

## **Service Manual**

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# 1 H1603A Module Features

## 1.1 H1603A

Figure 1.1: H1603A Module

### 1.2 Basic Feature

Table 1-1: Feature

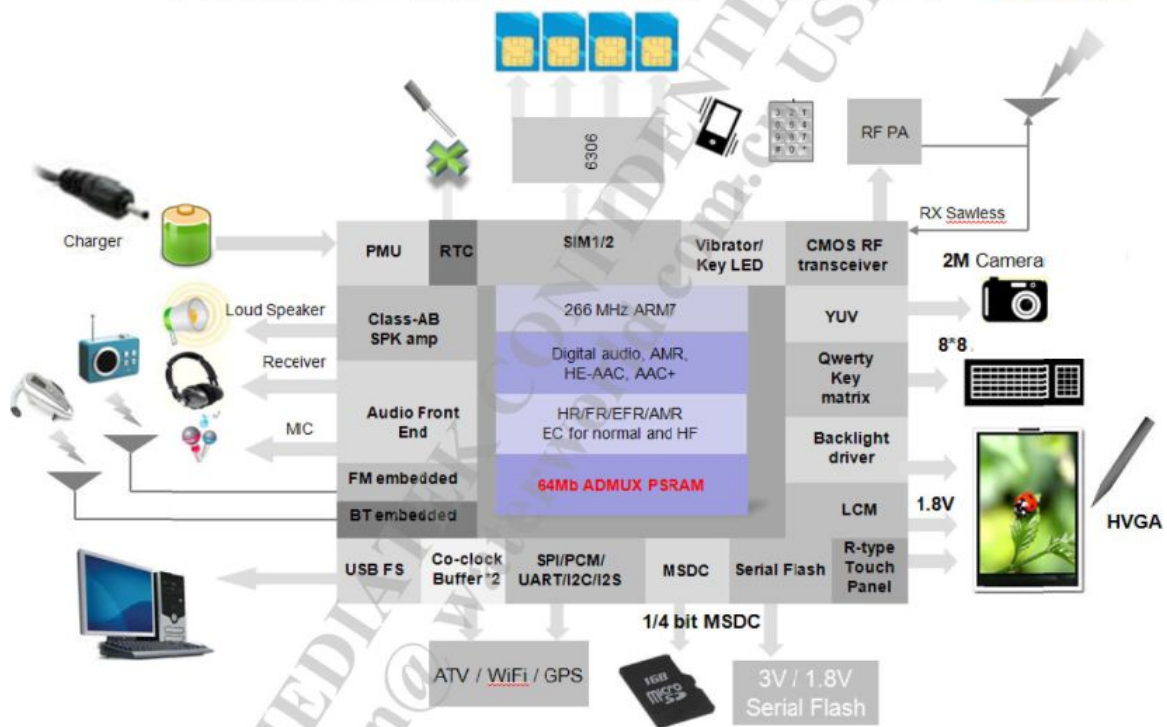
Platform	MTK MT6250D
Band	GSM850/GSM900/DCS1800/PCS1900
LCM	
CAMERA	
MCP Module	32Mbits Norflash+32Mbits pSRAM
BT Module	Internal
FM RX Module	Internal
Audio PA	Internal
SIM	Dual SIM
I/O	Micro USB 5PIN
Torch	Yes
Keypad	Yes

### 1.3 Typical Application

Figure 1.3.1: Typical Application with MT6250D Based platform

## Function Block introduction of 6250

Confidential B



## 2 Mainboard overview

Figure 2.11: top

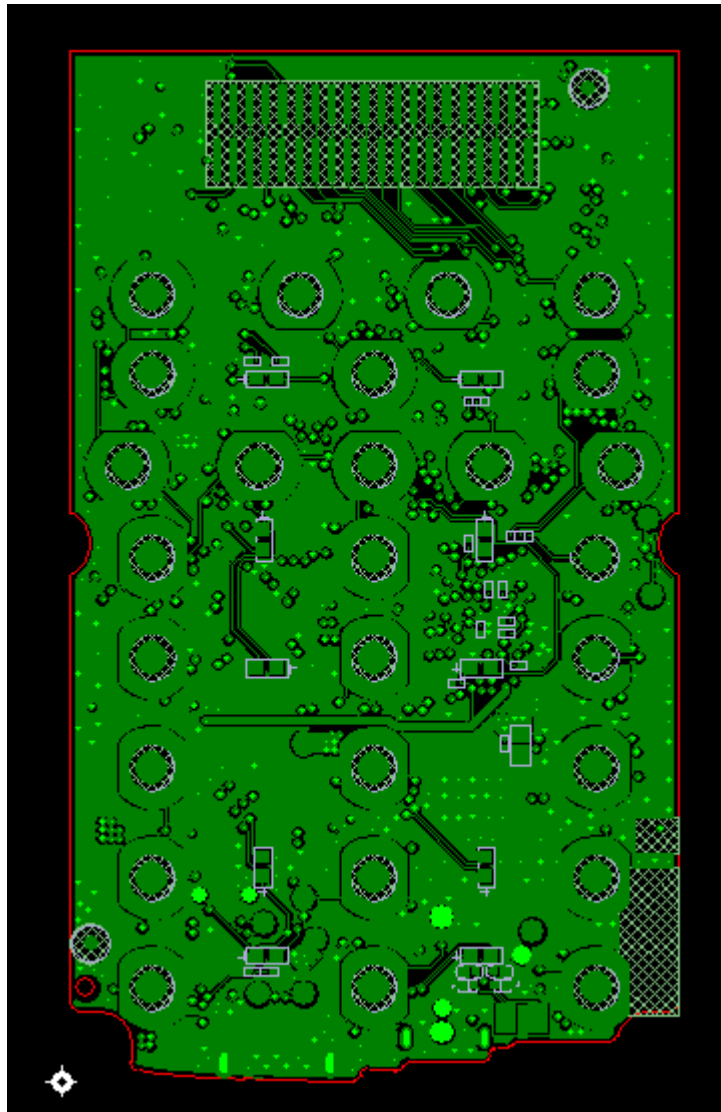
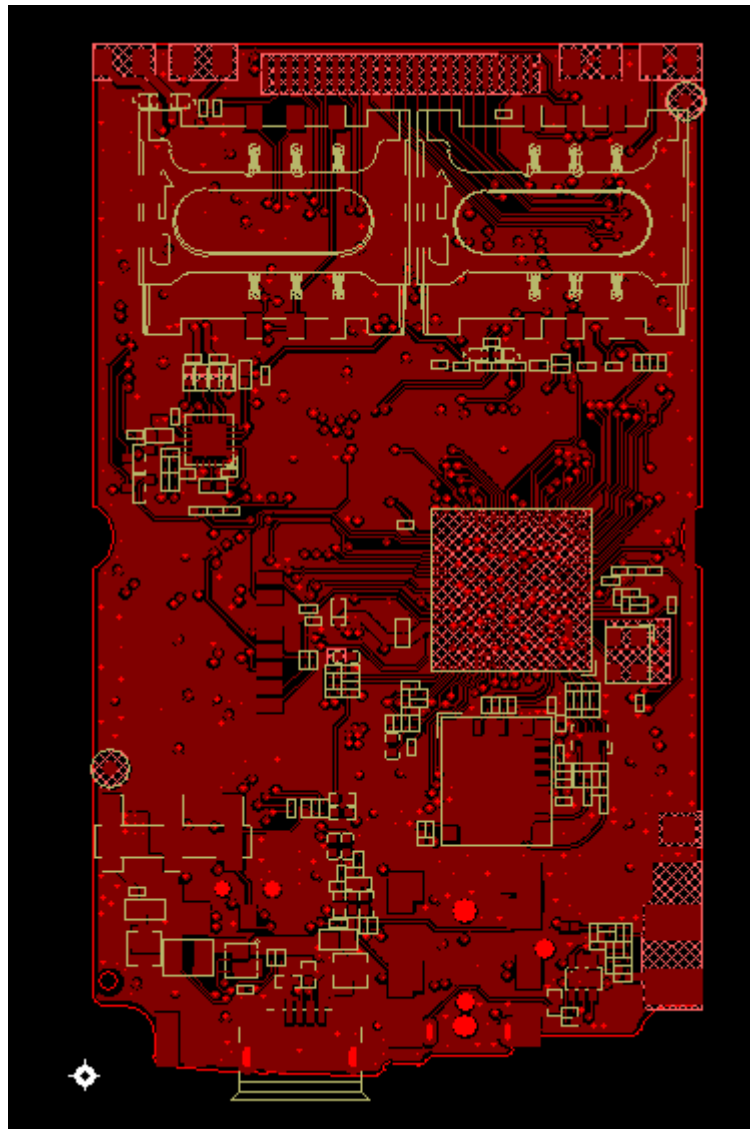


Figure 2.12: bottom



### 3 Detailed Function Circuit

#### 3.1 Download Module

When item U200 (pin N17 KCOL0) status is LOW, program select download mode.

Item U200 (pin N17 KCOL0) connects I/O or TEST point (BOOT\_L). Program can be download through USB I/O or test point when BOO\_L connects GND.

Step 1. whether SMD component of D/L Circuit is correct, not damaged and missing;

Step 2. whether PCB route is connecting;

Step 3. whether IC U200 is damaged.



Figure 3.1.1 BB IC D/L interface

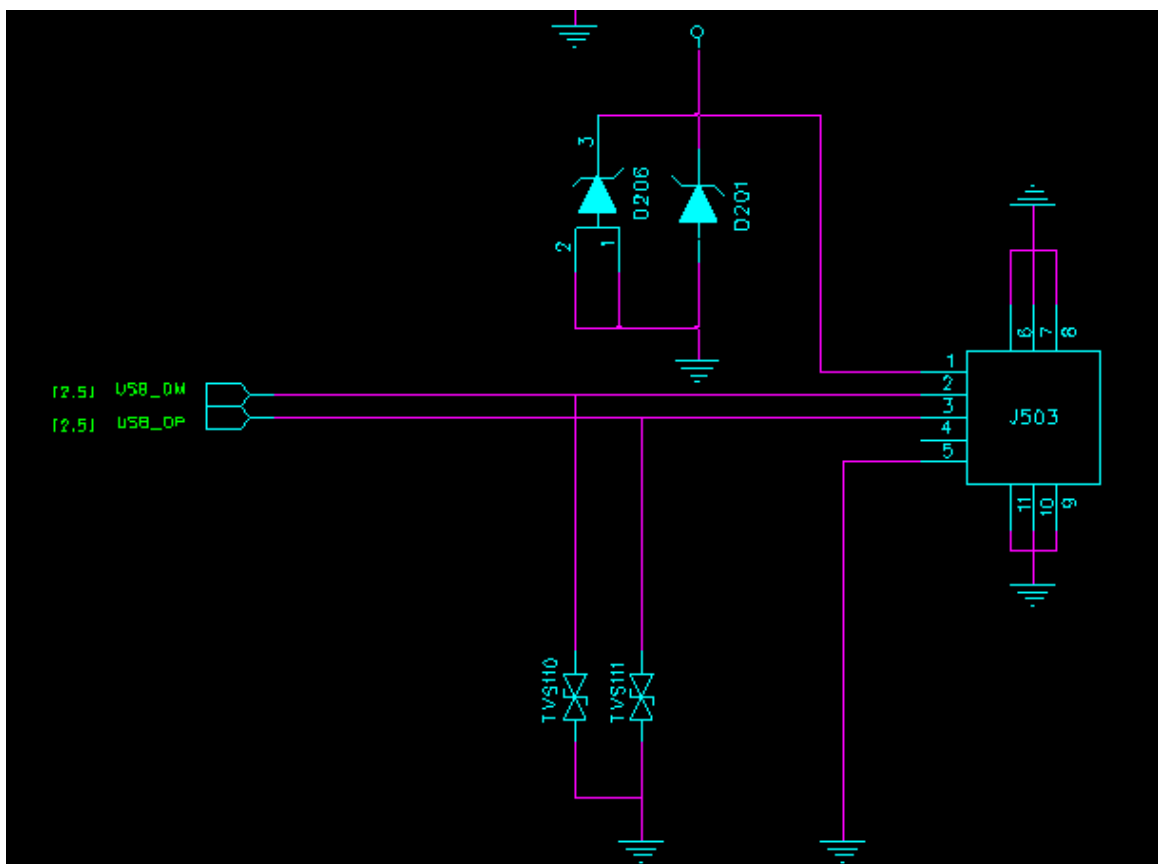


Figure 3.1.2 USB I/O interface

## 3.2 Audio Module

### 3.2.1 Micphone Circuit

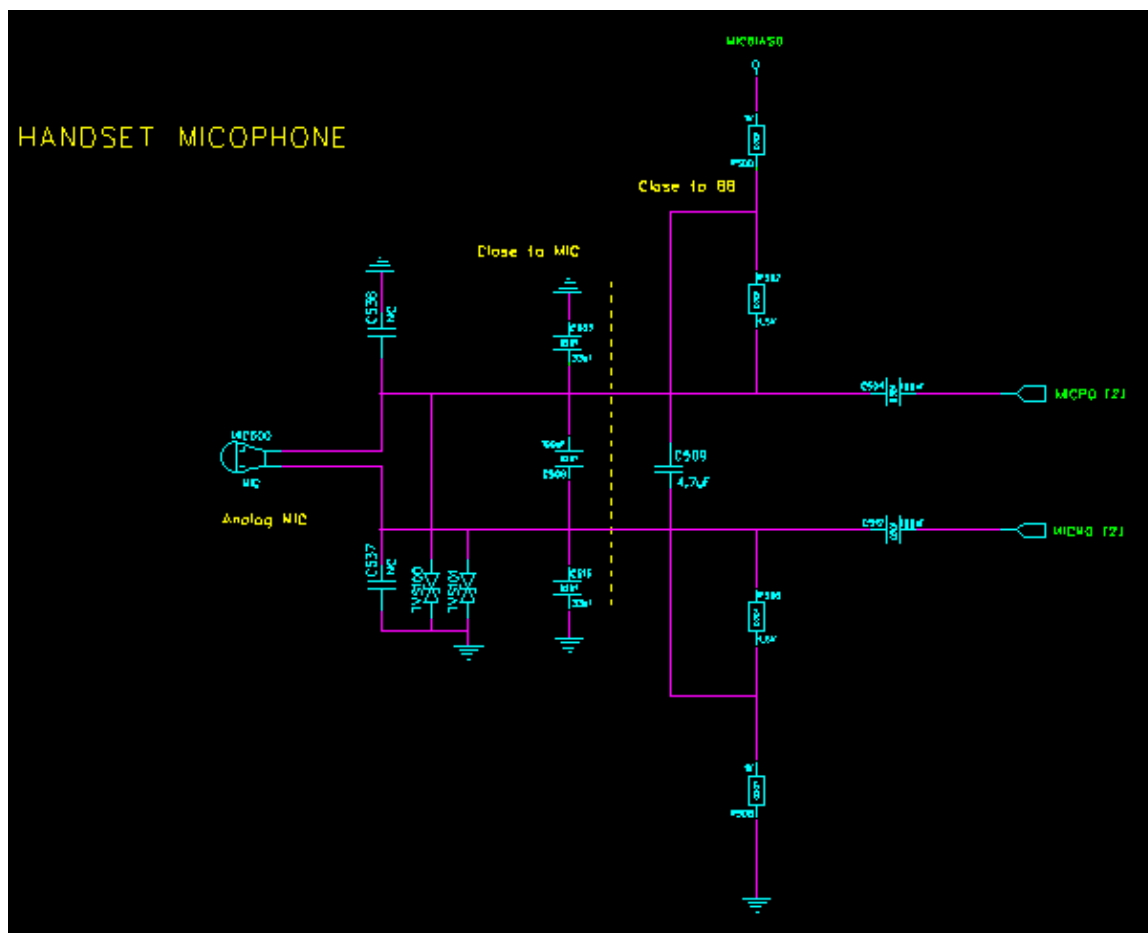


Figure 3.2.1 Micphone circuit

Micphone connect U200 pin U1/U2 through CAP(C504/C512) and MICBIAS voltage is about 2.8volt.

- Step 1. whether SMD component of MIC Circuit is correct, not damaged and missing;
- Step 2. whether PCB route is connecting;
- Step 3. whether IC U200 is damaged.



### 3.2.2 Receiver Circuit

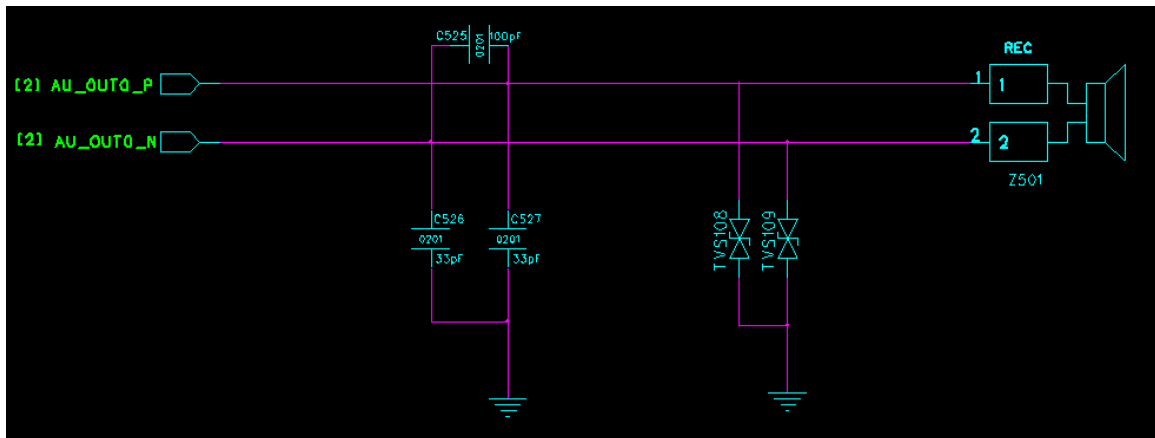


Figure 3.2.2 Receiver circuit

Receiver connect U200 pin T4/U4

Step 1. whether SMD component of Receiver Circuit is correct, not damaged and missing;

Step 2. whether IC U200 is damaged.

### 3.2.3 Speaker Circuit

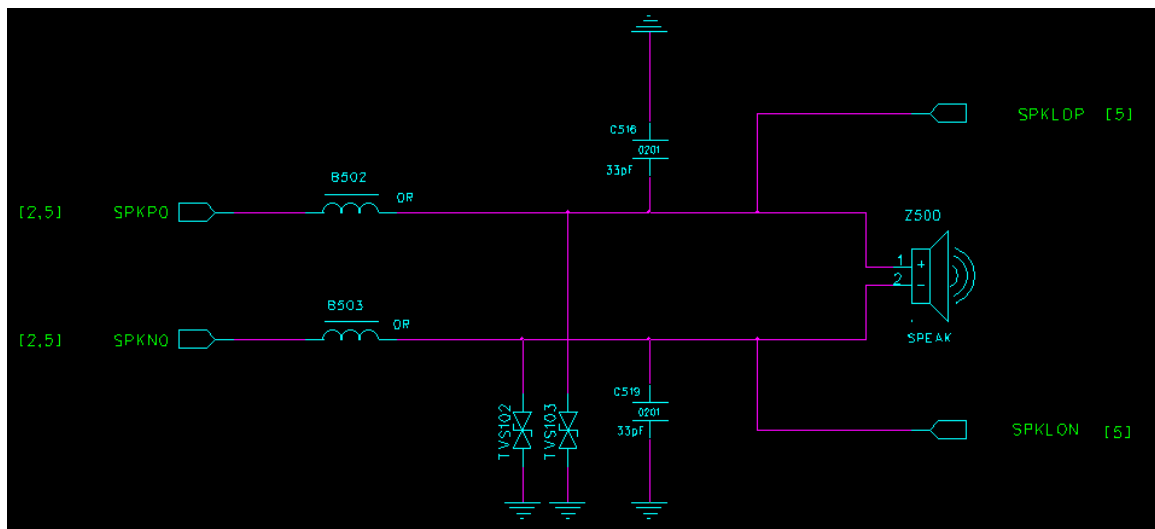


Figure 3.2.3: Speaker circuit

Internal Audio PA(Class AB) is built-in BB IC chipset, which output power is no more than 0.7W.

Step 1. whether SMD component of SPK Circuit is correct, not damaged and missing;

Step 2. whether PCB route is connecting;

Step 3. whether IC U200 is damaged.

### 3.3 FM Module

#### 3.3.1 FM Circuit

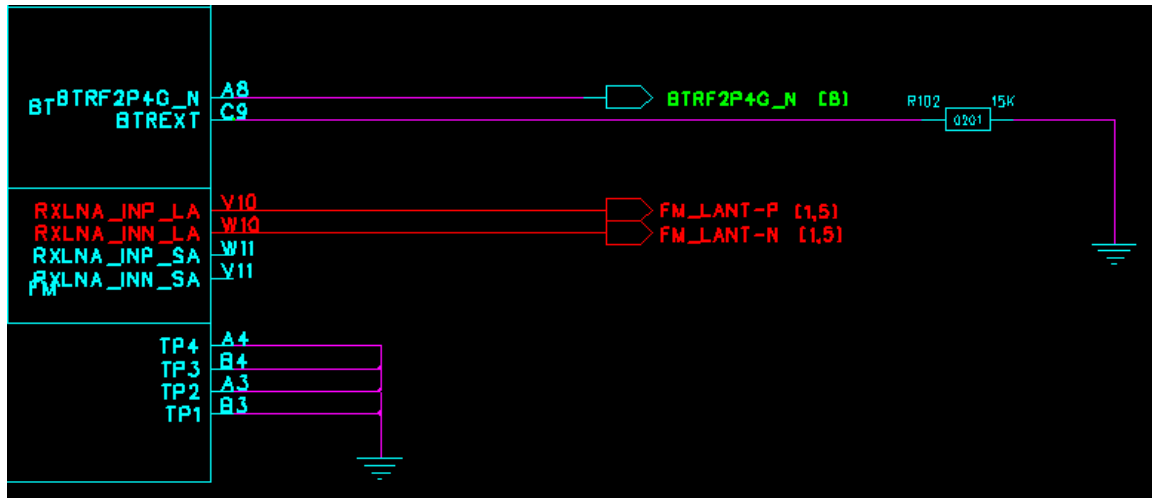


Figure 3.3.1 FM circuit (built-in)

- Step 1. whether SMD peripheral component of FM is correct, not damaged and missing;
- Step 2. whether PCB route is connecting;
- Step 3. whether IC U200 is damaged.

### 3.4 BT Module

Internal BT module ,this module built-in U200-baseband chipset.

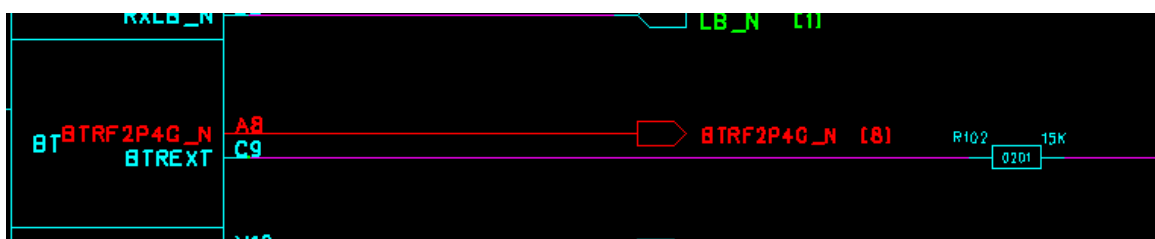


Figure 3.4.1 BT circuit

Bluetooth poor performance of the function, not active, not find BT device, next to match the circuit in normal circumstances, poor bluetooth antenna can lead to poor.

- Step 1. whether BT antenna is correctly placed according to guide;
- Step 2. whether SMD component of BT Circuit is correct, not damaged and missing;
- Step 3. whether PCB route is connecting;
- Step 4. whether IC U200 is damaged.

### 3.5 ATV Module

NONE

### 3.6 WIFI Module

NONE

### 3.7 RF Module

RF Module, type HS8269L, item U101

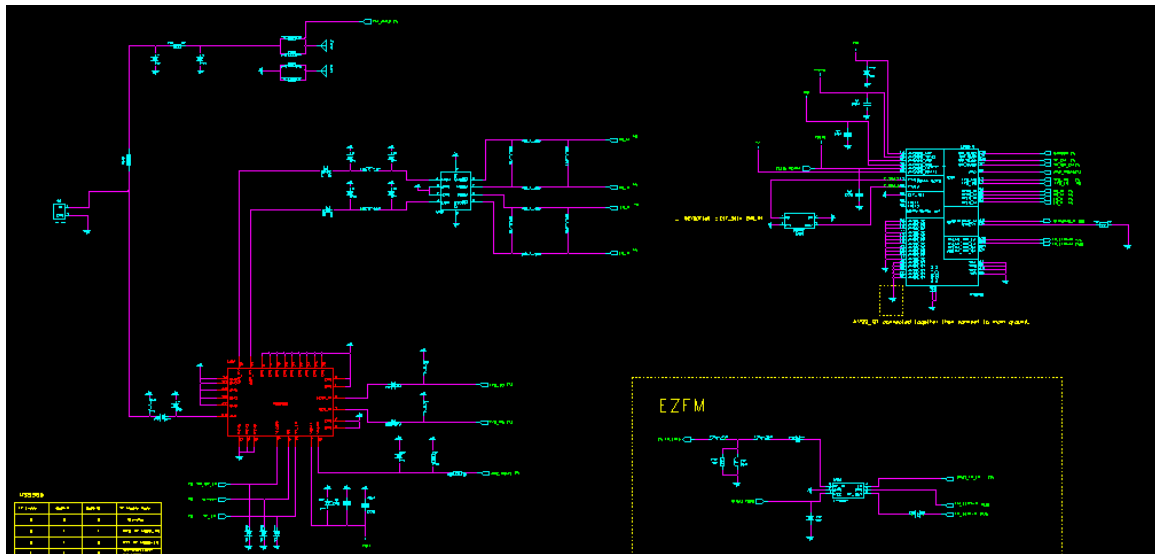


Figure 3.7.1 RF Front-end Module

RF PA is the probability of the most original failure, common faults include: no network, no signal, the signal is weak, only dial emergency calls, etc.

- Step 1. whether GSM antenna is correctly placed according to guide;
- Step 2. whether SMD peripheral component of RF PA is correct, not damaged and missing;
- Step 3. whether PCB route is connecting;;
- Step 5. whether PA IC U101 SMD is OK;
- Step 4. whether IC U200 is damaged.

### 3.8 LCM Module

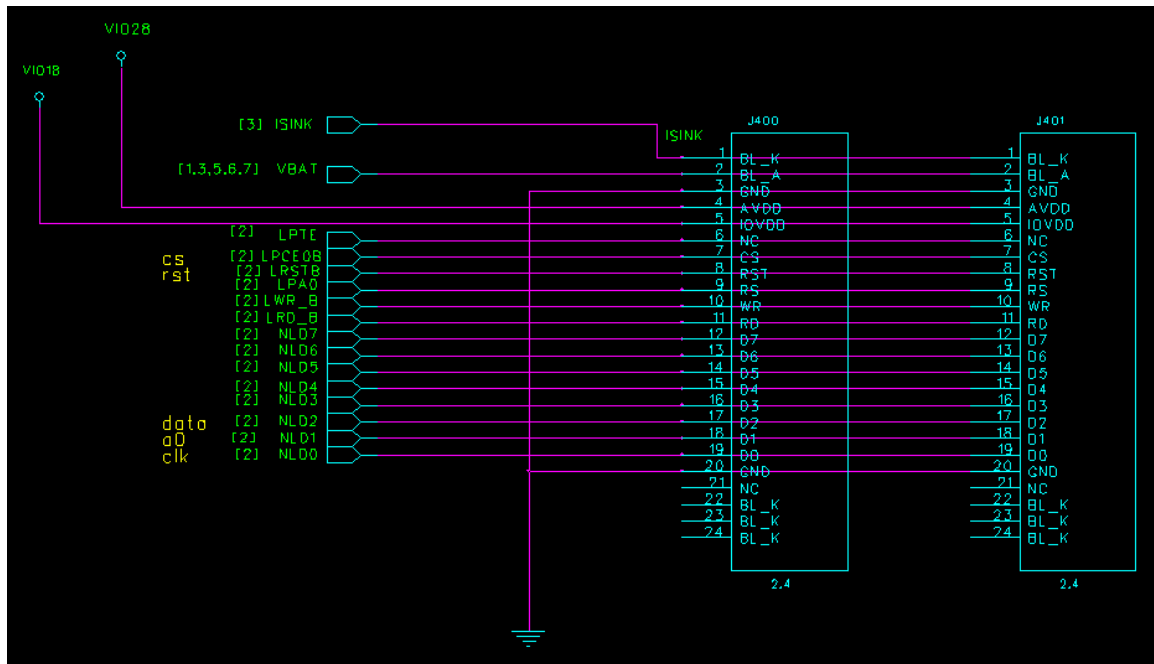


Figure 3.8.1 24PIN\_LCM interface

LCM interface is a channel connecting the motherboard and the screen, generally will not be bad, only when improper welding operation. Note that control iron welding temperature.

### 3.9 CAMERA MODULE

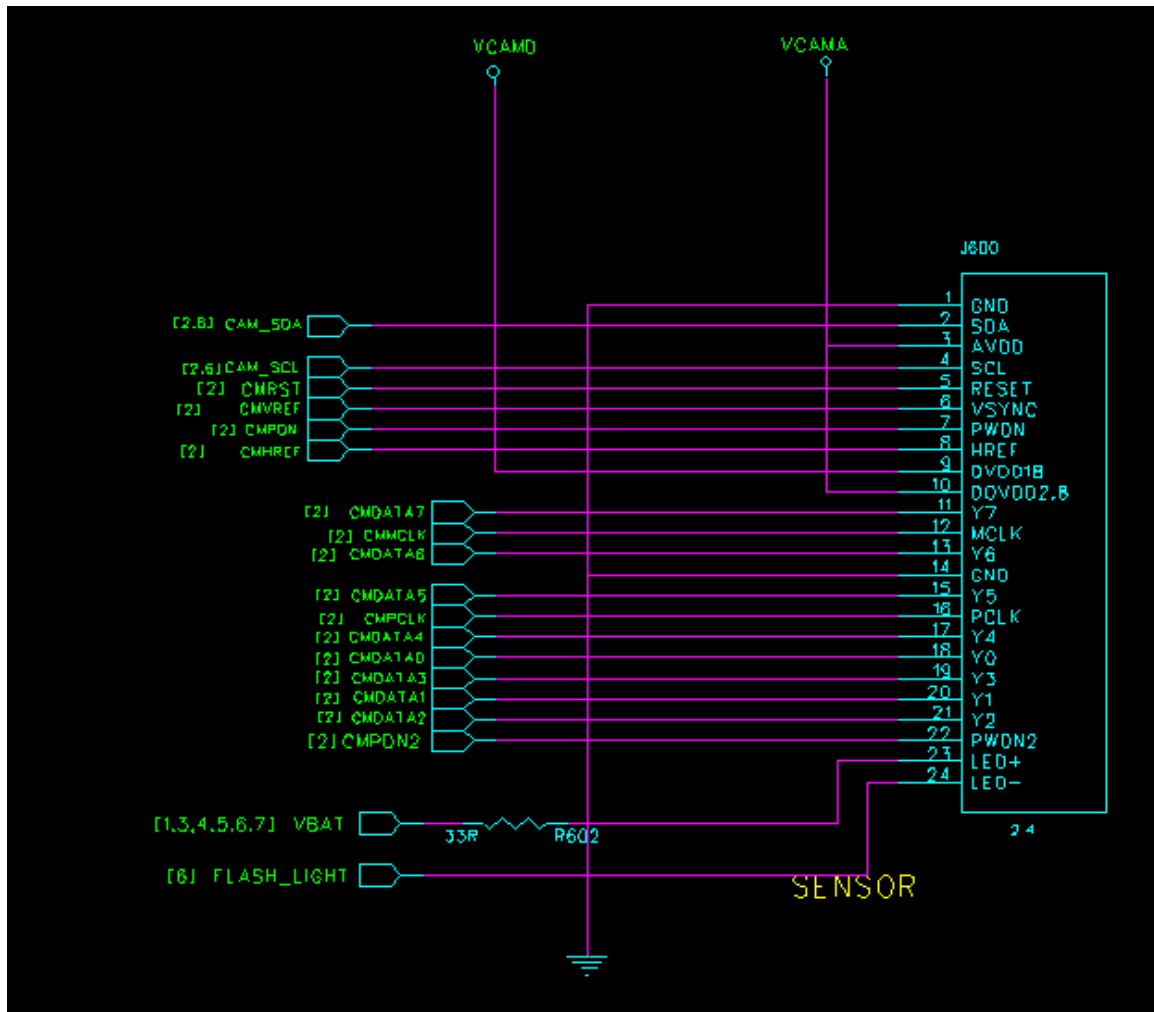


Figure 3.9.1 CAMERA

CAMERA interface is connected to the motherboard and the camera position when welding OK, then, will not cause camera failure Note that the temperature control soldering iron.

### 3.10 KEYPAD interface

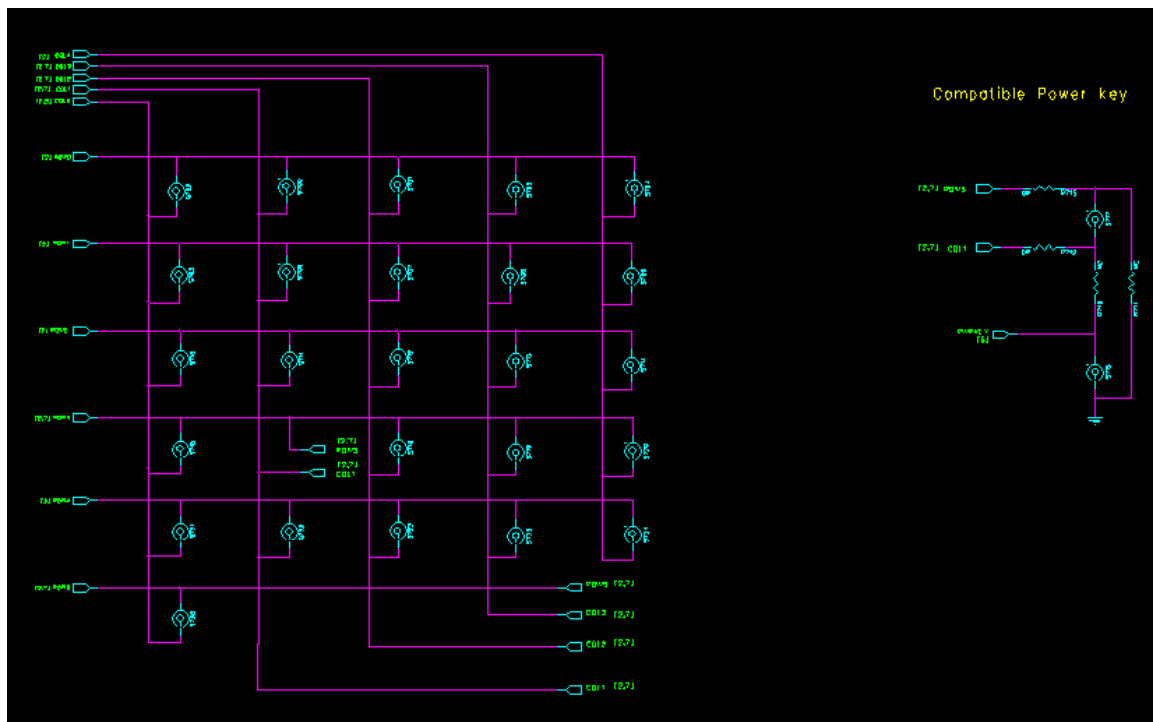


Figure 3.9.1 KEYPAD

## 4 Fault Maintenance

### 4.1 RF Part

Refer to function circuit Part 3.7

### 4.2 BB Part

Refer to function circuit

#### FCC Statement

1. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.

(2) This device must accept any interference received, including interference that may cause undesired operation.

2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

#### NOTE:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

#### SAR Information Statement

Your wireless phone is a radio transmitter and receiver. It is designed and manufactured not to exceed the emission limits for exposure to radiofrequency (RF) energy set by the Federal Communications Commission of the U.S. Government. These limits are part of comprehensive guidelines and establish permitted levels of RF energy for the general population. The guidelines are based on standards that were developed by independent scientific organizations through periodic and thorough evaluation of scientific studies. The standards include a substantial safety margin designed to assure the safety of all persons, regardless of age and health. The exposure standard for wireless mobile phones employs a unit of measurement known as the Specific Absorption Rate, or SAR. The SAR limit set by the FCC is 1.6 W/kg. \* Tests for SAR are conducted with the phone transmitting at its highest certified power level in all tested frequency bands. Although the SAR is determined at the highest certified power level, the actual SAR level of the phone while operating can be well below the maximum value. This is because the phone is designed to operate at multiple power levels so as to use only the power required to reach the network. In general, the closer you are to a wireless base station antenna, the lower the power output. Before a

phone model is available for sale to the public, it must be tested and certified to the FCC that it does not exceed the limit established by the government adopted requirement for safe exposure. The tests are performed in positions and locations (e.g., at the ear and worn on the body) as required by the FCC for each model. The highest SAR value for this model phone when tested for use at the ear is 1.131W/Kg and when worn on the body, as described in this user guide, is 1.048W/Kg(Body-worn measurements differ among phone models, depending upon available accessories and FCC requirements). While there may be differences between the SAR levels of various phones and at various positions, they all meet the government requirement for safe exposure. The FCC has granted an Equipment Authorization for this model phone with all reported SAR levels evaluated as in compliance with the FCC RFexposure guidelines. SAR information on this model phone is on file with the FCC and can be found under the Display Grant section of <http://www.fcc.gov/oet/fccid> after searching on

FCC ID: 2ABOSSKYROC Additional information on Specific Absorption Rates (SAR) can be found on the Cellular Telecommunications Industry Association (CTIA) web-site at <http://www.wow-com.com>. \* In the United States and Canada, the SAR limit for mobile phones used by the public is 1.6 watts/kg (W/kg) averaged over one gram of tissue. The standard incorporates a substantial margin of safety to give additional protection for the public and to account for any variations in measurements.

#### Body-worn Operation

This device was tested for typical body-worn operations. To comply with RF exposure requirements, a minimum separation distance of 15mm must be maintained between the user's body and the handset, including the antenna. Third-party belt-clips, holsters, and similar accessories used by this device should not contain any metallic components. Body-worn accessories that do not meet these requirements may not comply with RF exposure requirements and should be avoided. Use only the supplied or an approved antenna.