



Service Manual

MG185d



Model : MG185d



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1. INTRODUCTION

1.1 Purpose

This manual provides the information necessary to repair, calibration, description and download the features of this model.

1.2 Regulatory Information

A. Security

Toll fraud, the unauthorized use of telecommunications system by an unauthorized part (for example, persons other than your company's employees, agents, subcontractors, or person working on your company's behalf) can result in substantial additional charges for your telecommunications services. System users are responsible for the security of own system. There are may be risks of toll fraud associated with your telecommunications system. System users are responsible for programming and configuring the equipment to prevent unauthorized use. The manufacturer does not warrant that this product is immune from the above case but will prevent unauthorized use of common-carrier telecommunication service of facilities accessed through or connected to it. The manufacturer will not be responsible for any charges that result from such unauthorized use.

B. Incidence of Harm

If a telephone company determines that the equipment provided to customer is faulty and possibly causing harm or interruption in service to the telephone network, it should disconnect telephone service until repair can be done. A telephone company may temporarily disconnect service as long as repair is not done.

C. Changes in Service

A local telephone company may make changes in its communications facilities or procedure. If these changes could reasonably be expected to affect the use of the this phone or compatibility with the network, the telephone company is required to give advanced written notice to the user, allowing the user to take appropriate steps to maintain telephone service.

D. Maintenance Limitations

Maintenance limitations on this model must be performed only by the manufacturer or its authorized agent. The user may not make any changes and/or repairs expect as specifically noted in this manual. Therefore, note that unauthorized alternations or repair may affect the regulatory status of the system and may void any remaining warranty.

1. INTRODUCTION

E. Notice of Radiated Emissions

This model complies with rules regarding radiation and radio frequency emission as defined by local regulatory agencies. In accordance with these agencies, you may be required to provide information such as the following to the end user.

F. Pictures

The pictures in this manual are for illustrative purposes only; your actual hardware may look slightly different.

G. Interference and Attenuation

Phone may interfere with sensitive laboratory equipment, medical equipment, etc. Interference from unsuppressed engines or electric motors may cause problems.

H. Electrostatic Sensitive Devices

ATTENTION

Boards, which contain Electrostatic Sensitive Device (ESD), are indicated  by the sign. Following information is ESD handling:

- Service personnel should ground themselves by using a wrist strap when exchange system boards.
- When repairs are made to a system board, they should spread the floor with anti-static mat which is also grounded.
- Use a suitable, grounded soldering iron.
- Keep sensitive parts in these protective packages until these are used.
- When returning system boards or parts like EEPROM to the factory, use the protective package as described.

2. PERFORMANCE

2.1 Product Name

MG185D : GPRS Class 10

2.2 Supporting Standard

Item	Feature	Comment
Supporting Standard	850/1900/1800 Tri-Band (850/1900/1800) with seamless handover Phase 2+(include AMR) SIM Toolkit: Class 1,2,3,A~E	
Frequency Range	GSM850 TX : 824 - 849 MHz GSM850 RX : 869 - 894 MHz PCS1900 TX : 1850 - 1910 MHz PCS1900 RX : 1930 - 1990 MHz DCS1800 TX : 1710 - 1785 MHz DCS1800 RX : 1805 - 1880 MHz	
Application Standard	WAP 2.0 JAVA 2.0	

2.3 Main Parts : GSM Solution

Digital Baseband	Calypso-AMR C035(D751992GHH)
Analog Baseband	IOTA(TWL3025)
RF Chip	Aero2(SI4210-GM)

2. PERFORMANCE

2.4 HW Features

Item	Feature	Comment
Form Factor	Bar Type with camera	
Battery	1) Capacity Standard : Li-Ion, min 830mAh (LGC)	
	2) Packing Type : Inner Pack	
Size	Standard : 103.9 X 45.6 X 15.8 mm	
Weight	85 g	
Volume	TBD	
PCB	One PCB:8 Layers , 1t	
Stand by time	200 hrs	DRX6
Charging time	3 hrs	
Talk time	Min : about 2.5 hrs Min : about 3.0 hrs	GSM 850MHz PCS 1900MHz DCS 1800MHz
RX sensitivity	GSM 850 : -108 dBm PCS 1900 : -107 dBm DCS 1800 : -107dBm	
TX output power	GSM 850 : 33 dBm PCS 1900 : 30 dBm DCS 1800 : 30dBm	Class4 (GSM) Class1 (PCS)
GPRS compatibility	GPRS Class 10	
SIM card type	Plug-In SIM 3V	
Display	65K Color STN (128 X 128) Backlight : White LED	
Status Indicator	Indicator LED	
Keypad	Alphanumeric Key : 10 Function Key : 6 Side Key : 1 Total # of Keys : 22	0 ~ 9 Nevi. Key, Soft key, etc camera SND, END/PWR, CLR
ANT	Intenna	
System connector	24 Pin	
Ear Phone Jack	3 Pole (2.5mm)	
PC synchronization	Yes	
Memory	Flash : 128 Mbit SRAM : 64 Mbit	Spansion
Speech coding	FR, EFR, HR, AMR	
Data & Fax	Built in Data & Fax support	
Vibrator	Built in Vibrator	
MIDI(for Buzzer Function)	YAMAHA 40Poly	
Voice Recording	Yes	
Speaker Phone	Yes	
Travel Adapter	Yes	
CDROM	TBD	
Options	Ear-Microphone Data Cable	

2. PERFORMANCE

2.5 S/W Features

Item	Feature	Comment
RSSI	0 ~ 5 Levels	
Battery Charging	0 ~ 4 Levels	
Key Volume	0 ~ 5 Level	
Audio Volume	1 ~ 5 Level	
Time / Date Display	Yes	NITZ
Multi-Language	Yes	English / Spanish / France
Quick Access Mode	Phone Book / My MEdia / Message / Java or SIM Toolkit	
PC Sync	Schedule / Phonebook / MEMO / Photo	
Speed Dial	Yes (2~9)	Voice mail center -> 1 key
CLIP / CLIR	Yes (different melody)	
Speaker Phone	Yes	
Phone Book	3 Numbers + 1 Memo + 1 e-mail + Group Select + Picture	Total 255 Member
Last Dial Number	Yes (20)	
Last Received Number	Yes (20)	
Last Missed Number	Yes (10)	
Search by Number / Name	Name only	
Group	7	Possible Rename
Fixed Dial Number	Yes	
Service Dial Number	Yes	
Own Number	Yes	
Voice Memo	Yes	
Call Reminder	Yes	
Network Selection	Automatic / Manual	
Mute	Yes	
Call Divert	Yes	
Call Barring	Yes	
Call Charge (AoC)	No	
Call Duration	Yes	
SMS (EMS)	100	EMS : Release4 (Except Text align)
E-Mail	Yes	Over SMS
SMS Over GPRS	Yes	
EMS Melody / Picture Send / Receive / Save	Yes	
Long Message	MAX 918 Characters	
Cell Broadcast	Yes	
Download	Over the WAP	
Game	Yes	TBD
Calendar	Yes	
Memo	20	

2. PERFORMANCE

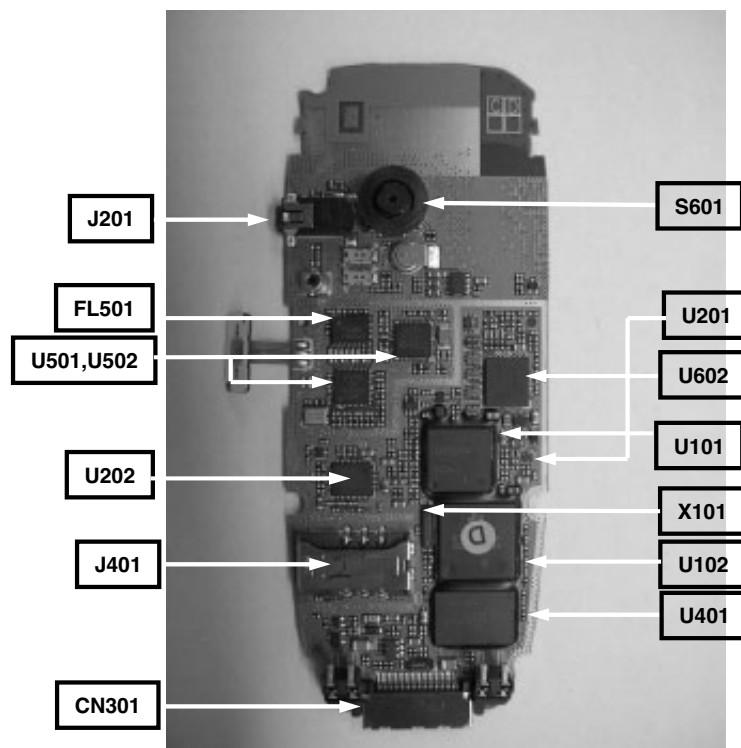
World Clock	Yes	
Unit Convert	Length/Surface/Volume/Weight	
Tip Calculator	Yes	
Fax & Data	Yes	
Wall Paper	Yes	Default 5ea
WAP Browser	Over WAP 2.0 w/o HTTP	UP Brower 6.2.3
Download Melody / Wallpaper	Yes	Over WAP
SIM Lock	Yes	Operator Dependent
SIM Toolkit	Class 1, 2, 3, A-E	
MMS	Yes	Openwave MMS Client
EONS	Yes	
CPHS	Yes	V4.2
ENS	Yes	
Camera	Yes	VGA CMOS, Digital 4x
JAVA	Yes	CLDC V1.1 / MIDP V2.0 Download Over WAP
Voice Dial	Yes	
IrDA	NO	
GPRS	Yes	Class10
Hold / Retrieve	Yes	
Conference Call	Yes	Max. 6
DTMF	Yes	
Memo pad	Yes	Yes
TTY	NO	
AMR	Yes	

- Some features depend on requirement.

3. TECHNICAL BRIEF

3.1 Baseband Part Technical Brief

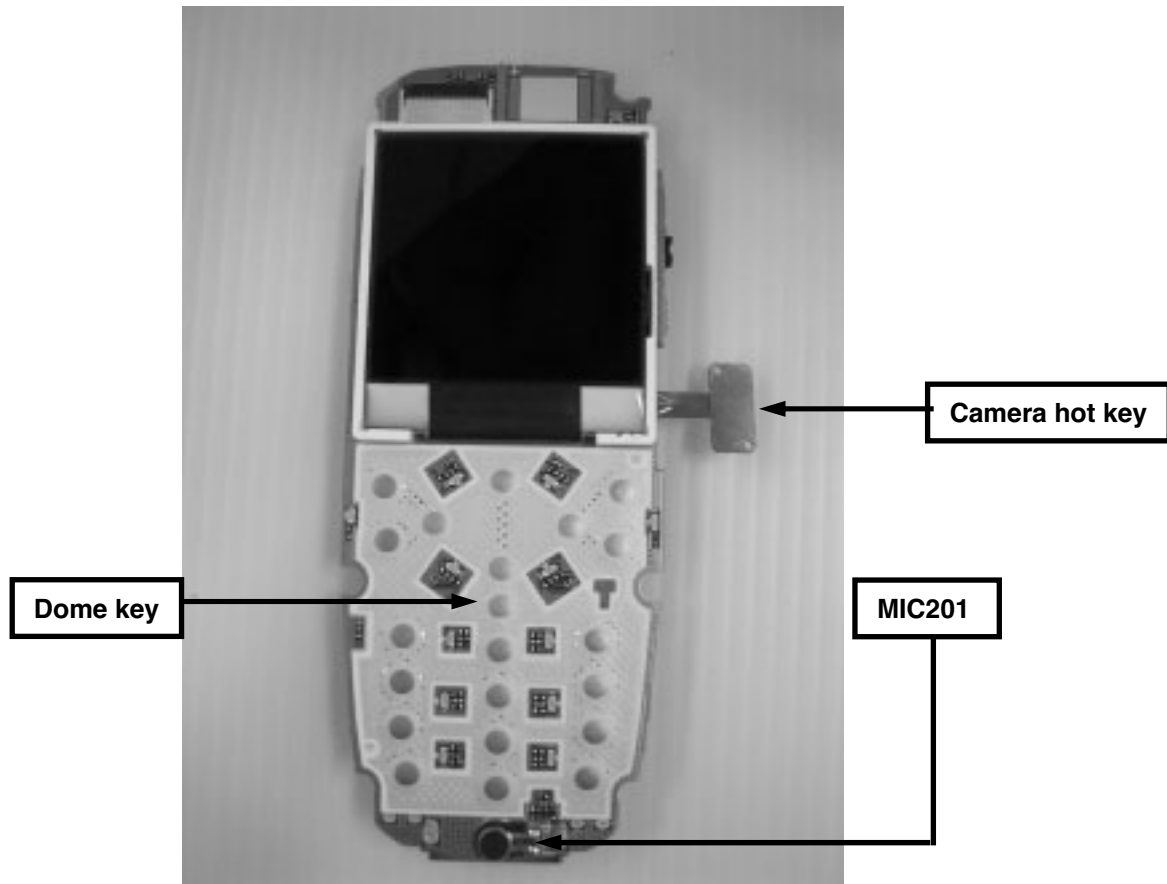
3.1.1 BaseBand Components (Component Side)



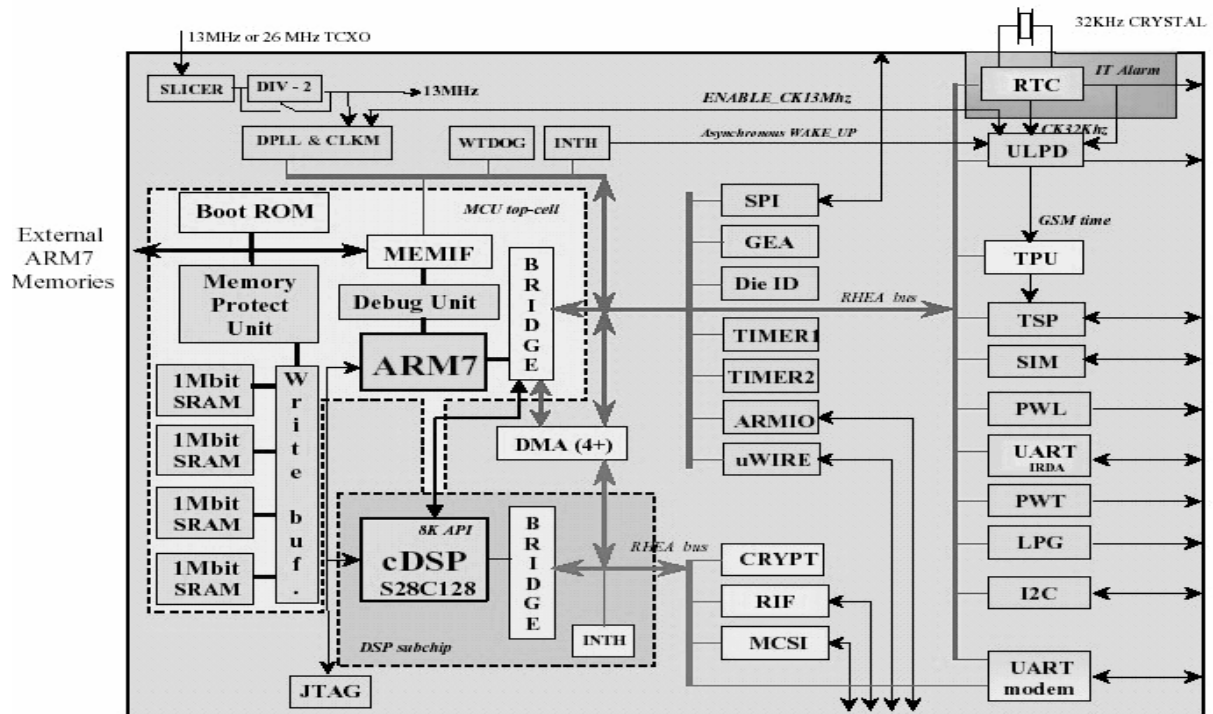
U101	Analog Baseband Chipset (IOTA)
U102	Digital Baseband Chipset (Calypso)
X101	Crystal (32.768KHz Oscillator)
U201	Analog Switch (Single)
U202	Melody IC (40 Poly)
U401	Memory (128M Flash x 64M pSRAM)
U501,U502	RF
J201	EAR Jack
J401	SIM Connector
CN301	IO Connector
S601	Camera Connector

3. TECHNICAL BRIEF

3.1.2 BaseBand Components (Keypad Side)



3.1.3 Digital Baseband(DBB) Processor



The Internal Architecture of the Calypso G2(HERCROM400G2)

3. TECHNICAL BRIEF

3.1.4 Analog Main Processor (ABB)

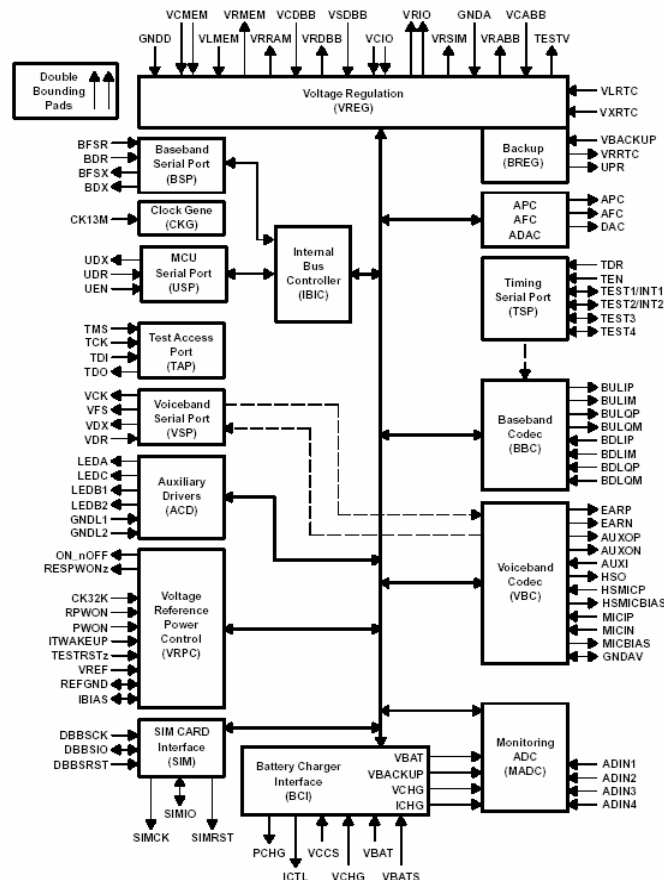
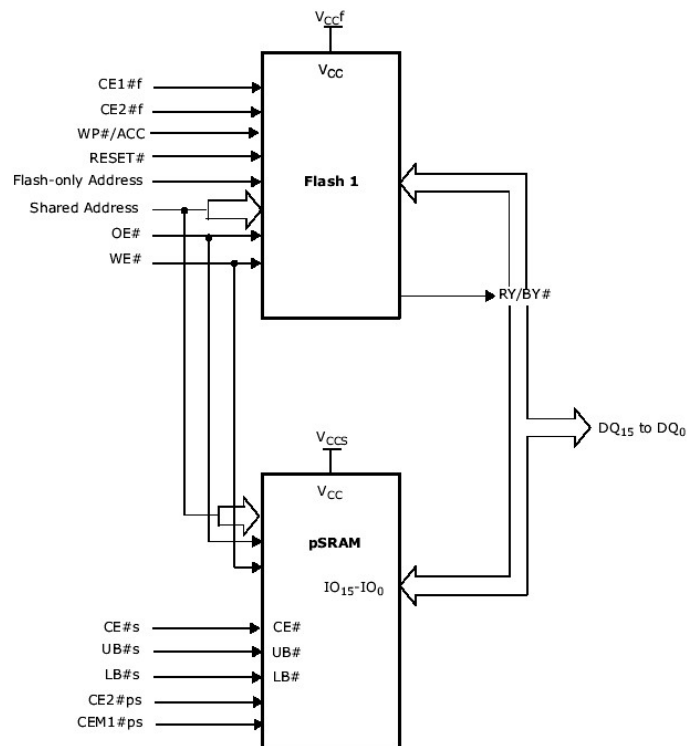


Figure 3-1. TWL3014 Functional Block Diagram

- Applications include GSM 850, 900, DCS 1800, PCS 1900 Cellular Telephones
- Voice Coder/Decoder (CODEC)
- Baseband CODEC single and multislot with I/Q RF Interface
- Auxiliary RF Converters
- SIM Card Interface
- Li-Ion or Ni-MH Battery Charging Control
- Six Low-DropOut, Low-Noise, Linear Voltage Regulators
- Dedicated Low Quiescent Current Mode on Regulators
- Voltage Detectors (with Power-Off Delays)
- Four Channel Analog-to-Digital Converters (ADC)
- Dedicated very low quiescent current domain supply

3.1.5 Memory

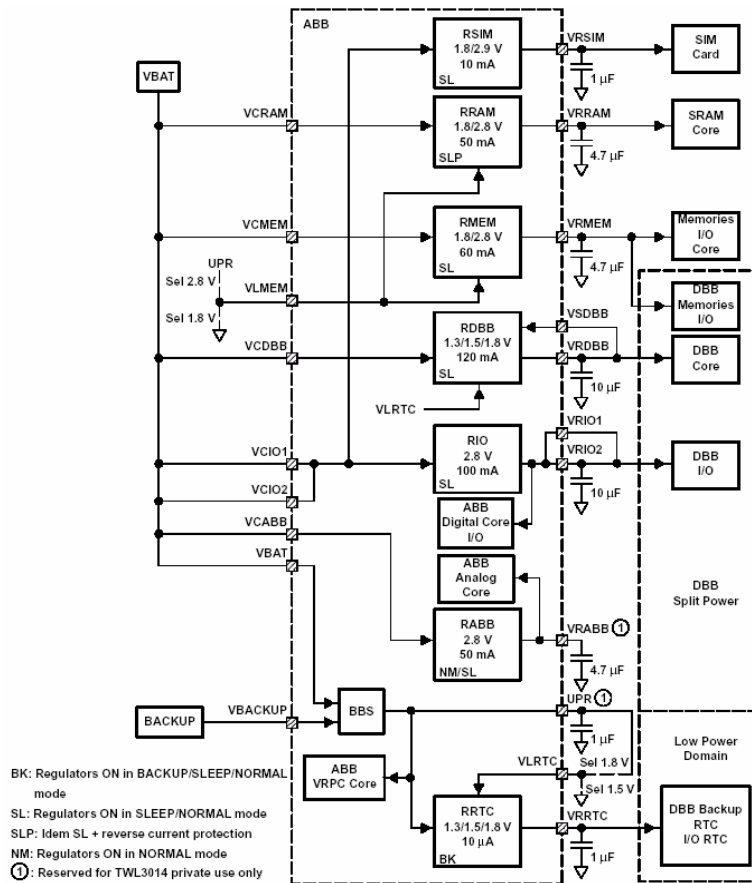
- Memory used MG185 is designed by SPANSION
- Mixed Multi-Chip Package containing a 64M pSRAM and 128M Flash Memory
- MCP(Multi-Chip Package) Features
 - Power Supply Voltage of 2.7 to 3.1 V
 - Operating Temperature of -25°C to 85°C
- pSRAM Features
 - Organization : 4 M x 16 bits
 - Power Dissipation : 50mA max.(Operating), 100μA max.(Standby)
- Flash Memory Features
 - Organization : 8M x 16 bits
 - Power Consumption
 - 55 mA (Read operation)
 - 10uA in standby or automatic sleep mode



Block Diagram

3. TECHNICAL BRIEF

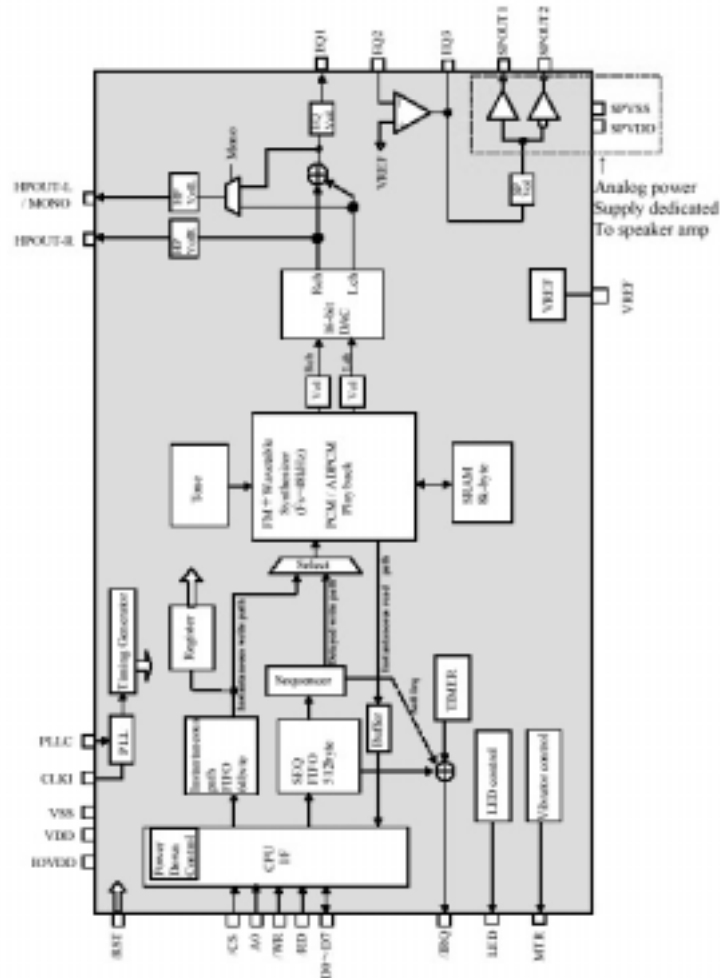
3.1.6 Voltage Regulation (LDO)



- V_DBB
 - Provides the power to the DBB(Calypso) Core
 - 1.5V / 120mA max.
- V_RAM
 - Provides the power to the IC, MIDI, LCD, etc
 - 2.8V / 50mA
- V_MEM
 - 2.8V / 60mA max.
- V_ABB
 - Provides the power to the ABB(IOTA) Core
 - 2.8V / 50mA max.

- V_IO
 - Provides the power to the Analog S/W,Memory, etc
 - 2.8V / 100mA max.
- V_RTC
 - Provides the power to the oscillator
 - 1.5V / 30uA max.
- V_SIM
 - Provides the power to the SIM card
 - 2.85V / 10mA max.

3.1.7 MIDI

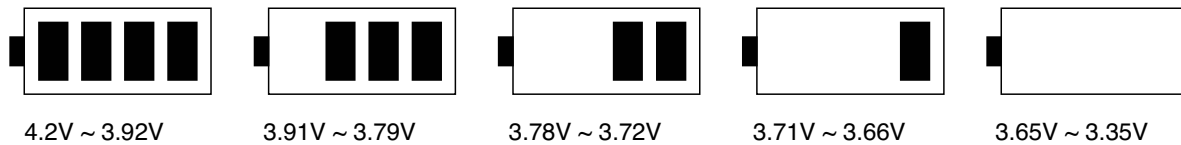


- The ringing source of MG185 is the MIDI.
- The MIDI chip which is used in MG185 is YMU762 from YAMAHA.
- YMU762 generates 40-poly MIDI sound.

3. TECHNICAL BRIEF

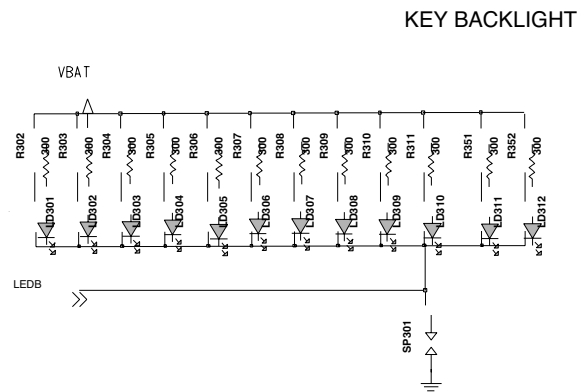
3.1.8 Charging

- Charging method : CC-CV
- Charger detect voltage : 4.0V
- Charging time : about 2h
- Icon stop current : 100mA
- Charging current : 420mA
- CV voltage : 4.2V
- Cutoff current : 45mA
- Low battery alarm
 - Idle : 3.62V
 - Dedicated : 3.50V
- Switch-off voltage : 3.35V
- Charging temperature ADC range
 - $\sim -5^{\circ}\text{C}$: not charging operation.
 - $-5^{\circ}\text{C} \sim 50^{\circ}\text{C}$: charging.
 - $50^{\circ}\text{C} \sim$: not charging operation.



3.1.9 KEY Back-light Illumination (1)

- KEYPAD Back-light Scheme(slide part).
 - There are 12 Deep Blue LEDs in slide Board for 'Number-key'.
 - Keypad Back-light is driven by 'LEDB' line from IOTA .

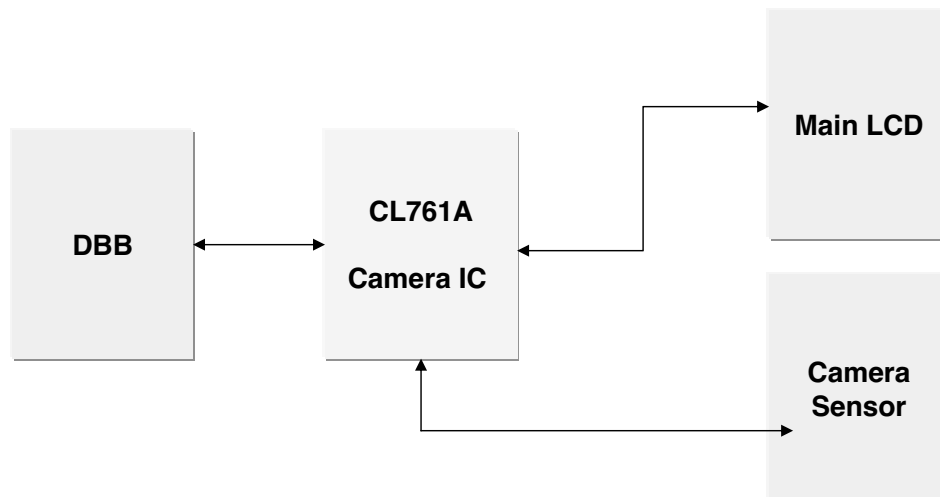


KEY Backlight

3.1.10 CAMERA Interface.

Allows you to use the built-in camera to take photos with the phone.

- The phone encodes up to 640 x 480 size with free size support



Built-in Camera BLOCK DIAGRAM

3. TECHNICAL BRIEF

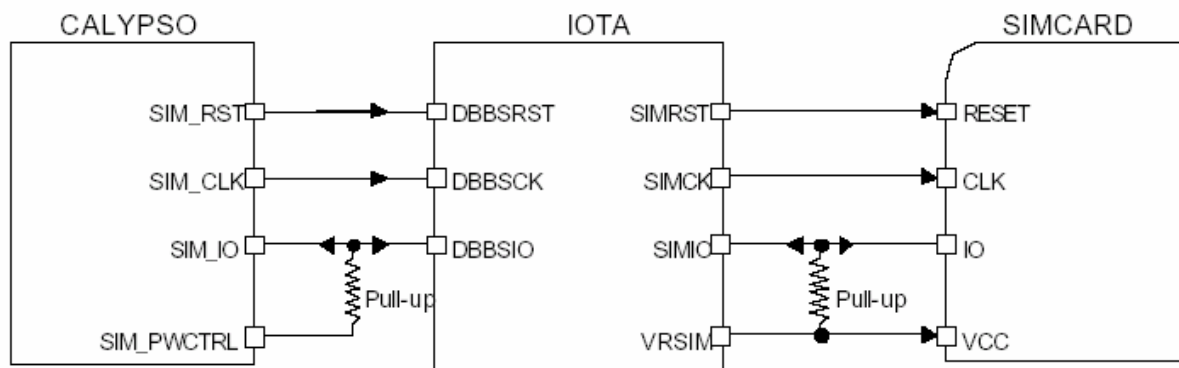
3.1.11 SIM

> SIM Interface

The Sim Card digital interface in ABB insures the translation of logic levels between DBB and Sim Card, for the transmission of 3 different signals:

- A clock derived from a clock elaborated in DBB, to the Sim-Card (DBBSCK -> SIM_CLK)
- A reset signal from DBB to the Sim Card (DBBSRST -> SIM_RST),
- A serial data from DBB to the Sim Card (DBBSIO -> SIM_IO) and vice-versa.

The SIM card interface can be programmed to drive a 3V Sim Card.



SIM Card connection scheme

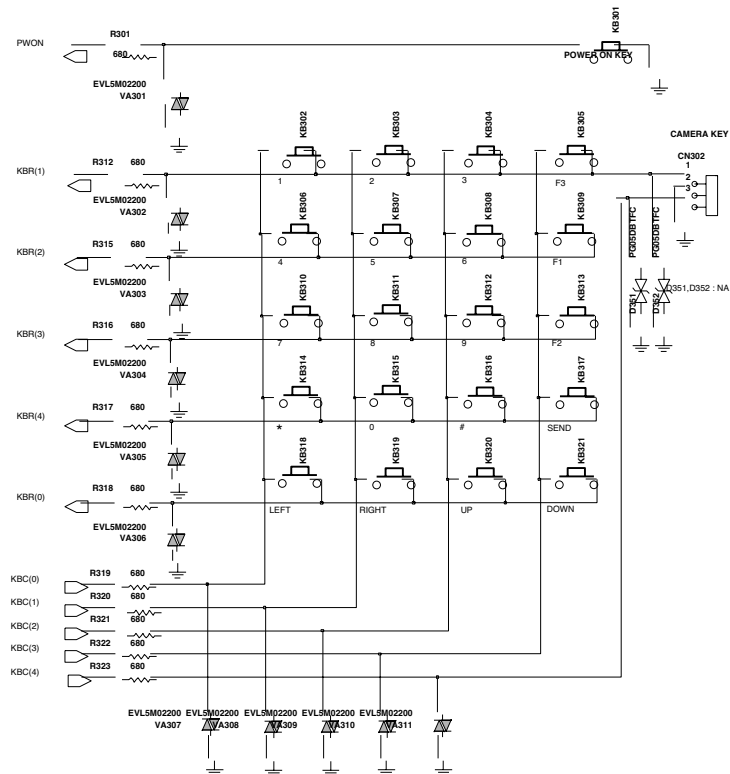
3.1.12 Keypad (1)

➤ KEYPAD Scanning Scheme (number -key).

The power key is connected to Calypso(DBB) directly using 'PWON'.

The other number-key and navigation-key is connected to Calypso(DBB) using:

- KBR (4:0) input pins for row lines
- KBC (4:0) output pins for column lines

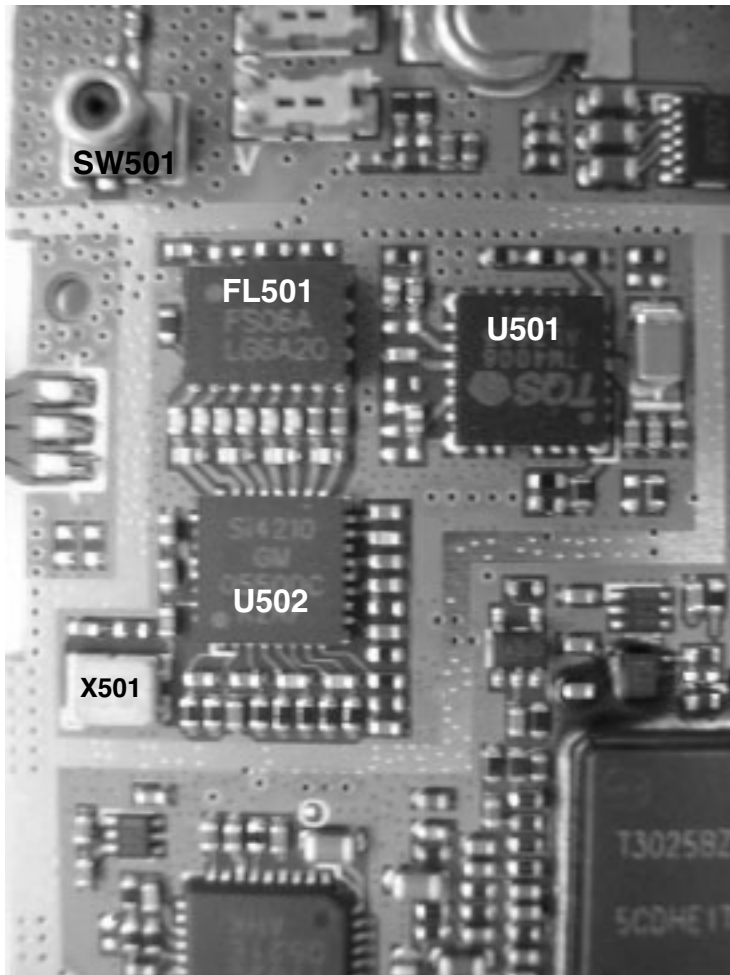


Keypad Scanning Scheme

3. TECHNICAL BRIEF

3.2 RF Part Technical Brief

3.2.1 RF Part components

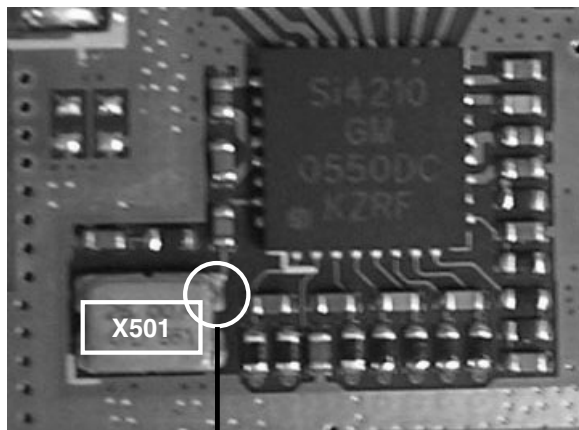


- SW501 : Mobile Switch
- FL501 : YGHF-S006A
- FEM
- U501 : TQM7M4006
- Power Amp Module
- U502 : SI4210
- RF Main chip
- X501
- VCTCXO
- 26MHz Clock

3.2.2 Tx / Rx Part Description(2)

2. Tx/Rx Part component Description

→ VCTCXO

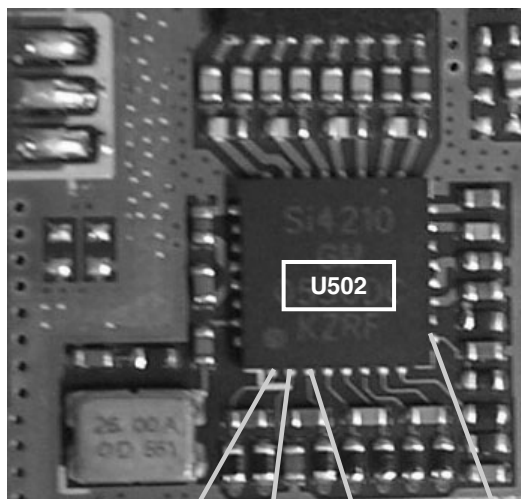


➤ VCTCXO

- Produce RF reference clock - 26MHz frequency

3. Tx/Rx Part component Description

→ RF Main Chip (SI4210)



➤ PDNB, _S_EN, S_CLK, S_DATA

- From DBB Main Chip Set
- Contains information all about ARFCN, voice data, user information etc.
- RF Chips operate according to these signals

S_CLK
(1pin)

_S_EN
(2pin)

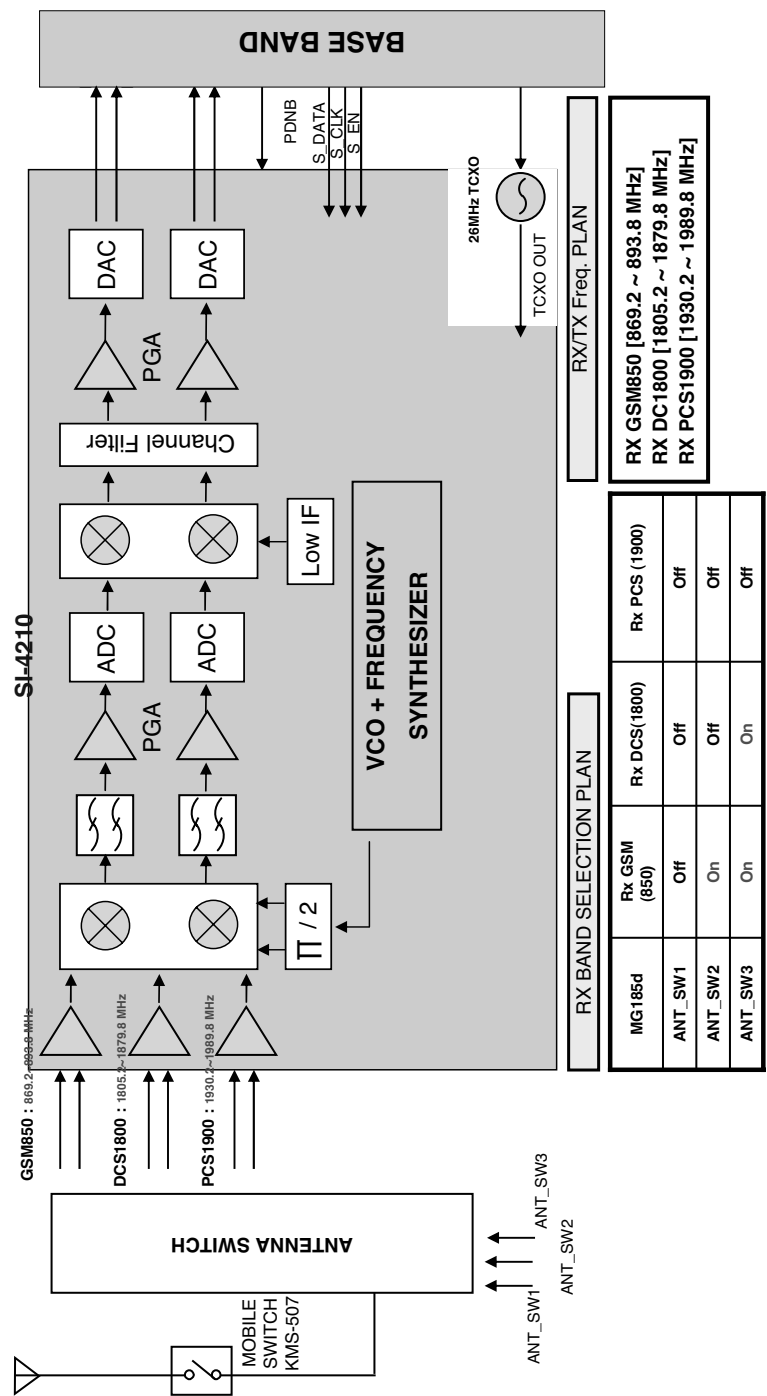
S_DATA
(3pin)

PDNB
(9pin)

3. TECHNICAL BRIEF

3.2.3 Receiver Part Description(1)

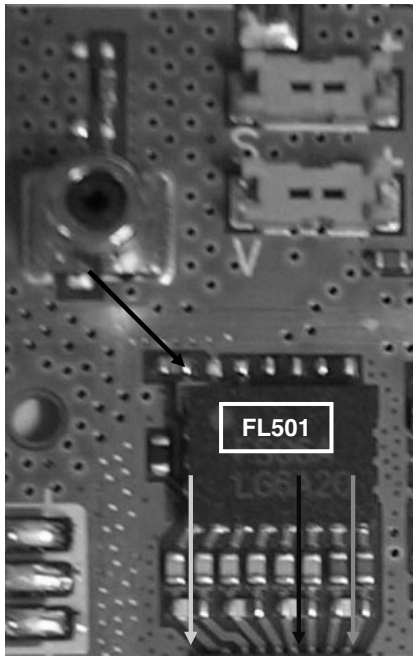
1. Rx Block Diagram



Receiver Part Description(2)

2. Rx Part component Description

→ Mobile Switch & FEM



- FEM (including Ant. SW & SAW filter)
- Select the Path - GSM / PCS Tx, GSM / PCS Rx
- From DBB, three control signals (ANT_SW1, ANT_SW2, ANT_SW3)

MG185d	Tx (850)	Tx (1800/1900)	Rx GSM (850)	Rx DCS (1800)	Rx PCS (1900)
ANT_SW1	On	On	Off	Off	Off
ANT_SW2	Off	On	On	Off	Off
ANT_SW3	Off	On	Off	On	Off

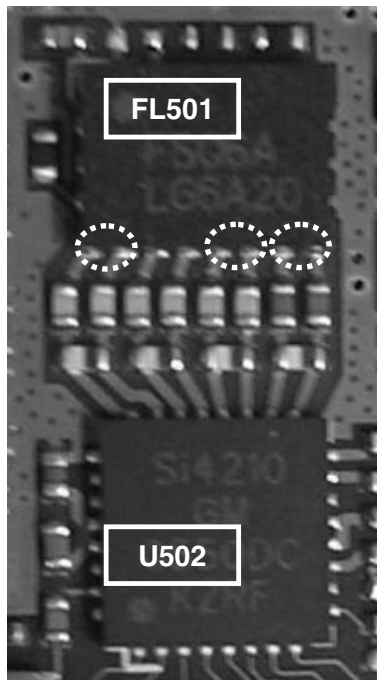
- GSM 850 :Rx Path
- DCS : Rx Path
- PCS : Rx Path
- GSM / PCS Rx Path

3. TECHNICAL BRIEF

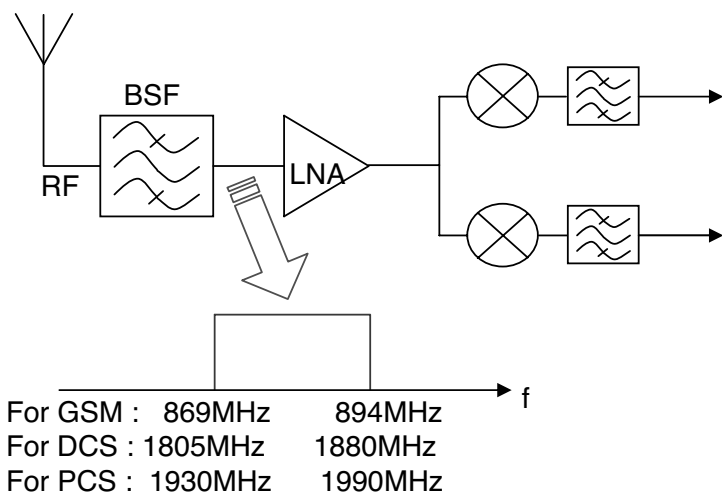
Receiver Part Description(3)

3. Rx Part component Description

→ FEM (BSF Output)



- Band Selection Filter
 - Cuts the out of band frequency

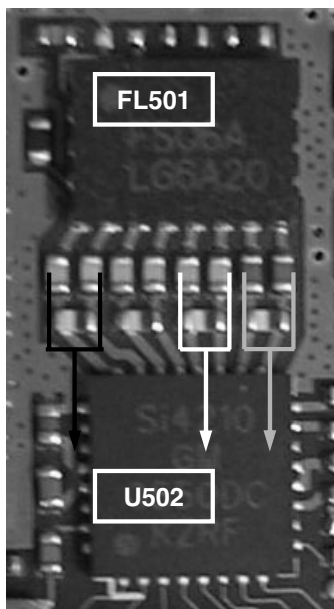


- Insertion Loss
- For GSM : ~2.5dB
- For DCS : ~3dB

Receiver Part Description(4)

2. Rx Part component Description

→ RF Transceiver Chip (LNA Input)

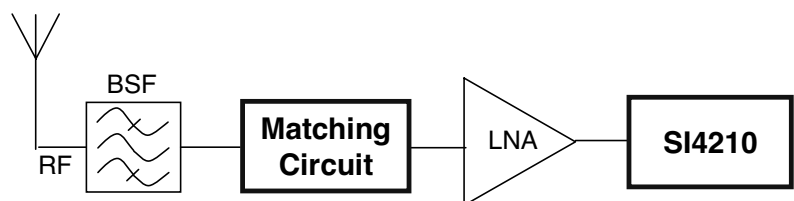


- LNA input port of RF Main Chip(SI4210)
 - Balanced-type LNA Input

➔ GSM850 LNA Input

➔ DCS LNA Input

➔ PCS LNA Input

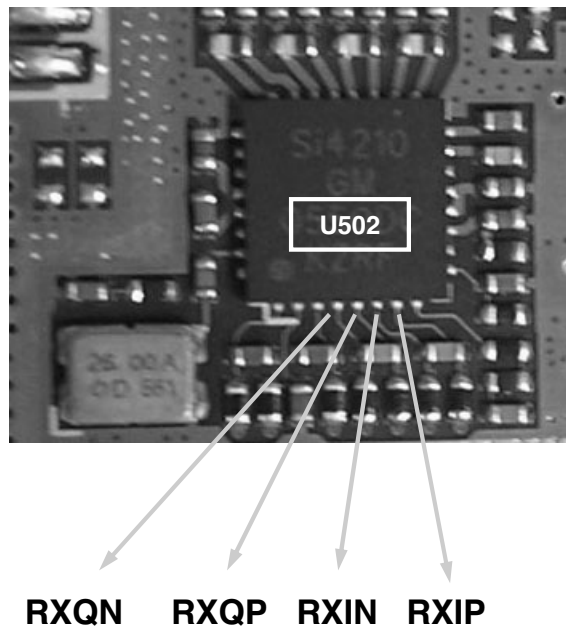


3. TECHNICAL BRIEF

Receiver Part Description(5)

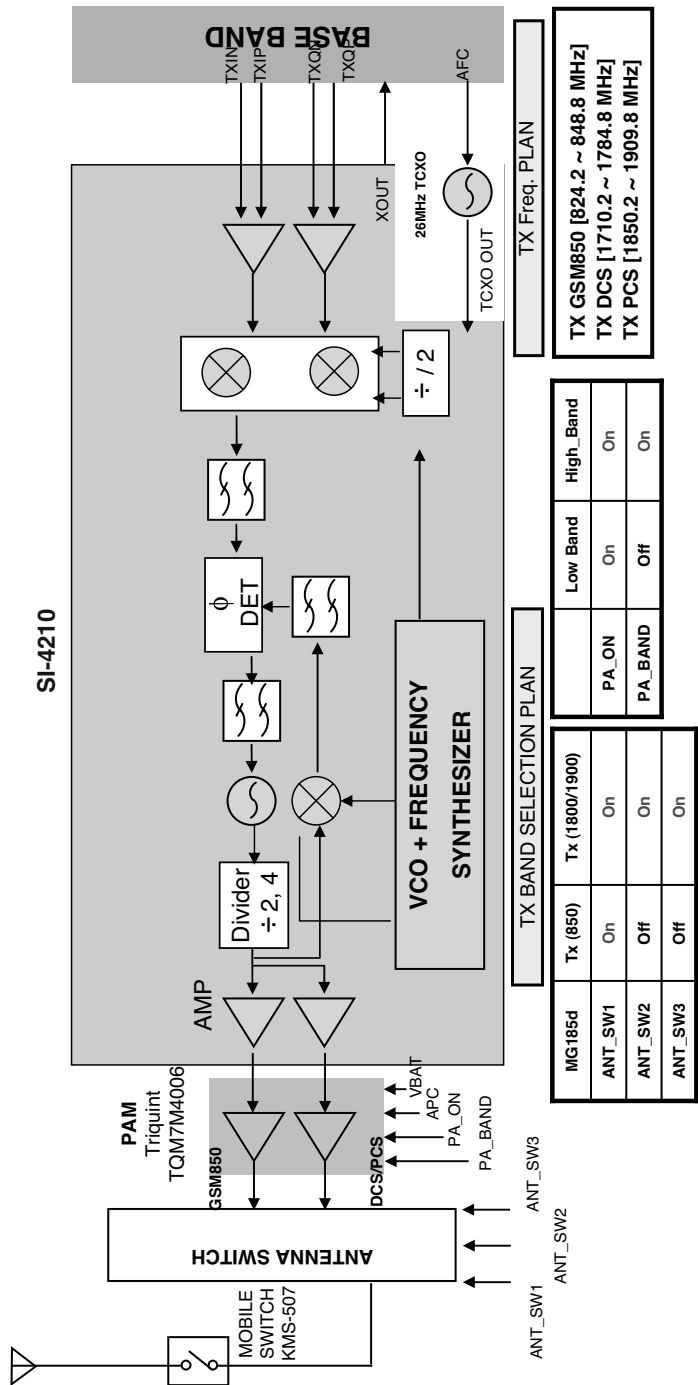
2. Rx Part component Description

→ Rx I/Q signal (SI4210)



3.2.4 Transmitter Part Description(1)

1. Tx Block Diagram

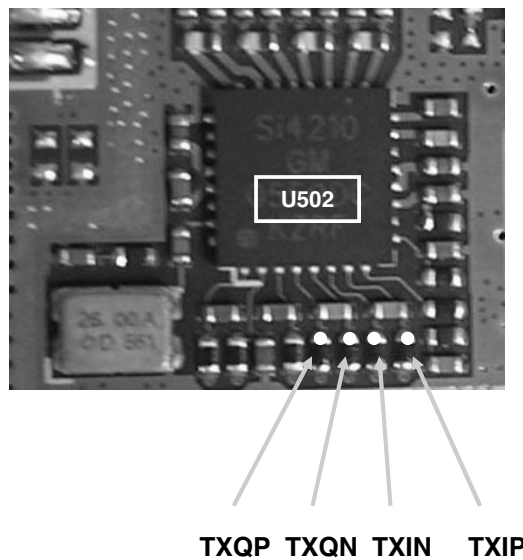


3. TECHNICAL BRIEF

Transmitter Part Description(2)

2. Tx Part component Description

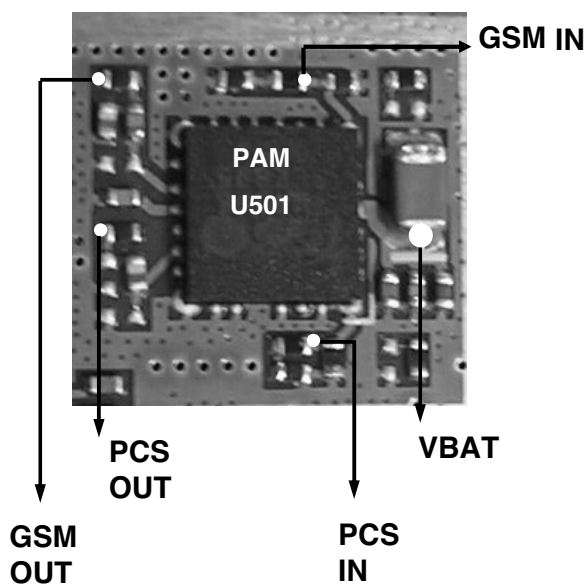
→ Tx I/Q signal from ABB signal



Transmitter Part Description(3)

2. Tx Part component Description

→ PAM - input and output signals

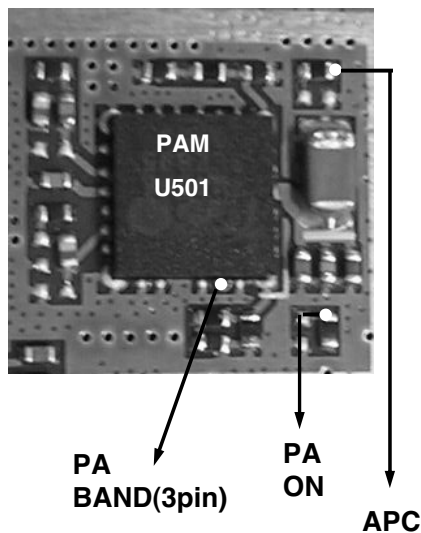


- Power Amp Module
 - Amplifies Tx Signal from SI4210
- Tx Carrier Frequency
 - GSM : 824 ~ 849MHz
 - DCS : 1710 ~ 1785MHz
 - PCS : 1850 ~ 1910MHz

Transmitter Part Description(4)

2. Tx Part component Description

→ PAM - control signals

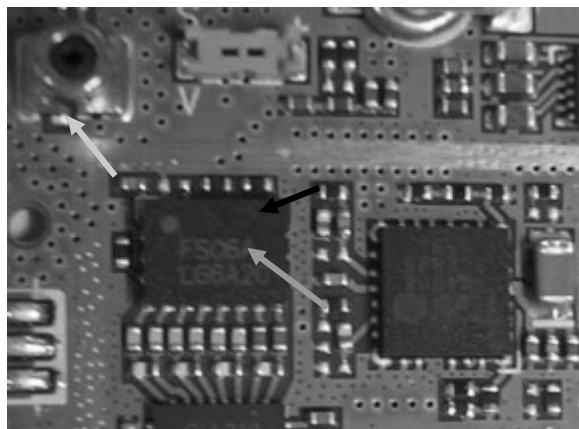


- PA_ON
 - From DBB Chip Set
 - Enables Tx Path
- PA_Band
 - From DBB Chip Set
 - Select PAM operating band
 - Low : GSM selected
 - High : PCS selected
- APC
 - From ABB Chip Set
 - Controls Tx rising and falling shape
 - APC voltage Controls Tx Output Power

Transmitter Part Description(5)

2. Tx Part component Description

→ Mobile Switch & FEM



- FEM
 - Select the Path - GSM / PCS Tx, GSM / PCS Rx
 - From DBB, three control signals (ANT_SW1, ANT_SW2, ANT_SW3) are fed into the DBB

- ➔ GSM Tx Path (FEM 6 pin)
- ➔ DCS/PCS Tx Path (FEM 8 pin)
- ➔ Tx Path

4. TROUBLESHOOTING

4. TROUBLESHOOTING

4.1 BaseBand Part Troubleshooting

Power On Trouble (1)

- Power On Sequence
 - Connecting Battery
 - Power-On Key Detection
 - END_ON_OFF signal goes to ABB and then ABB reset DBB by ON_OFF signal
 - ON_OFF turn low(0V) to HIGH(2.8V) and it resets Calypso(DBB).
 - All LDOs are turned on.
- Check Points
 - Battery Voltage
 - Power-On Key Detection(END_ON_OFF signal)
 - Outputs of LDOs

Power On Trouble (2)

- Trouble Shooting Setup
 - Connect PIF-UNION to the phone.
 - Set the TI-remote switch at PIF-UNION off.
- Trouble Shooting Procedure
 - Check Battery Voltage
 - END_KEY Dome Switch condition
 - Check the output voltages of all LDOs.



Charging Trouble (1)

- Charging method : CC-CV
- Charger detect voltage : 4.0V
- Charging time : about 2h
- Icon stop current : 100mA
- Charging current : 420mA
- CV voltage : 4.2V
- Cutoff current : 45mA
- Low battery alarm
 - Idle : 3.62V
 - Dedicated : 3.50V
- Switch-off voltage : 3.35V
- Charging temperature adc range
 - $\sim -5^{\circ}\text{C}$: not charging operation.
 - $-5^{\circ}\text{C} \sim 50^{\circ}\text{C}$: charging.
 - $50^{\circ}\text{C} \sim$: not charging operation.



4.2V ~ 3.92V



3.91V ~ 3.79V



3.78V ~ 3.72V



3.71V ~ 3.66V

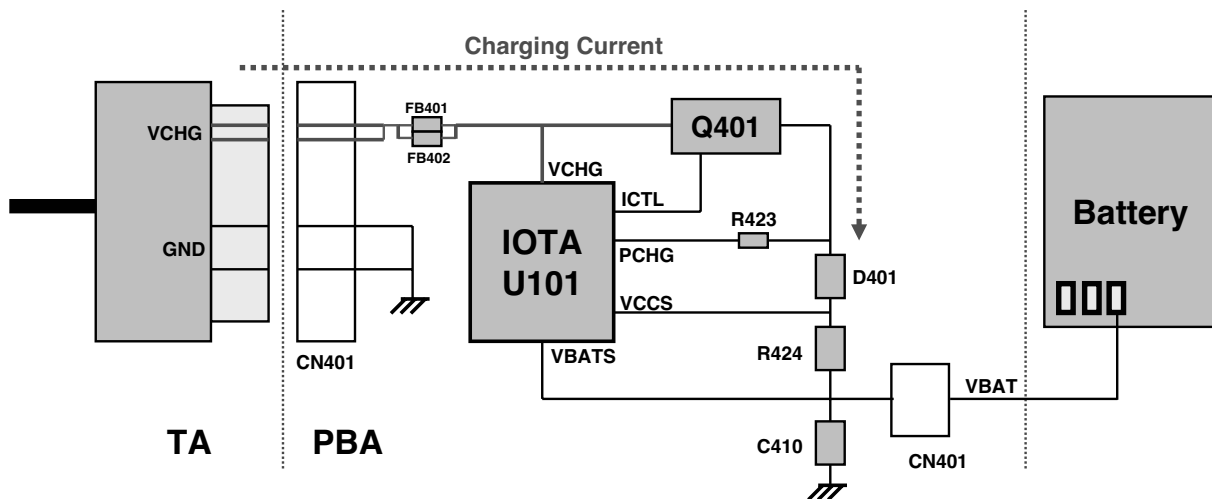


3.65V ~ 3.35V

4. TROUBLESHOOTING

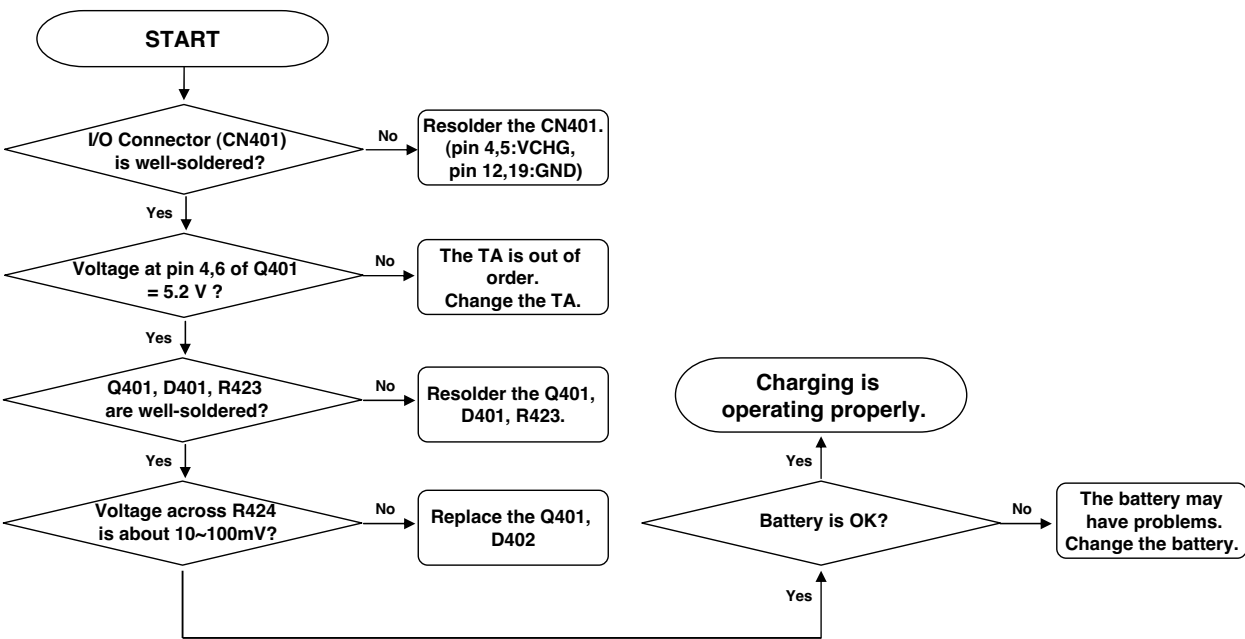
Charging Trouble (2)

- Block Diagram



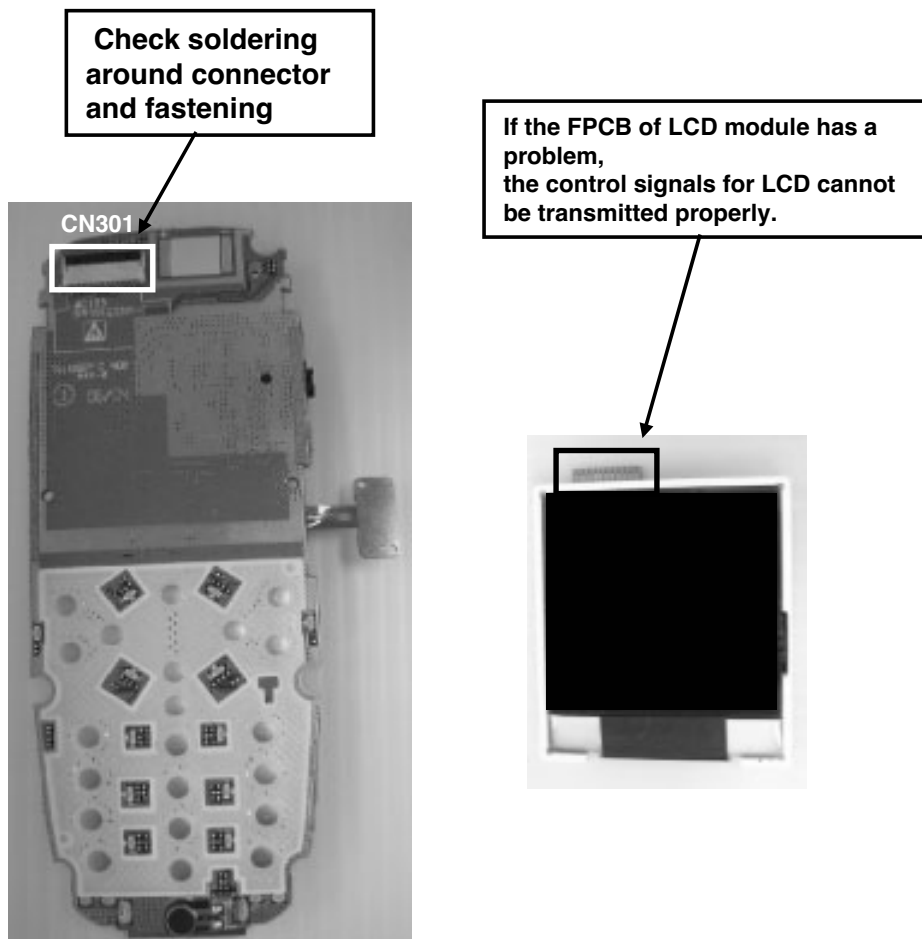
- Charging Procedure
 - Connecting TA & Charger Detection
 - Control the charging Current by IOTA(ABB)
 - Charging Current flows into the Battery
- Check Points
 - Connection of TA
 - Charging Current Path
 - Battery
- Trouble Shooting Setup
 - Connect Battery & TA to the handset.
- Trouble Shooting Procedure
 - Check the charger connector.
 - Check the charging current path.
 - Check the battery

Charging Trouble (3)



4. TROUBLESHOOTING

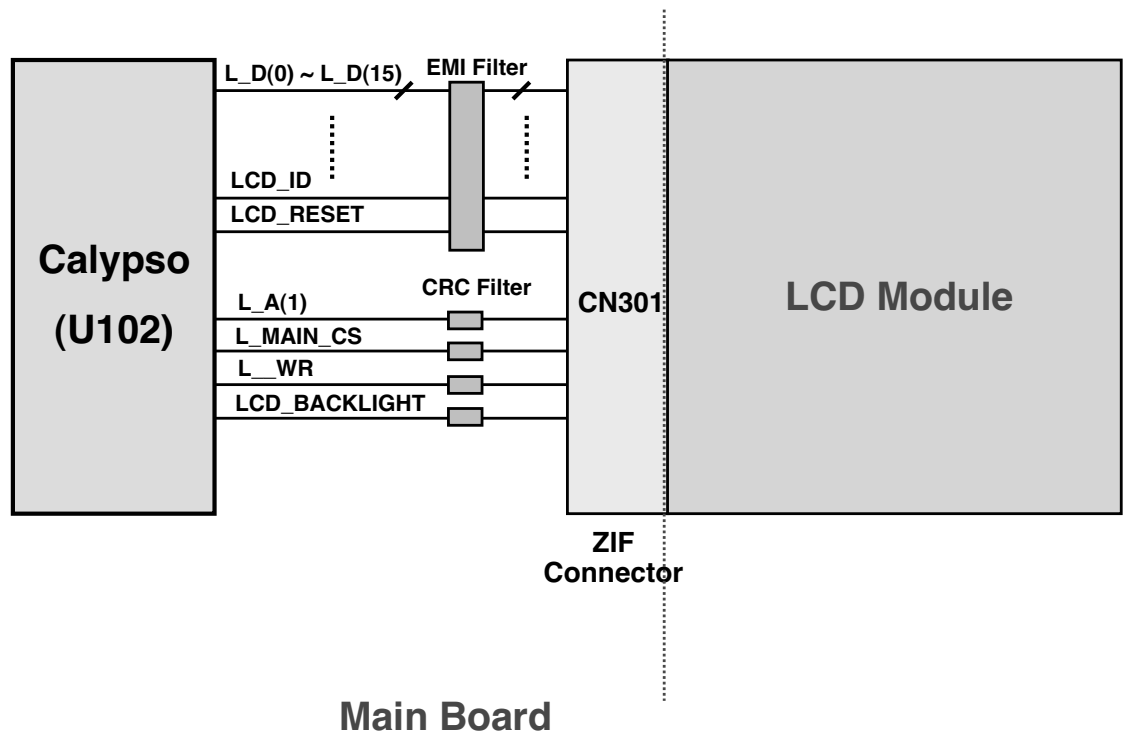
LCD Display Trouble (1)



- LCD Control Signals From Main Board
 - L_MAIN_CS, LCD_ID, _LCD_RESET, L_WR, L_A(1), L_DATA(0)~DATA(15), LCD_Backlight
- Check Points
 - The Assembly status of the LCD Module.
 - The Soldering of connectors
 - The FPCB of LCD module
- Trouble Shooting Setup
 - Connect PIF, and power on.

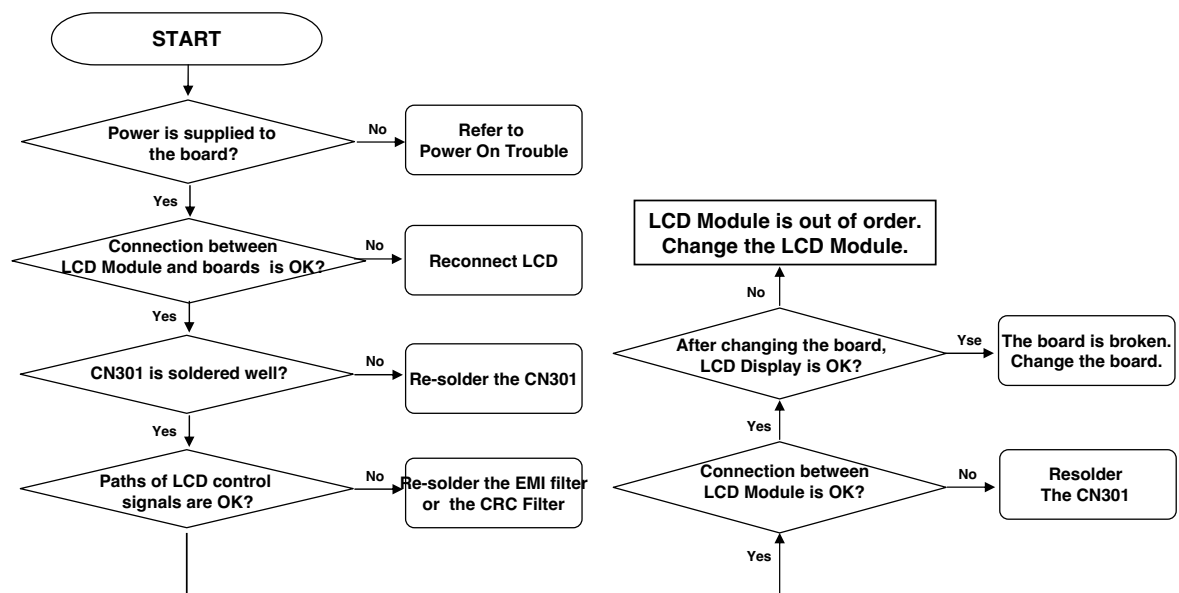
LCD Display Trouble (2)

• Block Diagram



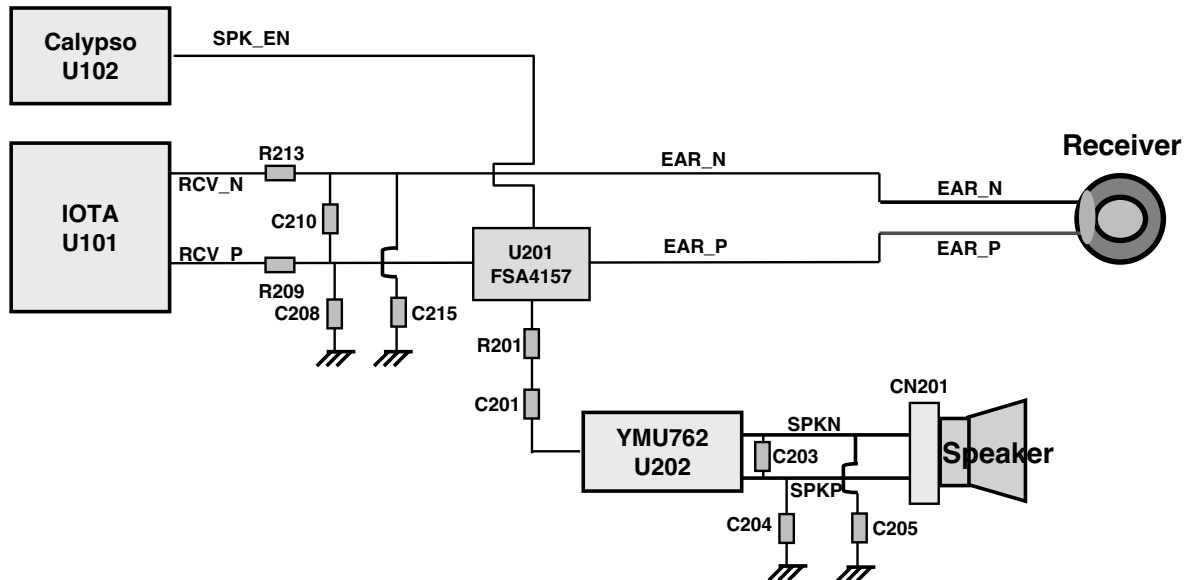
4. TROUBLESHOOTING

LCD Display Trouble (3)



Speaker/Receiver Trouble (1)

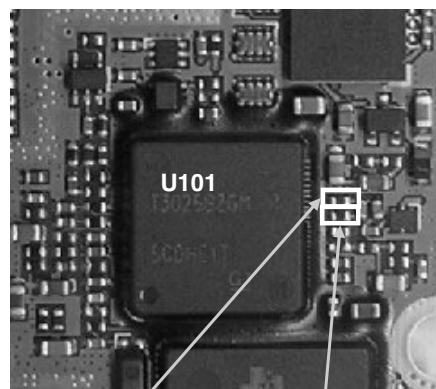
- Block Diagram



- Melody Generation
 - U202(YMU762,MIDI) is controlled by Calypso (DBB)
 - U201 generates 40poly MIDI sound and it is delivered to the speaker.
- Signals to the receiver
 - RCV_P,RCV_N From IOTA (ABB).
 - EAR_P,EAR_N to Speaker via 2 Pin Connector
- Check Points
 - Audio signals from ABB
 - Audio signals to the receiver
 - Audio signal path
 - Check the sound level to the speaker.
 - Soldering of connector & speaker/receiver
 - Speaker/Receiver

4. TROUBLESHOOTING

Speaker/Receiver Trouble (2)

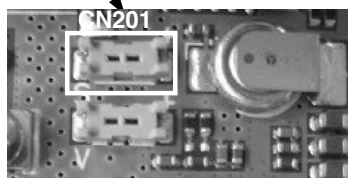
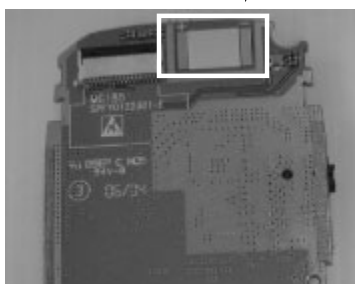


R213 : RCV_N

R209 : RCV_P

Check Audio signal here !
RCV_N and RCV_P

Check soldering
or contacting this point !



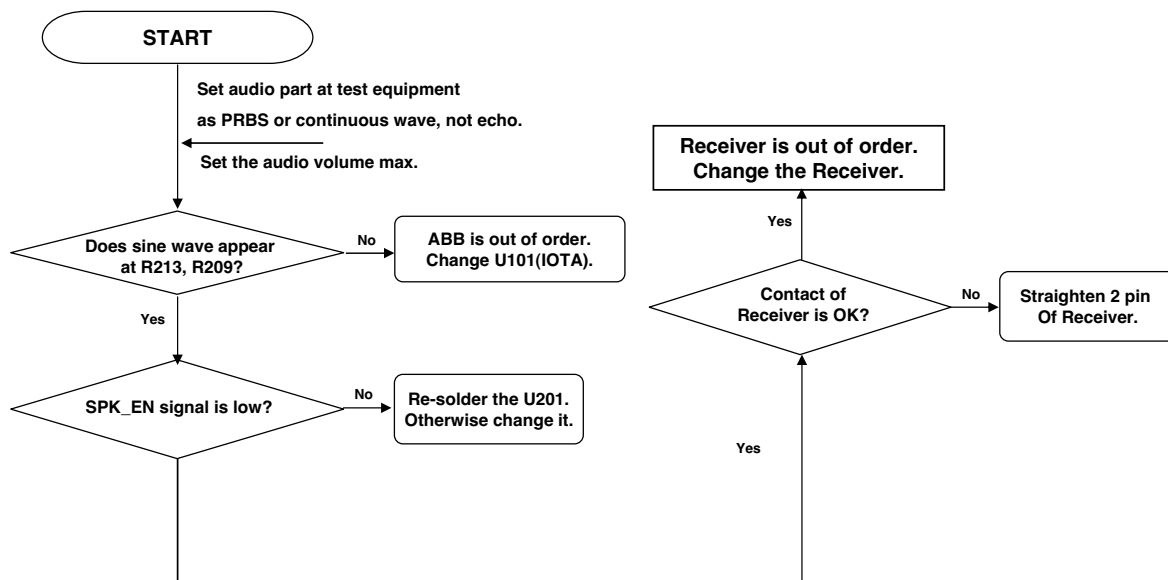
Speaker/Receiver Trouble (3)

- Receiver Trouble shooting setup
 - Initialize GSM MS test equipment.
 - Connect PIF-UNION and power on.
 - Make a test call to 112.
 - Set audio part at test equipment as PRBS or continuous wave, not echo.
- Trouble shooting Procedure
 - Check the audio signal levels at each point.
 - Check the soldering of the connector.
 - Check the contact of the receiver.
 - Check the receiver.
- Speaker Trouble Shooting Setup
 - Connect PIF to the phone, and power on.
 - Enter the engineering mode, and go to menu "Baseband -> Alert -> Ring"
- Trouble Shooting Procedure
 - Check the voltage levels of power supplies.
 - Check all sound path.
 - Check the sound level to the speaker.
 - Check the speaker and the soldering.

4. TROUBLESHOOTING

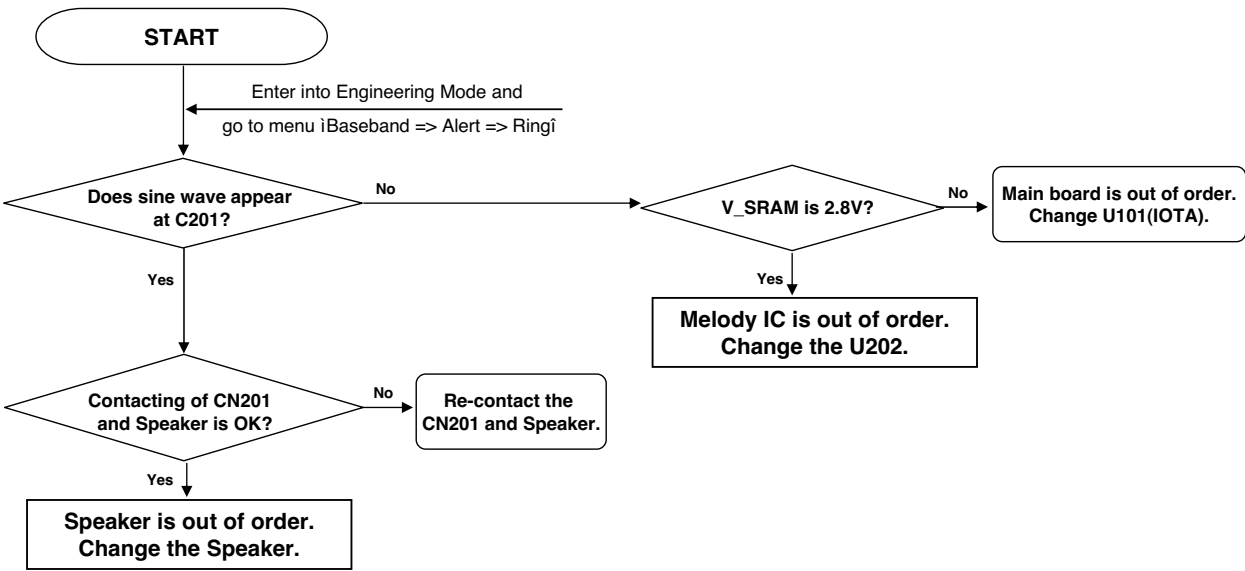
Speaker/Receiver Trouble (4)

1. Receiver Trouble



Speaker/Receiver Trouble (5)

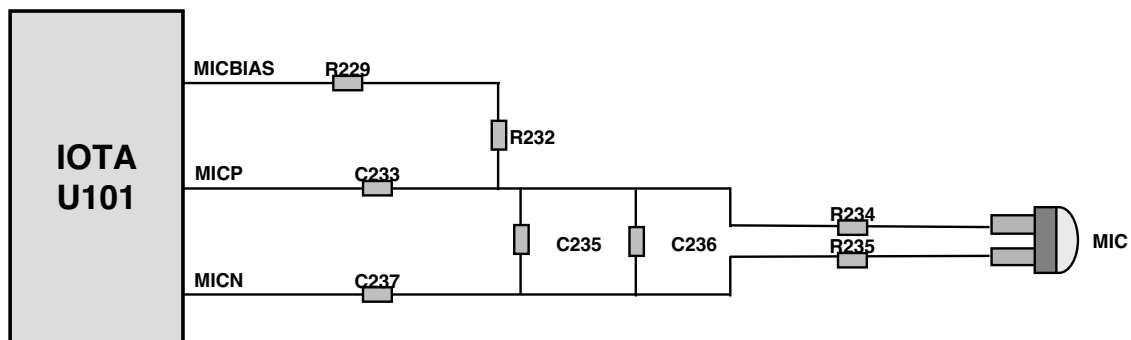
2. Speaker Trouble



4. TROUBLESHOOTING

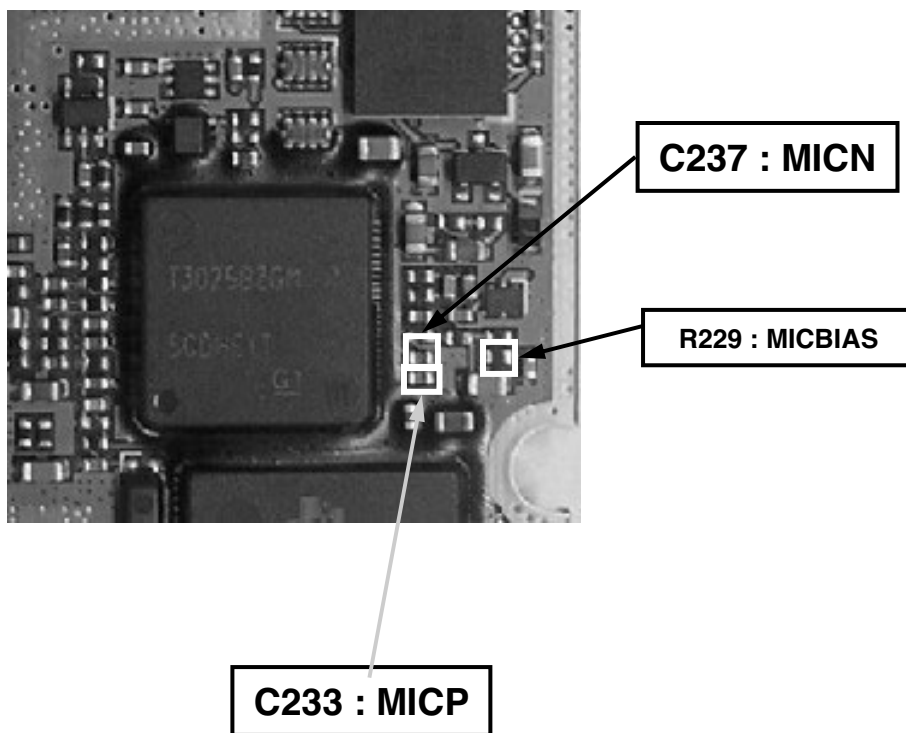
Microphone Trouble (1)

- Block Diagram



- Microphone Signal Flow
 - MIC is enable by MICBIAS
 - MICBIAS, MICP, MICN signals from IOTA(ABB)
- Check Points
 - Microphone bias
 - Audio signal level of the microphone
 - Soldering of components

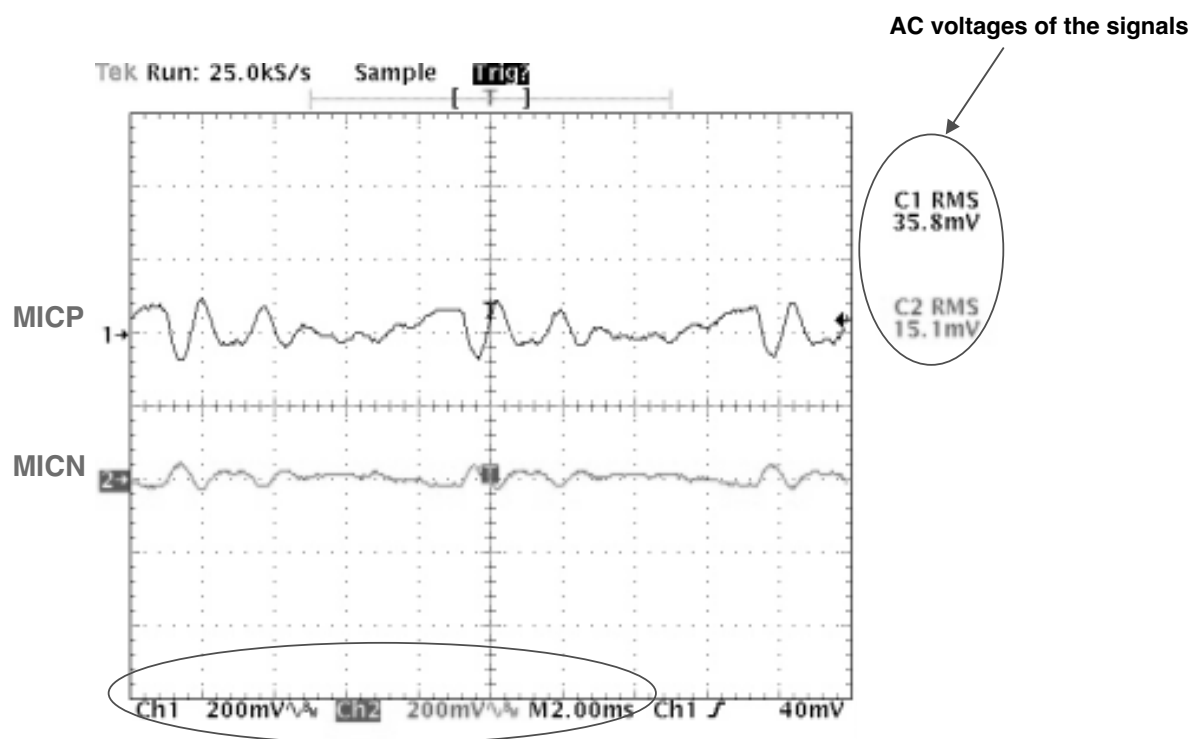
Microphone Trouble (2)



- Trouble Shooting Setup
 - Initialize GSM MS test equipment.
 - Connect PIF-UNION to the phone, and power on.
 - Make a test call to 112.
 - Make a sound in front of the microphone.
- Trouble Shooting Procedure
 - Check the bias of the microphone.
 - Check the audio signal path.
 - Check the soldering.
 - Check the microphone.

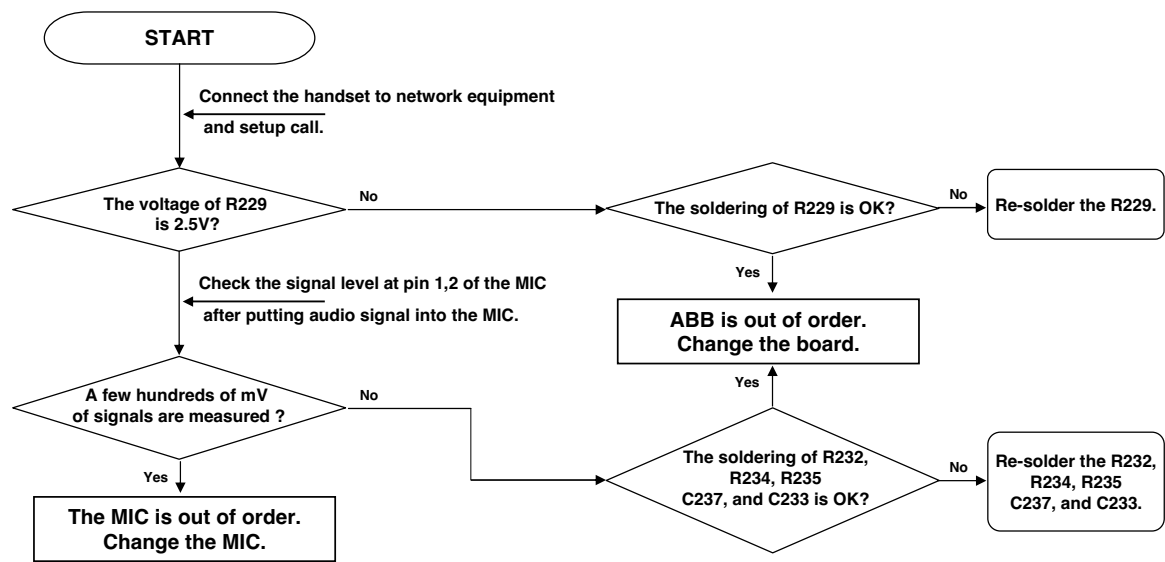
4. TROUBLESHOOTING

Microphone Trouble (3)



The waveforms at MICP and MICN

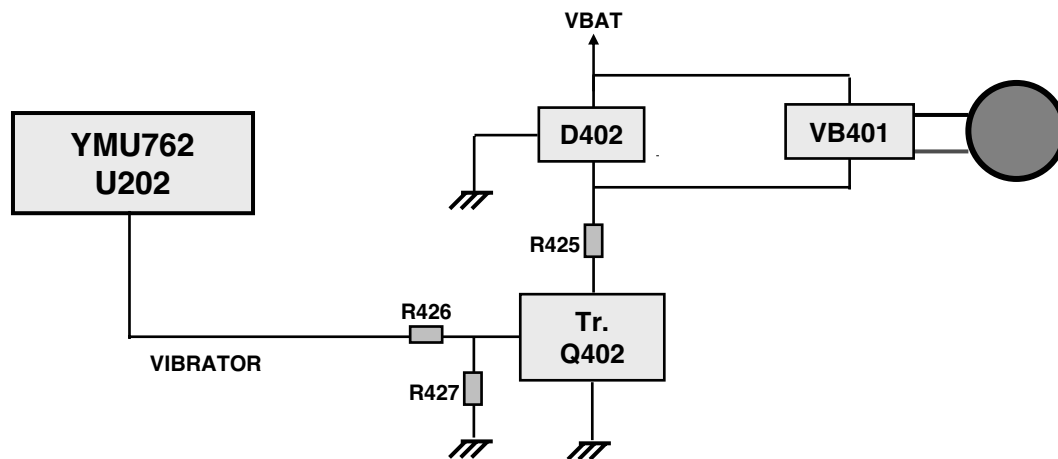
Microphone Trouble (4)



4. TROUBLESHOOTING

Vibrator Trouble (1)

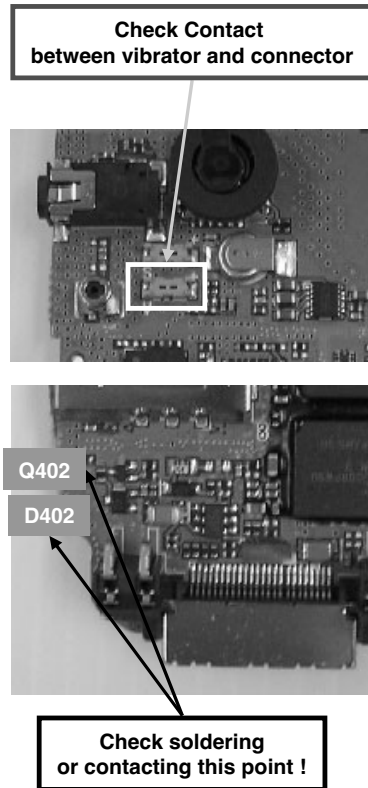
- Block Diagram



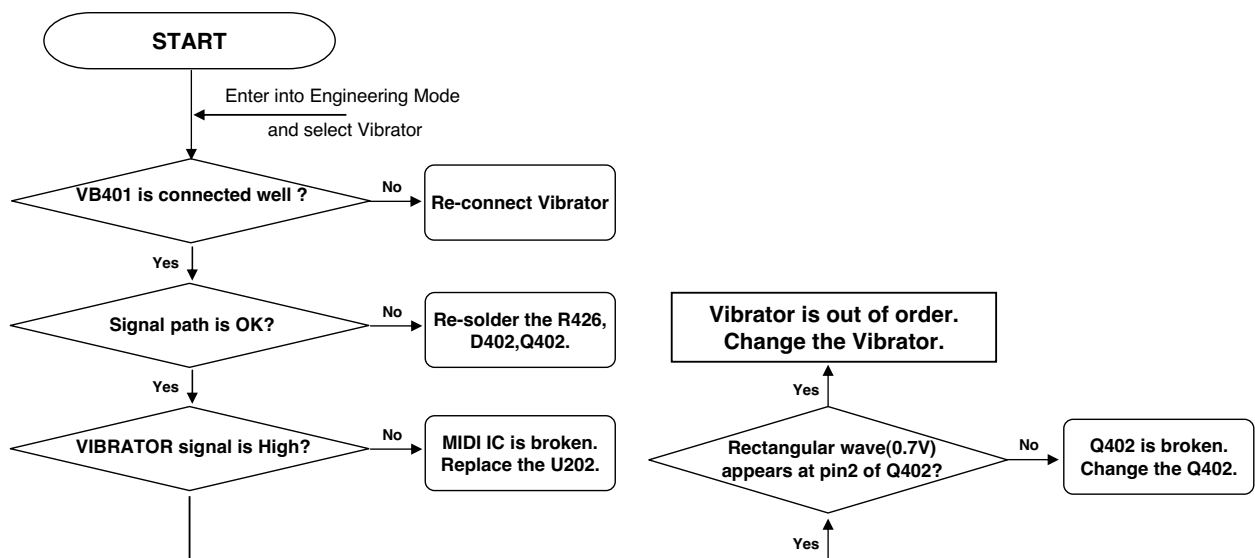
- Vibrator Operation
 - Vibrator is controlled by MIDI chip
 - When vibrator signal is high, vibrator on LCD module is enabled
- Check Points
 - VCC lines of MIDI chip
 - Vibrator signal path
 - The connection between the main board and LCD module
 - The soldering of components
 - The Vibrator

Vibrator Trouble (2)

- Trouble Shooting Setup
 - Connect PIF to the phone, and power on.
 - Enter the engineering mode.
 - Go to menu “Baseband -> Alert -> Vibrator”
- Trouble Shooting Procedure
 - Check vibrator signal
 - Check soldering of components
 - Check 2 Pin connector
 - Check vibrator



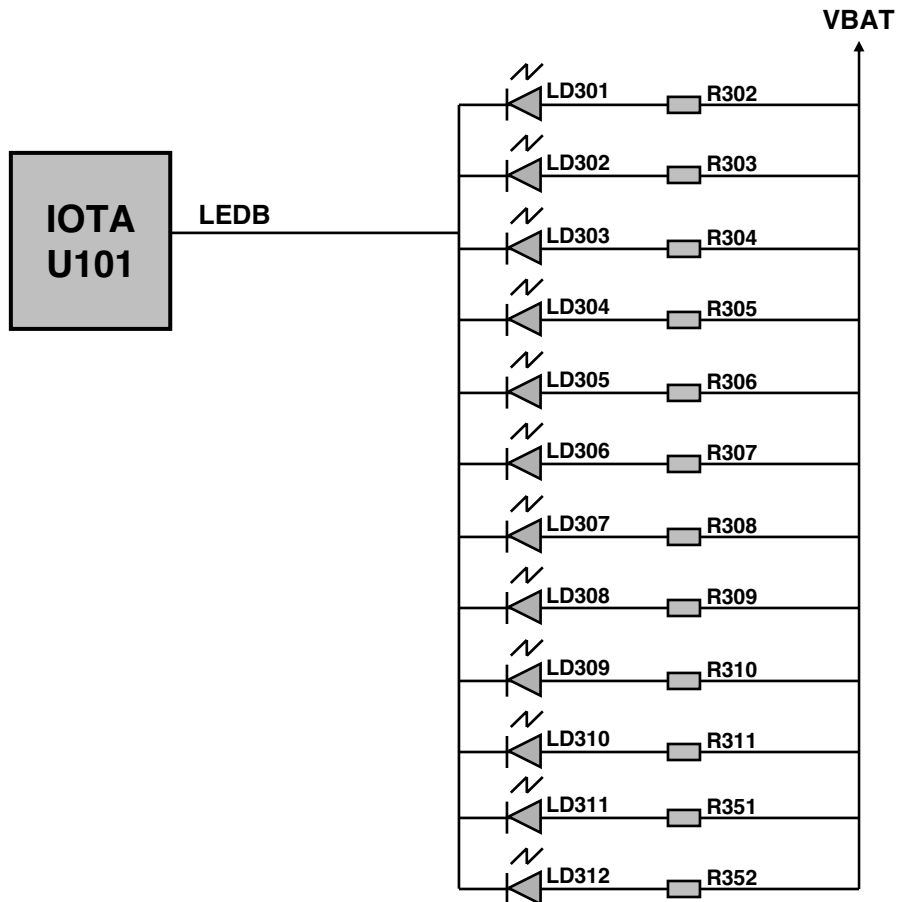
Vibrator Trouble (3)



4. TROUBLESHOOTING

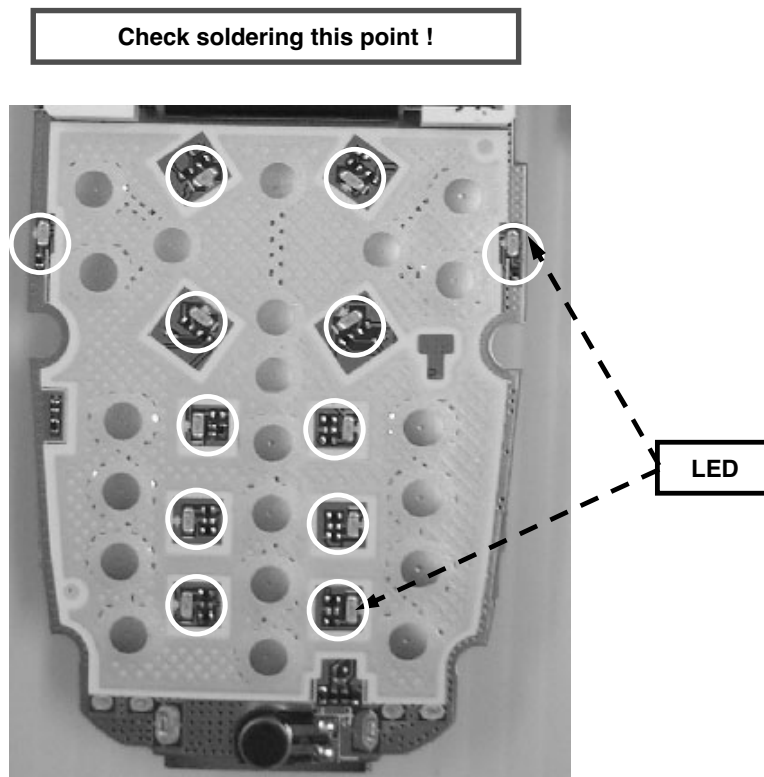
Keypad Backlight Trouble (Number Key) : (1)

- Block Diagram



- Backlight Operation
 - The keypad LED backlight is controlled with LEDB signal.
 - LEDB signal from ABB.
 - The LEDs are forward biased and turned on.
- Check Point
 - LEDB signal
 - LEDs

Keypad Backlight Trouble (Number Key) : (2)

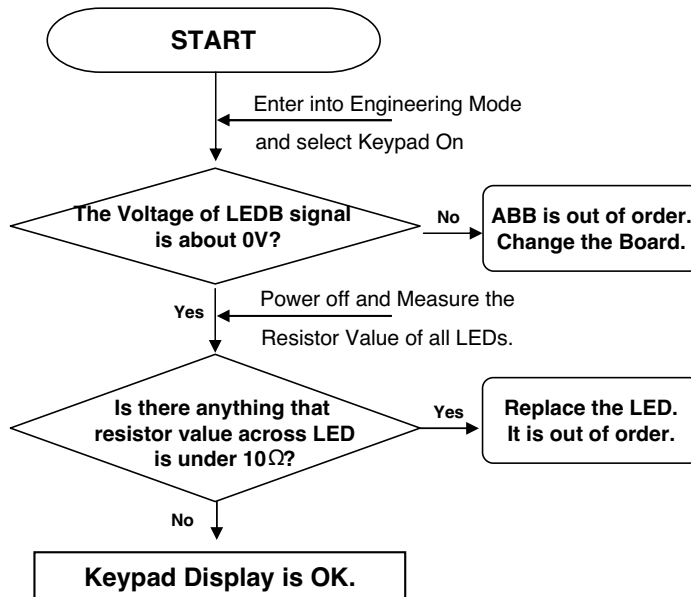


- Trouble Shooting Setup
 - Connect PIF-UNION to the phone, and power on.
 - Enter engineering mode.
 - Go to menu “Baseband -> Backlight -> Keypad on”
- Trouble Shooting Procedure
 - Check the soldering of components.
 - Check the LEDB signal.
 - Check LEDs.

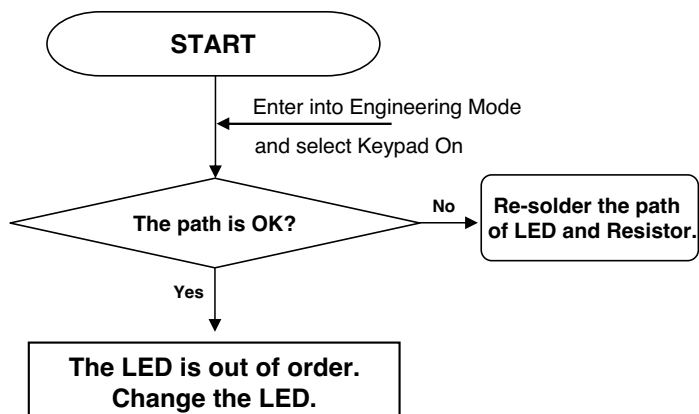
4. TROUBLESHOOTING

Keypad Backlight Trouble (Number Key) : (3)

1. All LEDs are not working

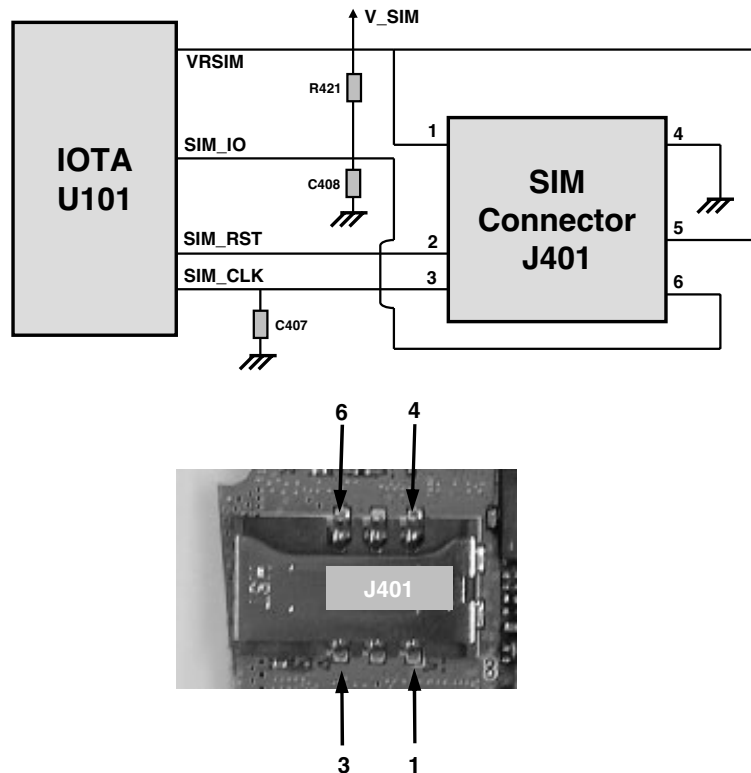


2. Any LED is not working



SIM Detect Trouble (1)

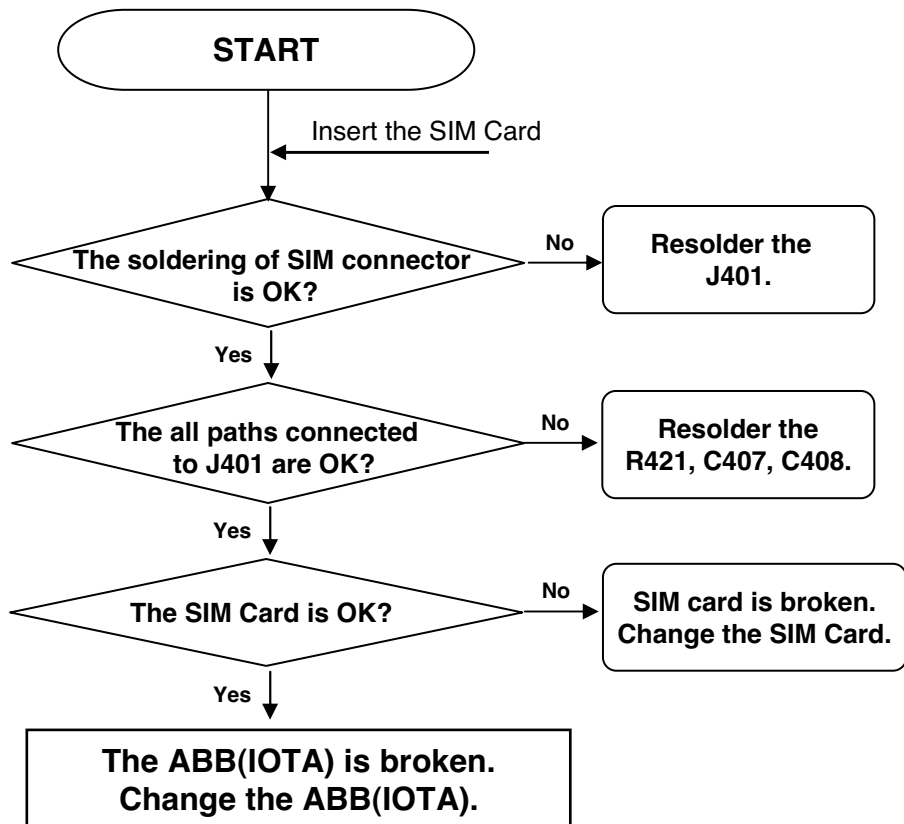
- Block Diagram



- Connection between SIM and DBB
 - SIM_CLK, SIM_IO, SIM_RST
- Check Point
 - Contact between SIM and socket
 - Soldering of SIM socket
- Trouble Shooting Setup
 - Insert the SIM into socket
 - Connect PIF to the phone, and power on.
- Trouble Shooting Procedure
 - Check the power supply.
 - Check the soldering of SIM socket.
 - Check the SIM.

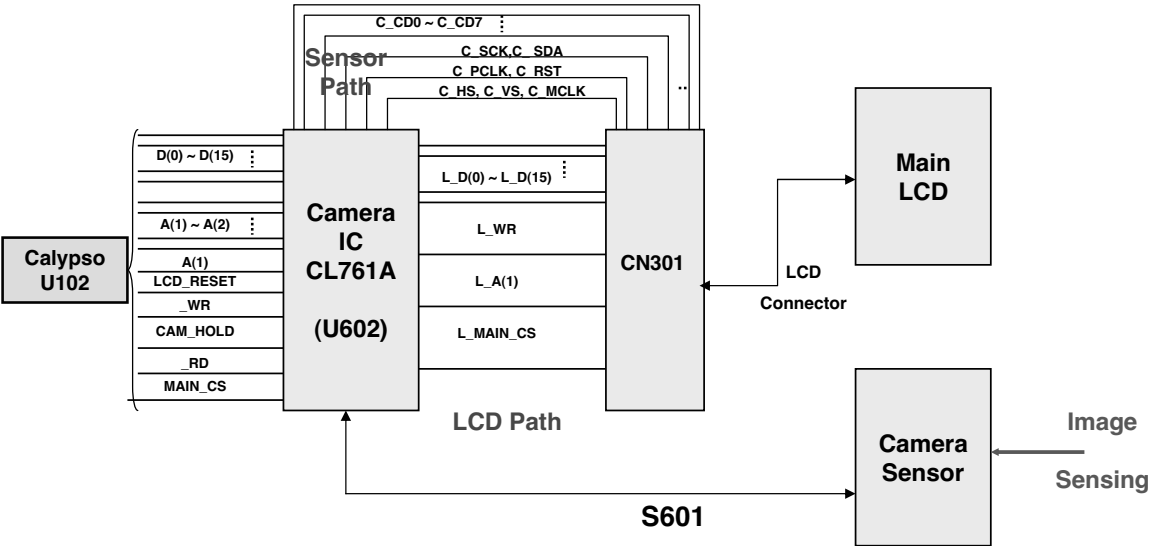
4. TROUBLESHOOTING

SIM Detect Trouble (2)



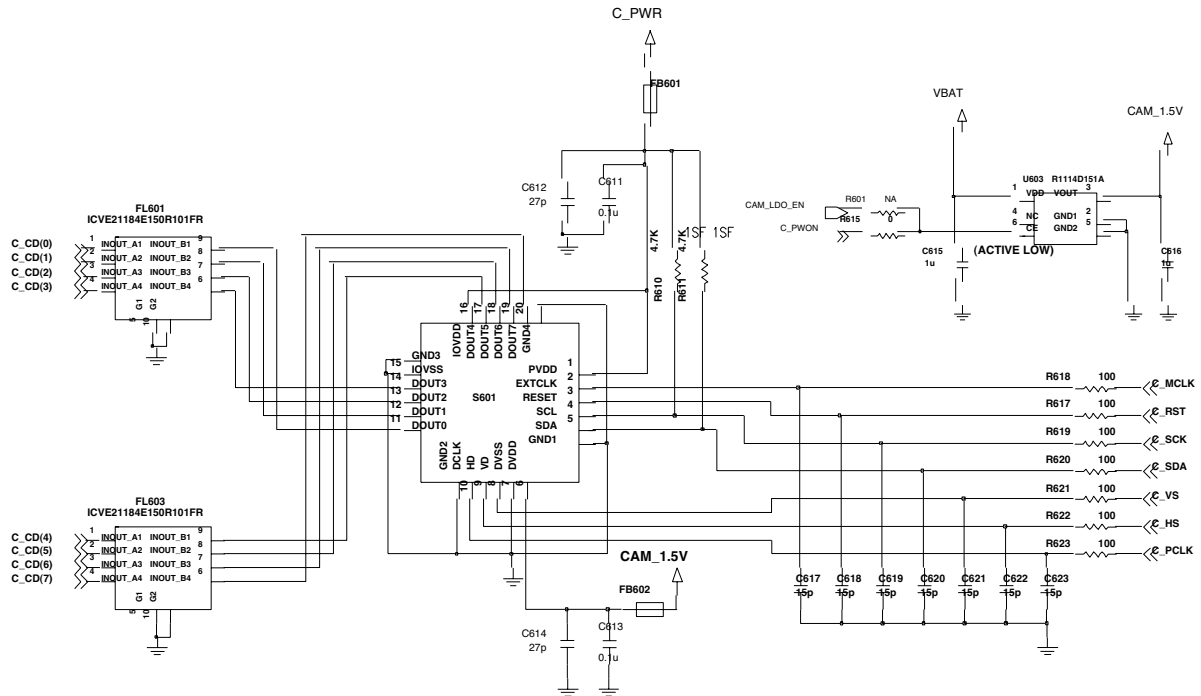
Camera Trouble (1)

- Block Diagram

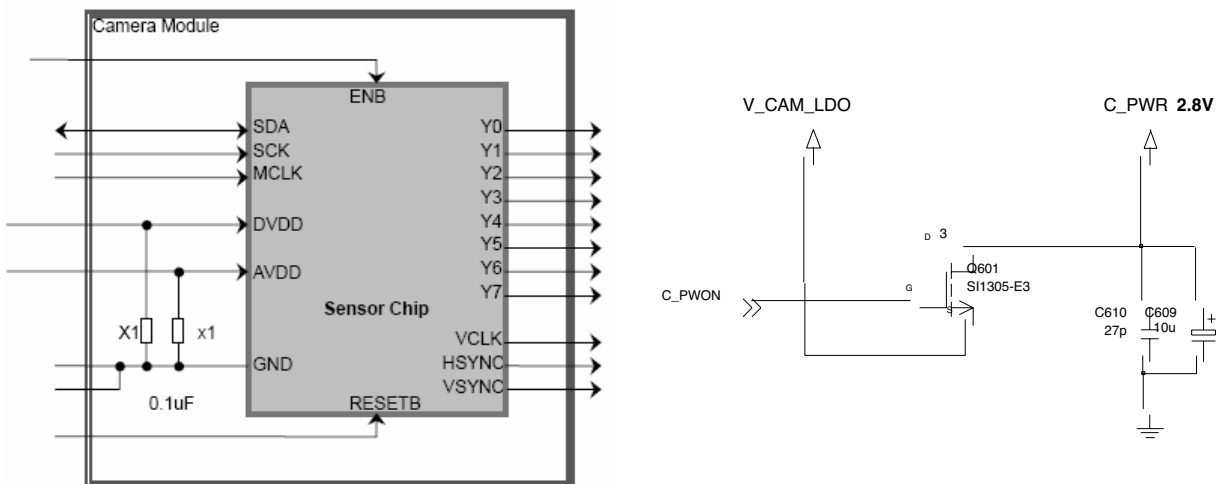


4. TROUBLESHOOTING

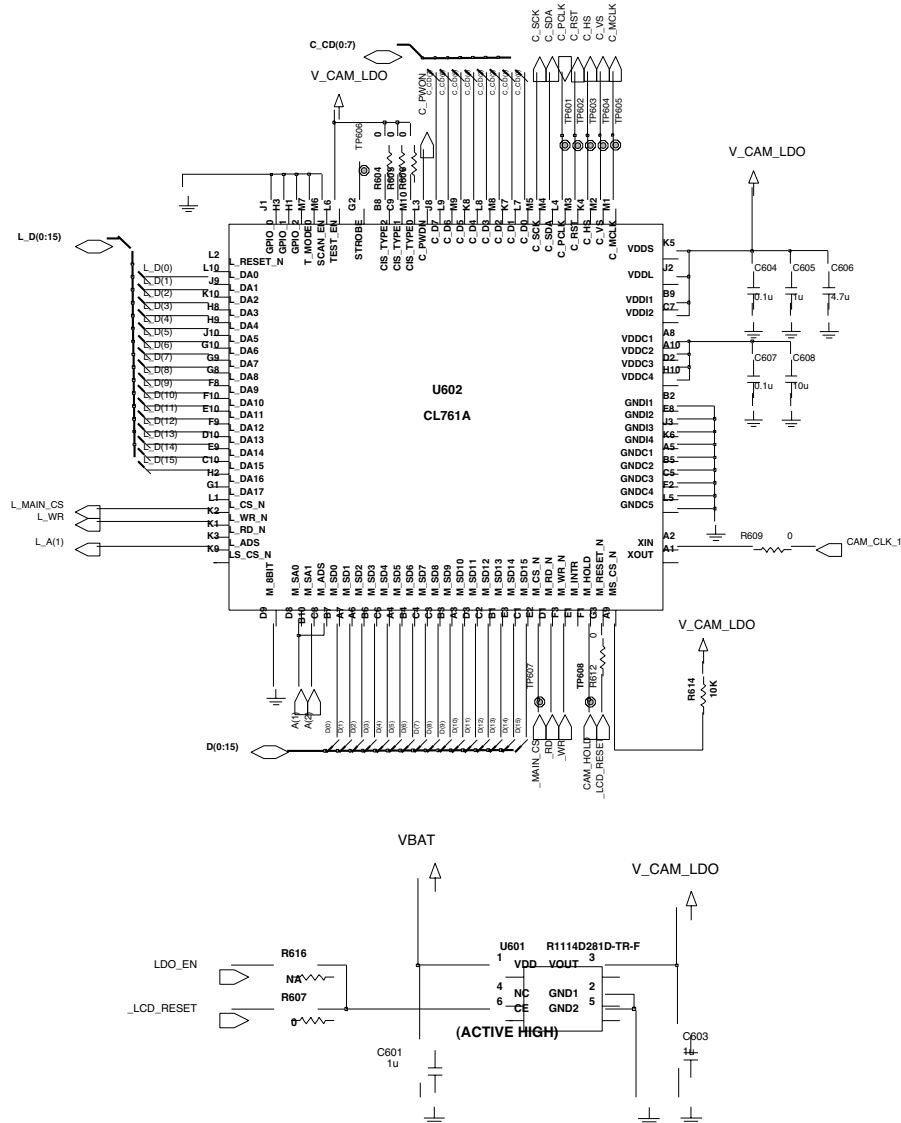
Camera Trouble (2)



• Camera Sensor Block Diagram



Camera Trouble (3)



CAMERA Operation

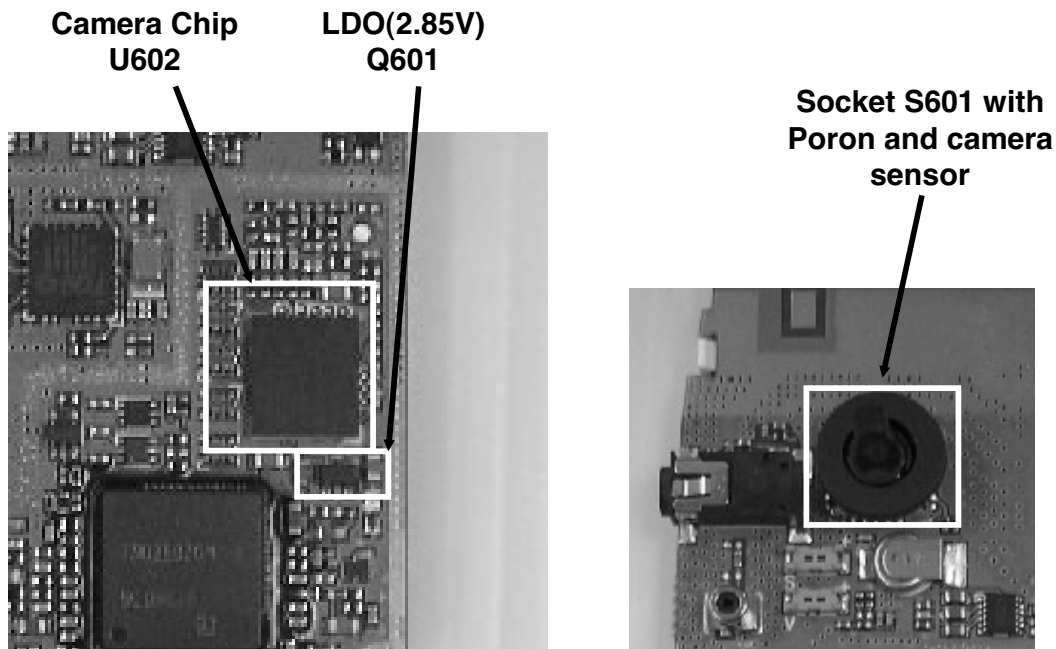
- U602(Camera Chip/USB Controller IC) is controlled by DBB.
- The Power is supplied to U601(2.85V).

CAMERA signal flow

- This camera signal is delivered to Camera IC(U602).

4. TROUBLESHOOTING

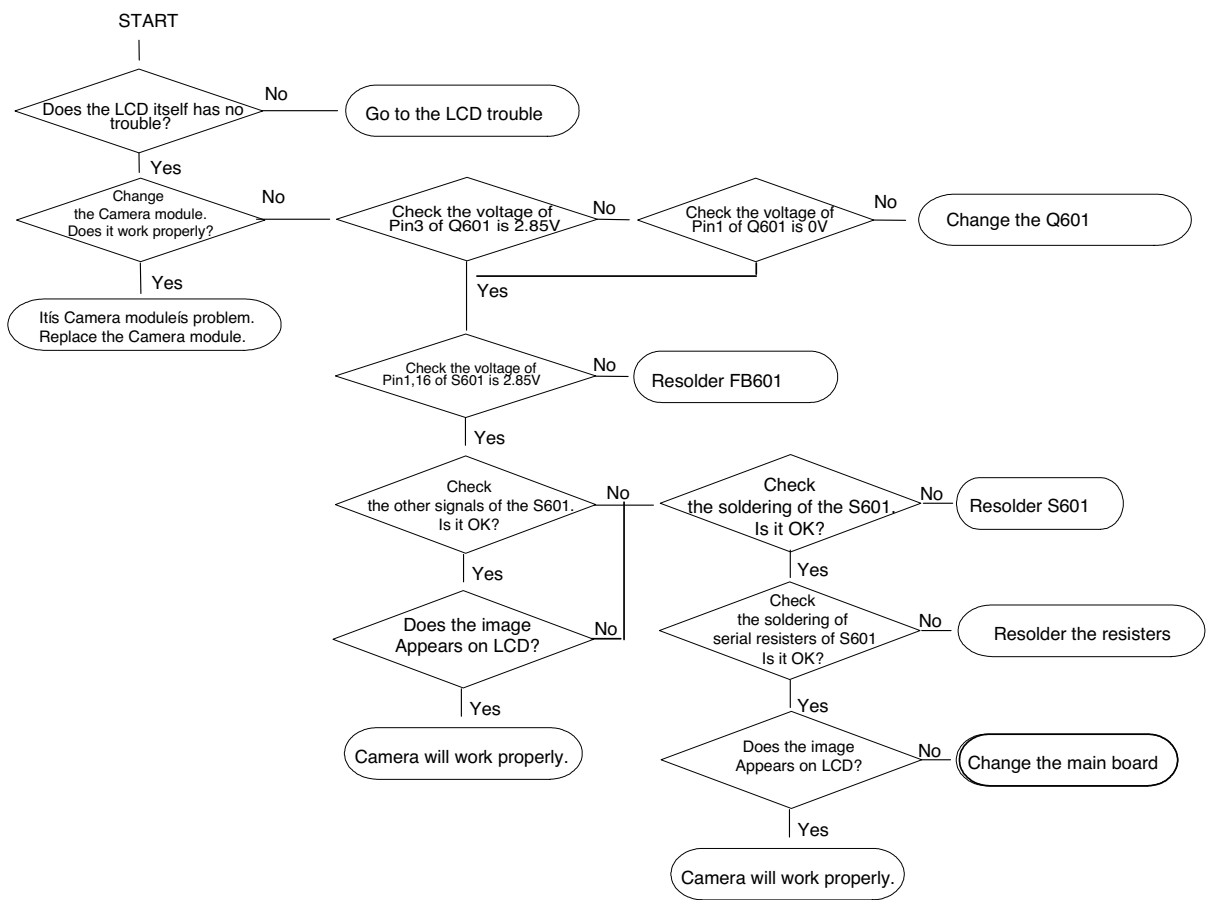
Camera Trouble (4)



Camera Trouble (5)

- Trouble Shooting Setup
 - Enter the engineering mode.
 - Go to menu “Baseband -> Camera ”
- Trouble Shooting Procedure
 - Check the Power Supply(2.85).
 - Check the connection between socket and camera.(S601)
- Camera signals from DBB
 - _MAIN_CS, CAM_HOLD, _WR,
 - _RD, A(1)~A(2), D(0) ~D(15), _LCD_RESET

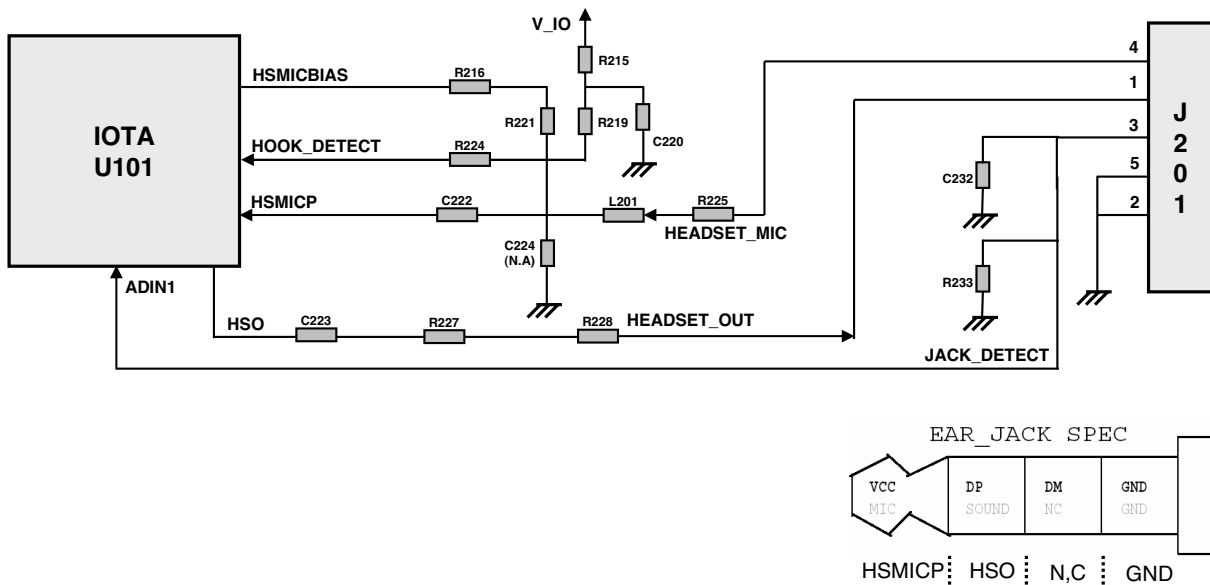
Camera Trouble (6)



4. TROUBLESHOOTING

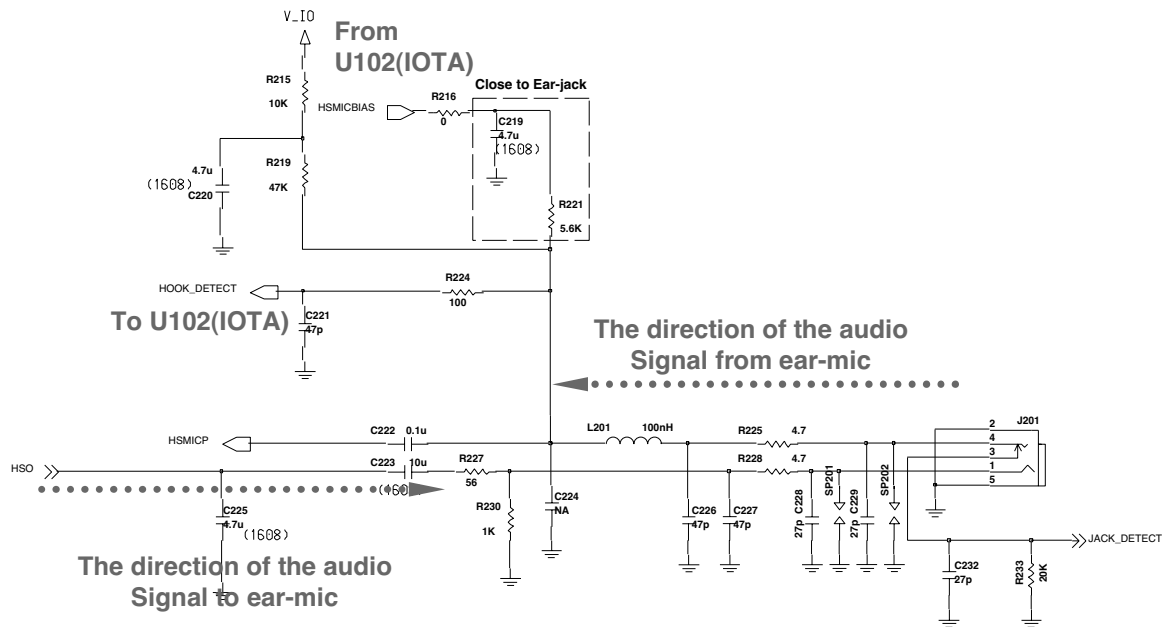
Earphone Trouble (1)

- Block Diagram



- Earphone Detecting Operation
 - The ABB operates A/D conversion continuously and if the value of “ADIN1” node goes to about 0, that is, voltage at “JACK_DETECT” 0.02V to 0.25V, it detects ear-jack inserted.
 - The ABB operates A/D conversion continuously and if the voltage of “HOOK_DETECT” node goes to 0V, it detects hook switch is pushed.

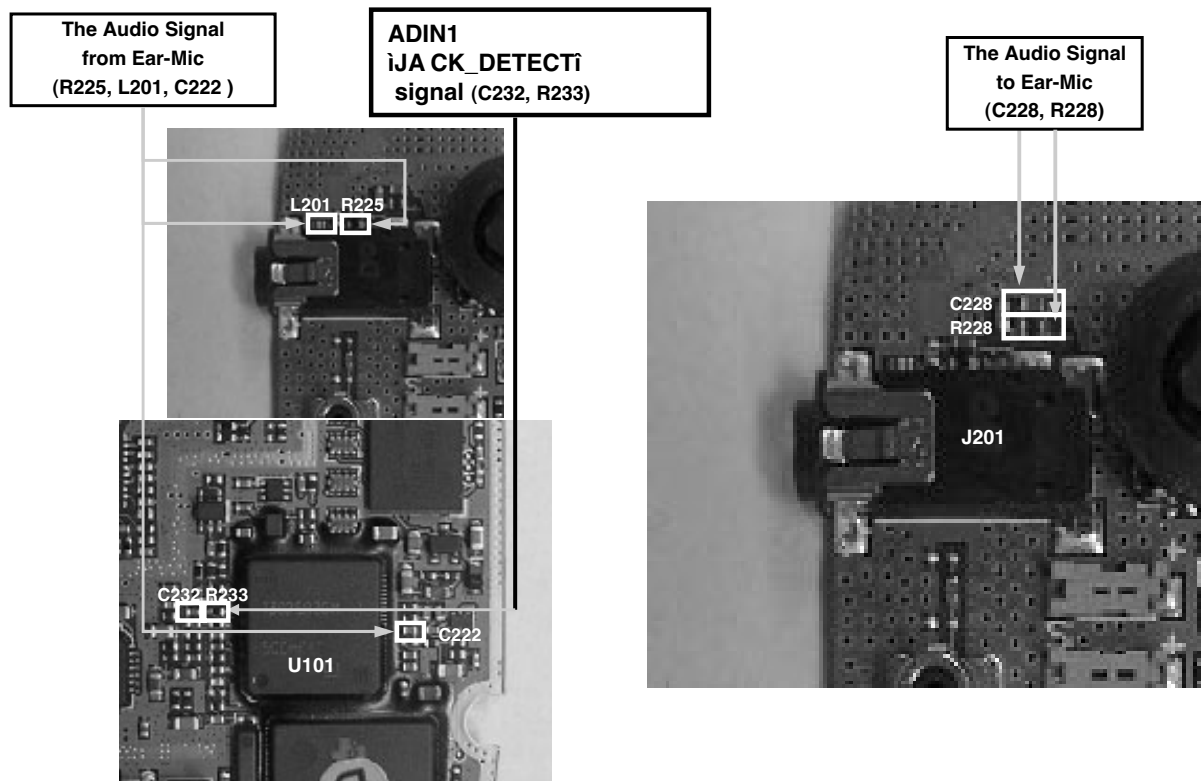
Earphone Trouble (2)



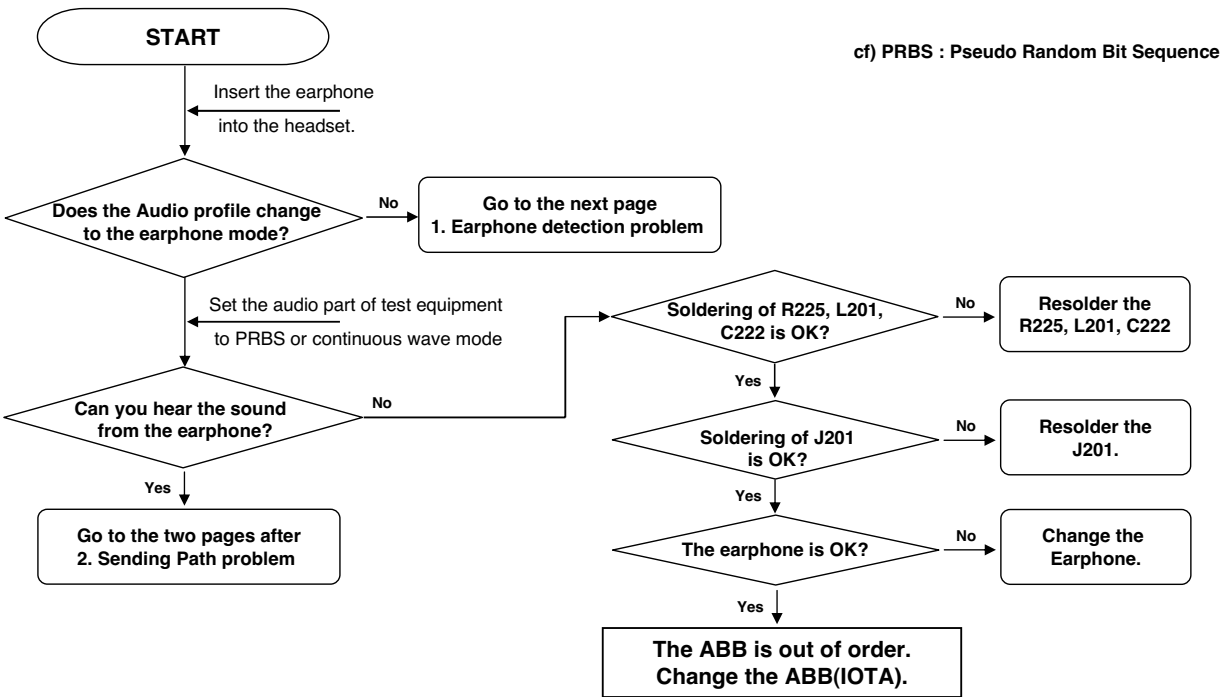
- Earphone Sending Path
 - HSMICP is the audio signal from the microphone of the earphone.
 - R225, L201 and C222 make the path of the audio signal from the microphone of the earphone.
 - This audio signal is delivered to ABB(IOTA).
- Earphone Receiving Path
 - HSO is the audio signal from ABB(IOTA).

4. TROUBLESHOOTING

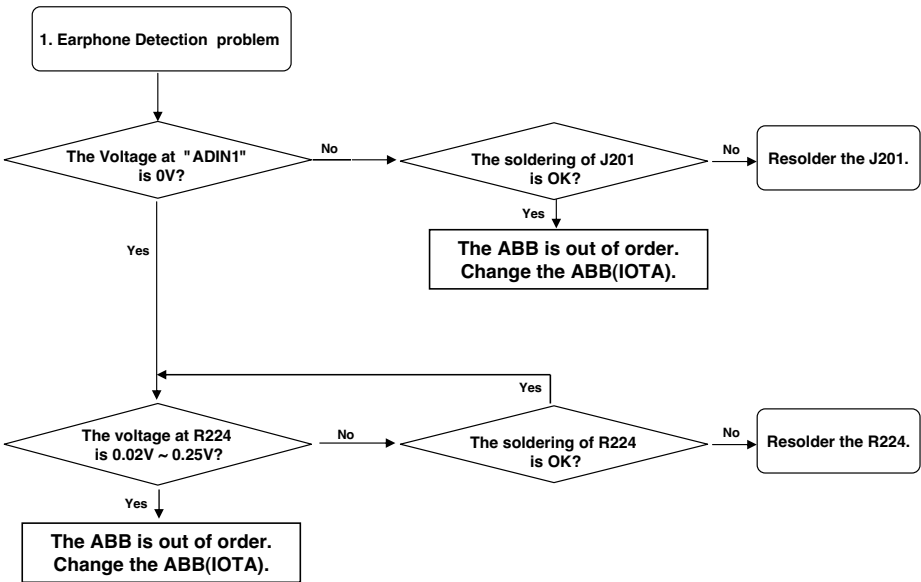
Earphone Trouble (3)



Earphone Trouble (4)

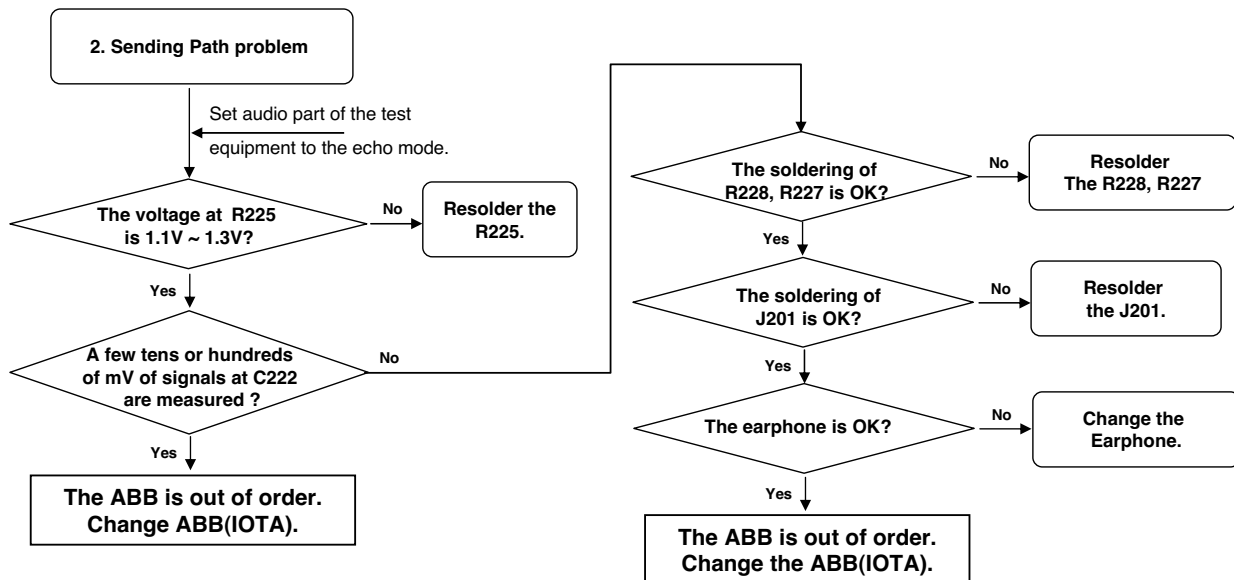


Earphone Trouble (5)



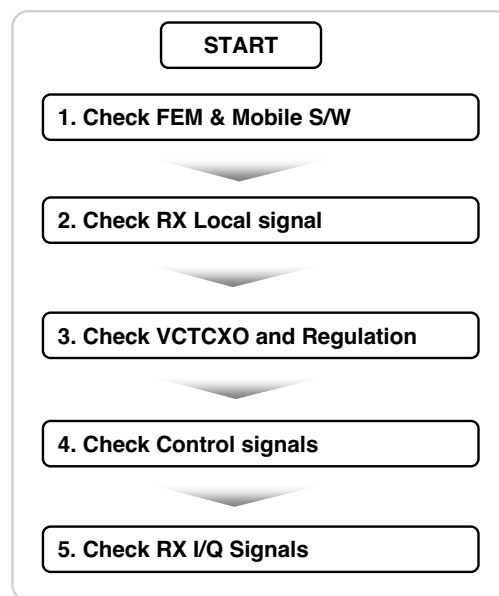
4. TROUBLESHOOTING

Earphone Trouble (6)

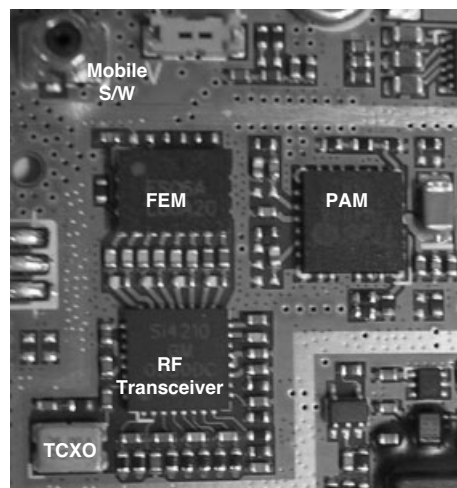


4.2 RF Part Troubleshooting

RX Part Trouble Shooting(1)



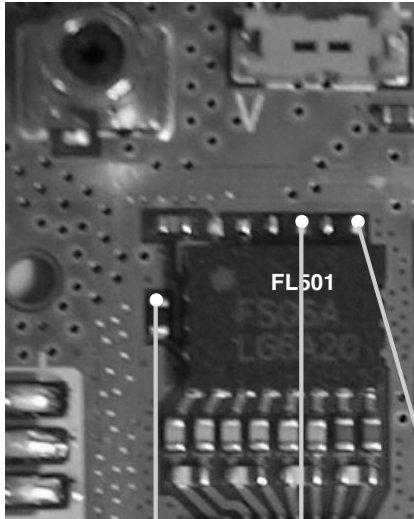
TEST Setup : GSM850 190Ch & PCS 661Ch
- 60dBm BCCH AGC Gain 24dB



4. TROUBLESHOOTING

RX Part Trouble Shooting(2)

1. Check Ant. SW and Mobile SW



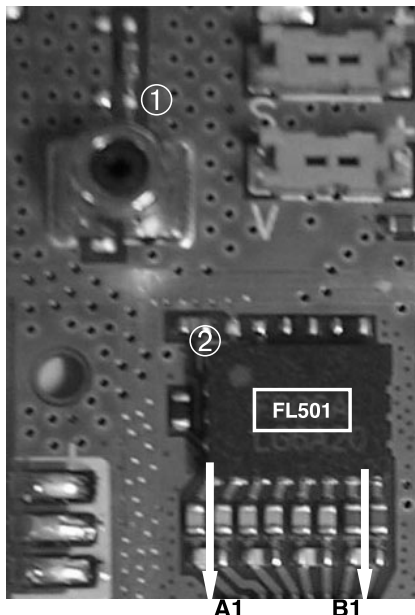
➤ Check Ant. SW control signals
(Outputs of And gate).

MG185d	Tx (850)	Tx (1800/1900)	Rx GSM (850)	Rx DCS (1800)	Rx PCS (1900)
Vdd	On	On	On	On	On
ANT_SW1	On	On	Off	Off	Off
ANT_SW2	Off	On	On	Off	Off
ANT_SW3	Off	On	Off	On	Off

ANT_SW3 ANT_SW2 ANT_SW1

RX Part Trouble Shooting(3)

2. Check Mobile SW & FEM



- ① Check RF Power at each point(①,②).
- ② If not, change SW501(Mobile SW)
- ③ Check SAW Filter Output power(A1, B1)
 - GSM Insertion loss ~-2.5dB
 - PCS Insertion loss ~-3dB
- ④ If checked insertion loss is too big,
check matching circuit or change FEM
(FL501)

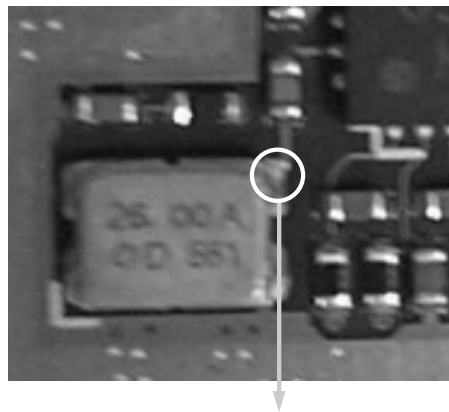
Check these circuit with High Frequency Probe.
You can see RF signal at Spectrum Analyzer !

RX Part Trouble Shooting(4)

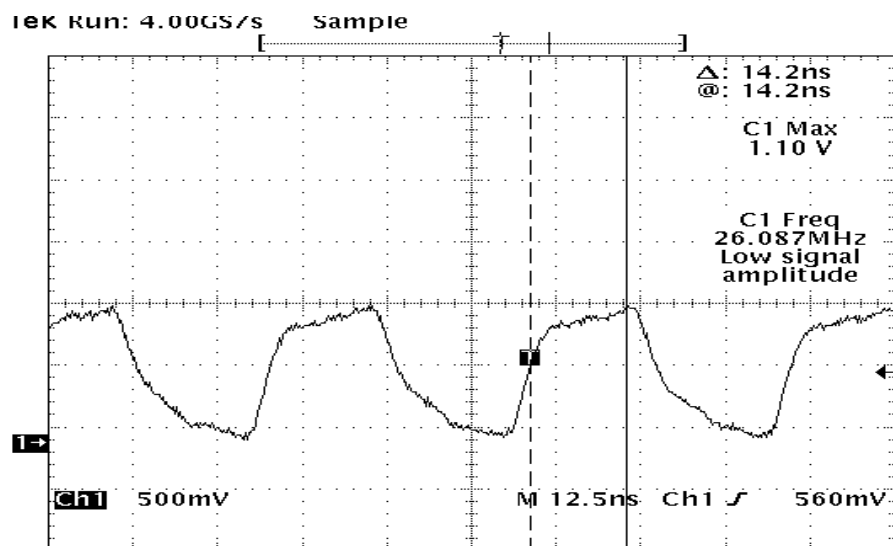
3. Check VCTCXO and Regulation

① VCTCXO

- 26MHz Clock Output



26MHz frequency output

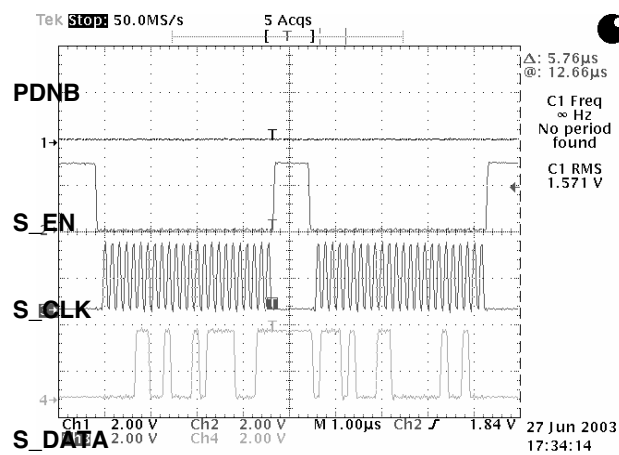
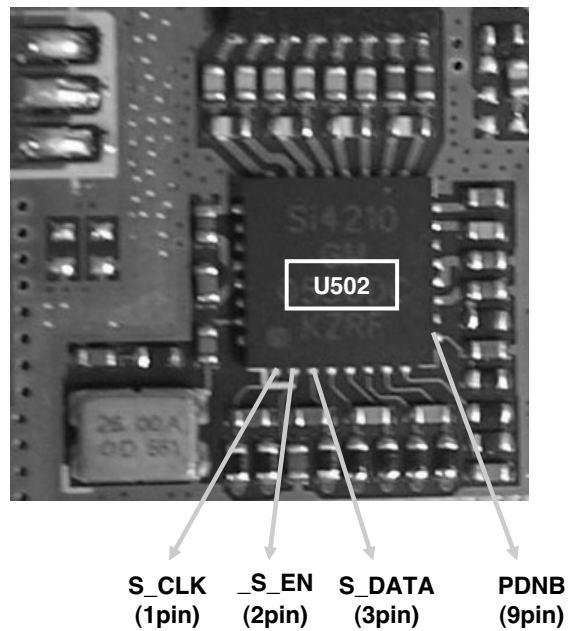


4. TROUBLESHOOTING

RX Part Trouble Shooting(5)

4. Check control signals

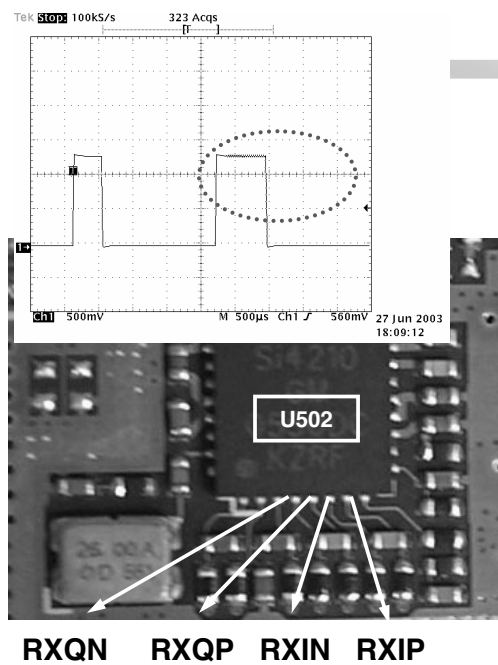
- ① PDNB, S_EN, S_CLK, S_DATA



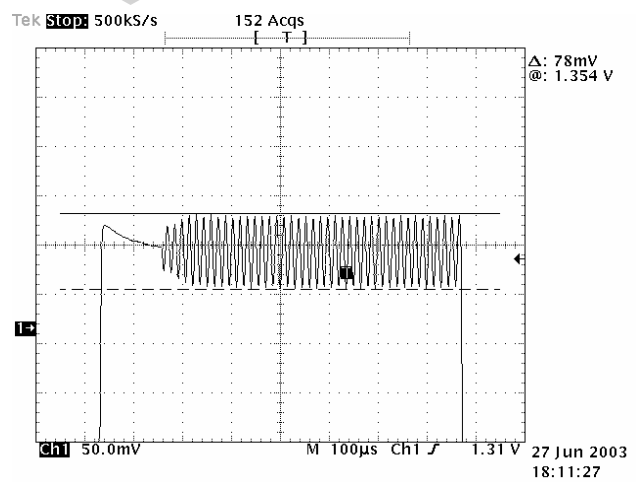
4. TROUBLESHOOTING

RX Part Trouble Shooting(6)

5. Check RX I/Q signal

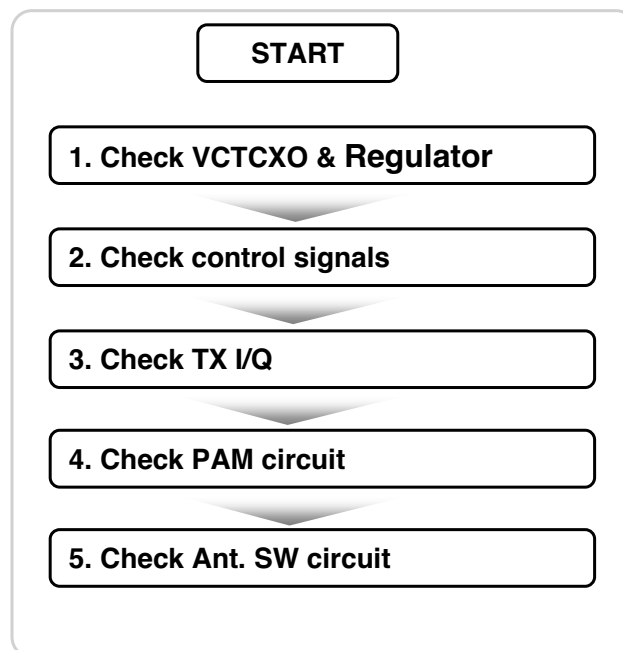


Expanded !

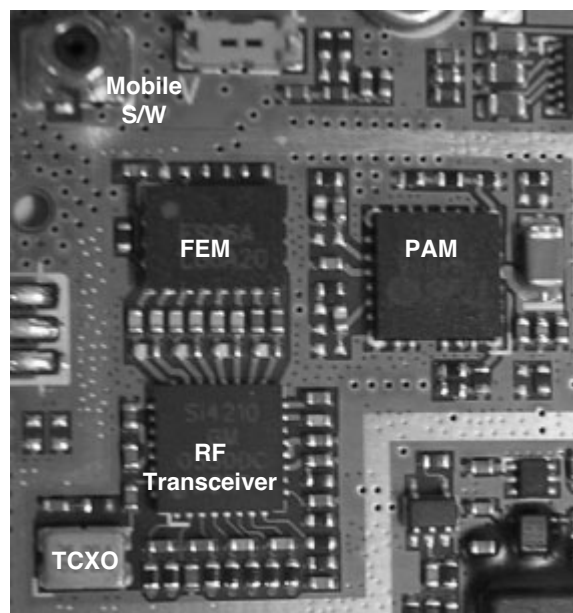


4. TROUBLESHOOTING

4.3 TX Part Trouble Shooting(1)



TEST Setup : GSM850 190Ch & PCS 661Ch
- 60dBm BCCH AGC Gain 24dB



TX Part Trouble Shooting(2)

1. Check VCTCXO and Regulator

① VCTCXO

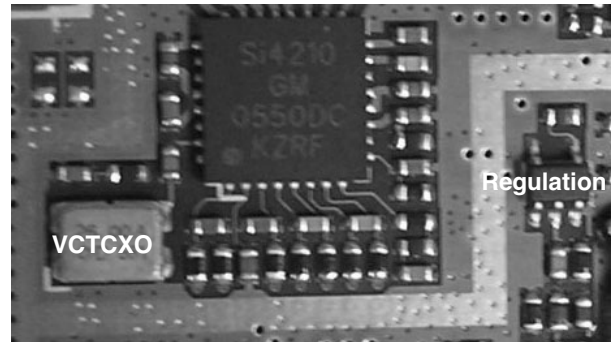
- 26MHz Clock Output

② Regulator

- 2.85V Regulator Out

1. Check Control Signals

① PDNB, _S_EN, S_CLK, S_DATA



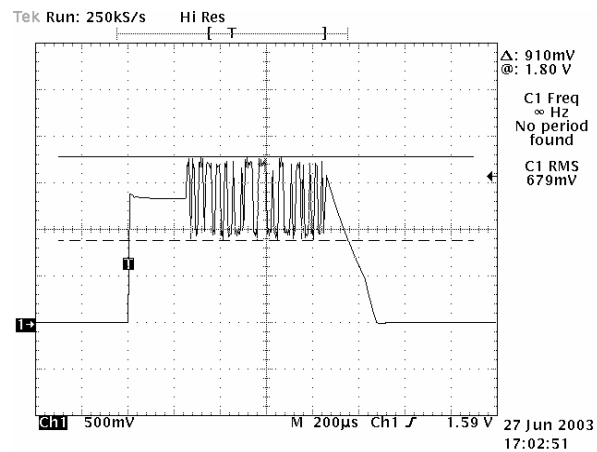
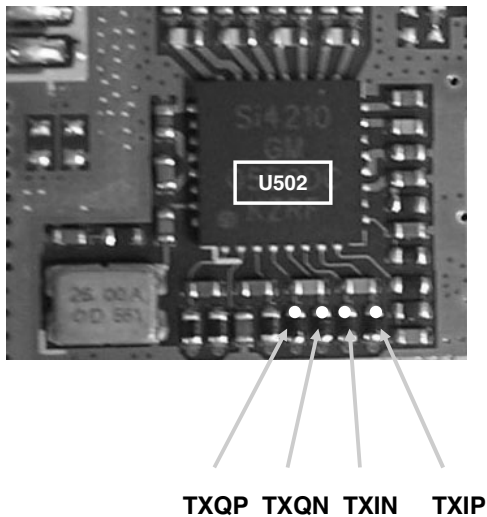
Same as RX Trouble Shooting
Procedure No.4 and 5.

4. TROUBLESHOOTING

TX Part Trouble Shooting(3)

3. Check Tx I/Q

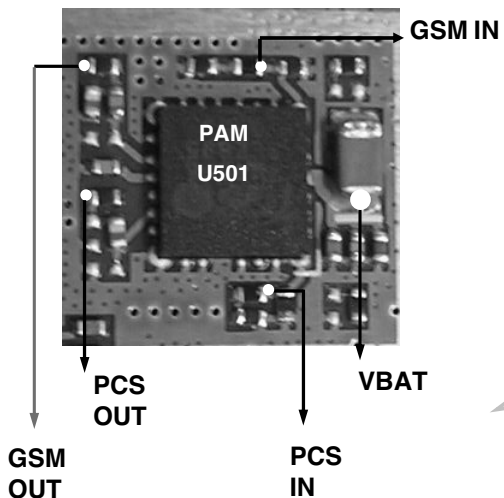
① Tx I/Q



TX Part Trouble Shooting(4)

4. Check PAM Circuit

① PAM input and output



- Tx Carrier Frequency
 - GSM 190Ch. : 836.6MHz
 - PCS 661Ch. : 1880.0MHz
- PAM output power
 - GSM : about 33dBm
 - PCS : about 30dBm

Check these points with High Frequency Probe.

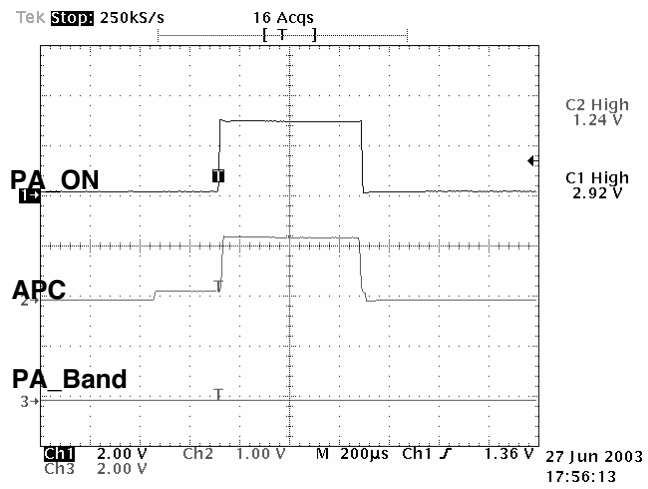
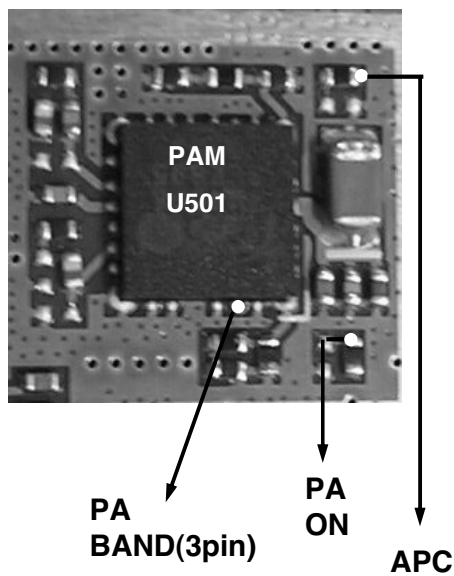
You can see RF signal at Spectrum Analyzer !

4. TROUBLESHOOTING

TX Part Trouble Shooting(5)

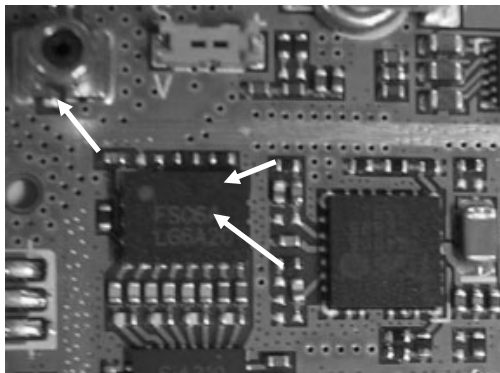
5. Check PAM Circuit

② PAM control signals



TX Part Trouble Shooting(6)

6. Check Ant. SW circuit



Control signal ANT_SW1, ANT_SW2
ANT_SW3

Same as RX Trouble Shooting
Procedure No.1

Tx OUT Power
GSM : about 33dBm

PCS : about 30dBm

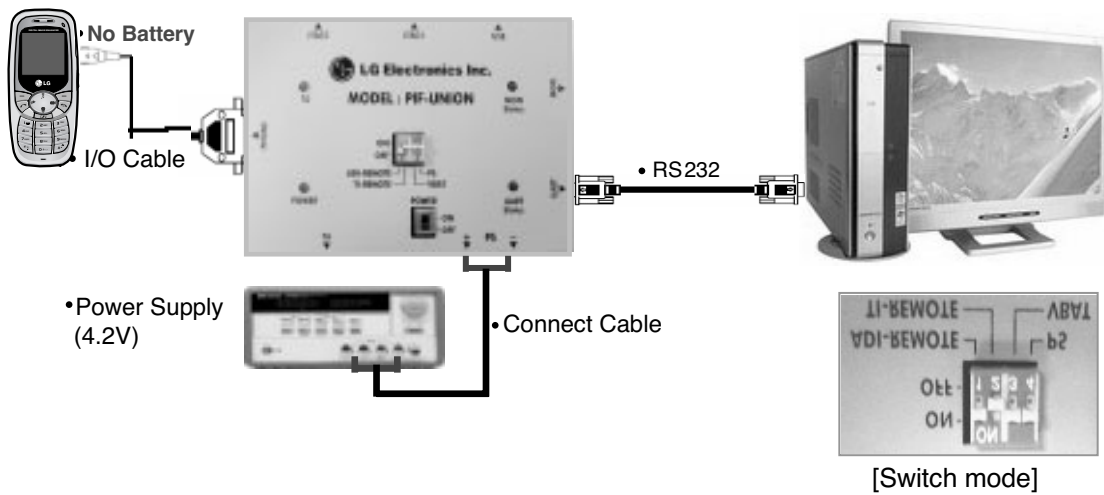
Check these points with High Frequency Probe.
You can see RF signal at Spectrum Analyzer !

5. DOWNLOAD

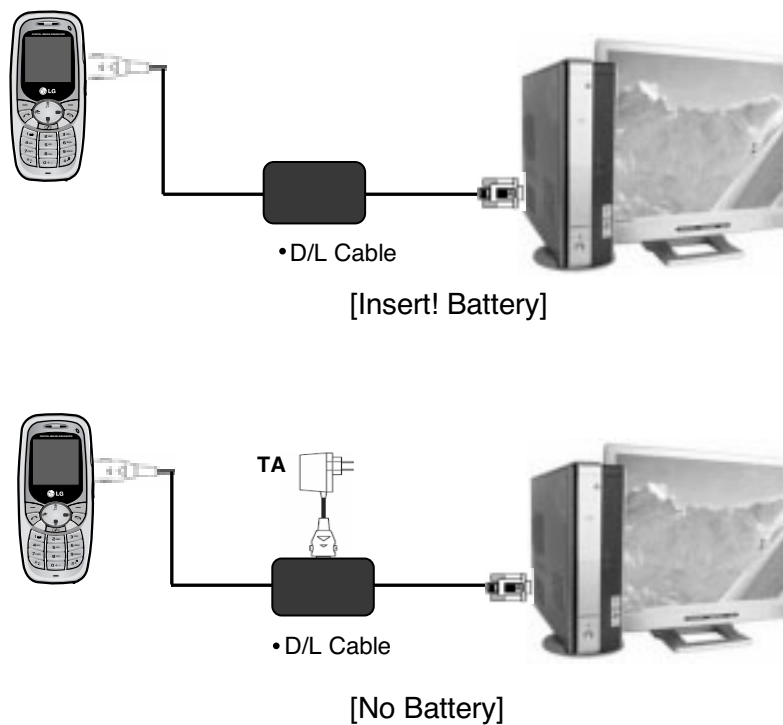
5. DOWNLOAD

5.1 H/W Tool Setup

1) PIF Jig



2) D/L Cable



5.2 Install & Directory structure

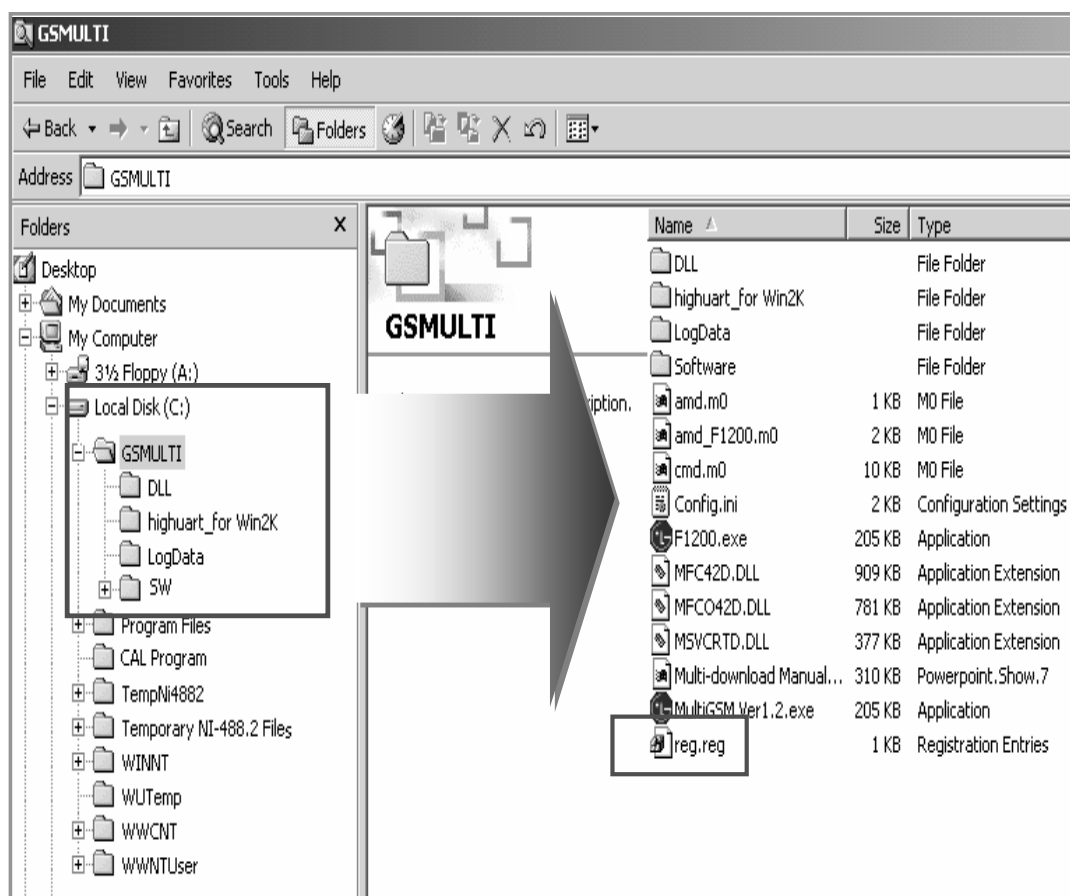
1) Copy! GSMULTI D/L Program in local Disk(C:)

- Folder name : Only "GSMULTI"
- This program and DLL file and SW is on GCSC Website

2) Registry of GSMULTI Program

- Execute by double click :  reg.reg

3)After Install Directory structure



5. DOWNLOAD

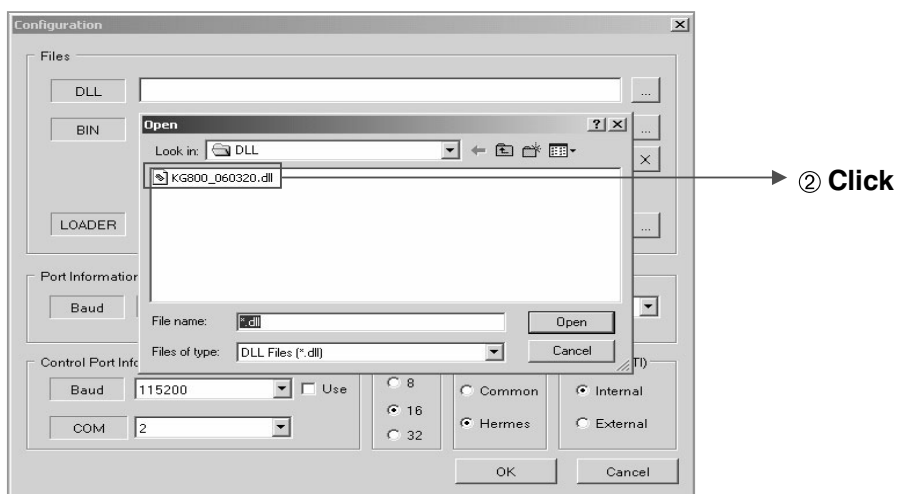
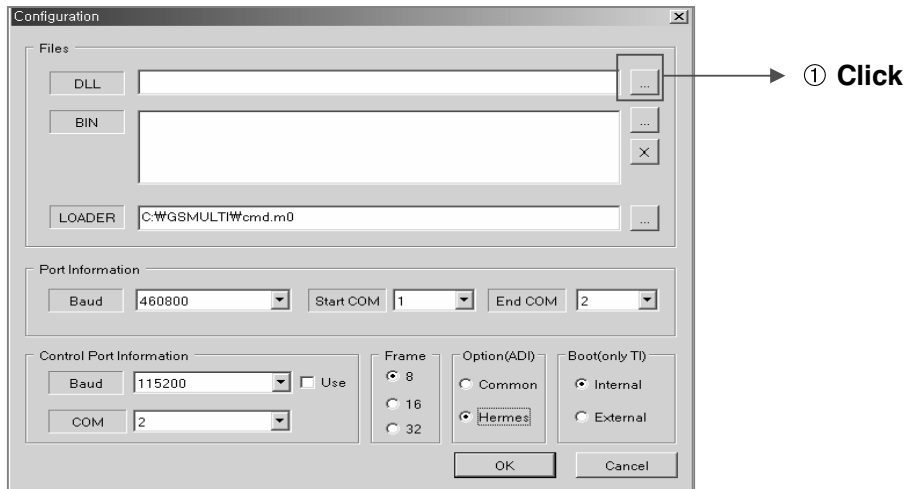
5.3 Configuration setting

1) Choose DLL

Copy! KG800 DLL File in DLL folder

MG800c DLL File in DLL folder

- Path of Dll folder : Local(C:) → GSMULTI Folder → Dll Folder
- Dll file is on GCSC Website



•Path of Configuration Screen

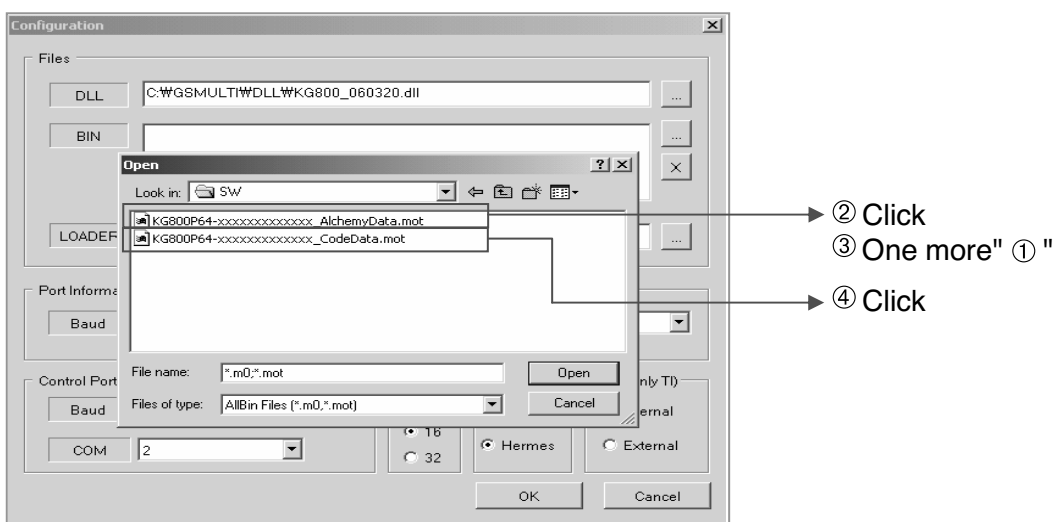
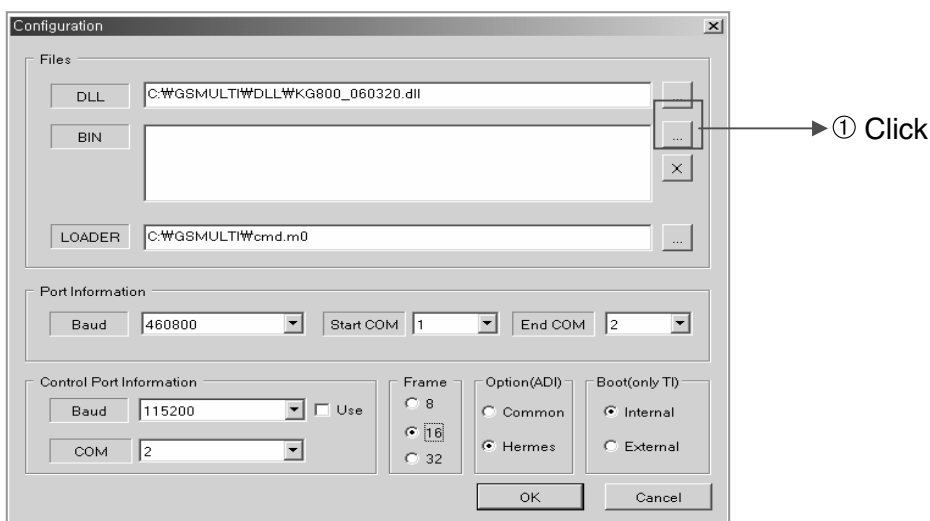
Local(c:) → GSMULTI → MultiGSM Ver1.2.exe → Setting(S) → Configuration

2) Choose SW

Copy! KG800 SW in SW folder

MG800c SW in SW folder

- Path of SW folder : Local(C:) → GSMULTI Folder → SW Folder
- SW is on GCSC Website



•SW Name Format

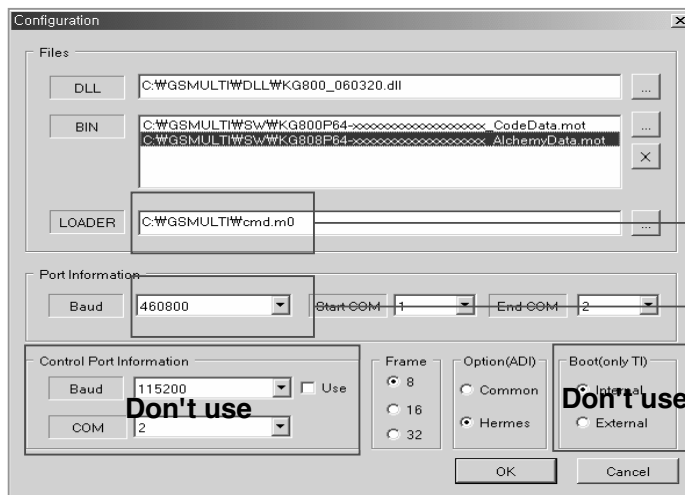
KG800P64-xxxxxxxxxxxxxxxxx_CodeData.mot
KG800P64-xxxxxxxxxxxxxxxxx_AlchemyData.mot

→ Difference as per country

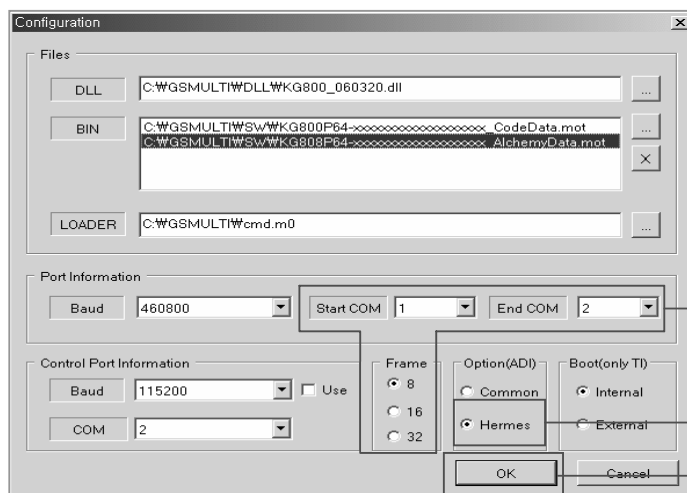
5. DOWNLOAD

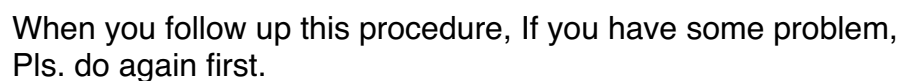
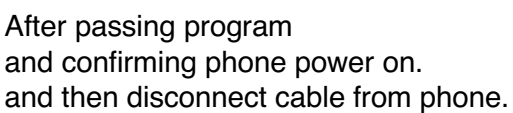
3) Choose Loader & Baud

- Loader file is in GSMULTI Folder
(Path:Local(C:) → GSMULTI Folder)



4) Others Setting

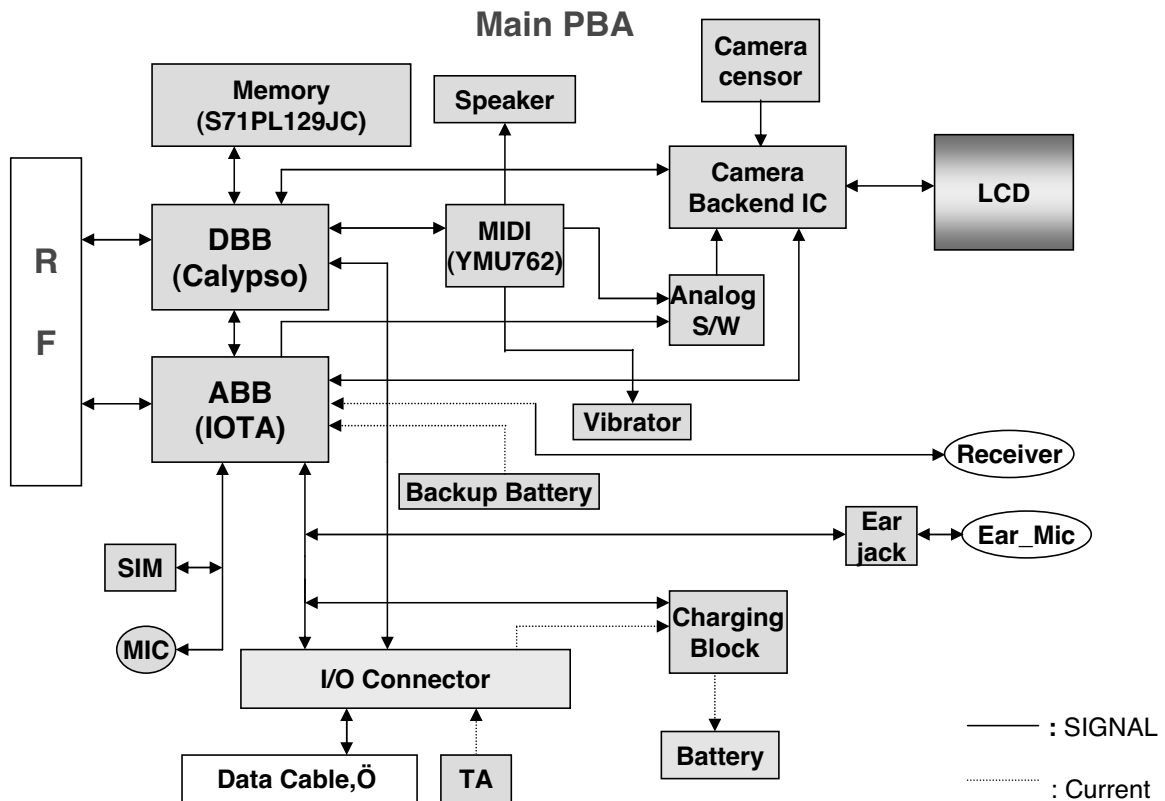




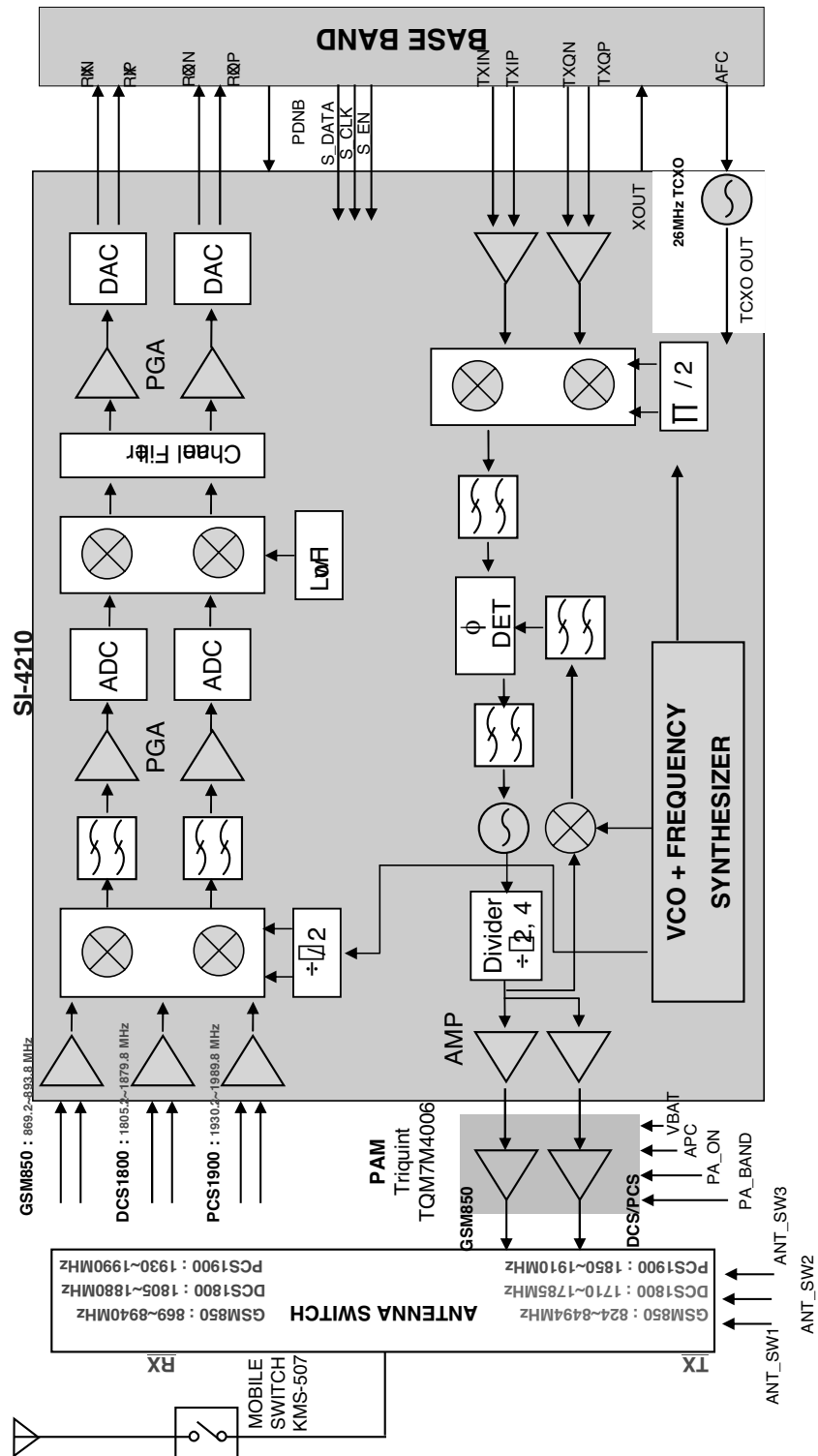
6. BLOCK DIAGRAM

6. BLOCK DIAGRAM

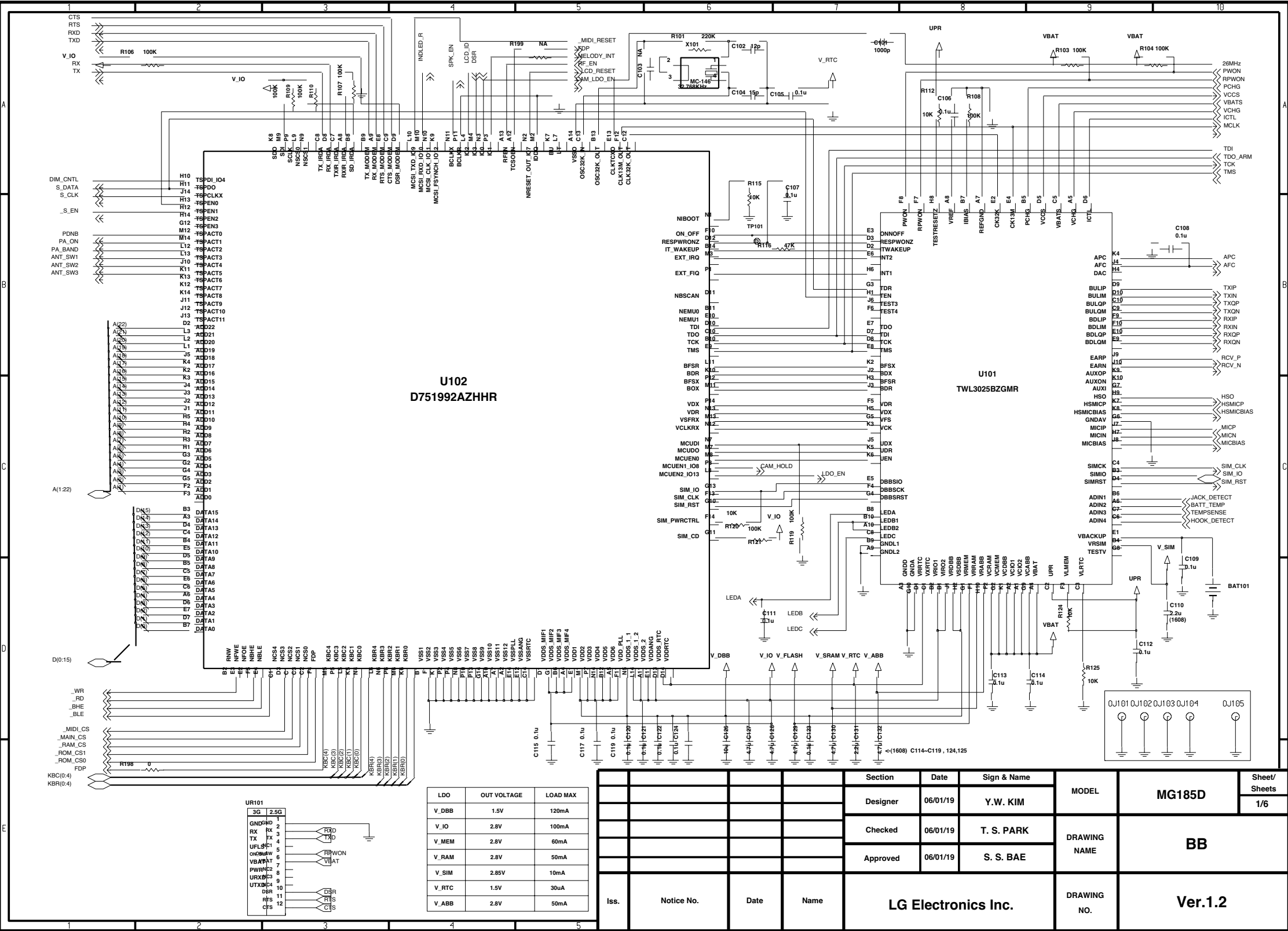
6.1 The Block Diagram of the Baseband Part



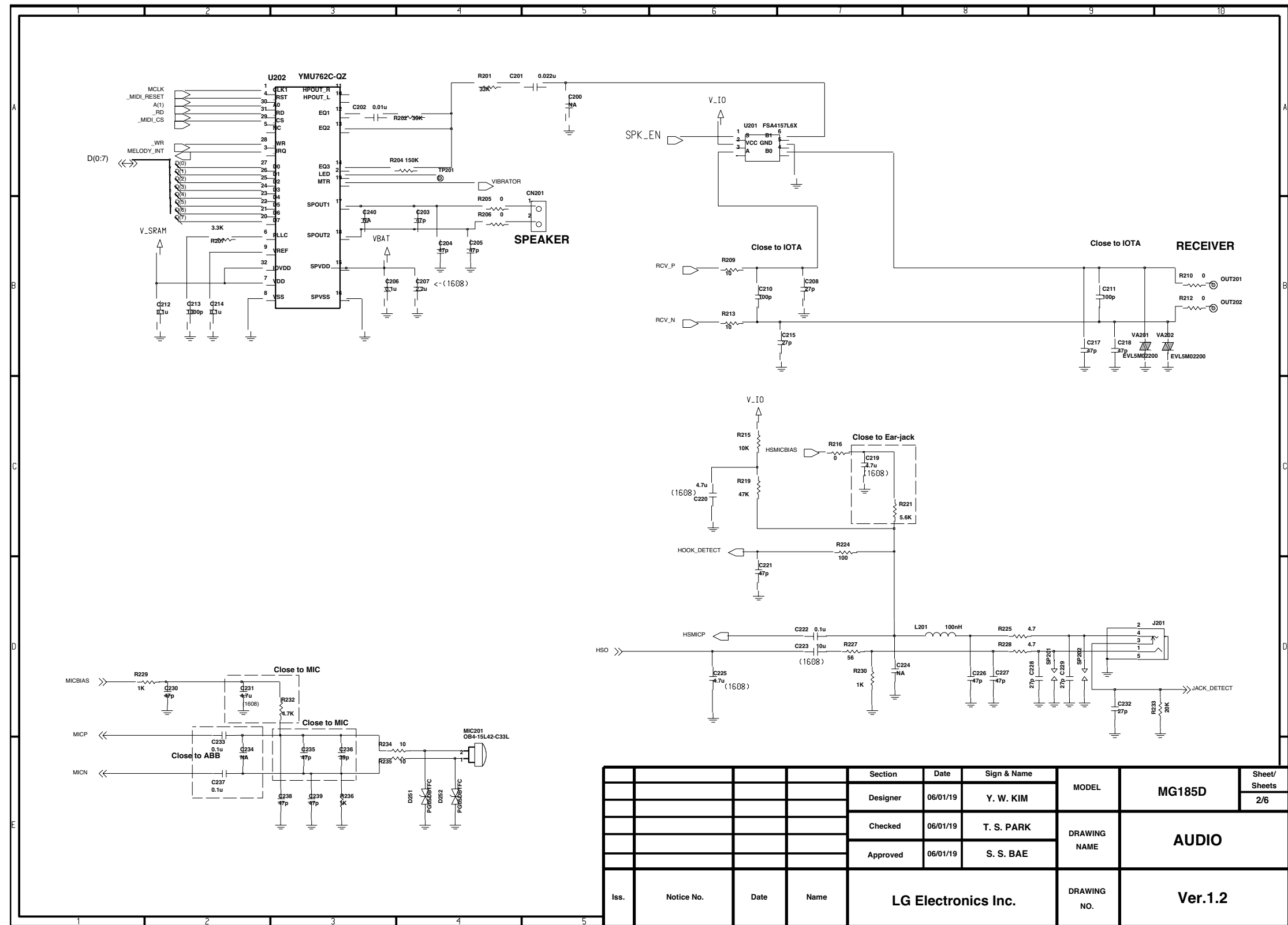
6.2 The Block Diagram of the RF Part



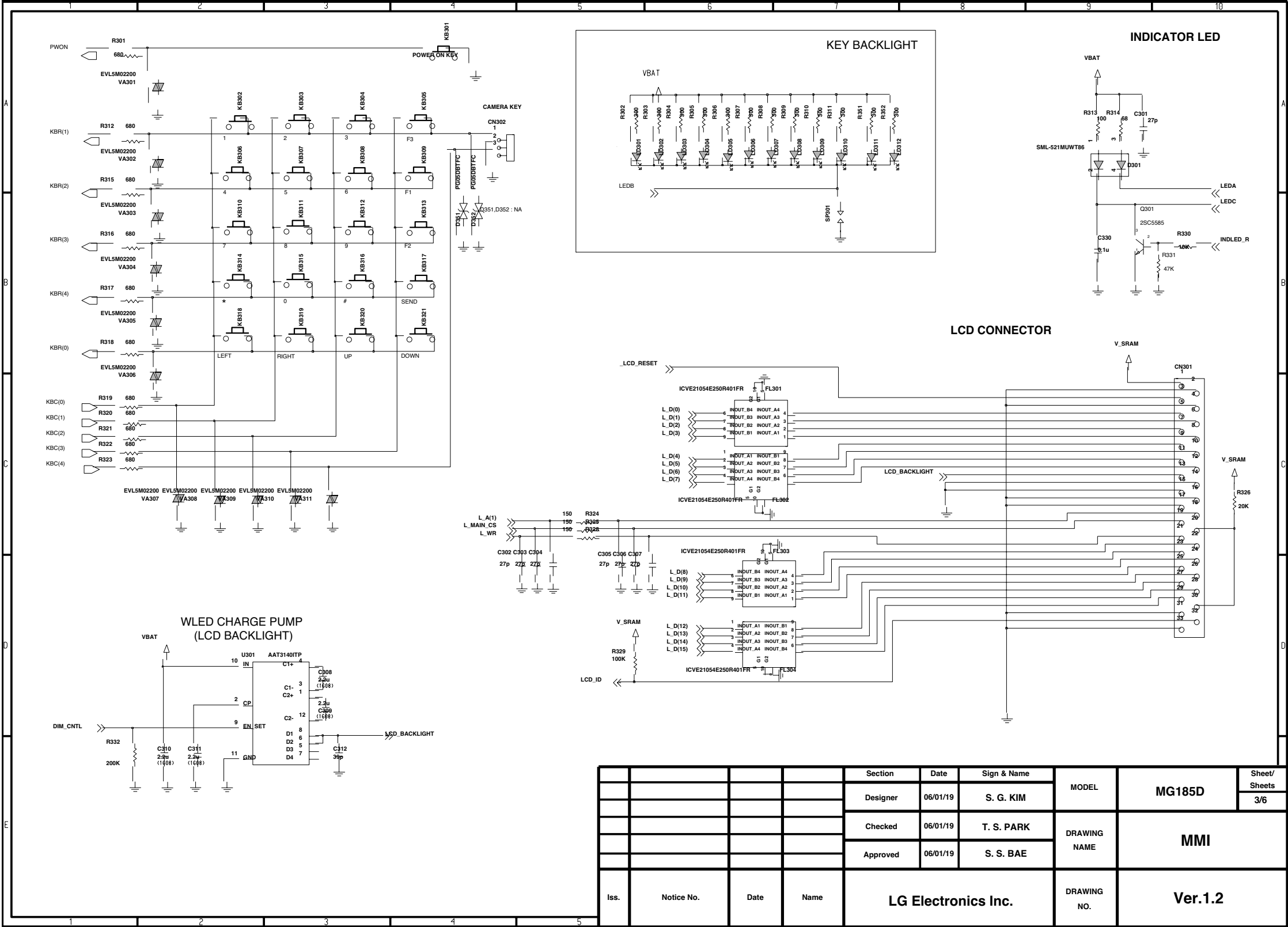
7. CIRCUIT DIAGRAM



7. CIRCUIT DIAGRAM

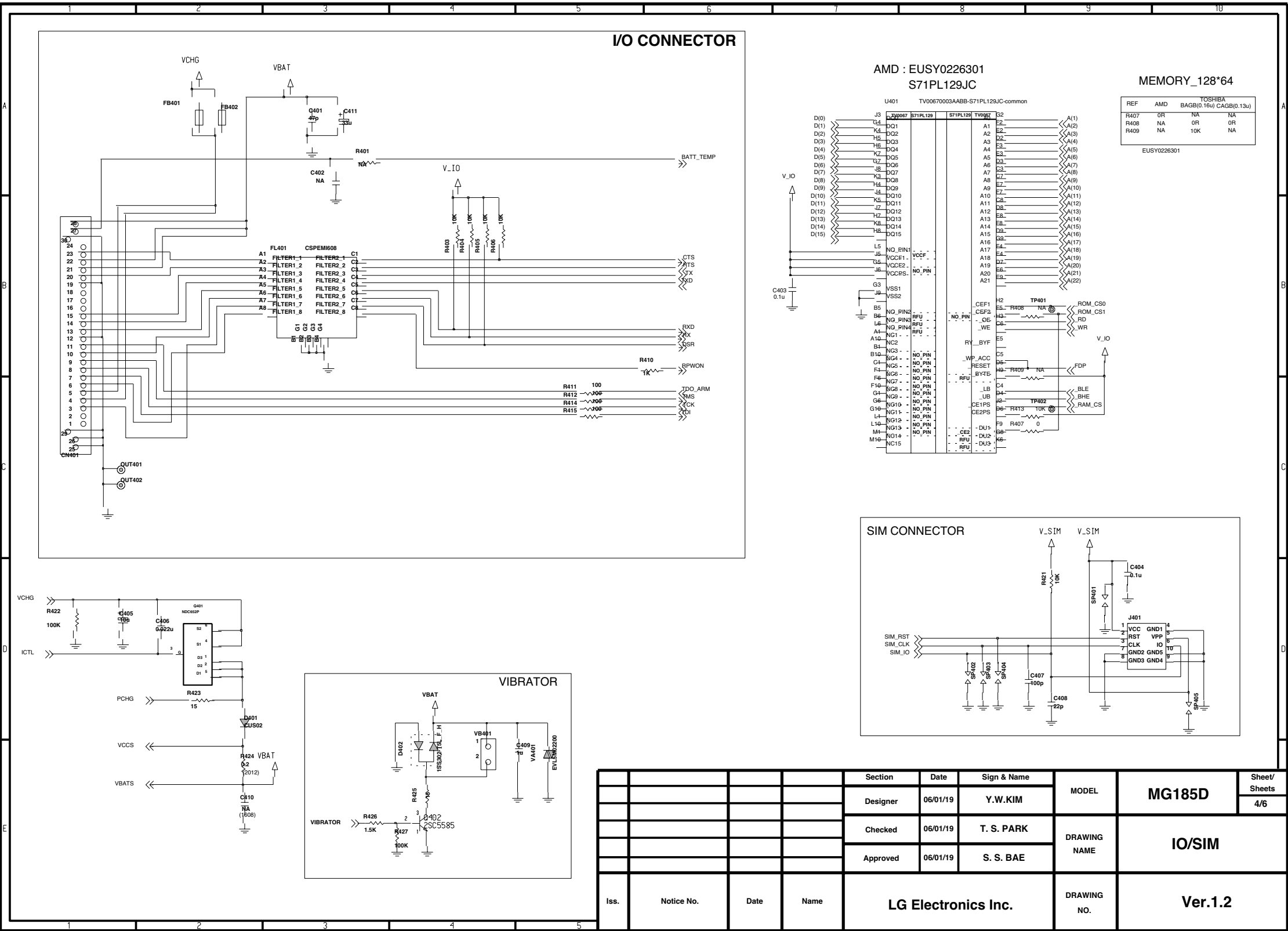


7. CIRCUIT DIAGRAM

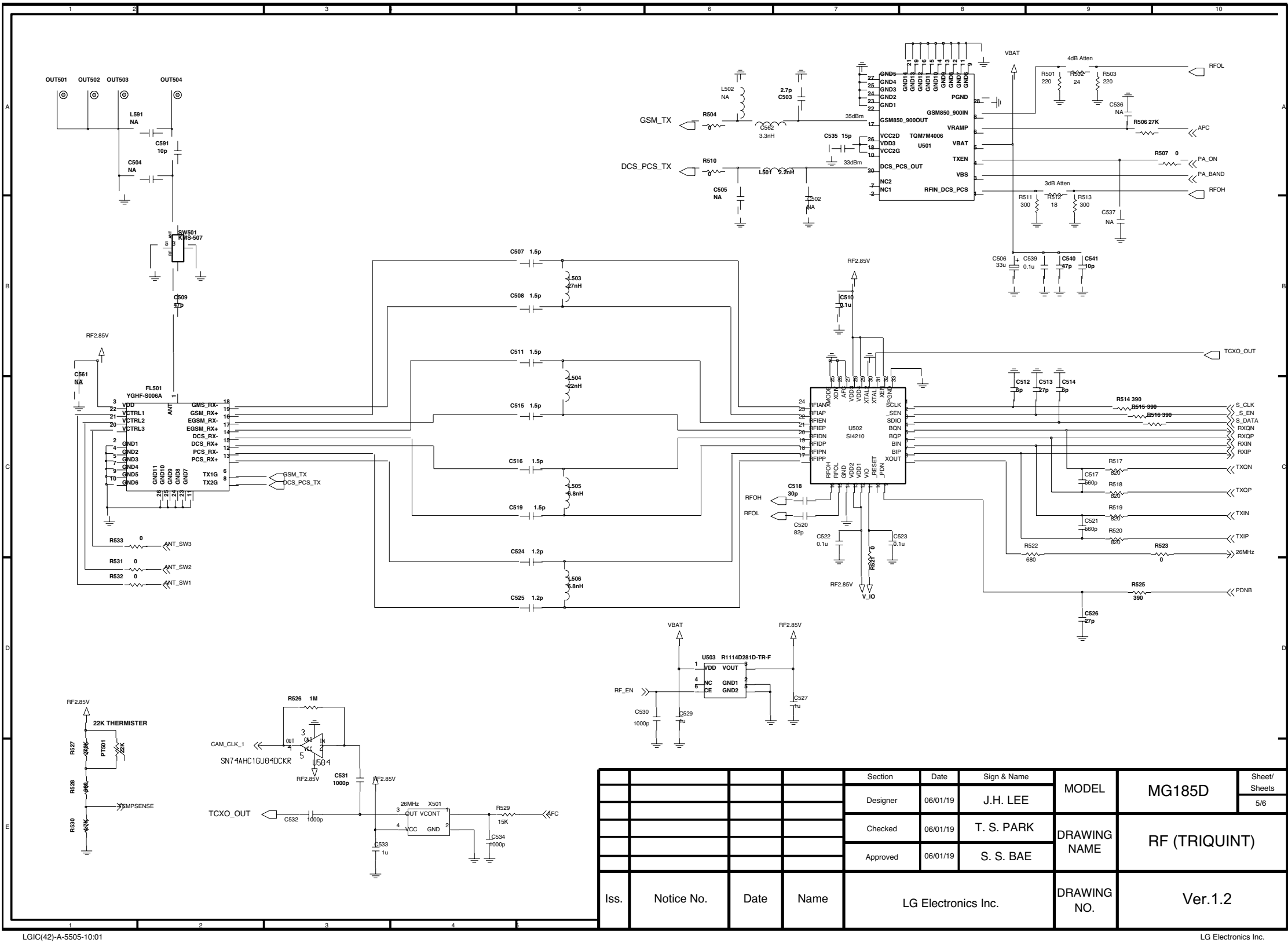


				Section	Date	Sign & Name	MODEL	MG185D	Sheet/ Sheets
				Designer	06/01/19	S. G. KIM			3/6
				Checked	06/01/19	T. S. PARK	DRAWING NAME	MMI	
				Approved	06/01/19	S. S. BAE			
Iss.	Notice No.	Date	Name	LG Electronics Inc.			DRAWING NO.	Ver.1.2	

7. CIRCUIT DIAGRAM



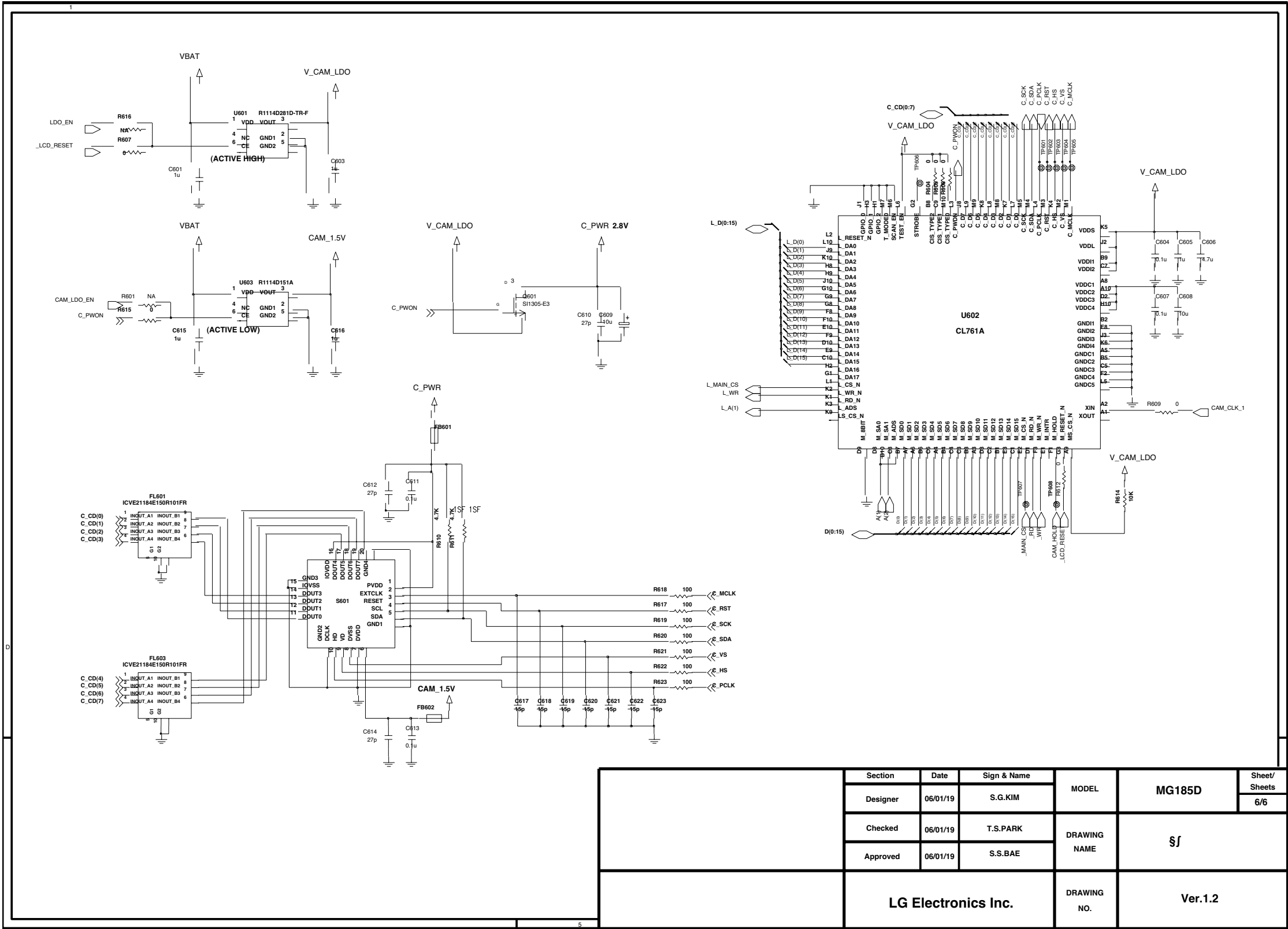
7. CIRCUIT DIAGRAM



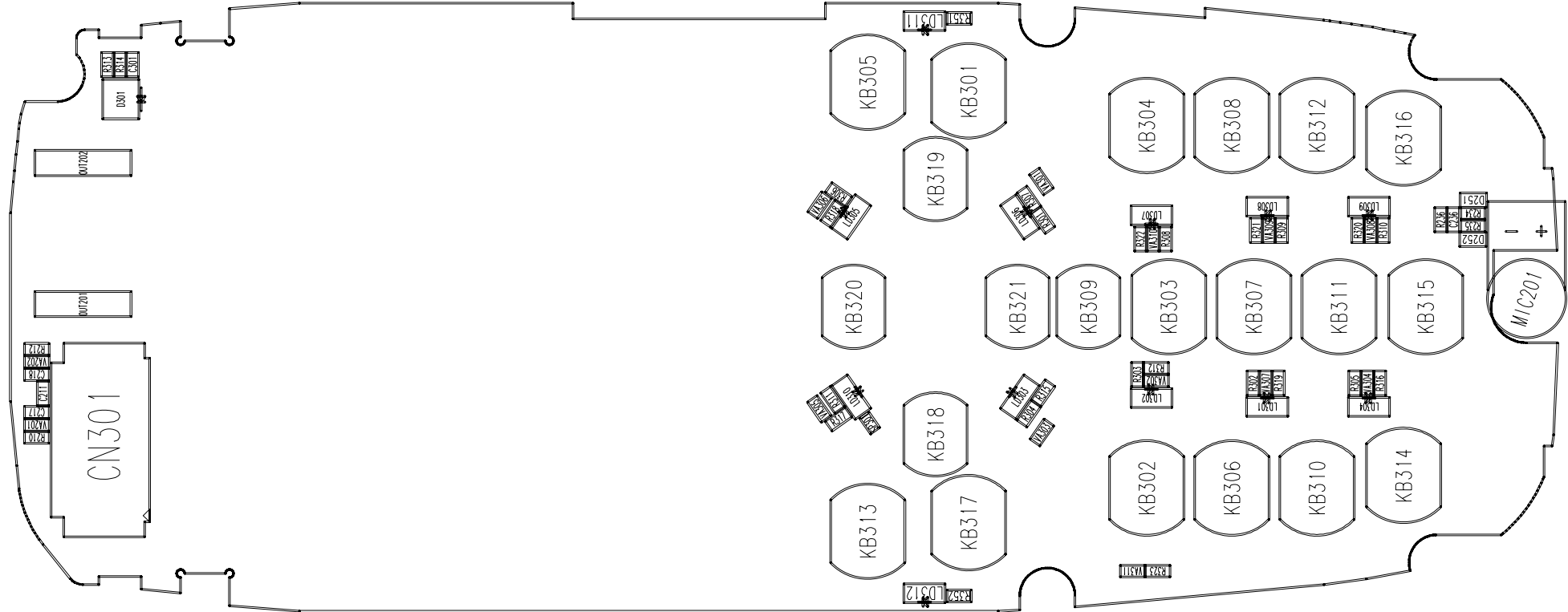
LGIC(42)-A-5505-10:01

LG Electronics Inc.

7. CIRCUIT DIAGRAM

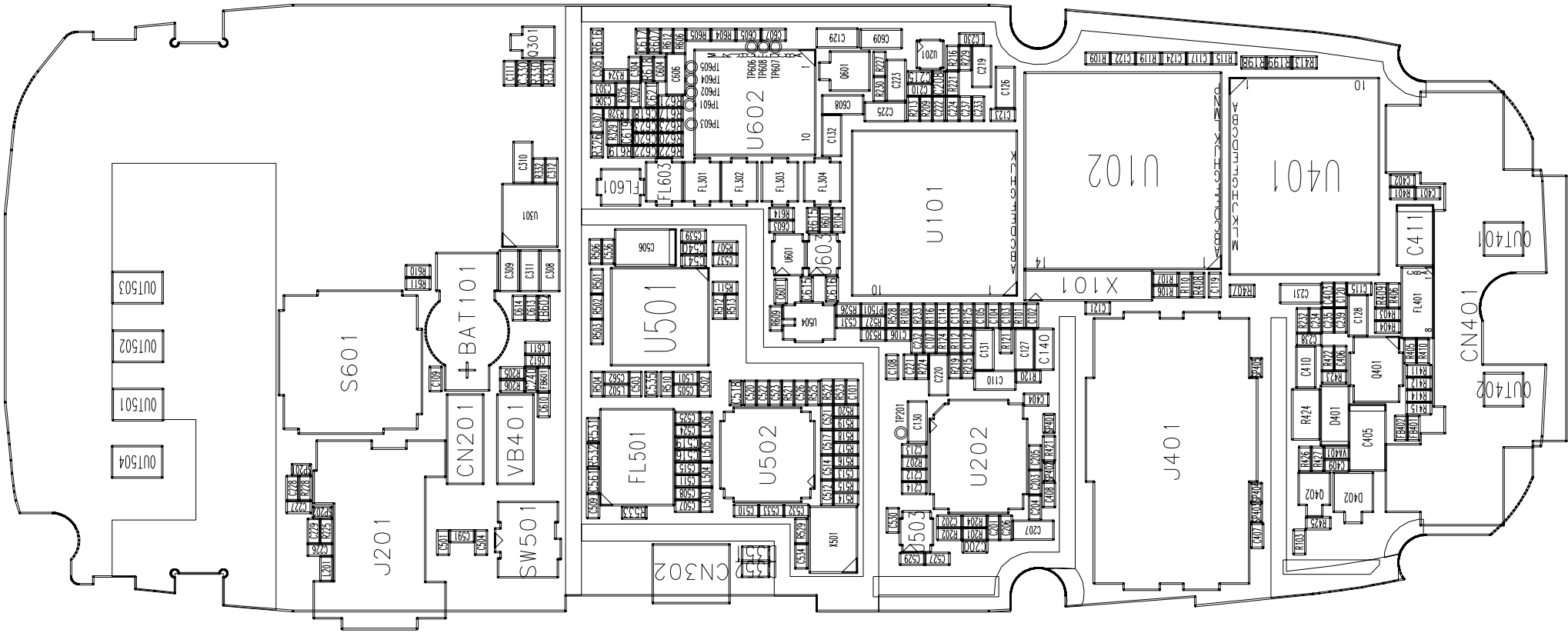


8. PCB LAYOUT



MG185 SPFY0122301-1.2 TOP

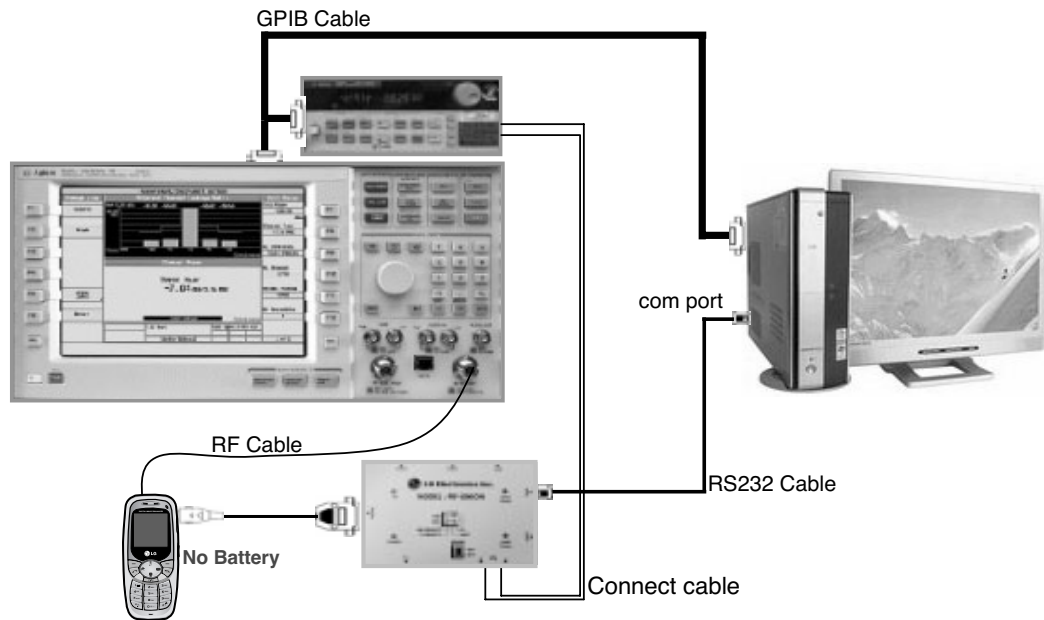
8. PCB LAYOUT



MG185 SPFY0122301-1.2 BOTTOM

9. Calibration

9.1 .H/W Tool Setup



H/W Tool Setup(RF test : 8960)

Tool List	Option	Reference
RF test set	8960/ Agilent	Address 1
Power Supply	66311B/Agilent	Address 2
PC	Only Windolw2000 or WinXP	English Version
PIF Jig	Dip SW mode "TI"	
GPIB card & Install SW		
GPIB Cable		
RS 232 Cable		
RF Cable	RF500	
I/O Cable	EDGE Cable + Connect zender	
Connect cable		

9. Calibration

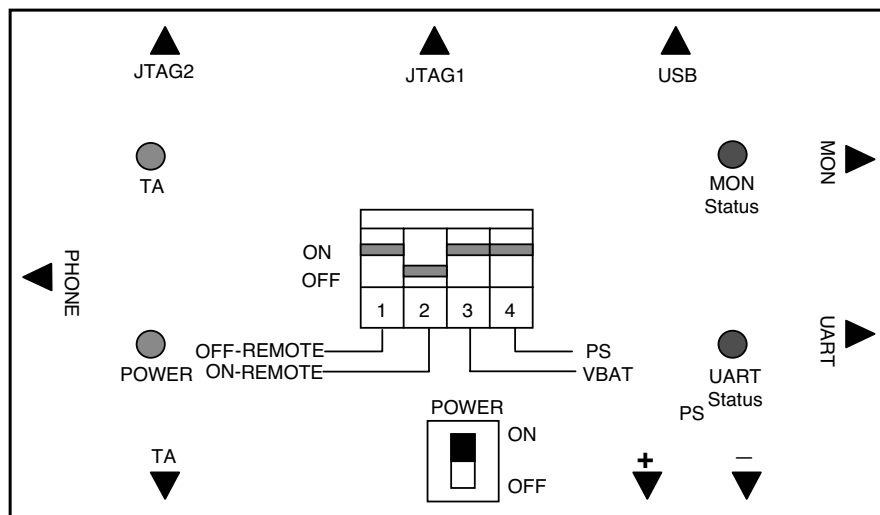


Figure 9-1 The top view of Test JIG

9.2 Test Jig Operation

Table 9-2 Jig Power

Power Source	Description
Power Supply	usually 4.0V
Travel Adaptor	Use TA, name is TA-20G(24pin)

Table 9-3 Jig DIP Switch

Switch Number	Name	Description
Switch 1	ADI-REMOTE	In ON state, phone is awaked. It is used ADI chipset.
Switch 2	TI-REMOTE	In ON state, phone is awaked. It is used TI chipset.
Switch 3	VBAT	Power is provided for phone from battery
Switch 4	PS	Power is provided for phone from Power supply

Table 9-4 LED Description

LED Number	Name	Description
LED 1	Power	Power is provided for Test Jig
LED 2	TA	Indicate charging state of the phone battery
LED 3	UART	Indicate data transfer state through the UART port
LED 4	MON	Indicate data transfer state through the MON port

1. Connect as Fig 6-2(RS232 serial cable is connected between COM port of PC and MON port of TEST JIG, in general)
2. Set the Power Supply 4.0V
3. Set the 3rd, 4th of DIP SW ON state always
4. Press the Phone power key, if the Remote ON is used, 1st ON state

9. Calibration

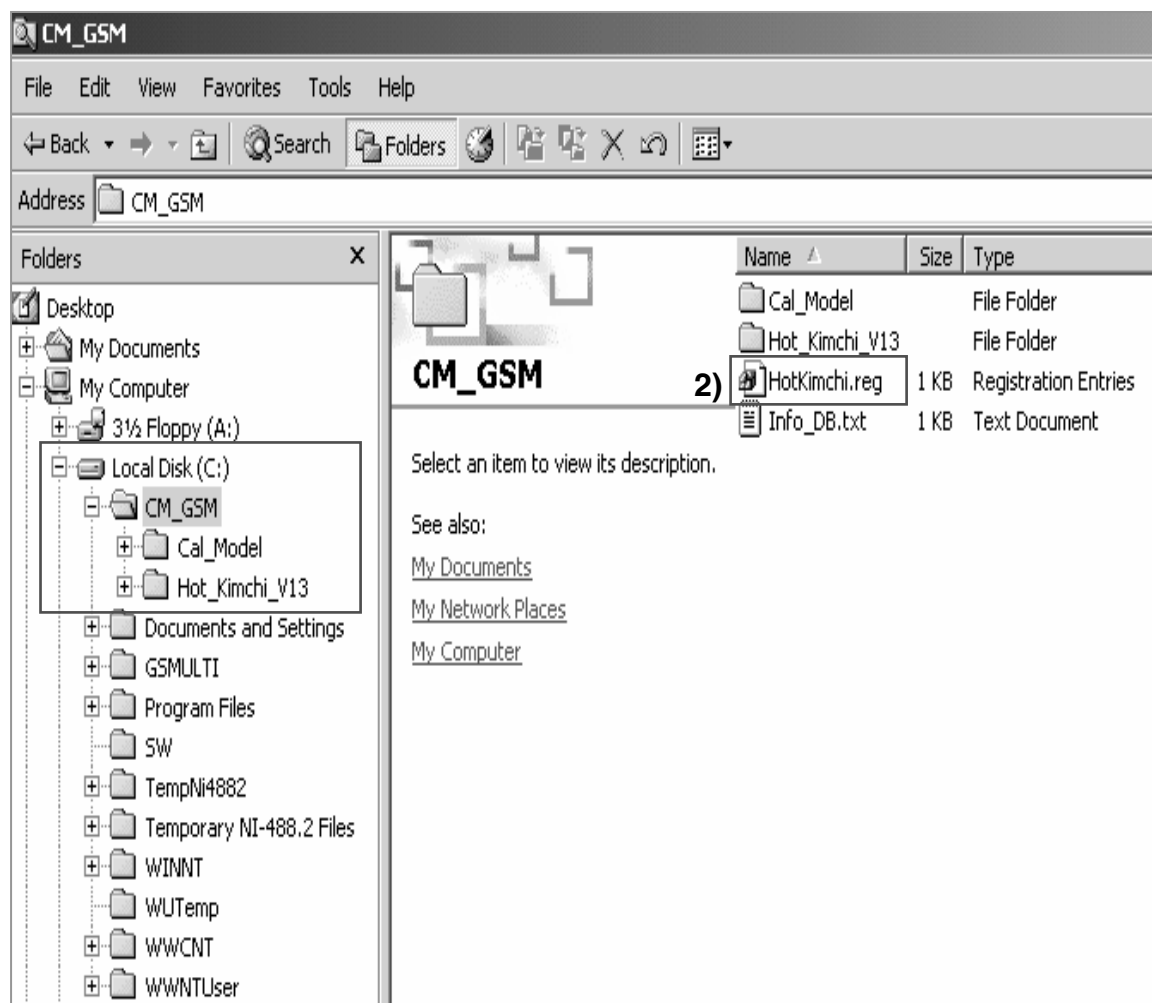
9.3 Install & Directory structure

- 1) Copy a Cal. Program in local Disk(C:). This program name is "Hotkimchi"
 - Folder name : Only "CM_GSM"
 - This Cal.Program is on GCSC Website

- 2) Registry of Calibration Program

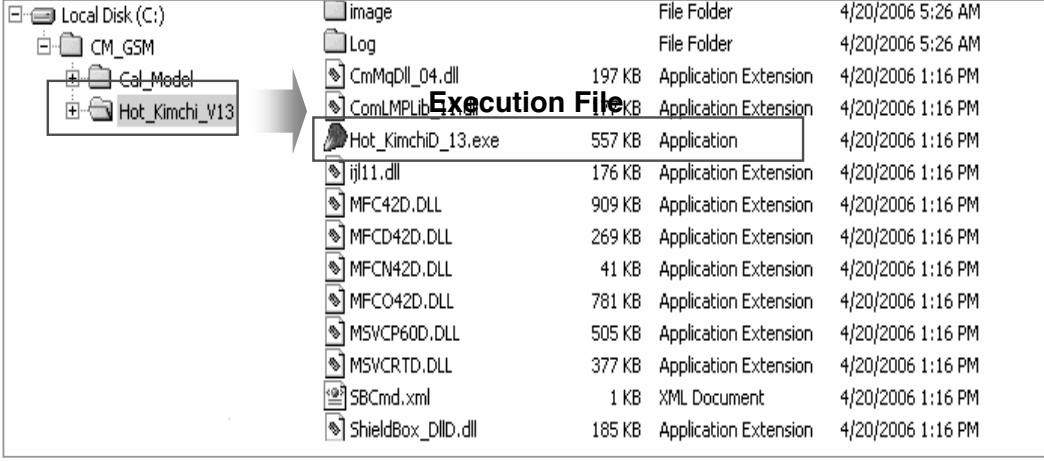
- Execute by double click :  HotKimchi.reg

- 3) Directory structure



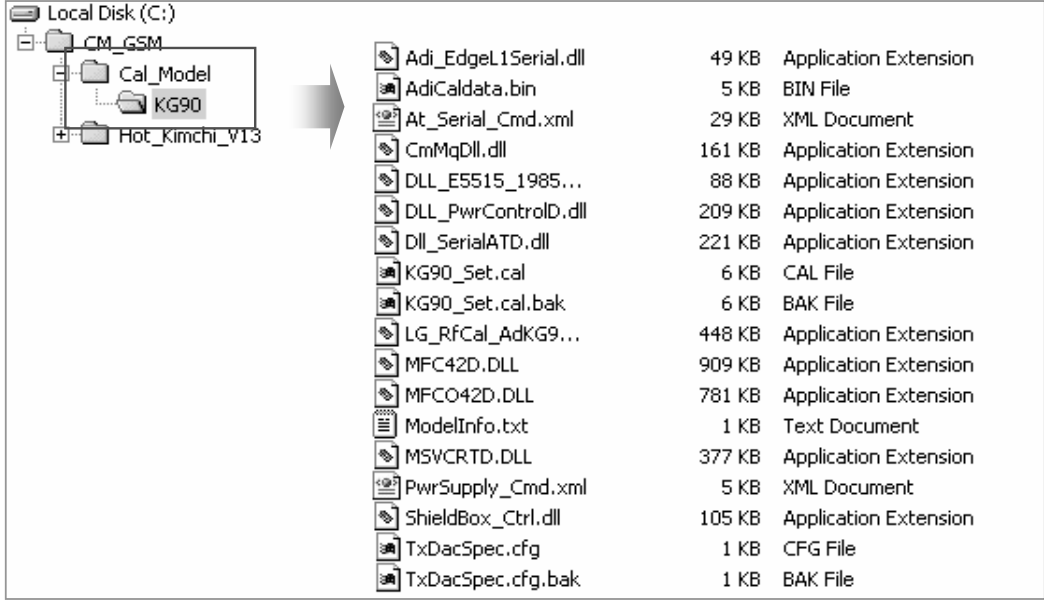
9.4 Others Directory structure of CM_GSM

1) Hot_Kimchi_V13



File/Folder	Size	Type	Date/Time
image		File Folder	4/20/2006 5:26 AM
Log		File Folder	4/20/2006 5:26 AM
CmMqDll_04.dll	197 KB	Application Extension	4/20/2006 1:16 PM
ComLMPLib.dll	1 KB	Application Extension	4/20/2006 1:16 PM
Hot_KimchiD_13.exe	557 KB	Application	4/20/2006 1:16 PM
ijl11.dll	176 KB	Application Extension	4/20/2006 1:16 PM
MFC42D.DLL	909 KB	Application Extension	4/20/2006 1:16 PM
MFC42D.DLL	269 KB	Application Extension	4/20/2006 1:16 PM
MFC42D.DLL	41 KB	Application Extension	4/20/2006 1:16 PM
MFC42D.DLL	781 KB	Application Extension	4/20/2006 1:16 PM
MSVCP60D.DLL	505 KB	Application Extension	4/20/2006 1:16 PM
MSVCRTD.DLL	377 KB	Application Extension	4/20/2006 1:16 PM
SBCmd.xml	1 KB	XML Document	4/20/2006 1:16 PM
ShieldBox_DLL.dll	185 KB	Application Extension	4/20/2006 1:16 PM

2) Cal_Model & KG90 Folder



File/Folder	Size	Type	Date/Time
Adi_EdgeL1Serial.dll	49 KB	Application Extension	
AdiCaldata.bin	5 KB	BIN File	
At_Serial_Cmd.xml	29 KB	XML Document	
CmMqDll.dll	161 KB	Application Extension	
DLL_E5515_1985...	88 KB	Application Extension	
DLL_PwrControlD.dll	209 KB	Application Extension	
Dll_SerialATD.dll	221 KB	Application Extension	
KG90_Set.cal	6 KB	CAL File	
KG90_Set.cal.bak	6 KB	BAK File	
LG_RfCal_AdKG9...	448 KB	Application Extension	
MFC42D.DLL	909 KB	Application Extension	
MFC42D.DLL	781 KB	Application Extension	
ModelInfo.txt	1 KB	Text Document	
MSVCRTD.DLL	377 KB	Application Extension	
PwrSupply_Cmd.xml	5 KB	XML Document	
ShieldBox_Ctrl.dll	105 KB	Application Extension	
TxDacSpec.cfg	1 KB	CFG File	
TxDacSpec.cfg.bak	1 KB	BAK File	

3) Info_Db.txt

```

Info_DB.txt - Notepad
File Edit Format Help
/*cal*/[Default]=[KG90_006]

[e2looks]=[off]
[batcal]=[off]
[svc]=[on]
[standalone]=[off]
[tescom]=[off]
[process]=[cal]

```

9. Calibration

9.5 Cal. Procedure

- 1) Execute.  Hot_KimchiD_13.exe

-Path : Local(C:) → CM_GSM Folder → Hot_Kimchi_V13 →  Hot_KimchiD_13.exe



- ① Click. And choose “KG90”



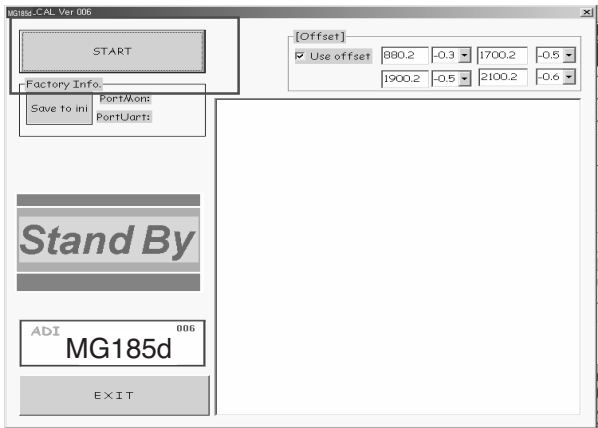
- ② Click.



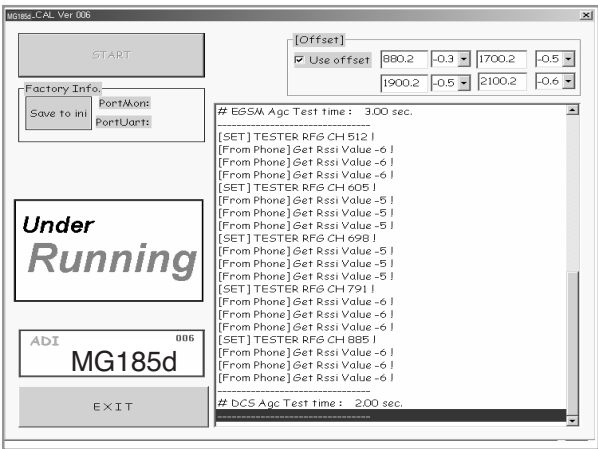
- ③ Click.



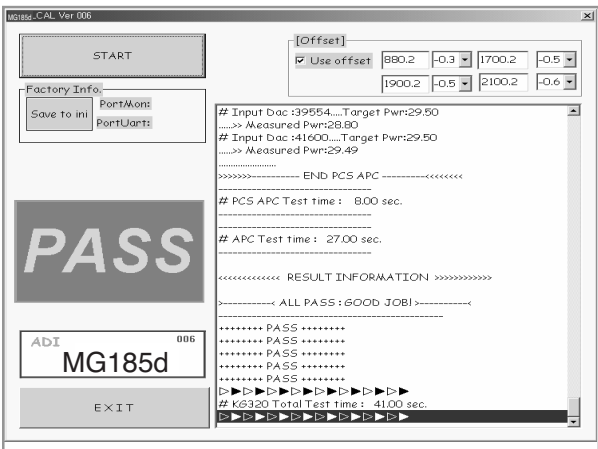
9.6 Cal. sequence



When the left window pop-up, first of all turn on the phone.
And then click 'Start' button after finishing turn on



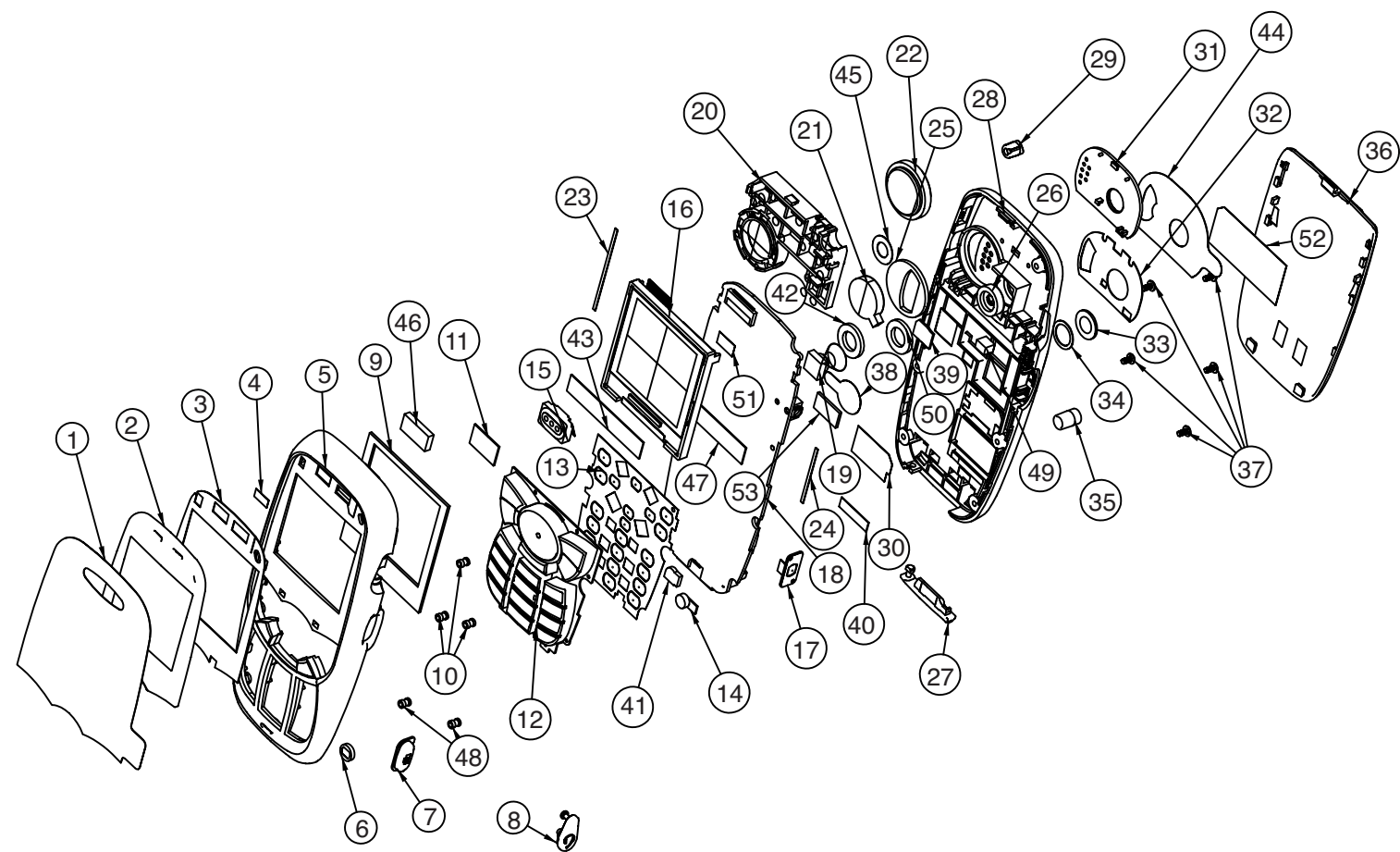
The left window is just progress screen.



Phone is being auto re-start after finishing cal.

10. EXPLODED VIEW & REPLACEMENT PART LIST

10.1 EXPLODED VIEW



PCB ASSY' MAIN	SAFY0157201	13,14,16-24,42 43,47,51,53
COVER ASSY' REAR	ACGM0069301	25-28,30-34,38-41 44,45,49,50,52
COVER ASSY' FRONT	ACGK0068601	1-11,46,48
DESCRIPTION	DRAWING NO.	REMARK

53	PAD,EARJACK	I	MPBD0001201	
52	LABEL,MODEL	I	MLAK0010802	
51	TAPE(PCB)	I	MTAZ0123101	
50	PAD, MSM(CAMERA)	I	MPBL0004301	
49	PAD, MOTOR	I	MPBJ0033801	
48	INSERT, FRONT	2	MICA0013901	
47	PAD,LCD 2	I	MPBG0048801	
46	PAD (CONNECTOR)	I	MPBZ0121501	
45	TAPE, MOTOR	I	MTAF0008301	
44	TAPE, PRTOECTION (DECO REAR)	I	MTAB0111401	
43	PAD (LCD BOTTOM)	I	MPBZ0128301	
42	PAD, CAMERA	I	MPBT0027101	
41	PAD, MIKE	I	MPBH0021801	
40	TAPE, SHIELD	I	MTAC0034201	
39	PAD	I	MPBZ0124001	
38	TAPE,PROTECTION	I	MTAB0106401	
37	SCREW MACHINE, BIND	5	GMEY0014301	MI,4X3,5L
36	COVER, BATTERY	I	MCJA0030301	
35	CAP, MOBILE SWITCH	I	MCCF0034101	
34	TAPE, WINDOW	I	MTAD0051701	
33	WINDOW, CAMERA	I	MWAE0015701	
32	TAPE, DECO	I	MTAA0113701	
31	DECO, CAMERA	I	MDAD0020401	
30	INSULATOR, REAR	I	MIDZ0089001	
29	CAP,SCREW	I	MCCH0076501	
28	COVER, REAR	I	MCJN0051401	
27	CAP, RECEPTACLE	I	MCCE0027201	
26	CAP, CAMERA	I	MCCK0004101	
25	PAD, SPEAKER	I	MPBN0029601	
24	GASKET, EMI (RIGHT)	I	MGAB0011701	
23	GASKET, EMI (LEFT)	I	MGAB0011601	
22	SPEAKER	I	SUSY0021601	
21	MOTOR	I	SJMY0006104	
20	ANTENNA,GSM,FIXED	I	SNGF0015101	
19	CAMERA	I	SVCY0004401	
18	PCB ASSY, MAIN	I	SAFY0167201	
17	PCB, SIDEKEY	I	SPKY0031601	
16	LCD, MODULE	I	SVLM0017201	
15	RECEIVER	I	SURY0010301	
14	MICROPHONE	I	SUMY0003802	
13	DOME ASSY, METAL	I	ADCA0050001	
12	KEYPAD ASSY	I	AKAZ0014701	
11	PAD, RECEIVER	I	MPBM0012901	
10	INSERT, FRONT	3	MICA0017201	
9	PAD, LCD	I	MPBG0042701	
8	CAP, EARJACK	I	MCCC0034001	
7	BUTTON, SHUTTER	I	MBJP0004601	
6	FILTER, MIKE	I	MFB00014401	
5	COVER, FRONT	I	MCJB0056001	
4	FILTER, RECEIVER	I	MFB00015401	
3	TAPE, WINDOW	I	MTAD0051601	
2	WINDOW, LCD	I	MWAC0064401	
1	TAPE, PROTECTION	I	MTAB0105601	
NO.	DESCRIPTION	Q'TY	DRAWING NO.	REMARK

10. EXPLODED VIEW & REPLACEMENT PART LIST

10.2 Replacement Parts <Mechanic component>

Note: This Chapter is used for reference, Part order is ordered by SBOM standard on GCSC

Level	Location No.	Description	Part Number	Specification	Color	Remark
1		GSM,BAR/FILP	TGSM0044120		Silver	
2	AAAY00	ADDITION	AAAY0160601		Silver	
3	MCJA00	COVER,BATTERY	MCJA0030301		Gray	36
2	APEY00	PHONE	APEY0300901		Silver	
3	ACGK00	COVER ASSY,FRONT	ACGK0068601		Silver	
4	MBJP00	BUTTON,SHUTTER	MBJP0004601		Shining Silver	7
4	MCCC00	CAP,EARPHONE JACK	MCCC0034001		Silver	8
4	MCJK00	COVER,FRONT	MCJK0056001		Silver	5
5	MICA00	INSERT,FRONT	MICA0017201	M14xL3.0	Silver	10
5	MICA01	INSERT,FRONT	MICA0013901	2.2X4.0	Without Color	48
4	MFBB00	FILTER,RECEIVER	MFBB0015401		Without Color	4
4	MFBD00	FILTER,MIKE	MFBD0014401		Without Color	6
4	MPBG00	PAD,LCD	MPBG0042701		Black	9
4	MPBM00	PAD,RECEIVER	MPBM0012901		Without Color	11
4	MPBZ00	PAD	MPBZ0121501		Black	46
4	MTAB00	TAPE,PROTECTION	MTAB0105601		Without Color	1
4	MTAD00	TAPE,WINDOW	MTAD0051601		Without Color	3
4	MWAC00	WINDOW,LCD	MWAC0064401		Gray	2
5	BFAA00	FILM,INMOLD	BFAA0038301	MAIN WINDOW		
4	SURY00	RECEIVER	SURY0010301	PIN ,109 dB,32 ohm,11*07 ,2.9T		15
3	ACGM00	COVER ASSY,REAR	ACGM0069301		Silver	
4	MCCE00	CAP,RECEPTACLE	MCCE0027201		Silver	27
4	MCCK00	CAP,CAMERA	MCCK0004101		Black	26
4	MCJN00	COVER,REAR	MCJN0051401		Silver	28
4	MDAD00	DECO,CAMERA	MDAD0020401		Gray	31
5	BFAA00	FILM,INMOLD	BFAA0038401	DECO CAMERA		
4	MIDZ00	INSULATOR	MIDZ0089001		Blue	30
4	MPBJ00	PAD,MOTOR	MPBJ0033801		Black	49

10. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Specification	Color	Remark
4	MPBL00	PAD,MSM	MPBL0004301		Black	50
4	MPBN00	PAD,SPEAKER	MPBN0029601		Black	25
4	MPBZ00	PAD	MPBZ0124001		Black	39
4	MTAA00	TAPE,DECO	MTAA0113701		Without Color	32
4	MTAB00	TAPE,PROTECTION	MTAB0106401		Blue	38
4	MTAB01	TAPE,PROTECTION	MTAB0111401		Without Color	44
4	MTAC00	TAPE,SHIELD	MTAC0034201		Cyber Lemon	40
4	MTAD00	TAPE,WINDOW	MTAD0051701		Without Color	34
4	MWAE00	WINDOW,CAMERA	MWAE0015701		Without Color	33
3	AKAZ00	KEYPAD ASSY	AKAZ0014701		Silver	12
3	GMEY00	SCREW MACHINE,BIND	GMEY0014301	2.7 mm,3.5 mm,MSWR3 ,Ni,+ ,NYLOK(0.6)	Silver	37
3	MCCF00	CAP,MOBILE SWITCH	MCCF0034101		Silver	35
3	MCCH00	CAP,SCREW	MCCH0076501		Silver	29
3	MLAK00	LABEL,MODEL	MLAK0010802		Without Color	52
5	ADCA00	DOME ASSY,METAL	ADCA0050001		White Beige	13
5	MGAB00	GASKET,EMI	MGAB0011601		GOLDEN YELLOW	23
5	MGAB01	GASKET,EMI	MGAB0011701		GOLDEN YELLOW	24
5	MPBD00	PAD,EARPHONE JACK	MPBD0001201		Black	53
5	MPBG00	PAD,LCD	MPBG0048801		Black	47
5	MPBH00	PAD,MIKE	MPBH0021801		Black	41
5	MPBT00	PAD,CAMERA	MPBT0027101		Black	42
5	MPBZ00	PAD	MPBZ0128301		Black	43
5	MTAZ00	TAPE	MTAZ0123101		Silver	51
5	MLAB00	LABEL,A/S	MLAB0000601	HUMIDITY STICKER	Without Color	
5	MLAC00	LABEL,BARCODE	MLAC0003301	EZ LOOKS(use for PCB ASSY MAIN(hardware))	Without Color	

10. EXPLODED VIEW & REPLACEMENT PART LIST

<Main component>

Note: This Chapter is used for reference, Part order is ordered by SBOM standard on GCSC

Level	Location No.	Description	Part Number	Specification	Color	Remark
3	SAFY00	PCB ASSY,MAIN	SAFY0167201			18
4	SAFB00	PCB ASSY,MAIN,INSERT	SAFB0058101			
5	AANY00	ANTENNA ASSY, INTENNA	AANY0001101		Silver	
6	MTAF00	TAPE,MOTOR	MTAF0008301		Without Color	45
6	SJMY00	VIBRATOR,MOTOR	SJMY0006104	3 V,0.08 A,12*2.6 ,25mm elco 8000		21
6	SNGF00	ANTENNA,GSM,FIXED	SNGF0015101	5.0:1 , -3.0 dBd , GSM900/DCS1800/PCS1900 INTERNAL PIPA TYPE Pb-Free		20
6	SUSY00	SPEAKER	SUSY0021601	ASSY ,8 ohm,89 dB,17 mm,3.4T, Elco8000 20mm		22
5	SPKY00	PCB,SIDEKEY	SPKY0031601	POLYI ,0.2 mm,DOUBLE ,MG185 CAMERA SIDEKEY FPCB		17
5	SUMY00	MICROPHONE	SUMY0003802	FPCB ,42 dB,4*1.5 ,		14
5	SVCY00	CAMERA	SVCY0004401	CMOS ,VGA ,		19
5	SVLM00	LCD MODULE	SVLM0017201	MAIN ,1.5" _128*128 ,35.78*39.7 ,65k ,CSTN ,TM ,S6B33B6 ,		16
4	SAFF00	PCB ASSY,MAIN,SMT	SAFF0089301			
5	SAFC00	PCB ASSY,MAIN,SMT BOTTOM	SAFC0076201			
6	BAT101	BATTERY,CELL,LITHIUM	SBCL0001305	3 V,1 mAh,COIN ,SMT Temp.260 degree. PB-Free B/B		
6	C101	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C102	CAP,CHIP,MAKER	ECZH0000816	12 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C104	CAP,CERAMIC,CHIP	ECCH0000112	15 pF,50V,J,NP0,TC,1005,R/TP		
6	C105	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C106	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C107	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C108	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C109	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C110	CAP,CHIP,MAKER	ECZH0001421	2.2 uF,6.3V ,K ,X5R ,HD ,1608 ,R/TP		
6	C111	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C112	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C113	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C114	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C115	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C117	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		

10. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Specification	Color	Remark
6	C119	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C120	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C121	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C122	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C123	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C124	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C126	CAP,CERAMIC,CHIP	ECCH0007901	10 uF,4V ,M ,X5R ,TC ,1608 ,R/TP		
6	C127	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C128	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C129	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C130	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C131	CAP,CHIP,MAKER	ECZH0001421	2.2 uF,6.3V ,K ,X5R ,HD ,1608 ,R/TP		
6	C132	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C140	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C201	CAP,CERAMIC,CHIP	ECCH0000179	22 nF,16V ,K ,X5R ,HD ,1005 ,R/TP		
6	C202	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
6	C203	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
6	C204	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
6	C205	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
6	C206	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C207	CAP,CHIP,MAKER	ECZH0001421	2.2 uF,6.3V ,K ,X5R ,HD ,1608 ,R/TP		
6	C208	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C210	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C212	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C213	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C214	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C215	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C219	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C220	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C221	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
6	C222	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C223	CAP,CERAMIC,CHIP	ECCH0007901	10 uF,4V ,M ,X5R ,TC ,1608 ,R/TP		
6	C225	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C226	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		

10. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Specification	Color	Remark
6	C227	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
6	C228	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C229	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C230	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
6	C231	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C232	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C233	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C235	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
6	C237	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C238	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
6	C239	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
6	C302	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C303	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C304	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C305	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C306	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C307	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C308	CAP,CHIP,MAKER	ECZH0001421	2.2 uF,6.3V ,K ,X5R ,HD ,1608 ,R/TP		
6	C309	CAP,CHIP,MAKER	ECZH0001421	2.2 uF,6.3V ,K ,X5R ,HD ,1608 ,R/TP		
6	C310	CAP,CHIP,MAKER	ECZH0001421	2.2 uF,6.3V ,K ,X5R ,HD ,1608 ,R/TP		
6	C311	CAP,CHIP,MAKER	ECZH0001421	2.2 uF,6.3V ,K ,X5R ,HD ,1608 ,R/TP		
6	C312	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C330	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C401	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
6	C403	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C404	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C405	CAP,TANTAL,CHIP,MAKER	ECTZ0003901	10 uF,16V ,M ,STD ,ETC ,R/TP		
6	C406	CAP,CERAMIC,CHIP	ECCH0000179	22 nF,16V ,K ,X5R ,HD ,1005 ,R/TP		
6	C407	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C408	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
6	C409	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C411	CAP,TANTAL,CHIP,MAKER	ECTZ0000406	33 uF,10V ,M ,STD ,3216 ,R/TP		
6	C503	CAP,CERAMIC,CHIP	ECCH0000184	2.7 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C506	CAP,TANTAL,CHIP,MAKER	ECTZ0000406	33 uF,10V ,M ,STD ,3216 ,R/TP		

10. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Specification	Color	Remark
6	C507	CAP,CHIP,MAKER	ECZH0000822	1.5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C508	CAP,CHIP,MAKER	ECZH0000822	1.5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C509	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
6	C510	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C511	CAP,CHIP,MAKER	ECZH0000822	1.5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C512	CAP,CERAMIC,CHIP	ECCH0000107	6 pF,50V,D,NP0,TC,1005,R/TP		
6	C513	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C514	CAP,CERAMIC,CHIP	ECCH0000107	6 pF,50V,D,NP0,TC,1005,R/TP		
6	C515	CAP,CHIP,MAKER	ECZH0000822	1.5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C516	CAP,CHIP,MAKER	ECZH0000822	1.5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C517	CAP,CHIP,MAKER	ECZH0003118	560 pF,50V ,K ,X7R ,HD ,1005 ,R/TP		
6	C518	CAP,CERAMIC,CHIP	ECCH0000118	30 pF,50V,J,NP0,TC,1005,R/TP		
6	C519	CAP,CHIP,MAKER	ECZH0000822	1.5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C520	CAP,CERAMIC,CHIP	ECCH0000127	82 pF,50V,J,NP0,TC,1005,R/TP		
6	C521	CAP,CHIP,MAKER	ECZH0003118	560 pF,50V ,K ,X7R ,HD ,1005 ,R/TP		
6	C522	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C523	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C524	CAP,CERAMIC,CHIP	ECCH0000701	1.2 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C525	CAP,CERAMIC,CHIP	ECCH0000701	1.2 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C526	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C527	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C529	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C530	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C531	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C532	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C533	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C534	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C535	CAP,CERAMIC,CHIP	ECCH0000112	15 pF,50V,J,NP0,TC,1005,R/TP		
6	C539	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C540	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
6	C541	CAP,CERAMIC,CHIP	ECCH0000110	10 pF,50V,D,NP0,TC,1005,R/TP		
6	C562	INDUCTOR,CHIP	ELCH0004709	3.3 nH,S ,1005 ,R/TP ,		
6	C591	CAP,CERAMIC,CHIP	ECCH0000110	10 pF,50V,D,NP0,TC,1005,R/TP		
6	C601	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		

10. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Specification	Color	Remark
6	C603	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C604	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C605	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C606	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C607	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C608	CAP,CERAMIC,CHIP	ECCH0007901	10 uF,4V ,M ,X5R ,TC ,1608 ,R/TP		
6	C610	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C611	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C612	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C613	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
6	C614	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C615	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C616	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C617	CAP,CERAMIC,CHIP	ECCH0000112	15 pF,50V,J,NP0,TC,1005,R/TP		
6	C618	CAP,CERAMIC,CHIP	ECCH0000112	15 pF,50V,J,NP0,TC,1005,R/TP		
6	C619	CAP,CERAMIC,CHIP	ECCH0000112	15 pF,50V,J,NP0,TC,1005,R/TP		
6	C620	CAP,CERAMIC,CHIP	ECCH0000112	15 pF,50V,J,NP0,TC,1005,R/TP		
6	C621	CAP,CERAMIC,CHIP	ECCH0000112	15 pF,50V,J,NP0,TC,1005,R/TP		
6	C622	CAP,CERAMIC,CHIP	ECCH0000112	15 pF,50V,J,NP0,TC,1005,R/TP		
6	C623	CAP,CERAMIC,CHIP	ECCH0000112	15 pF,50V,J,NP0,TC,1005,R/TP		
6	CN201	CONN,RECEPTACLE	ENEY0003801	2 PIN, , ,		
6	CN401	CONNECTOR,I/O	ENRY0003501	24 PIN,0.5 mm,ANGLE , ,		
6	D401	DIODE,SWITCHING	EDSY0012101	US-FLAT ,30 V,1 A,R/TP ,2.5*1.25*0.6(t)		
6	D402	DIODE,SWITCHING	EDSY0005301	SC-70 ,80 V,0.1 A,R/TP ,		
6	FB401	FILTER,BEAD,CHIP	SFBH0007102	10 ohm,1005 ,Ferrite Bead		
6	FB402	FILTER,BEAD,CHIP	SFBH0007102	10 ohm,1005 ,Ferrite Bead		
6	FB601	FILTER,BEAD,CHIP	SFBH0000903	600 ohm,1005 ,		
6	FB602	FILTER,BEAD,CHIP	SFBH0000903	600 ohm,1005 ,		
6	FL301	FILTER,EMI/POWER	SFEY0007102	SMD ,5.6 V,SMD ,4ch. R-Varistor Array(400Ohm,25pF)		
6	FL302	FILTER,EMI/POWER	SFEY0007102	SMD ,5.6 V,SMD ,4ch. R-Varistor Array(400Ohm,25pF)		
6	FL303	FILTER,EMI/POWER	SFEY0007102	SMD ,5.6 V,SMD ,4ch. R-Varistor Array(400Ohm,25pF)		
6	FL304	FILTER,EMI/POWER	SFEY0007102	SMD ,5.6 V,SMD ,4ch. R-Varistor Array(400Ohm,25pF)		
6	FL401	FILTER,EMI/POWER	SFEY0006701	SMD ,CSP, 20 Ball 8ch EMI Filter /w ESD,Pb-free		
6	FL501	FILTER,SEPERATOR	SFAY0007201	850.900 ,1800.1900 ,4.0 dB,4.0 dB, dB, dB,ETC ,Quad band FEM		

10. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Specification	Color	Remark
6	FL601	VARISTOR	SEVY0005501	18 V , ,SMD ,4ch. R-Varistor Array(100Ohm,15pF)		
6	FL603	VARISTOR	SEVY0005501	18 V , ,SMD ,4ch. R-Varistor Array(100Ohm,15pF)		
6	J201	CONN,JACK/PLUG, EARPHONE	ENJE0002301	3,5 PIN,G7000 EAR JACK 3 pole, 5 pin KSD		
6	J401	CONN,SOCKET	ENSY0016601	6 PIN,ETC , ,2.54 mm,H=2.5		
6	L201	INDUCTOR,CHIP	ELCH0005009	100 nH,J ,1005 ,R/TP ,		
6	L501	INDUCTOR,CHIP	ELCH0001427	2.2 nH,S ,1005 ,R/TP ,Pb Free		
6	L503	INDUCTOR,CHIP	ELCH0004715	27 nH,J ,1005 ,R/TP ,		
6	L504	INDUCTOR,CHIP	ELCH0004711	22 nH,J ,1005 ,R/TP ,		
6	L505	INDUCTOR,CHIP	ELCH0004713	6.8 nH,J ,1005 ,R/TP ,		
6	L506	INDUCTOR,CHIP	ELCH0004713	6.8 nH,J ,1005 ,R/TP ,		
6	PT501	THERMISTOR	SETY0006501	NTC ,22000 ohm,SMD ,1005, ECTH 1005 Series, Pb Free		
6	Q301	TR,BJT,NPN	EQBN0007101	EMT3 ,0.15 W,R/TP ,LOW FREQUENCY		
6	Q401	TR,FET,P-CHANNEL	EQFP0003301	SOT-6 ,1.6 W,30 V,2.4 A,R/TP ,use for charge P-CHANNEL FET		
6	Q402	TR,BJT,NPN	EQBN0007101	EMT3 ,0.15 W,R/TP ,LOW FREQUENCY		
6	Q601	TR,FET,P-CHANNEL	EQFP0004501	SOT-323 ,.29 W,1.8 V,.86 A,R/TP ,P-Chanel MOSFET, Pb free		
6	R101	RES,CHIP	ERHY0000287	220K ohm,1/16W,J,1005,R/TP		
6	R103	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP		
6	R104	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP		
6	R106	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP		
6	R107	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP		
6	R108	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP		
6	R109	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP		
6	R110	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP		
6	R112	RES,CHIP	ERHY0000261	10K ohm,1/16W,J,1005,R/TP		
6	R115	RES,CHIP	ERHY0000261	10K ohm,1/16W,J,1005,R/TP		
6	R116	RES,CHIP	ERHY0000273	47K ohm,1/16W,J,1005,R/TP		
6	R119	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP		
6	R120	RES,CHIP	ERHY0000261	10K ohm,1/16W,J,1005,R/TP		
6	R121	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP		
6	R124	RES,CHIP	ERHY0000261	10K ohm,1/16W,J,1005,R/TP		
6	R125	RES,CHIP	ERHY0000261	10K ohm,1/16W,J,1005,R/TP		
6	R198	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R201	RES,CHIP	ERHY0000138	33K ohm,1/16W,F,1005,R/TP		

10. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Specification	Color	Remark
6	R202	RES,CHIP	ERHY0000271	39K ohm,1/16W,J,1005,R/TP		
6	R204	RES,CHIP	ERHY0000284	150K ohm,1/16W,J,1005,R/TP		
6	R205	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R206	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R207	RES,CHIP	ERHY0000250	3.3K ohm,1/16W,J,1005,R/TP		
6	R209	RES,CHIP	ERHY0000203	10 ohm,1/16W,J,1005,R/TP		
6	R213	RES,CHIP	ERHY0000203	10 ohm,1/16W,J,1005,R/TP		
6	R215	RES,CHIP	ERHY0000261	10K ohm,1/16W,J,1005,R/TP		
6	R216	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R219	RES,CHIP	ERHY0000273	47K ohm,1/16W,J,1005,R/TP		
6	R221	RES,CHIP	ERHY0000255	5.6K ohm,1/16W,J,1005,R/TP		
6	R224	RES,CHIP	ERHY0000220	100 ohm,1/16W,J,1005,R/TP		
6	R225	RES,CHIP	ERHY0000202	4.7 ohm,1/16W,J,1005,R/TP		
6	R227	RES,CHIP	ERHY0000215	56 ohm,1/16W,J,1005,R/TP		
6	R228	RES,CHIP	ERHY0000202	4.7 ohm,1/16W,J,1005,R/TP		
6	R229	RES,CHIP	ERHY0000241	1K ohm,1/16W,J,1005,R/TP		
6	R230	RES,CHIP	ERHY0000241	1K ohm,1/16W,J,1005,R/TP		
6	R232	RES,CHIP	ERHY0000254	4.7K ohm,1/16W,J,1005,R/TP		
6	R233	RES,CHIP	ERHY0000265	20K ohm,1/16W,J,1005,R/TP		
6	R324	RES,CHIP	ERHY0000223	150 ohm,1/16W,J,1005,R/TP		
6	R325	RES,CHIP	ERHY0000223	150 ohm,1/16W,J,1005,R/TP		
6	R326	RES,CHIP	ERHY0000265	20K ohm,1/16W,J,1005,R/TP		
6	R328	RES,CHIP	ERHY0000223	150 ohm,1/16W,J,1005,R/TP		
6	R330	RES,CHIP	ERHY0000261	10K ohm,1/16W,J,1005,R/TP		
6	R331	RES,CHIP	ERHY0000273	47K ohm,1/16W,J,1005,R/TP		
6	R332	RES,CHIP	ERHY0000286	200K ohm,1/16W,J,1005,R/TP		
6	R403	RES,CHIP	ERHY0000261	10K ohm,1/16W,J,1005,R/TP		
6	R404	RES,CHIP	ERHY0000261	10K ohm,1/16W,J,1005,R/TP		
6	R405	RES,CHIP	ERHY0000261	10K ohm,1/16W,J,1005,R/TP		
6	R406	RES,CHIP	ERHY0000261	10K ohm,1/16W,J,1005,R/TP		
6	R407	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R410	RES,CHIP	ERHY0000241	1K ohm,1/16W,J,1005,R/TP		
6	R411	RES,CHIP	ERHY0000220	100 ohm,1/16W,J,1005,R/TP		
6	R412	RES,CHIP	ERHY0000220	100 ohm,1/16W,J,1005,R/TP		

10. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Specification	Color	Remark
6	R413	RES,CHIP	ERHY0000261	10K ohm,1/16W,J,1005,R/TP		
6	R414	RES,CHIP	ERHY0000220	100 ohm,1/16W,J,1005,R/TP		
6	R415	RES,CHIP	ERHY0000220	100 ohm,1/16W,J,1005,R/TP		
6	R421	RES,CHIP	ERHY0000261	10K ohm,1/16W,J,1005,R/TP		
6	R422	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP		
6	R423	RES,CHIP	ERHY0000205	15 ohm,1/16W,J,1005,R/TP		
6	R424	RES,CHIP	ERHY0001102	0.2 ohm,1/4W ,F ,2012 ,R/TP		
6	R425	RES,CHIP	ERHY0000205	15 ohm,1/16W,J,1005,R/TP		
6	R426	RES,CHIP	ERHY0000244	1.5K ohm,1/16W,J,1005,R/TP		
6	R427	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP		
6	R501	RES,CHIP	ERHY0000226	220 ohm,1/16W,J,1005,R/TP		
6	R502	RES,CHIP	ERHY0008201	24 ohm,1/16W ,J ,1005 ,R/TP		
6	R503	RES,CHIP	ERHY0000226	220 ohm,1/16W,J,1005,R/TP		
6	R504	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R506	RES,CHIP	ERHY0000268	27K ohm,1/16W,J,1005,R/TP		
6	R507	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R510	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R511	RES,CHIP	ERHY0000229	300 ohm,1/16W,J,1005,R/TP		
6	R512	RES,CHIP	ERHY0000206	18 ohm,1/16W,J,1005,R/TP		
6	R513	RES,CHIP	ERHY0000229	300 ohm,1/16W,J,1005,R/TP		
6	R514	RES,CHIP	ERHY0000231	390 ohm,1/16W,J,1005,R/TP		
6	R515	RES,CHIP	ERHY0000231	390 ohm,1/16W,J,1005,R/TP		
6	R516	RES,CHIP	ERHY0000231	390 ohm,1/16W,J,1005,R/TP		
6	R517	RES,CHIP	ERHY0000239	820 ohm,1/16W,J,1005,R/TP		
6	R518	RES,CHIP	ERHY0000239	820 ohm,1/16W,J,1005,R/TP		
6	R519	RES,CHIP	ERHY0000239	820 ohm,1/16W,J,1005,R/TP		
6	R520	RES,CHIP	ERHY0000239	820 ohm,1/16W,J,1005,R/TP		
6	R521	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R522	RES,CHIP	ERHY0000237	680 ohm,1/16W,J,1005,R/TP		
6	R523	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R525	RES,CHIP	ERHY0000231	390 ohm,1/16W,J,1005,R/TP		
6	R526	RES,CHIP	ERHY0000296	1M ohm,1/16W,J,1005,R/TP		
6	R527	RES,CHIP	ERHY0000289	270K ohm,1/16W,J,1005,R/TP		
6	R528	RES,CHIP	ERHY0000237	680 ohm,1/16W,J,1005,R/TP		

10. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Specification	Color	Remark
6	R529	RES,CHIP	ERHY0000263	15K ohm,1/16W,J,1005,R/TP		
6	R530	RES,CHIP	ERHY0000254	4.7K ohm,1/16W,J,1005,R/TP		
6	R531	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R532	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R533	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R604	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R605	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R606	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R607	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R609	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R610	RES,CHIP	ERHY0000254	4.7K ohm,1/16W,J,1005,R/TP		
6	R611	RES,CHIP	ERHY0000254	4.7K ohm,1/16W,J,1005,R/TP		
6	R612	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R614	RES,CHIP	ERHY0000261	10K ohm,1/16W,J,1005,R/TP		
6	R615	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R617	RES,CHIP	ERHY0000220	100 ohm,1/16W,J,1005,R/TP		
6	R618	RES,CHIP	ERHY0000220	100 ohm,1/16W,J,1005,R/TP		
6	R619	RES,CHIP	ERHY0000220	100 ohm,1/16W,J,1005,R/TP		
6	R620	RES,CHIP	ERHY0000220	100 ohm,1/16W,J,1005,R/TP		
6	R621	RES,CHIP	ERHY0000220	100 ohm,1/16W,J,1005,R/TP		
6	R622	RES,CHIP	ERHY0000220	100 ohm,1/16W,J,1005,R/TP		
6	R623	RES,CHIP	ERHY0000220	100 ohm,1/16W,J,1005,R/TP		
6	S601	CONN,SOCKET	ENSY0014401			
6	SW501	CONN,RF SWITCH	ENWY0003301	,SMD ,0.4 dB,		
6	U101	IC	EUSY0243001	BGA ,100 PIN,R/TP ,ABB(IOTA Shrink), Pb Free		
6	U102	IC	EUSY0155201	179GHH PBGA ,179 PIN,R/TP ,CALYPSO / DIGITAL BB CHIP, Pb Free		
6	U201	IC	EUSY0186502	Micropak ,6 PIN,R/TP ,Single SPDT Analog Switch, Pb Free		
6	U202	IC	EUSY0111601	32-PIN QFN ,32 PIN,R/TP ,MA-3 / 40 TONES / FM + WAVEFORM TABLE		
6	U301	IC	EUSY0227401	TSOPJW-12 ,12 PIN,R/TP ,CHARGE PUMP FOR WHITE LED / MAX - 4 LEDS		
6	U401	IC	EUSY0226301	FBGA ,64 PIN,R/TP ,128M NOR+64M PSRAM / PB FREE		
6	U501	PAM	SMPY0012901	35 dBm,52 %, A, dBc, dB,5x5x1.1 ,SMD ,		
6	U502	IC	EUSY0223202	5.0*5.0 ,32 PIN,R/TP ,AERO11 TRANSCEIVER, D Version		

10. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Specification	Color	Remark
6	U503	IC	EUSY0232812	SON1612-6 ,6 PIN,R/TP ,2.8V, 150mA LDO		
6	U504	IC	EUSY0077201	SC70 ,5 PIN,R/TP ,Inverter Gate, Pb Free		
6	U601	IC	EUSY0232812	SON1612-6 ,6 PIN,R/TP ,2.8V, 150mA LDO		
6	U602	IC	EUSY0240501	BGA(6.2*7.2*1.3t) ,96 PIN,R/TP ,128Kbyte SRAM, VGA Camera IC		
6	U603	IC	EUSY0292901	SON1612-6 ,6 PIN,R/TP ,1.5V, 150mA LDO		
6	VA401	VARISTOR	SEVY0003901	5.5 V , ,SMD ,480pF, 1005		
6	VB401	CONN,RECEPTACLE	ENEY0003801	2 PIN, , ,		
6	X101	X-TAL	EXXY0015601	.032768 MHz,20 PPM,7 pF,65000 ohm,SMD ,6.9*1.4*1.3 ,		
6	X501	VCTCXO	EXSK0005601	26 MHz,2 PPM,10 pF,SMD ,3.2*2.5*1.0 ,		
5	SAFD00	PCB ASSY,MAIN,SMT TOP	SAFD0075401			
6	C211	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C217	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
6	C218	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
6	C236	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C301	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	CN301	CONNECTOR,FFC/FPC	ENQY0012501	33 PIN,0.3 mm,ETC , ,H=1.2		
6	D251	DIODE,TVS	EDTY0008501	TFSC ,5 V,50 W,R/TP ,small size		
6	D252	DIODE,TVS	EDTY0008501	TFSC ,5 V,50 W,R/TP ,small size		
6	D301	DIODE,LED,CHIP	EDLH0003401	RED, GREEN ,ETC ,R/TP ,SIZE 1315 , GSM DUAL LED		
6	LD301	DIODE,LED,CHIP	EDLH0006001	Blue ,1608 ,R/TP ,Blue SMD LED		
6	LD302	DIODE,LED,CHIP	EDLH0006001	Blue ,1608 ,R/TP ,Blue SMD LED		
6	LD303	DIODE,LED,CHIP	EDLH0006001	Blue ,1608 ,R/TP ,Blue SMD LED		
6	LD304	DIODE,LED,CHIP	EDLH0006001	Blue ,1608 ,R/TP ,Blue SMD LED		
6	LD305	DIODE,LED,CHIP	EDLH0006001	Blue ,1608 ,R/TP ,Blue SMD LED		
6	LD306	DIODE,LED,CHIP	EDLH0006001	Blue ,1608 ,R/TP ,Blue SMD LED		
6	LD307	DIODE,LED,CHIP	EDLH0006001	Blue ,1608 ,R/TP ,Blue SMD LED		
6	LD308	DIODE,LED,CHIP	EDLH0006001	Blue ,1608 ,R/TP ,Blue SMD LED		
6	LD309	DIODE,LED,CHIP	EDLH0006001	Blue ,1608 ,R/TP ,Blue SMD LED		
6	LD310	DIODE,LED,CHIP	EDLH0006001	Blue ,1608 ,R/TP ,Blue SMD LED		
6	LD311	DIODE,LED,CHIP	EDLH0006001	Blue ,1608 ,R/TP ,Blue SMD LED		
6	LD312	DIODE,LED,CHIP	EDLH0006001	Blue ,1608 ,R/TP ,Blue SMD LED		
6	R210	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		
6	R212	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP		

10. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Specification	Color	Remark
6	R234	RES,CHIP	ERHY0000203	10 ohm,1/16W,J,1005,R/TP		
6	R235	RES,CHIP	ERHY0000203	10 ohm,1/16W,J,1005,R/TP		
6	R236	RES,CHIP	ERHY0000241	1K ohm,1/16W,J,1005,R/TP		
6	R301	RES,CHIP	ERHY0000237	680 ohm,1/16W,J,1005,R/TP		
6	R302	RES,CHIP	ERHY0000229	300 ohm,1/16W,J,1005,R/TP		
6	R303	RES,CHIP	ERHY0000229	300 ohm,1/16W,J,1005,R/TP		
6	R304	RES,CHIP	ERHY0000229	300 ohm,1/16W,J,1005,R/TP		
6	R305	RES,CHIP	ERHY0000229	300 ohm,1/16W,J,1005,R/TP		
6	R306	RES,CHIP	ERHY0000229	300 ohm,1/16W,J,1005,R/TP		
6	R307	RES,CHIP	ERHY0000229	300 ohm,1/16W,J,1005,R/TP		
6	R308	RES,CHIP	ERHY0000229	300 ohm,1/16W,J,1005,R/TP		
6	R309	RES,CHIP	ERHY0000229	300 ohm,1/16W,J,1005,R/TP		
6	R310	RES,CHIP	ERHY0000229	300 ohm,1/16W,J,1005,R/TP		
6	R311	RES,CHIP	ERHY0000229	300 ohm,1/16W,J,1005,R/TP		
6	R312	RES,CHIP	ERHY0000237	680 ohm,1/16W,J,1005,R/TP		
6	R313	RES,CHIP	ERHY0000220	100 ohm,1/16W,J,1005,R/TP		
6	R314	RES,CHIP	ERHY0000172	68 ohm,1/16W ,F ,1005 ,R/TP		
6	R315	RES,CHIP	ERHY0000237	680 ohm,1/16W,J,1005,R/TP		
6	R316	RES,CHIP	ERHY0000237	680 ohm,1/16W,J,1005,R/TP		
6	R317	RES,CHIP	ERHY0000237	680 ohm,1/16W,J,1005,R/TP		
6	R318	RES,CHIP	ERHY0000237	680 ohm,1/16W,J,1005,R/TP		
6	R319	RES,CHIP	ERHY0000237	680 ohm,1/16W,J,1005,R/TP		
6	R320	RES,CHIP	ERHY0000237	680 ohm,1/16W,J,1005,R/TP		
6	R321	RES,CHIP	ERHY0000237	680 ohm,1/16W,J,1005,R/TP		
6	R322	RES,CHIP	ERHY0000237	680 ohm,1/16W,J,1005,R/TP		
6	R323	RES,CHIP	ERHY0000237	680 ohm,1/16W,J,1005,R/TP		
6	R351	RES,CHIP	ERHY0000229	300 ohm,1/16W,J,1005,R/TP		
6	R352	RES,CHIP	ERHY0000229	300 ohm,1/16W,J,1005,R/TP		
6	VA201	VARISTOR	SEVY0003901	5.5 V ,SMD ,480pF, 1005		
6	VA202	VARISTOR	SEVY0003901	5.5 V ,SMD ,480pF, 1005		
6	VA301	VARISTOR	SEVY0003901	5.5 V ,SMD ,480pF, 1005		
6	VA302	VARISTOR	SEVY0003901	5.5 V ,SMD ,480pF, 1005		
6	VA303	VARISTOR	SEVY0003901	5.5 V ,SMD ,480pF, 1005		
6	VA304	VARISTOR	SEVY0003901	5.5 V ,SMD ,480pF, 1005		

10. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Specification	Color	Remark
6	VA305	VARISTOR	SEVY0003901	5.5 V, ,SMD ,480pF, 1005		
6	VA306	VARISTOR	SEVY0003901	5.5 V, ,SMD ,480pF, 1005		
6	VA307	VARISTOR	SEVY0003901	5.5 V, ,SMD ,480pF, 1005		
6	VA308	VARISTOR	SEVY0003901	5.5 V, ,SMD ,480pF, 1005		
6	VA309	VARISTOR	SEVY0003901	5.5 V, ,SMD ,480pF, 1005		
6	VA310	VARISTOR	SEVY0003901	5.5 V, ,SMD ,480pF, 1005		
6	VA311	VARISTOR	SEVY0003901	5.5 V, ,SMD ,480pF, 1005		
5	SPFY00	PCB,MAIN	SPFY0122301	FR-4 ,1.0 mm,BUILD-UP 8 ,MG185 MAIN PCB		

10. EXPLODED VIEW & REPLACEMENT PART LIST

10.3 Accessory

Note: This Chapter is used for reference, Part order is ordered by SBOM standard on GCSC

Level	Location No.	Description	Part Number	Specification	Color	Remark
3	SBPL00	BATTERY PACK,LI-ION	SBPL0077901	3.7 V,830 mAh,1 CELL,PRISMATIC ,FG101 RUSSV423450, Innerpack	Without Color	
3	SSAD00	ADAPTOR,AC-DC	SSAD0007844	FREE ,50 Hz,5.2 V,800 mA,NOM ,		

Note
