# CIRCUIT DESCRIPTION
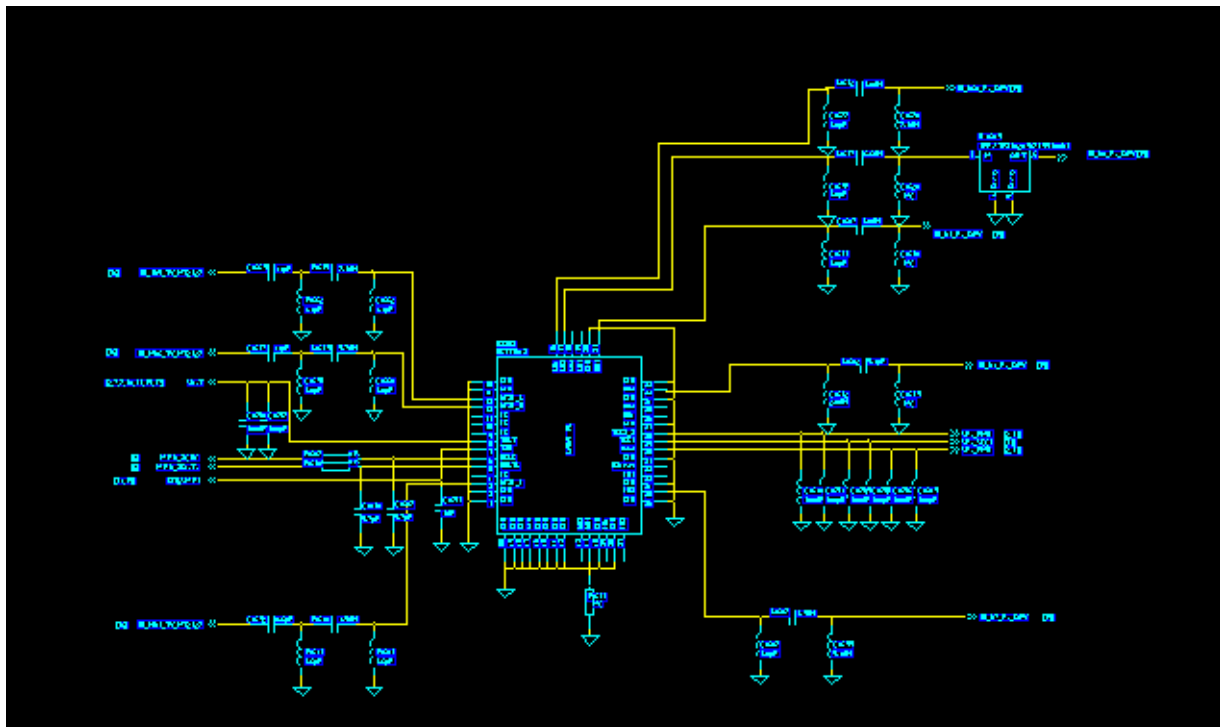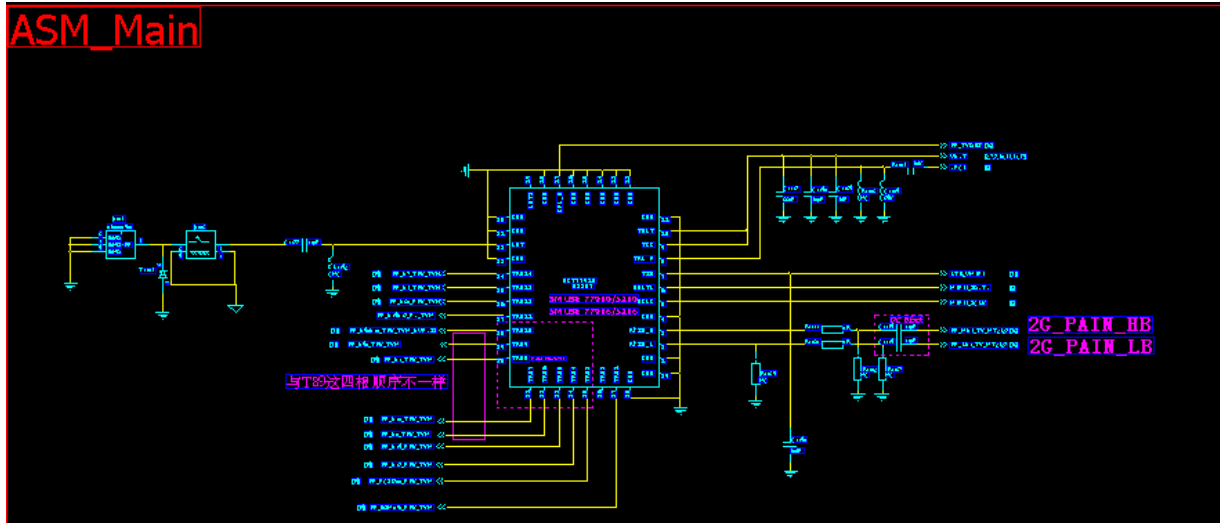




## 1、GSM/WCDMA/LTE Transmitter/Receiver Circuit

The development and design is based on MT6735V/WA MT6169V/A platform，a Four-band
（850/900/1800/1900）and three-band（B2/B4/B5）WCDMA/HSPA and four-band （B2/B4/B5/B17）FDD
mobile phone. The transmitter operates in a half-duplex for GSM and full-duplex for WCDMA/HSDPA
and FDD .

The majority of the phone circuitry consists: the MT6735V/WA Application and Modem
Processor,MT6328V power manage IC,MT6169 RF Transceiver , GSM PA: SKYWORKS SKY77910 for
DCS1800/PCS1900/GSM850/EGSM900,and SKYWORKS PA:SKY77643 for
Band2/Band4/Band5/Band17. The Diversity Antenna switch: SKYWORKS SKY13416 Antenna switch.

2G working frequency

GSM850: 824–849 MHz (TX), 869–894 MHz (RX)

GSM 900: 880–915 MHz (TX), 925–960 MHz (RX)

DCS 1800: 1710–1785 MHz (TX), 1805–1880 MHz (RX)

PCS 1900: 1850–1910 MHz (TX), 1930–1990 MHz (RX)

bandwidth ： 200k

modulation mode ： GMSK/8PSK


3G working frequency

WCDMA 850: 824–849 MHz (TX), 869–894 MHz (RX)

WCDMA1700: 1710-1755 MHz (TX), 2110-2155 MHz (RX)

WCDMA 1900: 1850–1910 MHz (TX), 1930–1990 MHz (RX)

bandwidth ： 5MHz

modulation mode ： QPSK/16QAM/64QAM

LTE working frequency

FDD 2 ： 1850–1910 MHz (TX), 1930–1990 MHz (RX)

FDD 4 ： 1710-1755 MHz (TX), 2110-2155 MHz (RX)

FDD 5 ： 824–849 MHz (TX), 869–894 MHz (RX)

FDD 12 ： 699-716 MHz (TX), 728–746 MHz (RX)

FDD 17 ： 704-716 MHz (TX), 734–746 MHz (RX)

bandwidth ： 1.4MHz、3MHz、5MHz、10MHz、15MHz、20MHz

modulation mode ： QPSK/16QAM/64QAM

Antenna gain

GSM850        -1.1dBi

GSM900         -0.3dBi

DCS1800      -0.5dBi

PCS1900      -0.7dBi

WCDMA900    -0.9dBi

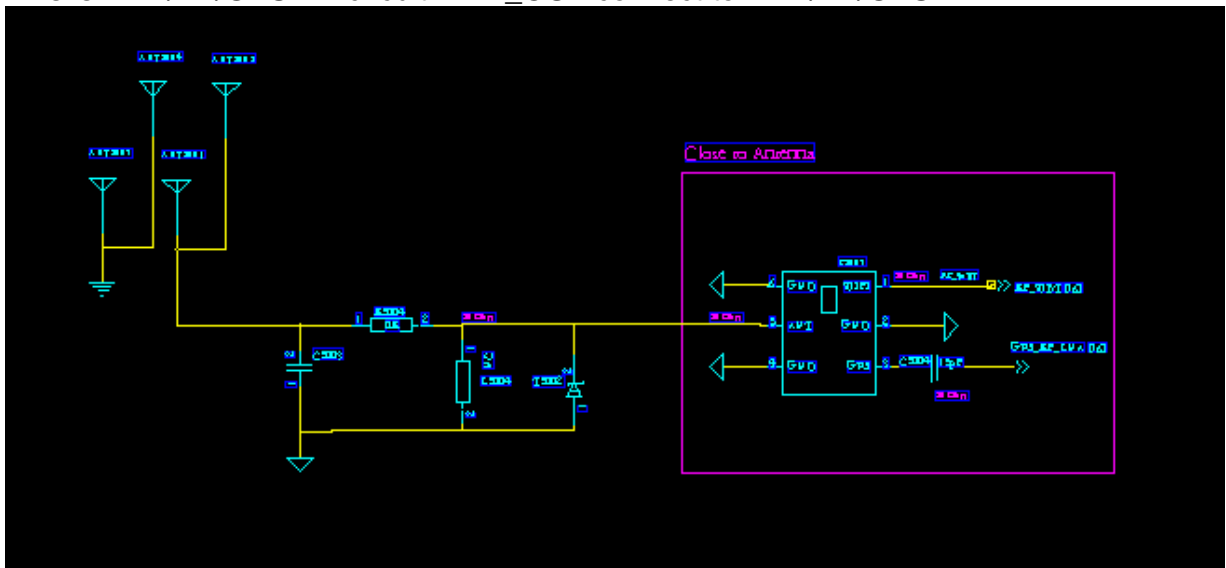WCDMA2100 -0.5dBi

FDD

B2          -0.6dBi

B4          -0.4dBi

B5           -0.8dBi

B12       -0.5dBi

B17       -1.0dBi


## 2、WIFI/BT Transmitter/Receiver Circuit

This is WIFI/BT/GPS RF circuit. ANT_OUT connect to WIFI/BT/GPS.



WIFI standard ：802.11B　802.11G　802.11N
working frequency ：2412-2462MHZ
modulation mode ： DBPSK ， DQPSK,CCK,BPSK,QPSK,16QAM,64QAM
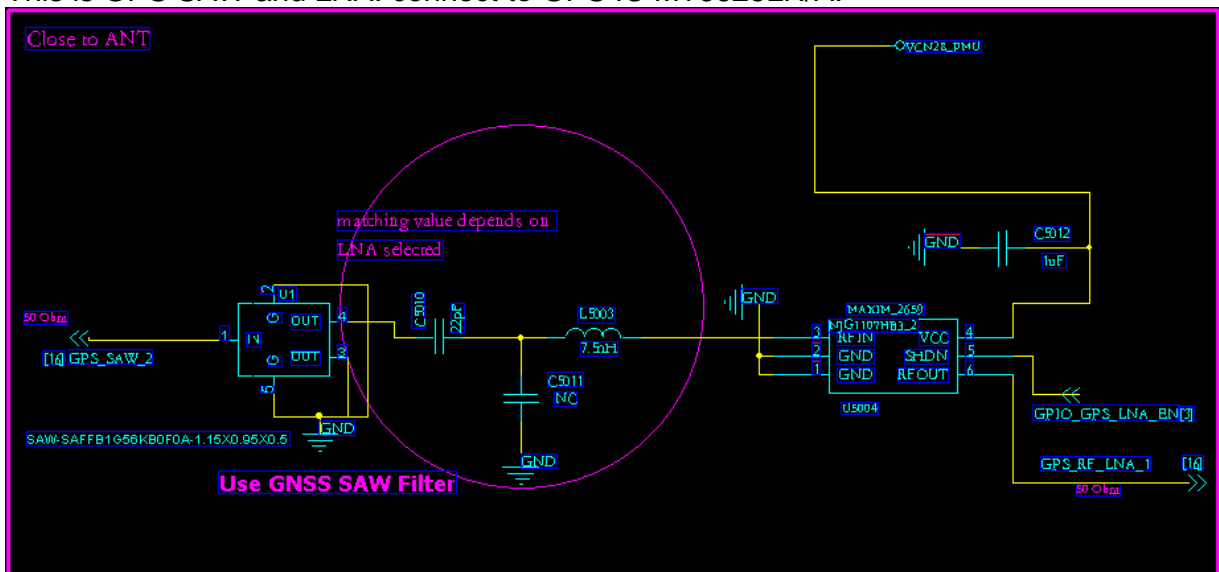Antenna gain
WIFI　　-1.3dBi
BT　version ：4.1
working frequency ： 2402-2480MHZ
modulation mode ： GFSK/DQPSK/8-DPSK
Antenna gain
BT　　　-1.3dBi

This is GPS SAW and LNA. connect to GPS IC MT6625LN/A.



GPS working frequency ： 1575.42MHz Antenna gain
Antenna gain
GPS　　-1.2dBi

## 4、Power ON/OFF Circuit

After inserting the battery, VRTC output voltage of 2V, and then the 32.768KHZ crystal start to work. Now press the power on/off switch CON1620, PMU will woking，then the BB inner program start initialing. Press the power on/off switch about 2s at normal work status, CPU will detect the signal and you will see the power off item.

## 5、Charger Circuit
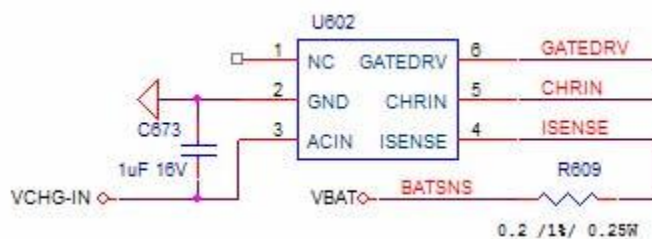
The U602 integrate the charger control circuit. When inserting the charging adapter, CHRIN detect high level, and start the charging program. GATEDRV output Anallog voltage to control charging current. The ISENSE and BATSNS between R609 is charge current A/D input.

The GATEDRV/CHRIN/ISENSE/BATSNS will connect BB(MT6573) is charge controler.

# 6、LCD Circuit
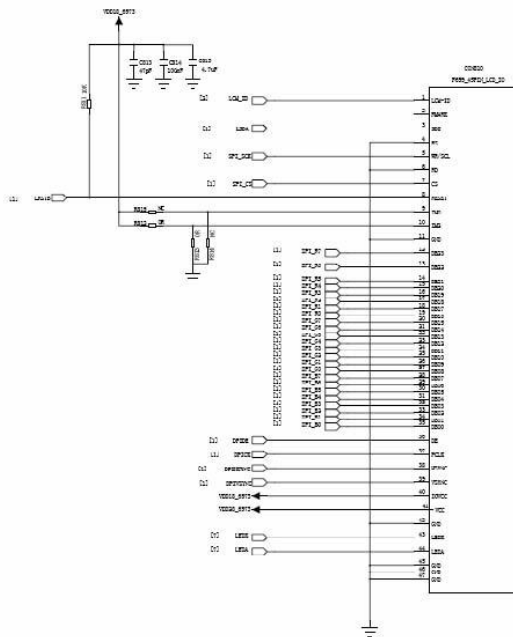
The LCD connects to MT6573 The signals are defined as follows:

IOVCC：LCD interface driver voltage，provided by MT6573 VCC：LCD inner driver voltage，provided by MT6573 CS：Chip select signal RESET：Reset signal VSYNC：LCD line synchronization signal HSYNC：LCD field synchronization signal WR： LCD write signal DB00～DB23：LCD data signal
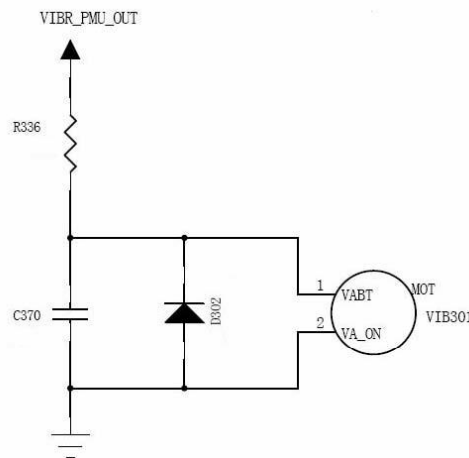
# 7、LCD Backlight Circuit
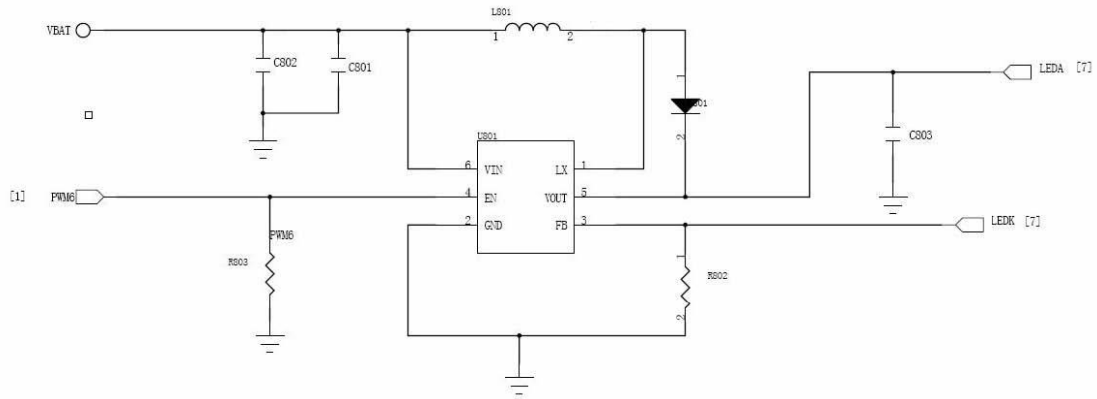
The keypad backlight is provided by 10 LEDs. The LED is serial connection. The positive pole connects to LEDA, and the negative pole connects to LEDK.R802 is used for limiting the current of LED.

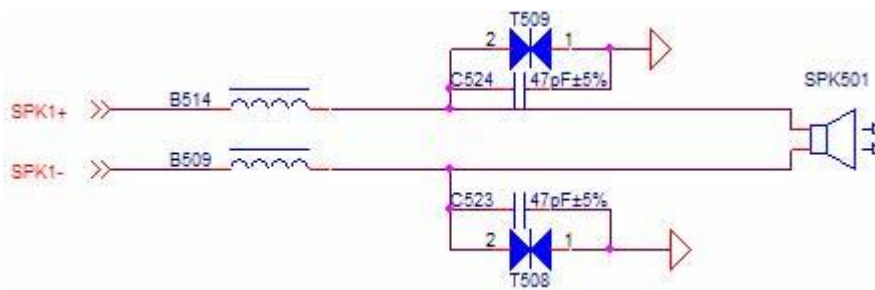LCD backlight is provided by 10 LEDs. The LED controled by the IC(KDT259).
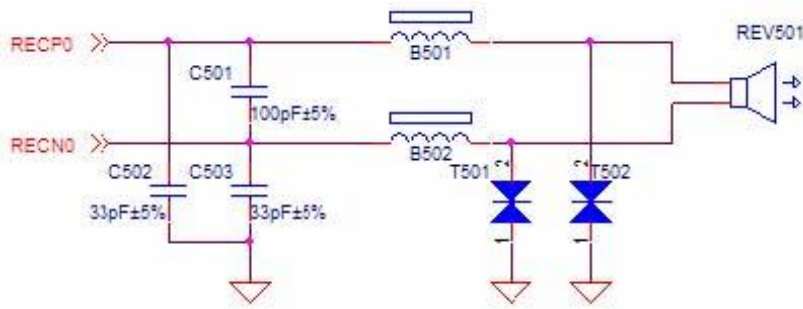
## 8、Motor Control Circuit

The BB controls the motor open or close. When the control pin VIBRATOR is high. the motor start to work, and when it is Low, the motor stop vibrate. The diode D302 is used as protect diode.
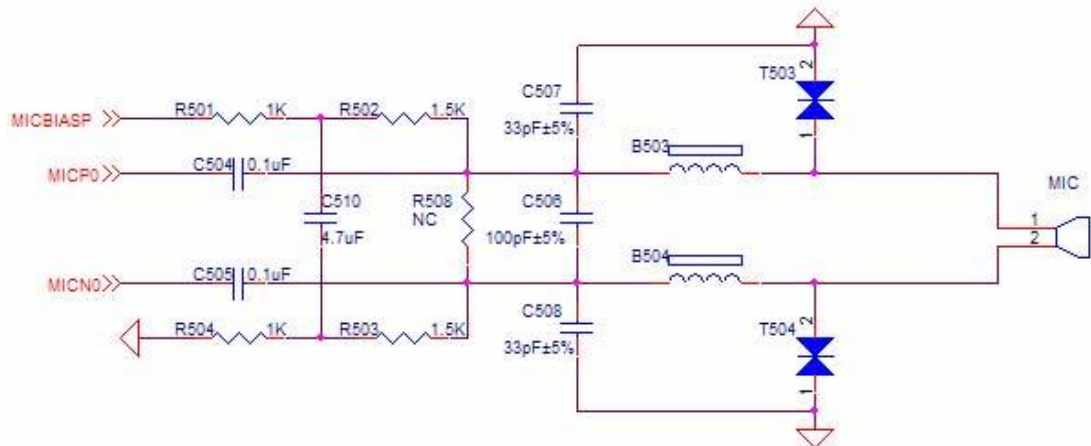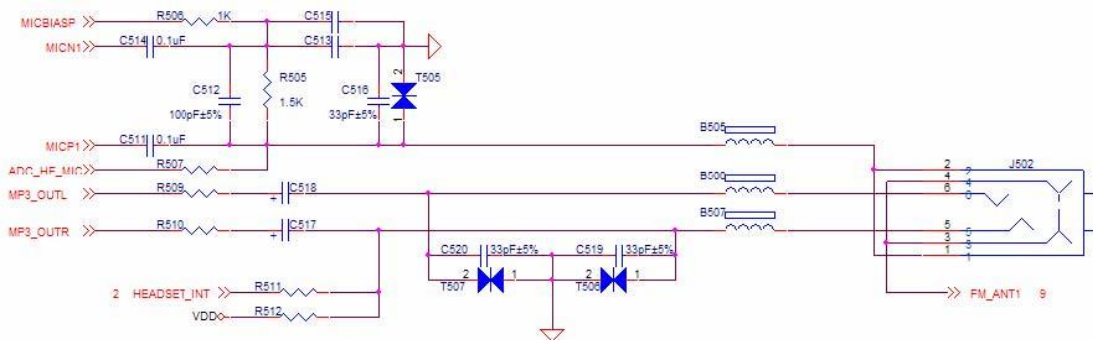


## 9、Audio Circuit

The receiver is drive by inner power amplifier of BB(MT6573). The speaker is drive by VBAT.

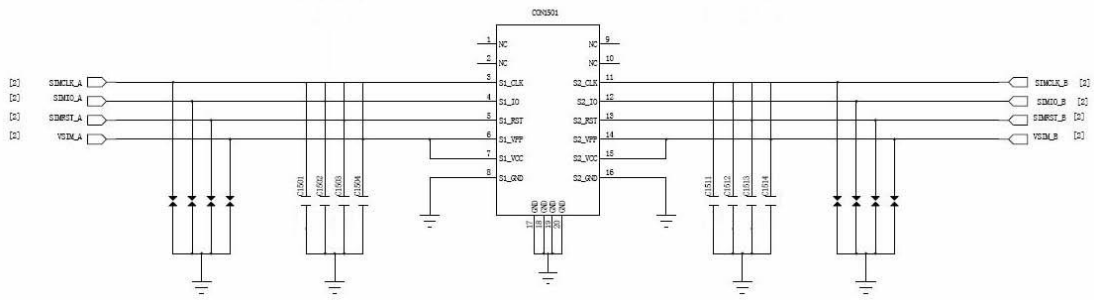This is micphone circuit. MICBIASP provides the bias voltage for micphone.



This is headset circuit.HEADSET_INT is headset insert signal.When headset insert,it



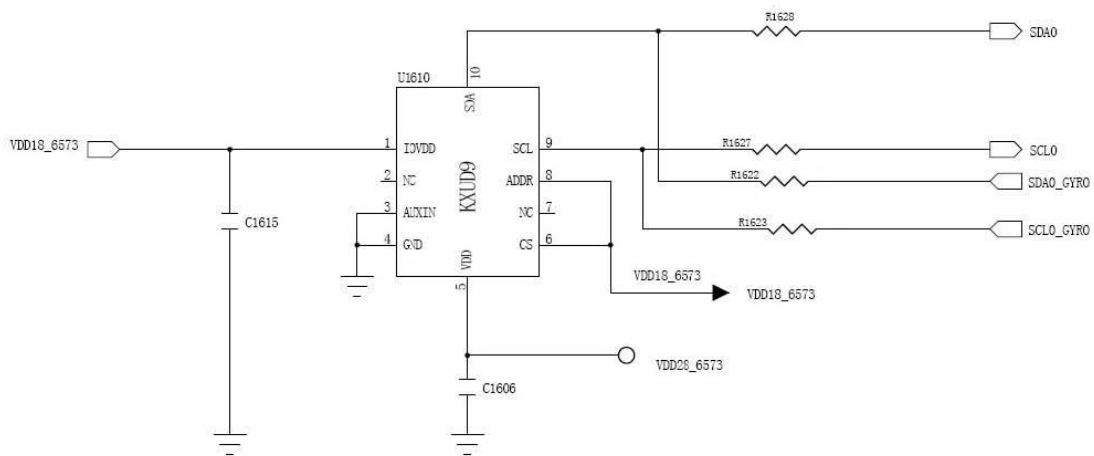is low. FM_ANT is FM analog signal from headset and to FM circuit.

10、 Dual SIM Card Circuit

Dual SIM card pin defined as follows： VSIM： SIM card voltage supply, provide by VSIM_ A OR VSIM_B SIMIO： Data input/output SIMCLK： Clock signal SIMRST： Reset signal
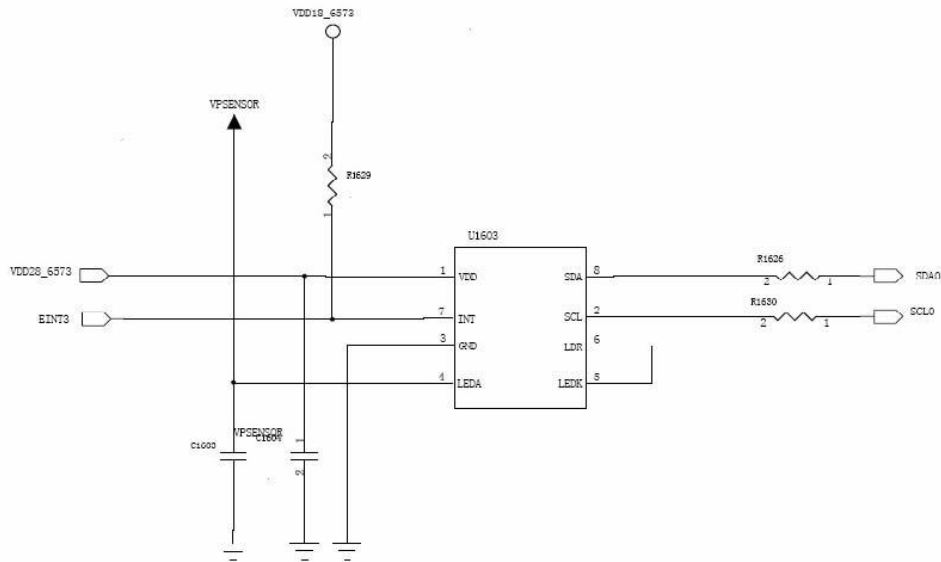
## 11、 G-Sensor Circuit

The KXUD9 is a tri-axis silicon micromachined accelerometer with a user selectable



full-scale output range of $\pm$ 2g， $\pm$ 4g，src. It futher utilizes common mode cancellation to decrease errors from process variation,temperatue,and environmental stress.

## 12、 G-Sensor Circuit Description

The APDS-9900 provides digital ambient light sensing(ALS),IR LED and a complete proximity detection system in a single 8pin package.The proximity function offers plug and play detection to 100mm (without front glass) thus eliminating the need for factory calibration of the end equipment of sub-assembly.In addition,an internal state machine provides the ability to put the device into a low power mode in between ALS and proximity measurements providing very low average power consumption. The ALS provies a photopic response to light intensity in very low light condition or behind a dark faceplate.

## 11、I/O Circuit

The I/O circuit used as USB port, charge input.