenna and into the front-end pre-amp, TR17. The RF signal is fed into the mosfet mixer circuit of TR18 and then into the AM/FM/SSB IF section of the receiver (depending on the mode of operation). The signal is then detected by either the AM/FM detector or 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 FM mode, the audio signal is not mixed with 10.6975MHz oscillator but instead phase modulates the basic exciter signal from the PLL circuit in the TX mixer.
- (iv) If the transceiver is in the SSB mode, the audio signal is mixed with the 10.6975MHz oscillator for LSB and 10.6925MHz for USB in IC3.

**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 TR46, TR45, TR44, TR43 and TR56 where it is then sent out to the antenna connector.



ECHO  
OFF/ON

INC.
AM

O/P  
O/P  
I/P  
I/P

**CHAPTER 4  
ALIGNMENT**

#### 4.0 REQUIRED TEST EQUIPMENT

- |                                  |                                 |
|----------------------------------|---------------------------------|
| ① DC Power Supply (13.8VDC, 10A) | ⑥ Frequency Counter (100 MHz)   |
| ② RF Wattmeter (25~60 MHz, 50W)  | 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 are used for the test setup or alignment shown in Figure 4-1 Transmitter Test Setup and Figure 4-2 Receiver Test Setup. These test setups are used in part or total during the following adjustments and refer to Page 15 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 A band, CH 1 AM RX mode. Set COARSE/FINE control at 12 o’clock. Connect Multimeter to TP2(R116).	L17	1.6 VDC $\pm$ 0.1
	Set radio to 25.615 MHz & 28.305MHz. Connect Oscilloscope to TP3(R74).	L18	Maximum Output and Balance
AM Frequency	Set radio to A band, CH 1 AM RX mode. Connect Frequency Counter to TP3(R74).	L19	14.9200 MHz $\pm$ 20Hz
USB Frequency	Set radio to A band, CH 1 USB RX mode. Connect Frequency Counter to TP3(R74).	L20	14.9225 MHz $\pm$ 20Hz
LSB Frequency	Set radio to A band, CH 1 LSB RX mode. Connect Frequency Counter to TP3(R74).	L21	14.9175 MHz $\pm$ 20Hz
TX Frequency	Set radio to A band, CH 1 AM TX mode. Connect Frequency Counter to TP3(R74).	VR21	14.9200 MHz $\pm$ 20Hz
AM OSC	Set radio to A band, CH 1 AM TX mode. Connect Frequency Counter to TP5(D62).	L26	10.6950 MHz $\pm$ 10Hz
SSB OSC	Set radio to A band, CH 1 USB TX mode.	L27	10.6925 MHz $\pm$ 10Hz
	Set radio to A band, CH 1 LSB TX mode. Modulation off. Short TR31 (Collector & Emitter). Connect Frequency Counter to TP6(R102).	L28	10.6975 MHz $\pm$ 10Hz

##### 4.1.2 TRANSMITTER ALIGNMENT

ITEM	U.U.T. SETTING	ADJUST POINT	MEASUREMENT
BIAS Current	Set radio to A band, CH 1 USB TX mode.		

	Modulation off. Connect current meter to TP9(+) and TP8(-). Connect current meter to TP9(+) and TP7(-).	VR11 VR10,VR20	20 mA 160 mA
SSB TX Power	Set radio to A band, CH 1 USB TX mode. Set Mic Gain Fully Clockwise. Set RF POWER H/M/L switch to H position. AF signal 30 mV, 1 KHz to microphone. Connect "short PCB" to TP7, TP8 & TP9. Connect RF Power Meter to antenna jack.	L44,L42	Maximum Output
	Set radio to F band, CH 40 USB TX mode.	L40,L43	Maximum Output
	Set radio to 25.615 MHz & 28.305MHz.	L33	Maximum Output and Balance
SSB ALC	Set radio to D band, CH 1 USB TX mode. AF signal 30 mV, 1 KHz to microphone.	VR12	25W
SSB Carrier Balance	Set radio to D band, CH 1 USB TX mode. AF signal 30 mV, 1 KHz to microphone. Connect Oscilloscope to antenna jack.	VR7	Spurious Emission to minimum
AM/FM TX Power	Set radio to D band, CH 1 AM TX mode. Modulation off. Connect RF Power Meter to antenna jack.	VR13	9W
RF Power Meter	Set radio to D band, CH 1 AM TX mode. Set S-RF/SWR switch to S/RF position. Modulation off.	VR8	For a needle reading "in-between green and red bar" on TX PWR scale.
CW TX	Set radio to D band, CH 1 CW TX mode. Plug in CW Key. Disconnect the Mic Jack. Connect AC Voltmeter to EXT SP.	VR16	200 mV
AM Modulation FM Deviation	Set radio to D band, CH 1 AM TX mode. Set radio to D band, CH 1 FM TX mode. Set Mic Gain Fully Clockwise. AF signal 30 mV, 1 KHz to microphone.	VR14 VR5	90% 4KHz
SWR Meter	Set radio to D band, CH 1 AM TX mode. Set S-RF/SWR switch to SWR position. Modulation off. Connect 100Ω load to antenna jack.	VR1 on ANT PCB	For a needle reading of "2" on SWR scale.

#### 4.1.3 RECEIVER ALIGNMENT

ITEM	U.U.T. SETTING	ADJUST POINT	MEASUREMENT
------	----------------	--------------	-------------

AM Sensitivity	Set radio to D band, CH 1 AM RX mode. Set RF Gain Fully Clockwise. Set SQ Control Fully Counter Clockwise. Set NB-ANL/OFF switch to OFF position. Set VOL Control at 2 o'clock. Connect RF SG to antenna jack. Frequency 26.965 MHz, 1uV. Mod 30%.	L3,L4,L6, L7,L8,L10, L11,L12	Audio Output > 2V S/N > 10 dB
	Set radio to A band, CH 1 AM RX mode. RF SG setting 25.615 MHz. Set radio to F band, CH 40 AM RX mode. RF SG setting 28.305 MHz.	L7,L8  L7,L8	Balance between 25.615 MHz and 28.305 MHz
FM Sensitivity	Set radio to D band, CH 1 FM RX mode. RF SG setting 26.965 MHz, 0.5uV. Mod 3KHz.	L5	S/N > 20 dB
USB Sensitivity	Set radio to D band, CH 1 USB RX mode. RF SG setting 26.966 MHz, 0.25uV. Mod off.	L13,L14	Audio Output > 2V S/N > 10 dB
LSB Sensitivity	Set radio to D band, CH 1 LSB RX mode. RF SG setting 26.964 MHz, 0.25uV. Mod off.	L13,L14	Audio Output > 2V S/N > 10 dB
NB Adjust	Set radio to D band, CH 1 AM RX mode. Set NB-ANL/OFF switch to NB/ANL position. RF SG setting 26.965 MHz, 100uV. Mod off. Connect Multimeter to TP1(D2).	L1,L2	DC voltage to max. > 2.0V
AM Squelch	Set radio to D band, CH 1 AM RX mode. Set SQ Control Fully Clockwise. RF SG setting 26.965 MHz, 1mV. Mod 30%.	VR4 Slowly	Adjust very slowly until squelch just open.
SSB Squelch	Set radio to D band, CH 1 USB RX mode. Set SQ Control Fully Clockwise. RF SG setting 26.966 MHz, 1mV. Mod off.	VR3 Slowly	Adjust very slowly until squelch just open.
AM S-Meter	Set radio to D band, CH 1 AM RX mode. Set S-RF/SWR switch to S/RF position. RF SG setting 26.965 MHz, 100uV. Mod 30%.	VR1	For a reading of "9" on the "S" scale.
SSB S-Meter	Set radio to D band, CH 1 USB RX mode. RF SG setting 26.966 MHz, 100uV. Mod off.	VR2	For a reading of "9" on the "S" scale.

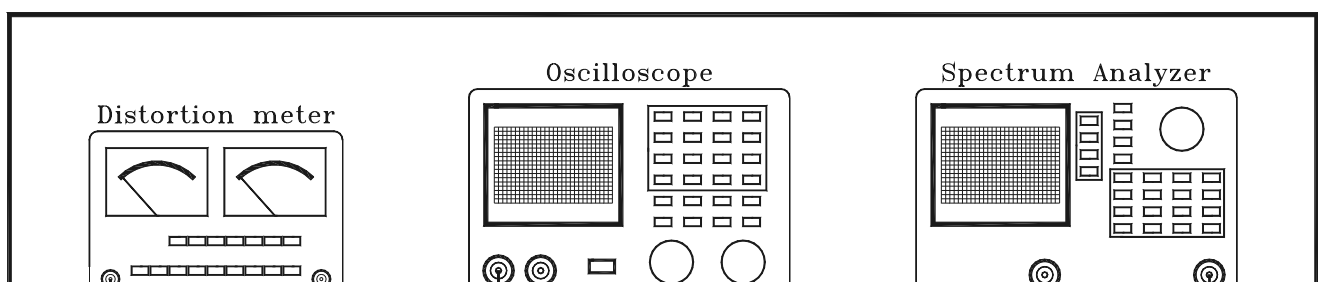


Figure 4-1 Transmitter test setup

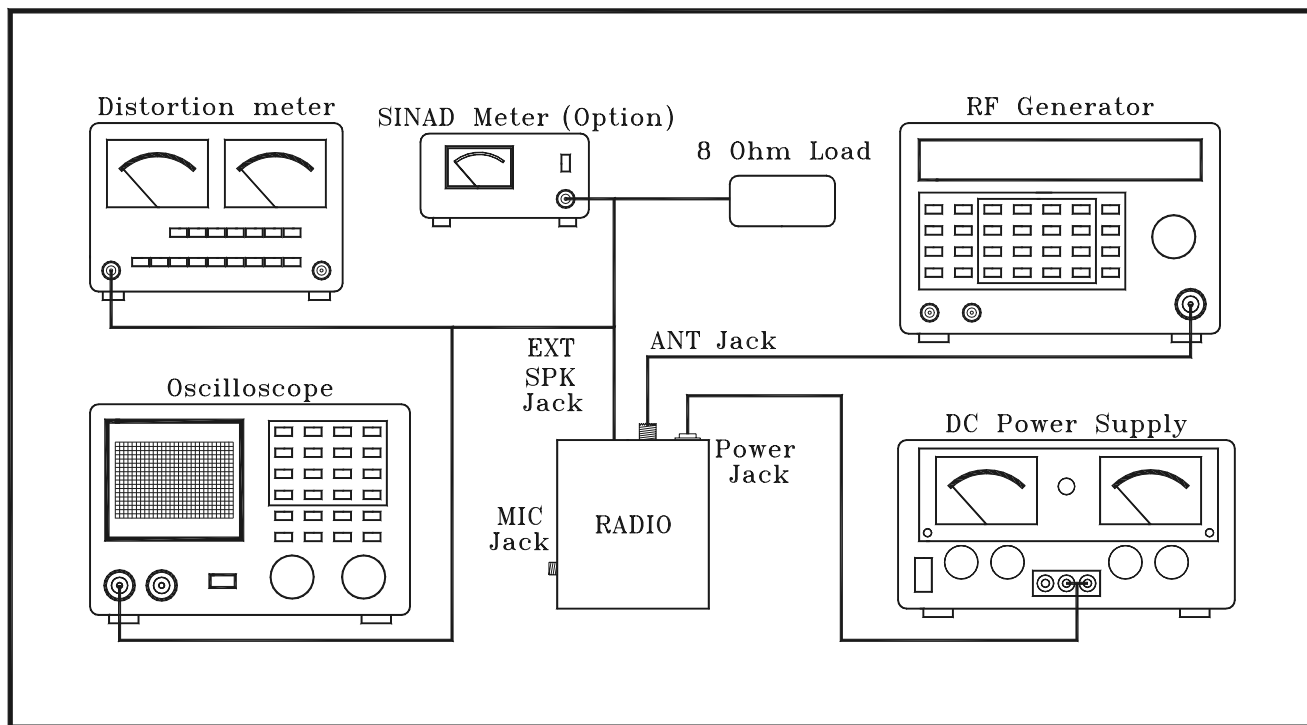
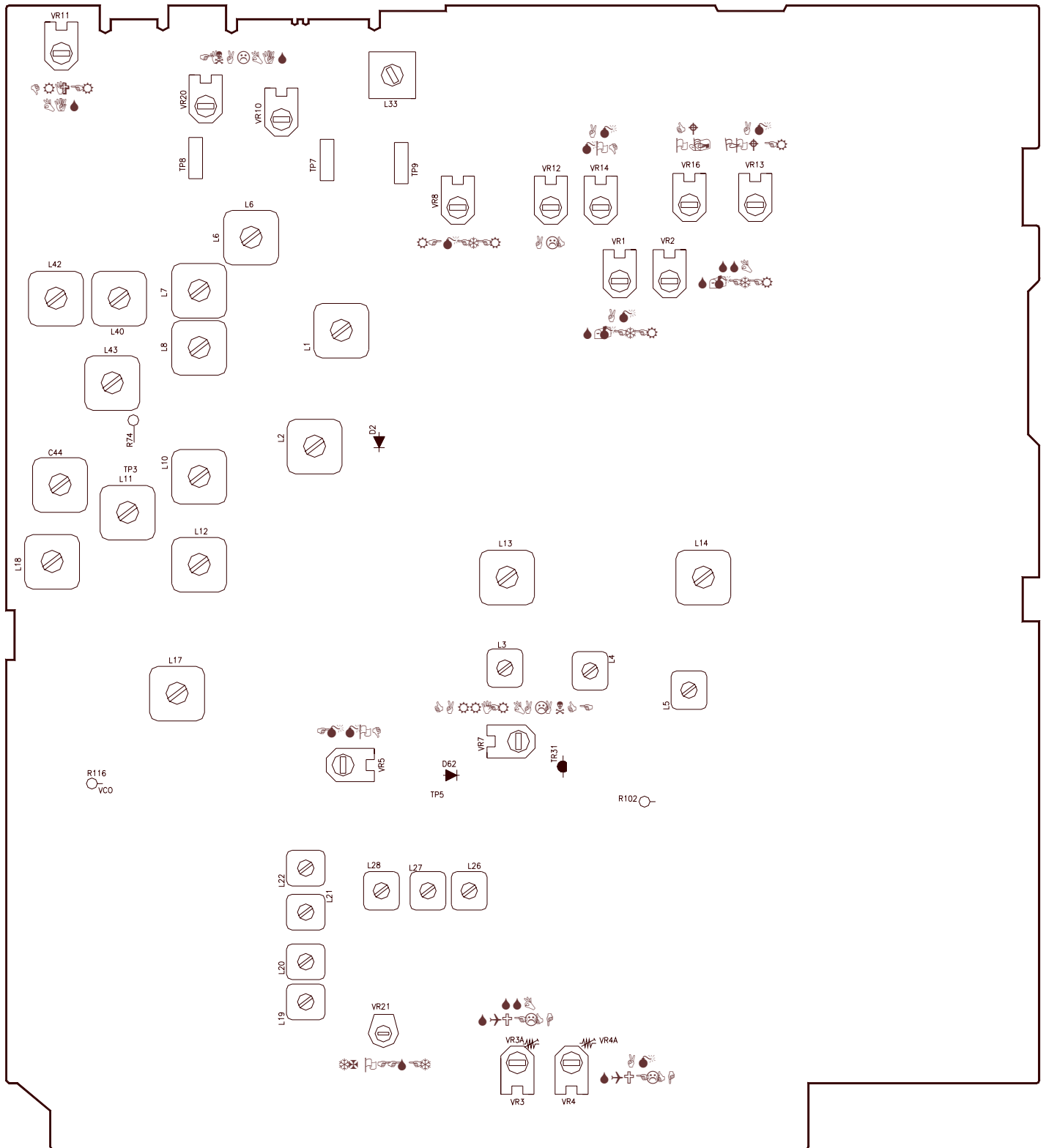


Figure 4-2 Receiver test setup

**SS-3900EGHP  
MAIN PCB ADJUSTMENT LOCATION**



**SS-3900EGHP**

**CHAPTER 5  
MAINTENANCE**

## 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 fuse protect against overvoltage / reverse polarity and 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 overfusing 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. 35<sup>Th</sup> ST., # B,  
NATIONAL CITY, CA 91950-7909

Fax: (619) 426-3788

**ROTARY SWITCH PCB (EPT360022Z)**

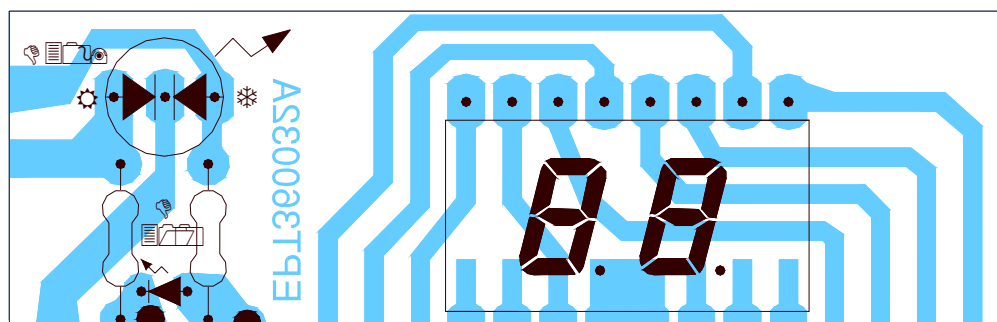
(Component Side)

**PART LIST:**

SS-3900EGHP ROTARY SW P.C.B

ITEM	REFERENCE NUMBER	RANGER PART NUMBER	DESCRIPTION
1		EPT360022Z	ROTARY SW PCB
2	R322,R323,R324	RCU141024Z	C/F/R 1K $\Omega$ 1/4W
3	R315	RCM144714A	C/F/R 470 $\Omega$ 1/4W
4	R313,R316,R317,R318,R319, R321	RCM141024A	C/F/R 1K $\Omega$ 1/4W
5	R312,R314,R320	RCM141024B	C/F/R 1K $\Omega$ 1/4W
6	CH SW	EWRT32000S	ROTARY SW GPS-0501
7	J304	EX07N40014	PCB CONN/S 10PIN
8	J305	WX01070703	JUMPER WIRE 7x3x7
9	D313,D314,D312,D315,D323 ,D324,D326,X1,D316	WX01070704	JUMPER WIRE 7x4x7
10	D325	WX01070705	JUMPER WIRE 7x5x7
11	J303,D311	WX01070710	JUMPER WIRE 7x10x7
12	J302	WX01070708	JUMPER WIRE 7x8x7

**DISPLAY PCB (EPT360032A)**



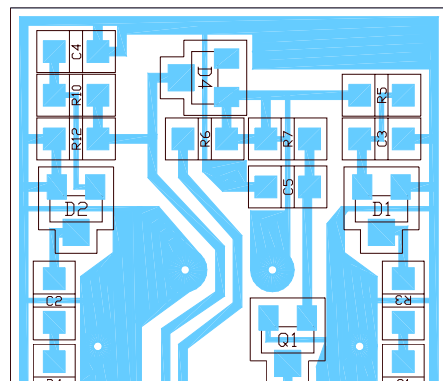
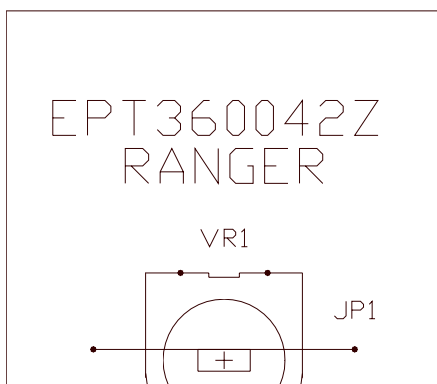
(Component Side)

**PART LIST:**

SS-3900EGHP DISPLAY P.C.B

ITEM	REFERENCE NUMBER	RANGER PART NUMBER	DESCRIPTION
1		EPT360032A	DISPLAY PCB
2	DISPLAY PCB	EX03N40003	LED DISPLAY (RED)
3	D309(R/T)	EX01N40004	LED (RED/GREEN)

**ANT PCB (EPT360042Z)**



(Component Side)

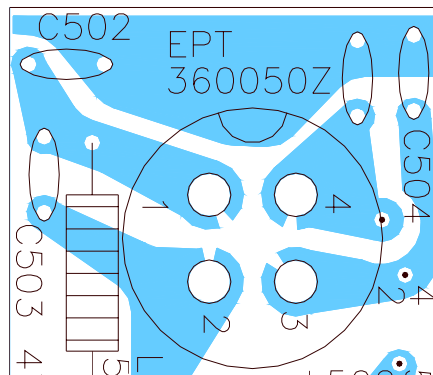
(Copper Side)

**PART LIST:**

SS-3900EGHP ANT P.C.B

ITEM	REFERENCE NUMBER	RANGER PART NUMBER	DESCRIPTION
4		EPT360042Z	ANT PCB
5	R9	RCY010004Z	CHIP/F/R 0 $\Omega$ 0.1W
6	R1	RCY014714Z	CHIP/F/R 470 $\Omega$ 0.1W
7	R3,R4	RCY011014Z	CHIP/F/R 100 $\Omega$ 0.1W
8	R2	RCY013314Z	CHIP/F/R 330 $\Omega$ 0.1W
9	R5,R11	RCY011024Z	CHIP/F/R 1K $\Omega$ 0.1W
10	R10,R12	RCY012224Z	CHIP/F/R 2.2K $\Omega$ 0.1W
11	R7	RCY011034Z	CHIP/F/R 10K $\Omega$ 0.1W
12	C5	RCY011534Z	CHIP/F/R 15K $\Omega$ 0.1W
13	C7	CK1059AB1A	CHIP/C 0.5PF 50WV
14	C6	CK1030AB1A	CHIP/C 3PF 50WV
15	C3,C4	CK2104AB7R	CHIP/C 0.1 $\mu$ F 25WV
16	C1,C2	CK1102AB7L	CHIP/C 0.001 $\mu$ F 50WV
17	Q1	TY2SC2712G	TR 2SC2712GR-TE85L
18	D3	EDSS00355Y	DIODE 1SS355
19	D1,D2	EDHM0198SY	DIODE HSM198S
20	D4	EDMA0028TY	DIODE MA28T
21	L1	ECRFZ10204	C.M.E. BRAND CORE BF2159576
22	VR1	RE10300009	S/F/R 10K $\Omega$
23	JP1	WX01070715	JUMPER WIRE 7x15x7

**MIC PCB (EPT360050Z)**



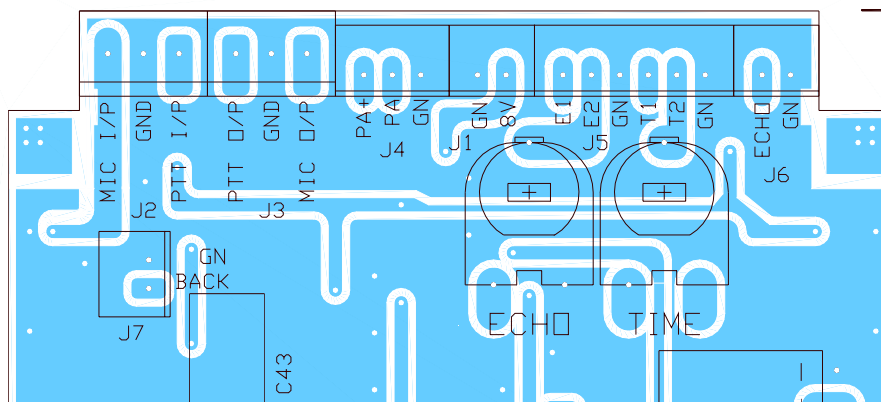
(Component Side)

**PART LIST:**

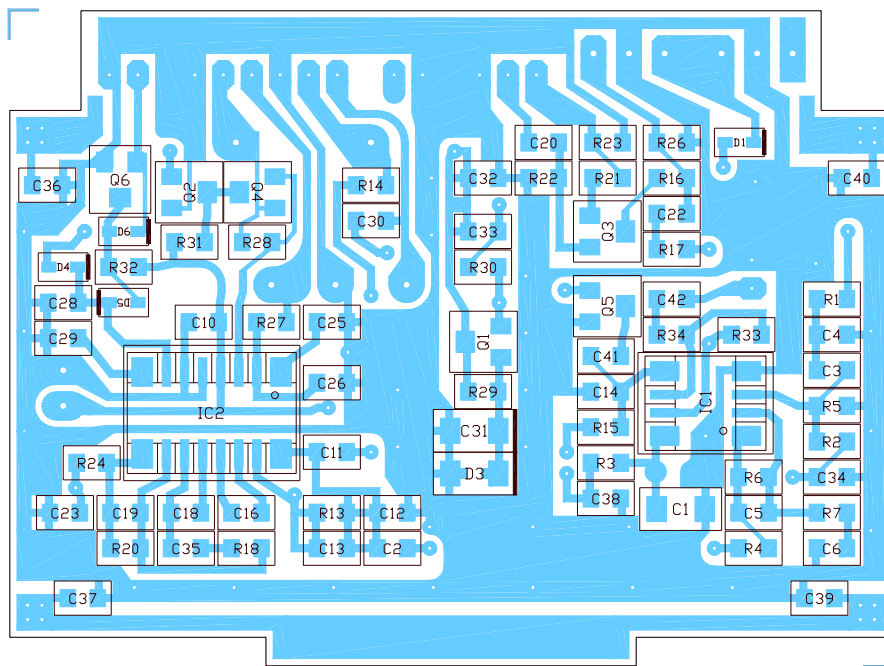
SS-3900EGHP MIC P.C.B

ITEM	REFERENCE NUMBER	RANGER PART NUMBER	DESCRIPTION
1		EPT360050Z	DIP PCB
2	C503,C504	CC0501027L	C/C 0.001 $\mu$ F 50WV
3	C502	CC0504727L	C/C 0.0047 $\mu$ F 50WV
4	L501	ECCHK16001	CHOKE COIL 5.6 $\mu$ H
5	L502	ECBAD18550	BEAD COIL 3.5x6x1.2
6	MIC PCB	EX06N41020	MIC JACK

**EB-2000B PCB (EPT0SSB51J)**



(Component Side)



(Copper Side)

**PART LIST:**

SS-3900EGHP EB-2000B P.C.B

ITEM	REFERENCE NUMBER	RANGER PART NUMBER	DESCRIPTION
1		EPT0SSB51J	EB-2000B PCB
2	R3	RCY011014Z	CHIP/F/R 100 $\Omega$ 0.1W
3	R17,R27	RCY011024Z	CHIP/F/R 1K $\Omega$ 0.1W
4	R7,R26	RCY012224Z	CHIP/F/R 2.2K $\Omega$ 0.1W
5	R29,R30	RCY014724Z	CHIP/F/R 4.7K $\Omega$ 0.1W

6	R22,R23,R24,R32	RCY011034Z	CHIP/F/R 10K $\Omega$ 0.1W
7	R1,R2,R5,R28	RCY012234Z	CHIP/F/R 22K $\Omega$ 0.1W
8	R6,R13,R15	RCY013334Z	CHIP/F/R 33K $\Omega$ 0.1W
9	R4,R20,R33,R34	RCY014734Z	CHIP/F/R 47K $\Omega$ 0.1W
10	R21,R31	RCY011044Z	CHIP/F/R 100K $\Omega$ 0.1W
11	R16	RCY011524Z	CHIP/F/R 1.5K $\Omega$ 0.1W
12	R14,R18	RCY012734Z	CHIP/F/R 27K $\Omega$ 0.1W
13	C26	CK1331AB5A	CHIP/C 330PF 50WV
14	C5,C13	CK1561AB5A	CHIP/C 560PF 50WV
15	C28,C29	CK1154AB7R	CHIP/C 0.15 $\mu$ F 50WV
16	C12	CK1102AB7L	CHIP/C 0.001 $\mu$ F 50WV
17	C4,C19,C23,C34	CK2103AB7R	CHIP/C 0.01 $\mu$ F 25WV
18	C2,C3,C10,C30,C32,C33, C36,C37,C38,C39,C40,C42	CK2104AB7R	CHIP/C 0.1 $\mu$ F 25WV
19	C6,C20,C25,C41	CK5105AB7R	CHIP/C 1 $\mu$ F 16WV
20	C11	CK1153AB6U	CHIP/C 0.015 $\mu$ F 50WV
21	C14	CK1222AB7R	CHIP/C 0.0022 $\mu$ F 50WV
22	C35	CK1223AB6U	CHIP/C 0.022 $\mu$ F 50WV
23	C22	CK5225AB7R	CHIP/C 2.2 $\mu$ F 16WV
24	C16,C18	CK1473AB7R	CHIP/C 0.047 $\mu$ F 50WV
25	C1,C31	CK5475AA7R	CHIP/C 4.7 $\mu$ F 16WV
26	IC1	YNJR04558M	IC NJM4558M 8PIN
27	IC2	YNES56033S	IC ES56033S 16PIN
28	Q1,Q3	TY2SC2712G	TR 2SC2712GR-TE85L
29	Q2,Q5,Q6	TYZRN1403Z	TR RN1403-TE85L
30	Q4	FY2SK0208Z	FET 2SK208
31	D1,D4,D5,D6	EDSS00355Y	DIODE 1SS355
32	D3	EDZD05569Y	ZENER DIODE 5.6V
33	C27	CE0164767Z	E/C 47 $\mu$ F 16WV
34	C43	CE0161077Z	E/C 100 $\mu$ F 16WV
35	J3	EX07N41216	PCB CONN/S 3PIN
36	J2	EX07N41227	PCB CONN/S 3PIN
37	J1	EX07N48223	PCB CONN/S 2PIN
38	J5	EX07N48331	PCB CONN/S 6PIN
39	J1-MAIN(J102)	EX07N48888	WIRE CONN/H 2PIN
40	J3-MAIN(J12)	EX07N48902	WIRE CONN/H 3P-3PIN
41	J5	EX07N49116	WIRE CONN/H 6PIN
<b>ITEM</b>	<b>REFERENCE NUMBER</b>	<b>RANGER PART NUMBER</b>	<b>DESCRIPTION</b>
42	-	MT2100061X	COUNTER COVER
43	-	MT2100070X	COUNTER BOX
44	-	MT2100081X	BRACKET OF COUNTER BOX
45	-	JS053006MN	SET SCREW M3x0.5Px6
46	-	XZZZ90376Z	FIBER BOARD
47	70X	JS013004MY	SET SCREW M3x0.5x4

**SS-3900EGHP MAIN PCB (EPT360014C)**

(Component Side - Text Layer)

**SS-3900EGHP MAIN PCB (EPT360014C)**

(Component Side)

**PART LIST**  
**SS-3900EGHP MAIN PCB**

REFERENCE NUMBER	RANGER PART NO.	DESCRIPTION			
	EPT360014C	MAIN PCB	R240,275,126,115,232	RCU145614Z	C/F/R 560 Ω 1/4W
R220	RCU144794Z	C/F/R 4.7 Ω 1/4W	R3,44,86	RCU146814Z	C/F/R 680 Ω 1/4W
R241	RCU141504Z	C/F/R 150 Ω 1/4W	R67,139,140	RCU148214Z	C/F/R 820 Ω 1/4W
R199,215,252,141,224,270	RCU144704Z	C/F/R 47 Ω 1/4W	R33,53,59,91,108,110,120,131,132,130,127,172,209,214,157,236,150,156,140,121,285,18	RCU141024Z	C/F/R 1K Ω 1/4W
R112,105,198,203	RCU145604Z	C/F/R 56 Ω 1/4W	R82,177	RCU141224Z	C/F/R 1.2K Ω 1/4W
R32,69,73,88,162,230,231,125,26,	RCU141014Z	C/F/R 100 Ω 1/4W	R90,190,193,104,227,246,81	RCU141524Z	C/F/R 1.5K Ω 1/4W
R28,93,219	RCU141514Z	C/F/R 150 Ω 1/4W	R17,24,64,68,87,189,155,180,257	RCU142224Z	C/F/R 2.2K Ω 1/4W
R21,106	RCU141814Z	C/F/R 180 Ω 1/4W	R7,25	RCU142724Z	C/F/R 2.7K Ω 1/4W
R4,154,256	RCU142214Z	C/F/R 220 Ω 1/4W	R22,51,52,58,95,128,16,158,245,202,259,	RCU143324Z	C/F/R 3.3K Ω 1/4W
R29,92	RCU142714Z	C/F/R 270 Ω 1/4W	R50	RCU143924Z	C/F/R 3.9K Ω 1/4W
R5,8,15,20,222,225	RCU143314Z	C/F/R 330 Ω 1/4W	R77,142,178,182,183,207,149,185,186	RCU144724Z	C/F/R 4.7K Ω 1/4W
R60,255,175,208,228	RCU144714Z	C/F/R 470 Ω 1/4W	R78,85,238	RCU145624Z	C/F/R 5.6K Ω 1/4W
			R12,31,35,63,76,114,123,254,109	RCU146824Z	C/F/R 6.8K Ω 1/4W
			R129,248	RCU148224Z	C/F/R 8.2K Ω 1/4W

R11,14,57,61,62,107,117,118,152,153,169,174,187,194,206,135,113,136,1	RCU141034Z	C/F/R 10K Ω 1/4W
R173	RCU141234Z	C/F/R 12K Ω 1/4W
R235,166,160	RCU141534Z	C/F/R 15K Ω 1/4W
R84,96	RCU142234Z	C/F/R 22K Ω 1/4W
R2	RCU143334Z	C/F/R 33K Ω 1/4W
R6,54,55,89,171,201	RCU144734Z	C/F/R 47K Ω 1/4W
R19,75,99,101	RCU146834Z	C/F/R 68K Ω 1/4W
R37	RCU148234Z	C/F/R 82K Ω 1/4W
R10,36,41,42,45,46,97,98,167,134,170,247	RCU141044Z	C/F/R 100K Ω 1/4W
R83,111,181,188	RCU142244Z	C/F/R 220K Ω 1/4W
R43,159,260,165,103	RCU142744Z	C/F/R 270K Ω 1/4W
R13,168	RCU144744Z	C/F/R 470K Ω 1/4W
R210	RCU146844Z	C/F/R 680K Ω 1/4W
R40	RCU148244Z	C/F/R 820K Ω 1/4W
R100	RCU141054Z	C/F/R 1M Ω 1/4W
R34,179	RCU141554Z	C/F/R 1.5M Ω 1/4W
COPPER SIDE	RCP161034Z	C/F/R 10K Ω1/16W
R216,271	RCP141094Z	C/F/R 1 Ω 1/4W
R218	RCP142294Z	C/F/R 2.2 Ω 1/4W
R122	RCP143304Z	C/F/R 33 Ω 1/4W
R124	RCP144704Z	C/F/R 47 Ω 1/4W
R151,COPPER SIDE(R281)	RCP141024Z	C/F/R 1K Ω 1/4W
R196	RCP146814Z	C/F/R 68K Ω 1/4W
R251	RCP142224Z	C/F/R 2.2K Ω 1/4W
R23	RCP142724Z	C/F/R 2.7K Ω 1/4W
R102,176,250,244	RCP143324Z	C/F/R 3.3K Ω 1/4W
R47	RCP143924Z	C/F/R 3.9K Ω 1/4W
R74	RCP141524Z	C/F/R 1.5K Ω 1/4W

REFERENCE NUMBER	RANGER PART NO.	DESCRIPTION
R79	RCP141034Z	C/F/R 10K Ω 1/4W
R195	RCP142234Z	C/F/R 22K Ω 1/4W
R116	RCP142734Z	C/F/R 27K Ω 1/4W
R217,272	RCP121514Z	C/F/R 150 Ω 1/2W
R213	RCP121034Z	C/F/R 10K Ω 1/2W
R243	RCP104704Z	C/F/R 47 Ω 1W
R161,237	RCM141014A	C/F/R 100 Ω 1/4W
R223	RCM141514A	C/F/R 150 Ω 1/4W
R138	RCM144724A	C/F/R 4.7K Ω 1/4W
R137,211	RCM141024A	C/F/R 1K Ω 1/4W
R221	RCM141524A	C/F/R 1.5K Ω 1/4W
R233	RCM141824A	C/F/R 1.8K Ω 1/4W
R234,242	RCM141034A	C/F/R 10K Ω 1/4W
R258	RCM144734A	C/F/R 47K Ω 1/4W
R119	RCM142244A	C/F/R 220K Ω 1/4W
R253	RCM143304B	C/F/R 33 Ω 1/4W
R9,94	RCM146804B	C/F/R 68 Ω 1/4W
R30	RCM141014B	C/F/R 100 Ω 1/4W
R80	RCM146814B	C/F/R 680 Ω 1/4W
R56,66,200	RCM141024B	C/F/R 1K Ω 1/4W
R48,226	RCM141524B	C/F/R 1.5K Ω 1/4W
R205	RCM141824B	C/F/R 1.8K Ω 1/4W
R239	RCM145624B	C/F/R 5.6K Ω 1/4W
R49,164,163,197,249	RCM141034B	C/F/R 10K Ω 1/4W
R229	RCM141834B	C/F/R 18K Ω 1/4W
R38	RCM143934B	C/F/R 39K Ω 1/4W
R27,133	RCM144734B	C/F/R 47K Ω 1/4W
R39	RCM142244B	C/F/R 220K Ω 1/4W
R274	RCM142744B	C/F/R 270K Ω 1/4W
R204	RCM144744B	C/F/R 470K Ω 1/4W
C25	CC0502204A	C/C 22PF 50WV
C52,58,59,103	CC0500501A	C/C 5PF 50WV
C89	CC0501504A	C/C 15PF 50WV
C83	CC0503004A	C/C 30PF 50WV
C211	CC0504704A	C/C 47PF 50WV
C81,158	CC0506804A	C/C 68PF 50WV
C124,163	CC0501015A	C/C 100PF 50WV
C91	CC0501515A	C/C 150PF 50WV

C162	CC0500301G	C/C 3PF 50WV
C80	CC0501504G	C/C 15PF 50WV
C75	CC0506804G	C/C 68PF 50WV
C160,167	CC0501515G	C/C 150PF 50WV
C82	CC0502715G	C/C 270PF 50WV
C175	CC0503315G	C/C 330PF 50WV
C85,171,209	CC0503915G	C/C 390PF 50WV
C208,COPPER SIDE(C170)	CC0505615G	C/C 560PF 50WV
C165	CD3005614Z	MICA/C 560PF 300WV
C166	CD3008214Z	MICA/C 820PF 300WV
C161	CC0500591L	C/C 0.5PF 50WV
C182	CC0500301L	C/C 3PF 50WV
C72,224	CC0500501L	C/C 5PF 50WV
C1,49,77,97,98,225,275	CC0501004L	C/C 10PF 50WV
C74,78,109	CC0501504L	C/C 15PF 50WV
C73,123	CC0501804L	C/C 18PF 50WV
C34,92	CC0502704L	C/C 27PF 50WV
C106	CC0503304L	C/C 33PF 50WV
C76	CC0503904L	C/C 39PF 50WV
C22	CC0506804L	C/C 68PF 50WV
C8	CC0508204L	C/C 82PF 50WV
C330	CC0500602L	C/C 6PF 50WV
C4,67,86,226	CC0501015L	C/C 100PF 50WV
C120	CC0501215L	C/C 120PF 50WV
C114	CC0501515L	C/C 150PF 50WV
C180	CC0501815L	C/C 180PF 50WV
C70	CC0502215L	C/C 220PF 50WV
C29,94,115	CC0502715L	C/C 270PF 50WV
C11,15	CC0503315L	C/C 330PF 50WV
C178	CC0504715L	C/C 470PF 50WV
C21,93	CC0505615L	C/C 560PF 50WV

REFERENCE NUMBER	RANGER PART NO.	DESCRIPTION
C159	CC0501036S	C/C 0.01μF 50WV
C169,172	CC0501047L	C/C 0.1μF 50WV
C2,3,6,9,14,16,51,56,60,63,64,65,69,99,107,119,230,113,121,176,183,185,205,201,177,184,200,277,COPPER SIDE	CC0501037L	C/C 0.01μF 50WV
C7,47,50,55,105,221,227,228,229,217,213,130,144,196,197,231	CC0501027L	C/C 0.001μF 50WV
C5,17,48,61,62,66,68,79,84,88,96,104,111,127,112,135,189,188,216,218,202,203,204,23,334,210,181	CC0504737L	C/C 0.047μF 50WV
COPPER SIDE(C210)	CC0504737L+	C/C 0.047μF 50WV
C30,42,45,46,173,179,332,335	CC0504727L	C/C 0.0047μF 50WV
C43	CC0501804D	C/C 18PF 50WV
C116,118	CC0503904D	C/C 39PF 50WV
C117	CC0501515D	C/C 150PF 50WV
C10	CE0504747Z	E/C 0.47μF 50WV
C71,129,132,143,157,164,24	CE0501057Z	E/C 1μF 50WV
C126,134,174,193	CE0502257Z	E/C 2.2μF 50WV
C220,151	CE0504757Z	E/C 4.7μF 50WV
C12,19,20,44,133,198,331,333	CE0251067Z	E/C 10μF 25WV
C40,186,150,219	CE0252267Z	E/C 22μF 25WV
C26,31,32,35,37,122,146,156	CE0104767Z	E/C 47μF 10WV
C90,131,190,108	CE0161077Z	E/C 100μF 16WV
C95	CE0102277Z	E/C 220μF 10WV
C145,199	CE0163377Z	E/C 330μF 16WV
C194,195	CE0251087Z	E/C 100μF 25WV
C39,149,155,212	CM0501045Z	M/C 0.1μF 50WV
C152,168,27,110,140,141,142	CM0501035Z	M/C 0.01μF 50WV
C28,36,100,148,192	CM0501024Z	M/C 0.001μF 50WV
C136	CM0501535Z	M/C 0.015μF 50WV
C38,139,153,41	CM0502235Z	M/C 0.022μF 50WV
C18,33,154,191,187	CM0504735Z	M/C 0.047μF 50WV
C147	CM0506835Z	M/C 0.068μF 50WV
C13,87	CM0502225Z	M/C 0.0022μF 50WV
C137,138	CM0504725Z	M/C 0.0047μF 50WV
C125	CT0161046Z	T/C 0.1μF 16WV
C128	CT0162246Z	T/C 0.22μF 16WV

C101	CT0162256Z	T/C 2.2μF 16WV
C102	CT0164746Z	T/C 0.47μF 16WV
IC1	ENSS00324Z	IC KA324 14P
IC3	ENMA00612Z	IC AN-612 7P
IC5	ENMC45106P	IC MC145106P 18P
IC9	YNSM6130X4	IC TDA 6130-5X4 14P
IC6,7	ENMC14008B	IC MC14008BCP 16P
IC2	ENR000403Z	IC BA-403 7P
IC4	ENR004558Z	IC BA4558 8P
IC10	ENTA07310P	IC TA7310P 9P
IC8	ENTA07222A	IC TA7222AP 10P
TR23	TDTC0114YS	TR DTC0114YS
TR52	T2SD00471K	TR 2SD471K
TR50	T2SA01869Z	TR 2SA1869
TR8,17,19	T2SC01674L	TR 2SC1674L
TR2,9,10,11,20,21,24,25,26,30,47,1	T2SC01675L	TR 2SC1675L
TR3,4,5,7,12,13,14,15,16,31,32,37,40,48,49,53,54,39,33,42,35	T2SC00945P	TR 2SC945P
TR22,46	T2SC01906Z	TR 2SC1906
TR36,38	T2SA01282E	TR 2SA1282AE
TR6,34	T2SA00733P	TR 2SA733P
TR45	T2SC02538Z	TR 2SC2538
TR51	T2SB00754Y	TR 2SB754Y
TR41	T2SA01869Z	TR 2SA1869
TR44	T2SC02166C	TR 2SC2166C
TR43,56	T2SC02312C	TR 2SC2312C
TR18	FZZJ00310Z	FET J310
X1	EYCAB10240	CRYSTAL 10.240MHz

REFERENCE NUMBER	RANGER PART NO.	DESCRIPTION
X4	EYBAE10697	CRYSTAL 10.6975MHz
X2	EYCAA14010	CRYSTAL 14.010MHz
FL3	EFX8106952	CRYSTAL FILTER 10M4D (10.695MHz)
FL2	EFCFE107MX	CERAMIC FILTER SFE10.7MX
FL1	EFCEW455HT	CERAMIC FILTER CFW-455HT
D93	ED1N04003Z	DIODE 1N4003
D29	ED1N04007Z	DIODE 1N4007
D1,2,10,11,23,24,83	ED1N00060P	DIODE 1N60P
D15,16	EDSS00053Z	DIODE 1SS53
D65,79	EDMA00027W	DIODE MA27W-A
D94,124	EDSV00251Z	DIODE SVC-251SPA
D77	EDMA00027T	DIODE MA27T-A
D3,4,5,6,7,8,9,12,13,14,17,18,19,20,21,22,25,26,27,28,31,32,33,34,35,36,38,39,40,49,57,58,59,60,61,62,63,64,66,67,68,69,70,71,72,73,74,80,81,82,84,85,86,87,90,91,92,94,97,98,99,100,101,102,103,104,105,106,107,115,109,110,111,118,119,120,121,122,123,125,R244,R275	ED1N04148Z	DIODE 1N4148
COPPER SIDE(D30)	EDHU00359Y	DIODE HVU359
D78	EDZD05759Z	ZENER DIODE 7.5V
D76	EDZD05519Z	ZENER DIODE 5.1V
RA101	RCS0870014	RESISTOR 47K Ω 8P
RA102	RCS0970015	RESISTOR 47K Ω 9P
L1	ECIFT12000	I.F.T
L2,13	ECIFT12001	I.F.T
L3,4	ECIFT12002	I.F.T
L5	ECIFT12003	I.F.T
L6	ECIFT12004	I.F.T
L7	ECIFT12005	I.F.T
L10,11,44	ECIFT12007	I.F.T
L12	ECIFT12008	I.F.T
L14	ECIFT12009	I.F.T
L18,43	ECIFT12010	I.F.T
L19,20,21	ECIFT12012	I.F.T
L28	ECIFT12013	I.F.T
L40	ECIFT12014	I.F.T

L42	ECIFT12015	I.F.T
L26,27	ECIFT12016	I.F.T
L17	ECIFT12017	I.F.T
L8	ECIFT12002	I.F.T
L22	ECIFT12258	I.F.T
L39	ECSPG18000	SPRING COIL 0.8x4.2x6.5t
L34	ECSPG18087	SPRING COIL 0.8x4x7t
L37	ECSPG18001	SPRING COIL 0.8x3.5x7t
L51,52	ECSPG18089	SPRING COIL 0.8x6x3.5t
L31	ECSPG18075	SPRING COIL 0.8x6x8.5t
L33	ECRFZ10045	RF COIL 0.16μH
L503,504	ECCHK16000	CHOKE COIL 0.47μH
L25,29,30	ECCHK16003	CHOKE COIL 470μH
L50	ECCHK16070	CHOKE COIL 22μH
T1	ECCHK16004	CHOKE COIL 1.1MH
J501,502	EX06N41045	EAR JACK 3.5mm
L35,47,24,15,50	ECBAD18504	BEAD COIL 3.5x6x1.2
L41	ECBAD18555	BEAD COIL 3.5x6x1.2
L36,38	ECBAD18506	BEAD COIL 3.5x6x1.2
VR10,20	RE10100018	S/F/R 100 Ω
VR14,11	RE10200003	S/F/R 1K Ω
VR13,12,16	RE50200006	S/F/R 5K Ω
VR1,2,5,7	RE10300009	S/F/R 10K Ω
VR8	RE10400020	S/F/R 100K Ω

REFERENCE NUMBER	RANGER PART NO.	DESCRIPTION
VR3,4	RE50400021	S/F/R 500K Ω
VR21	RE30200076	S/F/R 3K Ω
J107	EX07N41226	PCB CONN/S 2P
J109	EX07N41330	PCB CONN/S 2P
J101,104	EX07N41343	PCB CONN/S 4P
J102,MIC	EX07N41227	PCB CONN/S 3P
J106	EX07N41344	PCB CONN/S 6P
J103	EX07N41309	PCB CONN/S 12P
J108	EX07N41369	PCB CONN/S 14P
J105	EX07N48083	PCB CONN/S 9P
J75,93,111,501-502	WX01070704	JUMPER WIRE 7x4x7
J36,49,54,66,79,83,89,96,100,91,100UP	WX01070705	JUMPER WIRE 7x5x7
J6,8,11,30,33,35,50,52,64,88,92,86	WX01070706	JUMPER WIRE 7x6x7
J13,18,22,25,43,45,60,61,62,63,67,87,31,42,69,71,73,301,57,110,111,40,95,99DOWN	WX01070708	JUMPER WIRE 7x8x7
J12,17,53,55,58,65,72,74,84,85,9,44,51,68,102	WX01070710	JUMPER WIRE 7x10x7
J4,14,39,46,76,94	WX01070712	JUMPER WIRE 7x12x7
J10,78,80	WX01070713	JUMPER WIRE 7x13x7
J3,5,7,20,32,34,98,26,27,28,41,38	WX01070715	JUMPER WIRE 7x15x7
J15,16,56,59	WX01070718	JUMPER WIRE 7x18x7
J12,29	WX01070720	JUMPER WIRE 7x20x7
J37	WX01070722	JUMPER WIRE 7x22x7
J19,23	WX01070725	JUMPER WIRE 7x25x7
J4	WX01070730	JUMPER WIRE 7x30x7
J21	WX01070735	JUMPER WIRE 7x35x7
J77	WX01070714	JUMPER WIRE 7x14x7
J104(HOLE LEFT)-AMP	WL0720009Z	LEAD WIRE VIOLET
J104(HOLE CENTRE)-G	WL0920009Z	LEAD WIRE WHITE
J104(HOLE RIGHT)-SSBP	WL0520009Z	LEAD WIRE GREEN
J24(LEFT)-R244(TOP)	WL0416004Z	LEAD WIRE YELLOW
TP7,8,9	XZZZ90006Z	PCB STOPPER
TP7-TP9	EPT120060A	PCB DC B+
COPPER SIDE	MT1200060N	SHIELD PLATE (A)
COPPER SIDE	MT2710060X	SHIELD PLATE
COPPER SIDE	PT1200020A	SHIELD PLATE (A)

## SS-3900EGHP MISC. PARTS

REFERENCE NUMBER	RANGER PART NO.	DESCRIPTION
VOL/SQ	RV50303344	VR 50KB/50KA/SW
MIC GAIN/RF GAIN	RV10203345	VR 1KA/1KB
FINE/COARSE	RV20303347	VR 20KB/KB
E-TONE	RV50303587	VR 50KA/50KB W/SW
R503 RF POWER(SW)	RCP162714Z	C/F/R 270 Ω 1/16W
AMATUER FREQUENCY SHIPMENT(4)	RCU161014Z	C/F/R 100 Ω 1/16W
R501 RF POWER(SW)	RCP168214Z	C/F/R 820 Ω 1/16W
R504 RF POWER(SW)	RCP161224Z	C/F/R 1.2K Ω 1/16W
R502 RF POWER(SW)	RCP161524Z	C/F/R 1.5K Ω 1/16W
BAND	EWRT32038S	ROTARY SW 6N
MODE	EWRT32002S	ROTARY SW 24mm
RF PWR	EWSL31000G	SLIDE SW
NB/ANL,S/RF/SWR,TB	EWSL31001G	SLIDE SW
-	ES300835SQ	SPEAKER 8 Ω 3W
-	EX03N40005	SIGNAL METER
-	EX06T41019	ANT SOCKET
-	EX06T40007	DC SOCKET 3P
DC SOCKET	EDLT6A400Z	DIODE LT6A400
J304	EX07N40013	WIRE CONN/H 10P
J109	EX07N48041	WIRE CONN/H 2P

REFERENCE NUMBER	RANGER PART NO.	DESCRIPTION
J101,104	EX07N41355	WIRE CONN/H 4P
J102,MIC	EX07N48192	WIRE CONN/H 3P
J106	EX07N48191	WIRE CONN/H 6P
J103	EX07N48103	WIRE CONN/H 12P
J108	EX07N48104	WIRE CONN/H 14P
J105	EX07N48190	WIRE CONN/H 9P
POWER(2)	CC0501037L	C/C 0.01μF 50WV
MODE(SW)	WL0205005Z	LEAD WIRE RED
MIC GAIN	WL0006005Z	LEAD WIRE BLACK
ECHO(SW)-ECHO(VR)	WL0005005Z	LEAD WIRE BLACK
BAND(SW)-METER(-)	WL0012005Z	LEAD WIRE BLACK
SWR/S/RF-METER(+)	WL0213005Z	LEAD WIRE RED
L503,L504	WX0012015A	TUBE 1.2x15mm BLACK
IC8(2)	LZZZ61008Z	IC SHIELD B
D88,89,112	EDMV00001Y	DIODE MV-1Y
-	PT148N010H	FRONT PANEL
-	PT3600101H	KNOB (A-1)
-	PT3600110H	KNOB (B)
-	PT3600120H	KNOB (C)
-	PT3600130H	KNOB (D)
-	PT3600080A	SIGNAL METER HOLDER
-	PT3600090A	KNOB WASHER
-	PT3600070A	LED DISPLAY WINDOW
-	PT3600060A	LED DISPLAY HOLDER
FC	EX07N48983	WIRE CONN/H 6P
-	MT3600010S	FRONT CHASSIS
A-427	MT3600024M	SET CHASSIS
-	MT3600041S	CHANNEL BRACKET
-	MT3600050X	DC SOCKET HOLDER
-	MT3600061X	TOP HOUSING
-	MT3600071X	BOTTOM HOUSING
-	MT3600080T	D SPRING A
-	MT3600090T	D SPRING B
-	MT3600100T	D SPRING D
-	MM7878041B	HEAT SINK
-	BT148N020T	ID PLATE
-	BAA112010D	MIC PLATE
-	XZZZ90296A	MASK PLATE(SW) Ø20mm
SWR SW	XZZZ90004Z	FOAM 14x16x20mm

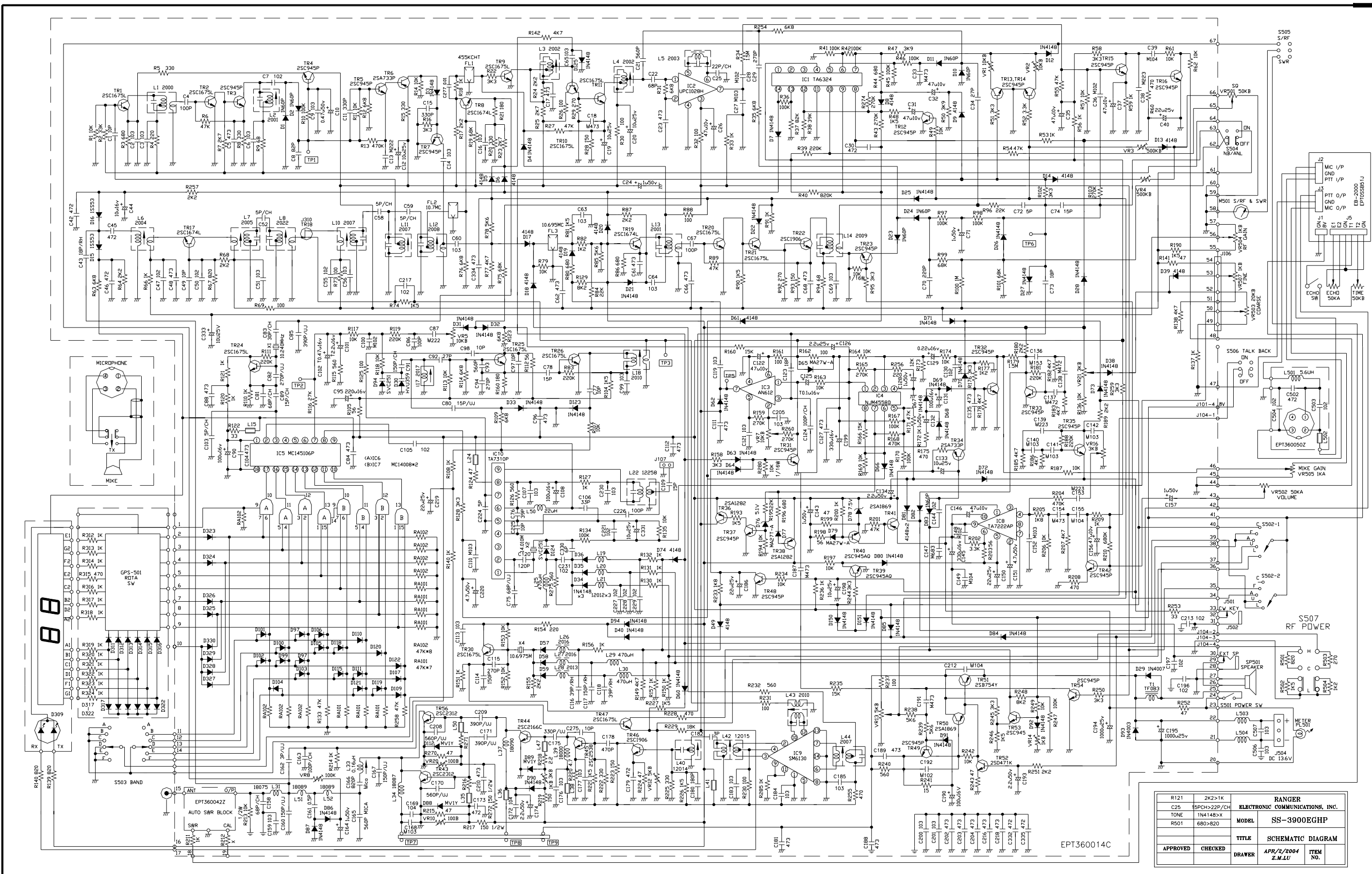
TR43,44,56	XZZZ90358Z	INSULATING PLATE 10x14x1.55mm
TR43,44,56	XZZZ90003Z	INSULATING RING
TR51	XZZZ90020Z	INSULATING PLATE 18x13mm
-	GZZZ50000Z	CLAMP 100mm
-	LZZZ60082Z	SHIELD CLOTH 10x170x0.3t
-	XZZZ90021Z	FOAM 11x30x15t
-	XZZZ90423Z	SOLDER PLATE
FRONT PANEL(4)	JS033008MN	SET SCREW M3x0.5Px8
NB/ANL(2),S/RF/SWR(2), TB(2)	JS052004MN	SET SCREW M2x0.4Px4
RF PWR(2)	JS052605MN	SET SCREW M2.6x0.45Px5
CHASSIS(12)	JS053006MN	SET SCREW M3x0.5Px6
TR41	JS052006MN	SET SCREW M2x0.4Px6
SPK(4),DC(2)	JS053008MN	SET SCREW M3x0.5Px8
TR43,44,56	JS052112MN	SET SCREW M2x0.4Px12
IC8	JS013006MV	SET SCREW M3x0.5Px6
MAIN PCB(5)	JS053006TN	SET SCREW T3x6-2

REFERENCE NUMBER	RANGER PART NO.	DESCRIPTION
H/S(2)	JS013008TN	SET SCREW T3x8-2
TR51	JS052010MN	SET SCREW M2x0.4Px10
CH BKT(2)	JS013008TH	SET SCREW T3x8-2
TR43,44,56	JN242012ZS	NUT M2x1.2t
SPK(4)	JN263035ZS	NUT WITH WASHER M3x3.5t
-	LZZZ61515Z	CAUTION LABEL (TOP HOUSING)
-	LZZZ61516Z	CAUTION LABEL (I/M)
-	LZZZ61533B	FREQ RANGE LABEL 6BAND (TOP HOUSING)
-	UB050725ZZ	PVC BAG 70x250x0.05tmm
-	UB051015ZZ	PVC BAG 100x150x0.05tmm
-	UB051625ZZ	PVC BAG 160x250x0.05tmm
SET	UB052945ZZ	PVC BAG 290x450x0.05tmm
6 CARTON	UB07604183	PVC BAG 600x410x830x0.07t
-	UDT360002Z	ACCESSORY BOX
-	UDT360003Z	STOPPER
-	UDT360001Z	MAIN UNIT BOARD
-	UF106025ZZ	BUBBLE SHEET
-	AT148N020G	I/M
-	U41230883A	GIFT BOX
-	UC474226F2	CARTON BOX
-	MT3600030S	HANDLER
-	XZZZ90008Z	MIC STOPPER
-	XZZZ90007Z	MOUNTING SCREW M5x0.8Px11(BLACK)
-	XZZZ90188Z	FIBER WASHER 4.9x15x1t
-	EX04N40658	MIC SRA-158-4H
-	EX02N40210	FUSE 16V 7A
-	WA0012185A	DC CORD W/FUSE SOCKET
-	JS015010WH	SET SCREW W5X10-1
-	JS013508TH	SET SCREW T3.5x8-2
-	JW315510CN	OUT-TOOTH WASHER

-	JW324008CN	5.5x10x0.3tmm IN-TOOTH WASHER
-	LMZZL0013A	4x8x0.3tmm CHECK PASS LABEL
-	LMZZL0009B	SERIAL NO. LABEL
-	LZZZ61472Z	WARRANTY LABEL



# SS-3900EGHP SCHEMATIC DIAGRAM

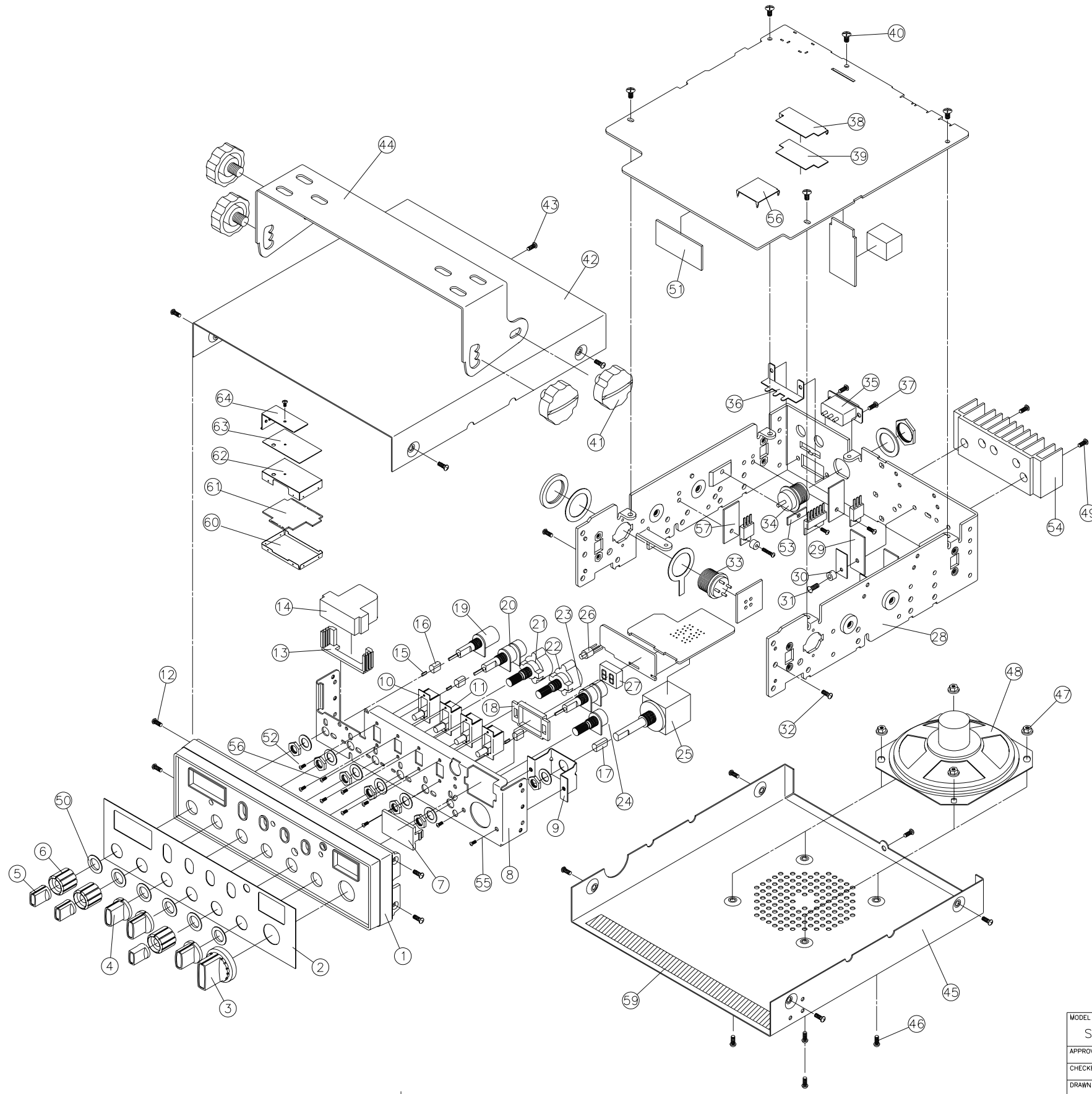


R121	2K2>1K	RANGER ELECTRONIC COMMUNICATIONS, INC.	MODEL	SS-3900EGHP
C25	5PCH/22P/CH			
TR1	1N4148X			
R501	680>820	TITLE	SCHEMATIC DIAGRAM	
APPROVED	CHECKED	DRAWER	APR/2/2004 Z.M.LU	ITEM NO.

ADD D150/D151 T.B. JUL2003  
 ADD R501-504 POW. JUL2003  
 C505 103>C277 103 MAY/12/2003  
 ADD R282-3K3

EPT360014C

# SS-3900EGHP EXPLODE DRAWING



64	MT2100081X	1
63	XZZZ90376Z	1
62	MT2100070X	1
61	EPROSSB51J	1
60	MT2100061X	1
59	LZZZ60082Z	2
58	MT2710060X	1
57	XZZZ90020Z	1
56	JS052004MN	6
55	JS013008TN	4
54	MM7878041B	1
53	LZZZ61008Z	2
52	JS052605MN	2
51	XZZZ90005Z	1
50	PT3600090A	6
49	JS052012MN	3
48	ES300835SQ	4
47	PT3600080A	4
46	JS053008MN	4
45	MT3600071X	1
44	MT3600030S	1
43	JS053006MN	5
42	MT3600061X	1
41	XZZZ900072	4
40	JS053006TN	5
39	PT1200020A	1
38	MT1200060N	1
37	JS053008MN	2
36	MT3600050X	1
35	EX06T40007	1
34	EX06T41019	1
33	EX06N41020	1
32	JS053006MN	2
31	JS052012MN	2
30	XZZZ90003Z	2
29	XZZZ90358Z	2
28	MT3600024M	1
27	EX03N40003	1
26	EX01N40004	1
25	EWRT32000S	1
24	RV20303347	1
23	RV50303598	1
22	EWRT32002S	1
21	EWRT32001S	1
20	RV10203345	1
19	RV50303344	1
18	PT3600060A	1
17	MT3600080T	2
16	MT3600100T	2
15	MT3600100T	2
14	EX03N40005	1
13	PT3600080A	1
12	JS033008MN	4
11	EWSL31001S	3
10	EWSL31000S	1
9	MT3600041S	1
8	MT3600010S	1
7	PT3600070A	1
6	PT3600130A	3
5	PT3600110A	3
4	PT3600120A	3
3	PT3600101A	1
2	BT0148020T	1
1	PT148N010H	1
NO. PART NO. Q'TY		

MODEL		SS-3900EGHP		RANGER ( 程遠通信 )		RANGER ELECTRONIC COMMUNICATIONS, INC.	
APPROVED	DATE	TITLE	EXPLODE DRAWING (U)				
CHECKED	DATE	PART NO.					
DRAWN	CHANG	DATE	06/14/96	USAGE		FILE	A2



ATZZZZ040A

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