Service Manual

27MHz CB RADIO

MODEL：XH9006E.RANDY Ⅱ P & M

Ver.02　2013/03/08

MANUFACTURED BY CHIEF TEK ELECTRONIC CO.,　LTD.
2013.03.08

I N D E X

ANTENNA

L.P.F
L1 L2

ANT. SW
D1 D2
(BA592)

B. P. F
L11 L10

RF AMP
Q42(SC3356)
Q59(SC4099)

B. P. F
L14 LR15 L16

MIX
Q5
(BB504C)

XTRL B.P.F
10.695MHz
XF1

10.240MHz

RSSI/NOISE AMP
U1
NJM2904V
RSSI
SQ
Q6 Q7
2SC4081

L. P. F
L1 L2
L3 L4

FINAL PA
Q1
2SK3476

DRIVE - 2
Q2
2SK3078

DRIVE - 1
Q3
(2SC3356)

BUFFER
Q28
(2SC2714)

PVCC
APC-O
APC
L.P.F
5T

V.C.O
BUFFER Q30 (2SC2714)
BUFFER Q29 (2SC2714)
OSC Q44 2SC3356
XA1
10.240MHz
PLL IN

PLL
U6
SR1503A

NOISE IN

BATTERY

POWER SW
Q12 Q13 Q14

AM MOD
AM MOD AMP
Q18
2SC2712 (GR)

Pre-emphasis
C19 R230
FM_MOD

XTRL B.P.F
FA1
455KHz

U2
NJM2552V

POWER SW
VR-SW1
SW-VCC
FM H.P.SW
Q15 Q17
L.P.SW
Q20 Q21
AM/H.P.C
W1
FM 5W
L POWER

MIC AMP
U7
LMV324
MIC IN

VCO_EN
H:RX VCO
L:TX VCO
T. V
L.P.F

5V REG
IC2
XC6201-5V

5T SW
Q22
Q24
5T

AM EN
Q11
PZP103BYB
FM EN
Q10
PZP103BYB

LED1
LED2
LCD DISPLAY
BACK LIGHT
DATA .CLOCK .EN

KEY TONE
Audio AMP
U3 (TA7368PL)
SP OUT
AF IN
AFOUT

TX EN
3V3 REG
IC1
XC6201-3.3V
3.3 V
APC
L POWER
FM 5W
RP1 RP2
LO BATT.
Q43
RESET
KEY
SW1--SW6
PROG. CONNECTOR
J1

U4
STM8L152M8T6

TX LED
BUSY LED
LED SW
Q26 Q27

RS232 PORT
TXD
RXD
Q40 Q47
TX/RX

J3
SPEAK PHONEJACK
MK
MICROPHONE2
EXT MIC
JACK1
MICROPHONE JACK
LS
SPEAKER
VOLUME

RSSI
SQ

CHIEF TEK ELECTRONICS CO.,LTD.	Project Title: RANDY II &XH9006E BLOCK DIAGRAM
	Page Title
	Authorize / Auditing / Draw
	Document Number / Rev
	Date / Sheet / of

Rx&Mix&IF Circuit

Tx Circuit

Power Control Circuit

VCO&PLL Circuit

Audio Amp Circuit

Mic Circuit

Mic Mod Circuit

Power Circuit

Project Title	RANDY II
Page Title	
Authorize	Auditing / Draw
Document Number	Rev. 0.7
Date	2013/02/25 Sheet of

CHIEF TEK ELECTRONICS CO.,LTD.

RANDY II/ XH9600E Circuit Description

Randy II / XH9600E & Rescue 27 are same Low Band VHF radio which is operating from 26.965 ~ 27.405 MHz frequency range. According to the schematic diagram that separate by several section, the circuit description are as below:

A. System Description

The radio has built in AM & FM modulation with receiving & transmitting simplex operating function. The operating frequency had been fixed by MCU. The receiving circuits are designed by double-mixer system both FM & AM, the 1st intermediate frequency is 10.695MHz & the 2nd intermediate frequency is 455KHz, the 2nd local frequency is 10.24MHz, the audio signal will connect from U2 through AF amplifier (U3) to the loudspeaker.
The 1st local frequency is generated by VCO (voltage controlled oscillation) that was controlled by MCU (U4) through PLL chip (U6). The PLL OSC frequency is 10.24MHz which is generate by XA1 crystal, the MCU clock is built-in type.
The transmission frequency is come from VCO with AM or FM modulation, then through RF PA amplifier (Q1) & low pass filter (L1~L4) to antenna.

B. Receiver Section

(1) Antenna Low Pass Filter

The low pass filter are used to attenuate the unwanted signal in RX & TX mode, they combine with L1, L2, L3, L4, L6 & other relative components.

(2) Antenna Switch

The RX/ TX antenna switch are including D1, D2, C15, C21, D4 & R3.

(3) Front End LNA Circuit

They are including band pass filter & LNA amplifier, L8, L10, L11, Q59, L14, L15, L16 are band pass filter which are allow the desired signal go in only, Q42 is LNA amplifier.

(4) 1ST Mixer & IF Filter

The input signal will be mixed with local OSC signal & generate the 1ST IF 10.695Mhz, they are including Q5, L17, R95, C130, C66, R10, it will go out through the IF filter XF1.

(5) IF Amplifier & Audio Detect Signal

The 1ST IF signal will go to U2 (including 2nd IF mixer, amplifier, AM/FM detect, --- etc.) pin 20, it will go through 455KHz ceramic filter FA1 & discriminator Y2, to detect a AF signal out in U2 pin11 (FM) or Pin14(AM).

(6) Squelch & AGC Circuit

The noise signal go to the noise amplifier input (U2 pin12) & output from U2 pin13, then go to the U1 to get the noise level & RSSI level, they are used to set the squelch level by MCU & AGC circuit (Q6, Q7).

(7) AM/FM switching & Speaker Amplifier

The AM/FM audio signal will be switch by Q10, Q11, then go in the TIC1 pin23 for CTCSS tone decoder & audio process, then go to the speaker amplifier (U3) through buffer amplifier (Q8) & volume controller.

C. PLL Frequency Synthesized

The PLL circuit is used to control the VCO to generate the local OSC frequency for receiving & transmission frequency.

(1) PLL Circuit
The XA1 is 10.24MHz crystal which is used to generate a standard frequency for PLL chip (U6), it will divide to 5KHz reference frequency to control VCO frequency. The U6 pin5 is charge pump output, it connect to VCO D22, D23 through low pass filter R222, E11, R219,218, E10, E9, R158. The U6 pin8 is RF input from VCO OUT (Q29).

(2) VCO (Voltage Controlled Oscillator) Circuit
The VCO circuit are including Q44, L24, L25, D22, D23, D20 & relative components, the Q45 is VCO switch to control RX/TX OSC frequency, Q9 is ripple filter of power supply, Q28 is RX buffer amplifier, Q3 is TX buffer amplifier, D20 is FM modulation diode.

(3) PLL Un-lock Detect
The D15, R17, R16, R221, C110 are circuit of PLL Lock detect to MCU PLL-LD pin.

D. Transmission Section

(1) AM Modulation

Microphone signal connect to U7 pin3, after amplifier, band pass filter & AGC circuit, it go out through W3, Q18, Q12, Q13 Q14 to PVCC of RF power supply.

(2) FM Modulation
It is similar circuit except that go from U7 Pin 14 through C19, R230, R67, W5 to VCO D20.

(3) TX Driver & Power Amplifier
The Q3, Q2 & Q1 are TX driver amplifier after VCO switching circuit, Q1 is TX power transistor. The TX power level have Hi & Low two Power level, The MCU APC pin is used to fine tune the Hi power to 4W & Low power to 1W in FM mode. AM Hi power is able to tune by W1 & go through D11, D10, D9, Q12, Q13, Q14 to PVCC.

E. DC Power Manager Circuit

The system power supply are able to offer stable +5VDC by IC2, then IC1 is used for MCU +3.3VDC power supply.

F. Controlled System

The controlled system are done by MCU that are including low battery check, Squelch level setting, PLL data, AM/FM power controlled, modulation, operating channel setting & EEPROM data, --- etc.

RANDY II/ XH9600E Circuit Description

Randy II / XH9600E are same Low Band VHF radio which is operating from 26.965 ~ 27.405 MHz frequency range. According to the schematic diagram that separate by several section, the circuit description are as below:

A · System Description

The radio has built in AM & FM modulation with receiving & transmitting simplex operating function. The operating frequency had been fixed by MCU. The receiving circuits are designed by double-mixer system both FM & AM, the 1st intermediate frequency is 10.695MHz & the 2nd intermediate frequency is 455KHz, the 2nd local frequency is 10.24MHz, the audio signal will connect from U2 through AF amplifier (U3) to the loudspeaker.

The 1st local frequency is generated by VCO (voltage controlled oscillation) that was controlled by MCU (U4) through PLL chip (U6). The PLL OSC frequency is 10.24MHz which is generate by XA1 crystal, the MCU clock is built-in type.

The transmission frequency is come from VCO with AM or FM modulation, then through RF PA amplifier (Q1) & low pass filter (L1~L4) to antenna.

B · Receiver Section

(1) Antenna Low Pass Filter

The low pass filter are used to attenuate the unwanted signal in RX & TX mode, they combine with L1, L2, L3, L4, L6 & other relative components.

(2) Antenna Switch

The RX/ TX antenna switch are including D1, D2, C15, C21, D4 & R3.

(3) Front End LNA Circuit

They are including band pass filter & LNA amplifier, L8, L10, L11, Q59, L14, L15, L16 are band pass filter which are allow the desired signal go in only, Q42 is LNA amplifier.

(4) 1ST Mixer & IF Filter

The input signal will be mixed with local OSC signal & generate the 1ST IF 10.695Mhz, they are including Q5, L17, R95, C130, C66, R10, it will go out through the IF filter XF1.

(5) IF Amplifier & Audio Detect Signal

The 1ST IF signal will go to U2 (including 2nd IF mixer, amplifier, AM/FM detect, --- etc.) pin 20, it will go through 455KHz ceramic filter FA1 & discriminator Y2, to detect a AF signal out in U2 pin11 (FM) or Pin14(AM).

(6) Squelch & AGC Circuit

The noise signal go to the noise amplifier input (U2 pin12) & output from U2 pin13, then go to the U1 to get the noise level & RSSI level, they are used to set the squelch level by MCU & AGC circuit (Q6, Q7).

(7) AM/FM switching & Speaker Amplifier

The AM/FM audio signal will be switch by Q10, Q11, then go in the TIC1 pin23 for CTCSS tone decoder & audio process, then go to the speaker amplifier (U3) through buffer amplifier (Q8) & volume controller.

C · PLL Frequency Synthesized

The PLL circuit is used to control the VCO to generate the local OSC frequency for receiving & transmission frequency.

(1) PLL Circuit

The XA1 is 10.24MHz crystal which is used to generate a standard frequency for PLL chip (U6), it will divide to 5KHz reference frequency to control VCO frequency. The U6 pin5 is charge pump output, it connect to VCO D22, D23 through low pass filter R222, E11, R219,218, E10, E9, R158. The U6 pin8 is RF input from VCO OUT (Q29).

(2) VCO (Voltage Controlled Oscillator) Circuit

The VCO circuit are including Q44, L24, L25, D22, D23, D20 & relative components, the Q45 is VCO switch to control RX/TX OSC frequency, Q9 is ripple filter of power supply, Q28 is RX buffer amplifier, Q3 is TX buffer amplifier, D20 is FM modulation diode.

(3) PLL Un-lock Detect

The D15, R17, R16, R221, C110 are circuit of PLL Lock detect to MCU PLL-LD pin.

D · Transmission Section

(1) AM Modulation

Microphone signal connect to U7 pin3, after amplifier, band pass filter & AGC circuit, it go out through W3, Q18, Q12, Q13 Q14 to PVCC of RF power supply.

(2) FM Modulation

It is similar circuit except that go from U7 Pin 14 through C19, R230, R67, W5 to VCO D20.

(3) TX Driver & Power Amplifier

The Q3, Q2 & Q1 are TX driver amplifier after VCO switching circuit, Q1 is TX power transistor. The TX power level have Hi & Low two Power level, The MCU APC pin is used to fine tune the Hi power to 4W & Low power to 1W in FM mode. AM Hi power is able to tune by W1 & go through D11, D10, D9, Q12, Q13, Q14 to PVCC.

E · DC Power Manager Circuit

The system power supply are able to offer stable +5VDC by IC2, then IC1 is used for MCU +3.3VDC power supply.

F · Controlled System

The controlled system are done by MCU that are including low battery check, Squelch level setting, PLL data, AM/FM power controlled, modulation, operating channel setting & EEPROM data, --- etc.

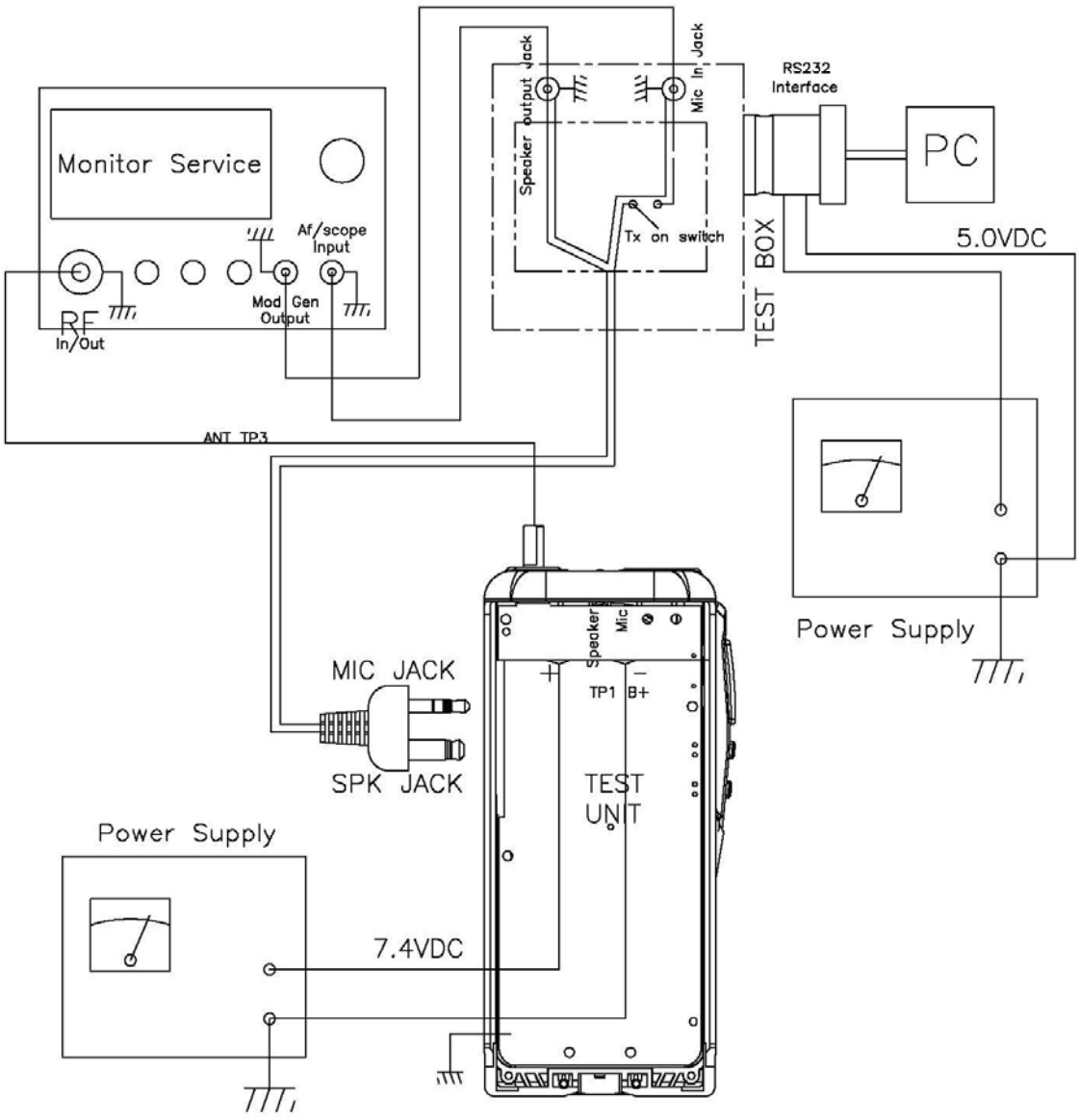
SPECIFICATION

GENERAL	
Frequency Range	26.965 ~ 28MHz.
Frequency Control	Phase Lock Loop (PLL) synthesizer.
Channel spacing	10KHz
Modulation mode	AM/ FM
Frequency Stability	± 0.005 %
Channel step	10KHz
Maximum channel	> 40 channel
Operating Temperature Range	-10°C to +50°C
Input Voltage	8.4VDC
Working Voltage	6.29~8.4V
Antenna Connector	TNC with 50 ohms
Dimensions	120(H)X54(W)X35(D)mm
Weight	About 250g(Including battery)
TRANSMITTER	
AM /FM Power Output	FM: 1/4W AM: Carry power 1/3W without modulation
Spurious Emissions	<-57 dBm.
Carrier Suppression	<-54 dBm.
Audio Frequency Response	300Hz to 2.5KHz
Max. Modulation FM AM	+/- 2KHz 100%
RECEIVER	
AM Sensitivity For 20dB S/N w.CCITT	< -110dBm
FM Sensitivity For 20dB S/N w.CCITT	< -116dBm
Image Rejection Ratio	>65 dB.
Adjacent Channel Selectivity	55 dB.
Automatic Gain Control (AGC) Figure Of Merit	100 mV for 10 dB Change in Audio Output.
Squelch Adjustable;	6 Levels
Audio Output Power	> 0.5W
Signal to noise ratio	> 40db
Internal Speaker	8 Ohms; 1 Watts.

ALIGNMENT INSTRUMENT LIST

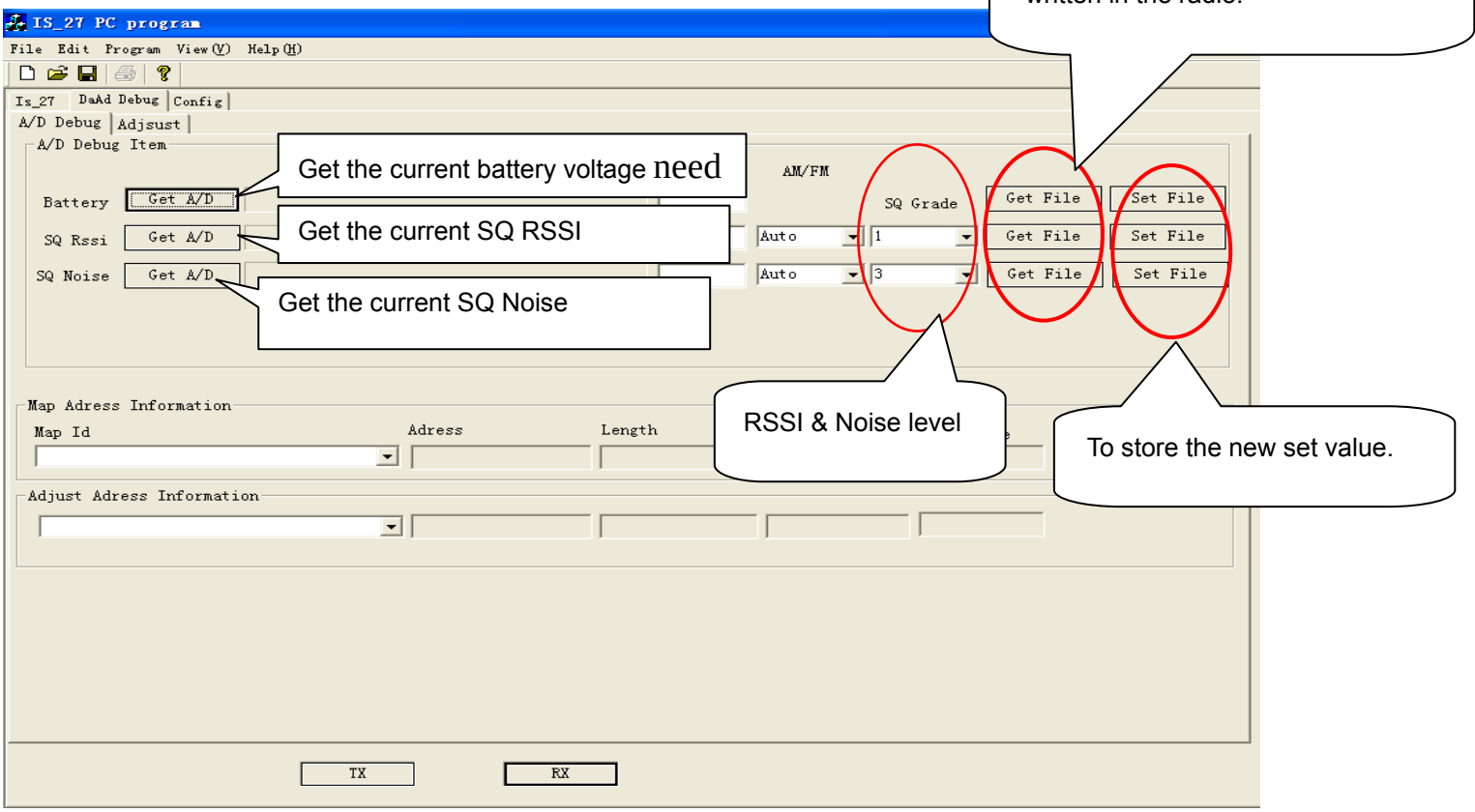
Instrument	Specification
Signal Generator	Frequency Range: 0.1~1Ghz Output Level: 0.1uV~50mV(-127 to -13 dBm)
AC Voltmeter	Measuring Range: 1mV~10V
Distortion Meter	Measuring Range: 0.1~20%
Frequency Counter	Frequency Range: 0.1~1GHz Accuracy: ±1ppm or Better Sensitivity: 100mV or Better
Oscilloscope	Frequency Range: DC~20MHz Measuring Range: 0.01~10V
RF Power Meter	Connector Type: BNC Measuring Range: 0.1~10W Frequency Range: 0.1~1GMHz Impedance: 50ohm VSWR: Less than 1.2:1
DC Power Supply	Output Voltage: 0~13.8 VDC Output Current: 3A or more
DC Voltage Meter	Output Impedance: 50K ohm / DC
External Load	Speaker: 3.5Φ, Mono with 4 ohm / 0.5 W load Microphone: 2.5Φ, Mono with 2k ohm impedance
Attenuator	Attention: 30 or 40 dB Rating Power: 5W or more
FM Modulation Meter	Frequency Range :20Hz~ 3 KHz Measuring Range : 0 ~ ±10KHz
Audio Signal Generator	Frequency Range: 20Hz~ 3 KHz Output Level: 1 mV~ 1V

INSTRUMENT CONNECTION Fig 1



ALIGNMENT PROCEDURES

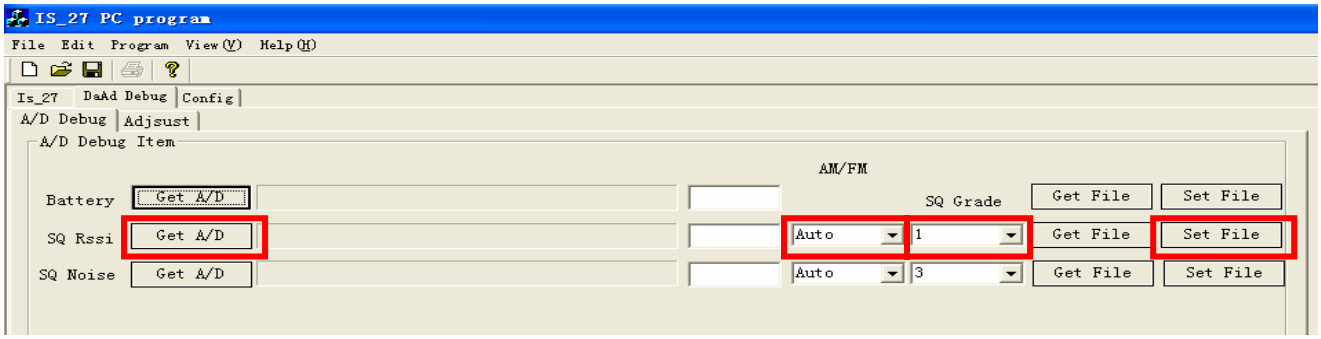
- **This software do not need to install. Double-click the**  **icon.**
- **DaAd Debug（A/D Debug）**



1. **Battery voltage setting：** No need to use this function, we've already set, so pls do not alignment this parameter.
2. **RSSI setting：** There are 7 RSSI levels should be alignment. Every level has its own RF LEV (see as bellow).

AM/FM	RSSI Level	0	1			4			7			10			13		15
	RF LEV	-123	-120			-109			-97			-85			-73		-48

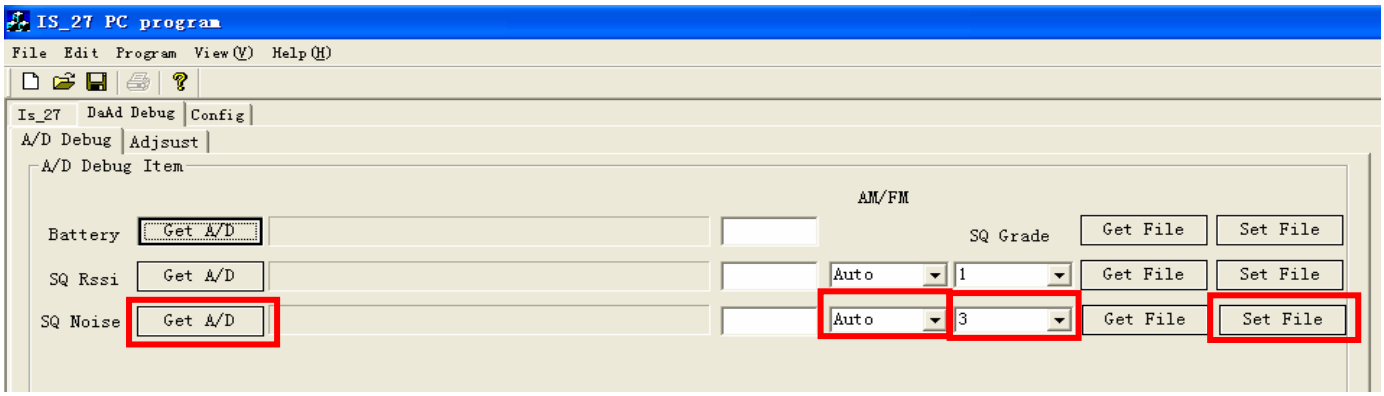
Procedure: Set the "RF LEV" on equipment to -123dBm，and the select the RSSI level "0". If the channel is at FM, choose "FM" in the software, then press Get A/D" of SQ Rssi,, then press "Set File" to store the setting. After that, continue to set the RSSI Level "1" and the rest level. When all of the 7 RSSI levels set, switch the radio to AM, then using the same way to set RSSI Level at AM. (See as bellow)



3. **NOISE LEV setting:** There are 4 Noise level, and each have its own RF LEV. (see as bellow)

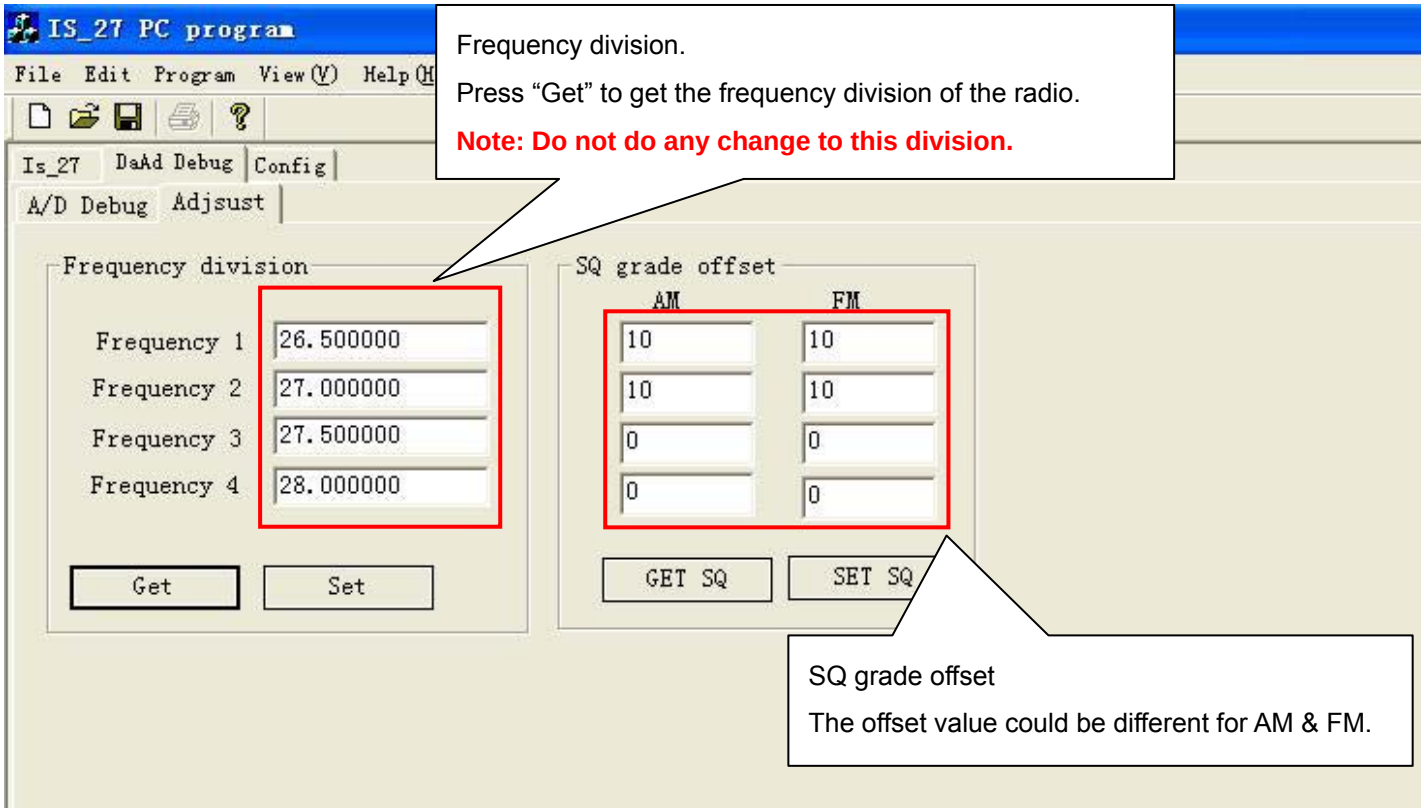
AM/FM	NOISE Level	0	1	2	3
	RF LEV	-126	-123	-120	-117

Procedure：Set the “RF LEV” to “-126dBm”, and choose NOISE Level “0”. If the channel is at FM, choose ”FM” in the software, then press Get A/D” of SQ Noise, then press “Set File” to store the setting. After that, continue to set the Noise Level “1” and the rest levels. When all of the 4 Noise levels set, switch the radio to AM, then using the same way to set Noise Level at AM. (See as bellow)



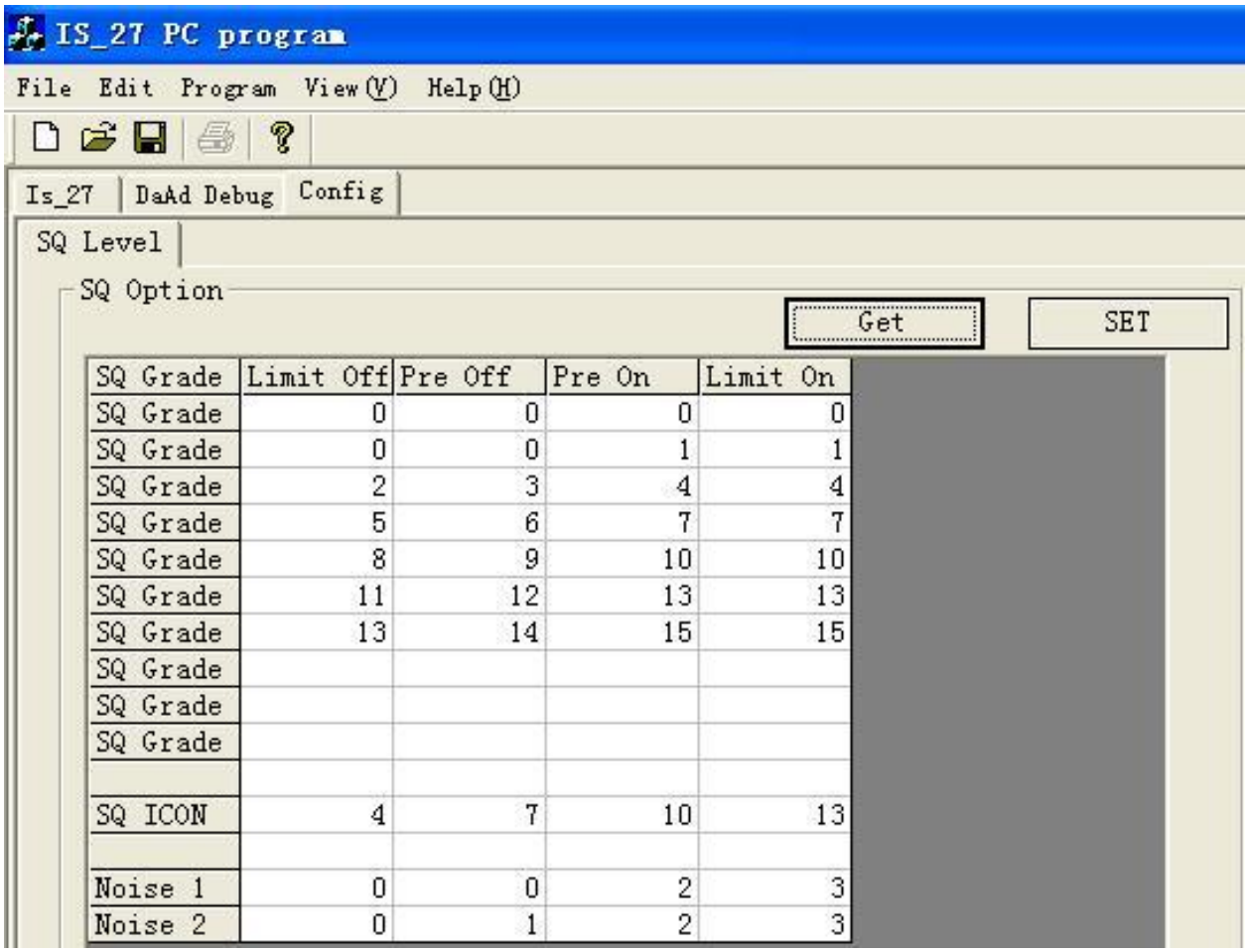
Adjust：

SQ grade offset: Do not change the frequency division and set the SQ grade offset as bellow:

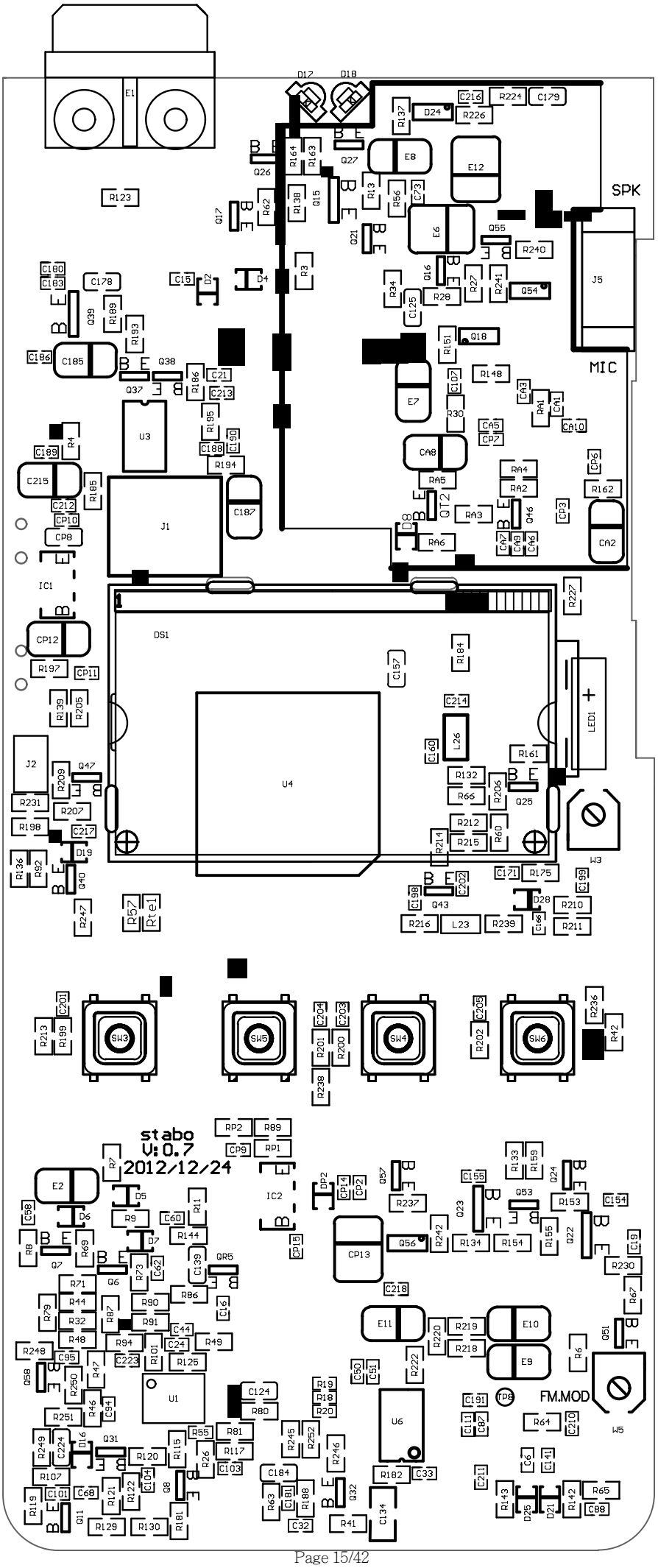


SQ Level setting:

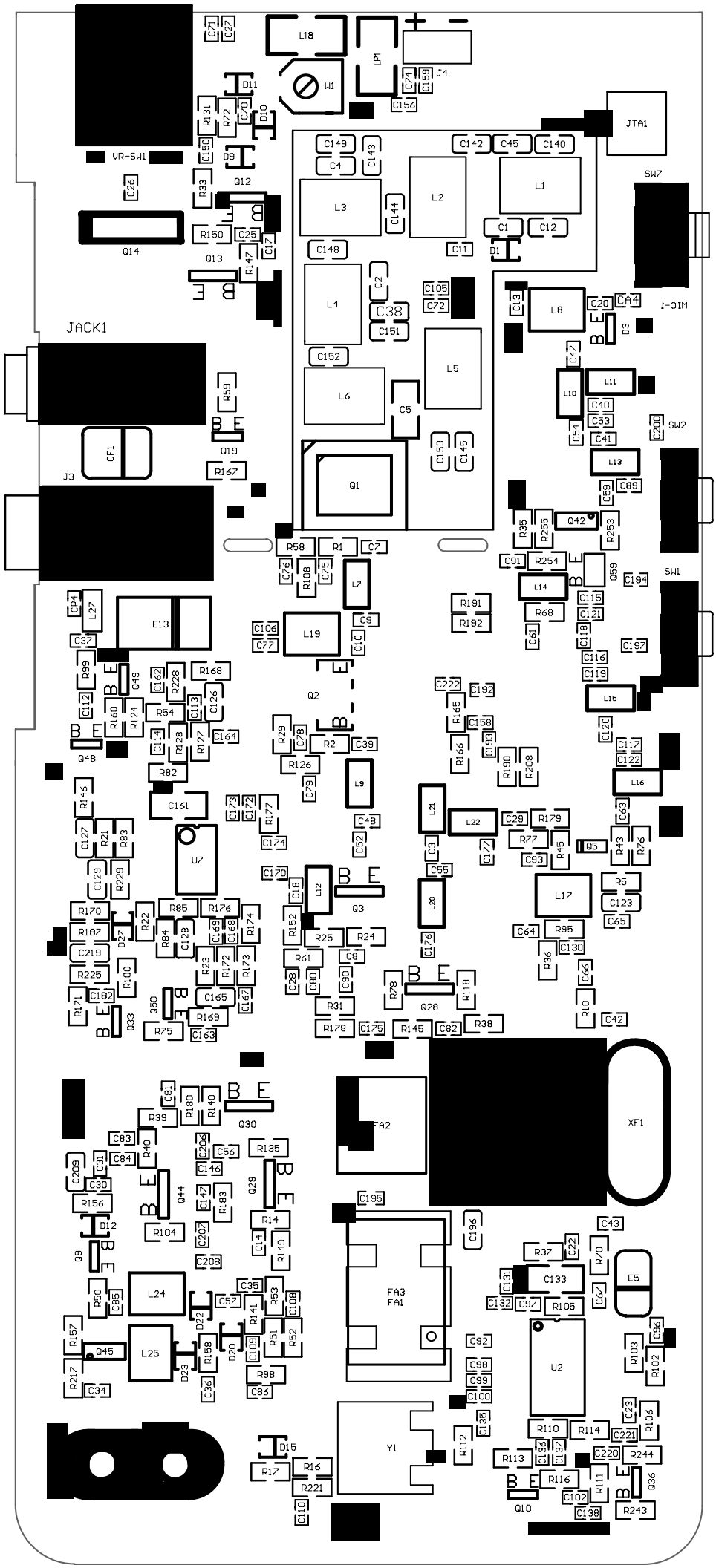
1. SQ Level setting: SQ1 set to “0-0-1-1”, which means SQ1: -120 on, -123 off. SQ2 set to: 2-3-4-4,and SQ3…….
2. SQ ICON(Signal strength): 4-7-10-13 means : showing one bar at -109dBm, two bar at -97dBm, three bar at -85dBm, for bar at -73dBm.
3. Noise level setting: There are two levels, pls set Noise 1: 0-0-2-3, which means:-123dBm off, -120dBm on, -126dBm Limit off, -117dBm Limit on.



SQ Grade	Limit Off	Pre Off	Pre On	Limit On
SQ Grade	0	0	0	0
SQ Grade	0	0	1	1
SQ Grade	2	3	4	4
SQ Grade	5	6	7	7
SQ Grade	8	9	10	10
SQ Grade	11	12	13	13
SQ Grade	13	14	15	15
SQ Grade				
SQ Grade				
SQ Grade				
SQ ICON	4	7	10	13
Noise 1	0	0	2	3
Noise 2	0	1	2	3

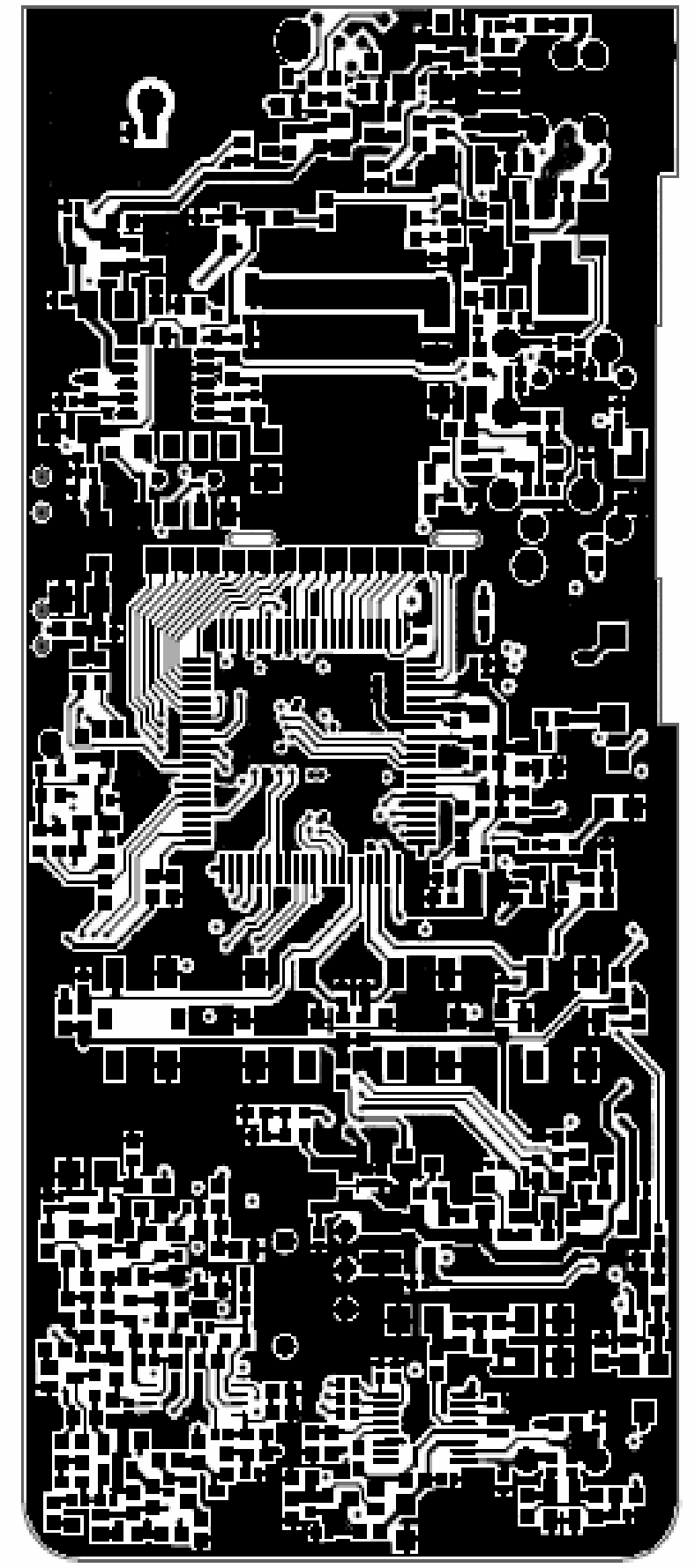

SPK
MIC
FM.MOD
stabo
V:0.7
2012/12/24
J1
J2
J5
U1
U3
U4
U6
IC1
IC2
DS1
LED1
SW3
SW4
SW5
SW6

TopOverlay



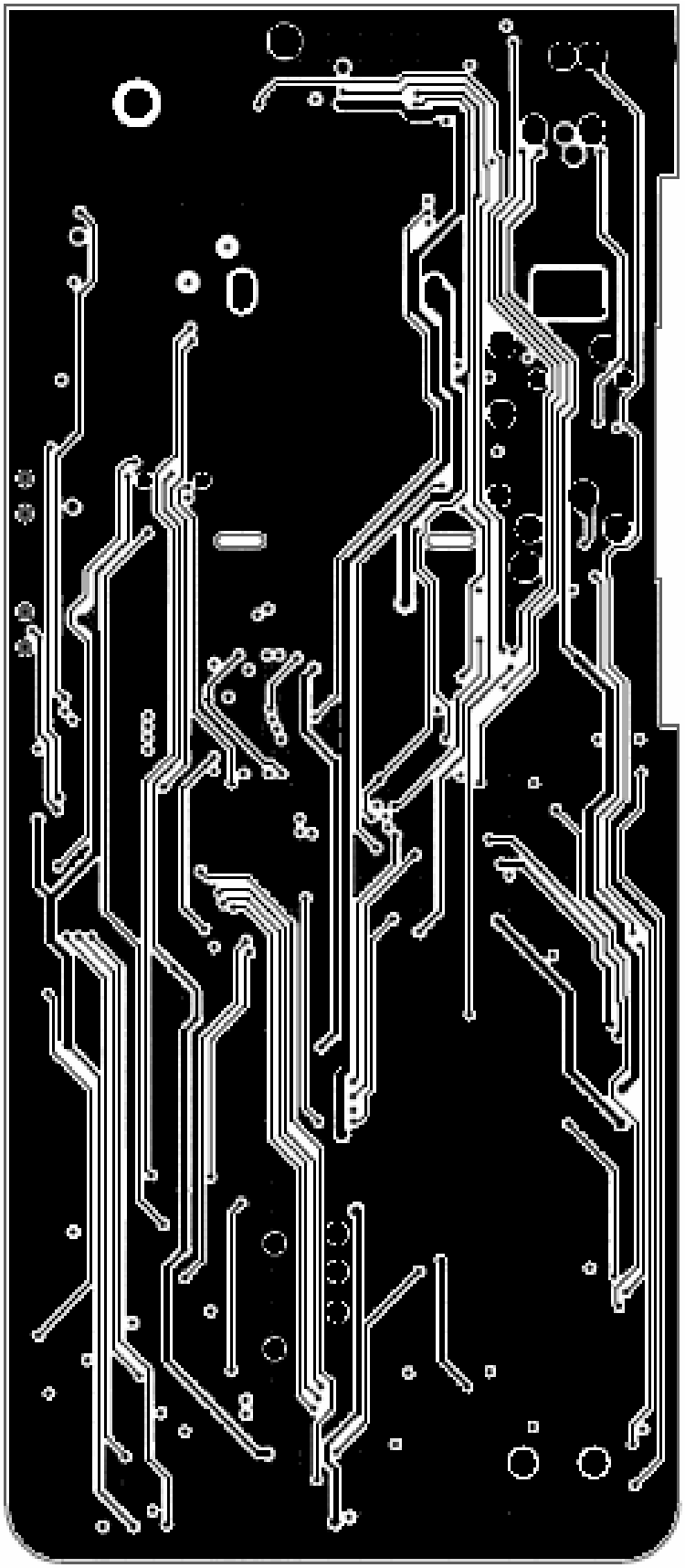
BottomOverlay

MAIN PC BOARD(VIEW)



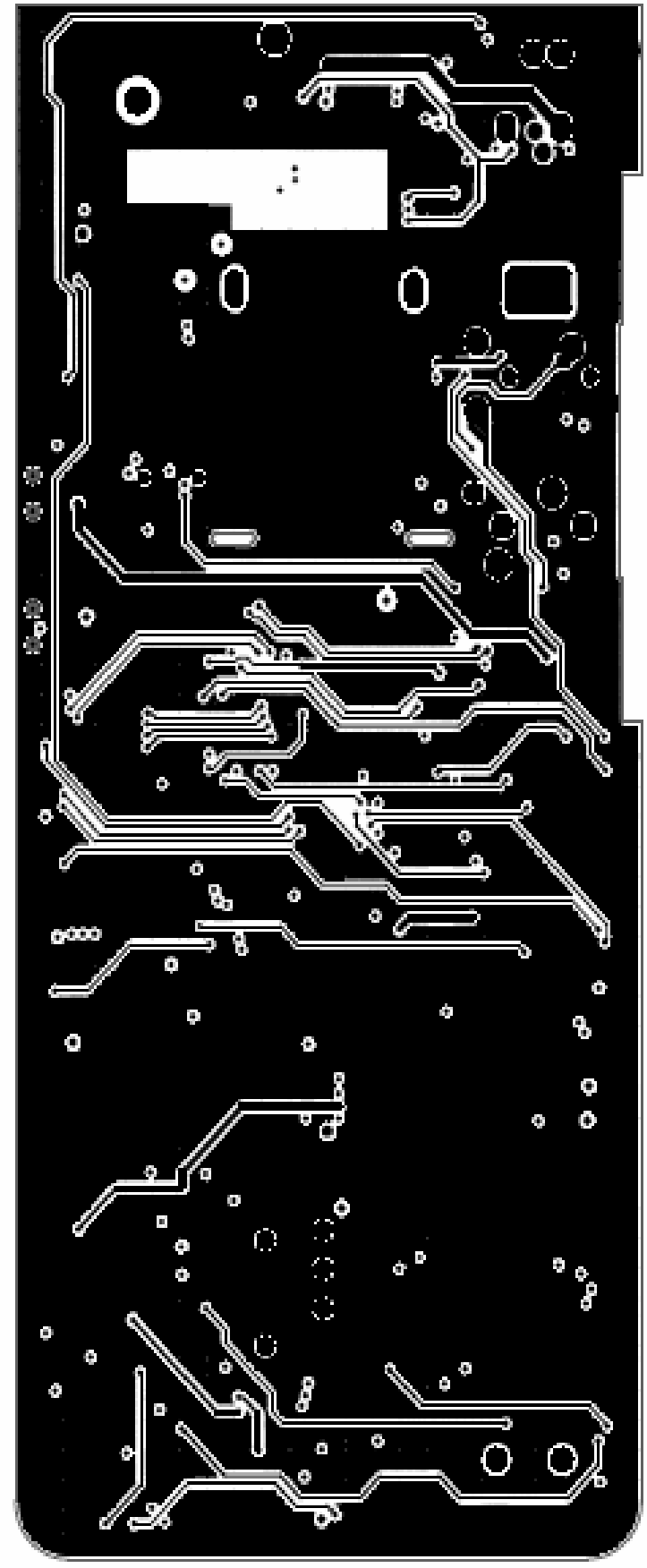
L1

MAIN PC BOARD(VIEW)



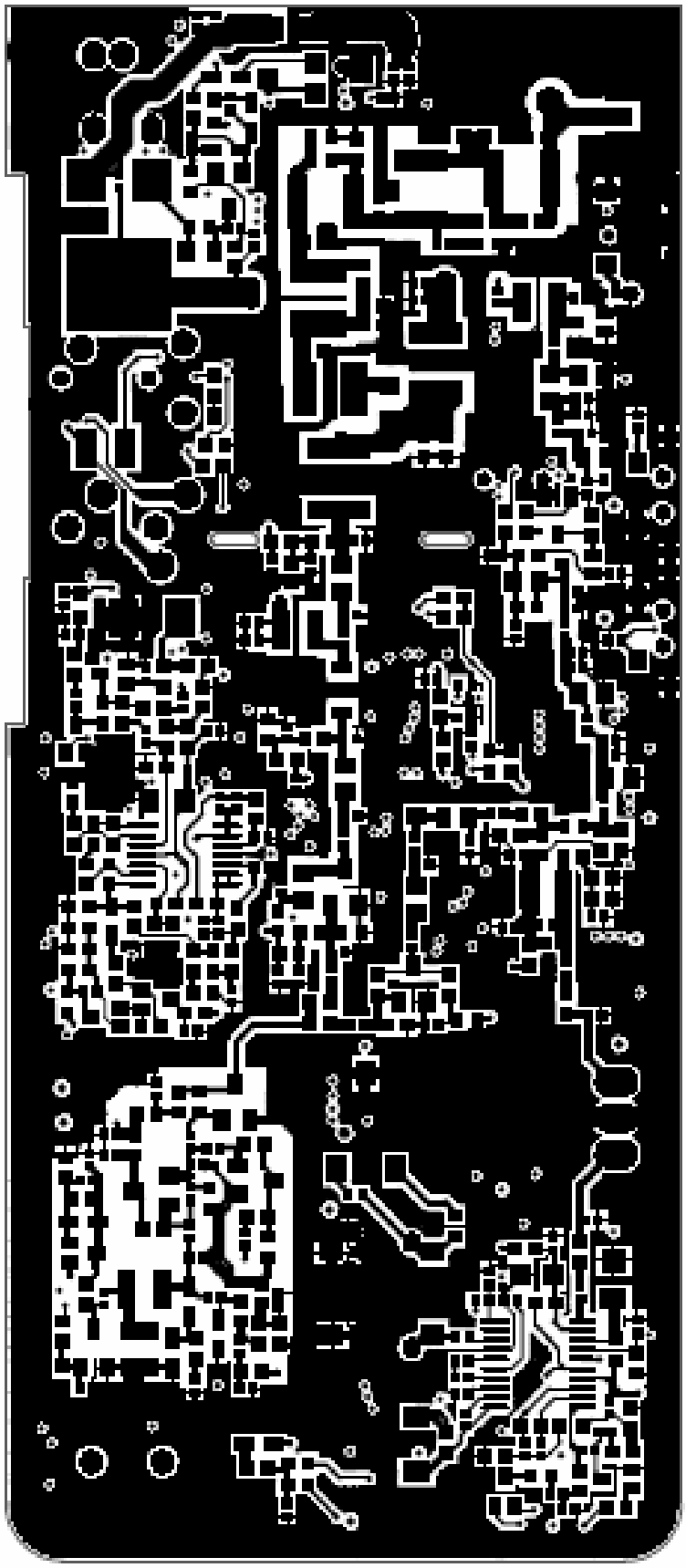
L2

MAIN PC BOARD(VIEW)

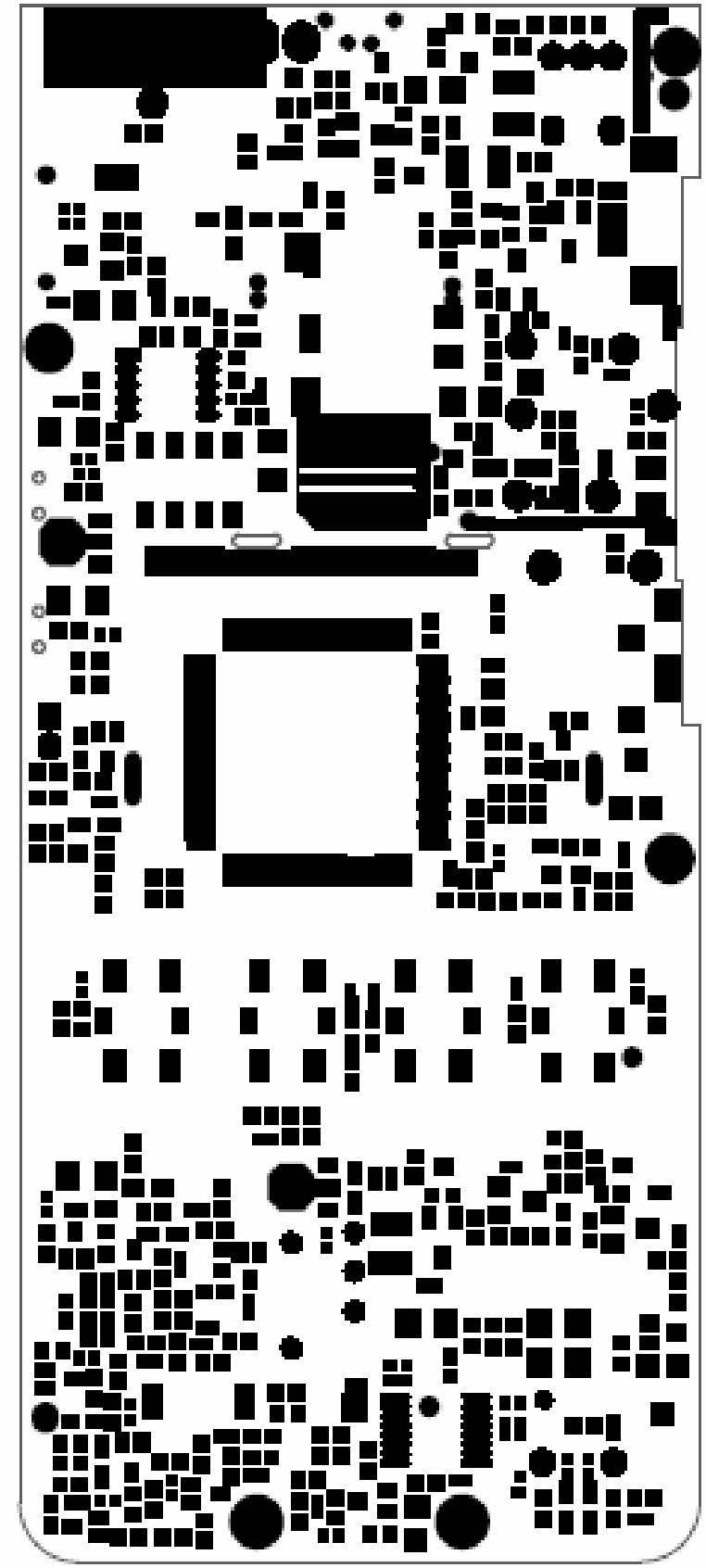


L3

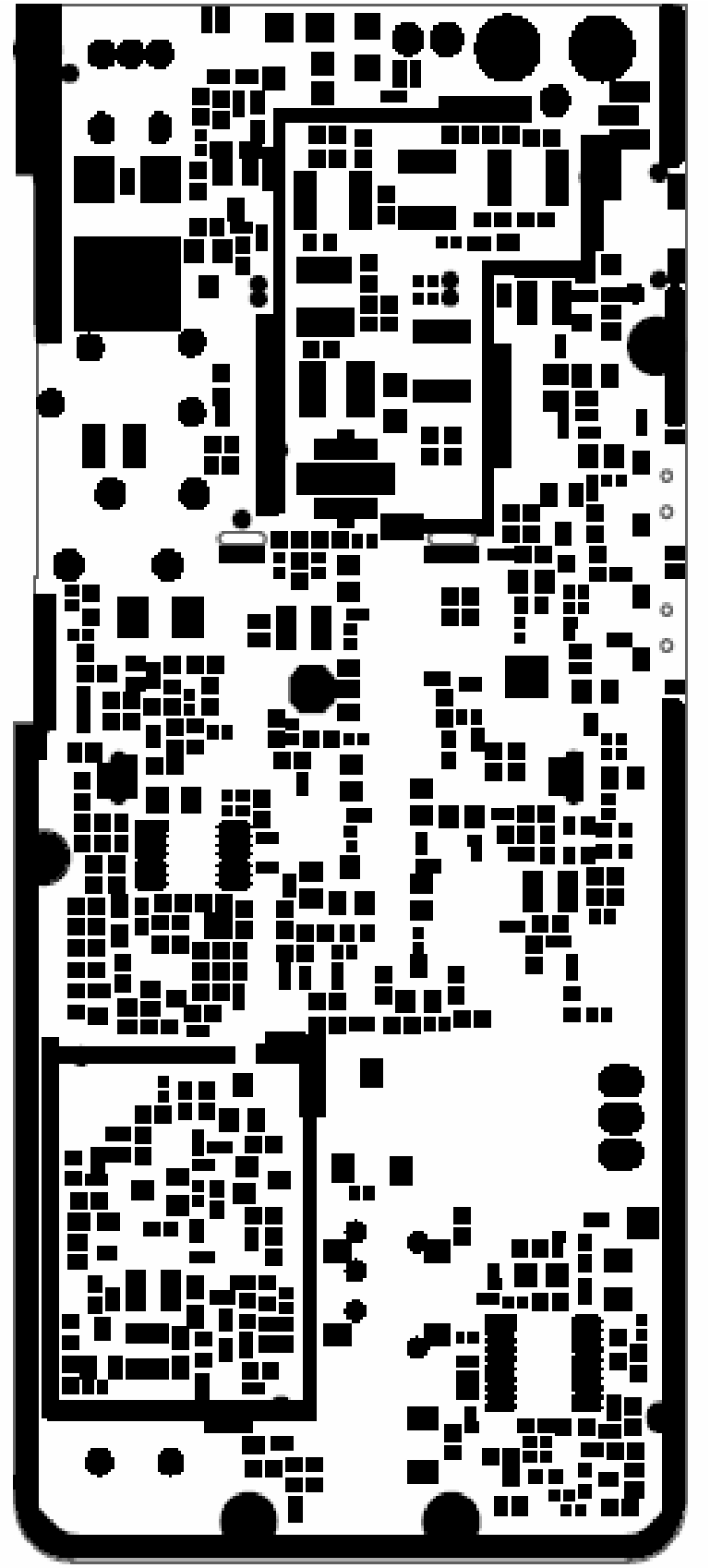
MAIN PC BOARD(VIEW)



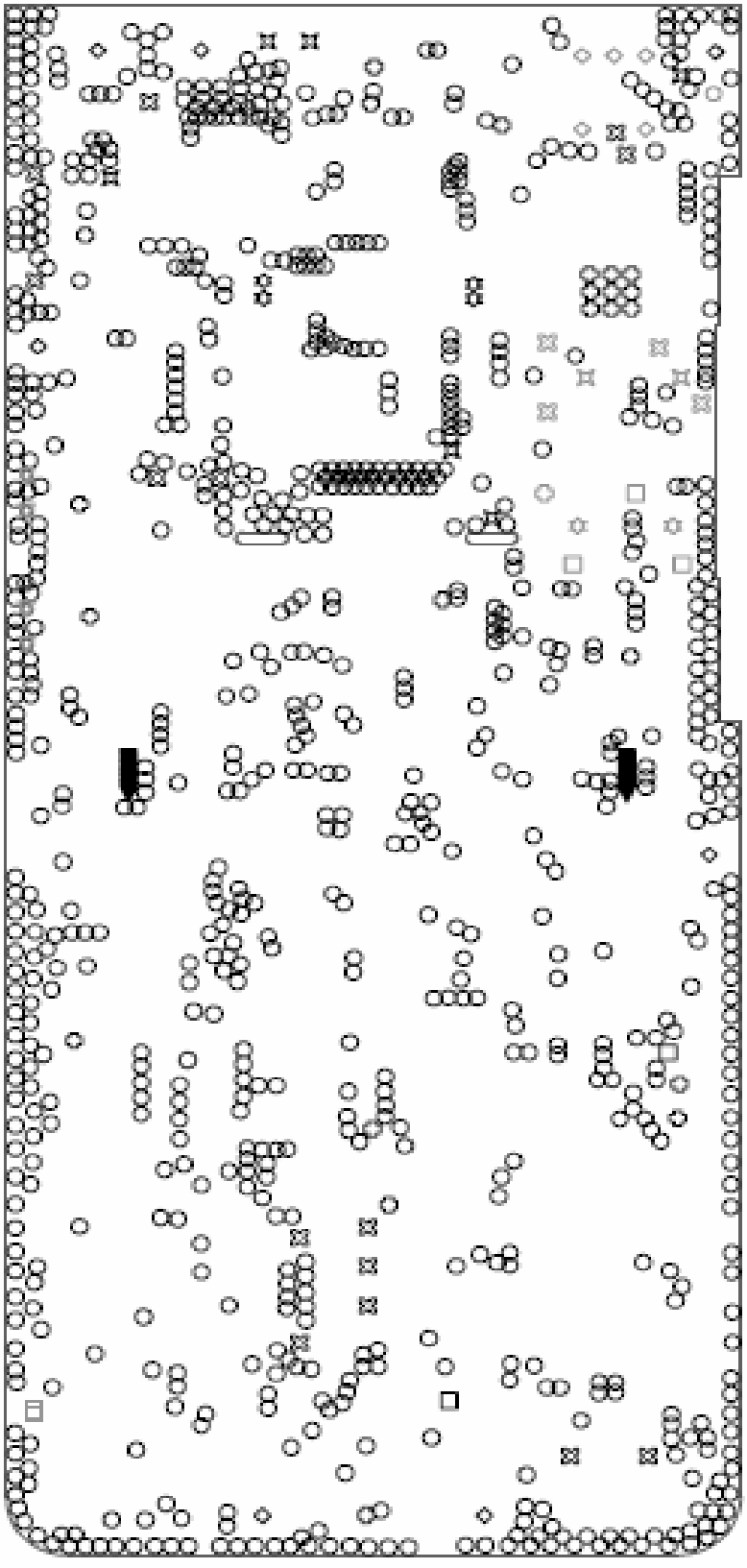
L4



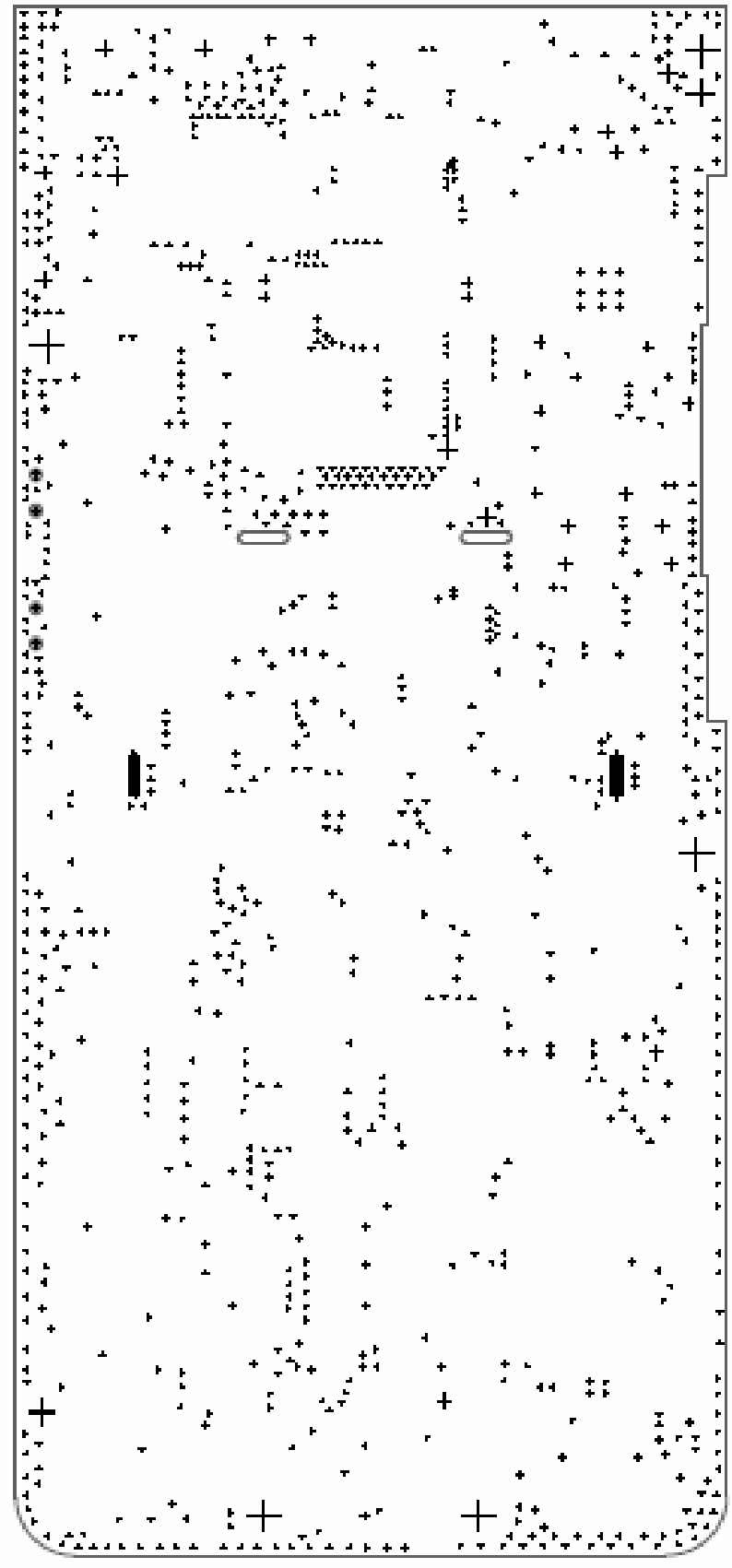
TopSolder



BottomSolder



DrillDrawing


DrillGuide

Electronic Material List

PCB BORAD:VER0.7
MODEL NO:12SEG-27-M1-G

Item No.	Part No.	Description	Specification	Qty'	Location
1	LEDS270VGC-GREEN-G	Lead-free, SMD LED 0603 side light, green	SL-S270VGS	2.000	LED1,LED2
2	PCBISRADIO-G	Lead-free, PCB FOR IS RADIO BACKLIGH	VER:1.1	1.000	54
3	CCP050C50CH02-G03	Lead-free, CHIP-C(0402) 5P	MURATA, NPO 50V ±0.25pF	3.000	C53, C55, C56
4	CCP060D50CH02-G03	Lead-free, CHIP-C(0402) 6P	MURATA, NPO 50V ±0.25pF	1.000	C211
5	CCP100C50CH03-G03	Lead-free, CHIP-C(0603) 10P	MURATA, NPO 50V ±0.5pF	1.000	C45
6	CCP100D50CH02-G03	Lead-free, CHIP-C(0402) 10P	MURATA, NPO 50V ±0.5pF	3.000	C131, C206, C208
7	CCP101J50CH02-G03	Lead-free, CHIP-C(0402) 100P	MURATA, NPO 50V ±5%	9.000	C10, C48, C50, C51, C170, CA3, CP6, CP7, CP14
8	CCP101J50CH03-G03	Lead-free, CHIP-C(0603) 100P	MURATA, NPO 50V ±5%	2.000	C144, C149
9	CCP102K50X7R02-G03	Lead-free，CHIP-C(0402) 102P	MURATA，X7R 50V +/-10%	42.000	C21, C22, C23, C25, C27, C28, C29, C30, C31, C32, C33, C34, C35, C36, C37, C44, C136, C137, C154, C155, C156, C159, C160, C164, C180, C181, C182, C191, C197, C200, C201, C203, C204, C205, C214, C218, CA1, CA9, CP2, CP3, CP4, CP15
10	CCP103K25X7R02-G03	Lead-free, CHIP-C(0402) 103P	MURATA, X7R 25V ±10%	38.000	C58, C60, C61, C62, C63, C64, C65, C66, C67, C68, C70, C71, C72, C74, C75, C76, C77, C78, C79, C80, C81, C82, C83, C84, C85, C86, C87, C88, C162, C163, C166, C194, C199, CA4, CA5, CA7, CA10, CP9
11	CCP104K16X7R02-G03	Lead-free, CHIP-C(0402) 104P	MURATA, X7R 16V ±10%	37.000	C73, C91, C93, C94, C95, C96, C97, C98, C99, C100, C101, C102, C103, C104, C105, C106, C107, C108, C109, C110, C111, C112, C113, C114, C138, C171, C183, C192, C193, C198, C202, C216, C221, C223, CP10, CP11, C16
12	CCP104K16X7R03-G03	Lead-free, CHIP-C(0603) 104P	MURATA, X7R 16V ±10%	1.000	R217
13	CCP105K16X5R03-G03	Lead-free, CHIP-C(0603) 105P	MURATA, X5R 16V ±10%	12.000	C123, C124, C125, C126, C127, C128, C129, C157, C178, C179, C224, CP8

Item No.	Part No.	Description	Specification	Qty'	Location
14	CCP106K06X5R05-G03	Lead-free, CHIP-C(0805) 106P	MURATA, X5R 6.3V ±10%	3.000	C133, C134, C161
15	CCP120J50CH03-G03	Lead-free, CHIP-C(0603) 12P	Murata, NPO 50V +/-5%	1.000	C38
16	CCP121J50CH02-G03	Lead-free, CHIP-C(0402) 120P	MURATA, NPO 50V +/-5%	2.000	C47, C135
17	CCP150J50CH02-G03	Lead-free, CHIP-C(0402) 15P	MURATA, NPO 50V ± 5%	1.000	C132
18	CCP151J50CH02-G03	Lead-free， CHIP-C(0402) 150P	Murata, NPO 50V +/-5%	4.000	C52, C146, C147, C217
19	CCP151J50CH03-G03	Lead-free, CHIP-C(0603) 150P	MURATA, NPO 50V +/-5%	2.000	C145, C148
20	CCP180J50CH02-G03	Lead-free, CHIP-C(0402) 18P	MURATA, NPO 50V +/-5%	2.000	C20, C207
21	CCP181J50CH03-G03	Lead-free, CHIP-C(0603) 180P	Murata, NPO 50V +/-5%	2.000	C143, C151
22	CCP200J50CH02-G03	Lead-free, CHIP-C(0402) 20P	MURATA, NPO 50V ± 5%	1.000	C130
23	CCP220J50CH02-G03	Lead-free, CHIP-C(0402)22P	MUATA, NPO 50V +/-5%	3.000	C7, C8, C54
24	CCP221J50CH02-G03	Lead-free, CHIP-C(0402) 220P	Murata, NPO 50V +/-5%	3.000	C90, C175, C167
25	CCP221J50CH03-G03	Lead-free, CHIP-C(0603) 220P	Murata, NPO 50V +/-5%	1.000	C142
26	CCP222K50X7R02-G03	Lead-free， CHIP-C(0402) 222P	MURATA，X7R 50V +/-10%	2.000	C6, C189
27	CCP222K50X7R05-G03	Lead-free, CHIP-C(0805) 222P	MURTA, X7R 50V +/-10%	1.000	C5
28	CCP225K16X5R03-G03	Lead-free, CHIP-C(0603) 225P	MURATA, X5R 16V +/-10%	1.000	C139
29	CCP270J50CH02-G03	Lead-free, CHIP-C(0402) 27P	MURATA, NPO 50V +/-5%	1.000	C3
30	CCP270J50CH03-G03	Lead-free, CHIP-C(0603) 27P	Murata, NPO 50V +/-5%	3.000	C1, C4, C2
31	CCP271J50CH03-G03	Lead-free, CHIP-C(0603) 270P	Murata, NPO 50V +/-5%	1.000	C152
32	CCP2R7C50CH02-G03	Lead-free, CHIP-C(0402) 2.7P	MURATA, NPO 50V .25P	1.000	C57
33	CCP330J50CH02-G03	Lead-free, CHIP-C(0402) 33P	MURATA，NPO 50V +/-5%	2.000	C115, C116
34	CCP390J50CH02-G03	Lead-free, CHIP-C(0402) 39P	MURATA, NPO 50V +/-5%	2.000	C177, C210
35	CCP391K50X7R02-G03	Lead-free, CHIP-C(0402) 390P	MURATA, X7R 50V ±10%	1.000	C169
36	CCP3R3C50CH02-G03	Lead-free, CHIP-C(0402) 3.3P	MURATA, NPO 50V ± 0.25pF	2.000	C118, C120
37	CCP470J50CH02-G03	Lead-free, CHIP-C(0402) 47P	MURATA, NPO 50V +/-5%	3.000	C11, C176, C117
38	CCP470J50CH03-G03	Lead-free, CHIP-C(0603) 47P	Murata, NPO 50V +/-5%	1.000	C12
39	CCP471J50CH02-G03	Lead-free, CHIP-C(0402) 470P	MURATA, NPO 50V +/- 5%	6.000	C13, C14, C212, C213, C220, CA6
40	CCP472K50X7R02-	Lead-free,	MURATA, NPO 50V	1.000	C150

Item No.	Part No.	Description	Specification	Qty'	Location
	G03	CHIP-C(0402) 4.7NF	X7R +/-10%		
41	CCP472K50X7R03-G03	Lead-free, CHIP-C(0603) 472P	Murata, X7R 50V +/-10%	1.000	R125
42	CCP473K25X7R02-G03	Lead-free, CHIP-C(0402) 473P	MURATA, X7R 25V +/-10%	8.000	C15, C24, C17, C18, C19, C158, C190, C222
43	CCP474Z16Y5V02-G03	Lead-free, CHIP-C(0402) 474P	MURATA, Y5V 16V	1.000	C186
44	CCP475K06X5R03-G03	Lead-free, CHIP-C(0603) 475P	MURATA, X5R 6.3V +/-10%	3.000	C184, C209, C219
45	CCP680J50CH02-G03	Lead-free, CHIP-C(0402)68P	MURATA, NPO 50V +/-5%	1.000	C141
46	CCP680J50CH03-G03	Lead-free, CHIP-C(0603) 68P	Murata, NPO 50V +/-5%	1.000	C153
47	CCP750J50CH03-G03	Lead-free, CHIP-C(0603)75P	MURATA, NPO 50V +/-5%	1.000	C140
48	CCP820J50CH02-G03	Lead-free, CHIP-C(0402) 82P	MURATA, NPO 50V +/- 5%	2.000	C9, C174
49	CCP821J50CH02-G03	Lead-free, CHIP-C(0402) 820P	MURATA, NPO 50V +/-5%	1.000	C172
50	CON-089-11-ND-G	Lead-free, Connector 8PIN Dual	SGFD2-089-11-ND	1.000	J1
51	CONRF101001-G	Lead-free, RF HEADER	RF101-001	1.000	JTA1
52	CONSGMXV-4P-G	Lead-free CONNECTOR MALE 4P	SGMX-V-125-04T-T-ND	1.000	J5
53	DIC1N4148-G	Lead-free, SMT DIODE 1N4148WS	PANJIT, SOD-323	11.000	D4, D5, D6, D9, D10, D11, D12, D15, D16, D28, DP2
54	DIC1SS302-G	Lead-free SMT DIODE 1SS302	TOSHIBA	1.000	D3
55	DIC1SS314-G	Lead-free SMT DIODE 1SS314	TOSHIBA (TY)	2.000	D1, D2
56	DIC1SS357-G	Lead-free SMT DIODE 1SS357	TOSHIBA, TH3, F, T (S3)	3.000	D19, D27, D8
57	DIC1SV270-G	Lead-free SMT DIODE 1SV270	TOSHIBA	1.000	D20
58	DIC1SV283B-G	Lead-free, SMT DIODE 1SV283B	TOSHIBA	2.000	D22, D23
59	DICHRB0103B-G	Lead-free, SMT DIODE HRB0103B	RENESAS, PTSP0003ZB-A	1.000	QR5
60	DICHVC376B-G	Lead-free, SMD DIODE HVC376B<B9>	RENESAS, UFP	2.000	D21, D25
61	ICCLMV324MT-G	Lead-free, CHIP IC LMV324MTX	NS, 14PIN TSSOP	1.000	U7
62	ICCNJM2552V-G	Lead-free, CHIP IC NJM2552V	JRC, SSOP-20	1.000	U2
63	ICCNJM2904V-G	Lead-free, CHIP IC NJM2904V	JRC, SSOP-8,	1.000	U1
64	ICCSR1503A-G	Lead-free, CHIP IC SR1503A	TSSOP16	1.000	U6
65	ICCSTM8L152-G	Lead-free, CHIP IC STM8L152M8T6	ST, LQFP80	1.000	U4
66	ICCTA7368PL-G	Lead-free, CHIP IC TA7368PL	UTC, SSOP-10	1.000	U3

Item No.	Part No.	Description	Specification	Qty'	Location
67	ICCXC6201P332PR-G	Lead-free,CHIP IC XC6201 3.3V	TOREX,SOT89 +/-2%	1.000	IC1
68	ICCXC6201P502PR-G	Lead-free,CHIP IC XC6201 5V	TOREX,SOT89 +/-2%	1.000	IC2
69	LBD1608U102-G31	Lead-free,CHIP BEAD 1000 ohm(0603)	SUNLORD,GZ1608U102TF	2.000	L23,L27
70	LBDJCB3216-600-G31	Lead-free,Chip Ferrite Bead 600 ohm(1206)	SUNLORD,PZ3216U601-1R5TF ± 25%,1.5A	2.000	L18,LP1
71	LCP102J-0805-G04	Lead-free CHIP COIL 1uH(0805,	AOBA, SWI0805FT-1R0J +/-5%	2.000	L12,L26
72	LCP103J-1008-G44	Lead-free,CHIP COIL 10uH	3L,SMDCHGR1008SED-100J, +/-5%	1.000	L17
73	LCP151J-0805-G04	Lead-free CHIP COIL 150nH	AOBA, SWI0805T-R15 +/-5%	1.000	L7
74	LCP221J-0805-G04	Lead-free CHIP COIL 220nH	AOBA, SWI0805CT-R22J +/-5%	2.000	L21,L22
75	LCP271J-1008-G04	Lead-free, CHIP COIL 270nH	AOBA, SWI 1008T-R27J +/-5%	1.000	L25
76	LCP331J-0805-G04	Lead-free,CHIP COIL 330nH	AOBA, SWI0805T-R33 +/-5%	1.000	L11
77	LCP391J-1008-G04	Lead-free,CHIP COIL 390nH	AOBA, SWI 1008T-R39 +/-5%	1.000	L24
78	LCP561J-0805-G04	Lead-free,CHIP COIL 560nH	AOBA,SWI0805FT-R56J +/-5%	1.000	L10
79	LCP561J-1008-G04	Lead-free,CHIP COIL 560nH	AOBA, SWI 1008T-R56 +/-5%	1.000	L19
80	LCP680J-0805-G04	Lead-free, CHIP COIL 68nH	AOBA, SWI0805CT-68NJ 5%	1.000	L9
81	LCP681J-1008-G04	Lead-free CHIP COIL 680nH	AOBA, SWI1008T R68J +/-5%	1.000	L8
82	LCP821J-0805-G04	Lead-free,CHIP COIL 820nH	AOBA, SWI0805FT-CTR82J +/-5%	4.000	L14,L15,L16,L20
83	LEDS270URC-RED-G	Lead-free,SMD LED 0603 side light, red	SL-S270URC	1.000	D17
84	LEDS270VGC-GREEN-G	Lead-free, SMD LED 0603 side light, green	SL-S270VGS	1.000	D18
85	LSS033011TL-1-G25	Lead-free,SMD COIL E2L TYPE	WAH TAYI, 0.3x3.0x11TN	4.000	L1,L2,L3,L4
86	LSS04208TL-G25	Lead-free，SMD COIL E2L TYPE	WAH TAYI， 0.4X2.0X8TN	1.000	L5
87	LSS04307TL-G25	Lead-free，SMD COIL E2L TYPE	WAH TAYI， 0.4X3.0X7TN	1.000	L6
88	PCBSEG-27-4-G	Lead-free, PCB FOR Rescue27	V0.8, four layer	1.000	
89	RCP000J16-02-G01	Lead-free, CHIP-R(0402) 0ohm	YAGEO, +/-5%	2.000	C59,C92

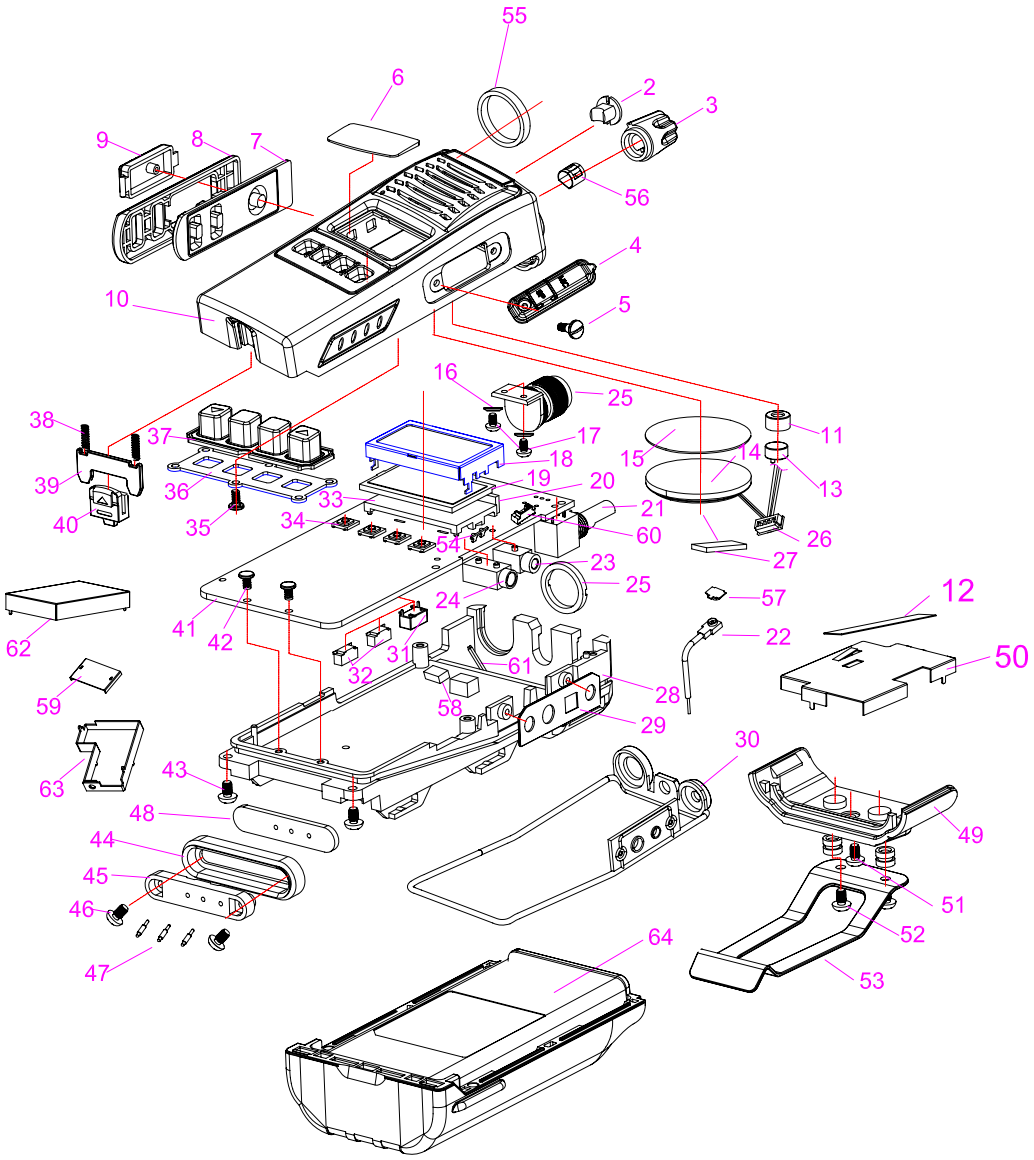
Item No.	Part No.	Description	Specification	Qty'	Location
90	RCP000J16-03-G01	Lead-free, CHIP-R(0603) 0ohm	YAGEO, +/-5%	4.000	R214, R220, R22, C196
91	RCP100J16-03-G01	Lead-free, CHIP-R(0603) 10ohm	YAGEO, +/-5%	4.000	R42, R152, R195, R227
92	RCP101J16-03-G01	Lead-free, CHIP-R(0603) 100ohm	YAGEO, +/-5%	5.000	R8, R31, R32, R33, R34
93	RCP102J16-02-G01	Lead-free, CHIP-R(0402) 1K ohm	YAGEO, +/-5%	3.000	R18, R19, R20
94	RCP102J16-03-G01	Lead-free, CHIP-R(0603) 1K ohm	YAGEO, +/-5%	12.000	R7, R10, R11, R14, R16, R17, R21, R87, R89, R169, R210, R211
95	RCP103J16-03-G01	Lead-free, CHIP-R(0603) 10K ohm	YAGEO, +/-5%	19.000	R58, R59, R61, R63, R64, R65, R91, R92, R119, R185, R186, R213, R224, R243, R244, R247, RA2, RA3, R146
96	RCP104F16-03-G01	Lead-free 注 *CHIP-R(0603) 100K	YAGEO 100K OHM +/-1%	1.000	RP1
97	RCP104J16-03-G01	Lead-free, CHIP-R(0603) 100K ohm	YAGEO, +/-5%	12.000	R43, R44, R45, R46, R48, R50, R51, R52, R53, R215, R231, R240
98	RCP121J16-03-G01	Lead-free, CHIP-R(0603) 120 ohm	YAGEO, +/-5%	1.000	R171
99	RCP123J16-03-G01	Lead-free, CHIP-R(0603) 12K ohm	YAGEO, +/-5%	4.000	R111, R126, R127, R128
100	RCP124F16-03-G01	Lead-free, CHIP-R(0603) 120K ohm	YAGEO, +/-1%	1.000	R57
101	RCP124J16-03-G01	Lead-free, CHIP-R(0603) 120K ohm	YAGEO, +/-5%	1.000	R221
102	RCP151J16-03-G01	Lead-free, CHIP-R(0603) 150ohm	YAGEO, +/-5%	1.000	R194
103	RCP152J16-03-G01	Lead-free, CHIP-R(0603) 1.5K ohm	YAGEO, +/-5%	3.000	D7, R114, R230
104	RCP153J16-03-G01	Lead-free, CHIP-R(0603) 15K ohm	YAGEO, +/-5%	3.000	R144, R145, R225
105	RCP182J16-03-G01	Lead-free, CHIP-R(0603) 1.8K ohm	YAGEO, +/-5%	2.000	R113, R115
106	RCP202J16-03-G01	Lead-free, CHIP-R(0603) 2K ohm	YAGEO, +/-5%	2.000	R222, R255
107	RCP220J16-03-G01	Lead-free, CHIP-R(0603) 22ohm	YAGEO, +/-5%	7.000	R35, R36, R37, R38, R39, R40, R41
108	RCP221J16-03-G01	Lead-free, CHIP-R(0603) 220 ohm	YAGEO, +/-5%	4.000	R3, R5, R164, R228
109	RCP222J16-03-G01	Lead-free, CHIP-R(0603) 2.2K ohm	YAGEO, +/-5%	16.000	R4, R6, R62, R95, R98, R99, R100, R153, R154, R193, R205, R209, R237, R241, RA4, R69
110	RCP223J16-03-G01	Lead-free, CHIP-R(0603) 22K ohm	YAGEO, +/-5%	6.000	R102, R103, R104, R187, R252, R253
111	RCP224J16-03-G01	Lead-free, CHIP-R(0603) 220K ohm	YAGEO, +/-5%	7.000	R94, R172, R173, R174, R176, R177, R229
112	RCP271J16-03-G01	Lead-free, CHIP-R(0603) 270 ohm	YAGEO, +/-5%	1.000	R183

Item No.	Part No.	Description	Specification	Qty'	Location
113	RCP272J16-03-G01	Lead-free, CHIP-R(0603) 2.7K ohm	YAGEO, +/-5%	1.000	R219
114	RCP273J16-03-G01	Lead-free, CHIP-R(0603) 27K ohm	YAGEO, +/-5%	3.000	R85, R108, R67
115	RCP274J16-03-G01	Lead-free, CHIP-R(0603) 270K ohm	YAGEO, +/-5%	1.000	R54
116	RCP331J16-03-G01	Lead-free, CHIP-R(0603) 330 ohm	YAGEO, +/-5%	2.000	R117, R118
117	RCP332J16-03-G01	Lead-free, CHIP-R(0603) 3.3K ohm	YAGEO, +/-5%	6.000	R68, R156, R157, R158, R160, R188
118	RCP333F16-03-G01	Lead-free, CHIP-R(0603) 33K	YAGEO 33K OHM +/-1%	1.000	RP2
119	RCP333J16-03-G01	Lead-free, CHIP-R(0603) 33K ohm	YAGEO, +/-5%	9.000	R79, R80, R81, R82, R83, R84, R90, R251, RA1
120	RCP334J16-03-G01	Lead-free, CHIP-R(0603) 330K ohm	YAGEO, +/-5%	1.000	R120
121	RCP391J16-03-G01	Lead-free, CHIP-R(0603) 390 ohm	YAGEO, +/-5%	3.000	R13, R179, R180
122	RCP392J16-03-G01	Lead-free, CHIP-R(0603) 3.9K ohm	YAGEO, +/-5%	1.000	R218
123	RCP393J16-03-G01	Lead-free, CHIP-R(0603) 39K ohm	YAGEO, +/-5%	2.000	R73, R75
124	RCP394J16-03-G01	Lead-free, CHIP-R(0603) 390K ohm	YAGEO, +/-5%	2.000	R49, R110
125	RCP470J16-03-G01	Lead-free, CHIP-R(0603) 47 ohm	YAGEO, +/-5%	3.000	R161, R162, R184
126	RCP390J16-03-G01	Lead-free, CHIP-R(0603) 39 ohm	YAGEO, +/-5%	2.000	R1, R2
127	RCP471J16-03-G01	Lead-free, CHIP-R(0603) 470 ohm	YAGEO, +/-5%	3.000	R147, R149, R163
128	RCP472J16-03-G01	Lead-free, CHIP-R(0603) 4.7K ohm	YAGEO, +/-5%	12.000	R25, R26, R27, R28, R30, R106, R116, R168, R170, R207, R239, RA5
129	RCP473J16-03-G01	Lead-free, CHIP-R(0603) 47K ohm	YAGEO, +/-5%	44.000	R60, R107, R129, R130, R131, R132, R133, R134, R135, R136, R137, R138, R139, R140, R141, R142, R143, R150, R155, R167, R189, R190, R191, R192, R197, R198, R199, R200, R201, R202, R206, R208, R212, R216, R236, R238, R242, R245, R246, R248, R249, R250, R254, RA6
130	RCP474J16-03-G01	Lead-free, CHIP-R(0603) 470K ohm	YAGEO, +/-5%	1.000	R151

Item No.	Part No.	Description	Specification	Qty'	Location
131	RCP511J16-03-G01	Lead-free, CHIP-R(0603) 510 ohm	YAGEO, +/-5%	1.000	R148
132	RCP513J16-03-G01	Lead-free, CHIP-R(0603) 51K ohm	YAGEO, +/-5%	1.000	R101
133	RCP560J16-03-G01	Lead-free, CHIP-R(0603) 56 ohm	YAGEO, +/-5%	1.000	R181
134	RCP561J16-03-G01	Lead-free, CHIP-R(0603) 560 ohm	YAGEO, +/-5%	1.000	R70
135	RCP562J16-03-G01	Lead-free, CHIP-R(0603) 5.6K ohm	YAGEO, +/-5%	4.000	R29, R122, R123, R124
136	RCP563J16-03-G01	Lead-free, CHIP-R(0603) 56K ohm	YAGEO, +/-5%	3.000	R76, R77, R78
137	RCP564J16-03-G01	Lead-free, CHIP-R(0603) 560K ohm	YAGEO, +/-5%	1.000	R121
138	RCP681J16-03-G01	Lead-free, CHIP-R(0603) 680 ohm	YAGEO, +/-5%	1.000	R9
139	RCP682J16-03-G01	Lead-free, CHIP-R(0603) 6.8K ohm	YAGEO, +/-5%	3.000	R24, R165, R166
140	RCP683J16-03-G01	Lead-free, CHIP-R(0603) 68K ohm	YAGEO, +/-5%	1.000	R47
141	RCP821J16-02-G01	Lead-free, CHIP-R(0402) 820ohm	YAGEO, +/-5%	1.000	R55
142	RCP821J16-03-G01	Lead-free, CHIP-R(0603) 820ohm	YAGEO, +/-5%	2.000	R175, R178
143	RCP822J16-03-G01	Lead-free, CHIP-R(0603) 8.2K ohm	YAGEO, +/-5%	1.000	R112
144	RCP823J16-03-G01	Lead-free, CHIP-R(0603) 82K ohm	YAGEO, +/-5%	4.000	R56, R71, R72, R226
145	RTH473J16-03A-G29	Lead-free, CHIP_THERMISTOR(0603)	47K 3950-F(+/-3%)	1.000	Rte1
146	SWPNTC303B-1-G	SMD TACT SW	T-MEC， NTC303-CB1G-B250T	1.000	SW7
147	SWPTM-534-G	Lead-free,TACT SW (SMD)	TM-534-T/R (260G)	4.000	SW3, SW4, SW5, SW6
148	SWPTS06PWO-1-G	Lead-free, TACT SW,	TS06PWOG35D	2.000	SW1, SW2
149	TNC104M35-A-G24	Lead-free, Chip T/C 0.1uF/35V	VISHAY, A CASE +/-20%	3.000	C185, E9, E11
150	TNC106M10-A-G05	Lead-free, SMD T/C 10uF/10V	AVX, A CASE +/-10%	4.000	CA8, CP12, E5, E8
151	TNC107M10-B-G24	Lead-free,SMD T/C 100uF/10V	VISHAY,B CASE +/-20%	2.000	CF1, E12
152	TNC225M16-A-G05	Lead-free,SMD T/C 2.2uF/16V	AVX, A CASE +/-20%	1.000	E2
153	TNC226M10-A-G05	Lead-free,SMD 22uF/10V	AVX,A Case +/-20%	2.000	CA2, E7
154	TNC227M6.3-C-G05	Lead-free，SMD T/C 220UF/6.3V	AVX C CASE +/-20%	1.000	E13
155	TNC335M16-A-G24	Lead-free, SMD T/C 3.3uF/16V	VISHAY,A CASE +/-20%	1.000	E10
156	TNC336M10-B-G05	Lead-free,SMD T/C 33uF/10V	AVX,B CASE +/-20%	1.000	E6
157	TNC475M16-A-G05	Lead-free, SMD T/C 4.7uF/16V	AVX, A CASE +/-20%	1.000	C187

Item No.	Part No.	Description	Specification	Qty'	Location
158	TNC476M10-B-G05	Lead-free,SMD T/C 47uF/10V	AVX, B CASE +/-20%	1.000	CP13
159	TRC2SC2712GR-G	Lead-free SMT TR.2SC2712(GR)	TOSHIBA,BC817-25 replaceble <LG>	2.000	Q12, Q18
160	TRC2SC2714-O-G	Lead-free, SMT TR.	TOSHIBA, 2SC2714 <QO>	3.000	Q28, Q29, Q30
161	TRC2SC3356R24-G	Lead-free SMT TR.	RENESAS,2SC3356-T1B-A/ (R24)	3.000	Q3, Q42, Q44
162	TRC2SC4081-G	Lead-free SMT TR. 2SC4081T106R	ROHM, (UMT) 	15.000	Q6, Q7, Q8, Q9, Q31, Q32, Q33, Q36, Q37, Q38, Q43, Q47, Q49, Q58, QT2
163	TRC2SC4099-G	Lead-free SMT TR. 2SC4099T106P	ROHM (UMT)<JP>	1.000	Q59
164	TRC2SD1048-G	Lead-free,SMD TR 2SD1048-7-TB-E	SANYO,X7	1.000	Q45
165	TRC2SK3078-G	Lead-free,SMD TR 2SK3078 (TE12L,F)	TOSHIBA	1.000	Q2
166	TRC2SK3476-G	Lead-free, SMD TR. 2SK3476-G	TOSHIBA,TE12L,Q	1.000	Q1
167	TRCBB504C-G	Lead-free,SMT MOS-FET BB504CDS-TL-E	RENESAS	1.000	Q5
168	TRCBC857W-G	Lead-free,CHIP TR PNP BC857W	PHILIPS SOT-323 代 UMT2907A	2.000	Q46, Q50
169	TRCDTC114TU-G	Lead-free, SMT TR. DTC114TUA T106	ROHM, UMT-3<04>	14.000	Q16, Q17, Q19, Q21, Q24, Q25, Q26, Q27, Q40, Q48, Q51, Q53, Q55, Q57
170	TRCFMMT717-G	Lead-free,TRANSISTOR FMMT717TA	ZETEX SOT23 PNP SILICON POWER	6.000	Q13, Q15, Q22, Q23, Q39, Q56
171	TRCKTA1042DY-G	Lead-free,SMT PNP TRANSISTOR	KEC KTA1042D-Y-RTFP(DPAK)	1.000	Q14
172	TRCP5103EMG-G	Lead-free, Transistor P5103EMG	NIKO-SEM,SOT-23	1.000	Q54
173	TRCPZP103BYB-G	Lead-free, N-Channel PZP103BYB	NIKO-SEM,SOT-523	2.000	Q10, Q11
174	VRC100K-TMC3K-G	Lead-free SMT VR 100K 3D	NOBLE, TMC3KJ-B100K	1.000	W1
175	VRC1K-TMC3K-G	Lead-free SMT VR 1K 3D	NOBLE, TMC3KJ-B1K	1.000	W3
176	VRC5K-TMC3K-G	Lead-free,SMT VR 5K	NOBLE,TMC3K	1.000	W5
177	ZDC5V1-PH1-G	Lead-free,SMD ZENER 5.1V	PHILIPS,BZX84-C5V1	1.000	D24
178	CRF455E24-LTWC-G	Lead-free,SMD CERAMIC FILTER	CDS455E24	1.000	Y1
179	CRFLTWC455H-G	Lead-free,SMD CERAMIC FILTER	455KHz,LTWC455H	1.000	FA1
180	JAK2D5-10-G	Lead-free, DIP 2D5 PHONE JACK	PJ-208B	1.000	JACK1
181	JAKPJ-327C-G	Lead-free，Earphone JACK	PJ-327 4P	1.000	J3
182	VRT10KA-CT-G	Lead-free，VR 10KA +/-10%	R087A0NS,with nut	1.000	VR-SW1

Item No.	Part No.	Description	Specification	Qty'	Location
183	XTF10M695-CSP-G	Lead-free,Crystal Filter 10.695MHz	CSPXO,HC-49T-10M 07B-10.6950MHz	1.000	XF1
184	XTL10M240-VT-G	Lead-free,CRYSTAL 10.24MHz	VTOP,HC-49US,XSD 10.24A20G3	1.000	Y2
185	WIR35/2/2-R-G	Lead-free, WIRE 35/2/2 RED	CHWEN JHEN, 1571 #30	1.000	J2



64	MP-01	MP01 ASM	13SEGMP01-G	1							
32	Switch	TS06PWOG35D	SWPTS06PWO-1-G	2	31	PTT Switch	T-MEC, NTC303-BA1G-B250T	SWPNTC303B-1-G	1		
33	LCD Back Light	PMMA	ACLISRADIOLCDB-1-G	1	30	O-Ring	O-Ring 2011	RUBIS-OR-4-G	1		
34	Switch	TM-534-T/R (260G)	SWPTM-534-G	4	29	Jack Washer	SECC T:0.5mm	BKTISRADIOJAK-2-G	1		
35	Screw	CB1.7*3.5	SCW1R7X3R5TP-G	4	28	Rear Panel	ADC12,2xM2	CABISXT2PRP-M-G	1		
36	Key holder	SECC T:0.8mm	BKTISRADIOKEY-G	1	27	Sponge	10x5x1t	SPN10X5X1-G	2		
37	Key Rubber	KEYPAD RUBBER FOR IS27	RUBISRADIOKP27-1-G	1	26	CON Male	CONNECTOR MALE 4P 50MM	CON125-4P-F-G	1		
38	battery lock spring	SWP Ø2.0 K=0.4	SPR7025175-G	2	25	TNC	TNC-070320/HR TNC+NUT	HTNC070320-HR-G	1		
39	Battery lock Plane	Aluminum Plane	PLTISRADIOBAT-G	1	24	Earphone Jack	PJ-327C-3(HAOYU)	JAK-PJ-327C-G	1		
40	Battery lock	ABS Color:black	KNBISRADIOBAT-1-G	1	23	MIC Jack	PJ-208B(HAOYU)	JAK2D5-10-G	1		
41	PCB	FR6 T:1.6mm	PCBSEG-27-1-G	1	22	MHF PLUG	I-PEX 20278-111R-13 COAXIAL CABLE,L=70mm	WIRMHFCAL-70-G	1		
42	Screw	PM2X5	SCW2X5TP-01-G	5	21	VR	R087A0NS(CTR)	VRT10KA-CT-G	1		
43	Screw	PM2.0*6	SCW2X8MI-03-G	2	20	LCD Connector	Zebra Rubber	RUBISRADIOLCD-G	1		
44	Battery Rubber	Rubber color:balck 50°	RUBISRADIOBR-M-G	1	19	LCD	SV-WT6006APTZ	LCDRESCUE27-G	1		
45	Battery Housing	PCABS Color:black	BKTISRADIOBATH-M-G	1	18	LCD Frame	SPTE T:0.4mm	BKTISRADIOLCD-1-G	1		
46	Screw	2.0*0.4 L=5.0	SCW2X4MI-01-G	2	17	Screw	ISO M2.0*4.0	SCW2X4MI-01-G	2		
47	Pogo Pin	L=8.3mm	PINBT8R3-G	3	16	Washer	Ø2*Ø4*0.35,WASRDM101-2-G	NU	2		
48	PCB	T:1.2mm	PCBSEG-27-ANT-G	1	15	Speaker Space	NET 32D	NET32D5-G	1		
49	Rear Case	ABS Color:black	CABISRADIORC-G	1	14	Speaker	Ø36 8ohm 1W	SPK36D8FC-1-G	1		
50	EMC-COVER	4.5X24.5X3.0	BKTIS-HOM-G	1	13	Micphone	Ø6.0 H:2.7mm	MIC6D27MM-S1-G	1		
51	Screw	CM3.0*4	SCW3X4MI-04-G	1	12	MYLAR	24X7X0.3T (MYLAR)	ISP24X7MYLAR-1-G	1		
52	Screw	SCW MI2.5X4	SCW2R5X4MI-01-G	2	11	MIC Rubber	RUB7D1X3.3-G	RUB7D1X3.3-G	1		
53	Belt clip	SUS	BKTISRADIOBLT-G	1	10	Front case	FRONT_CASE FOR RESCUE27	CABRANDY2FP-P-2-G	1		
54	LCD PCB	PCB FOR IS RADIO	PCBISRADIO-G	1	9	PTT Key	PCABS Color:black	BKTISRADIOPTT-G	1		
55	Rubber ring	RUBBER-50°	RUBIS13X11-G	1	8	PTT Cover	PCABS Color:black	CVRISRADIOPTT-1-G	1		
56	knob-sheet metal	SUS 301	BKTISKNOB-G	1	7	PTT Rubber	Rubber color:black shore hardness A=50/60	RUBISRADIOPTT-1-G	1		
57	MHF receptacle	I-PEX,MHF receptacle, 20279-001E-01	CON20279-001E	1	6	LCD LENS	LCD-LENS PMMA	ACLRANDY2DSP-G	1		
58	Rubber	4.5*5.5*2	RUB4.5X5.5X2-G	1	5	Screw	M2 X 6.2	SCWM2X6R2-G	1		
59	Shield case	Low pass shield case	BKTSEG27-SHI-1-G	1	4	Jack Cover	JACK COVER RUBBER	RUBISJACK-G	1		
60	SMD CONNECTOR FEMALE 4P	SMD CONNECTOR FEMALE 4P	CONSGMXV-4P-G	1	3	Knob	POWER SW/VOL KNOB	KNBISRADIOVR-1-G	1		
61	WIRE 60-3-3	WIRE 60/3/3	WIR60-3-3-B-G	1	2	LED Lens	LED-LENS PMMA(CM-21)	ACLISRADIOLENS-1-G	1		
62	VCO Shield case	VCO Shield case	BKTISRADIOVCO-G	1	1	Antenna	HELICAL ANT 27MHZ,TNC	NU	1		
63	Shield case	Low pass shield case	BKTSEG27-SHI-G	1	NO.	PART NAME			QTY		

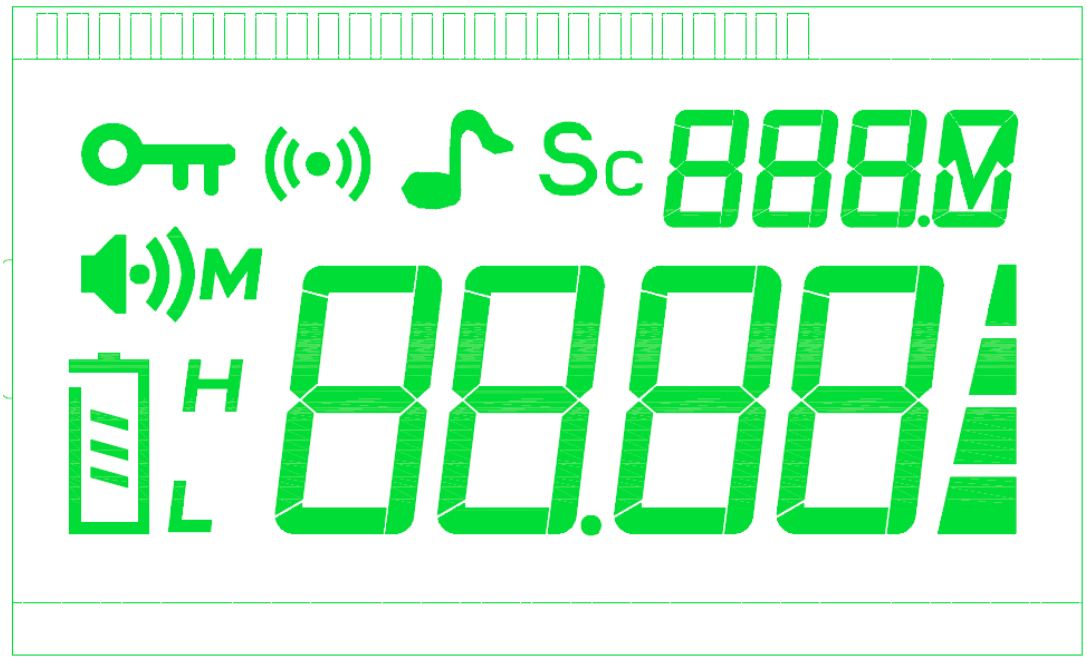
CHIEF TEK ELECTRONICS CO, LTD	Model	Rescue27-RANDY II M	Part NO.		Material		Approve		Check		Drawn Alex Rev. 1.0
	Part Name	EXPLODE	Drawing NO.		Finish		Unit	mm	Scale		Date 13/02/26 Projection

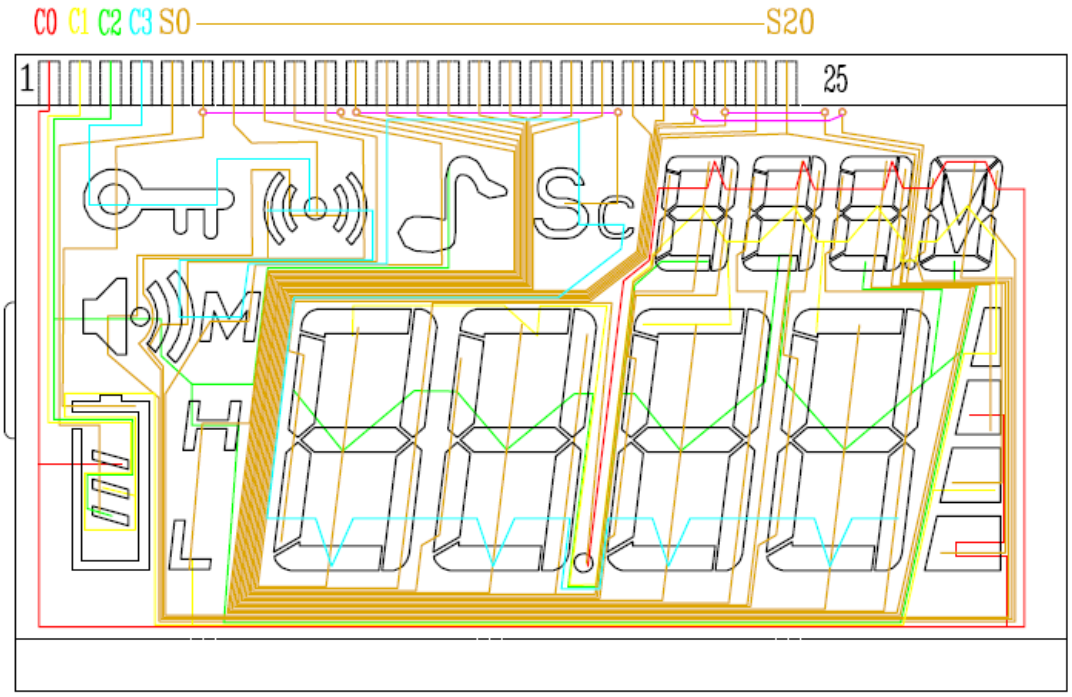
MECHANICAL MATERIAL LIST

Item No.	Part No.	Description	Specification	Qty'	Location
1	BKTISRADIOPTT-G	Lead-free, PTT KEY	PC+ABS	1.000	9
2	CABRANDY2FP-P-2-G	Lead-free, FRONT_CASE FOR RANDY Ⅱ SERIES	PC+ABS,with silk-printing	1.000	10
3	CVRISRADIOPTT-1-G	Lead-free, PTT cover	PC+ABS	1.000	8
4	RUBISRADIOPTT-2-G	Lead-free, PTT RUBBER FOR ISRADIO		1.000	7
5	ACLISRADIOLENS-1-G	Lead-free, LED-LENS PMMA(CM-21)	9X7.8X3.6MM	1.000	2
6	BKTISRADIOKEY-G	Lead-free, key button holder	secc,42.3X14.2X0.8	1.000	36
7	CON-125-4P-F-G	Lead-free, CONNECTOR WIRE 4P 50MM	GWH125-041-50-2.0ND	1.000	26
8	KNBISRADIOBAT-1-G	Lead-free, Battery LOCK	PC+ABS,black 2010	1.000	40
9	MIC6D27MM-S1-G	Lead-free, Mic, 6Dx2.7MM-44dB	SY-D27P44HF	1.000	13
10	NET32D5-G	Lead-free, Net 32D		1.000	15
11	PLTISRADIOBAT-G	Lead-free, Battery lock	C1050,T=1.4	1.000	39
12	RUB7D1X3.3-G	Lead-free, MIC water-proof rubber	7D1X3.3MM,black, 40°	1.000	11
13	RUBISRADIOKP27-1-G	Lead-free, KEYPAD RUBBER For Rescue27	Black ground with white words	1.000	37
14	SCW1R7X3R5TP-G	Lead-free, SCREW	CB1.7X3 D3.5 head:0.5mm	4.000	35
15	SPK36D8FC-1-G	Lead-free, Speaker 8 ohm/1W 36mm	F36M381BGP	1.000	14
16	SPN10X5X1-G	Lead-free, LCD sponge 10x5x1t		2.000	27
17	SPR7025175-G	Lead-free, LOCK Spring	7X0.25X1.75	2.000	38
18	ACLRANDY2DSP-G	Lead-free, RANDY Ⅱ LCD LENS PMMA	34.5X20mm,T=1.0	1.000	6
19	BKTISKNOB-G	Lead-free, IS RADIO KNOB SHEET METAL		1.000	56
20	BKTISRADIOJAK-2-G	Lead-free, Rescue 27 bracket	secc,34.8X12.35X0.5mm	1.000	29
21	CABISRADIORC-1-G	Lead-free, Rear_Case FOR IS RADIO	ABS black	1.000	49
22	KNBISRADIOVR-1-G	Lead-free, POWER SW/VOL knob	PC ABS,black	1.000	3
23	RUB4.5X5.5X2-G	Lead-free, heat-conduct rubber IS RADIO	P300BG4.5-5.5-2T	1.000	58
24	RUBIS-OR-4-G	Lead-free, O-RING	with key button	1.000	30
25	RUBIS13X11-G	Lead-free, IS RADIO		1.000	55

Item No.	Part No.	Description	Specification	Qty'	Location
		RUBBER CIRCLE			
26	SCW2X5TP-G	Lead-free, SCREW	PM2X5MM	5.000	42
27	SCW2X8MI-03-G	Lead-free, SCREW	Ni M2X8 ISO	2.000	43
28	SCW3X4MI-04-G	Lead-free, SCREW	CM3.0*4	1.000	51
29	BKTISRADIOBATH-M-G	Lead-free, BATTERY HOUSING FOR Rescue27-M	ABS	1.000	45
30	PCBSEG-27-ANT-G	Lead-free, PCB FOR antenna connector *50	V02,21*3.8,t=1.0mm	1.000	
31	PINBT8R3-G	Lead-free, PIN FOR 9PIN Dongle	L=8.3mm	3.000	47
32	RUBISRADIOBR-M-G	Lead-free, BATTERY RUBBER FOR Rescue27-M	50°,Black,38X11X5.7mm	1.000	44
33	WIR60/3/3-B-G	Lead-free, WIRE 60/3/3 BLACK	UL68/0.08 CSAB AWM	1.000	61
34	WIRMHFCAL-70-G	Lead-free, MHF PLUG with COAXIAL CABLE	I-PEX 20278-111R-13 with COAXIAL CABLE,L=70mm	1.000	22
35	CABISXT2PRP-M-G	Lead-free, BACK_CASE FOR XT 2Pin	3Pin connecter jack	1.000	28
36	SCW2X5TP-01-G	Lead-free, black screw	PM2X5MM	2.000	46
37	BKTISRADIOBLT-G	Lead-free，belt-clip FOR ISRADIO	SUS301，T:0.8mm	1.000	53
38	BKTISRADIOMP-G	Lead-free, IS RADIO BRACKET	SUS301,T=1.0mm, nickle-plate	1.000	
39	BOXRANDY2-C1-G	Lead-free, RANDY Ⅱ gift-box	396X115.5X113mm	1.000	
40	BOXSEG27-PE-1-G	Lead-free，Rescue27 plastic inner box	384X110X60mm	1.000	
41	BOXSEGMP01-G	Lead-free, MP01 package	266X90mm	1.000	
42	CTNSEG27M-G	Lead-free, RANDY Ⅱ-M carton 356X249X420mm	1/10	1.000	
43	MNURANDY2-FS-G	Lead-free, User Manu FOR RANDY Ⅱ	Franch+Spanish	1.000	
44	MNURANDY2-EP-G	Lead-free, User Manu FOR RANDY Ⅱ	English+Polish	1.000	
45	RUBISJACK-G	Lead-free ISRADIO Jack cover	70°	1.000	4
46	RUB11X11X2-G	Lead-free, RUBBER(with back-glue)	11X11X2.0mm,black	1.000	
47	SCW2R5X4MI-01-G	Lead-free,SCW MI2.5X4		2.000	52
48	SCWM2X6R2-G	Lead-free, SCREW M2X6.2	D5	1.000	5

Item No.	Part No.	Description	Specification	Qty'	Location
49	SCWM5X12TP-G	Lead-free, SCREW M5X12	Ni	4.000	
50	STKRANDY2-G	Lead-free, RANDY Ⅱ sticker	40.2X37.1mm(black ground with white words)	1.000	
51	STKSEG27CB-G	Lead-free, "N°1 CB President" sticker	125X83.41mm,PVC	1.000	
52	STKSEG27M-BC-G	Lead-free, RANDY Ⅱ-M series-number sticker on giftbox	40*15mm	1.000	
53	STKSEG27M-SN-G	Lead-free, RANDY Ⅱ-M SERIES-number sticker	30X7mm	1.000	
54	WAS5.3X10-G	Lead-free,washer	5.3mm,10mm,AW-5	4.000	
55	ACLISRADIOLCDB-1-G	Lead-free, LCD Back light PMMA- 2011	31X17.29X1.5MM	1.000	33
56	BKTIS-HOM-G	Lead-free,EMC-COVER	34.5X24.5X3.0	1.000	50
57	BKTISRADIOLCD-1-G	Lead-free，LCD frame	SPCC	1.000	18
58	BKTISRADIOVCO-G	VCO cover IS RADIO	T=0.3 C2680	1.000	62
59	BKTSEG27-SHI-1-G	Lead-free,Rescue 27 shield cover	16.75*9.5*1.5mm,T=0.3mm,C2680	1.000	59
60	BKTSEG27-SHI-G	Lead-free,Rescue 27 shield case	22*28.2*4.5mm,T=0.5mm,C2680	1.000	63
61	HTNC070320-HR-1-G	Lead-free，TNC header	TNC-070320/HR RNC+NUT	1.000	25
62	ISP24X7MYLAR-1-G	Lead-free, Battery "-" isolution plate	24X7X0.3T (MYLAR)	1.000	12
63	LCDRESCUE27-1-G	Lead-free,LCD FOR RESCUE27	GP09013A0,3.3V	1.000	19
64	RUBISRADIOLCD-G	Lead-free, electric-conduct rubber(LCD RUBBER)RADIO	31.0*4.80*1.50 Wa-0.7	1.000	20
65	SCW2X4MI-01-G	Lead-free, SCREW	Ni M2X4 ISO round head	2.000	17
66	WIR15/2/2-B-G	Lead-free, WIRE 15/2/2 BLACK	CHWEN JHEN, 1571 #30	1.000	

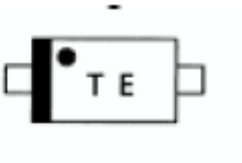




PIN	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	P17	P18	P19	P20	P21	P22	P23	P24	P25
COM0	COM0	X	X	X			8b	8a	8f	7b	7a	7f	X	6b	6a	6f	X	5b	5a	5f	X			X	
COM1	X	COM1	X	X		L	8c		8e	7c	7g	7e	4a	6c	6g	6e	3a	5c	5g	5e	2a			1a	
COM2	X	X	COM2	X		H		8d			7d	4b	4g	4f	6d	3b	3g	3f	5d	2b	2g	2f	1b	1g	1f
COM3	X	X	X	COM3	X					M	Sc	4c	4d	4e	X	3c	3d	3e	X	2c	2d	2e	1c	1d	1e

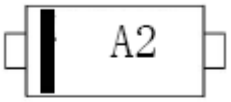
LCD DISPLAY

SEMICONDUCTOR LEAD IDENTIFICATION



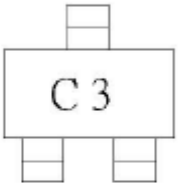
1SV283

1SV239



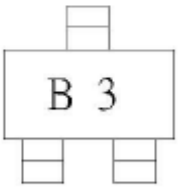
1N4148WS

BA592

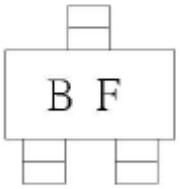


1SS302

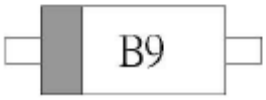
1SV270



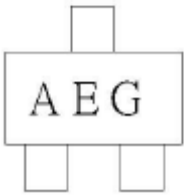
1SS184



1SS268

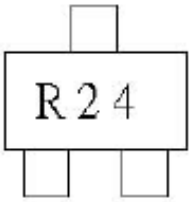


HVC376B

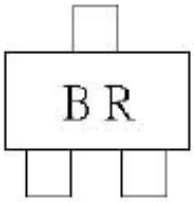


2SA1362

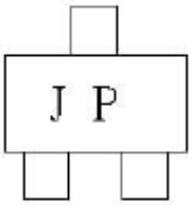
SEMICONDUCTOR LEAD IDENTIFICATION



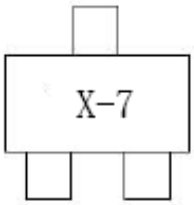
2SC3356



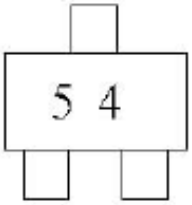
2SC4081



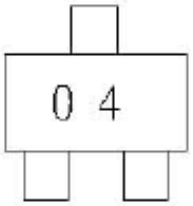
2SC4099



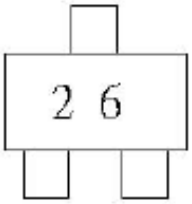
2SD1048



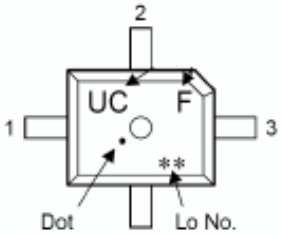
DTA114YUA



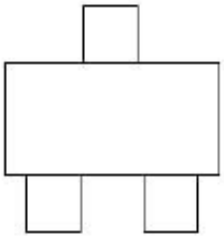
DTC114TU



DTC144EU



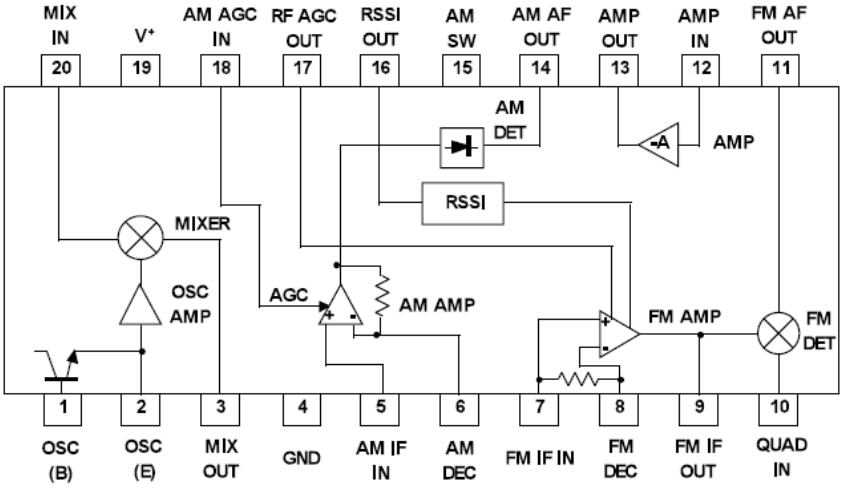
2SK3476



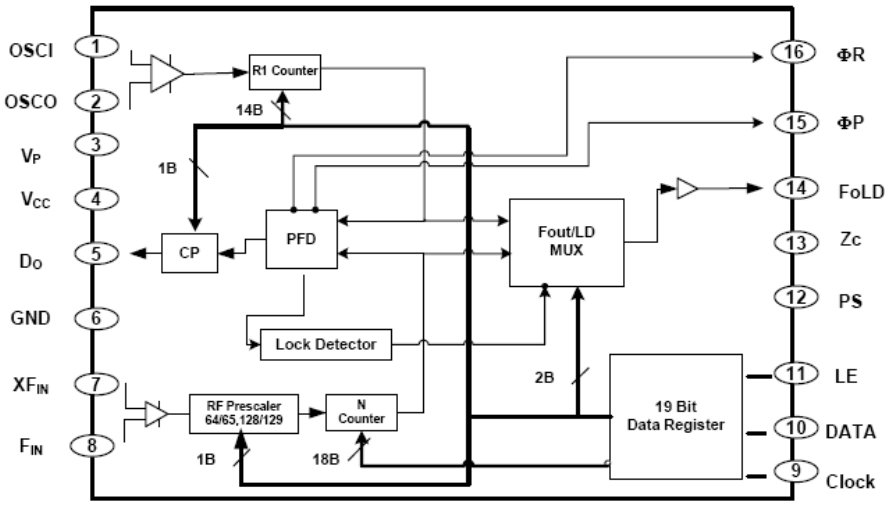
DTC114YUA

2SK3078

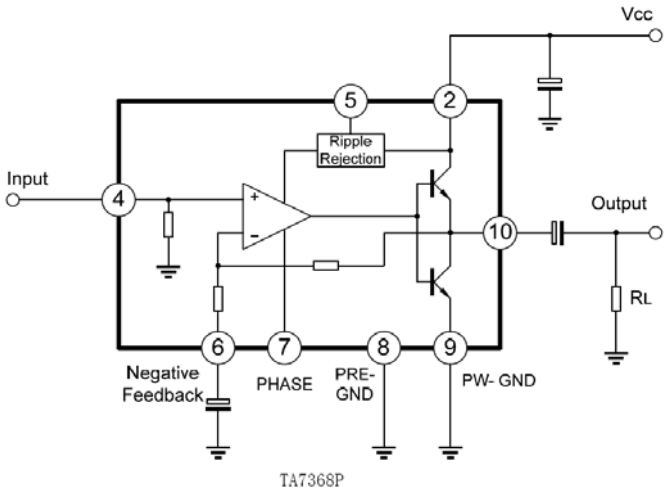
IC LEAED IDENTIFICATION



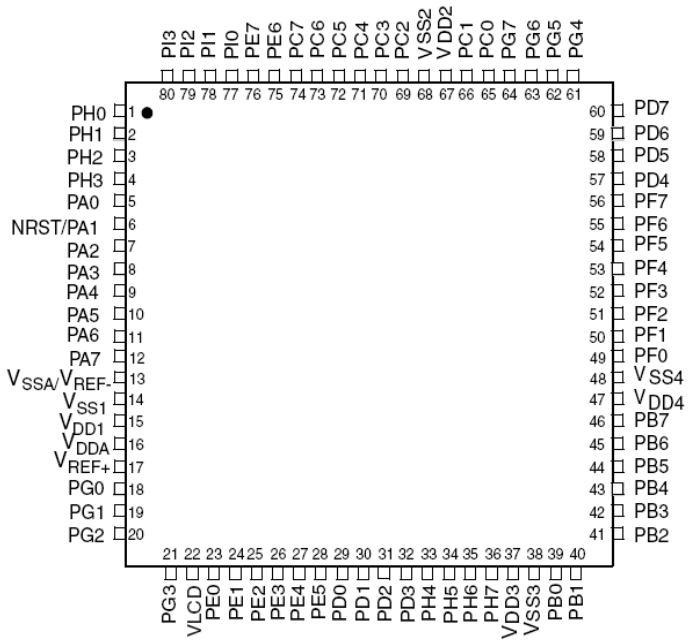
NJM2552



SR1503A



TA7368P



STM8L152M8T6