

Content

**Dangerous!**

Do not connect the AC power or DC power over 8.6V with any connector or terminal of the radio. Otherwise it will cause fire, electric shock or damage to the radio.

**Warning!**

Do not reverse power connection.

It may cause harm to the radio if signal input on the antenna connector is higher than 20 dBm (100mW).

Do not turn on the radio before the antenna or load connection is completed.

If the antenna has been damaged, do not use the radio. Damaged antenna may cause light burning on skin.

Though the radio is waterproof, it's better to avoid putting it in rain or snow, or any other liquid to ensure its life and performance.

**Statement!**


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## Chapter 1 Overview

### 1.1 Introduction

This manual applies to the service and maintenance of PT6700 series of FM portable radios, and is intended for use by engineers and professional technicians that have been trained by Kirisun. It contains all required service information for the equipment. Kirisun reserves the right to modify the product structure and specifications without notice in order to improve product performance and quality. You can also log on our website [www.kirisun.com](http://www.kirisun.com) to download the latest service manual or contact your local dealer or us.

Please read this manual carefully before repairing the product.

### 1.2 Service Attentions

#### \* Safety

Do not touch the antenna connector or the PCB while repairing the radio.

Do not reverse the battery polarity.

It may cause harm to the radio if signal input on the antenna connector is higher than 20 dBm (100mW).

Do not turn on the radio before the antenna or load connection is completed.

If the antenna has been damaged, do not use the radio. Damaged antenna may cause light burning on skin.

#### \* Electromagnetic Interference

It's prohibited to use or repair the radio in the following places:

Hospital, health center, airport

Any area with a potentially explosive atmosphere (e.g. orlop deck of the ship, storage or transportation equipment for fuel and chemical etc.)

Any place near blasting sites or area with electrical blasting cap.

It's recommended to avoid using or repairing the radio in the following place:

It's recommended to avoid using radios in a car that is moving as the radio wave might interfere the auto engine and cause it to stop working.

#### \* Replacement Parts

All components used for repair should be supplied by Kirisun.

Components of the same type available on the market are not surely able to be used in this product and we do not guarantee the quality of the product using such components.

If you want to apply for any component from Kirisun, please fill in an application form as below.

e.g.

Component Application Form

Radio Model	Component	Position Mark	Model/ Specifications	Part No.	Qty
PT6700-01	FET	Q203	2SK1824	1TF1-2SK1824	1

### 1.3 Service

All the Kirisun products are subject to the service warranty.

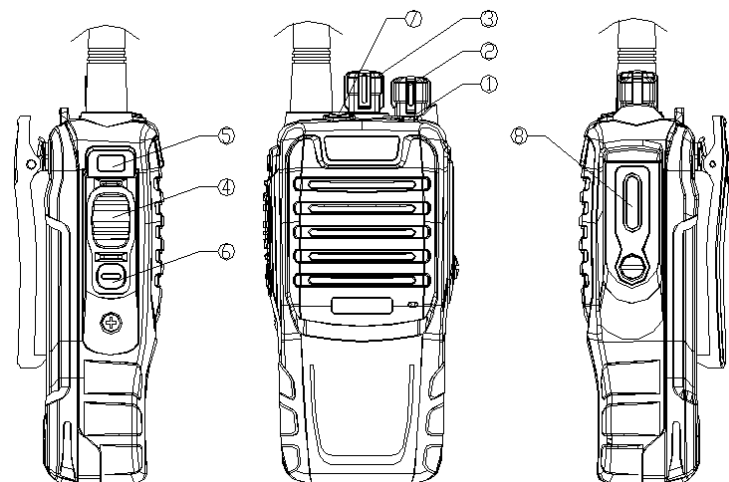
The main unit of the radio is guaranteed for free service of 12 months. Accessories (such as battery pack, antenna, charger and power adapter etc.) are guaranteed for free service of 6 months. However, in one of the following cases, charge free service will be not available.

- \* No valid warranty card or original invoice.
- \* Malfunction caused by disassembling, repairing or reconstructing the radio by the users without permission.
- \* Wear and tear or any man-made damage such as mechanical damage, burning or water leaking.
- \* Product's serial number has been damaged or the product trademark is difficult to identify.

After the warranty expires, lifetime service is still available. We also provide service components to service stations and staffs.

## Chapter 2 External View and Functional Keys

### 2.1 External View



### 2.2 Functional Keys

#### ① LED Indicator

Lights red while transmitting; lights green while receiving; flashes red when the radio is in low power.

② On/Off/Volume Control Knob

Turn clockwise until you hear a click to turn on the radio. Turn counterclockwise until you hear a click to turn it off. Rotate it to adjust the volume after turning on the radio.

③ Channel Selector Knob

Rotate the knob to select channel 1-16.

④ PTT (Push-To-Talk) Button

Press and hold the PTT button and speak into the microphone, your voice can be sent to the recipient. Release the PTT button to receive.

⑤ Side Button 1 (programmable button)

⑥ Side Button 2 (programmable button)

⑦ Top Button (programmable button)

⑧ External Speaker/Microphone Jack Cover

Remove the cover; you will see the external speaker/microphone jack. External speaker/microphone can be connected to the radio through this jack.

## Chapter 3 Circuit Description

### 3.1 Frequency Configuration

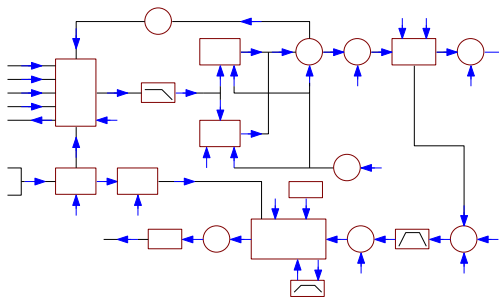


Figure 3.1 Frequency Configuration

The reference frequency of the frequency synthesizer is provided by 12.8MHz crystal oscillator X300 TCXO. The receiver adopts double mixing. The first IF is 51.65MHz and the second IF is 450kHz. The first local oscillator signal of the receiver is generated by the frequency synthesizer. The second local oscillator signal adopts the fourth harmonics (51.2MHz) of the crystal oscillator X300 (TCXO, 12.8MHz). Transmitter signal is directly produced by the frequency synthesizer.

### 3.2 Principle of Receiver (RX)

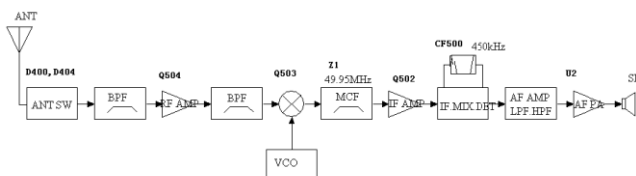


Figure 3.2 Principle of Receiver

#### Front end

The signal coming from the antenna passes through the RX/TX switch circuit (D400, D401, D403 and D404), and passes through a BPF comprises of C504, C510, L502, L507, C526, C549, D508, C548, L515, C547, C532, D503, C544 and L513 to remove unwanted out-of-band signal, and is sent to the low noise amplifier (LNA) consists of Q504 and its peripheral components to be amplified.

Output signal from the LNA passes through a BPF comprises of L511, C530, C540, D506, C539, L510, C538, C529, D505, C537, L509, C536 and D504 and goes to the first mixer (Q503).

PWM wave is output from pin 12 of the MCU. The wave is filtered and rectified into adjustable voltage, which can control the center frequency of the band pass filter through changing capacity of the varactor diodes (D503, D504, D505, D506, D507, and D508).

#### First mixer

The received signal from LNA is mixed with the first local oscillator signal from the frequency synthesizer to produce the first IF signal (51.65MHz). Then the first IF signal passes through crystal filter (Z1) to remove the adjacent channel signal and signal outside the adjacent channel.

#### IF circuit

The first IF signal from the crystal filter is amplified by the first IF amplifier (Q502), and is sent to the IF processing IC (IC500, TA31136).

IF IC consists of second mixer, second local oscillator, IF amplifier, limiter, discriminator, and noise amplifier.

The 12.8MHz frequency produced by TCXO (X300) is multiple-amplified and then the fourth harmonics (51.2MHz) is adopted as the second local oscillator signal source. The second local oscillator signal (51.2MHz) is mixed with the first IF signal (51.65MHz) in IC500 to generate the second IF (450kHz). And then the second IF signal is amplified and limited in IC500, filtered by the ceramic filter (CF500, 450kHz), and demodulated in IC500 to output audio signal.

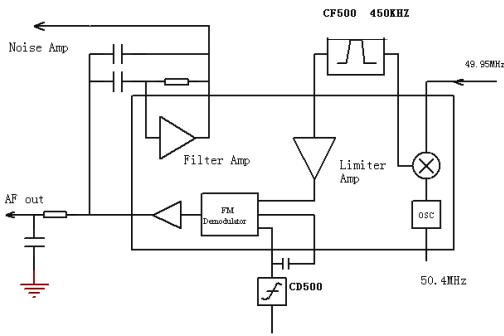


Figure 3.3 IF System

**Rx audio signal processing**

The voice signal processing circuit of the receiver consists of IC702 and its peripheral circuits. After being amplified in IC702-C, voice signal from IC500 is sent to IC4 (CTCSS signal filtering circuit) and IC702-D respectively. The signal is then amplified, deemphasized and filtered by other units of IC702 to remove HF and LF components contained in the audio frequency, with only voice components within 300~3000Hz left. The resulting signal is then sent to Q701 for amplification. The amplified signal is adjusted by the volume potentiometer and then is sent to the audio power amplifier (U2).

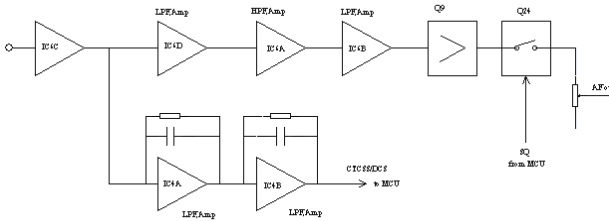


Figure 3.4 Audio Processing of Receiver

**Squelch circuit**

The demodulated signal from IC500 goes to the selective noise amplifier consists of internal noise amplifier of IC500, C522, R521, C522 and R516 to remove the noise component. The resulting signal is then amplified by Q500 and demodulated by D501 and is sent to the MCU. MCU identifies level of the noise and controls the squelch.

**Audio power amplifier**

The audio power amplifier circuit consists of U2 and its peripheral components.

The received audio signal, voice alert signal, alert tone signal and warning tone signal are collected and pass through the audio amplifier where they are amplified and output to drive the speaker. The volume of the warning tone is not controlled by the preset

volume level of the radio.

When AFCO is in high level, Q707 turns on, U2 starts to operate, and the speaker makes sound. Speaker impedance: 16Ω.

**CTCSS/DCS signal filtering**

Audio signal demodulated by IC500 may contain CTCSS (Continuous Tone Control Squelch System) or DCS (Digital Code Squelch) signal. The spectrum components of CTCSS/DCS are within 2-250Hz. The filtering circuit consists of IC4 can remove signals outside the CTCSS/DCS spectrum, which enables the MCU to decode CTCSS/DCS more accurately.

**3.3 Principle of Transmitter (TX)**

**TX power amplification**

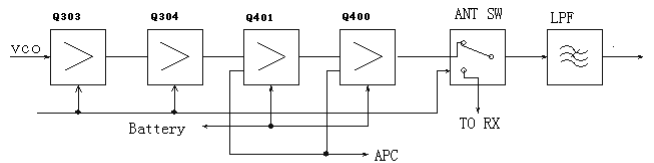


Figure 3.5 Principle of Power Amplifier and Antenna Switch

The modulated RF signal from VCO is amplified by Q303, Q304 and Q401, and is sent to Q400 for power amplification.

Grid bias of Q400 and Q401 is controlled by the APC circuit. Through changing the grid bias voltage, the Tx output power can be controlled conveniently.

**APC (Automatic Power Control)**

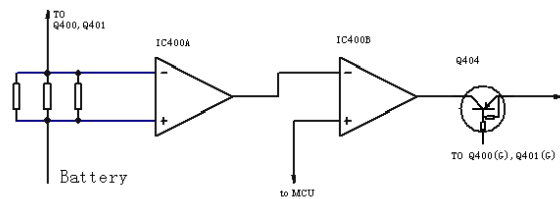


Figure 3.6 APC Circuit

R422, R423 and R424 are used to test the power amplification current. IC400A is the sampling amplifier for the power amplification current. IC400B is the power comparator amplifier.

If the Tx output power is too high, the power amplification current and IC400A output will increase; IC400B output voltage will decrease, so the bias voltage of Q400 and Q401 will also decrease, which causes the Tx output power to be lowered, and vice versa. Thus the Tx output power can keep stable under different working conditions.

MCU can set the power through changing the voltage input to IC400B.

**Tx voice signal processing**

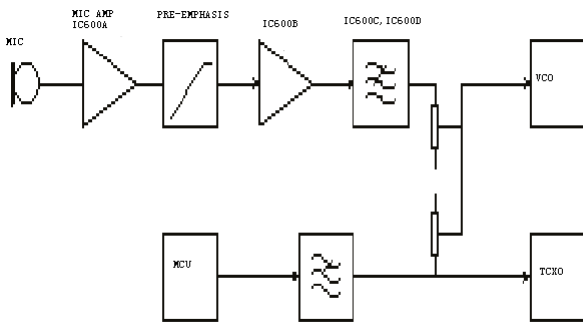


Figure 3.7 Transmitter Audio Circuit

The Tx voice signal processing circuit consists of IC600 and its peripheral components. After being amplified, limited and filtered, the voice signal from MIC is sent to VCO for modulation together with CTCSS/DCS signal.

The AGC circuit consists of D600, D601 and Q601. When signal from MIC is too strong, the AGC circuit will lower the signal strength to make sure that no distortion happens to the signal.

Q600 is the power switch of the voice processing circuit. It is controlled by MCU. Power supply of IC7 will be turned on when the radio is transmitting.

J2 is the jack for external MIC. When using external MIC, the internal MIC will be turned off automatically. But the internal PTT is still effective.

**3.4 Principle of Frequency Synthesizer**

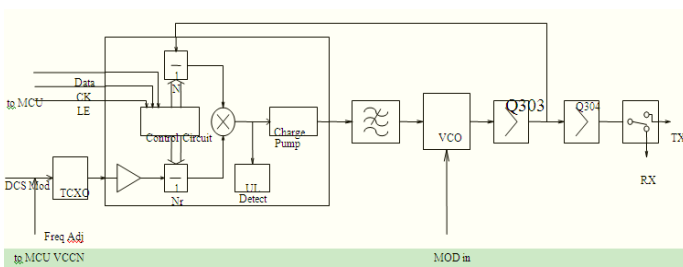


Figure 3.8 Frequency Synthesizer

The radio adopts PLL type frequency synthesizer.

The frequency synthesizer consists of reference oscillator, voltage control oscillator (VCO), programmable divider, phase comparator, and low pass filter.

Rx VCO unit consists of Q302, L308, C331, C335, C332, D301 and D303. Tx VCO unit consists of Q307, L322, C355, C363, C371, C364, D306 and D308. D304 is the modulation circuit of VCO.

IC300 (MB15E03) is PLL integrated circuit, which consists of

programmable reference divider, programmable swallowing divider, phase comparator, and charge pump.

The low pass filter consists of R329, C358, R330, R331, C359, R332, C356, C365 and C360.

The reference frequency is provided by X300 (TCXO, 12.8MHz).

The reference frequency from TCXO (Temperature Compensated Crystal Oscillator) is divided by the programmable reference divider in IC1 to produce reference frequency of 5kHz or 6.25kHz (determined by the preset channel frequency and is controlled by MCU).

The oscillation frequency from VCO goes to IC300 where it is divided by the programmable swallowing divider and is then compared with the reference frequency to obtain error signal. The signal is then filtered by a low pass filter and is sent to VCO to change the oscillation frequency of the VCO, enabling the frequency to reach the set value. Then the VCO is locked.

$$N = F_{VCO} / F_R$$

N: Times of frequency division

F<sub>VCO</sub>: Oscillation frequency of VCO

F<sub>R</sub>: Reference frequency

Unlock detection: When PLL is unlocked, Pin 14 of IC will output low level signal to MCU. Then MCU prohibits the transmitter from transmitting and makes an alert tone.

Q308: Power filter, which provides more purified power for PLL to reduce noise of the frequency synthesizer.

**3.5 Voice Alert Circuit**

The radio is provided with voice alert function, which is especially useful at night or in dark environment.

IC203 is a voice memory chip, which is stored with voices of channel indication etc. Once the channel selector knob is switched, the speaker will announce the current channel number. You can press the preprogrammed “Voice Alert” key to repeat the current channel number.

If voice alert function is enabled, the speaker will announce the current channel number once the “Voice Alert” key is pressed under standby mode. You can switch the voice type by pressing and holding the “Voice Alert” key while restarting the radio. Do it repeatedly to switch the voice type in the order of “Chinese Male-English Male-Chinese Female-English Female-No Alert”.

**3.6 Power Supply**

The radio uses 7.4V, 1700mAh Li battery. The Tx power amplification circuit (Q400 and Q401) and the Rx audio power amplifier (U2) directly adopt the battery for power supply. Power

of other circuits is supplied by 5V regulated voltage.

IC100: 5V low dropout, micro-power regulator, which supplies 5V power with large current for the radio together with Q104.

Q100: 5T switch, which is controlled by MCU.

5T: Supplies power for front end of Tx.

Q102: 5R switch, which is controlled by MCU.

5R: Supplies power for RF amplifier, mixer, IF processing unit, and audio signal processing unit etc. of the receiver.

Q103: 5C switch, which is controlled by MCU.

5C: 5V power supply under SAVE control. Supplies power for frequency synthesizer.

### 3.7 MCU Unit

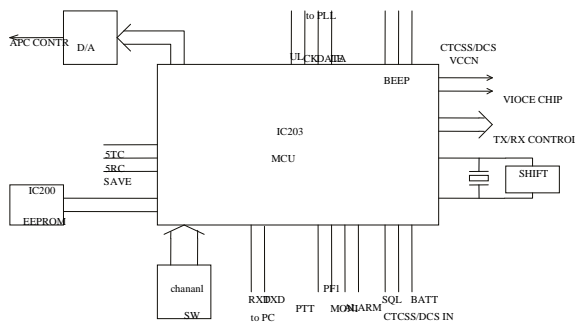


Figure 3.9 Principle of MCU Unit

MCU unit controls the operation of each unit of the radio so that all functions can be realized.

Communicate with external PC.

Access the status data of the radio.

Control the PLL to generate Rx and Tx local oscillator frequencies.

Obtain status parameters of current channel.

Control status of LED indicator.

Control power supply for each unit.

Check the actions of each functional key.

Generate CTCSS signal.

Generate DCS signal.

Generate power control signal.

Perform CTCSS decoding.

Perform DCS decoding.

Test and control the squelch.

Control content of voice alert.

### Memory (E<sup>2</sup>PROM, AT24C08):

The memory is stored with channel data, CTCSS/DCS data, other function setting data, and parameter adjusting data.

### CTCSS/DCS signal encoding and decoding:

The CTCSS/DCS signal (output from pin 12) generated by MCU is filtered by R155, R156, C242 and C243. Then the resulting signal is divided into two parts and sent to VCO and TCXO respectively for modulation.

The CTCSS/DCS signal from the receiver is sent to MCU (pin 49) for decoding. MCU checks if the CTCSS/DCS signal in the received signal matches the preset value of the radio, and determines whether to open the speaker or not.

### Power adjustment:

Output from pin 42 of the MCU passes through integrating filter (R161, C317, R206, and C318), and is sent to the APC unit to control the output power of the transmitter.

### CTCSS

CTCSS (Continuous Tone Control Squelch System) is a squelch control system which is modulated on carrier and is guided by a continuous sub-audio signal. If CTCSS is set, the communication between the transmitting and receiving radios can be realized only when the two radios have set the same CTCSS frequency. In doing this, disturbance from other signals can be avoided.

PT6700 has 39 groups of standard CTCSS frequencies for your selection. See table 3.1.

The CTCSS signal is generated by MCU, and is passed through low pass filter consists of RC to remove high frequency components (above 300Hz). Then the resulting signal is sent to VCO for modulation.

Table 3.1 CTCSS Frequencies

No.	Frequency [Hz]	No.	Frequency [Hz]	No.	Frequency [Hz]	No.	Frequency [Hz]
1	67.0	11	94.8	21	131.8	31	186.2
2	69.3	12	97.4	22	136.5	32	192.8
3	71.9	13	100.0	23	141.3	33	203.5
4	74.4	14	103.5	24	146.2	34	210.7
5	77.0	15	107.2	25	151.4	35	218.1
6	79.7	16	110.9	26	156.7	36	225.7
7	82.5	17	114.8	27	162.2	37	233.6
8	85.4	18	118.8	28	167.9	38	241.8
9	88.5	19	123.0	29	173.8	39	250.3
10	91.5	20	127.3	30	179.9		

## DCS

DCS (Digital Code Squelch), which is used to control squelch, is a series of continuous digital codes modulated on carrier together with voice signal. If DCS is set, the speaker can be opened only when the radio receives signal with the same DCS to avoid disturbance of unwanted signals.

PT6700 has 83 standard codes (inverted and non-inverted) for your selection. See table 3.2.

DCS signal is produced by MCU (in waveform of PWM). It passes through the low pass filter consists of RC to remove the high frequency components (above 300Hz). Then the resulting signal is sent to VCO and TCXO for modulation, with HF components of the DCS signal being modulated by VCO, and the LF components of the DCS signal being modulated by TCXO.

The CTCSS/DCS signal coming from the receiver is sent to MCU for decoding. MCU checks if the DCS code in the received signal matches the preset DCS of the radio, and determines whether to open the speaker or not.

Table 3.2 DCS Codes

023	114	174	315	445	631
025	115	205	331	464	632
026	116	223	343	465	654
031	125	226	346	466	662
032	131	243	351	503	664
043	132	244	364	506	703
047	134	245	365	516	712
051	143	251	371	532	723
054	152	261	411	546	731
065	155	263	412	565	732
071	156	265	413	606	734
072	162	271	423	612	743
073	165	306	431	624	754
074	172	311	432	627	

## 3.8 Semiconductor Data

Refer to table 3.3 for descriptions of each pin.

Table 3.3 Definition of CPU Pins

No.	Port name	Pin Name	I/O	Function
1	NC			NC
2	AFCO2	P35	O	Audio frequency switch 2
3	GLED	P33	O	Green LED switch
4	PTT	P34	I	[PTT] input
5	MODE		I	Connect the 4.7K resistor with VCC, programming test point
6	VDEVC2	P43	O	VHF deviation switch 2
7	VDEVC1	P44	O	VHF deviation switch 1
8	RST		I	Reset input, programming test point
9	XOUT		O	
10	VSS		I	GND, programming test point
11	XIN		I	Oscillator (7.3MHz)

12	VCC		I	5V CPU power input, programming test point
13	SHIFT	P27	O	Clock beat shift. H: On
14	VCCN	P26	O(PWM)	Frequency stability output
15	TO	P25	O(PWM)	QT/DQT output
16	WNTC	P24	O	Wideband/Narrowband control H: Wideband, L: Narrowband
17	APC	P23	O(PWM)	TX: Automatic power control output, RX: 0
18	TUNE	P22	O(PWM)	TX: 0 RX: BPF tuning output
19	BEEP	P21	O(PWM)	BEEP/DTMF output
20	SDA	P20	I/O	EEPROM data line
21	ENC0	P17	I	Encoder input
22	ENC2	P16	I	Encoder input
23	ENC3	P15	I	Encoder input
24	ENC1	P14	I	Encoder input
25	SCL	P13	O	EEPROM clock line
26	NC			NC
27	UL	P45	I	PLL circuit unlock detect pin H: locked, L: unlocked
28	TXD	P66	O	RS-232C output, programming test point
29	RXD	P67	I	RS-232C input, programming test point
30	CK	P12	O	PLL clock output
31	DT	P11	O	PLL data output
32	LE	P10	O	PLL IC enable pin, H: locked
33	RX	P31	O	Receiving enable
34	BUSY_V	P30	O	Busy signal of voice annunciation IC
35	DATA_V	P65	O	Data of voice annunciation IC
36	SCLK_V	P64	O	Clock of voice annunciation IC
37	RLED	P63	O	Red LED control, H: On
38	NC	P07	I(A/D0)	Connect the pull-up resistor with VCC, and connect the pull-down resistor with VSS
39	NC			NC
40	NC			NC
41	TI	P06	I(A/D1)	QT/DQT signal input
42	BUSY	P05	I(A/D2)	Busy signal input
43	BATT	P04	I(A/D3)	Battery voltage detect
44	VREF		I	Connect with VCC
45	SAVE	P60	O	Battery saving control, H: supply power, L: power saving
46	MUTE	P62	O	Mute control H: Mic mute L: audio mute
47	5RC	P61	O	Receiving power control L: On
48	KEYIN	P03	I(A/D4)	Programmable key P1, P2, P3 detect
49	5TC	P02	O	Transmitting power control, H: On
50	RLED	P01	O	Red LED switch
51	AC	P00	O	Alarm switch control, H: controlled by volume switch Radio should be in low level in emergency alarm
52	AFCO1	P37	I	Audio control switch 1

Table 3.4 Function Description of Semiconductor Components

	Position Mark	Model	Function Description
1	IC300	MB15E03	Frequency synthesizer
2	IC701	NJM2904	APC, voltage comparison, driving



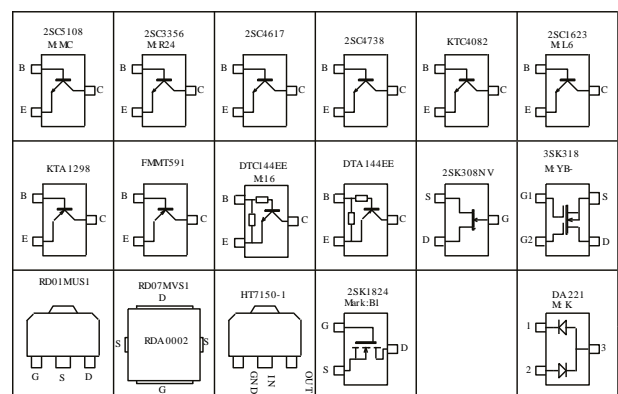
3	IC500	TA31136	Rx second local oscillation, second IF amplification, limitation, demodulation, and noise amplification
4	IC702	NJM2902	Amplification and filtering of demodulation signal of receiver.
5	IC600	NJM2902	MIC amplification, limitation and filtering
6	U2	TDA2822	Audio frequency power amplification of receiver
7	IC200	AT24C08	E <sup>2</sup> PROM, memorizes channel frequency data, function setting parameters and adjusting status parameters
8	IC201	R5F212A8	MCU
9	IC202	PST9140NR	MCU reset circuit
10	IC100	HT7150-1	LDO, low-power voltage regulator
11	IC203	W588A080	Voice storage IC
12	Q402	2SC5108	First amplification of transmitter
13	Q403	2SC3356	Second amplification of transmitter
14	Q304	2SC5108	VCO buffer amplifier
15	Q303	2SC5108	VCO buffer amplifier
16	Q308	2SC4617	VCO power supply filter
17	Q500	2SC4738	Noise amplifier
18	Q701	2SC4617	Audio frequency signal amplification of receiver
19	Q400	2SK3476	Transmitter final power amplification
20	Q401	RD01MUS1	Transmitter power amplification driving
21	Q404	DTA144EE	APC output switch
22	Q503	3SK318	First mixer
23	Q504	3SK318	Receiver high power amplifier
24	Q502	KTC4082	1 <sup>st</sup> IF Amplifier
25	Q200	DTC144EE	Red LED Driving
26	Q201	DTC144EE	Green LED Driving
27	Q601	2SK1824	Voice alert switch
28	Q100	KTA1298	5T switch
29	IC102	KTA1298	5R switch

Guarantee attenuation	80dB or higher, within f0-910kHz
Terminal impedance	1.2kΩ

Table 3.7 Features of CF500LTVPC450EB

Item	Rated Value
Nominal center frequency	450kHz
6dB band width	±6kHz or higher
50dB band width	±12.5kHz or lower
Pulse	2.0dB or lower, within f0±4kHz
Insertion loss	6.0dB or lower
Guarantee attenuation	35.0db or higher, within f0±100kHz
Terminal impedance	2.0kΩ

Table 3.8 Schematic Diagram for Packaging of Semiconductor Devices



## Chapter 4 Mode Introduction

Table 3.5 Function Description of Diodes

Position Mark	Model	Function Description
D400	MA77	Transmitter antenna switch diode
D401	HVC131	Transmitter antenna switch diode
D402	HSC277	VCO output switch
D403	HVC131	Antenna toggle switch
D301	HVC376B	VCO oscillation varactor diode
D303	HVC376B	VCO oscillation varactor diode
D304	MA360	VCO modulation diode
D405	HZU5ALL	APC output voltage-limiting diode
D309	MA2S111	Unlock detection diode
D310	MA2S111	VCO oscillation varactor diode
D501	1N4148	Noise demodulation
D202	GREEN LED	Receiving indicator
D509	MA2S111	APC single diode
D201	RED LED	Transmitting indicator
D202、D203	GREEN LED	Receiving indicator

Table 3.6 Features of Crystal Filter Z1

Item	Rated Value
Nominal center frequency	51.65MHz
Pass band width	±7.5kHz or higher but within 3dB
40dB stop band width	±20.0kHz or lower
Pulse within band	1.0dB or lower
Insertion loss	3.0dB or lower

### Mode Introduction

Mode	Function	How to enter
User Mode	For normal use	Power ON
PC Mode	Data Programming Mode	Used to read and write frequency data and other features to and from the radio. Received commands from PC.
	PC Test Mode	Tune the radio parameters by PC. Received commands from PC.
	Firmware Programming Mode	Upgrade the radio when new features are released. Press and hold the top key for over 2 seconds while turning the radio power ON, and received commands from PC.
Wired Clone Mode	Used to transfer programming data from one radio to another.	Press and hold side key 1 for over 2 seconds while turning the radio power ON.

#### 4.1 User Mode

You can enter User Mode (conventional communication mode) by turning the radio power ON. Under this mode, users can use the defined functions of the radio.

#### 4.2 Data Programming Mode



The radio has been set before leaving the factory. However, due to different requirements of users, the radio's operating frequencies, channels, CTCSS/DCS, scan, and other functional parameters should be reprogrammed. Therefore, Kirisun has specially designed a set of Chinese/English programming software KSP6700 with friendly interface, convenient operation and visualized display for setting functional parameters of the radio.

Steps for setting the functional parameters of the radio by PC are as follows:

- A. Install KSP6700 on the computer.
- B. Connect the radio to the serial port of the PC with the special programming cable (KSPL-U08). Refer to the figure below.

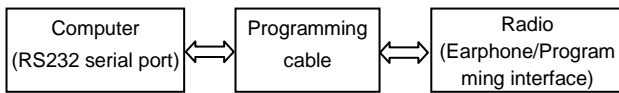


Figure 4.1

- C. Turn on the computer.
- D. Turn on the radio.
- E. Run the KSP6700 programming software by double clicking on its executive program.
- F. Click "Program" in the main menu of KSP6700, and click "Read" in the pull-down menu to read parameters of the radio to the computer; click "Write" in the pull-down menu to write parameters in the computer to the radio.
- G. The following parameters can be set by using KSP6700 according to requirements of the user:

#### Radio Information:

Radio Model (model/frequency range), Serial Number, Embedded Information, MCU Version, Hardware Version, etc.

#### Radio Parameters:

- 1) Key Assignment: Side Button 1, Side Button 2, Top Button can be set as long/short key and the hold time can be defined.
- 2) Optional Functions
  1. Wired Clone enable
  2. TOT All Low Power Switch
  3. TOT Reset Time Firmware Programming Mode enable
  4. TOT Pre-alert Beep Tone
  5. TOT Rekey Time All Low Power
  6. Squelch Level Selection
  7. Voice Annunciation Setting Battery Save
  8. Password of Read Radio
  9. Password of Write Radio

#### 3) Scans

Scan function setting: Priority Channel selection, Revert Channel selection, Tx Dwell Time, Dropout Delay Time, Lookback Time.

#### 4) Emergency Setting

Channel Parameter:

- (1) CH Rx frequency and Tx frequency (Step value: 2.5kHz/5kHz/6.25kHz)
- (2) CH Rx signaling and Tx signaling.
  - a) None
  - b) CTCSS (60~260Hz @ 0.1Hz step)
  - c) DCS(-777 ~ 777 @ octal number)
- (3) Busy channel lockout selection
- (4) Clock beat control
- (5) Channel spacing 25kHz/12.5kHz (Wide/Narrow) selection
- (6) Add/delete scan list
- (7) High/low power level selection
- (8) QT Reverse

For detailed operation, please refer to "Help" of KPS6700 programming software.

Note:

1. Firstly, please read data of the radio and back up the data before editing the parameters on KSP6700.
2. If the radio cannot function normally after being written in with the edited data, please rewrite the backup data into the radio.
3. "Model Information" is important for the radio; users should not modify it.

#### 4.3 PC Test Mode

Connect the radio to the serial port of the computer with the special programming cable. Please refer to Figure 4.1.

Warning: Non-professionals should not enter PC Test Mode; otherwise, the radio may be damaged. Before entering the PC Test Mode, please firstly connect a 50Ω high frequency load to the antenna connector of the radio or connect the radio to a general test set.

In the programming software, enter the Tuning Mode under the PC Test Mode to tune the following parameters of the radio:

- 1) Frequency Stability
- 2) Five frequency points of Tx High Power
- 3) Five frequency points of Tx Low Power
- 4) Five frequency points for SQL9 On (Wideband)
- 5) Five frequency points for SQL9 Off (Wideband)
- 6) Five frequency points for SQL9 On (Narrowband)

- 7) Five frequency points for SQL9 Off (Narrowband)
- 8) Five frequency points for SQL1 On (Wideband)
- 9) Five frequency points for SQL1 Off (Wideband)
- 10) Five frequency points for SQL1 On (Narrowband)
- 11) Five frequency points for SQL1 Off (Narrowband)
- 12) Five frequency points for QT (67.0Hz) Deviation (Wideband)
- 13) Center frequency point for QT (67.0Hz) Deviation (Narrowband)
- 14) Five frequency points for QT (151.4Hz) Deviation (Wideband)
- 15) Center frequency point for QT (151.4Hz) Deviation (Narrowband)
- 16) Five frequency points for QT (254.1Hz) Deviation (Wideband)
- 17) Center frequency point for QT (254.1Hz) Deviation (Narrowband)
- 18) Five frequency points for DQT Deviation (Wideband)
- 19) Center frequency point for DQT Deviation (Narrowband)
- 20) Five frequency points for Rx Sensitivity
- 21) Tx Low Voltage

#### 4.4 Firmware Programming Mode

The radio is in possession with an internal Flash ROM which can be upgraded when new features are released.

Procedure:

1. Press and hold the Top Key for over 2 seconds while turning the radio power ON. The LED will light orange and the radio enters the Firmware Programming Mode.
2. Run the firmware programming software KMU on PC.
3. Connect the radio to the computer by the programming cable.
4. Select a COM port and load the firmware upgrading file. Then click on "E.P" to start downloading.
5. If the communication ends successfully, turn the radio power OFF to exit.
6. If you want to continue programming other radios, repeat steps 1 to 5.

#### 4.5 Wired Clone Mode

If the wired clone function is enabled, the radio can enter the Wired Clone Mode. After entering this mode, the radio will not exit automatically. The user needs to restart the radio if he wants the radio to return to the User Mode.

The operation procedure is as follows:

1. Press and hold Side Button 1 while turning the radio power ON to enter the Wired Clone Mode. If the wired clone function is

disabled, the radio will enter User Mode.

2. Connect the slave radio to the master radio by the cloning cable and turn on the power of the slave radio.

3. Press Side Button 2 of the master radio to start cloning. The LED on the master radio will light red, and the data of the master is sent to the slave. While the slave is receiving the data, the LED lights green. When cloning of data is completed, the LED of the master will go out, and the slave will restart automatically.

4. Carry out the operation in step 3 to clone other slave radios.

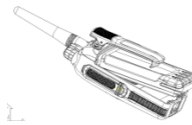
Note: The user can enable or disable the wired clone function through PC programming software. Once the wired clone function is disabled, the radio cannot enter the Wired Clone Mode.

## Chapter 5 Disassembly for Repair

The radio is a piece of precision communication equipment. Please be careful when disassemble the radio during service. The instructions for the disassembly are as follows.

### 5.1 Attaching and Removing the Battery

#### 1) Attaching the Battery

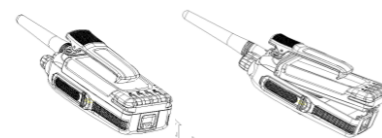


Fit the two extensions at the top of the battery into the slots at the top of the radio's body.



Press the bottom part of the battery towards the radio until a click is heard and the battery is hooked.

#### 2) Removing the Battery



Push the battery latch at the bottom of the radio forward, the bottom part of the battery will bounce up automatically. Then release the belt clip and remove the battery from the radio's body.

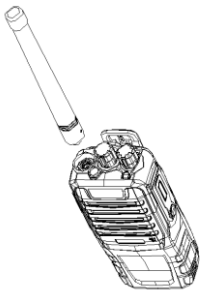
Note:

\* Do not short-circuit the battery terminals or dispose battery in fire.

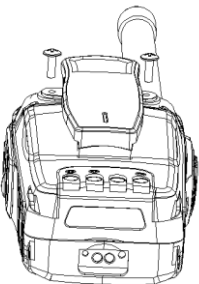
\* Do not disassemble the battery casing by yourself.

### 5.2 Installing the antenna

Hold the base of the antenna, and rotate it clockwise to the connector on the top of the radio until it secures.



**5.3 Installing the belt clip**

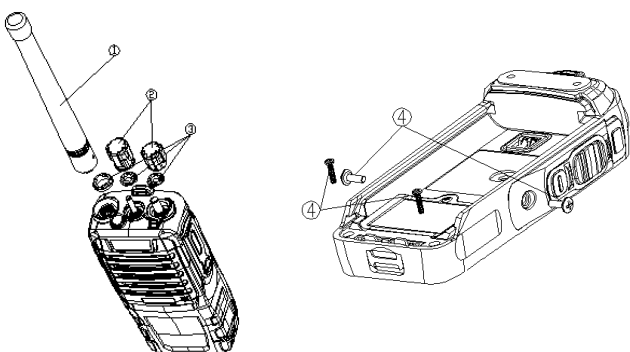


Match the two holes of the belt clip with those on the rear of the radio, and then fix the belt clip to the radio using the two supplied screws. Loose the fixing screws to remove the belt clip.

**5.4 Removing the chassis from the front cabinet**

1. Remove the antenna;
2. Pull out the volume knob and the channel selector knob.
3. Remove the two nuts for knobs and the nut for the antenna connector by the special tool;
4. Remove the two fixing screws at the lower part of the AI chassis and remove the two fixing screws on two sides of the cover;
5. Insert a flat-blade screwdriver into the slot at the bottom of the AI chassis, and prize it up. Then pull the AI chassis backwards to remove it from the front cabinet. Be careful not to break the speaker wire.

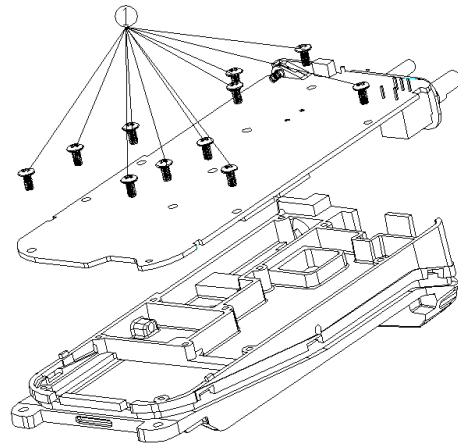
See figure below:



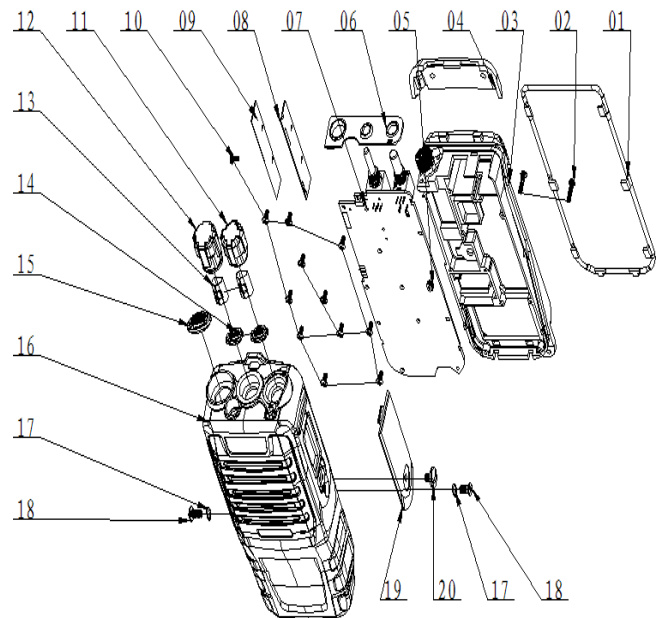
**5.4 Removing the mainboard from the AI chassis**

1. Remove 11 screws on the PCB by a cross screwdriver;
2. Remove the solder of the antenna connector with a soldering iron, and remove the mainboard.

See figure below:



**5.5 Exploded View**



No.	Name	Part number	Pcs
1	7MHR-7069-04A-W0	Main Waterproof Loop	1
2	7SMF-020080M-MH HT-N1	M2*8 Machine Screws	1
3		AI cabinet assembly	1
4	7MHP-7069-02A-W0	Top Cover	1
5	7MHR-1727-09A-W3	MIC Seal	1

6	7MHR-7210-02A-W0	PT6700 Top Waterproof Gasket	1
7		Mainboard assembly	1
8		PTT PCB	1
9	7MHS-7069-04A-W	PT7800 PTT key	1
10	7SMF-020040M-SZY B-N	M2*4 Screws	12
11	7MHP-7210-04A-W0	Volume Knob	1
12	7MHP-7210-03A-W0	Channel Selector Knob	1
13	7MHS-1140-01A-W	Circlip for knob	2
14	7NRC-060100035-B1	Nut for knob	2
15	7NRC-090115025-G1	Nut	1
16		Front cover assembly	2
17	7MHR-7069-08A-W0	O-type gasket	2
18	7SMF-025080M-SZY B-Z1	M2.5*8 Screws	2
19	7MHP-7210-02A-W0	MIC cover	1
20	7SSF-030040M-YXHP	M3*4 Screws	1

1	7MHL-7069-01A-W	AI bracket	
2	3CR7-SMA-50JFB-4	RF co-axis connector	
3	7SMF-020040M-SZYB-N	M2*4 machine screw	
4	7MHR-7069-07A-W0	water-proof gasket for bracket	
5	7MHR-7069-05A-W3	Water-proof gasket for dormer	
6	7MHF-7069-02A-W	dormer cover	

## Chapter 6 Adjustment

Before test/adjustment, make sure all equipment has been grounded!

Before test/adjustment, make sure the antenna output terminal has been correctly connected to corresponding equipment or load!

The transmitter output terminal must be terminated with an RF power attenuator and connected to a standard signal generator (SSG)/frequency counter/deviation meter/spectrum analyzer!

Make sure no transmission operation is being conducted while measuring the receiver!

During the adjustment/test/maintenance, make sure reliable anti-static measures are taken for human body and equipment.

### Front cover assembly:

No.	Name	Part No.	Pcs
1	7MHP-7210-01A-W0	Front cover	1
2	7MHP-7069-03A-W0	PTT Side cover	1
3	7MHP-7069-04A-W0	PTT cover	1
4	7MHP-7069-06A-W0	Battery latch	1
5	7MHP-7069-10A-WC	Light guide	1
6	7MHR-7069-02A-W0	PTT key	1
7	7MHR-7210-01A-W3	Emergency key	1
8	7GCJ-S1867-01	Paste for earphone PCB board	1
9	7MHS-1010-02A-N	Spring	2
10	7GCB-3950001	φ 39.5 Speaker net	1
11	4SS7-4564-016-100	φ 45 Speaker	1
12	7MHS-7210-01A-W	Fixed sheet for speaker	1
13	7GCB-070045005-J	3 对讲机 φ7 话筒布	1
14	7SMF-020040M-SZY B-N	M2*4 Machine screw	1
15	6PD7-1867-HLC	Earphone PCB board	1
16	6PF7-1867-HLC	7200 耳机连接软板	1

### AI cover assembly:

No.	Name	Part number	Pcs
-----	------	-------------	-----

### 6.1 Equipment and Software Required for Test and Adjustment

Equipment and software listed in Table 6.1 are required for test and adjustment of PT6700.

Table 6.1 Equipment and Software Required for Test and Adjustment

No.	Name	Specifications
1	Computer	P2 or above, IBM compatible PC, WINDOWS 98/ME/2000/XP Operating System
2	Programming software	KSP6700
3	Programming cable	
4	Clone cable	KCL01
5	DC regulated power supply	Output voltage: 13.8V Output current: ≥ 20A
6	RF power meter	Measurement range: 0.5-10W Frequency range: 100MHz-500MHz Impedance: 50Ω SWR ≤ 1.2
7	Frequency counter	Frequency range: 0.1-600MHz Frequency accuracy: better than ±1 × 10 <sup>-6</sup> Sensitivity: better than 100mV
8	Deviation	Frequency range: DC600MHz

	meter	Measurement range: 0 - $\pm 5$ kHz
9	DMM	Input impedance: above 10M $\Omega$ /V DC, capable of measuring voltage, current and resistance.
10	Audio signal generator	Frequency range:2-3000Hz Output level: 1-500mV
11	RF power attenuator	Attenuation: 40dB or 50dB Supporting power : higher than 50W
12	Standard signal generator	Frequency range:10MHz-1000MHz Output level: 0.1 $\mu$ V-32mV (-127dBm~-17dBm)
13	Oscilloscope	Frequency range: DC~20MHz Test range: 10mV-20V
14	Audio frequency voltmeter	Test range: 10mV-10V

Recommendation: Item 6, 7, 8, 10, 11, and 12 listed in the table can be replaced by HP8920 general test set.

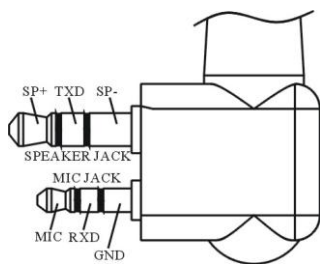


Figure 6.1 External Speaker/Microphone Interface Definition

### 6.2 Adjustment

After changing components during the maintenance, it is necessary to test the radio and adjust its technical parameters. The following part is going to introduce the adjustment items.

Some parameters can be adjusted by use of KSP6700 programming software (in the Tuning Mode). The adjustable parameters are as follows:

- 1) 6250Hz Precision
- 2) 2500Hz Precision
- 3) Tx Power
- 4) Tx Low Voltage
- 5) Squelch Level
- 6) QT Deviation
- 7) DCS Deviation
- 8) Rx Sensitivity

#### Steps for adjustment:

- a. Enter PC Test Mode. Refer to Section 4.2.1.
- b. Click “Edit” in the main menu of KSP6700 programming software, and then click “Entry Tuning” in the pull-down menu to enter the Tuning Mode.
- c. Then the “Tuning Item List” screen will pop up. Double click the item you want to adjust, and then you can adjust the parameters.
- d. Exit the PC Test Mode after adjustment.

### 6.3 Adjustment

#### 6.3.1 VCO

Disable the “Battery Save” function, and set the Rx frequency at the high frequency point (see Table 6.2). Under the receiving status, measure the voltage of PD by DMM. Then adjust the PD voltage to be 4.0V  $\pm$ 0.2V by tuning the trimming capacitor C371.

Set the Tx frequency at the low frequency point (see Table 6.2), and press the PTT button. Then measure the voltage of PD by DMM. The resulting voltage should be higher than 0.5V.

Table 6.2 High/Intermediate/Low Frequency Point for PT6700

	Low Freq Point	Intermediate Freq Point	High Freq Point
PT6700	420.125MHz	445.125MHz	469.975MHz

#### 6.3.2 PLL frequency

1. In the Tuning Mode, double click “6250Hz precision” to enter. Adjust the parameter among 0-255 to make the Tx frequency at the rated value (error within  $\pm 200$ Hz).

2. In the Tuning Mode, double click “2500Hz precision” to enter. Adjust the parameter among 0-255 to make the Tx frequency at the rated value (error within  $\pm 200$ Hz).

#### 6.3.3 Tx Power

In the Tuning Mode, double click Tx “High power” to enter. Adjust the five frequency points of “Lowest”, “Low”, “Mid”, “High” and “Highest” among 0-255 to make the Tx power at 4W. Meanwhile, observe the operating current, and make sure that the current  $\leq 1.8$ A.

In the Tuning Mode, double click Tx “Low power” to enter. Adjust the five frequency points of “Lowest”, “Low”, “Mid”, “High” and “Highest” among 0-255 to make the Tx power higher than 0.5W.

#### 6.3.4 Tx Low Voltage

Firstly, adjust the power voltage to be 6.8V. Double click “Tx low voltage” in the Tuning Mode to enter. The software will test automatically. When the value changes no more or only changes a little, click SAVE to exit.

#### 6.3.5 Deviation

Input audio signal (120mV, 1000Hz) to the MIC jack of the radio. Adjust the potentiometer VR2 to make the Tx deviation at  $\pm 4.2$ kHz.

#### 6.3.6 DCS Tx Signal Waveform and Deviation

In the Tuning Mode, double click “DCS DEV” to enter. Adjust

the potentiometer VR1 and observe the demodulation signal (the waveform should be smooth and similar to square wave). Click wideband, and adjust the five frequency points of “Lowest”, “Low”, “Mid”, “High”, and “Highest” to make the deviation at 0.75kHz. Then click narrowband, and adjust the value to make the deviation at 0.35kHz.

**6.3.7 CTCSS Deviation**

In the Tuning Mode, double click “QT (67.0) DEV” to enter. Click wideband, and adjust the five frequency points of “Lowest”, “Low”, “Mid”, “High”, and “Highest” to make the deviation at 0.75kHz. Then click narrowband, and adjust the value to make the deviation at 0.35kHz.

In the Tuning Mode, double click “QT(2541) DEV” to enter. The tuning method is the same as that of “QT(670) DEV”.

**6.3.8 Receiver Sensitivity**

In the Tuning Mode, double click “Sensitivity” to enter. Adjust the five frequency points of “Lowest”, “Low”, “Mid”, “High”, and “Highest” among 0-255 to make the sensitivity be the highest.

**6.3.9 Receiver Squelch**

In the Tuning Mode, double click “SQL9 On” to enter. Click wideband and use the following method to adjust the five frequency points of “Lowest”, “Low”, “Mid”, “High”, and “Highest” respectively. Firstly, click one of the frequency points, and adjust the RF signal frequency of the test equipment to be the same with the receiving frequency of that frequency point, and adjust the signal level to be -116dBm. Then adjust the frequency of the modulation signal to be 1kHz and the deviation to be 3kHz.

The programming software will adjust the value automatically. When the value keeps stable, the adjustment of that frequency point is completed. Then click the next frequency point to do the adjustment. After all of the five frequency points are adjusted, use the same method to adjust the five frequency points for narrowband. The only difference is that the frequency of the modulation signal should be 1kHz, and the deviation should be 1.5kHz.

In the Tuning Mode, double click “SQL9 Off” to enter. Click wideband and use the following method to adjust the five frequency points of “Lowest”, “Low”, “Mid”, “High”, and “Highest” respectively. Firstly, click one of the frequency points, and adjust the RF signal frequency of the test equipment to be the same with the receiving frequency of that frequency point, and adjust the signal level to be -118dBm. Then adjust the frequency of the modulation signal to be 1kHz and the deviation to be 3kHz. The programming software will adjust the value automatically. When the value keeps stable, the adjustment of that frequency point is completed. Then click the next frequency point to do the adjustment. After all of the five frequency points are adjusted, use the same method to adjust the five frequency points for narrowband. The only difference is that the frequency of the modulation signal should be 1kHz, and the deviation should be 1.5kHz.

In the Tuning Mode, double click “SQL1 On” and “SQL1 Off” to enter respectively. Use the same method stated above to do the adjustment. The only difference is that the RF signal level for “SQL1 On” should be 123dBm, and the RF signal level for “SQL1 Off” should be 125dBm.

**6.4 Adjustment Description**

See Table 6.3, 6.4, and 6.5.

Table 6.3 VCO

Item	Test Condition	Test Equipment	Measurement Point	Parts to be adjusted	Requirements	Remark
Setting	BATT terminal voltage: 7.5V	DMM	CV			
VCO lock voltage	CH: Rx high freq point			C180	4.0V ±0.2V	Adjust
	CH: Tx high freq point				4.0V ±0.2V	Adjust

Table 6.4 Rx Part

Item	Test Condition	Test Equipment	Measurement Terminal	Adjustment Parts	Requirement	Remark
Audio level	Test freq: Mid freq point Antenna input: RF OUT: -53dBm (501µV) MOD: 1kHz DEV: ±3.0kHz	RF signal generator  Oscilloscope  Audio frequency voltmeter	Speaker connector		(Turn the volume knob clockwise to the end) Audio power > 1.2W	



	Audio load: 16Ω	Distortion meter/General test set			
Sensitivity	CH: Mid freq point CH: Low freq point CH: High freq point RF OUT: -119dBm (0.25μV) MOD: 1kHz DEV: ±3.0kHz		PC Tuning Mode	SINAD: 12dB or higher	
SQL On sensitivity	CH: Rx center freq point Level 9 RF OUT: -116dBm Level 1 RF OUT: -123dBm		PC Tuning Mode	Normal squelch on after adjustment	

Table 6.5 Tx Part

Item	Test condition	Test equipment	Measuring terminal	Adjustment parts	Requirement	Remark
Tx frequency		Frequency counter / General test set	Antenna	PC Tuning Mode	Within ±200Hz	
DCS waveform (balance)		Oscilloscope / General test set		VR1	Smooth and similar to square wave	
Power	Power: 7.5V	Power meter/ General test set Ammeter		PC Tuning Mode	Adjust to 4W	Within ±0.2W
Max. modulation deviation	CH: Tx center freq point AG: 1kHz/220mV	Deviation meter/ General test set		VR2	Adjust to ±4.2kHz	±200Hz
Modulation sensitivity	CH: Tx center freq point AG: 1kHz/22mV					Deviation checked should be 2.2kHz~3.6kHz
CTCSS DEV	CTCSS: 67Hz	Deviation meter/ General test set		PC Tuning Mode	Adjust to ±0.75kHz	±50Hz
DCS DEV	DCS: 023N	Deviation meter/ General test set		PC Tuning Mode	Adjust to ±0.75kHz	±50Hz
Low battery warning	Battery terminal: 6.8V			PC Tuning Mode	Indicator flashes after adjustment	

## Chapter 7 Specifications

### 7.1 General Specifications

Product Model	PT6700
Frequency	136 ~ 174 MHz
	400 ~ 450MHz
	420 ~ 470 MHz
Number of Channels	16
Channel Spacing	W: 25 kHz / N: 12.5kHz
Operating Temperature	-25°C ~ +55°C
Antenna Impedance	50Ω
Frequency Stability	±2.5ppm

### 7.2 Receiver Section

Sensitivity (12dB SINAD)	0.25μV(W) / 0.28μV(N)
Adjacent Channel Selectivity	W: ≥ 70dB / N: ≥ 60dB
Intermodulation Interference	≥ 65dB
Audio Output Power	1W (16Ω)
Audio Distortion	≤ 5%

### 7.3 Transmitter Section

Tx Power	4W(UHF) / 5W(VHF)
Modulation Type	W: 16KφF3E / N: 11KφF3E
Clutter and Harmonic	≤ 36 dBm
Residual FM (300~3000Hz)	W: ≤ 45 dB / N: ≤ 40dB
Audio Distortion (300~3000Hz)	≤ 5%
Adjacent Channel Power	W: ≥ 70dB / N: ≥ 60dB
Max. Deviation	W: < ±5kHz / N: < ±2.5kHz

## Chapter 8 Troubleshooting

No.	Problem	Causes and Solutions
1	No display after switching on the radio	A. Battery power may be insufficient, please recharge or change the battery pack. B. The power switch is broken, please change it. C. The CPU is broken, please change the IC. D. The regulator tube IC100 is broken, please change the IC.
2	PLL unlocked (Beeping)	A. The PLL crystal oscillator X300 is broken. Please change it. B. The oscillator transistor Q302 and Q307 are broken. Please change them. C. The PLL IC300 is broken. Please change it.
3	Cannot talk to or hear other group members	A. The frequencies of both users are not the same, select the same frequency channel. B. The CTCSS/DCS of both users are not the same. Please reset it with PC. C. The radio is out of the effective communication range.
4	Cannot receive signals	A. The antenna is in poor contact. Please fasten the antenna until secure. B. The sensitivity is too low, please adjust it with PC. C. The HF amplifier Q504 is broken. Please change it. D. The squelch level is too high and the squelch cannot be opened. Please reset the squelch level with PC. E. The mixing tube Q503 is broken. Please change it. F. The FM processing chip IC500 is broken. Please change it. G. The crystal filter Z1 is broken, please change it. H. The ceramic filter CF500 is broken, please change it.
5	The transmitting red light is on, but no voice is heard by the recipient.	A. The amplifier tube Q400 is broken, so there is no power output, please change it. B. The microphone is broken, please change it. C. The operational amplifier IC400 is broken, please change it.
6	The receiving green light is on, but no voice is heard.	A. The speaker is broken. Please change it. B. The audio power amplifier U2 is broken. Please change it. C. The operational amplifier IC702 is broken, please change it.
7	Cannot program	A. The cable connection is wrong, please check the

the radio parameters normally	cable connection. B. The computer RS232 serial port output is abnormal, please check the computer. C. The external MIC/Speaker jack is in poor contact, please change the jack.
-------------------------------	---

## Appendix 1 Abbreviations

AMP: Amplify, amplifier  
 ANT: Antenna  
 APC: Automatic Power Control  
 BPF: Band Pass Filter  
 CTCSS: Continuous Tone Control Squelch System  
 DCS: Digital Code Squelch  
 DEMOD: Demodulation  
 E<sup>2</sup>PROM: Electrical Erasable Programmable Read Only Memory  
 HPF: High Pass Filter  
 IDC: Instantaneous Deviation Control  
 IF: Intermediate Frequency  
 LED: Light-Emitting Diode  
 LNA: Low Noise Amplifier  
 LPF: Low Pass Filter  
 MCU: Micro Control Unit  
 MIC: Microphone  
 MOD: Modulation  
 MONI: Monitor  
 PLL: Phase Lock Loop  
 PTT: Push-to-talk  
 RX: Receiver  
 SPK: Speaker  
 TCXO: Temperature Compensated Crystal Oscillators  
 TX: Transmitter  
 UL: Un-lock  
 VCO: Voltage Control Oscillator

## Appendix 2 Electronic Parts List

No.	Part No.	Name	Specifications	Qty	Position mark
1	4SM7-6027-A40B	MIC	MIC_PT567	1	MIC600
2	1DG1-CM1293A	Diode	CM1293A	2	D101,D102
3	1DP1-BV08C	Diode	SOD323	3	D1,D2,D4
4	1DR1-1SR154-400	Diode	1SR154_400	1	D100

5	1DS1-1SS372	Diode	1SS372	1	D600
6	1DS1-DAN222	Diode	DAN222	1	D601
7	1DS1-HSC277	Diode	HSC277	3	D402,D403,D500
8	1DS1-HVC131	Diode	HVC131	2	D400,D401
9	1DS1-MA2S111	Diode	MA2S111	3	D309,D310,D509
10	1DS1-RB706F-40	Diode	RB706F	1	D501
11	1DV1-1SV278	Diode	1SV278	1	D304
12	1DV1-HVC376B	Diode	HVC376B	15	D300,D301,D302,D303,D305,D306,D607 ,D308,D502,D503,D504,D505,D506,D507,D508
13	1DZ1-HZU5ALL	Voltage regulator Diode	HZU5ALL	1	D405
14	1IL1-NJM2902V	Operational amplifier IC	NJM2902	3	IC600,IC701,IC702
15	1IL1-NJM2904V	Operational amplifier IC	NJM2904	1	IC400
16	1IM1-AT24C512BN	Memory IC	AT24C08N	1	IC200
17	1IS1-BT588	Voice IC	BT588	1	IC1
18	<b>1IP1-R5F212B8SNFP</b>	<b>CPU IC</b>	R8C_PT4208	1	IC201
19	1IS1-HT7130-1	Voltage regulator IC	HT7130	1	IC100
20	1IS1-MB15E03SL	PLL IC	MB15E03	1	IC300
21	1IS1-PST9140NR	Reset IC	PST9124NR	1	IC202
22	<b>1IS1-GT3136</b>	<b>IF IC</b>	<b>TA31136</b>	<b>1</b>	<b>IC500</b>
23	1IS1-TA7805AF	Voltage regulator IC	TA78033AF	1	Q104
24	1IS1-TDA2822	AUDIO AMP IC	TDA2822	1	U2
25	1IS1-W588A080	Voice IC	W588-PT567	1	IC203
26	1TF1-2SK1824	FET	2SK1824	7	Q203,Q406,Q600,Q604,Q702,Q704,Q710
27	1TF1-2SK508NV-K52	FET	2SK508	2	Q302,Q307
28	1TF1-3SK318	Dual-gate FET	3SK318	2	Q503,Q504
29	1TF1-RD01MUS2	FET	RD01	1	Q401
30	1TF1-RD07MUS2B	FET	RD07	1	Q400
31	1TF1-ST2302	FET	ST2302	4	Q4,Q5,Q700,Q703
32	1TT1-2SC3356-R24	Triode	2SC3356	1	Q403
33	1TT1-2SC4617-R	Triode	2SC4617	4	Q202,Q308,Q500,Q701
34	1TT1-2SC4919	Triode	2SC4919	1	Q601
35	1TT1-2SC5108-Y	Triode	2SC5108	6	Q300,Q301,Q303,Q304,Q402,Q502
36	1TT1-DTA143TE	Triode	DTA143TE	2	Q305,Q306
37	1TT1-DTA144EE	Triode	DTA144EE	3	Q404,Q505,Q705

38	1TT1-DTC144EE	Triode	DTC144EE	13	Q2,Q3,Q101,Q105,Q106,Q200,Q201,Q405,Q501,Q602,Q603,Q706,Q707
39	1TT1-KTA1298-Y	Triode	KTA1298	4	Q1,Q100,Q102,Q103
40	2CA1-TZVY2Z100A110	Capacity	VC-1	2	C335,C371
41	2CC1-10-C0G500-100D	Capacity	C0402	7	C308,C309,C318,C321,C328,C547,C603
42	2CC1-10-C0G500-101J	Capacity	C0402	16	C113,C118,C119,C120,C121,C122,C123,C124,C125,C126,C127,C128,C375,C422,C447,C566
43	2CC1-10-C0G500-120J	Capacity	C0402	3	C331,C363,C534
44	2CC1-10-C0G500-150J	Capacity	C0402	3	C327,C536,C544
45	2CC1-10-C0G500-160J	Capacity	C0402	2	C311,C419
46	2CC1-10-C0G500-180J	Capacity	C0402	2	C421,C524
47	2CC1-10-C0G500-1R0C	1P Capacity	C0402	2	C325,C357
48	2CC1-10-C0G500-1R5C	1.5P Capacity	C0402	1	C532
49	2CC1-10-C0G500-200J	20P Capacity	C0402	2	C538,C540
50	2CC1-10-C0G500-220J	22P Capacity	C0402	2	C225,C227
51	2CC1-10-C0G500-221J	221 Capacity	C0402	1	C734
52	2CC1-10-C0G500-270J	27P Capacity	C0402	1	C313
53	2CC1-10-C0G500-2R0C	2P Capacity	C0402	1	C302
54	2CC1-10-C0G500-2R5C	2.5P Capacity	C0402	1	C539
55	2CC1-10-C0G500-3R0B	3P Capacity	C0402	3	C226,C305,C541
56	2CC1-10-C0G500-330J	33P Capacity	C0402	3	C355,C326,C555
57	2CC1-10-C0G500-390J	39P Capacity	C0402	1	C526
58	2CC1-10-C0G500-470J	47P Capacity	C0402	3	C306,C504,C711
59	2CC1-10-C0G500-4R0C	4P Capacity	C0402	5	C324,C332,C333,C364,C510
60	2CC1-10-C0G500-5R0C	5P Capacity	C0402	4	C314,C315,C356,C503
61	2CC1-10-C0G500-680J	68P Capacity	C0402	1	C323
62	2CC1-10-C0G500-6R0C	6P Capacity	C0402	1	C500
63	2CC1-10-C0G500-820J	82P Capacity	C0402	1	C560
64	2CC1-10-C0G500-R50B	0.5P Capacity	C0402	4	C343,C362,C529,C530
65	2CC1-10-X5R100-474K	474 Capacity	C0402	1	C720
66	2CC1-10-X5R6R3-105K	105 Capacity	C0402	8	C213,C215,C217,C377,C431,C442,C739,R27
67	2CC1-10-X7R100-393K	393 Capacity	C0402	1	C737
68	2CC1-10-X7R100-683K	683 Capacity	C0402	3	C209,C210,C707
69	2CC1-10-X7R160-104K	104 Capacity	C0402	22	C100,C101,C102,C105,C108,C223,C224,C334,C345,C379,C507,C515,C550,C565,C606,C617,C619,C621,C701,C713,C716,C723
70	2CC1-10-X7R160-333K	333 Capacity	C0402	4	C361,C600,C722,C732

71	2CC1-10-X7R160-473K	473 Capacity	C0402	2	C211,C212
72	2CC1-10-X7R160-681K	681 Capacity	C0402	3	C602,C610,C614
73	2CC1-10-X7R160-683K	683 Capacity	C0402	2	C615,C705
74	2CC1-10-X7R250-123K	123 Capacity	C0402	1	C709
75	2CC1-10-X7R250-472K	472 Capacity	C0402	1	C719
76	2CC1-10-X7R500-102K	102 Capacity	C0402	26	C103,C114,C219,C304,C322,C329,C347,C351,C366,C412,C439,C449,C451,C506,C509,C511,C512,C513,514,C519,C520,C542,C543,C552,C554,C725
77	2CC1-10-X7R500-103K	103 Capacity	C0402	12	C3,C27,C106,C109,C205,C430,C444,C452,C527,C605,C700,C735
78	2CC1-10-X7R500-153K	153 Capacity	C0402	4	C708,C717,C721,C728
79	2CC1-10-X7R500-182K	182 Capacity	C0402	3	C341,C342,C508
80	2CC1-10-X7R500-222K	222 Capacity	C0402	1	C706
81	2CC1-10-X7R500-223K	223 Capacity	C0402	3	C200,C201,C612
82	2CC1-10-X7R500-392K	392 Capacity	C0402	5	C2,C206,C601,C609,C712
83	2CC1-10-X7R500-332K	332 Capacity	C0402	1	C616
84	2CC1-10-X7R500-471K	471 Capacity	C0402	89	C25,C48,C107,C111,C115,C116,C202,C203,C204,C207,C208,C218,C220,C221,C222,C228,C229,C230,C232,C233,C234,C235,C236,C300,C301,C307,C316,C320,C336,C337,C338,C339,C340,C346,C349,C350,C352,C353,C367,C368,C369,C370,C372,C373,C420,C423,C424,C427,C428,C429,C432,C433,C434,C435,C436,C438,C440,C441,C443,C445,C448,C450,C454,C516,C517,C518,C521,C522,C528,C531,C533,C535,C556,C557,C558,C559,C561,C562,C563,C564,C618,C620,C710,C714,C724,C726,C730,C738,R629
85	2CC1-16-C0G500-100C	10P Capacity	C0603	1	C402
86	2CC1-16-C0G500-1R0C	1P Capacity	C0603	1	C437
87	2CC1-16-C0G500-1R5C	1.5P Capacity	C0603	1	C404
88	2CC1-16-C0G500-200J	20P Capacity	C0603	2	C401,C407
89	2CC1-16-C0G500-270J	27P Capacity	C0603	1	C410
90	2CC1-16-C0G500-2R0C	2P Capacity	C0603	2	C403,C415
91	2CC1-16-C0G500-3R5C	3.5P Capacity	C0603	1	C405
92	2CC1-16-C0G500-4R0C	4P Capacity	C0603	1	C417
93	2CC1-16-C0G500-5R0C	5P Capacity	C0603	3	C365,C414,C416
94	2CC1-16-C0G500-6R0D	6P Capacity	C0603	1	C409
95	2CC1-16-X7R500-471K	471 Capacity	C0603	1	C411

96	2CC1-20-X7R6R3-475K	4.7uF/6.3V Capacity	E_0805	21	C104,C110,C112,C117,C231,C319,C344, C348,C378,C446,C453,C505,C553,C607, C608,C611,C622,C702,C704,C727,C731
97	2CC1-20-Y5V160-106Z	10uF/16V Capacity	E_0805	1	C26
98	2CT1-TP20-6R3-4R7M	4.7uF/6.3V Ta Capacity	E_0805	1	C551
99	2CT1-TS32-160-1R0M	1uF/16V Ta Capacity	E_1206	1	C359
100	2CT1-TS32-350-R10M	0.1uF/35V Ta Capacity	E_1206	2	C358,C360
101	2CT1-TS32-6R3-150M	15uF/6.3V Ta Capacity	E_1206	2	C1,C376
102	2CT1-TS35-100-470M	47uF/10V Ta Capacity	E_1412	2	C4,C715
103	2LH1-R401R5-R03-05	3T Inductance	L_1_3T	10	L400,L401,L403,L406,L507,L509,L510,L 511,L513,L515
104	2LH1-R401R5-R04-05	4T Inductance	L_1_3T	1	L402
105	2LH1-R401R5-R08-05	8T Inductance	L_1_8T	1	L408
106	2LH1-R501R5-L05-05	5T Inductance	5T	1	L407
107	2LL1-16-12NJ	12nH Inductance	L_1_0603	1	L412
108	2LL1-16-1R0K	1uH Inductance	L_1_0603	1	L503
109	2LL1-16-22NJ	22nH Inductance	L_1_0603	1	L311
110	2LL1-16-27NJ	27nH Inductance	L_1_0603	1	L410
111	2LL1-16-33NJ	33nH Inductance	L_1_0603	1	L313
112	2LL1-16-3N9D	3.9nH Inductance	L_1_0603	1	L405
113	2LL1-16-3R3K	3.3uH Inductance	L_1_0603	2	L309,L323
114	2LL1-16-82NJ	82nH Inductance	L_1_0603	2	L307,L310
115	2LL1-16-R22J	220nH Inductance	L_1_0603	3	L306,L319,L324
116	2LL1-16-R56KA	560nH Inductance	L_1_0603	1	L300
117	2LP1-20-27NG	27nH Inductance	L_2_1206	1	L308



118	2LW1-16UC-180J	18nH Inductance	L_2_0603	3	L301,L304,L500
119	2LW1-16UC-181J	180nH Inductance	L_1_0603	1	L321
120	2LW1-16UC-331K	330nH Inductance	L_1_0603	1	L303
121	2LW1-16UC-560J	56nH Inductance	L_2_0603	1	L502
122	2LW1-16UC-680J	68nH Inductance	L_2_0603	2	L501,L506
123	2LW1-20UC-221J	220nH Inductance	L_2_0805	1	L409
124	2LW1-25UC-103J	10uH Inductance	L_2_1008	1	L305
125	2LW1-25UC-331K	0.33uH Inductance	L_2_1008	1	L504
126	2LW1-25UC-561J	0.56uH Inductance	L_2_1008	1	L505
127	2LW1-32UC-170J	17nH Inductance	L_2_1206	1	L322
128	2RA1-EVM2NSX80B54	50K Resistance	VR2	1	VR601
129	2RA1-EVM2NSX80BS4	68K Resistance	VR1	1	VR600
130	2RE1-10-2201	2.2K Resistance	R0402	4	R24,R101,R103,R106
131	2RE1-16-1503	150K Resistance	R0603	8	R419,R420,R421,R426,R427,R429,R430, R529
132	2RS1-10-000O	0R Resistance	R0402	18	R41,R108,R111,R220,R226,R345,R404,R 418,R604,R623,R711,R744,R747,R749C 214,C567,C703,C741
133	2RS1-10-100J	10R Resistance	R0402	8	R4,R202,R219,R231,R233,R300,R308,R3 24
134	2RS1-10-562J	100R Resistance	R0402	5	R221,R321,R503,R541,R612
135	2RS1-10-102J	1K Resistance	R0402	21	R109,R118,R119,R207,R214,R222,R223, R227,R229,R230,R234,R235,R301,R304, R329,R341,R402,R408,R511,R520,R754

136	2RS1-10-103J	10K Resistance	R0402	19	R25,R100,R104,R105,R116,R117,R327,R337,R338,R339,R340,R344,R501,R519,R622,R630,R710,R731,R753
137	2RS1-10-104J	100K Resistance	R0402	14	R107,R208,R213,R342,R504,R525,R528,R605,R614,R703,R721,R725,R734,R741
138	2RS1-10-105J	1M Resistance	R0402	9	R428,R526,R530,R531,R532,R533,R534,R535,R718
139	2RS1-10-122J	1.2K Resistance	R0402	2	R540,R620
140	2RS1-10-123J	12K Resistance	R0402	1	R602
141	2RS1-10-124J	120K Resistance	R0402	1	R715
142	2RS1-10-151J	150R Resistance	R0402	2	R333,R513
143	2RS1-10-152J	1.5K Resistance	R0402	1	R409
144	2RS1-10-153J	15K Resistance	R0402	7	R315,R334,R335,R336,R610,R621,R625
145	2RS1-10-154J	150K Resistance	R0402	3	R232,R303,R314
146	2RS1-10-182J	1.8K Resistance	R0402	1	R617
147	2RS1-10-183J	18K Resistance	R0402	4	R611,R720,R724,R732
148	2RS1-10-184J	180K Resistance	R0402	3	R537,R704,R735
149	2RS1-10-204J	200K Resistance	R0402	1	R302
150	2RS1-10-220J	22R Resistance	R0402	6	R305,R323,R413,R515,R522,R716
151	2RS1-10-221J	220R Resistance	R0402	4	R203,R204,R523,R527
152	2RS1-10-223J	22K Resistance	R0402	3	R606,R705,R736
153	2RS1-10-224J	220K Resistance	R0402	3	R102,R709,R727
154	2RS1-10-241J	240R Resistance	R0402	2	R310,R328
155	2RS1-10-271J	270R Resistance	R0402	3	R309,R318,R405

156	2RS1-10-272J	2.7K Resistance	R0402	2	R313,R331
157	2RS1-10-273J	27K Resistance	R0402	3	R224,R433,R521
158	2RS1-10-274J	270K Resistance	R0402	3	R325,R326,R701
159	2RS1-10-330J	33R Resistance	R0402	1	R412
160	2RS1-10-332J	3.3K Resistance	R0402	4	R312,R508,R518,R536
161	2RS1-10-333J	33K Resistance	R0402	7	R200,R201,R211,R212,R608,R712,C29
162	2RS1-10-334J	330K Resistance	R0402	2	R228,R502
163	2RS1-10-392J	3.9K Resistance	R0402	6	R2,R206,R416,R618,R627,R632
164	2RS1-10-393J	39K Resistance	R0402	2	R414,R631
165	2RS1-10-394J	390K Resistance	R0402	1	R722
166	2RS1-10-470J	47R Resistance	R0402	1	R400
167	2RS1-10-471J	470R Resistance	R0402	2	R514,R609
168	2RS1-10-472J	4.7K Resistance	R0402	10	R1, R205, R209, R210,R322,R343,R406,R407,R500 R706
169	2RS1-10-473J	47K Resistance	R0402	19	R112,R113,R114,R115,R215,R216,R217, R218,R236,R238,R239,R240,R241,R401, R410,R415,R506,R746,R748
170	2RS1-10-474J	470K Resistance	R0402	5	R3,R516,R702,R717,R726
171	2RS1-10-560J	56R Resistance	R0402	1	R510
172	2RS1-10-561J	560R Resistance	R0402	2	R330,R332
173	2RS1-10-562J	5.6K Resistance	R0402	8	R225,R317,R403,R601,R713,R714,R728, R737
174	2RS1-10-563J	56K Resistance	R0402	7	R431,R505,R524,R600,R607,R619,R624

175	2RS1-10-564J	560K Resistance	R0402	3	R512,R626,R752
176	2RS1-10-682J	6.8K Resistance	R0402	1	R603
177	2RS1-10-683J	68K Resistance	R0402	1	R615
178	2RS1-10-684J	680K Resistance	R0402	1	R733
179	2RS1-10-821J	820R Resistance	R0402	4	R316,R319,R320,R613
180	2RS1-10-822J	8.2K Resistance	R0402	1	R539
181	2RS1-10-823J	82K Resistance	R0402	2	R411,R739
182	2RS1-10-913J	91K Resistance	R0402	1	R719
183	2RS1-16-000O	0R Resistance	L_3_0603	3	L100,L411,L508
184	2RS1-16-153J	15K Resistance	R0603	1	R417
185	2RS1-32-R47J	0.47R Resistance	R1206	3	R422,R423,R424
186	2RT1-NTH5G16P42B104K	100K Thermistor	R0603	1	R507
187	3CF1-BL112-14RL	FFC/FPC Connector	PT7200_EXT _CON	1	J100
188	3FW1-42932-302320	3A Fuse	FUSE_3A	1	F100
189	3ST1-SKRTLBE010	ALARM contact switch	SW_ALPS_1	1	K200
190	4PE1-16-F2-A	RED Light-emitting diodes	RED_LED_06 03	1	D201
191	4PE1-16-F5	GREEN Light-emitting diodes	GREEN_LED _0603	2	D202,D203
192	5FC1-DSF51R6M-0705	51.65MHz Crystal filter	BW_51.65M	1	Z1
193	5FE1-BLM11A221SPT	EMI filter	603	1	L700
194	5FE1-BLM11A601S	EMI filter	L_3_0603	17	L104,L200,L201,L202,L203,L314,L315,L316,L317,L318,L320,L414,L512,L516,L600,L601,L701
195	5FE1-BLM21P300S	EMI filter	805	6	L1,L101,L102,L103,L413,L415




196	5FT1-LTWC450G	450G Ceramic Filters	CF450_SMD	1	CF500
197	5OT1-12R8-CEC3-0503	12.8M TCXO	TCXO_12.8M	1	X300
198	5XT1-CSTCR-7R30G53	7.3M R Ceramic resonator	XTAL_7.3M	1	X200
199	7MHP-7042-12A-W	7.5V PT568battery connector	BATTERY_P T567	1	DC
203	2RW3-TP76N97N15FB103	Volume Switch	POW&VOL	1	POW&VOL
204	3SE3-ED08731616HCF18	Channel Switch	SW200	1	SW200
205	5XT3-JTBM450C24	C24_450 R Ceramic resonator	CD500	1	CD500

### Appendix 3 Structural Parts List

No.	Part No.	Name	Specifications	Qty.
1	7MHP-7210-01A-W0	Front cover	PC+ABS, black, surface-treatment, ROHS	1
2	7MHP-7069-02A-W0	Top cover	PC+ABS, black, surface-treatment, ROHS	1
3	7MHP-7069-03A-W0	PTT Side cover	PC+ABS, black, surface-treatment, ROHS	1
4	7MHP-7069-04A-W0	PTT cover	PC+ABS,black, surface-treatment, ROHS	1
5	7MHP-7210-02A-W0	MIC seal	PC+ABS,black, surface-treatment, ROHS	1
6	7MHP-7069-06A-W0	Battery latch	PC+ABS, black, surface-treatment	1
7	7MHP-7210-03A-W0	Rotary encoder	ABS, black, surface-treatment, ROHS	1
8	7MHP-7210-04A-W0	Volume knob	ABS, black, surface-treatment, ROHS	1
9	7MHP-7069-10A-WC	Light guide	PC, transparent, ROHS	1
10	7MHR-7069-02A-W0	PTT key	Silica gel, black, hardness 60° , ROHS	1
11	7MHR-7210-01A-W3	Emergency alarm key	Silica gel, orange, hardness 60° , ROHS	1
12	7MHR-7069-04A-W0	water-proof gasket	Silica gel, black, hardness 40° , ROHS	1
13	7MHR-7069-05A-W3	天窗 water-proof gasket	Silica gel, orange, hardness 60° , ROHS	1
14	7MHR-7210-02A-W0	top water-proof	Silica gel, black, hardness 60° , ROHS	1
15	7MHR-7069-07A-W0	Water-proof gasket for chassis	Silica gel, Silica gel, hardness 60° , ROHS	1
16	7MHR-1727-09A-W3	Radio MIC cover	Silica gel, hardness 40° , orange, no surface treatment	1
17	7MHR-7042-06B-W0	Heat-conducted silica gel gasket	Silica gel, Silica gel, 3*6*9mm, ROHS	1
18	3CR7-SMA-50JFB-4	RF co-axis connector	SMA-J, installation by flange plate (558, pitch 14mm, core length 10.5mm)	1
19	7NRC-060100035-B1	Nut for knob	Brass, inner diameter M6mm, outer diameter φ10mm, depth 3.5mm, black passivated	2
20	7NRC-087120036-Z	Nut for antenna	Brass, inner diameter M8.7mm, outer diameter φ12mm,	1

		connector	depth 3.6mm, black Ni-plated	
21	7MHL-7069-01A-W	Al alloy bracket	Al alloy (ADC12), ROHS	1
22	7MHF-7069-02A-W	天窗 Cover	0.5MM,SUS304, ROHS	1
23	7MHS-7069-04A-W	PTT key	METAL DOME, ROHS	1
24	7MHS-1140-01A-W	Circlip for knob	Spring steel	2
25	7MHS-1010-02A-N	spring	Spring steel, Ni-plated, wire diameter 0.2, OD 2, H 9.5, number of turns 11	2
26	7MHS-7210-01A-W	Speaker packing sheet	Spring steel, D 0.7mm, ROHS	1
27	4SS7-4564-016-100	φ45 Speaker	16OHM 1W, diameter 45MM, H 6.4MM, IP67	1
28	7GCB-3950001	φ39.5 Net for speaker	Black dustproof net,φ39.5mm (diameter) * 0.1mm (D)	1
29	7GCM-074044	Water-proof gasket for MIC head	DY-E002Afilm,φ7.4xφ4.4, ROHS	1
30	7GCJ-S1867-01	Paster for earphone PCB board	Double-sided adhesive tape	1
31	7SMF-020040M-SZY B-N	M2*4 Flat round cross head machine screw	Steel hardened, Φ2mm*4mm, Flat round cross head machine screw, nylon patch	16
32	7SMF-020080M-MH HT-N1	M2*8 Thick head machine screw	Steel hardened, Φ2mm*8mm Torx thick head Ni-plated machine screw, metric coarse thread	2
33	7SMF-025080M-SZY B-Z1	M2.5*8 Flat round cross head machine screw	Steel hardened, Φ2.5mm*8mm Flat round cross head black Zn-plated machine screw, metric coarse thread	2
34	7SSF-030040M-YXH P-BA	M3*4 Washer added screw (screw on the earphone cover)	Screw on the earphone cover, SUS303, ROHS	1
35	7MHR-7069-08A-W0	O-type ring	D2.4X1.0MM, ROHS	2

### Appendix 4 Accessories

Name	Model	Specifications	External View
Antenna	PT6500		
Belt clip	DP770		
Screw	M2.5X8.0		



Battery	KB-77B		
Hand Strap	KGS-01		
Charger	KBC-77Q		
Power Adaptor	KTC-24		

Figure 1 PT6700 Block Diagram

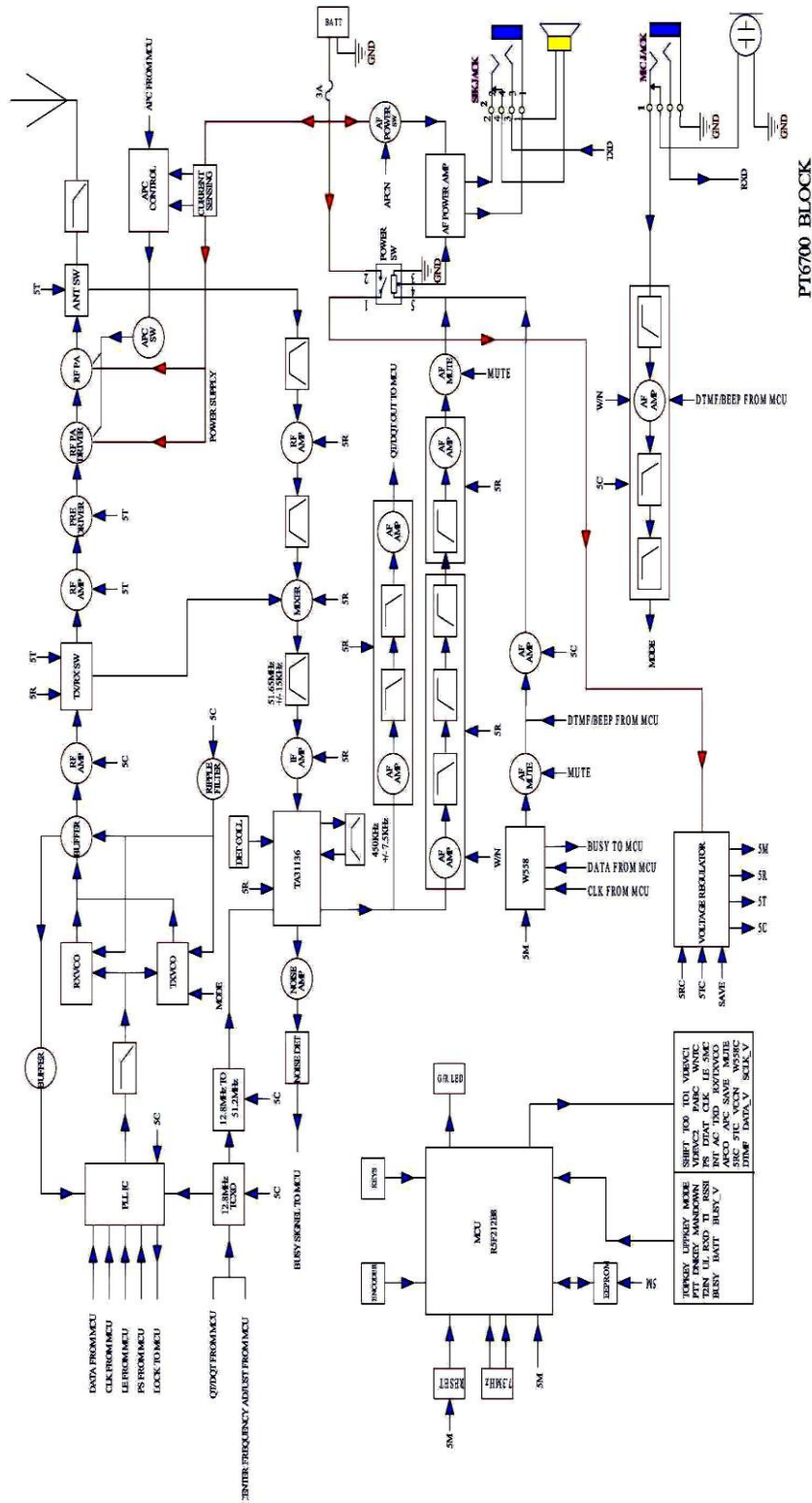
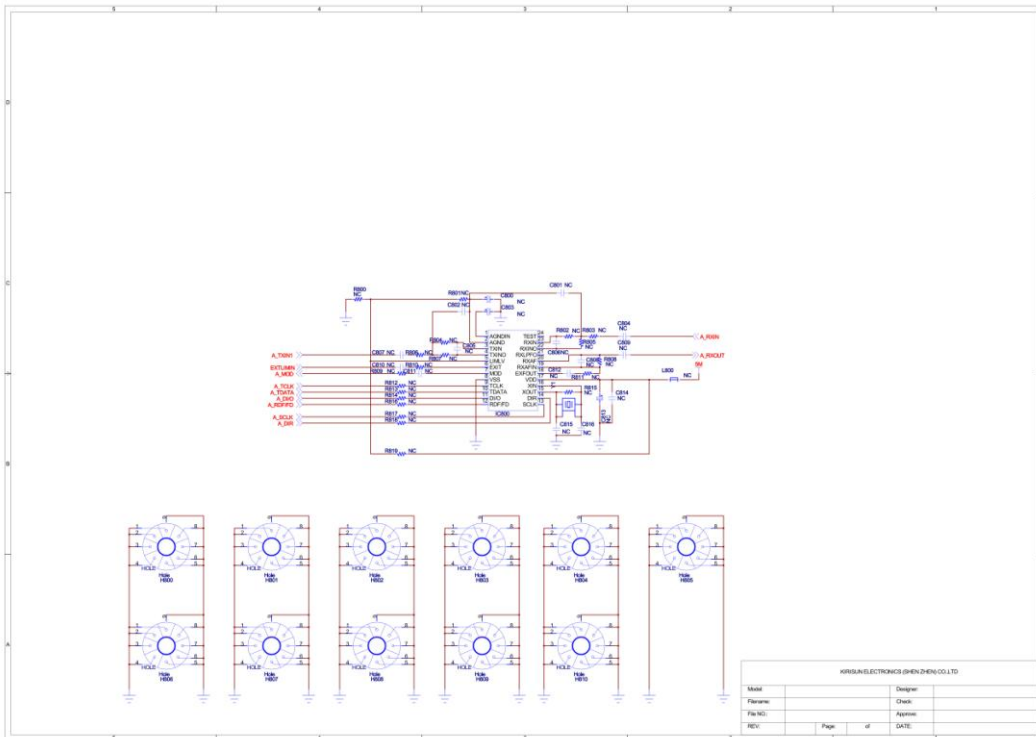
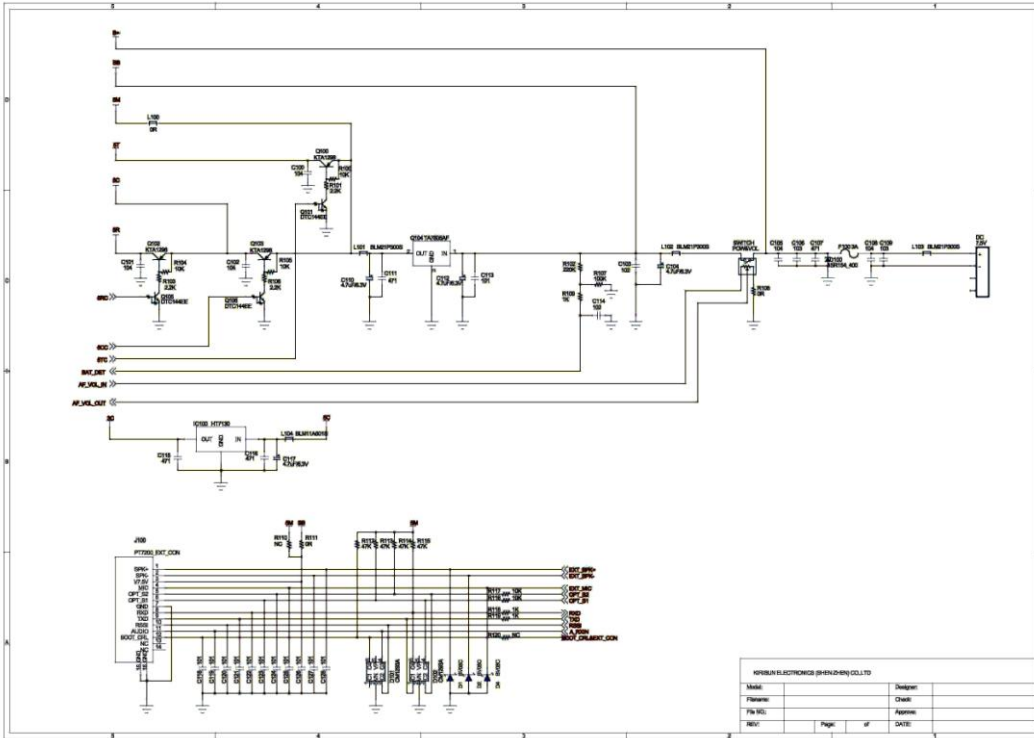
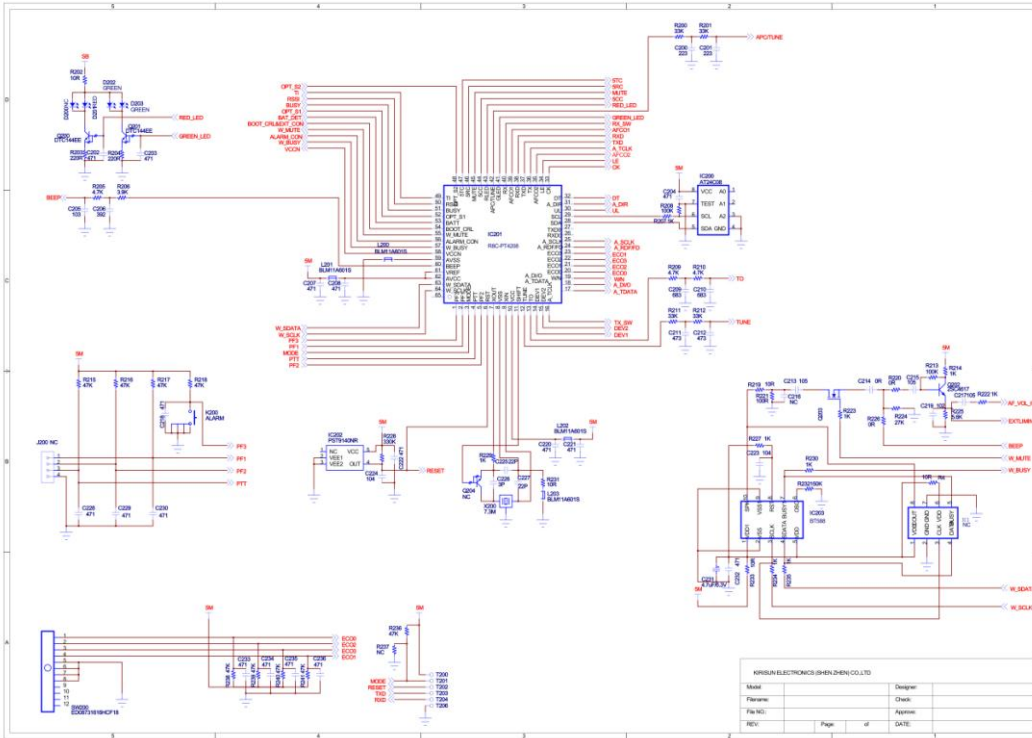
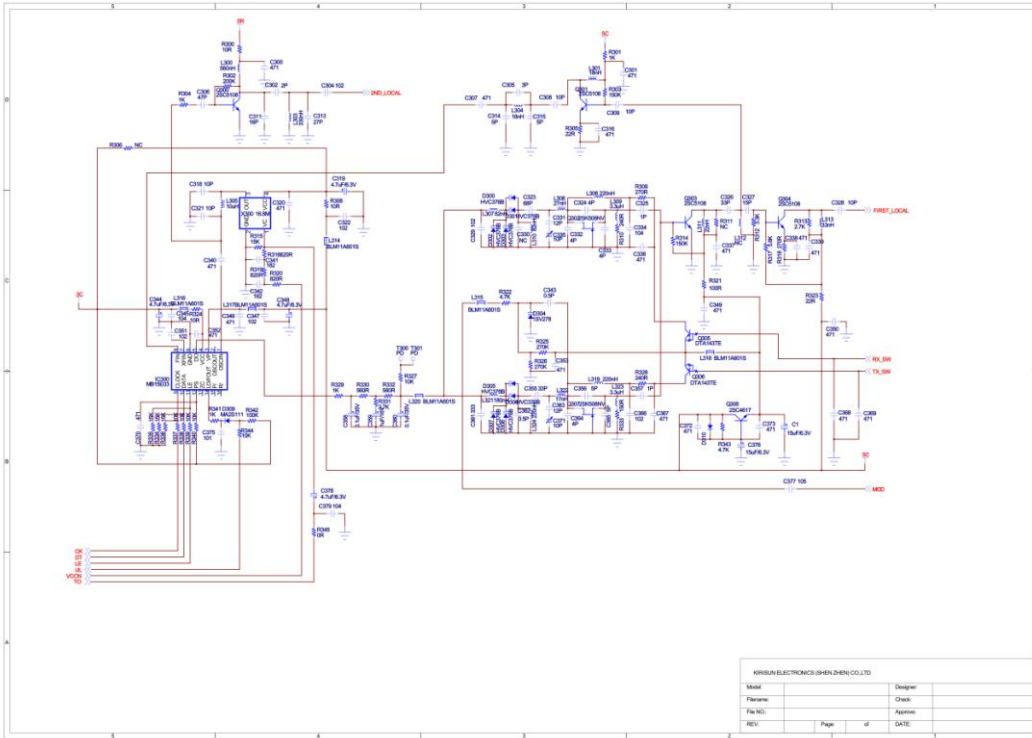


Figure 2 PT6700 Schematic Circuit Diagram



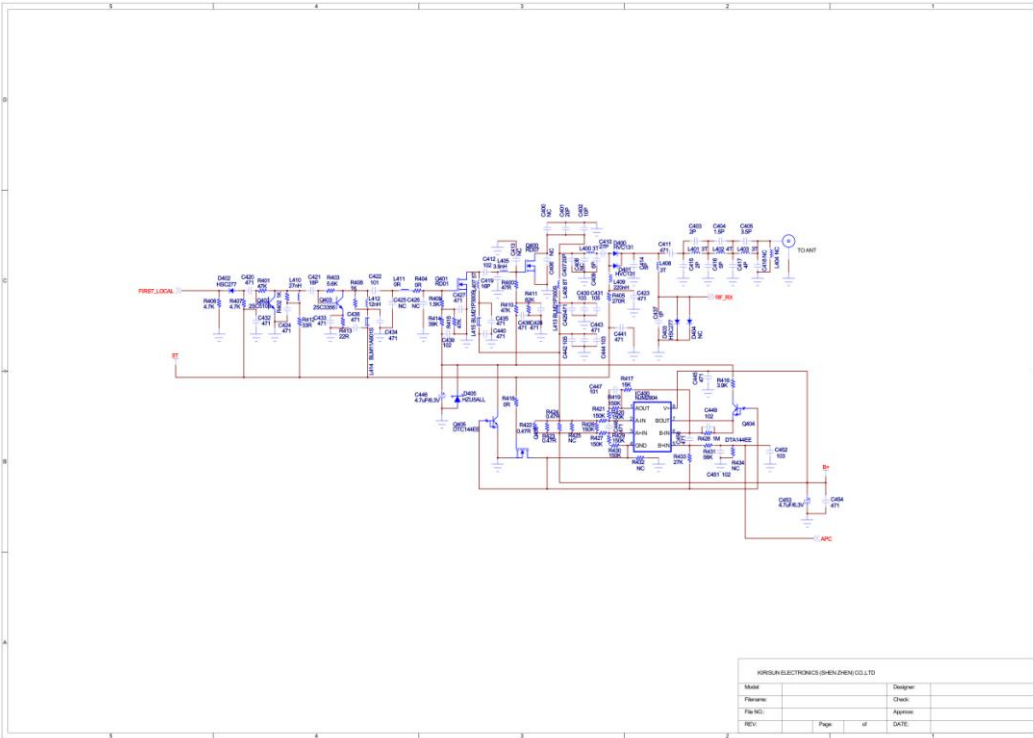


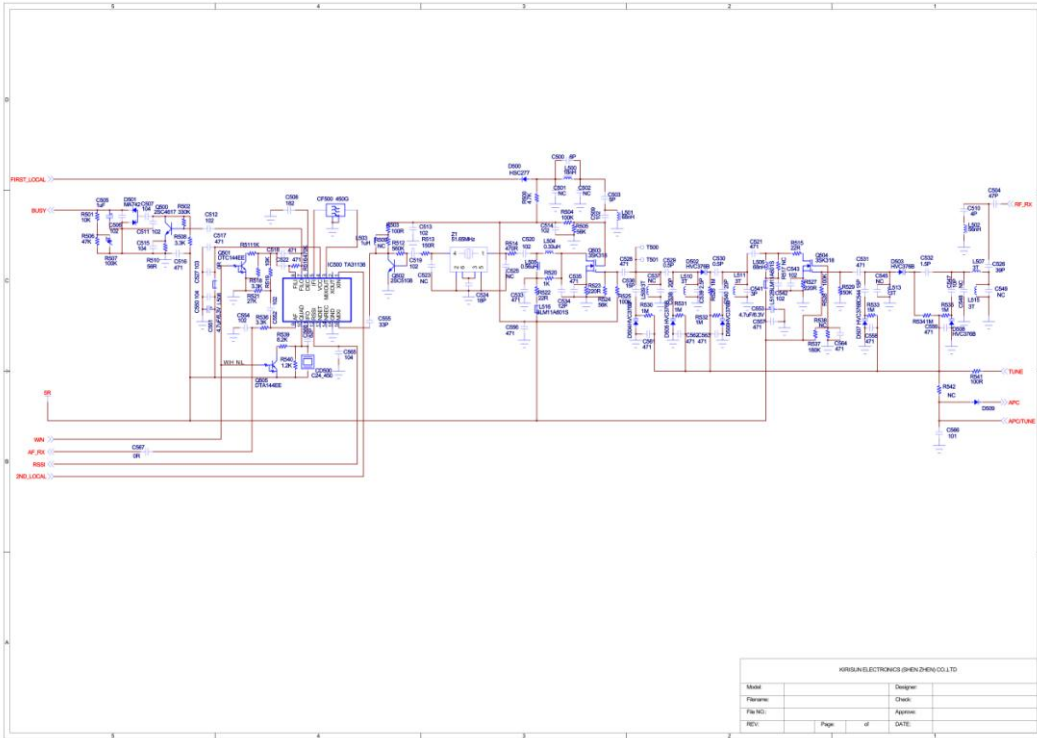


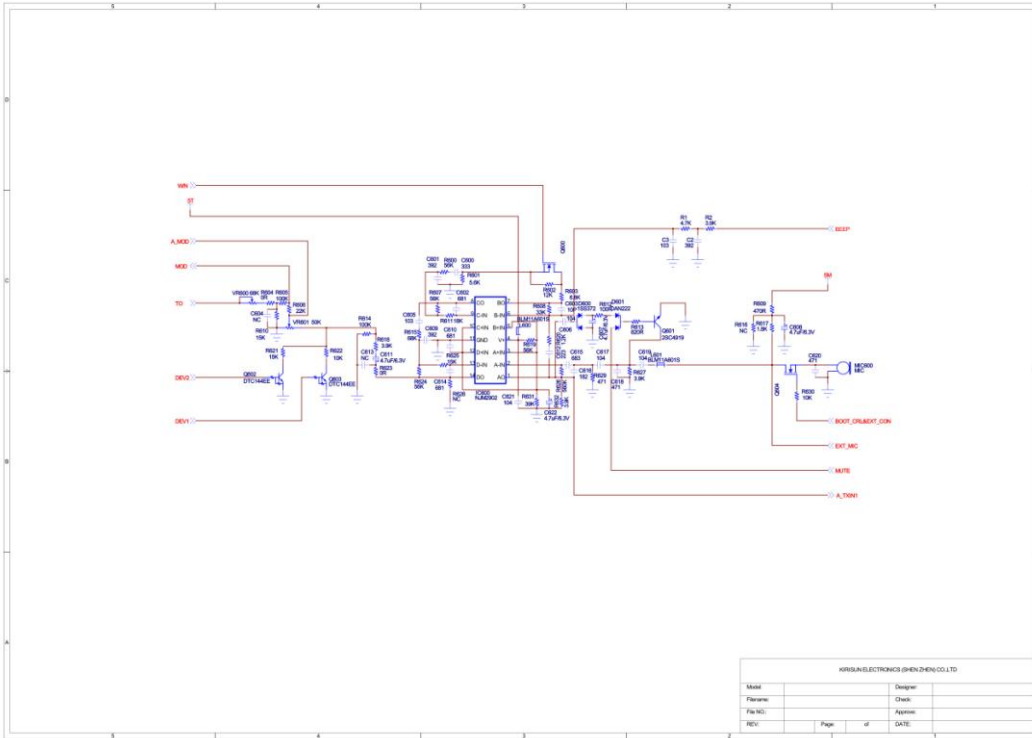


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Model		Designer	
Version		Check	
File No.		Approved	
Rev.		Page	of DATE









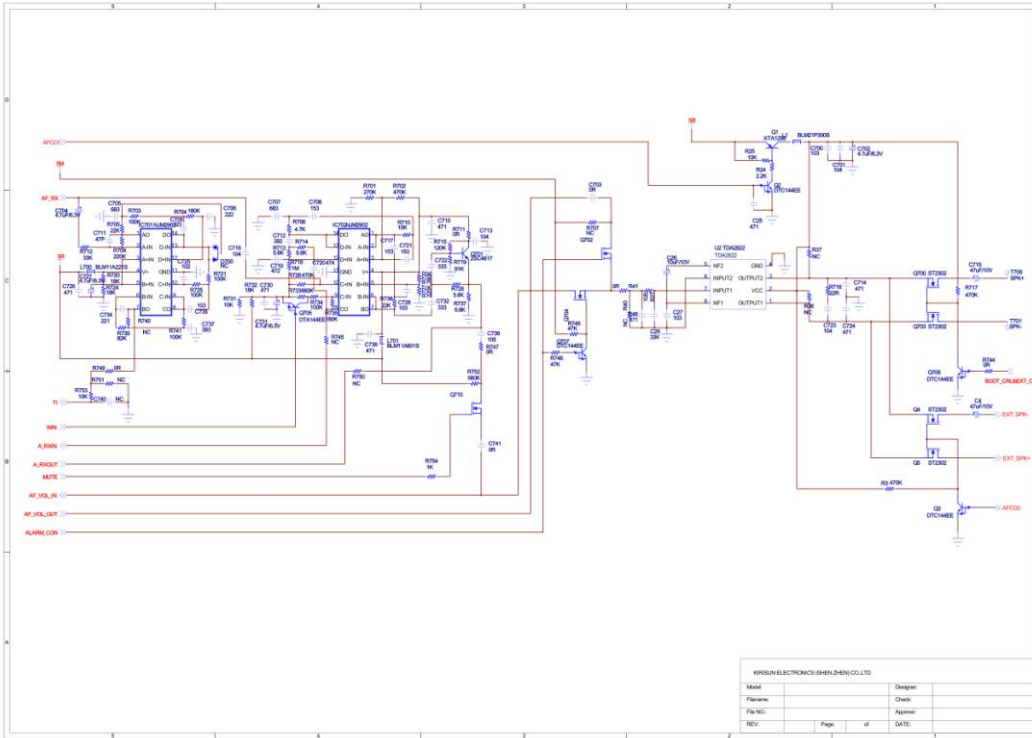


Figure 3 PT6700 Top Layer Position Mark Diagram

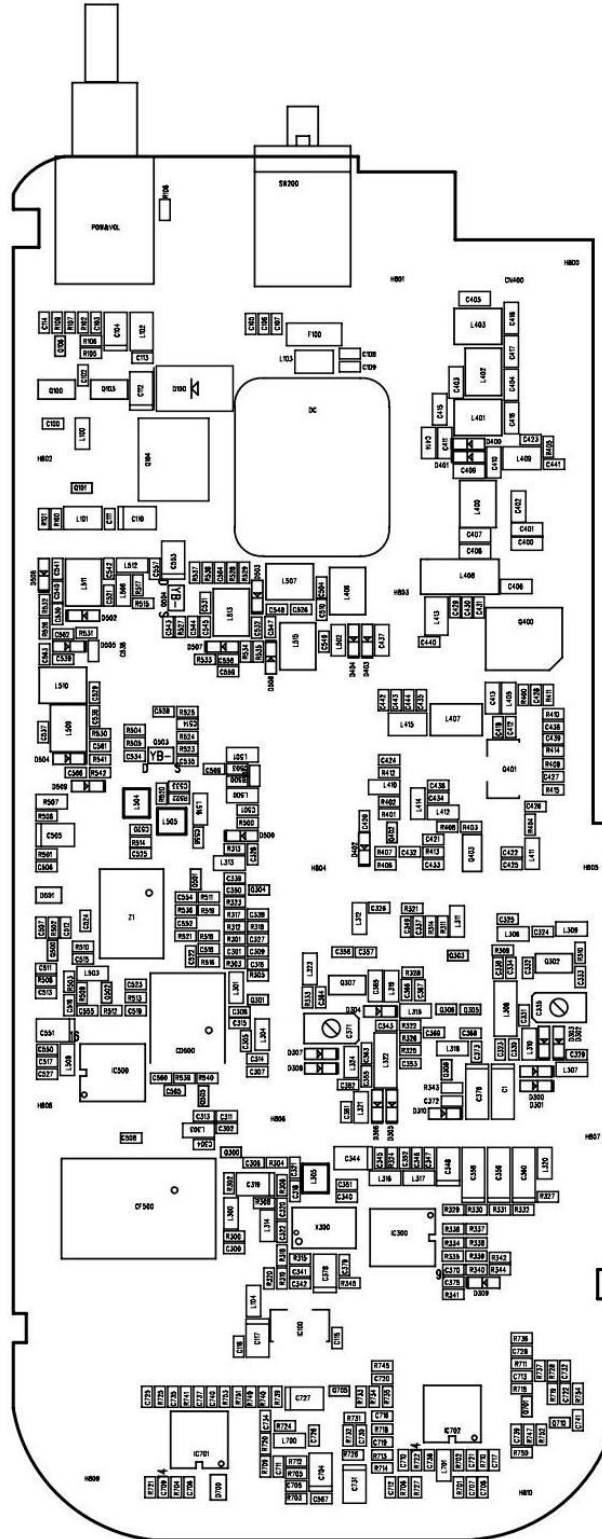


Figure 4 PT6700 Bottom Layer Position Mark Diagram

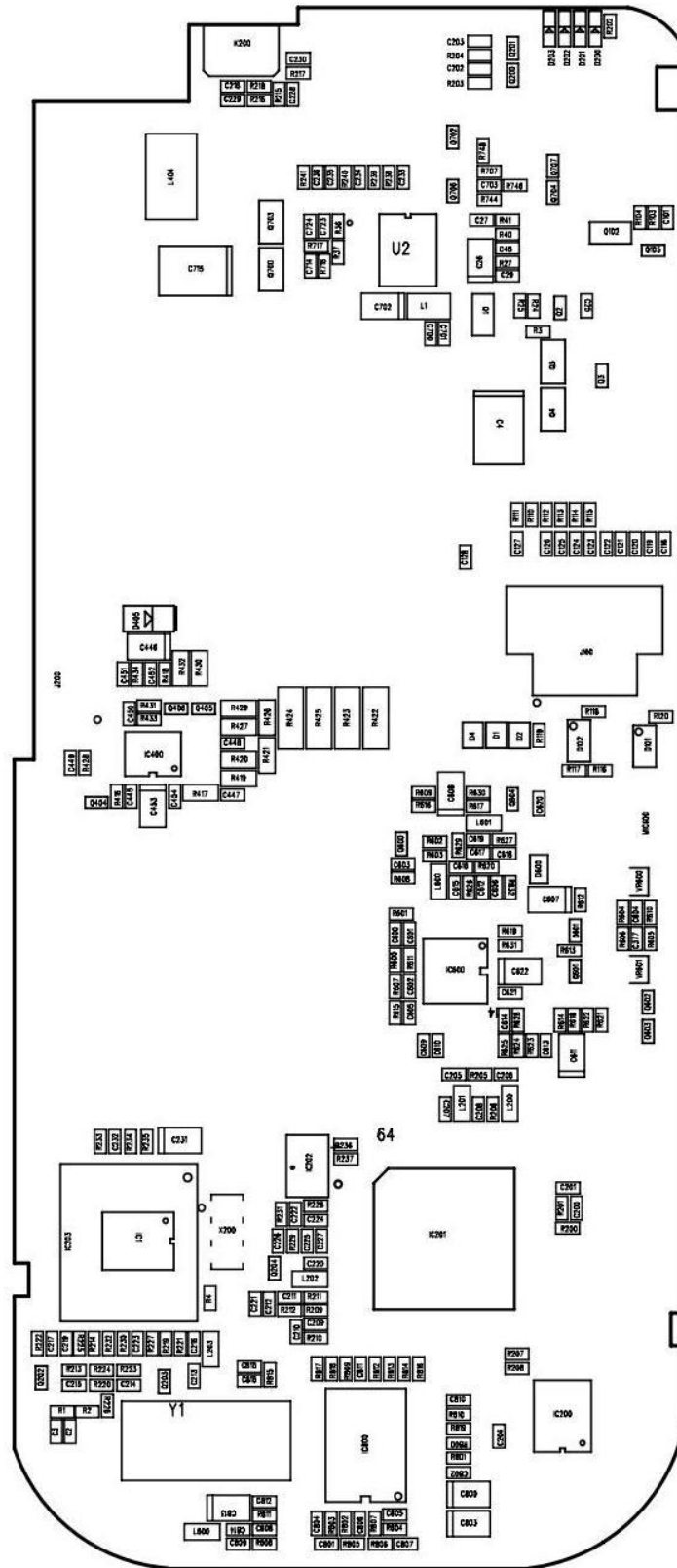


Figure 5 PT6700 Top Layer Position Value Diagram

