Internal Use Only

Service Manual

LG410G

Service Manual

Model : LG410G

Date: April, 2009 / Issue 1.0

REVISED HISTORY

DATE	ISSUE	CONTENTS OF CHANGES	S/W VERSION

The information in this manual is subject to change without notice and should not be construed as a commitment by LGE Inc. Furthermore, LGE Inc. reserves the right, without notice, to make changes to equipment design as advances in engineering and manufacturing methods warrant.

This manual provides the information necessary to install, program, operate and maintain the LG410G.

1. INTRODUCTION

Table Of Contents

1. INTRODUCTION

1.1 Purpose

This manual provides the information necessary to repair, calibration, description and download the features of the LG410G

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 you're 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. LGE 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. LGE 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 LG410G 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 the LG410G must be performed only by the LGE 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.

E. Notice of Radiated Emissions

The LG410G 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

An LG410G 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.

1.3 Abbreviations

For the purposes of this manual, following abbreviations apply:

APC	Automatic Power Control
BB	Baseband
BER	Bit Error Ratio
CC-CV	Constant Current – Constant Voltage
DAC	Digital to Analog Converter
DCS	Digital Communication System
dBm	dB relative to 1 milliwatt
DSP	Digital Signal Processing
EEPROM	Electrical Erasable Programmable Read-Only Memory
EL	Electroluminescence
ESD	Electrostatic Discharge
FPCB	Flexible Printed Circuit Board
GMSK	Gaussian Minimum Shift Keying
GPIB	General Purpose Interface Bus
GSM	Global System for Mobile Communications
IPUI	International Portable User Identity
IF	Intermediate Frequency
LCD	Liquid Crystal Display
LDO	Low Drop Output
LED	Light Emitting Diode
OPLL	Offset Phase Locked Loop
PAM	Power Amplifier Module
PCB	Printed Circuit Board
PGA	Programmable Gain Amplifier
PLL	Phase Locked Loop
PSTN	Public Switched Telephone Network
RF	Radio Frequency
RLR	Receiving Loudness Rating
RMS	Root Mean Square
RTC	Real Time Clock
FEM	Front End Module
SIM	Subscriber Identity Module
SLR	Sending Loudness Rating
SRAM	Static Random Access Memory
STMR	Side Tone Masking Rating
TA	Travel Adapter
TDD	Time Division Duplex
TDMA	Time Division Multiple Access
UART	Universal Asynchronous Receiver/Transmitter
VCO	Voltage Controlled Oscillator
VCTCXO	Voltage Control Temperature Compensated Crystal Oscillator
WAP	Wireless Application Protocol

2. GENERAL PERFORMANCE

2.1 Product Name

LG410G : Support GSM

2.2 Supporting Standard

Item	Feature	Comment
Supporting Standard	EGSM/GSM850/DCS/PCS Quad-Band (850/900/1800/1900) with seamless handover Phase 2+(include AMR) SIM Toolkit : Class 1,2,3	
Frequency Range	GSM850 TX : 824.2 – 848.8 GSM850 RX : 869.2 – 893.8 EGSM TX : 880.2 – 914.8 MHz EGSM RX : 925.2 – 959.8 MHz DCS1800 TX : 1710.2 – 1784.8 MHz DCS1800 RX : 1805.8 – 1879.8 MHz PCS1900 TX : 1850.2 – 1909.8 MHz PCS1900 RX : 1930.2 – 1989.8 MHz	
Application Standard	SMS : Yes	

2.3 Main Parts: GSM Solution

	LG410G
Digital Baseband	TI Locosto
RF Chip	SKY77318

2.4 H/W Features

Item	Feature	Comment
Form Factor	Folder type	LCD : 65K CSTN, 128 x128
Battery	**Capacity** Standard: Li-Ion, 800mAh(Min)	
	Packing Type: Soft Pack	
Size	Standard: 88 x 47 x 18.7 mm	L×W×H
Weight	81g	With Battery
PCB	One PCB :6 Layers, 0.8t	
AVG TCVR current (mA)	Max : 225 mA (GSM, Power Level 5) Max : 90 mA (GSM, Power Level 19)	
Standby Current	1.5 mA	@ Paging Period 6
Standby time	500 hours	@ Paging Period 6
Charging time	Below 3 hours	@ Power Off /800mAh
Talk time	Min : 3.5hr@Power Level 5(GSM850) Min : 4.5hr@Power Level 0(PCS)	@ 800 mAh
RX sensitivity	GSM 850 : -109 dBm DCS/PCS : -109 dBm	Condition: conducted
TX output power	GSM 850 : 32.5 dBm DCS/PCS : 29.5 dBm	Class4 (GSM850) Class1 (PCS)
SIM card type	Plug-In SIM 3V	
Display	Main LCD : 262k TFT Sub LCD : 96 x 64 FSTN LCD Backlight : White LED	
Keypad	Alphanumeric Key : 12 Function Key : 10 Total Number of Keys : 22	Function Key: 5 Key Navigation, F1, F2, C, SND, END/PWR

2. GENERAL PERFORMANCE

Item	Feature	Comment
Antenna	Internal Antenna	Quad-band
System connector	18 Pin	
Ear Phone Jack	18 Pin	
PC synchronization	No	
Memory	Flash : 128Mbit / SRAM : 64Mbit	Spansion
Speech coding	FR, EFR, HR, AMR	
Data & Fax	Yes	
Vibrator	Built in Vibrator	
MIDI (for Buzzer Function)	SW Decoded 16Poly	
Voice Recording	Yes	30 sec.
Travel Adapter	Yes	
Options	Ear-Microphone Data Cable	TBD TBD

2.5 S/W Features

Item	Feature	Comment
RSSI	0~5 level	
Battery Charging	0~3 level	
Key Volume	0~7 level	
Effect sound volume	0~7 level	
Audio Volume	0~7 level	
Time/Date Display	Yes	NITZ
Multi-language	Yes	English /Spanish /French
Quick Access Mode	Yes	U:Message, D:Phonebook L:My stuff, R:IM
PC Sync	No	
Speed Dial	Yes	
Speaker Phone	Yes	
CLIP/CLIR	Yes	
Phonebook	Yes(2 Numbers + 1 Memo + 1 e-mail + Group Select + Picture)	Total 500 members
Last Dial Number	Yes (40)	
Last Received Number	Yes (40)	
Last Missed Number	Yes (40)	
Search Number/Name	Yes	
Group	Yes	8ea (Possible Rename)
Fixed Dial Number	Yes	
Service Dial Number	Yes	
Own Number	Yes	
Voice Memo	Yes	
Call Reminder	Yes	
Network Selection	Yes	

2. GENERAL PERFORMANCE

Item	Feature	Comment
Call Divert	Yes	
Call Barring	Yes	
Call Charge (AoC)	Yes	
Call Duration	Yes	
SMS	Yes	Max 100
EMS melody/Picture Send/ Receive/ Save	No	
SMS Over GPRS	No	
E-Mail	No	
Long Message	Yes	Max. 1530 Characters
Cell Broadcast	No	AT&T required not supported
Download Melody / Wallpaper	Yes	
Game	Yes	Default 1ea
Calendar	Yes	
Memo Pad	Yes	
World Clock	Yes	
Unit Convert	Yes	Currency/Area/Length/Volume /Weight/Temperature/Velocity
Fax & Data	Built in Data & Fax support	
Wall Paper	Yes	Default 5ea
WAP Browser	Yes	
Download	Yes	
SIM Lock	Yes	Operator Dependent
SIM Toolkit	Class 1, 2, 3	
MMS	Yes	
EONS	Yes	
CPHS	Yes	
ENS	Yes	
Conference Call	Yes	Max. 3
DTMF	Yes	

3. H/W Circuit Description

3.1 Digital Main Processor (Locosto)

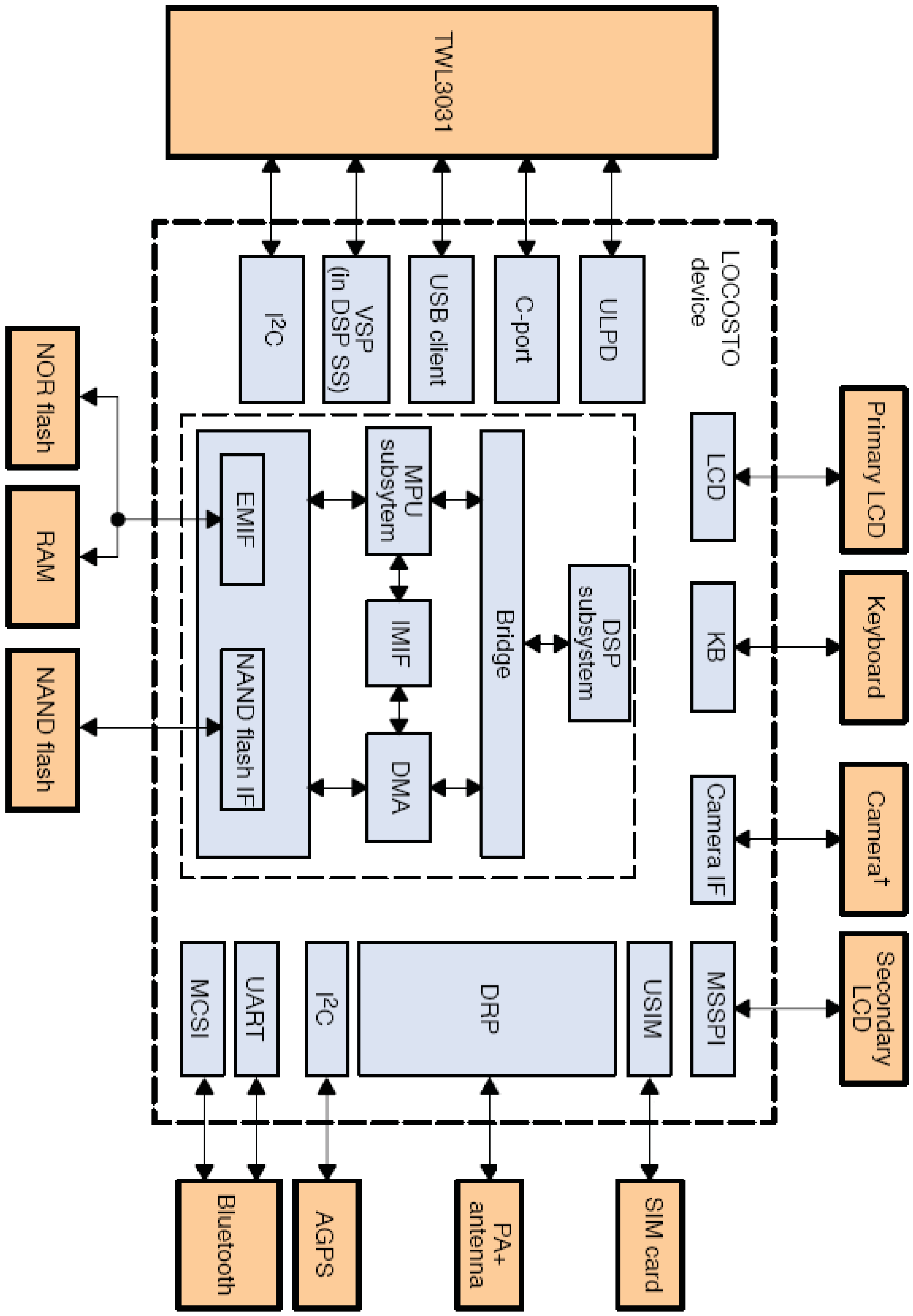


Figure. 3-1 Locosto FUNCTIONAL BLOCK DIAGRAM

3.1.1 Overview of Locosto

The Locosto is a GSM base band modem including RF transceiver covering the low bands GSM850 /GSM900 and high bands GSM1800 / GSM1900 bands. Locosto is Dual Band, therefore, it supports by default a low / high pair of bands at the same time:

1. GSM850 / GSM1800
2. GSM850 / GSM1900
3. GSM900 / GSM1800
4. GSM900 / GSM1900

The Locosto is optimized for voice-centric Mobile Phone applications.
The Locosto is designed as a single chip solution that integrates the digital, mixed-signal, RF functionality and a direct-to-battery Power Management Unit.

The transceiver consists of:

- Constant gain direct conversion receiver with an analog I/Q base band interface
- Fully integrated Sigma/Delta-synthesizer capability
- Fully integrated two-band RF oscillator
- Two-band digital GMSK modulator with digital TX interface
- Digitally controlled crystal oscillator generating system clocks.

The Locosto supports a direct battery connection, hence eliminating the need for an external Power Management Unit. The Locosto has different power down modes and an integrated power up sequencer.

The Locosto is powered by the ARM7(104MHz) MCU and C54® DSP cores.
The operating temperature range from -40˚C to 85˚C. It is manufactured using the 0.13 μm CMOS process.

3.1.2 Features

The LOCOSTO device is an integrated solution that embeds a digital baseband(DBB) and a digital radio processor (DRP) on the same die. The LOCOSTO device targets solutions for GSM/GPRS (low-cost global system for mobile communications/general packet radio service).
The DRP is a digital radio-frequency (RF) transceiver that supports up to a GPRS class12. The DRP is designed for quad-band operation, supporting both the European and the US bands (E-GSM 900 and DCS 1800 bands, GSM850 and PCS 1900 bands, respectively).
The DBB supports the processing of GSM radio signals in the switching circuit mode and the packet data mode (GPRS) for up to class 10, including evolutions such as the SAIC and localization system (A-GPS) in compliance with the European Telecommunications Standards Institute specification.

The LOCOSTO silicon process is a 90-nm digital CMOS technology.
The LOCOSTO device includes two versions: LOCOSTO and LOCOSTO Lite.
The LOCOSTO Lite device does not include the camera interface and the GPRS.

LOCOSTO offers the following features:

☐ Dual processors:
  - 104-MHz ARM7TDMI® microprocessor unit (MPU)
  - 104-MHz customized digital signal processor (cDSP) c54x

☐ Internal memory:
  - 154KW DSP read-only memory (ROM)
  - 30KW DSP static random-access memory (SRAM)
  - 2.5Mb MPU SRAM
  - 1.5Mb MPU ROM

☐ External memory support:
  - 1.8/3 V subscriber identity module (SIM) I/F
  - Direct memory access (DMA) to external memory
  - Burst mode, page-mode external memory: NAND and NOR flash and SRAM (frame buffer)

☐ Hardware security
  - Flash content
  - International mobile equipment identity (IMEI) protection
  - SIM lock

☐ Peripheral interfaces
  - Vibrator PWM control signal
  - Universal serial bus (USB) 2.0 full-speed client
  - Keypad
  - Universal asynchronous receiver/transmitter (UART)
  - Multichannel serial interface (MCSI)
  - Bluetooth
  - Camera
  - Primary liquid-crystal display (LCD): 8-bit parallel interface Up to QVGA (quarter video graphics array) 256K colors
  - Secondary LCD: Serial interface

☐ DRP2.0 RF integrated RF:

- Digital RF 4 band GSM/GPRS up to Class 12 (On the LOCOSTO Lite device, GSM is dual-band muxed and GPRS is not available.)
- -110 dBm sensitivity
- Digital PA driver output level +2 dBm
- 0.7 degrees RMS phase error
- Integrated digitally controlled crystal oscillator (DCXO)

☐ Software support:

- GSM/GPRS layer 1,2,3 (GPRS is not available on LOCOSTO Lite.)
- Adaptive multirate (AMR), full rate (FR), half rate (HR), enhanced full rate (EFR)
- Teletypewriter (TTY)
- SAIC over GSM
- Man machine interface (MMI) for test
- Wireless application protocol (WAP), enhanced message service(EMS), multimedia message service (MMS), JAVA

☐ Multimedia support:

- Internal 300 KP camera support
- MP3 player
- Up to 32 polyphonies stereo midi player
- Up to 32 polyphonies mono midi ringer
- JPEG encode and decode

The LOCOSTO device communicates with the analog TWL3031 external subsystem, which provides the following capabilities:

- Handset microphone and speaker
- Headset mono/stereo audio speakers and microphone connection
- Melody ringer (hands-free) and buzzer
- Battery pack (Nimh/Li-ion) and six 7-V regulated or 20-V nonregulated charger
- Vibrator motor control
- Real-time clock (RTC) 32-kHz crystal

The following external/extra subsystems are also supported:

- TI−Bluetooth (BRF6150) wireless short-distance connectivity
- Voice/audio and data
- TI-AGPS/TWL5002 localization system (I/F provision)
- Digital camera systems (not available on LOCOSTO Lite)
- VGA camera sensor/module, for example, AGILENT ADCM-2700 (not available on LOCOSTO Lite)
- OMAP-DMxx(GoldenEye) camera companion chip (up to 3M-pixel) (not available on LOCOSTO Lite)
- UART cable or IrDA (infrared data association)
- Boot-manufacturing capability from the USB link
- FM radio receiver (for example, Philips TEA5767/68)
- Primary (Qcif) and secondary LCD
- NAND flash-based media storage (for example, on-board SmartMedia)
- USB carkit

3.1.3 Asynchronous Operation Mode Concept

The Locosto can operate in either:

- The traditional synchronous mode with the 26MHz system clock synchronized on the base station
- A special asynchronous mode (XO concept).

In the asynchronous mode the 26MHz clock input is not synchronized with the base station; the residual frequency offset is compensated in the digital signal processing domain. This processing includes frequency and timing compensation of the baseband and voiceband signals.

3.1.4 Receiver Antenna Bar Display

	Antenna Bar Number	RX Power (dBm)
Antenna display	5->4	over -92dBm
	4->3	-93dBm~ -100dBm
	3->2	skip
	2->1	-104dBm~ -105dBm
	1->0	less -106dBm

Antenna Bar	RSSI Range (dBm)
Y▁▂▃▄▅	**Over -92**
Y▁▂▃▄	**-93~ -100**
Y▁▂▃	**-100~-101**
Y▁▂	**-101 ~ -103**
Y▁	**-104 ~ -105**
Y	**Less -106**
OFF	**No service**

3.2 Power Amplifier Module (SKY77318)

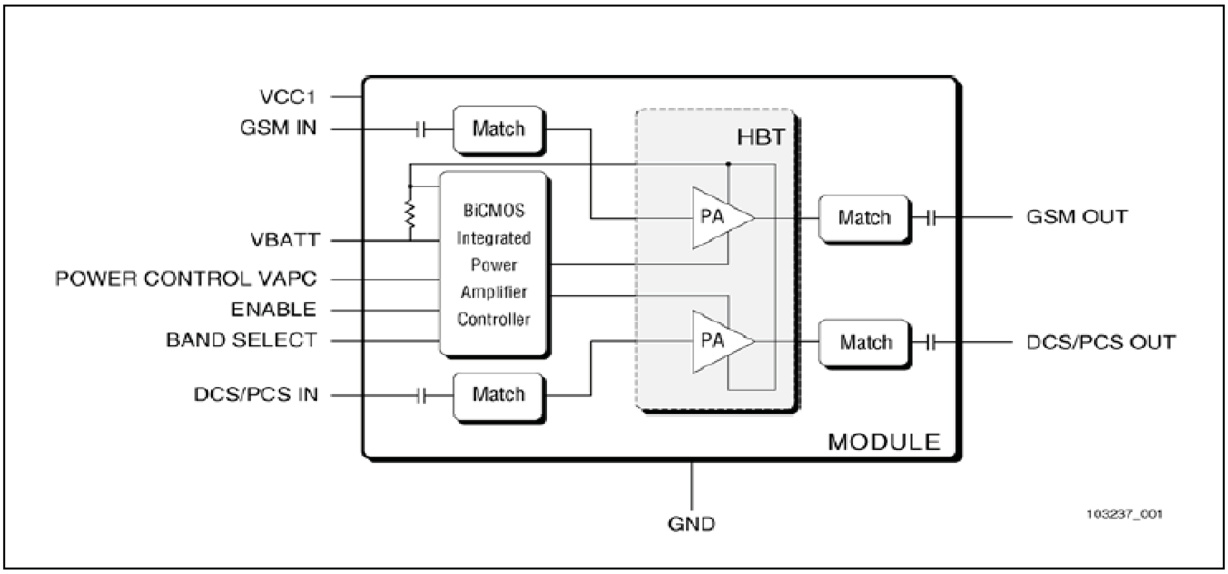


Figure. 3-2 SKY77318 FUNCTIONAL BLOCK DIAGRAM

The SKY77318 Power Amplifier Module (PAM) is designed in a low profile (1.2 mm), compact form factor for quad-band cellular handsets comprising GSM850/900, DCS1800, and PCS1900 operation. The PAM also supports Class 12 General Packet Radio Service (GPRS) multi-slot operation.

The module consists of separate GSM PA and DCS1800/PCS1900 PA blocks, impedance-matching circuitry for 50 Ω input and output impedances and a Power Amplifier Control (PAC) block with an internal current-sense resistor. The custom BiCMOS integrated circuit provides the internal PAC function and interface circuitry. Fabricated onto a single Gallium Arsenide (GaAs) die, one Heterojunction Bipolar Transistor (HBT) PA block supports the GSM bands and the other supports the DCS1800 and PCS1900 bands. Both PA blocks share common power supply pins to distribute current.

The GaAs die, the Silicon (Si) die, and the passive components are mounted on a multi-layer laminate substrate. The assembly is encapsulated with plastic overmold.

RF input and output ports of the SKY77318 are internally matched to a 50 Ω load to reduce the number of external components for a quad-band design. Extremely low leakage current (2.5 μA, typical) of the dual PA module maximizes handset standby time. The SKY77318 also contains band select switching circuitry to select GSM (logic 0) or DCS/PCS (logic 1) as determined from the Band Select (BS) signal.

In Figure 1 below, the BS pin selects the PA output (DCS/PCS_OUT or GSM_OUT) and the Analog Power Control (VAPC) controls the level of output power.

The VBATT pin connects to an internal current-sense resistor and interfaces to an integrated power amplifier control (iPAC™) function, which is insensitive to variations in temperature, power supply, process, and input power.
The ENABLE input allows initial turn-on of PAM circuitry to minimize battery drain.

3.3 26 MHz Clock (DCXO)

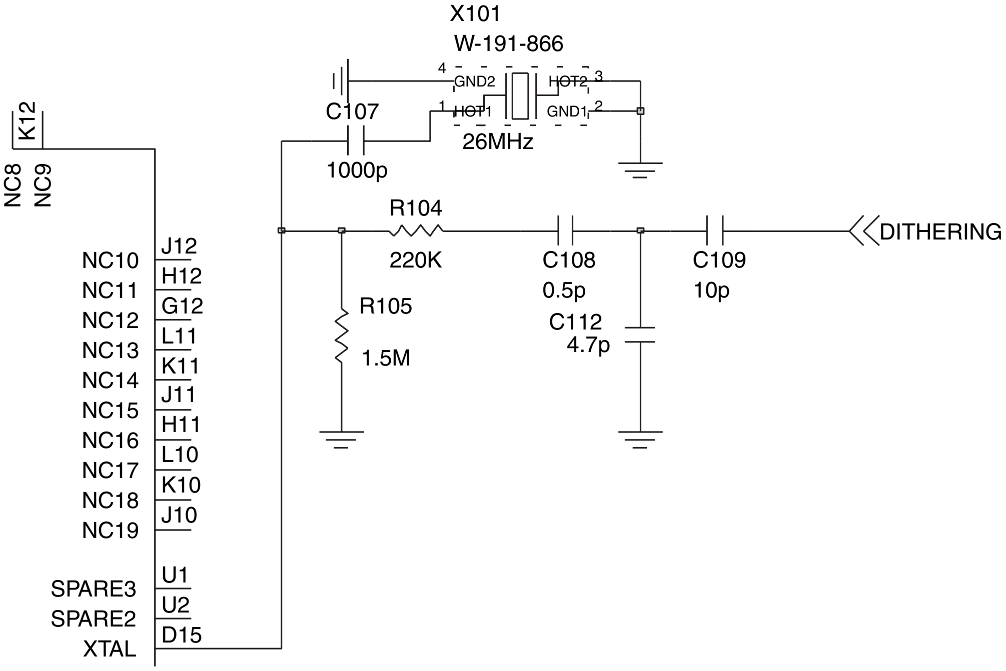


Figure. 3-3 Locosto DCXO Overview

DCXO (Digitally Controlled Crystal Oscillator) and VCTCXO (Voltage Controlled Temperature Compensated Crystal Oscillator) are two different techniques used to maintain the mobile's reference oscillator's accuracy over time. The reference oscillator's accuracy over time will vary due to initial crystal frequency offset, temperature drift and aging. These static and dynamic frequency variations have to be compensated, otherwise the mobile would be in danger of losing connection to the network.
The technique used to perform the frequency compensation is generally termed Automatic Frequency Control (AFC). To summarize the operation of DCXO, GSM Baseband processor will calculate the AFC compensation (which is continuously updated) required based on the measured frequency error. Then the required AFC compensation is sent to the LUXO (Lineari-Zation Unit of Crystal Oscillator), which in turns control the DCXO core and generates the 26MHz system clock.

3.4 RTC(32.768KHz Crystal)

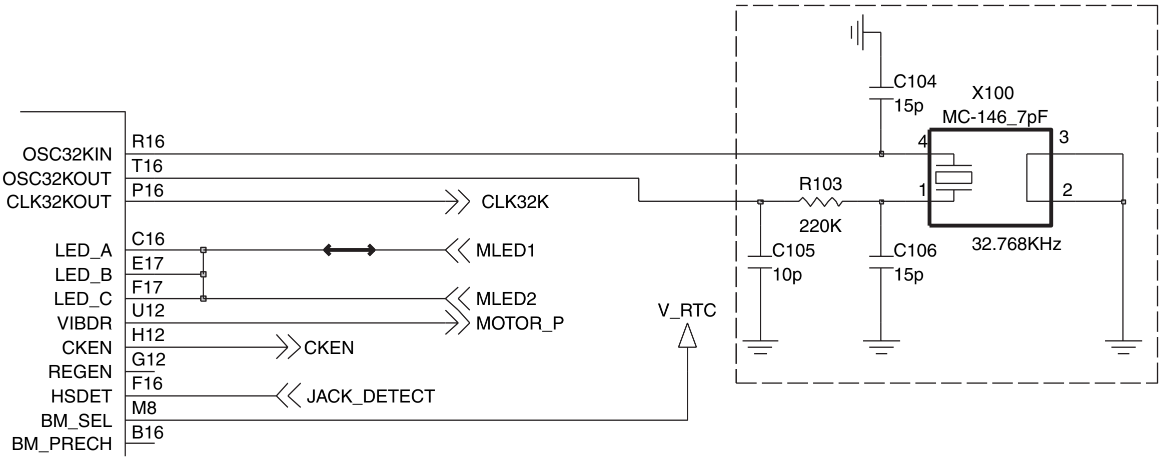


Figure. 3-4 Locosto RTC Interface

The integrated Real Time Clock (RTC) is able to provide programmable alarm functions and external interrupts. Due to its extreme low power consumption the RTC can be supplied from a small backup battery. This allows the generation of external interrupts, even when the main Locosto supply voltage is switched off. For this purpose the RTC is powered by own voltage supply pins VDD_RTC and VSS_RTC.
The RTC shall be driven by a 32.768 kHz (32k) clock which needs to be applied via the Triton(ABB) OSC32KIN and OSC32KOUT pins. The clock can be fed from either an external clock source or use the on chip 32 KHz oscillator module.
The low clock frequency and the optimized low power design give the possibility to run the chip with a minimum of power dissipation. For example, for this specific application the 26 MHz reference oscillator can be switched off during system standby and a low- power time reference can be kept when the 32k clock is provided to the RTC.
The RTC consists of an Locosto specific RTC shell, containing the RTC macro, as well as the 32 kHz oscillator, as described in the following sections. The module RTC Shell solely performs level translation of the 32KHz clock to the VDD_LD1 power supply domain, and is not functionally associated with the RTC.

3.5 LCD Interface(8-bit Parallel interface)

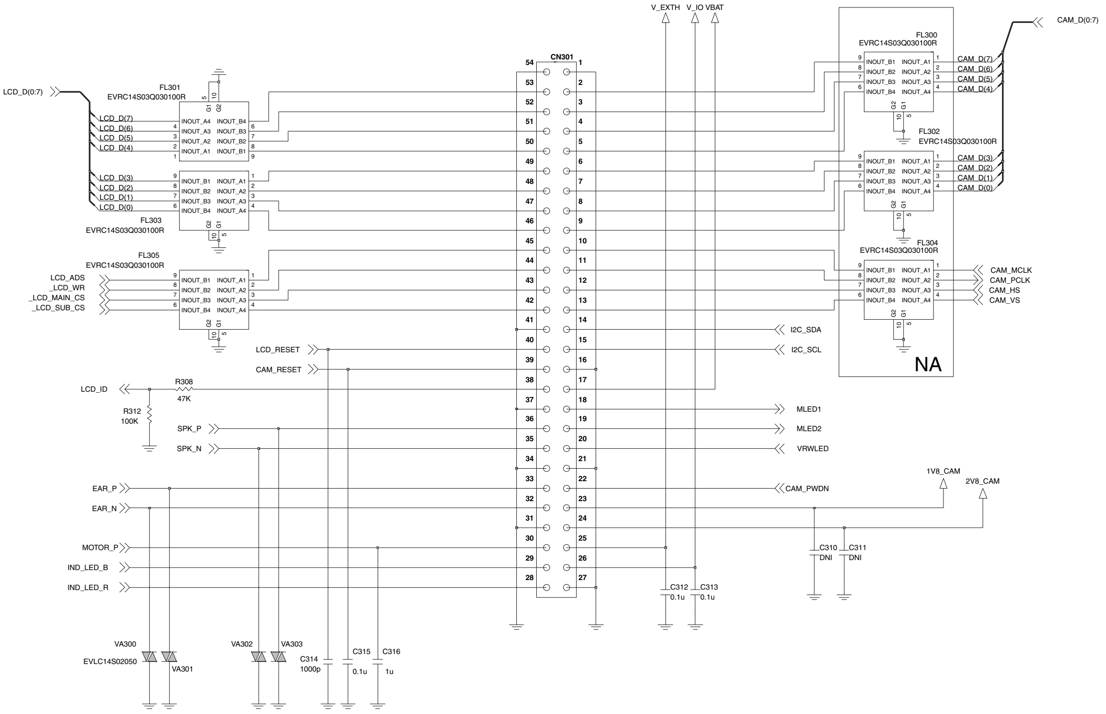


Figure 3-5-1. LCD Interface

Signal	Description
_LCD_MAIN_CS	This signal enable to access to the driver IC of main LCD.
_LCD_SUB_CS	This signal enable to access to the driver IC of sub LCD.
LCD_D(0:7)	This signal transfer display data to driver IC.
LCD_ADS, _LCD_WR	This signal transfer control signal to driver IC.
LCD_RESET	This signal makes driver IC to HW default status.
VRWLED	This signal provide power to white LEDs.
MLED1/2	This signal be feed back from white LEDs.
V_EXTH, V_IO	This signal provides power to LCD modules.

3.6 SIM Card Interface

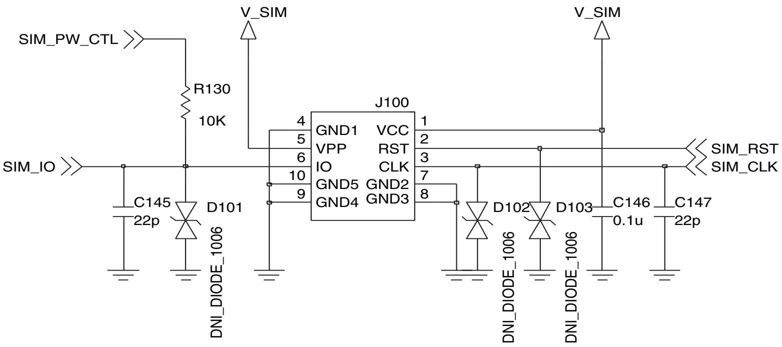


Figure 3-6. SIM CARD Interface

The Locosto provides SIM Interface Module. The Locosto checks status periodically during established call mode whether SIM card is inserted or not, but it doesn't check during deep sleep mode. In order to communicate with SIM card, 3 signals SIM_DATA, SIM_CLK, SIM_RST.

Signal	Description
SIM_RST	This signal makes SIM card to HW default status.
SIM_CLK	This signal is transferred to SIM card.
SIM_DATA	This signal is interface datum.

3.7 KEYPAD Interface

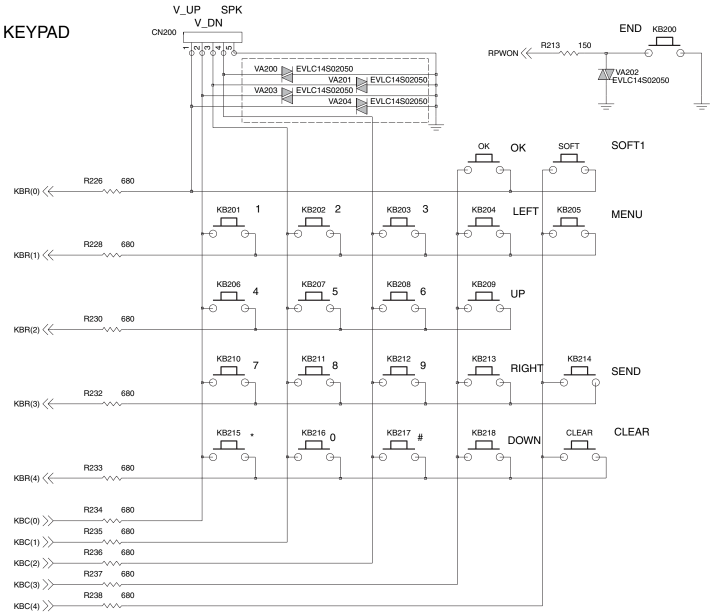


Figure 3-7 KEY MATRIX Interface

3.8 Battery Charging Block Interface

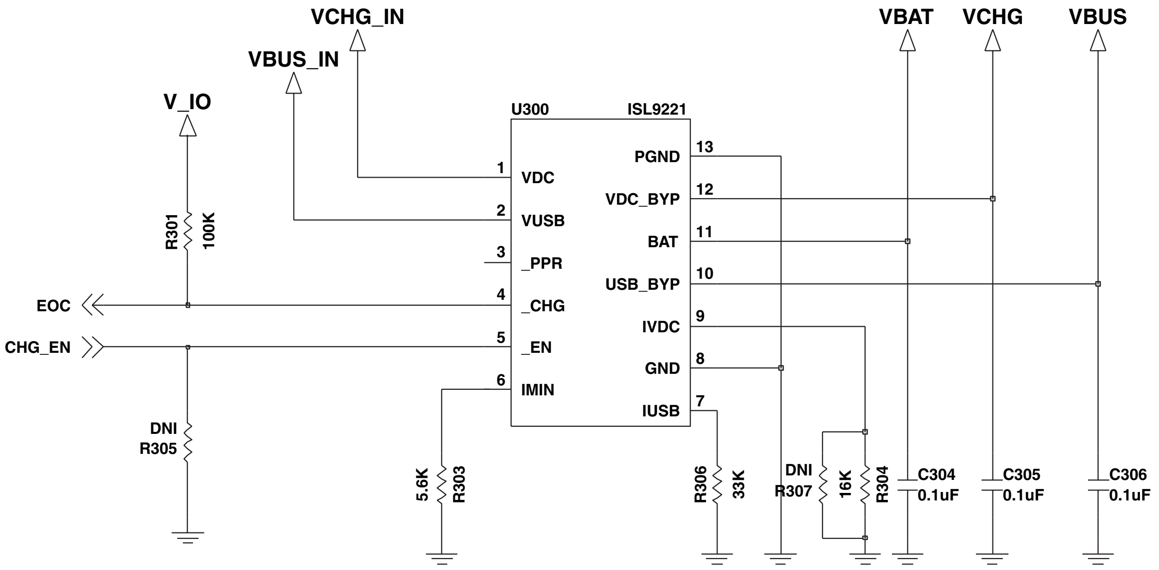


Figure 3-8. Charging IC Interface

The ISL9221 is a high performance battery charger designed to charge single cell Li-Ion/Li-Poly batteries with up to 500mA of current from an external power source. It is a stand-alone charging solution, with just one external component required for complete functionality.
The ISL9221 precisely regulates battery charge voltage and current for 4.2V Li-Ion/Li-Poly battery cells. The ISL9221 has four basic modes for the battery charge cycle: preconditioning/trickle charge; constant current/fast charge; constant voltage; and end of charge.

3.9 RF Interface

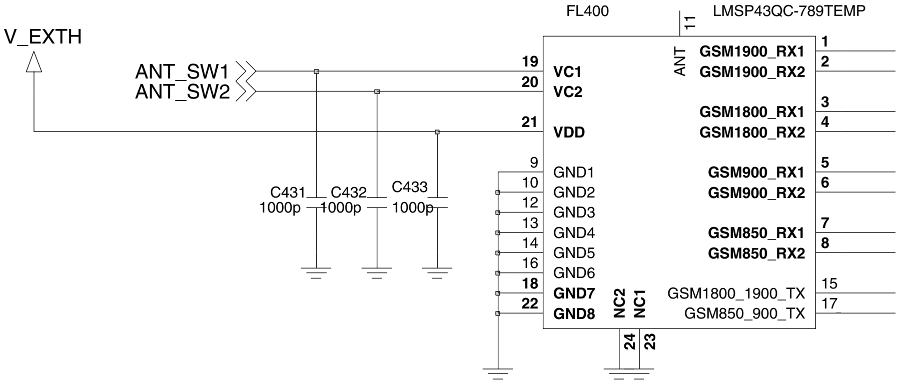


Figure 3-9-1. FEM interface

Locosto features a fully integrated constant-gain direct conversion receiver, i.e. there is no interstage filter needed and the baseband level at the analogue IQ- interface follows directly the RF input level. Depending on the baseband ADC dynamic range, single- or multiple-step gain switching schemes are possible.
An integrated, selfaligning, low-pass filter ensures the receivers to function under blocking and reference interference conditions and avoids aliasing by baseband sampling. An automatic DC-offset compensation is implemented and can beswitched depending on the gain setting.

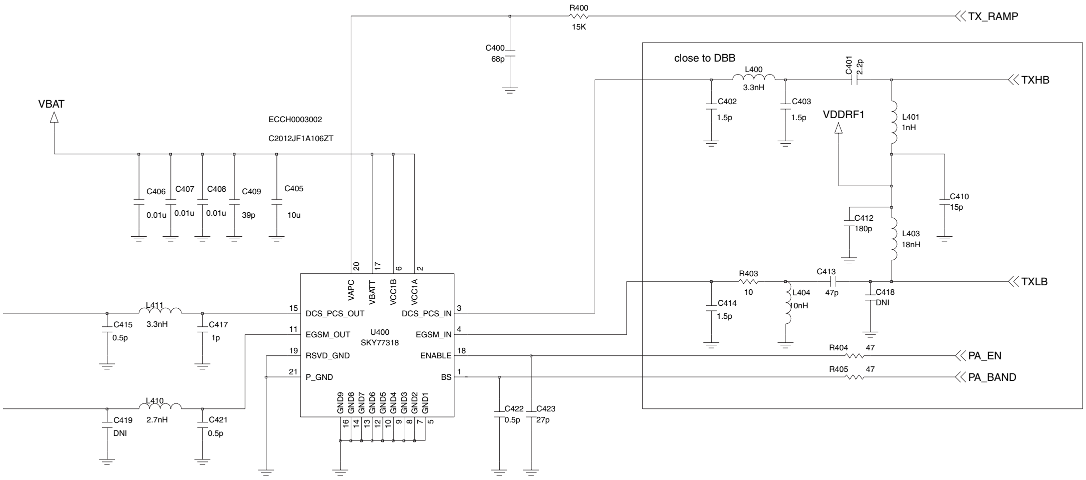


Figure 3-9-2. PAM (Power Amplifier Module) interface

The digital transmitter architecture is based on a fractional-N sigma-delta synthesizer for constant envelope GMSK modulation. This configuration allows a very low power design with a reduced external component count.

The modulation is transferred between baseband- and RF-part of the PMB7880 via a digital interface signal into the digital modulator. The following Gaussian filter shapes the digital data stream for the GMSK modulation. Additionally a pre-distortion filter compensates the attenuation of the PLL transfer function resulting in a very low distortion at the transmit output. The filtered digital data stream is scaled appropriately and added to the channel word.

This sum is fed into the MASH modulator. The output of the MASH modulator is a sequence of integer divider values representing the high resolution fractional input signal. This sequence controls the MMD (multi modulus divider) at a sample rate of 26MHz. Thus a tightly controlled frequency modulation of the VCO is achieved.

3.10 Audio Interface

3.10.1 Uplink Path

A voice signal is converted to electrical signal with Microphone. The converted electrical voice signal is amplified and converted to digital signal in ABB(T3031). The converted digital data is encoded to GSM voice standard in DBB(LOCOSTO).
The audio signals from main microphone goes to MICP and MICN of ABB and the voice signal from head-set to HSMIC of ABB. The bias voltage for microphone is 2V for main mic. and 1.8V for head-set mic,
which bias voltage is generated in ABB(MICBIAS, V_IO)

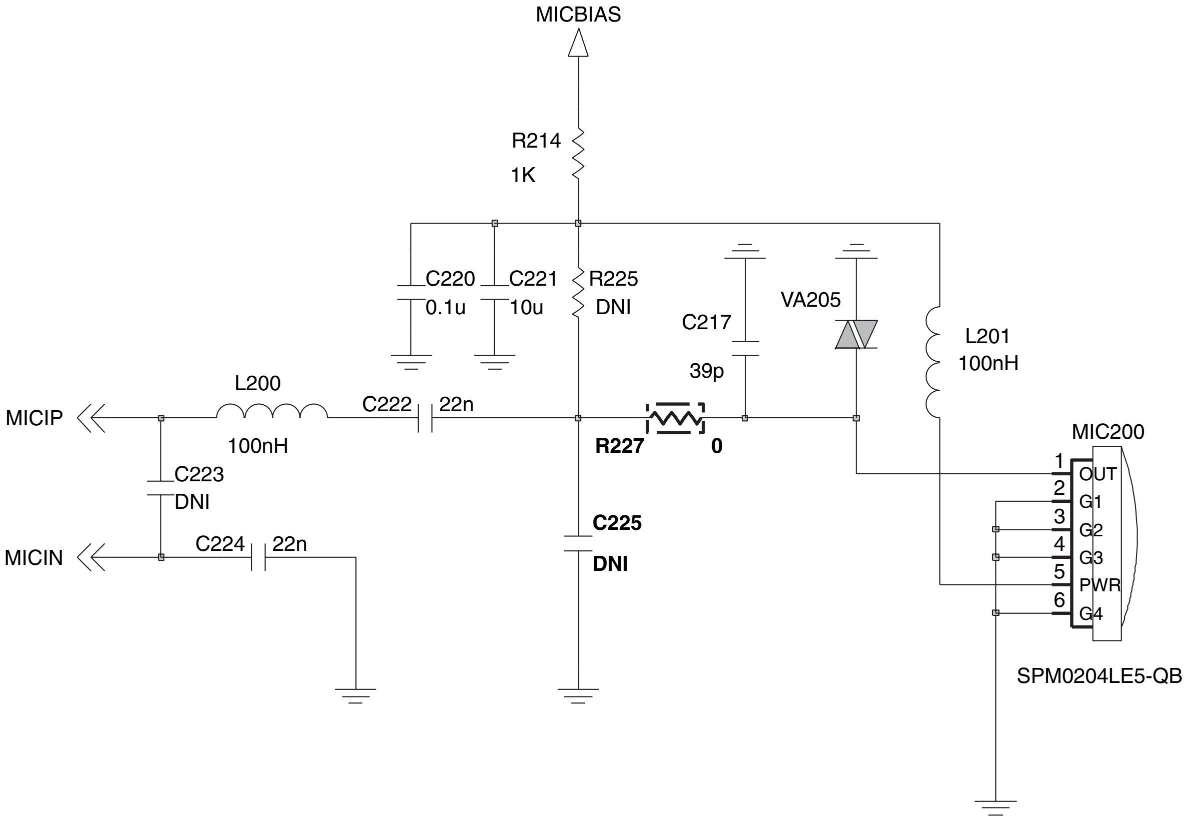


Figure 3-10-1 Main Mic interface

3.10.2 Downlink Path

The voice downlink path receives speech samples at the rate of 8 kHz/16kHz from the DSP via the voice serial interface VSP and converts them to analog signals to drive the external transducers.

Earphone : The earphone amplifier provides a full differential signal on the terminals (EAR_P ,EAR_N)
Headset : Each output amplifier provides a single signal on Headset Left.(HSOL)
Handfree : The 8 Ohms speaker amplifier provides a differential signal on the terminals SPKPA, and SPKNA then goes to external AMP for SPEAKER(SPKPA,SPKNA)

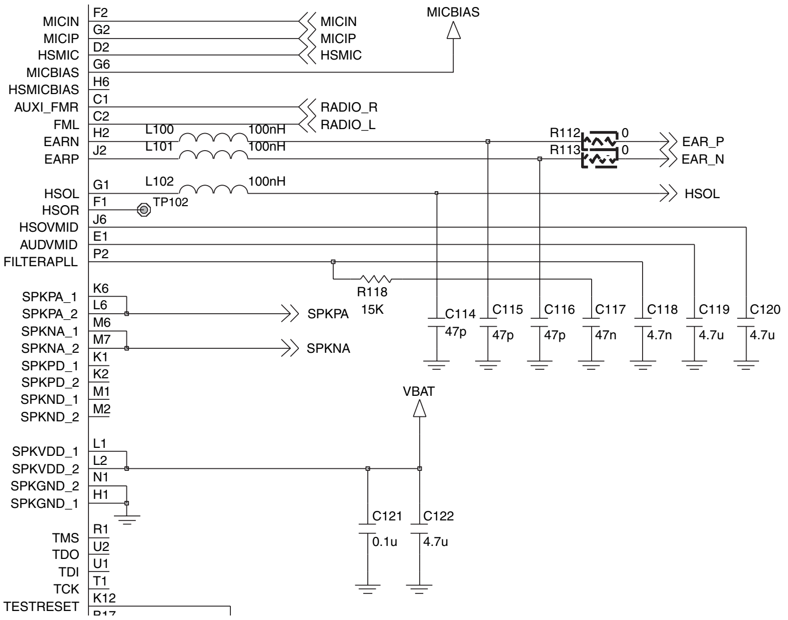


Figure 3-10-2 Downlink Interface of ABB

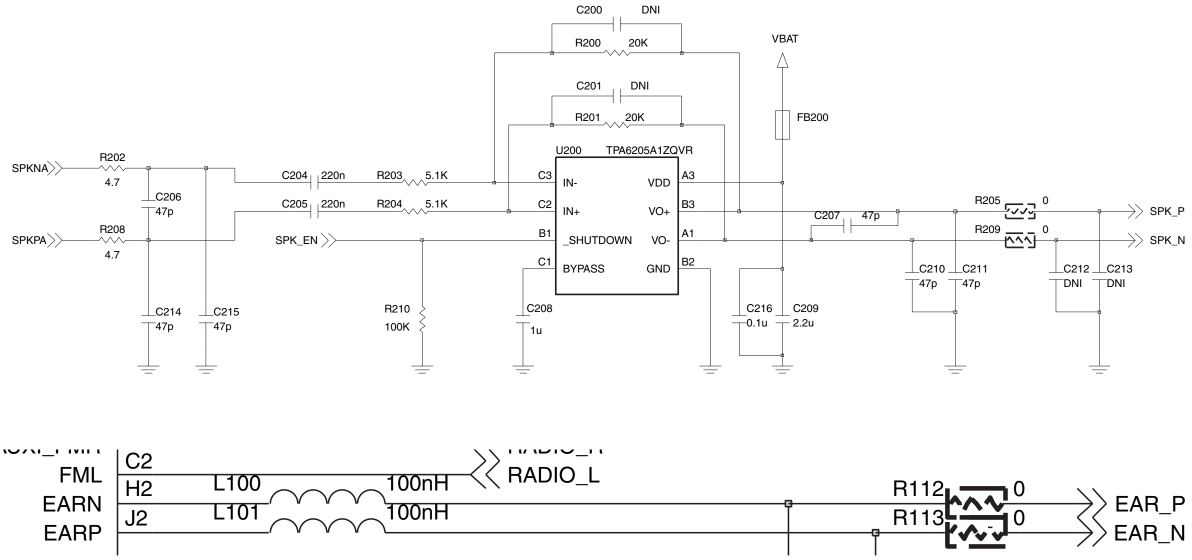


Figure 3-10-3 Speaker/Receiver Interface

3.11 Key LED Interface

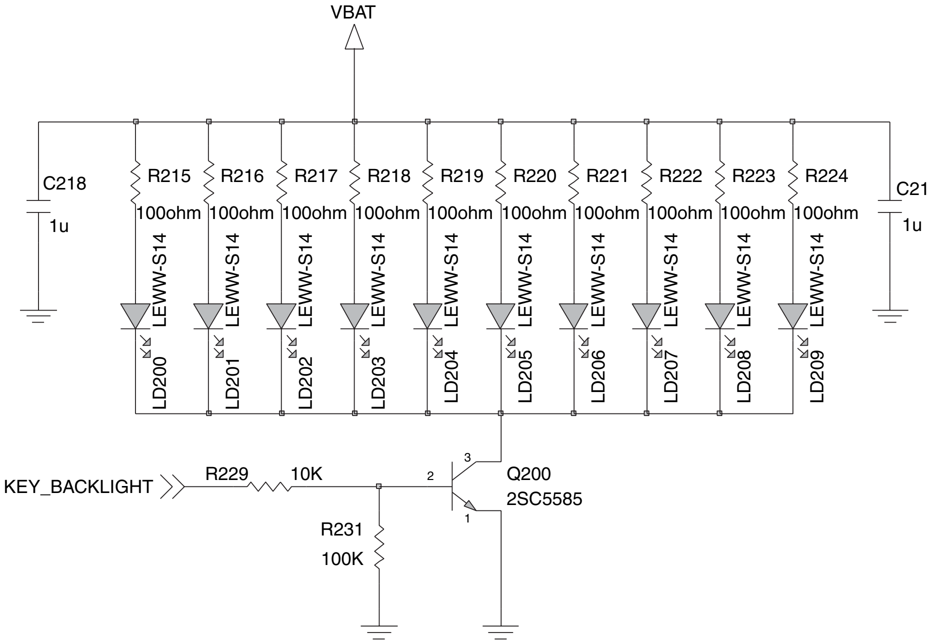


Figure 3-11 Key LED interface

This handset has 10 LEDs that illuminates blue color.
Control signal is controlled by Locosto with PWM and handset has 3 methods, ON, OFF and dimming.

3.12 Vibrator Interface

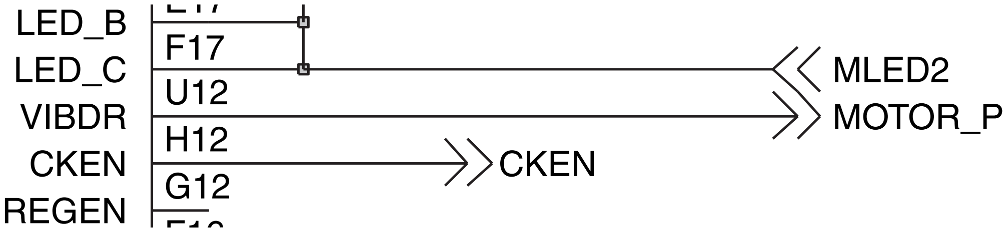


Figure 3-12 Vibrator interface

This handset has vibrator operation. Control signal is controlled by Locosto with PWM.

3.13 Memory Interface

Memory (128Mb Nor + 64Mb pSRAM)

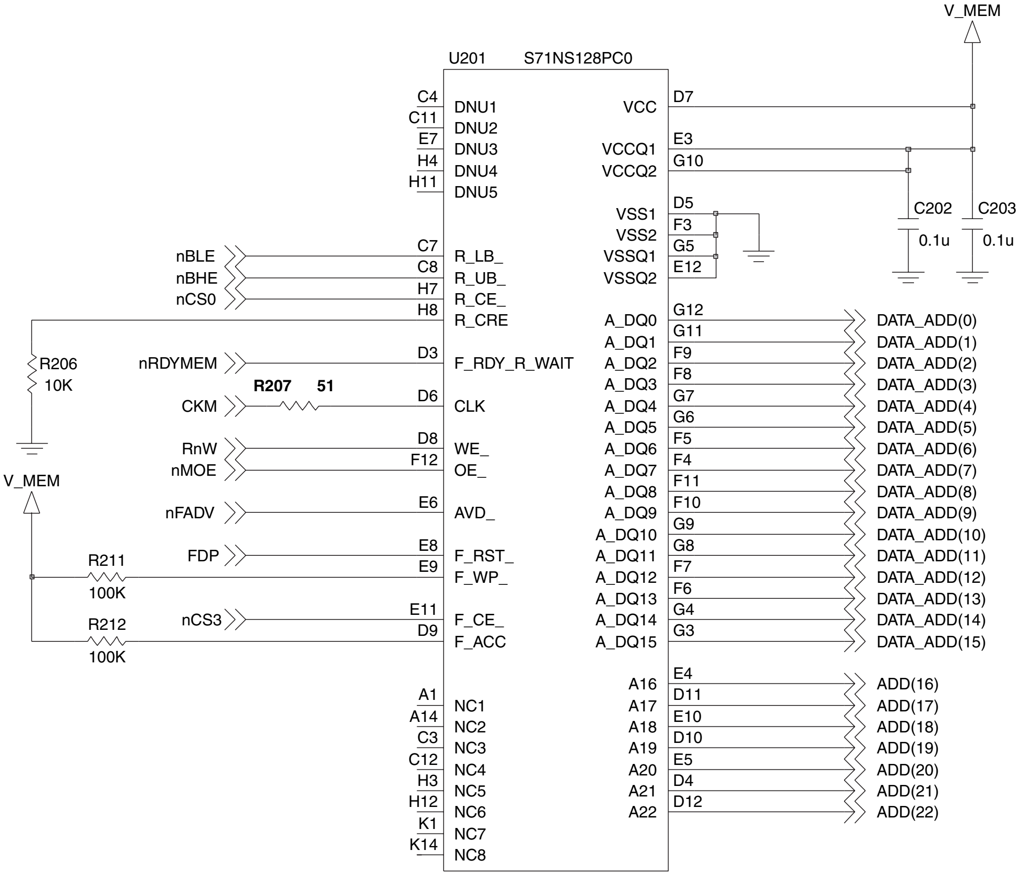


Figure 3-13 Memory interface

3.14 Power Block Interface

There are 10 LDOs(Low Drop Output) regulators and 1 DC-DC converter in ABB chip.
The output of these 10 LDOs and 1 DC-DC converter is as following table.

	Output Voltage	Usage
VREXTL	1.8V/2.8V, 1.3V/1.03V	Digital Core of DBB
VREXTH	1.8V/2.8V	Peripheral Devices
VRMEM	1.8V	External Memory
VRMMC	1.8V/2.85V	RF
VRABB	2.8V	Analog Block of ABB
VRSIM	1.8V/2.85V	SIM Card Drive
VRUSB	3.3V	USB Block
VRPLL	1.4V/1.3V/1.05V	PLL Block
VRIO	1.8V	I/O Interface
VRWLED	20V	White LED Drive

Table LDO Output Table

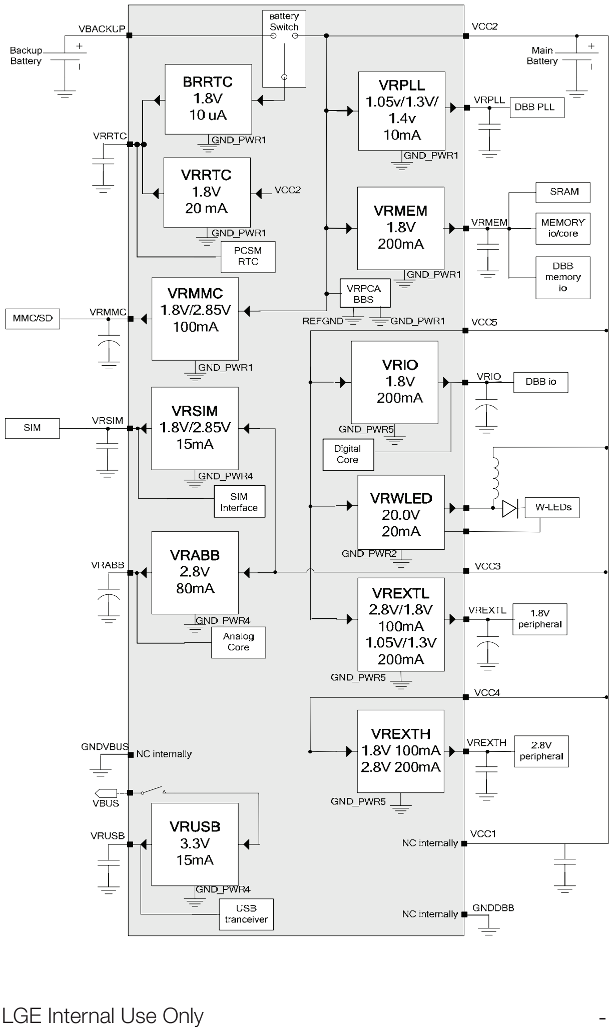
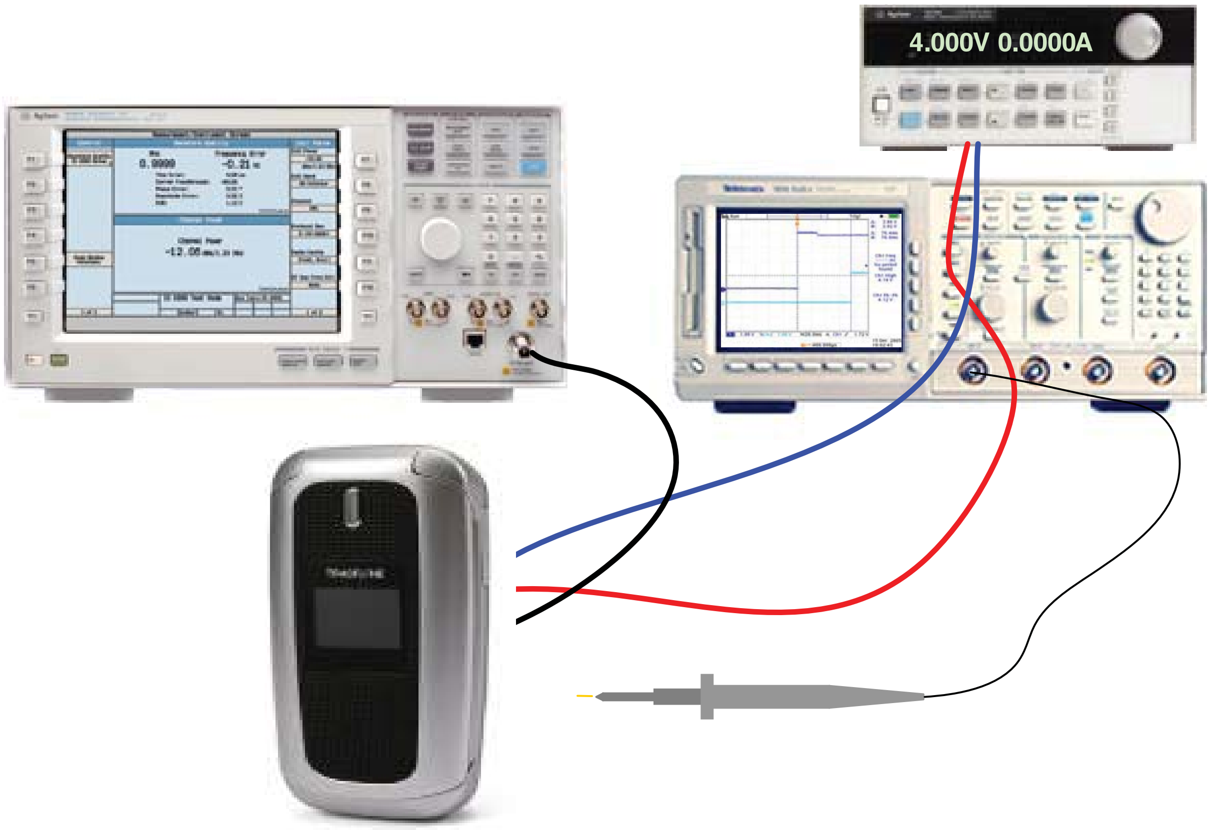


Figure 3-14-2
ABB Power Supply Scheme

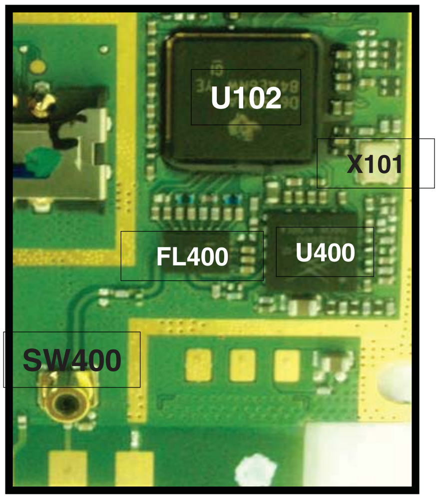
4. TROUBLE SHOOTING

4.1 Trouble Test Set-up

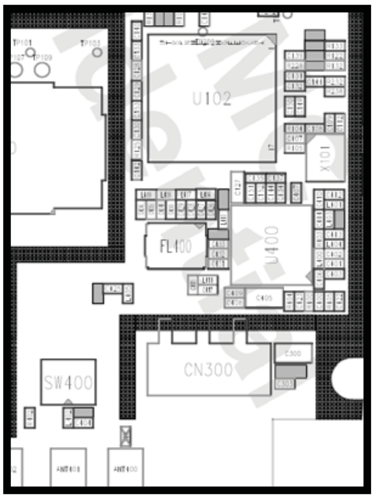


Power on all of test equipment
-Connect PIF-UNION JIG or dummy battery to the DUT for power up.
-Connect mobile switch cable between Communication test set and DUT when you need to
 make a phone call.
-Follow trouble shooting procedure

4.2 RF Part Component



< PCB Placement>



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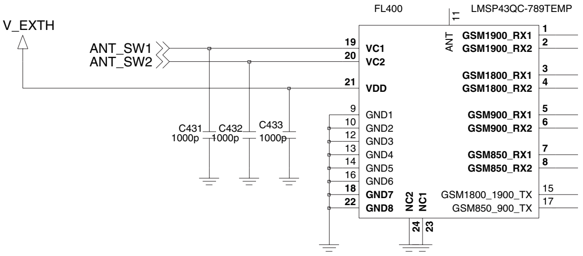
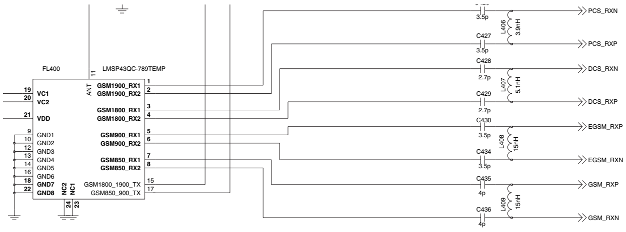


<ASM interface>

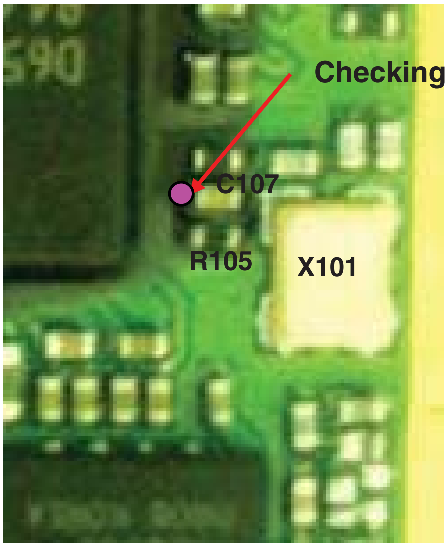


<SAW Filter interface>

REFERENCE	PART Description
U102	DBB(Included RF Block)
U400	PAM (Power Amp. Module)
X101	DCXO (26MHz)
FL400	FEM (Front Ended Module)
SW400	Mobile Switch

4.2.1 DCXO Part

Produce RF and BB reference Clock - 26MHz Clock.



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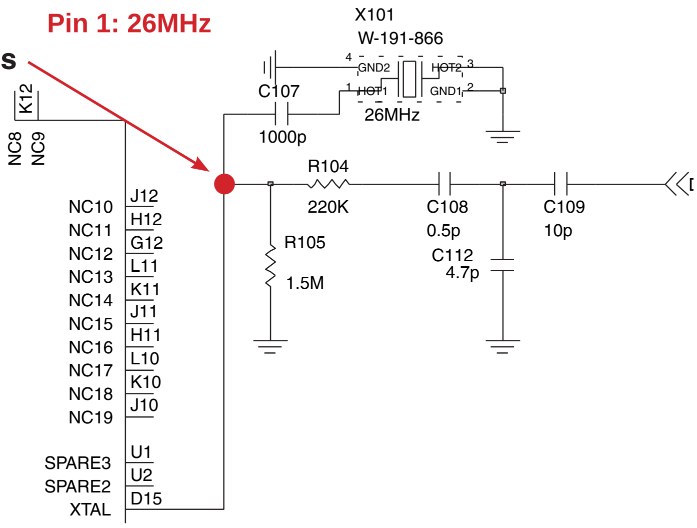

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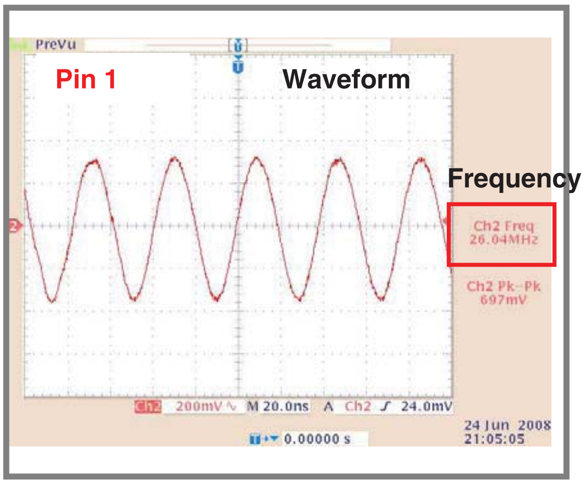
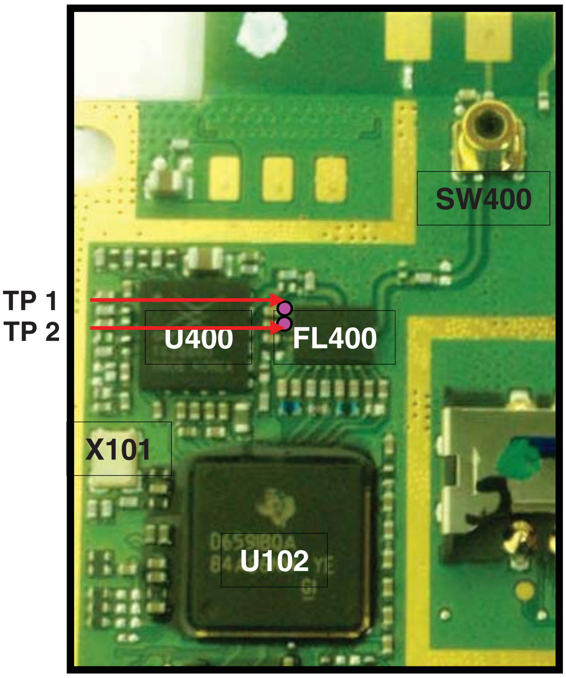


<DCXO Waveform>

4.2.2 Front End Module & Mobile Switch



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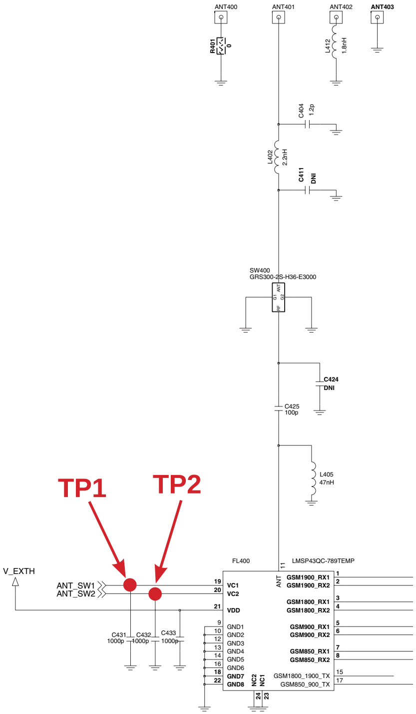
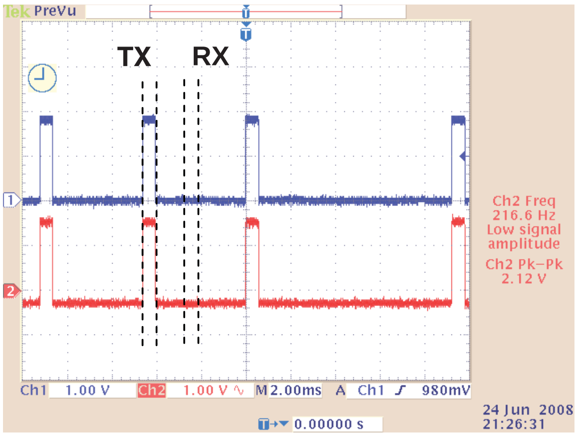


< M/S & FEM Circuit>

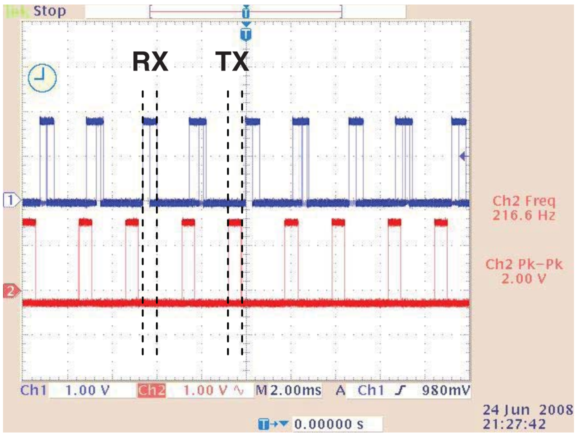
Mode	850/900 TX	850/900 RX	1800/1900 TX	1800/1900 RX
ANT_SW1	H	L	L	H
ANT_SW2	H	L	H	L

< FEM LOGIC TABLE>

< LOW BAND>

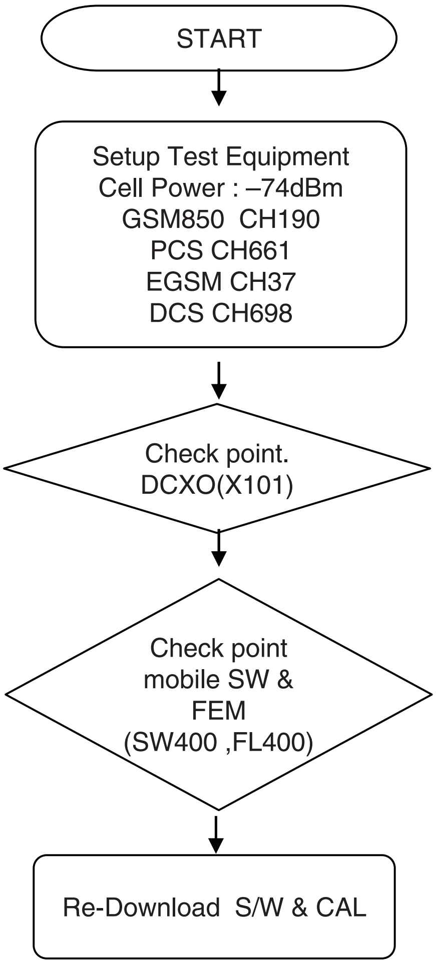


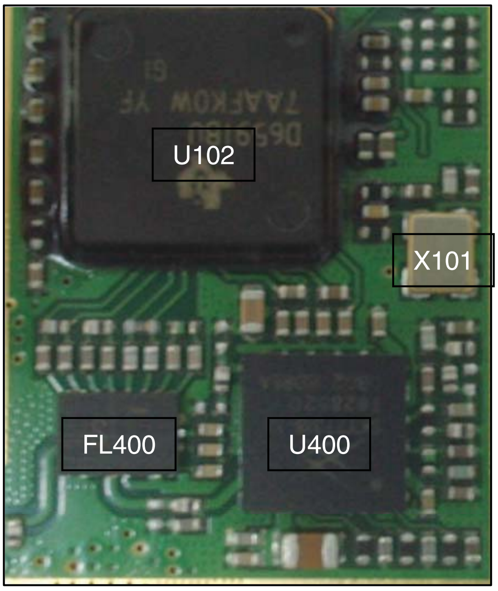
< HIGH BAND>

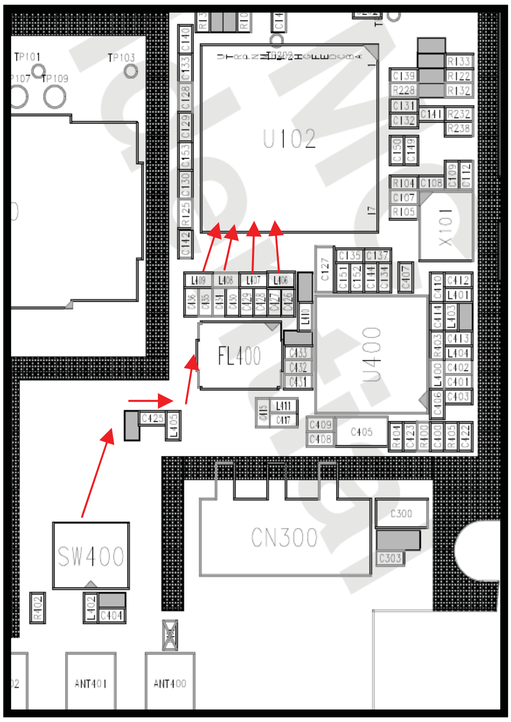


4.3 RX Receiver Part

CHECKING FLOW

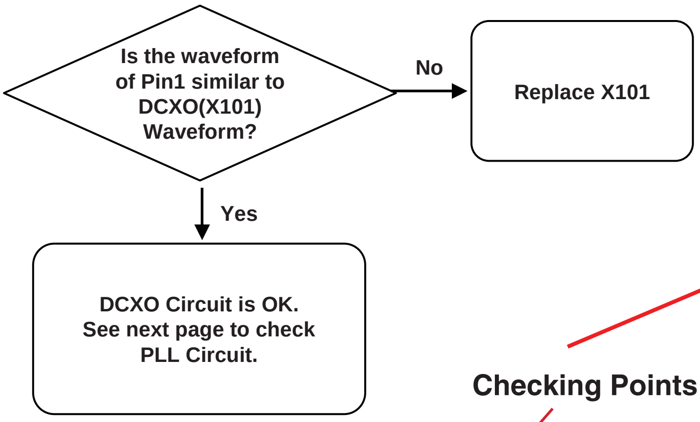


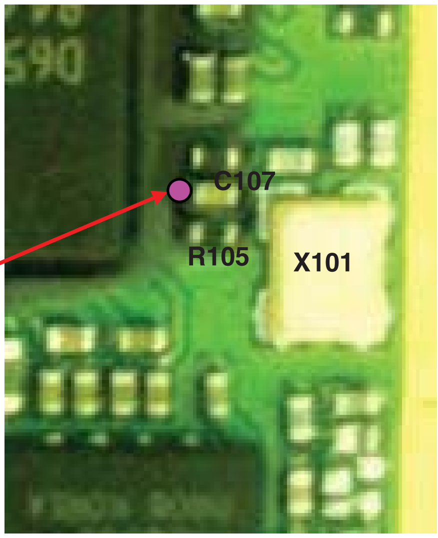




4.3.1 DCXO Part

CHECKING FLOW

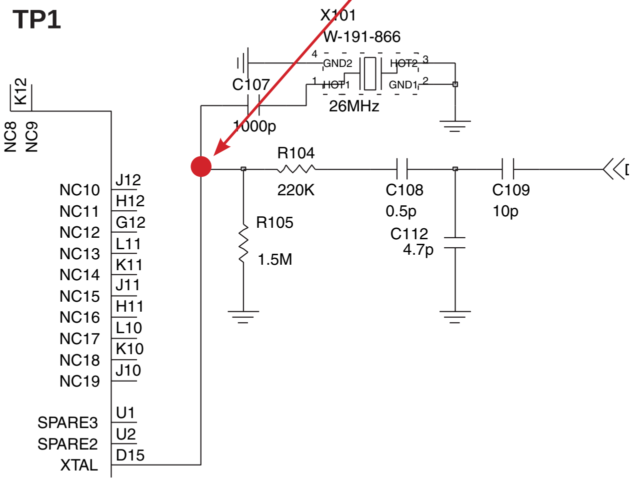




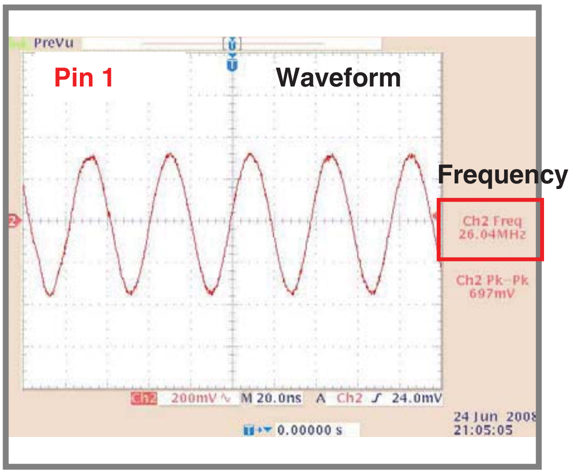
< DCXO Placement>

Checking Points

TP1



< DCXO Circuit>



<DCXO Waveform>

4.3.2 Mobile S/W & FEM Part

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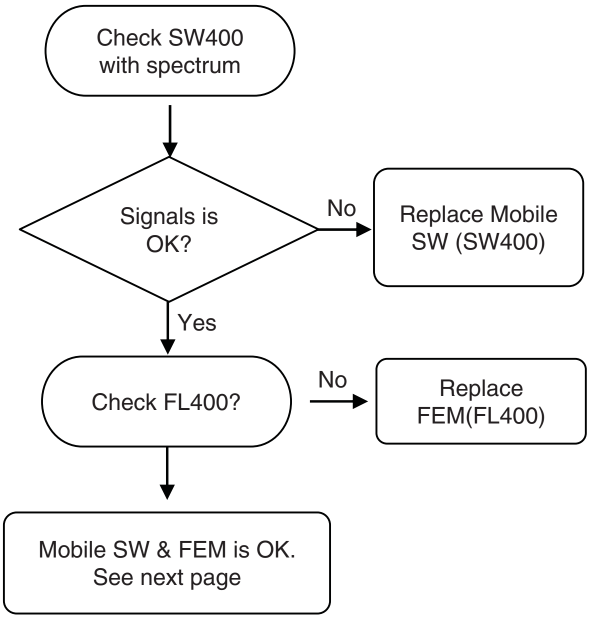
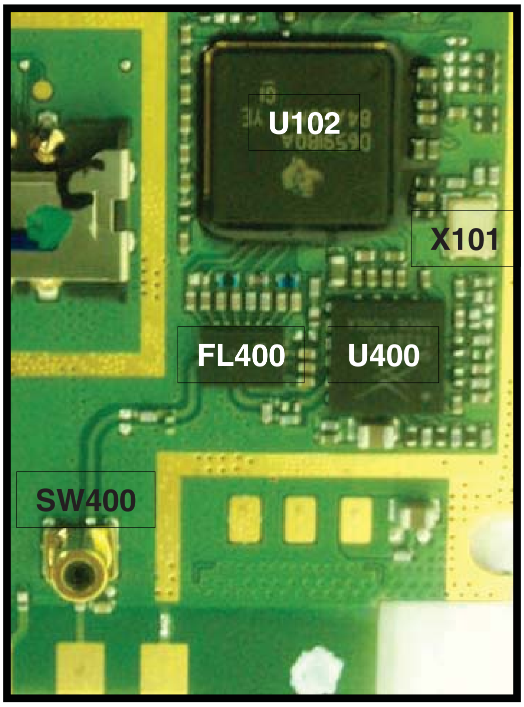
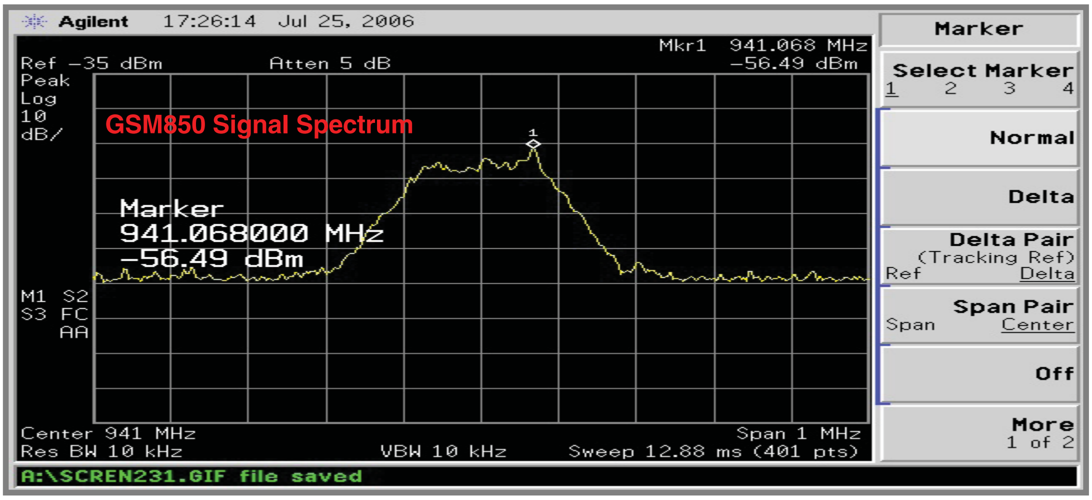




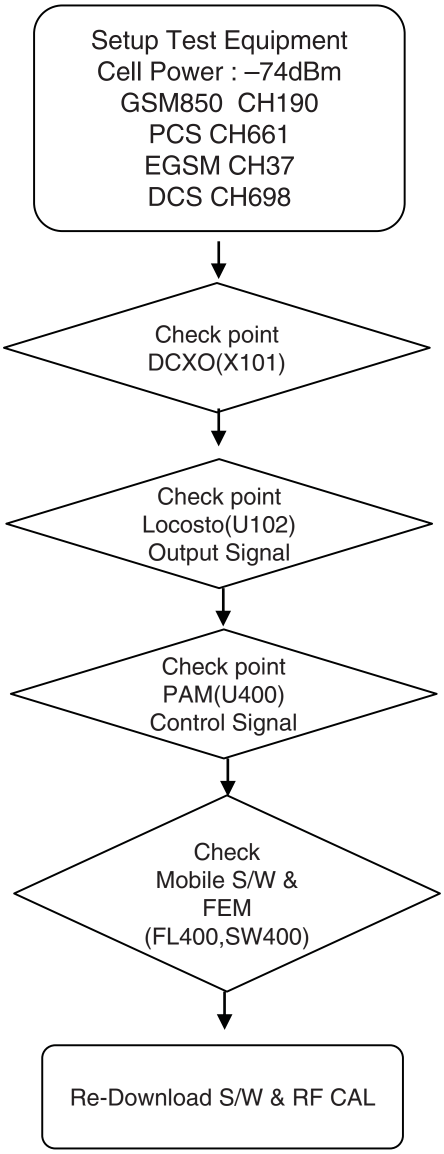
< Mobile S/W & FEM Placement>

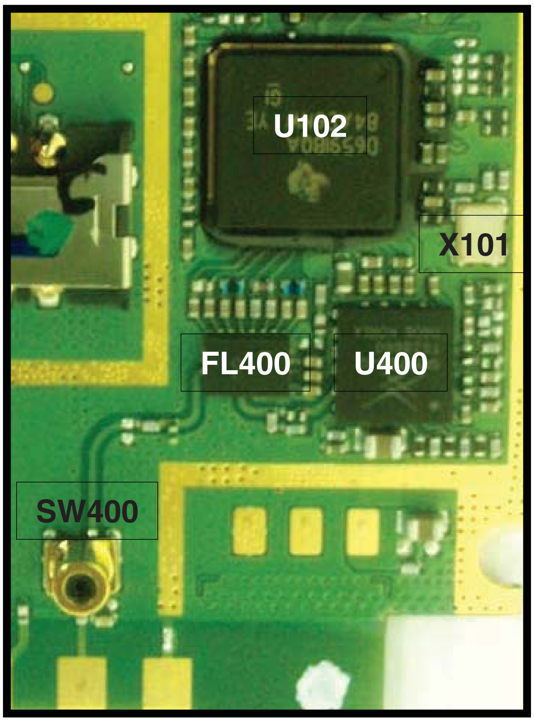
< SW400 Signal>

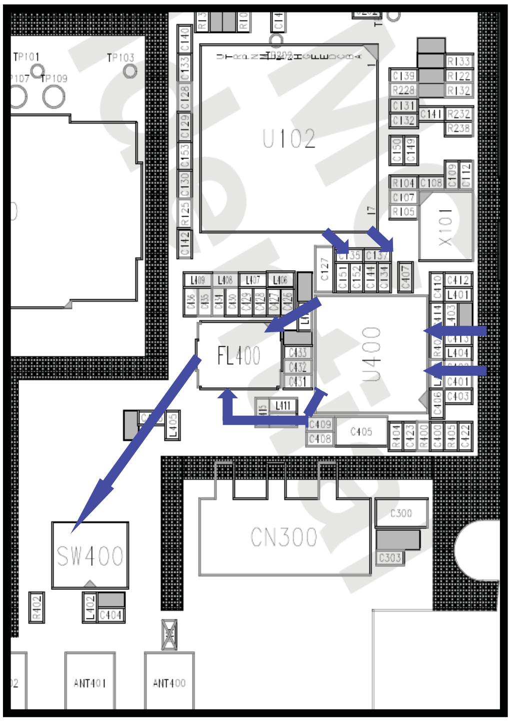


4.4 TX Transmitter Part

CHECKING FLOW

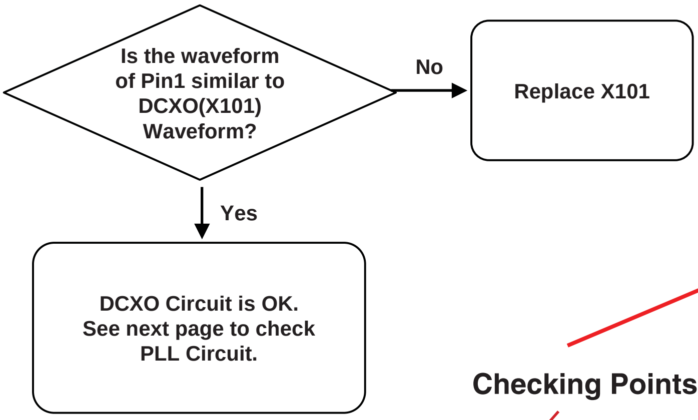


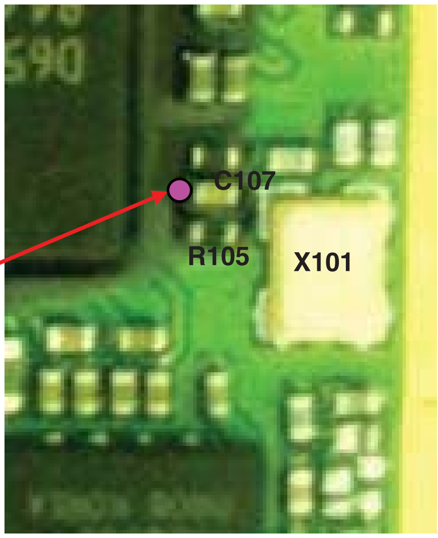




4.4.1 DCXO Part

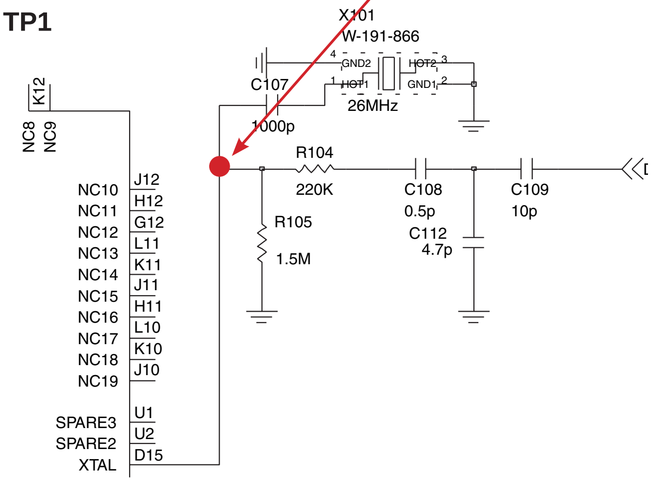
CHECKING FLOW





< DCXO Placement>

Checking Points



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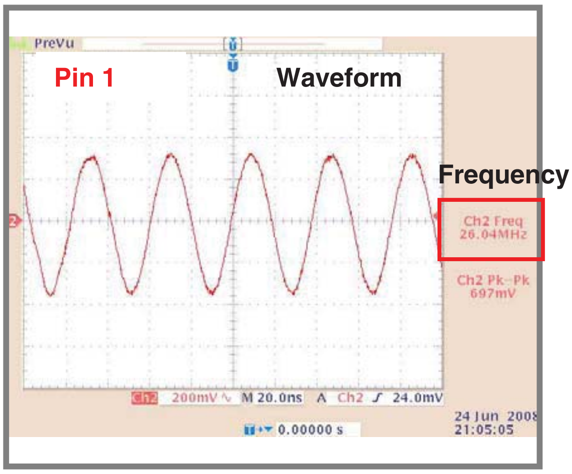
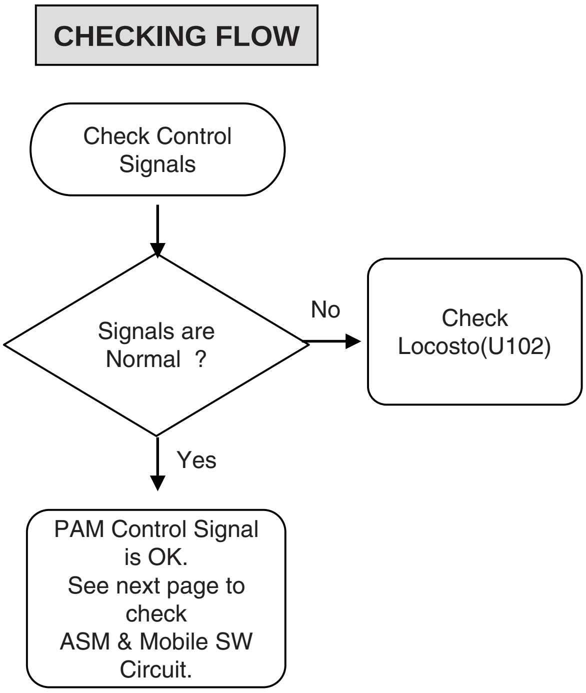
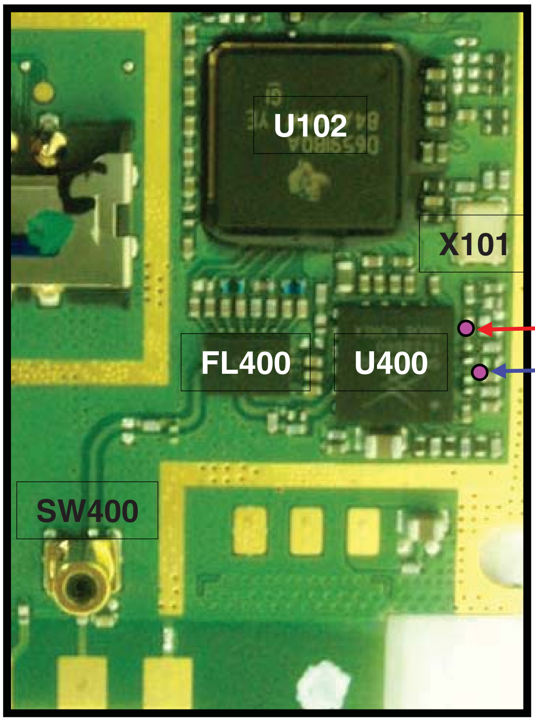


<DCXO Waveform>

4.4.2 PAM INPUT Part(Locosto Output)





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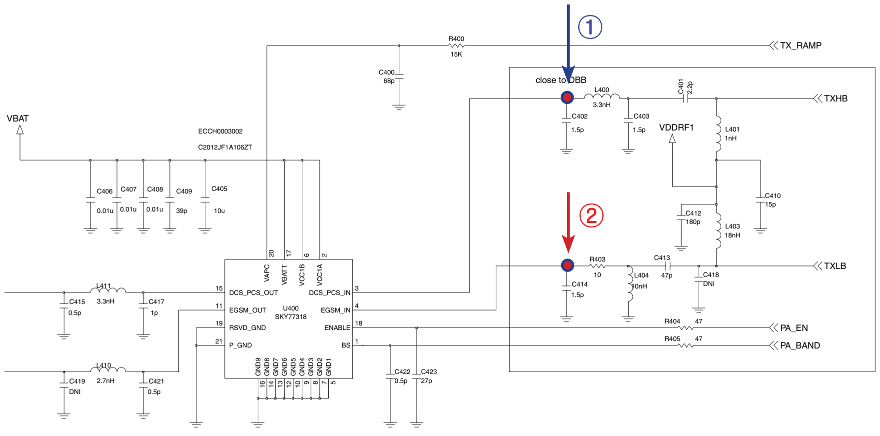
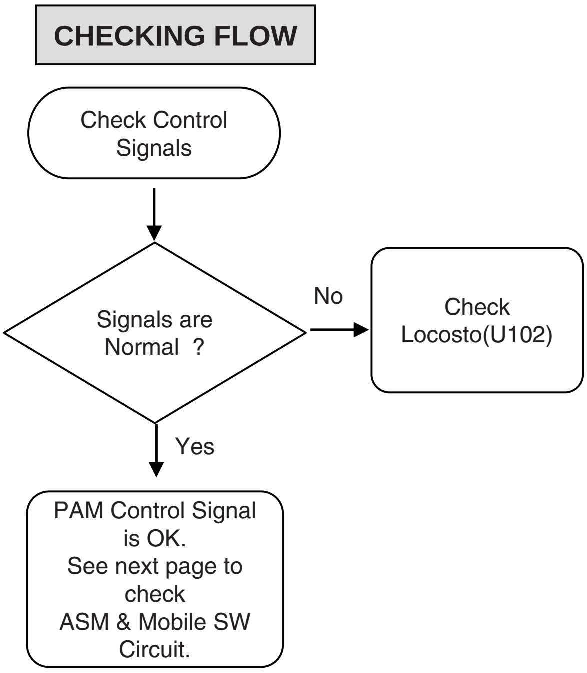


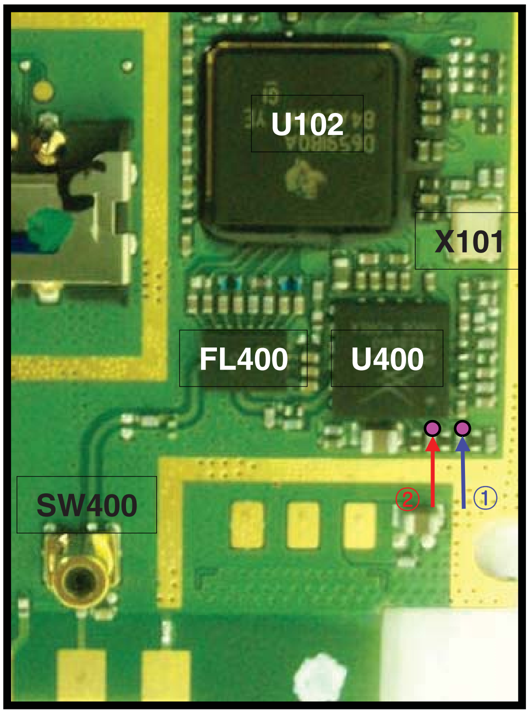
High Band
Type 5dB
(3 ~ 7dB)

Low Band
Type 5dB
(3 ~ 7dB)

< PAM INPUT Circuit>

4.4.3 PAM Control Signal part





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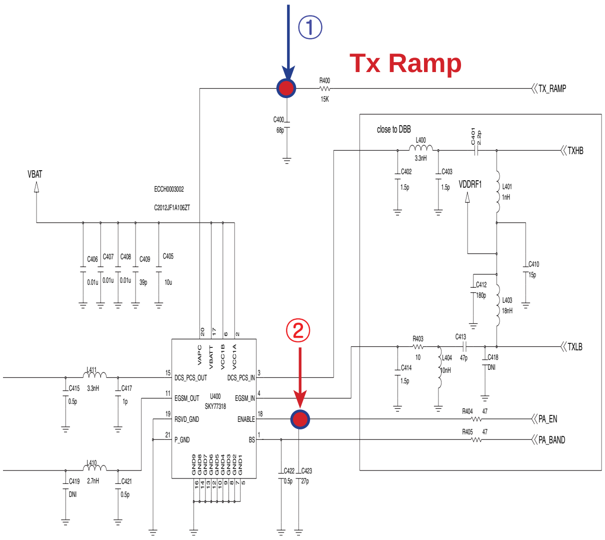

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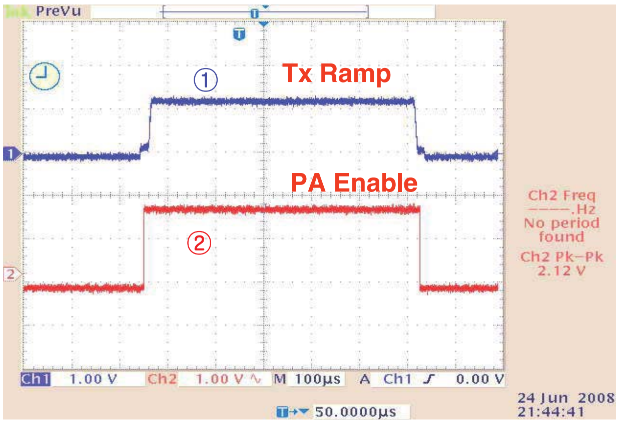

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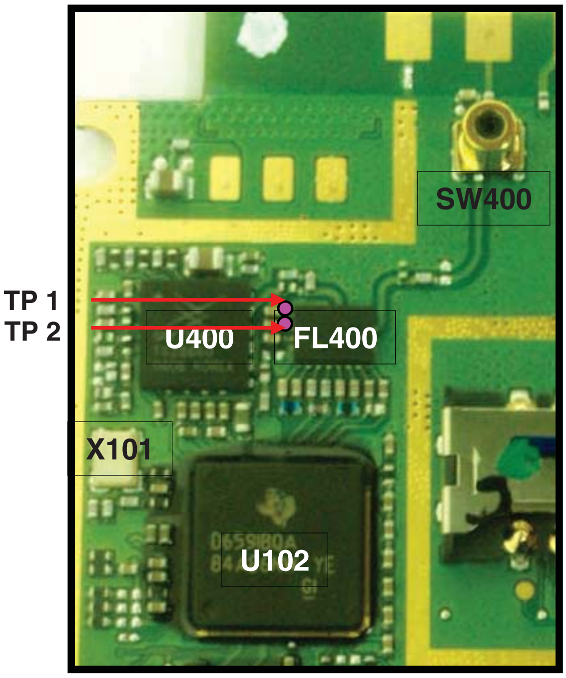
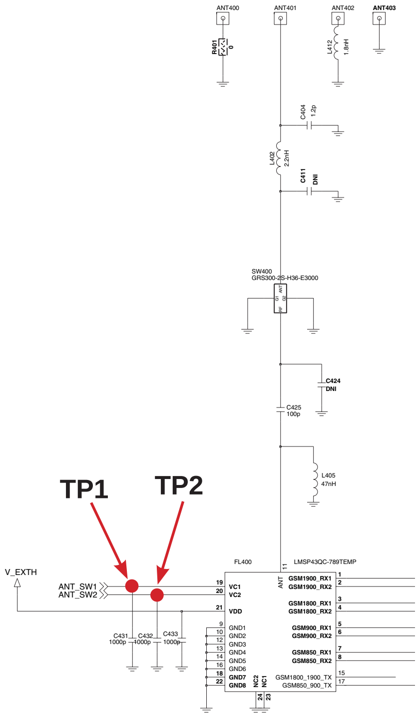
4.4.4 Front End Module Part



< M/S & FEM Placement>

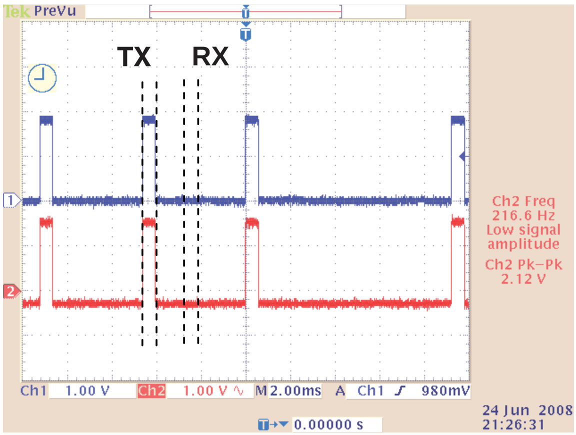


< M/S & FEM Circuit>

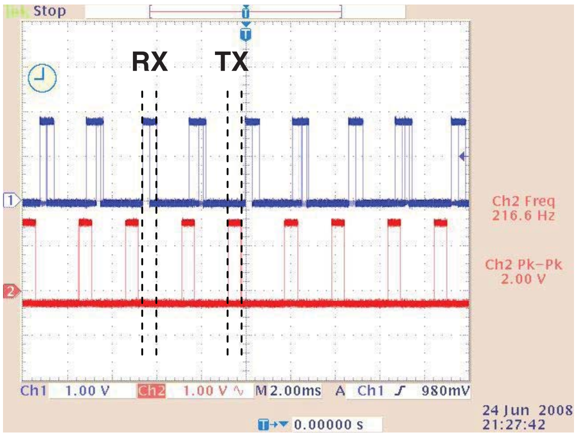
Mode	850/900 TX	850/900 RX	1800/1900 TX	1800/1900 RX
ANT_SW1	H	L	L	H
ANT_SW2	H	L	H	L

< FEM LOGIC TABLE>

< LOW BAND>



< HIGH BAND>

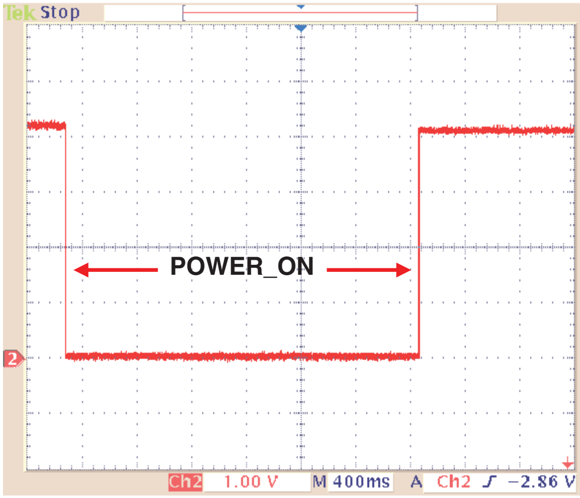


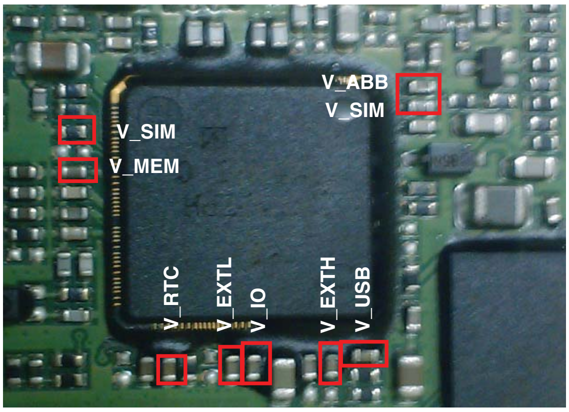
4.5 Power On Trouble

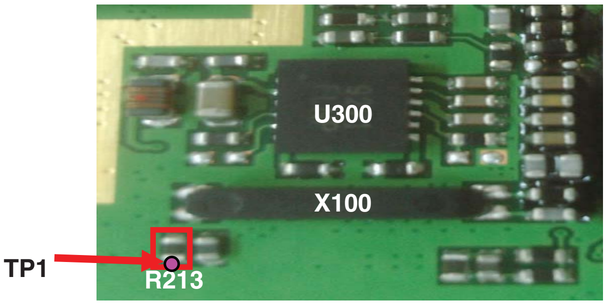
TEST POINT

Check Points

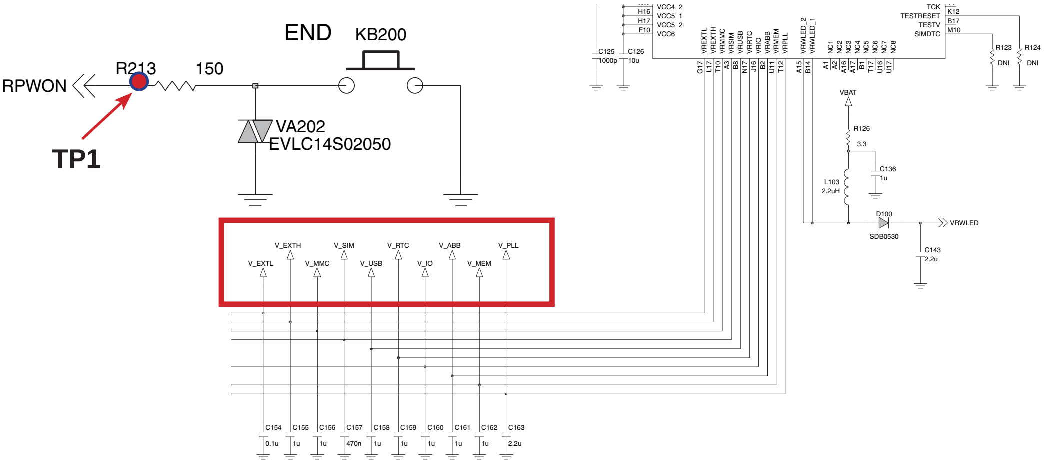
-Battery Voltage(Need to over 3.35V)
-Power-On Key detection (PWRON signal)
-Outputs of LDOs from ABB(Triton-Lite)



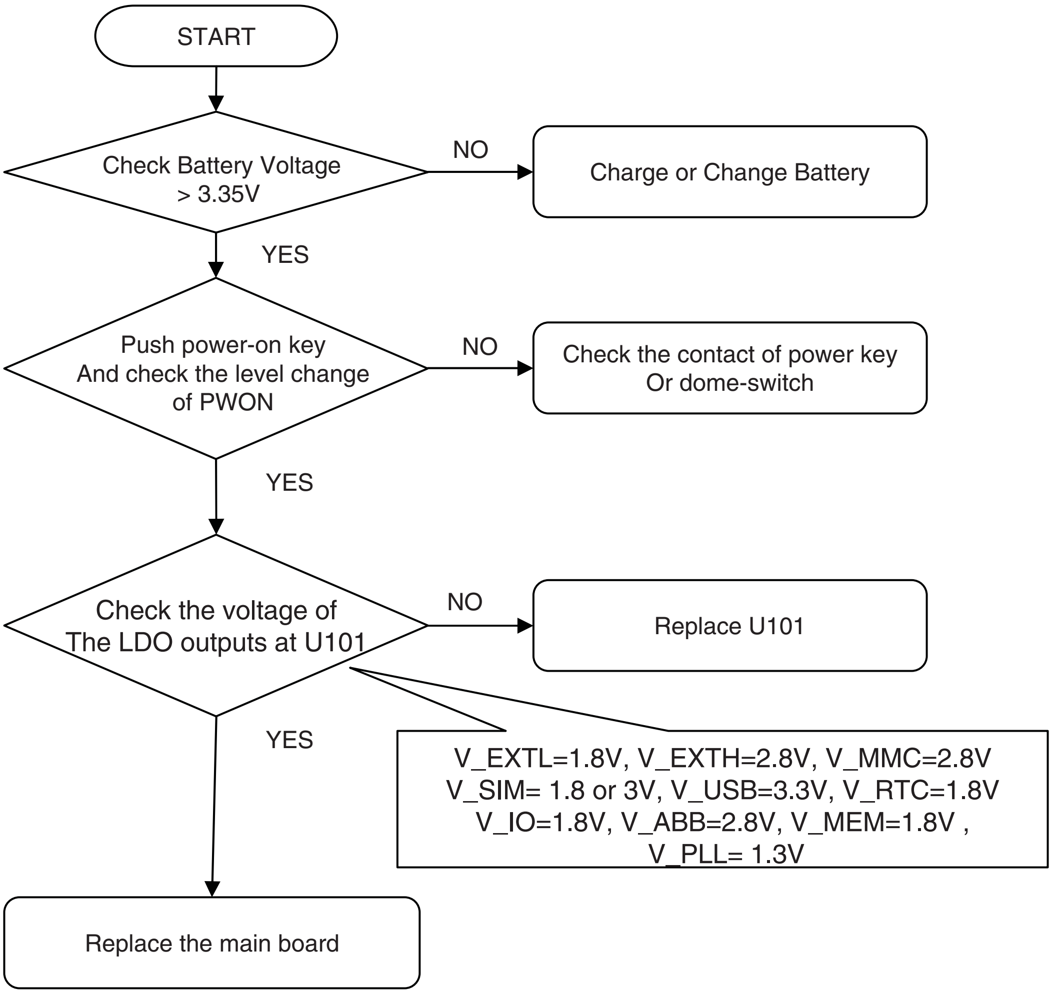




CIRCUIT



CHECKING FLOW

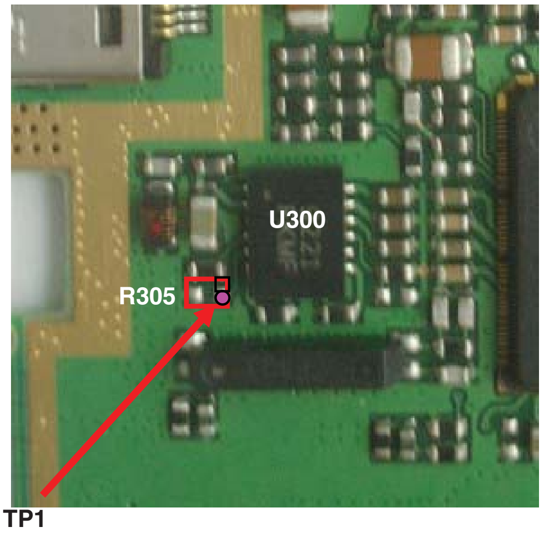


4.6 Charging Trouble

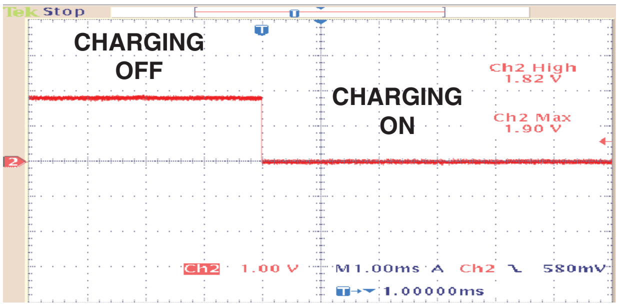
TEST POINT

Check Points

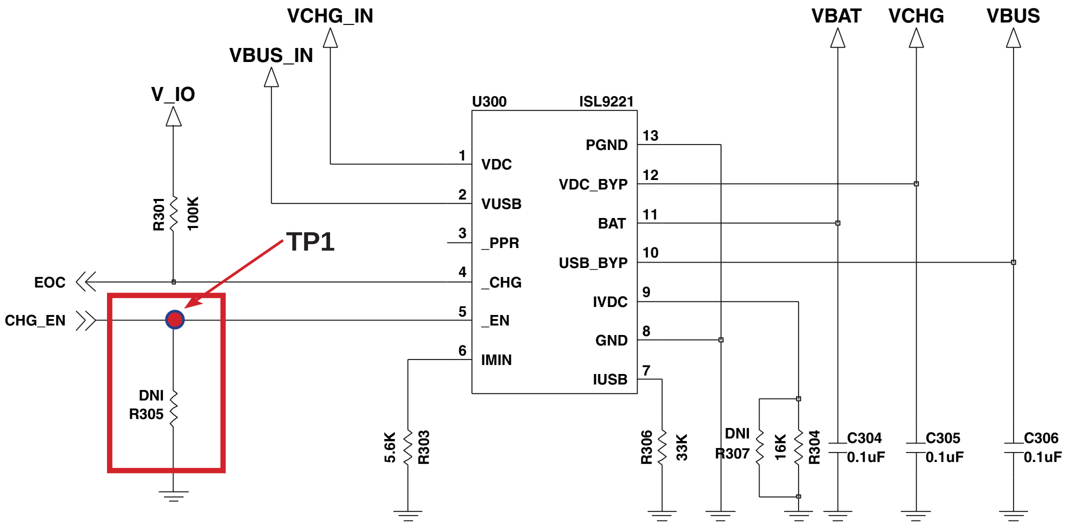
-Connection of TA (check TA voltage 5.6V)
-Charging Current Path component voltage drop
-Battery voltage
-Charging IC



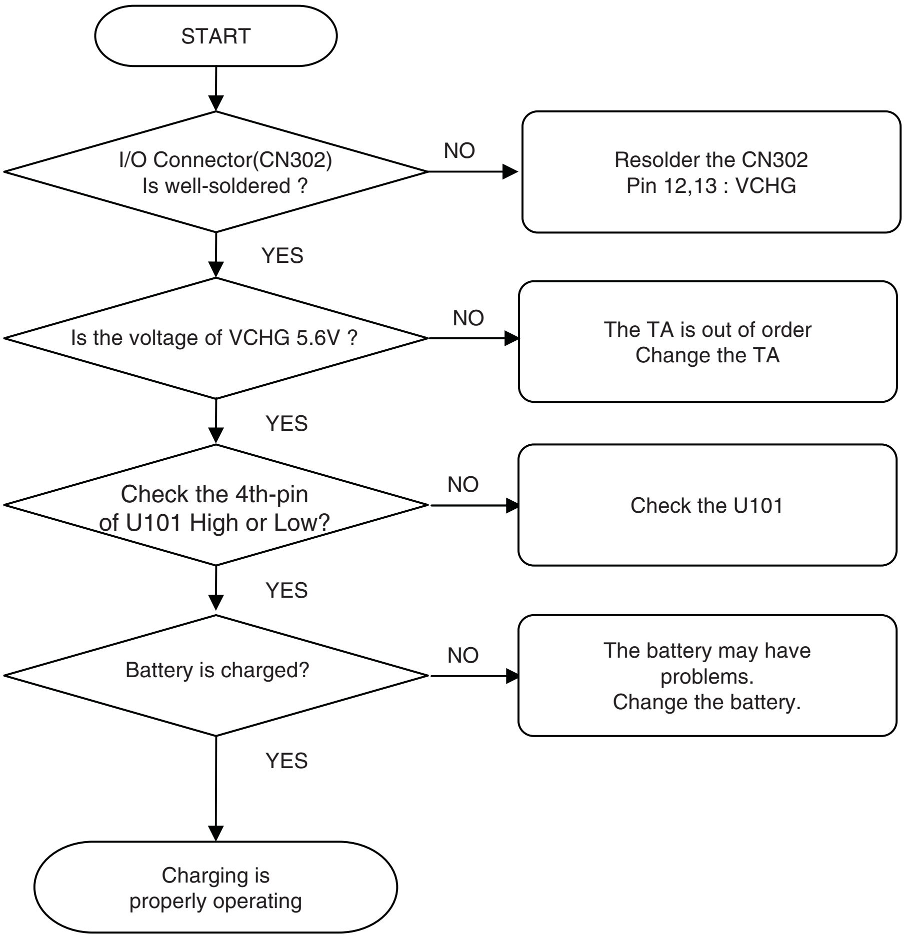
WAVE FROM



CIRCUIT



Checking Flow

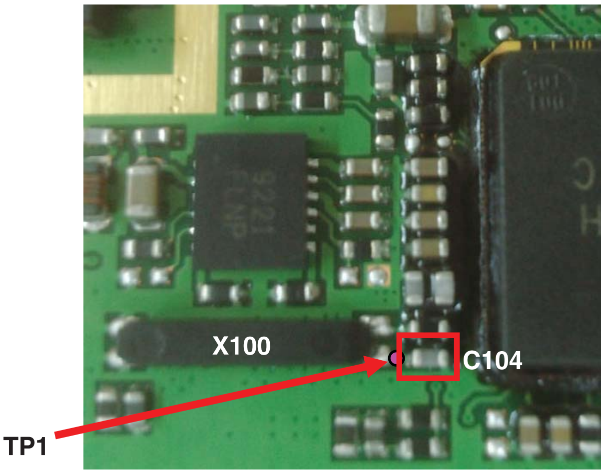


4.7 RTC Trouble

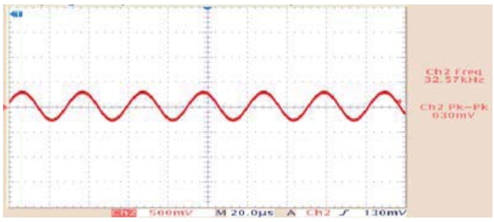
TEST POINT

Check Points

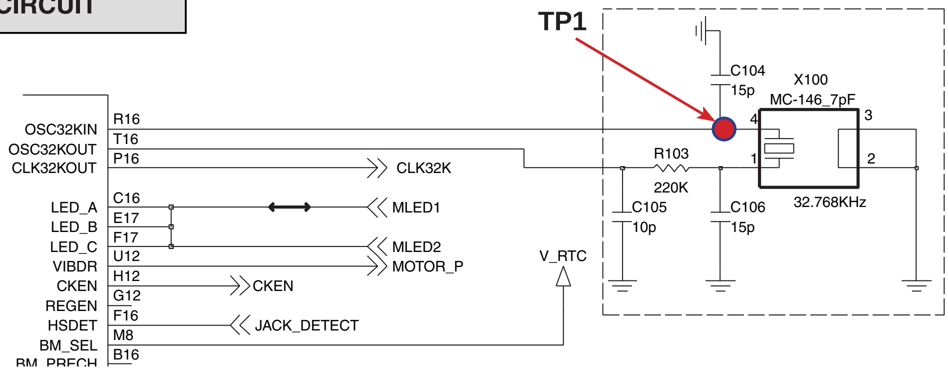
-Crystal soldering.



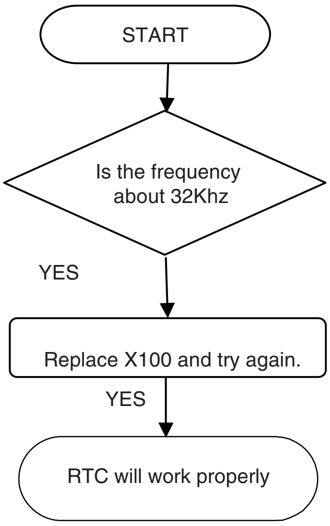
WAVE FROM



CIRCUIT



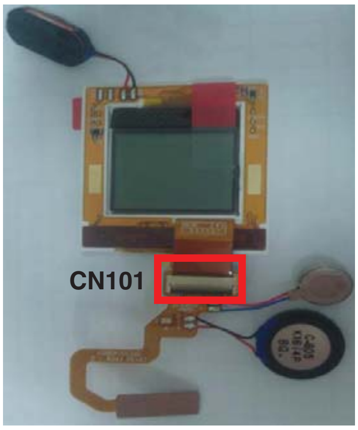
CHECKING FLOW



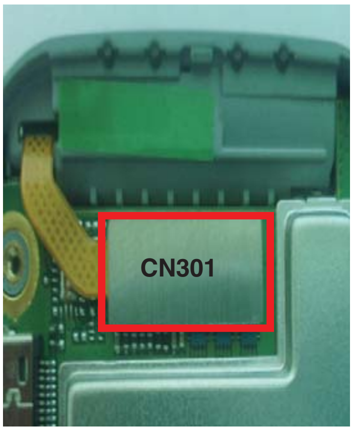
4.8 LCD Trouble

TEST POINT

-LCD assembly status (FPCB)
-LCD Interface's status
-Connector combination
-Data signal through EMI filter

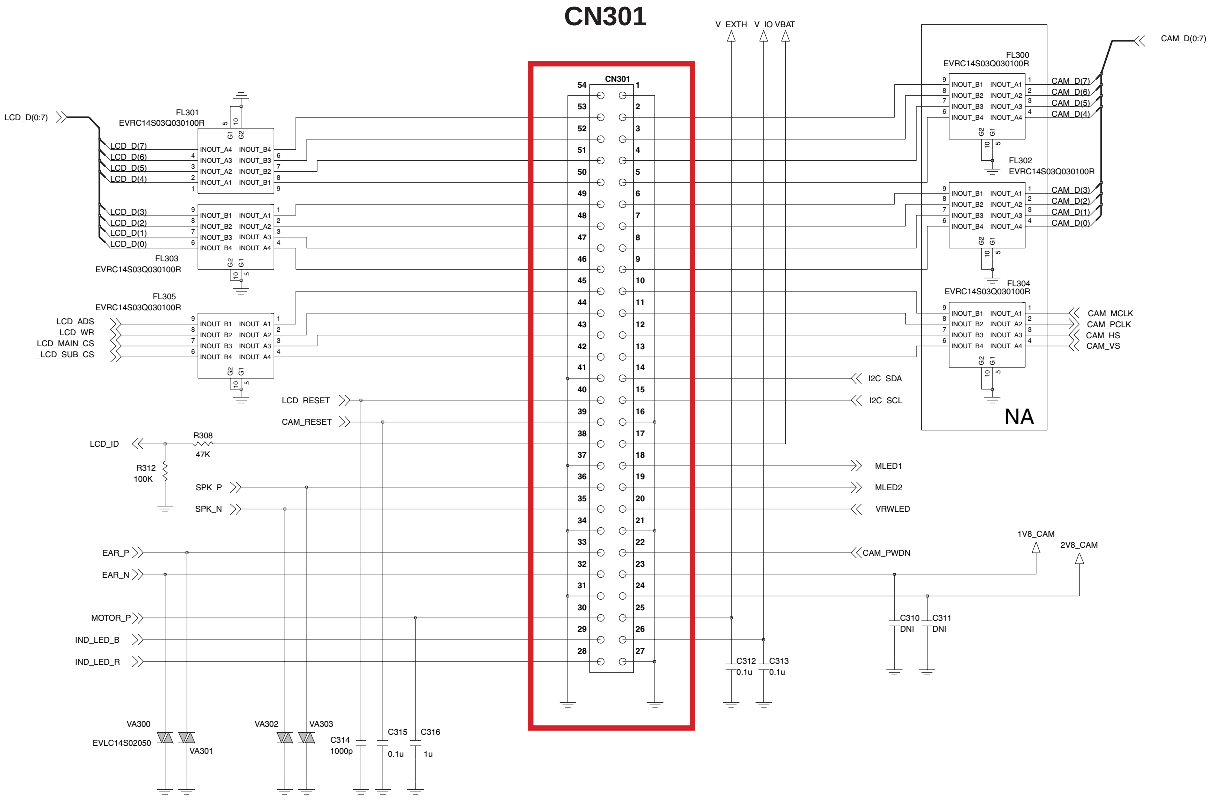


FPCB

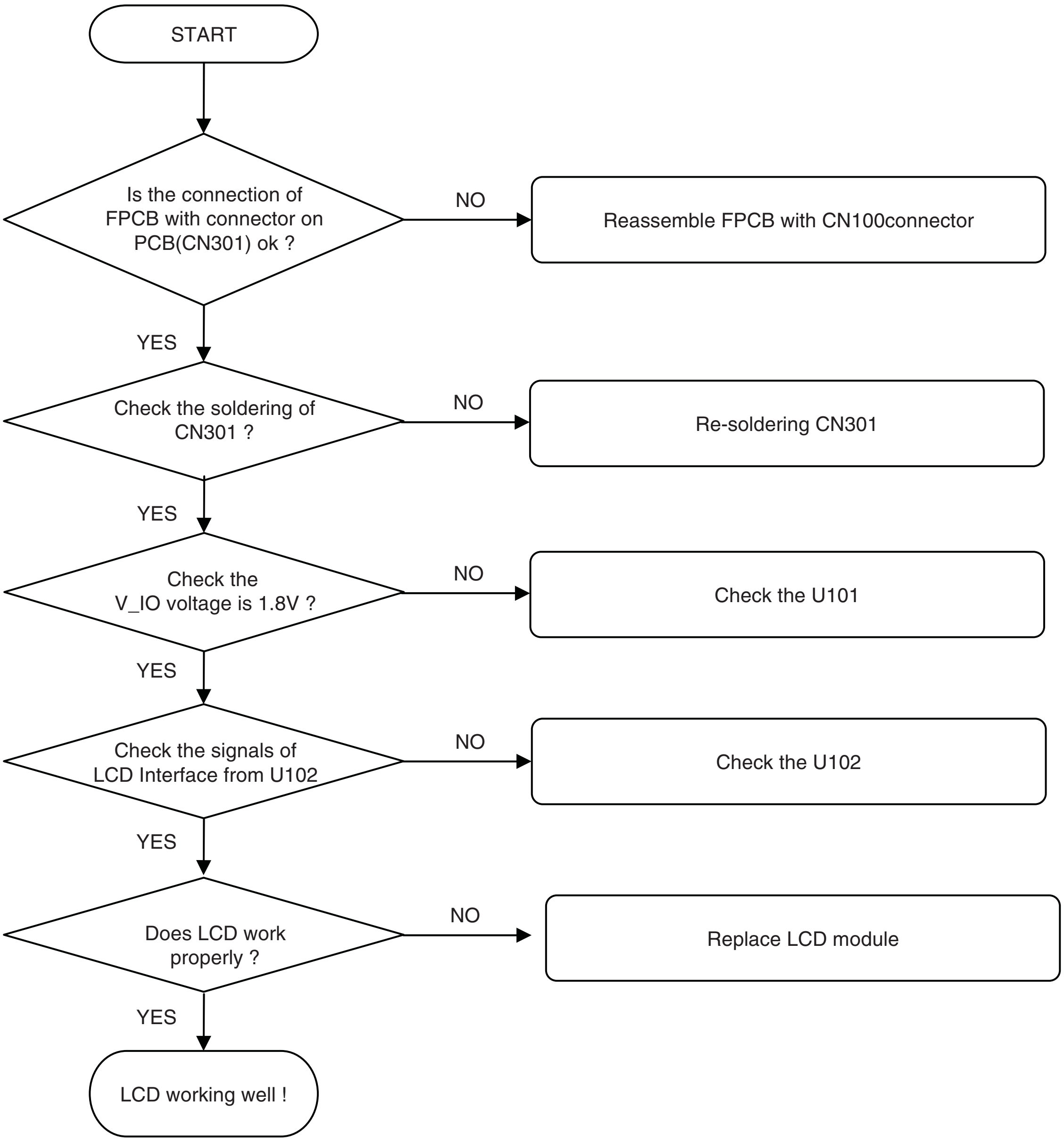


MAIN PCB

CIRCUIT



CHECKING FLOW



4.9 Speaker & Receiver Trouble

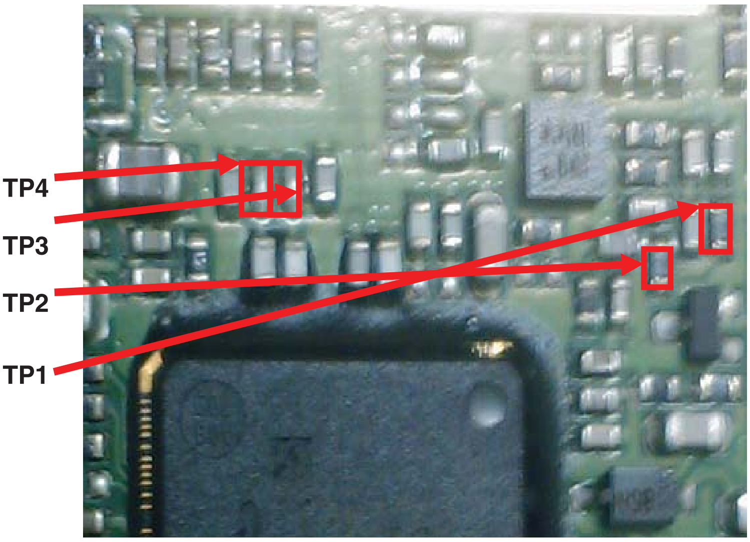
TEST POINT

Check Points

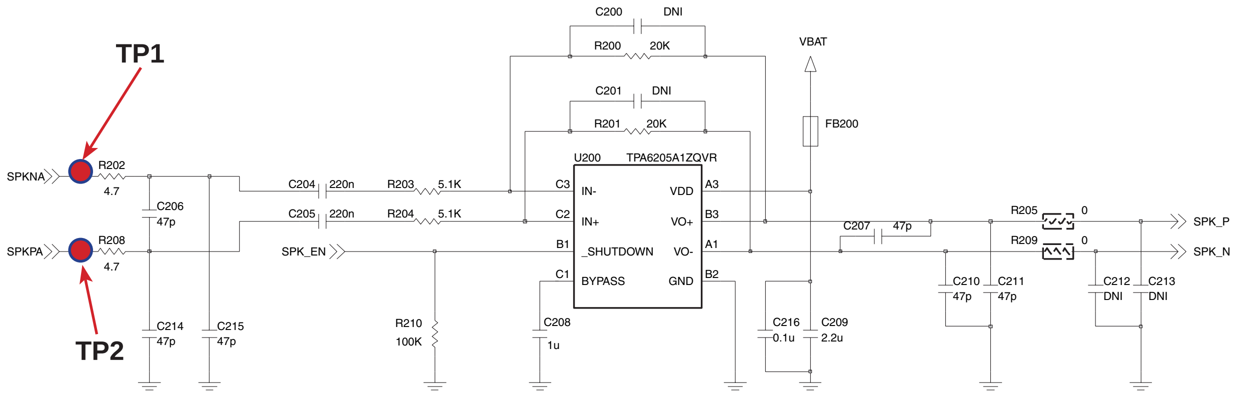
-Speaker/Receiver Solder contact
-Audio amp soldering

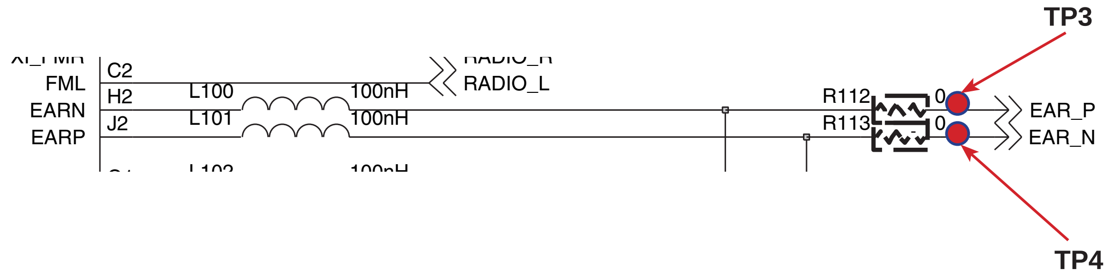
TP1(R202), **TP2** (R208) :SPK path
-> Audio signal Check

TP3 (R112), **TP4** (R113) : RCV path
-> Audio signal Check

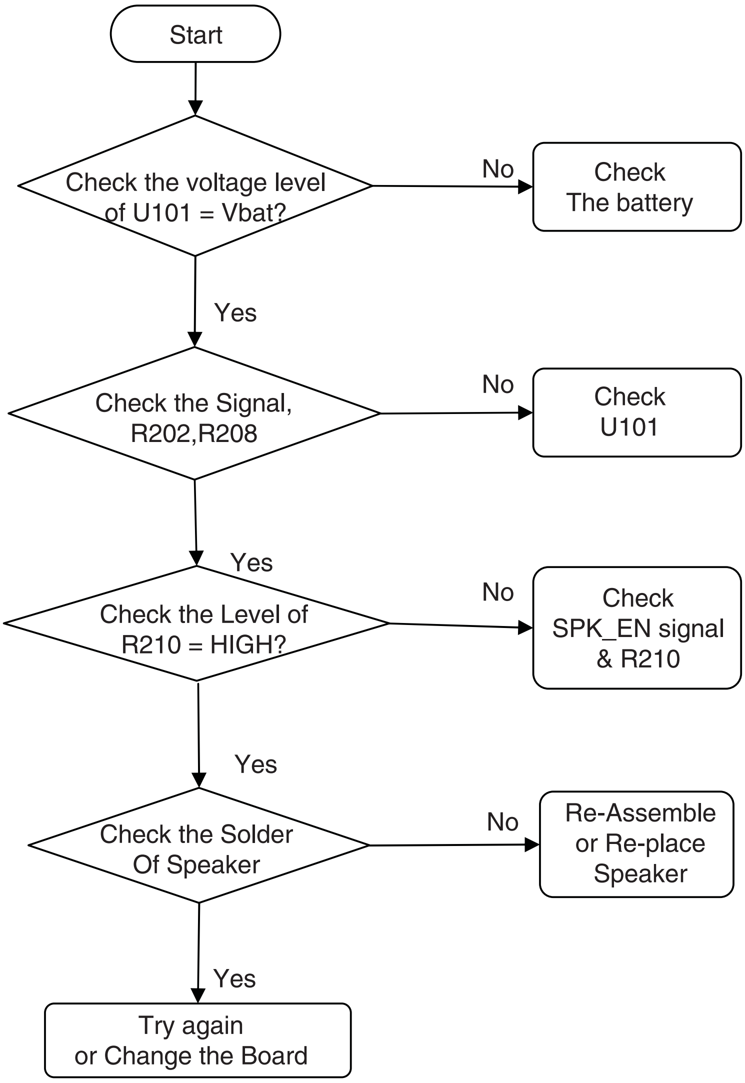


CIRCUIT

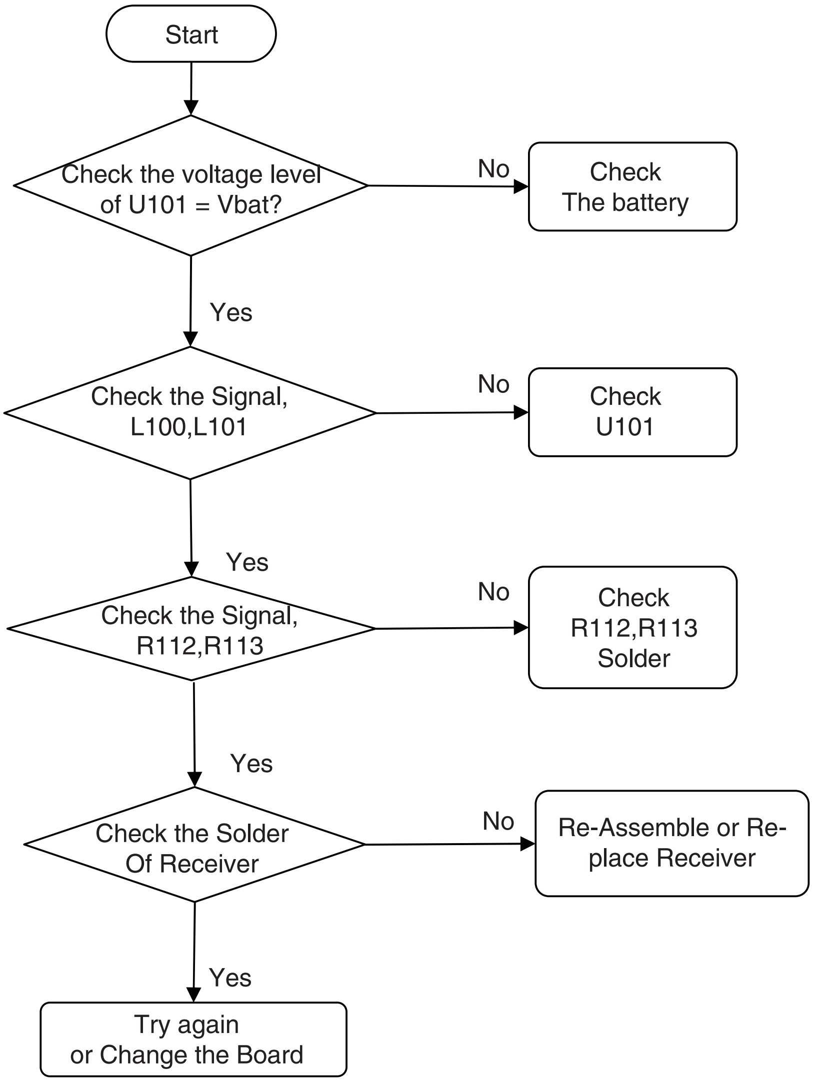




CHECKING FLOW (Speaker)



CHECKING FLOW (Receiver)



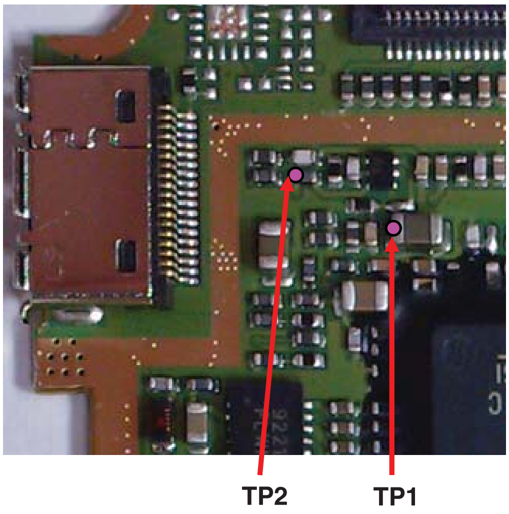
4.10 Headphone Trouble

TEST POINT

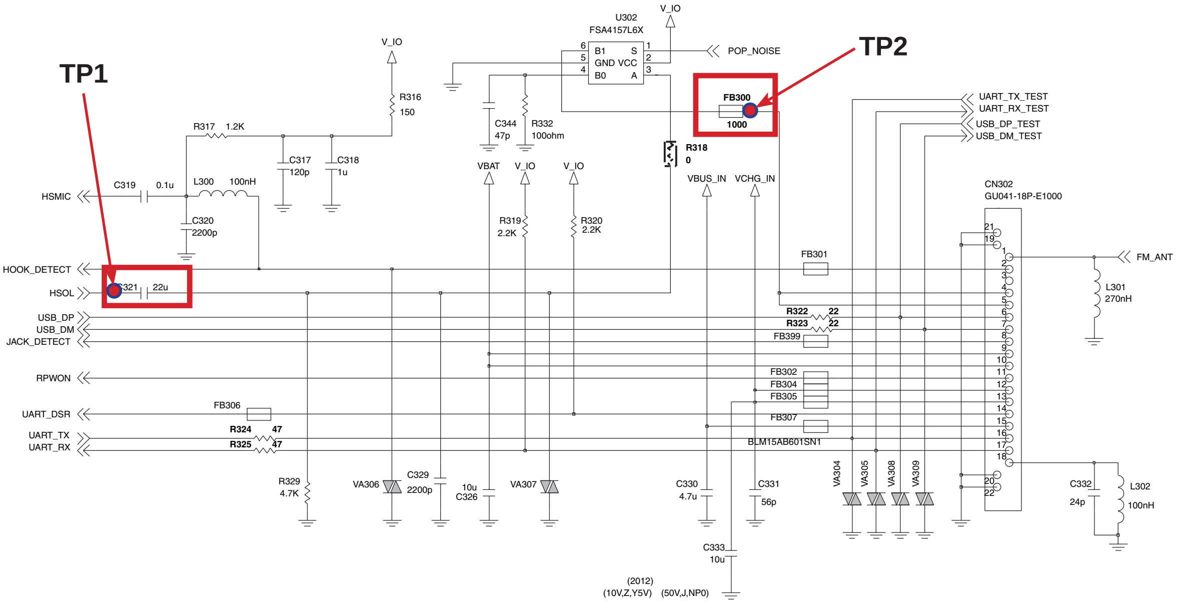
Check Points

-18pin IO connector
-Passive Parts soldering Status

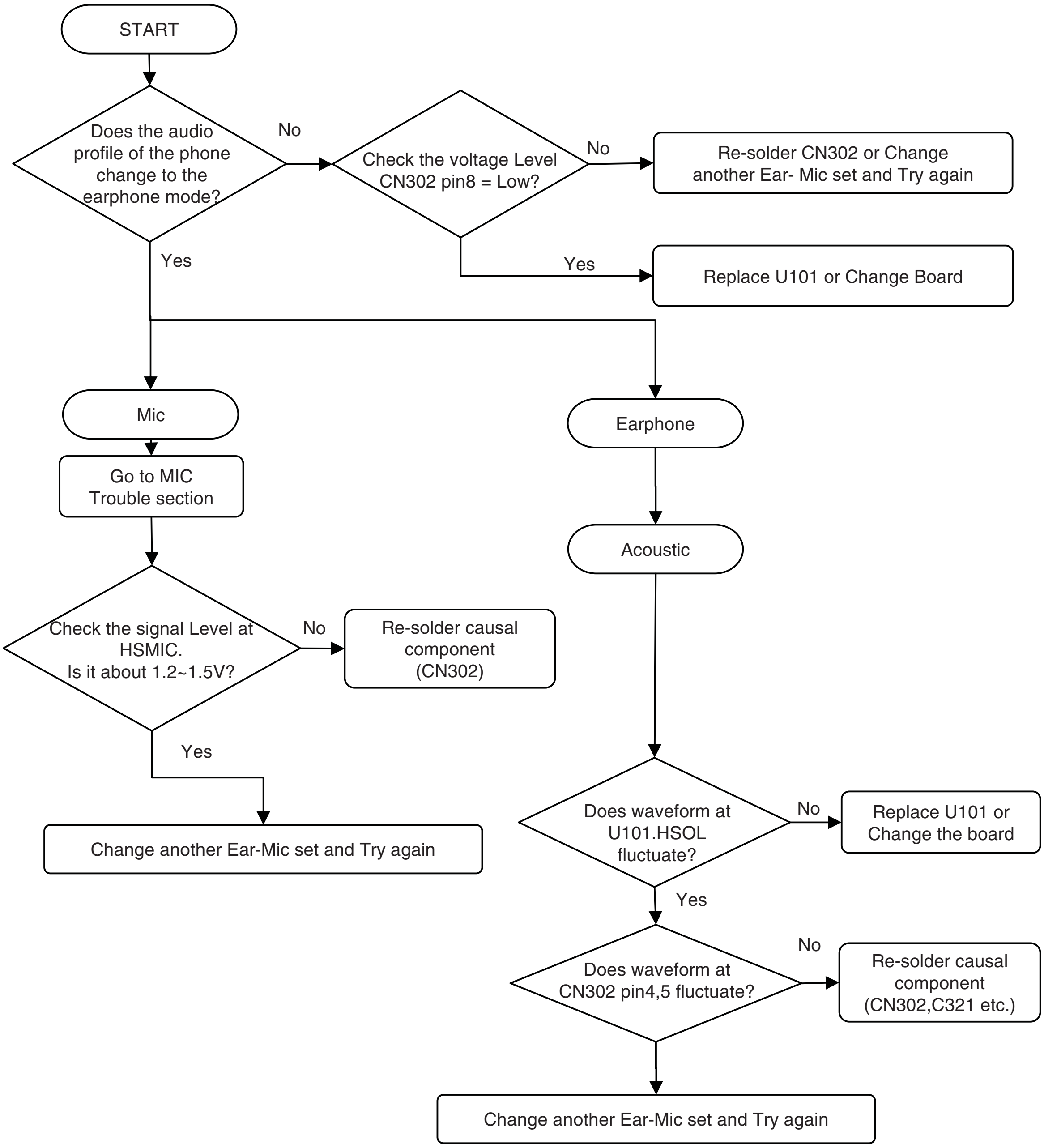
TP1 (C321), **TP2** (FB300) : Audio path
-> Audio signal Check



CIRCUIT



CHECKING FLOW



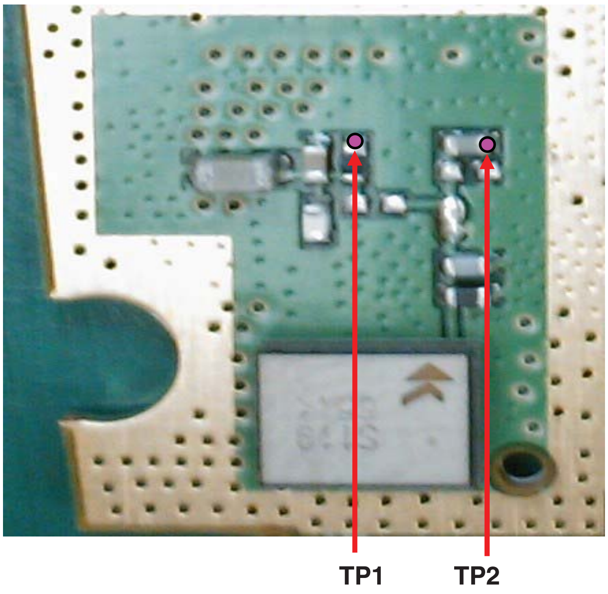
4.11 Microphone Trouble

TEST POINT

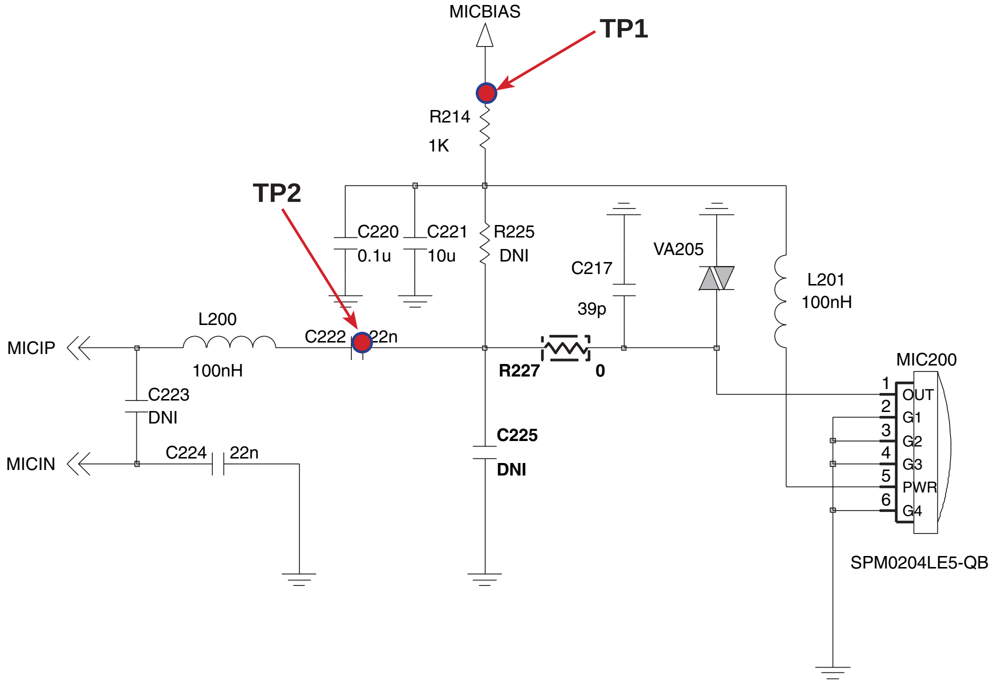
Check Points

-18pin IO connector
-Passive Parts soldering Status

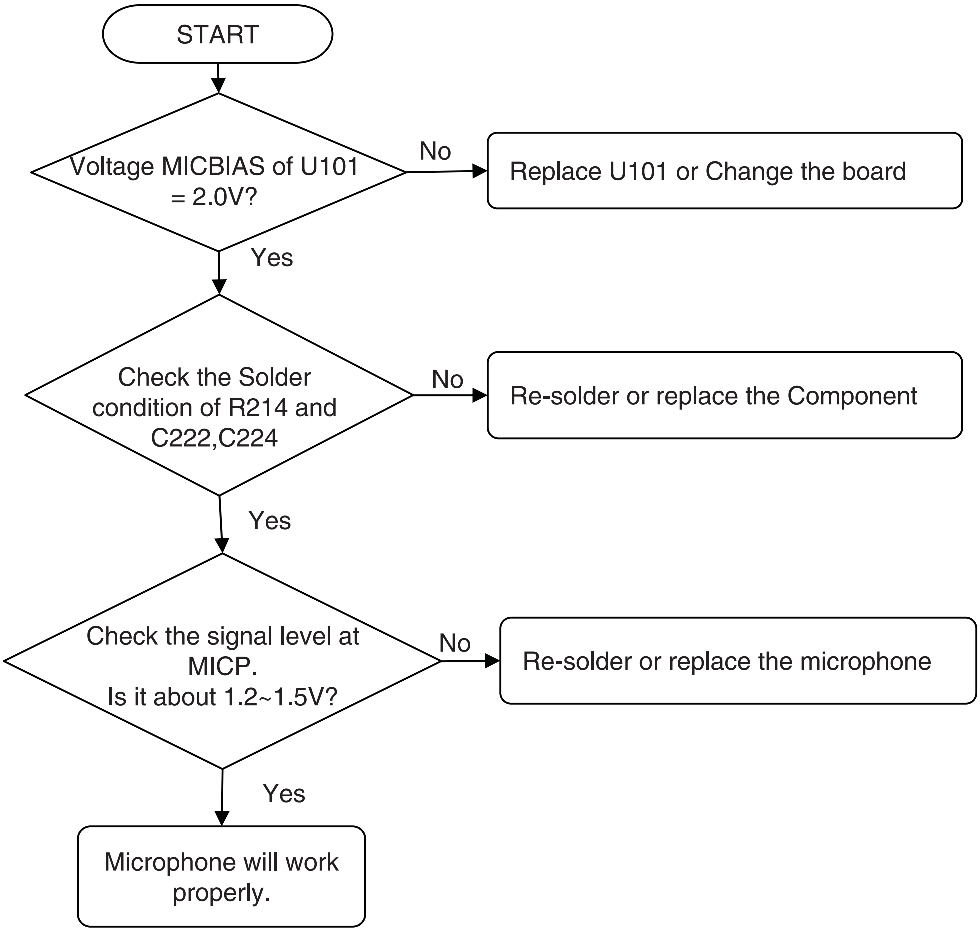
TP1 (R214), **TP2** (C222) : Mic path
-> Audio signal Check



CIRCUIT



CHECKING FLOW

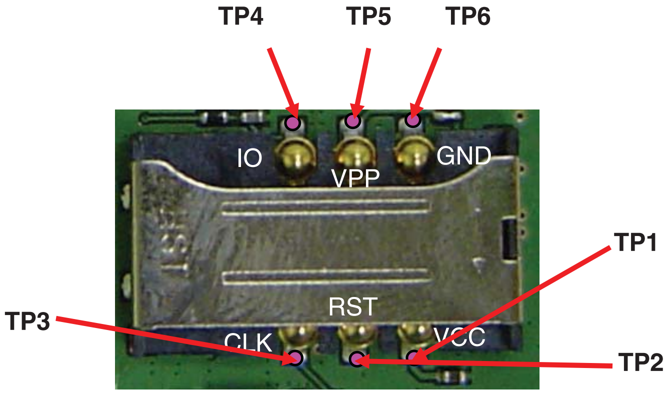


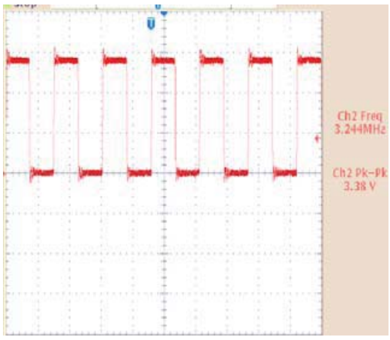
4.12 SIM Card Trouble

TEST POINT

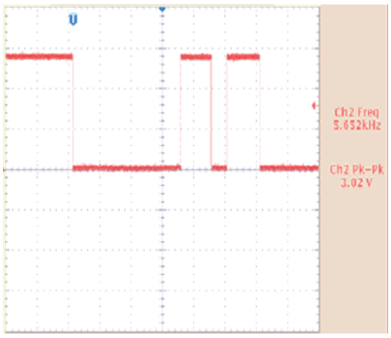
Check Points

-Socket soldering
-Proper SIM is used

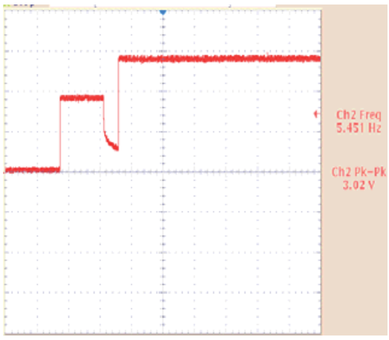




SIM_CLK

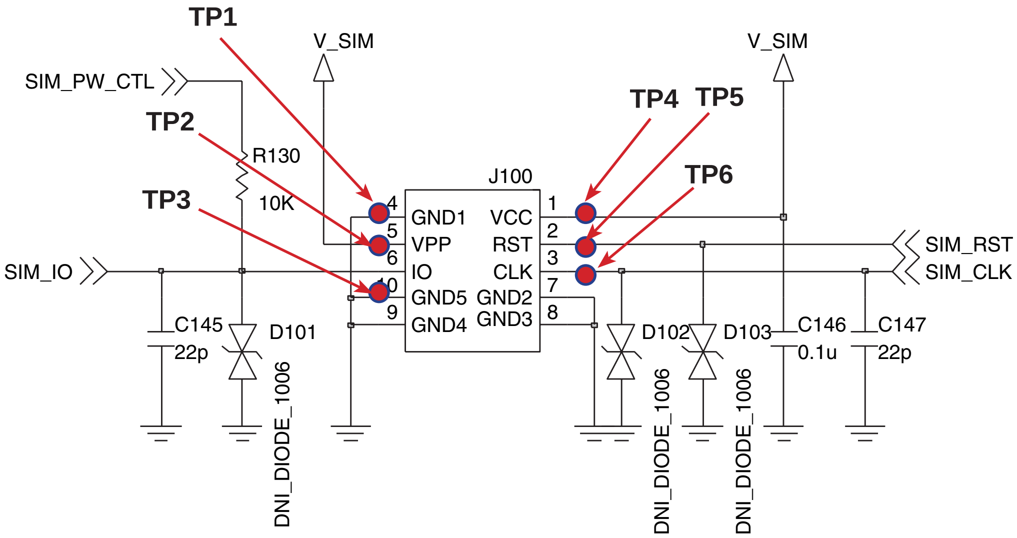


SIM_IO

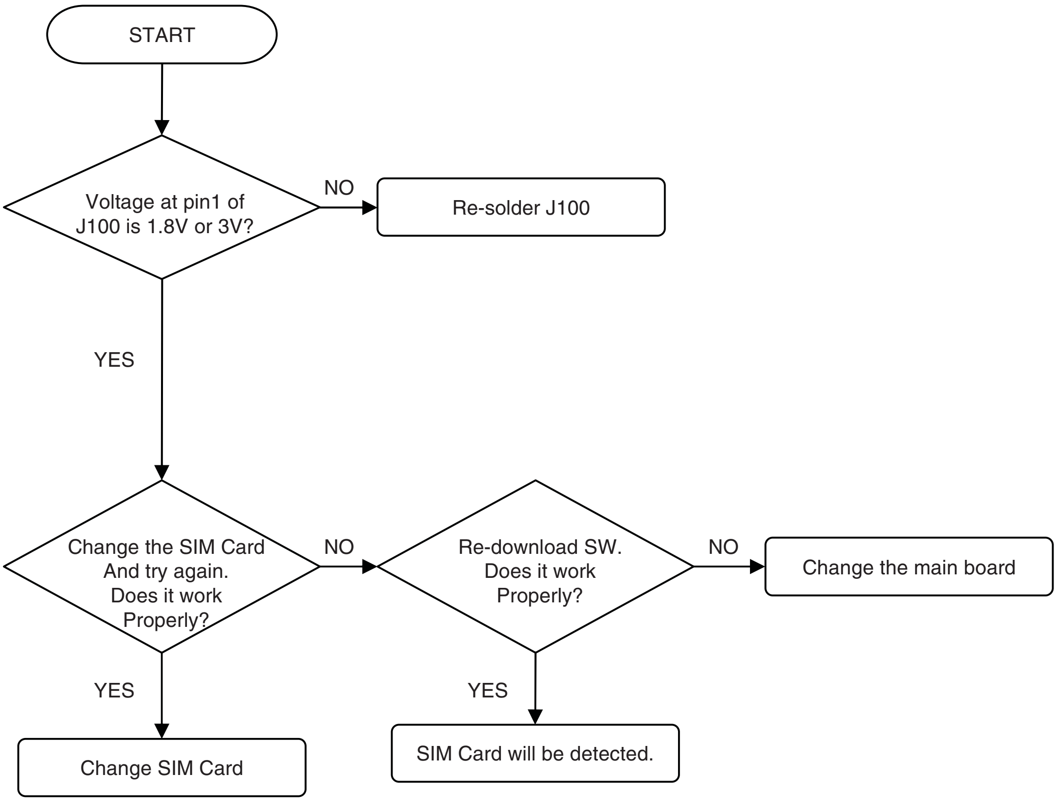


SIM_VCC

CIRCUIT



Checking Flow

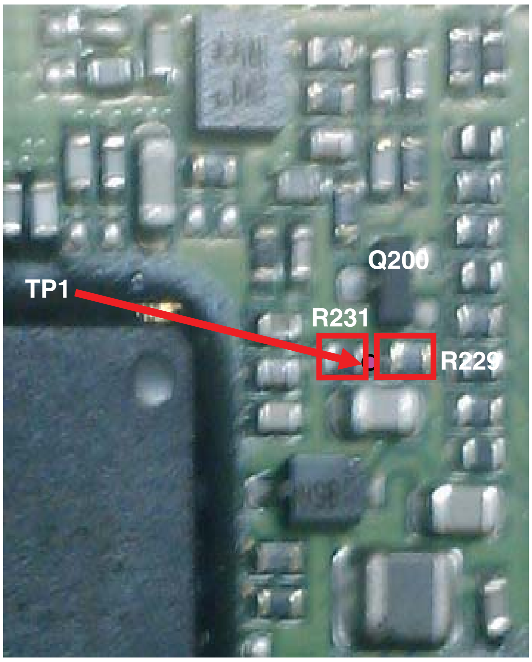


4.13 KEY backlight Trouble

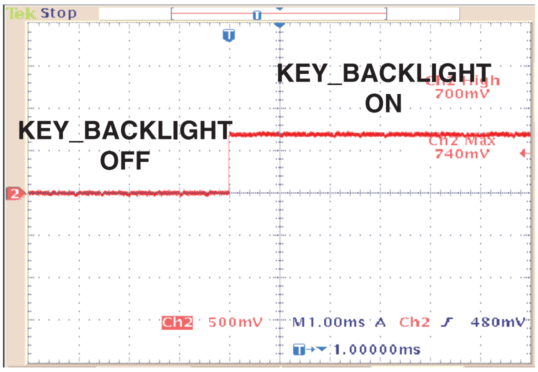
TEST POINT

Check Points

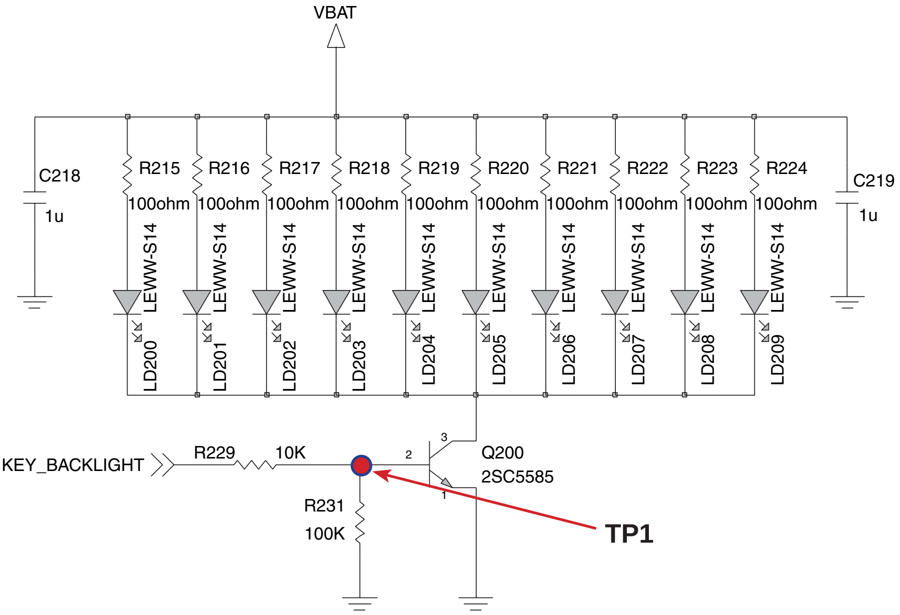
-Control IC is working properly
-Passive Parts soldering Status



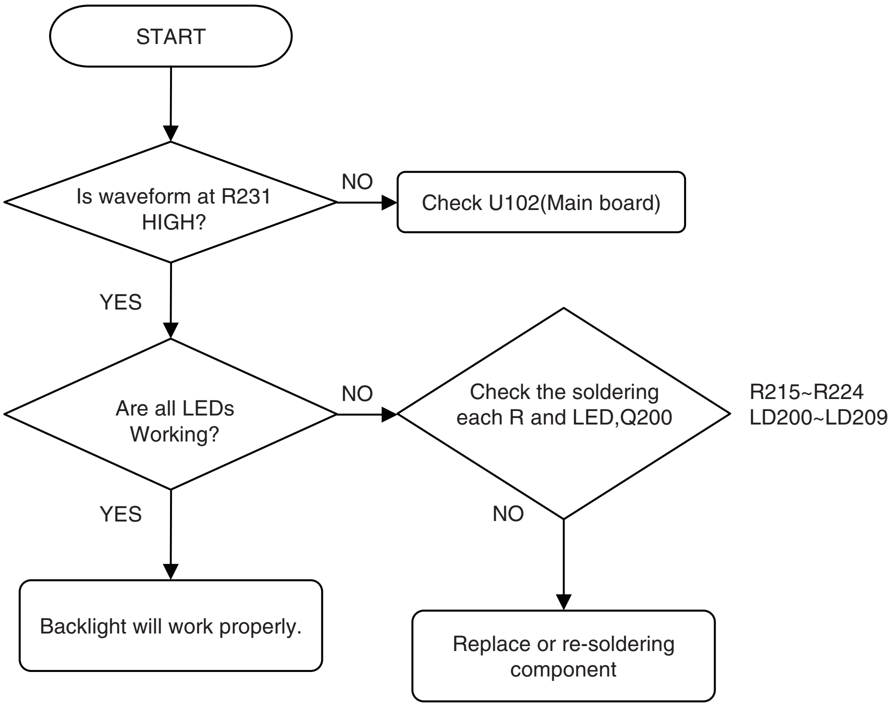
WAVE FROM



CIRCUIT

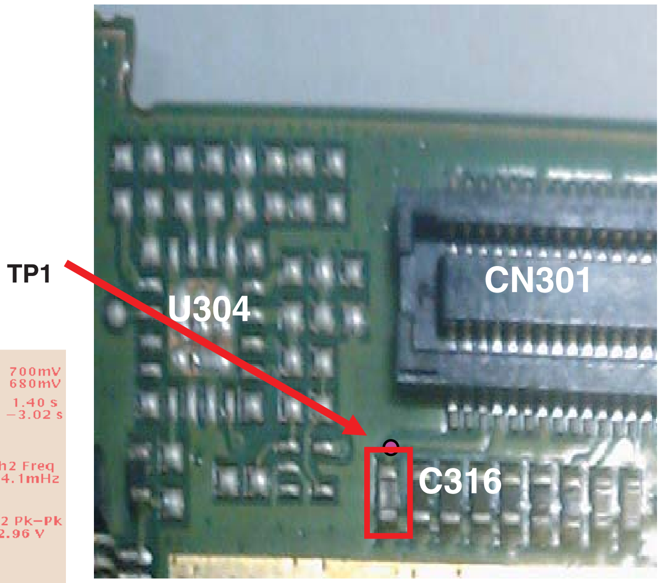


CHECKING FLOW



4.14 Vibrator Trouble

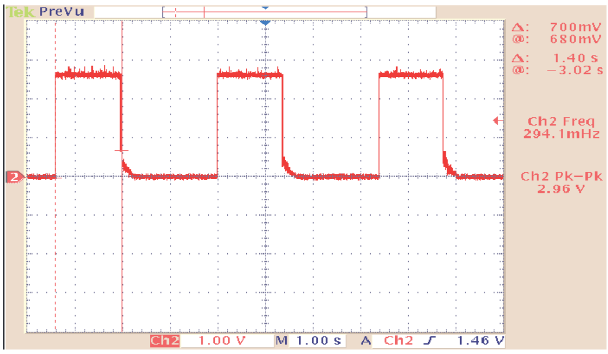
TEST POINT



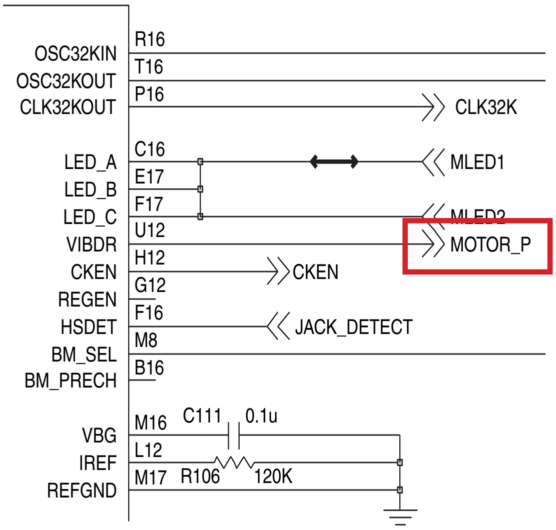
Check Points

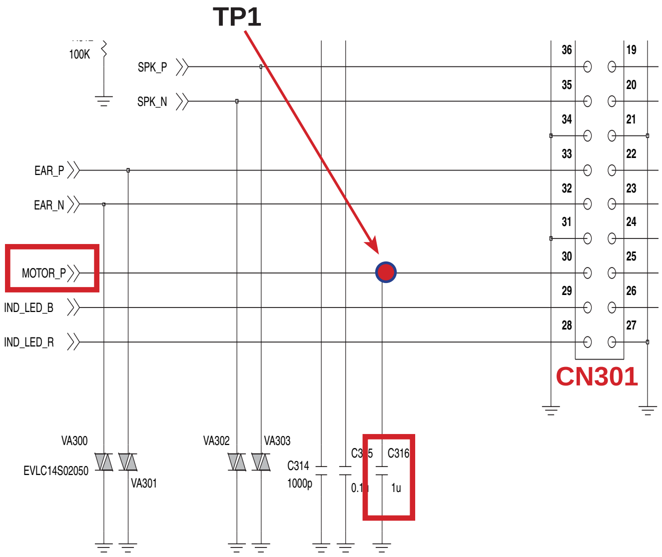
-Vibrator contact is right
-MOTOR_P signal working correctly

WAVE FROM



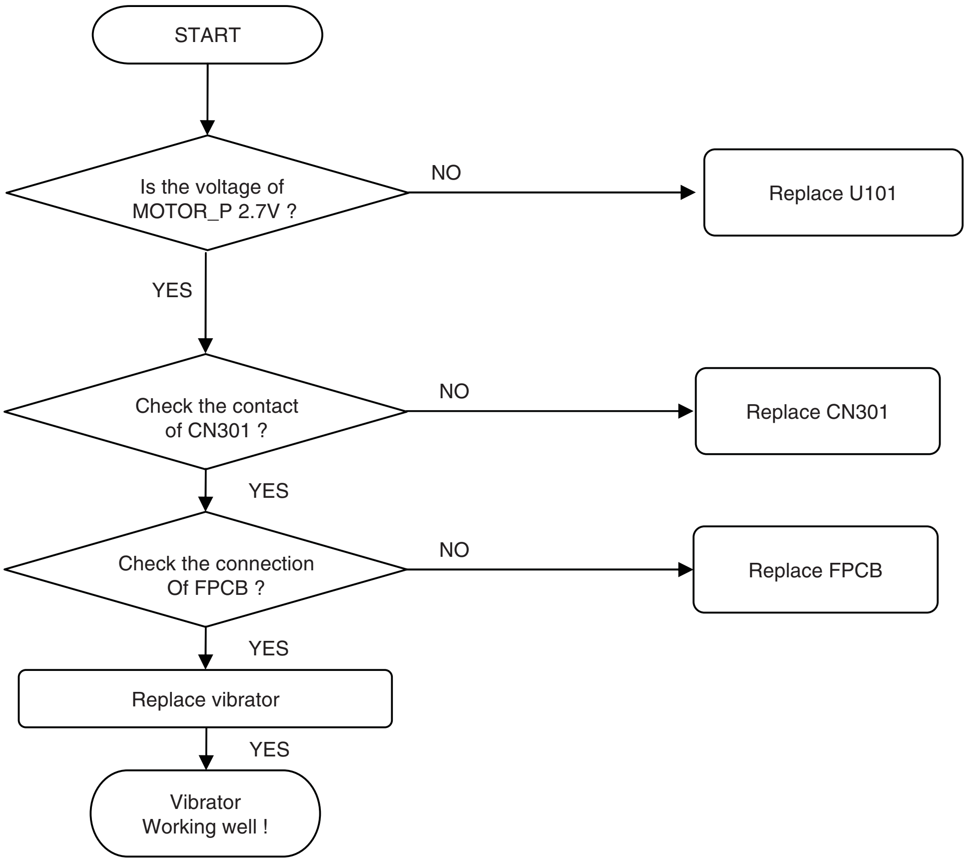
CIRCUIT





CHECKING FLOW

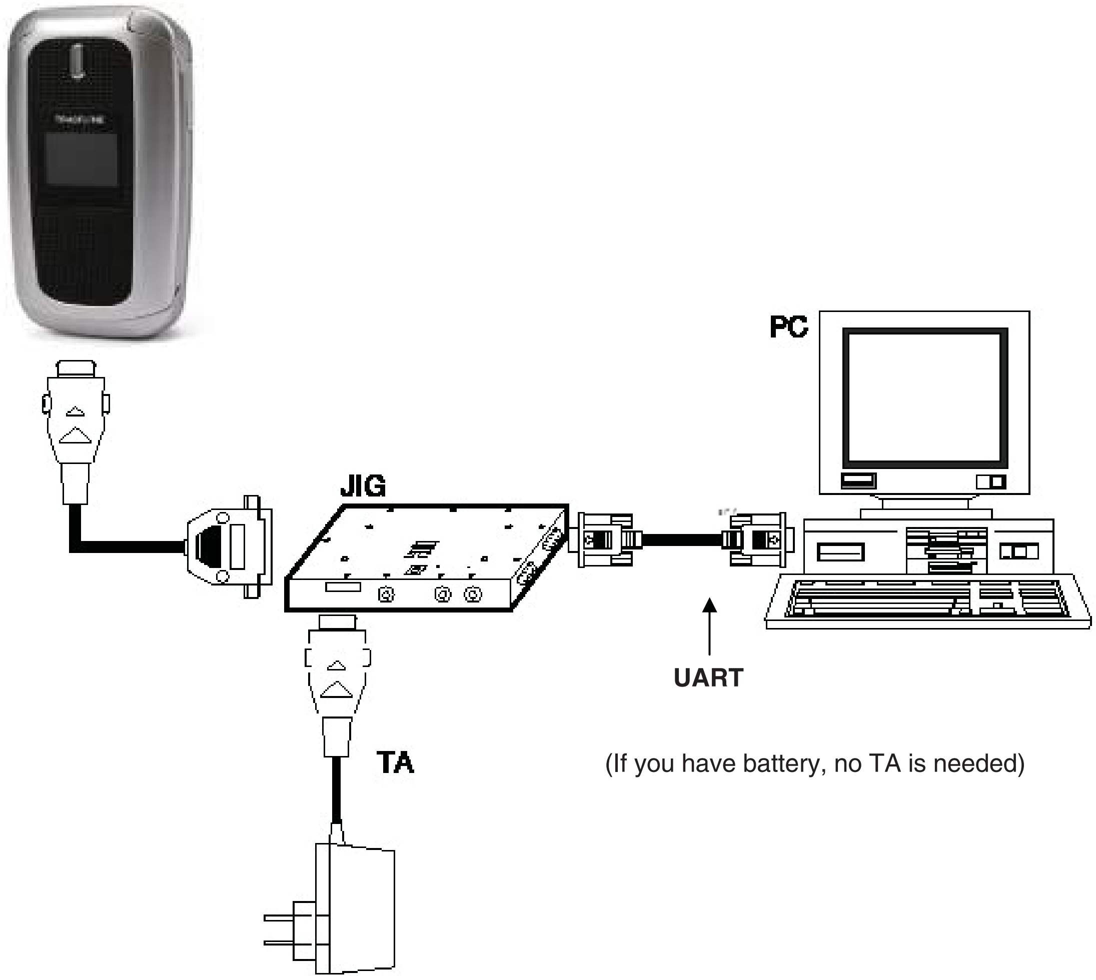
SETTING : Enter the engineering mode, and set vibrator on at vibration of BB test menu



5. Trouble shooting

5.1. Download Setup

Figure 5-1 describes Download setup

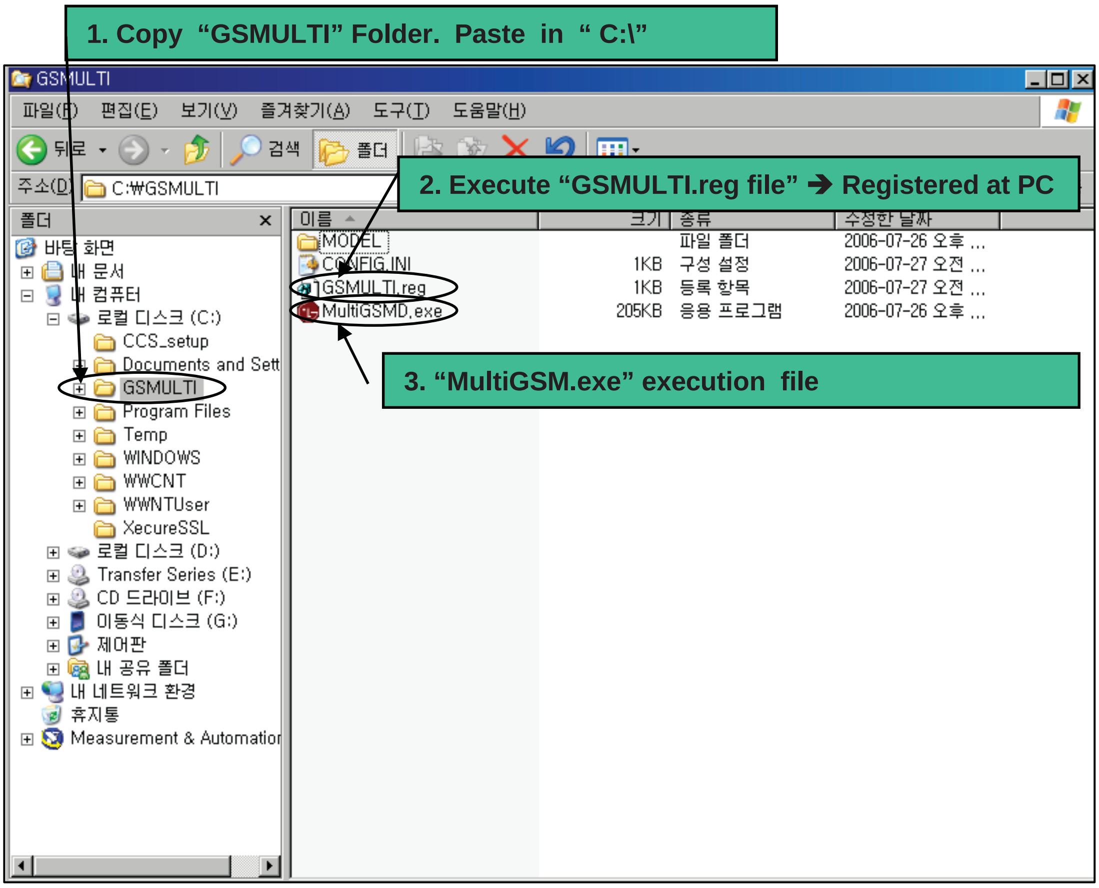


(If you have battery, no TA is needed)

Figure 5-1. Download Setup

5.2. Download Procedure

5.2.1. Computer Program file -> MultiGSM.EXE Click



1. Copy “GSMULTI” Folder. Paste in “ C:\”

2. Execute “GSMULTI.reg file” ➔ Registered at PC

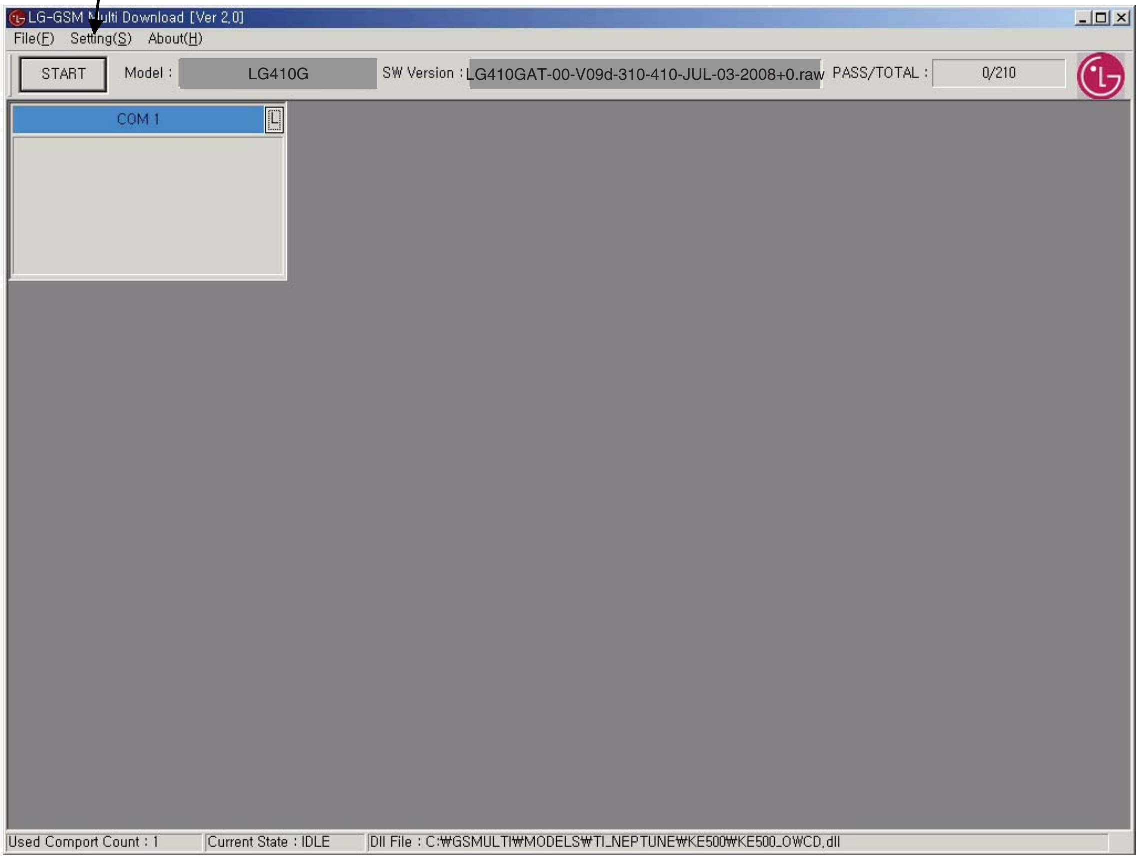
3. “MultiGSM.exe” execution file

주소(D) C:₩GSMULTI

이름	크기	종류	수정한 날짜
MODEL		파일 폴더	2006-07-26 오후 ...
CONFIG.INI	1KB	구성 설정	2006-07-27 오전 ...
GSMULTI.reg	1KB	등록 항목	2006-07-27 오전 ...
MultiGSMD.exe	205KB	응용 프로그램	2006-07-26 오후 ...

5.2. 2. Click the “Setting” button.
Then, choose Configuration which is going to download.

4. Munu “Setting” ➔ “Configuration”



Model : LG410G

S₩ Version : LG410GAT-00-V09d-310-410-JUL-03-2008+0.raw

PASS/TOTAL : 0/210

COM 1

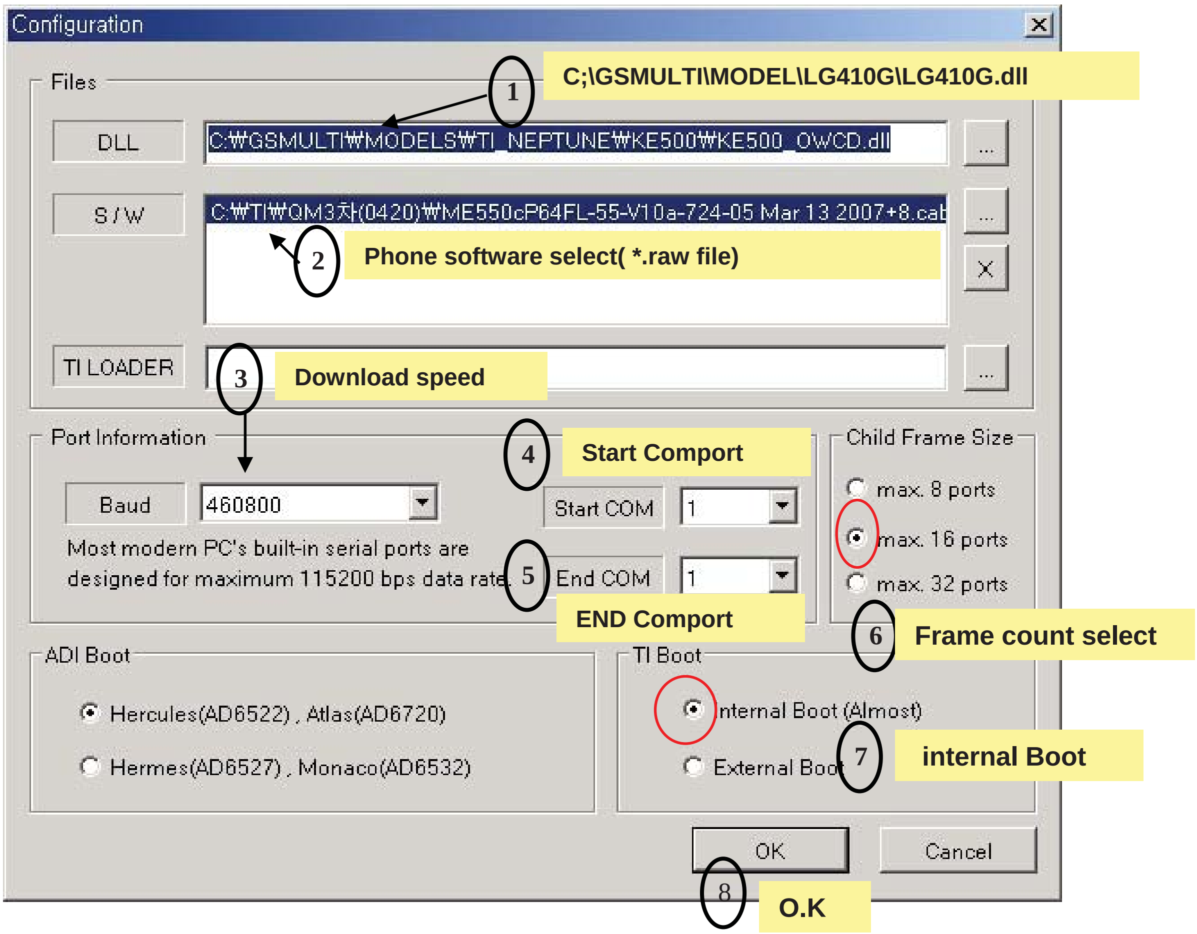
Used Comport Count : 1

Current State : IDLE

Dll File : C:₩GSMULTI₩MODELS₩TI_NEPTUNE₩KE500₩KE500_OWCD.dll

5.2.3. Computer Program file -> MultiGSM.EXE Click

5. Configuration : select values like below



Configuration

Files

DLL: C:₩GSMULTI₩MODELS₩TI_NEPTUNE₩KE500₩KE500_OWCD.dll

S / W: C:₩TI₩QM3차(0420)₩ME550cP64FL-55-V10a-724-05 Mar 13 2007+8.cab

TI LOADER:

Port Information

Baud: 460800

Most modern PC's built-in serial ports are designed for maximum 115200 bps data rate.

Start COM: 1

End COM: 1

Child Frame Size

○ max. 8 ports
● max. 16 ports
○ max. 32 ports

ADI Boot

● Hercules(AD6522) , Atlas(AD6720)
○ Hermes(AD6527) , Monaco(AD6532)

TI Boot

● Internal Boot (Almost)
○ External Boot

1 C;\GSMULTI\MODEL\LG410G\LG410G.dll

2 Phone software select(*.raw file)

3 Download speed

4 Start Comport

5 END Comport

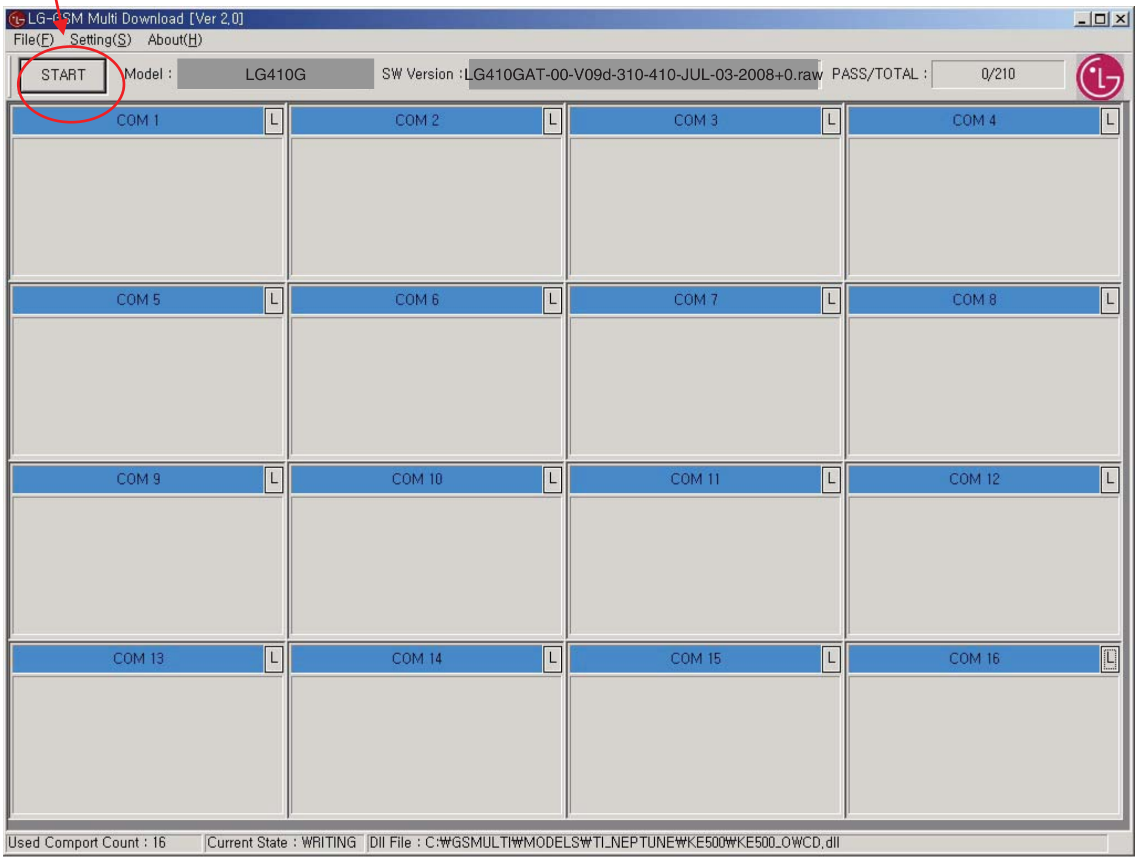
6 Frame count select

7 internal Boot

8 O.K

5.2.4. Computer Program file -> MultiGSM.EXE Click

6. Press the " START" button



Model : LG410G

SW Version : LG410GAT-00-V09d-310-410-JUL-03-2008+0.raw

PASS/TOTAL : 0/210

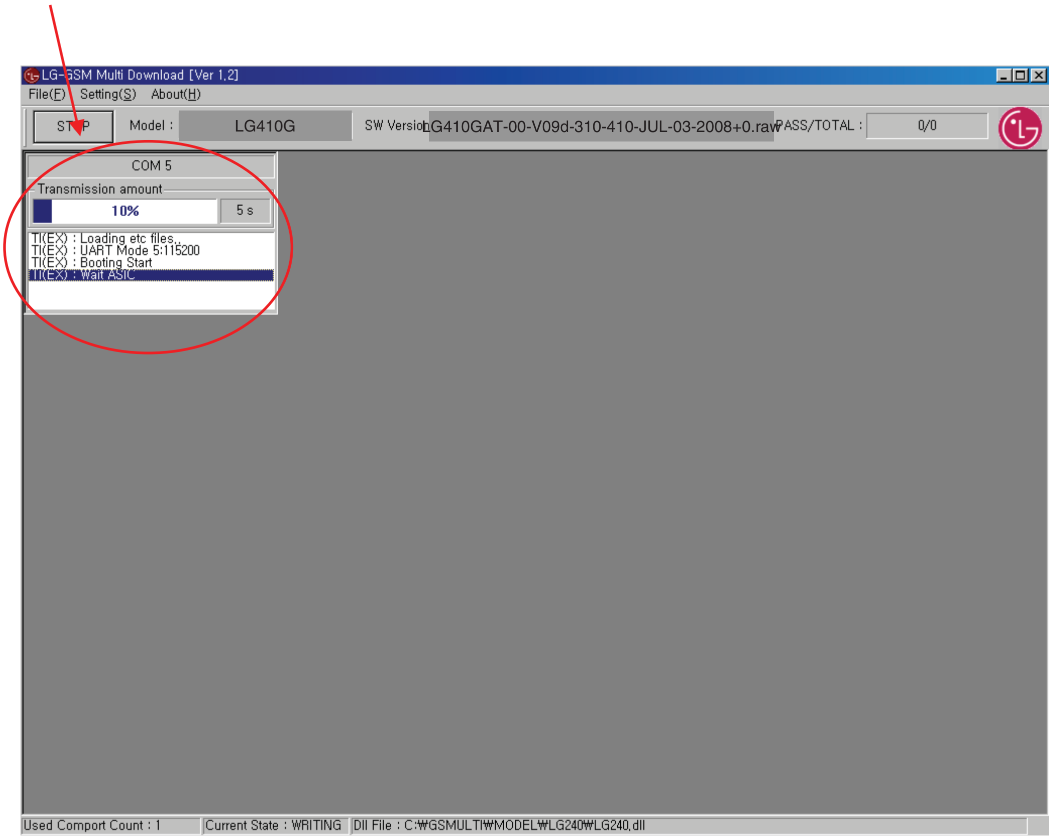
Used Comport Count : 16

Current State : WRITING

Dll File : C:₩GSMULTI₩MODELS₩TI_NEPTUNE₩KE500₩KE500_OWCD.dll

5.2.5. After “Start Button”, Which Stand-by condition

7. Stand-by condition ➔ “TI(EX) : Wait ASIC” is displayed ➔ connect the Phone



Model : LG410G

SW Version LG410GAT-00-V09d-310-410-JUL-03-2008+0.raw

PASS/TOTAL : 0/0

10%

5 s

```
TI(EX) : Loading etc files..
TI(EX) : UART Mode 5:115200
TI(EX) : Booting Start
TI(EX) : Wait ASIC
```

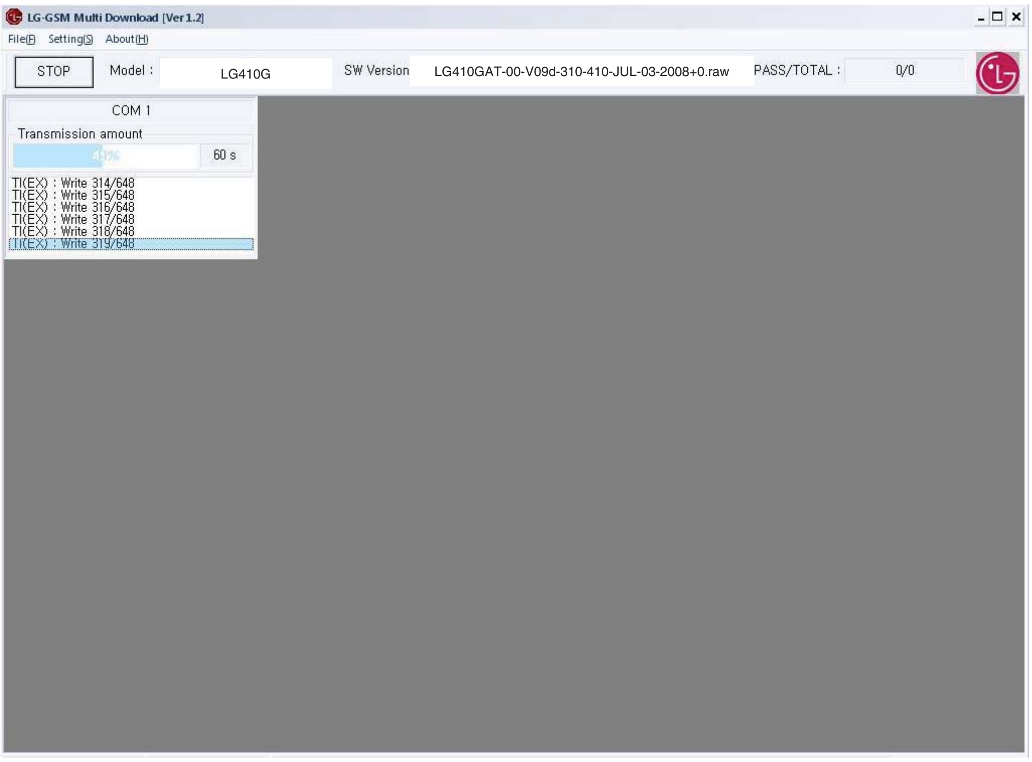
Used Comport Count : 1

Current State : WRITING

Dll File : C:₩GSMULTI₩MODEL₩LG240₩LG240.dll

5.2.6. SW downloading condition

※ **Downloading : Start**



Model : LG410G

SW Version LG410GAT-00-V09d-310-410-JUL-03-2008+0.raw

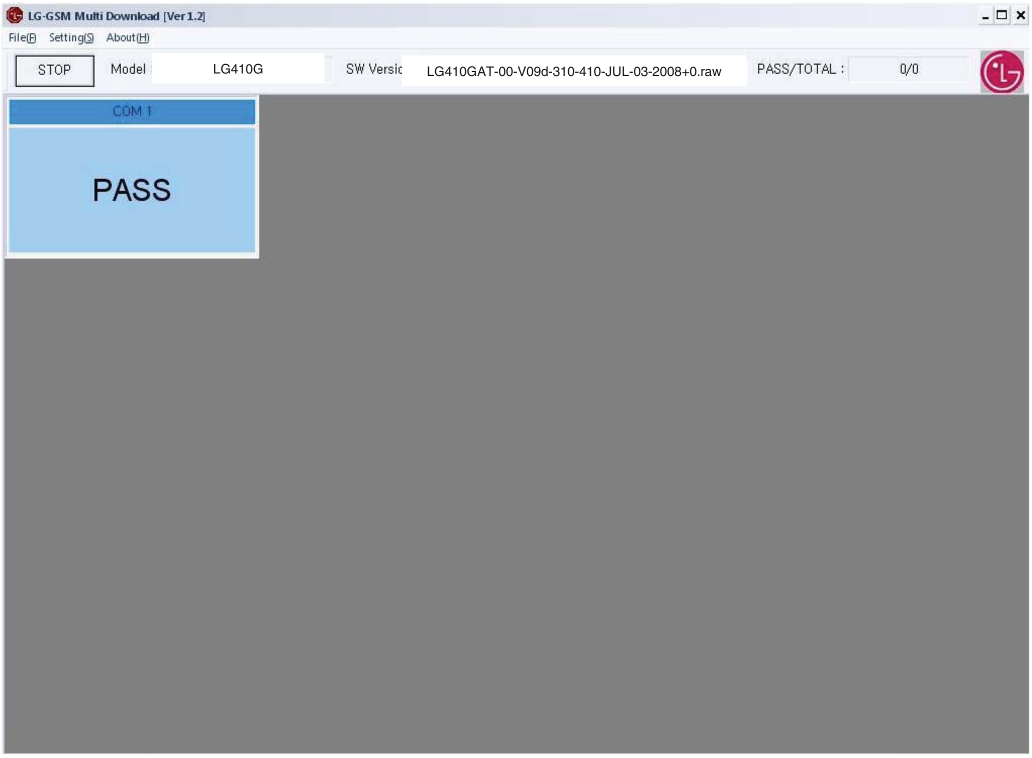
PASS/TOTAL : 0/0

Transmission amount 60 s

```
TI(EX) : Write 314/648
TI(EX) : Write 315/648
TI(EX) : Write 316/648
TI(EX) : Write 317/648
TI(EX) : Write 318/648
TI(EX) : Write 319/648
```

5.2.7 SW downloading END condition

※ **Downloading : END**



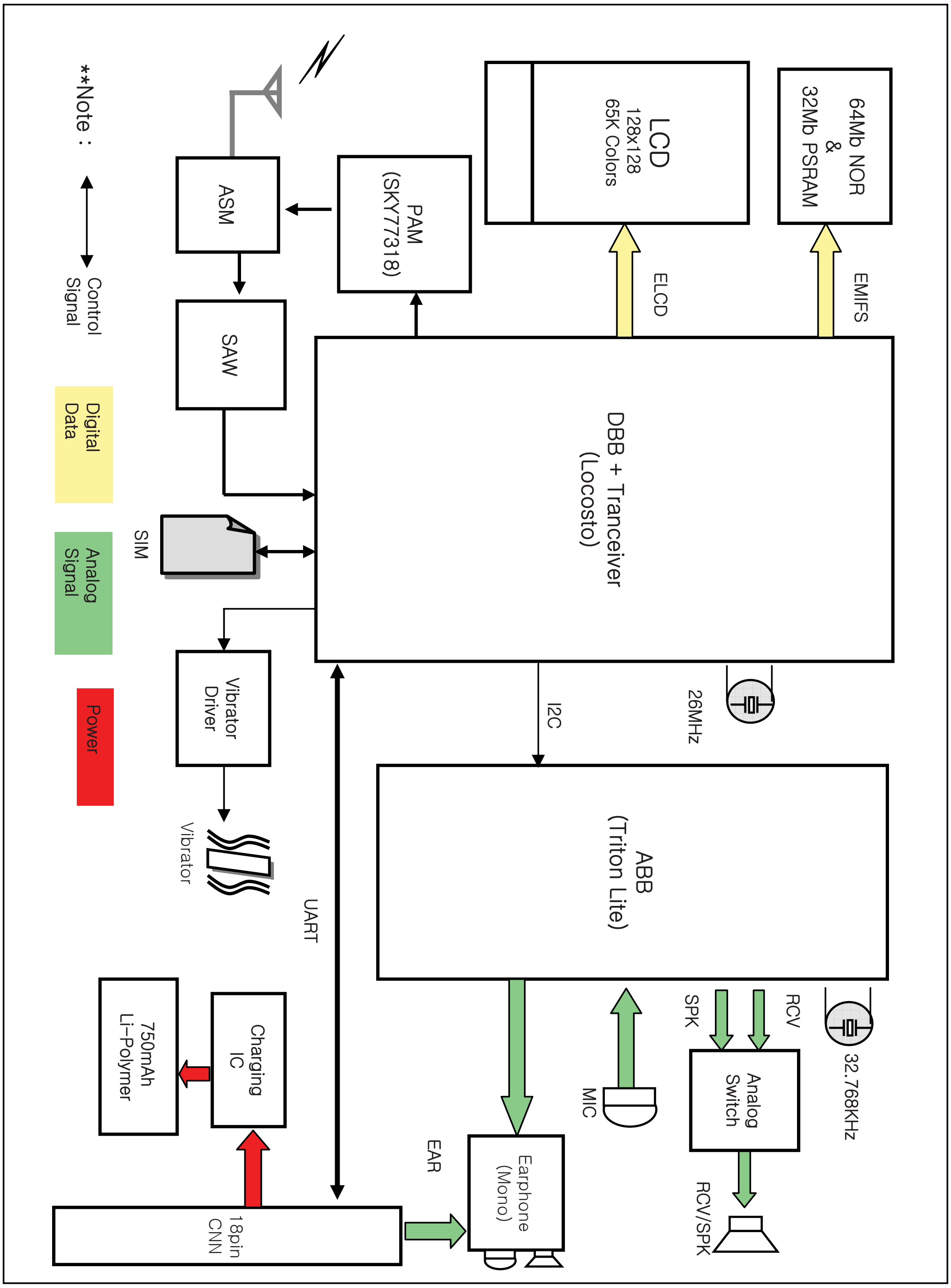
Model LG410G

SW Versic LG410GAT-00-V09d-310-410-JUL-03-2008+0.raw

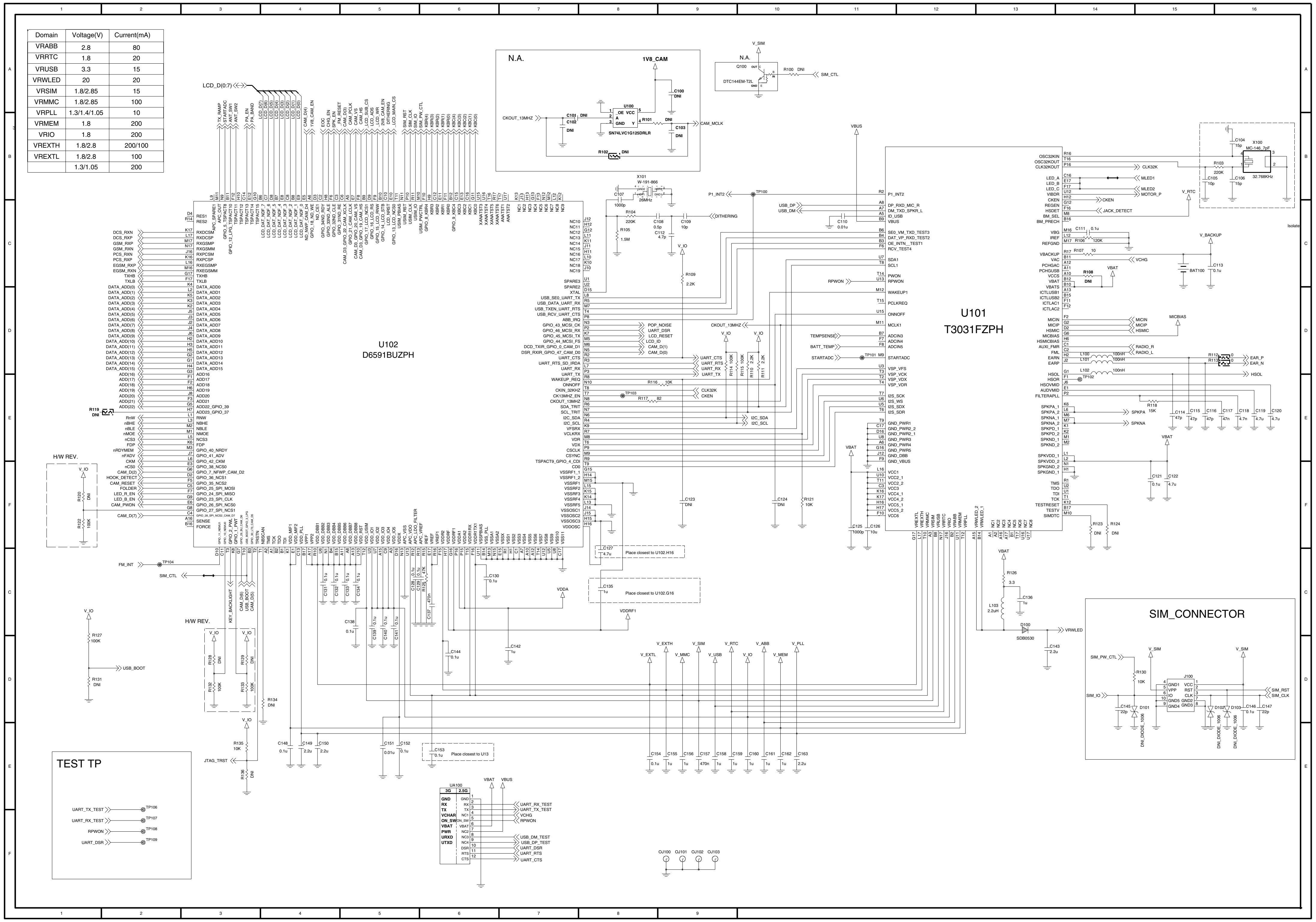
PASS/TOTAL : 0/0

PASS

6. BLOCK DIAGRAM

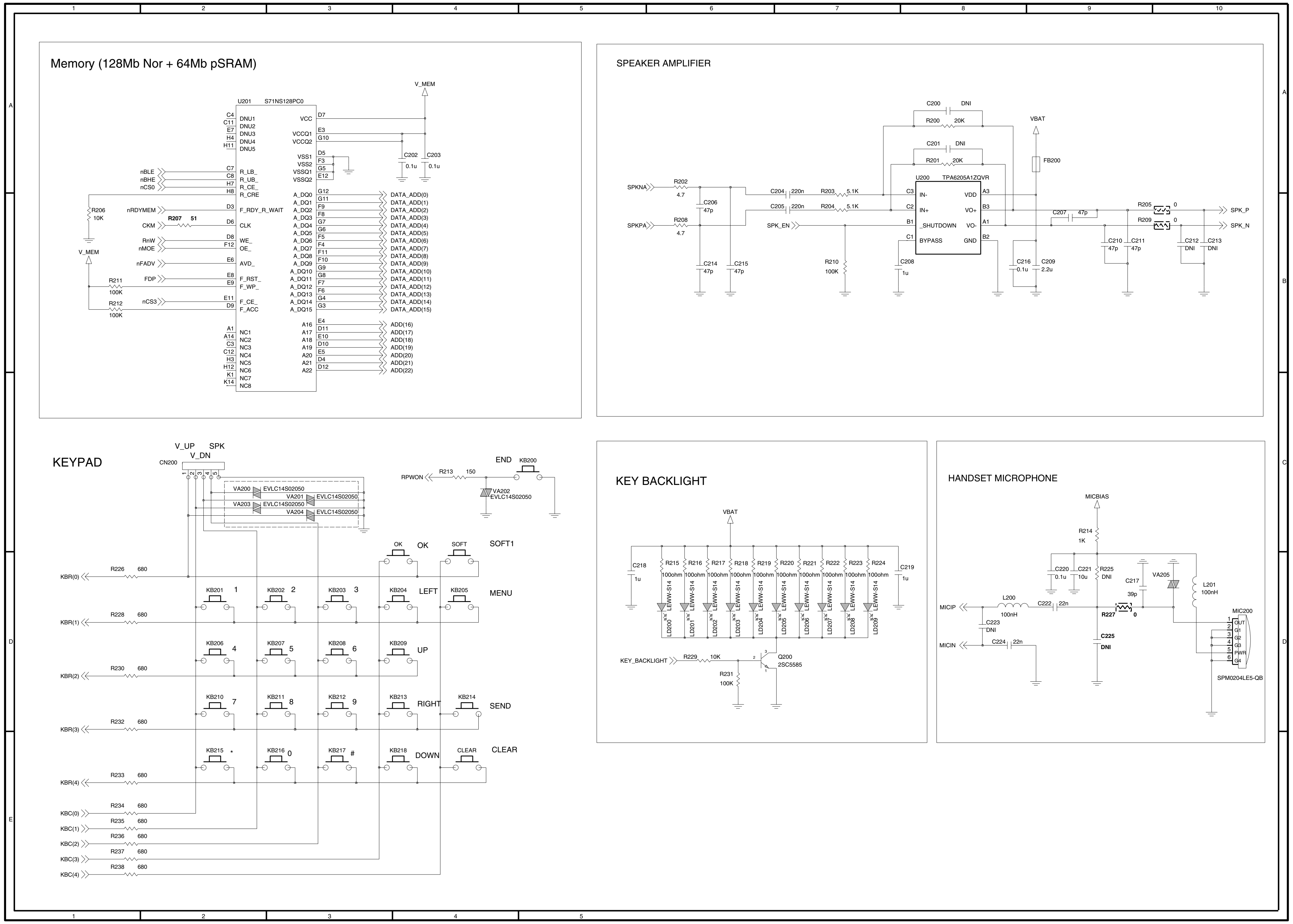


8. CIRCUIT DIAGRAM

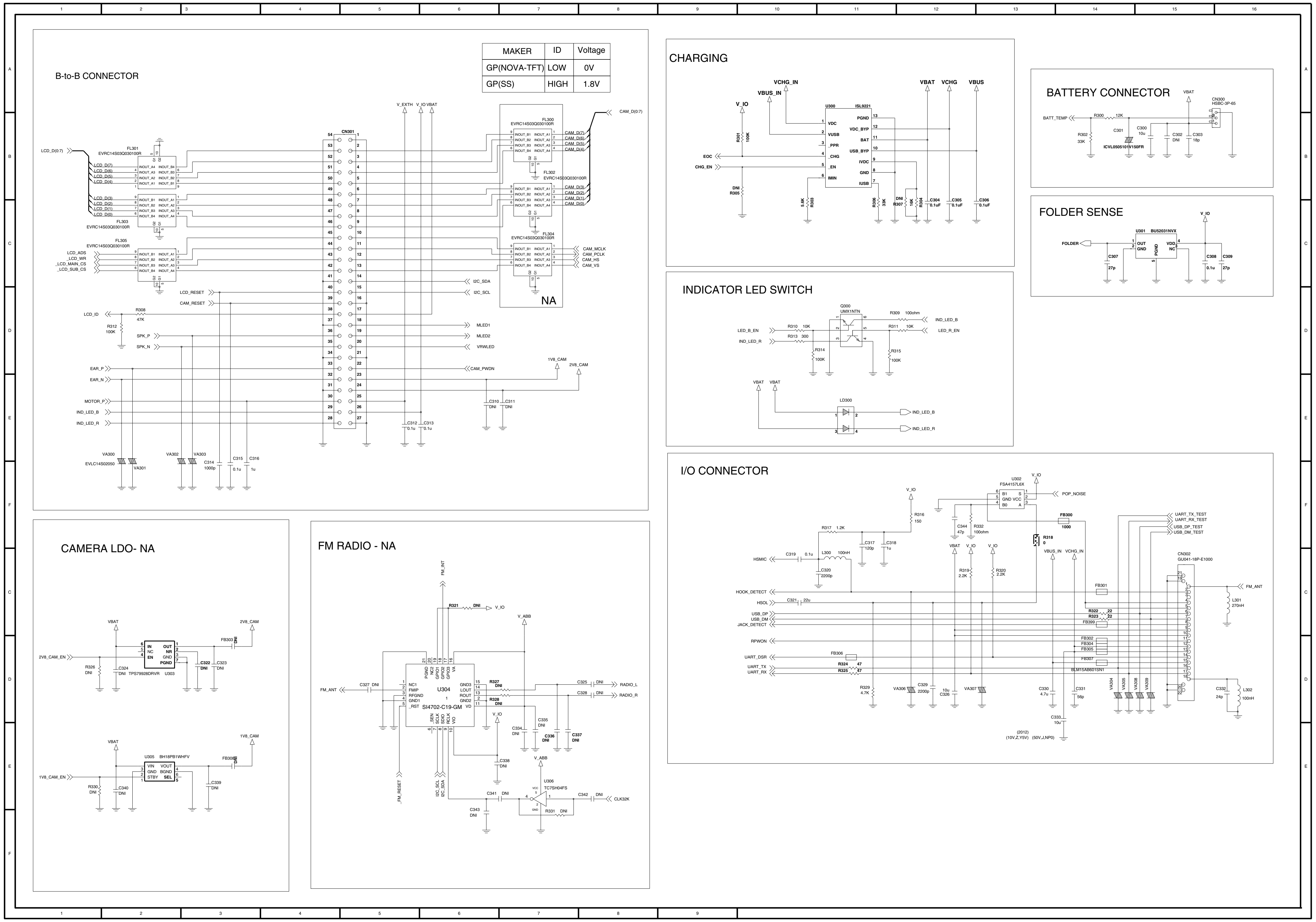


Domain	Voltage(V)	Current(mA)
VRABB	2.8	80
VRRTC	1.8	20
VRUSB	3.3	15
VRWLED	20	20
VRSIM	1.8/2.85	15
VRMMC	1.8/2.85	100
VRPLL	1.3/1.4/1.05	10
VRMEM	1.8	200
VRIO	1.8	200
VREXTH	1.8/2.8	200/100
VREXTL	1.8/2.8	100
	1.3/1.05	200

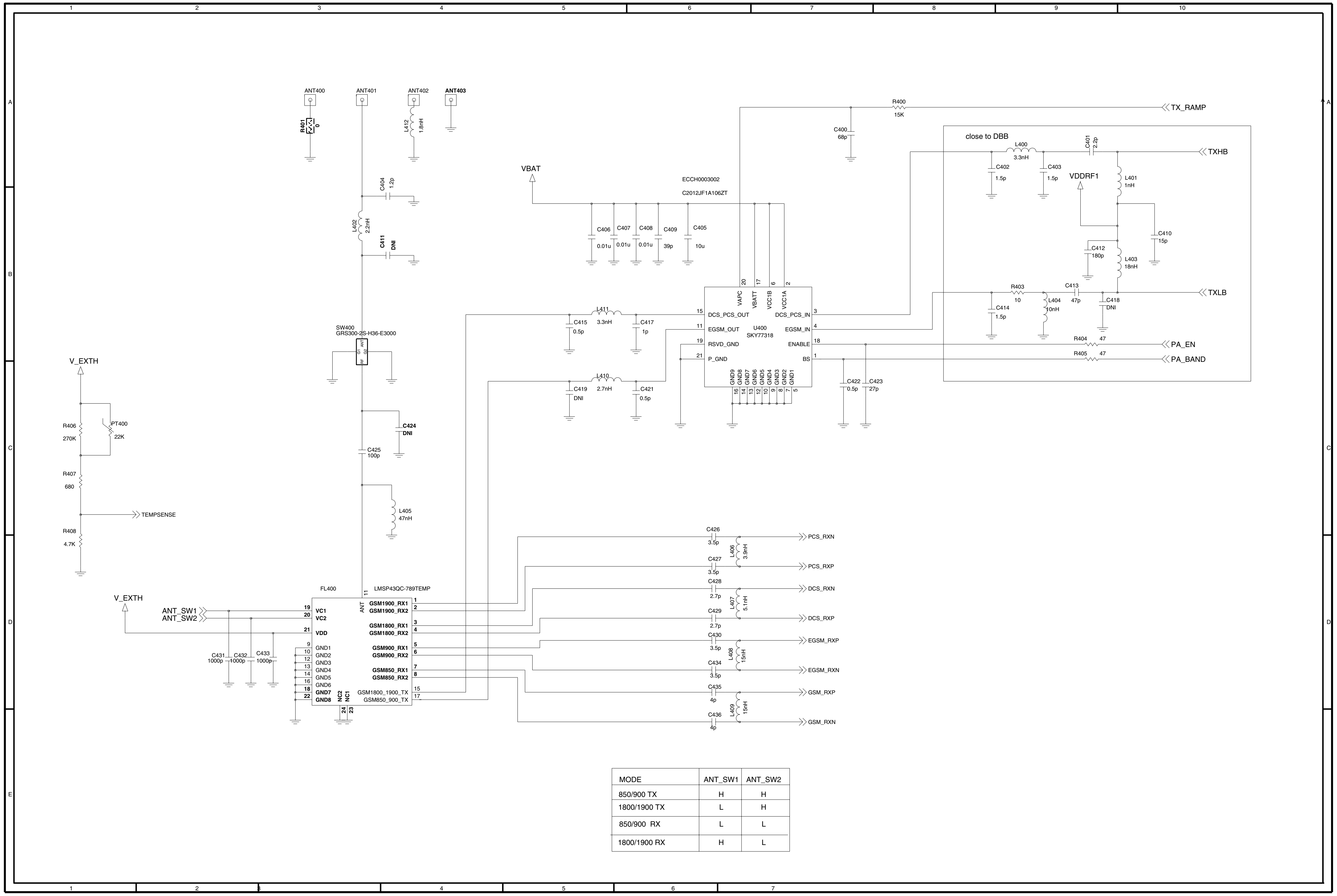
7. CIRCUIT DIAGRAM



7. CIRCUIT DIAGRAM

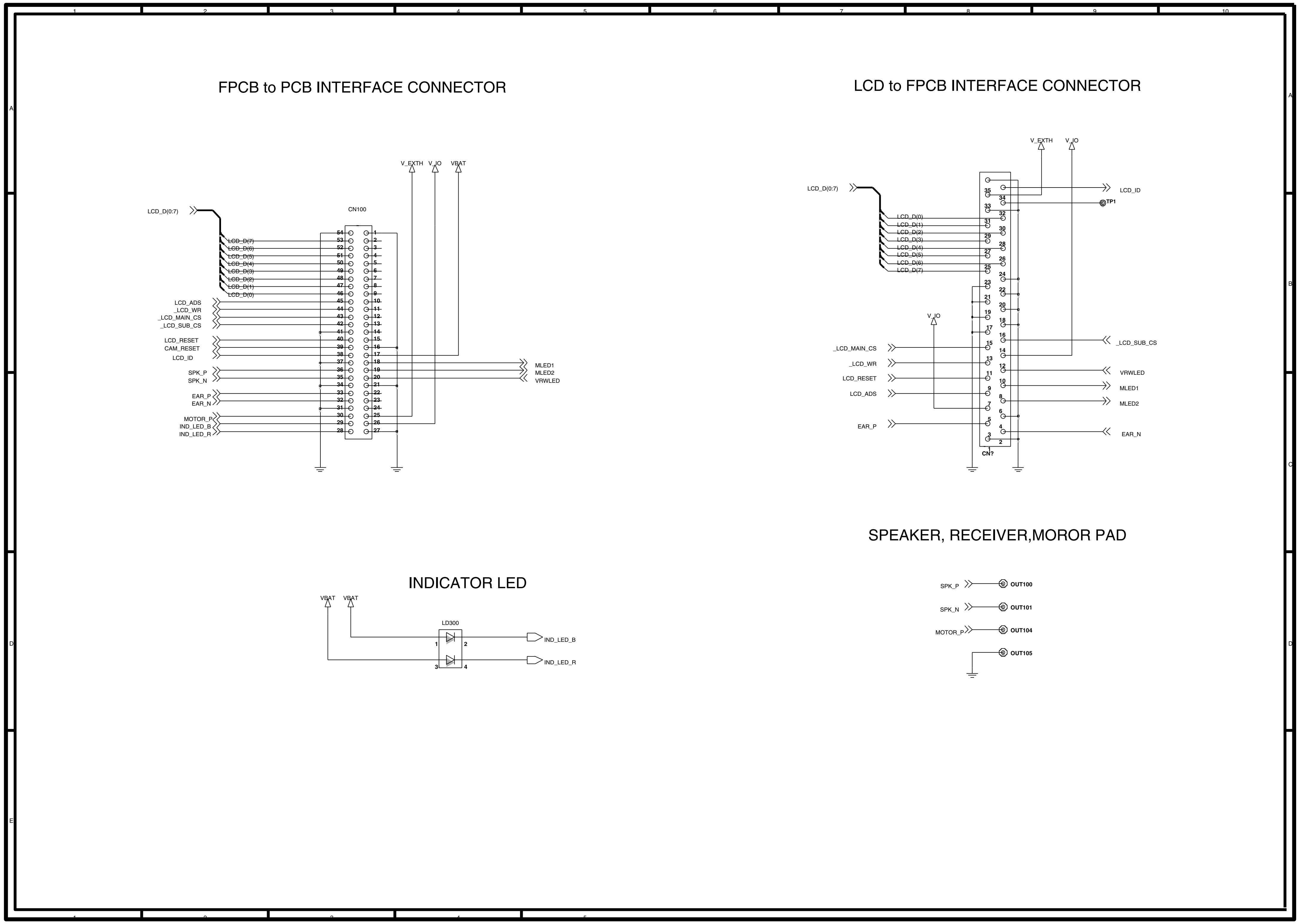


7. CIRCUIT DIAGRAM



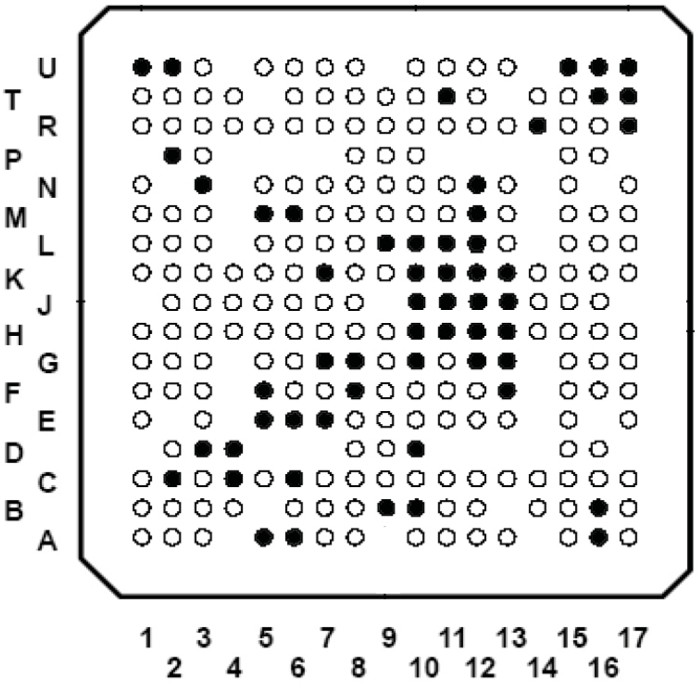
MODE	ANT_SW1	ANT_SW2
850/900 TX	H	H
1800/1900 TX	L	H
850/900 RX	L	L
1800/1900 RX	H	L

7. CIRCUIT DIAGRAM



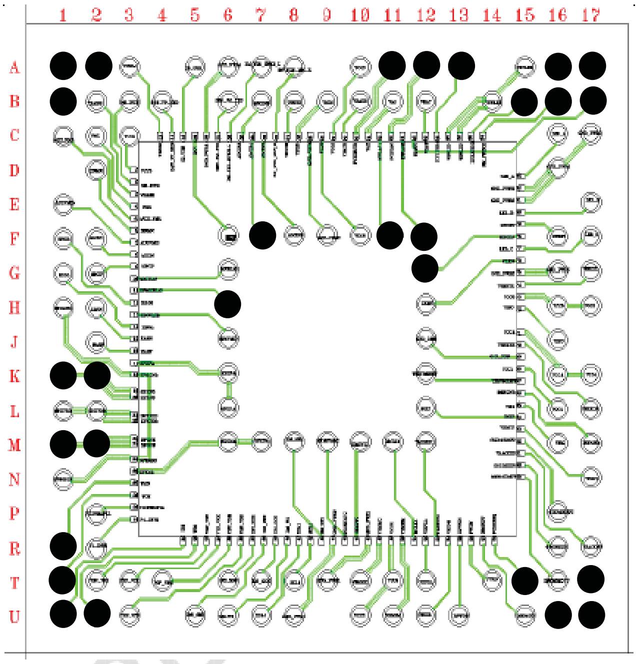
8. BGA Pin Map

8.1 DBB (U102 : D6591_SECURITY_LOCOSTO)



○ Use
● Don’t use

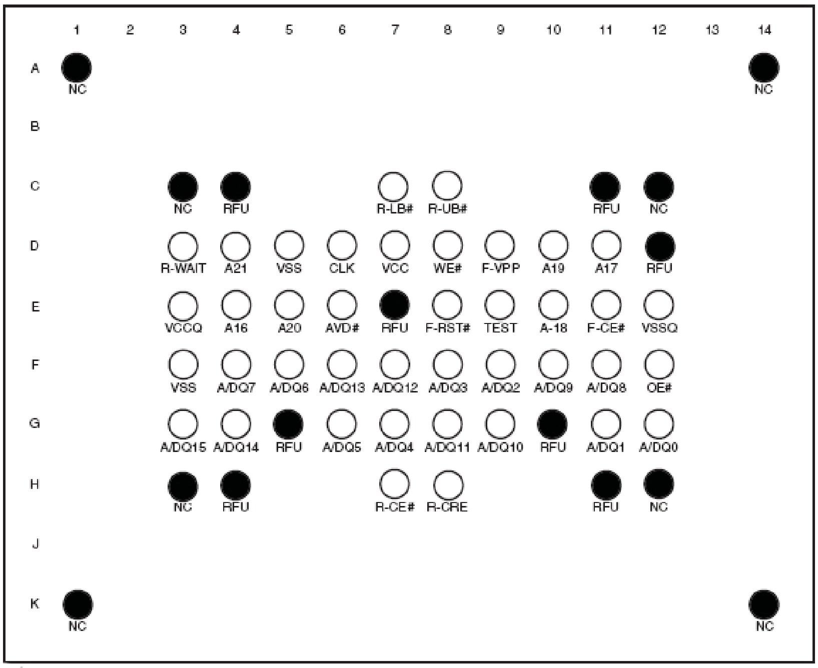
8.2 ABB (U101 : T3031FZPH)



○ Use
● Don’t use

8. BGA Pin Map

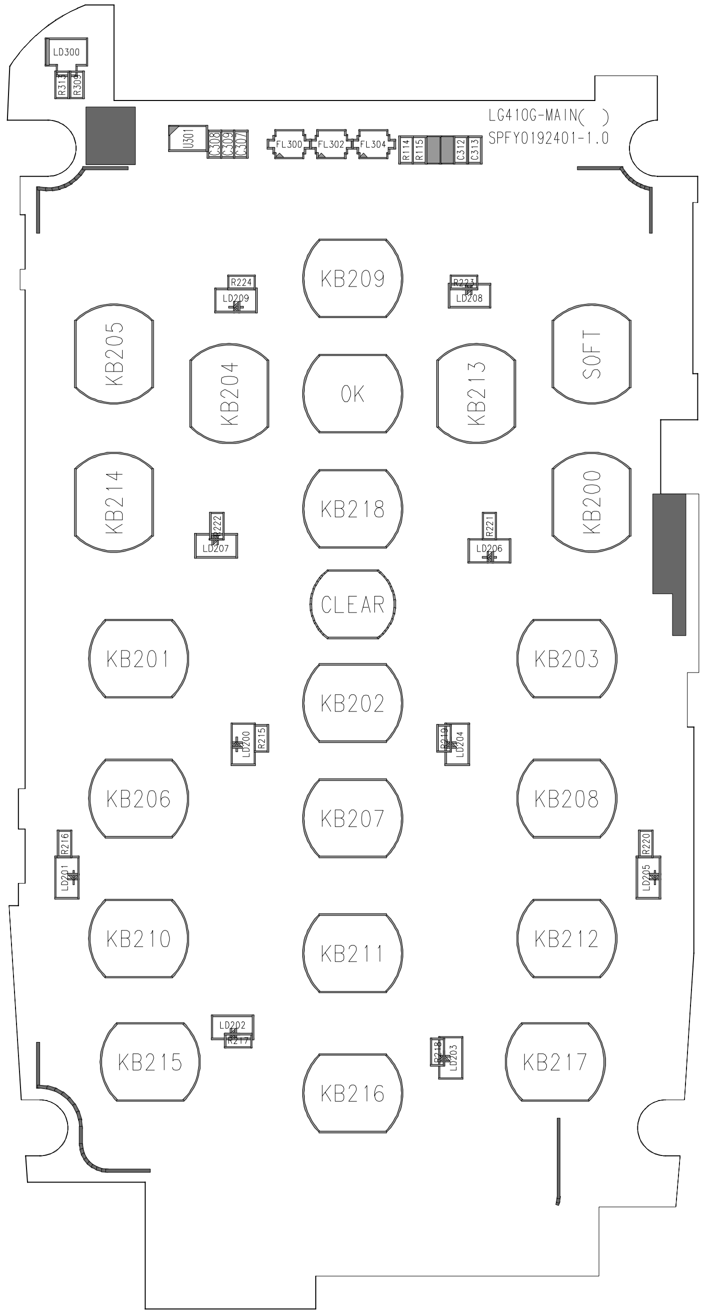
8.3 Memory (U201 : S71VS064KB0)



	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	● NC													● NC
B														
C			● NC	● RFU			○ R-LB#	○ R-UB#			● RFU	● NC		
D			○ R-WAIT	○ A21	○ VSS	○ CLK	○ VCC	○ WE#	○ F-VPP	○ A19	○ A17	● RFU		
E			○ VCCQ	○ A16	○ A20	○ AVD#	● RFU	○ F-RST#	○ TEST	○ A-18	○ F-CE#	○ VSSQ		
F			○ VSS	○ A/DQ7	○ A/DQ6	○ A/DQ13	○ A/DQ12	○ A/DQ3	○ A/DQ2	○ A/DQ9	○ A/DQ8	○ OE#		
G			○ A/DQ15	○ A/DQ14	● RFU	○ A/DQ5	○ A/DQ4	○ A/DQ11	○ A/DQ10	● RFU	○ A/DQ1	○ A/DQ0		
H			● NC	● RFU			○ R-CE#	○ R-CRE			● RFU	● NC		
J														
K	● NC													● NC

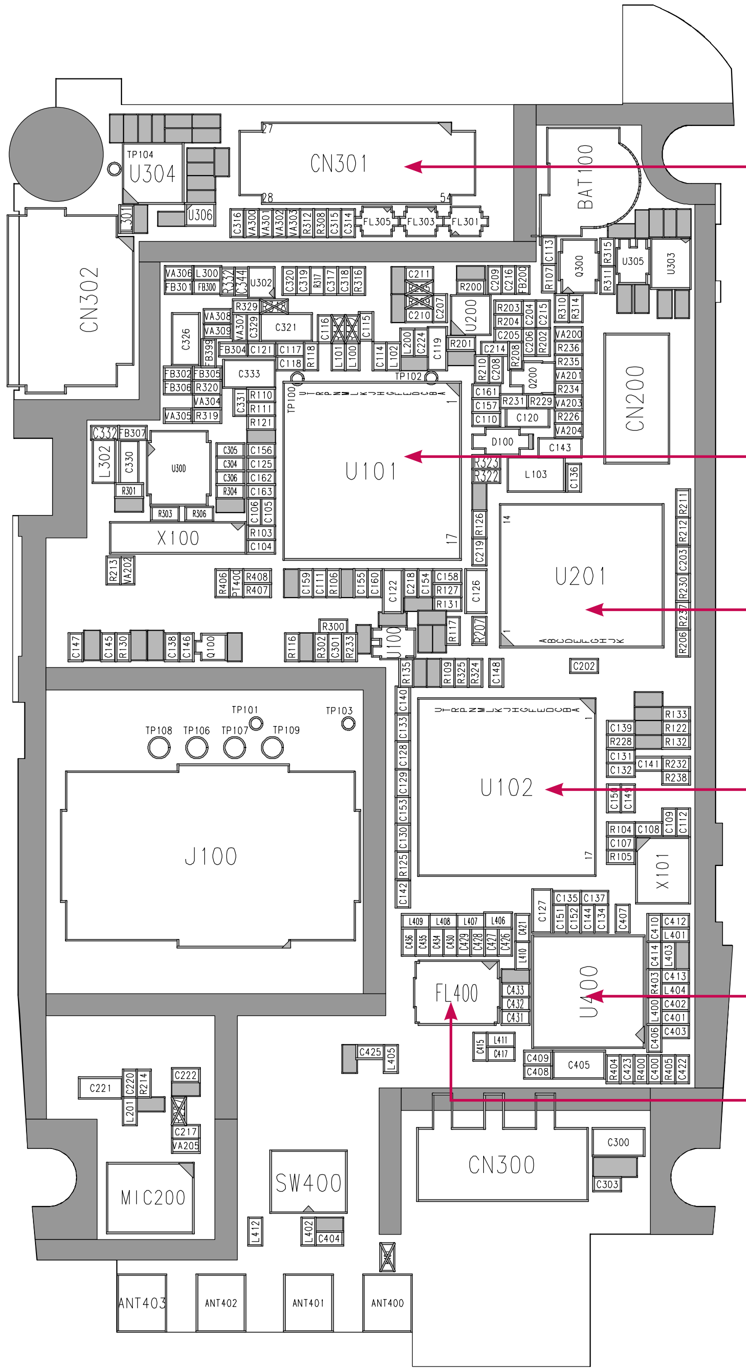
○ Use
● Don’t use

9. PCB LAYOUT



LG410G-MAIN-SPFY0192401-1.0-TOP

9. PCB LAYOUT



CN301: FPCB conn.
No Display
No Vibrator
No Sound
No Charging LED

U101: Triton lite(ABB)
No Power On
No Sound
No LED

U201: Memory
No Booting

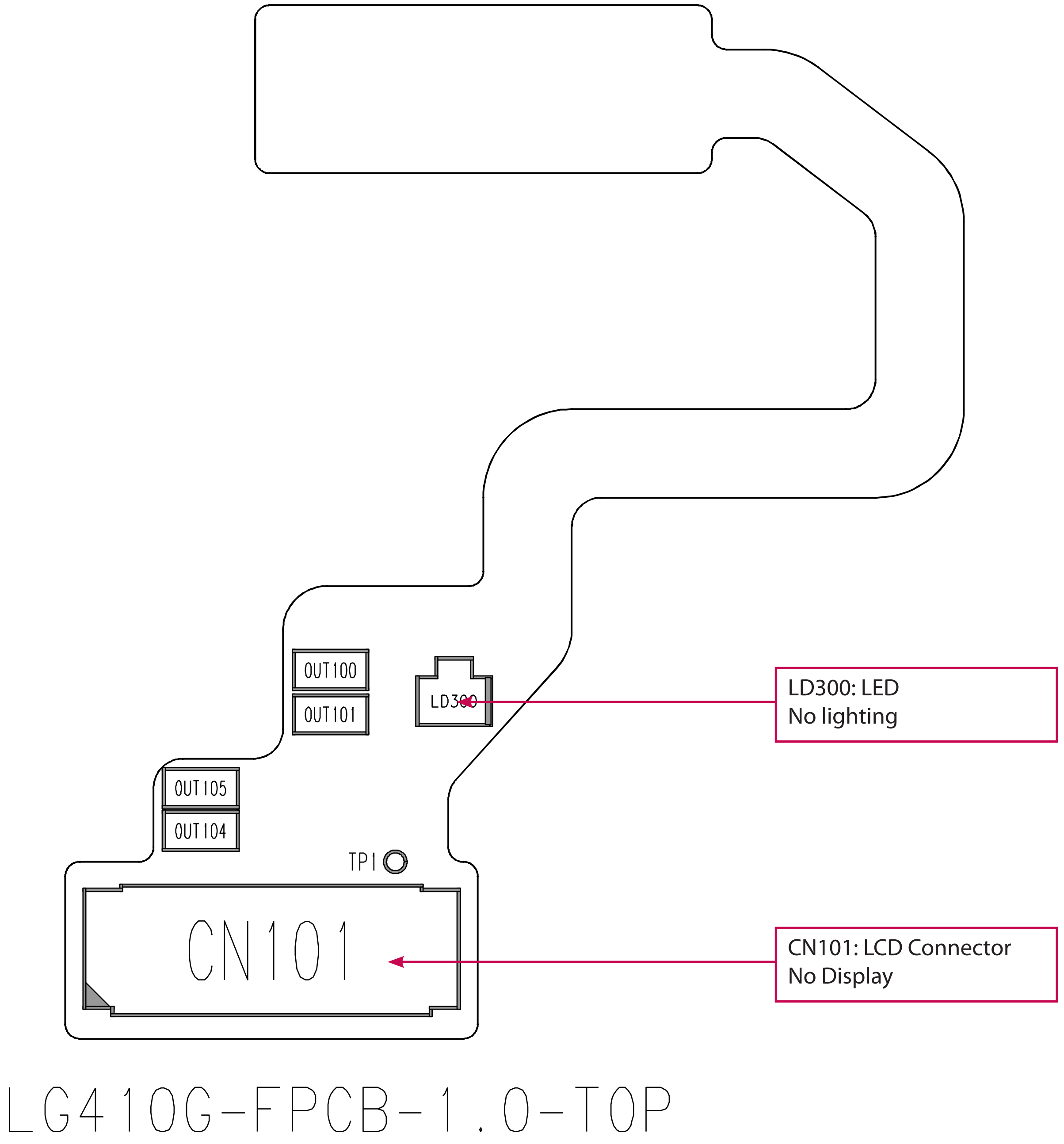
U101: Locosto (DBB)
No Booting
No Service
No Display

U400: PAM
GSM TX Power
No Service

FL400: FEM
GSM Rx Sensitivity
No Service

LG410G-MAIN-SPFY0192401-1.0-BTM

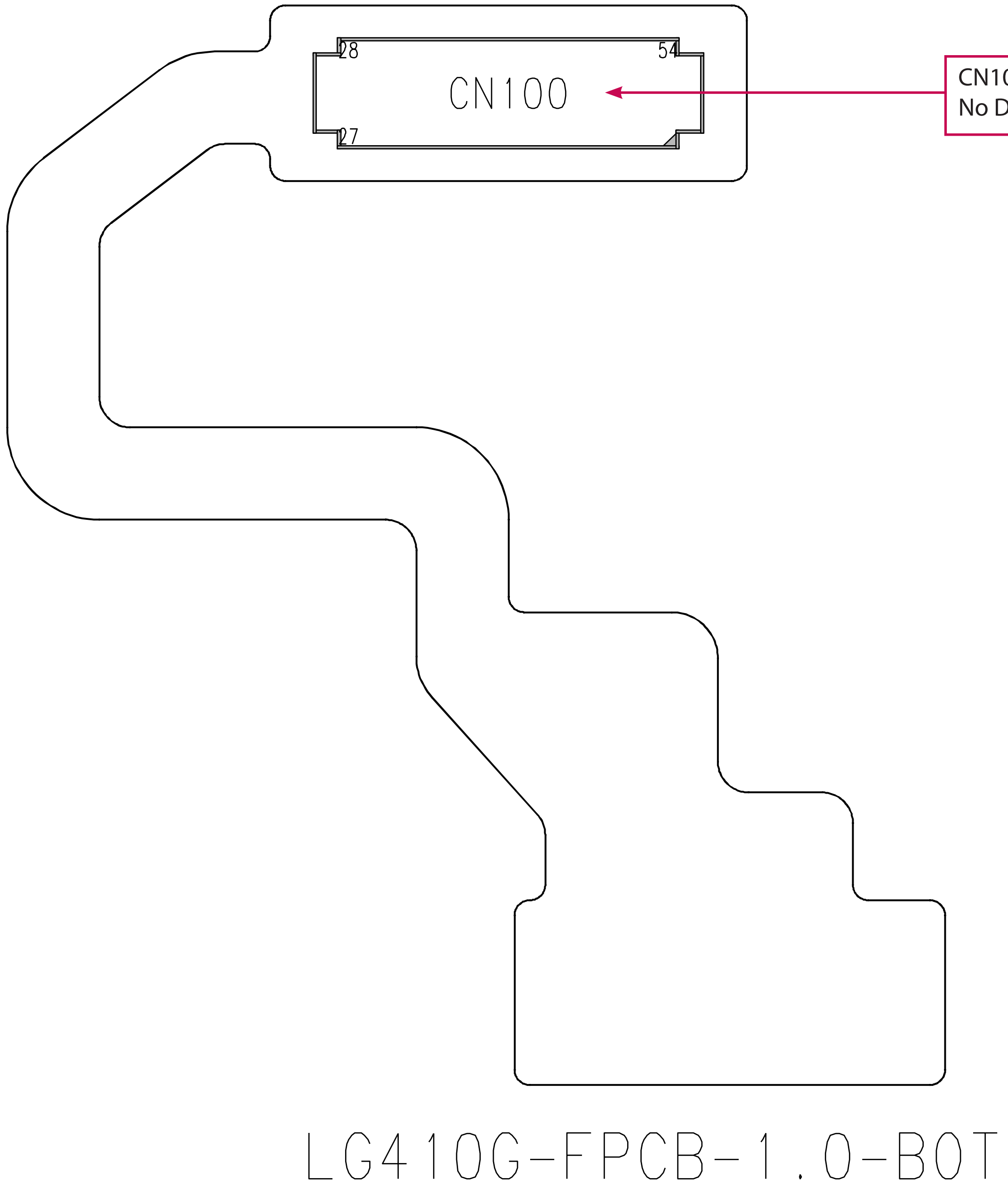
9. PCB LAYOUT



LD300: LED
No lighting

CN101: LCD Connector
No Display

9. PCB LAYOUT



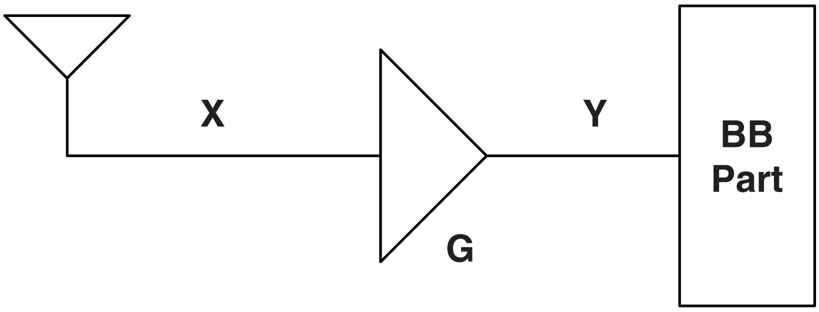
CN100: FPCB Connector
No Display

10. RF Calibration

10.1 What's the Rx Calibration?

10.1.1 Find proper AGC Gain to make the same Rx Power fed into the Base Band Part regardless of Antenna Input Level

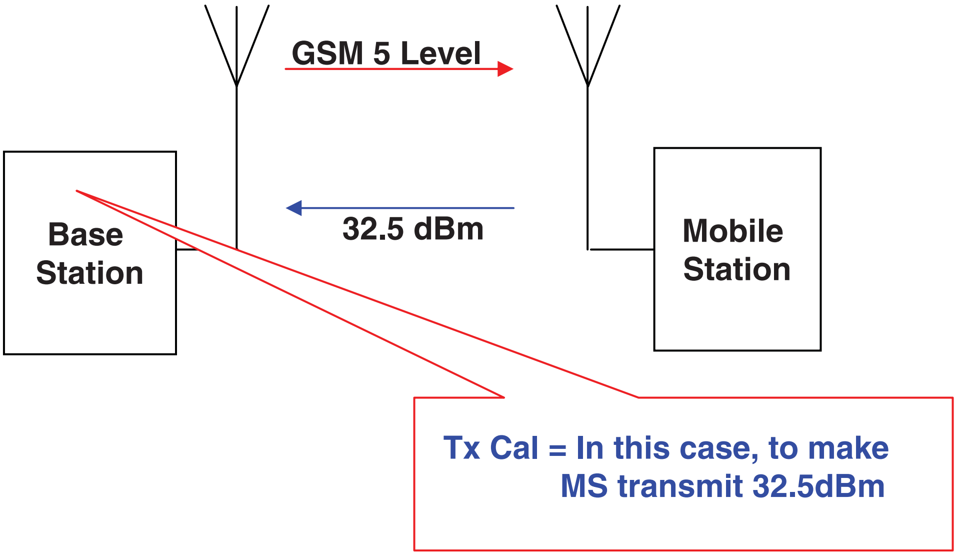
10.1.2 Can make report correct RSSI level



X(Input Level)+G(Gain)=Y

10. 2 What's the Tx Calibration?

10.2.1. To make Tx Power Level transmitted properly following the information of Base Station



Tx Cal = In this case, to make MS transmit 32.5dBm

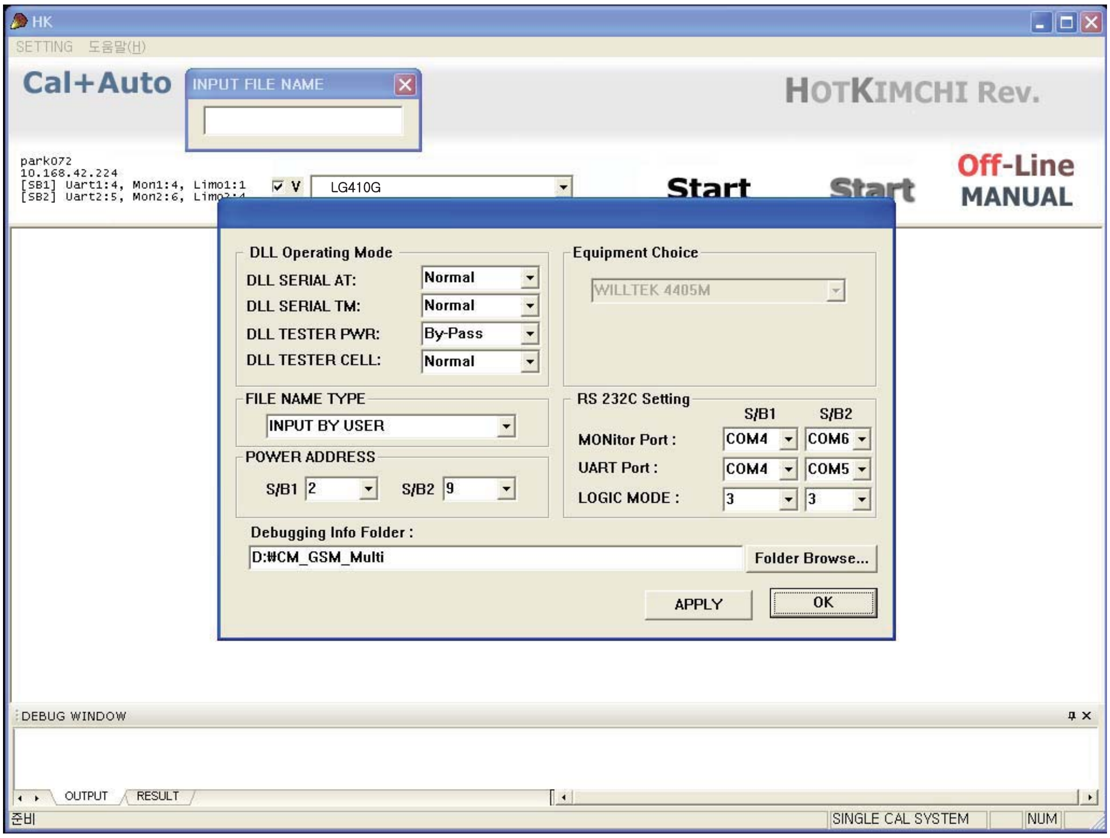
10.3. Calibration program - HOT_KIMCHI

10.3.1 Calibration Program (HOT_KIMCHI)

- Under windows 2k or XP
- PIF JIG Support Agilent 8960 Test Set

10.3.2 Required Equipments

- Test PC with PCMCIA slot
- GPIB card
- E5515C(Agilent 8960 series)
- Power supply



```
park072
10.168.42.224
[SB1] Uart1:4, Mon1:4, Limo1:1
[SB2] Uart2:5, Mon2:6, Limo
```

☑ V LG410G

DLL Operating Mode
DLL SERIAL AT: Normal
DLL SERIAL TM: Normal
DLL TESTER PWR: By-Pass
DLL TESTER CELL: Normal

Equipment Choice: WILLTEK 4405M

FILE NAME TYPE: INPUT BY USER

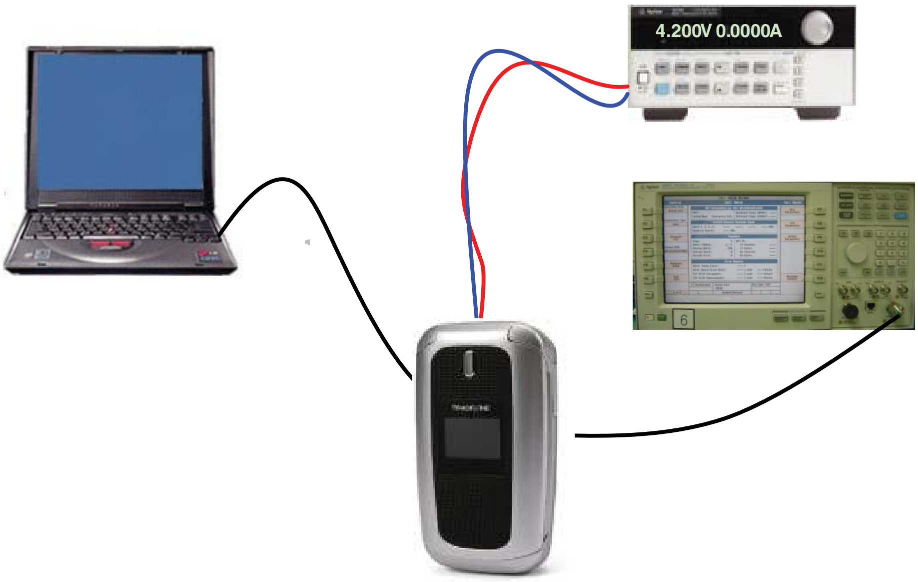
POWER ADDRESS
S/B1 2
S/B2 9

RS 232C Setting

	S/B1	S/B2
MONitor Port :	COM4	COM6
UART Port :	COM4	COM5
LOGIC MODE :	3	3

Debugging Info Folder : D:₩CM_GSM_Multi

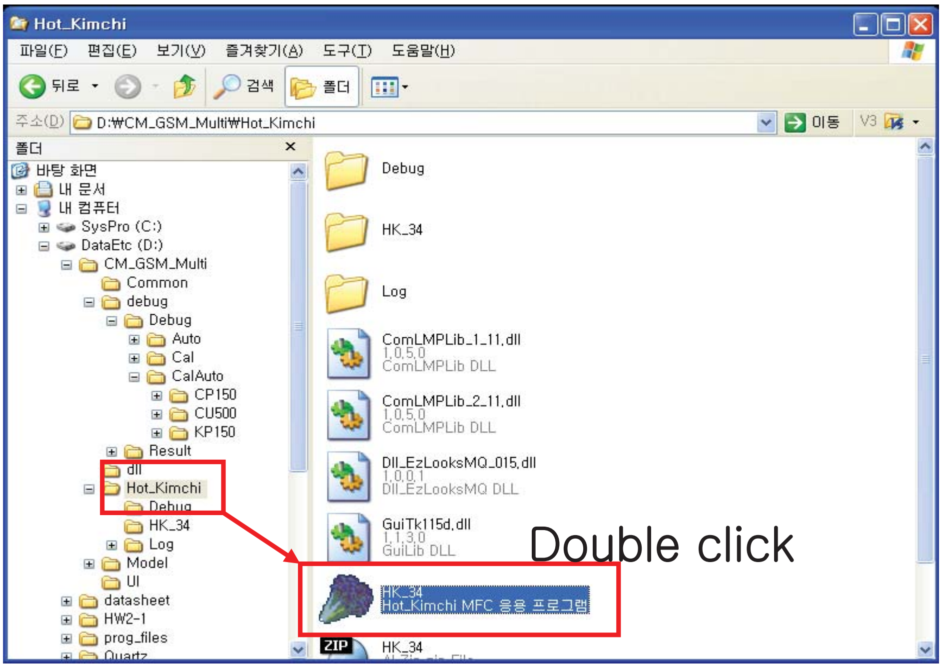
10.4. Calibration Setting



10.5. Calibration Steps

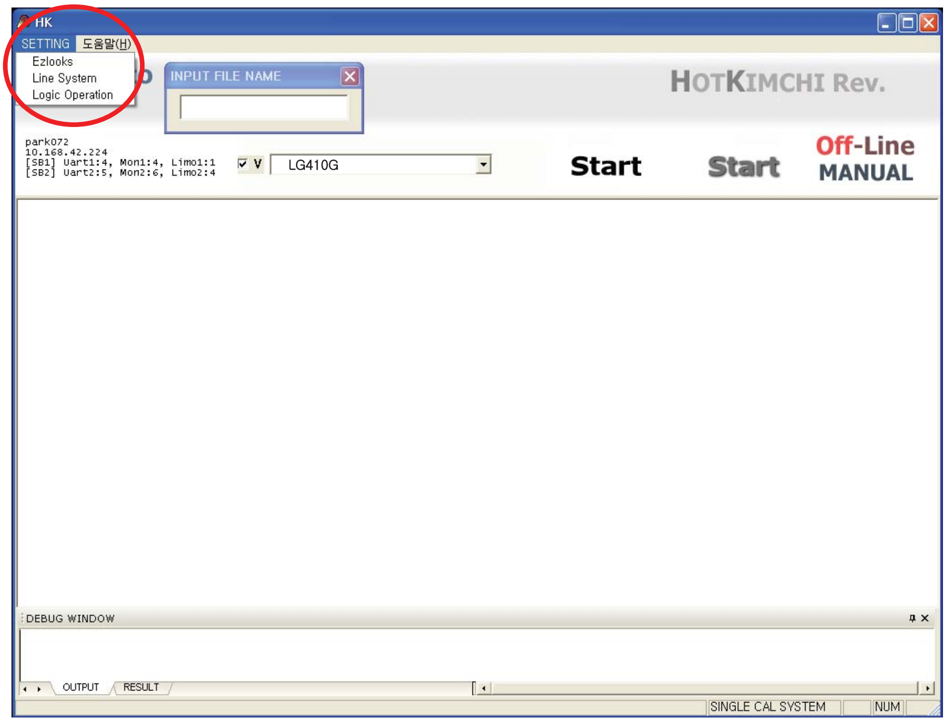
10.5.1. Turn on the Phone.

10.5.2. Execute “HK_34.exe”



Double click

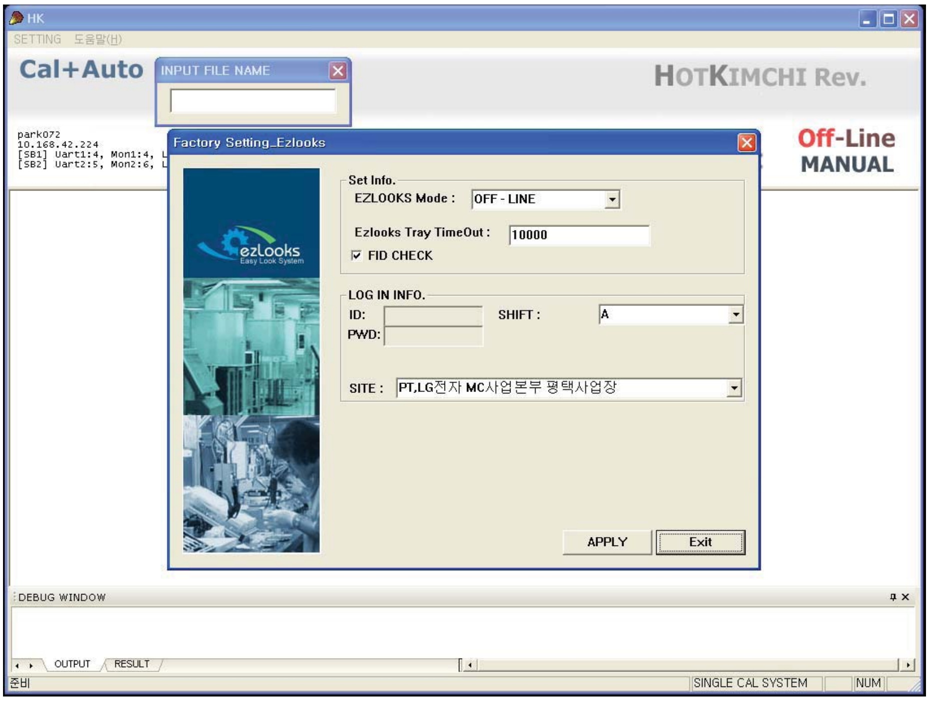
10.5.3. Click “SETTING” Menu



```
park072
10.168.42.224
[SB1] Uart1:4, Mon1:4, Limo1:1
[SB2] Uart2:5, Mon2:6, Limo2:4
```

☑ V LG410G

10.5.4. Setup “Ezlooks” menu such as the following figure



```
park072
10.168.42.224
[SB1] Uart1:4, Mon1:4,
[SB2] Uart2:5, Mon2:6,
```

EZLOOKS Mode : OFF - LINE

Ezlooks Tray TimeOut : 10000

☑ FID CHECK

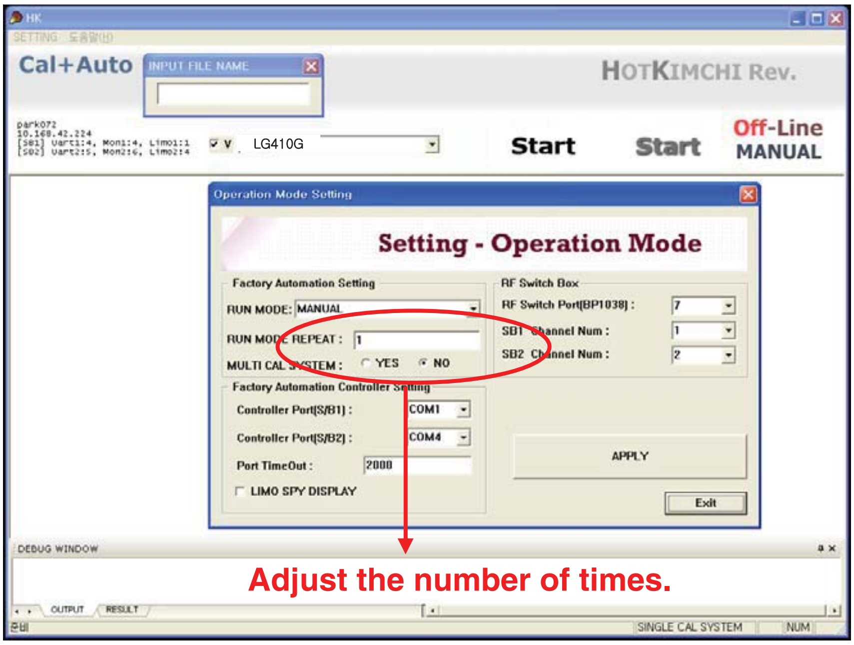
ID:

PWD:

SHIFT : A

SITE : PT,LG전자 MC사업본부 평택사업장

10.5.5. Setup “Line System” menu such as the following figure



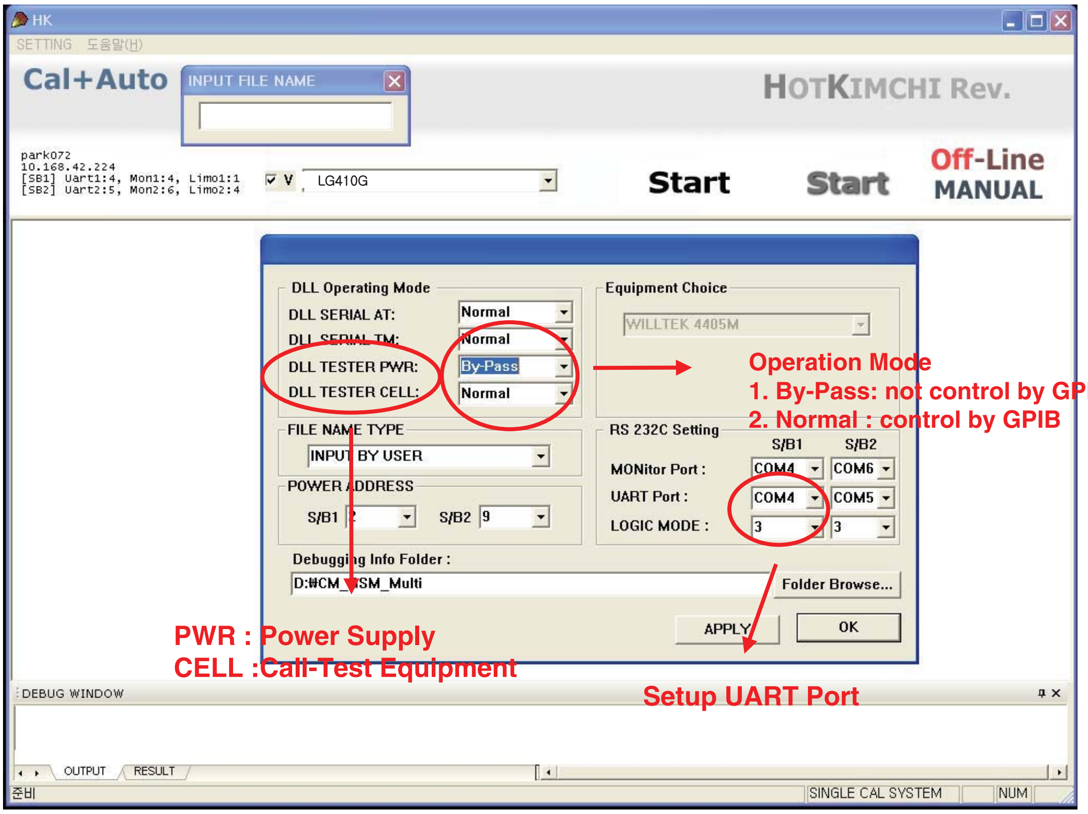
park072
10.168.42.224
[SB1] Uart1:4, Mon1:4, Limo1:1
[SB2] Uart2:5, Mon2:6, Limo2:4

☑ V LG410G

RUN MODE: MANUAL
RUN MODE REPEAT : 1
MULTI CAL SYSTEM : ○ YES ● NO
Controller Port(S/B1) : COM1
Controller Port(S/B2) : COM4
Port TimeOut : 2000
☐ LIMO SPY DISPLAY
RF Switch Port(BP1038) : 7
SB1 Channel Num : 1
SB2 Channel Num : 2

Adjust the number of times.

10.5.6.Setup Logic operation such as the following figure.



park072
10.168.42.224
[SB1] Uart1:4, Mon1:4, Limo1:1
[SB2] Uart2:5, Mon2:6, Limo2:4

☑ V LG410G

DLL SERIAL AT: Normal
DLL SERIAL TM: Normal
DLL TESTER PWR: By-Pass
DLL TESTER CELL: Normal
WILLTEK 4405M
INPUT BY USER
S/B1 2 S/B2 9

	S/B1	S/B2
MONitor Port :	COM4	COM6
UART Port :	COM4	COM5
LOGIC MODE :	3	3

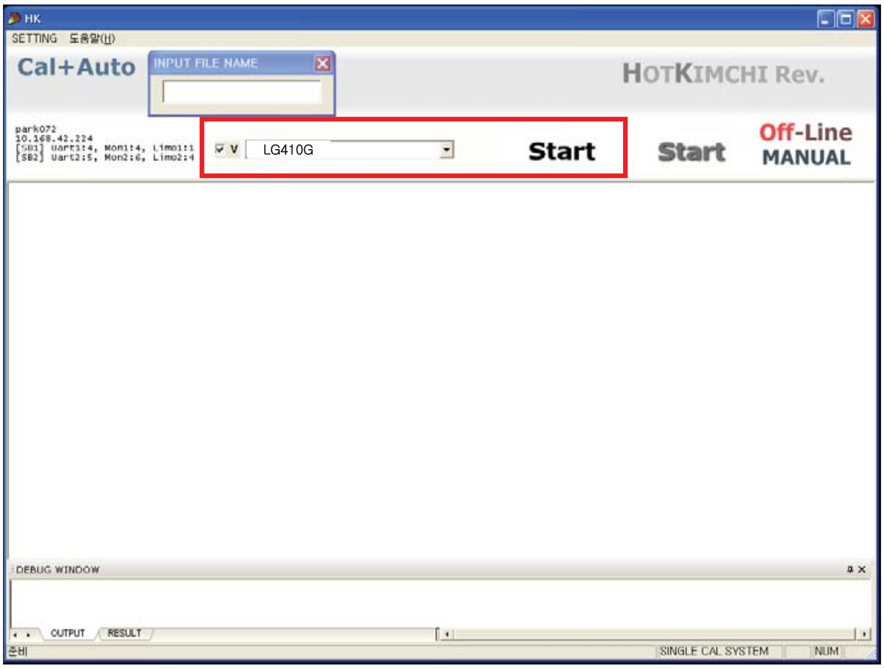
Debugging Info Folder :
D:₩CM_GSM_Multi

Operation Mode
1. By-Pass: not control by GPIB
2. Normal : control by GPIB

PWR : Power Supply
CELL :Call-Test Equipment

Setup UART Port

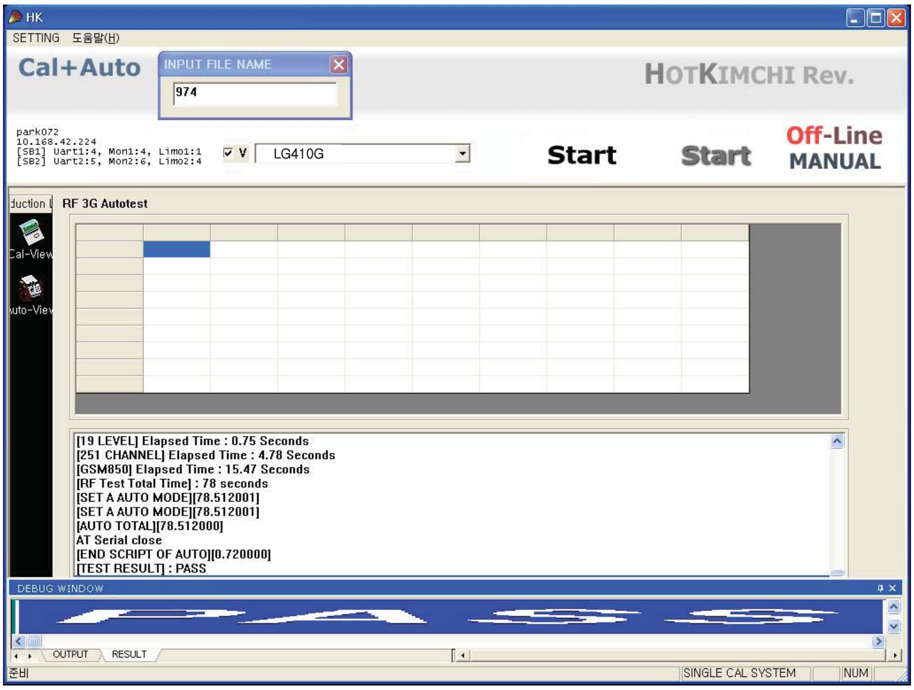
10.5.7. Select “MODEL”.
10.5.8 Click “START” for RF calibration



```
park072
10.168.42.224
[SB1] Uart1:4, Mon1:4, Limo1:1
[SB2] Uart2:5, Mon2:6, Limo2:4
```

☑ V LG410G

10.5.9. RF Calibration finishes.



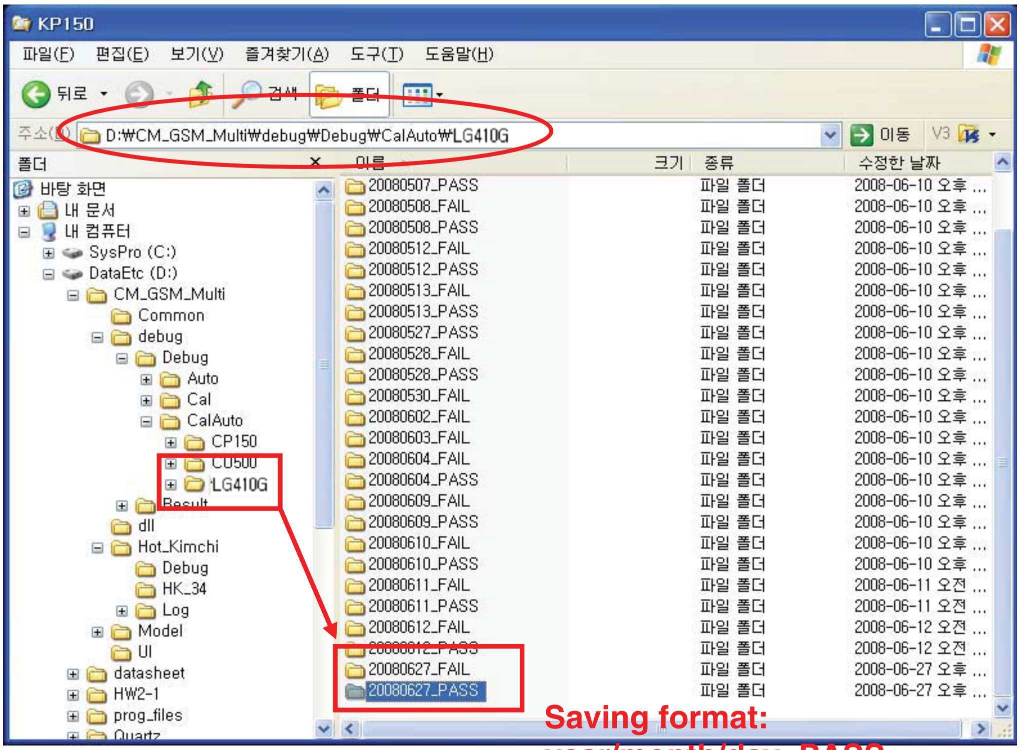
INPUT FILE NAME: 974

```
park072
10.168.42.224
[SB1] Uart1:4, Mon1:4, Limo1:1
[SB2] Uart2:5, Mon2:6, Limo2:4
```

☑ V LG410G

```
[19 LEVEL] Elapsed Time : 0.75 Seconds
[251 CHANNEL] Elapsed Time : 4.78 Seconds
[GSM850] Elapsed Time : 15.47 Seconds
[RF Test Total Time] : 78 seconds
[SET A AUTO MODE][78.512001]
[SET A AUTO MODE][78.512001]
[AUTO TOTAL][78.512000]
AT Serial close
[END SCRIPT OF AUTO][0.720000]
[TEST RESULT] : PASS
```

10.5.10. Calibration data will be saved to the following folder.



D:₩CM_GSM_Multi₩debug₩Debug₩CalAuto₩LG410G

이름	크기	종류	수정한 날짜
20080507_PASS		파일 폴더	2008-06-10 오후 ...
20080508_FAIL		파일 폴더	2008-06-10 오후 ...
20080508_PASS		파일 폴더	2008-06-10 오후 ...
20080512_FAIL		파일 폴더	2008-06-10 오후 ...
20080512_PASS		파일 폴더	2008-06-10 오후 ...
20080513_FAIL		파일 폴더	2008-06-10 오후 ...
20080513_PASS		파일 폴더	2008-06-10 오후 ...
20080527_PASS		파일 폴더	2008-06-10 오후 ...
20080528_FAIL		파일 폴더	2008-06-10 오후 ...
20080528_PASS		파일 폴더	2008-06-10 오후 ...
20080530_FAIL		파일 폴더	2008-06-10 오후 ...
20080602_FAIL		파일 폴더	2008-06-10 오후 ...
20080603_FAIL		파일 폴더	2008-06-10 오후 ...
20080604_FAIL		파일 폴더	2008-06-10 오후 ...
20080604_PASS		파일 폴더	2008-06-10 오후 ...
20080609_FAIL		파일 폴더	2008-06-10 오후 ...
20080609_PASS		파일 폴더	2008-06-10 오후 ...
20080610_FAIL		파일 폴더	2008-06-10 오후 ...
20080610_PASS		파일 폴더	2008-06-10 오후 ...
20080611_FAIL		파일 폴더	2008-06-11 오전 ...
20080611_PASS		파일 폴더	2008-06-11 오전 ...
20080612_FAIL		파일 폴더	2008-06-12 오전 ...
20080612_PASS		파일 폴더	2008-06-12 오전 ...
20080627_FAIL		파일 폴더	2008-06-27 오후 ...
20080627_PASS		파일 폴더	2008-06-27 오후 ...

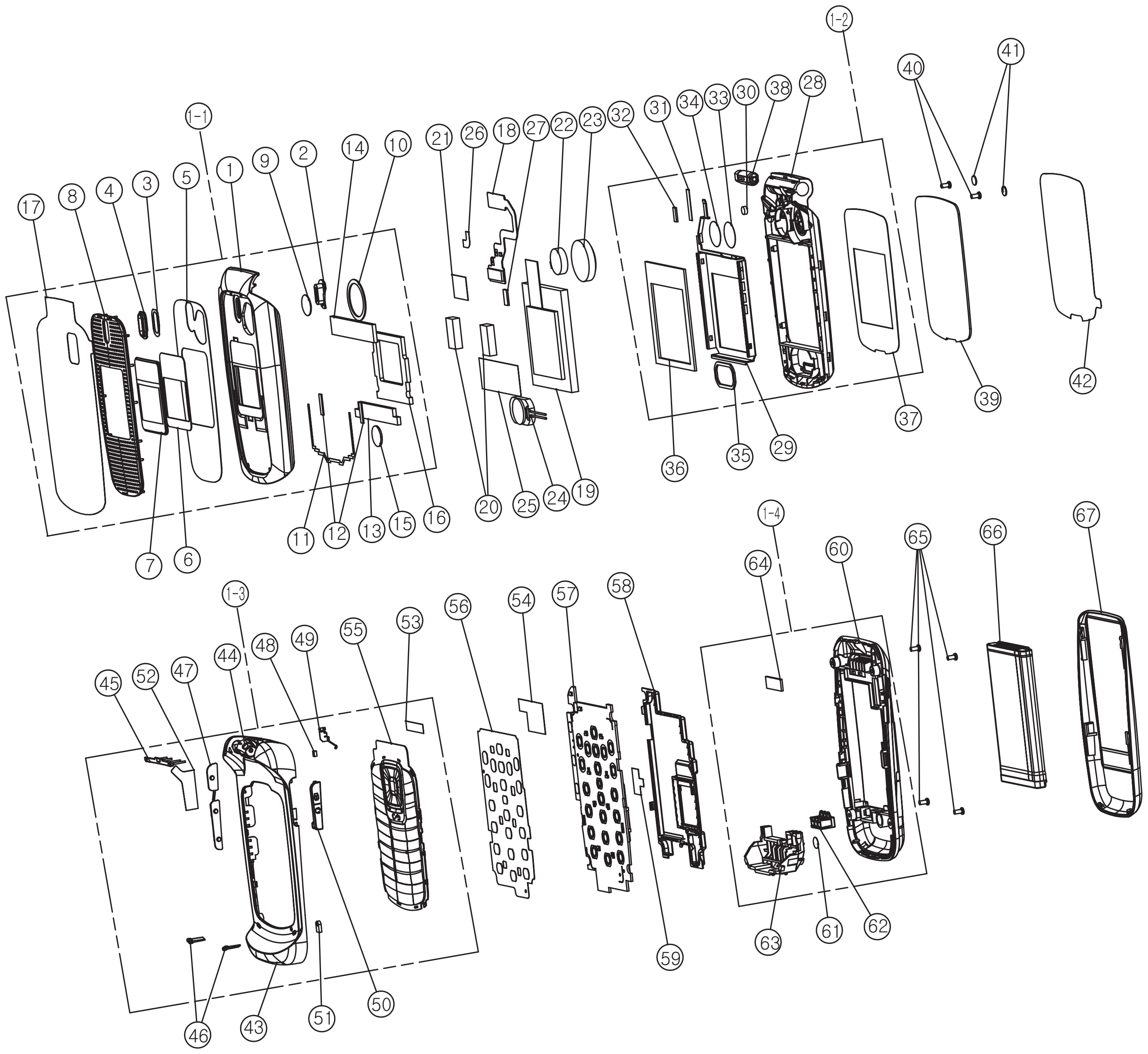
Saving format:
year/month/day_PASS

Notices:

1. The state of Phone is “ test mode “ during the CALIBRATION.
2. Calibration program automatically changes either “normal mode” or “ptest mode”.
3. RF Calibration steps as follow:
   DRP → AFC → AGC → APC
4. Phone Operation Mode

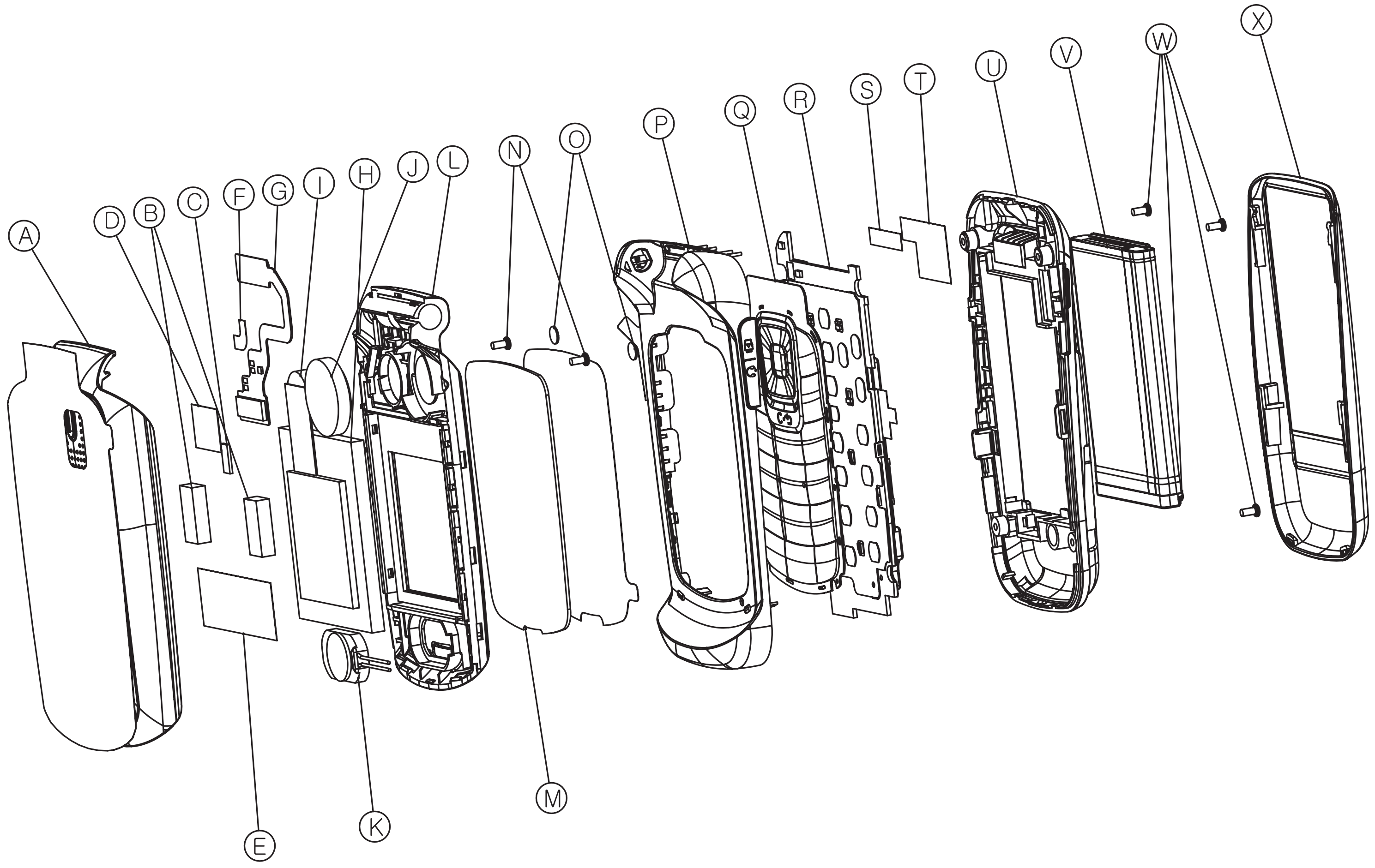
11. EXPLODED VIEW & REPLACEMENT PART LIST

11.1 EXPLODED VIEW



NO.	DESCRIPTION	Q'TY	DRAWING NO.	REMARK
1-4	COVER ASSY,REAR	1	ACGM0112903	ASS`Y
1-3	COVER ASSY,FRONT	1	ACGK0120302	ASS`Y
1-2	COVER ASSY,LOWER	1	MCJH0044002	ASS`Y
1-1	COVER ASSY,UPPER	1	ACGJ0071903	ASS`Y
67	COVER,BATTERY	1	MCJA0065301	
66	BATTERY	1	-	H/W 자재
65	SCREW, M1.4X3.0	4	GMEY0011201	
64	PAD,CONNECTOR	1	MPBU0027701	
63	INTENNA	1	-	H/W 자재
62	BATTERY,CONTACT	1	-	H/W 자재
61	TAPE,WATER □	1	MTAZ0220101	
60	COVER,REAR□	1	MCJN0085801	
59	TAPE,INSULATION,MAIN,PCB	1	MIDZ0189301	
58	SHIELD,CAN	1	MCBA0034601	
57	MAIN PCB	1	-	H/W 자재
56	DOME,ASS'Y,METAL□	1	ADCA0083601	
55	BUTTON,ASSY,MAIN	1	ABGF0007102	
54	TAPE,GASK,CONNECTOR□	1	MTAC0075501	
53	TAPE,FPCB,FRONT	1	MTAZ0216701	
52	TAPE,BUTTON,SIDE	1	MTAG0008201	
51	PAD,(MIC)□	1	MPBZ0210701	
50	CAP,EARPHONE JACK	1	MCCC0055503	
49	CONTACT,HINGE	1	MCIB0001401	
48	PAD,CONTACT,HINGE	1	MPBU0035201	
47	BUTTON,SIDE	1	MBJL0059603	
46	BUMPER	2	MBHY0020703	
45	STOPPER,FOLDER	1	MSGC0003703	
44	BUSHING,HINGE	1	MBIB0007101	
43	COVER,FRONT	1	MCJK0093002	
42	TAPE_PROTECTION,IN□	1	MTAB0275701	
41	CAP,SCREW	2	MCCH0130104	
40	SCREW, M1.4X3.0	2	GMEY0011201	
39	WINDOW,LCD	1	MWAC0111001	
38	HINGE,FOLDER	1	MHFD0016501	
37	TAPE,WINDOW	1	MTAD0092701	
36	PAD,LCD	1	MPBG0082401	
35	PAD,RECEIVER,(FILTER)	1	MPBM0024601	
34	TAPE,MOTOR	1	MTAF0018701	
33	TAPE,SPEAKER	1	MTAZ0212101	
32	PAD,CONNECTOR,LCD,SUS	1	MPBZ0204101	
31	TAPE,INSULATION,LCD,SUS	1	MTAZ0216401	
30	MAGNET□	1	MMAA0008201	
29	BRACKET,LCD	1	MBFF0020401	
28	COVER,FOLDER(LOWER)	1	MCJH0044002	
27	PAD_LCD_FPCB	1		
26	TAPE,FPCB,CON□	1	MTAZ0216901	
25	TAPE,INSULATION,LCD□	1	MTAE0036702	
24	RECEIVER,MODULE	1	-	H/W 자재
23	SPEAKER,MODULE	1	-	H/W 자재
22	MOTOR,MODULE	1	-	H/W 자재
21	TAPE,(INSULATION,CON,TO,CON)□	1	MTAZ0216501	
20	PORON,GASKET,LCD,SIDE□	2	MGAD0185901	
19	LCD,MODULE	1	-	H/W 자재
18	LCD,FPCB	1	-	H/W 자재
17	TAPE_PROTECTION,OUT□	1	MTAB0275601	
16	PAD,LCD(SUB)	1	MPBQ0038801	
15	PAD_RECEIVER□	1	MPBM0025301	
14	PAD_UPPER_2□	1	MPBQ0037701	
13	PAD_UPPER□	1	MPBZ0214801	
12	TAPE,GASK,BRACKET□	2	MTAZ0220201	
11	TAPE,GASKET,UPPER□	1	MTAZ0220301	
10	PAD,SPEAKER,(FILTER)	1	MPBN0058801	
9	PAD,MOTOR	1	MPBJ0057001	
8	DECO,UPPER□	1	MDAE0045001	
7	WINDOW,LCD,(SUB)□	1	MWAF0043201	
6	TAPE,WINDOW,SUB,(LCD)□	1	MTAE0037401	
5	TAPE,DECO,(UPPER)□	1	MTAA0173901	
4	DECO,(INDICATOR)□	1	MDAE0045101	
3	TAPE,DECO,(INDICATOR)□	1	MTAA0174001	
2	INDICATOR,LED,FOLDER□	1	MIAA0025101	
1	COVER UPPER	1	MCJJ0055401	

ASS’Y EXPLODED VIEW



X	COVER,BATTERY	MCJA0065301	1	
W	screw	GMEY0011201	4	
V	BATTERY	-	1	
U	COVER ASSY,REAR	ACGM0112901	1	
T	TAPE,GASK,CONNECTOR	MTAC0075501	1	
S	TAPE,(FPCB,FRONT)	MTAZ0216701	1	
R	MAIN PCB ASSY	-	1	
Q	BUTTON,ASSY,MAIN	ABGF0007102	1	
P	COVER ASSY,FRONT	ACGK0120302	1	
O	CAP,SCREW	MCCH0130104	2	
N	screw	GMEY0011201	2	
M	WINDOW,LCD	MWAC0111001	1	
L	COVER ASSY,FOLDER(LOWER)	ACGH0054302	1	
K	RECEIVER	-	1	
J	SPEAKER	-	1	
I	MOTOR	-	1	
H	LCD,MODULE	-	1	
G	LCD,FPCB	-	1	
F	TAPE,FPCB,CON	MTAZ0216901	1	
E	TAPE,INSULATION,LCD	MTAE0036702	1	
D	TAPE,(INSULATION,CON,TO,CON)	MTAZ0216501	1	
C	PAD,LCD,FPCB	MPBG0088401	1	
B	PORON,GASKET,LCD,SIDE	MGAD0185901	2	
A	COVER ASSY,FOLDER(UPPER)	ACGJ0071903	1	
No	Part Name	Part Number	Q'ty	Remark

11.2 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	Spec	Color	Remark
2	AAAY00	ADDITION	AAAY0345001		TITANIUM	
3	MCJA	COVER,BATTERY	MCJA0065301	MOLD, PC LUPOY SC-1004A, , , , ,	Black	X, 67
3	MMBB00	MANUAL,OPERATION	MMBB0332701	PRINTING, (empty), , , , ,	WITHOUT COLOR	
3	MTAG	TAPE,BUTTON	MTAG0013801	COMPLEX, (empty), , , , ,	BLACK	
3	MBAD00	BAG,VINYL(PE)	MBAD0005204	COMPLEX, (empty), , , , ,	Without Color	
3	MBAD01	BAG,VINYL(PE)	MBAD0003101	1700*1700*0.04t	Without Color	
3	MLAC00	LABEL,BARCODE	MLAC0004501	Export(105*40)	WITHOUT COLOR	
3	MLAZ05	LABEL	MLAZ0050901	PRINTING, (empty), , , , ,	WITHOUT COLOR	
3	MPBZ	PAD	MPBZ0036841	BOX, SW, , , , , 1 COLOR	WITHOUT COLOR	
3	MPCY00	PALLET	MPCY0005202	COMPLEX, (empty), , , , ,	Without Color	
2	APEY	PHONE	APEY0614322		TITANIUM	
3	ACGG	COVER ASSY,FOLDER	ACGG0093607		TITANIUM	
4	ABGF	BUTTON ASSY,MAIN	ABGF0007102		TITANIUM	Q, 55
4	ACGH	COVER ASSY,FOLDER(LOWER)	ACGH0054302		TITANIUM	L
5	ABFE00	BRACKET ASSY,SPEAKER	ABFE0001101		Silver	
6	MBFF00	BRACKET,LCD	MBFF0020401	PRESS, STS, , , , ,	WITHOUT COLOR	29
6	MPBZ00	PAD	MPBZ0204101	COMPLEX, (empty), , , , ,	Black	32
6	MTAZ00	TAPE	MTAZ0216401	CUTTING, NS, , , , ,	Blue	31
5	MCJH	COVER,FOLDER(LOWER)	MCJH0044002	MOLD, PC LUPOY SC-1004A, , , , ,	TITANIUM	28, 1-2
5	MHFD00	HINGE,FOLDER	MHFD0016501	CUTTING, STS, , , , ,	Silver	38
5	MMAA00	MAGNET,SWITCH	MMAA0008201	COMPLEX, (empty), , , , ,	Metal Silver	30
5	MPBG00	PAD,LCD	MPBG0082401	CUTTING, NS, , , , ,	Black	36
5	MPBM00	PAD,RECEIVER	MPBM0024601	CUTTING, NS, , , , ,	Black	35
5	MTAD00	TAPE,WINDOW	MTAD0092701	CUTTING, NS, , , , ,	Without Color	37

Level	Location No.	Description	Part Number	Spec	Color	Remark
5	MTAF00	TAPE,MOTOR	MTAF0018701	COMPLEX, (empty), , , , ,	Without Color	34
5	MTAZ00	TAPE	MTAZ0212101	COMPLEX, (empty), , , , ,	Without Color	33
4	ACGJ	COVER ASSY,FOLDER(UPPER)	ACGJ0071903		TITANIUM	A, 1-1
5	MCJJ00	COVER,FOLDER(UPPER)	MCJJ0055401	MOLD, PC LUPOY SC-1004A, , , , ,	TITANIUM	1
5	MDAE00	DECO,FOLDER(UPPER)	MDAE0045001	MOLD, PC LUPOY SC-1004A, , , , ,	BLACK	8
5	MDAE01	DECO,FOLDER(UPPER)	MDAE0045101	MOLD, PC LUPOY SC-1004A, , , , ,	SILVER	4
5	MIAA00	INDICATOR,LED	MIAA0025101	MOLD, PC LUPOY SC-1004A, , , , ,	WHITE	2
5	MPBJ00	PAD,MOTOR	MPBJ0057001	CUTTING, NS, , , , ,	Black	9
5	MPBM00	PAD,RECEIVER	MPBM0025301	CUTTING, NS, , , , ,	Black	15
5	MPBN00	PAD,SPEAKER	MPBN0058801	CUTTING, NS, , , , ,	Black	10
5	MPBQ00	PAD,LCD(SUB)	MPBQ0038801	CUTTING, NS, , , , ,	BLACK	16
5	MPBQ01	PAD,LCD(SUB)	MPBQ0037701	CUTTING, NS, , , , ,	Black	14
5	MPBZ00	PAD	MPBZ0214801	CUTTING, NS, , , , ,	Black	13
5	MTAA00	TAPE,DECO	MTAA0173901	CUTTING, NS, , , , ,	WITHOUT COLOR	5
5	MTAA01	TAPE,DECO	MTAA0174001	CUTTING, NS, , , , ,	WITHOUT COLOR	3
5	MTAB00	TAPE,PROTECTION	MTAB0275601	CUTTING, NS, , , , ,	WITHOUT COLOR	17
5	MTAE00	TAPE,WINDOW(SUB)	MTAE0037401	CUTTING, NS, , , , ,	WITHOUT COLOR	6
5	MTAZ00	TAPE	MTAZ0220201	CUTTING, NS, , , , ,	Gold	12
5	MTAZ01	TAPE	MTAZ0220301	CUTTING, NS, , , , ,	Gold	11
5	MWAF00	WINDOW,LCD(SUB)	MWAF0043201	CUTTING, PMMA MR 200, , , , ,	WITHOUT COLOR	7
4	ACGK	COVER ASSY,FRONT	ACGK0120302		TITANIUM	P, 1-3
5	MBHY	BUMPER	MBHY0020703	MOLD, Urethane Rubber S190A, , , , ,	TITANIUM	46
5	MBIB00	BUSHING,HINGE	MBIB0007101	CASTING, Zn Alloy, , , , ,	Silver	44
5	MBJL	BUTTON,SIDE	MBJL0059603	MOLD, PC LUPOY SC-1004A, , , , ,	TITANIUM	47
5	MCCC	CAP,EARPHONE JACK	MCCC0055503	MOLD, PC LUPOY SC-1004A, , , , ,	TITANIUM	50
5	MCIB00	CONTACT,HINGE	MCIB0001401	PRESS, BeCu, , , , ,	Gold	49
5	MCJK	COVER,FRONT	MCJK0093002	MOLD, PC LUPOY SC-1004A, , , , ,	TITANIUM	43
5	MPBU00	PAD,CONNECTOR	MPBU0035201	CUTTING, NS, , , , ,	Black	48

Level	Location No.	Description	Part Number	Spec	Color	Remark
5	MPBZ00	PAD	MPBZ0210701	CUTTING, NS, , , , ,	Black	51
5	MSGC	STOPPER,FOLDER	MSGC0003703	MOLD, Urethane Rubber S190A, , , , ,	TITANIUM	45
5	MTAG00	TAPE,BUTTON	MTAG0008201	CUTTING, NS, , , , ,	Without Color	52
4	GMEY00	SCREW MACHINE,BIND	GMEY0011201	1.4 mm,3 mm,MSWR3(BK) ,N ,+ ,NYLOK	WITHOUT COLOR	
4	MCCH	CAP,SCREW	MCCH0130104	COMPLEX, (empty), , , , ,	TITANIUM	O, 41
4	MGAD00	GASKET,SHIELD FORM	MGAD0185901	CUTTING, NS, , , , ,	GOLD	B, 20
4	MLAZ00	LABEL	MLAZ0038303	PRINTING, (empty), , , , ,	White	
4	MPBG	PAD,LCD	MPBG0088401	CUTTING, NS, , , , ,	BLACK	C
4	MTAB00	TAPE,PROTECTION	MTAB0275701	CUTTING, NS, , , , ,	WITHOUT COLOR	42
4	MTAE	TAPE,WINDOW(SUB)	MTAE0036702		BLUE	E, 25
4	MTAZ00	TAPE	MTAZ0216501	CUTTING, NS, , , , ,	Blue	D, 21
4	MTAZ01	TAPE	MTAZ0216701	CUTTING, NS, , , , ,	Without Color	S, 26, 53
4	MTAZ02	TAPE	MTAZ0216901	CUTTING, NS, , , , ,	Without Color	F
4	MWAC00	WINDOW,LCD	MWAC0111001	CUTTING, PMMA MR 200, , , , ,	WITHOUT COLOR	M, 39
3	ACGM	COVER ASSY,REAR	ACGM0112901		Black	U, 1-4
4	MCJN00	COVER,REAR	MCJN0085801	MOLD, PC LUPOY SC-1004A, , , , ,	Black	60
4	MPBU00	PAD,CONNECTOR	MPBU0027701	COMPLEX, (empty), , , , ,	Without Color	64
4	MTAZ00	TAPE	MTAZ0220101	CUTTING, NS, , , , ,	Without Color	61
3	GMEY00	SCREW MACHINE,BIND	GMEY0011201	1.4 mm,3 mm,MSWR3(BK) ,N ,+ ,NYLOK	WITHOUT COLOR	N, W, 40, 65
3	MLAK00	LABEL,MODEL	MLAK0006905	PRINTING, (empty), , , , ,	SILVER	
3	MTAC	TAPE,SHIELD	MTAC0075501	CUTTING, NS, , , , ,	Gold	T, 54
5	ADCA00	DOME ASSY,METAL	ADCA0083601		Without Color	56
5	MCBA00	CAN,SHIELD	MCBA0034601	PRESS, STS, , , , ,	Silver	58
5	MIDZ	INSULATOR	MIDZ0189301	CUTTING, NS, , , , ,	WITHOUT COLOR	59
5	MLAZ00	LABEL	MLAZ0038301	PID Label 4 Array	WITHOUT COLOR	

11.2 Replacement Parts

<Main component>

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

Level	Location No.	Description	Part Number	Spec	Color	Remark
1		GSM(FOLDER)	TGFF0104001		COLOR UNFIXED	
4	SACY	PCB ASSY,FLEXIBLE	SACY0093101			
5	SACE00	PCB ASSY,FLEXIBLE,SMT	SACE0084801			
6	SACC	PCB ASSY,FLEXIBLE,SMT BOTTOM	SACC0051802		TITAN SILVER	
7	EDLS00	DIODE,LED,7-SEG	EDLS0001101	RED/YELLOW-GREEN ,2 DIGIT,R/TP ,		
7	ENQY00	CONNECTOR,FFC/FPC	ENQY0014901	35 ,0.3 mm,ETC , , ,; , ,0.30MM ,FPC ,STRAIGHT ,BOTH ,SMD ,R/TP ,[empty] ,		
6	SACD	PCB ASSY,FLEXIBLE,SMT TOP	SACD0064603		TITAN SILVER	
7	ENBY00	CONNECTOR,BOARD TO BOARD	ENBY0042601	54 PIN,0.4 mm,ETC , , ,; , ,0.40MM ,[empty] ,MALE ,[empty] ,R/TP , ,		
7	SPCY00	PCB,FLEXIBLE	SPCY0163901	POLYI ,0.3 mm,MULTI-3 ,LG410G ,; , , , , , , , , ,		
4	SJMY00	VIBRATOR,MOTOR	SJMY0008412			
4	SUSY00	SPEAKER	SUSY0027101			
4	SUSY01	SPEAKER	SUSY0026401	ASSY ,8 ohm,90 dB,16 mm,Wire15mm ,; , , , , , , ,WIRE		
4	SVLM00	LCD MODULE	SVLM0029201	Main/Sub ,1.52" ,128*128 ,35.78*39.7*4.2 ,262K ,TFT ,TM ,SPFD54122B , ,0.91"/ 96*64/ Mono/ NT7543		
4	ENZY00	CONNECTOR,ETC	ENZY0019901	3 PIN,3 mm,STRAIGHT , ,		
4	SNGF00	ANTENNA,GSM,FIXED	SNGF0036501	3.0 ,-2 dBd,, ,internal, GSM850/900/1800/1900 ,; ,QUAD ,-2.0 ,50 ,3.0		
3	SAFY	PCB ASSY,MAIN	SAFY0304201		COLOR UNFIXED	
4	SAFB	PCB ASSY,MAIN,INSERT	SAFB0091002		BLACK	
5	SPKY00	PCB,SIDEKEY	SPKY0060201	POLYI , mm,MULTI-2 , ,; , , , , , , , , ,		
4	SAFF00	PCB ASSY,MAIN,SMT	SAFF0216901			
5	SAFC00	PCB ASSY,MAIN,SMT BOTTOM	SAFC0122001			
6	BAT100	BATTERY,CELL,LITHIUM	SBCL0002001	3 V,1 mAh,COIN ,3V, SMT type Backup Batt, Coin(4.8mm, 1.4t) , Pb-Free ,; ,3 ,1mAh ,COIN		
6	C100	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
6	C101	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	C102	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
6	C103	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
6	C104	CAP,CERAMIC,CHIP	ECCH0000112	15 pF,50V,J,NP0,TC,1005,R/TP		
6	C105	CAP,CERAMIC,CHIP	ECCH0000110	10 pF,50V,D,NP0,TC,1005,R/TP		
6	C106	CAP,CERAMIC,CHIP	ECCH0000112	15 pF,50V,J,NP0,TC,1005,R/TP		
6	C107	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C108	CAP,CHIP,MAKER	ECZH0001002	0.5 pF,50V ,B ,NP0 ,TC ,1005 ,R/TP		
6	C109	CAP,CERAMIC,CHIP	ECCH0000110	10 pF,50V,D,NP0,TC,1005,R/TP		
6	C110	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
6	C111	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C112	CAP,CHIP,MAKER	ECZH0000839	4.7 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C113	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C114	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
6	C115	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
6	C116	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
6	C117	CAP,CERAMIC,CHIP	ECCH0000163	47 nF,10V,K,X5R,HD,1005,R/TP		
6	C118	CAP,CERAMIC,CHIP	ECCH0000151	4.7 nF,25V,K,X7R,HD,1005,R/TP		
6	C119	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C120	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C121	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C122	CAP,CERAMIC,CHIP	ECCH0007802	4.7 uF,10V ,M ,X5R ,TC ,1608 ,R/TP		
6	C125	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C126	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
6	C127	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
6	C128	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C129	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C130	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C131	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C132	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C133	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	C134	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C135	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C136	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C137	CAP,CHIP,MAKER	ECZH0001210	470 nF,10V ,Z ,Y5V ,HD ,1005 ,R/TP		
6	C138	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C139	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C140	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C141	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C142	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C143	CAP,CERAMIC,CHIP	ECCH0005603	2.2 uF,10V ,K ,X5R ,TC ,1608 ,R/TP		
6	C144	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C145	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
6	C146	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C147	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
6	C148	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C149	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
6	C150	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
6	C151	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
6	C152	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C153	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C154	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C155	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C156	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C157	CAP,CHIP,MAKER	ECZH0001210	470 nF,10V ,Z ,Y5V ,HD ,1005 ,R/TP		
6	C158	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C159	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C160	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C161	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C162	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C163	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
6	C202	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C203	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	C204	CAP,CHIP,MAKER	ECZH0001216	220 nF,10V ,K ,X5R ,TC ,1005 ,R/TP		
6	C205	CAP,CHIP,MAKER	ECZH0001216	220 nF,10V ,K ,X5R ,TC ,1005 ,R/TP		
6	C206	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
6	C207	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
6	C208	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C209	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
6	C210	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
6	C211	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
6	C214	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
6	C215	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
6	C216	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C217	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C218	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
6	C219	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
6	C220	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C221	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
6	C222	CAP,CERAMIC,CHIP	ECCH0000179	22 nF,16V ,K ,X5R ,HD ,1005 ,R/TP		
6	C224	CAP,CERAMIC,CHIP	ECCH0000179	22 nF,16V ,K ,X5R ,HD ,1005 ,R/TP		
6	C300	CAP,CERAMIC,CHIP	ECCH0003002	10000000 pF,10V ,Z ,Y5V ,HD ,2012 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,1.25 mm		
6	C301	VARISTOR	SEVY0003601	5.6 V, ,SMD ,100pF, 1005		
6	C303	CAP,CERAMIC,CHIP	ECCH0000113	18 pF,50V,J,NP0,TC,1005,R/TP		
6	C304	CAP,CHIP,MAKER	ECZH0004402	100000 pF,16V ,Z ,X7R ,TC ,1005 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty]		
6	C305	CAP,CHIP,MAKER	ECZH0004402	100000 pF,16V ,Z ,X7R ,TC ,1005 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty]		
6	C306	CAP,CHIP,MAKER	ECZH0004402	100000 pF,16V ,Z ,X7R ,TC ,1005 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty]		
6	C314	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C315	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C316	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
6	C317	CAP,CERAMIC,CHIP	ECCH0000129	120 pF,50V,J,NP0,TC,1005,R/TP		
6	C318	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
6	C319	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	C320	CAP,CERAMIC,CHIP	ECCH0000147	2.2 nF,50V,K,X7R,HD,1005,R/TP		
6	C321	CAP,CERAMIC,CHIP	ECCH0000393	22000000 pF,6.3V ,M ,X5R ,HD ,2012 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,1.25 mm		
6	C322	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
6	C323	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
6	C325	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
6	C326	CAP,CERAMIC,CHIP	ECCH0003002	10000000 pF,10V ,Z ,Y5V ,HD ,2012 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,1.25 mm		
6	C327	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
6	C328	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
6	C329	CAP,CERAMIC,CHIP	ECCH0000147	2.2 nF,50V,K,X7R,HD,1005,R/TP		
6	C330	CAP,CERAMIC,CHIP	ECCH0007802	4.7 uF,10V ,M ,X5R ,TC ,1608 ,R/TP		
6	C331	CAP,CHIP,MAKER	ECZH0000841	56 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C332	CAP,CHIP,MAKER	ECZH0000901	24 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C333	CAP,CERAMIC,CHIP	ECCH0003002	10000000 pF,10V ,Z ,Y5V ,HD ,2012 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,1.25 mm		
6	C334	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
6	C335	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
6	C336	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
6	C337	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
6	C338	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
6	C339	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
6	C340	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
6	C341	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
6	C342	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
6	C343	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
6	C344	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	C400	CAP,CHIP,MAKER	ECZH0000844	68 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C401	CAP,CERAMIC,CHIP	ECCH0000901	2.2 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C402	CAP,CHIP,MAKER	ECZH0000822	1.5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C403	CAP,CHIP,MAKER	ECZH0000822	1.5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C404	CAP,CERAMIC,CHIP	ECCH0000701	1.2 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C405	CAP,CERAMIC,CHIP	ECCH0003002	10000000 pF,10V ,Z ,Y5V ,HD ,2012 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,1.25 mm		
6	C406	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
6	C407	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
6	C408	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
6	C409	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
6	C410	CAP,CERAMIC,CHIP	ECCH0000112	15 pF,50V,J,NP0,TC,1005,R/TP		
6	C412	CAP,CERAMIC,CHIP	ECCH0001002	180 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C413	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
6	C414	CAP,CHIP,MAKER	ECZH0000822	1.5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C415	CAP,CHIP,MAKER	ECZH0001002	0.5 pF,50V ,B ,NP0 ,TC ,1005 ,R/TP		
6	C417	CAP,CHIP,MAKER	ECZH0000802	1 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C421	CAP,CHIP,MAKER	ECZH0001002	0.5 pF,50V ,B ,NP0 ,TC ,1005 ,R/TP		
6	C422	CAP,CHIP,MAKER	ECZH0001002	0.5 pF,50V ,B ,NP0 ,TC ,1005 ,R/TP		
6	C423	CAP,CERAMIC,CHIP	ECCH0000117	27 pF,50V,J,NP0,TC,1005,R/TP		
6	C425	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
6	C426	CAP,CHIP,MAKER	ECZH0000835	3.5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C427	CAP,CHIP,MAKER	ECZH0000835	3.5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C428	CAP,CERAMIC,CHIP	ECCH0000175	2.7 pF,50V ,B ,NP0 ,TC ,1005 ,R/TP		
6	C429	CAP,CERAMIC,CHIP	ECCH0000175	2.7 pF,50V ,B ,NP0 ,TC ,1005 ,R/TP		
6	C430	CAP,CHIP,MAKER	ECZH0000835	3.5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C431	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C432	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C433	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
6	C434	CAP,CHIP,MAKER	ECZH0000835	3.5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
6	C435	CAP,CERAMIC,CHIP	ECCH0000105	4 pF,50V,C,NP0,TC,1005,R/TP		
6	C436	CAP,CERAMIC,CHIP	ECCH0000105	4 pF,50V,C,NP0,TC,1005,R/TP		

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	CN301	CONNECTOR,BOARD TO BOARD	ENBY0042701	54 PIN,0.4 mm,ETC , , ,; , ,0.40MM ,[empty] ,FEMALE ,SMD ,R/TP , ,		
6	CN302	CONNECTOR,I/O	ENRY0006801	18 PIN,0.4 mm,ETC , , ,; ,18 ,0.40MM ,ANGLE ,RECEPTACLE ,SMD ,R/TP ,		
6	D100	DIODE,SWITCHING	EDSY0017702	SOD-323 ,30 V,0.5 A,R/TP ,2.5*1.25*1.0 ,; ,0.36V ,30V ,500mA , , ,200mW ,[empty] ,[empty] ,2P ,1		
6	FB200	FILTER,BEAD,CHIP	SFBH0007102	10 ohm,1005 ,Ferrite Bead		
6	FB300	FILTER,BEAD,CHIP	SFBH0008103	1000 ohm,1005 ,chip bead, 200mA,DCR0.9ohm ,; , , ,SMD ,R/TP		
6	FB301	FILTER,BEAD,CHIP	SFBH0008103	1000 ohm,1005 ,chip bead, 200mA,DCR0.9ohm ,; , , ,SMD ,R/TP		
6	FB302	FILTER,BEAD,CHIP	SFBH0008103	1000 ohm,1005 ,chip bead, 200mA,DCR0.9ohm ,; , , ,SMD ,R/TP		
6	FB303	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
6	FB304	FILTER,BEAD,CHIP	SFBH0008101	600 ohm,1005 ,		
6	FB305	FILTER,BEAD,CHIP	SFBH0008101	600 ohm,1005 ,		
6	FB306	FILTER,BEAD,CHIP	SFBH0008103	1000 ohm,1005 ,chip bead, 200mA,DCR0.9ohm ,; , , ,SMD ,R/TP		
6	FB307	FILTER,BEAD,CHIP	SFBH0008101	600 ohm,1005 ,		
6	FB308	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
6	FB399	FILTER,BEAD,CHIP	SFBH0008103	1000 ohm,1005 ,chip bead, 200mA,DCR0.9ohm ,; , , ,SMD ,R/TP		
6	FL301	FILTER,EMI/POWER	SFEY0013201	SMD ,1608 ,EMI-ESD Filter, 4ch, 14V, 15pF, 100ohm		
6	FL303	FILTER,EMI/POWER	SFEY0013201	SMD ,1608 ,EMI-ESD Filter, 4ch, 14V, 15pF, 100ohm		
6	FL305	FILTER,EMI/POWER	SFEY0013201	SMD ,1608 ,EMI-ESD Filter, 4ch, 14V, 15pF, 100ohm		
6	FL400	FILTER,SEPERATOR	SFAY0011801	850.900 ,1800.1900 ,1.15 dB,1.3 dB,30 dB,30 dB,4532 ,Quad Band		
6	J100	CONN,SOCKET	ENSY0014601	6 PIN,ETC , ,2.54 mm,H=2.3		
6	L100	INDUCTOR,CHIP	ELCH0010628	100 nH,J ,1005 ,R/TP ,		
6	L101	INDUCTOR,CHIP	ELCH0010628	100 nH,J ,1005 ,R/TP ,		
6	L102	INDUCTOR,CHIP	ELCH0010628	100 nH,J ,1005 ,R/TP ,		
6	L103	INDUCTOR,SMD,POWER	ELCP0008006	2.2 uH,M ,- ,R/TP ,Chip power inductor ,- ,650mA(30%) ,20% ,- ,- ,1.5 ,- ,- ,SHIELD ,2X1.5X1.3MM ,[empty] ,[empty] ,Inductor,Wire Wound,Chip		
6	L200	INDUCTOR,CHIP	ELCH0010628	100 nH,J ,1005 ,R/TP ,		
6	L201	INDUCTOR,CHIP	ELCH0010628	100 nH,J ,1005 ,R/TP ,		
6	L300	INDUCTOR,CHIP	ELCH0010628	100 nH,J ,1005 ,R/TP ,		

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	L301	INDUCTOR,CHIP	ELCH0010402	270 nH,M ,1005 ,R/TP ,CHIP		
6	L302	INDUCTOR,CHIP	ELCH0010302	100 nH,J ,1608 ,R/TP ,chip coil		
6	L400	INDUCTOR,CHIP	ELCH0003826	3.3 nH,S ,1005 ,R/TP ,chip		
6	L401	INDUCTOR,CHIP	ELCH0004703	1 nH,S ,1005 ,R/TP ,		
6	L402	INDUCTOR,CHIP	ELCH0004721	2.2 nH,S ,1005 ,R/TP ,		
6	L403	INDUCTOR,CHIP	ELCH0004714	18 nH,J ,1005 ,R/TP ,		
6	L404	INDUCTOR,CHIP	ELCH0003824	10 nH,J ,1005 ,R/TP ,chip inductor,PBFREE		
6	L405	INDUCTOR,CHIP	ELCH0003827	47 nH,J ,1005 ,R/TP ,chip coil		
6	L406	INDUCTOR,CHIP	ELCH0012511	3.9 nH,S ,1005 ,R/TP ,chip coil		
6	L407	INDUCTOR,CHIP	ELCH0009110	5.1 nH,J ,1005 ,R/TP ,chip coil		
6	L408	INDUCTOR,CHIP	ELCH0012510	15 nH,G ,1005 ,R/TP ,chip coil		
6	L409	INDUCTOR,CHIP	ELCH0004710	15 nH,J ,1005 ,R/TP ,		
6	L410	INDUCTOR,CHIP	ELCH0001056	2.7 nH,S ,1005 ,R/TP ,PBFREE		
6	L411	INDUCTOR,CHIP	ELCH0003826	3.3 nH,S ,1005 ,R/TP ,chip		
6	L412	INDUCTOR,CHIP	ELCH0001412	1.8 nH,S ,1005 ,R/TP ,PBFREE		
6	MIC200	MICROPHONE	SUMY0010604	UNIT ,-38 dB,4.72*3.76 ,1.25T Bottom Silicon type ,; , , ,UNI ,1.5V , ,SMD		
6	PT400	THERMISTOR	SETY0006501	NTC ,22000 ohm,SMD ,1005, ECTH 1005 Series, Pb Free		
6	Q100	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
6	Q200	TR,BJT,NPN	EQBN0007101	EMT3 ,0.15 W,R/TP ,LOW FREQUENCY		
6	Q300	TR,BJT,ARRAY	EQBA0000406	SC-70 ,0.2 W,R/TP ,CDMA,Common use		
6	R101	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
6	R102	PCB ASSY,MAIN,PAD OPEN	SAFO0000501	0OHM_1005_DNI		
6	R103	RES,CHIP,MAKER	ERHZ0000445	220 Kohm,1/16W ,J ,1005 ,R/TP		
6	R104	RES,CHIP,MAKER	ERHZ0000245	220 Kohm,1/16W ,F ,1005 ,R/TP		
6	R105	RES,CHIP	ERHY0013401	1.5 Mohm,1/16W ,F ,1005 ,R/TP		
6	R106	RES,CHIP,MAKER	ERHZ0000213	120 Kohm,1/16W ,F ,1005 ,R/TP		
6	R107	RES,CHIP,MAKER	ERHZ0000402	10 ohm,1/16W ,J ,1005 ,R/TP		
6	R109	RES,CHIP,MAKER	ERHZ0000443	2200 ohm,1/16W ,J ,1005 ,R/TP		
6	R110	RES,CHIP,MAKER	ERHZ0000443	2200 ohm,1/16W ,J ,1005 ,R/TP		
6	R111	RES,CHIP,MAKER	ERHZ0000443	2200 ohm,1/16W ,J ,1005 ,R/TP		

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	R112	PCB ASSY,MAIN,PAD SHORT	SAFP0000501			
6	R113	PCB ASSY,MAIN,PAD SHORT	SAFP0000501			
6	R116	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
6	R117	RES,CHIP,MAKER	ERHZ0000512	82 ohm,1/16W ,J ,1005 ,R/TP		
6	R118	RES,CHIP,MAKER	ERHZ0000422	15 Kohm,1/16W ,J ,1005 ,R/TP		
6	R119	PCB ASSY,MAIN,PAD OPEN	SAFO0000501	0OHM_1005_DNI		
6	R121	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
6	R122	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R125	RES,CHIP,MAKER	ERHZ0000287	47 Kohm,1/16W ,F ,1005 ,R/TP		
6	R126	RES,CHIP,MAKER	ERHZ0000478	3.3 ohm,1/16W ,J ,1005 ,R/TP		
6	R130	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
6	R131	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R132	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R133	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R135	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
6	R200	RES,CHIP,MAKER	ERHZ0000237	20 Kohm,1/16W ,F ,1005 ,R/TP		
6	R201	RES,CHIP,MAKER	ERHZ0000237	20 Kohm,1/16W ,F ,1005 ,R/TP		
6	R202	RES,CHIP,MAKER	ERHZ0000488	4.7 ohm,1/16W ,J ,1005 ,R/TP		
6	R203	RES,CHIP,MAKER	ERHZ0000530	5.1 Kohm,1/16W ,J ,1005 ,R/TP		
6	R204	RES,CHIP,MAKER	ERHZ0000530	5.1 Kohm,1/16W ,J ,1005 ,R/TP		
6	R205	PCB ASSY,MAIN,PAD SHORT	SAFP0000501			
6	R206	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
6	R207	RES,CHIP,MAKER	ERHZ0000490	51 ohm,1/16W ,J ,1005 ,R/TP		
6	R208	RES,CHIP,MAKER	ERHZ0000488	4.7 ohm,1/16W ,J ,1005 ,R/TP		
6	R209	PCB ASSY,MAIN,PAD SHORT	SAFP0000501			
6	R210	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R211	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R212	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R213	RES,CHIP,MAKER	ERHZ0000420	150 ohm,1/16W ,J ,1005 ,R/TP		
6	R214	RES,CHIP	ERHY0003201	1000 ohm,1/16W ,F ,1005 ,R/TP		

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	R226	RES,CHIP,MAKER	ERHZ0000505	680 ohm,1/16W ,J ,1005 ,R/TP		
6	R227	PCB ASSY,MAIN,PAD SHORT	SAFP0000501			
6	R228	RES,CHIP,MAKER	ERHZ0000505	680 ohm,1/16W ,J ,1005 ,R/TP		
6	R229	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
6	R230	RES,CHIP,MAKER	ERHZ0000505	680 ohm,1/16W ,J ,1005 ,R/TP		
6	R231	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R232	RES,CHIP,MAKER	ERHZ0000505	680 ohm,1/16W ,J ,1005 ,R/TP		
6	R233	RES,CHIP,MAKER	ERHZ0000505	680 ohm,1/16W ,J ,1005 ,R/TP		
6	R234	RES,CHIP,MAKER	ERHZ0000505	680 ohm,1/16W ,J ,1005 ,R/TP		
6	R235	RES,CHIP,MAKER	ERHZ0000505	680 ohm,1/16W ,J ,1005 ,R/TP		
6	R236	RES,CHIP,MAKER	ERHZ0000505	680 ohm,1/16W ,J ,1005 ,R/TP		
6	R237	RES,CHIP,MAKER	ERHZ0000505	680 ohm,1/16W ,J ,1005 ,R/TP		
6	R238	RES,CHIP,MAKER	ERHZ0000505	680 ohm,1/16W ,J ,1005 ,R/TP		
6	R300	RES,CHIP,MAKER	ERHZ0000212	12 Kohm,1/16W ,F ,1005 ,R/TP		
6	R301	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R302	RES,CHIP,MAKER	ERHZ0000268	33 Kohm,1/16W ,F ,1005 ,R/TP		
6	R303	RES,CHIP,MAKER	ERHZ0000499	5600 ohm,1/16W ,J ,1005 ,R/TP		
6	R304	RES,CHIP,MAKER	ERHZ0000224	16 Kohm,1/16W ,F ,1005 ,R/TP		
6	R306	RES,CHIP,MAKER	ERHZ0000268	33 Kohm,1/16W ,F ,1005 ,R/TP		
6	R308	RES,CHIP,MAKER	ERHZ0000486	47 Kohm,1/16W ,J ,1005 ,R/TP		
6	R310	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
6	R311	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
6	R312	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R314	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R315	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R316	RES,CHIP,MAKER	ERHZ0000420	150 ohm,1/16W ,J ,1005 ,R/TP		
6	R317	RES,CHIP,MAKER	ERHZ0000412	1200 ohm,1/16W ,J ,1005 ,R/TP		
6	R318	PCB ASSY,MAIN,PAD SHORT	SAFP0000501			
6	R319	RES,CHIP,MAKER	ERHZ0000443	2200 ohm,1/16W ,J ,1005 ,R/TP		
6	R320	RES,CHIP,MAKER	ERHZ0000443	2200 ohm,1/16W ,J ,1005 ,R/TP		

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	R321	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
6	R322	RES,CHIP,MAKER	ERHZ0000441	22 ohm,1/16W ,J ,1005 ,R/TP		
6	R323	RES,CHIP,MAKER	ERHZ0000441	22 ohm,1/16W ,J ,1005 ,R/TP		
6	R324	RES,CHIP,MAKER	ERHZ0000483	47 ohm,1/16W ,J ,1005 ,R/TP		
6	R325	RES,CHIP,MAKER	ERHZ0000483	47 ohm,1/16W ,J ,1005 ,R/TP		
6	R326	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
6	R327	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
6	R328	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
6	R329	RES,CHIP,MAKER	ERHZ0000485	4700 ohm,1/16W ,J ,1005 ,R/TP		
6	R331	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
6	R332	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
6	R400	RES,CHIP	ERHY0000128	15K ohm,1/16W,F,1005,R/TP		
6	R401	PCB ASSY,MAIN,PAD SHORT	SAFP0000501			
6	R403	RES,CHIP,MAKER	ERHZ0000402	10 ohm,1/16W ,J ,1005 ,R/TP		
6	R404	RES,CHIP,MAKER	ERHZ0000483	47 ohm,1/16W ,J ,1005 ,R/TP		
6	R405	RES,CHIP,MAKER	ERHZ0000483	47 ohm,1/16W ,J ,1005 ,R/TP		
6	R406	RES,CHIP	ERHY0000289	270K ohm,1/16W,J,1005,R/TP		
6	R407	RES,CHIP,MAKER	ERHZ0000310	680 ohm,1/16W ,F ,1005 ,R/TP		
6	R408	RES,CHIP,MAKER	ERHZ0000286	4700 ohm,1/16W ,F ,1005 ,R/TP		
6	SW400	CONN,RF SWITCH	ENWY0006101	,SMD ,0.4 dB, ,; ,0.40MM ,STRAIGHT ,SOCKET ,SMD ,R/TP ,BR , ,		
6	U100	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
6	U101	IC	EUSY0284601	BGA ,125 PIN,R/TP ,Triton-Lite ABB		
6	U102	IC	EUSY0285303	BGA ,241 ,R/TP ,GSM/GPRS,Locosto-Security,MP3,VGA CAM,QCIF,USBFS ,; ,IC,Digital Baseband Processor		
6	U200	IC	EUSY0349001	BGA ,8 PIN,R/TP ,Class AB SPK AMP ,; ,IC,Audio Amplifier		
6	U201	IC	EUSY0340201	128NOR MUX 1.8V + 64 psRAM ,44 PIN,R/TP ,W6.2 L7.7 H1.2 ,; ,IC,NOR Flash Memory		
6	U300	IC	EUSY0351601	DFN ,12 PIN,R/TP ,Dual Charger IC (Bypass) ,; ,IC,Charger		

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	U302	IC	EUSY0186502	Micropak ,6 PIN,R/TP ,Single SPDT Analog Switch, Pb Free		
6	U303	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
6	U304	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
6	U305	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
6	U306	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
6	U400	PAM	SMPY0014001	35.5 dBm,56 %, A, dBc, dB,6x6x1.15 ,SMD ,Tri Band		
6	VA200	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
6	VA201	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
6	VA202	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
6	VA203	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
6	VA204	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
6	VA205	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
6	VA300	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
6	VA301	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
6	VA302	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
6	VA303	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
6	VA304	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
6	VA305	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
6	VA306	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
6	VA307	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
6	VA308	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
6	VA309	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
6	X100	X-TAL	EXXY0004601	.032768 MHz,20 PPM,7 pF,65000 ohm,SMD ,6.9*1.4*1.3 ,		
6	X101	X-TAL	EXXY0024102	26 MHz,10 PPM,12.5 pF,34 ohm,SMD ,3.5*2.5*0.6 ,Optimized for TI LOCOSTO ,; , ,10PPM , , , ,SMD ,R/TP		
5	SAFD00	PCB ASSY,MAIN,SMT TOP	SAFD0119801			
6	C307	CAP,CERAMIC,CHIP	ECCH0000117	27 pF,50V,J,NP0,TC,1005,R/TP		
6	C308	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	C309	CAP,CERAMIC,CHIP	ECCH0000117	27 pF,50V,J,NP0,TC,1005,R/TP		
6	C312	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		

Level	Location No.	Description	Part Number	Spec	Color	Remark
6	C313	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
6	LD200	DIODE,LED,CHIP	EDLH0005901	White ,1608 ,R/TP ,White LED		
6	LD201	DIODE,LED,CHIP	EDLH0005901	White ,1608 ,R/TP ,White LED		
6	LD202	DIODE,LED,CHIP	EDLH0005901	White ,1608 ,R/TP ,White LED		
6	LD203	DIODE,LED,CHIP	EDLH0005901	White ,1608 ,R/TP ,White LED		
6	LD204	DIODE,LED,CHIP	EDLH0005901	White ,1608 ,R/TP ,White LED		
6	LD205	DIODE,LED,CHIP	EDLH0005901	White ,1608 ,R/TP ,White LED		
6	LD206	DIODE,LED,CHIP	EDLH0005901	White ,1608 ,R/TP ,White LED		
6	LD207	DIODE,LED,CHIP	EDLH0005901	White ,1608 ,R/TP ,White LED		
6	LD208	DIODE,LED,CHIP	EDLH0005901	White ,1608 ,R/TP ,White LED		
6	LD209	DIODE,LED,CHIP	EDLH0005901	White ,1608 ,R/TP ,White LED		
6	R114	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R115	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
6	R215	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
6	R216	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
6	R217	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
6	R218	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
6	R219	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
6	R220	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
6	R221	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
6	R222	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
6	R223	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
6	R224	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
6	R309	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
6	R313	RES,CHIP,MAKER	ERHZ0000458	300 ohm,1/16W ,J ,1005 ,R/TP		
6	SPFY00	PCB,MAIN	SPFY0192401	FR-4 ,0.8 mm,BUILD-UP 6 ,LG410G MAIN ,; , , , , , , , , ,		
6	U301	IC	EUSY0362601	SSON004 ,4 ,R/TP ,Hall IC ,; ,IC,CMOS		

11.3 Accessory

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

Level	Location No.	Description	Part Number	Spec	Color	Remark
3	SBPL00	BATTERY PACK,LI-ION	SBPL0096602	3.7 V,800 mAh,1 CELL,PRISMATIC ,463450,INNERPACK,NOTTH AMERICA ,; ,3.7 ,800 ,160 ,PRISMATIC ,4.6X34X50 ,5.1X34X54 ,BLACK ,INNERPACK ,		
3	SSAD00	ADAPTOR,AC-DC	SSAD0028101	100-240V ,5060 Hz,5.6 V,.4 A,UL, CSA ,AC-DC Adaptor ,; ,85Vac~264Vac ,5.6V +/-0.8V ,400mA ,5060 , ,WALL 2P ,I/O CONNECTOR ,		