Service Manual

Model : BL40

Internal Use Only

Service Manual

BL40

Date: August, 2009 / Issue 1.0

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1. INTRODUCTION

1.1 Purpose

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

1.2 Regulatory Information

A. Security

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

The manufacturer will not be responsible for any charges that result from such unauthorized use.

B. Incidence of Harm

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

C. Changes in Service

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

D. Maintenance Limitations

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

E. Notice of Radiated Emissions

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

F. Pictures

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

G. Interference and Attenuation

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

H. Electrostatic Sensitive Devices

ATTENTION

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

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

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 milli watt
DSP	Digital Signal Processing
EEPROM	Electrical Erasable Programmable Read-Only Memory
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
SAW	Surface Acoustic Wave
SIM	Subscriber Identity Module
SLR	Sending Loudness Rating
SRAM	Static Random Access Memory
PSRAM	Pseudo SRAM
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. SYSTEM SPECIFICATION

2.1 Product Name

BL40 : WCDMA900/2100+EGSM/GSM850/DCS/PCS

(HSDPA 7.2Mbps / GPRS Class 12 / EDGE Class 12)

2.2 Supporting Standard

Item	Feature	Comment
Supporting Standard	WCDMA(FDD1,8)/EGSM/GSM850/DCS1800/PCS1900 with seamless handover Phase 2+(include AMR) SIM Toolkit : Class 1, 2, 3, C-E	
Frequency Range	WCDMA(FDD1) TX : 1920 – 1980 MHz WCDMA(FDD1) RX : 2110 – 2170 MHz WCDMA(FDD8) TX : 880 – 915 MHz WCDMA(FDD8) RX : 925 – 960 MHz EGSM TX : 880 – 915 MHz EGSM RX : 925 – 960 MHz GSM850 TX : 824 – 849 MHz GSM850 RX : 869 – 894 MHz DCS1800 TX : 1710 – 1785 MHz DCS1800 RX : 1805 – 1880 MHz PCS1900 TX : 1850 – 1910 MHz PCS1900 RX : 1930 – 1990 MHz	
Application Standard	WAP 2.0, JAVA 2.0	

2.3 Main Parts : GSM Solution

Item	Part Name	Comment
Digital Baseband	MSM7200A : Qualcomm	
Analog Baseband	PM7540 : Qualcomm	
RF Chip	RTR6285 : Qualcomm	

2.4 HW Features

Item		Feature	Comment
Form Factor		Bar type	
Battery		1) Capacity Standard : Li-Ion, 1000mAh	
		2) Packing Type : Soft Pack	
Size		Standard : 128 x 51 x 10.9mm	
Weight		130g	With Battery
Volume		TBD	
PCB		LX-BUMP L1B2 10 Layers , 0.8t	
Stand by time		2G Up to 333 hrs 3G Up to 277 hrs	@ Paging Period 5 (2G) @ DRX 7 (3G)
Charging time		3 hrs	@ Power Off / 1000mAh
Talk time		2G Up to 181mins 3G Up to 240 mins	@ Power Level 5 (2G) @ Tx = 12dBm (3G)
RX sensitivity		WCDMA(FDD1) : -106.7 dBm WCDMA(FDD8) : -103.7 dBm EGSM : -105 dBm GSM850 : -105 dBm DCS 1800 : -105 dBm PCS 1900 : -105 dBm	
TX output power	WCDMA/ GSM/ GPRS	WCDMA : 24dBm/3.84MHz,+1/-3dBm EGSM : 33dBm GSM850 : 33 dBm DCS 1800 : 30 dBm PCS 1900 : 30 dBm	Class3(WCDMA) Class4 (EGSM) Class4 (GSM850) Class1 (PCS) Class1 (DCS)
	EDGE	GSM 900 : 27 dBm DCS 1800 : 26 dBm PCS 1900 : 26 dBm	E2 (GSM900) E2 (PCS) E2 (DCS)
GPRS compatibility		GPRS Class 12	
EDGE compatibility		EDGE Class 12	
SIM card type		Plug-In SIM 3V /1.8V	
Display		Main LCD TFT Main LCD(4', 345 x 800)	
Built-in Camera		5M CMOS Camera 1.3M CMOS Camera (VGA)	
Status Indicator		Yes	
Keypad		Function Key : 3 Side Key : 2	Function Key: CAM, Lock, short Side Key : Volume up/down
ANT		Main : Internal Fixed Type	
System connector		5 Pin	
Ear Phone Jack		3.5Phi, 4 Pole, Stereo	

PC synchronization	Yes	
Memory	NAND Flash : 2Gbit SDRAM : 1Gbit	
Speech coding	FR, EFR, HR,AMR	
Data & Fax	Built in Data & Fax support	
Vibrator	Built in Vibrator	
Blue Tooth	V2.0, A2DP	
MIDI(for Buzzer Function)	SW Decoded 72Poly	
Music Player	MP3/ WMA/AAC/HE-AAC/EAAC+	
Video Player	MPEG4, H.263, WMV9	
Camcorder	MPEG4, H.263,	
Voice Recording	Yes	
Speaker Phone mode Support	Yes	
Travel Adapter	Yes	
CDROM	Yes	
Stereo Headset	Yes	
Data Cable	Yes	
T-Flash (External Memory)	Yes	

2.5 SW Features

Item	Feature	Comment
RSSI	0 ~ 7 Levels	
Battery Charging	0 ~ 3 Levels	
Key Volume	0 ~ 7 Level	
Audio Volume	1 ~ 20 Level	
Time / Date Display	Yes	
Multi-Language	Yes	English/Spanish/Portuguese/Korean
Quick Access Mode	Dialing / Call Log / Contact / Menu / Message / Camera / Favorite	
PC Sync	Schedule / Phonebook / MEMO / SMS / Download (Photo, file)	
Speed Dial	Yes (1~9)	Voice mail center -> 1 key
Profile	Yes	
CLIP / CLIR	Yes	
Phone Book	Name + 5 Numbers + 1 Memo + 2 e-mail + 3 Group Select + Picture + Ringtone + Anniversary day	Total 1000 Member
Last Dial Number	Yes	Total Call DB Max 100 LDN (SIM) N/A
Last Received Number	Yes	Total Call DB Max 100 LDN (SIM) N/A
Last Missed Number	Yes	Total Call DB Max 100 LDN (SIM) N/A
Search by Number / Name	Name and Number	
Group	30	
Fixed Dial Number	Yes	
Service Dial Number	Yes	
Own Number	Yes	
Voice Memo	Yes	
Call Reminder	Yes	
Network Selection	Automatic	
Mute	Yes	
Call Divert	Yes	
Call Barring	Yes	
Call Charge (AoC)	Yes	
Call Duration	Yes	
SMS (EMS)	1000 (10)	EMS : Release4 (Except Text align)
SMS Over GPRS	Yes	
EMS Melody / Picture Send / Receive / Save	Yes Receive only	
MMS MPEG4 Send / Receive / Save	Yes Yes	
Long Message	MAX 1000 Characters	SMS 7pages

Cell Broadcast	Yes	
Download	Over the WAP	
Game	Yes	
Calendar	Yes	
Memo	50	
World Clock	Yes	
Unit Convert	Currency/Surface/Length/Volume/Weight/Temperature/Velocity	
Stop Watch	Yes	
Wall Paper	Yes	
WAP Browser	Over WAP 2.0	Obigo
Download Melody / Wallpaper	Yes	Over WAP
SIM Lock	Yes	Operator Dependent
SIM Toolkit	Class 1, 2, 3, C-E	
MMS	Yes	Obigo +LG MMS Client
EONS	Yes	
CPHS	Yes	V4.2
ENS	No	
Camera	Yes	5M AF / Digital Zoom : x16
JAVA	Yes	CLDC V1.1 / MIDP V2.0 Download Over WAP
Voice Dial	No	
IrDa	No	
Bluetooth	Yes	V2.0 HSP, HFP, OPP, FTP(server), BPP, A2DP, AVRCP
FM radio	Yes	
GPRS	Yes	Class 12
EDGE	Yes	Class 12
Hold / Retrieve	Yes	
Conference Call	Yes	Max. 6
DTMF	Yes	
Memo pad	Yes	
TTY	No	
AMR	Yes	
SyncML	Yes	
IM	No	
Email	Yes	

2.6 HW SPEC.

1) GSM transceiver specification

Item	Specification
Phase Error	Rms : 5° Peak : 20 °
Frequency Error	GSM : 0.1 ppm DCS/PCS : 0.1 ppm
EMC(Radiated Spurious Emission Disturbance)	GSM/DCS : < -28dBm
Transmitter Output power and Burst Timing	GSM : 5dBm – 33dBm ± 3dB DCS/PCS : 0dBm – 30dBm ± 3dB
Burst Timing	<3.69us
Spectrum due to modulation out to less than 1800kHz offset	200kHz : -36dBm 600kHz : -51dBm/-56dBm
Spectrum due to modulation out to larger than 1800kHz offset to the edge of the transmit band	GSM : 1800-3000kHz :< -63dBc(-46dBm) 3000kHz-6000kHz : <-65dBc(-46dBm) 6000kHz < : < -71dBc(-46dBm) DCS : 1800-3000kHz :< -65dBc(-51dBm) 6000kHz < : < -73dBc(-51dBm)
Spectrum due to switching transient	400kHz : -19dBm/-22dBm(5/0), -23dBm 600kHz : -21dBm/-24dBm(5/0), -26dBm
Reference Sensitivity – TCH/FS	Class II(RBER) : -105dBm(2.439%)
Usable receiver input level range	0.012(-15 - -40dBm)
Intermodulation rejection – Speech channels	± 800kHz, ± 1600kHz : -98dBm/-96dBm (2.439%)
AM Suppression – GSM : -31dBm - DCS : -29dBm	-98dBm/-96dBm (2.439%)
Timing Advance	± 0.5T

2) WCDMA transmitter specification

Item	Specification
Transmit Frequency	Band1 : 1920 MHz ~ 1980 MHz Band8 : 880MHz~915MHz
Maximum Output Power	+24 dBm / 3.84 MHz, +1 / -3 dB
Frequency Error	within ±0.1 PPM
Open Loop Power Control	Normal Conditions : within ±9 dB, Extreme Conditions : within ±12 dB
Minimum Transmit Power	< -50 dBm /3.84 MHz
Occupied Bandwidth	< 5 MHz at 3.84 Mcps (99% of power)
Adjacent Channel Leakage Power Ratio (ACLR)	> 33 dB @ ±5 MHz, > 43 dB @ ±10 MHz
Spurious Emissions |f-fc| > 12.5 MHz	< -36 dBm / 1 kHz RW @ 9 kHz ≤ f < 150 kHz < -36 dBm / 10 kHz RW @ 150 KHz ≤ f < 30 MHz < -36 dBm / 100 kHz RW @ 30 MHz ≤ f < 1 GHz < -30 dBm / 1 MHz RW @ 1 GHz ≤ f < 12.75 GHz < -60 dBm / 3.84 MHz RW @ 869 MHz ≤ f ≤ 894 MHz < -60 dBm / 3.84 MHz RW @ 1930 MHz ≤ f ≤ 1900 MHz < -60 dBm / 3.84 MHz RW @ 2110 MHz ≤ f ≤ 2155 MHz < -67 dBm / 100 kHz RW @ 925 MHz ≤ f ≤ 935 MHz < -79 dBm / 100 kHz RW @ 935 MHz < f ≤ 960 GHz < -71 dBm / 100 kHz RW @ 1805 MHz ≤ f ≤ 1880 MHz < -41 dBm / 300 kHz RW @ 1884.5 MHz < f < 1919.6 MHz
Transmit Intermodulation	< -31 dBc @ 5 MHz & < -41 dBc @ 10 MHz when Interference CW Signal Level = -40 dBc
Error Vector Magnitude	< 17.5 %, when Pout ≥ -20 dBm
Peak Code Domain Error	< -15 dB at Pout ≥ -20 dBm

3) WCDMA receiver specification

Item	Specification
Receive Frequency	Band1 : 2110 ~ 2170 MHz Band8 : 925~960MHz
Reference Sensitivity Level	Band1 : BER < 0.001 when Îor = -106.7 dBm / 3.84 MHz Band8 : BER < 0.001 when Îor = -103.7 dBm / 3.84 MHz
Maximum Input Level	BER < 0.001 when Îor = -25 dBm / 3.84 MHz
Adjacent Channel Selectivity (ACS)	ACS > 33 dB where BER < 0.001 when Îor = -92.7 dBm / 3.84 MHz & Ioac = –52 dBm / 3.84 MHz @ ±5 MHz
Blocking Characteristic	BER < 0.001 when Îor = -103.7 dBm / 3.84 MHz & Iblocking = -56 dBm / 3.84 MHz @ Fuw(offset) = ±10 MHz or Iblocking = -44 dBm / 3.84 MHz @ Fuw(offset) = ±15 MHz
Spurious Response	BER < 0.001 when Îor = -103.7 dBm / 3.84 MHz & Iblocking = -44 dBm
Intermodulation	BER < 0.001 when Îor= -103.7 dBm / 3.84 MHz & Iouw1 = -46 dBm @ Fuw1(offset) = ±10 MHz & Iouw2 = -46 dBm / 3.84 MHz @ Fuw2(offset) = ±20 MHz
Spurious Emissions	< -57 dBm / 100 kHz BW @ 9 kHz ≤ f < 1 GHz < -47 dBm / 1 MHz BW @ 1 GHz ≤ f ≤ 12.75 GHz
Inner Loop Power Control In Uplink	Adjust output(TPC command) cmd 1dB 2dB 3dB +1 +0.5/1.5 +1/3 +1.5/4 0 -0.5/+0.5 -0.5/+0.5 -0.5/+0.5 -1 -0.5/-1.5 -1/-3 -1.5/-4 group(10equal command group) +1 +8/+12 +16/+24

4) HSDPA transmitter specification

<table>
<tr><th>Item</th><th>Specification</th></tr>
<tr><td>Transmit Frequency</td><td>Band1 : 1920 MHz ~ 1980 MHz
Band8 : 880MHz~915 MHz</td></tr>
<tr><td>Maximum Output Power</td><td>Sub-Test
1=1/15, 2=12/15 21~25dBm / 3.84 MHz
3=13/15 4=15/8 20~25dBm / 3.84 MHz
5=15/7 6=15/0 19~25dBm / 3.84 MHz</td></tr>
<tr><td>HS-DPCCH</td><td>
<table>
<tr><th>Sub-test in table C.10.1.4</th><th>Power step</th><th>Power step slot boundary</th><th>Power step size, P [dB]</th><th>Transmitter power step tolerance [dB]</th></tr>
<tr><td rowspan="3">5</td><td>1</td><td>Start of Ack/Nack</td><td>6</td><td>+/- 2.3</td></tr>
<tr><td>2</td><td>Start of CQI</td><td>1</td><td>+/- 0.6</td></tr>
<tr><td>3</td><td>Middle of CQI</td><td>0</td><td>+/- 0.6</td></tr>
</table>
</td></tr>
<tr><td>Spectrum Emission Mask</td><td>Sub-Test : 1=1/15, 2=12/15, 3=13/15, 4=15/8, 5=15/7, 6=15/0
<table>
<tr><th>Frequency offset from carrier △f</th><th>Minimum requirement</th><th>Measurement Bandwidth</th></tr>
<tr><td>2.5 ~ 3.5 MHz</td><td>-35-15×(△f-2.5)dBc</td><td>30 kHz</td></tr>
<tr><td>3.5 ~ 7.5 MHz</td><td>-35-1×(△f-3.5)dBc</td><td>1 MHz</td></tr>
<tr><td>7.5 ~ 8.5 MHz</td><td>-35-10×(△f-7.5)dBc</td><td>1 MHz</td></tr>
<tr><td>8.5 ~ 12.5 MHz</td><td>-49dBc</td><td>1 MHz</td></tr>
</table>
</td></tr>
<tr><td>Adjacent Channel Leakage Power Ratio (ACLR)</td><td>Sub-Test : 1=1/15, 2=12/15, 3=13/15, 4=15/8, 5=15/7, 6=15/0

> 33 dB @ ±5 MHz
> 43 dB @ ±10 MHz</td></tr>
<tr><td>Error Vector Magnitude</td><td>< 17.5 %, when Pout ≥ -20 dBm</td></tr>
</table>

5) HSDPA receiver specification

Item	Specification
Receive Frequency	Band1 : 2110 ~ 2170 MHz Band8 : 925 ~ 960Hz
Maximum Input Level (BLER or R), 16QAM Only	Sub-Test : 1=1/15, 2=12/15, 3=13/15, 4=15/8, 5=15/7, 6=15/0 BLER < 10% or R >= 700kbps

6) WLAN 802.11b transceiver specification

Item	Specification
Transmit Frequency	2400 MHz ~ 2483.5 MHz (CH1~CH13)
Tx Power Level	≤ 20dBm under (Europe), ≤ 30dBm under (USA)
Frequency Tolerance	within ±25 PPM
Chip clock Frequency Tolerance	within ±25 PPM
Spectrum Mask	≤ -30 @ fc-22MHz< f <fc-11MHz and fc+11MHz< f <fc+22MHz ≤ -50 @ f < fc-22MHz and f > fc+22MHz
Power ramp on/off time	≤ 2us
Carrier Suppression	≤ -15dB
Modulation Accuracy (Peak EVM)	≤ 35%
Spurious Emissions	< -36 dBm @ 30MHz ~ 1GHz < -30 dBm above @ 1GHz ~ 12.75GHz < -47 dBm @ 1.8GHz ~ 1.9GHz < -47 dBm @ 5.15GHz ~ 5.3GHz
Rx Min input Sensitivity	≤ -76dBm(1Mbps,2Mbps,5.5Mbps,11Mbps) @ FER ≤ 8%
Rx Max input Sensitivity	≥ -10dBm(1Mbps,2Mbps,5.5Mbps,11Mbps) @ FER ≤ 8%
Rx Adjacent Channel Rejection	≥ 35dB @FER ≤ 8%, interference input signal -70dBm@fc±25MHz(11Mbps)

7) WLAN 802.11g transceiver specification

Item	Specification
Transmit Frequency	2400 MHz ~ 2483.5 MHz (CH1~CH13)
Tx Power Level	≤ 20dBm under (Europe), ≤ 30dBm under (USA)
Frequency Tolerance	within ±25 PPM
Chip clock Frequency Tolerance	within ±25 PPM
Spectrum Mask	≤ -20 @ ±11MHz offset (9Mhz ~ 11MHz) ≤ -28 @ ±20MHz offset (11MHz ~ 20Mhz) ≤ -40 @ ±30MHz offset (20MHz ~ 30Mhz)
Transmitter constellation error (rms EVM)	≤ -5dB
Spurious Emissions	< -36 dBm @ 30MHz ~ 1GHz < -30 dBm above @ 1GHz ~ 12.75GHz < -47 dBm @ 1.8GHz ~ 1.9GHz < -47 dBm @ 5.15GHz ~ 5.3GHz
Rx Min input Sensitivity	PER ≤ 10% -82dBm@6Mbps, -81dBm@9Mbps, -79dBm@12Mbps -77dBm@18Mbps, -74dBm@24Mbps, -70dBm@36Mbps -66dBm@48Mbps, -65dBm@54Mbps
Rx Max input Sensitivity	≥ -20dBm(6,9,12,18,24,36,48,54Mbps) @ PER ≤ 10%
Rx Adjacent Channel Rejection	PER ≤ 10%, ACR ≥ 16dB@6Mbps, ACR ≥ 15dB@9Mbps, ACR ≥ 13dB@12Mbps, ACR ≥ 11dB@18Mbps, ACR ≥ 8dB@24Mbps, ACR ≥ 4dB@36Mbps ACR ≥ 0dB@48Mbps, ACR ≥ -1dB@54Mbps ※ACR shall be measured by setting the desired signal's strength 3 dB above the rate-dependent sensitivity specified in min input sensitivity

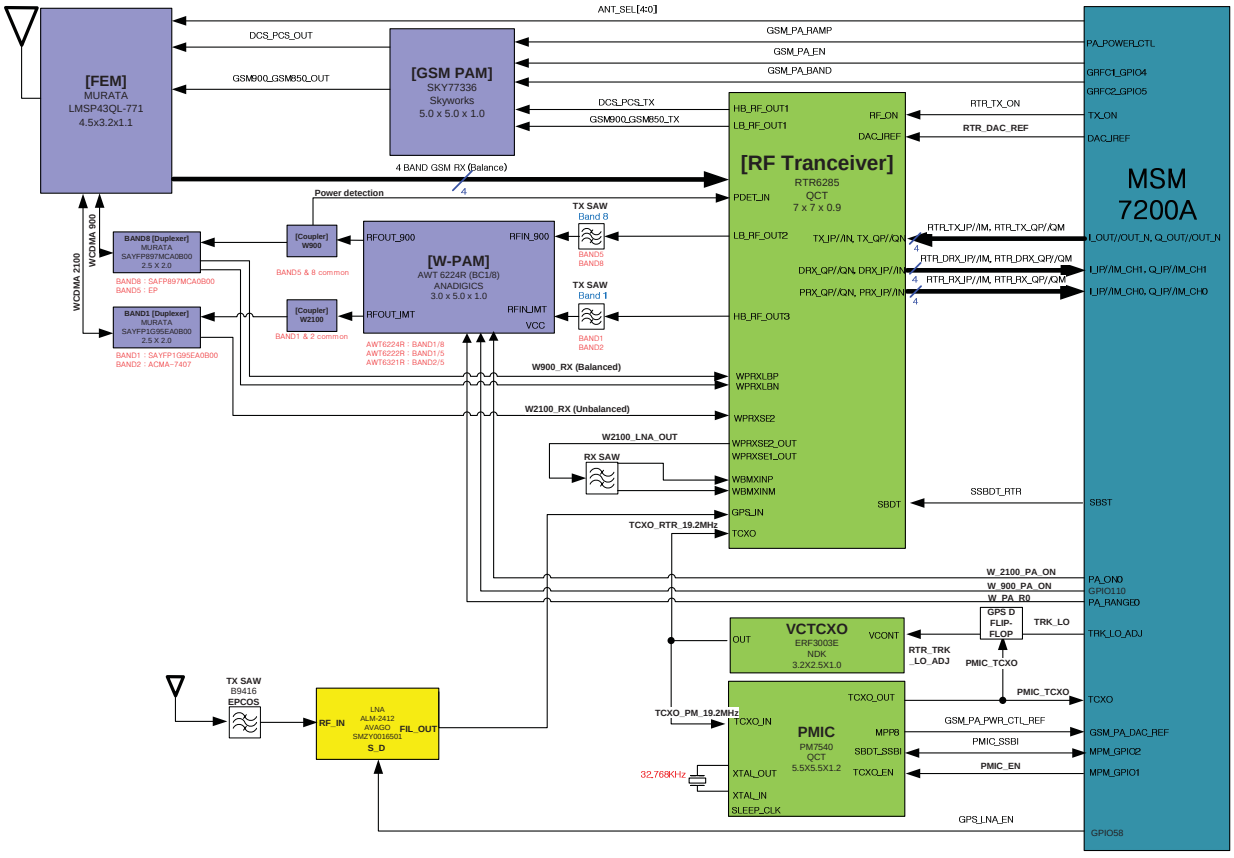
8) GPS receiver specification

Item	Specification
Receive Frequency	1574.42 MHz ~ 1576.42 MHz
Minimum Sensitivity	1 satellite ≥-142dBm, 7 satellites ≥ -147dBm at coarse time aiding

3. TECHNICAL BRIEF

3.1. GENERAL DESCRIPTION

The BL40 supports UMTS-900(Band VIII), UMTS-2100(Band I), GSM-850, GSM-900, GSM-1800, and GSM-1900 based GSM/GPRS/EDGE/UMTS. All receivers and the UMTS transmitter use the radioOne1Zero-IF architecture to eliminate intermediate frequencies, directly converting signals between RF and baseband. The quad-band GSM transmitters use a baseband-to-IF up-conversion followed by an offset phase-locked loop that translates the GMSK-modulated or 8-PSK-modulated signal to RF.



[Figure 1-1] Block diagram of RF part

[1] QUALCOMM's branded chipset that implements a Zero-IF radio architecture.

3. TECHNICAL BRIEF

A generic, high-level functional block diagram of BL40f is shown in Figure 1-1. One antenna collects base station forward link signals and radiates handset reverse link signals. The antenna connects with receive and transmit paths through LMSP43QL-771 (FEM, Front End Module). The UMTS receive paths each include an LNA, an RF band-pass filter, and a downconverter that translate the signal directly from RF-to-baseband using radioOne ZIF techniques. The RFIC's RX analog baseband outputs, for the receive chains, connect to the MSM IC. The UMTS and GSM RX baseband outputs share the same inputs to the MSM IC.

For the transmit chains, the RTR6285 IC directly translates the TX baseband signals (from the MSM device) to an RF signal using an internal LO generated by integrated on-chip PLL and VCO. The RTR6285 IC outputs deliver fairly high-level RF signals that are first filtered by TX SAWs and then amplified by their respective UMTS PAs.

In the GSM receive path, the received RF signals are applied through their band-pass filters and down-converted directly to baseband in the RTR6285 transceiver IC. These baseband outputs are shared with the UMTS receiver and routed to the MSM IC for further signal processing.

The GSM/EDGE transmit path employs one stage of up-conversion and, in order to improve efficiency, is divided into phase and amplitude components to produce an open-loop Polar topology:

1. The on-chip quadrature up-converter translates the GMSK-modulated signal or 8-PSK modulated signal, to a constant envelope phase signal at RF;
2. The amplitude-modulated (AM) component is applied to the ramping control pin of Polar power amplifier from a DAC within the MSM

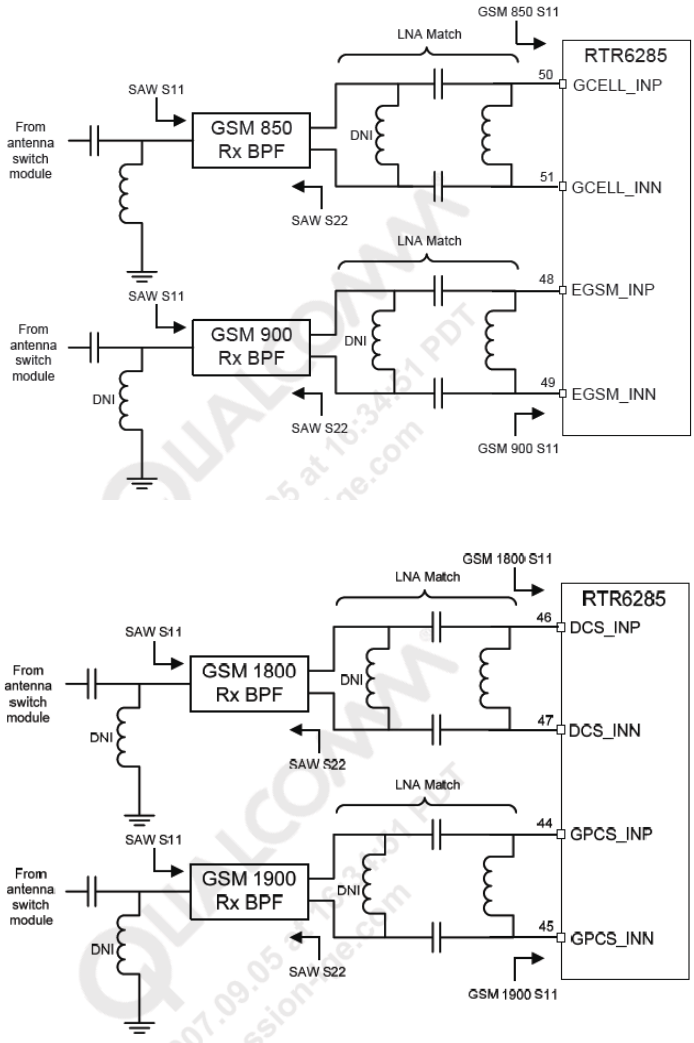
BL40f power supply voltages are managed and regulated by the PM7540 Power Management IC. This versatile device integrates all wireless handset power management, general housekeeping, and user interface support functions into a single mixed signal IC. It monitors and controls the external power source and coordinates battery recharging while maintaining the handset supply voltages using low dropout, programmable regulators.

The device's general housekeeping functions include an ADC and analog multiplexer circuit for monitoring on-chip voltage sources, charging status, and current flow, as well as user-defined off-chip variables such as temperature, RF output power, and battery ID. Various oscillator, clock, and counter circuits support IC and higher-level handset functions. Key parameters such as under-voltage lockout and crystal oscillator signal presence are monitored to protect against detrimental conditions.

3.2. GSM MODE

3.2.1 GSM RECEIVER

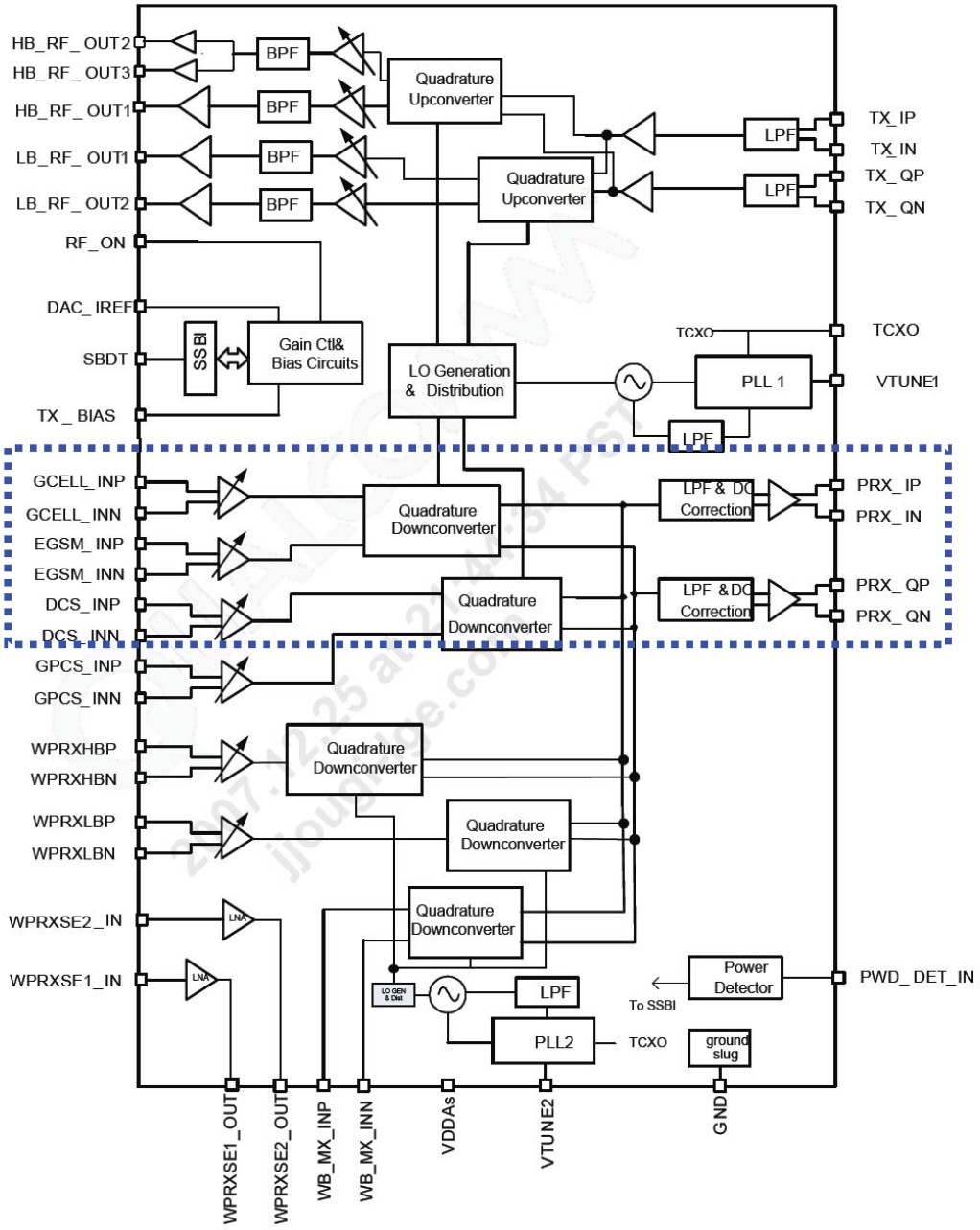
The GSM-850, GSM-900, GSM-1800, and GSM-1900 receiver inputs of RTR6285 are connected to the transceiver front-end circuits(switch module) through saw filters. GSM-850, GSM-900, GSM-1800, and GSM-1900 receiver inputs use differential configurations to improve common-mode rejection and second-order non-linearity performance as shown in Figure 1-2. The balance between the complementary signals is critical and must be maintained from the RF filter outputs all the way into the IC pins



[Figure 1-2] GSM Receiver Inputs Topologies

Since GSM-850, GSM-900, GSM-1800, and GSM-1900 signals are time-division duplex (the handset can only receive or transmit at one time), switches are used to separate RX and TX signals in place of frequency duplexers – this is accomplished in the switch module. The GSM-850, GSM-900, GSM-1800, and GSM-1900 receive signals are routed to the RTR6285 through saw filters and matching networks that transform single-ended 50-Ω sources to differential impedances optimized for gain and noise figure. The RTR input uses a differential configuration to improve second-order inter-modulation and common mode rejection performance. The RTR6285 input stages include MSM-controlled gain adjustments that maximize receiver dynamic range.

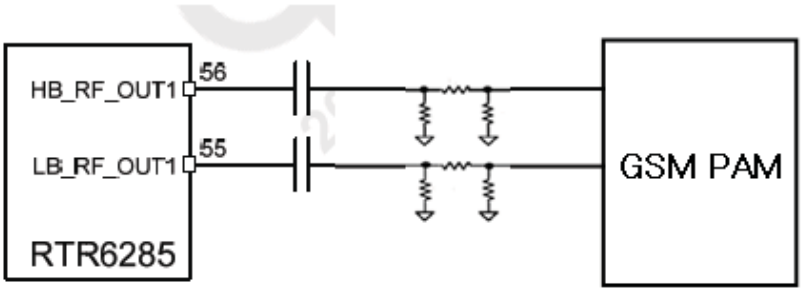
The amplifier outputs drive the RF ports of the quadrature RF-to-baseband downconverters. The downconverted baseband outputs are multiplexed and routed to lowpass filters (one I and one Q) having passband and stopband characteristics suitable for GMSK or 8-PSK processing. These filter circuits include DC offset corrections. The filter outputs are buffered and passed on to the MSM7200A IC for further processing as shown in Figure 1-3.



[Figure 1-3] RTR6285 RX feature

3.2.2 GSM TRANSMITTER

The RTR6285 transmitter outputs(HB_RF_OUT1 and LB_RF_OUT1) include on-chip output matching inductors. 50ohm output impedance is achieved by adding a series capacitor at the output pins. The capacitor value may be optimized for specific applications and PCB characteristics based on pass-band symmetry about the band center frequency as shown in Figure 1-3.



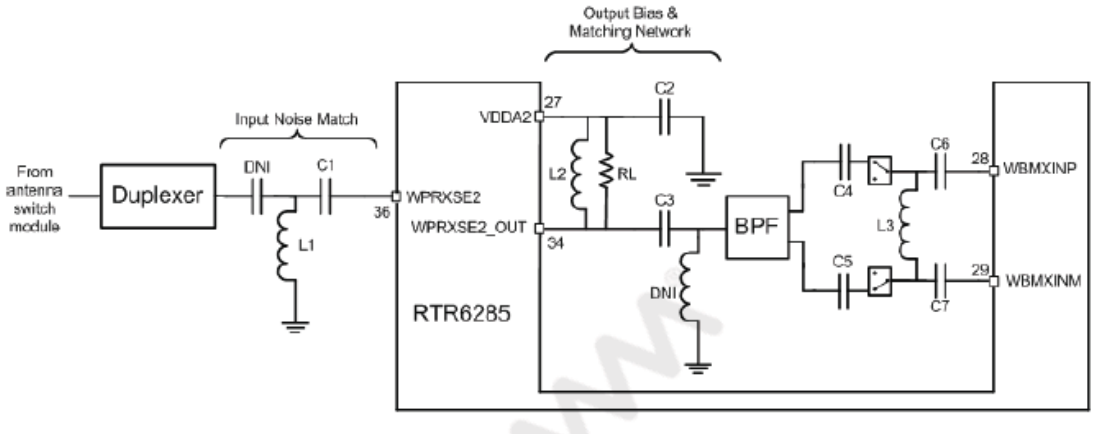
[Figure 1-4] GSM Transmitter Outputs Topologies

The RTR6285 IC is able to support GSM850/GSM 900 and GSM 1800/1900 mode transmitting. This design guideline shows a quad-band GSM application. Both high-band and low band outputs are followed by resistive pads to ensure that the load presented to the outputs remains close to 50ohm.

3.3. UMTS MODE

3.3.1 UMTS RECEIVER

The UMTS duplexer receiver output is routed to LNA circuits within the RTR6285 device as shown in Figure 1-5. The UMTS RX input is provided with an on-chip LNA that amplifies the signal before a second stage filter that provides differential downconverter as shown in Figure 1-5. This second stage input is configured differentially to optimize second-order intermodulation and common mode rejection performance. The gain of the UMTS front end amplifier and the UMTS second stage differential amplifier are adjustable, under MSM control, to extend the dynamic range of the receivers. The second stage UMTS RX amplifiers drive the RF ports of the quadrature RF-to-baseband downconverters. The downconverted UMTS RX baseband outputs are routed to lowpass filters having passband and stopband characteristics suitable for UMTS RX processing. These filter circuits allow DC offset corrections, and their differential outputs are buffered to interface shared with GSM RX to the MSM IC. The UMTS baseband outputs are turned off when the RTR6285 is downconverting GSM signals and on when the UMTS is operating.



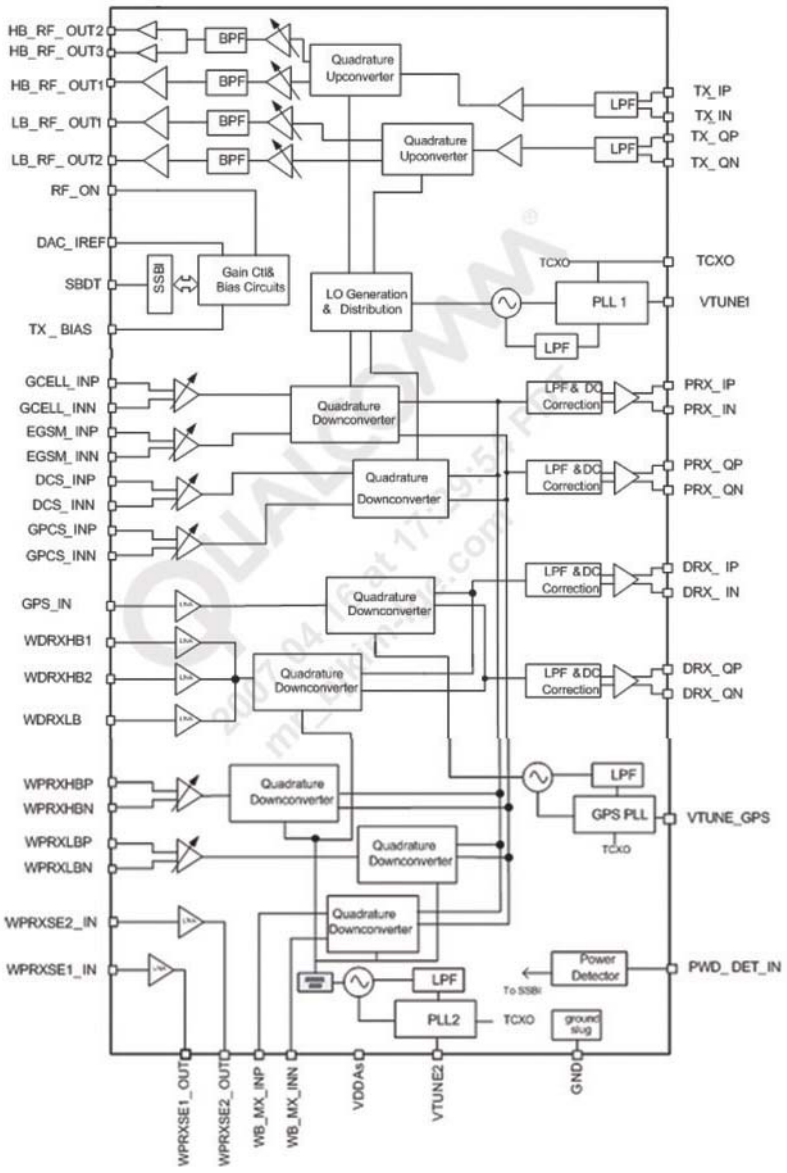
[Figure 1-5] UMTS Receiver Inputs Topologies

3.3.2 UMTS TRANSMITTER

The UMTS TX path begins with differential baseband signals (I and Q) from the MSM device.
These analog input signals are amplified, filtered, and applied to the quadrature up-converter mixers. The up-converter output is amplified by multiple variable gain stages that provide transmit AGC control. The AGC output is filtered and applied to the driver amplifier; this output stage includes an integrated matching inductor that simplifies the external matching network to a single series capacitor to achieve the desired 50-Ω interface.

The RTR6285 UMTS output is routed to its power amplifier through a bandpass filter, and delivers fairly high-level signals that are filtered and applied to the PA. Transmit power is delivered from the duplexer to the antenna through the switch module.
The transceiver LO synthesizer is contained within the RTR6285 IC with the exception of the off-chip loop filter components and the VC-TCXO. This provides a simplified design for multimode applications. The PLL circuits include a reference divider, phase detector, charge pump, feedback divider, and digital logic generator.

UMTS TX Using only PLL1, the LO generation and distribution circuits create the necessary LO signals for nine different frequency converters. The UMTS transmitter also employs the ZIF architecture to translate the signal directly from baseband to RF. This requires FLO to equal FRF, and the RTR6285 IC design achieves this without allowing FVCO to equal FRF.
The RTR6285 IC is able to support UMTS 2100/1900/1800/1700/900 and 850 mode transmitting. This design guideline shows UMTS 2100, UMTS1900 and UMTS850 applications.



[Figure 1.6] RTR6285 IC Functional Block Diagram

3.4. LO GENERATION and DISTRIBUTION CIRCUIT

The integrated LO generation and distribution circuits are driven by internal VCOs to support various modes to yield highly flexible quadrature LO outputs that drive all GSM/EDGE, UMTS band and GPS upconverters and downconverters; with the help of these LO generation and distribution circuits, true zero-IF architecture is employed in all GSM and UMTS band receivers and transmitters to translate the signal directly from RF-to-baseband and from baseband-to-RF. Two fully functional fraction-N synthesizers, including VCOs and loop filters, are integrated within the RTR6285 IC. In addition, the RTR6285 has a third synthesizer used for GPS operation. The first synthesizer (PLL1) in the RTR6285 creates the transceiver Los that support the UMTS transmitter, and all four GSM band receivers and transmitters including: GSM850, GSM900, GSM1800, and GSM1900. The second synthesizer (PLL2) in the RTR6285 IC provides the LO for the UMTS primary receiver. For the RTR6285 IC only, the second synthesizer also provides the LO for the secondary UMTS receiver. The third synthesizer (PLL3), only in the RTR6285 IC, provides the LO for the GPS receiver. An external TCXO input signal is required to provide the synthesizer frequency reference to which the PLL is phase and frequency locked. The RTR6285 ICs integrate most of the PLL loop filter components on-chip except for three off-chip loop filter-series capacitors, which significantly reduces off-chip component requirement. With the integrated fractional-N PLL synthesizers, the RTR6285 ICs have the advantage of more flexible loop bandwidth control, fast lock time, and low-integrated phase error

3.5. OFF-CHIP RF COMPONENTS

3.5.1 LMSP43QL-771 (FL100: FEM)

LMSP43QL-771 is transmit and receive Front End Module(FEM), compact form factor for quad-band cellular handsets comprising GSM850/900, DCS1800, and PCS1900 operation. WCDMA switch-through support is provided by two dedicated high-linearity ports.

ANTENNA SWITCH MODULE LOGIC

	ANT_SEL0	ANT_SEL1	ANT_SEL2	ANT_SEL3
GSM850/EGSM TX	HIGH	LOW	LOW	LOW
DCS/PCS TX	HIGH	HIGH	LOW	LOW
GSM850 RX	LOW	HIGH	HIGH	LOW
EGSM RX	LOW	LOW	HIGH	LOW
DCS1800 RX	LOW	LOW	LOW	LOW
PCS1900 RX	LOW	HIGH	LOW	LOW
WCDMA 900 (UMTS1)	LOW	LOW	LOW	HIGH
WCDMA 2100 (UMTS2)	LOW	HIGH	LOW	HIGH

[Table 1] Antenna Switch Module Logic

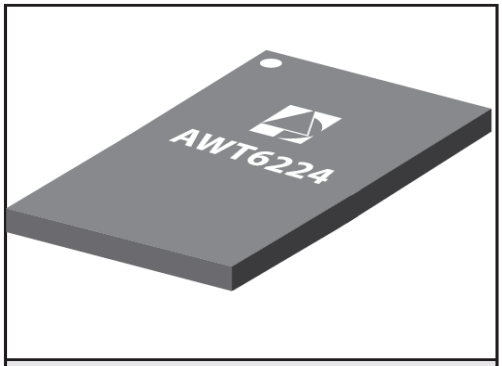
3.5.2 W-CDMA Dual-Band POWER AMPLIFIER (U104: AWT6224R)

FEATURES

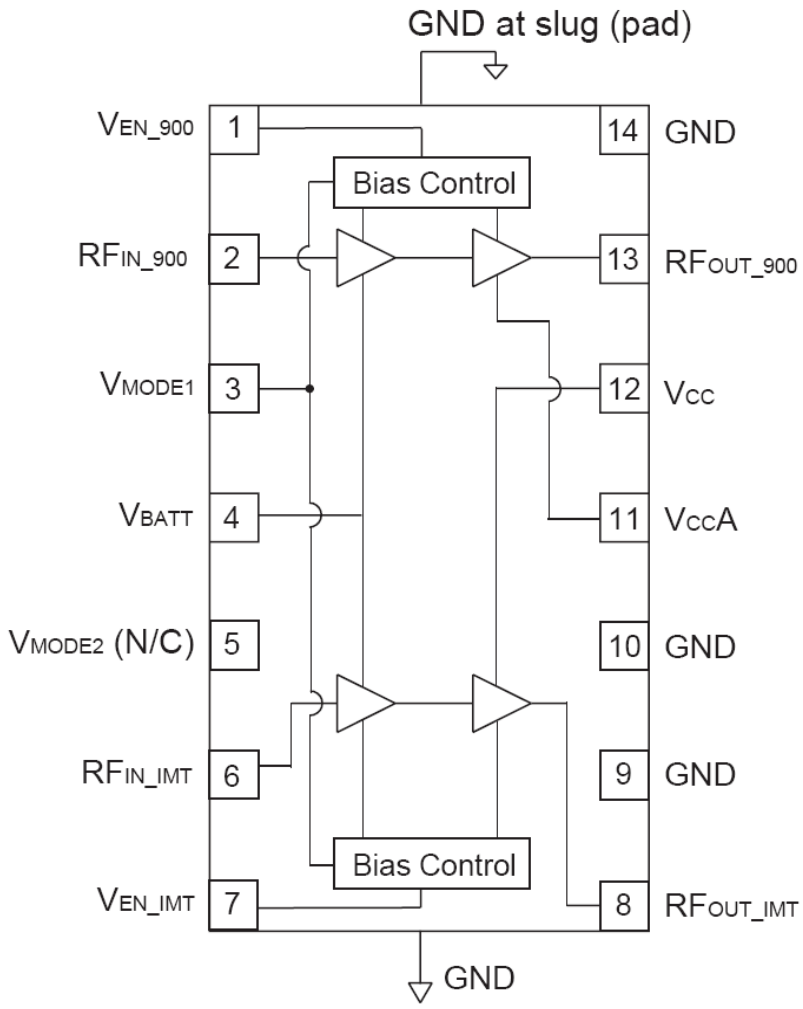
- InGaP HBT Technology
- High Efficiency:
  20 % @ +16 dBm P_{OUT}
  (without DC/DC Converter)
  40 % @ maximum P_{OUT}
- Low Quiescent Current: 8 mA
- Internal Voltage Regulation
- Common V_{MODE} Control Line
- Simplified V_{CC} Bus PCB routing
- Reduced External Component Count
- Low Profile Surface Mount Package: 1 mm
- HSDPA Compliant
- RoHS Compliant Package, 250 °C MSL-3

APPLICATIONS

- Dual-band UMTS Band 1 and 8 Wireless Handsets and Datacards



M28 Package
14 Pin 3 mm x 5 mm x 1 mm
Surface Mount Module



[Figure 1.8] AWT6224R Functional Block Diagram.

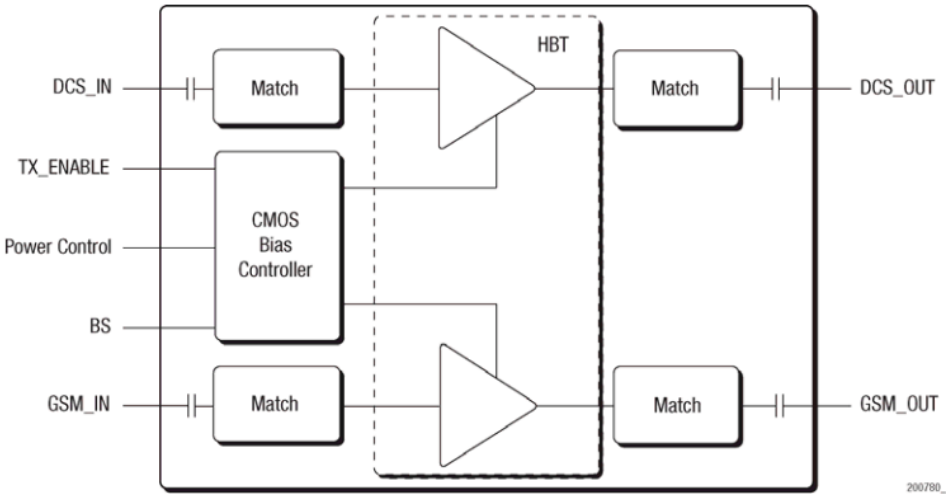
3.5.3 GSM Quad-Band PAM (U102: SKY77336)

Applications

- Quad-band cellular handsets
- GMSK Modulation
  - Class 4 GSM850/900
  - Class 1 DCS1800/ PCS1900
  - Class 12 GPRS multi-slot operation
- EDGE modulation
  - Class E2 GSM850/900
  - Class E2 DCS1800/ PCS1900

Features

- High efficiency:
  - GSM850, 55%
  - GSM900, 55%
  - DCS, 53%
  - PCS, 53%
- Small outline
  - 5 x 5 mm
- Low profile
  - 0.9 mm, max
- Low VRAMP current
  - 10 µA

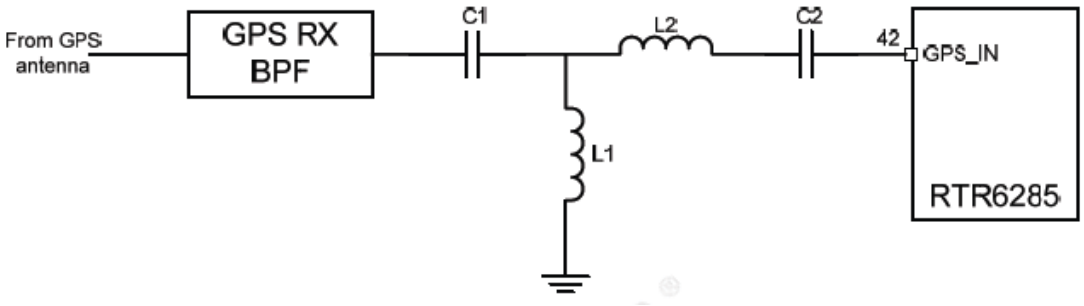


[Figure 1.9] SKY77336 Functional Block Diagram.

3.6. GPS MODE

3.6.1 GPS RECEIVER

The GPS receiver input employs a single-ended connection realized by this pin. The GPS input is routed from the GPS antenna switch, through a band pass filter and then an impedance transformer circuit that optimally matches the impedance looking into the GPS LNA. The impedance transformer circuit topology is shown in Figure 1-6.



[Figure 1.1] GPS Input Network Topology

3.7. GPS/WIFI/BT OFF-CHIP RF COMPONENTS

3.7.1 A-GPS (ALM-2412)

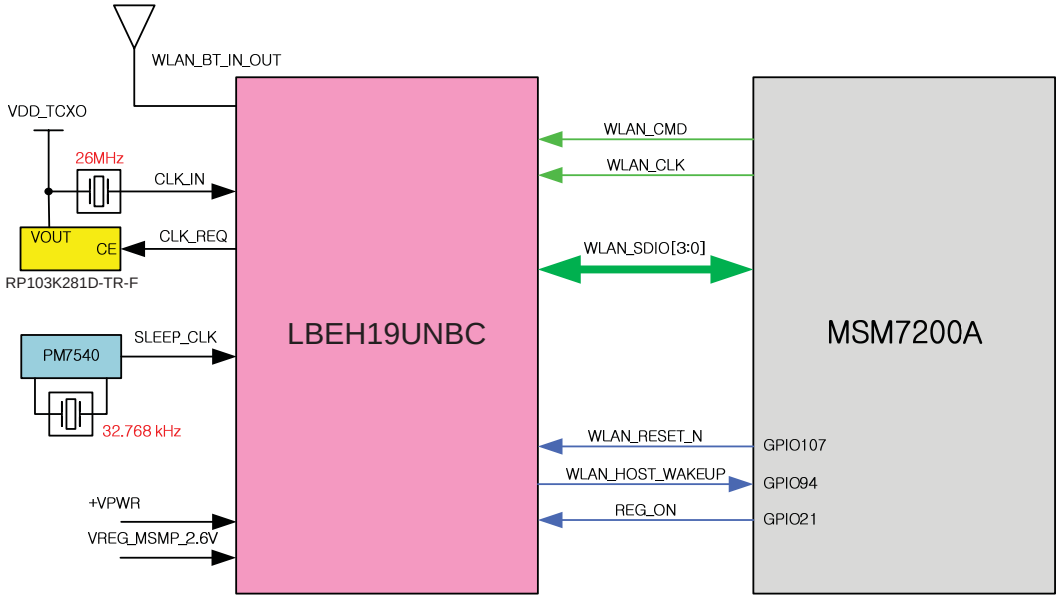
The ALM-2412 is a LNA with integrated filter designed for GPS band applications at 1.575GHz. The LNA uses AVAGO Technologies' proprietary GaAs Enhancement-mode pHEMT process to achieve high gain operation with very low noise figures and high linearity. Noise figure distribution is very tightly controlled. A CMOS-compatible shutdown pin is included to turn the LNA off and provide a variable bias. The integrated filter utilizes an Avago Technologies' leading edge FBAR filter for exceptional rejection at Cell/PCS Band frequencies. The ALM-2412 is useable down to 1V operation. It achieves low noise figure and high gain and linearity even at 1V, making it suitable for use in critical low-power GPS applications or during low-battery situations.

3.7.2 WLAN/Bluetooth (LBEH19UNBC)

The BL40f device provides the highest level of integration for a mobile wireless system, with integrated IEEE802.11 b/g (MAC/baseband/radio), Bluetooth 2.0. The LBEH19UNBC that is included of BCM4325 solution is supported three kinds of functions. It is the one antenna structure which is supported of WLAN/Bluetooth in 2.4GHz band.

<WLAN>

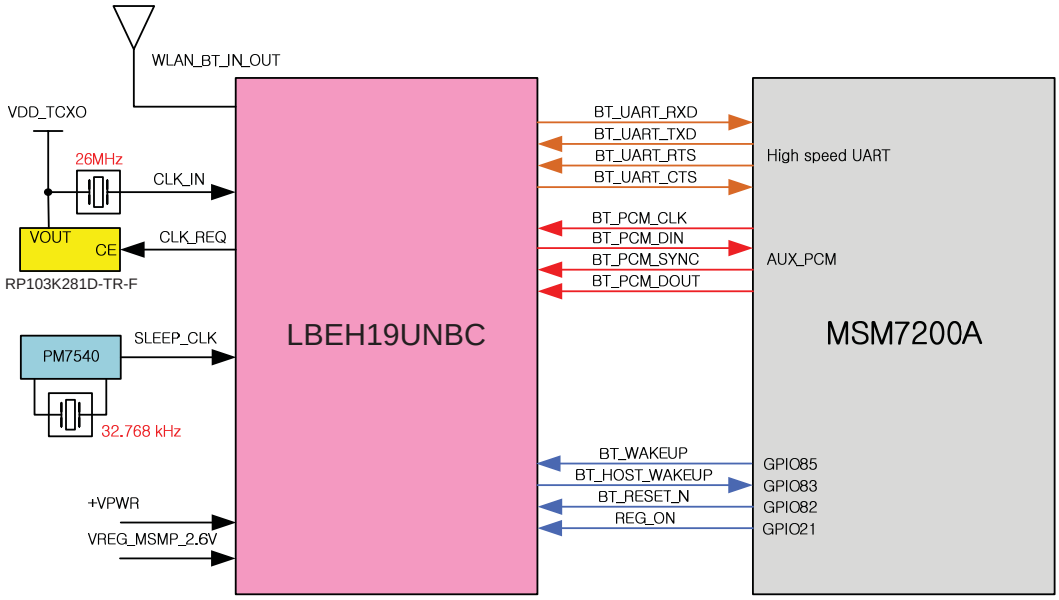
The BL40f supports single-band 2.4GHz IEEE802.11b/g standardization. The WLAN module which is consisted of the BCM4325 single chip device provides for the highest level of integration for a mobile or handheld wireless system, with integrated IEEE802.11TM b/g (MAC/baseband/radio). The BCM4325's integrated CMOS WLAN 2.4GHz power amplifier provides sufficient output power to meet the need of most WLAN devices. The interface between MSM7200A and WLAN module is the standard interfaces SDIO v1.2 (4-bit and 1-bit). Figure1.9 shows the WLAN system architecture in the BL40.



[Figure 1.2] WLAN system architecture

<Bluetooth>

The BL40f provides the Bluetooth 2.1 + EDR specification. The Bluetooth module is the optimal solution for any voice or data application that requires the Bluetooth SIG standard Host Controller Interface (HCI) using a high-speed UART and PCM. The Bluetooth solution has an integrated radio transceiver that has been optimized for 2.4GHz Bluetooth wireless systems. It has been designed to provided low-power, low-cost, robust communications for applications operating in the globally available 2.4GHz unlicensed ISM band. It is fully compliant with the Bluetooth Radio Specification and meets or exceeds the requirements to provide the highest communication link quality of service. Figure1.2 shows the Bluetooth system architecture in the BL40f.

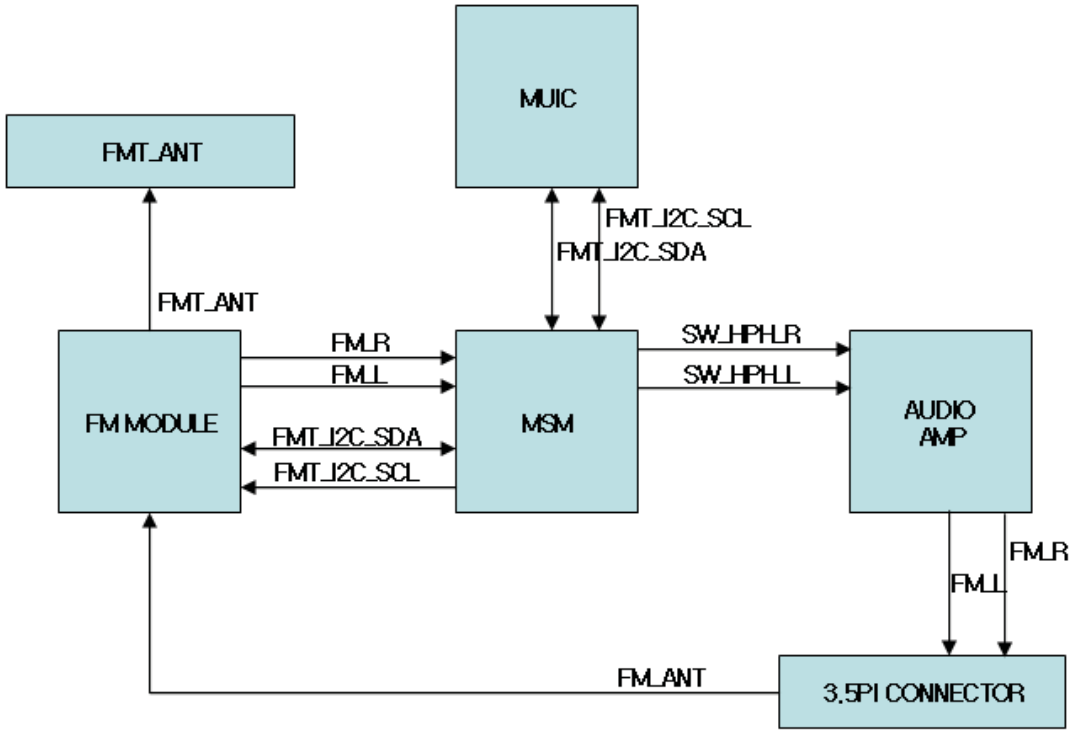


[Figure 1.3] Bluetooth system architecture

3.8. FM Transceiver

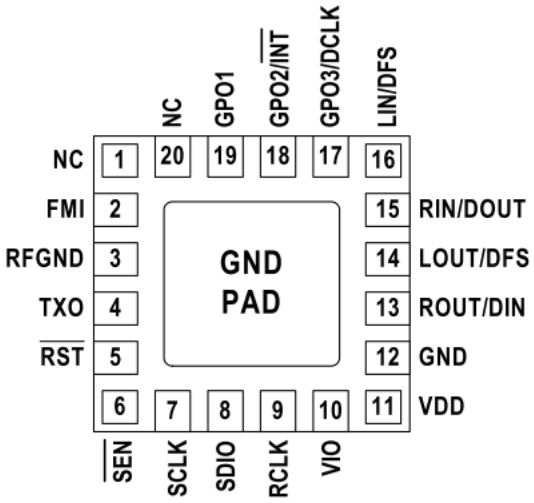
This FM module is a single-chip FM Radio transceiver. It integrates the complete tuner and transmits functions for FM broadcast reception and standards-compliant, unlicensed FM broadcast stereo transmission.

It is performs FM modulation in the digital domain to achieve high fidelity, optimal performance versus power consumption. This equipment supports the European Radio Data System (RDS) and the US Radio Broadcast Data system (RBDS) including all the symbol encoding, block synchronization, and error correction functions. [Figure3.xx.x.x] shows the FM Radio / FM Transmitter system architecture in the BL40f.



[Figure3.xx.x.x]

Pin Descriptions



[Figure3.xx.x.x]

[Table 3.15-1] PIN assign

Pin Number(s)	Name	Description
1, 20	NC	No connect. Leave floating.
2	FMI	FM RF input.
3	RFGND	RF ground. Connect to ground plane on PCB.
4	TXO	FM transmit output connection to transmit antenna.
5	RST	Device reset (active low) input.
6	SEN	Serial enable input (active low).
7	SCLK	Serial clock input.
8	SDIO	Serial data input/output.
9	RCLK	External reference oscillator input.
10	VIO	I/O supply voltage.
11	VDD	Supply voltage. May be connected directly to battery
13	ROUT/DIN	Right audio line output-digital input data.
14	LOUT/DFS	Left audio line output-digital frame synchronization.
15	RIN/DOUT	Right audio line input-digital output data.
16	LIN/DFS	Left audio line input-digital frame synchronization.
17	GPO3/DCLK	General purpose output-digital bit synchronous clock
18	GPO2/INT	General purpose output-interrupt request.
19	GPO1	General purpose output.
12, GND PAD	GND	Ground. Connect to ground plane on PCB.

3. BB Technical Description

3.9 Digital Baseband(DBB/MSM7200A)

3.9.1 General Description

A. Features(MSM7200A)

- Support for multimode operation – WCDMA(UMTS),GSM/GPRS,EDGE, HSDPA
- The ARM1136-J microprocessor can operate at up to 528 MHz.
- The ARM926EJ-S microprocessor can operate up to 256 MHz.
- Internal 256M Bits stacked DDR memory.
- Java hardware acceleration for faster Java-based games and other applets.
- Supports low-power, low-frequency crystal to enable TCXO shutoff.
- Integrated USIM Controller for direct interface to USIM card
- Software-controlled power management feature
- Integrated Bluetooth 2.0 baseband processor for wireless connectivity to peripherals
- High-speed, serial mobile-display, digital interface that optimizes the interconnection cost between the MSM device and the LCD panel
- Receive chain diversity support for WCDMA, providing improved capacity and data throughput
- USB OTG core supports both slave and limited host functionality
- High-speed USB link
- Integrated wideband stereo CODEC for digital audio applications
- Direct interface to digital camera module with video front end (VFE) image processing
- Vocoder support (GSM-HR, FR, EFR, AMR, W-AMR, and 4GV)
- Advanced 15 × 15 × 1.4 mm, 0.5 mm pitch, 543-pin lead-free CSP packaging technology
- HSDPA Features
  - supports release 5, December 2004 standard for HSDPA
  - HSDPA enables PS data speeds up to 7.2 Mbps on the downlink
- WCDMA Features
  - supports release 99 June 2004 of the W-CDMA FDD standard
  - PS data rates supporting 384kbps DL / 384kbps UL
  - CS data rates supporting 64kbps DL / 64kbps UL
  - AMR (all rates)
- GSM Features
  - Voice features (FR,EFR,AMR,HR)
  - Circuit-switched data features(9.6K,14.4K,Fax)
- GPRS Features
  - Simple Class A operation
  - Multi-slot class 12 data services
  - CS schemes CS1,CS2,CS3,CS4
- EDGE Features
  - EDGE E2 power class for 8PSK
  - Simple Class A, multi-slot class 12
  - Downlink/Uplink coding schemes (CS1-4, MCS1-9)
- Operation and Services
  - LCD & Camera Interface
  - USIM Interface
  - Dual Memory Buses(EBI1-SDRAM & EBI2-NAND Flash)
  - External Memory Interface (Micro SD)
- Data Communication
  - Bluetooth
  - Slave USB

3.10 Hardware Architecture

<AUDIO / Sensor / MCP Block>

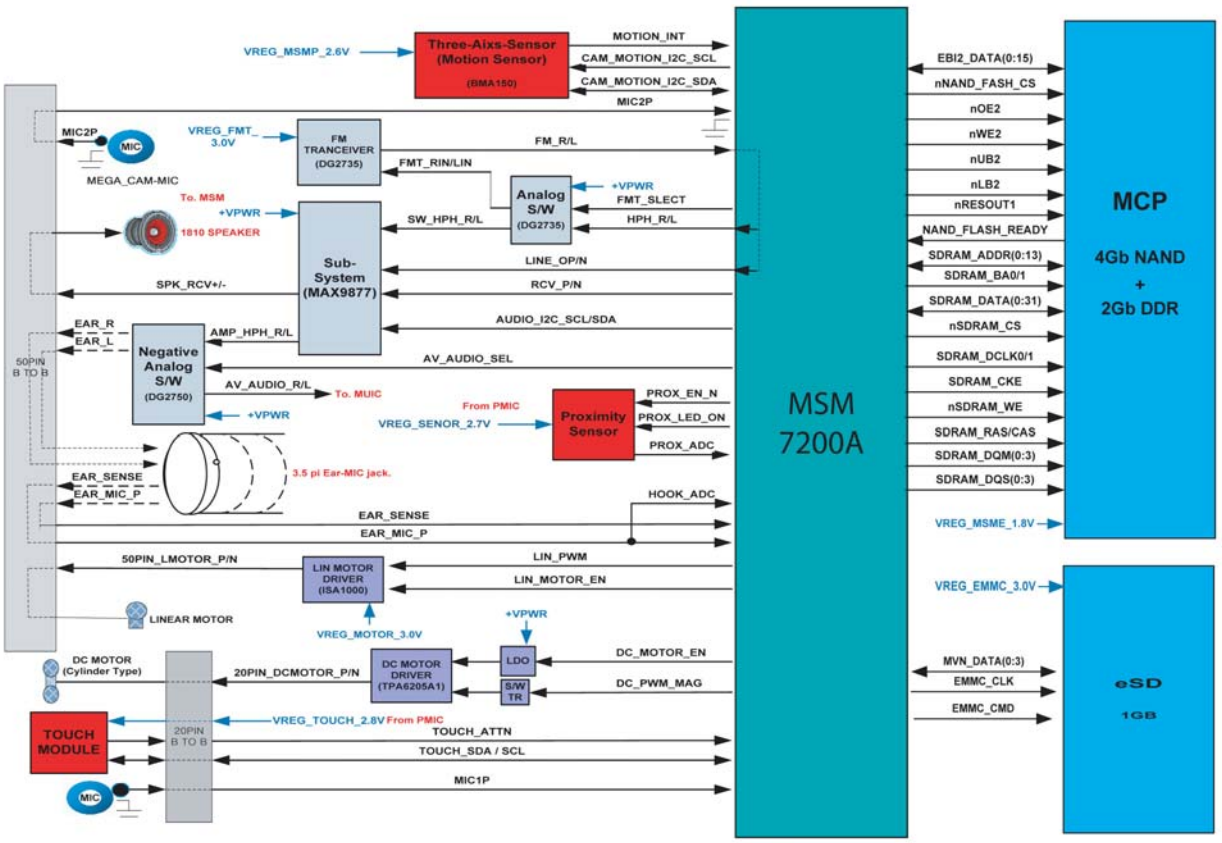


Figure. Simplified Block Diagram of System

<Camera / LCD Block>

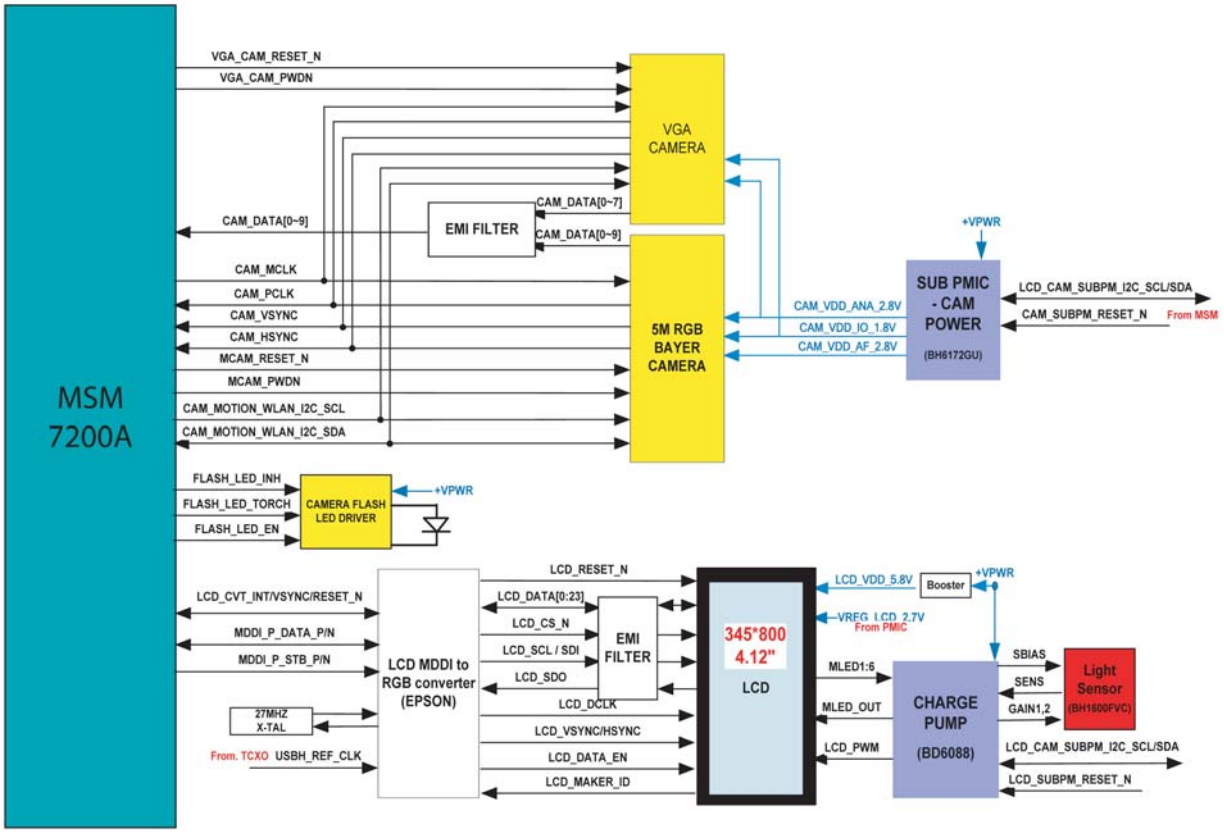


Figure. Simplified Block Diagram of System

<PMIC / CONNECTION / POWER Block>

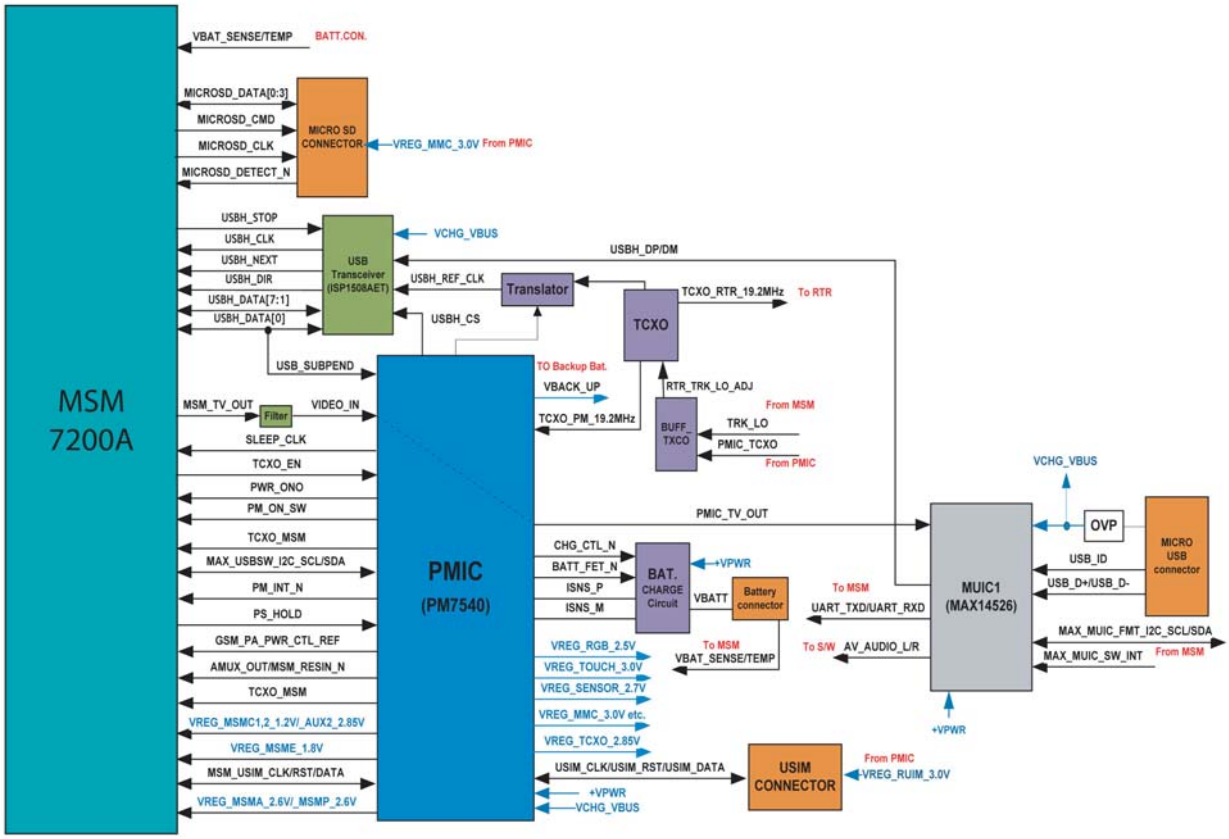


Figure. Simplified Block Diagram of System

3.10.1. Block Diagram(MSM7200A)

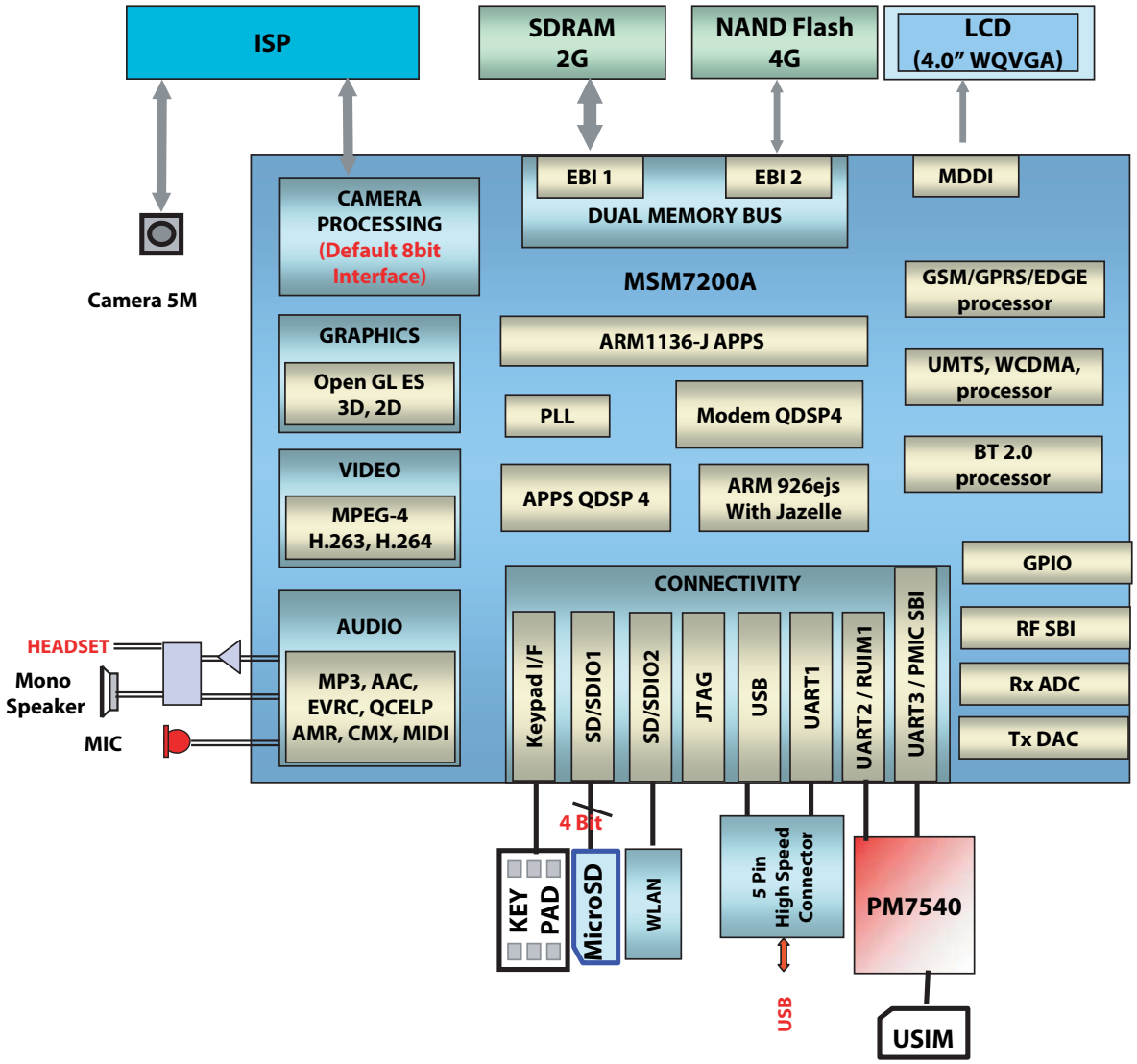


Figure. Simplified Block Diagram of MSM7200A

3.11 Subsystem(MSM7200A)

3.11.1. ARM Microprocessor Subsystem

The MSM7200A device uses an embedded ARM1136-J, ARM926EJ-S microprocessor. This microprocessor, through the system software, controls most of the functionality for the MSM, including control of the external peripherals such as the keypad, LCD, SDRAM, and NAND-Flash devices. Through a QUALCOMM proprietary serial bus interface (SBI) the ARM926EJ-S configures and controls the functionality of the RTR6285 and PM7540 devices.

3.11.2. UMTS Subsystem

The UMTS Subsystem performs the digital UMTS signal processing. Its components include:

- Searcher engine
- Demodulating fingers
- Combining block
- Frame de-interleaver
- Viterbi decoder
- Up-link subsystem
- Turbo decoder

On the down-link channel the UMTS subsystem searches, demodulates, and decodes incoming CPICH, CCPCH, SCH, and Traffic Channel information. It extracts packet data from the downlink traffic channel and prepares the packet data for processing. For the up-link, the WCDMA subsystem processes the packet data and modulates the up-link traffic channel (DCH).

3.11.3. GSM Subsystem

The GSM/GPRS/EGPRS subsystem reuses the MSM7200A GSM core. It performs the digital GSM signal processing and PA gain controls for GPRS support. The PA output level is controlled by an analog signal generated on the MSM. In GSM mode, the power profile ramps up before the burst and ramps down after the burst. In GPRS mode, at the beginning of each burst (up to four active transmit slots), PA must be smoothly ramped up to some desired output power level, held at that level for the current slot, smoothly ramped down/up during the transition period and held to the new level for the next slot until the last slot. Then it must be smoothly ramped down to near-zero level. The MSM7200A support differential GSM PA power control output. The RF interface communicates with the mobile station external RF circuits. Signals to these circuits control signal gain in the Rx and Tx signal path, control DC offset errors, and maintain the system frequency reference.

3.11.4. RF Interface

The RF interface communicates with the mobile station's external RF and analog baseband circuits. Signals to these circuits control signal gain in the Rx and Tx signal path and maintain The system's frequency reference.

3.11.5. Serial Bus Interface(SBI)

The MSM7200A device's SBI is designed specifically to be a quick, low pin count control protocol for QUALCOMM's RTR6285 and PM7540 ASICs. Using the SBI, the RTR6285 and PM7540 devices can be configured for different operating modes and for minimum power consumption, extending battery life in Standby mode. The SBI also controls DC baseband offset errors.

3.11.6. Wideband CODEC

The MSM7200A device integrates a wideband voice/audio CODEC into the mobile station modem (MSM). The CODEC supports two differential microphone inputs, one differential earphone output, one single-ended earphone output, and a differential analog auxiliary interface. The CODEC integrates the microphone and earphone amplifiers into the MSM7200A device, reducing the external component count to just a few passive components. The microphone (Tx) audio path consists of a two-stage amplifier with the gain of the second stage set externally. The Rx/Tx paths are designed to meet the ITU-G.712 requirements for digital transmission systems.

3.11.7. Vocoder Subsystem

The MSM7200A device's QDSP4000 supports AMR,FR,EFR and HR. In addition, the QDSP4000 has modules to support the following audio functions: DTMF tone generation, DTMF tone detection, Tx/Rx volume controls, Tx/Rx automatic gain control (AGC), Rx Automatic Volume Control (AVC), EarSeal Echo Canceller (ESEC), Acoustic Echo Canceller (AEC), Noise Suppression (NS), and programmable, 13-tap, Type-I, FIR, Tx/Rx compensation filters. The MSM7200A device's integrated ARM9TDMI processor downloads the firmware into the QDSP4000 and configures QDSP4000 to support the desired functionality.

3.11.8. ARM Microprocessor subsystem

The MSM7200A device uses an embedded ARM1136-J, ARM926EJ-S microprocessor. This microprocessor, through the system software, controls most of the functionality for the MSM device, including control of the external peripherals such as the keypad, LCD, RAM, ROM, and EEPROM devices. Through a generic serial bus interface (SBI) the ARM926EJ-S configures and controls the functionality of the RTR6285 and PM7540 devices.

3.11.9. Mode Select and JTAG Interfaces

The mode pins to the MSM7200A device determine the overall operating mode of the ASIC. The options under the control of the mode inputs are Native mode, which is the normal subscriber unit operation, ETM mode, which enables the built-in trace mode, and test mode for factory testing.

The MSM7200 device meets the intent of the ANSI/IEEE 1149.1A-1993 feature list. The JTAG interface can be used to test digital interconnects between devices within the mobile station during manufacture.

3.11.10. General-Purpose Input/Output Interface

The MSM7200A device has general-purpose bidirectional input/output pins. Some of the GPIO pins have alternate functions supported on them. The alternate functions include USB interface, additional RAM, ROM, general-purpose chip selects, parallel LCD interface, and a UART interface. The function of these pins is documented in the various software releases.

3.11.11. UART

The MSM7200A device employs three UARTs. UART1 has dedicated pins while UART2 and UART3 share multiplexed pins.

- UART1 for Bluetooth
- UART2 for USIM interface
- UART3 for data

3.11.12. USB

The MSM7200A device integrates a universal serial bus (USB) controller that supports both unidirectional and bidirectional transceiver interfaces. The USB controller acts as a USB peripheral communicating with the USB host.

3.12. Power Block

3.12.1. General

MSM7200A, included RF, is fully covered by PM7540(Qualcomm PMIC). PM7540 cover the power of MSM7200A, MSM memory, RF block, Bluetooth, USIM and TCXO.

Major power components are :

PM7540(U701) : Phone main pmic

BD6083GUL(U801) : LCD Backlight charge pump

LP8720(U501) : 5M cam sub pmic

AAT1270(U255) : Camera Flash driver

NUS5530(U703) : main power path switch(battery charging circuit)

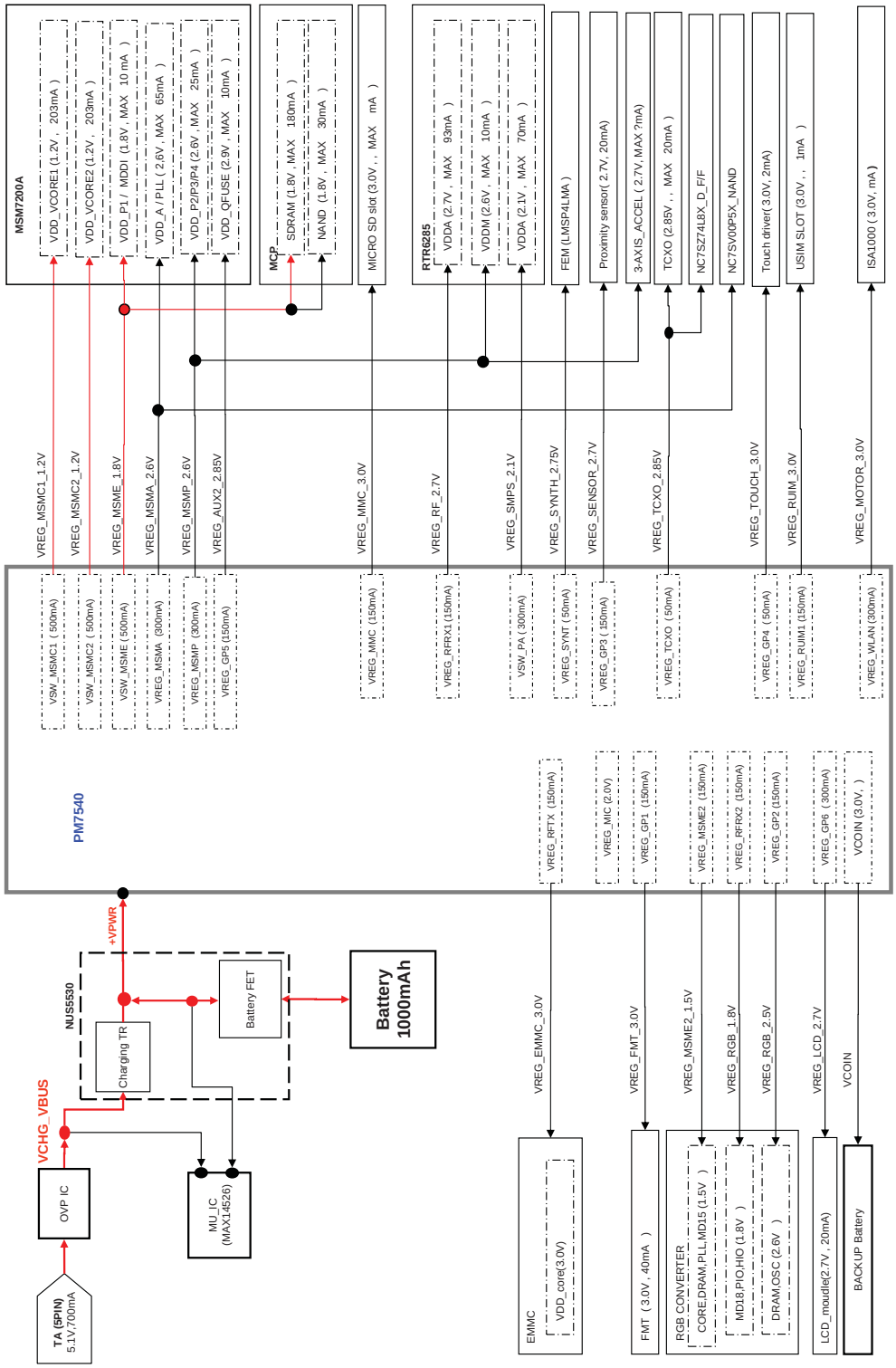
MAX14528(U702) : OVP(Over voltage protection) IC

3.12.2 PM7540

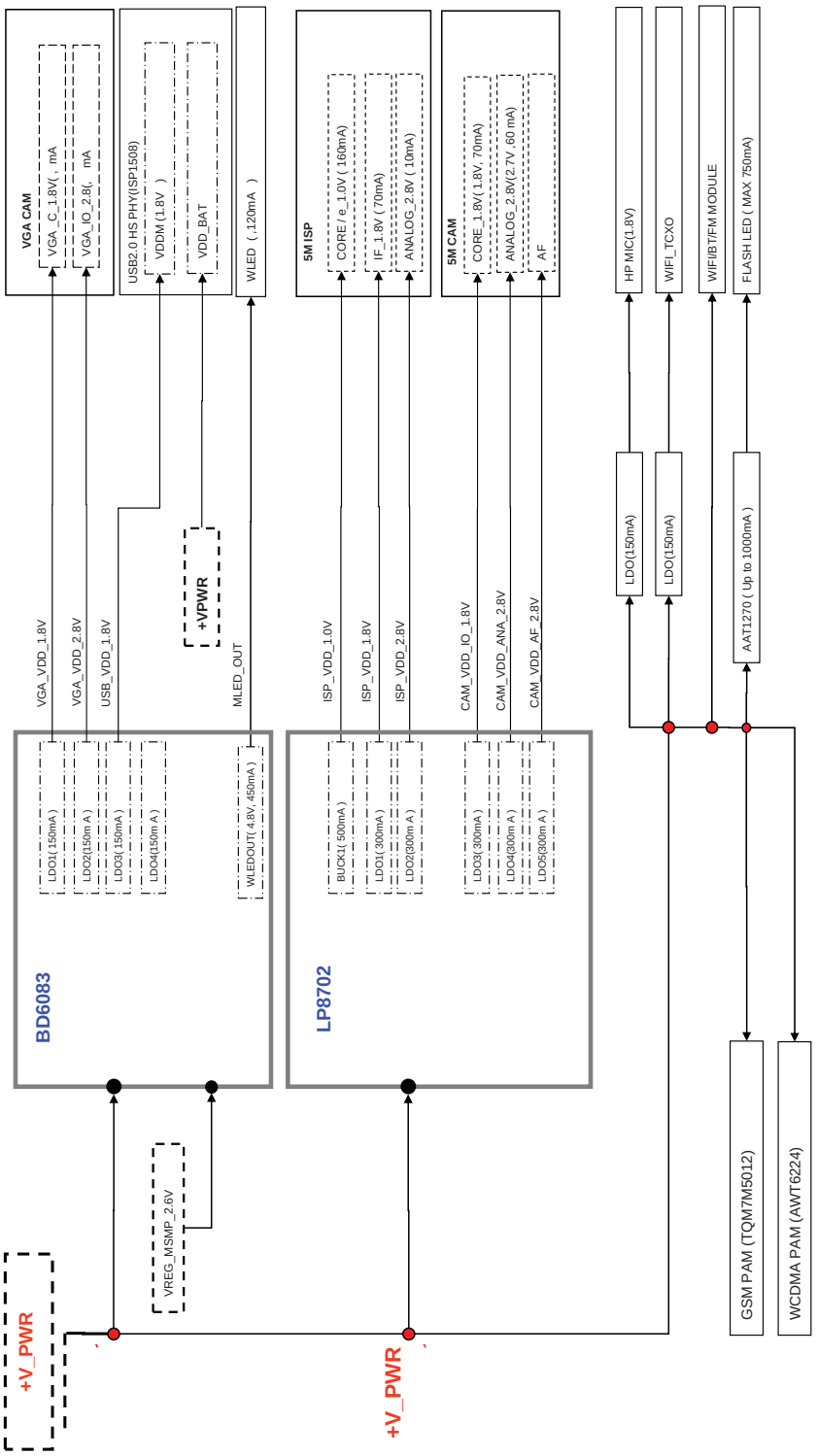
The PM7540 device (Figure) integrates all wireless handset power management. The power management portion accepts power from all the most common sources – battery, external charger, adapter, coin cell back-up – and generates all the regulated voltages needed to power the appropriate handset electronics. It monitors and controls the power sources, detecting which sources are applied, verifying that they are within acceptable operational limits, and coordinates battery and coin cell recharging while maintaining the handset electronics supply voltages. Eight programmable output voltages are generated using low dropout voltage regulators, all derived from a common trimmed voltage reference.

A dedicated controller manages the TCXO warm-up and signal buffering, and key parameters (under-voltage lockout and crystal oscillator signal presence) are monitored to protect against detrimental conditions.

MSM device controls and statuses the PM7540 IC using Single Serial Bus Interface (SSBI) supplemented by an Interrupt Manager for time-critical information. Another dedicated IC Interface circuit monitors multiple trigger events and controls the power-on sequence.



BL40 power block diagram



BL40 power block diagram

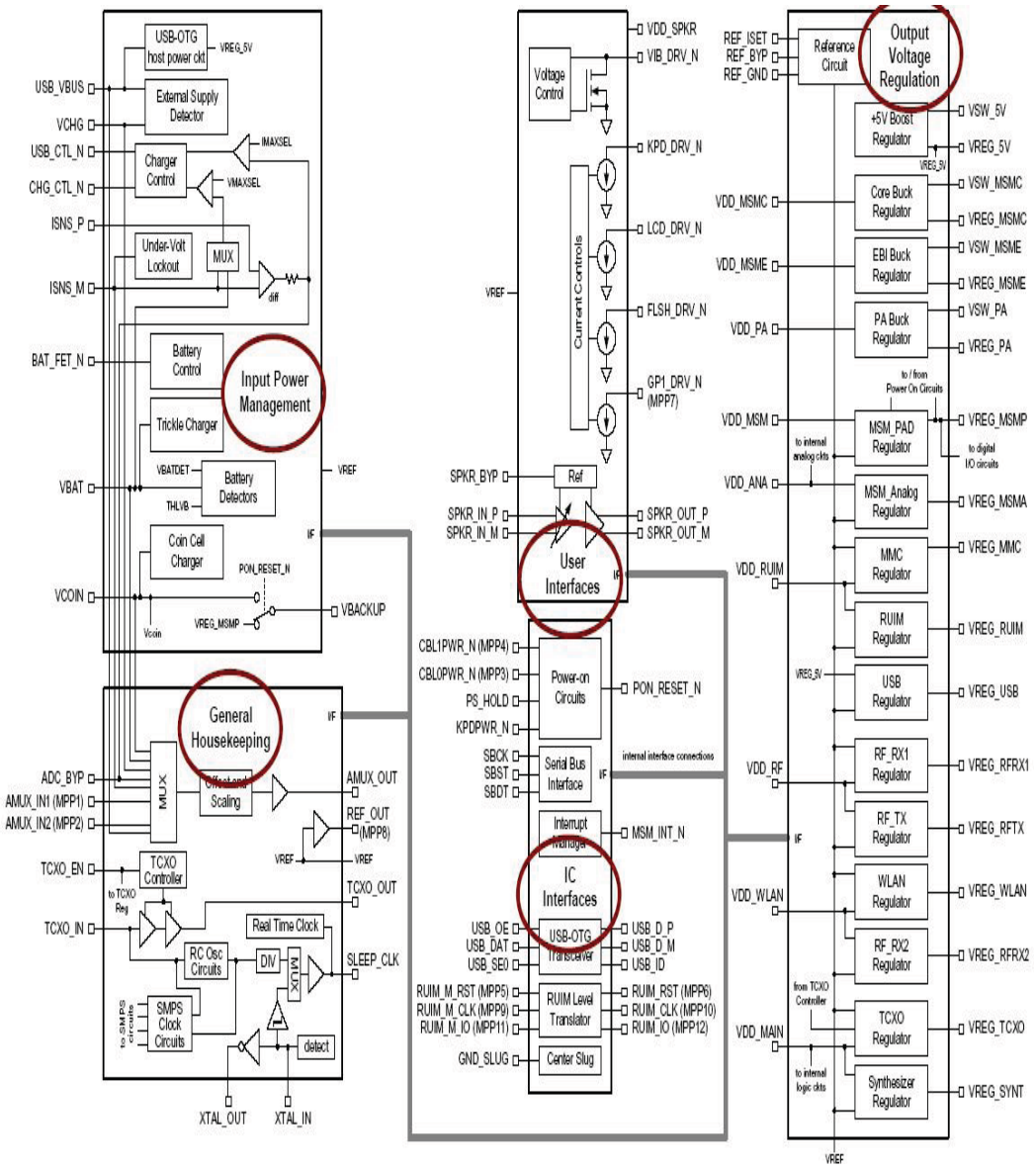
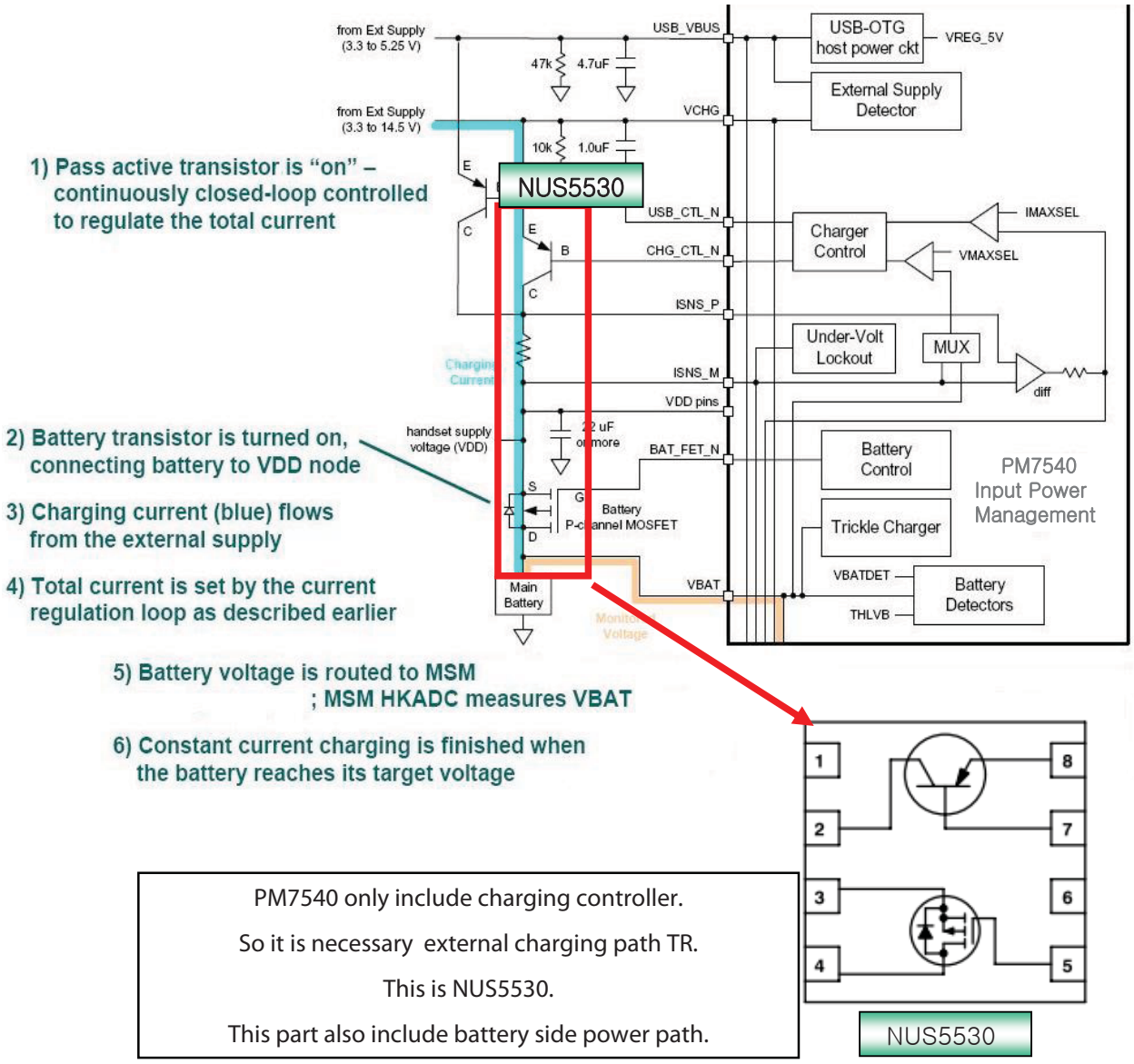


Figure. PM7540 Functional Block Diagram

3.12.3. Charging control

A programmable charging block in PM7540 is used for battery charging. It is possible to set limits for the charging current. The external supply typically connects directly to pin (VCHG). The voltage on this pin (VCHG) is monitored by detection circuitry to ascertain whether a valid external supply is applied or not. For additional accuracy or to capture variations over time, this voltage is routed internally to the housekeeping ADC via the analog multiplexer. PM7540 circuits monitor voltages at VCHARGER and ICHARGE pins to determine which supply should be used and when to switch between the two supplies. These pins are connected to the Source (or emitter) and Drain (or collector) contacts of the pass transistor respectively.



PM7540 only include charging controller.

So it is necessary external charging path TR.

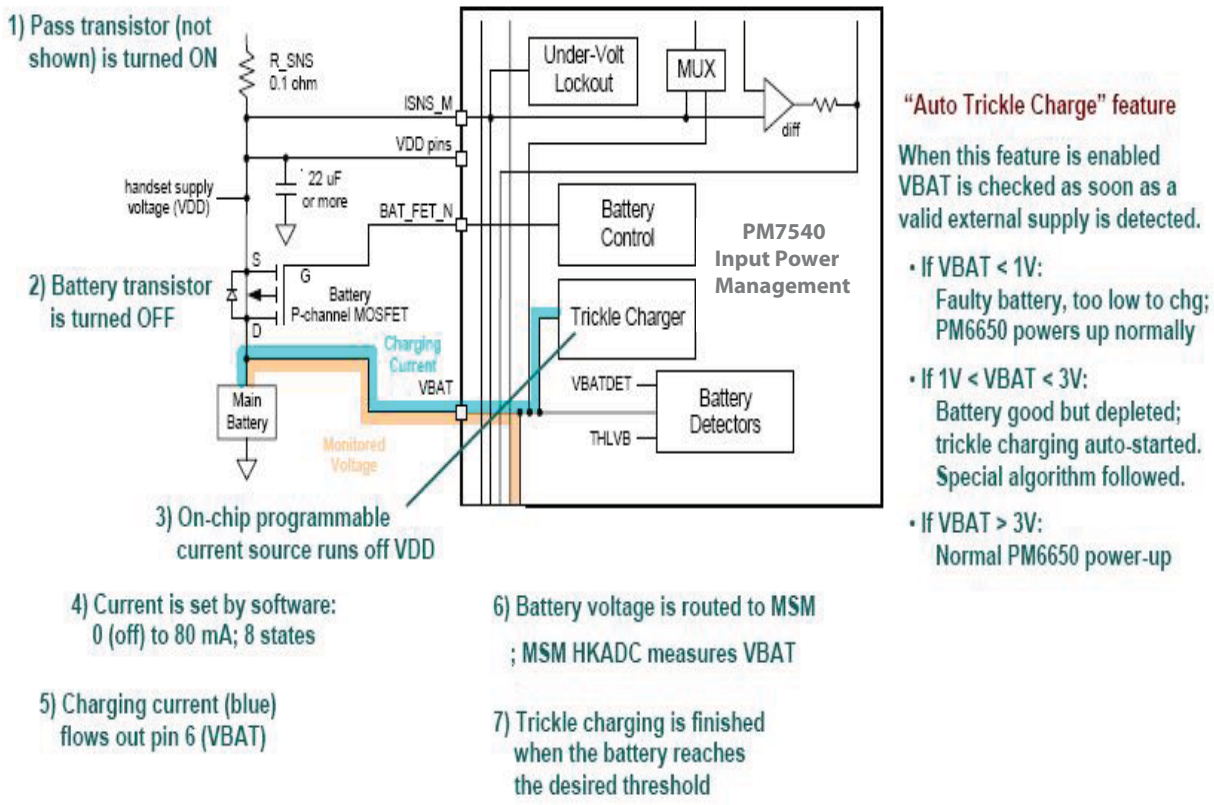
This is NUS5530.

This part also include battery side power path.

Trickle Charging

Trickle Charging of the main battery, enabled through SBI control and powered from V_{DD}, is provided by the PM7540 IC, The trickle charger is on-chip programmable current source that supplies current from V_{DD} to pin (VBAT). Trickle charging can be used for lithium-ion and nickel-based batteries, with its performance specified below (3.2V). The charging current is set to 80mA.

Parameter	Min	Typ	Max	Unit
Trickle Current	60	80	100	mA



Constant Current Charging

The PM7540 IC supports constant current charging of the main battery by controlling the charger pass transistor and the battery transistor. The constant current charging continues until the battery reaches its target voltage, 4.2V.

Constant Voltage Charging

Constant voltage charging begins when the battery voltage reaches a target voltage, 4.2V.
The end of constant voltage charging is commonly detected 10% of the full charging current.

- Charging Method : CC & CV (Constant Current & Constant Voltage)
- Maximum Charging Voltage : 4.2V
- Maximum Charging Current : 660mA
- Nominal Battery Capacity : 1000mAh
- Charging time : Max. 3h 30m
- Full charge indication current (icon stop current) : 50mA
- Cut-off voltage : 3.30V

@ Battery icon display

Indication	Standby
Bar3	3.746 ±0.05V 이상
Bar 3 → 2	3.746 ± 0.05V
Bar 2 → 1	3.674 ± 0.05V
Bar 1 → Blink	3.583 ± 0.05V
Low Voltage, Warning message+ Blinking	3.583 ± 0.05V (Stand-by) / 3.583 ± 0.05V (Talk) [Interval : 3min(Stand-by) / 1min(Talk)]
Power Off	3.3 ± 0.05V

3.13. External memory interface

A. MSM7200A

The MSM7200A device was designed to provide two distinct memory interfaces. EBI1 was targeted for supporting DDR synchronous memory devices. EBI2 was targeted towards supporting slower asynchronous devices such as LCD, NAND flash, SRAM, NOR flash etc. To support the high-bandwidth, high-density, and low-latency requirements of the advanced on-chip applications, the MSM7200A IC has two high-speed, high-performance memory slave interfaces: the external bus interface 1 (EBI1) and the stack memory interface (SMI). To achieve higher bandwidth and better use of the memory device interface, the SMI accepts multiple commands for the external memory device. The SMI interface acts as a slave device to all of the bus masters within the MSM device. The masters arbitrate to gain access to the SMI, and upon obtaining the access, they issue commands to the SMI. The bus masters are connected to the SMI through an advanced extensible interface (AXI) bus bridge (or global interconnect block) and communicate over a 64-bit, non-blocking AXI bus protocol. The AXI bus bridge provides the arbitration logic for all of the bus masters.

- EBI1 Features
  - Support for only low-power memories at 1.8-V I/O power supply voltage
  - AXI bus frequencies up to 133 MHz
  - A 16-bit/32-bit static and dynamic memory interface
- DDR SDRAM interface features include:
  - Supports both 32-bit DDR SDRAM devices, up to 133-MHz bus speed
  - Supports auto precharge and manual precharge
  - Supports partial refresh
  - Separate CKE pin per chip-select to support partial operation mode
  - Idle power down to save idling power consumption
- EBI2 Features
  - Support for asynchronous FLASH and SRAM(16bit & 8bit).
  - Interface support for byte addressable 16bit devices(UB_N & LB_N signals).
  - 2Mbytes of memory per chip select.
  - Support for 8 bit/16bit wide NAND flash.
  - Support for parallel LCD interfaces, port mapped of memory mapped(8 or 16 bit)
- Multi Chip Package : DDR SDRAM and NAND Flash merged 1 package
- 2Gbit Mobile DDR SDRAM(64Mb x32) / 4Gbit NAND Flash

Interface Spec				
Part Name	**Product Gr**	**Maker**	**Operation Voltage (Flash / DRAM)**	**Speed (Flash / DRAM)**
H8BES0UQ0MCR-46M	NAND	Hynix	1.8V	45ns / 333MHz
	SDRAM		1.8V	

Table#1. External memory interface for GM730

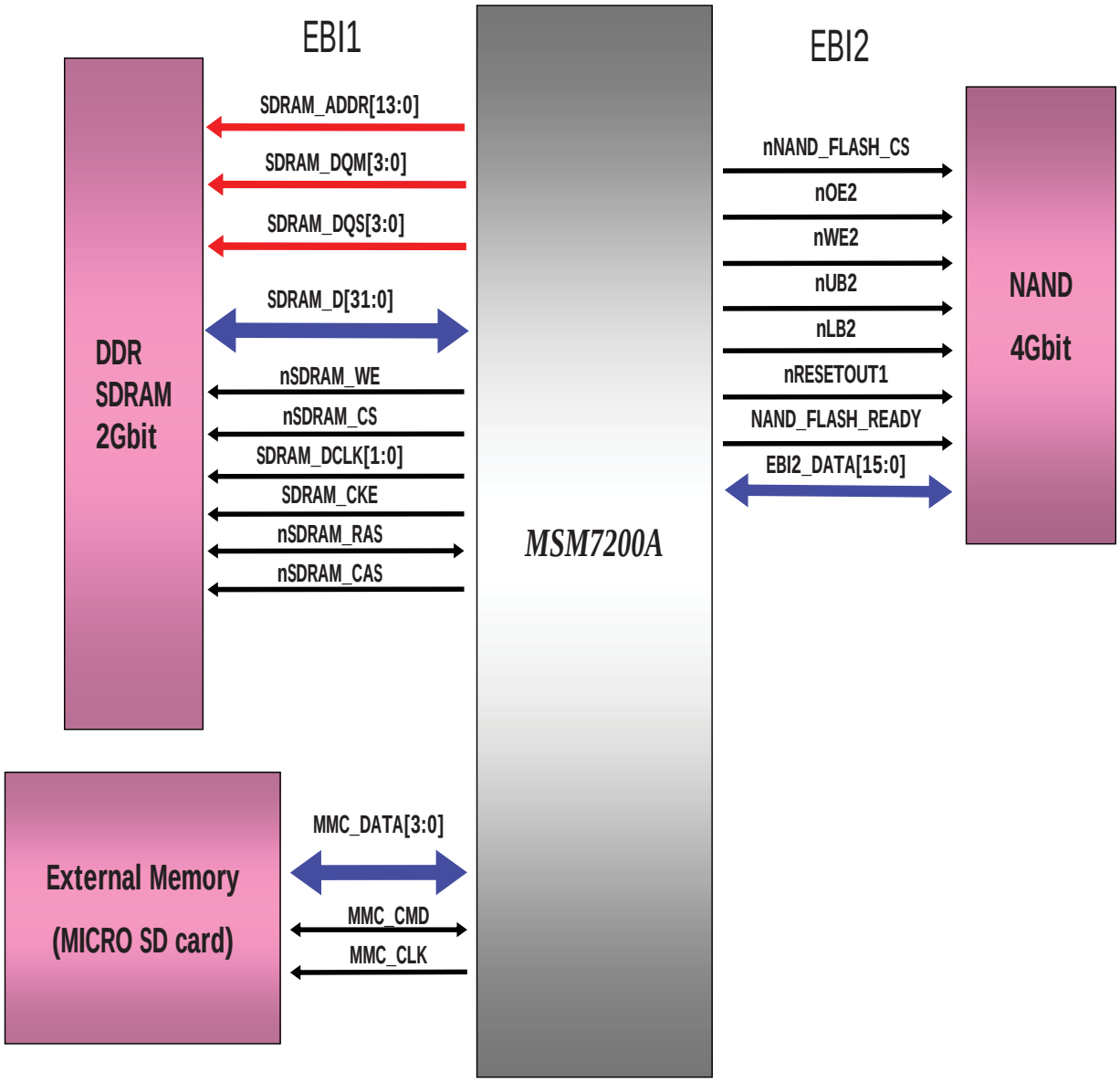


Figure. Simplified Block Diagram of Memory Interface

3.14. H/W Sub System

3.14.1. RF Interface

A. RTR6285 (WCDMA_Tx, GSM_Tx/Rx)
MSM7200A controls RF part(RTR6285) using these signals.

• SSBDT : SSBI I/F signals for control Sub-chipset
• TX_ON : Power AMP on RF part
• RX0_I/Q_M/P,TX_I/Q_M/P : I/Q for T/Rx of RF
• TX_AGC_ADJ : control the gain of the Tx signal prior to the power amplifier
• DAC_REF : Reference input to the MSM Tx data DACs

B. the others
• TRK_LO_ADJ : TCXO(19.2M) Control
• PA_ON0/PA_RANGE0 : WCDMA(2100) TX Power Amp Enable
• ANT_SEL[0-2] : Ant Switch Module Mode Selection(WCDMA,GSM Tx/Rx,DCS-PCS Tx/Rx)
• GSM_PA_BAND : GSM/DCS-PCS Band Selection of Power Amp
• GSM_PA_RAMP : Power Amp Gain Control of APC_IC
• GSM_PA_EN : Power Amp Gain Control Enable of APC_IC

C. ALM2412 (A-GPS LNA)
* GPS_LNA_EN : GPS LNA Enable Saignal (GPS LNA Shutdown)

D. LBEH19UNBC (BT / WiFi module)

1. WiFi

* WLAN_CMD : WLAN SDIO Command Line.
* WLAN_CLK : WLAN SDIO Clock Input.
* WLAN_SDIO[3:0] : WLAN SDIO Data Line.
* WLAN_RESET_N : Low asserting reset for WLAN core.
* WLAN_HOST_WAKEUP : WL_HOST_WAKE signal output.

2. BT

* BT_UART_RXD : Bluetooth UART Serial Input.
* BT_UART_RTS : Bluetooth UART Request to Send. Active-low request.
* BT_UART_CTS : Bluetooth UART Clear to Send. Active-low clear.
* BT_UART_TXD : Bluetooth UART Serial Output.
* BT_PCM_CLK : BT PCM clock, can be PCM-master (output) or PCM-slave (input).
* BT_PCM_DIN : BT PCM data input.
* BT_PCM_SYNC : BT PCM sync signal, can be PCM-master (output) or PCM-slave (input).
* BT_PCM_DOUT : BT PCM data output.
* BT_WAKEUP : BT Wakeup Input.
* BT_HOST_WAKEUP : BT Host Wakeup Output
* BT_RESET_N : Low asserting reset for BT core.

3. Common

* REG_ON : If low the internal regulators will be disabled.
* SLEEP_CLK : LPO clock (32.768kHz) input. Used for low-power mode timing.
* CLK_IN : Crystal amplifier input or frequency reference input.
* CLK_REQ : Crystal Circuit / Reference Clock Enable (active-high)

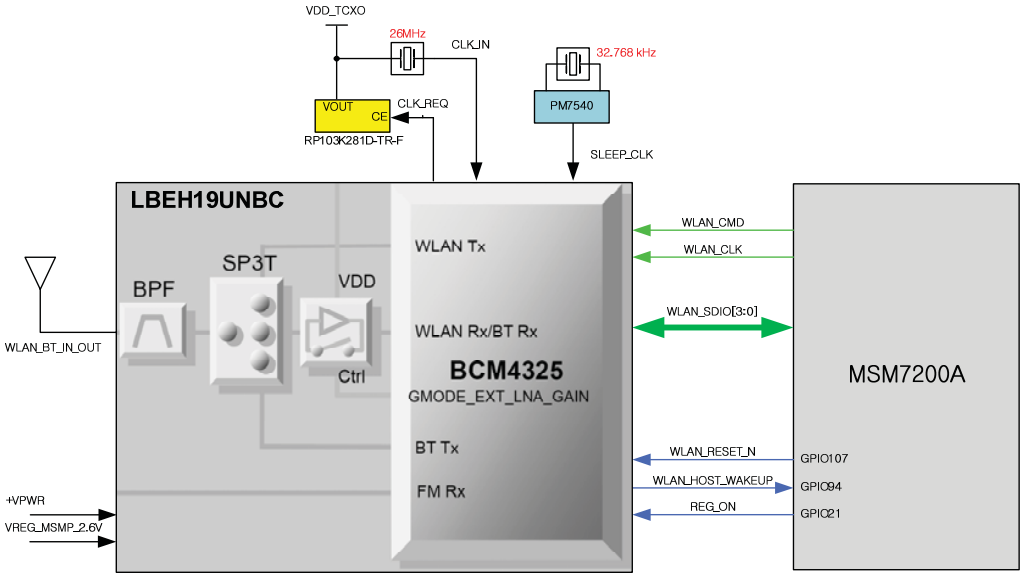


Figure. Block Diagram of WiFi Interface

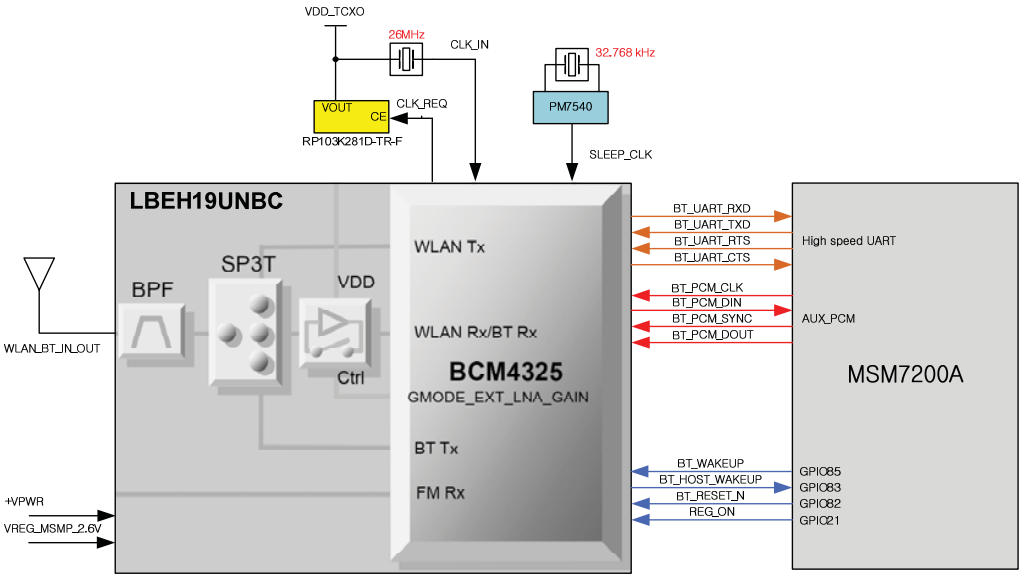


Figure. Block Diagram of BT Interface

E. FM Radio interface

- FM_ANT : FM RF input.
- FMT_ANT : FM transmit output connection to transmit antenna.
- FMT_RESET : Device reset (active low) input.
- MUIC_FMT_I2C_SCL : Serial clock input.
- MUIC_FMT_I2C_SDA : Serial data input/output.
- SLEEP CLK : External reference oscillator input. (32.768KHz)
- FM_R : Right audio line output – digital input data.
- FM_L : Left audio line output – digital frame synchronization.
- FMT_RIN : Right audio line input – digital output data.
- FMT_LIN : Left audio line input _ digital frame synchronization.
- FM_RDS_INT : General purpose output – interrupt request.

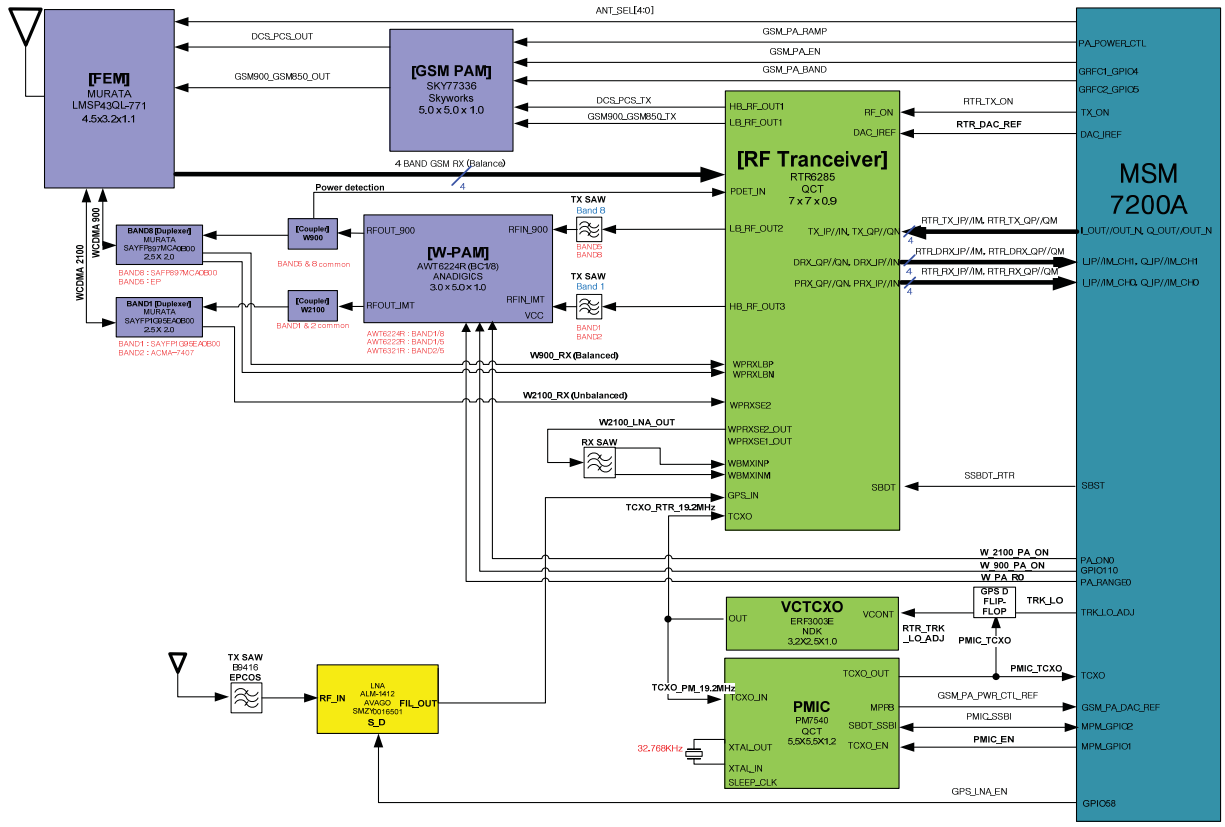


Figure. Block Diagram of RF Interface

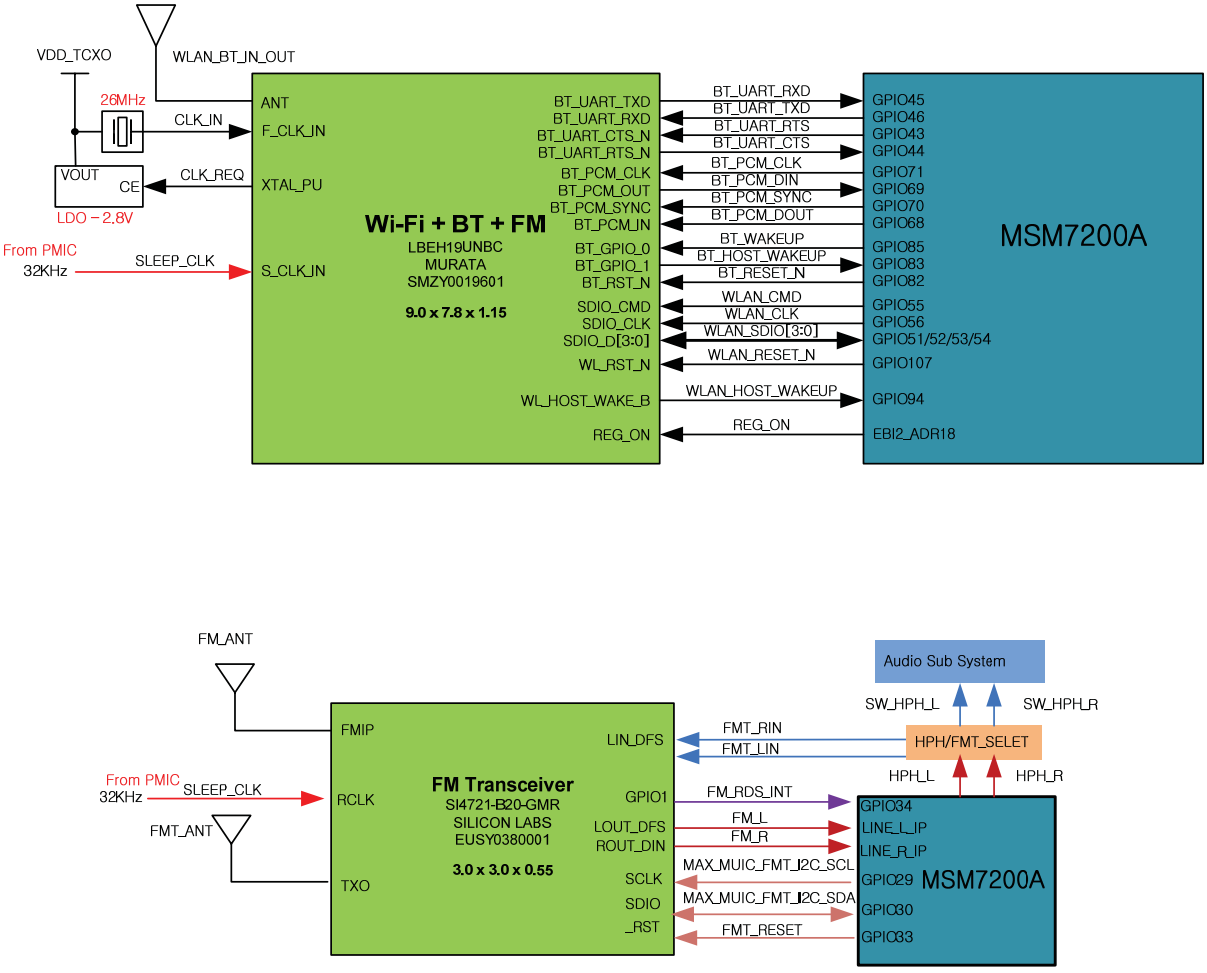


Figure. Block Diagram of RF Interface

3.14.2. MSM Sub System

3.14.2.1. USIM Interface

SIM interface scheme is shown in Figure.
And, there control signals are followed
- USIM_CLK : USIM Clock
- USIM_Reset : USIM Reset
- USIM_Data : USIM Data T/Rx

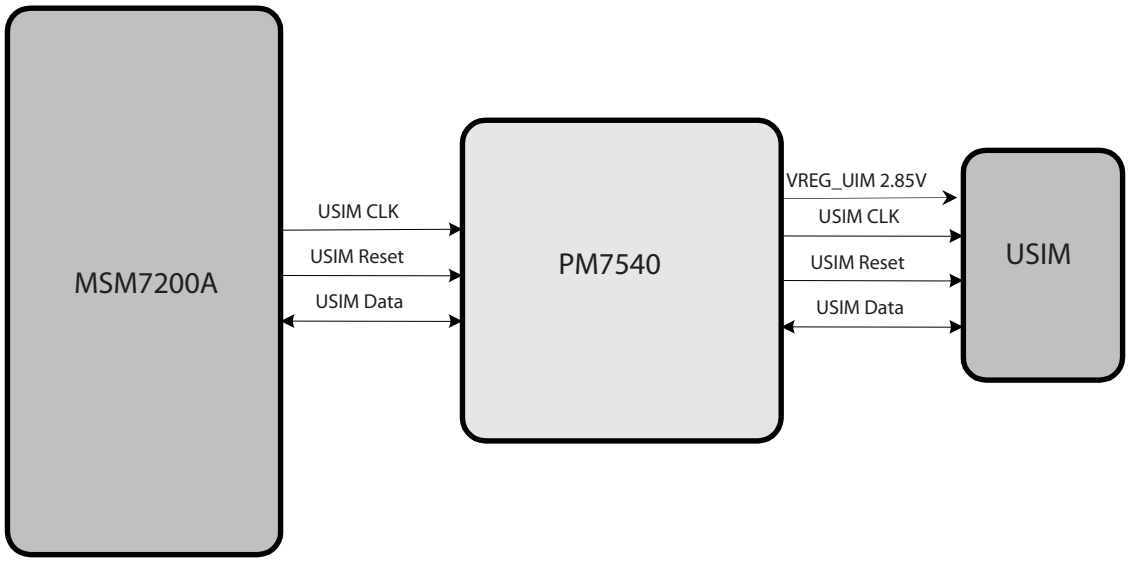


Figure. SIM Interface

3.14.2.2. UART Interface

UART signals are connected to MSM GPIO through IO connector with 115200 bps speed.

GPIO_Map	Name	Note
GPIO_86	UART3_RX	Data_Rx
GPIO_87	UART3_TX	Data_Tx

Table. UART Interface

3.14.2.3. HS-USB

The universal serial bus (USB) is an interconnection standard widely supported by the electronic industry. The USB2.0 spec defines data rates as low-speed (1.5 Mbps), full-speed (12Mbps) and hi-speed (480 Mbps). When two devices are connected via a USB interface, one of the devices must act as a host, and the other device must act as a peripheral. The host is responsible for initiating and controlling traffic on the bus. The USB specification requires personal computers (PCs) to act as hosts, and other devices such as printers, keyboards, mice, etc. to act as peripherals. The OTG supplement creates a new class of devices called OTG devices. OTG devices can act as either hosts or peripherals, depending upon how they are connected and/or used.
The MSM7200A device contains a new USB high-speed function that is based on a embedded UTMI+ core with a UTMI+ low pin interface (ULPI) compatible port. The MSM device's ULPI interface connects to an external ULPI PHY chip to complete the design. The ULPI core embedded in the MSM along with the PM7540 IC and a USB high-speed PHY IC provide support for the high-speed interface.

Name	Note
USBH_CLK	Input clock from PHY
USBH_DIR	Controls the direction of USBH_DATA. When high, data is driven into the MSM.
USBH_NEXT	Used by the PHY to throttle data.
USBH_STOP	Signals the end of a USB transmit packet or a register write operation, and optionally stops any receive.
USBH_DATA[0:7]	Bi-directional data pin

Table. HSUSB Signal Interface

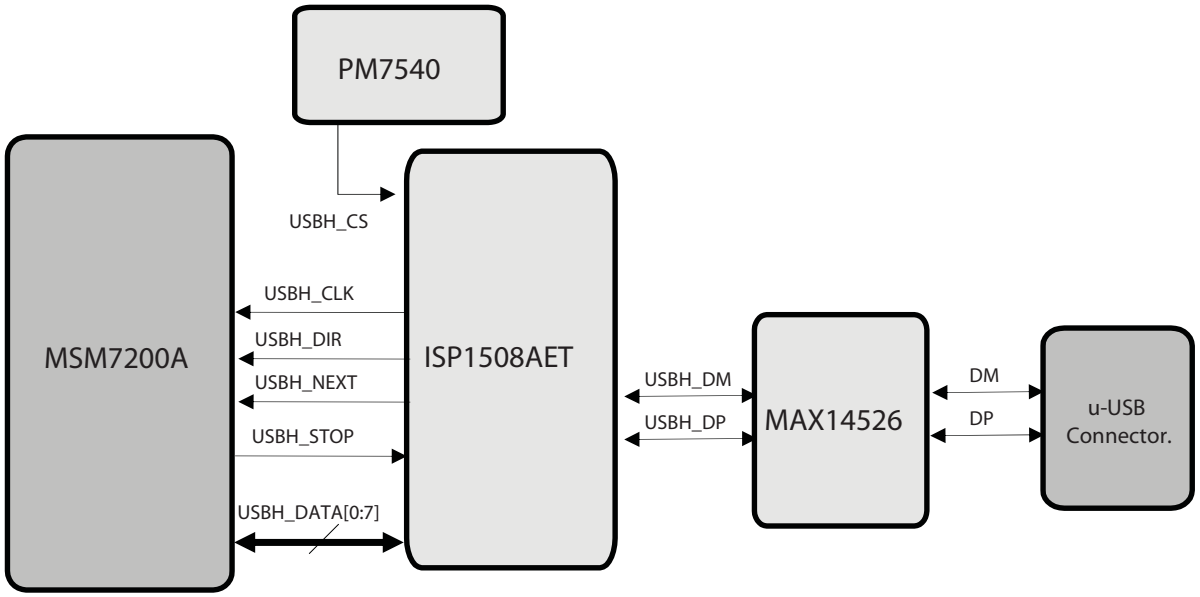


Figure. USB block(MSM7200A Side & ISP1508AET, MAX14526 Side)

3.14.3. Side Key

There are 6 main key buttons that are controlled by MSM7200A. Refer to the Side Key circuit. 'Power Button' Key is connected to PMIC(PM7540:KPD_PWR_N).

	KEY_COL[0]	KEY_COL[1]
KEY_ROW[0]	Music	FOCUS
KEY_ROW[1]	-	SHUTTER
KEY_ROW[2]	VOL_UP	VOL_DOWN

Table. Key Matrix Mapping Table

POWER ON KEY

0128 CHAGE

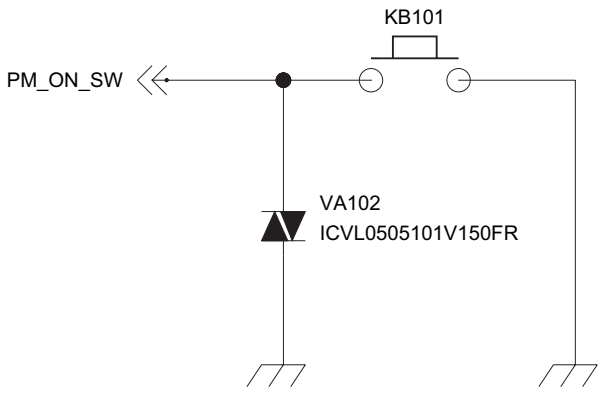
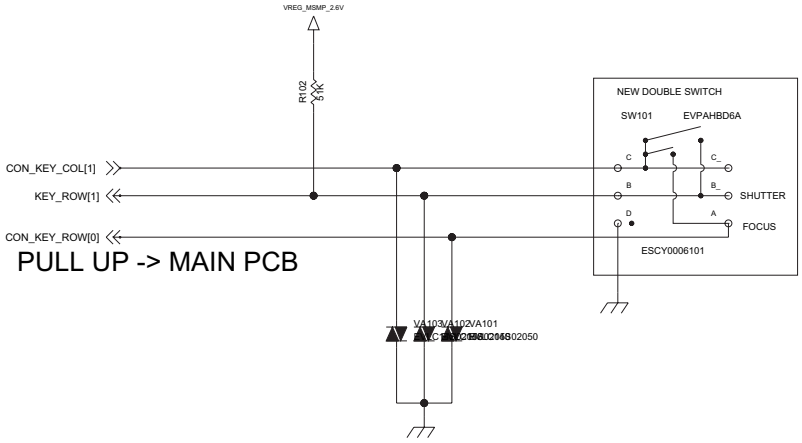


Figure. Power ON / OFF & Suspend Button Key circuit

SIDE KEY - VOLUME

Figure. Volume Key Circuit

SIDE KEY (FPCB)



SIDE KEY - AF

Figure. Camera Key Circuit

0128 ADD

VOICE RECOGNITION

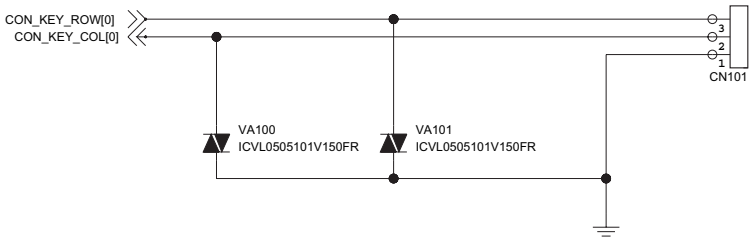


Figure. Music Key Circuit

3.14.3.1 Power Key LED

There are 1 Red, 1 Blue LED in power key backlight circuit which is in SPK_FPCB.
Those LEDs are driven by KPD_DR_N and LCD_DR_N line from PM7540.

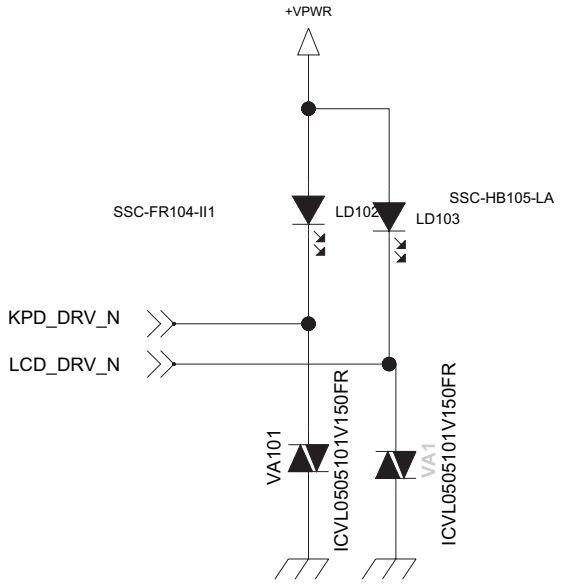


Figure. Schematic of Power Keypad back light circuit

3.14.3.2 Charging LED

There are 1 Red LED in Indicator LED_Rev.D circuit, which are driven by IND_DRV_N line from PM7540.

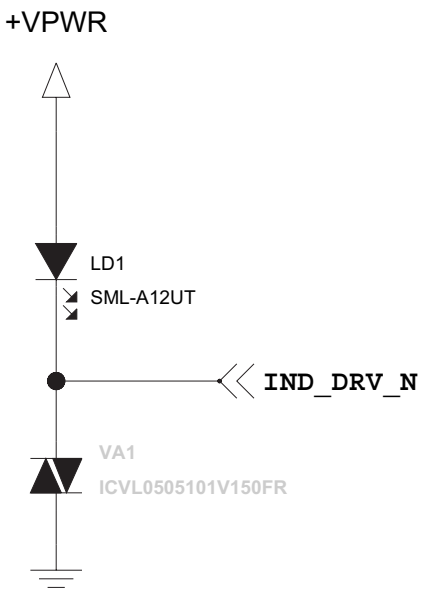


Figure. Schematic of Indicator LED_Rev.D circuit

3.14.4. Touch Interface

In BL40 touch screen sensor is an optically clear, solid state, high resolution capacitive touch solution that enables precise and advanced finger-based input for portable electronic devices.
Touch screen module is a glass ClearPad sensor with an attached flexible PCB with control electronic components.There is a cover lens to protect the sensor assembly. The communication protocol to host is RMI over I2C.

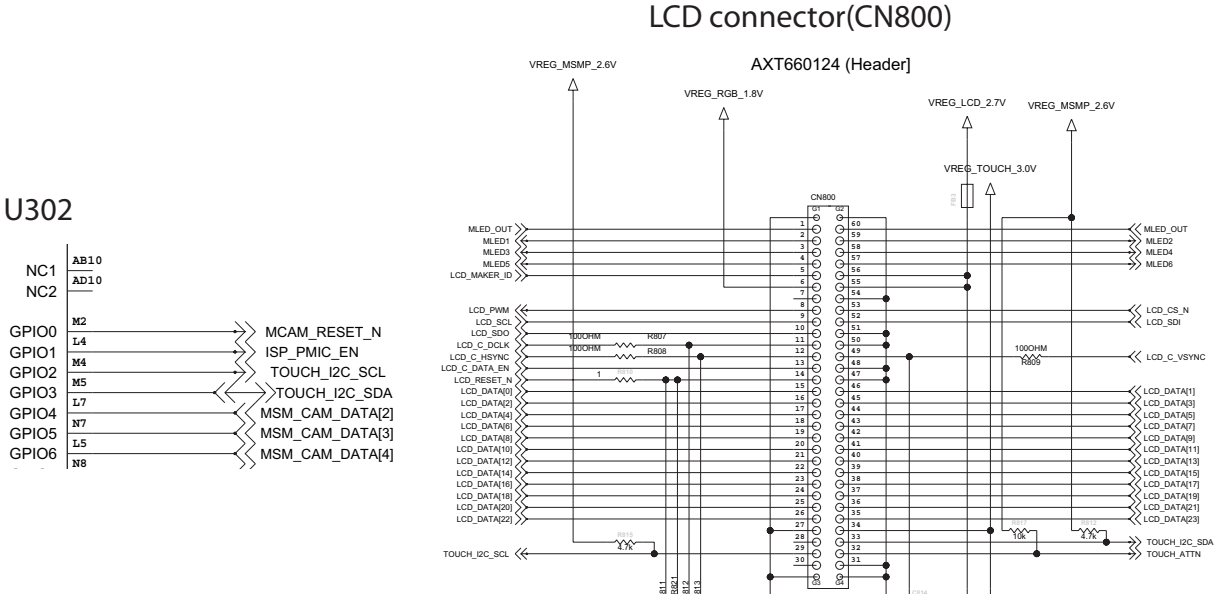


Figure. Touch Sensor Schematic

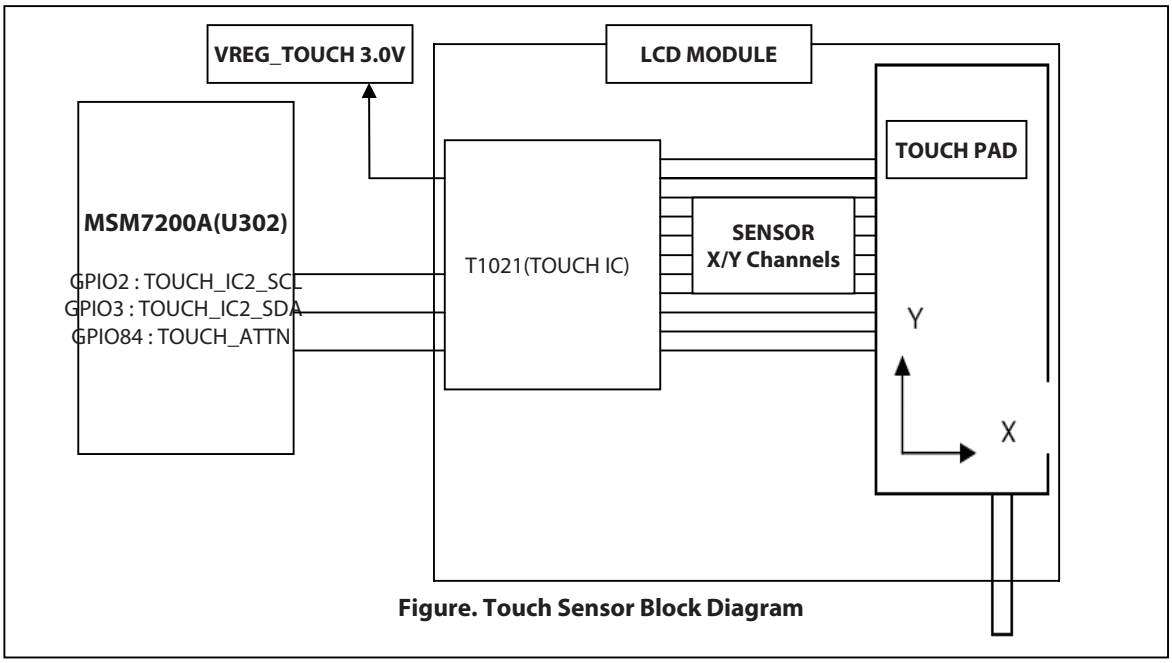


Figure. Touch Sensor Block Diagram

3.14.5. LED(KEY/Indicator) Light

There are 2 White LEDs in sub key backlight circuit, which are driven by KPD_DR_N line from PM7540.

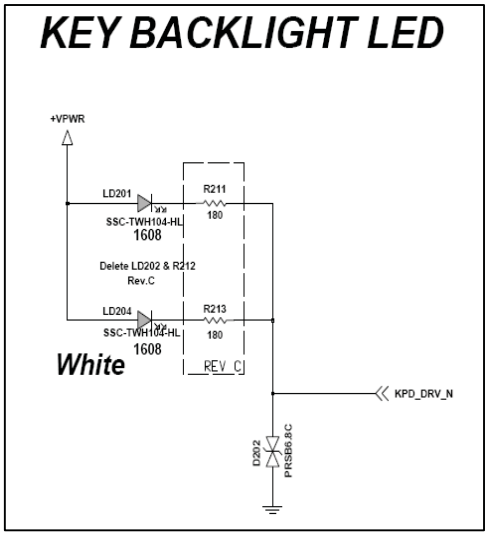


Figure. Schematic of Power Keypad back light circuit

In addition, there is 1 RGB LED in LED Notification-RGB backlight circuit, which are driven by KEBY_BACKLIGHT line from MSM7200 GPIO90/89/88.

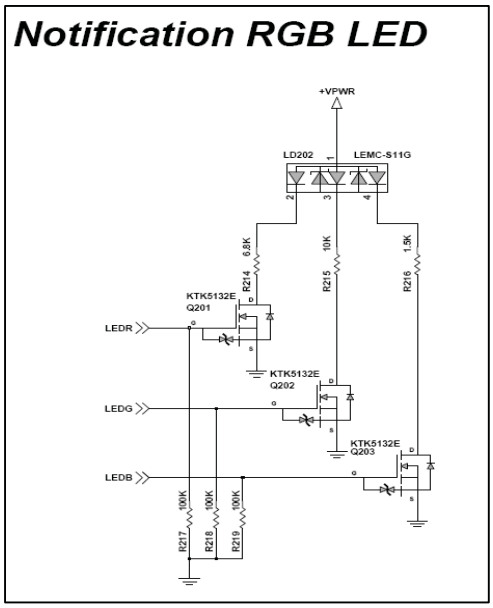


Figure. Schematic of KEY back light circuit

3.15. Audio and sound

3.15.1. Overview of Audio & Sound & BT path

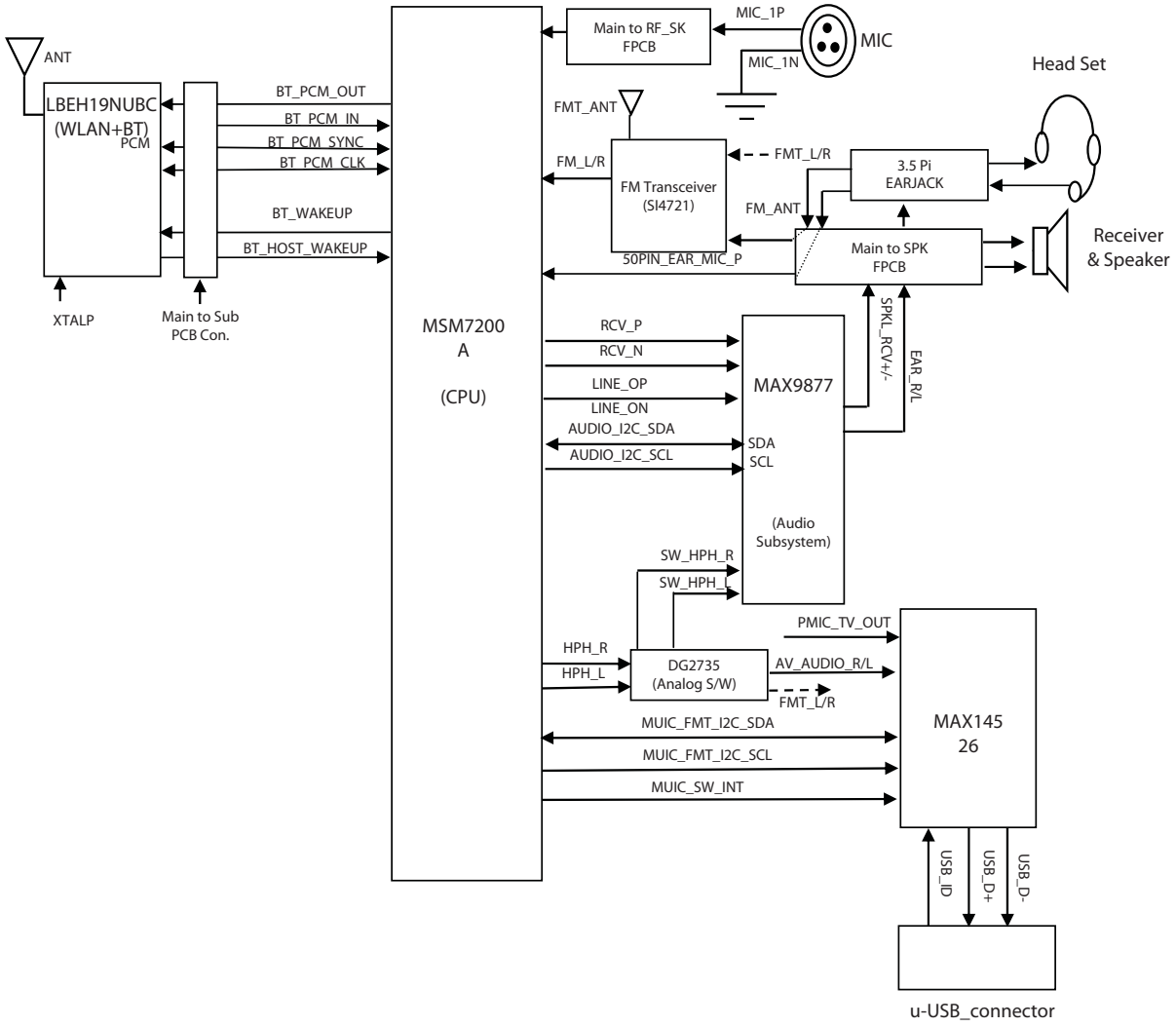


Figure. Block diagram of Audio & Sound path

3.15.2. Audio signal processing & interface

3.15.2.1 MSM7200A audio interface

The MSM7200A audio front end comprises the stereo wideband codec, PCM interface, and additional DSP audio processing.
The stereo wideband codec allows the MSM7200A device to support stereo music/ringer melody applications in addition to the 8 kHz voice band applications on the forward link. In the audio transmit path, the device operates as 13-bit linear converter with software, selectable 8 kHz and 16 kHz sampling rate. In the audio receive path, the device operates as a software-selectable 13-bit or 16-bit linear converter with software selectable 8 kHz, 16 kHz, 22.05 kHz, 24 kHz, 32 kHz, 44.1 kHz, or 48 kHz sampling rate. Through software, the Rx path can be configured as either a mono or stereo output. New to the MSM7200A device is a transmit (Tx) ADC path that now supports stereo wideband sampling.
The integrated codec contains all of the required conversion and amplification stages for the audio front end. The codec operates as a 13-bit linear codec with the transmit (Tx) and receive (Rx) filters designed to meet ITU-T G.712 requirements. The codec includes a programmable side tone path for summing a portion of the Tx audio into the Rx path.
An on-chip voltage/current reference is provided to generate the precise voltages and currents required by the codec. This circuit requires a single capacitor of 0.1 µF to be connected between the CCOMP and GND pins. The on-chip voltage reference also provides a microphone bias voltage required for electret condenser microphones typically used in handset applications. The MICBIAS output pin is designed to provide 1.8 V DC while delivering as much as 1 mA of current. Audio decoder summing and headset switch detection are included.
The codec interface includes the amplification stages for both the microphone and earphone. On the transmit (Tx) path, the interface supports two differential microphone inputs, a differential auxiliary input, and a stereo line input. On the receive (Rx) path the interface supports one differential earphone output, a stereo single-ended headphone output, one differential auxiliary output, and stereo single-ended line outputs.
The codec is configured by the codec SBI registers. The codec interface is shown in Figure.
Also part of the audio front end is the PCM interface. The PCM interface allows for an external codec to be used instead of the internal codec. This interface can be used in I2S mode which will allows for an external stereo DAC to be used.
Finally, the audio front end includes additional DSP audio processing that does gains, filtering and other audio processing.
The DSP audio processing is configured through the QDSP5000 command types and is not directly controlled by the microprocessor.

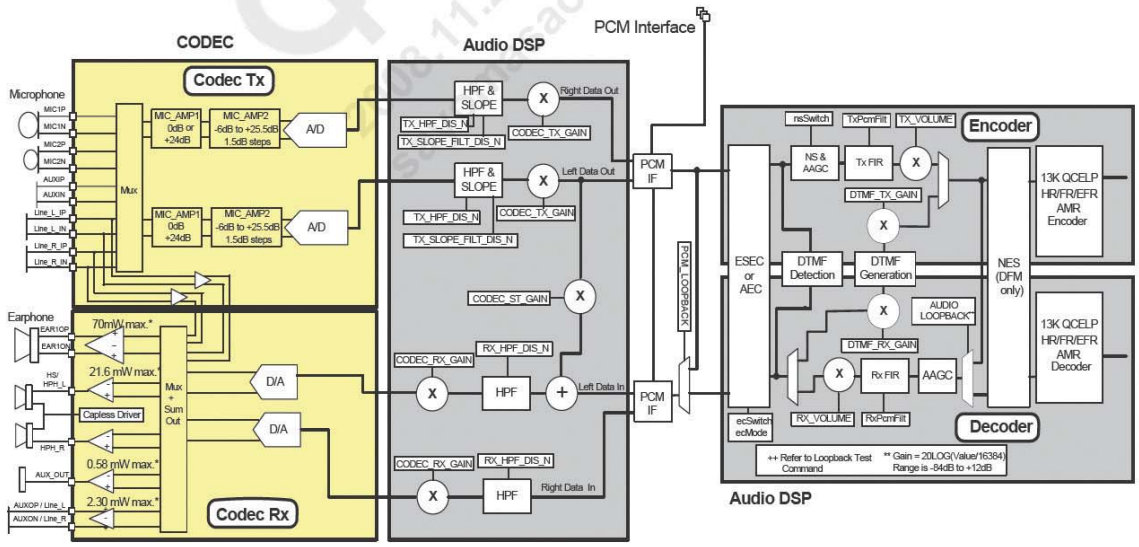


Figure. Detailed diagram of MSM7200A audio interface

3.15.2.2 MAX9877 audio interface

The MAX9877 combines a high-efficiency Class D audio power amplifier with a stereo Class AB capacitorless DirectDrive® headphone amplifier. Maxim's 3rd generation, filterless Class D amplifier with active emissions limiting technology provides Class AB performance with Class D efficiency.
The MAX9877 delivers up to 725mW from a 3.7V supply into an 8Ω load with 87% efficiency to extend battery life. The filterless modulation scheme combined with active
emissions limiting circuitry and spread-spectrum modulation greatly reduces EMI while eliminating the need for output filtering used in traditional Class D devices.
The stereo Class AB headphone amplifier in the MAX9877 uses Maxim's patented DirectDrive architecture, that produces a ground-referenced output from a single supply, eliminating the need for large DC-blocking capacitors, saving cost, space, and component height.
The device utilizes a user-defined input architecture, three preamplifier gain settings, an input mixer, volume control, comprehensive click-and-pop suppression, and I2C control. A bypass mode feature disables the integrated Class D amplifier and utilizes an internal DPST switch to allow an external amplifier to drive the speaker that is connected at the outputs of the MAX9877.
The MAX9877 is available in a thermally efficient, space-saving 20-bump WLP package.

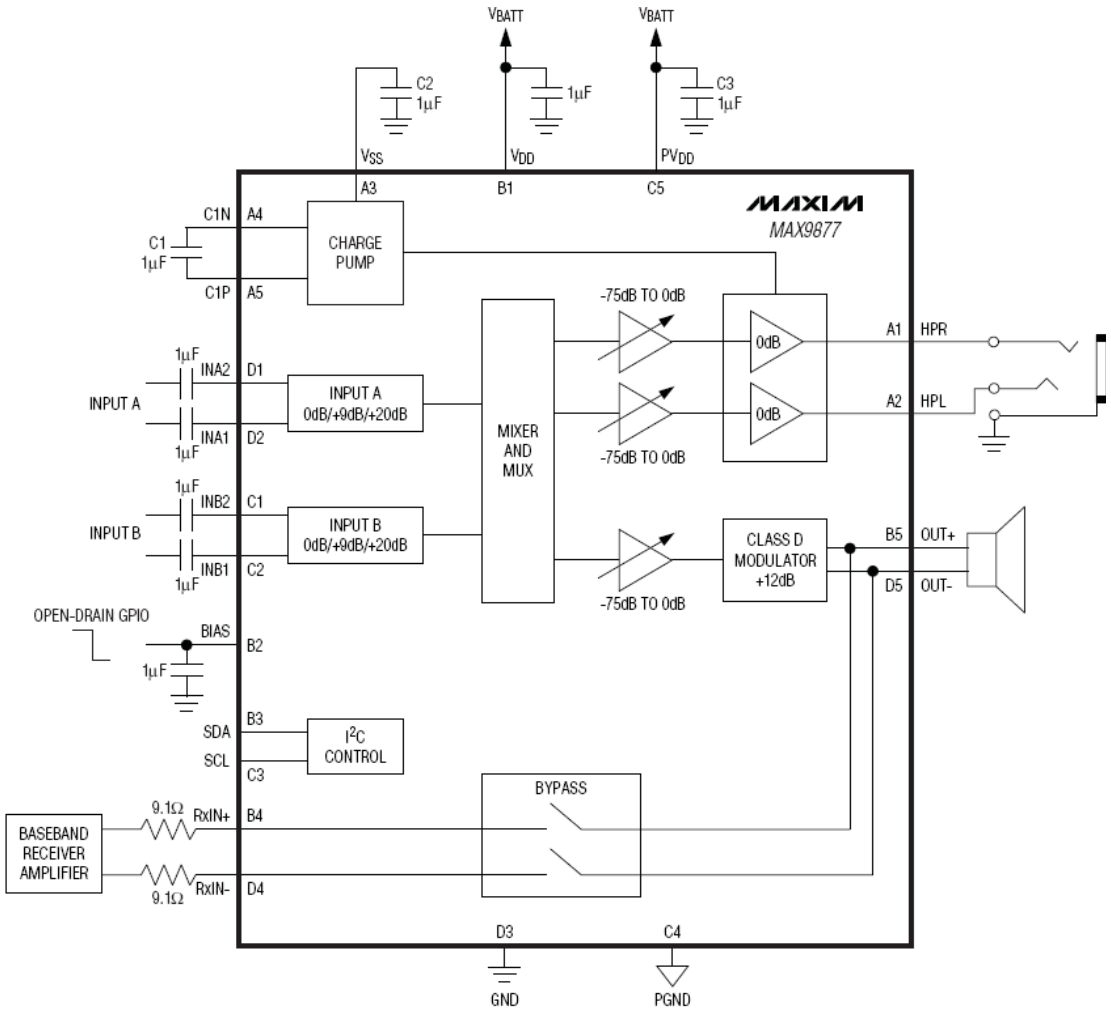
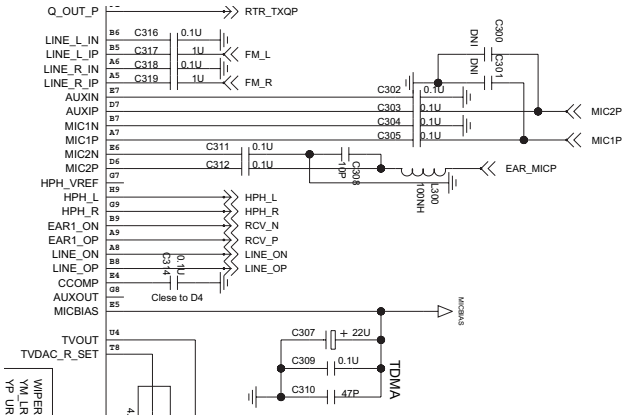


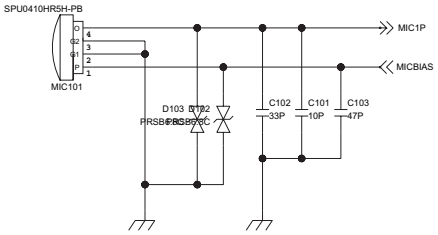
Figure. Detailed diagram of MAX9877 audio interface

MSM7200A Block



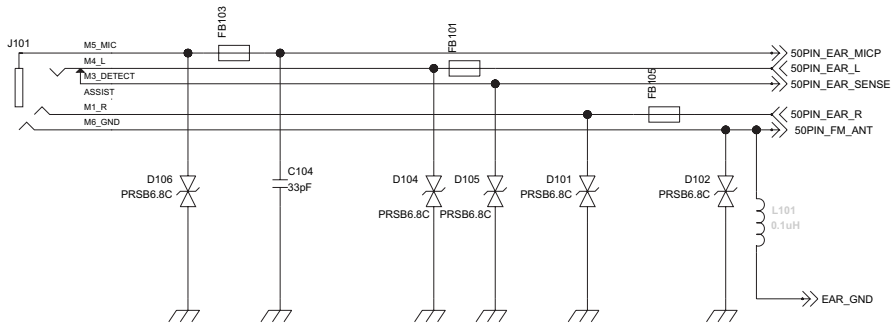
Handset main MIC Block

0128 MIC CHANGE

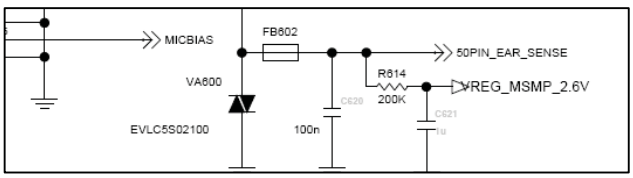


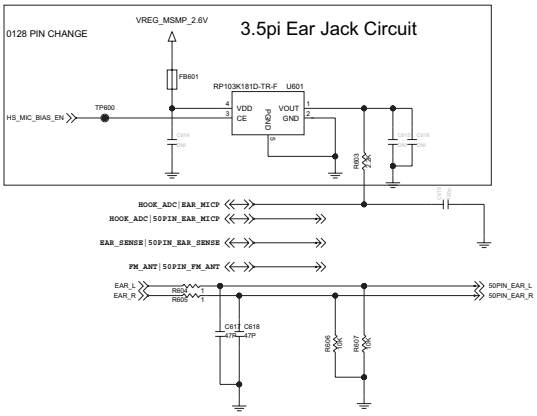
MAIN MIC

Head Set Jack Block

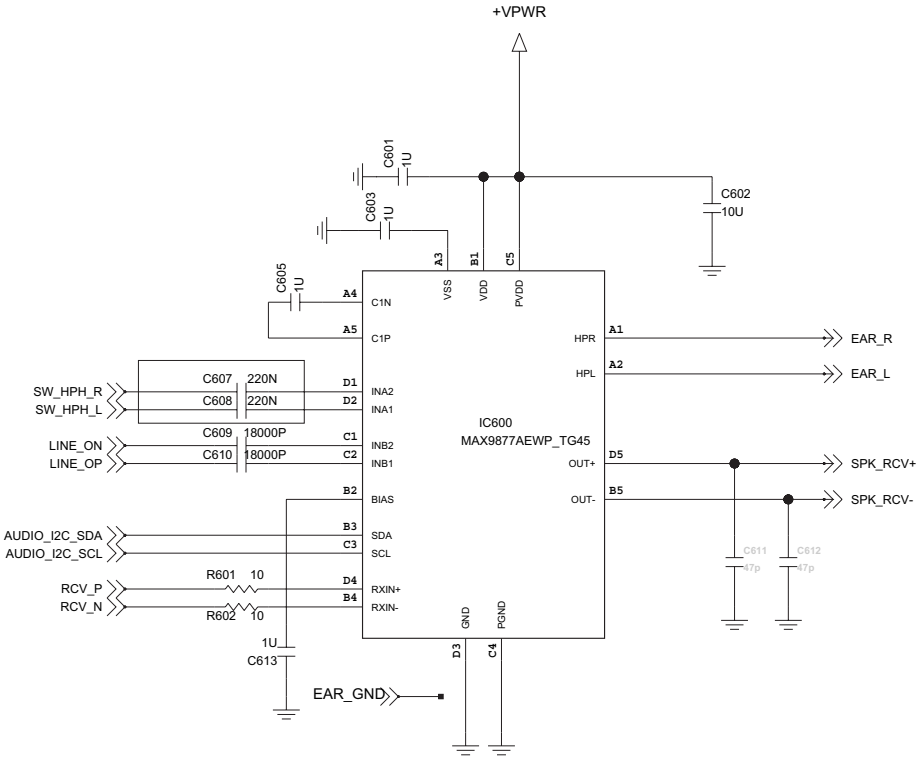


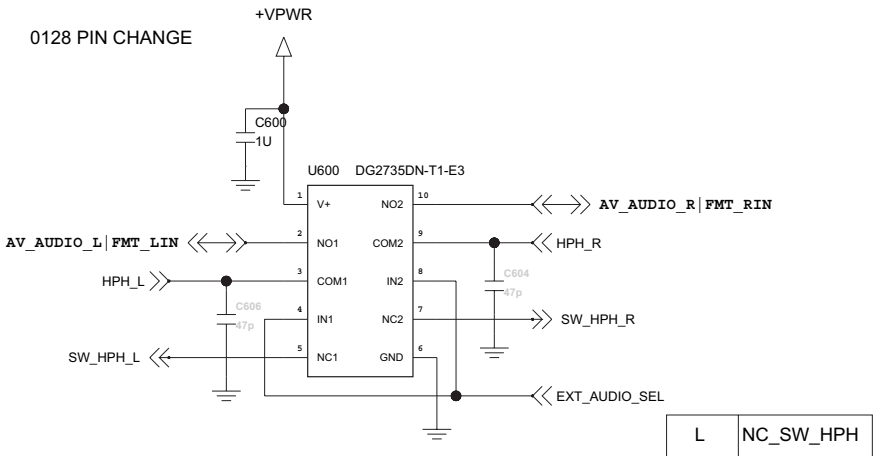
3.5pi Ear Jack Connector





Audio Subsystem(MAX9877) Block & Analog S/W

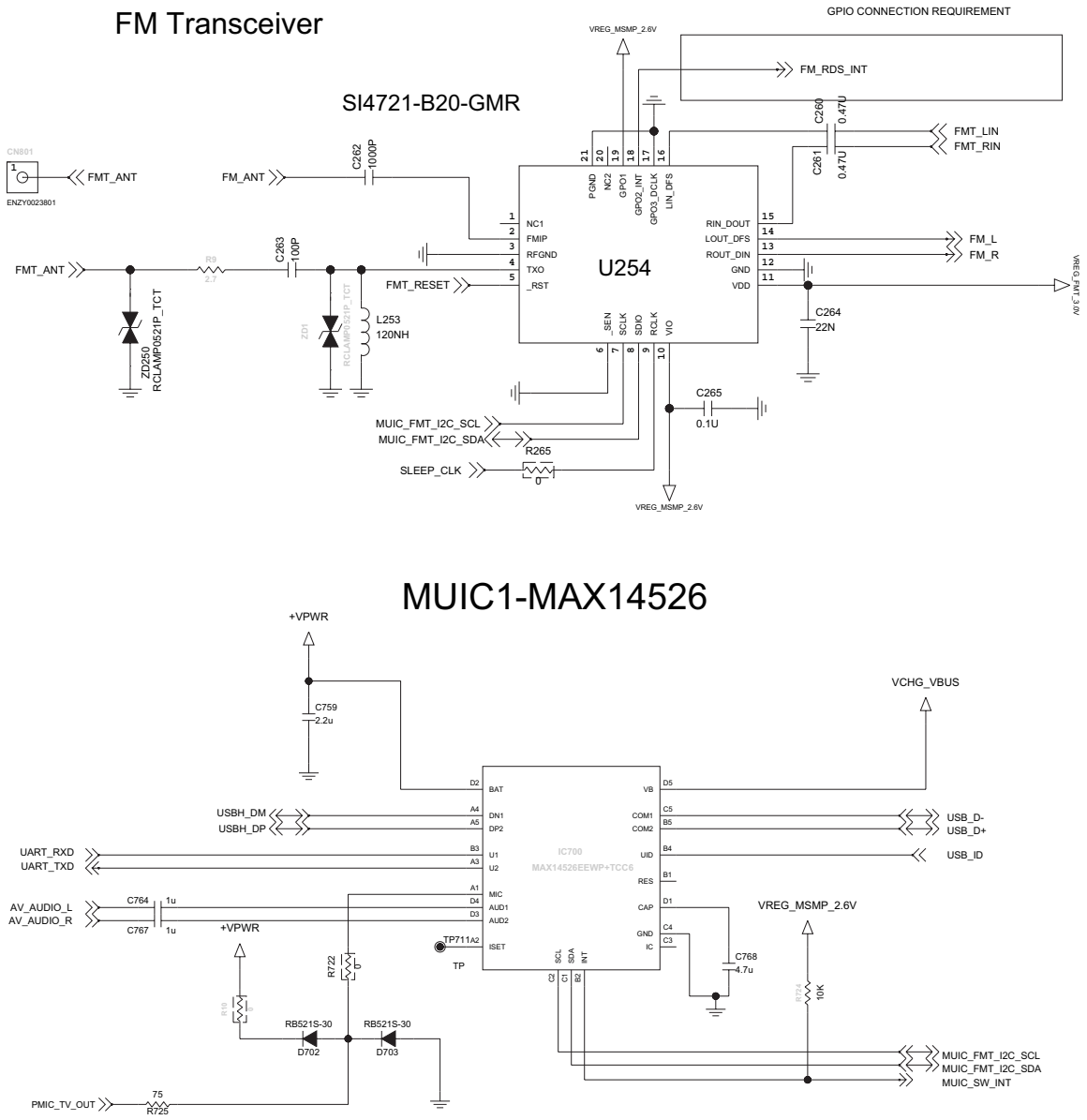




FMT_AV_AUDIO_HPH_SELET

L	NC_SW_HPH
H	NO_FMT

FMT, FMR & AV Audio Out



3.16 Camera / LCD

BL40 has two cameras : 5M Pixel CMOS Camera and VGA camera.
Below figures shows the 5M camera I/F and ISP Block.

3.16.1 5 Mega Camera Interface

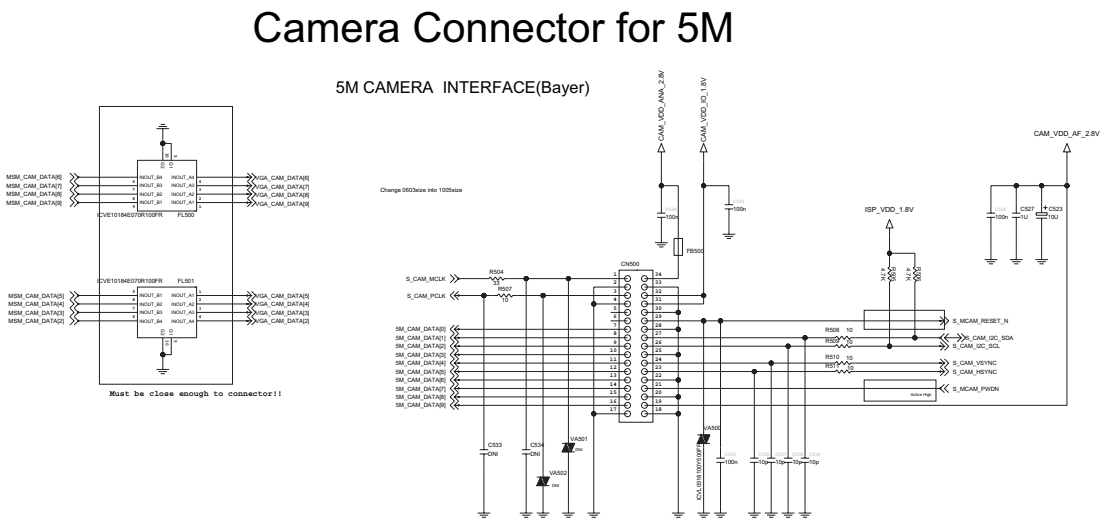


Figure. Schematic of 5 Mega Camera I/F

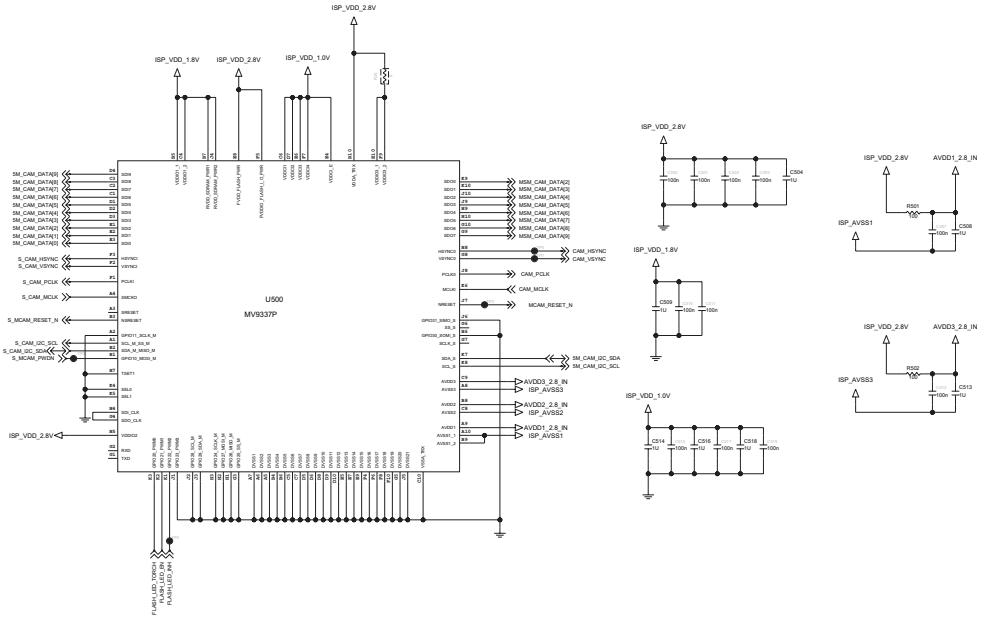


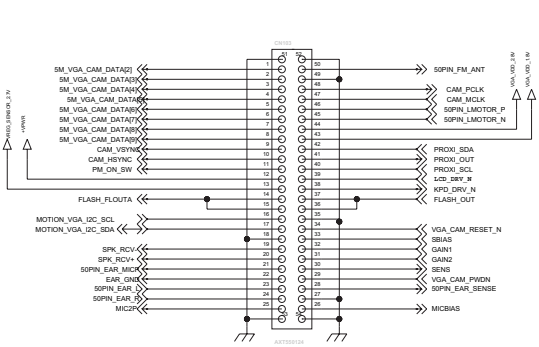
Figure. Schematic of ISP Block

NO	NAME	TYPE	Description
1	S_CAM_MCLK	Input	Master clock input
2	GND	Ground	Ground
3	S_CAM_PCLK	Output	CAMERA clock output
4	GND	Ground	Ground
5	NC	NC	NC
6	NC	NC	NC
7~16	DATA[0]~[9]	Output	Data line
17	GND	Ground	Ground
18	GND	Ground	Ground
19	CAM_VDD_AF_2.8V	Power	AF Motor power (2.8V)
20	GND	Ground	Ground
21	S_MCAM_PWDN	Input	Camera Power Down (Active “H”)
22	GND	Ground	Ground
23	S_CAM_HSYNC	Input	SYNC
24	S_CAM_VSYNC	Input	SYNC
25	GND	Ground	Ground
26	S_CAM_I2C_SCL	Input	I2C Clock
27	S_CAM_I2C_SDA	Input/Output	I2C Data
28	GND	Ground	Ground
29	S_MCAM_RESET_N	Input	Camera reset (Active “L”)
30	GND	Ground	Ground
31	CAM_VDD_IO_1.8V	Power	Digital Power (2.8V)
32	CAM_VDD_IO_1.8V	Power	Digital Power (2.8V)
33	GND	Ground	Ground
34	CAM_VDD_ANA_1.8V	Input	Digital Power (2.8V)

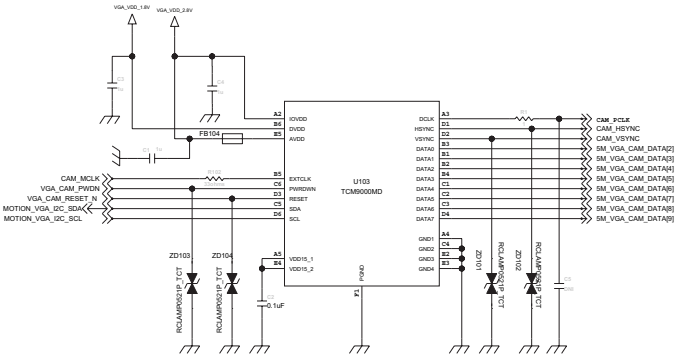
Table. Interface between 5M Camera Module and MAIN Board

The camera port supply 24MHz master clock to ISP and then ISP supply 64MHz master clock to camera module again and receive serial data from camera module. And ISP supply converted 8bits data, 48MHz pixel clock(max.15fps@ full resolution), vertical sync signal, horizontal sync signal, reset signal to MSM7200A again. The camera module is controlled by I2C port from MSM7200A via ISP.

3.16.2 VGA Camera Interface



SUB_TOP PCB to MAIN (50PIN)



VGA CAMERA [SVCY0019901]

Figure. Schematic of VGA Camera Module and I/F

The VGA Camera module is mounted to SPK FPCB. Its interface is dedicated camera interface port in MSM7200A. The camera port supply 24MHz master clock to camera module and receive 19.2MHz pixel clock (max.30fps@VGA), vertical sync signal, horizontal sync signal, reset signal and 8bits data from camera module. The camera module is controlled by I2C port from MSM7200A.

3.16.3 LCD module

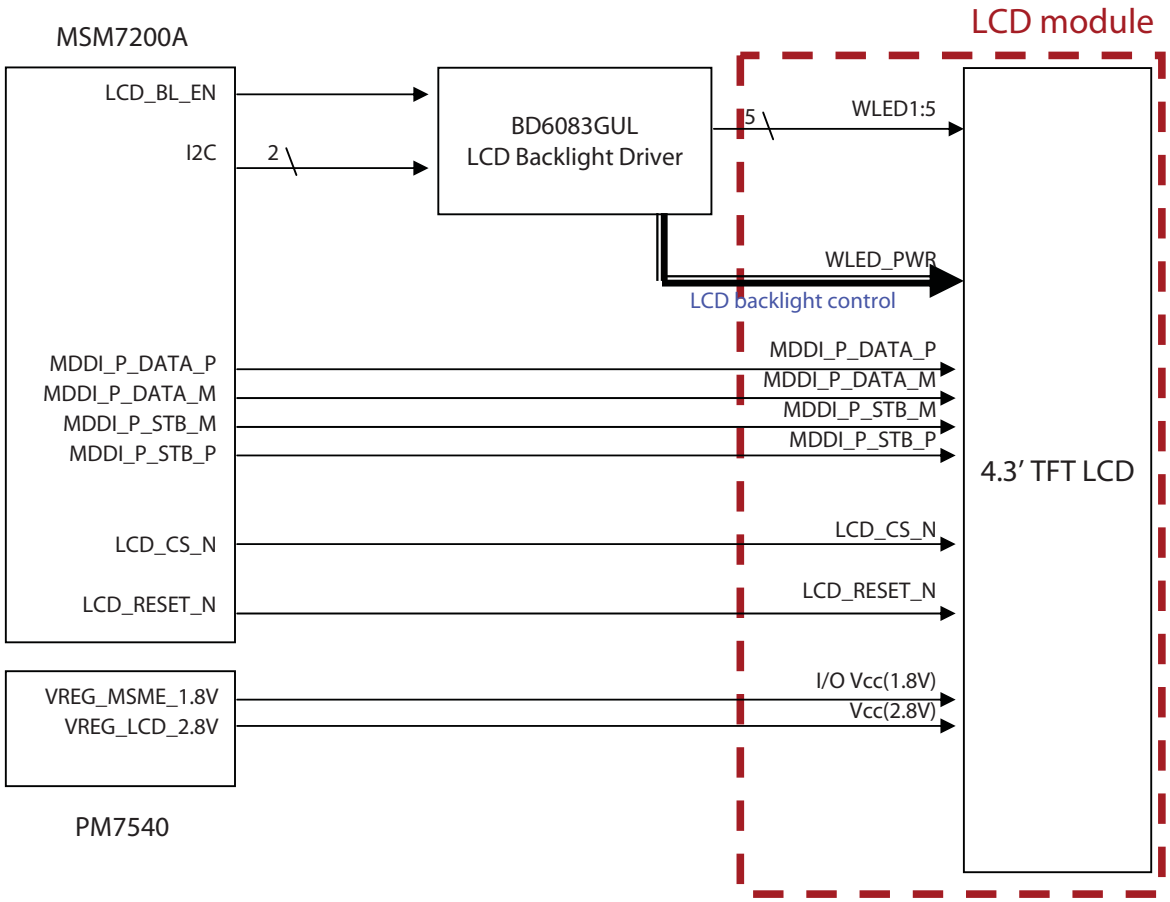
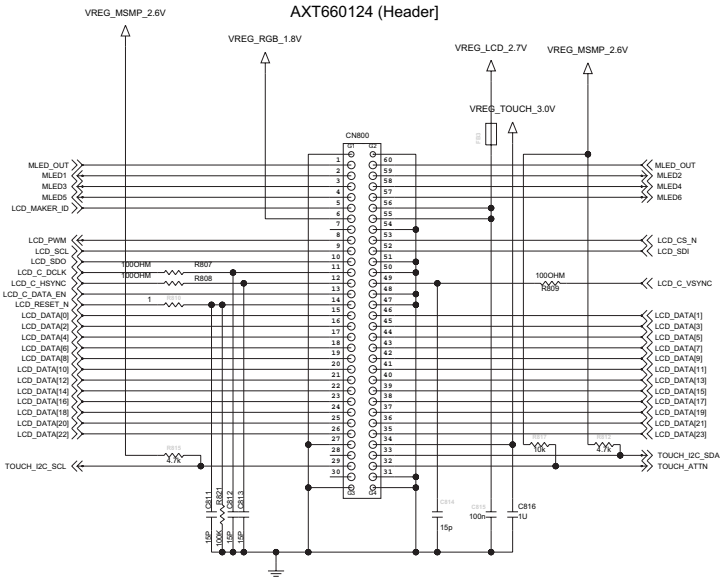


Figure. LCD I/F Block Diagram

3.16.4 Display

LCD module is connected to Main PCB with 60-pin connector(AXT660124). The LCD is controlled by MDDI Interface in MSM7200A.



White_4" LCD_RGB I/F

Figure. Schematic of LCD connector (in Sub PCB)

8.1 INTERNAL PIN CONNECTION

Pin No.	Signal	I/O	Function	Driver's Signal name
1	AN(LED)	-	Power Supply for LED	-
2	CA1(LED)	-	GND for LED	-
3	CA3(LED)	-	GND for LED	-
4	CA5(LED)	-	GND for LED	-
5	MAKER ID(Low)	O	Maker ID(Low: GND level)	-
6	IOVCC	-	Power Supply for Interface (1.8V)	-
7	OPEN	-	OPEN (Hitachi)	-
8	LEDPWM	O	Dimmer Control Signal for LED Driver	LEDPWM
9	SCL	I	Synchronous clock signal	SCL
10	SDO	O	Serial data output	SDO
11	DOTCLK	I	Dot Clock Signal	PCLK
12	HSYNC	I	Line Synchronous Signal	HSYNC
13	ENABLE	I	Data Enable Signal for When RGB Interface is selected	EN
14	RESET	I	Reset	RESET*
15	DB0	I	Data Bus (Display data)	DB0
16	DB2	I	Data Bus (Display data)	DB2
17	DB4	I	Data Bus (Display data)	DB4
18	DB6	I	Data Bus (Display data)	DB6
19	DB8	I	Data Bus (Display data)	DB8
20	DB10	I	Data Bus (Display data)	DB10
21	DB12	I	Data Bus (Display data)	DB12
22	DB14	I	Data Bus (Display data)	DB14
23	DB16	I	Data Bus (Display data)	DB16
24	DB18	I	Data Bus (Display data)	DB18
25	DB20	I	Data Bus (Display data)	DB20
26	DB22	I	Data Bus (Display data)	DB22
27	TP-GND	-	GND for Touch Panel	-
28	TP-NC	TBD	for Touch Panel	
29	TP-SCL	TBD	for Touch Panel	
30	TP-NC	TBD	for Touch Panel	
31	TP-GND	-	GND for Touch Panel	-
32	TP-ATTN	TBD	for Touch Panel	
33	TP-SDA	TBD	for Touch Panel	
34	TP-VDD	-	Power Supply for Touch Panel	
35	DB23	I	Data Bus (Display data)	DB23
36	DB21	I	Data Bus (Display data)	DB21
37	DB19	I	Data Bus (Display data)	DB19
38	DB17	I	Data Bus (Display data)	DB17
39	DB15	I	Data Bus (Display data)	DB15
40	DB13	I	Data Bus (Display data)	DB13
41	DB11	I	Data Bus (Display data)	DB11
42	DB9	I	Data Bus (Display data)	DB9
43	DB7	I	Data Bus (Display data)	DB7
44	DB5	I	Data Bus (Display data)	DB5

Pin No.	Signal	I/O	Function	Driver's Signal name
45	DB3	I	Data Bus (Display data)	DB3
46	DB1	I	Data Bus (Display data)	DB1
47	GND	-	GND	-
48	GND	-	GND	-
49	VSYNC	I	Frame synchronous signal	VSYNC
50	GND	-	GND	-
51	GND	-	GND	-
52	SDI	I	Serial data input	SDI
53	CS	I	Chip Select	CS*
54	GND	-	GND	-
55	DDVDH	-	Power Supply for Logic and Analog (2.8V)	-
56	VCC	-	Power Supply for Logic and Analog (2.8V)	-
57	CA6(LED)	-	GND for LED	-
58	CA4(LED)	-	GND for LED	-
59	CA2(LED)	-	GND for LED	-
60	AN(LED)	-	Power Supply for LED	-

LCM Connector : AXT560124 (Panasonic) , Suitable Connector : AXT660124 (Panasonic)

Table. Interface between LCD Module and MAIN Board

3.17. Proximity Sensor

When call connected, the object is moved nearer to the proximity sensor.
LCD backlight and Touch screen is disable operation automatically.

U102 : GP2AP002S00F is Optical proximity sensor.

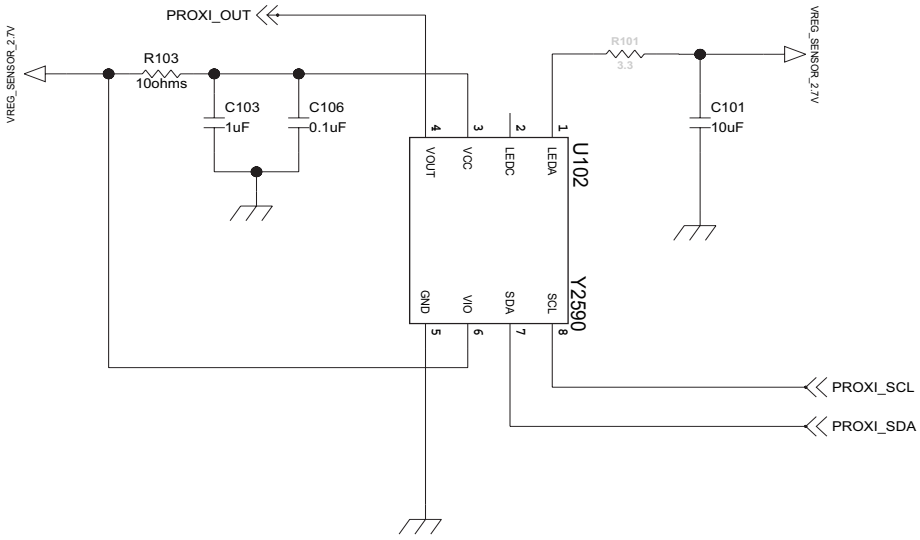


Figure. Proximity Sensor Schematic

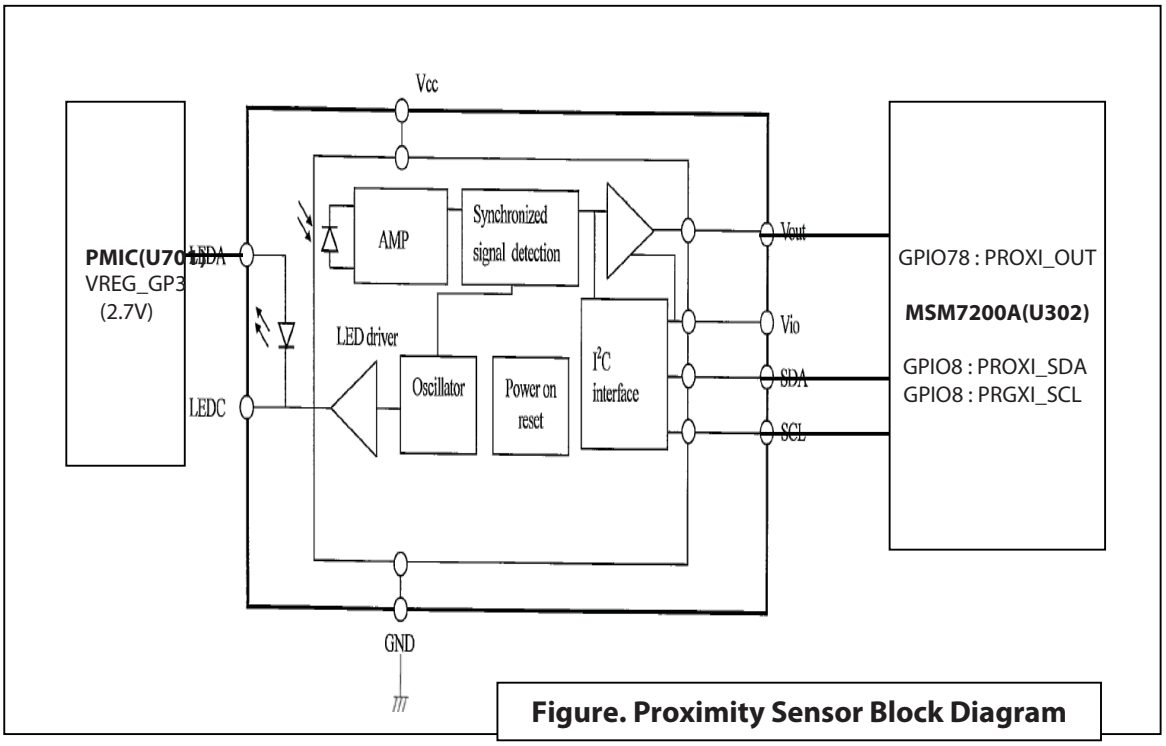
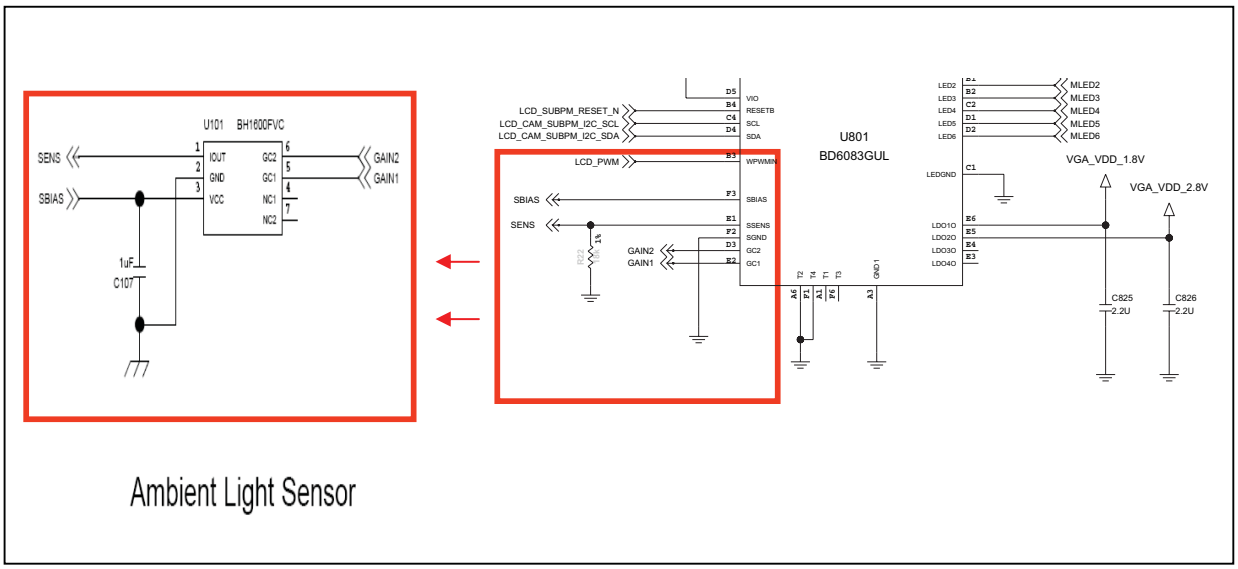


Figure. Proximity Sensor Block Diagram

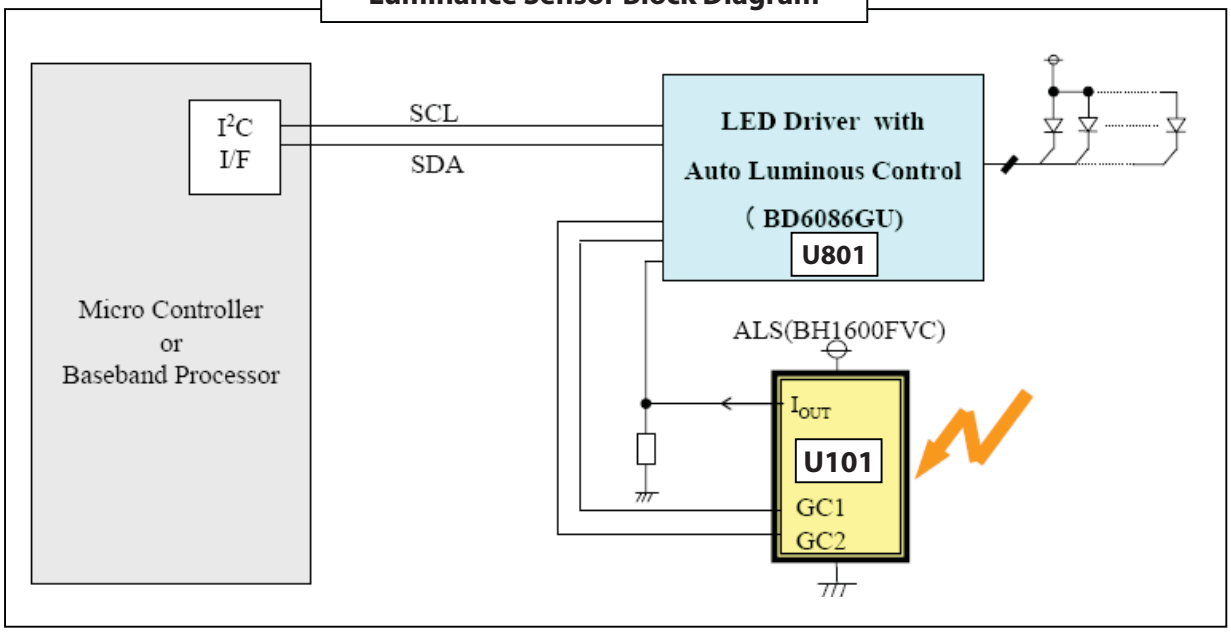
3.18. Luminance Sensor

When ALC sensor turn on, automatically controls brightness of the display backlight.
U801 : Backlight driver IC (BD6083) used I2C interface to MSM7200A [Main PCB]
U101 : Luminance Sensor [SPK_FPCB]

Luminance Sensor Schematic



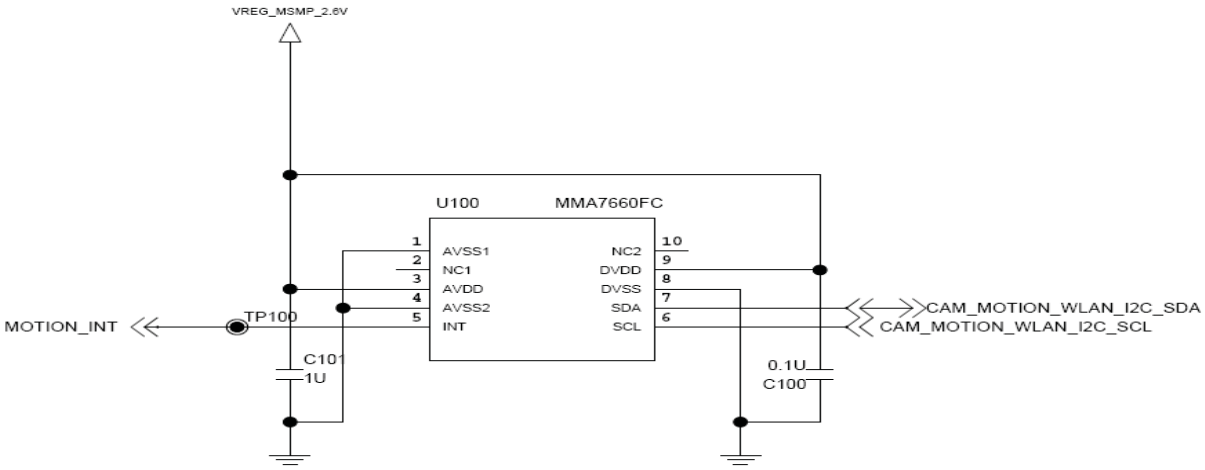
Luminance Sensor Block Diagram



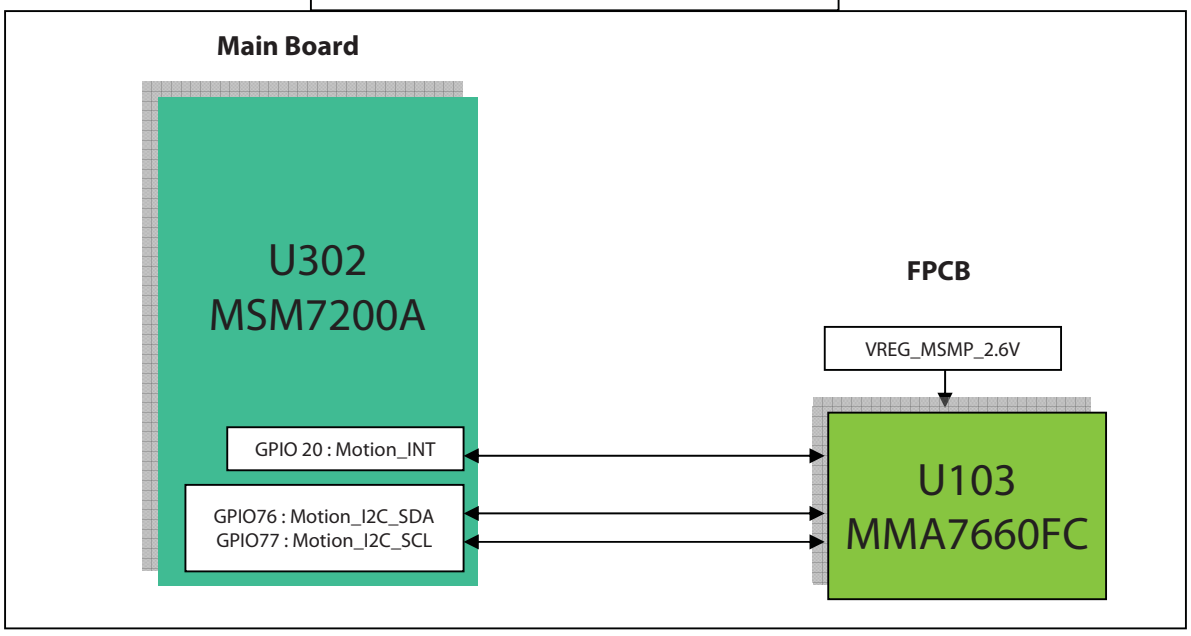
3.19. Motion Sensor

According to tilt the cell phone, the screen is had rotated automatically.
U200 :MMA7660FC IC used I2C interface to MSM7200A

Motion Sensor Schematic



Luminance Sensor Block Diagram

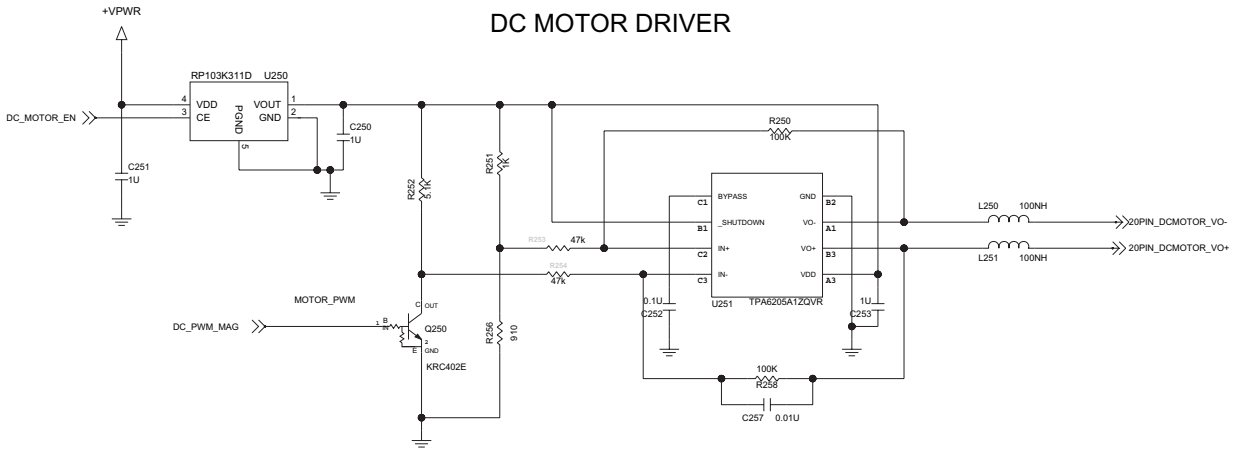


3.20 Vibrators

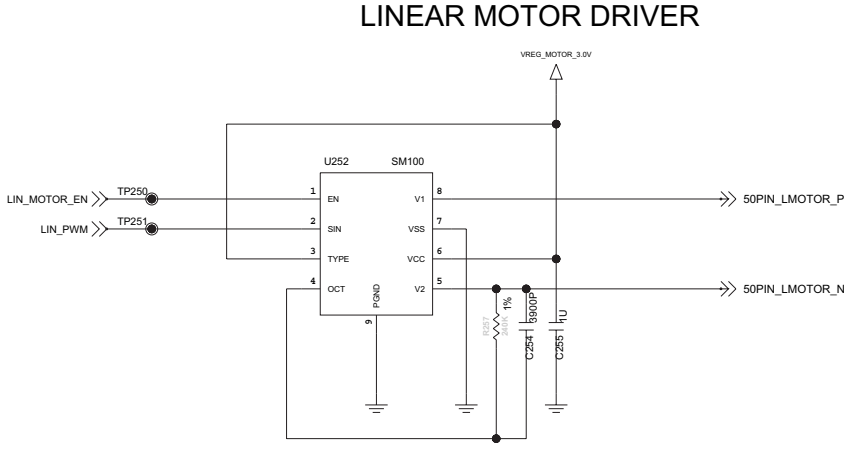
There are two motors which are linear (main motor) on top of phone and DC (sub motor) on lower side of phone respectively.
Depending on user scenario, one of these motors operates or two motors operate at the same time.
The strength of vibration is determined by the duty cycle of PWM (DC_PWM_MAG for DC motor, LIN_PWM for linear motor).

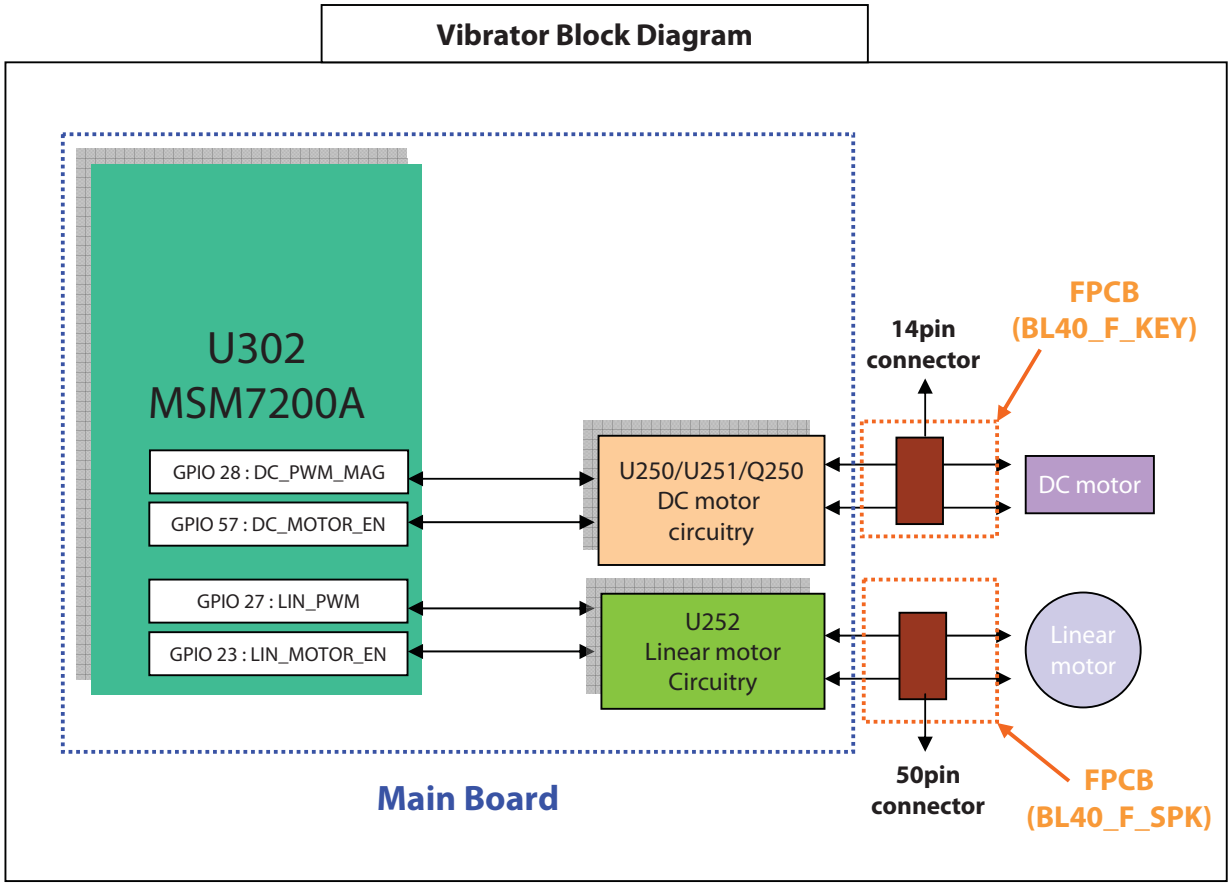
U250 : RP103k311D is LDO for feeding power to U251.
U251 : TPA6205A1ZQVR is an opamp whose output is connected to DC motor.
Q250 : KRC402E is a transistor whose base is fed with PWM signal coming from U302(MSM7200A)
U252 : SM100 is Linear motor driver IC.

DC Motor Schematic



Linear Motor Schematic



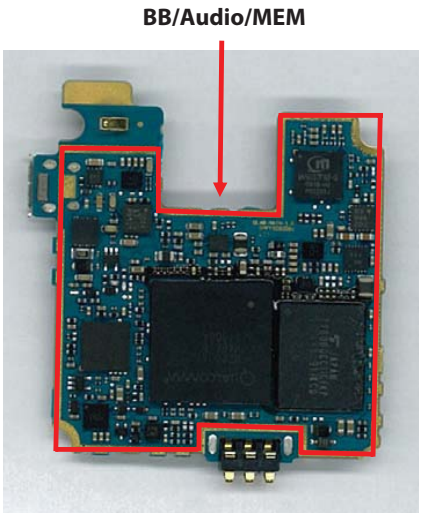


3.21 Main Features

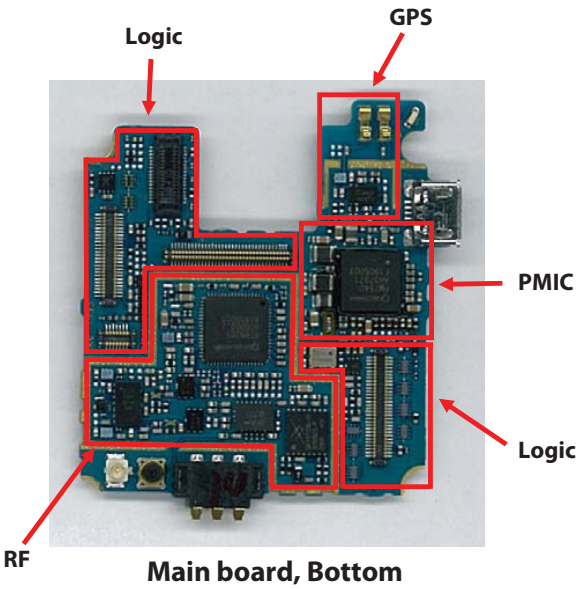
1. LG BL40 Main Features

- Bar Type Simple & Stylish design
- UMTS 2100 + UMTS900+
  GSM 900 + DCS 1800 + PCS 1900 + GSM850 based GSM/GPRS/EDGE/UMTS
- HSDPA 7.2Mbps
- TFT Main LCD(4', 345 x 800)
- Touch Sensitive User Interface
- 5M AF Camera
- 3.5Phi Stereo Headset & Speaker phone
- 64 Poly Sound
- MP3/AAC/AMR/MIDI/3GP/SMAF decoder and play
- MPEG4 encoder/decoder and play/save
- JPEG en/decoder
- Supports Bluetooth and HS-USB
- Supports WLAN
- Supports FM Transceiver
- 1G Internal User Memory
- 1000 mAh (Li-Ion Polymer)

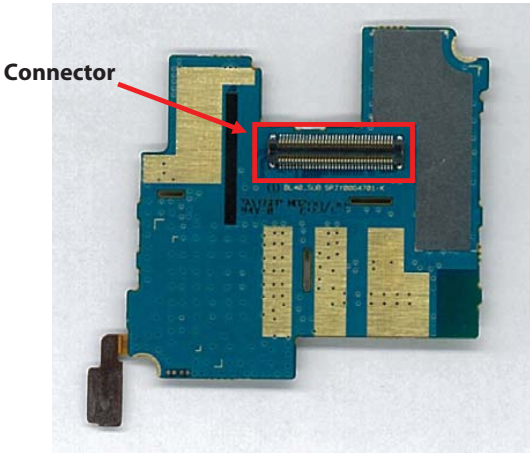
2. BL40 Main Component



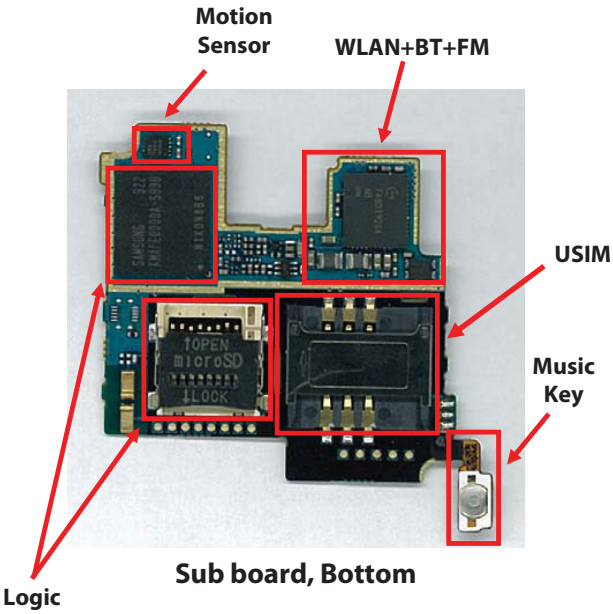
Main board, Top



Main board, Bottom

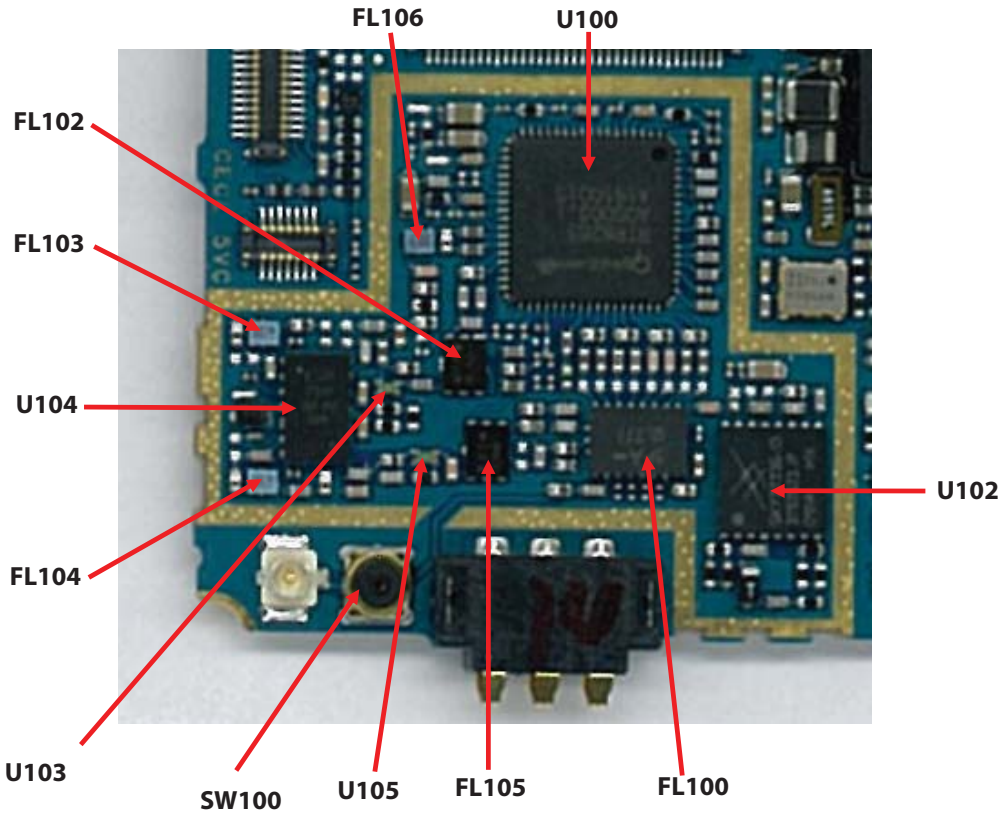


Sub board, Top



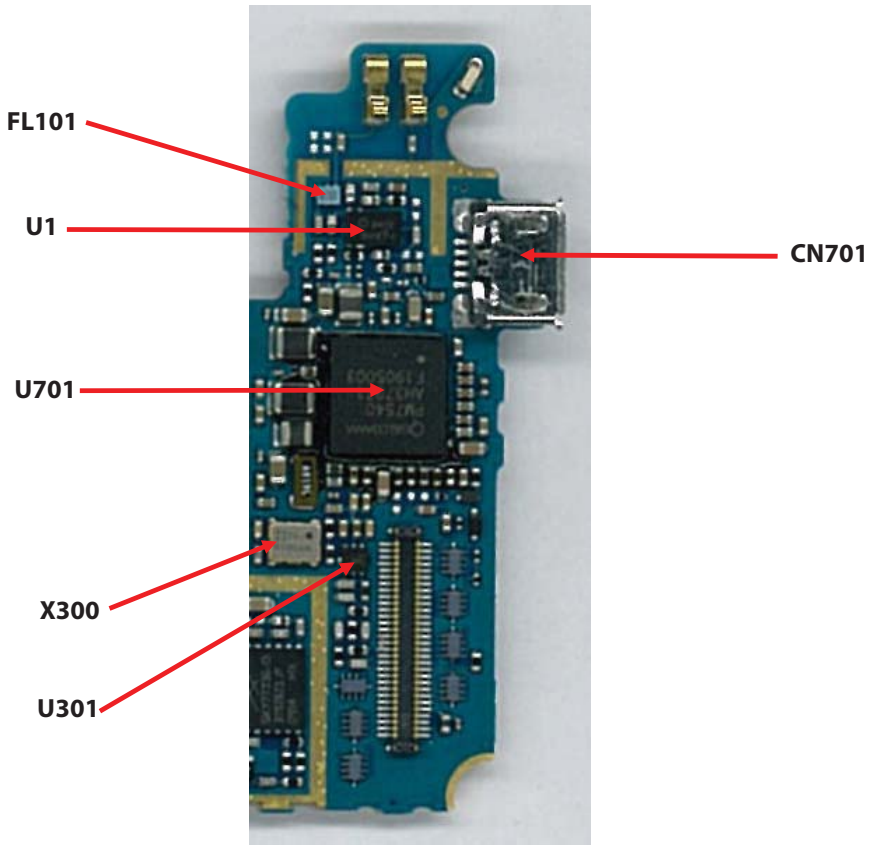
Sub board, Bottom

RF



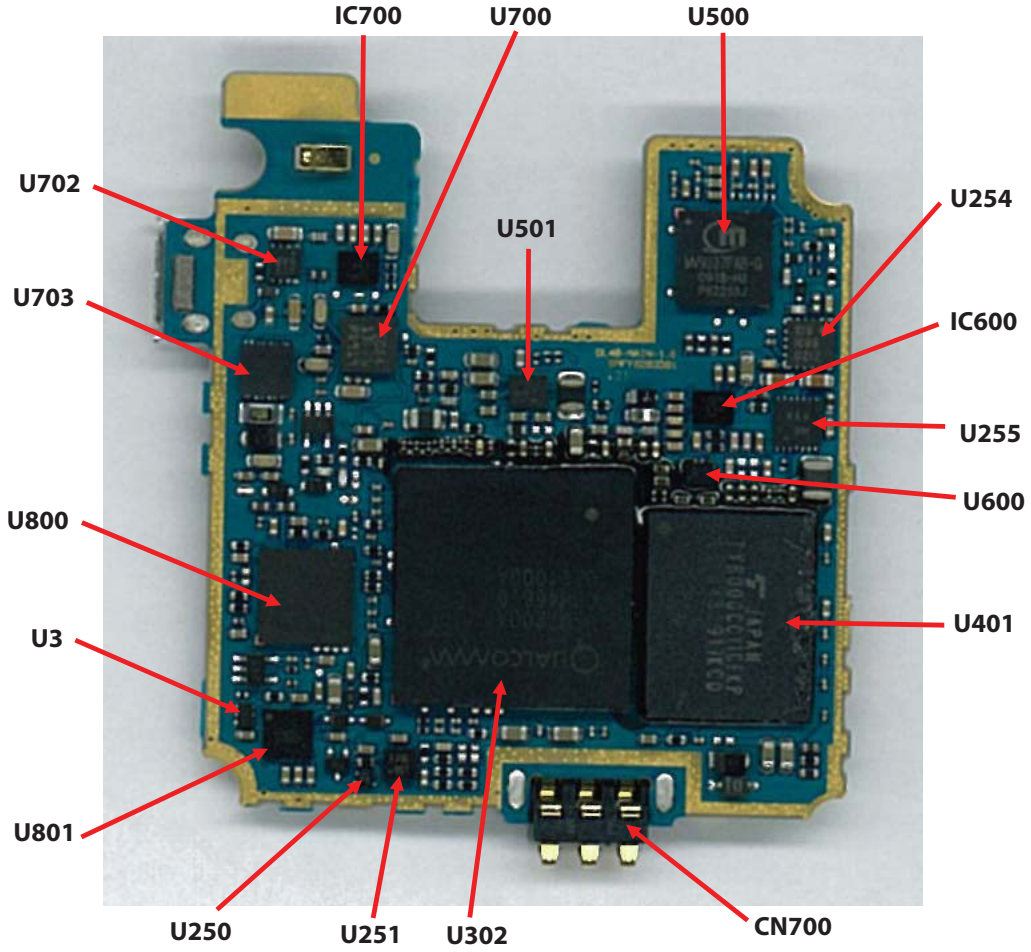
Reference	Description	Reference	Description
FL102	WCDMA (VIII) Duplexer	FL105	WCDMA (I) Duplexer
FL103	WCDMA (VIII) TX SAW Filter	FL100	FEM
FL104	WCDMA (I) TX SAW Filter	U102	GSM PAM
U103	WCDMA (VIII) Coupler	U100	RTR6285(Transceiver)
U104	WCDMA Dual (1&8)PAM	FL106	WCDMA (I) RX SAW Filter
U105	WCDMA (I) Coupler	SW100	RF Antenna connector

GPS / PMIC / Logic



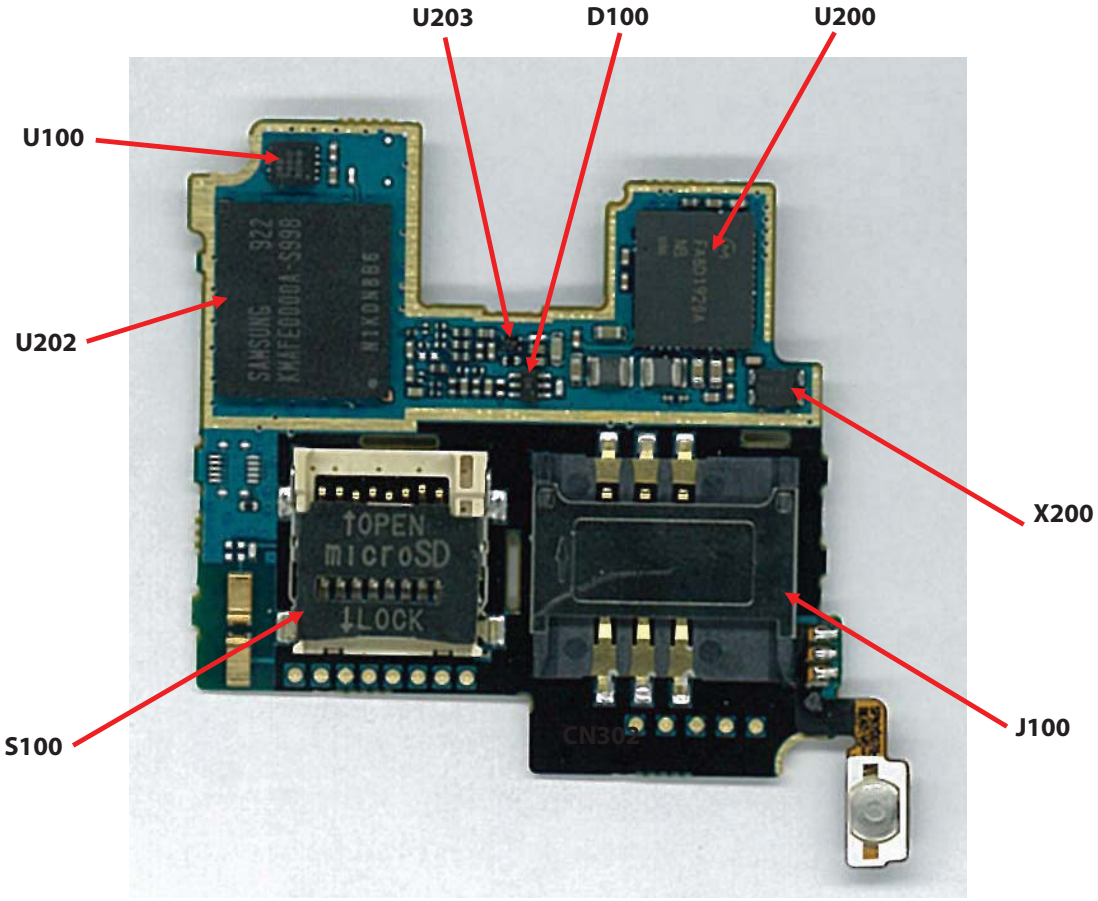
Reference	Description	Reference	Description
FL101	GPS SAW Filter	X300	TCXO(19.2MHz)
U1	GPS LNA	U301	GPS D FLIP-FLOP
U701	PMIC, PM7540	CN701	Micro USB 5Pin Con.

BB / MEM / Audio



Ref.	Description	Ref.	Description
U700	USB Transceiver	U302	MSM7200A
U702	Over-voltage Protection	U401	Memory, MCP
U703	Power MOSFET for Changing	CN700	Battery Connector
U800	RGB Converter	U254	FM Transceiver
IC700	MUIC for 5Pin Micro USB	U255	CAMERA FLASH LED DRIVER
U801	LCD Charge-pump	U600	Dual SPDT Analog Switch
U3	Single Bit Uni-Director	IC600	AUDIO_SUB_SYSTEM
U250	LDO Voltage Regulator for Dc motor	U500	5M Camera ISP
U251	Amplifier for DC motor	U501	Linear Regulators

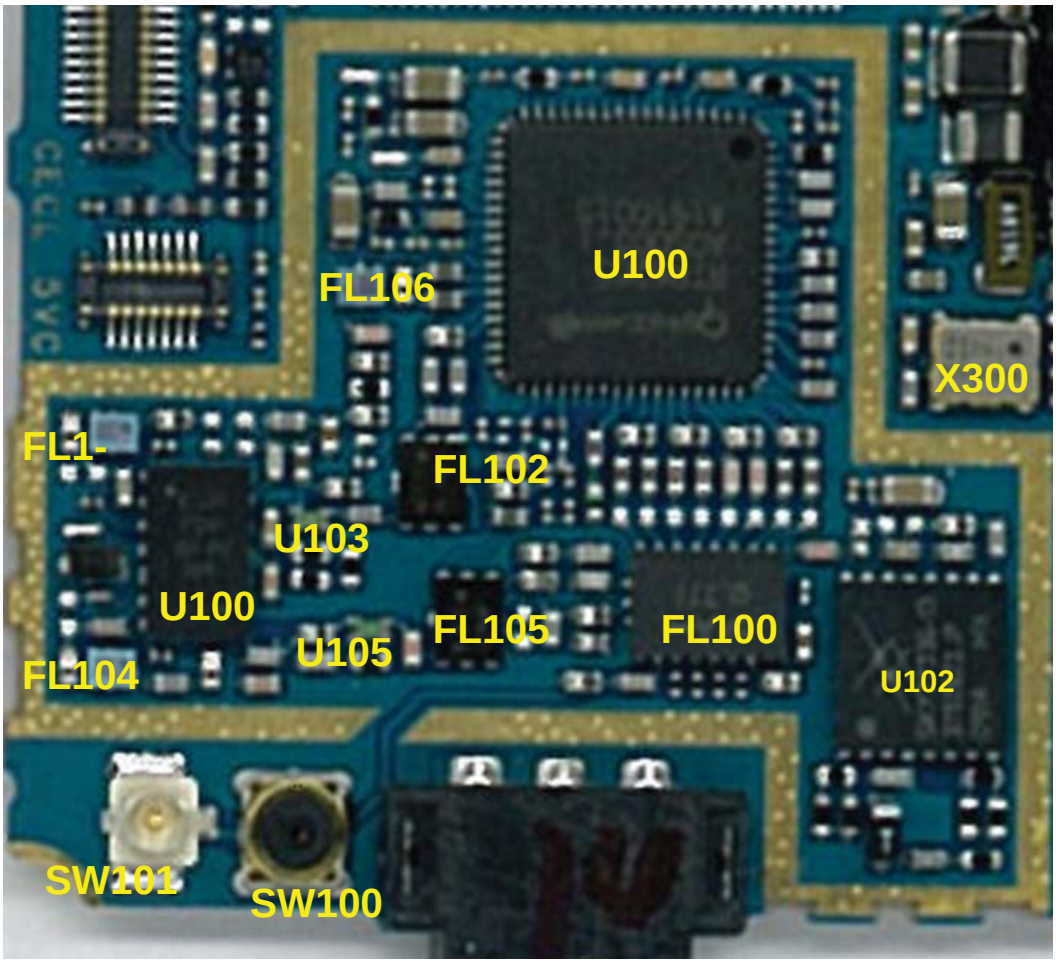
Logic / WLAN+BT+FM

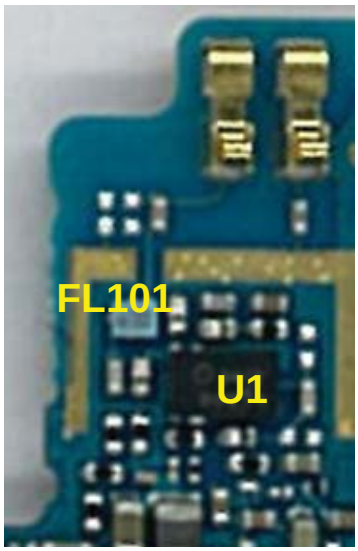


Ref.	Description	Ref.	Description
U100	Motion sensor	D100	STEERING DIODE / TVS ARRAY COMBO
U200	Wi-Fi &BT Module	X200	TCXO (26MHz)
U202	1G NAND Flash Memory	S100	Micro-SD Socket
U203	LDO for TCXO	J100	SIM Connector

4. TROUBLE SHOOTING

4.1 RF Component

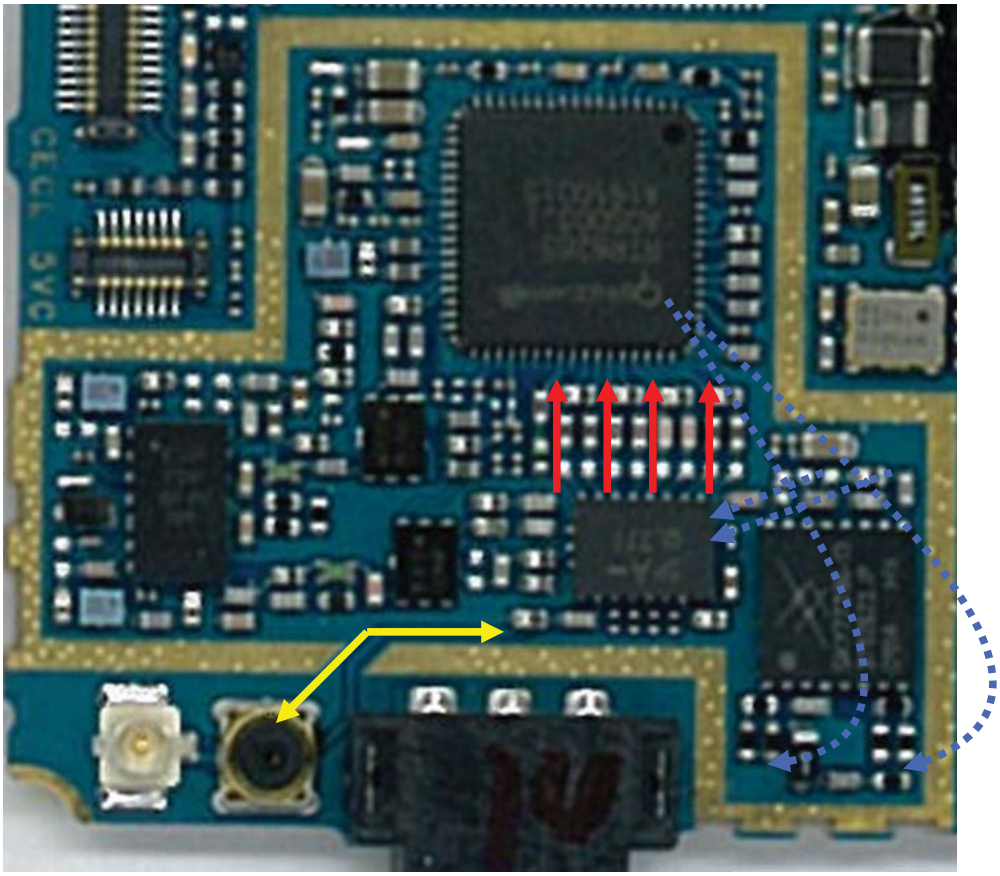




RF component (WCDMA / GSM)

Reference	Description	Reference	Description
U100	RTR6285(Transceiver)	FL102	WCDMA (VIII) Duplexer
FL100	FEM	FL106	WCDMA (I) RX SAW Filter
U104	WCDMA Dual (I,VIII) PAM	X300	VCTCXO(19.2MHz)
FL104	WCDMA (I) TX SAW Filter	U102	GSM/EDGE PAM
FL103	WCDMA (VIII) TX SAW Filter	U1	GPS LNA
U105	WCDMA (I) Coupler	FL101	GPS SAW Filter
U103	WCDMA (VIII) Coupler	SW100	RF Antenna Connector
FL105	WCDMA (I) Duplexer	SW101	RF Antenna Connector

4.2 SIGNAL PATH

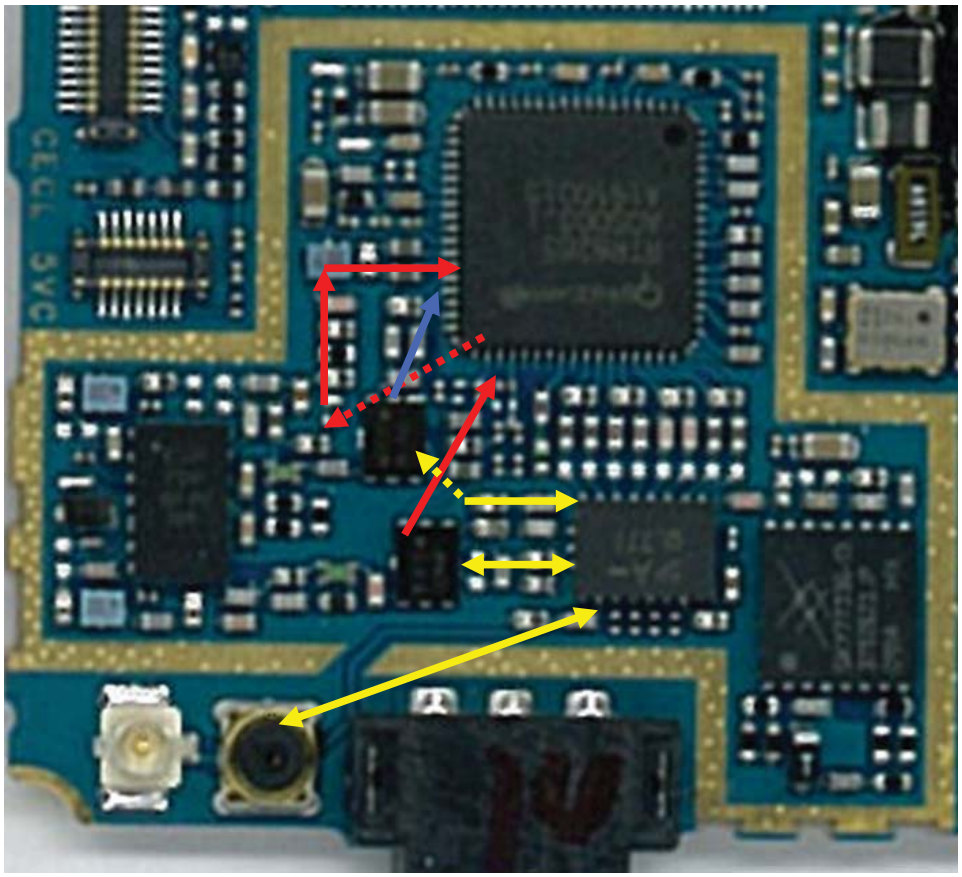


GSM850/GSM900/DCS/PCS's RX/TX Signal PATH

A. GSM850/GSM900/DCS1800/PCS1900 RX PATH

B. GSM850/GSM900/DCS1800/PCS1900 TX PATH

C. COMMON TX/RX PATH

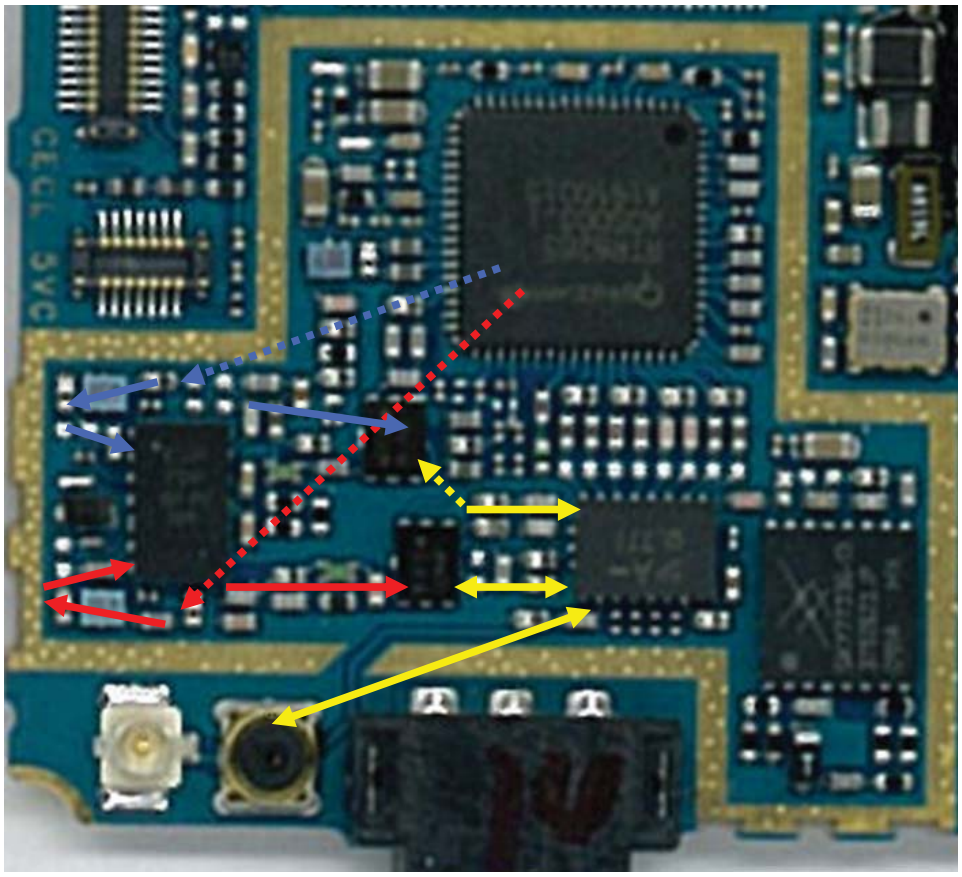


WCDMA BAND I and VIII RX Signal PATH

D1. WCDMA 2100 RX PATH

E1. WCDMA 900 RX PATH

F1. COMMON TX/RX PATH

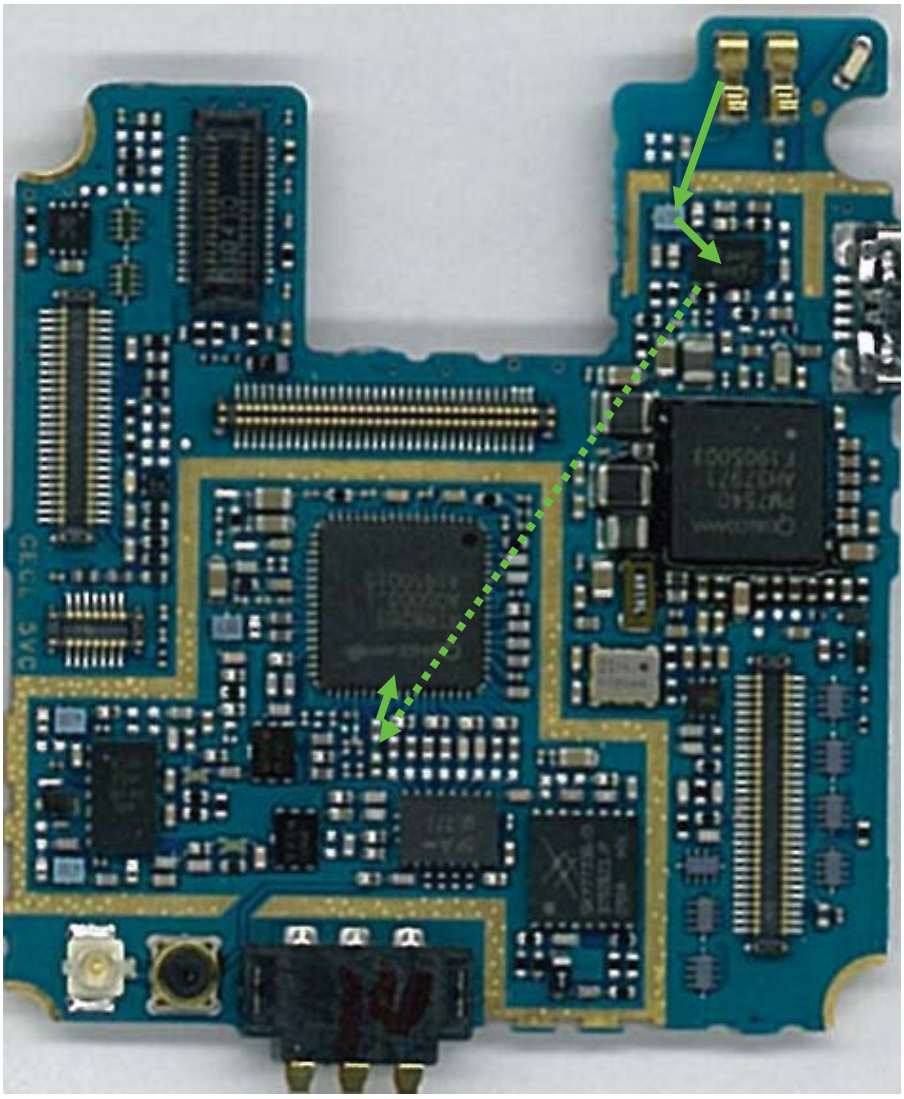


WCDMA I,II and VIII Band TX Signal PATH

D2. WCDMA 2100 TX PATH

E2. WCDMA 900 TX PATH

F1. COMMON TX/RX PATH

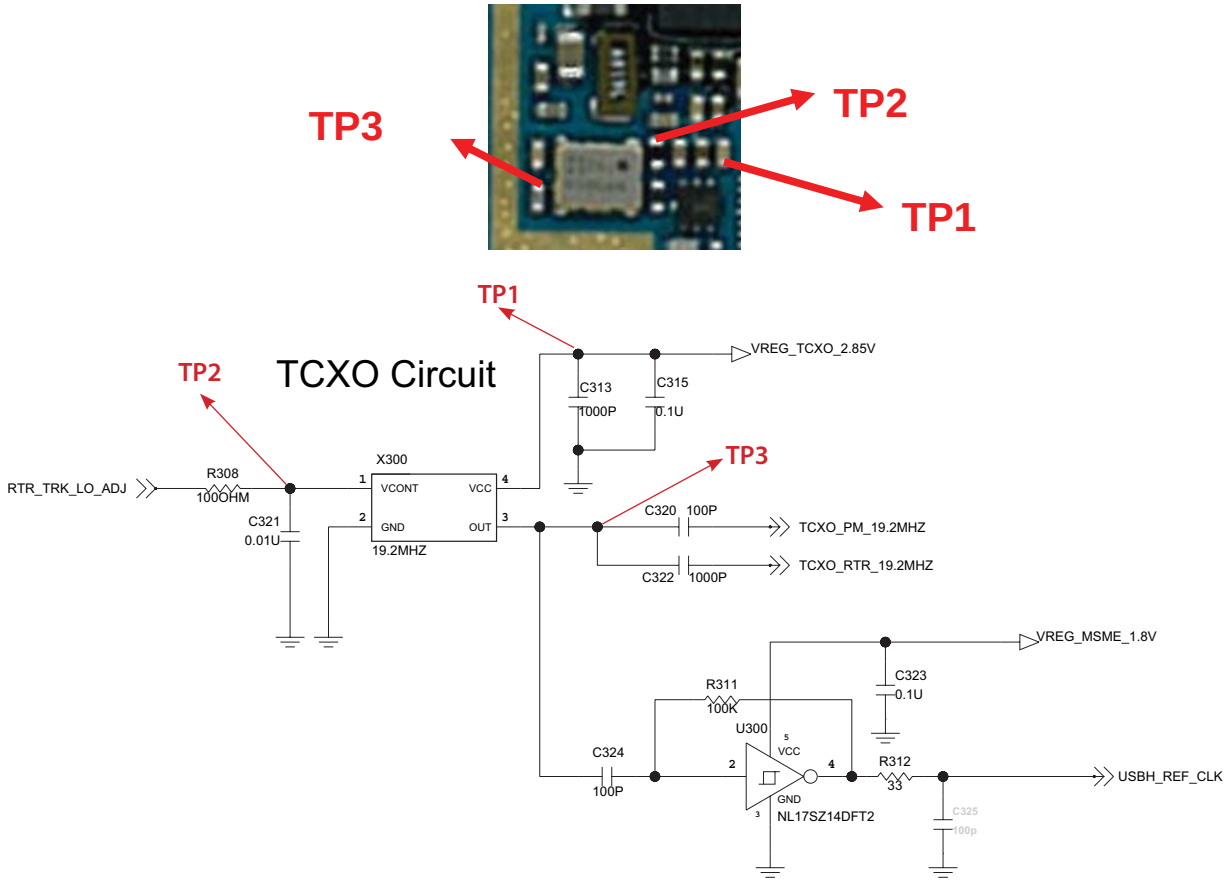


GPS Signal PATH

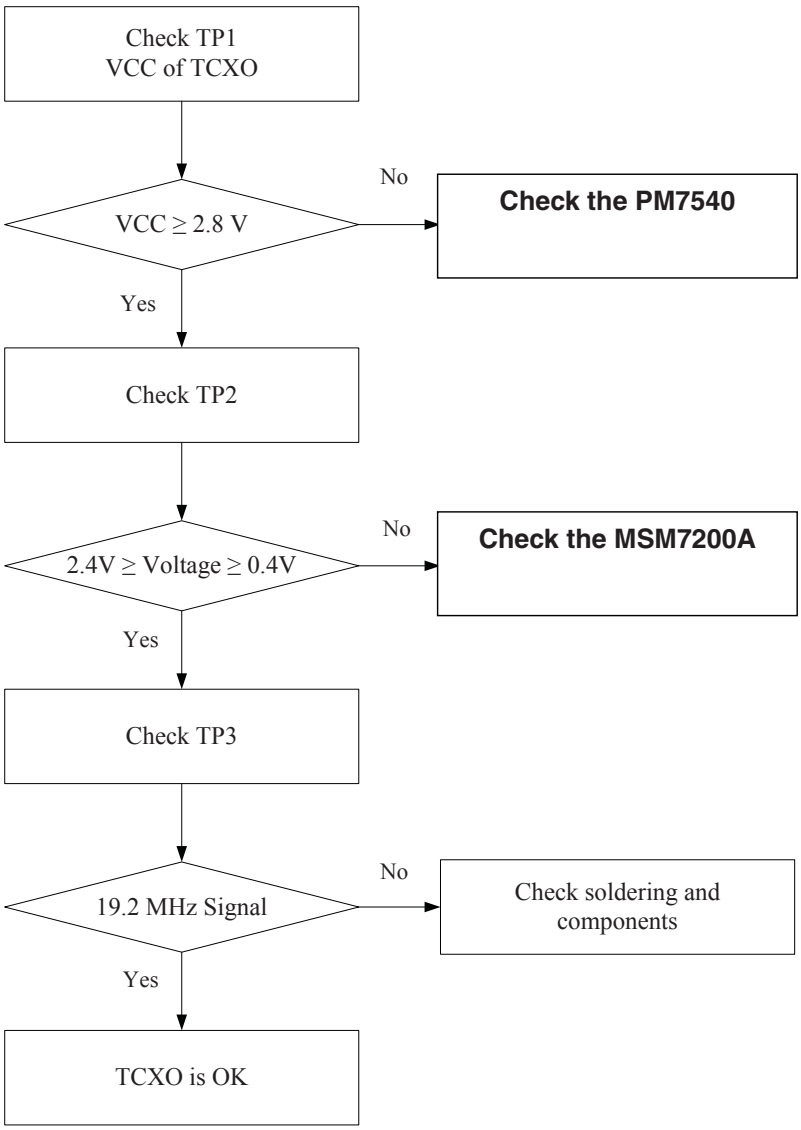
F. GPS Rx PATH

4.3 Checking TCXO Block

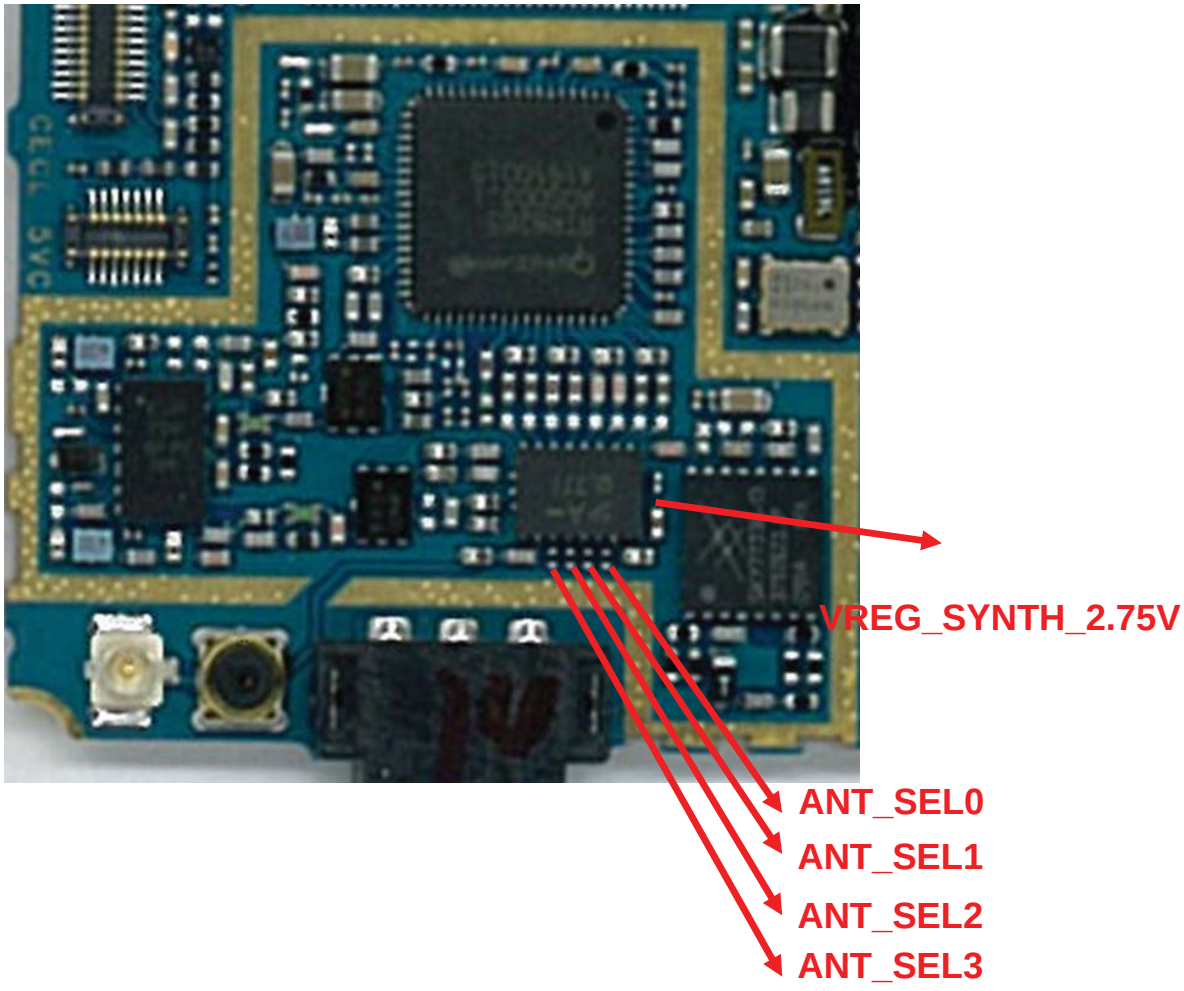
The output frequency (19.2MHz) of TCXO (X101) is used as the reference one of RTR6285 and PM7540 internal VCO.

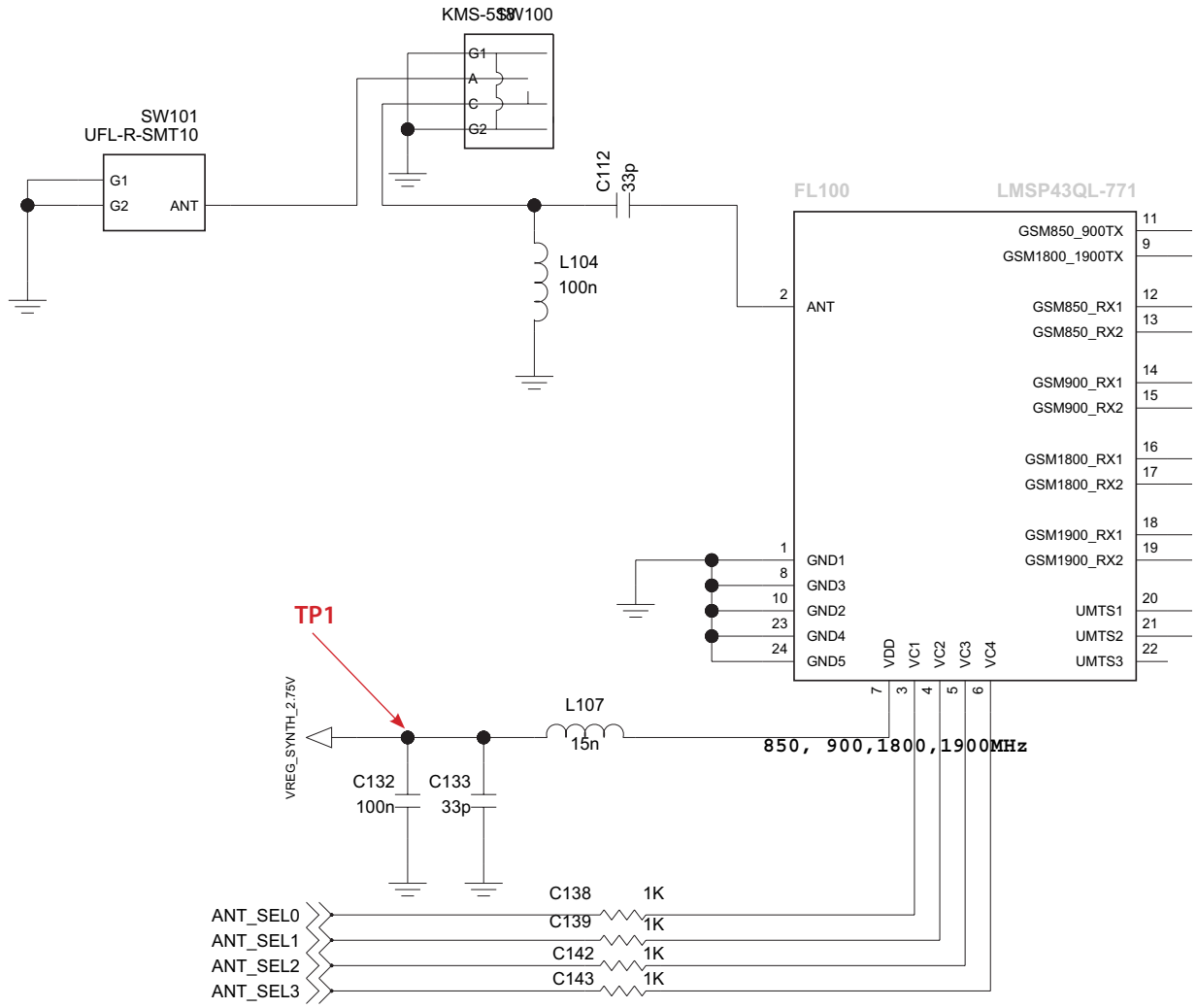


Schematic of the Crystal Part (19.2MHz)



4.4 Checking Front End Module(FEM) Block



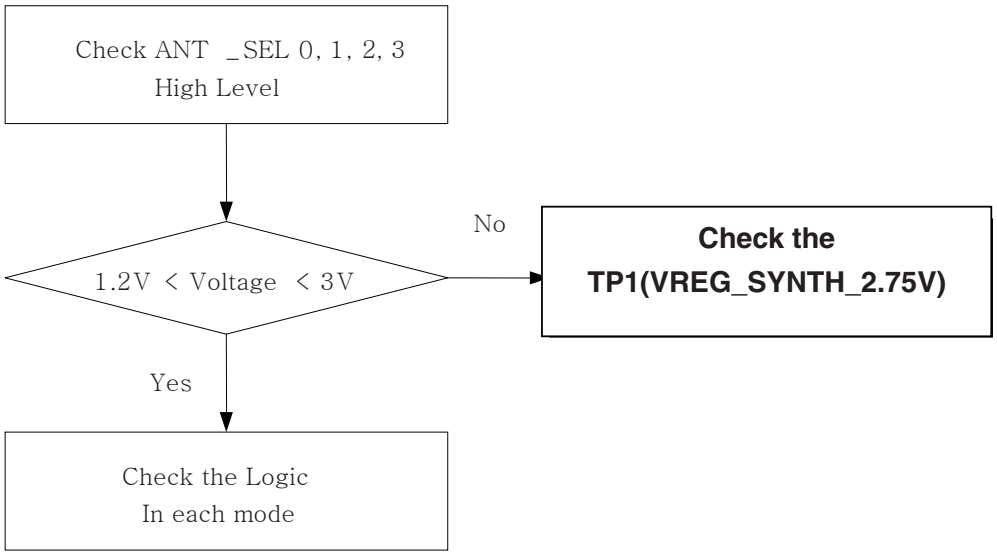


Schematic of the Antenna Switch Block

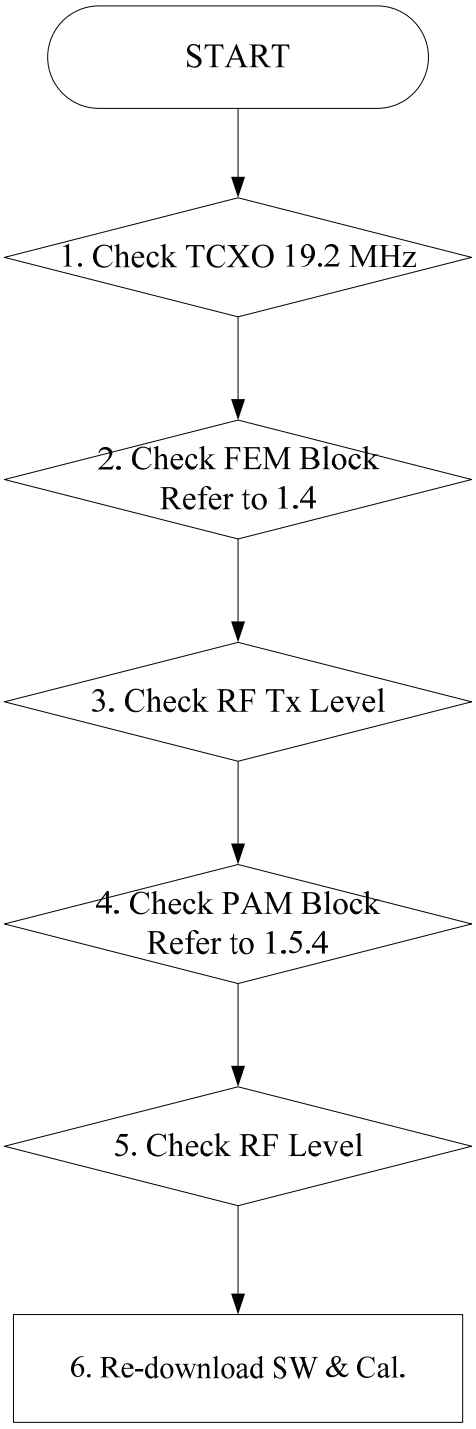
ANTENNA SWITCH MODULE LOGIC

	ANT_SEL0	ANT_SEL1	ANT_SEL2	ANT_SEL3
GSM850/EGSM TX	HIGH	LOW	LOW	LOW
DCS/PCS TX	HIGH	HIGH	LOW	LOW
GSM850 RX	LOW	HIGH	HIGH	LOW
EGSM RX	LOW	LOW	HIGH	LOW
DCS1800 RX	LOW	LOW	LOW	LOW
PCS1900 RX	LOW	HIGH	LOW	LOW
WCDMA 900 (UMTS1)	LOW	LOW	LOW	HIGH
WCDMA 2100 (UMTS2)	LOW	HIGH	LOW	HIGH

Checking Switch Block Power Source



4.5 Checking WCDMA Block



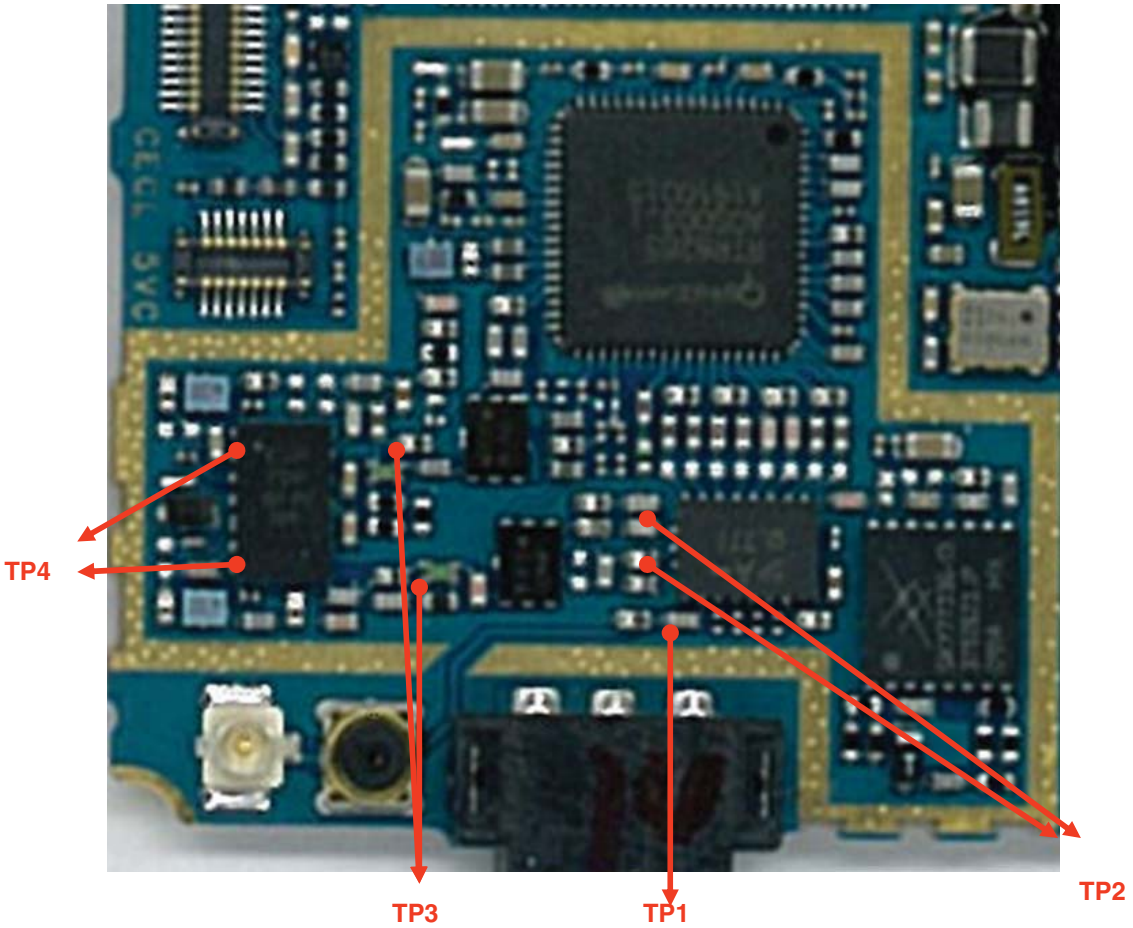
4.5.1 Checking TCXO Block

Refer to 4.3

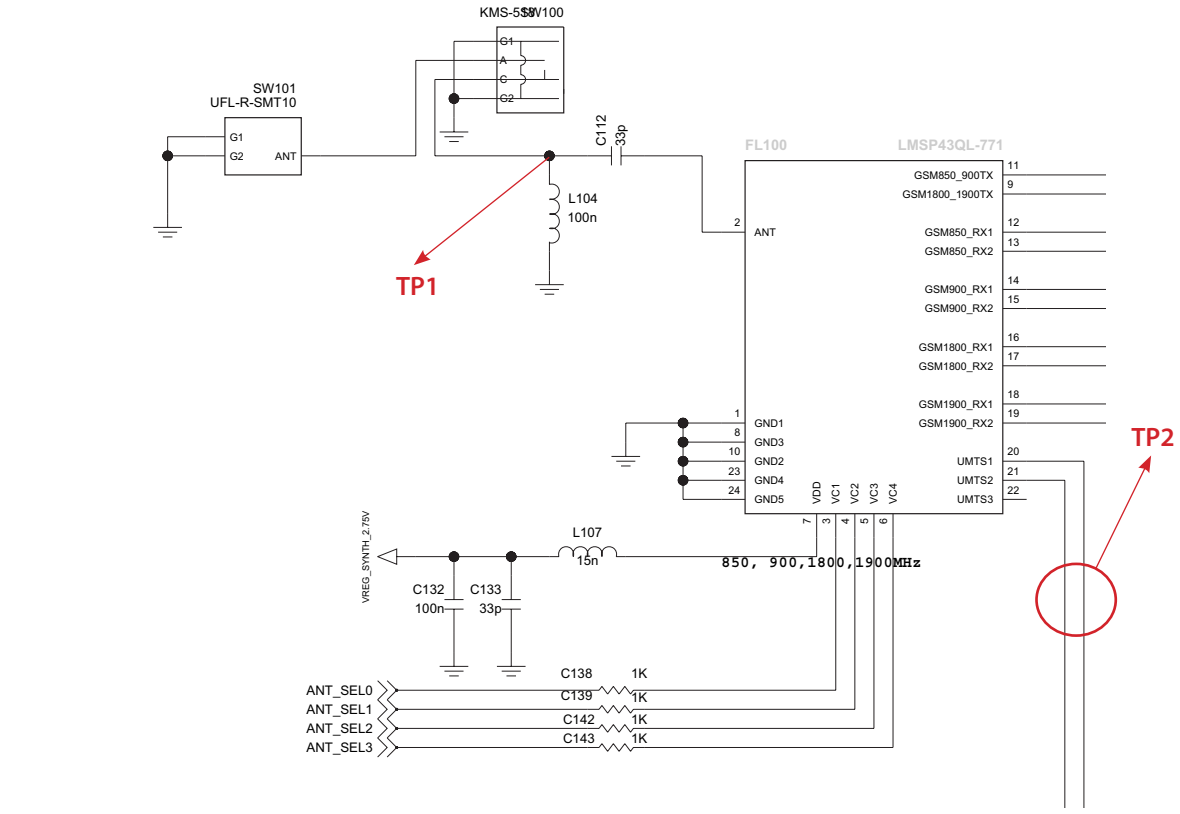
4.5.2. Checking FEM Block

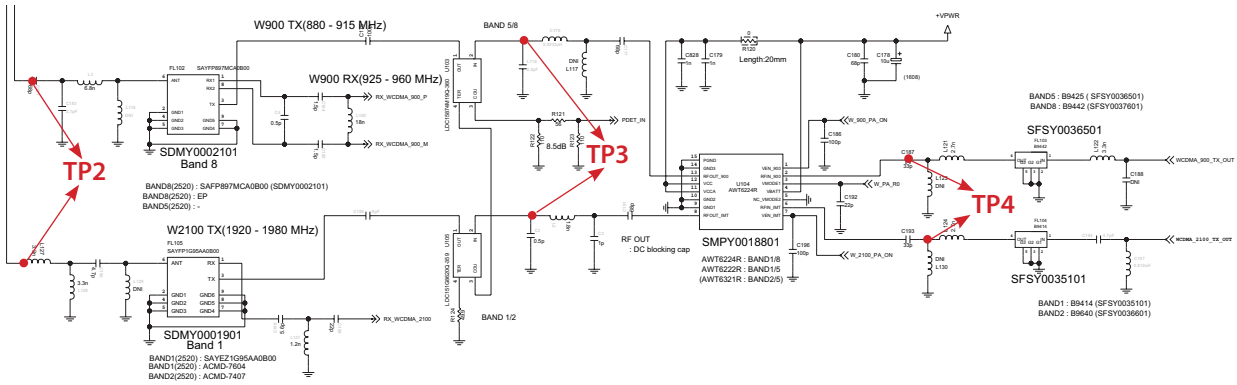
Refer to 4.4

4.5.3. Checking RF TX Level

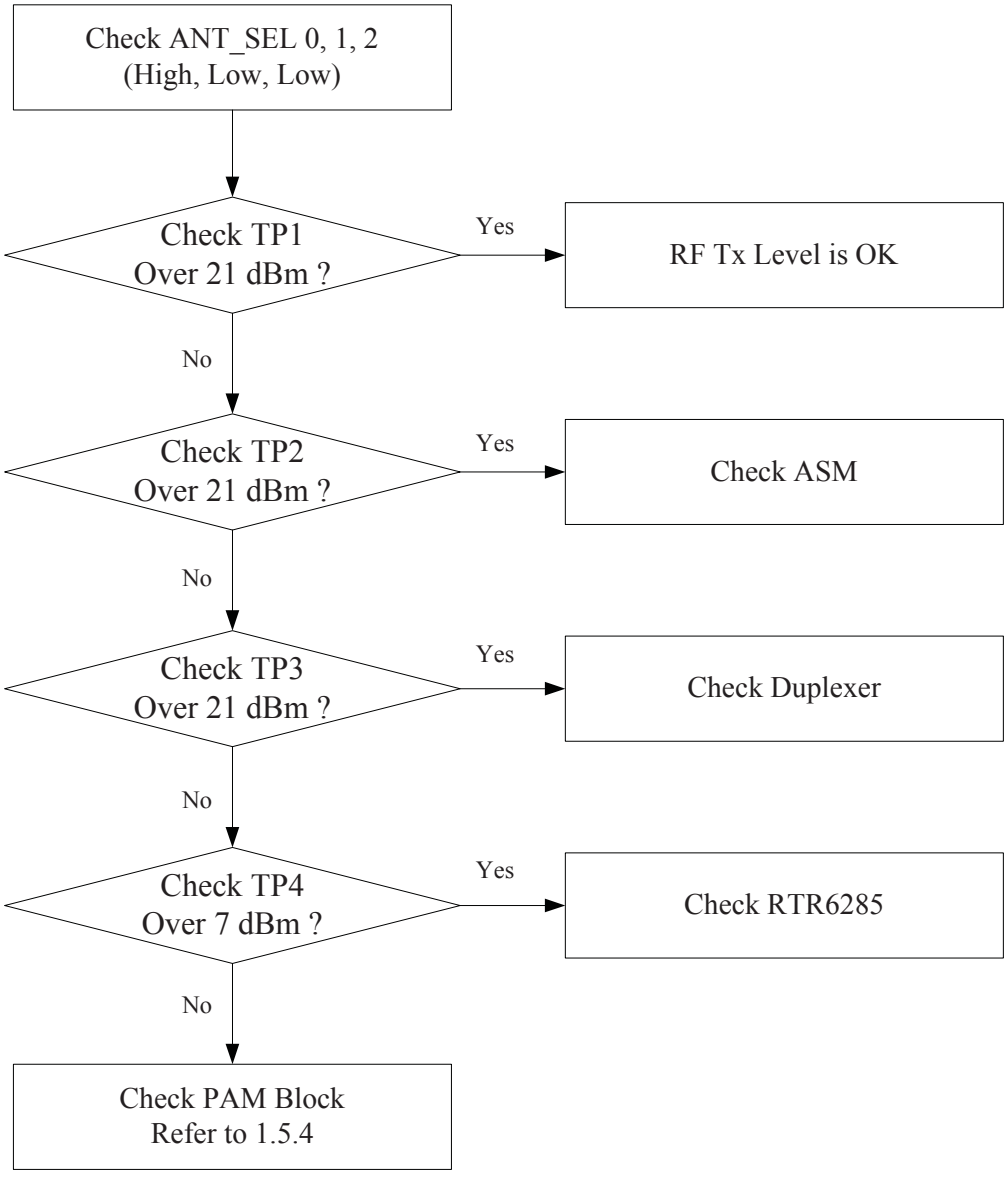


Test Point (TX Level)





For testing, Max power output is needed.



RTR6285 Maximum output Power = 7 dBm
RTR6285 minimum output Power = -80 dBm
PAM(ACPM-7381) = Maximum input Power = 10 dBm

4.5.4. Checking PAM Block

PAM control signal

W_PA_ON(WCDMA_900_ON(C186), WCDMA_1900_ON(C222) and) : PAM Enable

W_PA_RO: PAM Gain Control

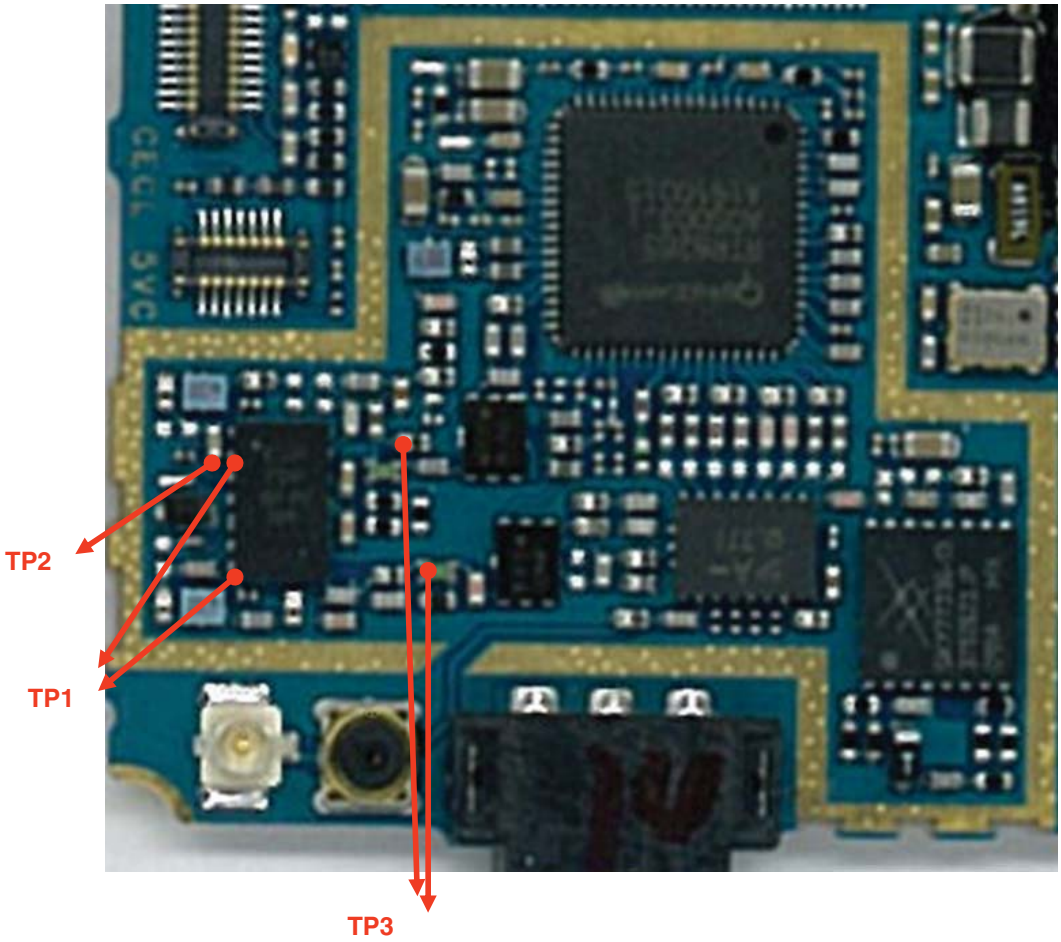
W_PA_ON must be HIGH (over 2.6V)

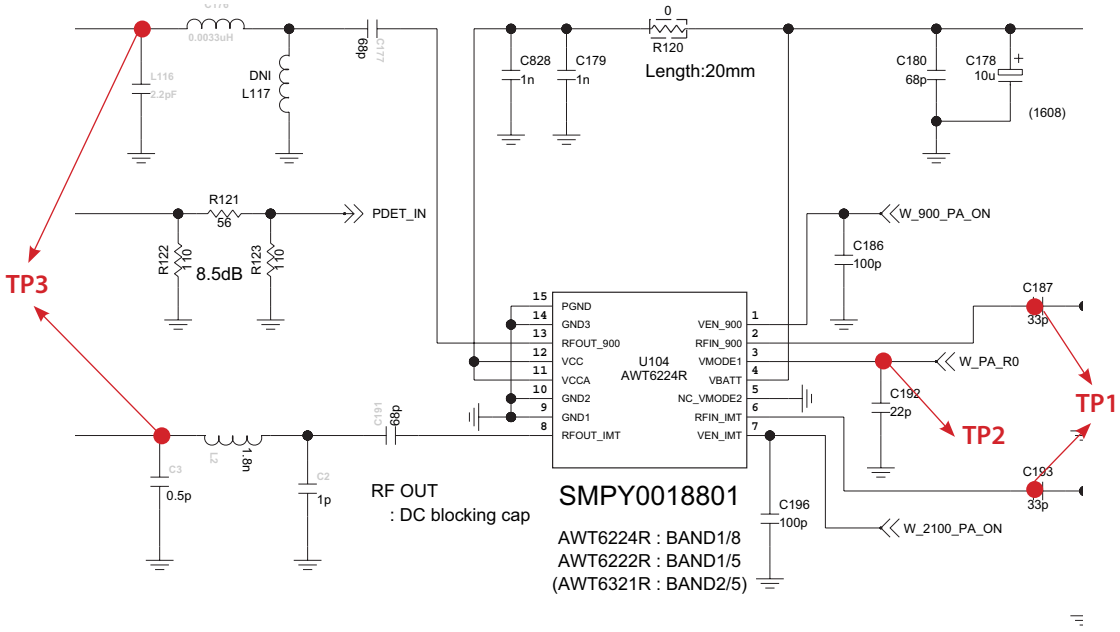
PAM IN/OUT Signal :

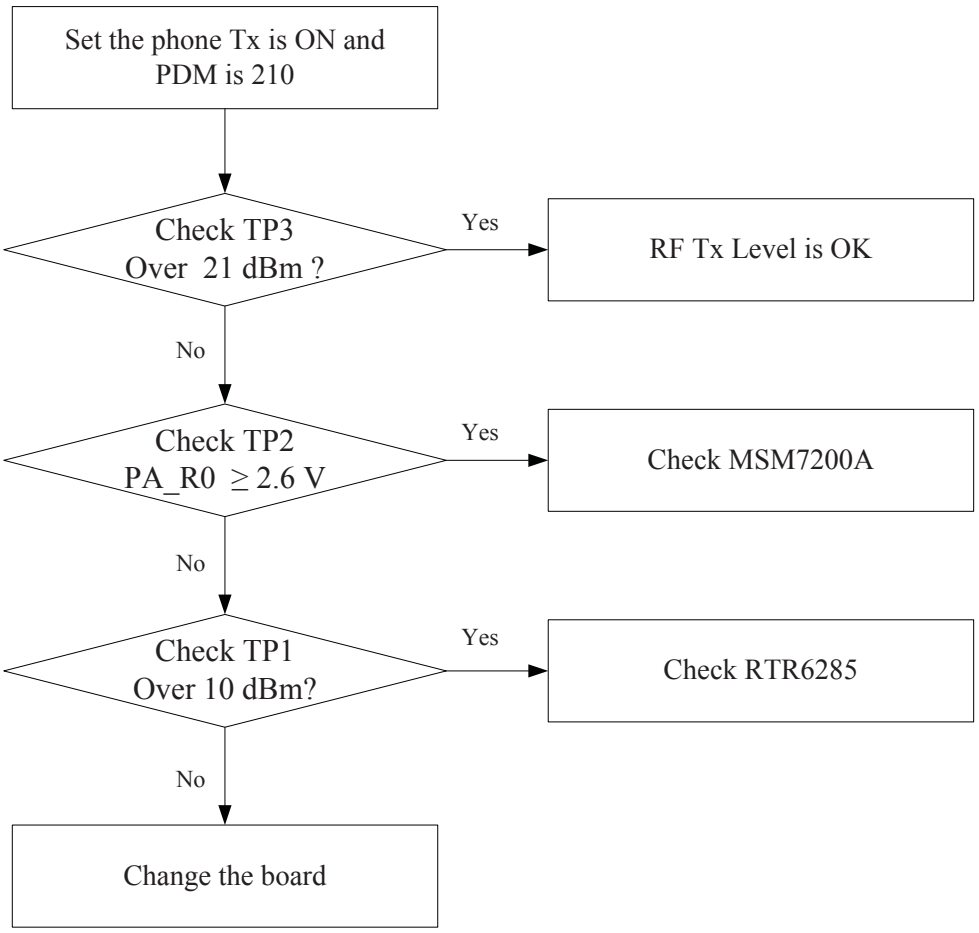
When PAM is under the operation of high power mode (W_PA_R0(C194,C223):Low),

PAM OUT power must be over 21 dBm

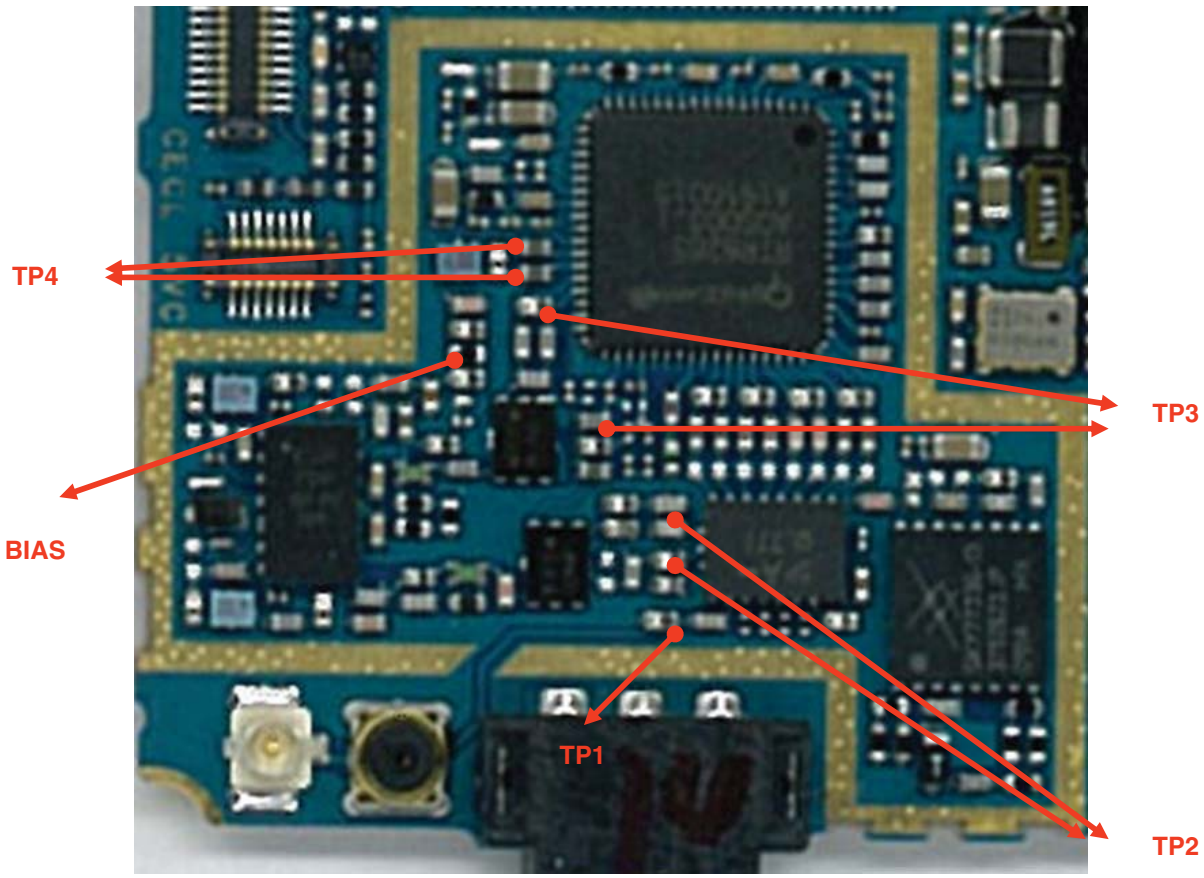
PAM IN power must be under 10 dBm



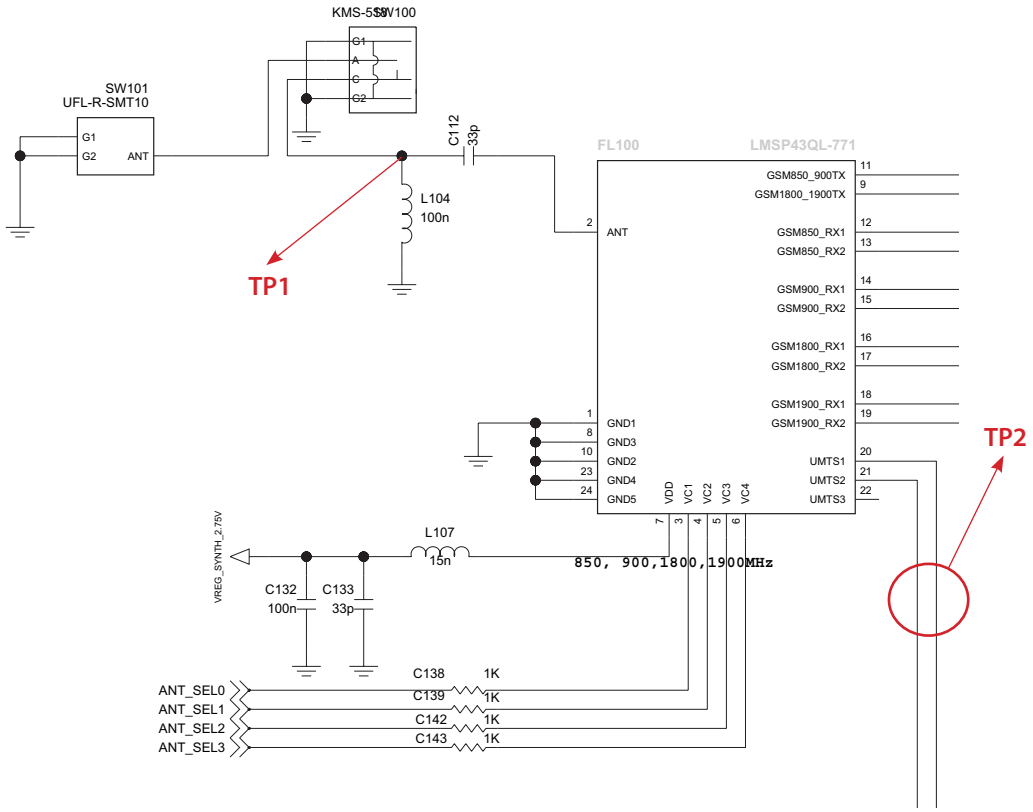


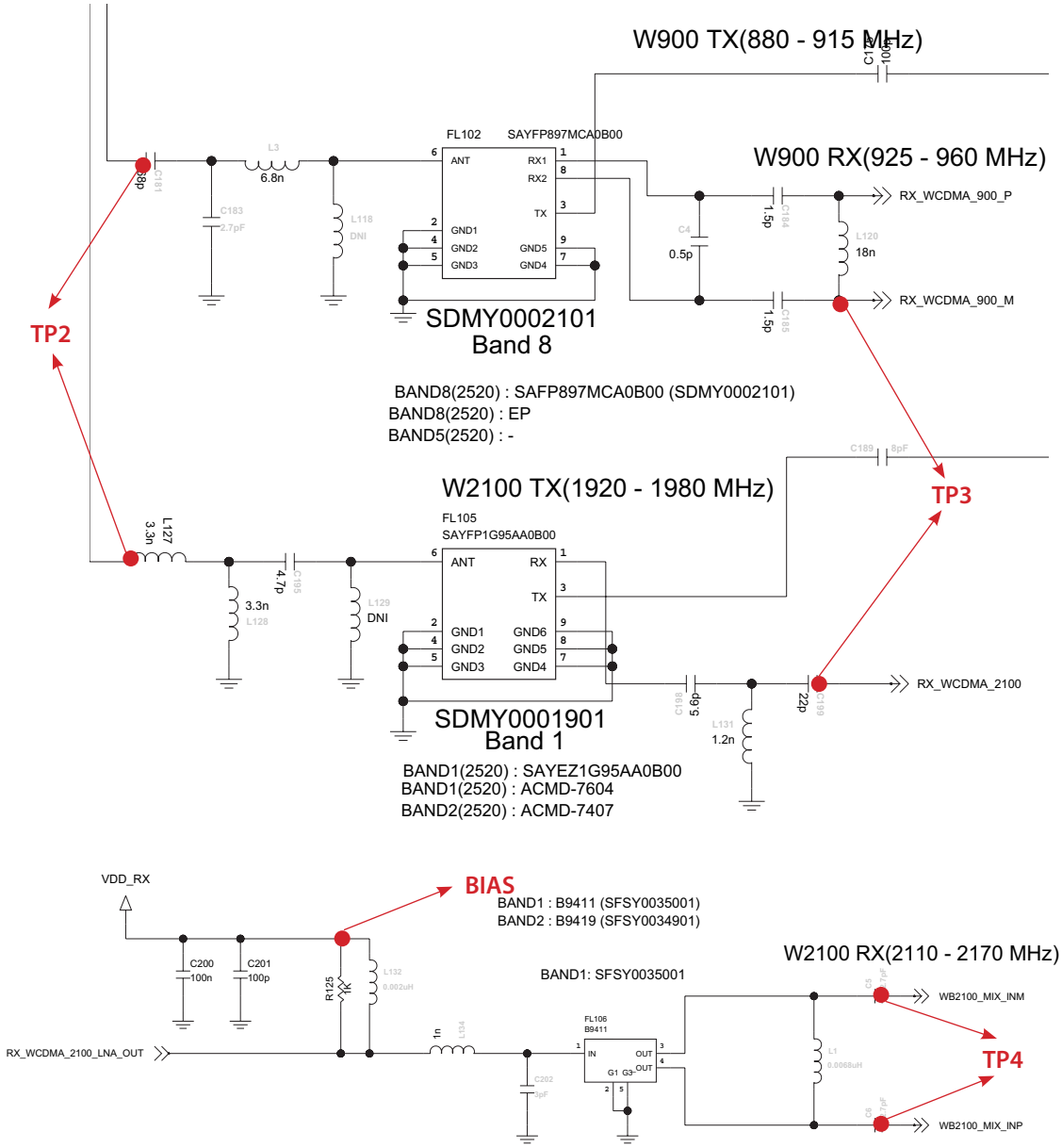


4.5.5. Checking RF Rx Level

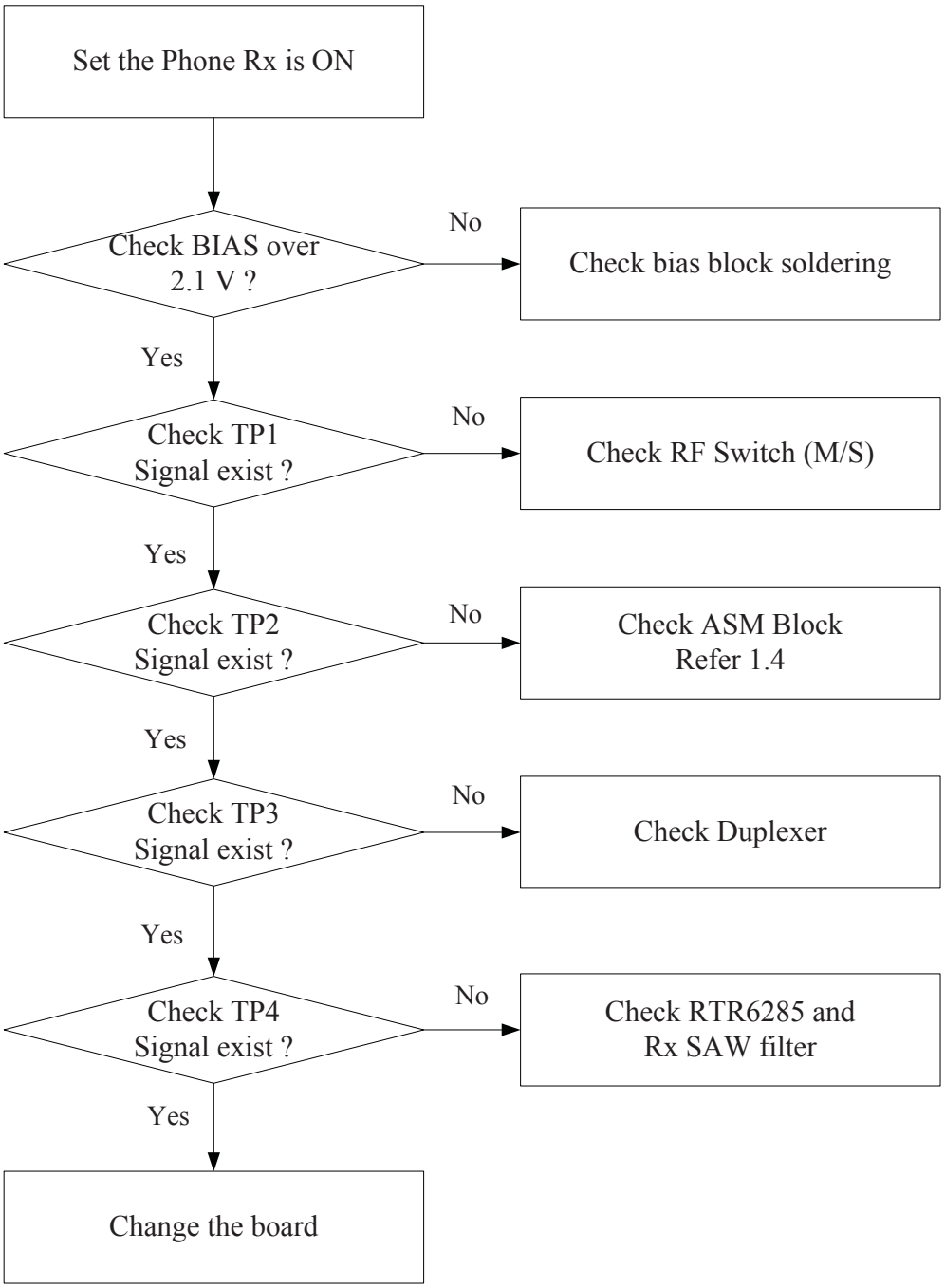


Test Point (RF Rx Level)

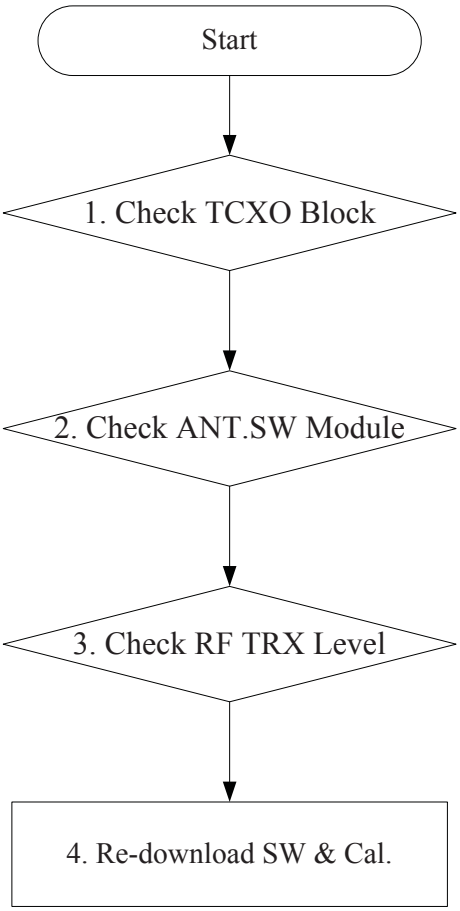




WCDMA RX 2100 LNA Circuit



4.6 Checking GSM Block



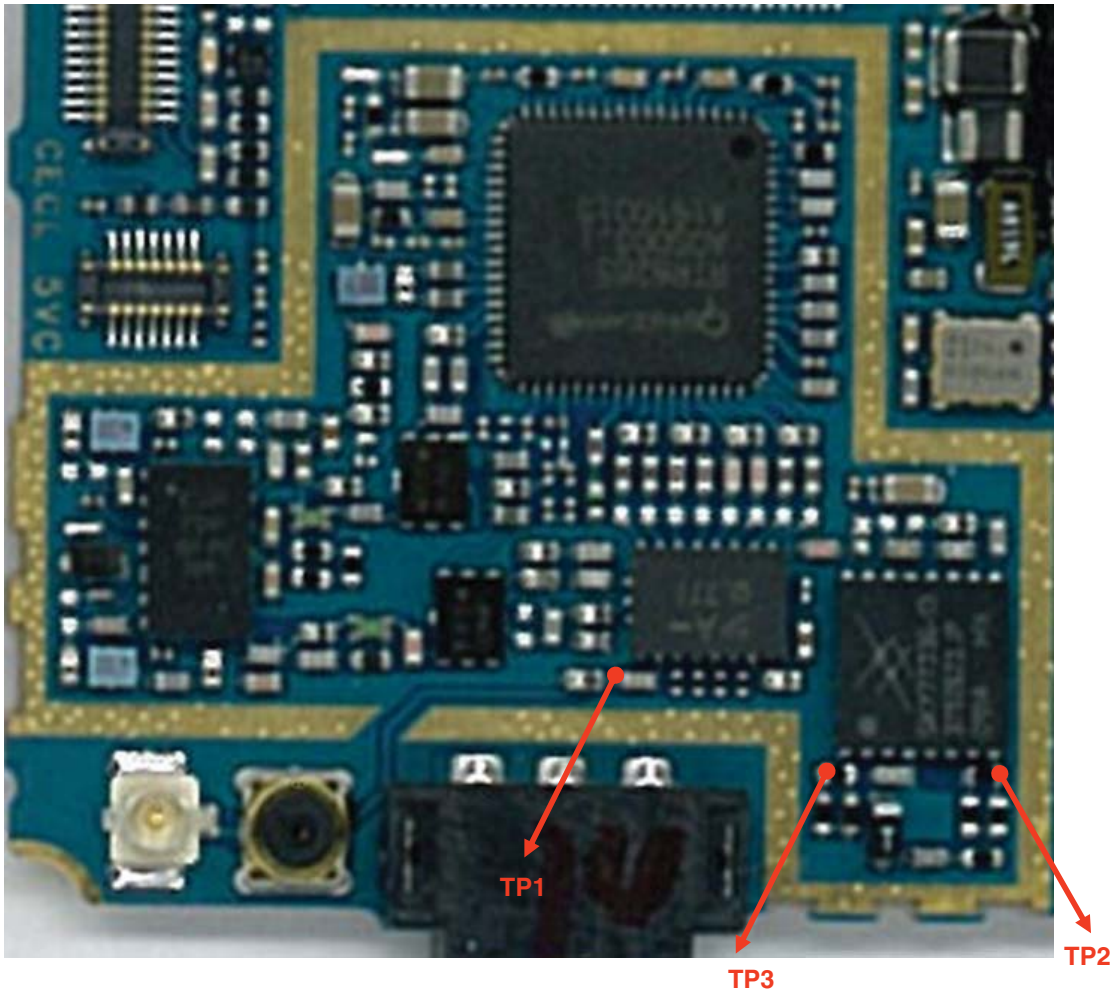
4.6.1. Checking TCXO Block

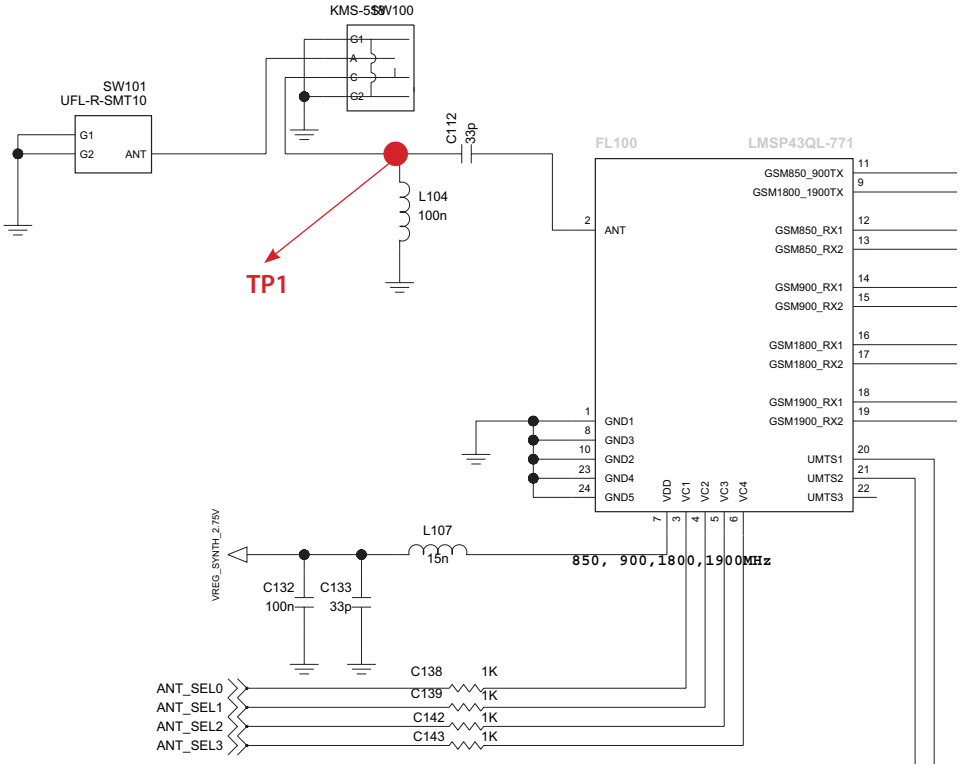
Refer to 4.3

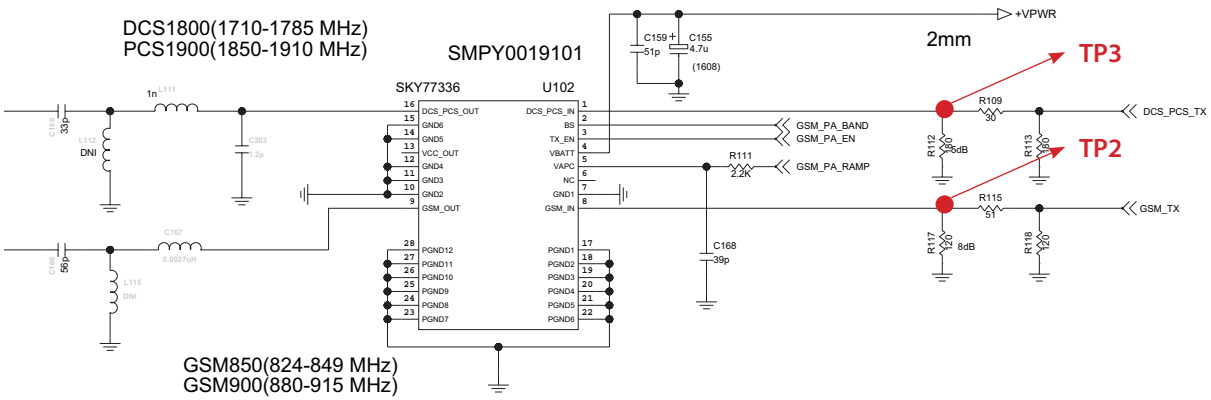
4.6.2. Checking FEM Block

Refer to 4.4

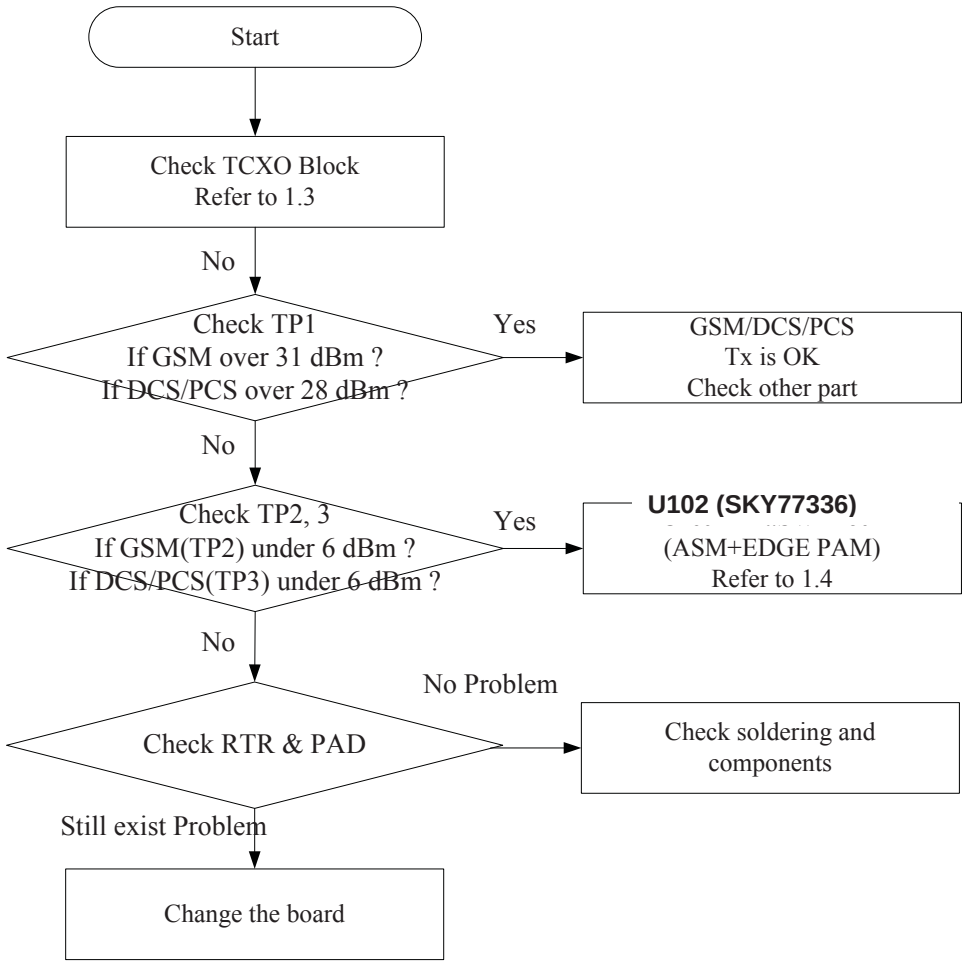
4.6.3.1. Checking RF TX level



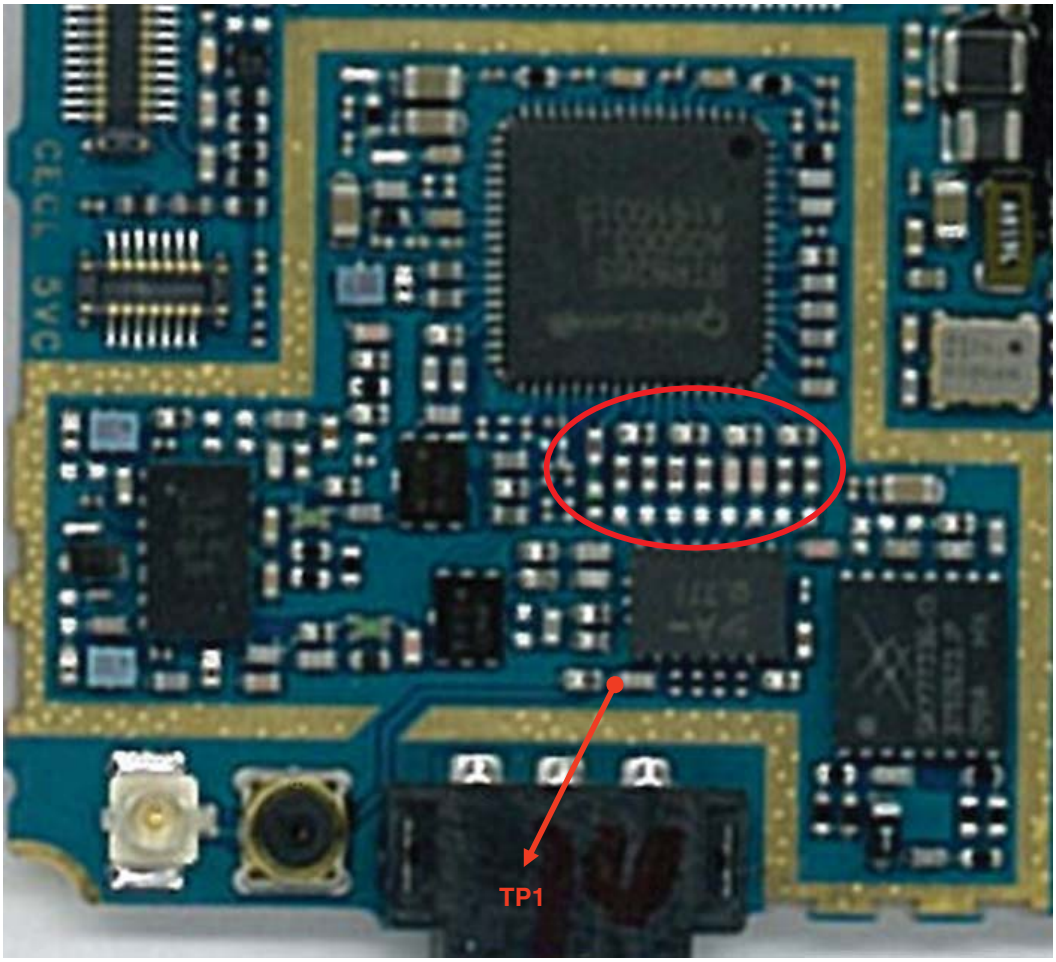


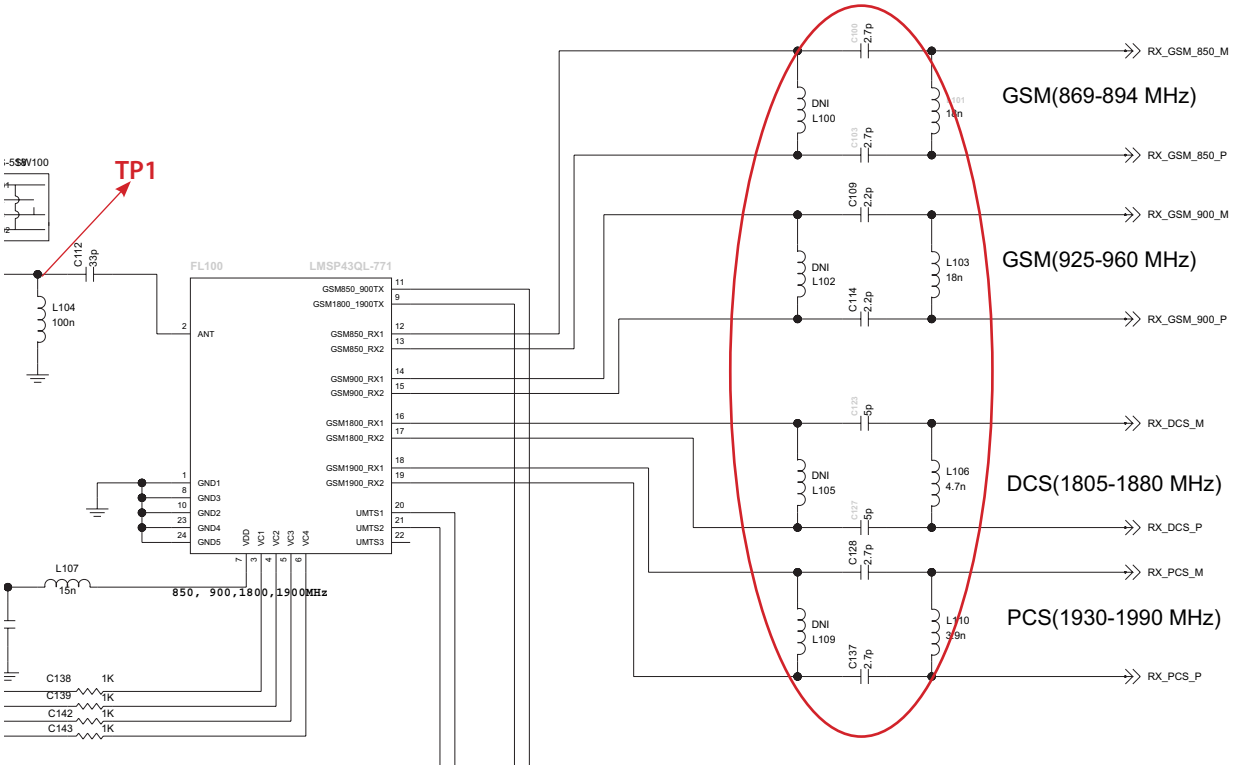


Schematic of GSM/DCS/PCS Tx Block

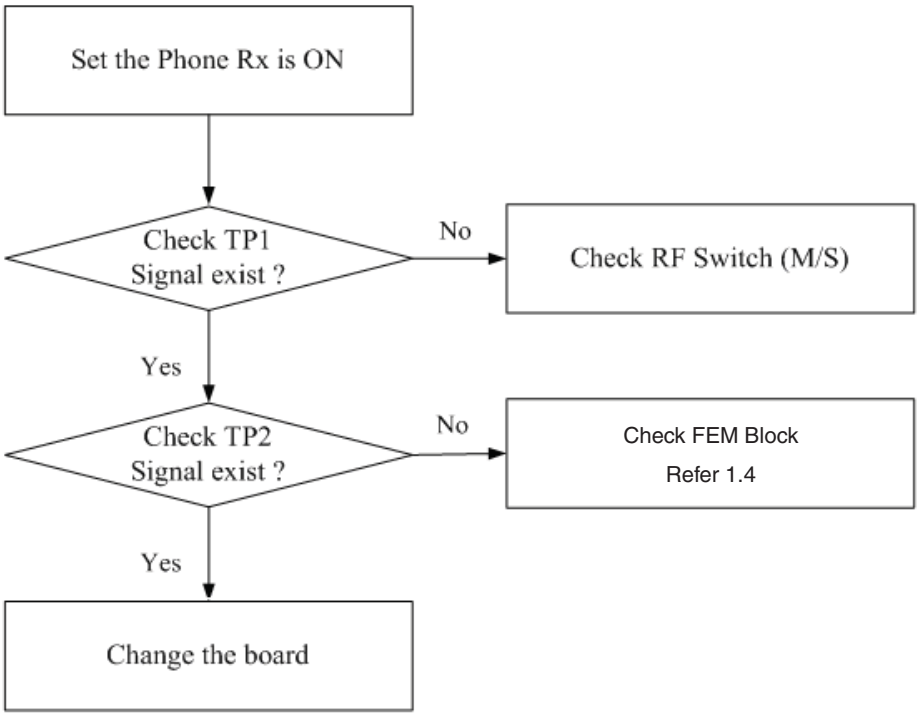


4.6.3.2 Checking RF Rx Block

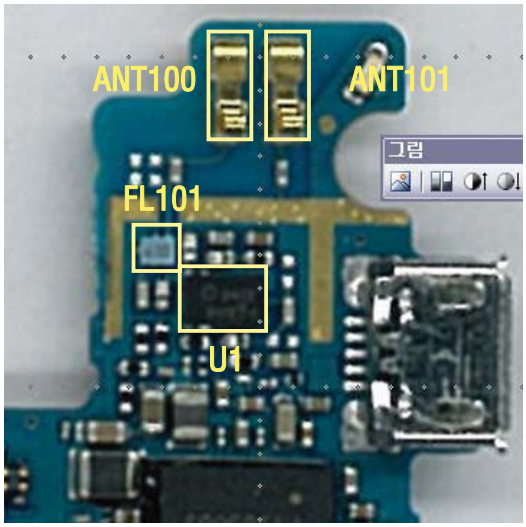


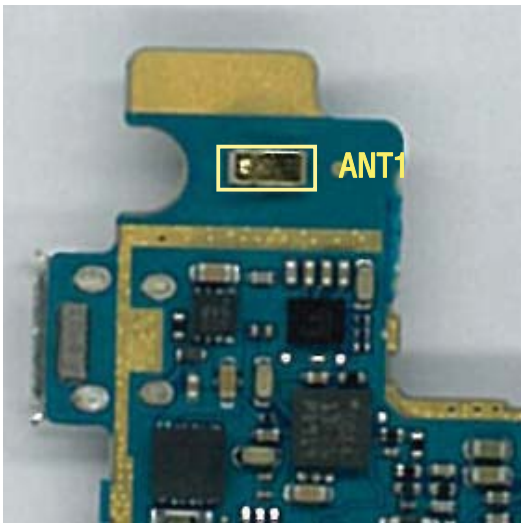


Schematic of GSM/DCS/PCS Rx Block



4.7 GPS/WIFI/BT RF components

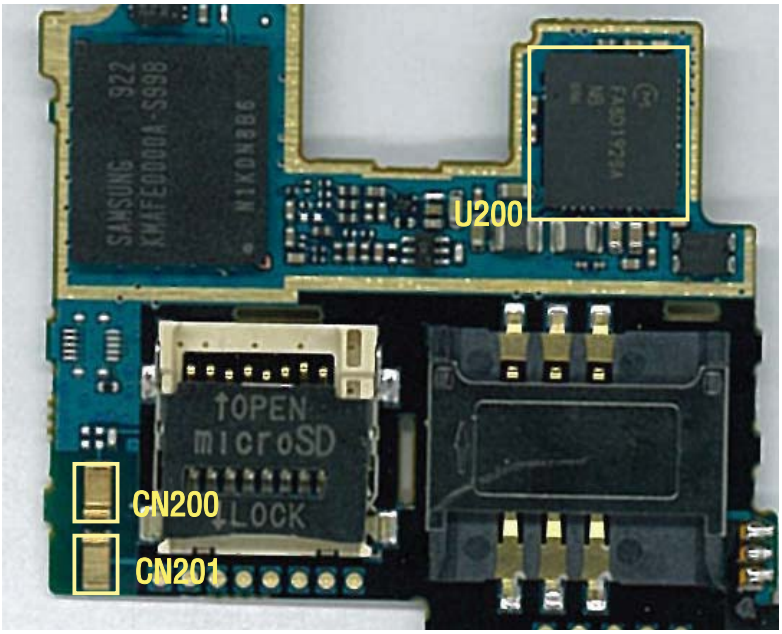




RF component (GPS)

- Main board bottom - **- Main board Top -**

Reference	Description
ANT10X	ANTENNA PAD connected to FPCB type antenna
ANT1	GND PAD Connected to SUS GND
FL101	GPS SAW FILTER
U1	GPS LNA

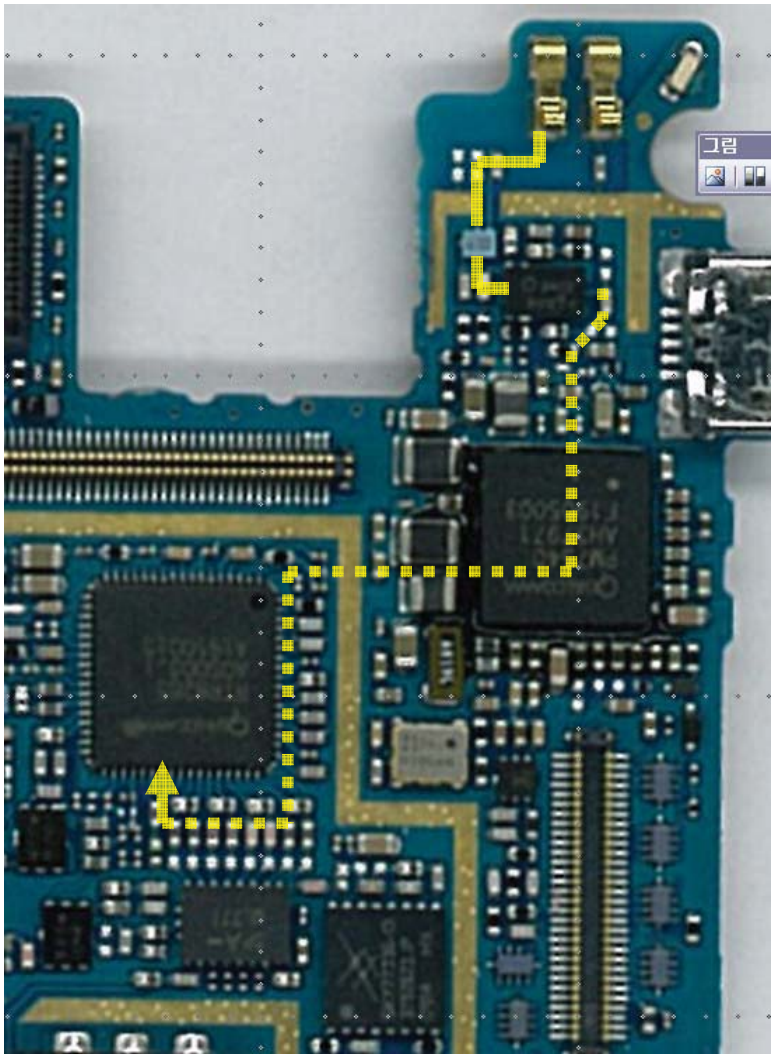


RF component (WiFi / BT)

- Sub board bottom -

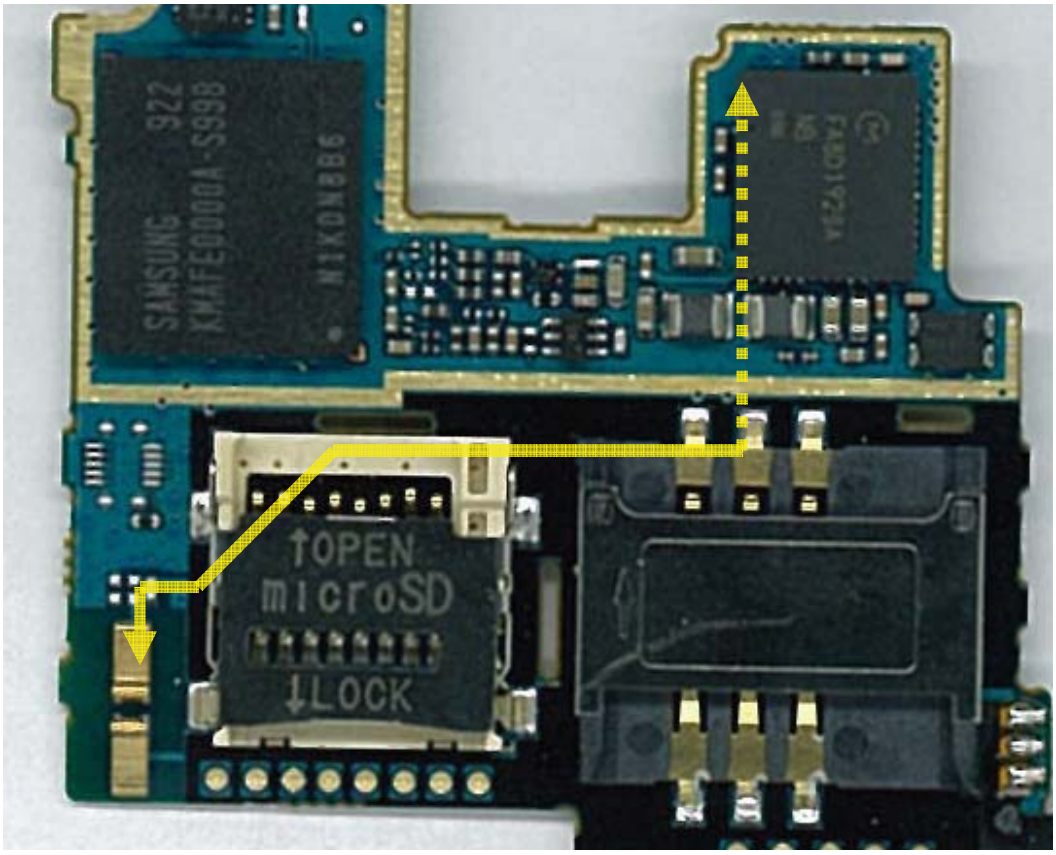
Reference	Description
CN20X	ANTENNA PAD connected to FPCB type antenna
U200	WiFi / BT module

4.8 GPS/WIFI/BT SIGNAL PATH



GPS Signal PATH (main board bottom)

GPS Rx PATH

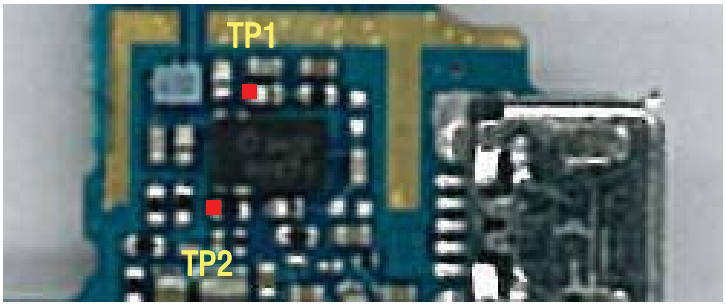


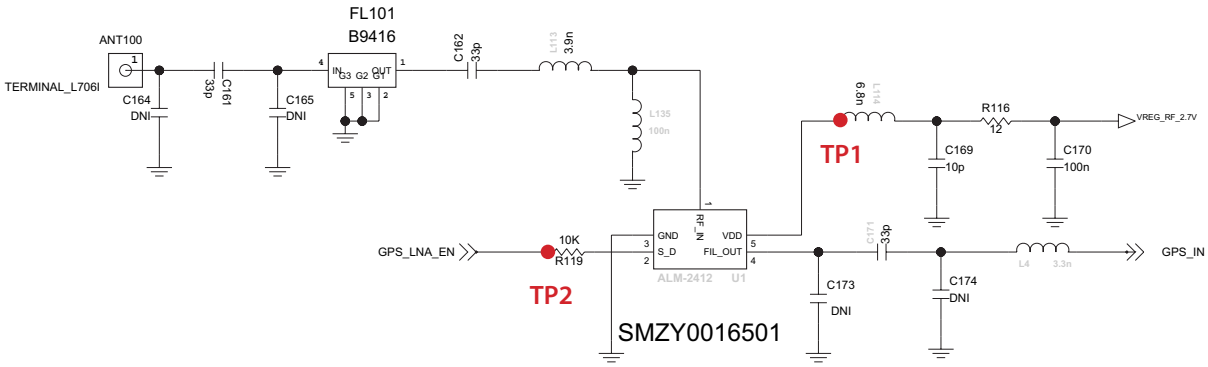
WiFi / BT Signal PATH (Sub board bottom)

WiFi / BT Tx Rx PATH

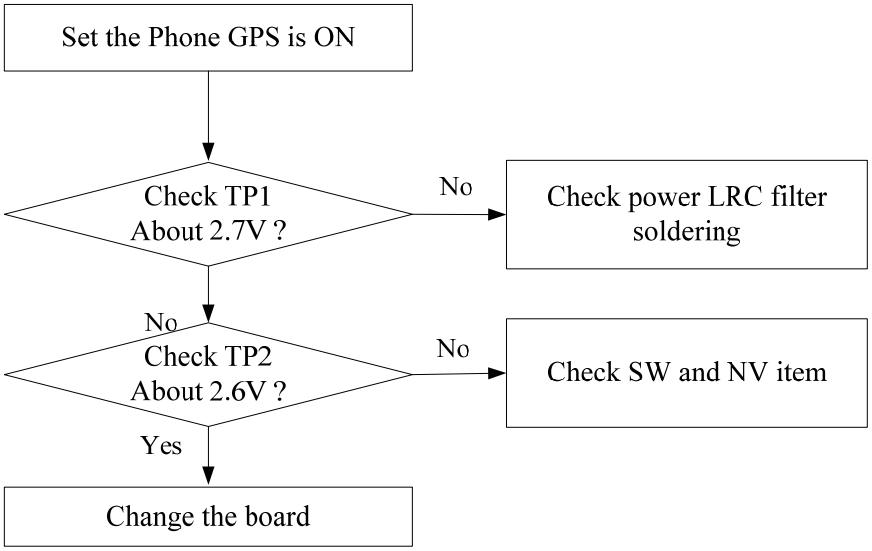
4.9 GPS/WIFI/BT Trouble shooting

4.9.1 A-GPS Block

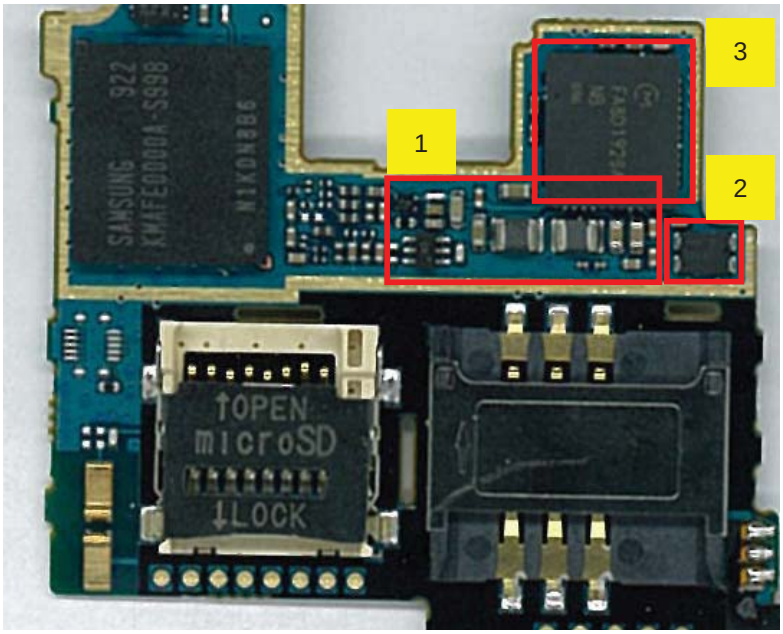


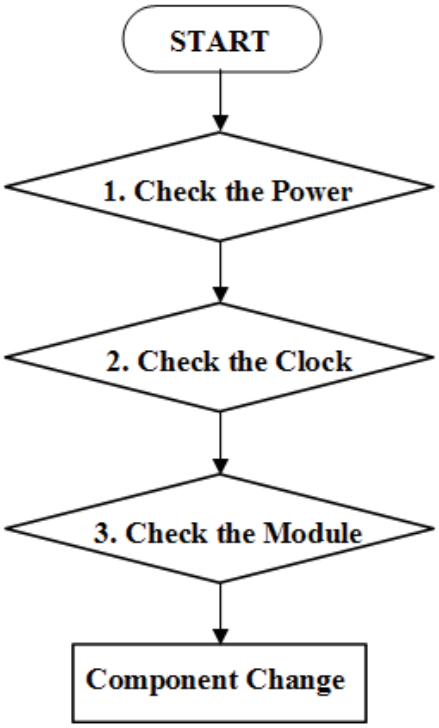


Schematic of the A-GPS block



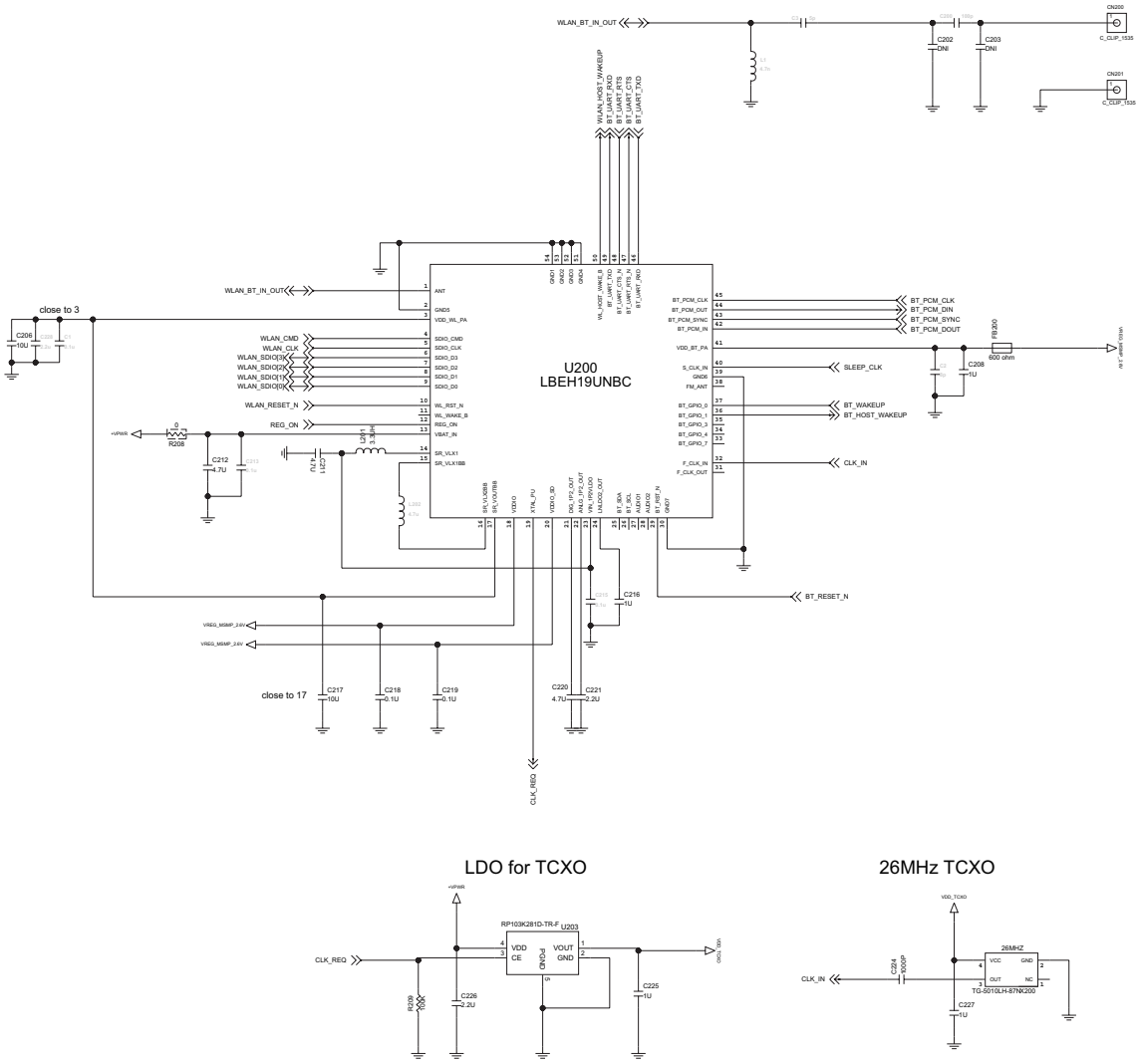
4.9.2 WLAN/BT/FM Block



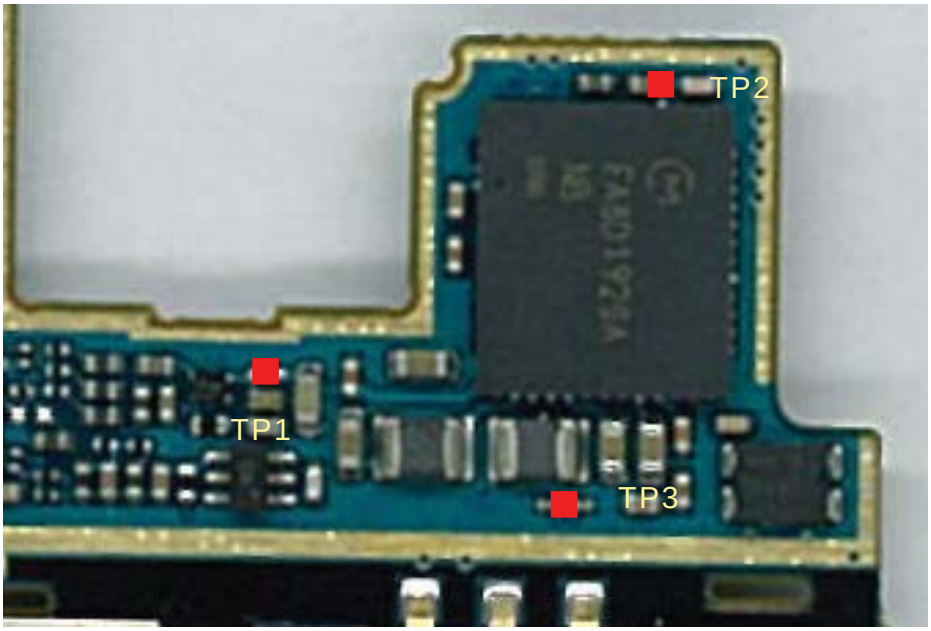


4.9.2.1 Module part

WLAN+BT+FM



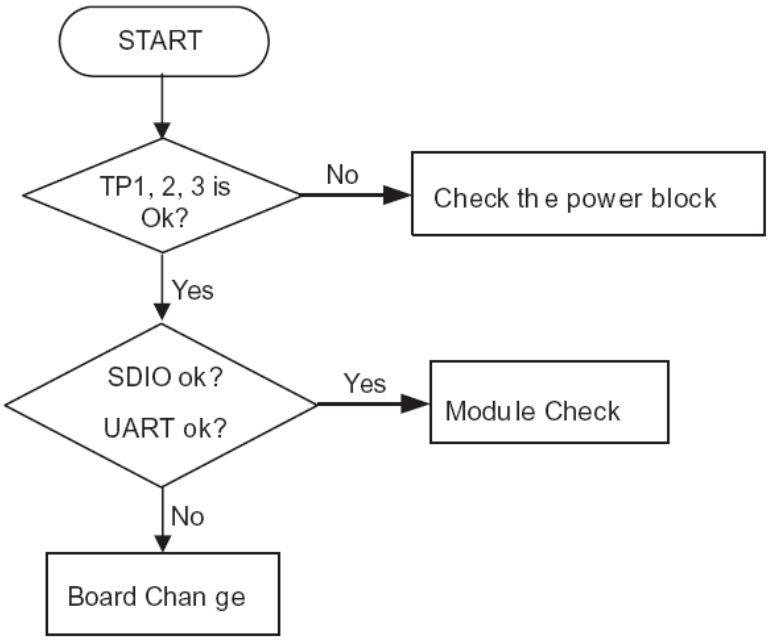
[Figure] Schematic of WiFi/BT module



Test point Description

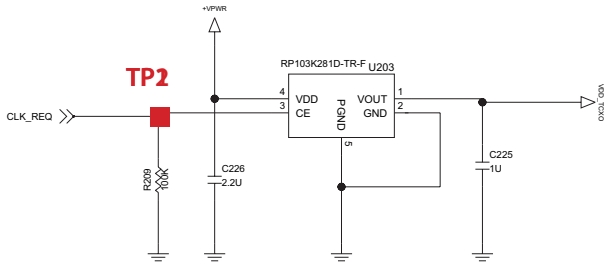
Test point	Net name	Description
TP1	+VPWR	Power for BT/WiFi BB core and WiFi power Amp. (V Batt)
TP2	VREG_MSMP_2.6V	Power for BT power Amp. (2.6V)
TP3	VREG_MSMP_2.6V	Power for host interface (2.6V)

Checking Flow

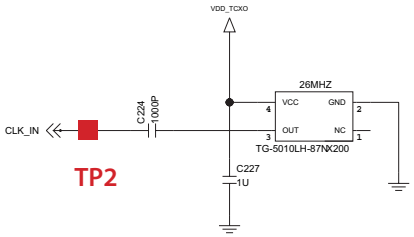


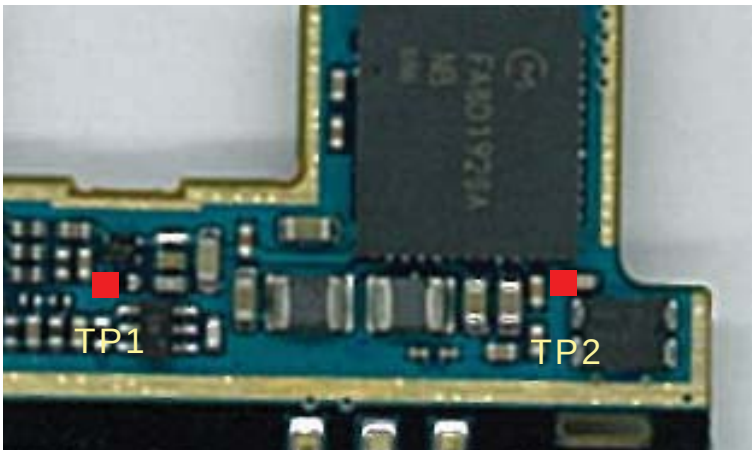
4.9.2.2 Main clock part

LDO for TCXO



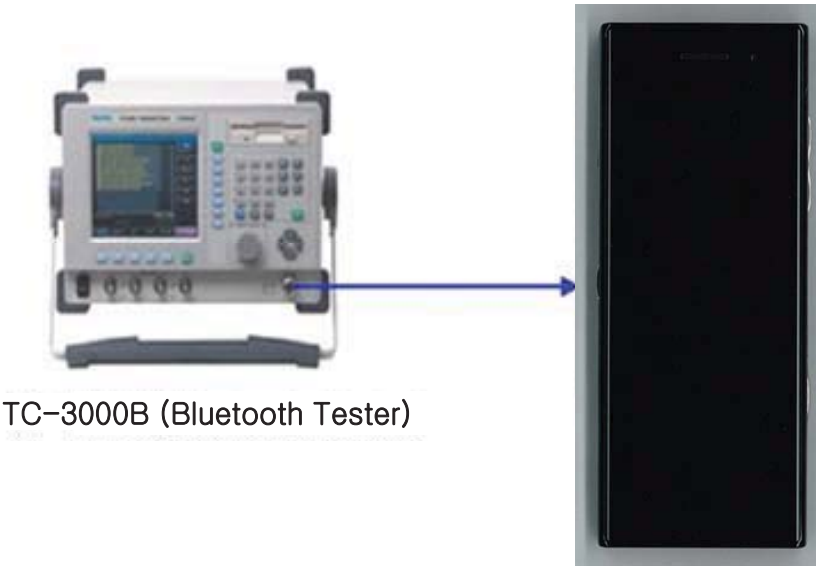
26MHz TCXO





Test Point	Net name	Description
TP1	CLK_REQ	On/Off Control external clock source 0 : TCXO off 1 : TCXO on
TP2	CLK_IN	TCXO outp ut clock : 26MHz

Test Point of TCXO



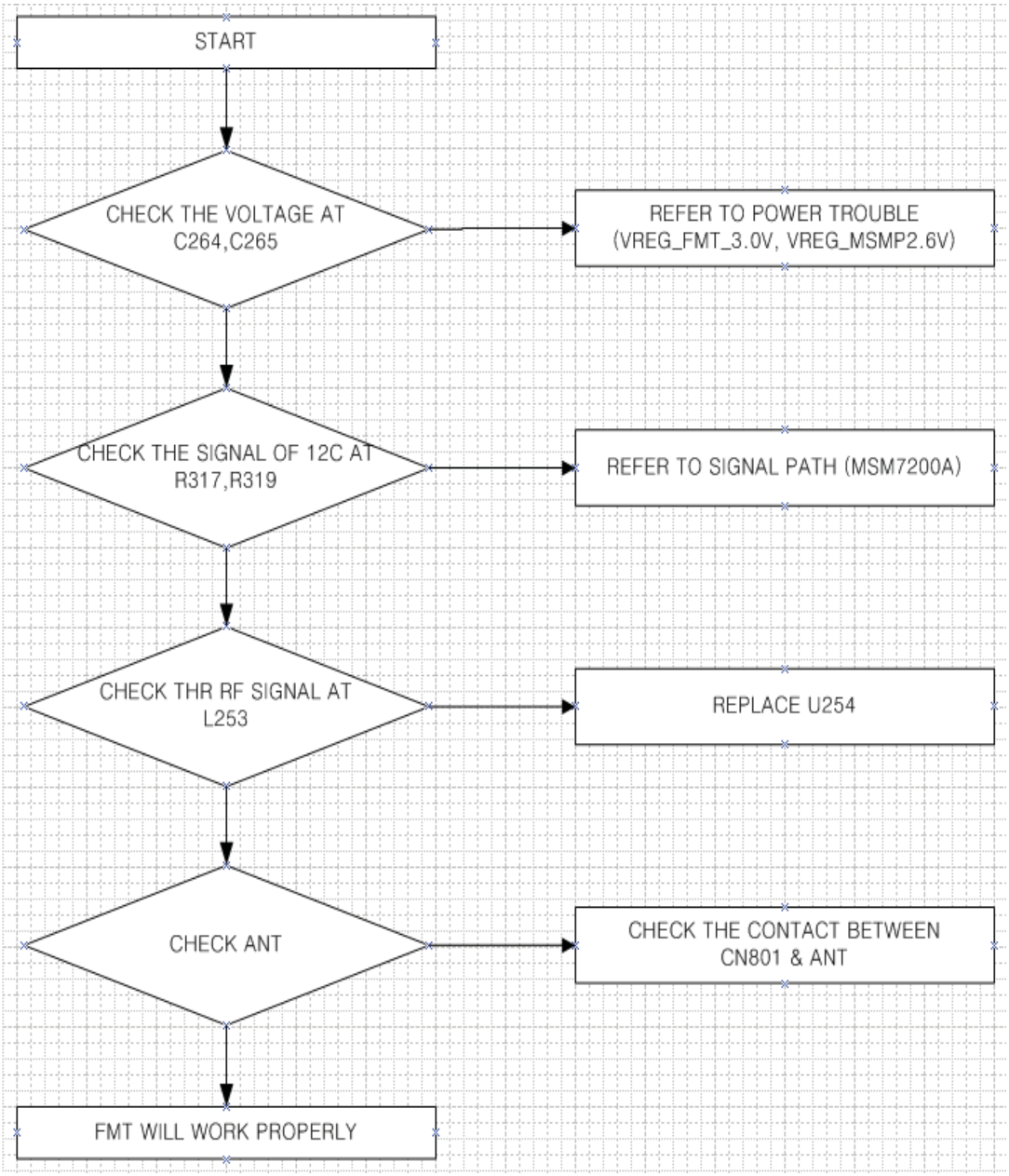
◆ Bluetooth RF Test procedure

1. Set phone to bluetooth test-mode.
   - Blue tooth ON : Enter Test Mode(277634#*#) → Module test set → BT DUT → BT DUT ON
2. Insert a phone in a TEMCELL (in case of radiation test)
3. Set 'discover' after push menu button of the tester and select the link analyzer .
4. After 'set test mode', confirm the connection state.
5. Measure the power of full channel after hopping mode is selected to 'ON'
6. You can select wanted test cases after getting an optimized power
7. Blue tooth On/Off
   - Menu→settings→Bluetooth→Turn on/Turn off

4.10 FM Transmitter Trouble shooting

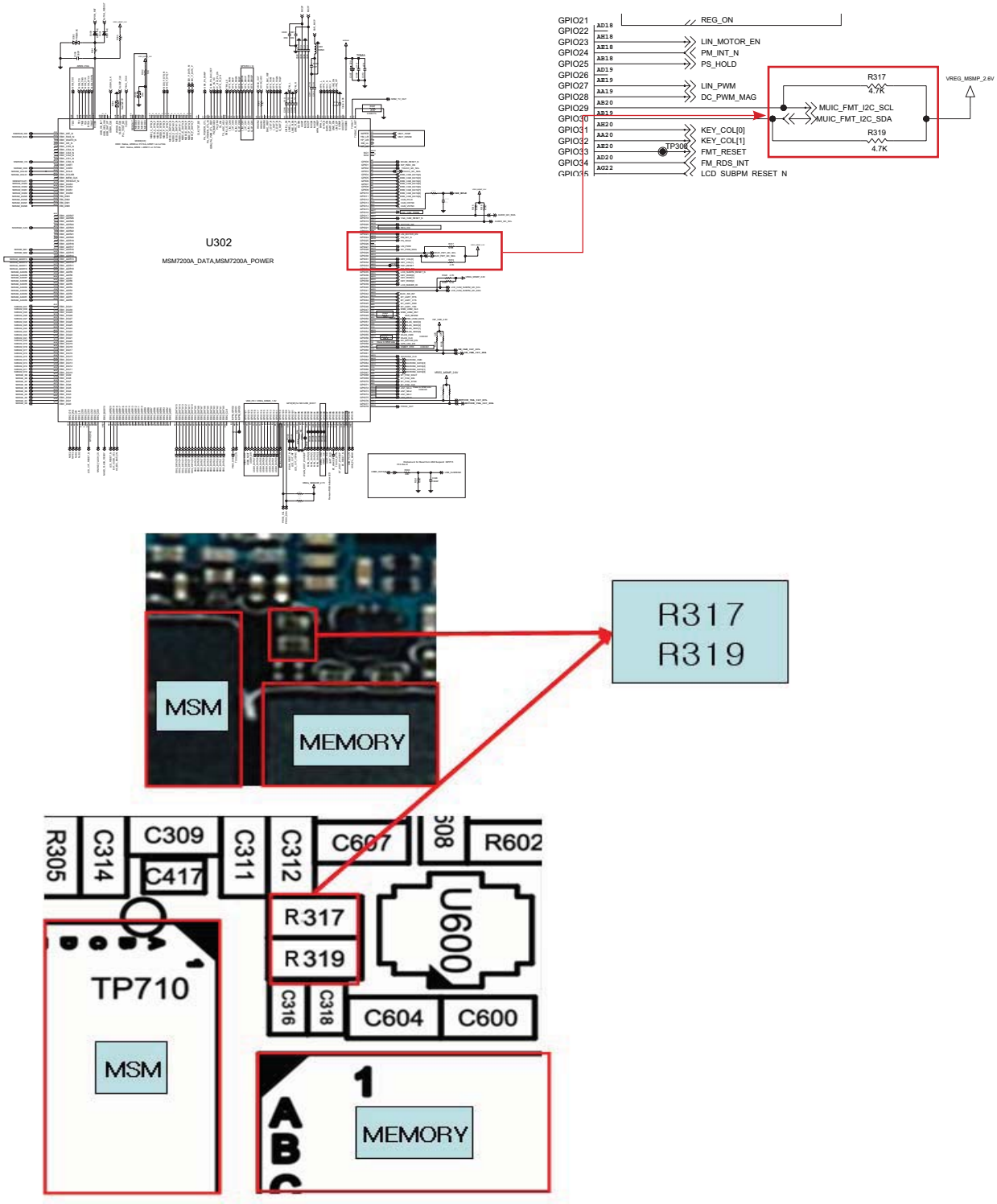
FM Transmitter trouble

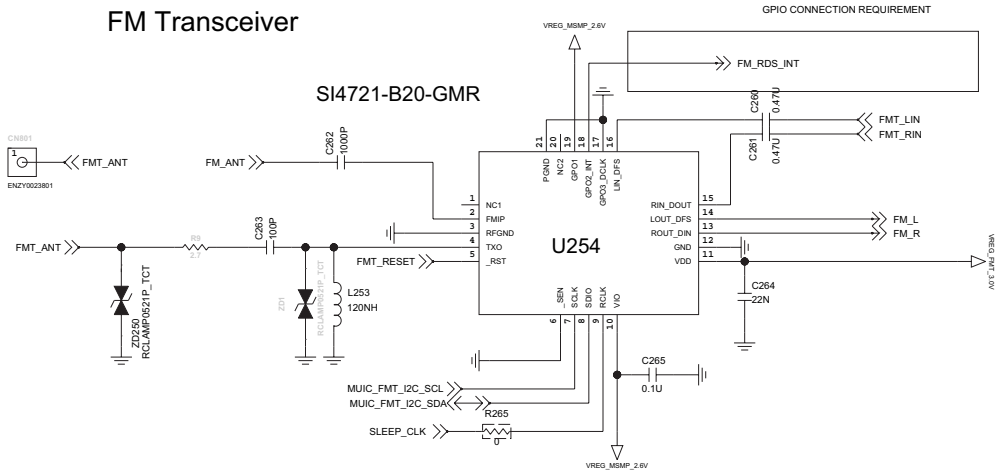
Checking Flow



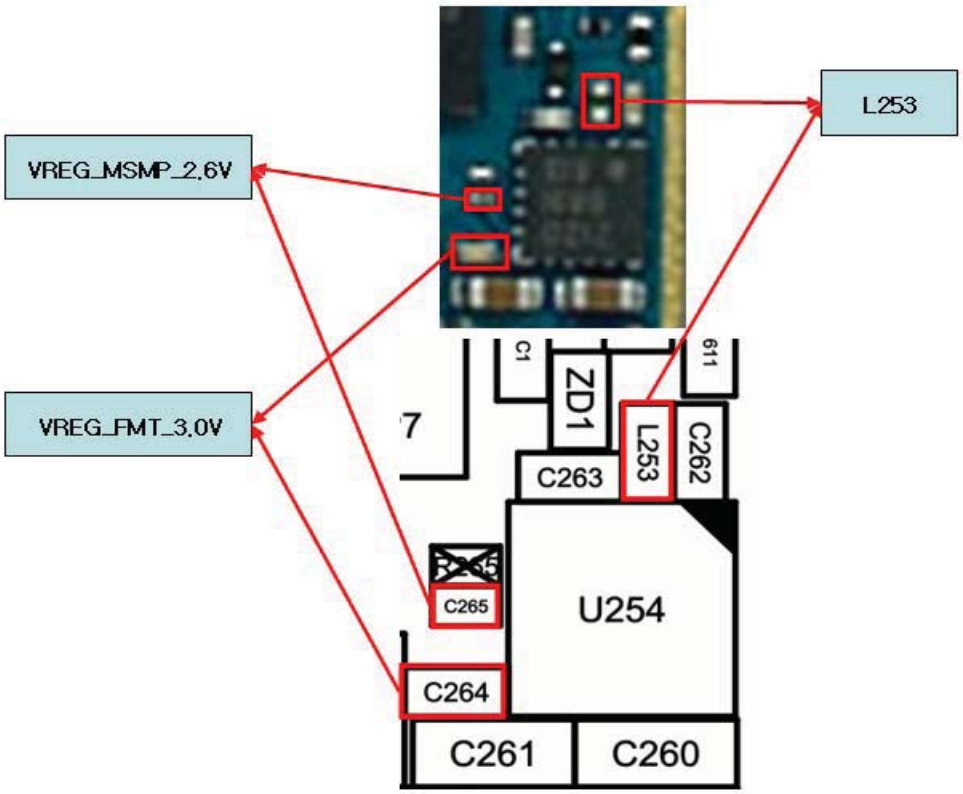
FM_Transmitter

MSM7200A



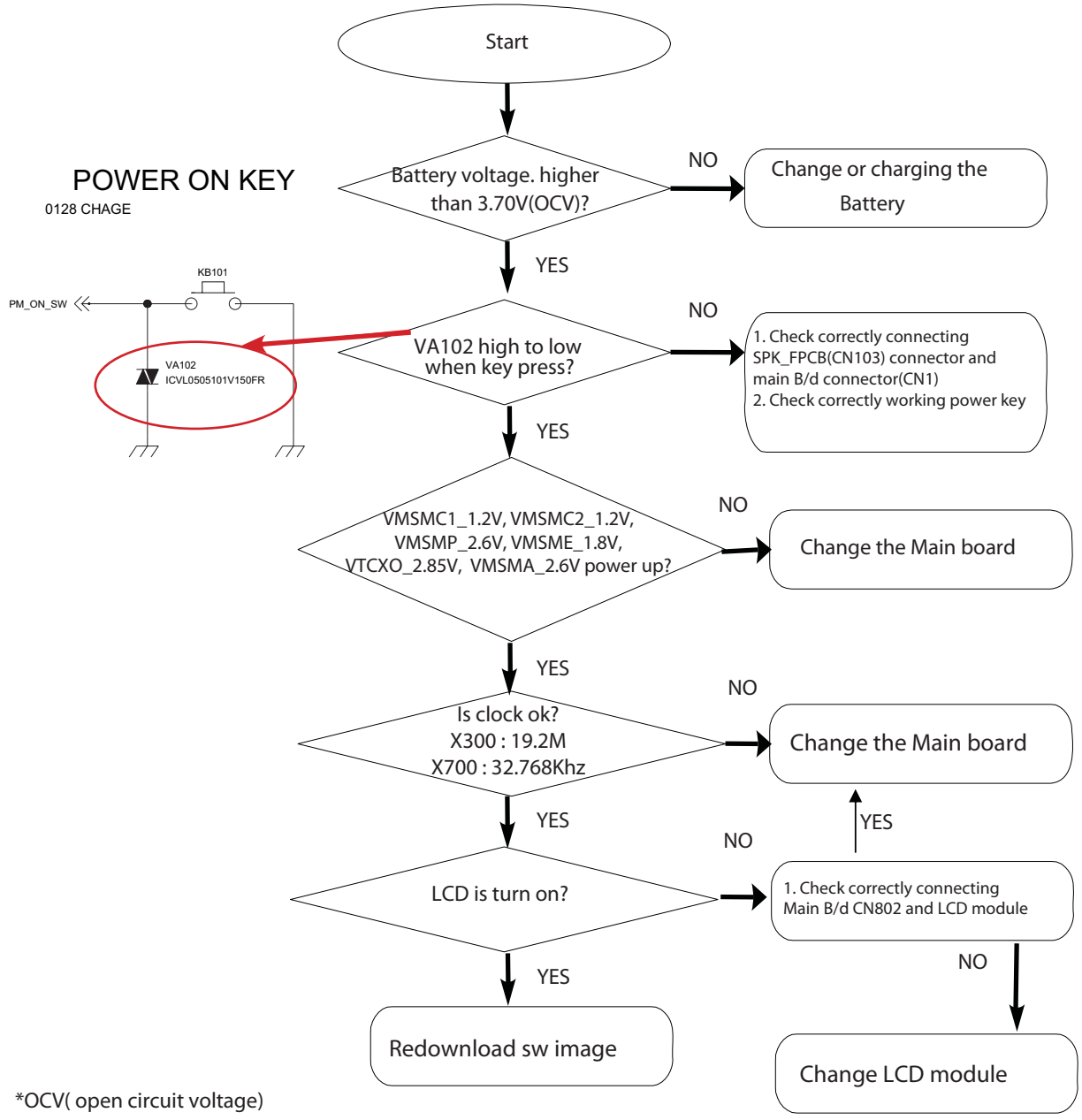


Test Point

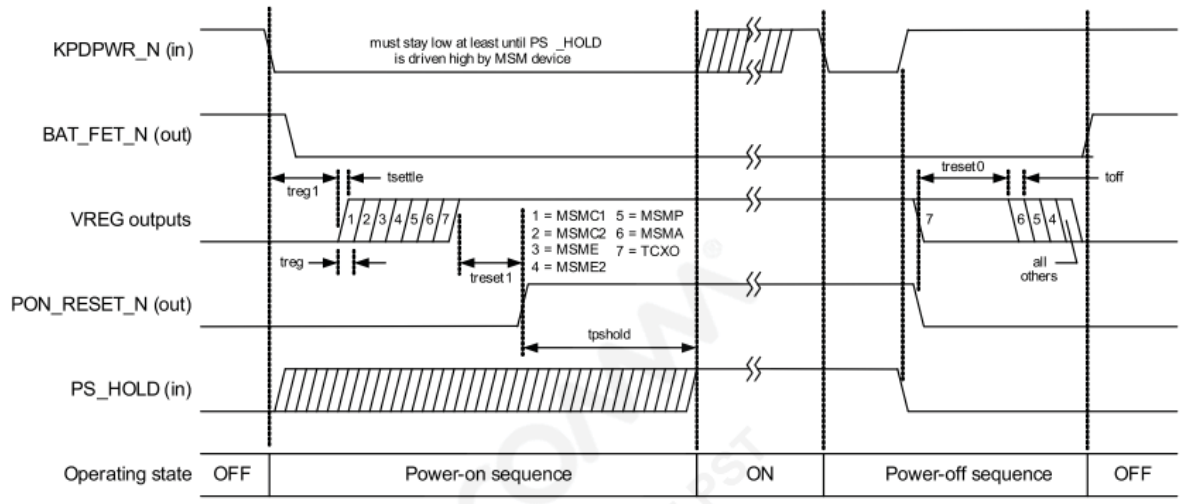


4.11 Power ON Troubleshooting

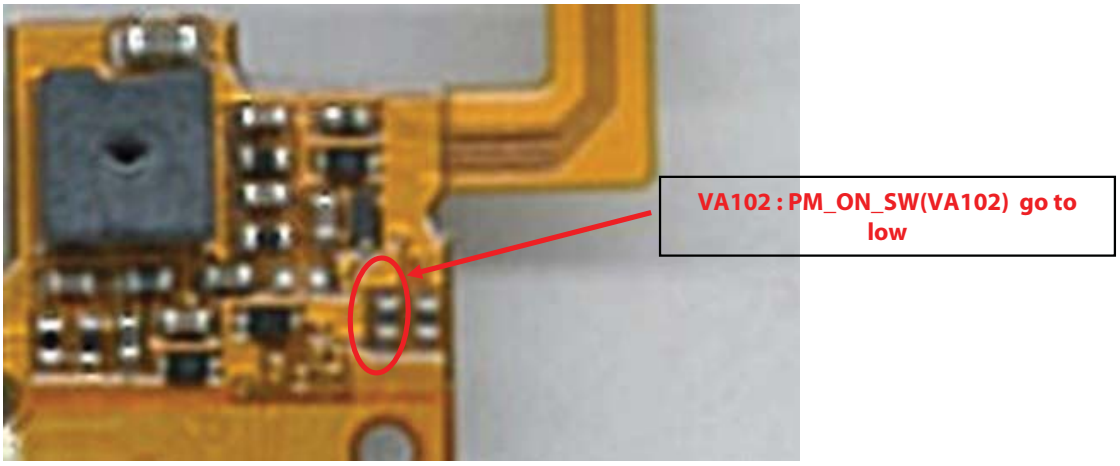
Power On sequence of BL40 is :
Power key press → PM_ON_SW(VA102) go to low→ PM7540 Power Up → VMSMC1_1.2V(C723), VMSMC2_1.2V(C724), VMSME_1.8V(C725), VMSMP_2.6V(C746), VMSMA_2.6V(C745), VTCXO_2.85V(C752) power ON → Phone booting and PS_HOLD(D701) go to High

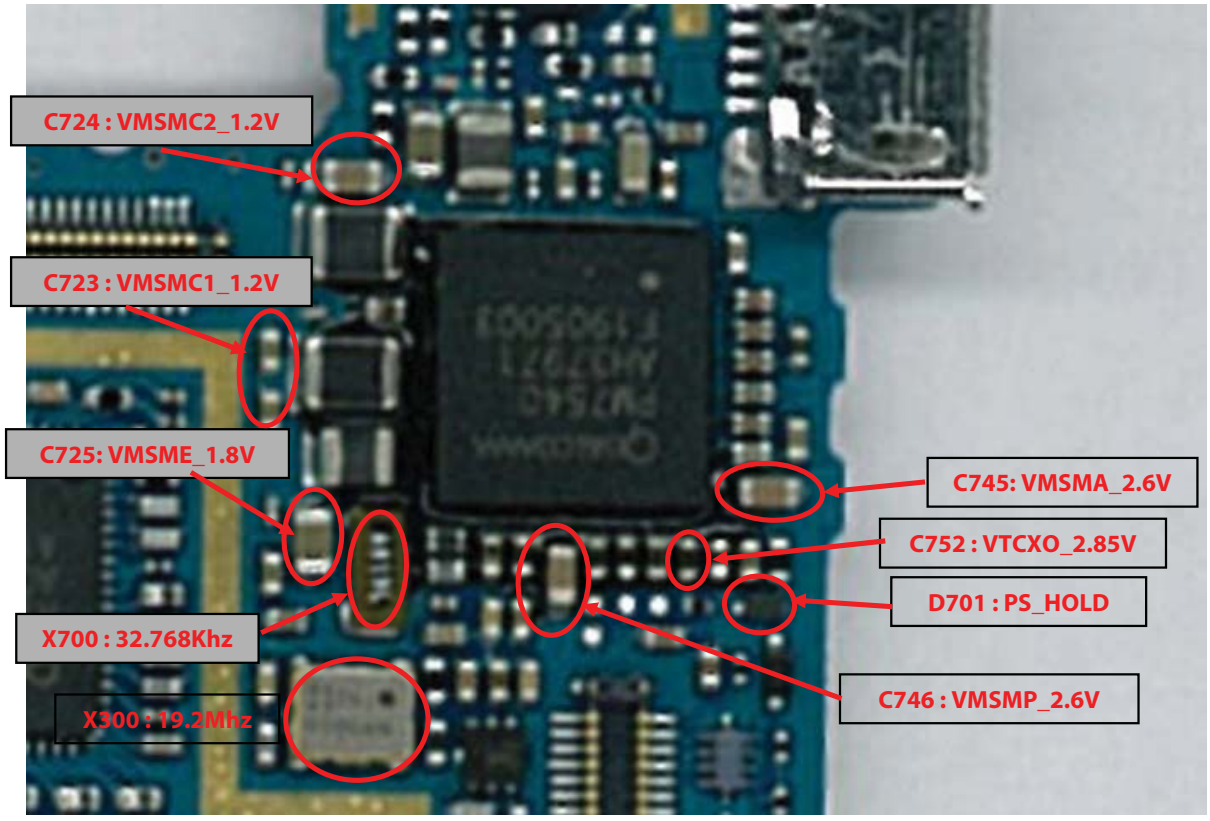


*OCV(open circuit voltage)

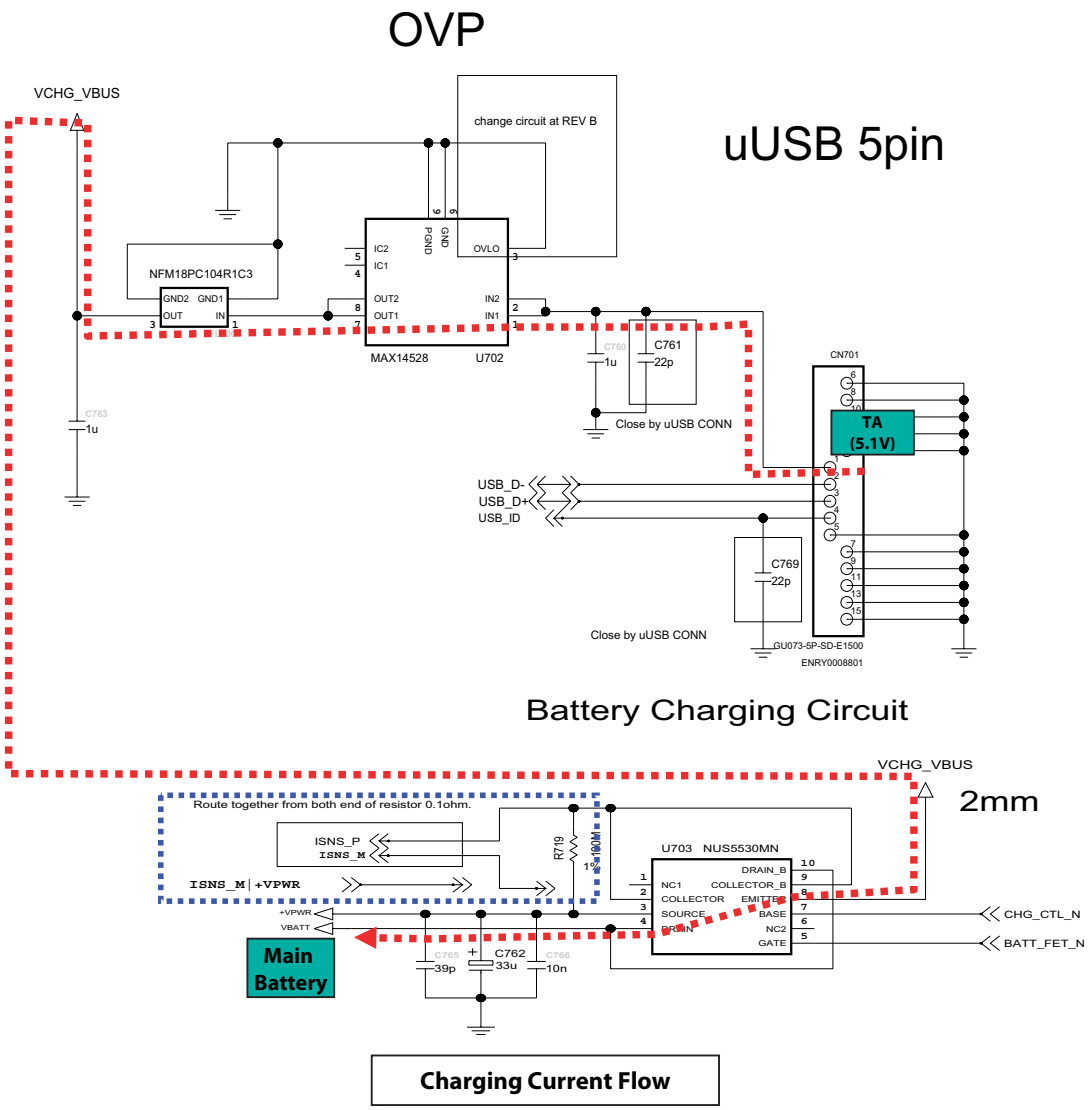


PM7540 Power sequence





4.12 Charger Troubleshooting

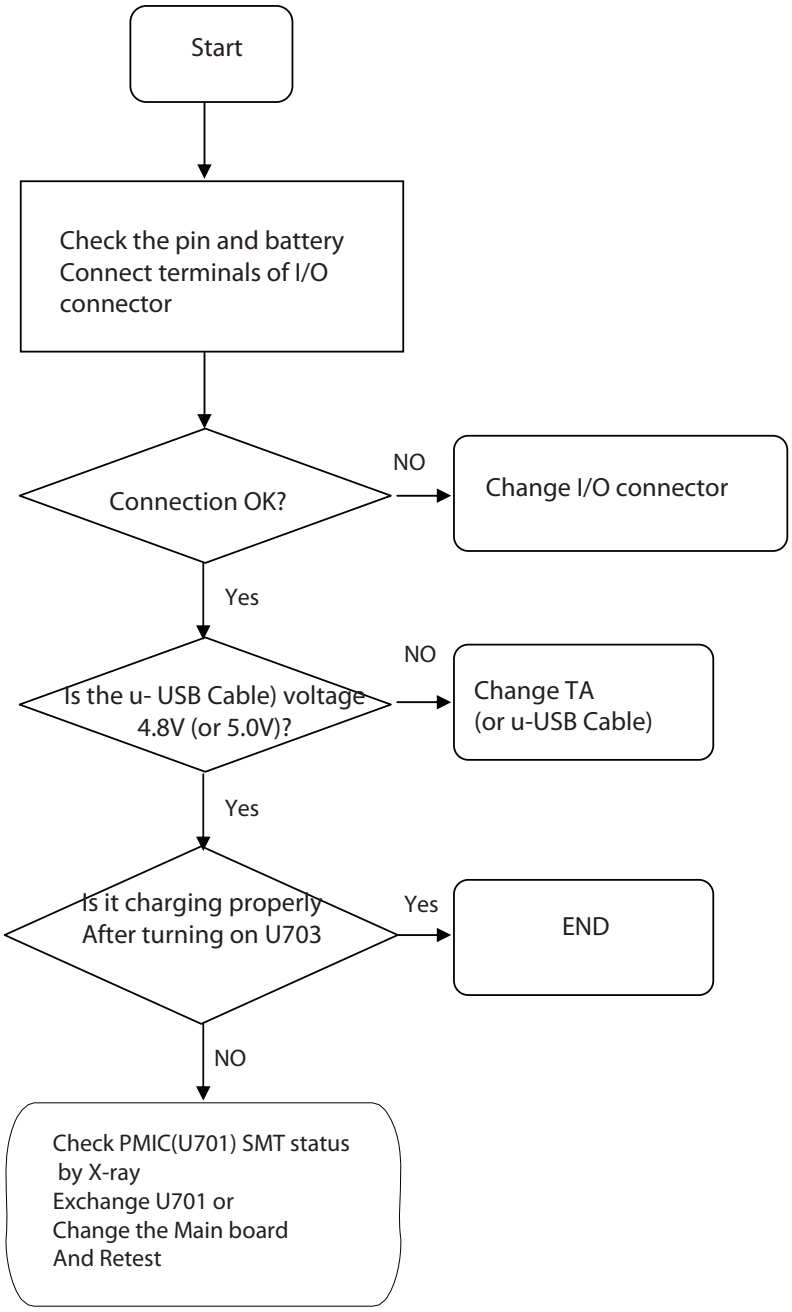


Charging Procedure
- Connect TA or u-USB Cable
- Control the charging current by PM7540 IC
- Charging current flows into the battery

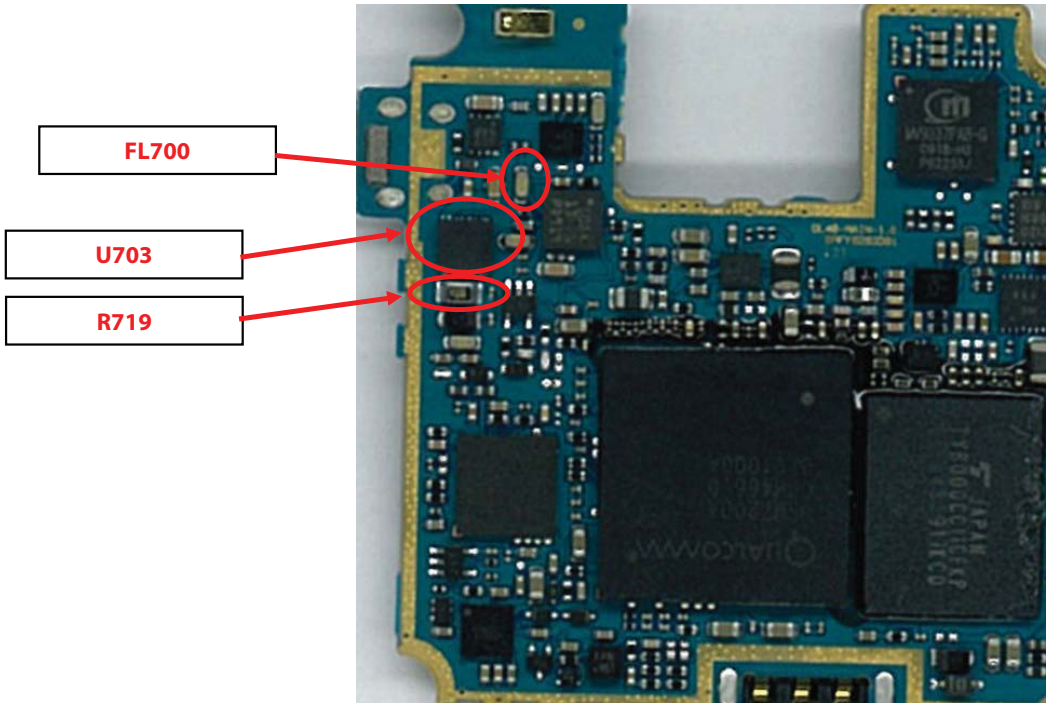
Check Point
- Connection of TA or USB Cable
- Charging current path(NUS5530)
- Battery

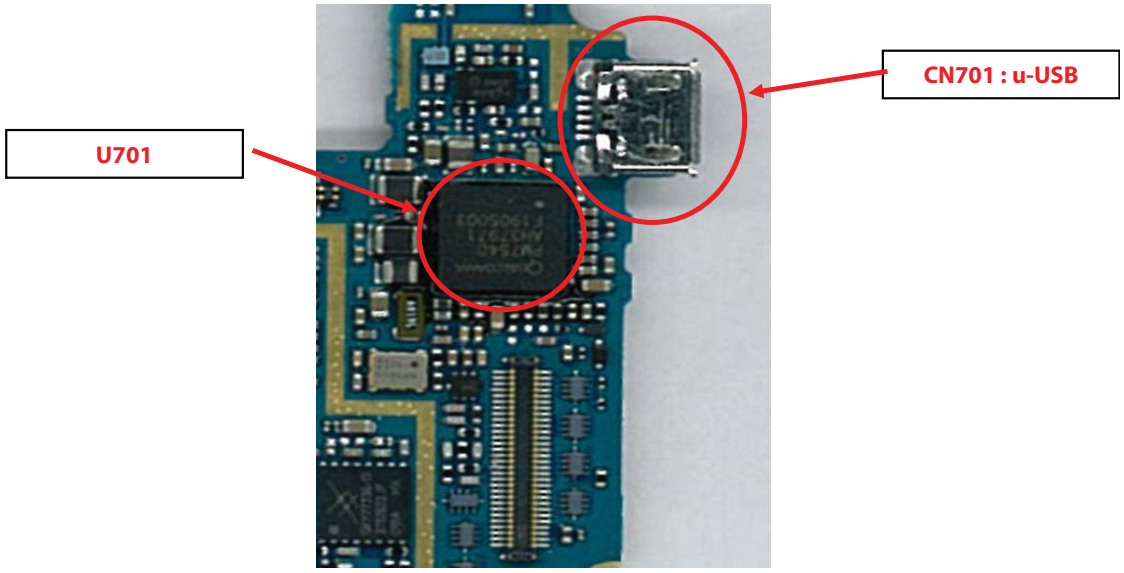
Troubleshooting Setup
- Connect TA and battery to the phone

Troubleshooting Procedure
- Check the charger (TA or USB Cable) connector
- Check the OVP Circuit
- Check the charging current Path
- Check the battery



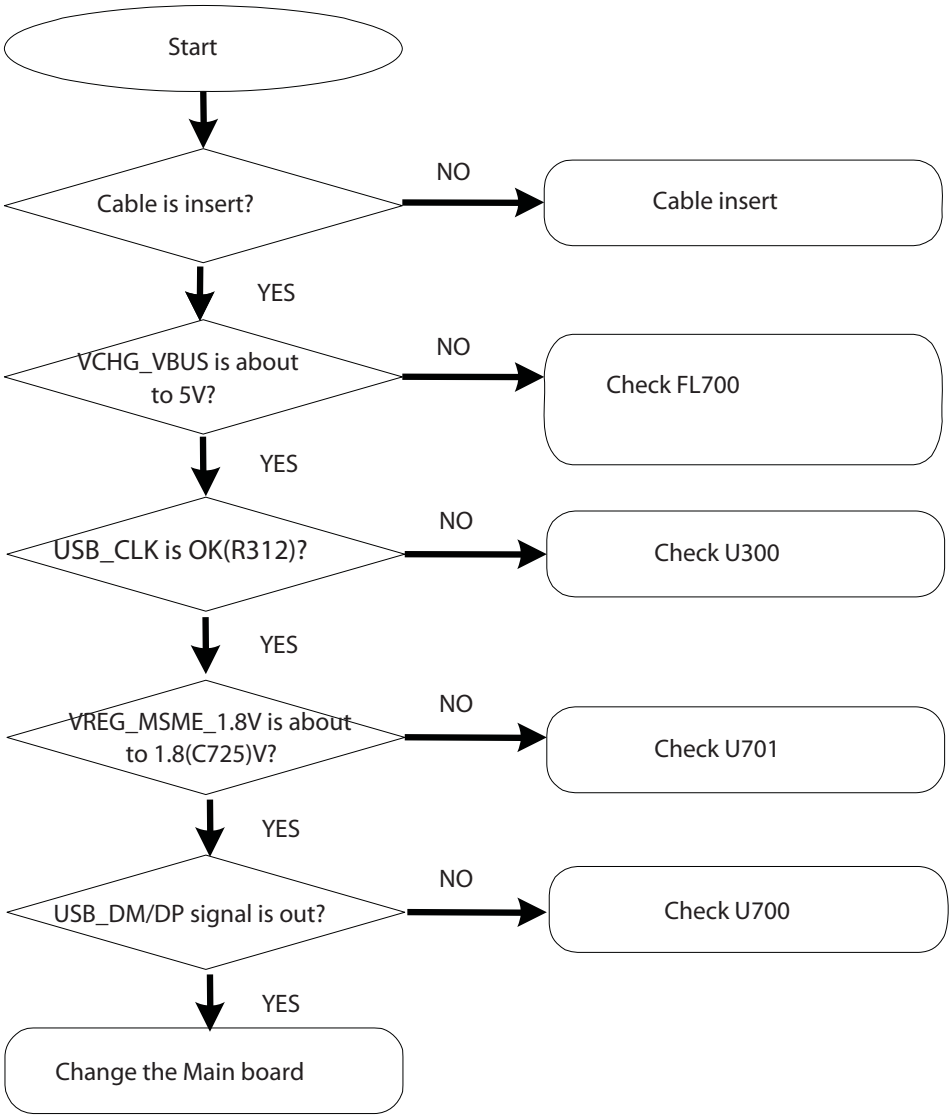
[Charger Troubleshooting Flow]



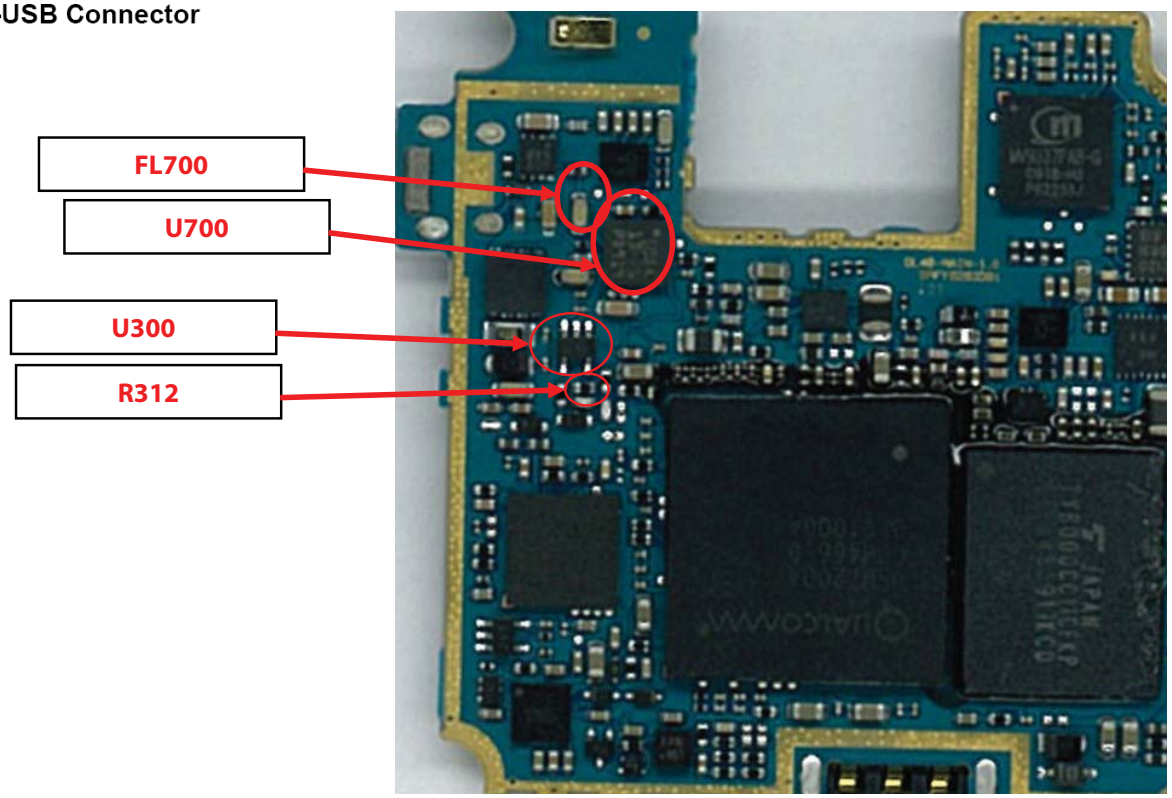


4.13 USB trouble

USB Initial sequence of BL40 is :
USB connected to BL40 → VCHG_VBUS(FL700) go to 5V
→ VERG_MSME_1.8V is about 1.8V → USB_CLK is OK(R312)->USB work



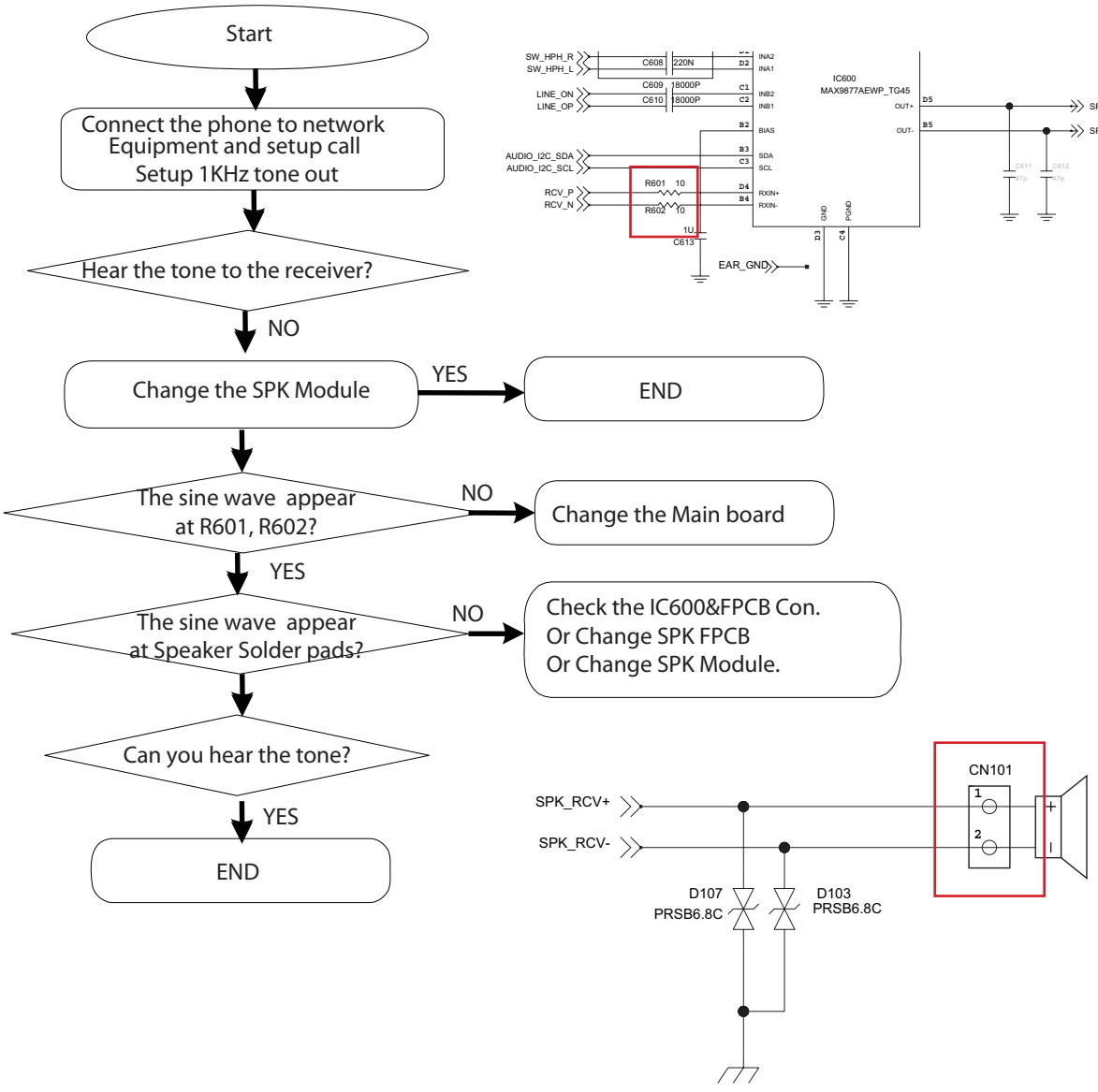
u-USB Connector

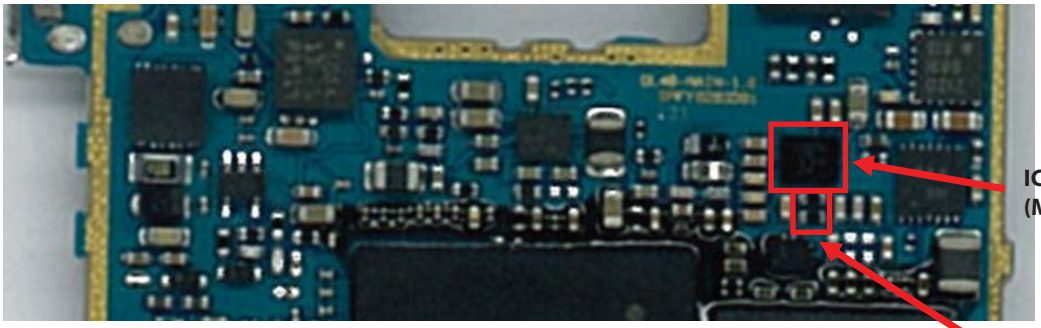


4.14 Audio trouble

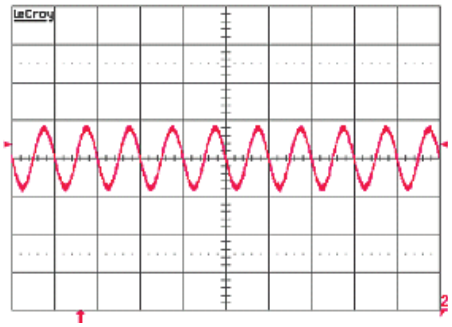
4.14.1 Receiver path

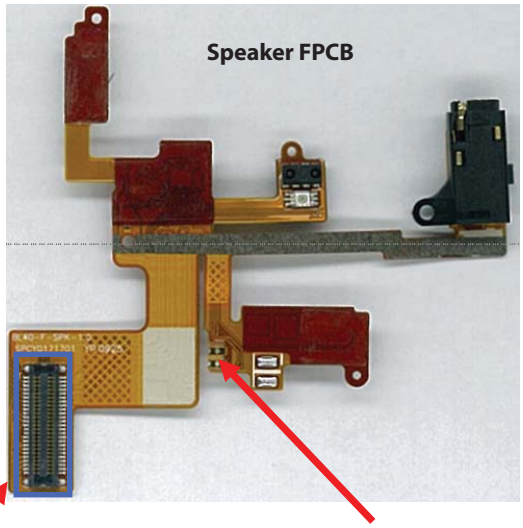
Voice Receiver path as below:
MSM7200A Ear_ON/Ear_OP → IC600 (MAX9877) → Main to SPK FPCB → Speaker

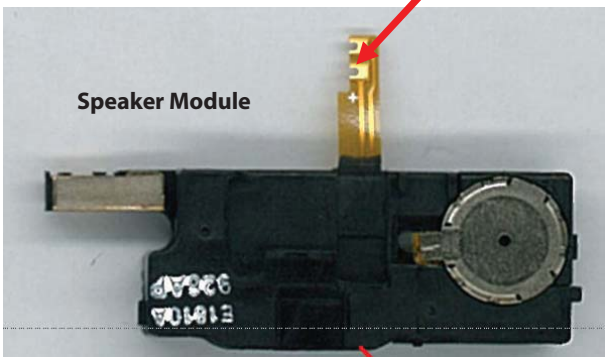




R601,R602

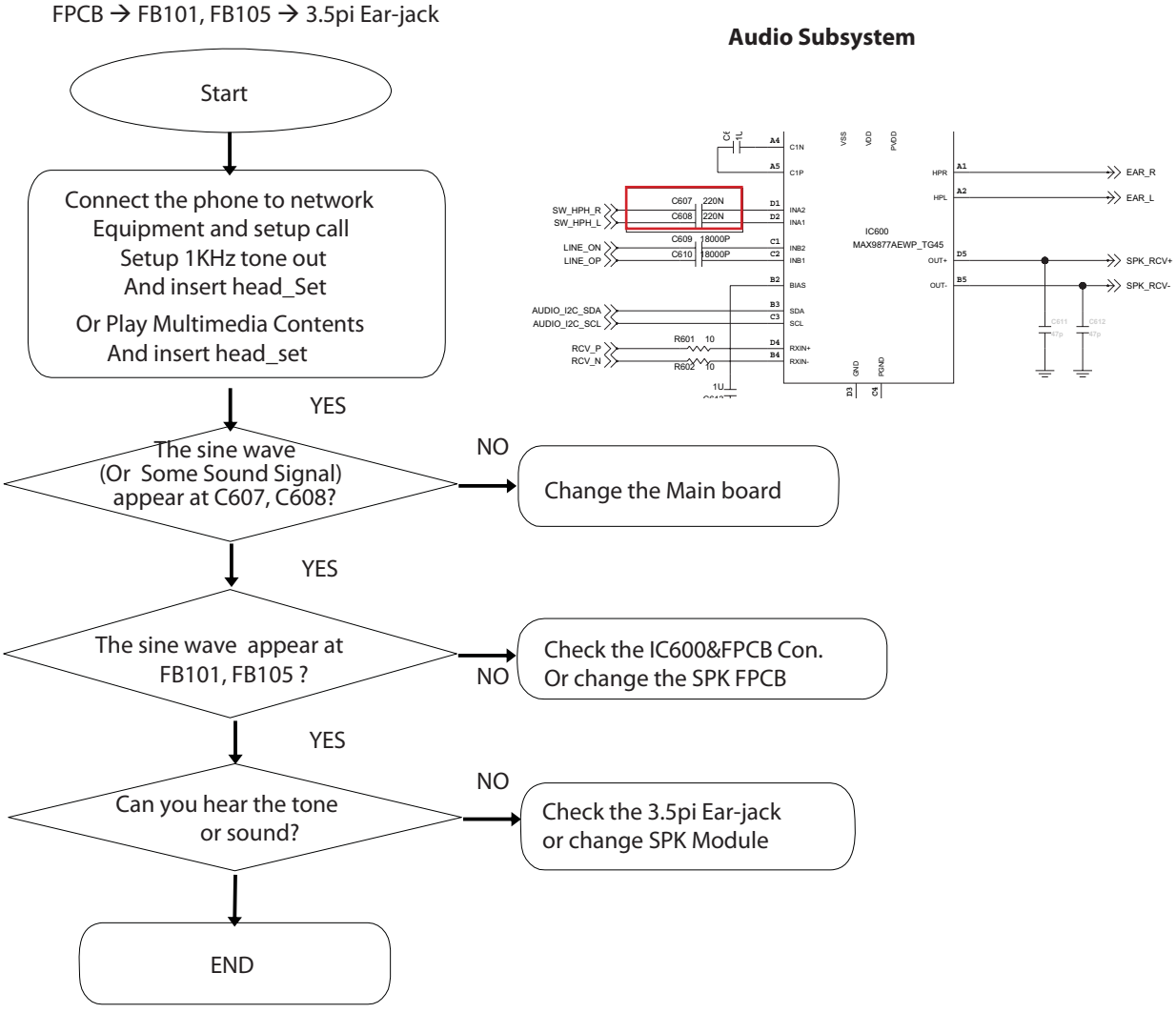


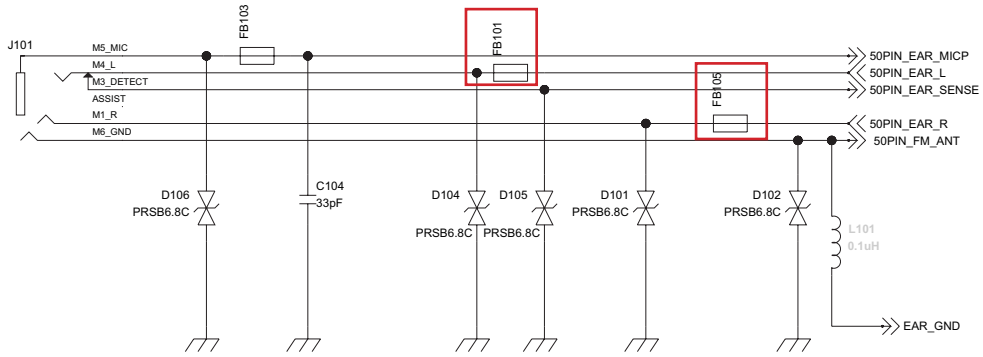




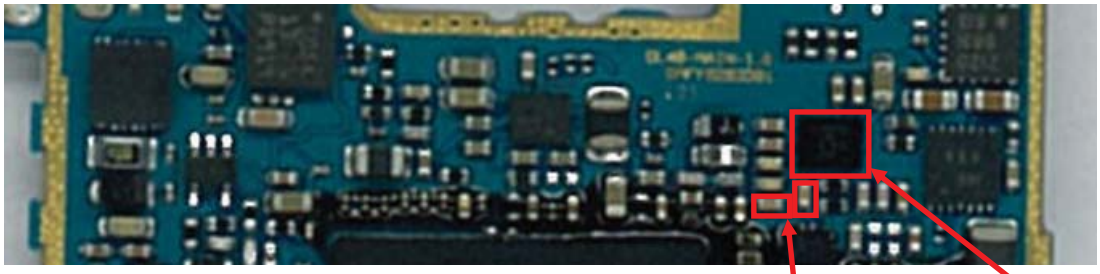
4.14.2 Headset path (Voice & Multimedia play)

Voice path for Head_Set as below:
MSM7200A HPH_R, HPH_L → U600(Analog S/W) → C607, C608 → IC600 (Audio Subsystem) → Main to SPK FPCB → FB101, FB105 → 3.5pi Ear-jack



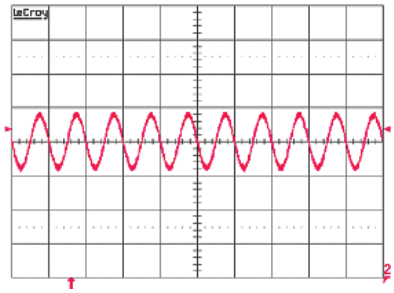


3.5pi Ear Jack Connector



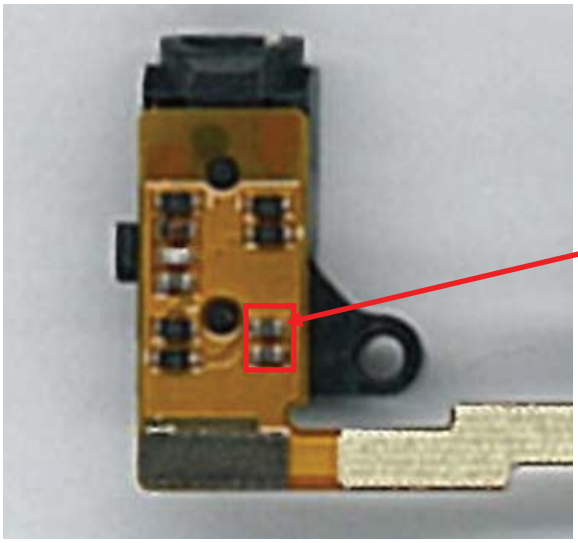
IC600 (audio subsystem)

C607, C608



C607, C608 output

FB101, FB105 output

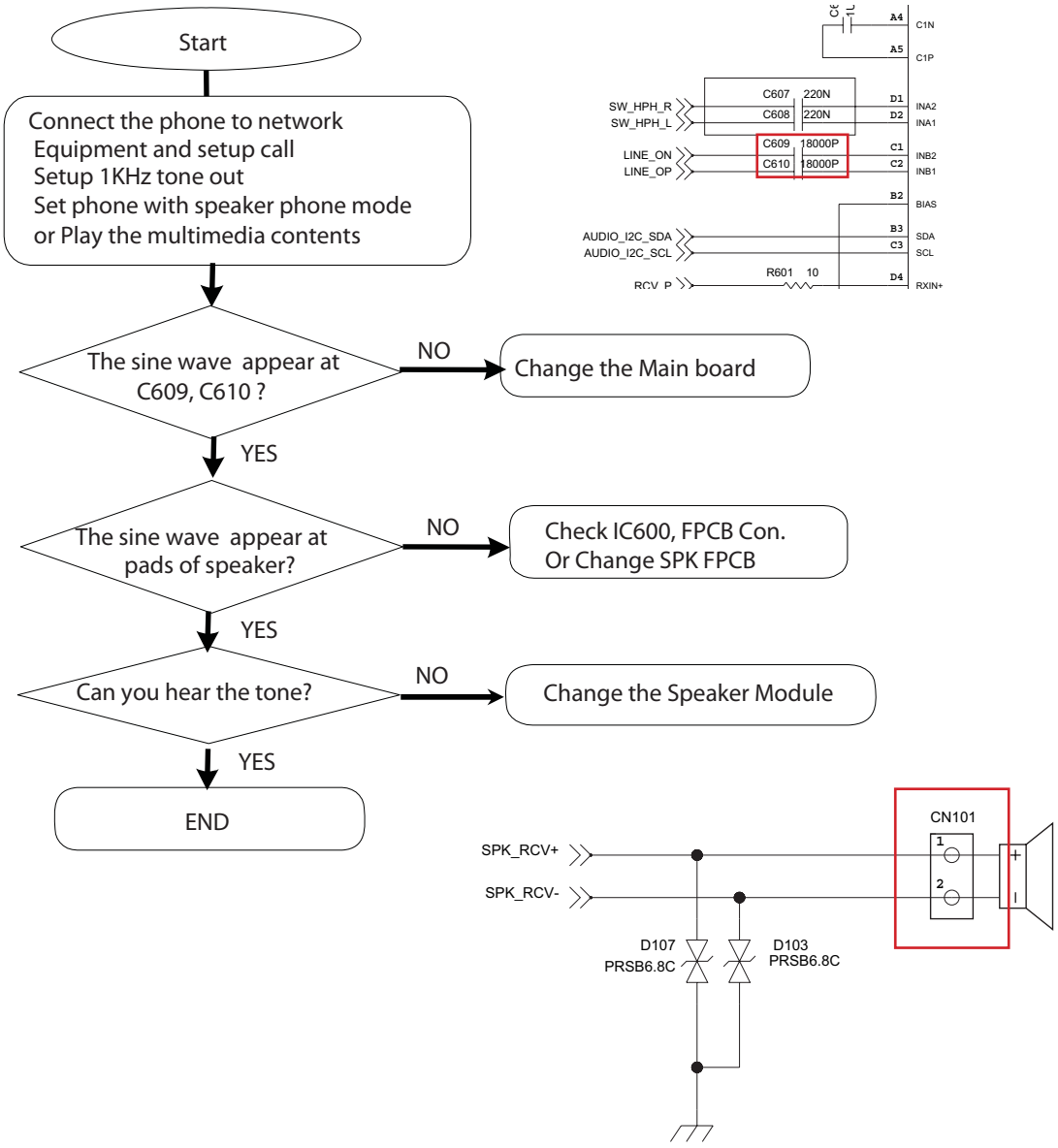


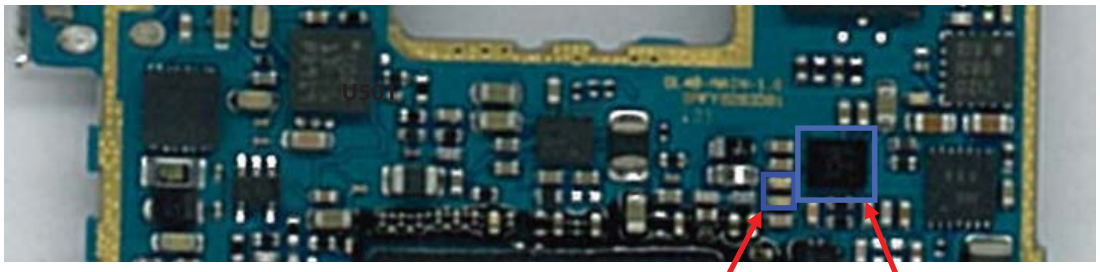
FB101, FB105

4.14.3 Loud speaker path (voice speaker phone, Multimedia play)

Loud speaker path as below:

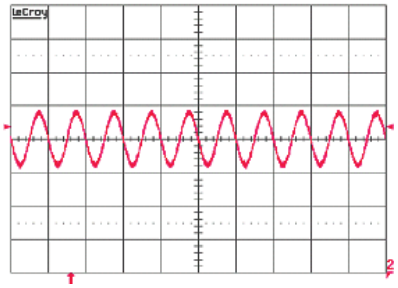
MSM7200A Line_OP,ON → C609, C610 → IC600 (Audio Subsystem) →Main to SPK FPCB → Speaker PAD

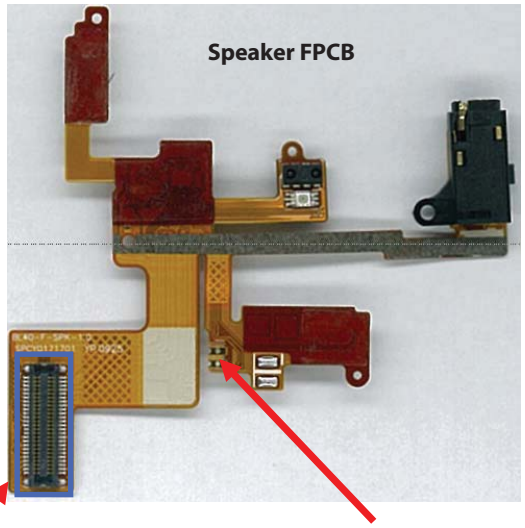




C609, C610 IC600

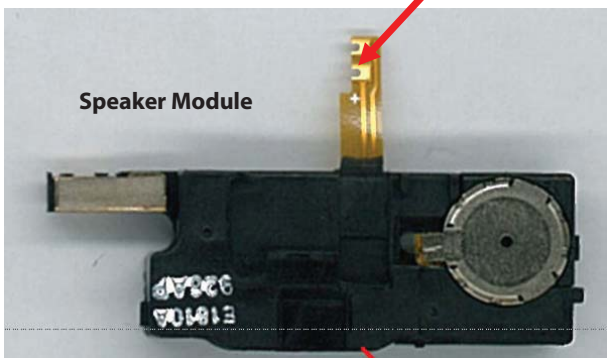
C5609, C610 output





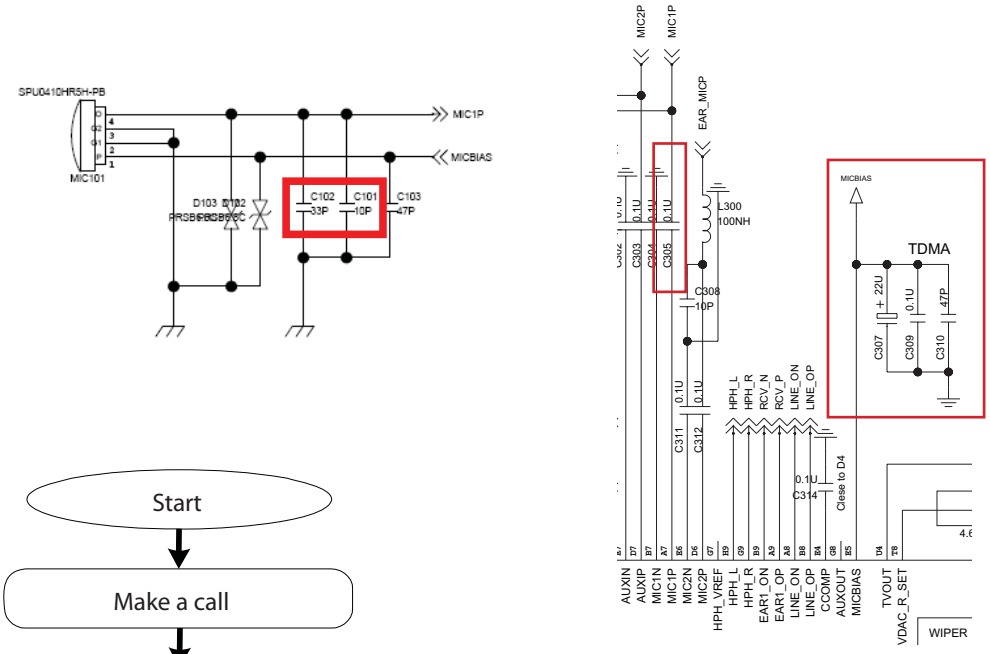
Speaker FPCB Connector

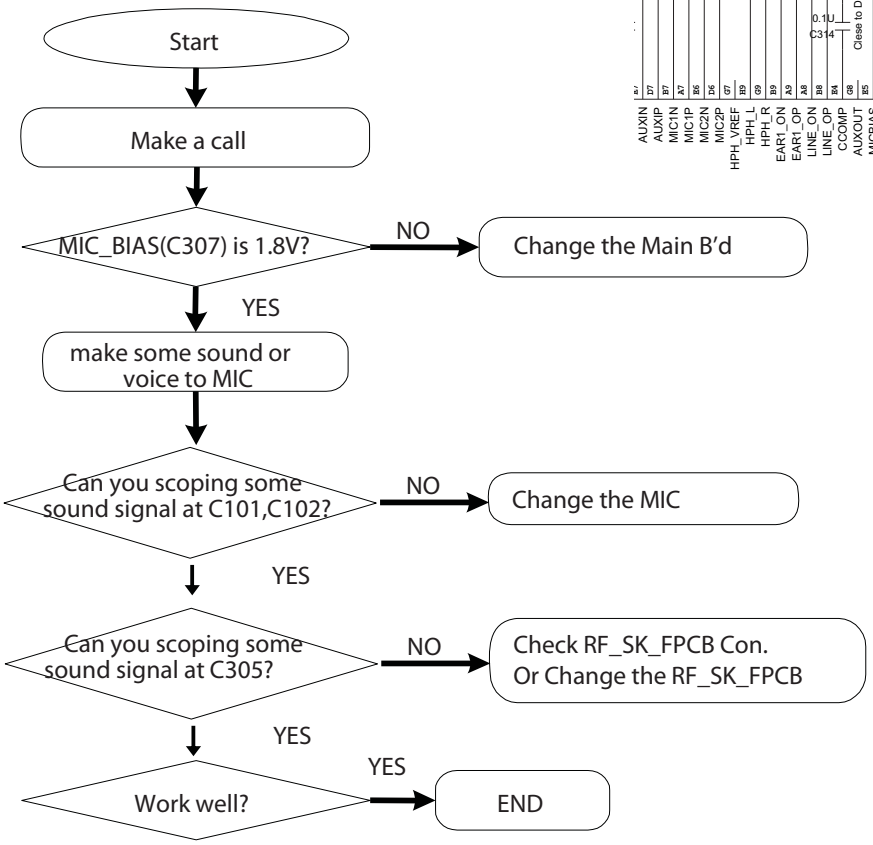
Speaker Solder Pads

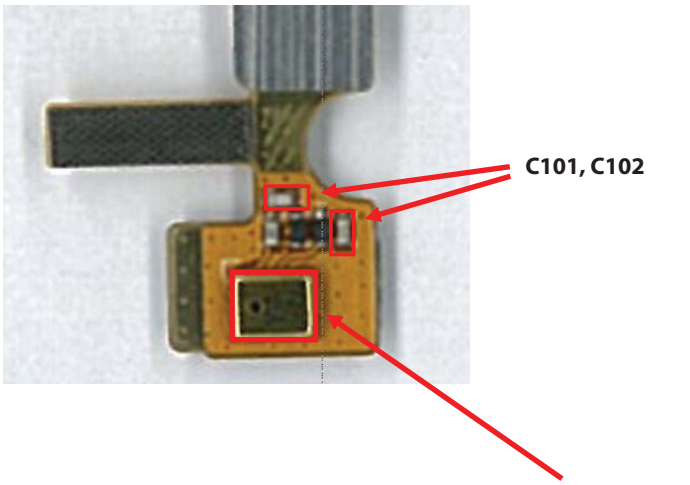


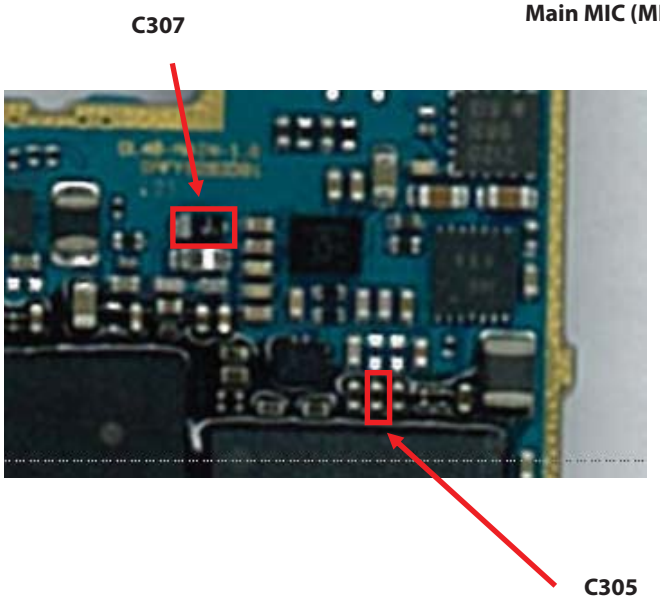
4.14.4 Microphone for main MIC

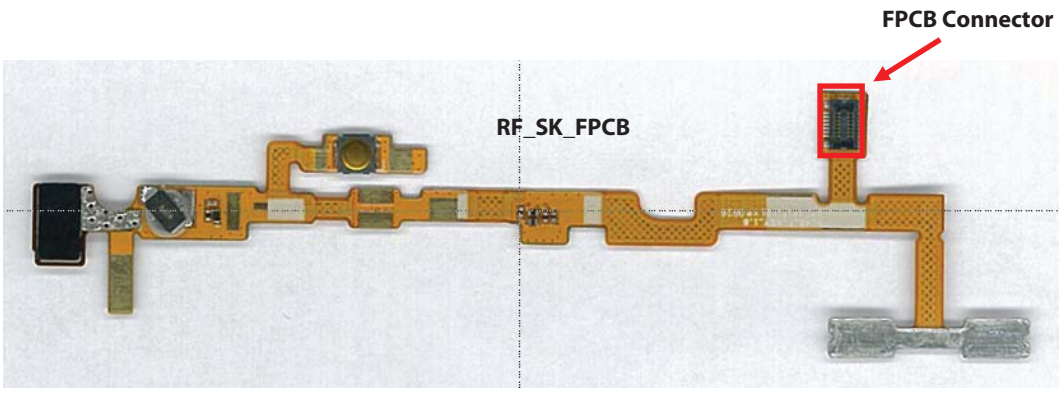
Main Microphone path as below:
MIC → C101&C102(Besides GND) → RF_SK to Main FPCB -> C305 → MSM7200A





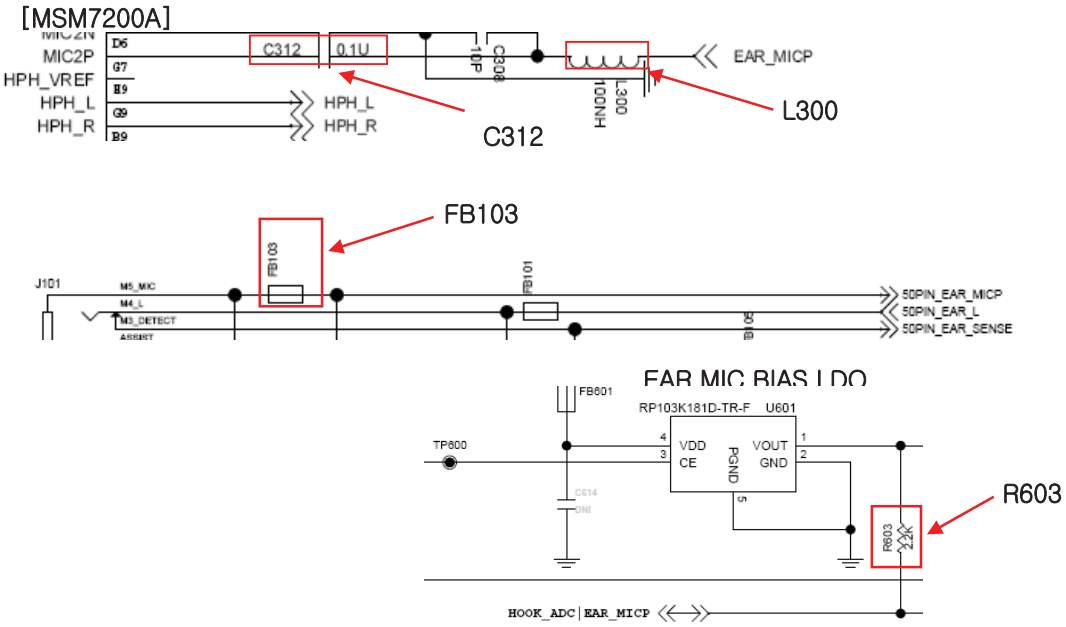


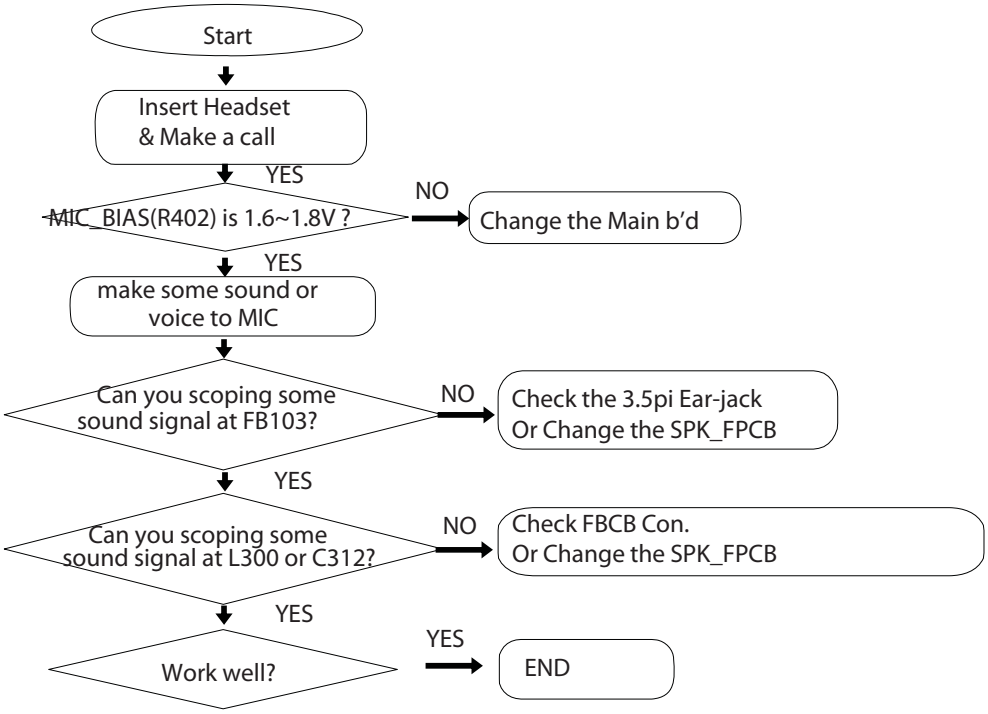


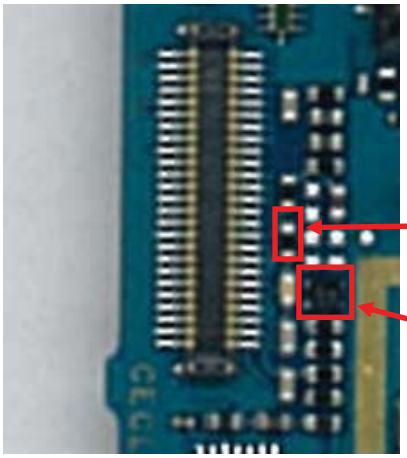


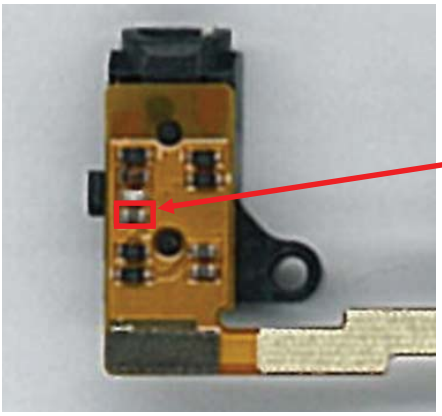
4.14.5 Microphone for headset

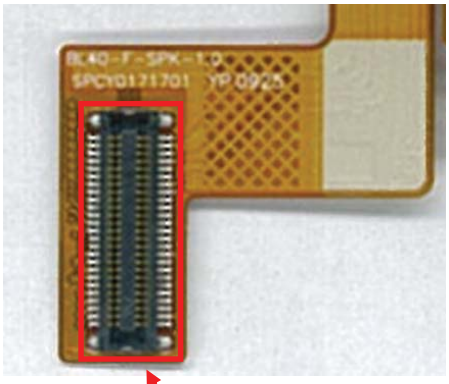
MIC for Head_Set path as below:
Insert Headset → Interrupt which are the signal of Headset detecting arise in EAR_SENSE
→MIC BIAS LDO U601's R603(RES) : 1.6V~1.8V(MIC BIAS) → MIC signal → FB103 →
→ SPK to Main FPCB -> L300 -> C312 -> MSM7200A

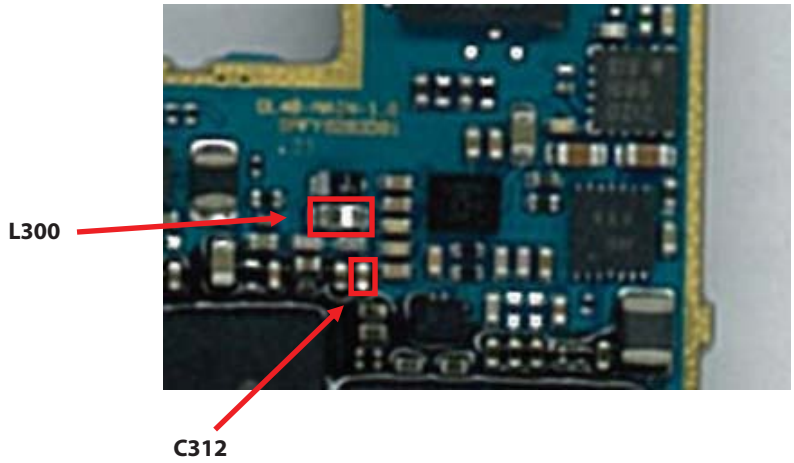






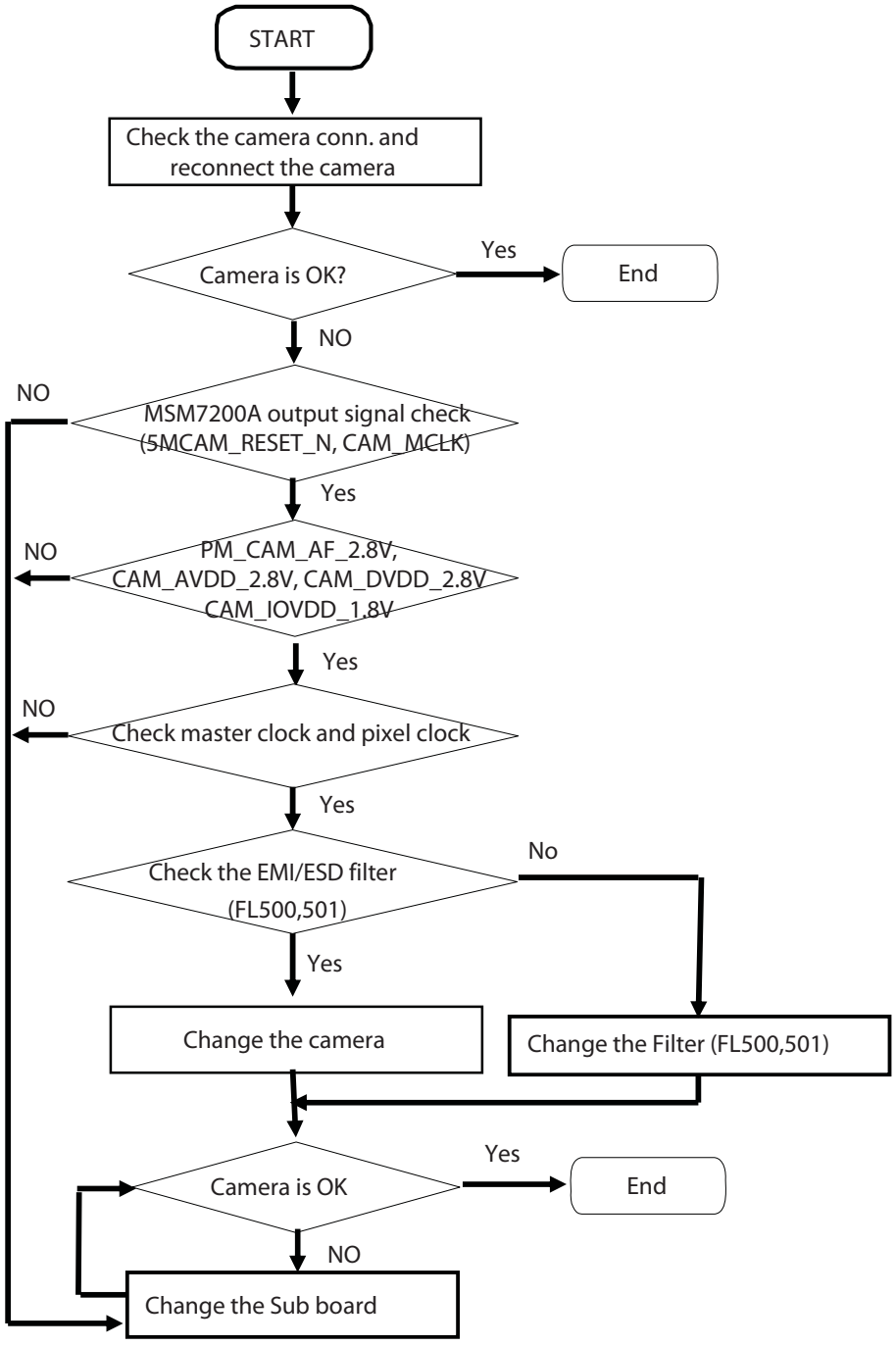


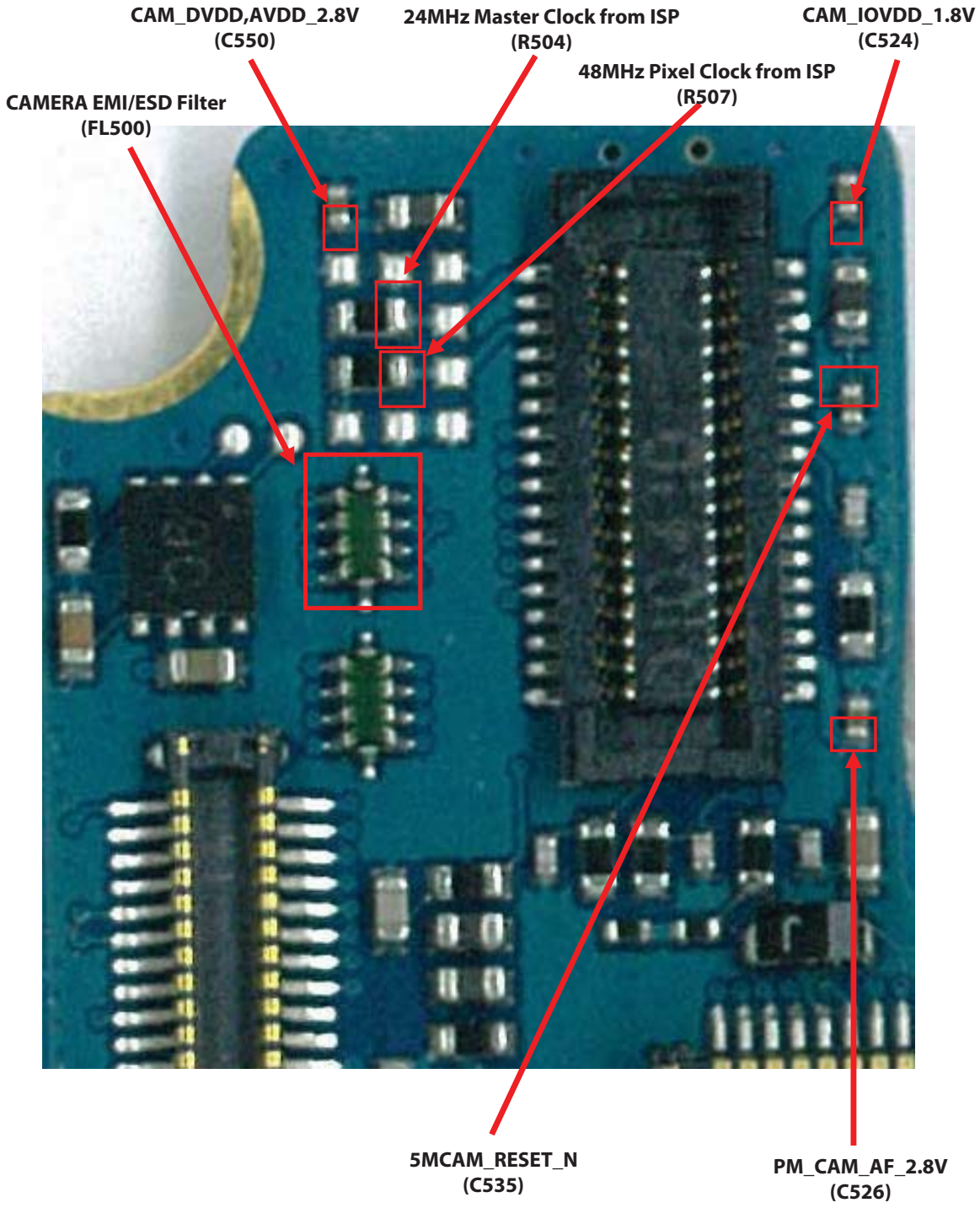


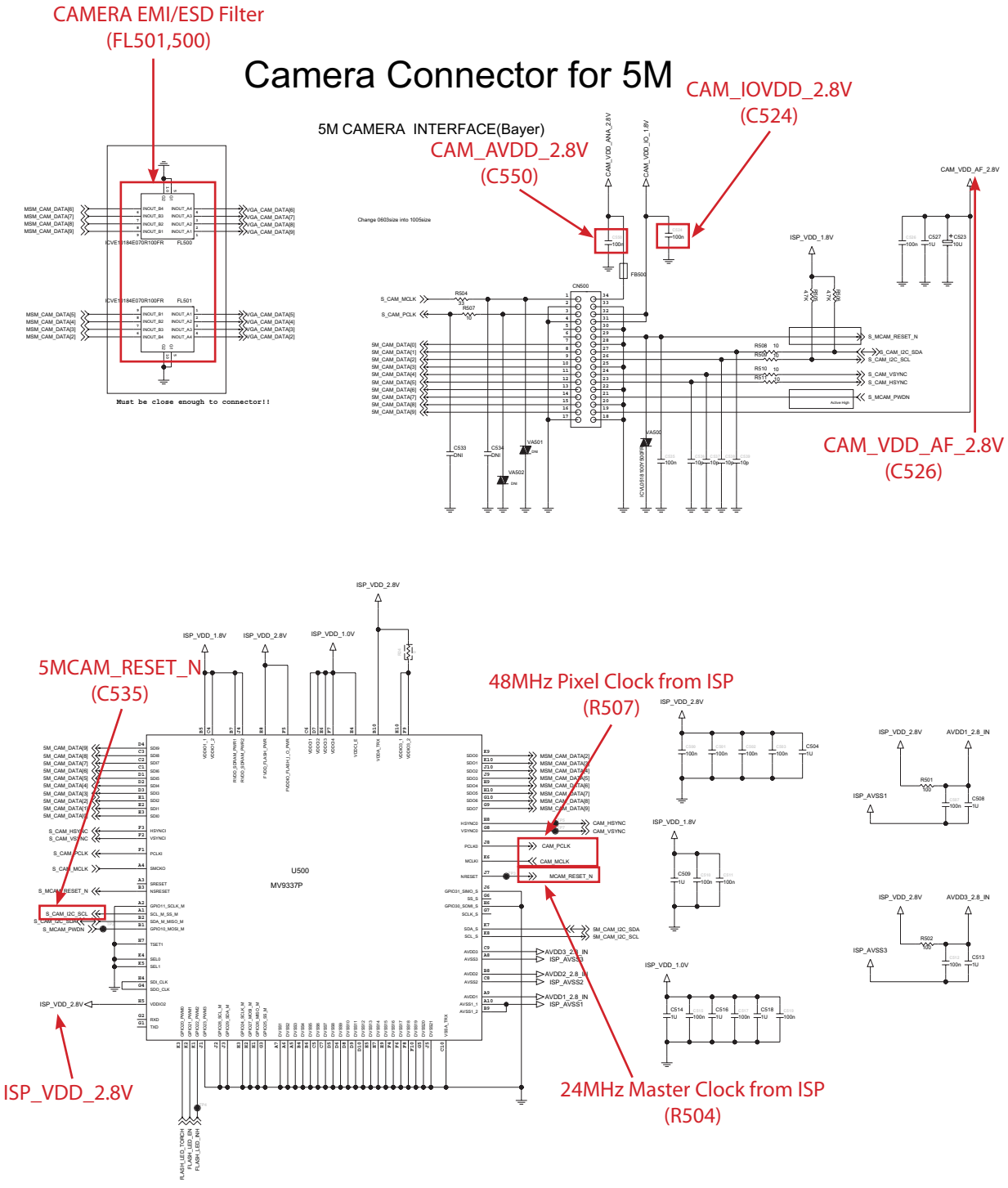


4.15 5M Camera trouble

5M camera control signals are generated by MV9337 and MSM7200A.

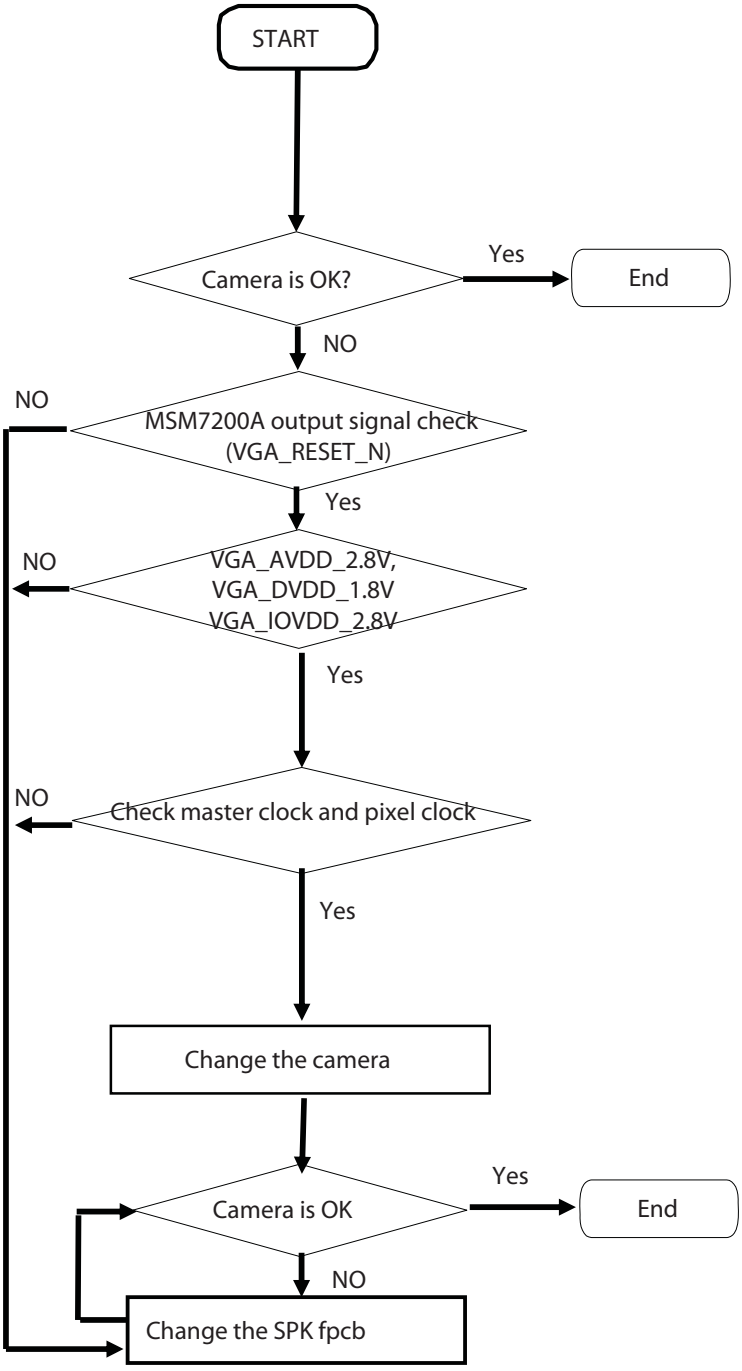


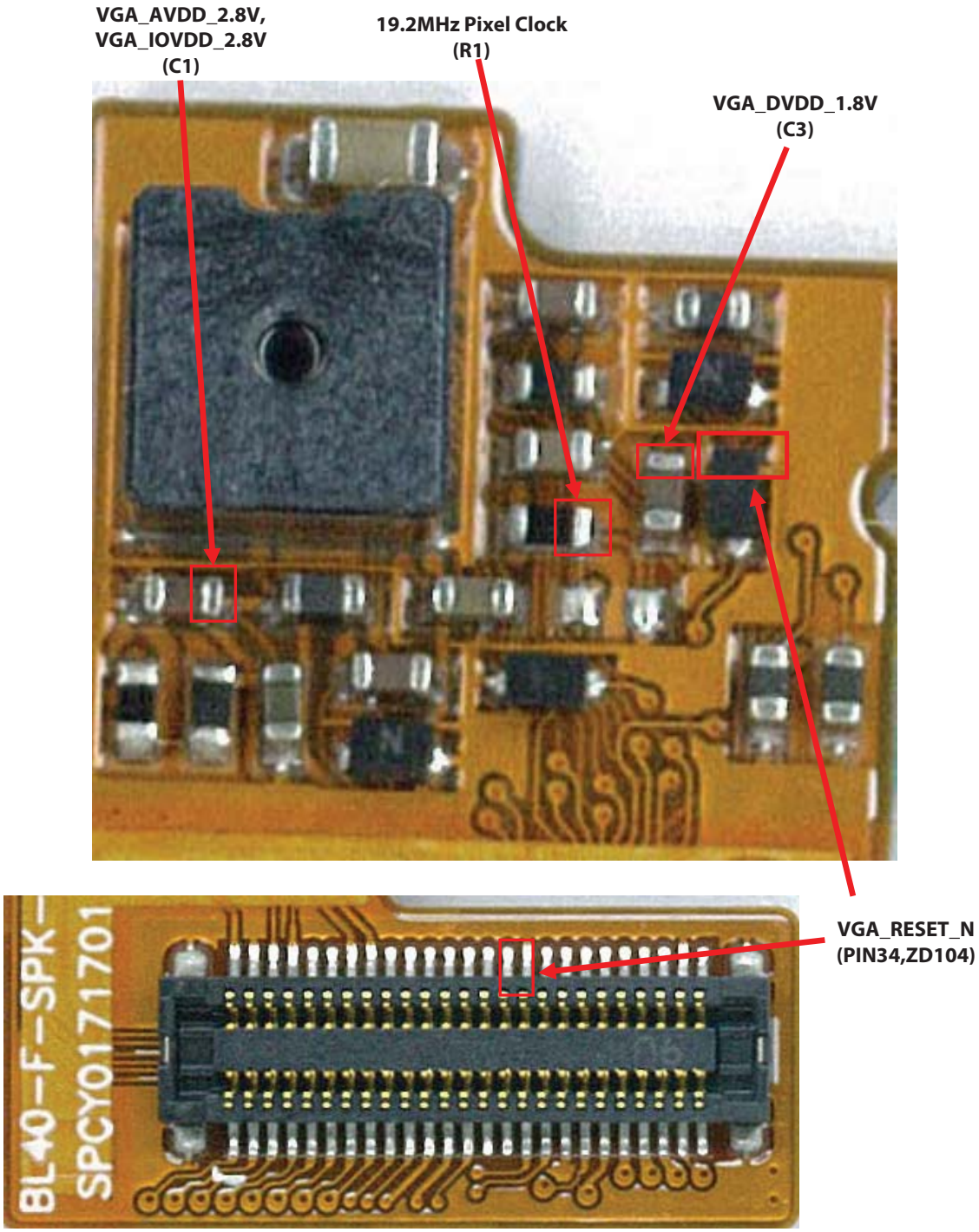


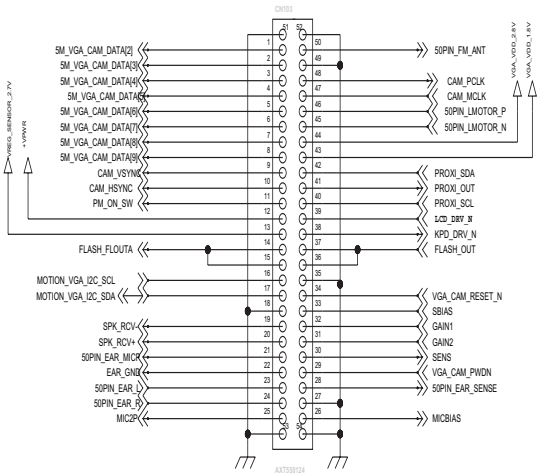


4.16 VGA Camera trouble

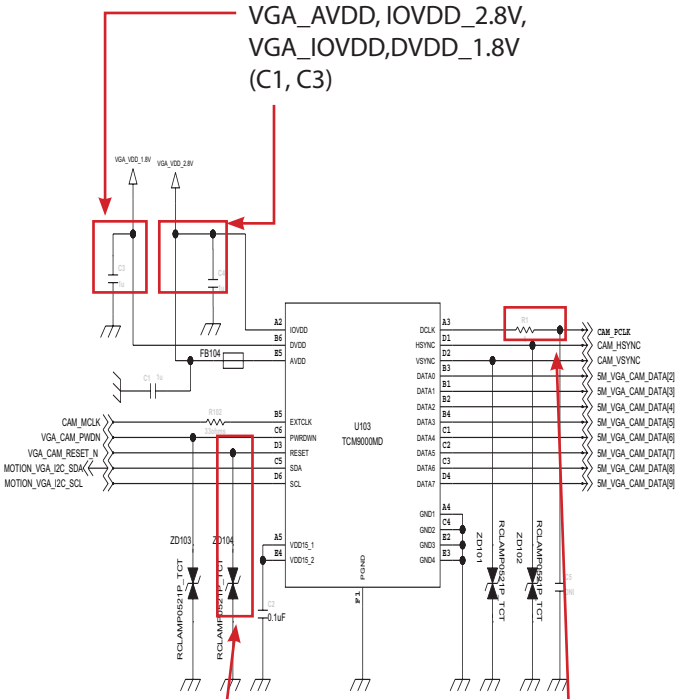
VGA camera control signals are generated by MSM7200A.







SUB_TOP PCB to MAIN (50PIN)



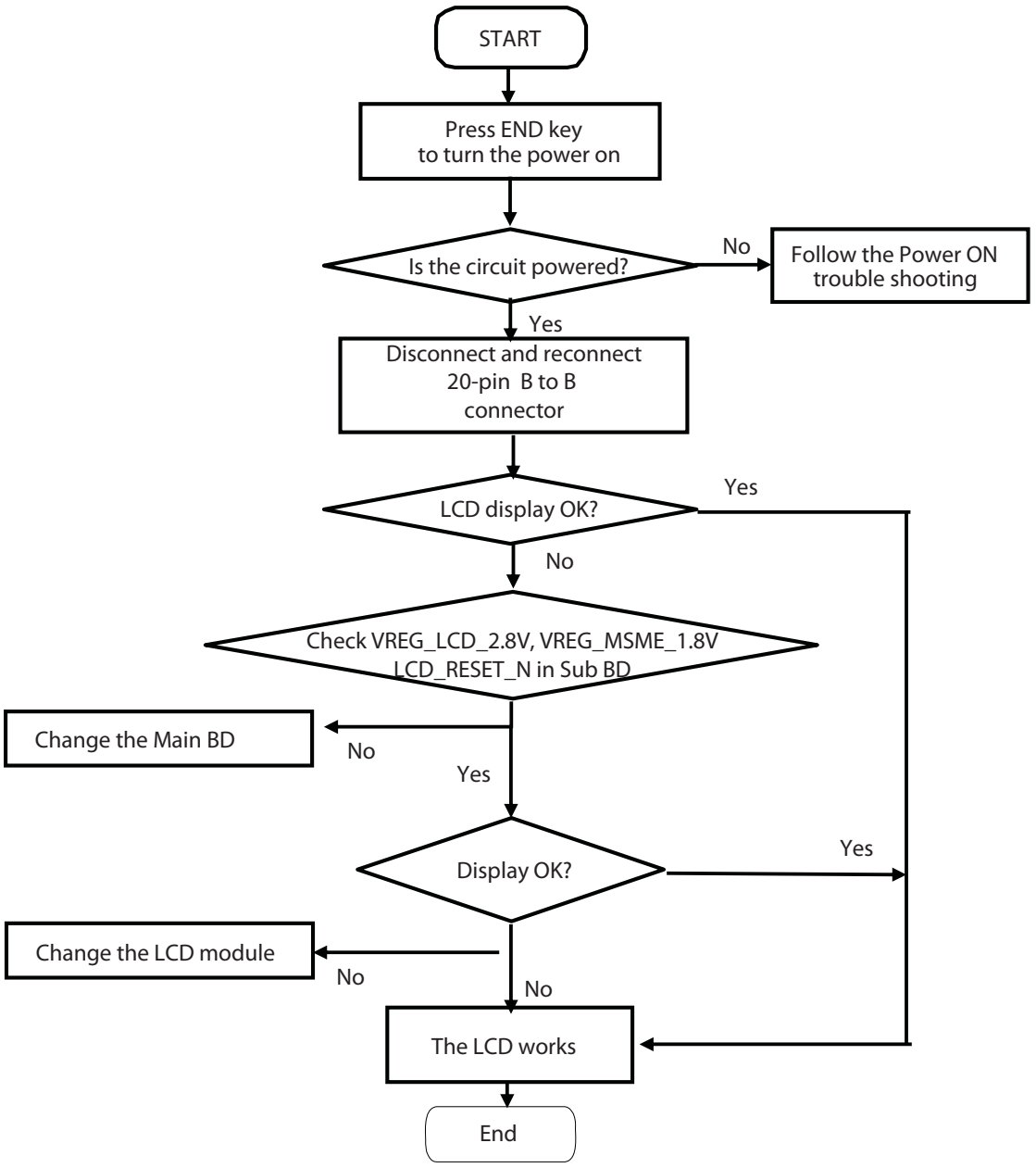
VGA CAMERA [SVCY0019901]

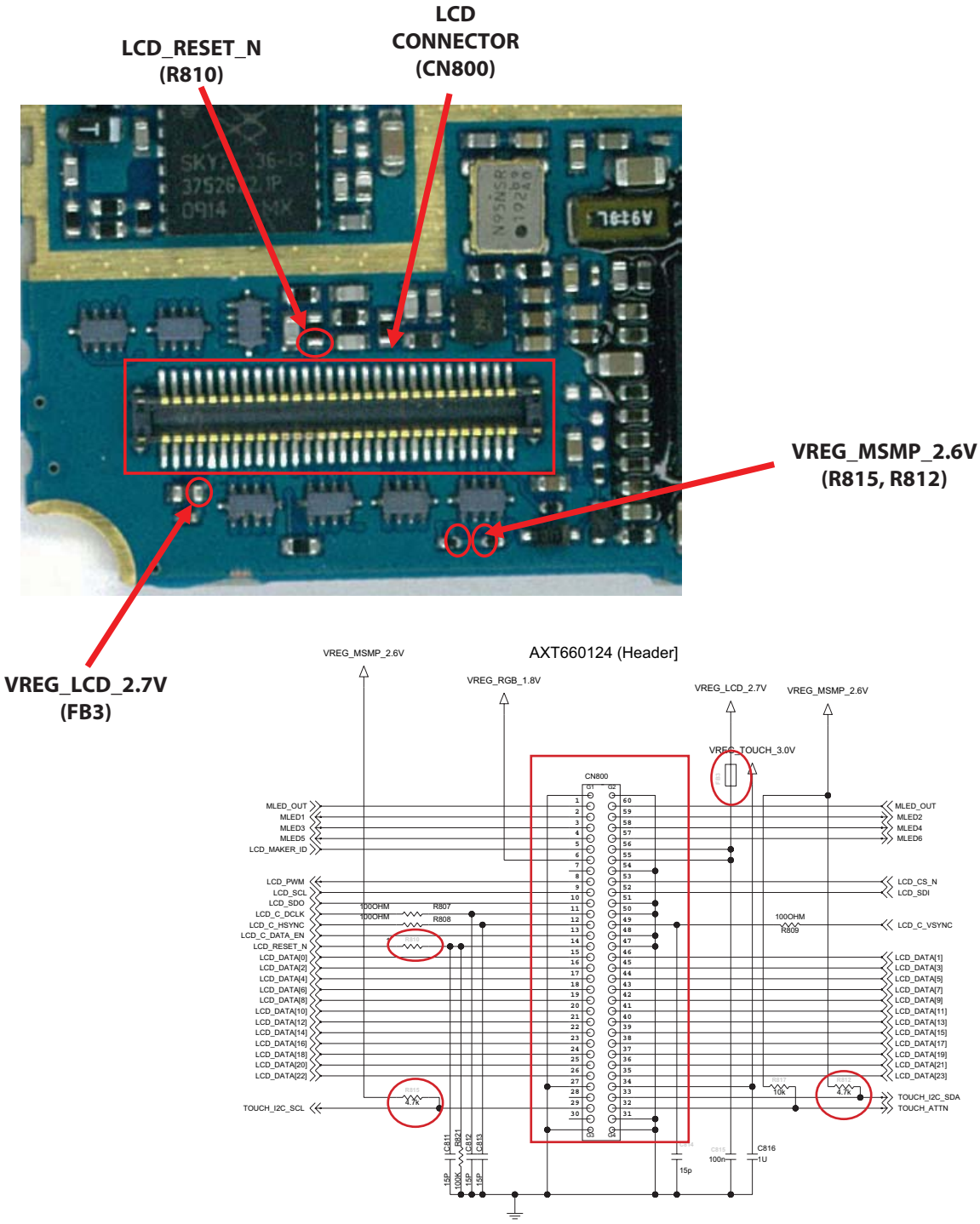
VGA_RESET_N
(ZD104)

19.2MHz Pixel Clock
(R1)

4.1 7 Main LCD trouble

Main LCD control signals are generated by MSM7200A. Those signal's path are :
MSM7200A → 20-pin LCD connector -> LCD Module

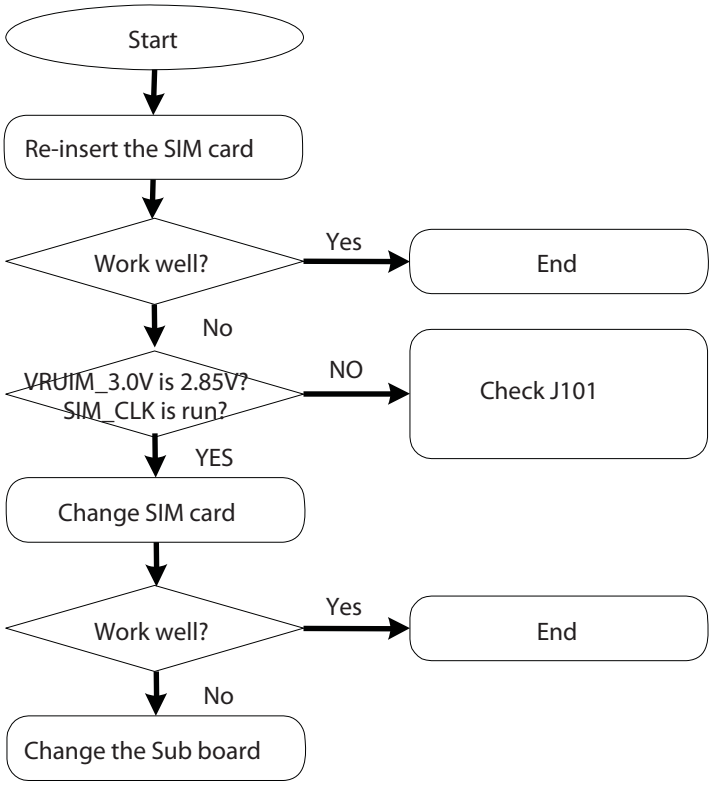


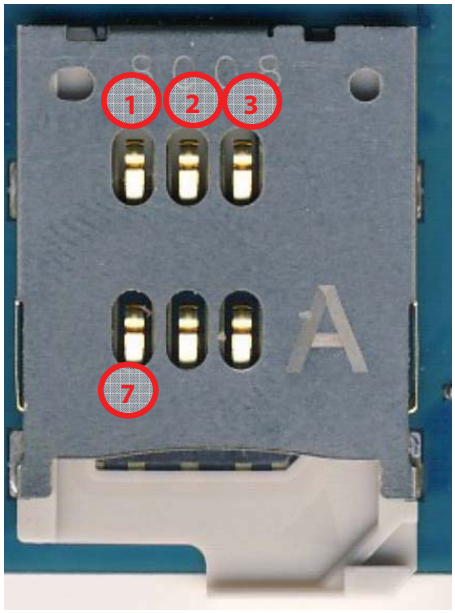


White_4" LCD_RGB I/F

4.18 SIM Detect Troubleshooting

USIM Initial sequence of GM730 is :
SIM_CLK,SIM_RST,SIM_IO triggered → VRUIM_3.0V go to 2.8V → SIM IF work





1 VRUIM_3.0V
2 SIM_RST
3 SIM_CLK
7 SIM_IO

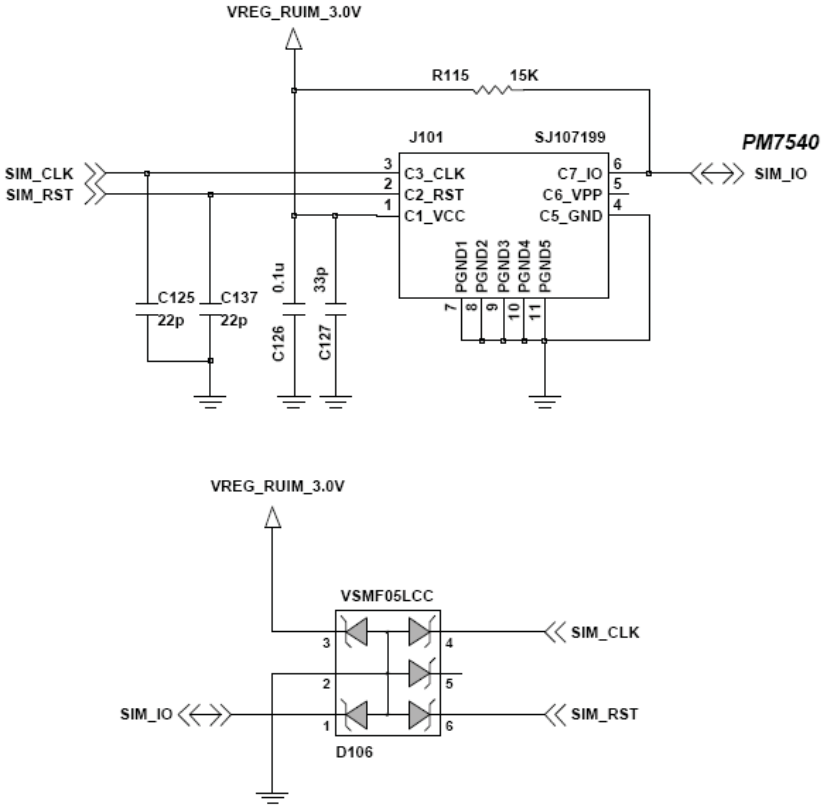
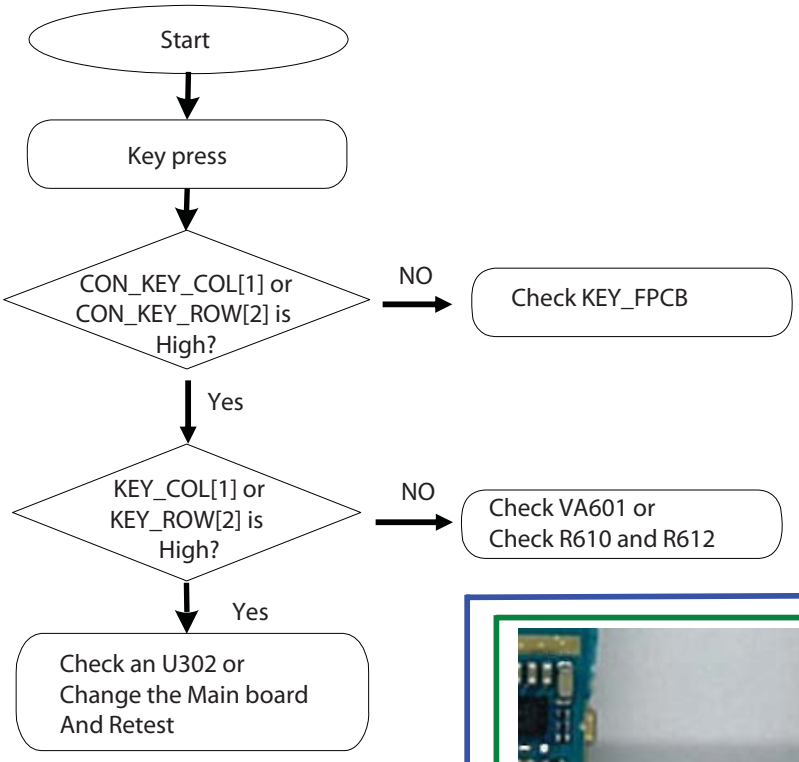


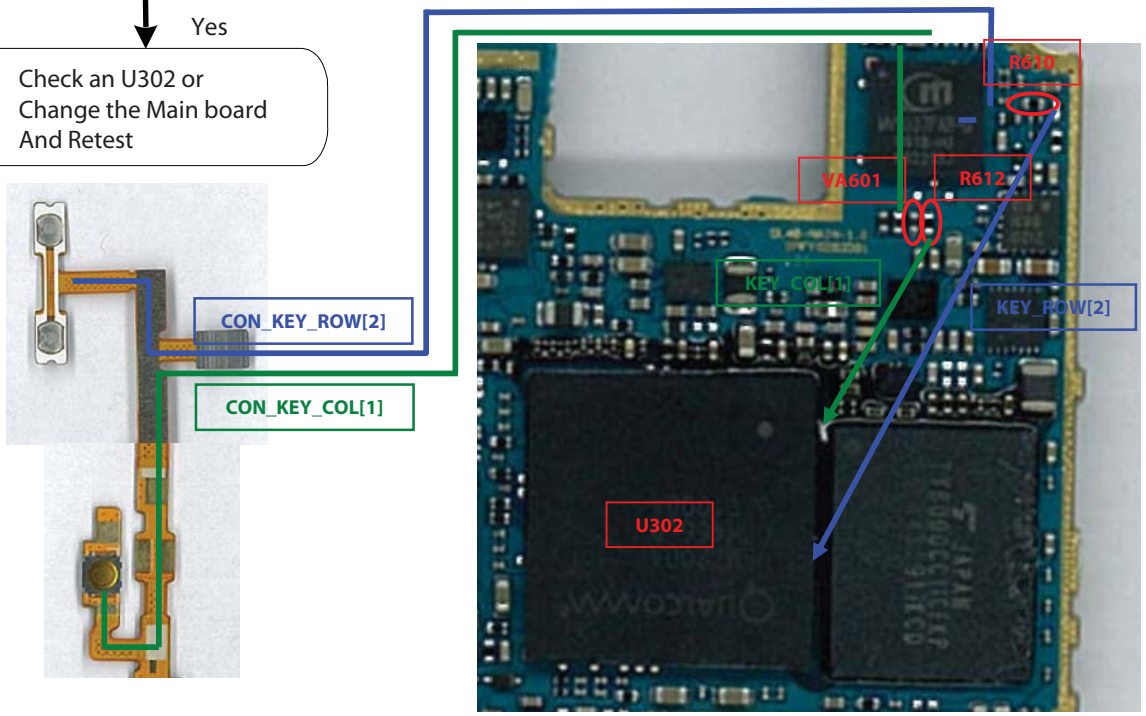
Figure .USIM part schematics

4.19 Side Key Troubleshooting

1)Key FPCB

There are 2 main Key, Volume and Camera Key, which is connected to Key FPCB.
Volume Key consists of Volume up and Volume down. Also, Camera Key is composed of Focus and Shutter.

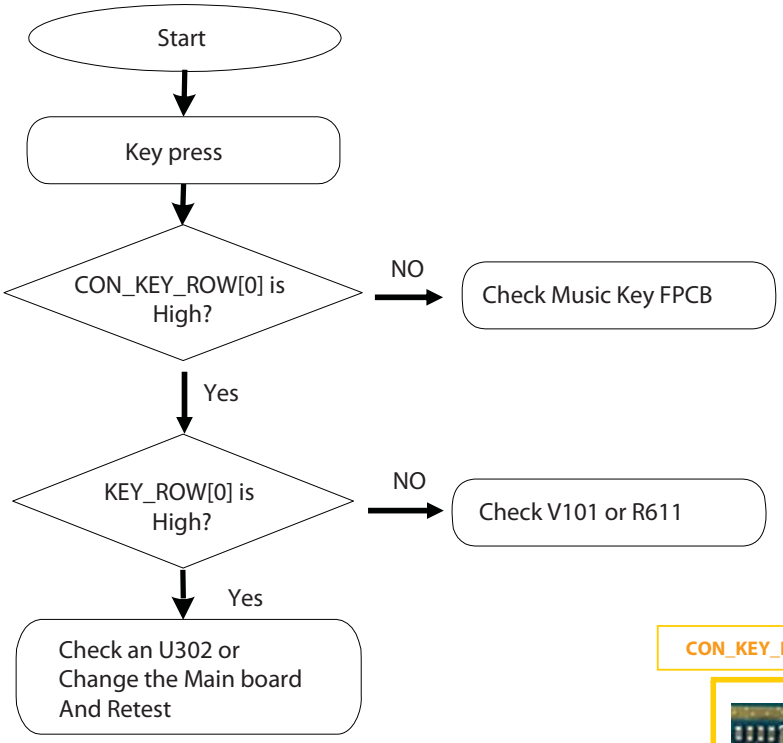


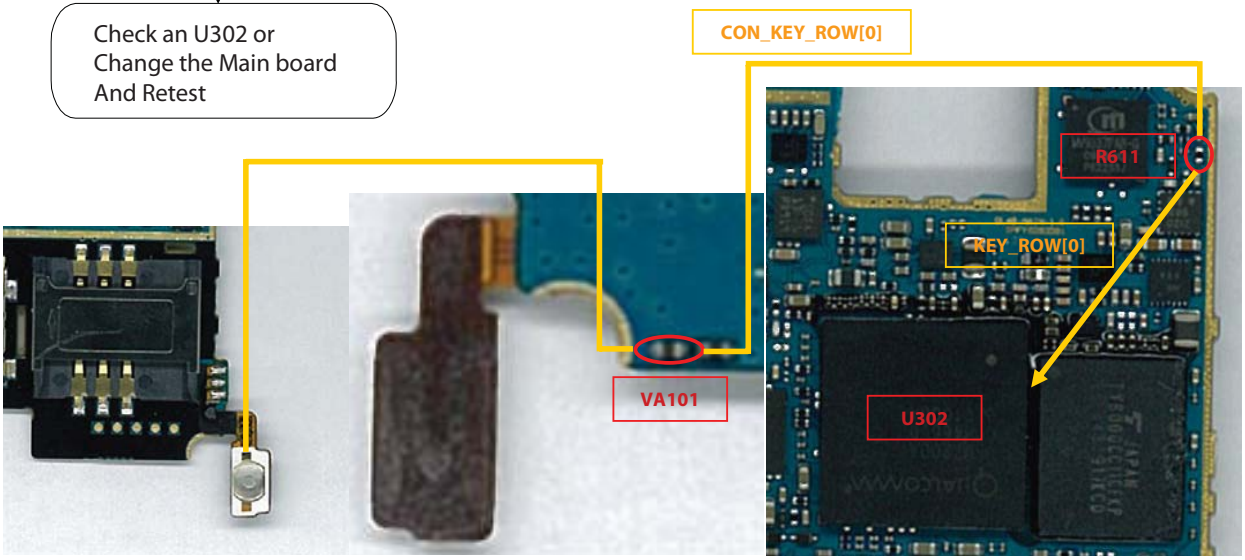


<Main Board_Top>

2)Music Key

There are 2 main Key, Volume and Camera Key, which is connected to Key FPCB.
Volume Key consists of Volume up and Volume down. Also, Camera Key is composed of Focus and Shutter.

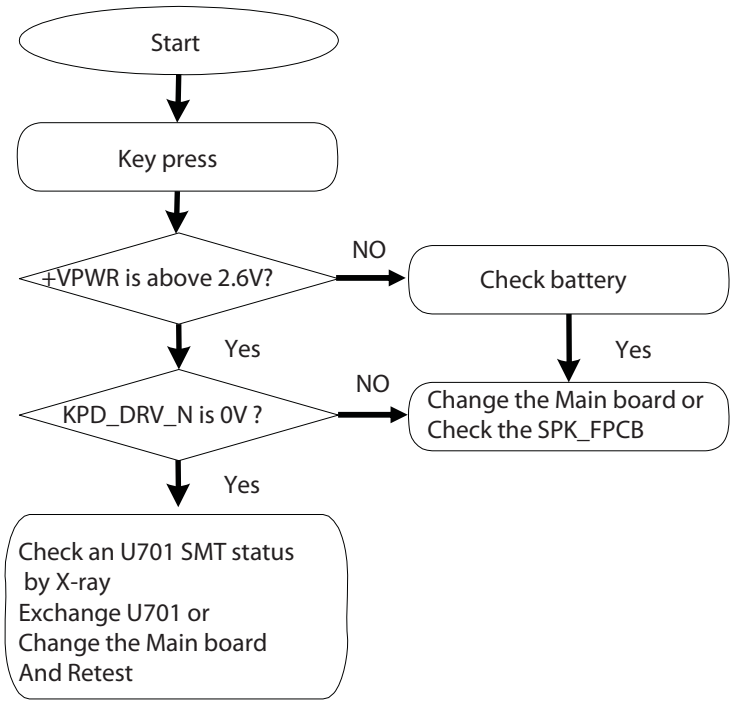


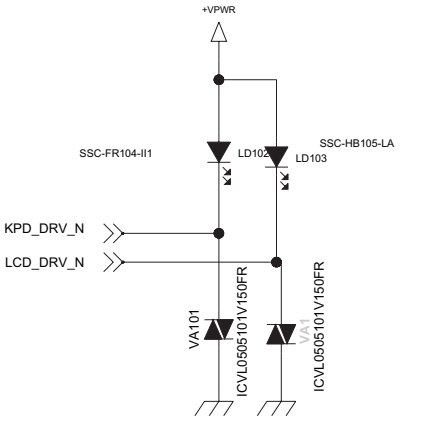


<Sub Board_Top> <Sub Board_Bottom> <MainBoard_Top>

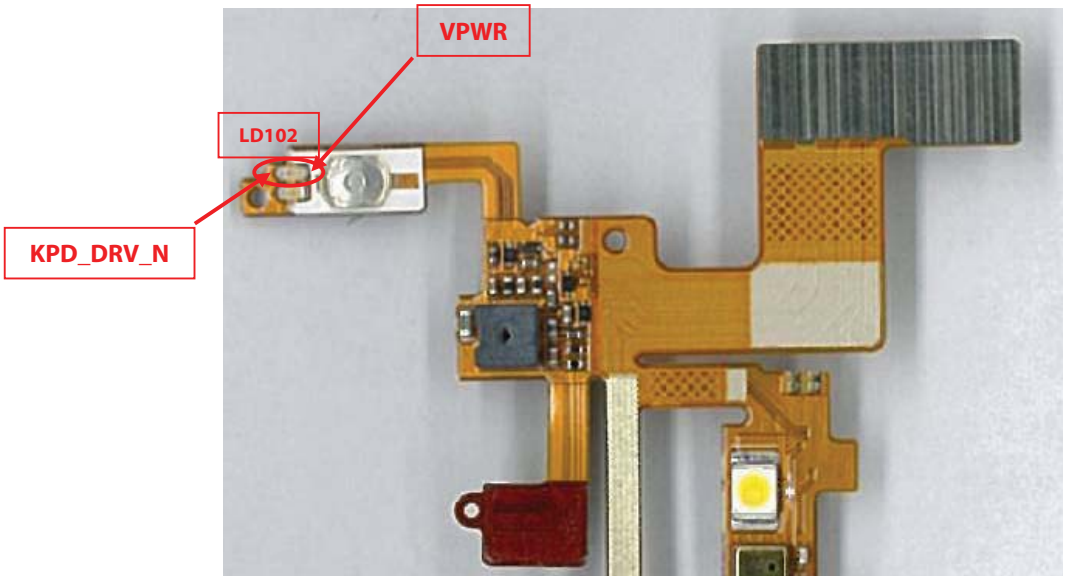
4.19.1 Power Key LED Troubleshooting

Power Key LED initial sequence of BL40 is(Actually, We use Only Red LED) :
Key pressing → KPD_DRV_N go to 0V → Power Key LED On



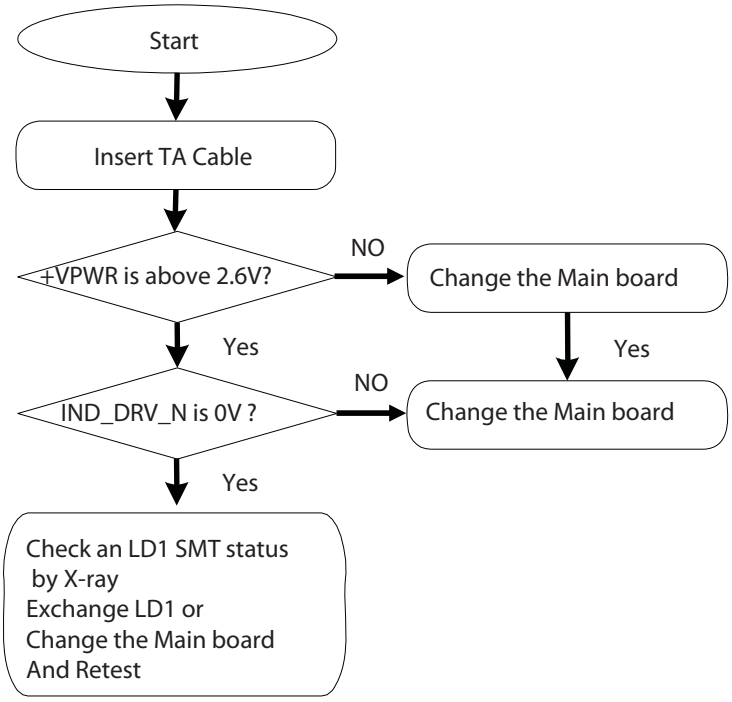


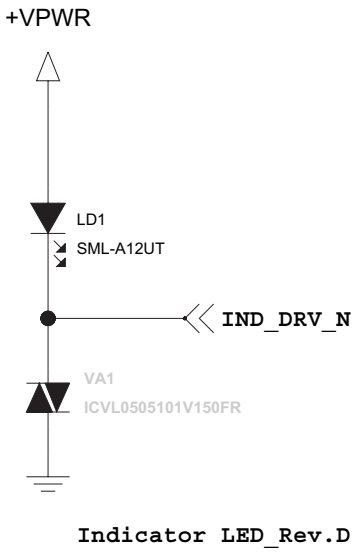
Power Key Backlight



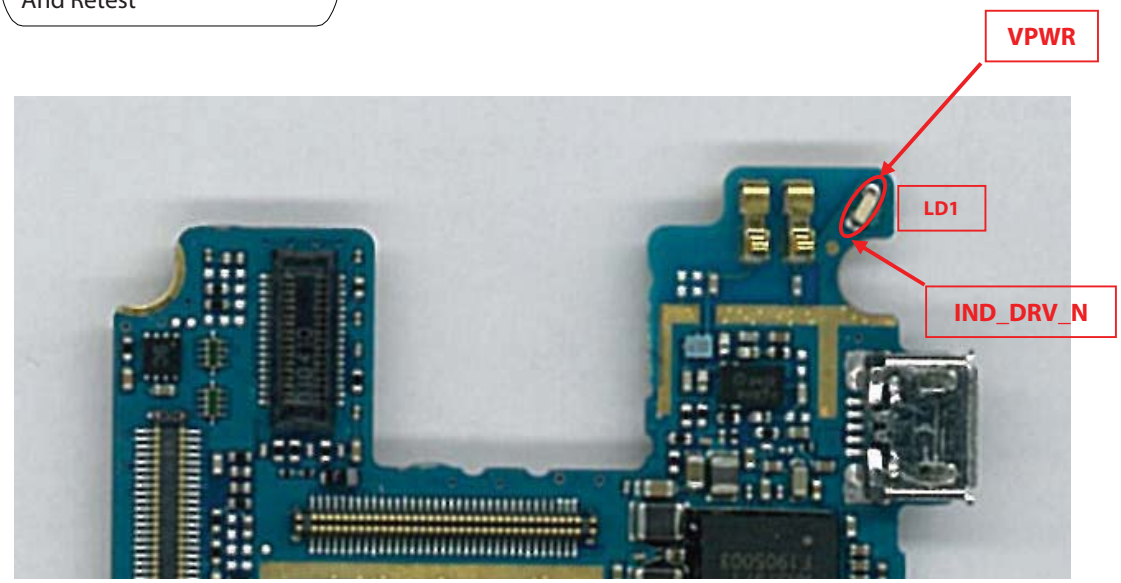
4.9.2 Charging LED Troubleshooting

Charging LED is on as below :
Insert TA Cable → IND_DRV_N go to 0V → Charging LED On





Indicator LED_Rev.D

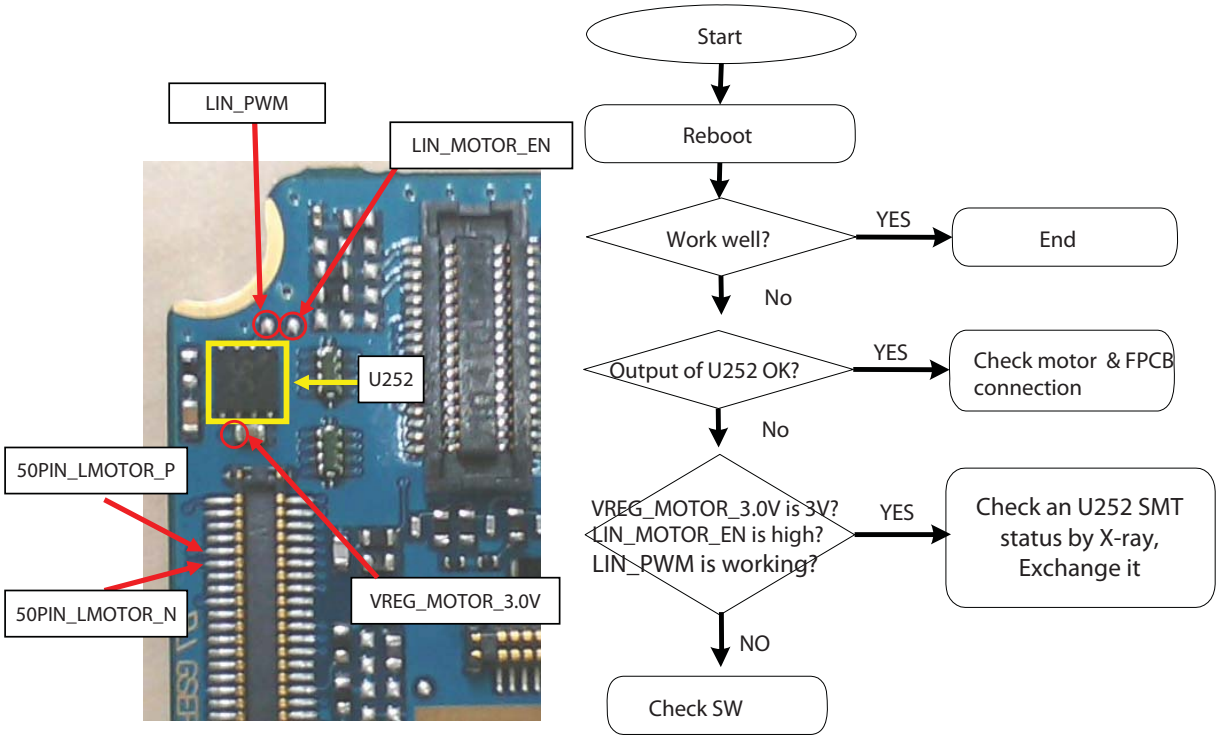


4.20 VIBRATORS

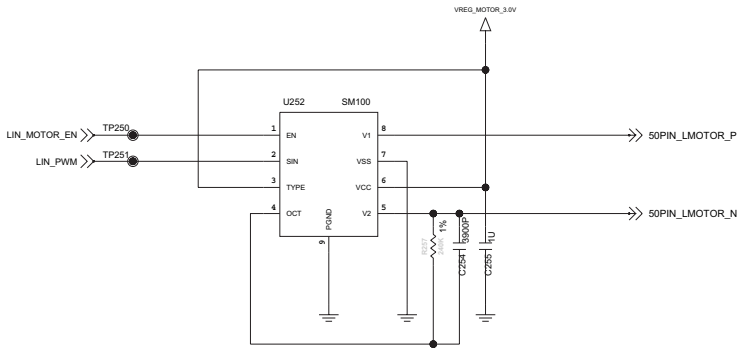
4. 20.1 LINEAR MOTOR

Linear Motor trouble shooting can be processed as below :

U252 uses the PWM pulse.
50PIN_LMOTOR_P and 50PIN_LMOTOR_N : output of U252.



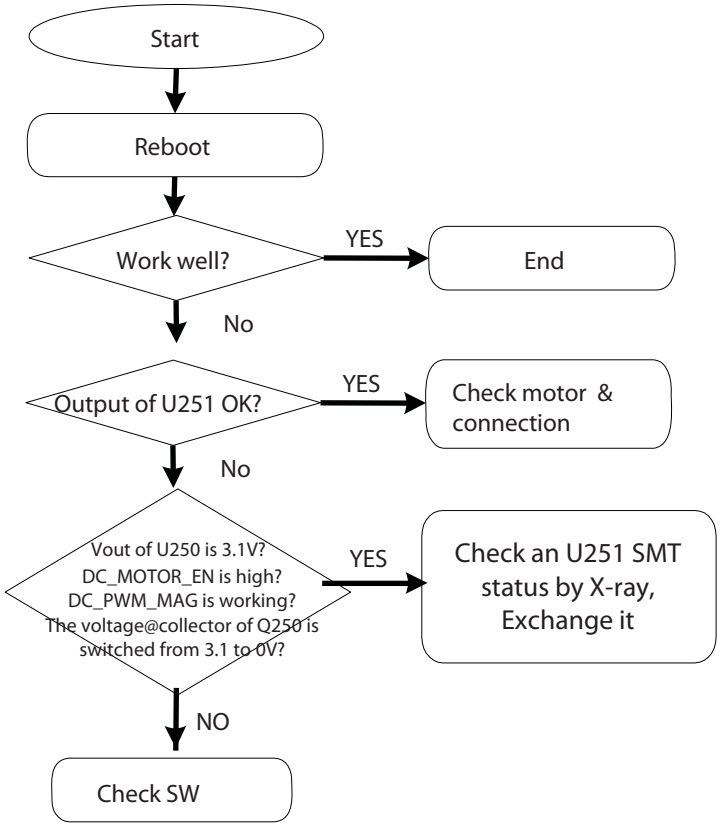
LINEAR MOTOR DRIVER

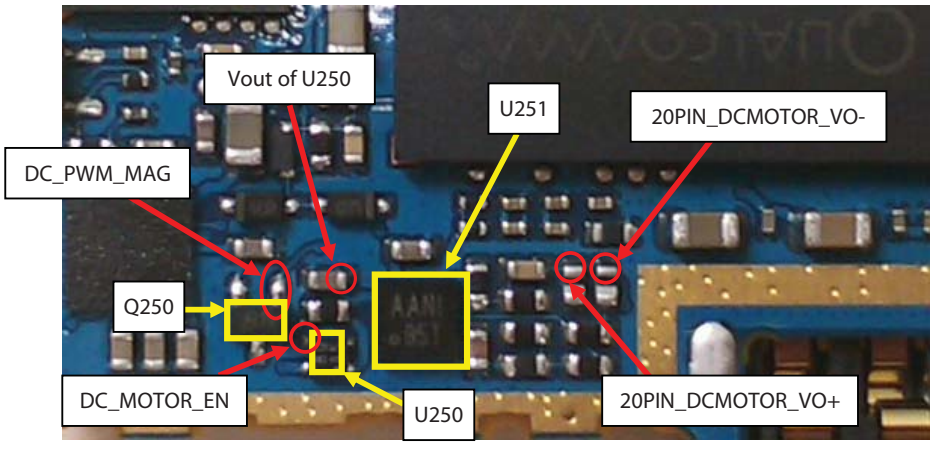


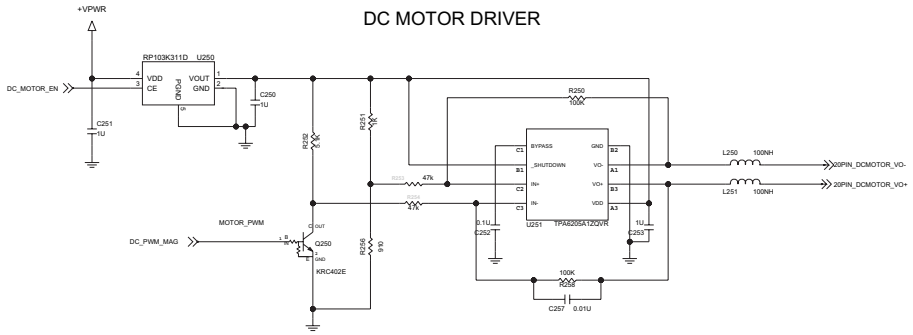
4. 20. 2 DC MOTOR

DC motor trouble shooting can be done in this process

Q250 : PWM signal is fed to the base of transistor.
U250 : LDO for feeding power to U251.
20PIN_DCMOTOR_VO- and
20PIN_DCMOTOR_VO+ are
the output of U251.



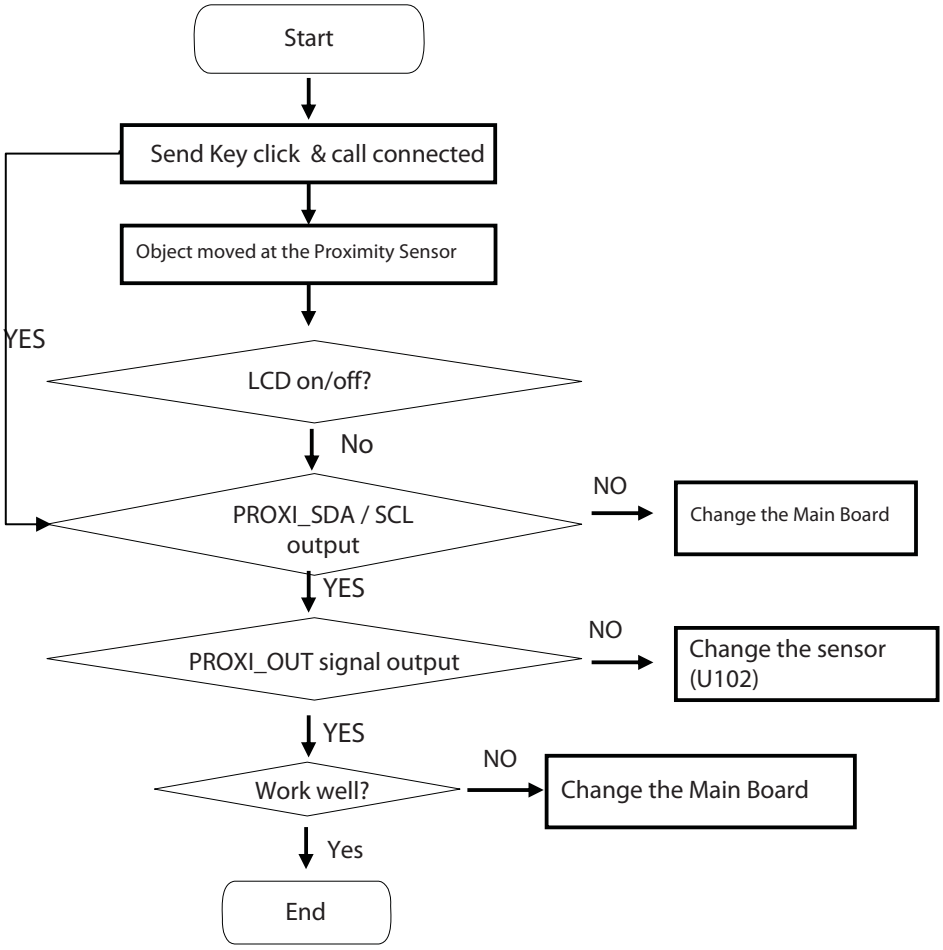




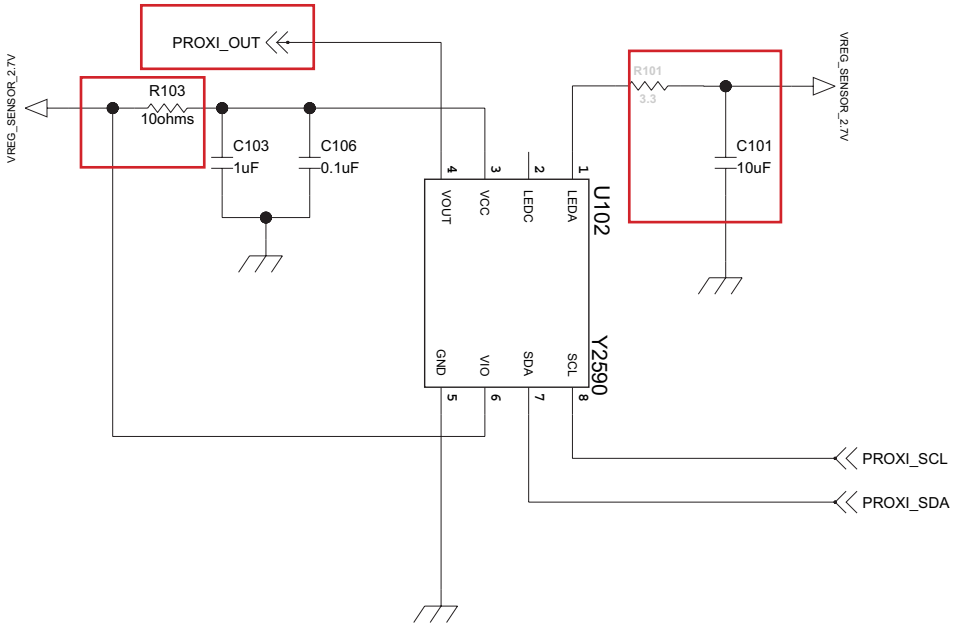
4.21 Proximity Sensor on/off trouble

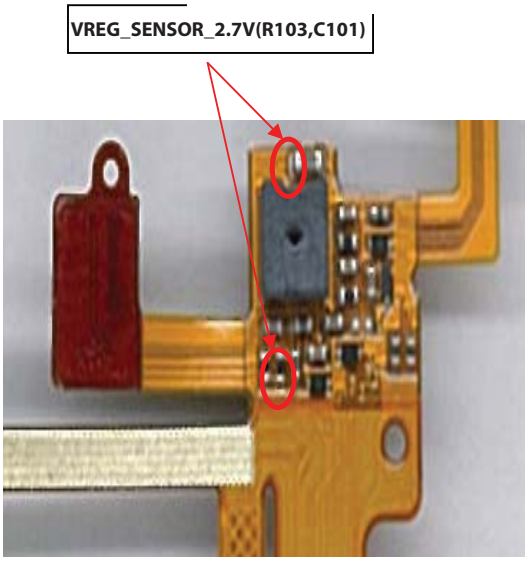
Proximity Sensor is worked as below :

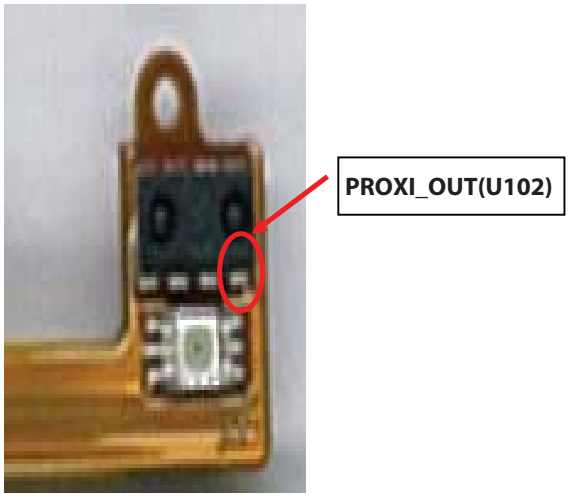
Send Key click ➔ Phone number click ➔ Call connected ➔ Object moved at the sensor ➔ Control the screen's on/off operation automatically



1) Measurement : U203
-. VCC : VREG_SENSOR_2.7V (C101,R103)
-. PROXI_OUT :(U102)

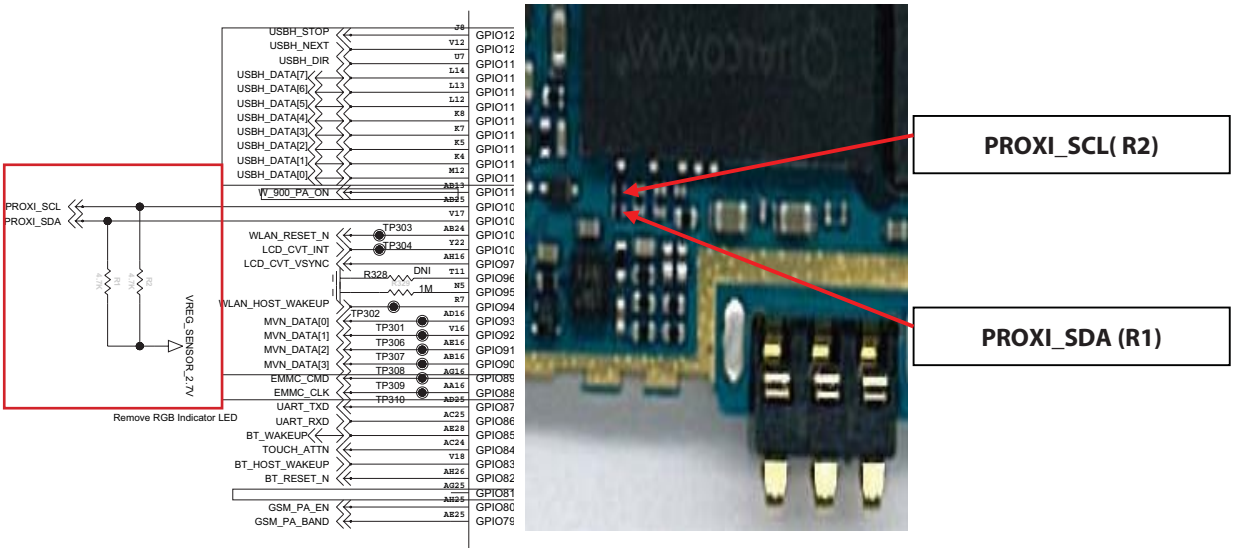






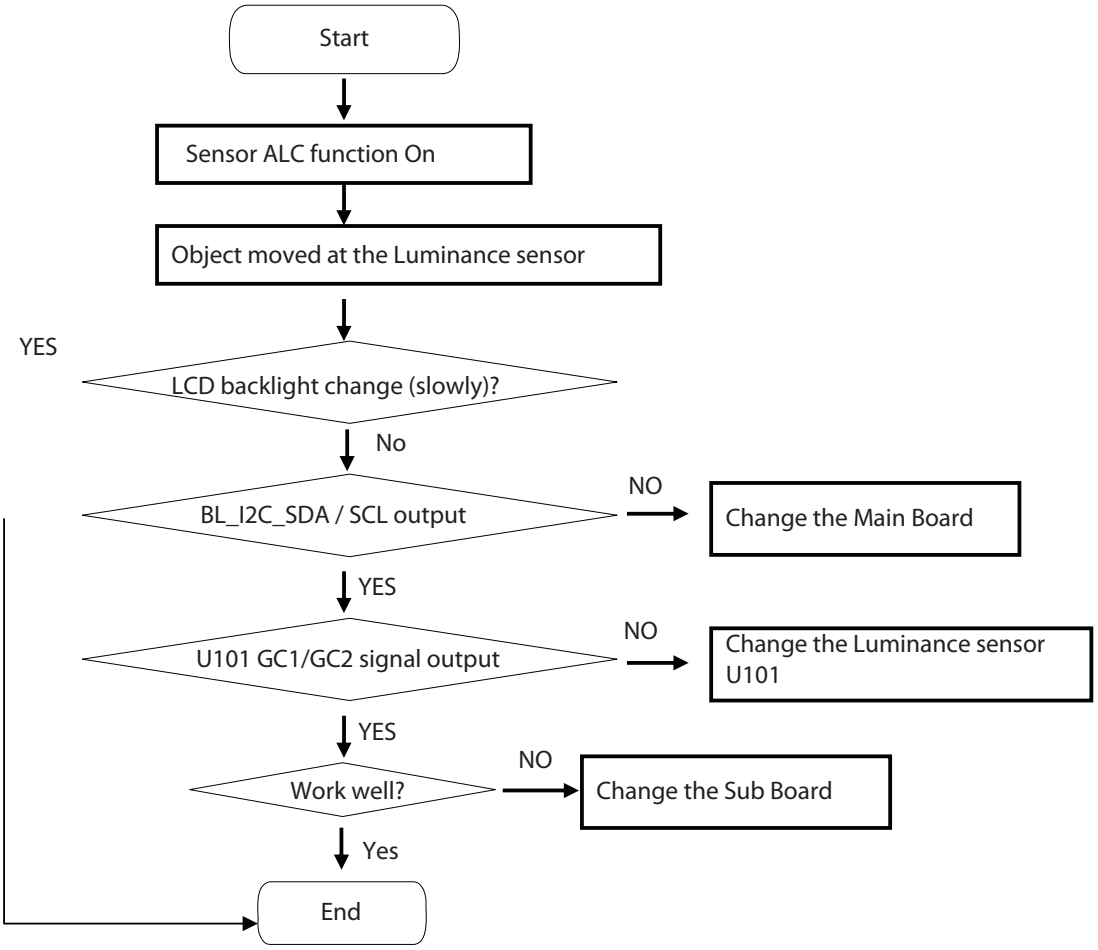
1) Measurement : Main B/D - U203

-. PROXI_SDA / SCL : data / CLK pulse (R1, R2)

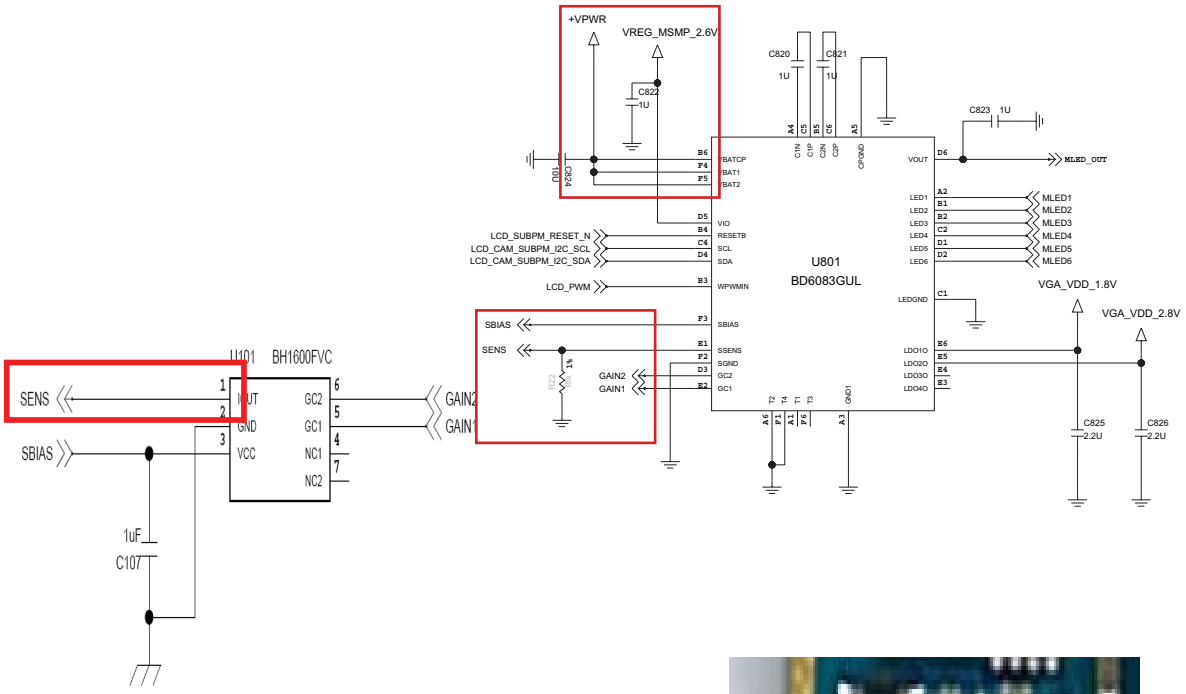


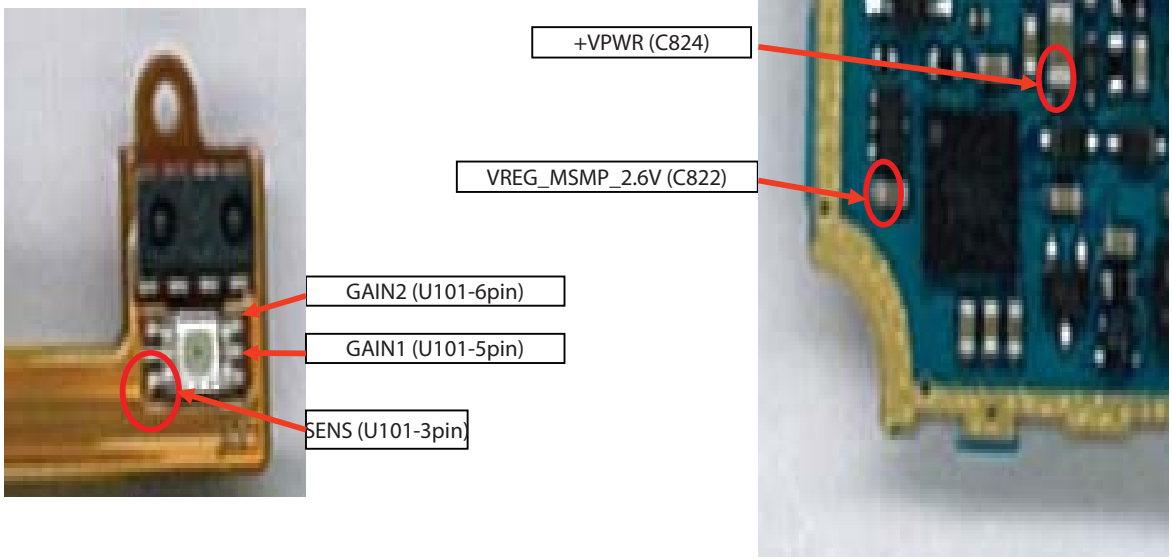
4.22 Luminance Sensor on/off trouble

Luminance Sensor is worked as below :
Sensor ALC function On ➔ Object moved at the Luminance sensor
➔ automatically controls brightness of the display backlight. (Very slowly)

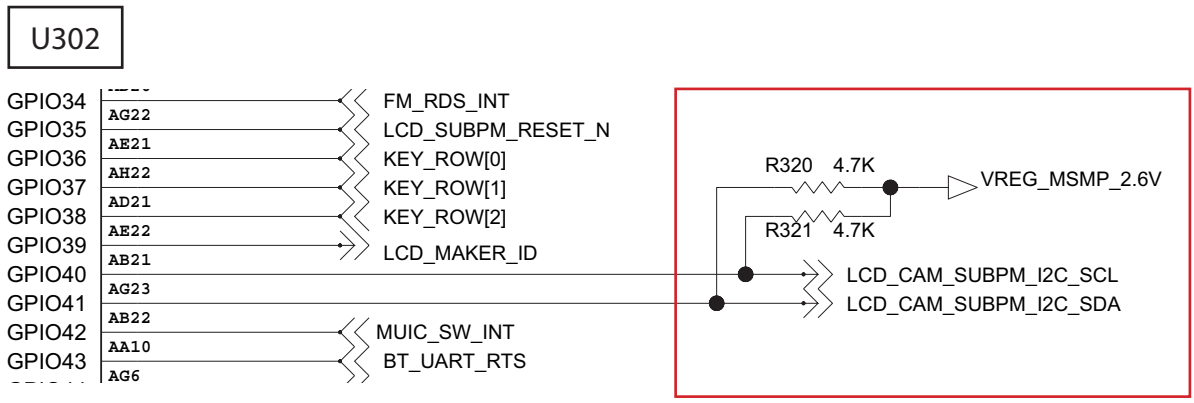


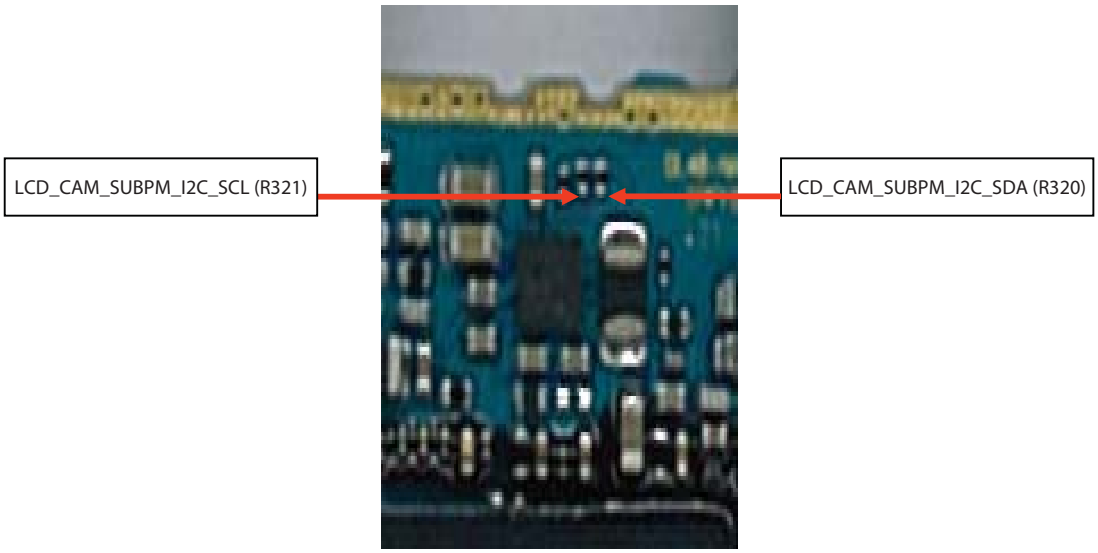
1) Measurement : Main U801 SPK FPCB U101
-. +VPWR : 4V (C814)
-. VREG_MSMP_2.6V : 2.6V (C822)
-. U101 (GC1 / GC2) : data pulse
-. U101 (SENS)





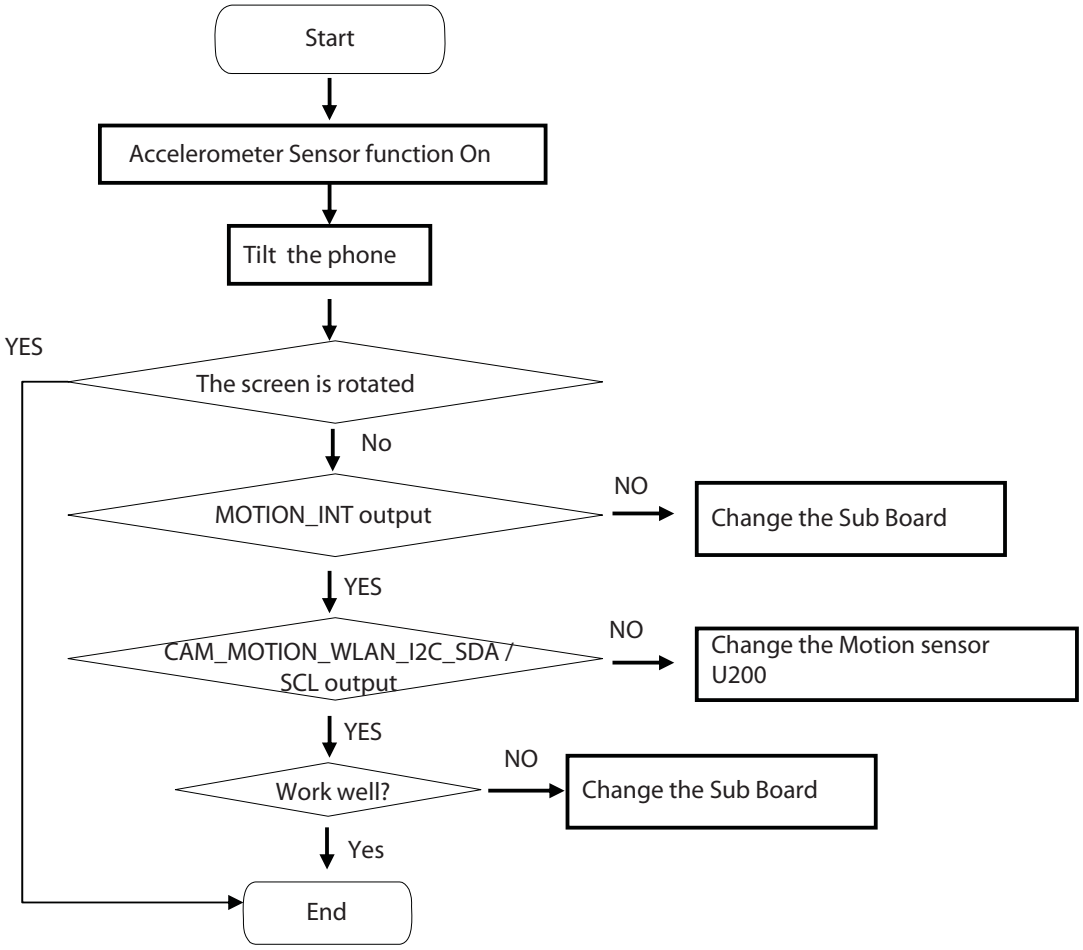
1) Measurement : Main U302
-. LCD_CAM_SUBPM_I2C_SDA / SCL : data / CLK pulse (R321, R320)



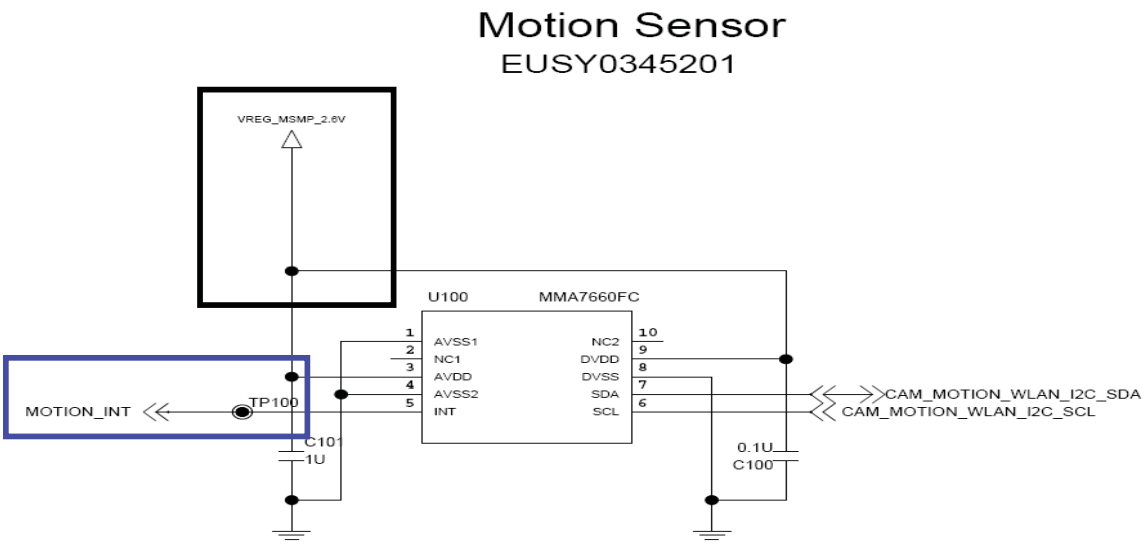


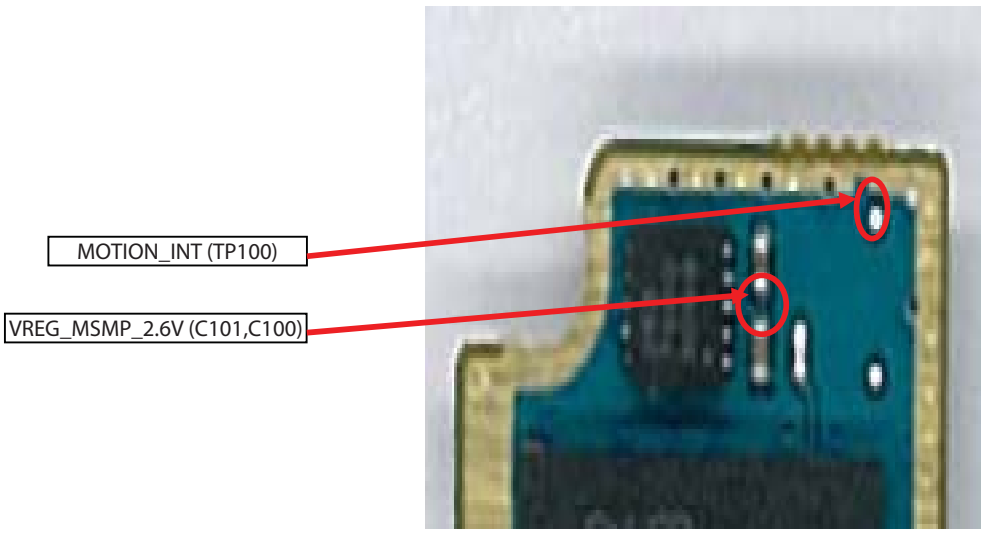
4.23 Motion Sensor on/off trouble

Motion Sensor is worked as below :
Accelerometer Sensor function On ➔ Tilt the phone (90˚) ➔ The screen is had rotated automatically.



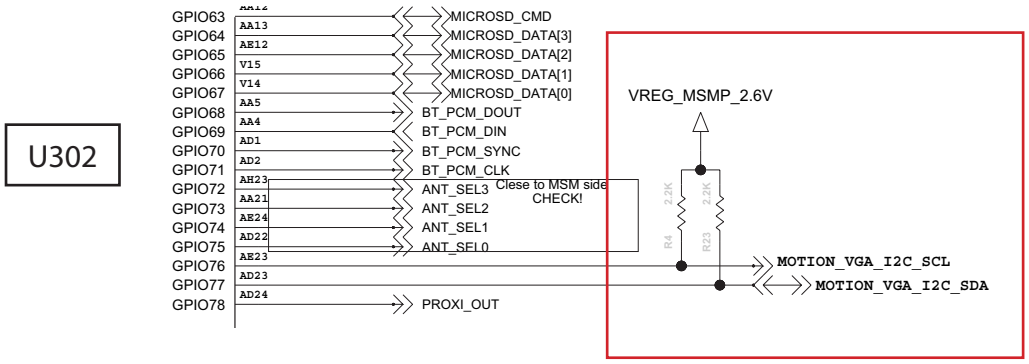
1) Measurement : Sub board
-. VREG_MSMP_2.6V : 2.6V (C100, C100)
-. MOTION_INT : High enable (TP100)

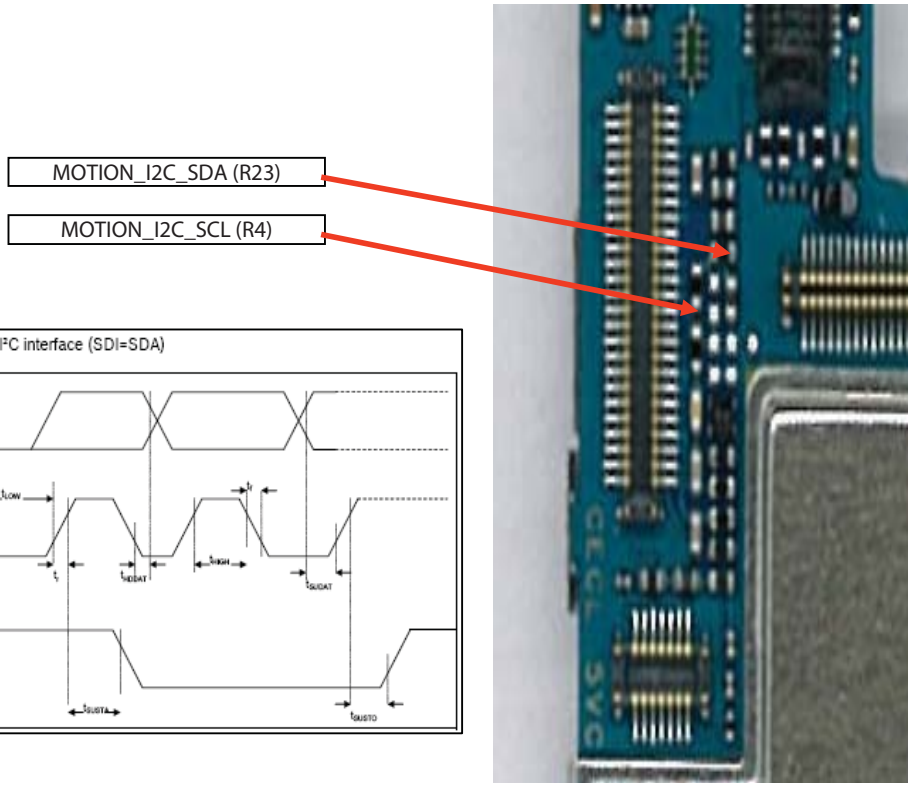




1) Measurement : Main board

-. MOTION_I2C_SDA / SCL : data / CLK pulse (R23, R4)





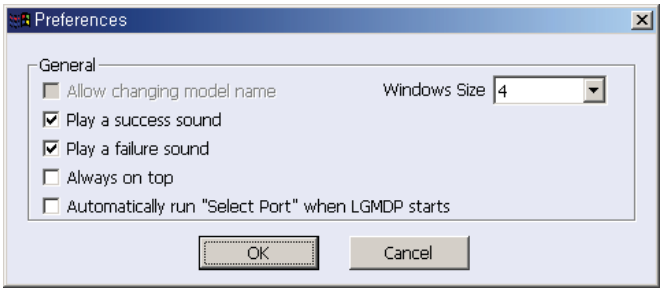
5. DOWNLOAD

5.1 Introduction

LGMDP is a LGE application that allow users to download images from PC to handset. LGMDP is a download tool with capabilities to upload image files to the handset. LGMDP is designed to be simple to use and easy enough for the beginner to upload executable images to the handset. LGMDP supports Windows 2000/XP where the LG (Ver 4.6 or later) USB modem driver is installed. Additionally, LGMDP allows multi downloading up to 9 handsets at the same time.

5.2 Downloading Procedure

- Connect the phone to your desktop PC using the USB cable and run the LGMDP application. Before getting started, set up LGMDP preferences from the Preferences of the file menu the way you want. Click on the File menu and select Preferences.



▶ Play a success sound

It will be played a .wav file when the download has been completed. To enable this simply check the box.

▶ Always on Top

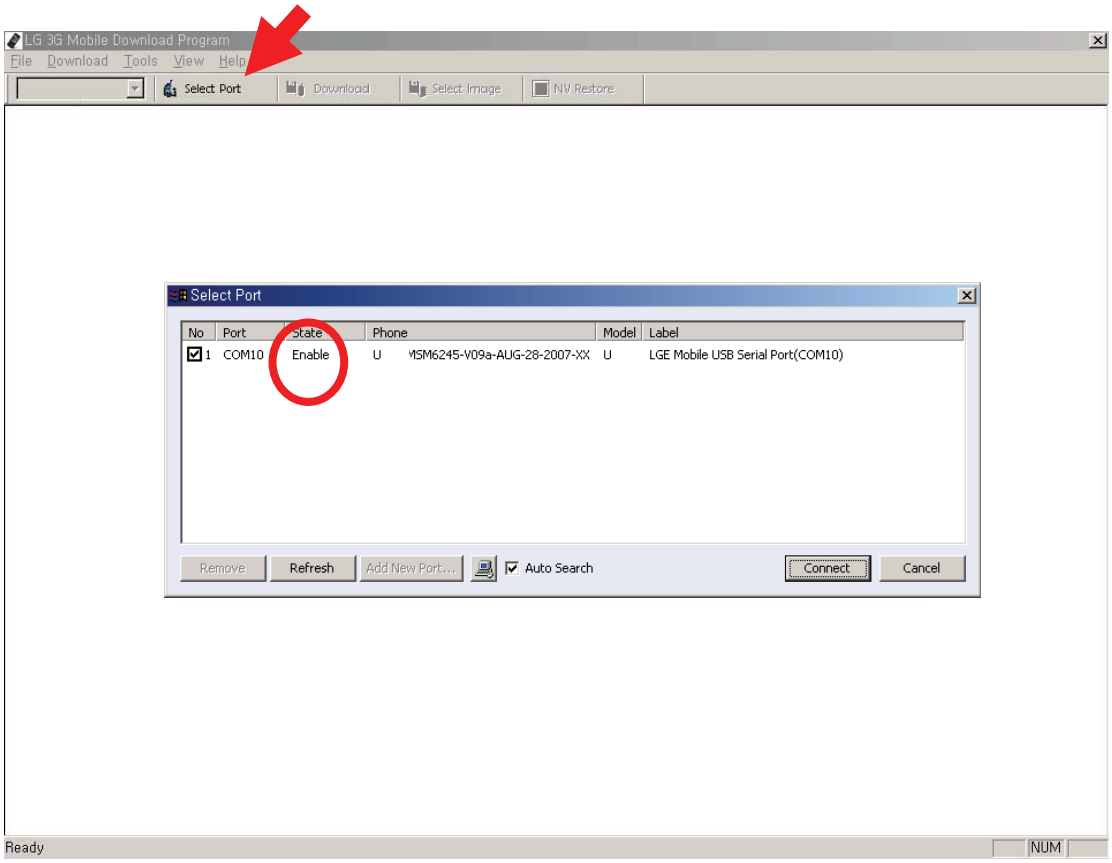
Check if LGMDP always appears at the top of the window so that user can monitor it all the time.

▶ Automatically run Select Port When LGMDP starts

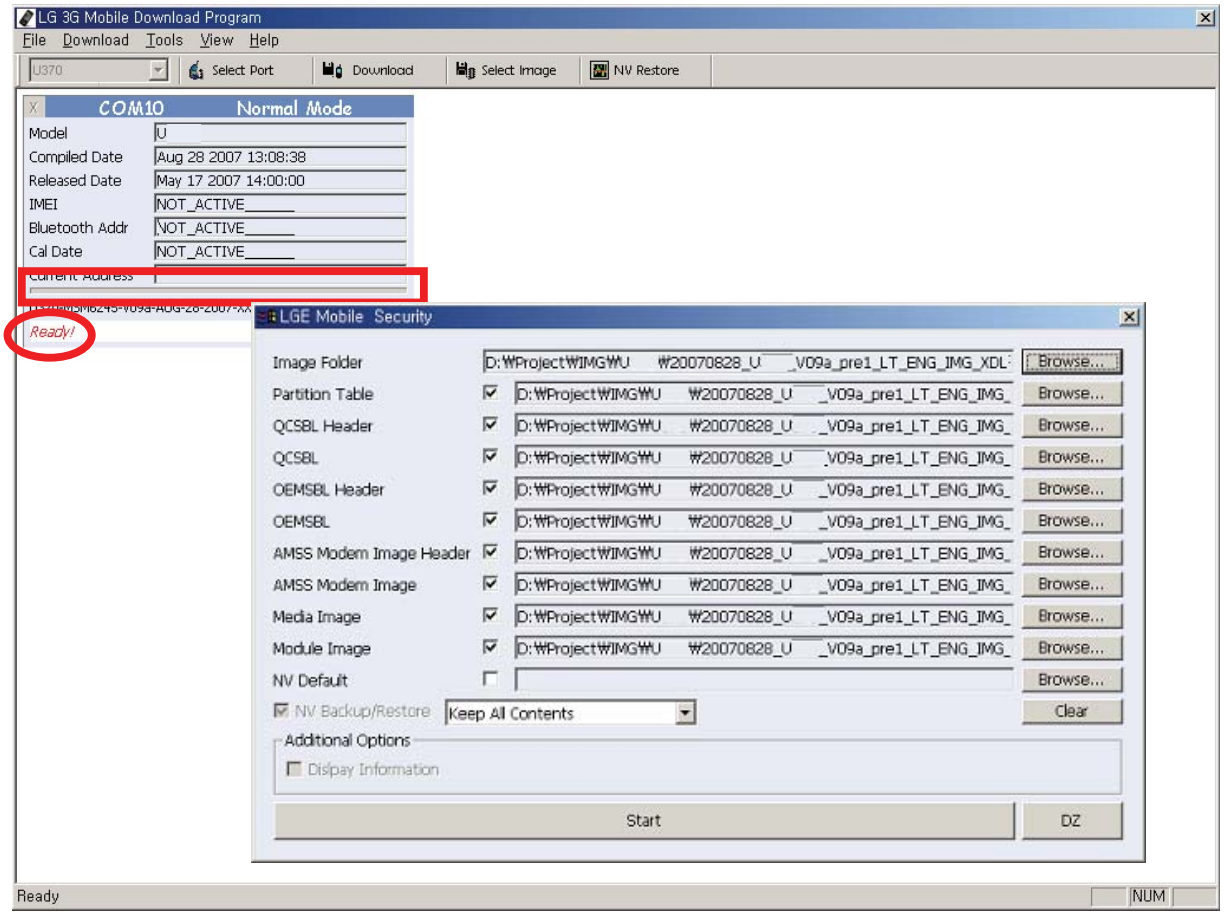
When LGMDP starts, it will automatically select Select Port button to download new image file.

5.2.1 Connection to PC

- Click on the Select Port and then Select Port window will be pop up. Check if state shows Enable for the port to be connected for downloading images. Then click on the Connect button.
  (The port number(COM7) shall be different from that of the port number in the snapshot.)

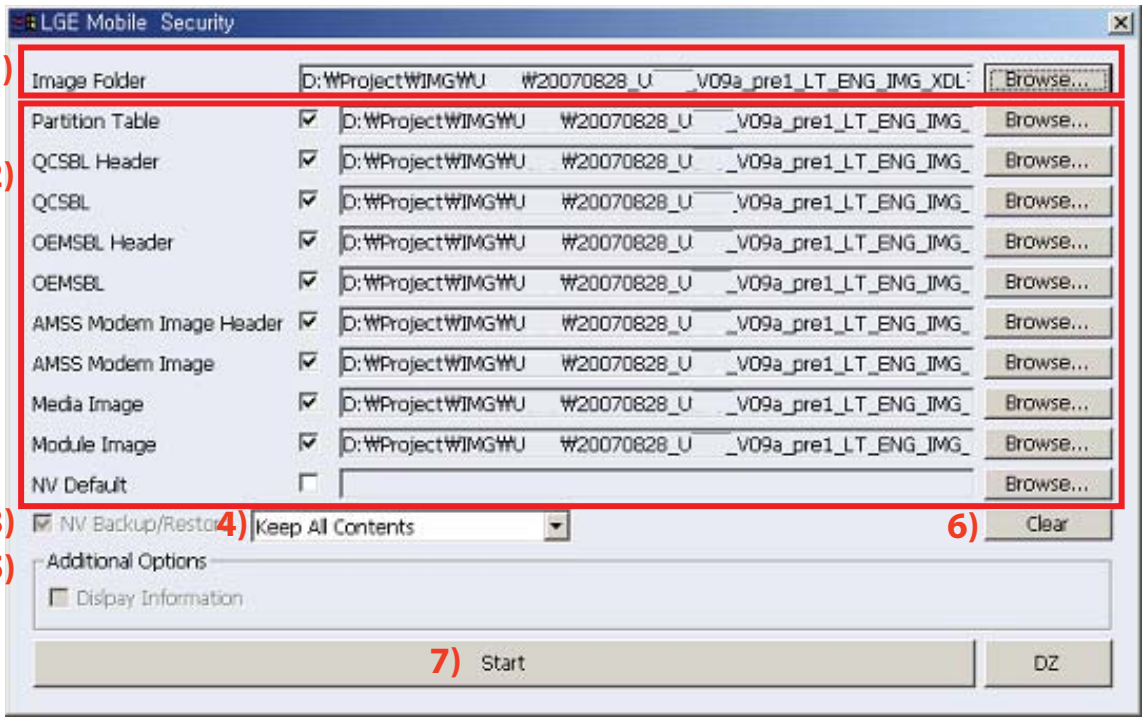


- The status Ready is displayed when the application is ready for downloading.
  While the images are transmitted from PC to the handset, a progressive bar (Red box) indicating the degree of transmission of data is displayed.



1) Image Folder indicates loot path where all image files are placed. To change location of the default image path, select Browse… button. The edit box shows the file path where images are located. Please note that all images should be located in a selected folder.

2) Click on the Browse… button to select image files to be downloaded on the handset.



WARNING! For a Media Image, please make sure that country code is match with connected phone. If country code does not match, select Browse… button next to the Media Image, and then select the media image with matched country code.

3) NV Backup/Restore: NV Backup/Restore always have to be done, and it is default selected option. Backup the NV data and restore the backed up NV data automatically.

4) Reset database & Contents:
User related data including the setting data on the EFS is reset in the handset. The user contents in the handset will be erased. If you want to reset all the user data back to the way they were before you started downloading new images, check the option.

Erase_EFS:

The calibration data, user contents, media, and module are erased. Only calibration data is kept when NV backup/restore is checked. The user contents and file system physically are wiped out.

Keep All Contents

Maintain user data including WAP, AD, DRM, E-mail, Play lists, and images when downloading a new S/W images. User data stated above are maintained if this option is selected.

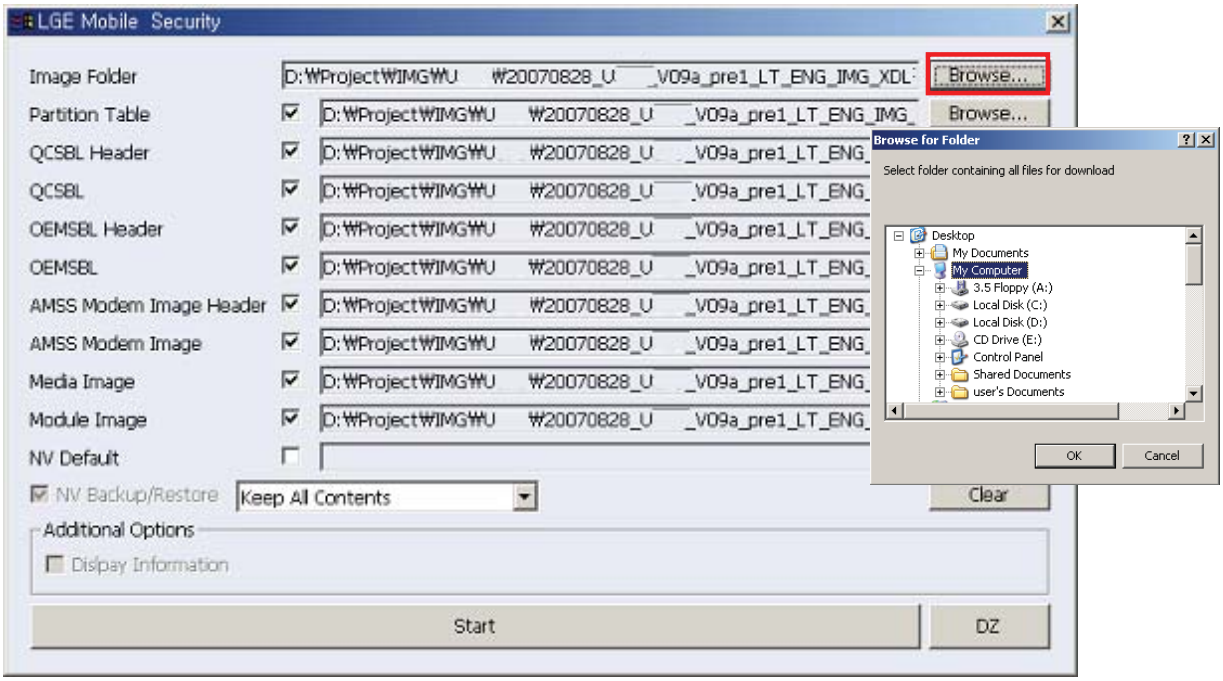
5) Additional Options:
Display Information is defaultly not selected and user cannot choose.
Override partition table is also also defaultly not selected and user cannot choose.

6) Clear: Clearing all directory paths of images in the dialog.

7) Start: Starting downloading the selected individual image.

5.2.2 Choosing image files

- Select the image folder, where all the image files are located, by clicking on the Browse….
  (The folder name shall be different from that of the folder name in the snapshot. The folder name indicates the path where the image files are located.)

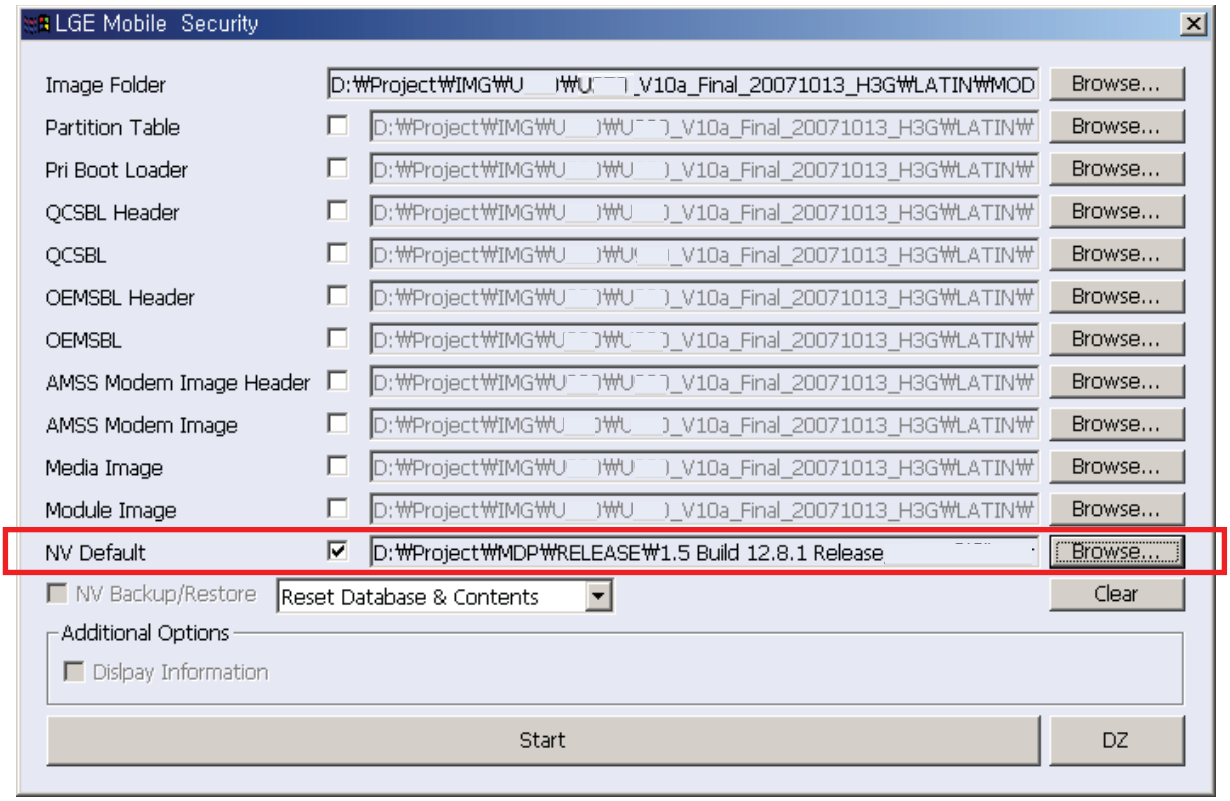


Select the path on the Image Folder by clicking on the Browse…, then the LGMDP will automatically load images accordingly. Also you can select images by manually. For instance, select the path of AMSS Modem Image file by clicking on the Browse… button.

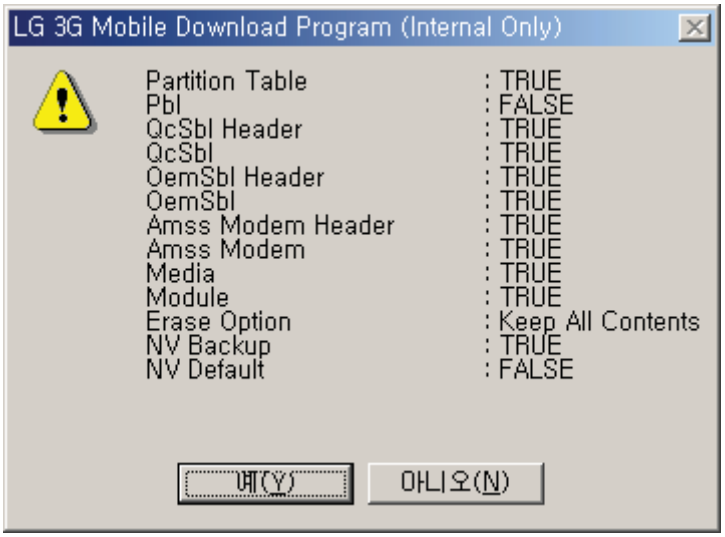
The selected AMSS image will be downloaded to the handset from the path directory in the PC. Make sure that you have chosen correct file. In case of wrong AMSS Modem file is selected, the phone may not work.

(The file name shall be different from that of the file name in the snapshot.)

- If NV restore is failed, then the NV Data(*.nv2) is erased permanently. In this case, choose the desired NV file to be downloaded on the handset. To enable this simply check the box or select the NV file from the LGMDP installation directory by clicking on the Browse… button.



Click on the START button to start downloading. A summary of the selected images and option information window will be displayed. Click on the No button if this is not the setting you are downloading for. Otherwise click on the Yes button to continue downloading selected image file with options.

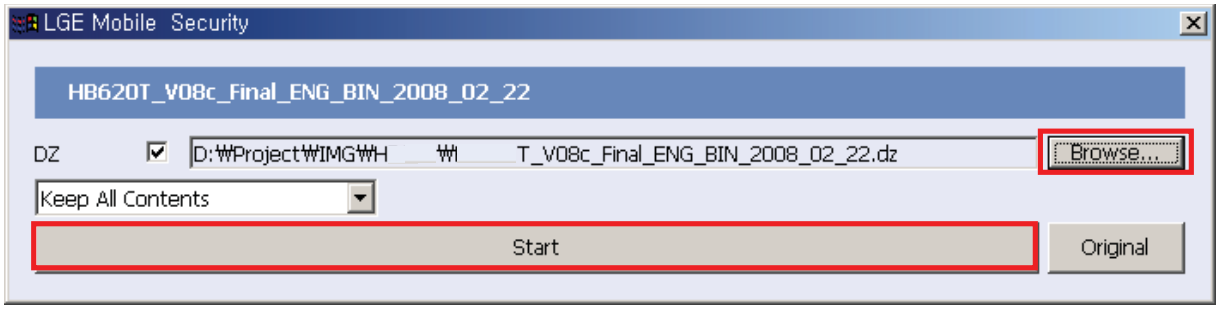


- DZ is one image S/W binary consisting of variety S/W images such as partition.mbn, pbl.mbn,.., module.bin. The new download function has been provided to allow the testing of the integrity of the DZ image by checking a hash code of every included file.
  (DZ does not allowing extracting or creating zip archive with other public opened archive tool such as WinZip or Alzip.) To download DZ image, simply click on the DZ button.

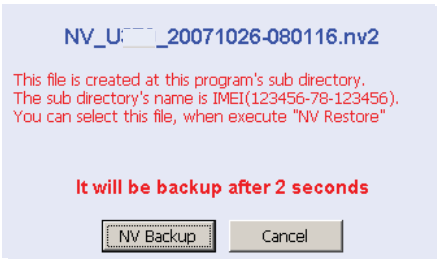
5.2.2 Choosing DZ image file

- DZ is one image S/W binary consisting of variety S/W images such as partition.mbn, pbl.mbn,.., module.bin. The new download function has been provided to allow the testing of the integrity of the DZ image by checking a hash code of every included file.
  (DZ does not allowing extracting or creating zip archive with other public opened archive tool such as WinZip or Alzip.) To download DZ image, simply click on the DZ button.

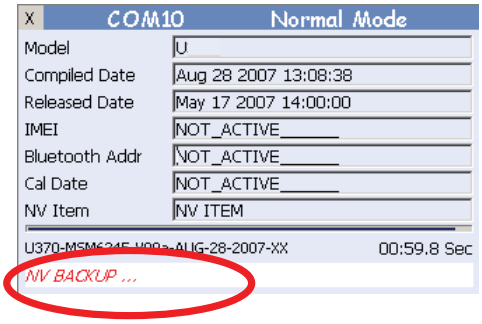
- Select dz image path where dz image file is located by clicking on the Browse…button. Click on the Start Button to start downloading DZ image. If you want to go back to original download mode, click on the Original button.



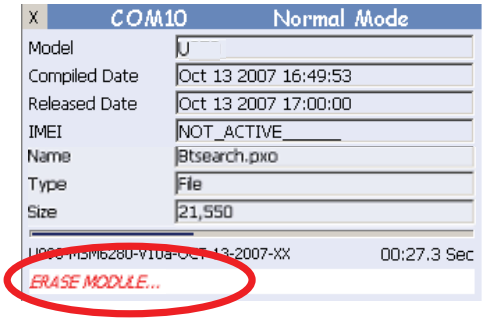
5.2.3 Downloading



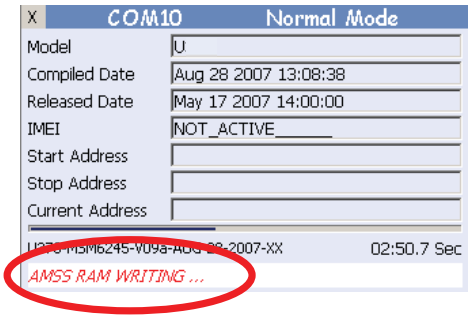
- This message box informs that a new file for NV backup will be created in the displayed file name in the LGMDP installation directory.



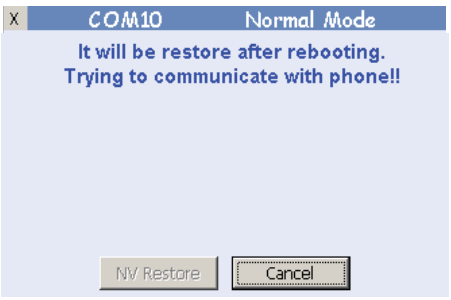
- Backing up NV data and backed up NV data will be stored in the LGMDP installation directory.



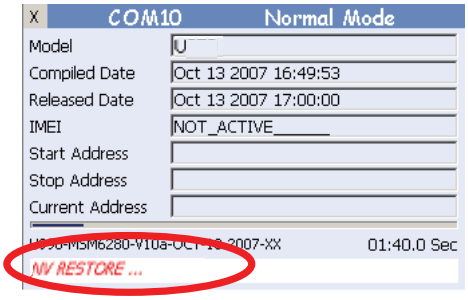
- Erasing the existing directories and files before the Module image is downloaded.



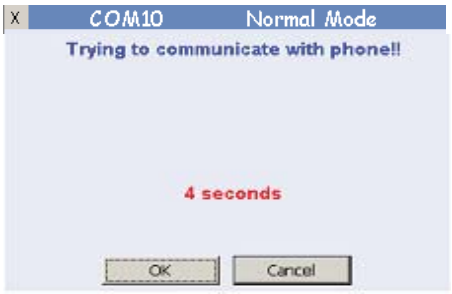
- Downloading the AMSS modem image



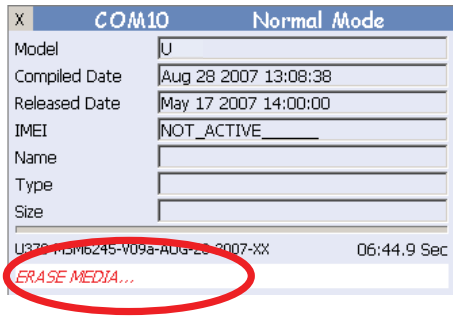
- Rebooting the handset and re-establishing the connection.



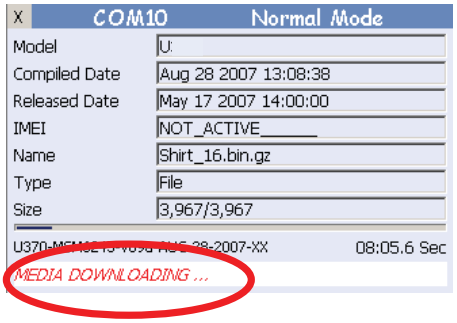
- Restoring NV data which backed up in the Backing up process. User can also restore NV data using NV Default image selection.



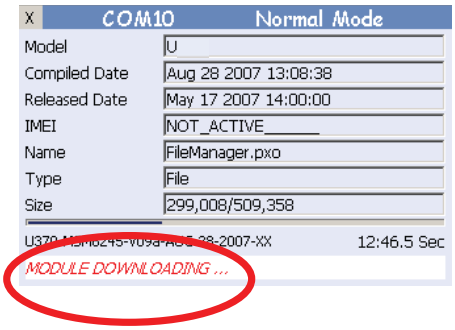
- Rebooting the handset and re-establishing the connection



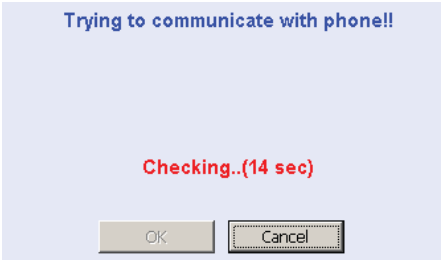
- Erasing the existing directories and files before downloading the selected Media image



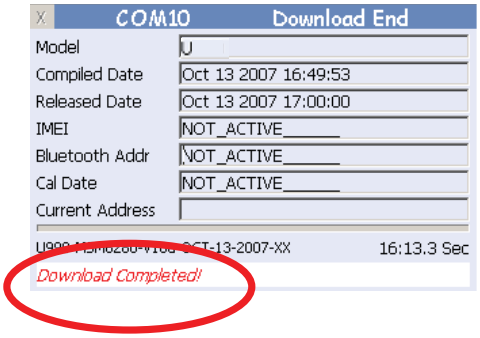
- Downloading Media image in progress



- Downloading Module image in progress



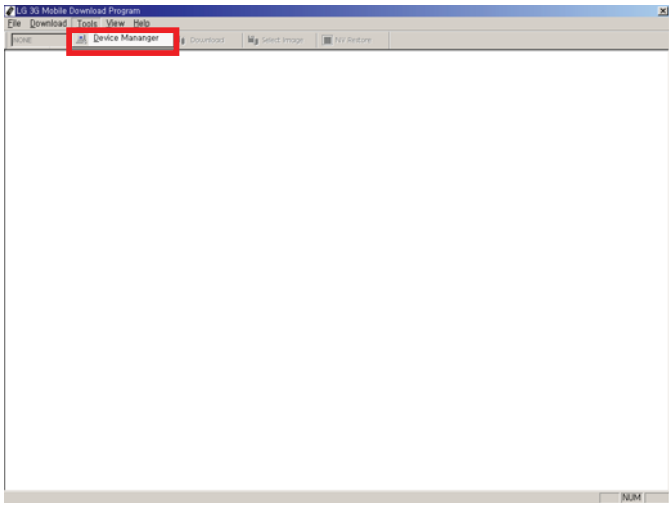
- Rebooting handset

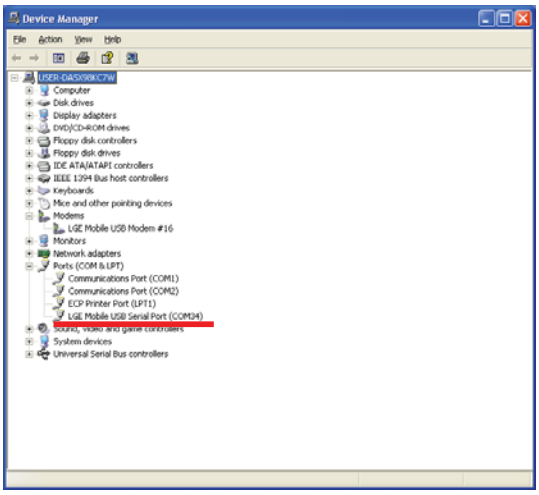


- Downloading process has completed successfully

5.2.4 Tools

- Device Manager allows to monitor current hardware that is installed on your PC. Device Manager is designed to monitor USB connectivity and check where the COM has been installed . Select Device Manager from the Tools of the file menu.





5.3 Troubleshooting Download Errors

1) When the phone does not work after downloading has been completed.

2) Media Erasing Error

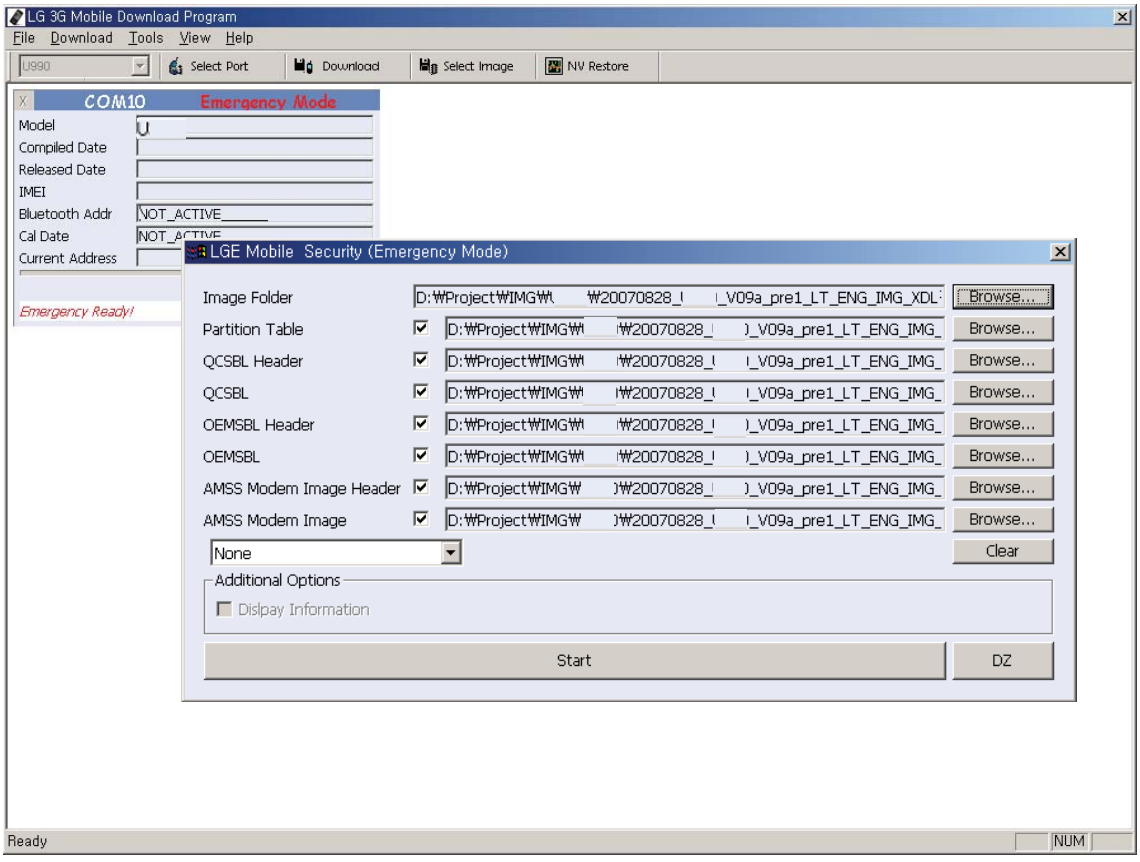
3) NV Restore Error

5.3.1 When the phone does not work

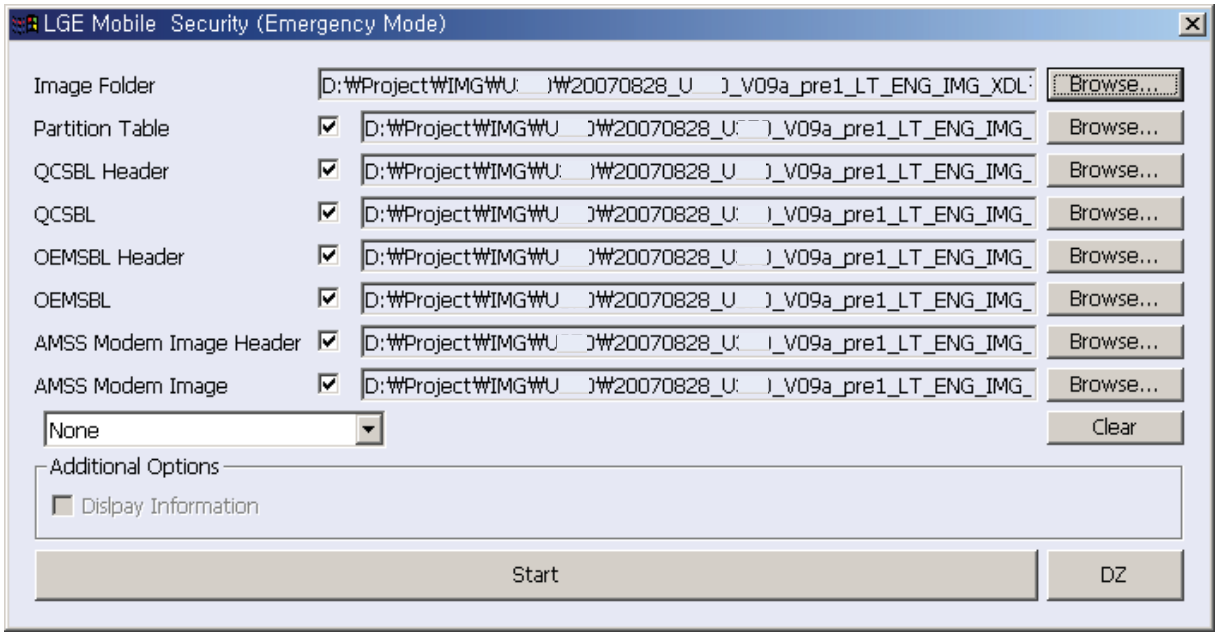
- Reboot the phone in the emergency mode (Simultaneously press 2, 5, and PWR red keys) and then try to download all the images up to AMSS. In the emergency mode, you can not download media or module image.

  The phone supports a special mode called emergency mode. In this mode, minimum units for downloading is running so that users can download the images again in case of emergency situation. (AMSS modem, Media, and Module images can not be running in this mode.)

- The below dialog shows parameters of Select Port when phone is booted in Emergency mode. Click on the Connect button to continue.

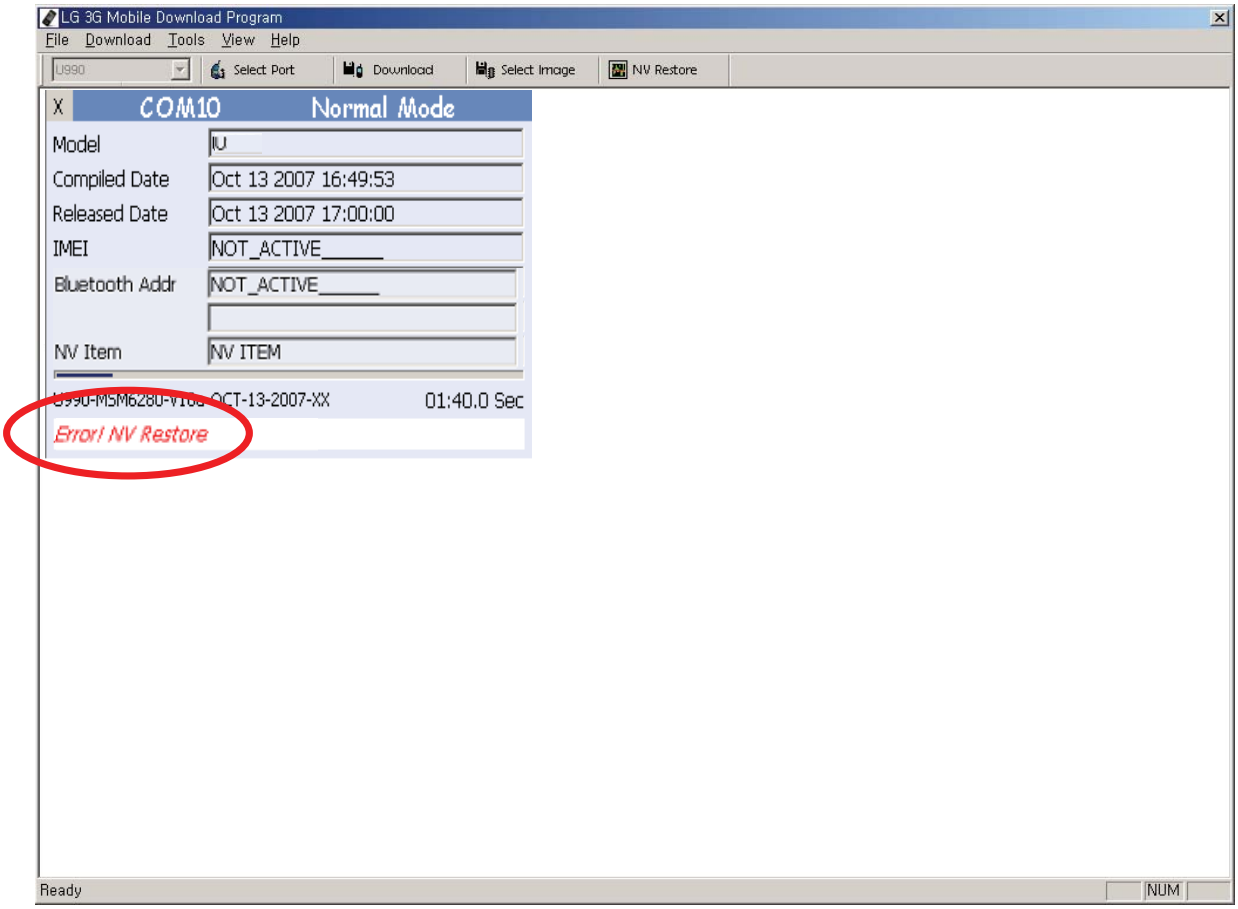


- Choose Image file after clicking on the Browse… button. Make sure that you have chosen the right image file. After choosing valid images, then click on the Start button to start downloading selected images. The selected image will be downloaded to the handset from the path directory in the PC. After downloading images successfully, it will boot to normal mode.

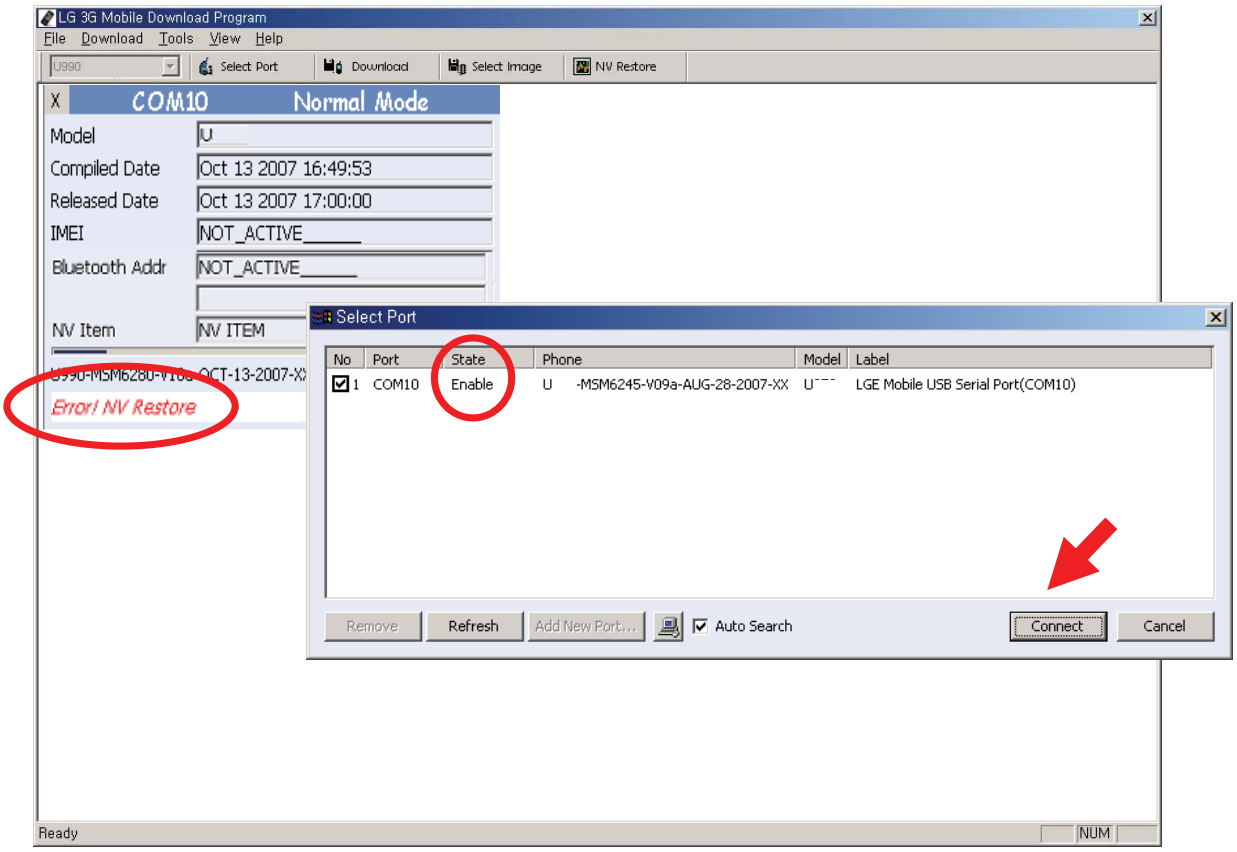


5.3.2 NV Restore Error

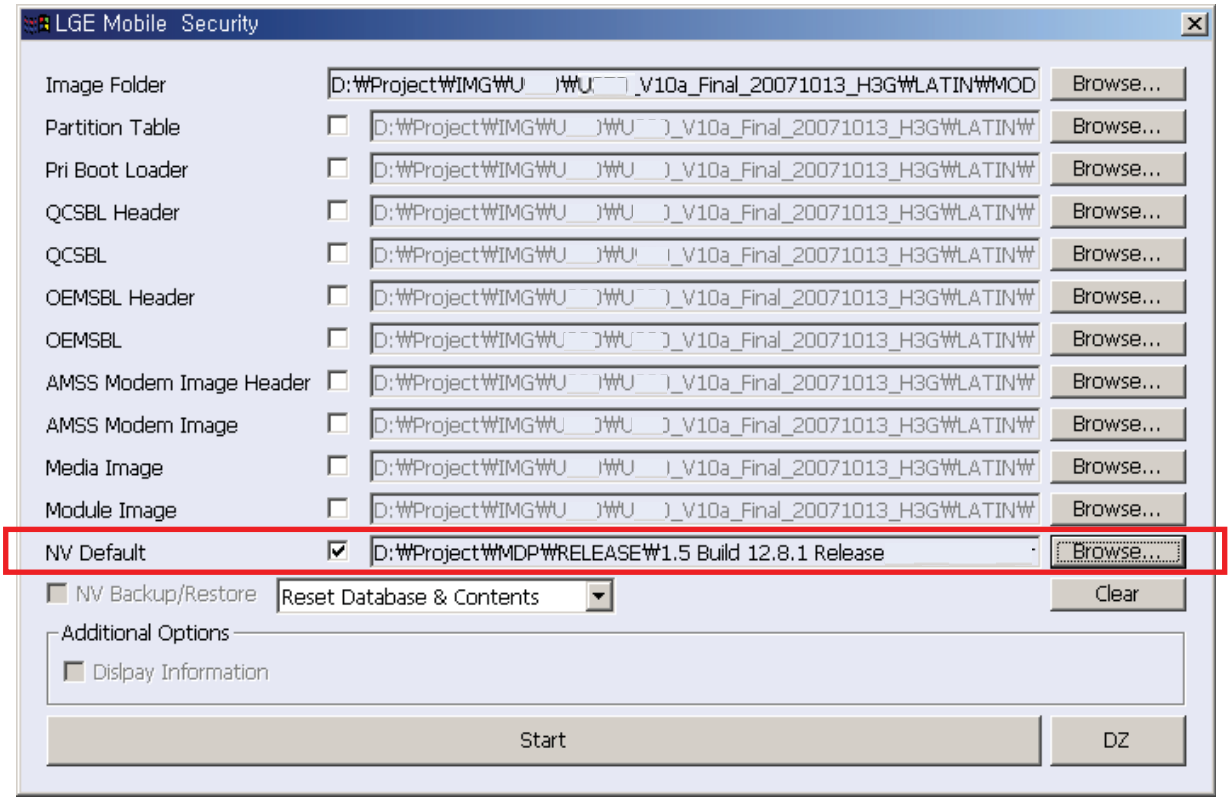
- Snapshot showing the NV Restore error. Next slide shows the remedial procedure to adopt.



• Connect the handset and Press the Connect button in the Select Port window.
(Enable state in the window indicates that the Phone has been detected and is ready to download.)



• Click on Browse… . Select the LGMDP installation directory and a list of NV Backup files(*.nv2) will be shown. These nv files were saved every time NV Backup option was selected, and the name of the nv file is determined based on the time when NV Backup was done. Choose the desired NV file to be downloaded on the handset, and click on Start.

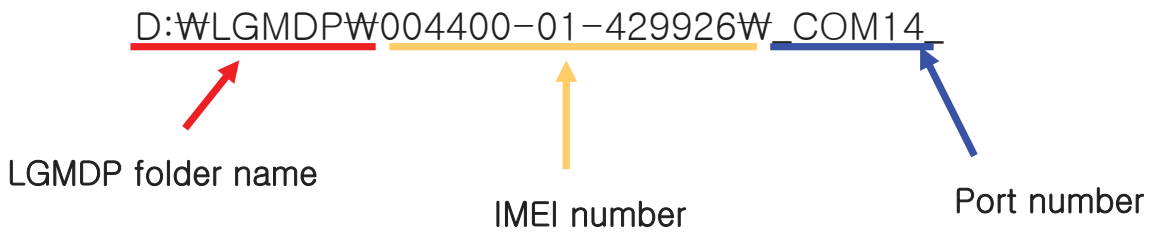


5.4 Caution

1) Multi-downloading using the USB hub is not recommendable.

2) If you see the message 'cal mode' after 'completing download', you must do NV restore and image (media and module) download.

3) The NV data saved at LGMDP folder as following format.

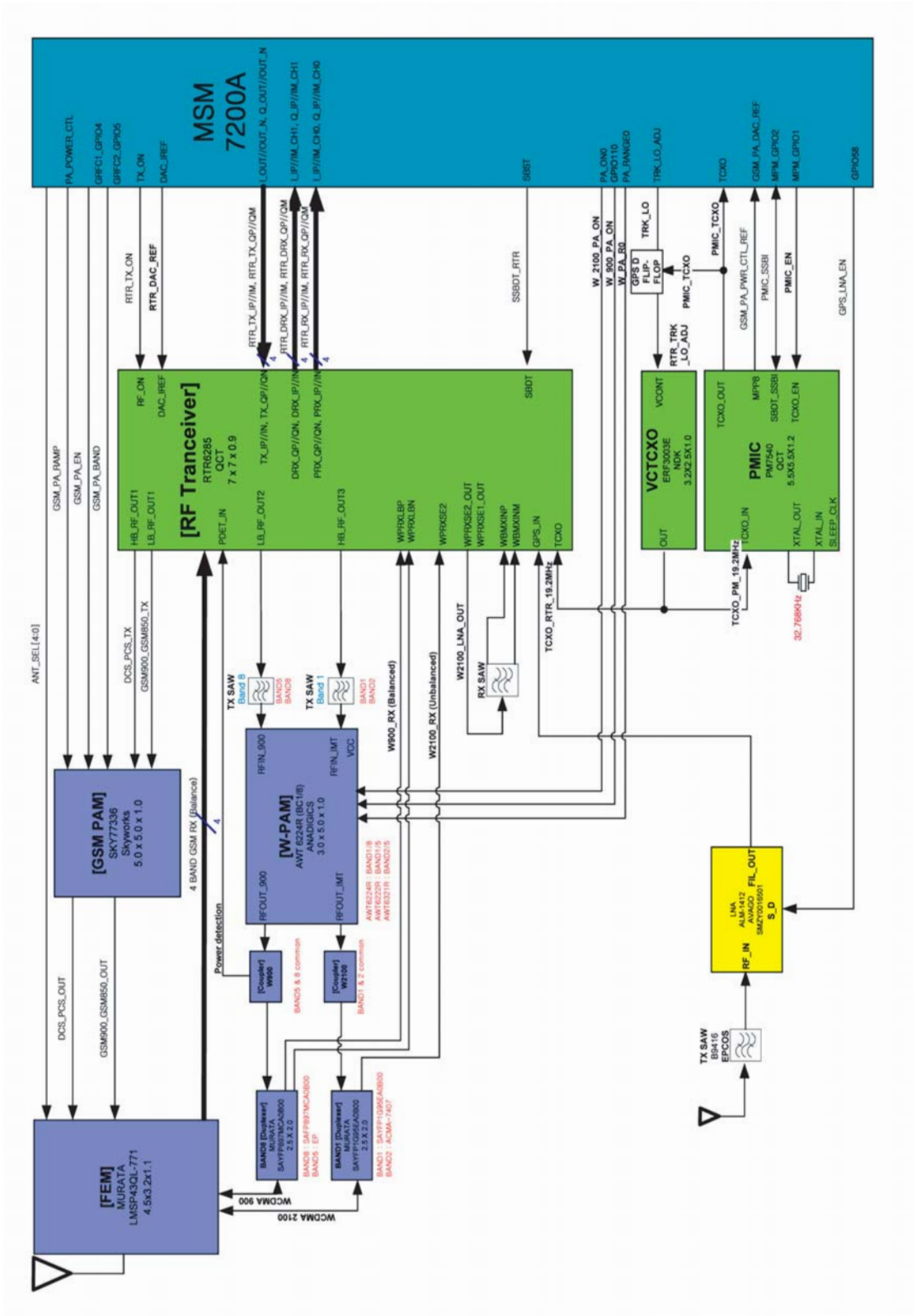


4) Recommended that the Module and Media Image have to be downloaded at the same time.

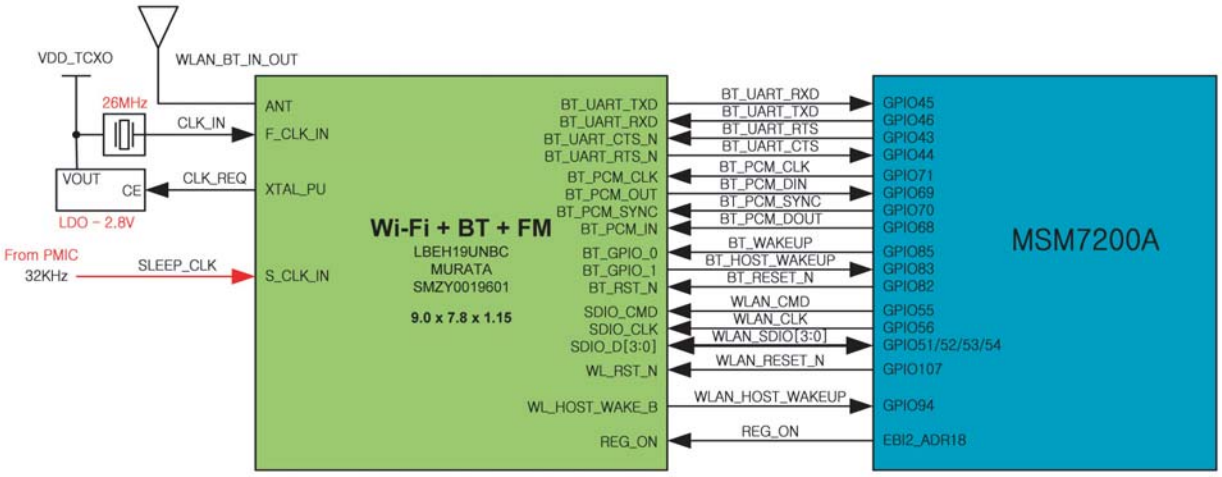
5) Erase EFS option will erase everything (media, module, nv items, and user data) in the EFS area.

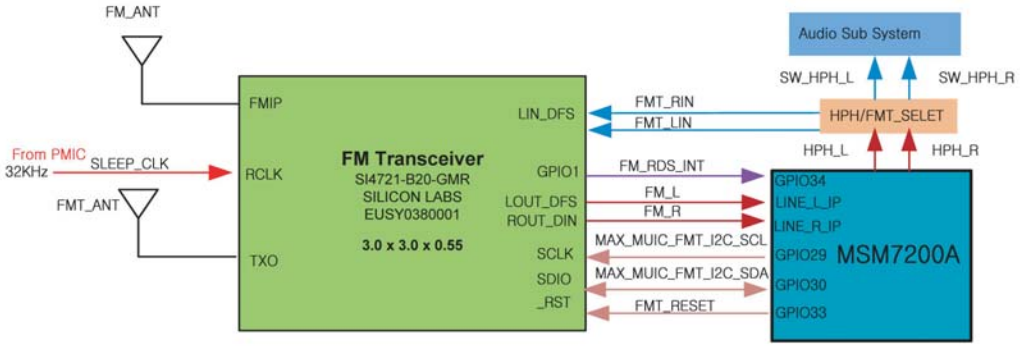
6. Block Diagram

RF Block

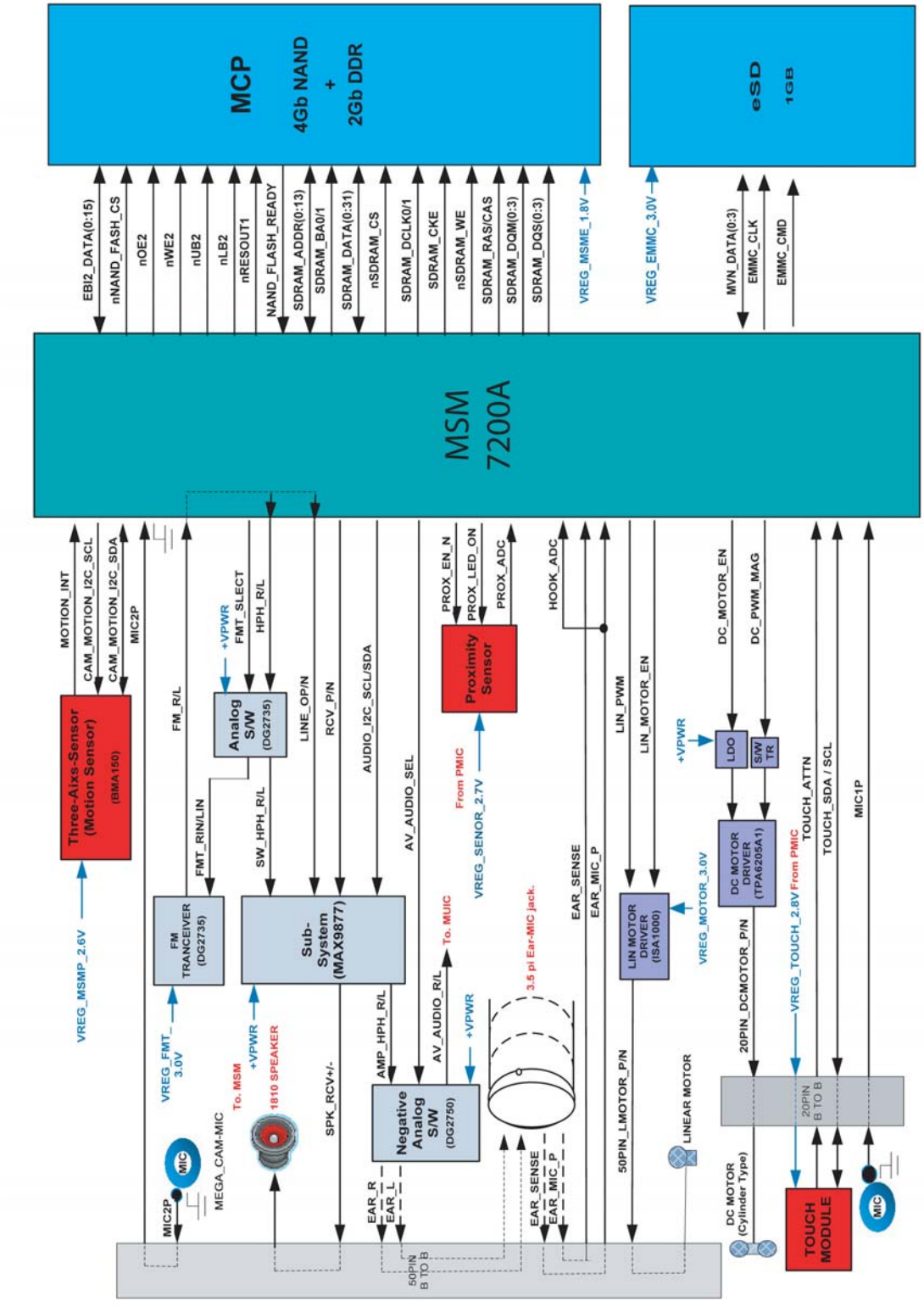


WiFi / BT / FM Block

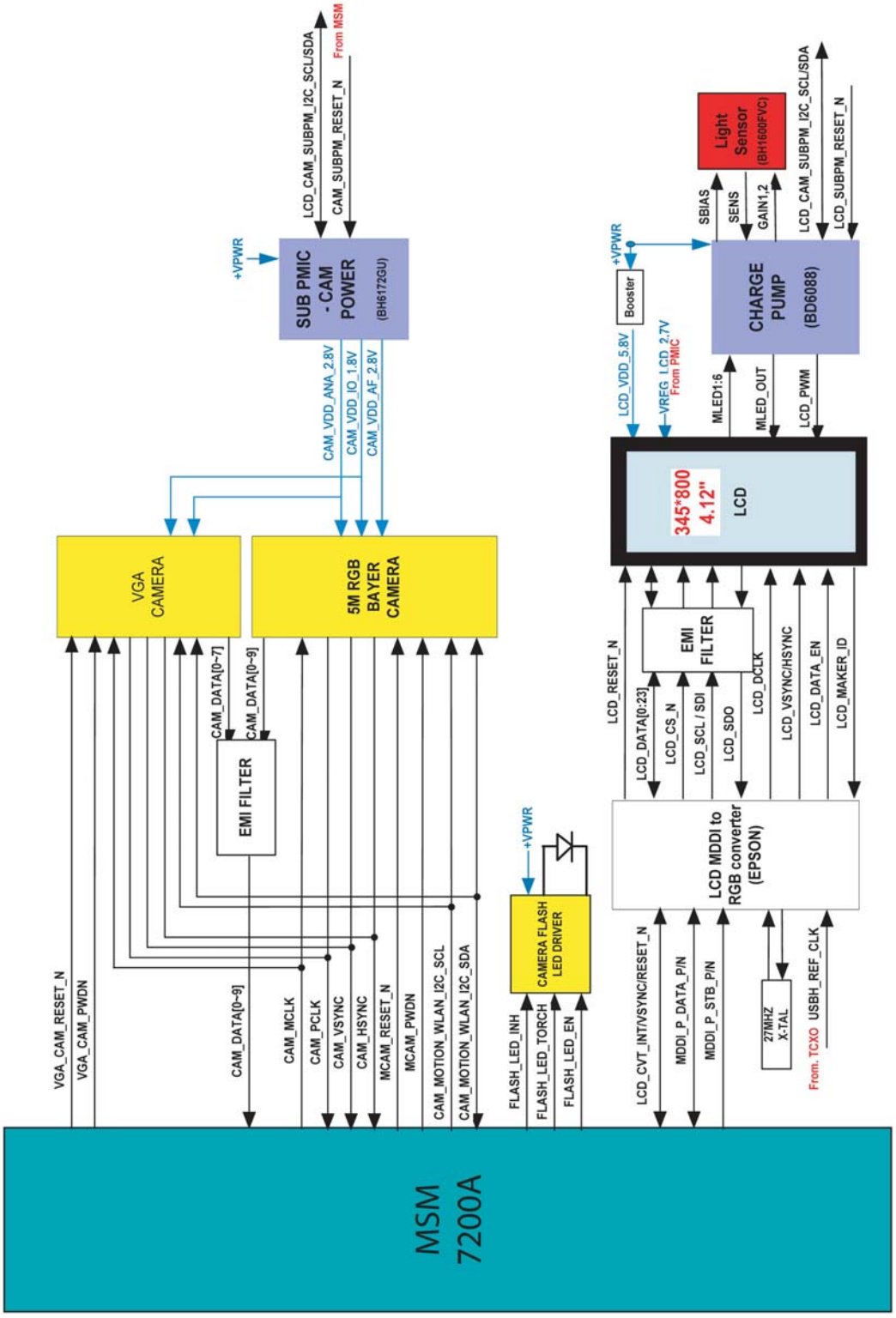




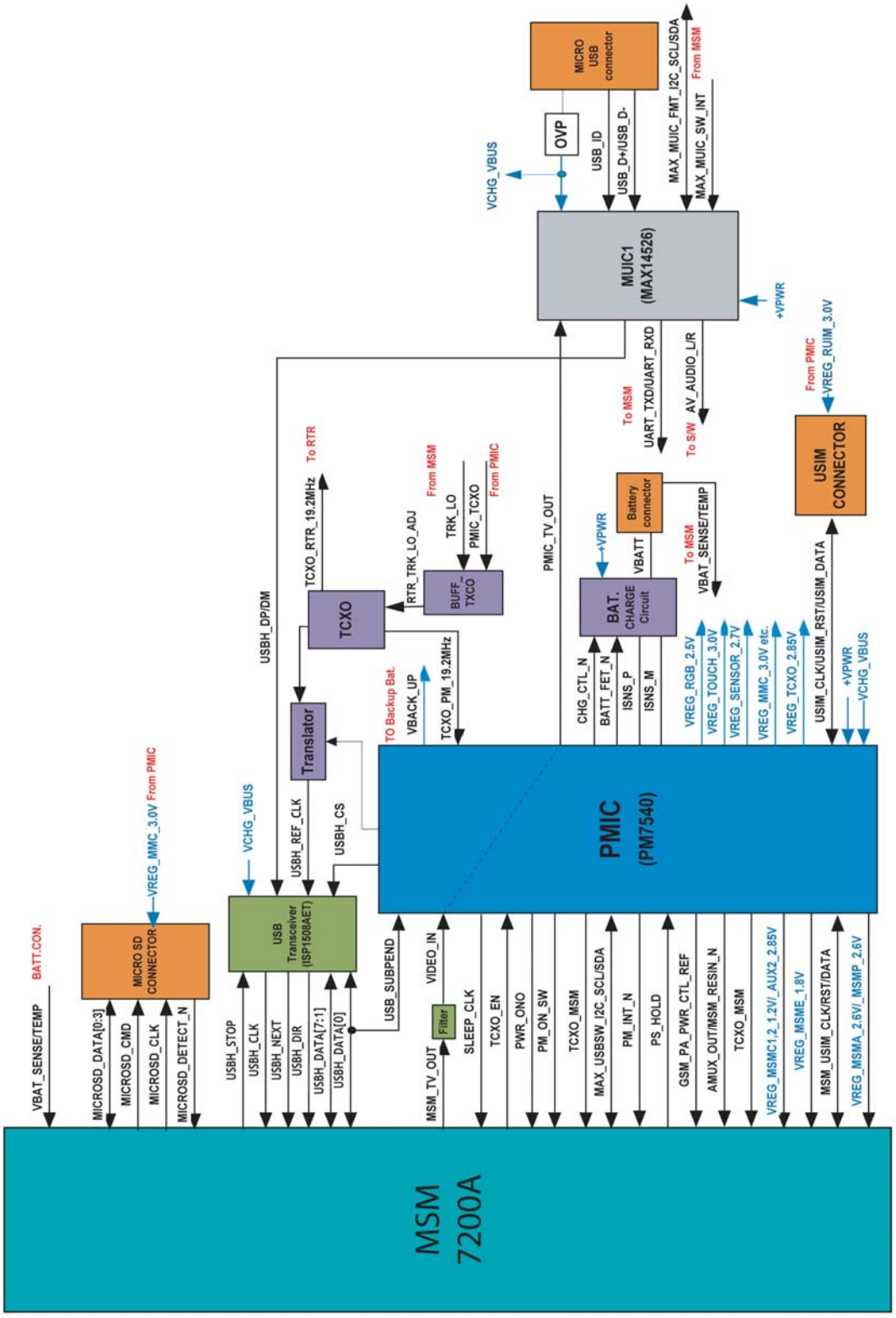
AUDIO / Sensor / MCP Block



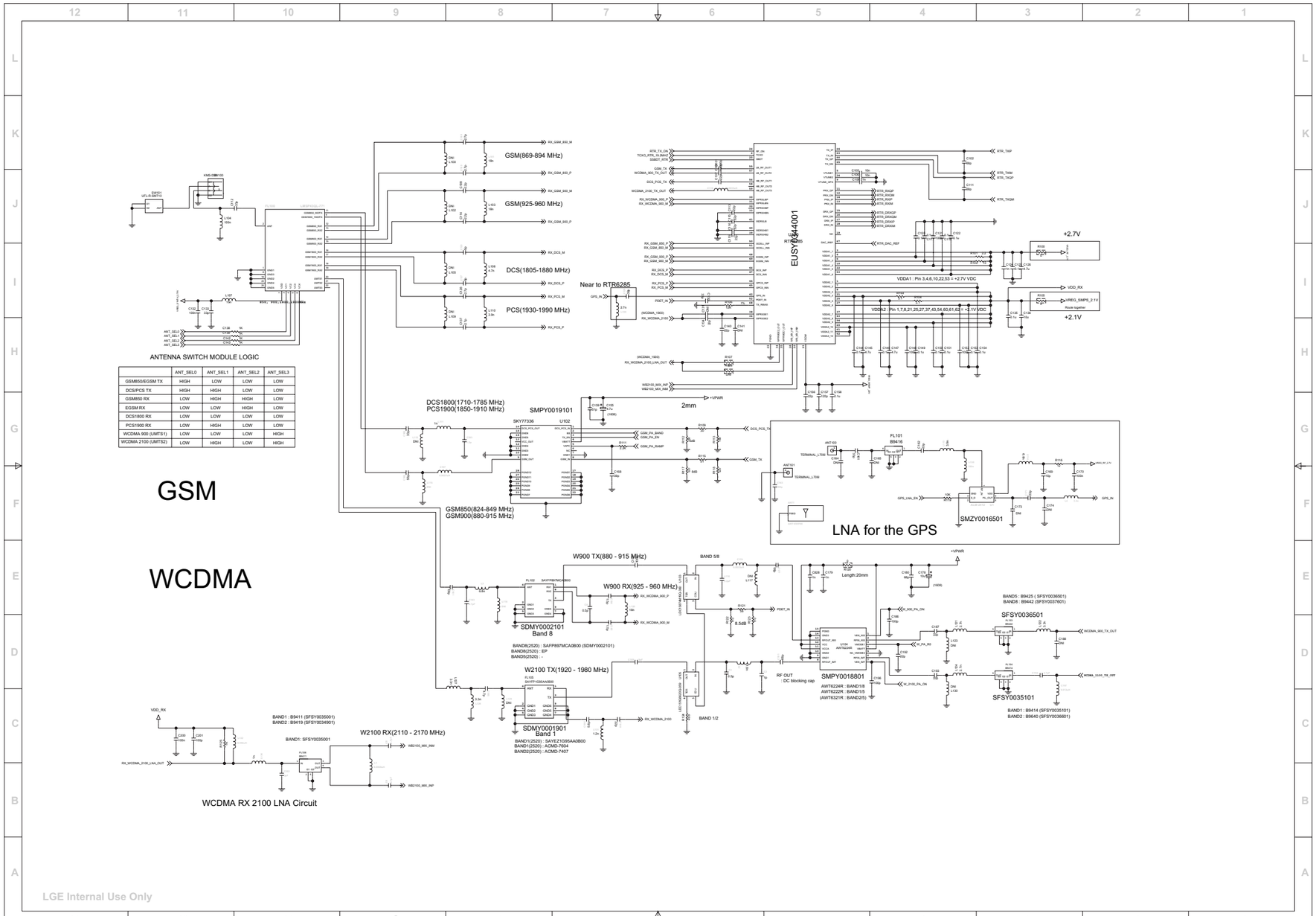
Camera / LCD Block



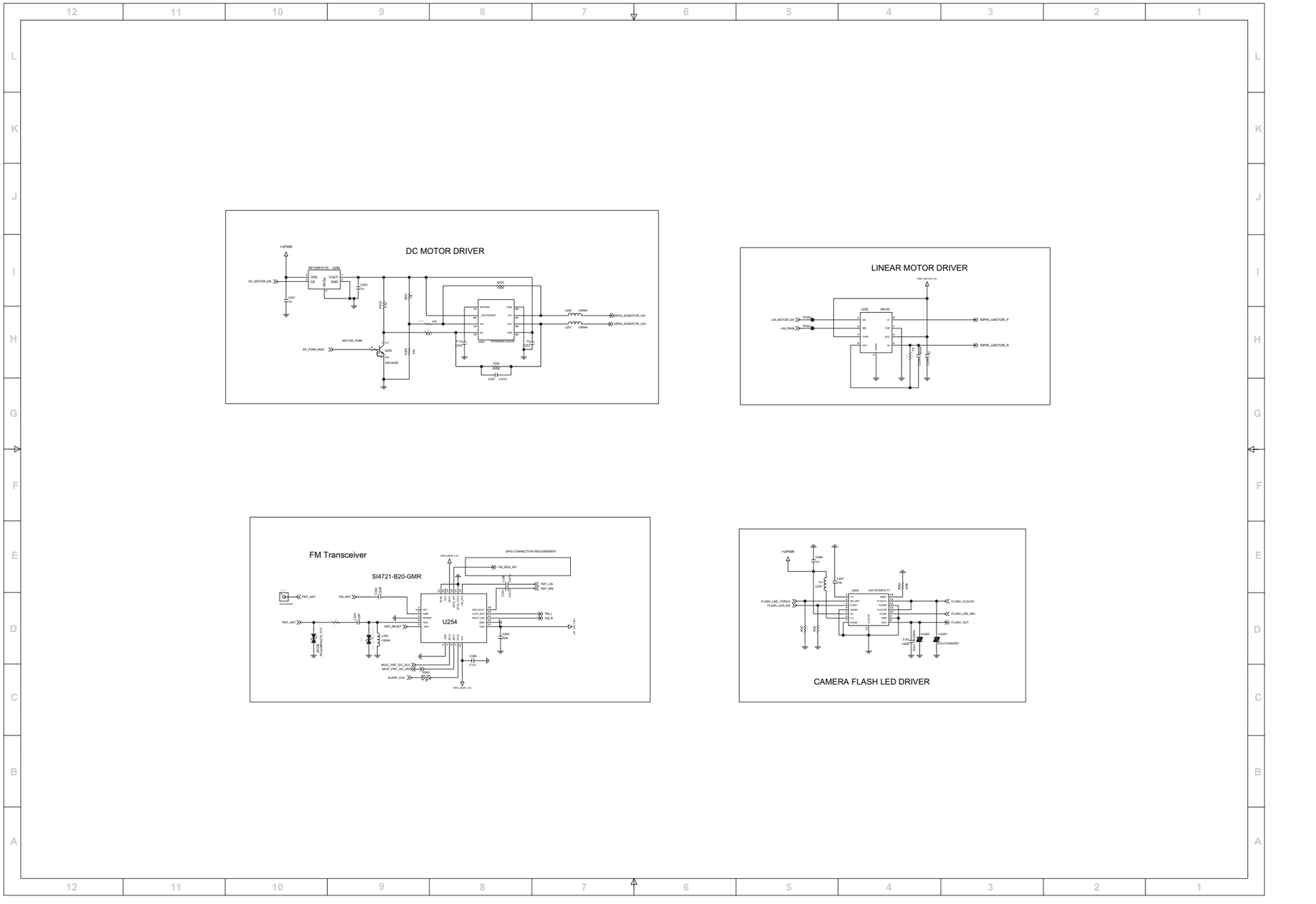
PMIC / CONNECTION / POWER Block



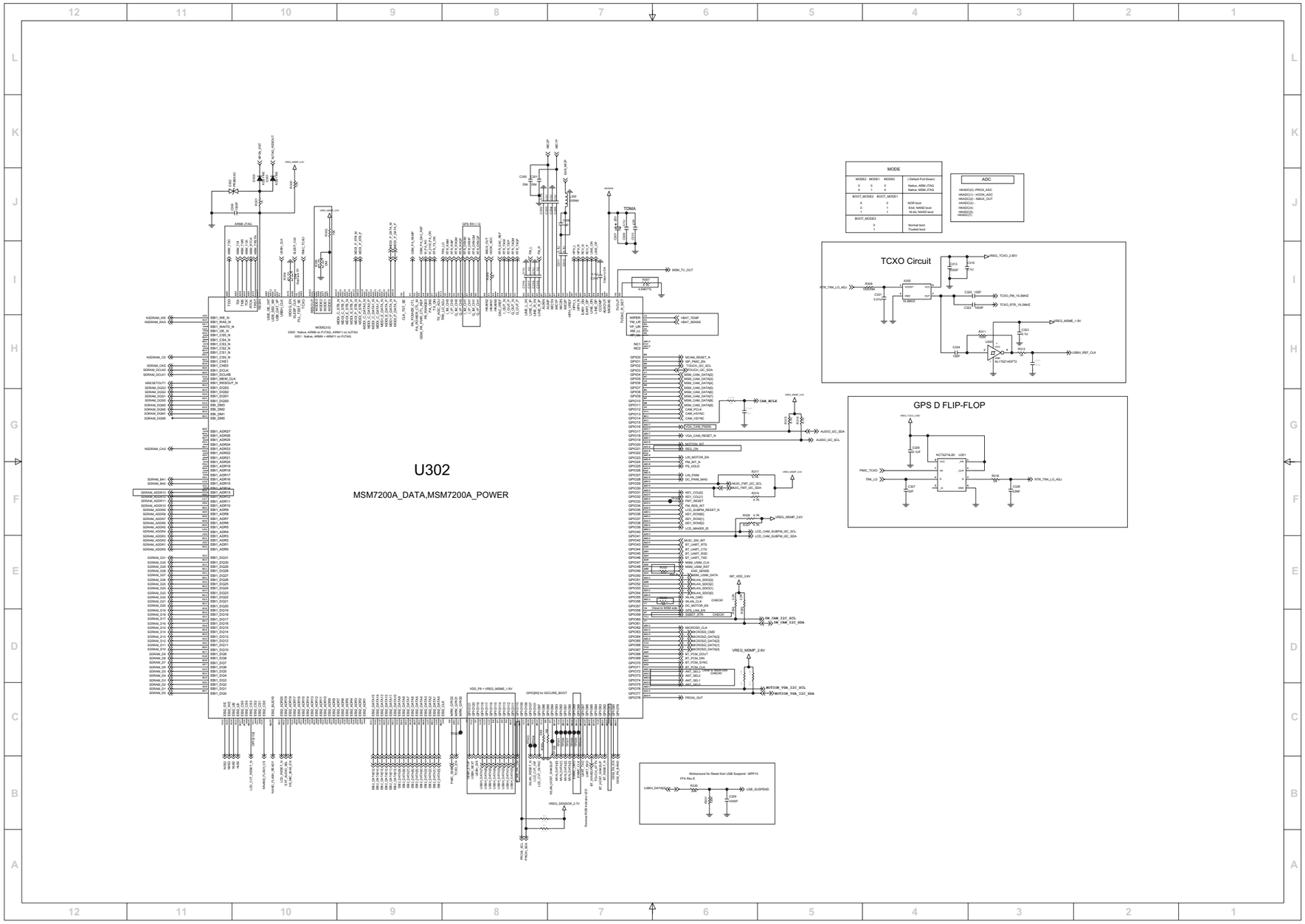
7. CIRCUIT DIAGRAM



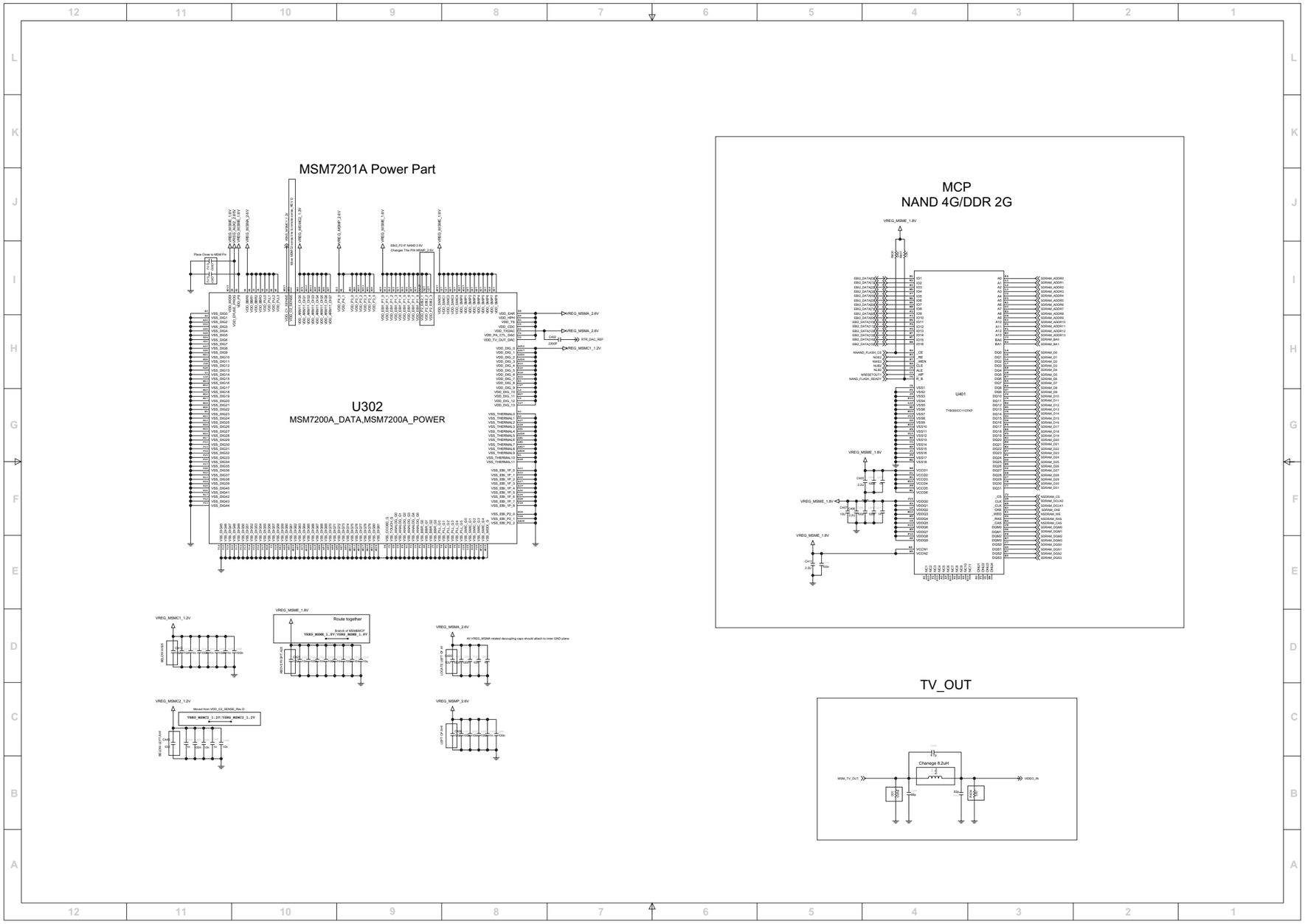
7. CIRCUIT DIAGRAM



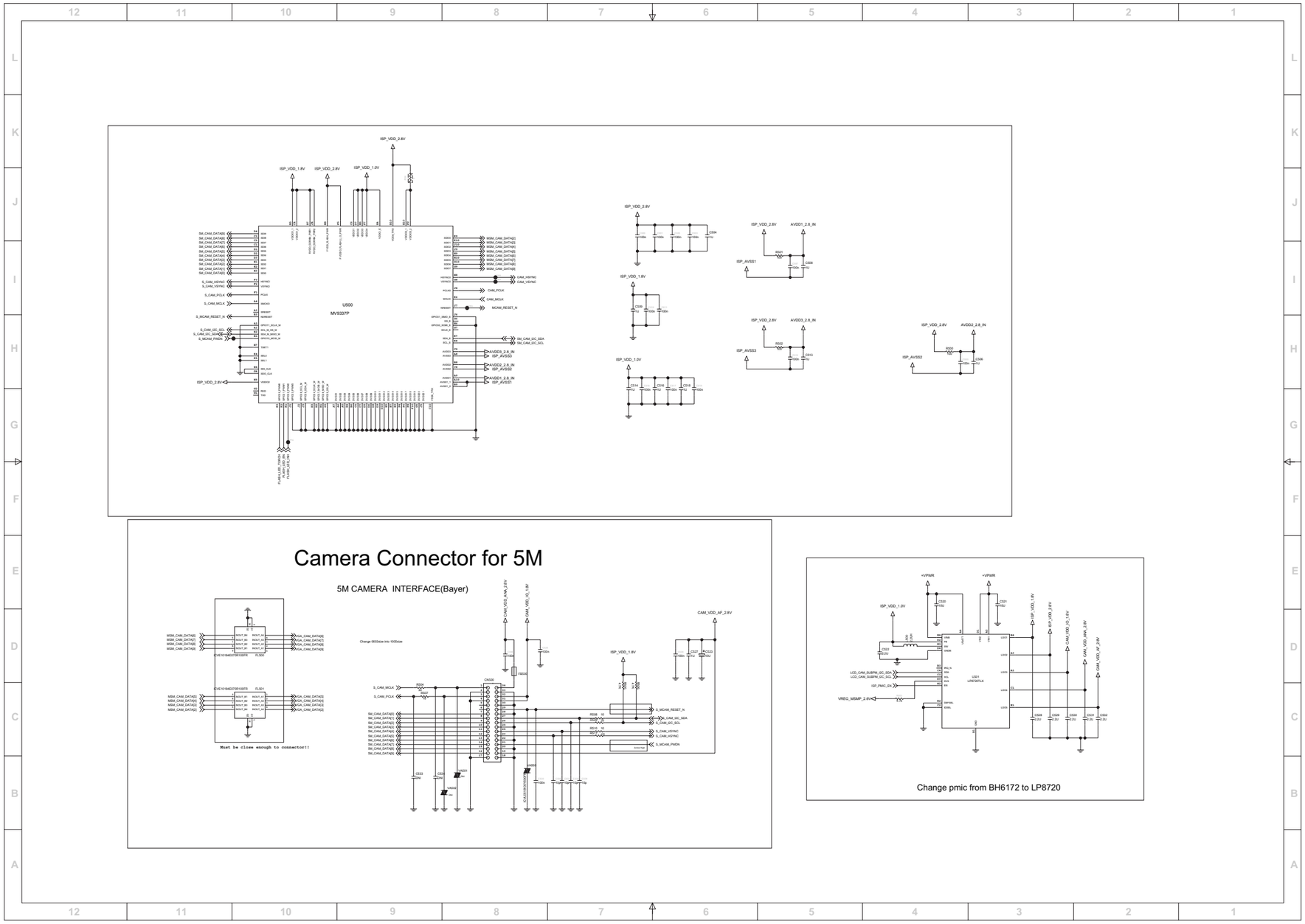
7. CIRCUIT DIAGRAM



7. CIRCUIT DIAGRAM



7. CIRCUIT DIAGRAM

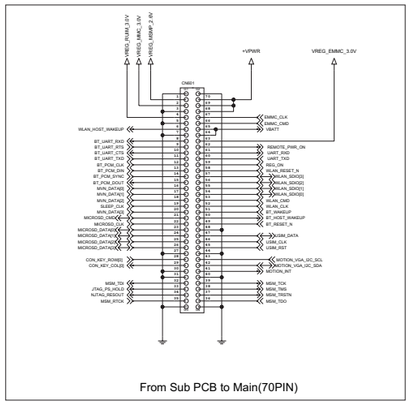


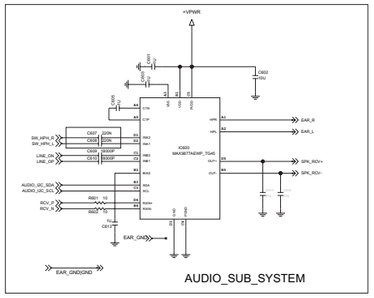
Camera Connector for 5M

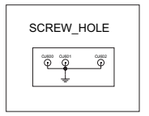
5M CAMERA INTERFACE(Bayer)

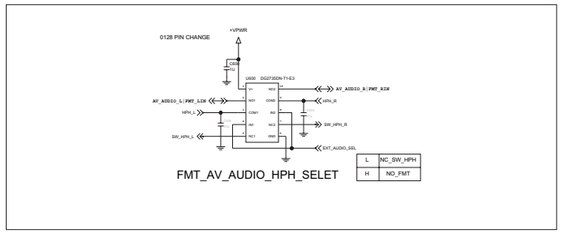
Change pmic from BH6172 to LP8720

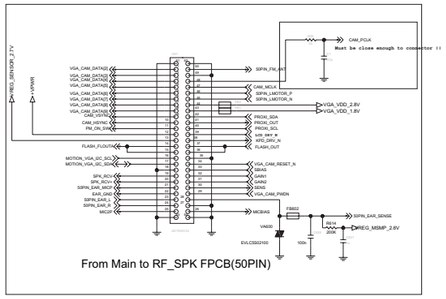
7. CIRCUIT DIAGRAM

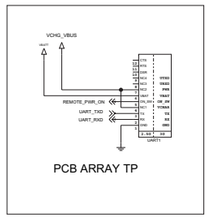


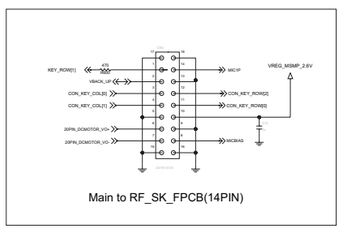


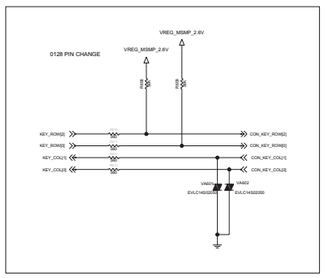


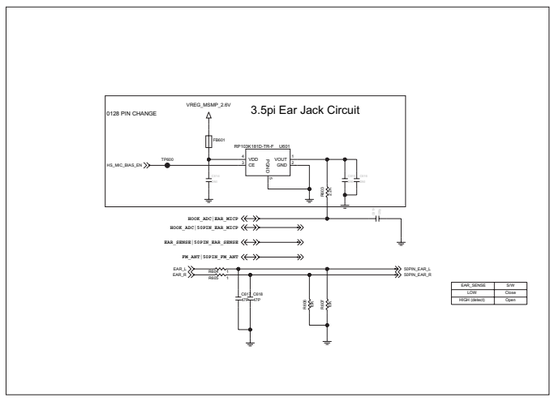




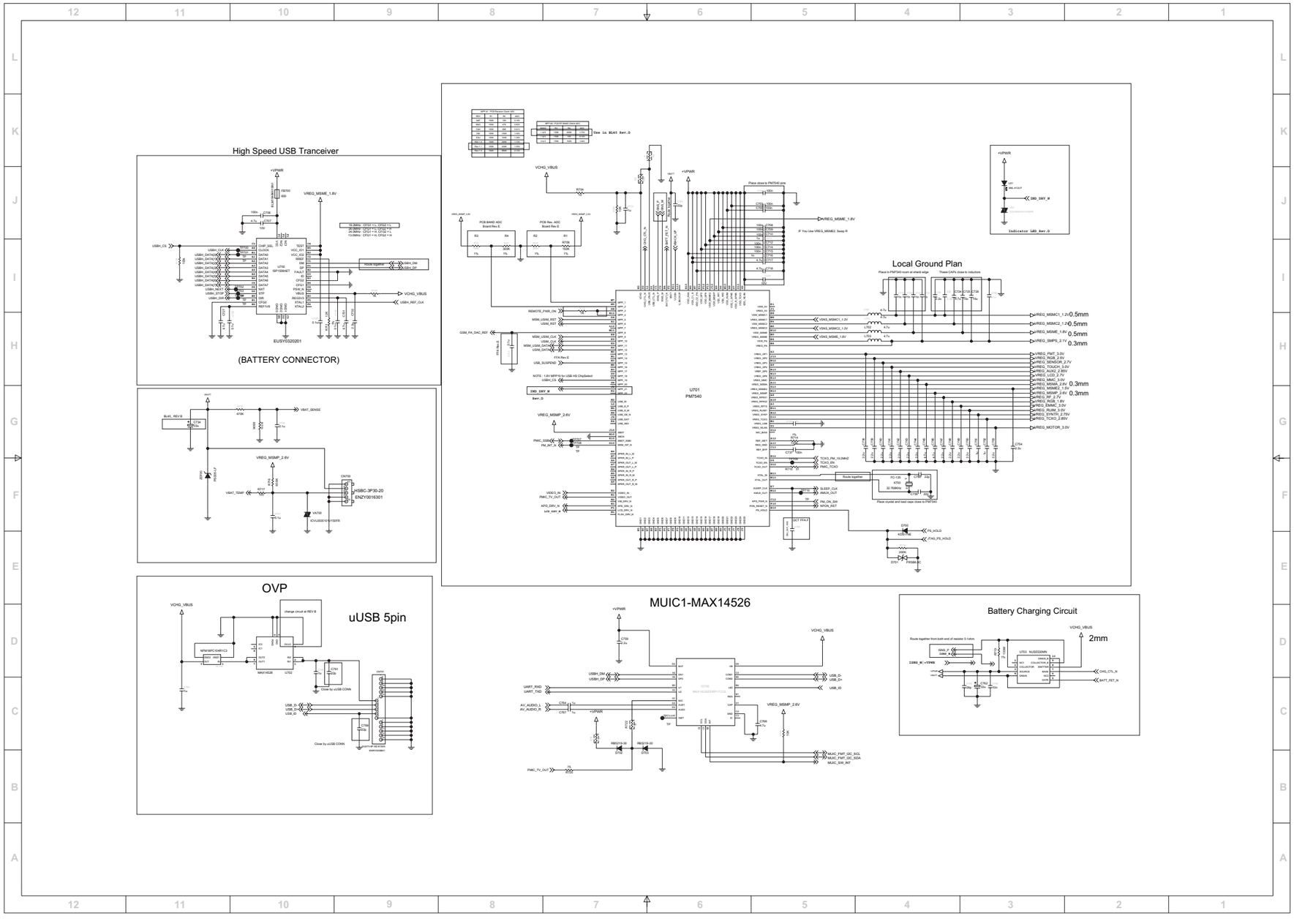




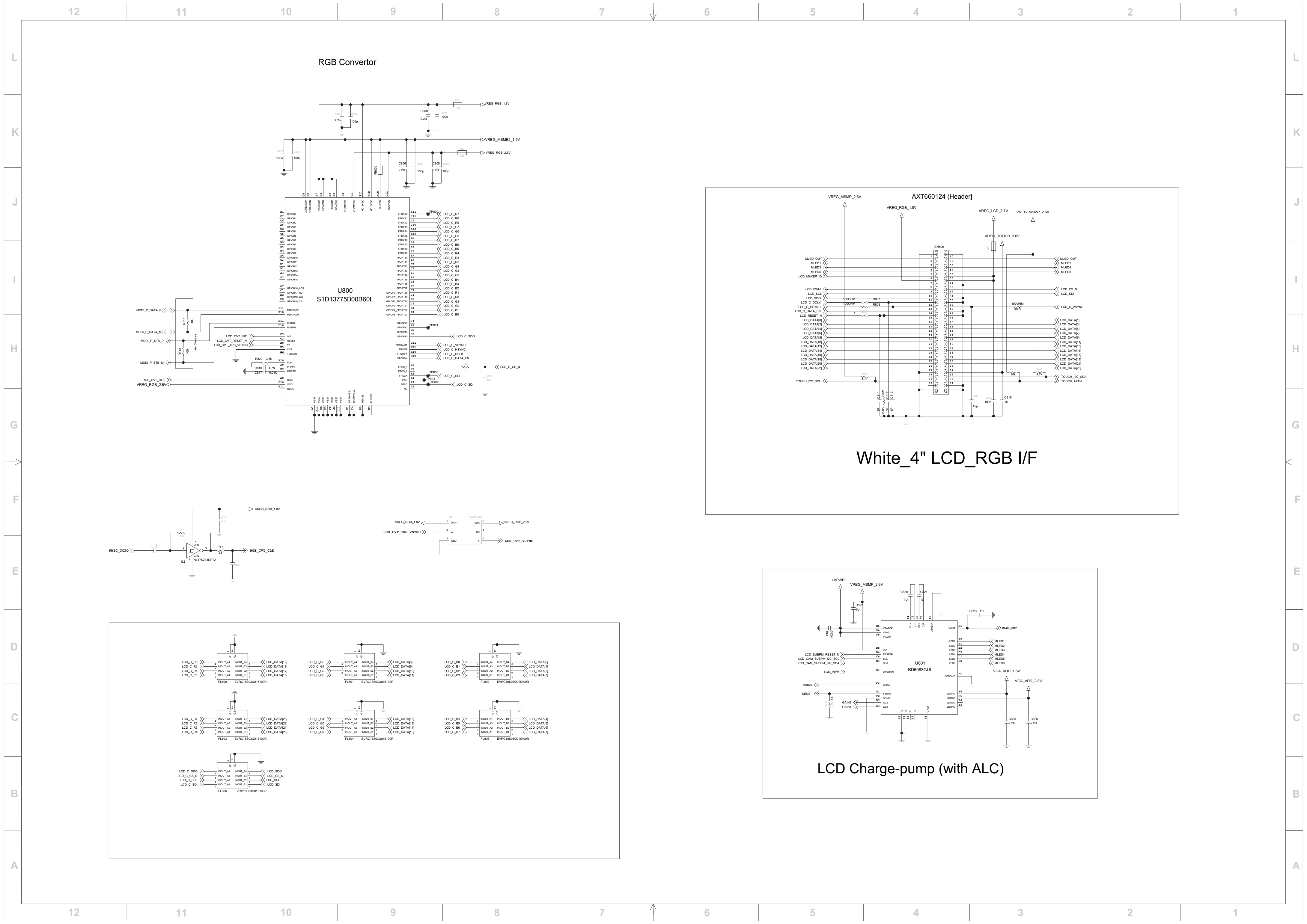




7. CIRCUIT DIAGRAM

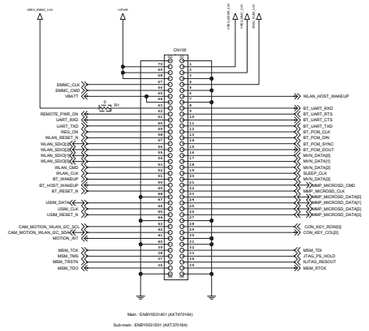


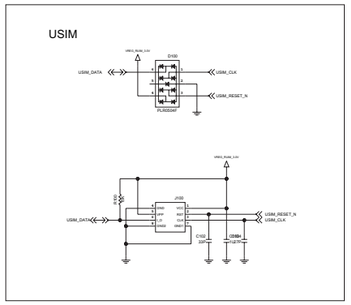
7. CIRCUIT DIAGRAM

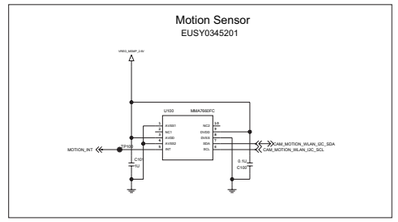


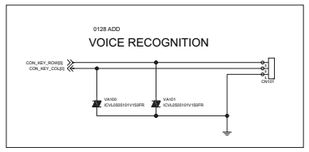
7. CIRCUIT DIAGRAM

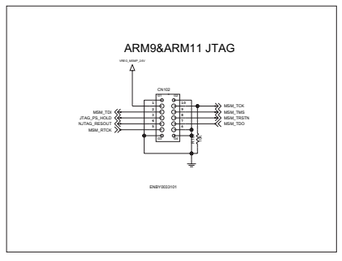
LGE Internal Use Only

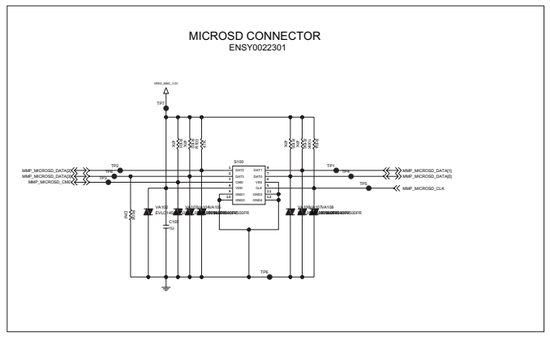


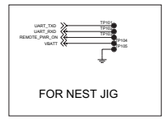


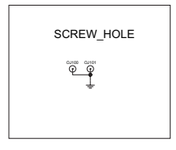










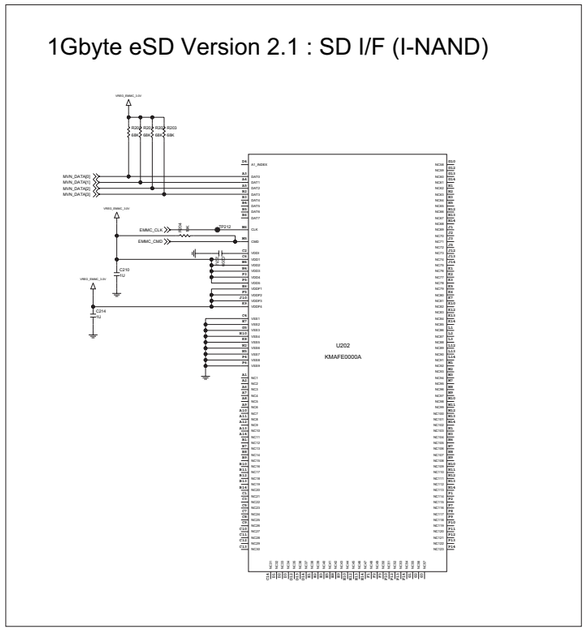


7. CIRCUIT DIAGRAM

LGE Internal Use Only

WLAN+BT+FM

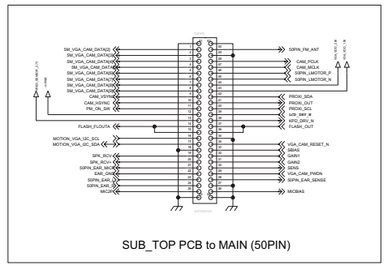
1Gbyte eSD Version 2.1 : SD I/F (I-NAND)



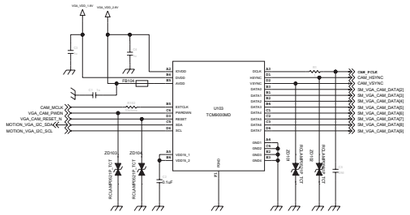
7. CIRCUIT DIAGRAM

SUB_TOP PCB

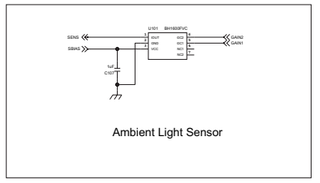
LGE Internal Use Only



SUB_TOP PCB to MAIN (50PIN)

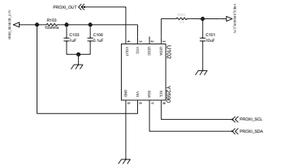


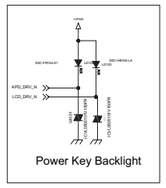
VGA CAMERA [SVCY0019901]



Ambient Light Sensor

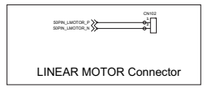
Proximity Sensor



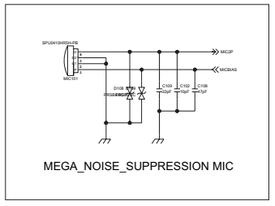


Power Key Backlight

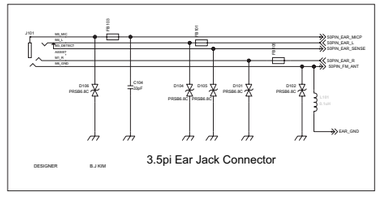
CAMERA FLASH LED



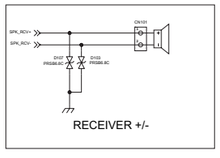
LINEAR MOTOR Connector



MEGA_NOISE_SUPPRESSION MIC



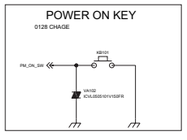
3.5pi Ear Jack Connector



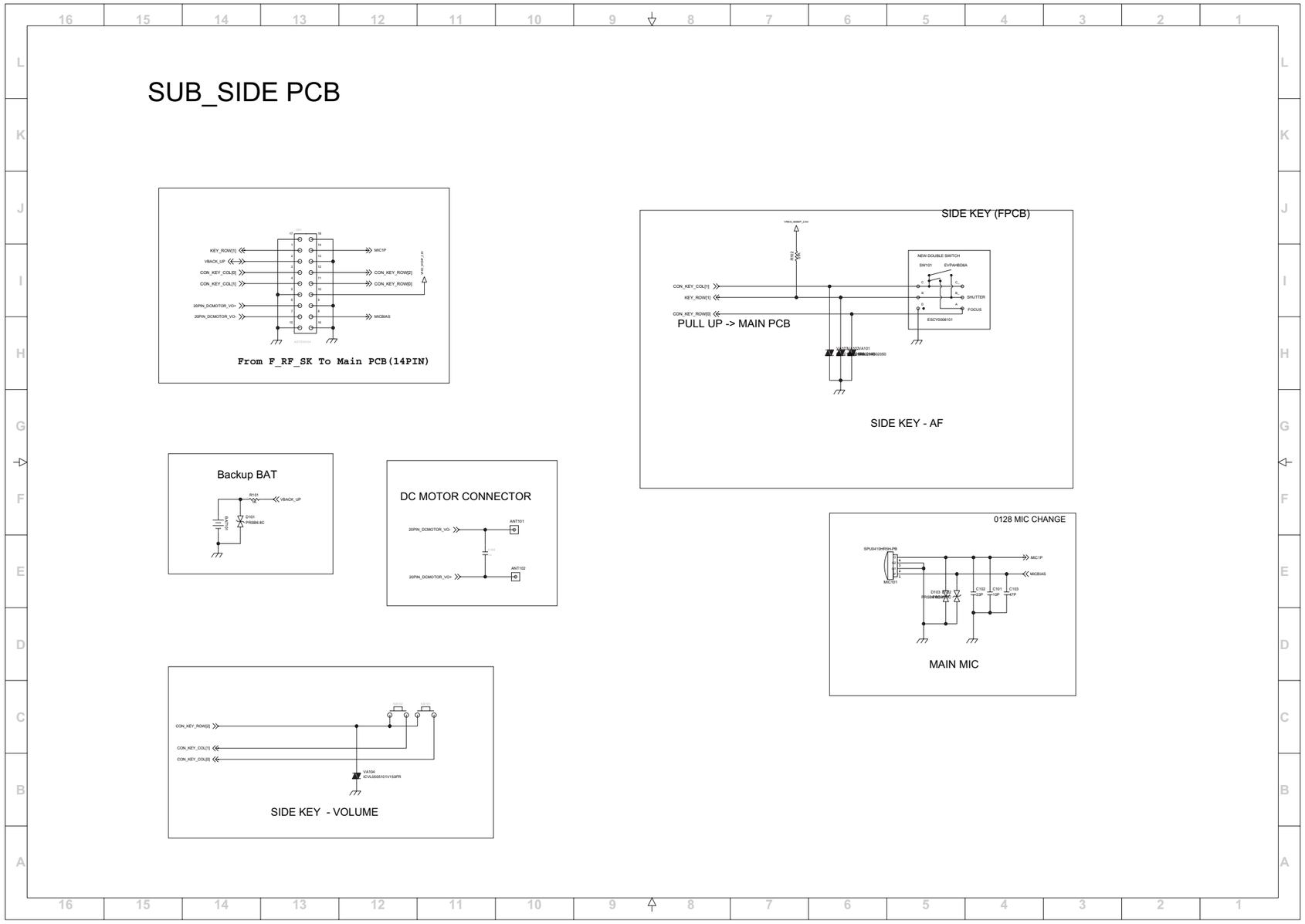
RECEIVER +/-

POWER ON KEY

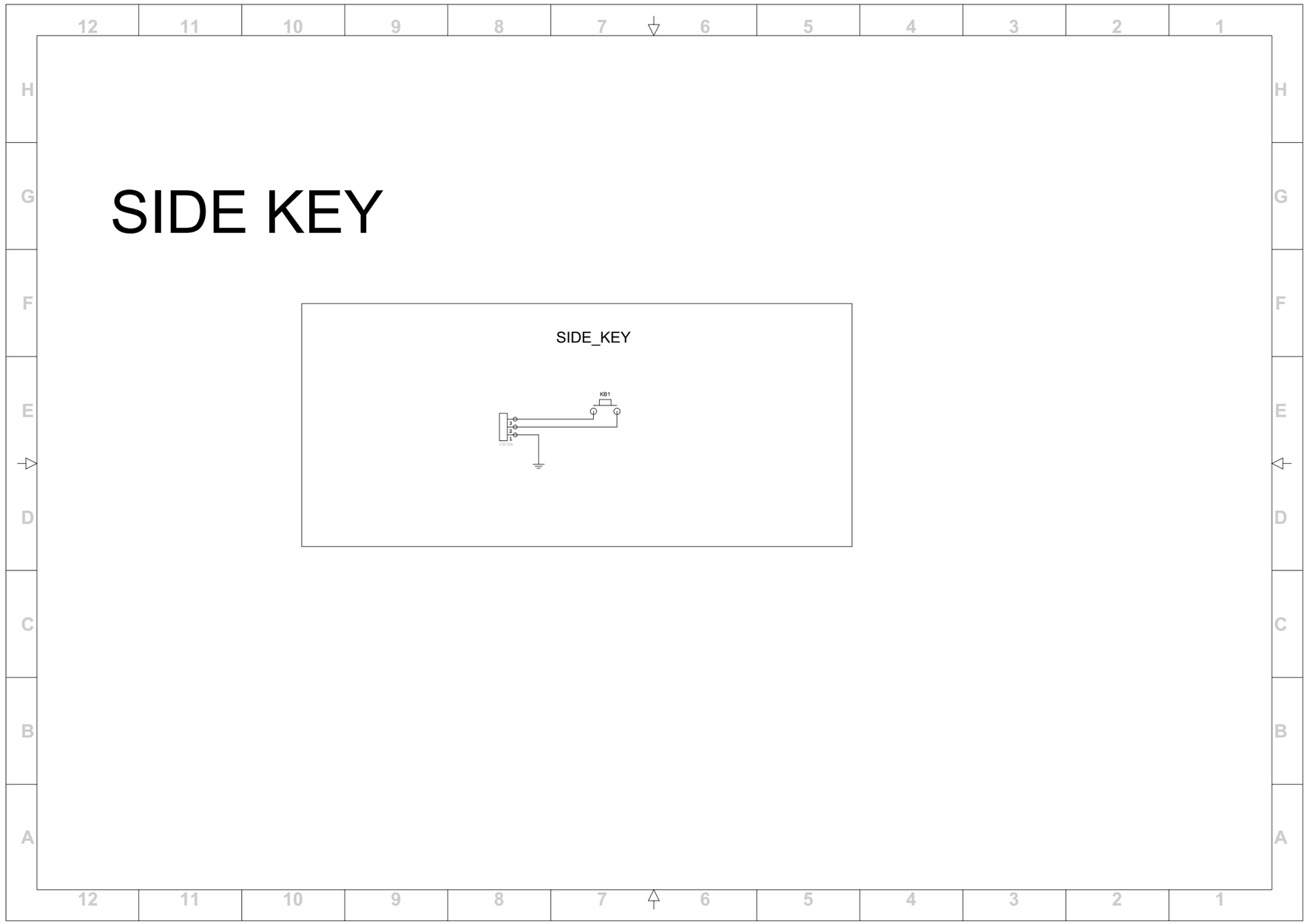
0128 CHANGE



7. CIRCUIT DIAGRAM

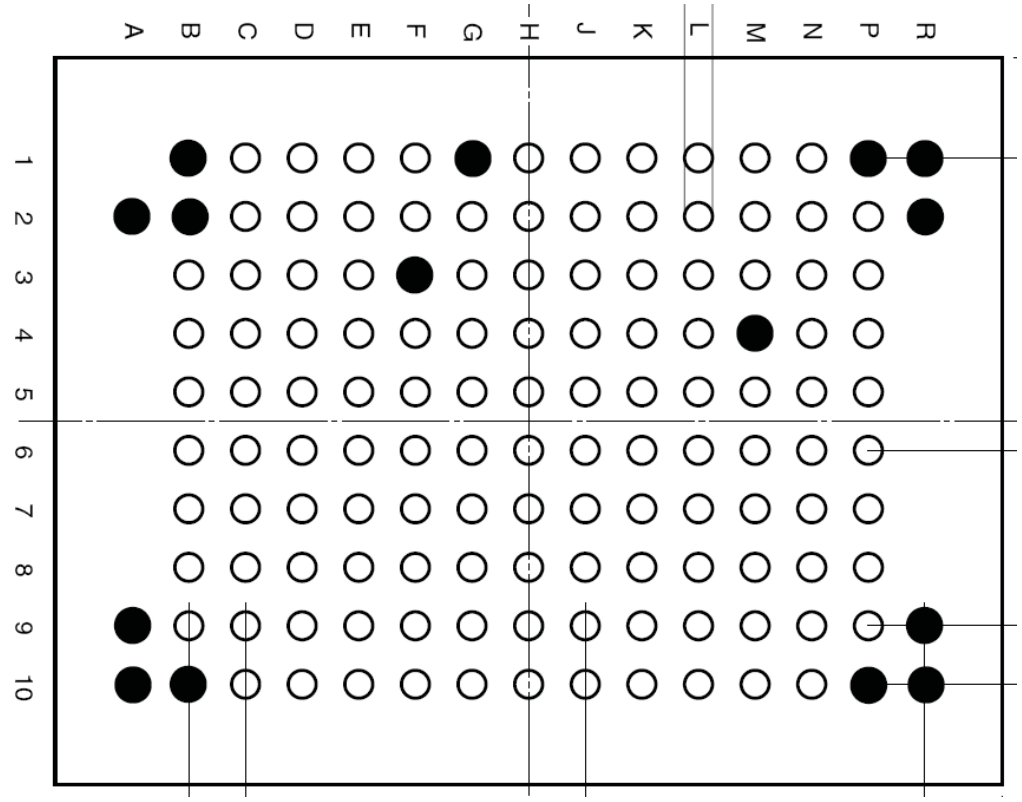


7. CIRCUIT DIAGRAM



8. BGA Pin Map

MCP(TOP View)

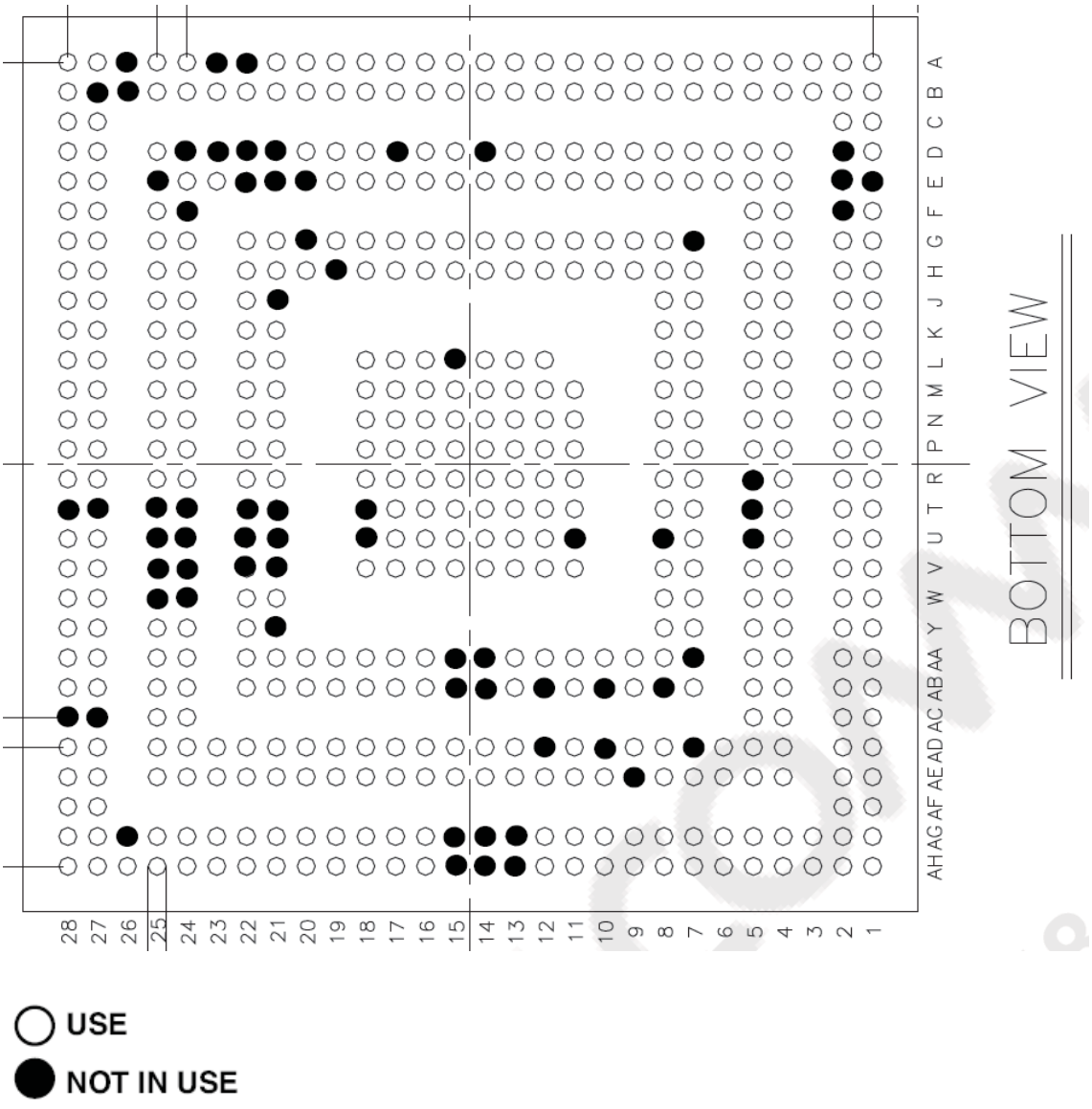


○ USE

● NOT IN USE

8. BGA Pin Map

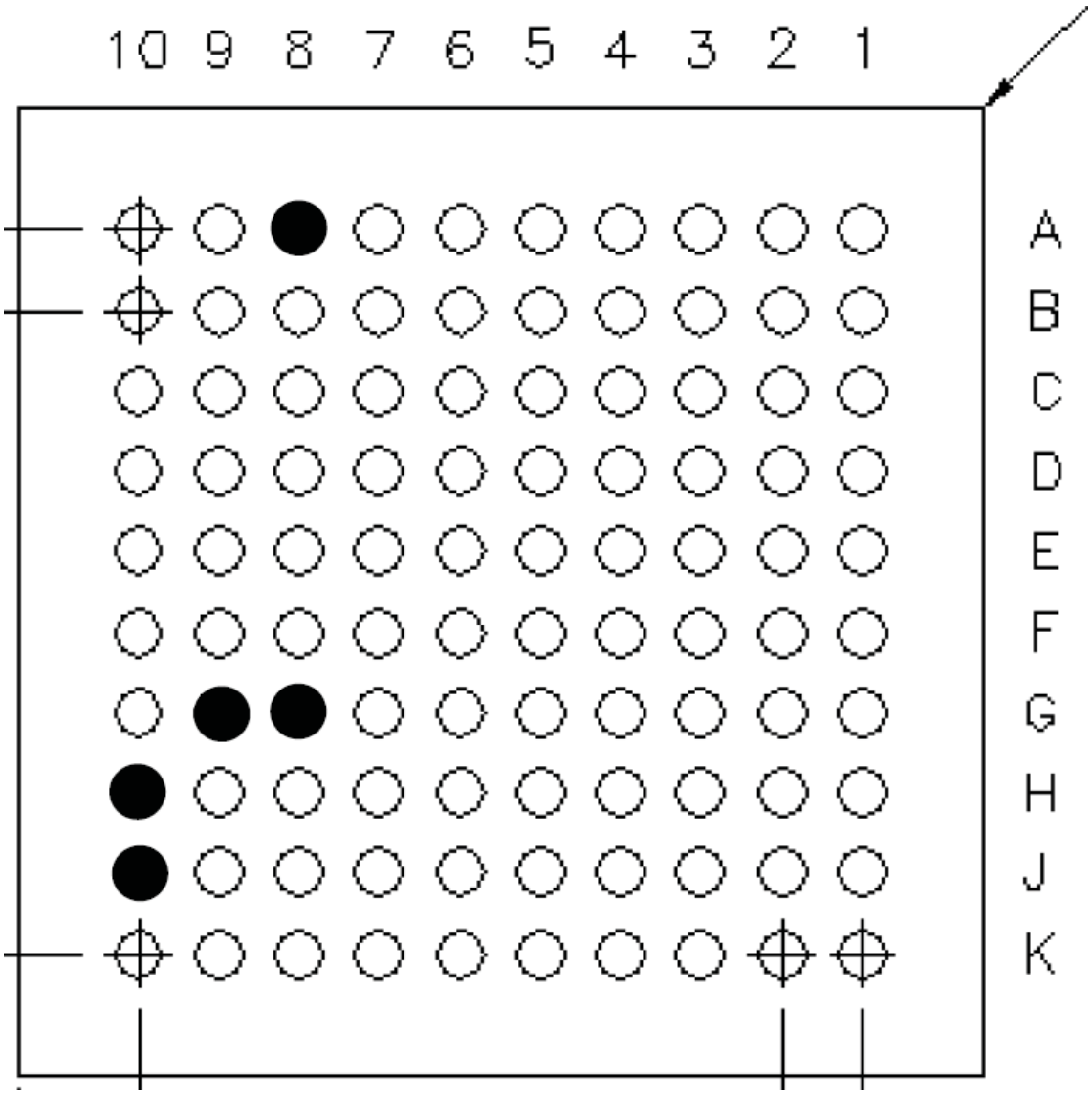
MSM7200A



○ USE

● NOT IN USE

MV9337(Bottom view)

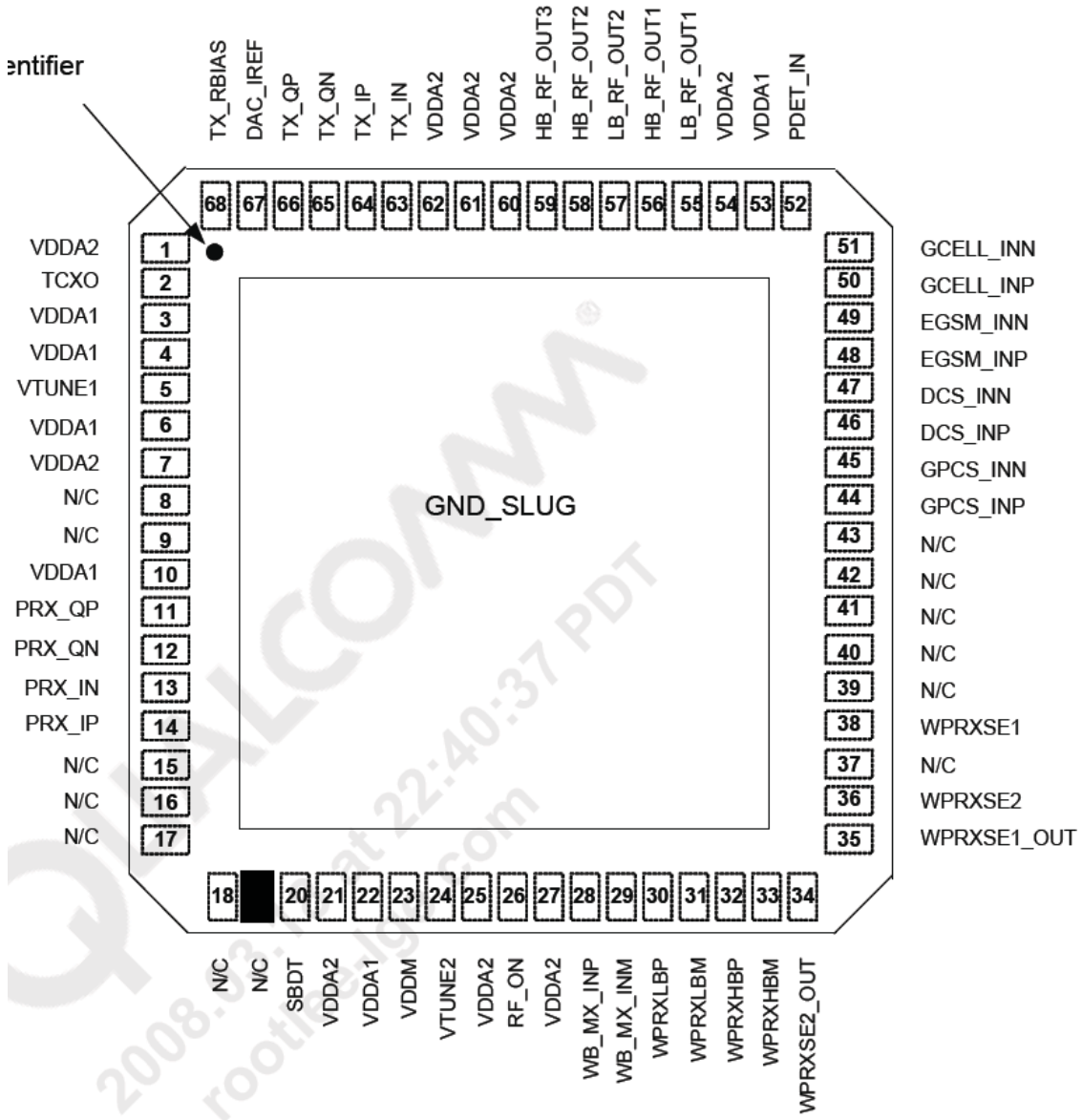


○ USE

● NOT IN USE

8. BGA Pin Map

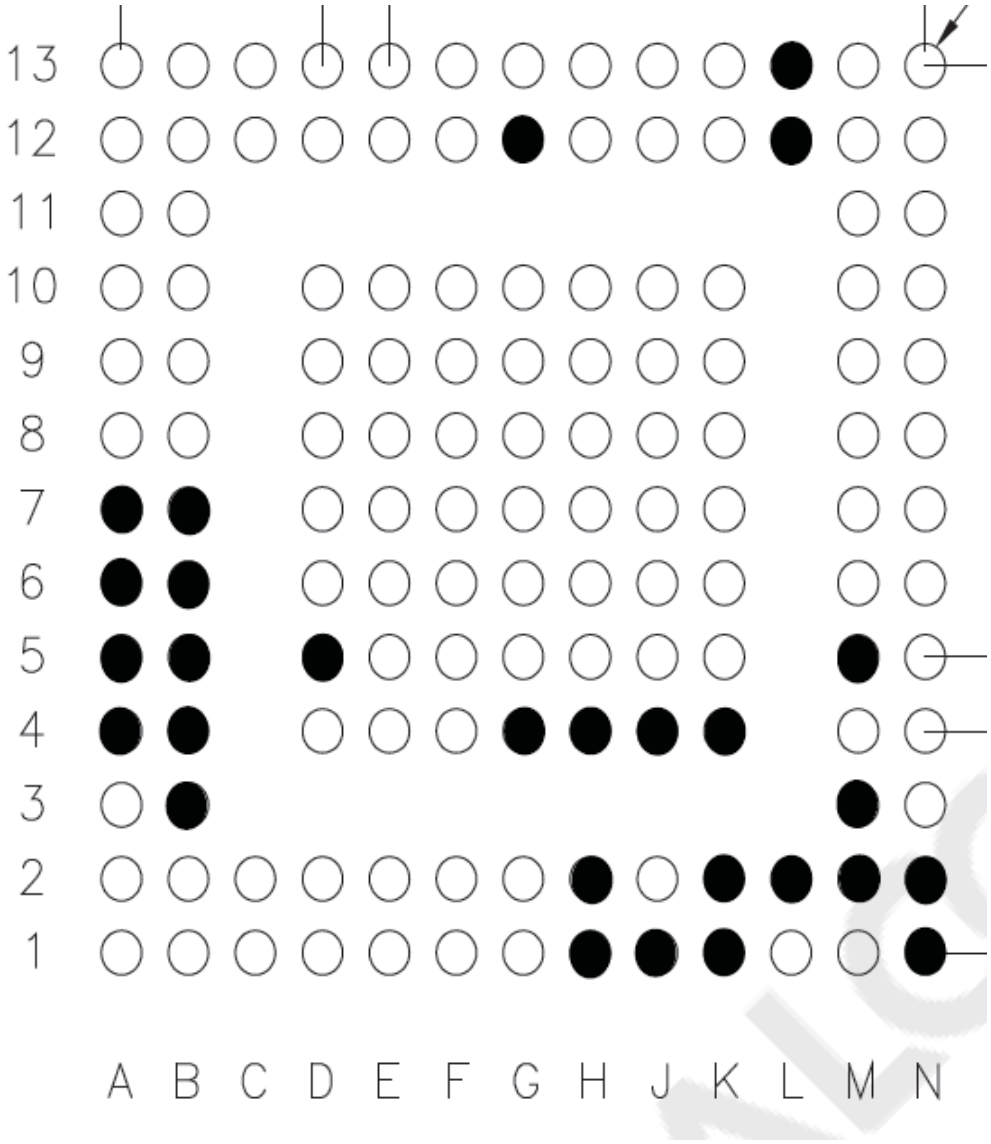
RTR6285(Top View)



○ USE

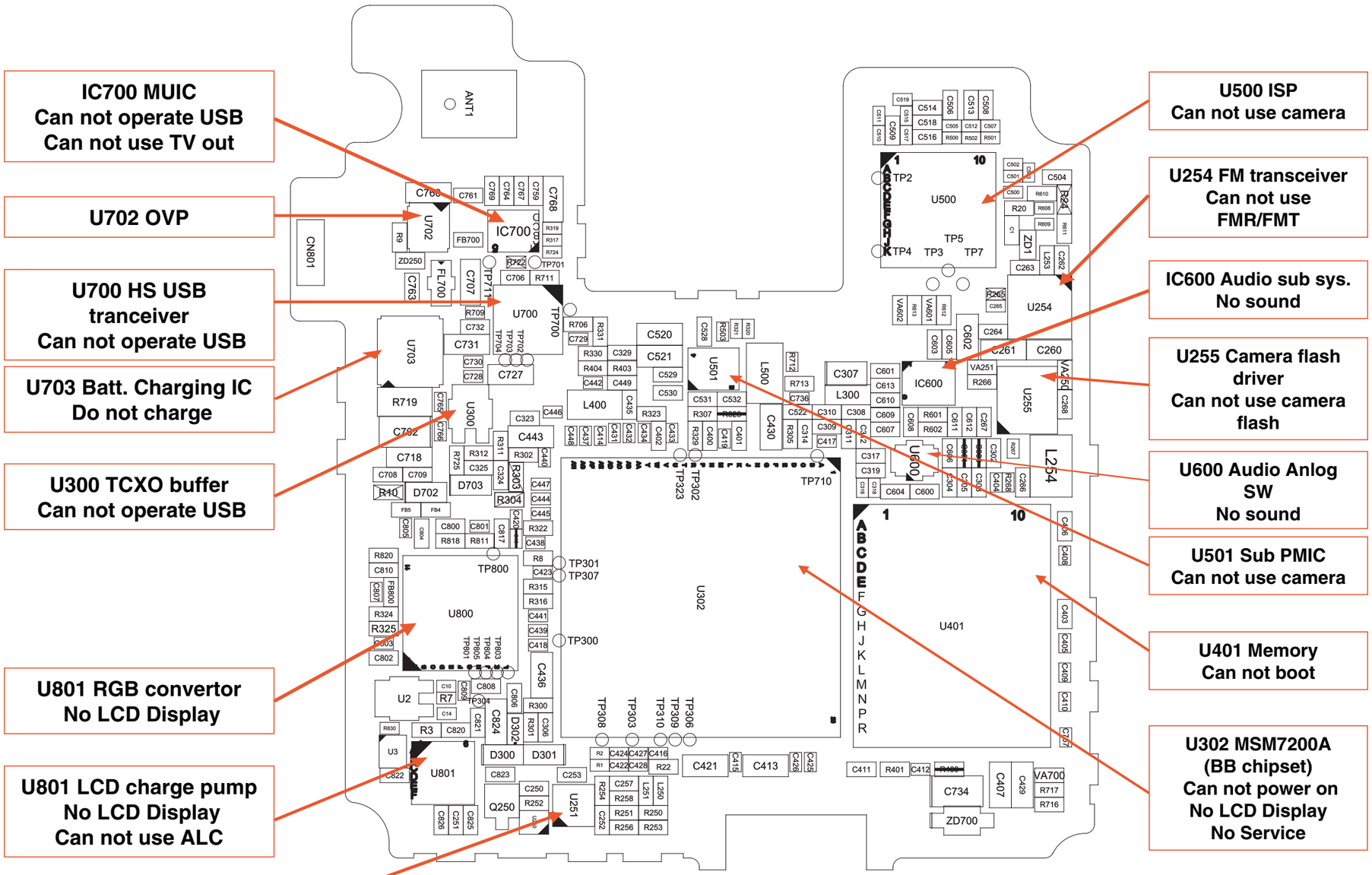
● NOT IN USE

PM7540(PMIC)

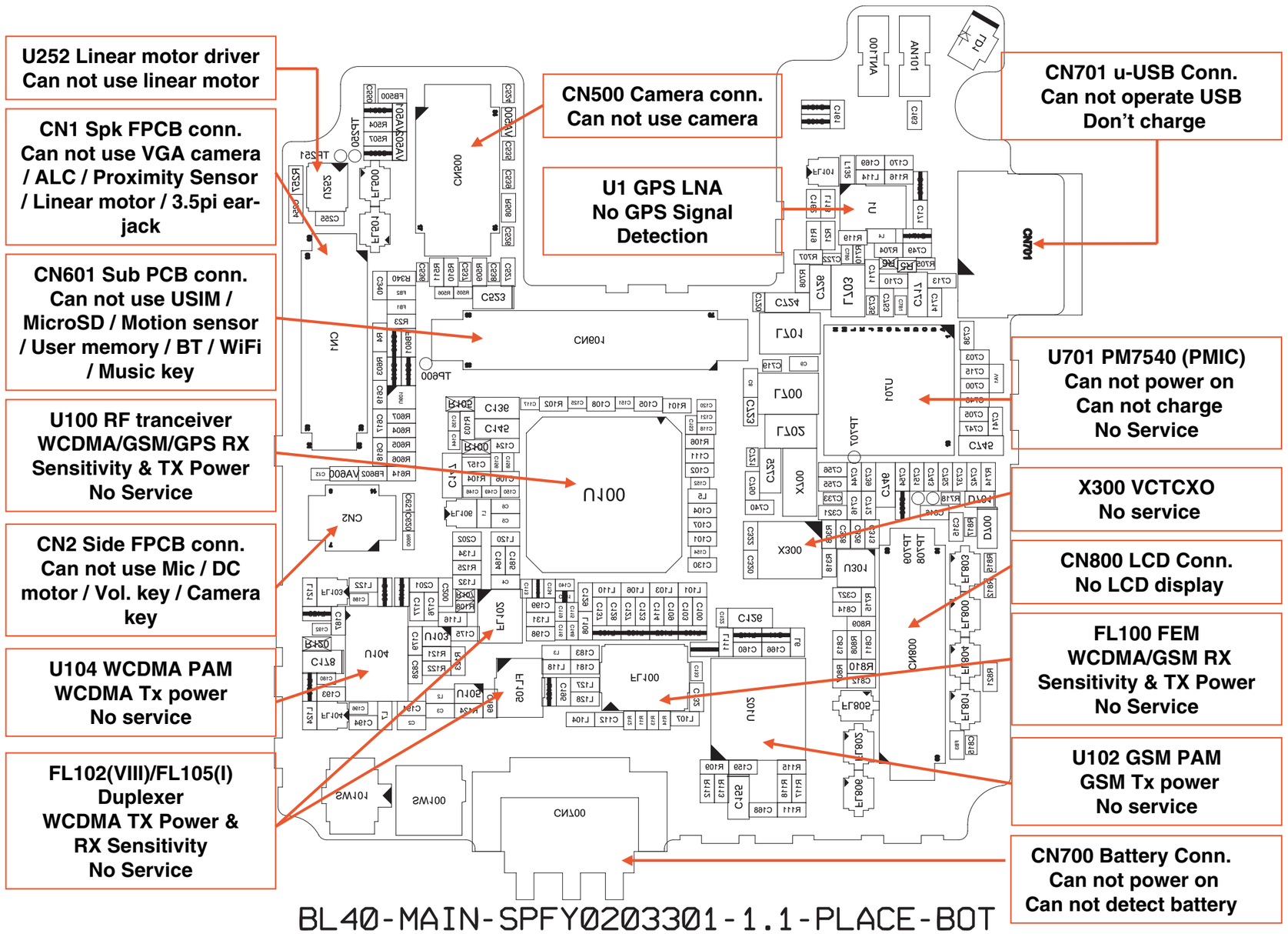


○ USE
● NOT IN USE

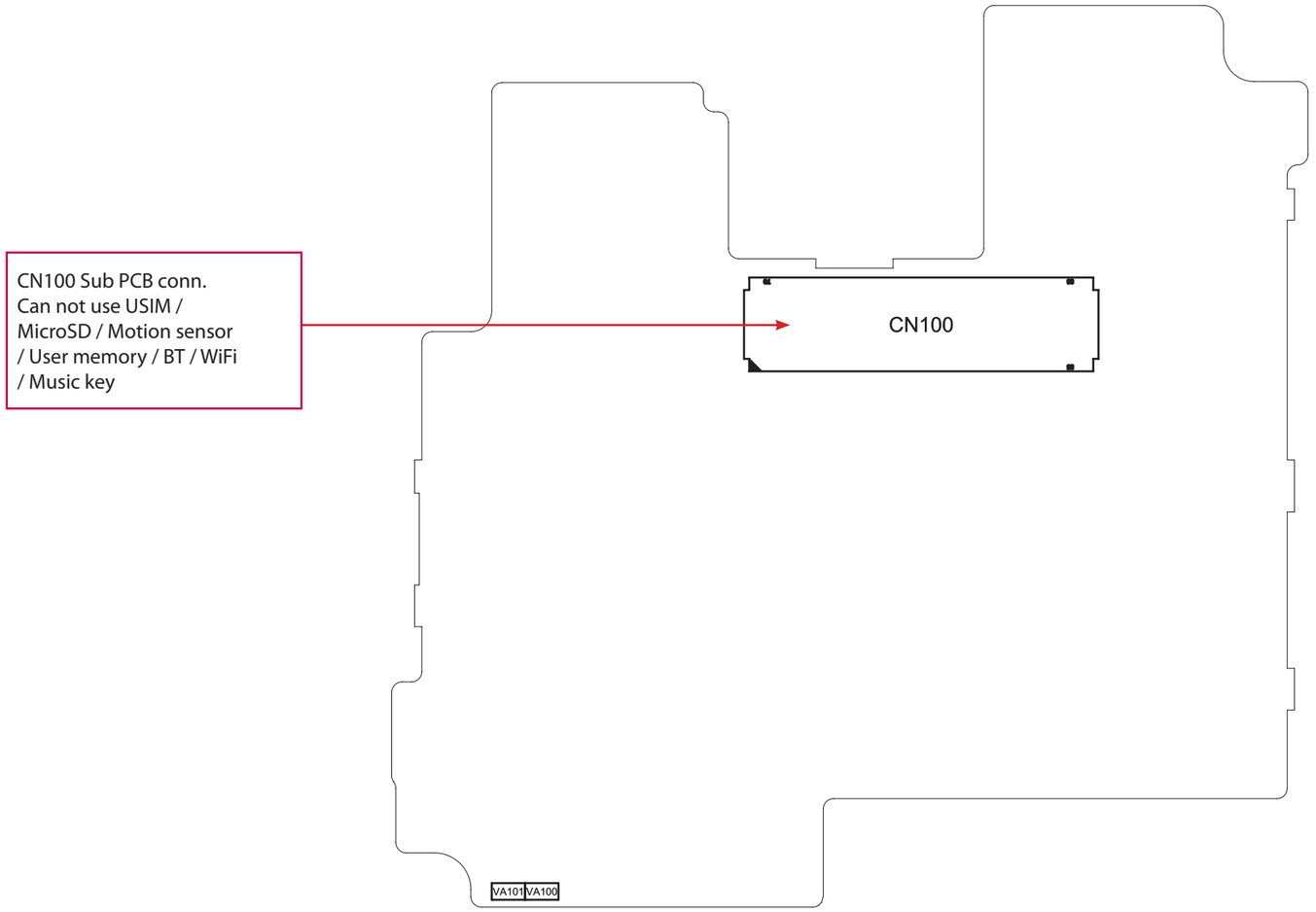
9. PCB LAYOUT



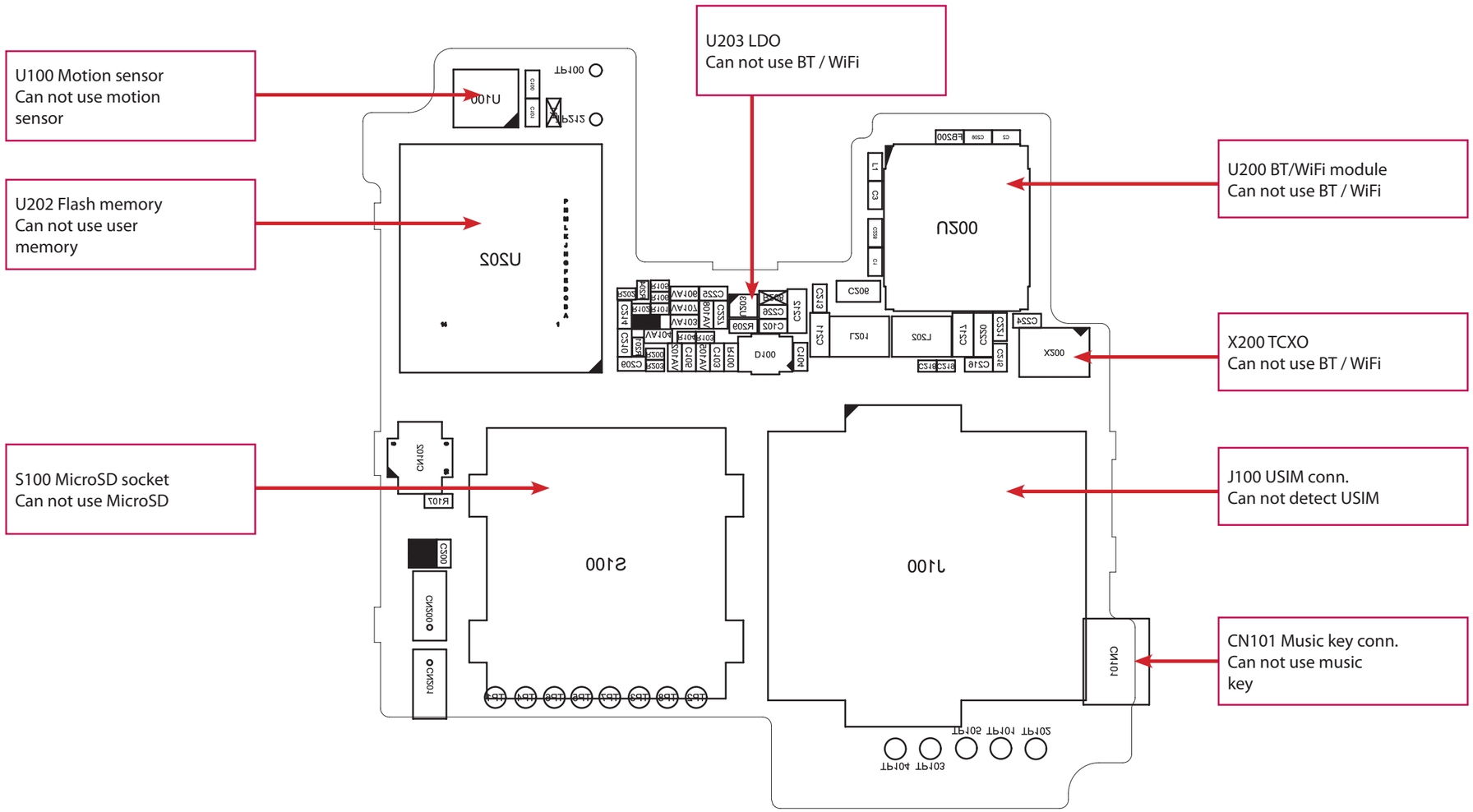
9. PCB LAYOUT



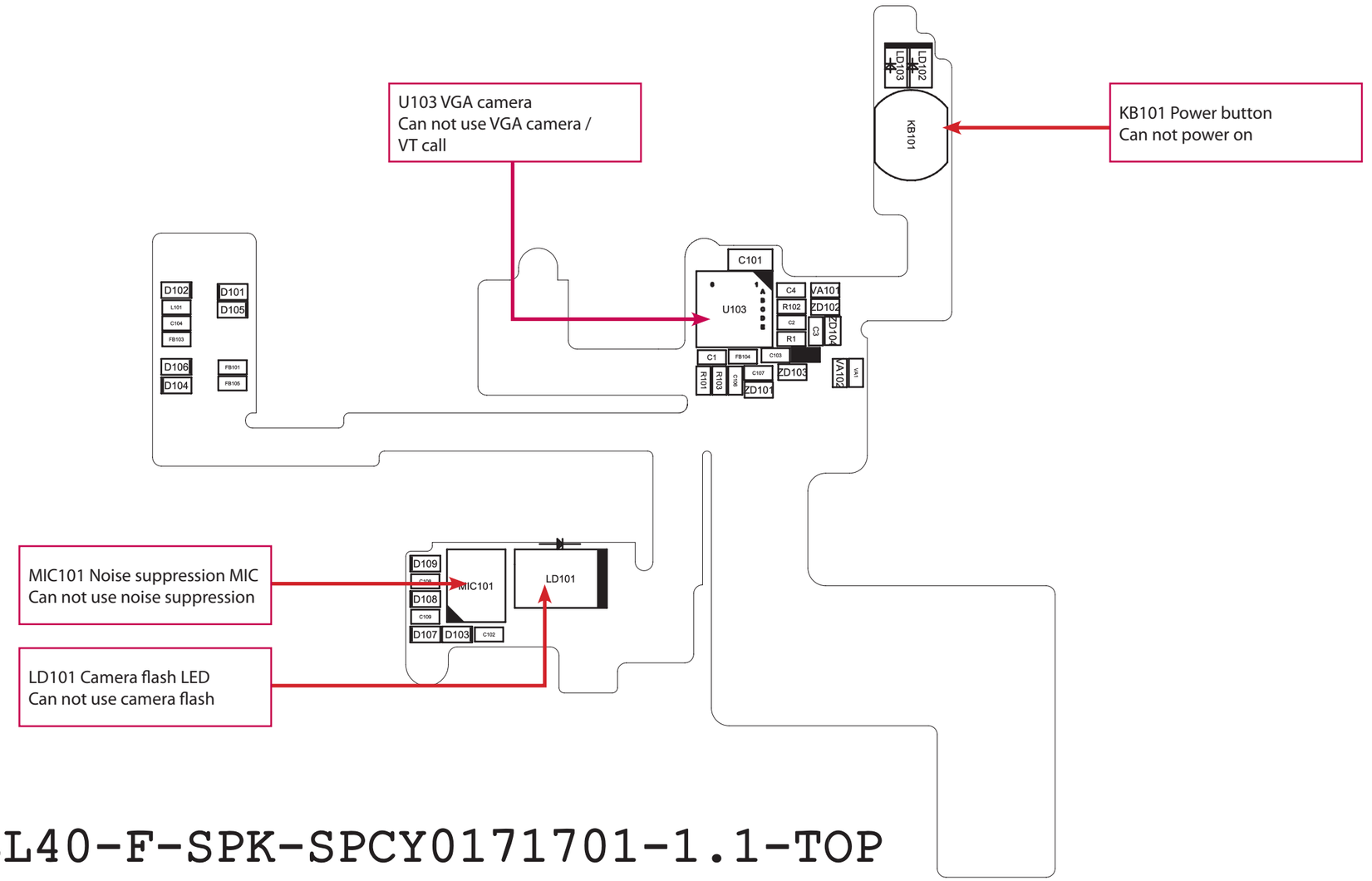
9. PCB LAYOUT



9. PCB LAYOUT

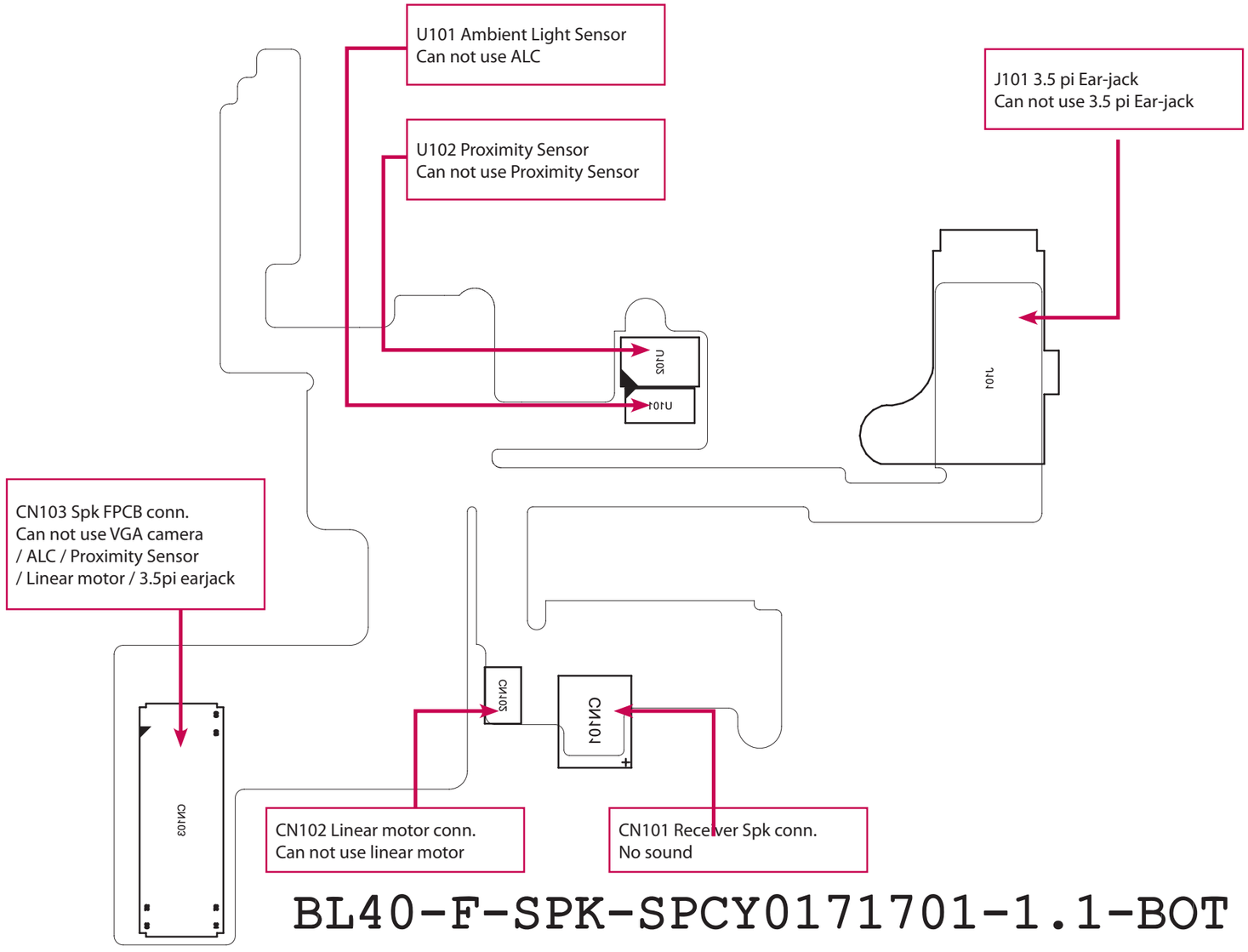


9. PCB LAYOUT



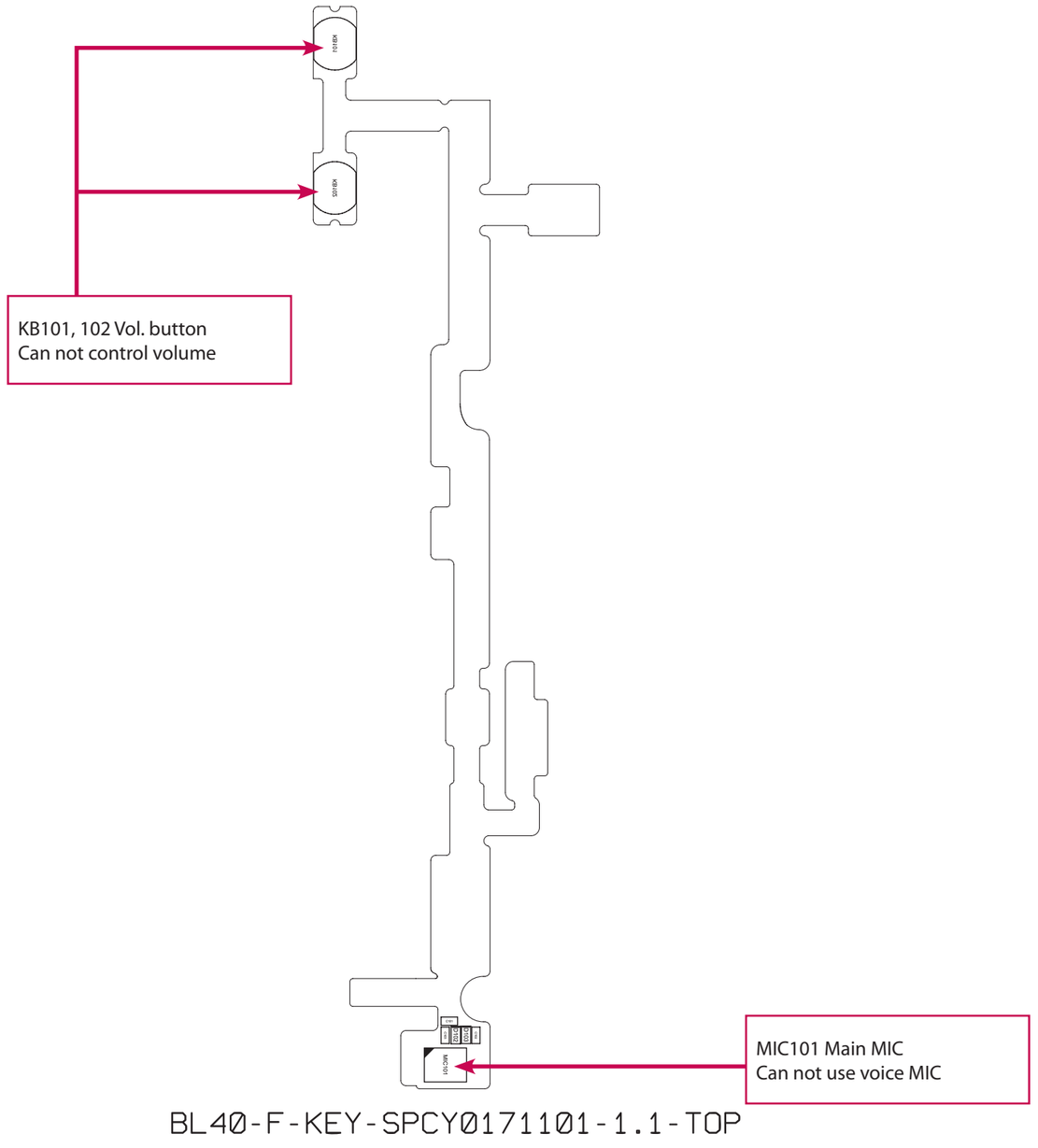
BL40-F-SPK-SPCY0171701-1.1-TOP

9. PCB LAYOUT

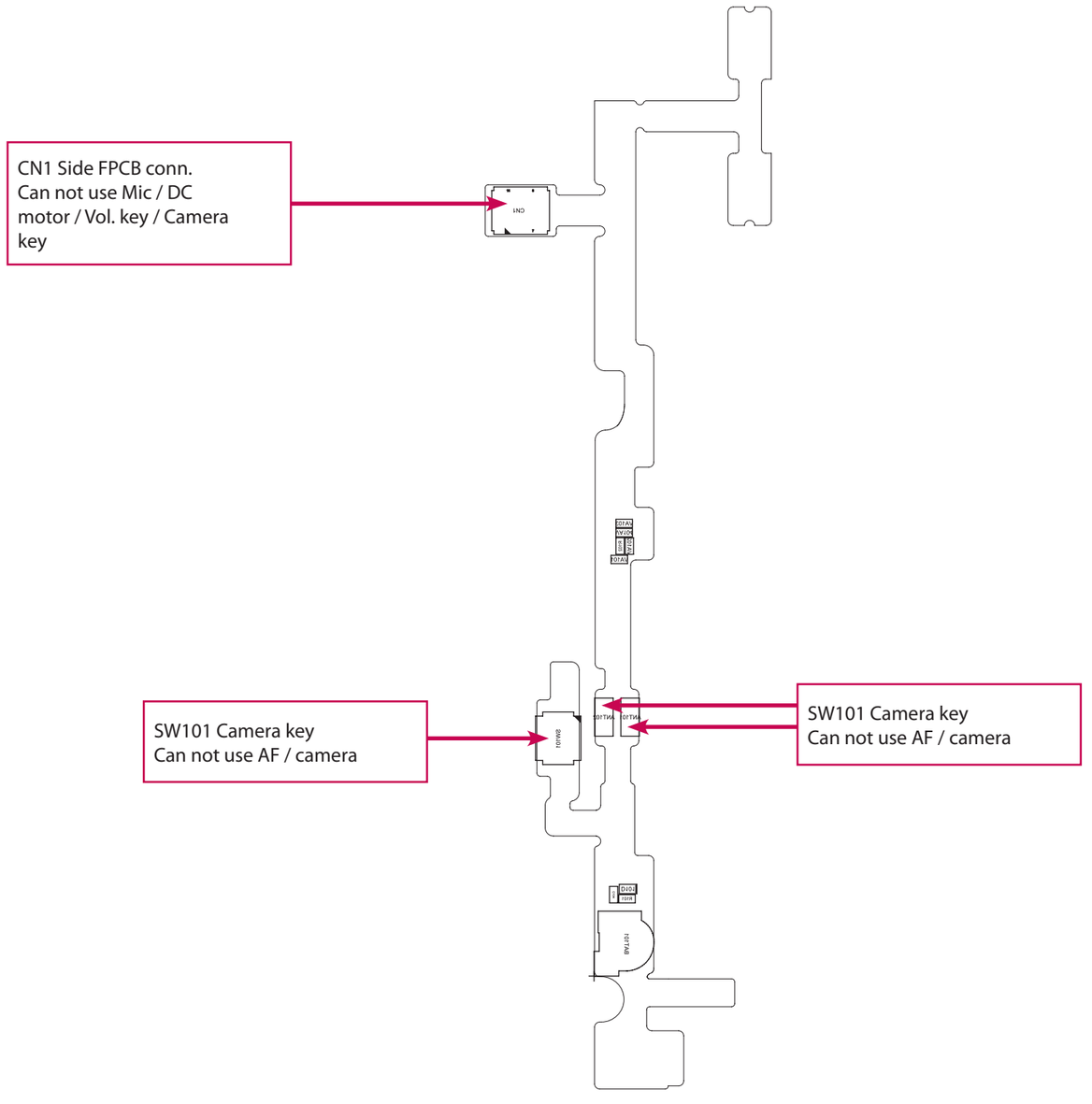


BL40-F-SPK-SPCY0171701-1.1-BOT

9. PCB LAYOUT



9. PCB LAYOUT

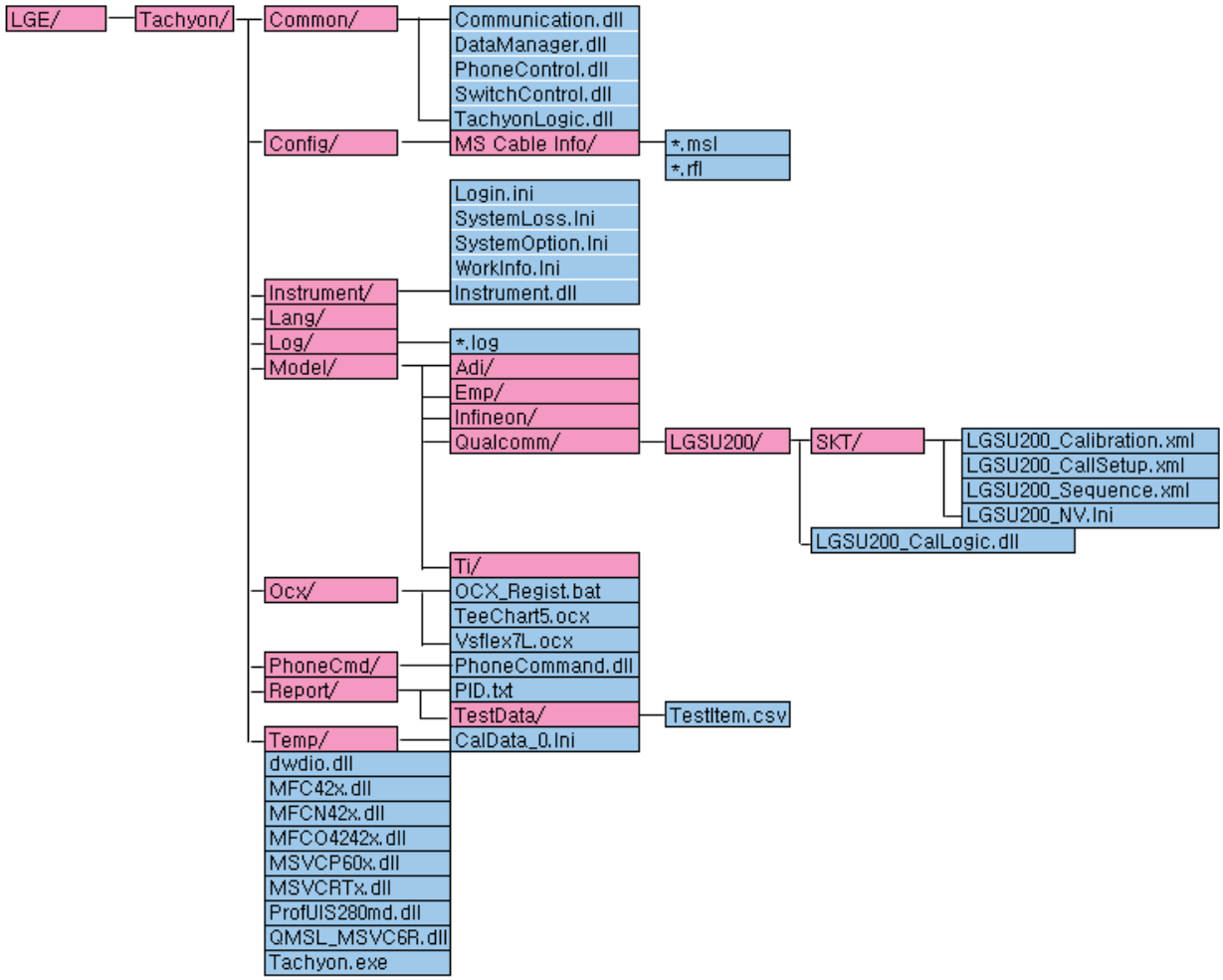


BL40-F-KEY-SPCY0171101-1.1-BOT

10. Calibration

10.1 Configuration of Tachyon

10.1.1Configuration of directory



10.1.2 Description of basic folders

Folder	Description
Tachyon	Exe file and MFC dll, UI dll is present.
Common	Common dll files. (XML Data I/O , Auto Test Logic, Tachyon Logic Control, Communication)
Config	Envirement files. (Port configuration, Loss adjust)
Instrument	Tester control dll.
Model	Model files is present. (Model -> Solution (Qualcomm, EMP, ADI, INFINEON) -> MODEL NAME(LGGM630, LGSH470, ..) -> BUYER NAME(SKT, TEL, VIVO, …)
OCX	Conponent files.
PhoneCmd	Phone communication file
Report	Report Files is present. (Cal data, test data)

10.1.3 Description of configuration files

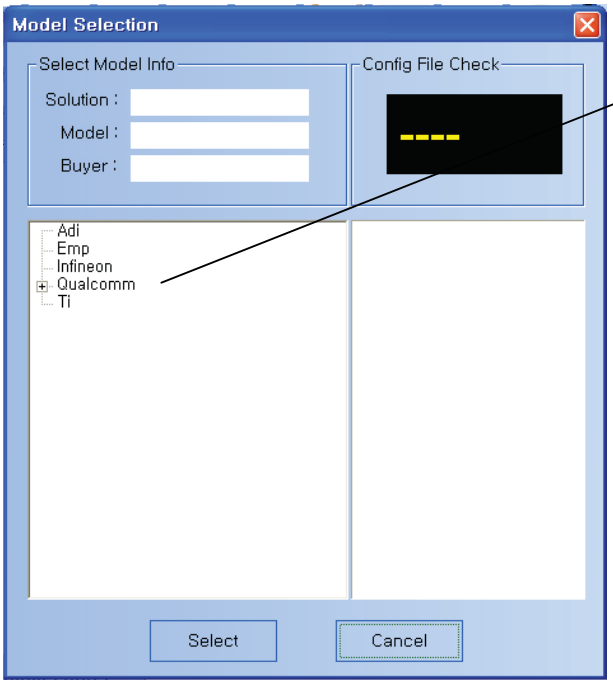
File	Description
'MODEL NAME'_Calibration.XML	There are imformations to calibrate. It consist of calibration items.
'MODEL NAME'_CallSetup.XML	There are imformations to call.
'MODEL NAME'_NV.INI	It consists of default values. It is written when 'cal&auto' is begun.
'MODEL NAME'_Sequence.XML	It is described a testing procedures.

10.2 How to use Tachyon

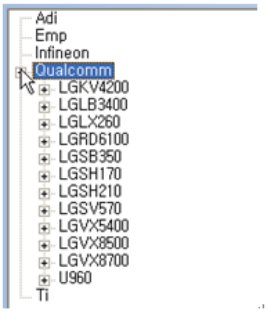
10.2.1Model selection

Follow the procedure before start calibration & auto test

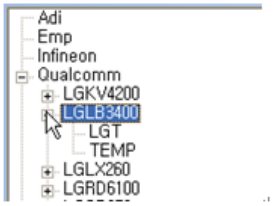
a. Click the icon,  in tool bar.
Then, you can see the below screen



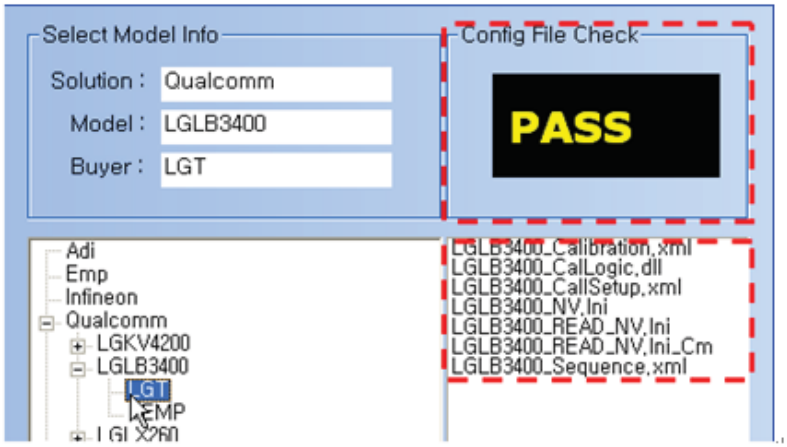
b. Select the chipset “Qualcomm”



c. Select the model
You should select “BL40F”



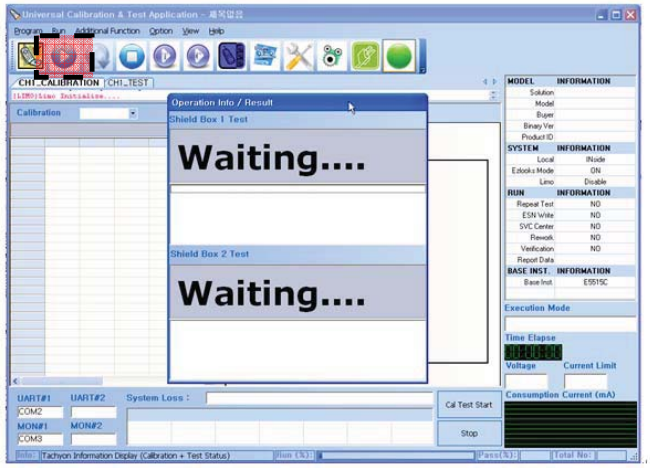
d. Select the buyer (must be double clicked)



e. Click select button

10.2.2 Start cal & auto

a. Click calibration & autotest button,  in Tool bar



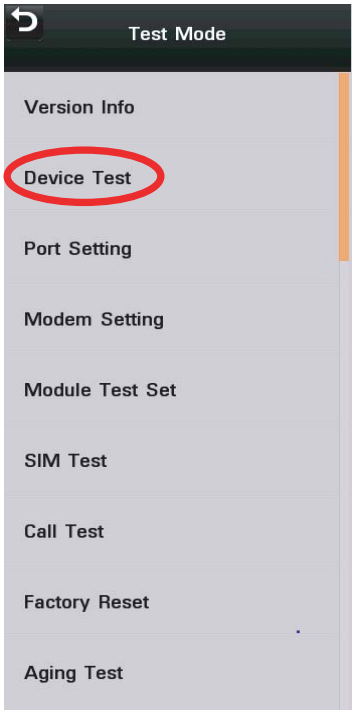
b. Calibration & autotest will be executed in order.

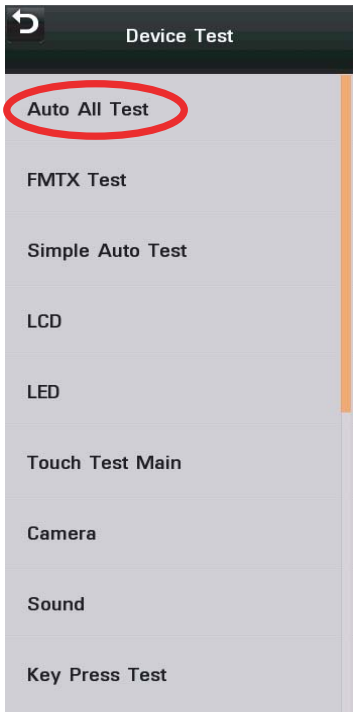
1) Precede Action.
   - NV write
   - Test command send.
2) Calibration
3) Auto test
4) After action
   - Phone reset
   - Change UE to AMSS

11. Test Mode

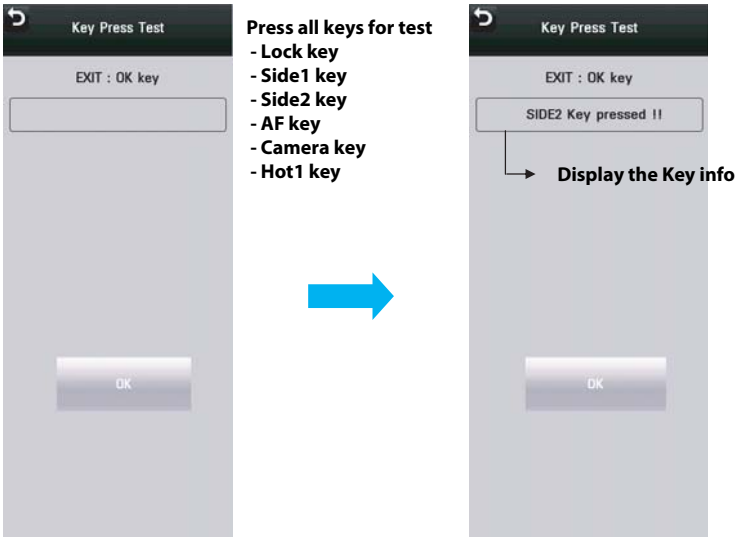
Phone Test Mode _ BL40

1. **Enter the Engineer Menu**
2. **Tap 2. Device Test**
3. **Tap 1. Auto ALL Test**





Phone Test Mode Scenario_ UMTS(1)

Item	Order	Description
(1) Key Press Test	① Key Test ② IF OK, tab "YES" button	◎ Key Test 

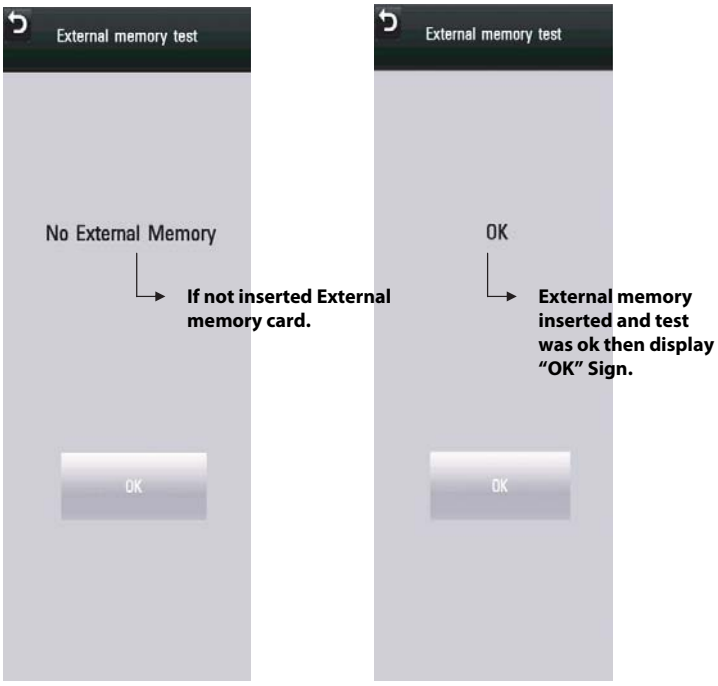
Phone Test Mode Scenario_ UMTS(2)

Item	Order	Description
(2) Sound	**① Sound On**	 **Ringtone (MP3) is played regularly**
	② IF OK, tab "YES" button	→ **Press OK button Move to next step**

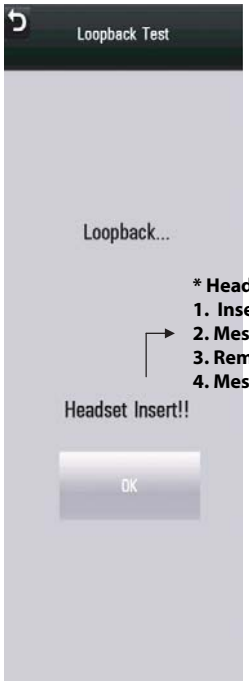
Phone Test Mode Scenario_ UMTS(3)

Item	Order	Description
(3) Vibrator Test	**① Vibrator On**	 **< Vibrator Mode Select>** **- Linear Motor Test** **: Press "Lin" button** **- DC Motor Test** **: Press "DC" button** **- Linear and DC Motor Test** **: Press "Dual" button**
	② IF OK, tab "YES" button	→ **Press OK button** **Move to next step**

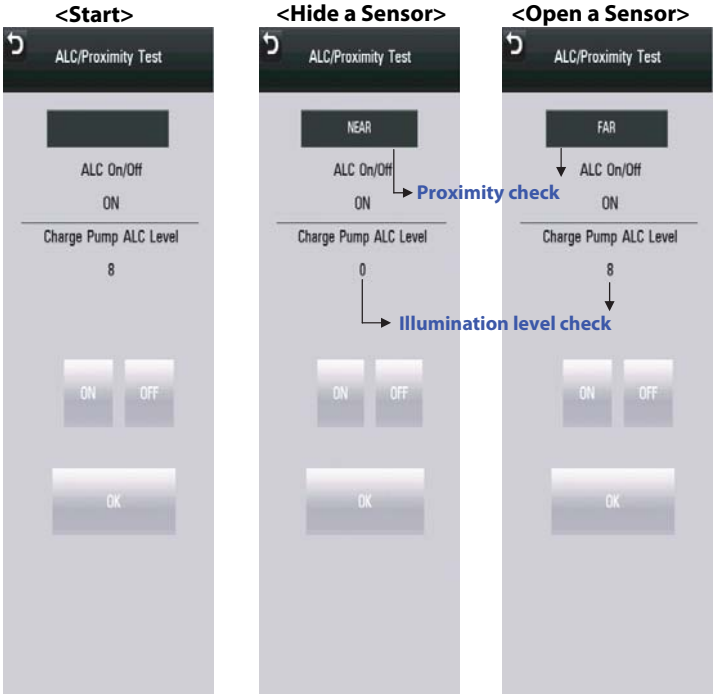
Phone Test Mode Scenario_ UMTS(4)

Item	Order	Description
(4) External Memory Test	**External Memory Test Start** **② IF OK, tab "YES" button**	

Phone Test Mode Scenario_ UMTS(5)

Item	Order	Description
(5) Loop Back (Include EAR-MIC)	**① Loop Back Start**	 
	② IF OK, tab "YES" button	

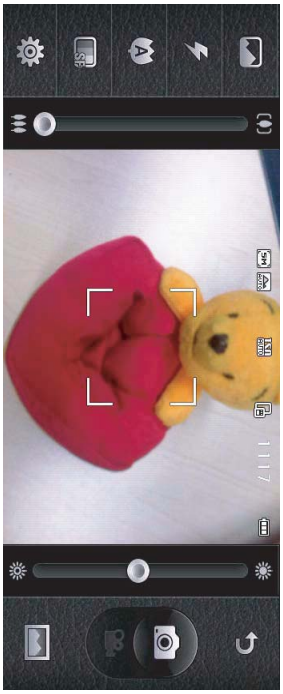
Phone Test Mode Scenario_ UMTS(6)

Item	Order	Description
(6) Proximity Sensor illumination Sensor	① Proximity Sensor on If OK → Next ② illumnation on if OK → Next	<Start> <Hide a Sensor> <Open a Sensor> 

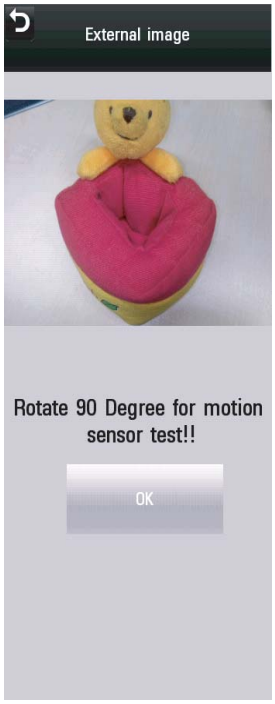
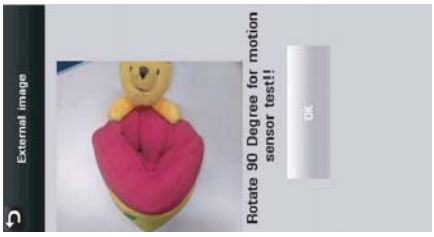
Phone Test Mode Scenario_ UMTS(7)

Item	Order	Description
(7) Camera Test	**① Information for Camera Test**	
	② IF OK, tab "YES" button	

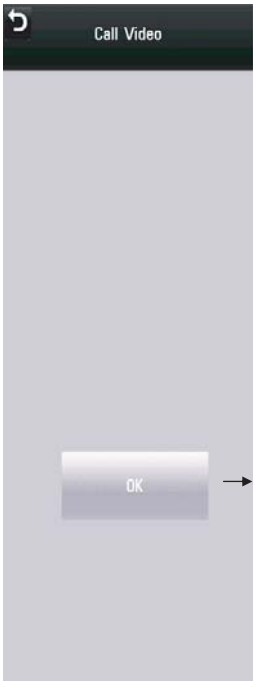
Phone Test Mode Scenario_ UMTS(7)

Item	Order	Description
(7) Camera Test	① Camera Auto On (Preview) If "Music Key" next ② Photo Shot (Main) ③ Photo Save ④ Video on (Main) (Preview) ⑤ Record video(2Sec) ⑥ Video Save ⑦ Video on (VGA) (Preview) ⑧ Record video(2Sec) ⑨ Video Save ⑩ Photo Shot (VGA) ⑪ Photo Save	 In Camera Preview Mode Press "Music Key" to start Camera Auto Test. Music Key in left side of the phone.

Phone Test Mode Scenario_ UMTS(7)

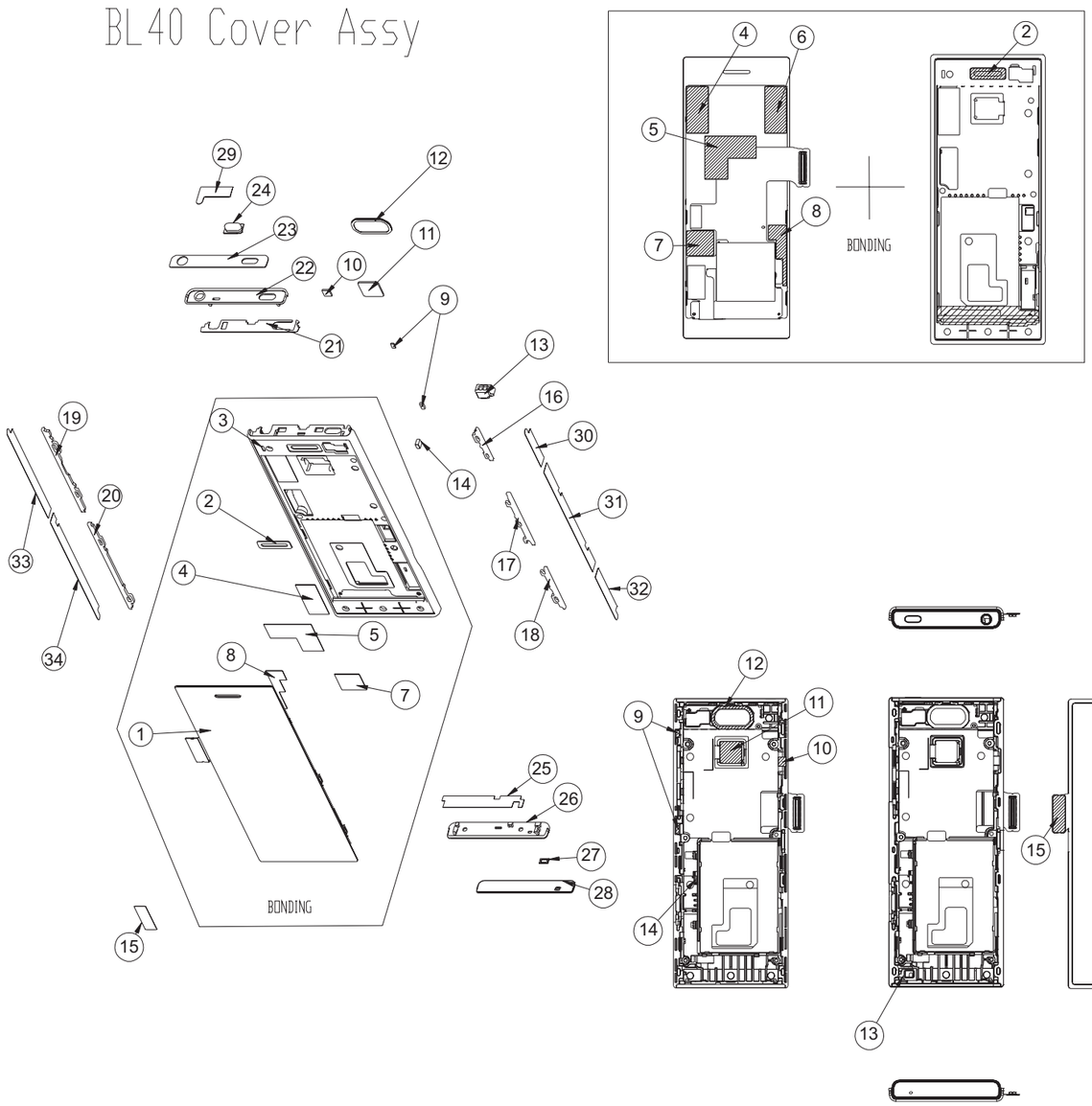
Item	Order	Description
(7) Camera Test	⑫ Call Photo If OK next ⑬ Call Video If OK End	 - Gyro Sensor Test 1) Rotate the device 2) Image will be rotate 3) Rotate again and wait for a while 

Phone Test Mode Scenario_ UMTS(7)

Item	Order	Description
(7) Camera Test	⑬ Call Video If OK End	- Recorded Video Check   → Press OK button

12. EXPLODED VIEW & REPLACEMENT PART LIST

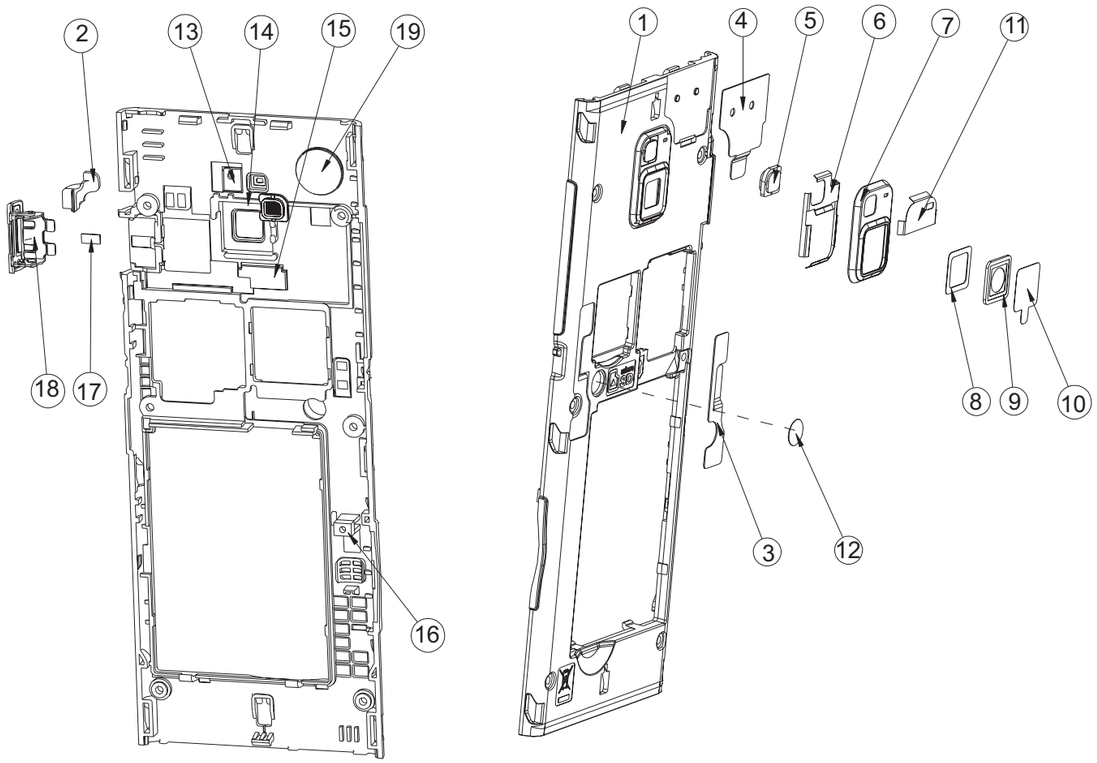
12.1 EXPLODED VIEW



	PART NAME	PART NUMBER	QUANTITY	REMARK
BONDING				
1	LCD MODULE	SVLM0032301	1	
2	FILTER SPEAKER	MFBC0052401	1	
3	COVER FRONT	MCJK0101401	1	
4	GASKET (LCD1)	MGAZ0069901	1	
5	GASKET (LCD2)	MGAZ0070001	1	
6	GASKET (LCD3)	MGAZ0070301	1	
7	PAD (LCD 1)	MPBZ0249601	1	
8	PAD (LCD 2)	MPBZ0249701	1	
SUB ASSEMBLY				
9	GASKET (RIGHT)	MGAZ0070601	2	
10	PAD CONNECTOR (FMT)	MPBU0071101	1	
11	PAD CAMERA (FRONT)	MPBT0078801	1	
12	PAD SPEAKER	MPBN0068101	1	
13	HOLDER MIKE	MHGF0006701	1	
14	GASKET, SHIELD FOAM	MGAD0198501	1	
15	PAD CONNECTOR (LCD)	MPBU0072101	1	
16	DECO SIDE (RIGHT 1)	MDAC0025001	1	
17	DECO SIDE (RIGHT 2)	MDAC0025101	1	
18	DECO SIDE (RIGHT 3)	MDAC0025201	1	
19	DECO SIDE (LEFT 1)	MDAC0025301	1	
20	DECO SIDE (LEFT 2)	MDAC0026501	1	
21	TAPE DECO (TOP)	MTAA0180601	1	
22	DECO FRONT (TOP)	MDAG0046301	1	
23	DECO FRONT (TOP SHEET)	MDAG0046401	1	
24	BUTTON SIDE (POWER)	MBJL0081901	1	
25	TAPE DECO (BOTTOM)	MTAA0180701	1	
26	DECO FRONT (BOTTOM)	MDAG0046501	1	
27	FILTER MIKE	MFBD0038801	1	
28	DECO FRONT (BOTTOM SHEET)	MDAG0046601	1	
29	TAPE PROTECTION (TOP)	MTAB0319901	1	
30	TAPE PROTECTION (SIDE 1)	MTAB0320101	1	
31	TAPE PROTECTION (SIDE 2)	MTAB0320201	1	
32	TAPE PROTECTION (SIDE 3)	MTAB0342201	1	
33	TAPE PROTECTION (SIDE 4)	MTAB0342301	1	
34	TAPE PROTECTION (SIDE 5)	MTAB0342401	1	

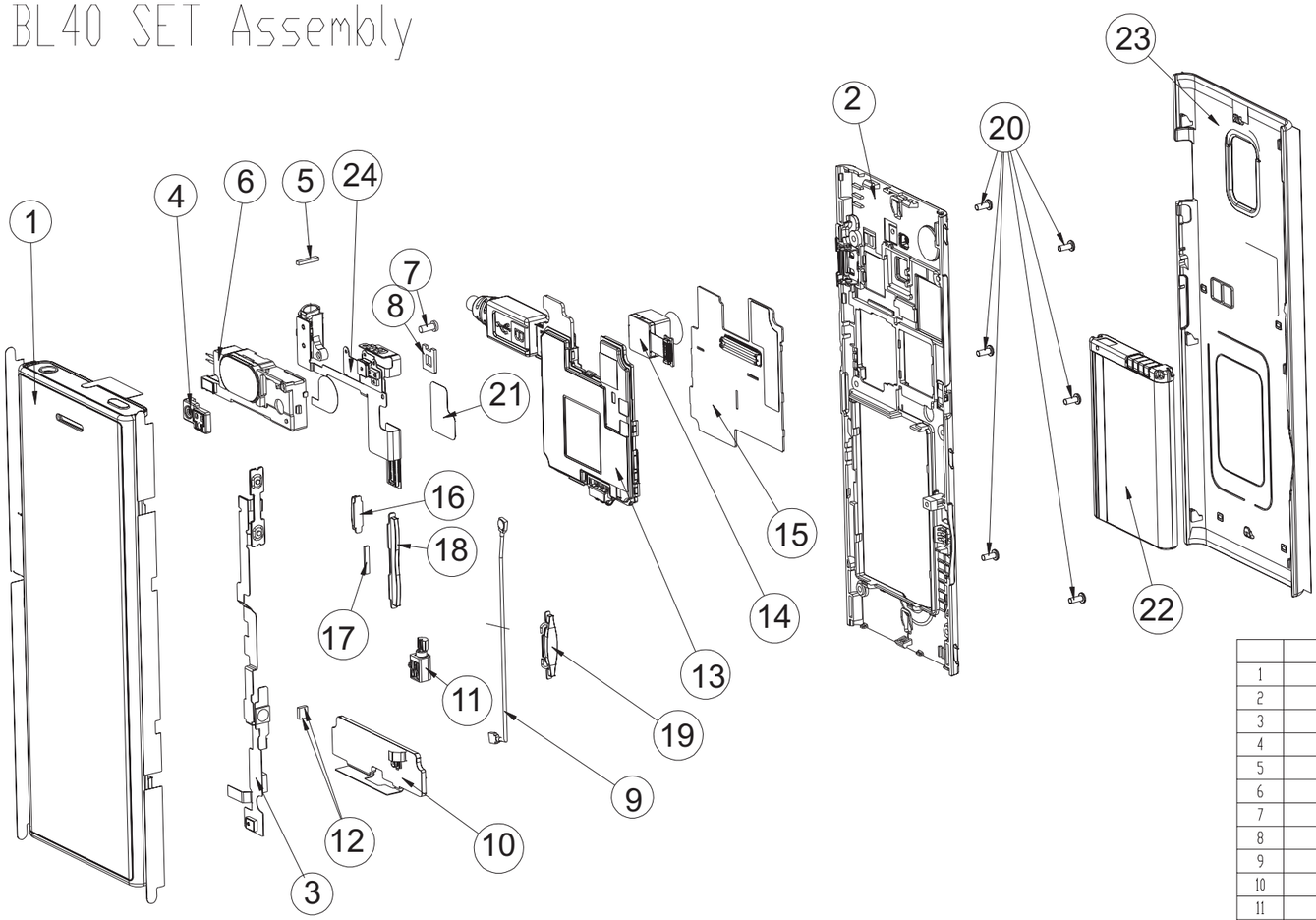
ASS'Y EXPLODED VIEW

BL40 Cover Assy Rear



	PART NAME	PART NUMBER
1	COVER REAR	MCJN0098401
2	Deco Side (Lighting)	MDAC0027901
3	FPCB (BT/WiFi)	SNGF0045802
4	FPCB (A-GPS)	SNGF0045902
5	LENS FLASH	MLCE0012501
6	TAPE DECO (CAMERA)	MTAA0196401
7	DECO CAMERA	MDAD0045001
8	TAPE WINDOW	MTAD0101901
9	WINDOW CAMERA	MWAE0044901
10	TAPE PROTECTION (Camera)	MTAB0320301
11	TAPE PROTECTION (Deco Camera)	MTAB0289301
12	CAP MOBILE SWITCH	MCCF0058101
13	FILTER MIKE	MFBD0036701
14	PAD CAMERA	MPBT0071901
15	PAD SUB PCB	MPBZ0235401
16	PAD FLEXIBLE PCB	MPBF0039701
17	TAPE DECO (CAP)	MTAA0181201
18	CAP RECEPTACLE	MCCE0049001
19	PAD (MAIN MOTOR)	MPBZ0242501

BL40 SET Assembly



	PART NAME	PART NUMBER	QUANTITY	REMARK
1	Cover Assy	ACGZ0019601	1	
2	Cover Assy, Rear	ACGM0129101	1	
3	PCB Assy, Side	SACY0102701	1	
4	Gasket (Light)	MGAZ0067601	1	
5	PAD (Light)	MPBZ0243101	1	
6	Encloser Speaker	SUSY0027612	1	
7	Screw Tapping	GGZZ0005701	1	
8	Pad (Flash)	MPBZ0242601	1	
9	Cable, Coaxial	SNGF0044302	1	
10	Interna	SNGF0044302	1	
11	Motor, Cylinder	SJMY0007908	1	
12	Gasket, Shield Form (Cable, Coaxial)	MDAG0046401	1	
13	Main PCB Assy (SMT)	SAFF0227211	1	
14	Camera Module	SVCY0023101	1	
15	Sub PCB Assy (SMT)	SAJY0039801	1	
16	Button Side (Voice)	MBJL0089701	1	
17	Pad (Volume Key)	MPBZ0245401	1	
18	BUTTON SIDE (Volume)	MBJL0081301	1	
19	Button Side (Camera)	MBJL0082001	1	
20	Screw Machine	GMEY0009201	6	
21	Gasket (SPK FPCB)	MGAZ0072001	1	
22	BATTERY	SBPL0099201	1	
23	Cover Assy, Battery	MCJA0088401	1	
24	PCB ASSY,FLEXIBLE (Speaker)	SACY0102901	1	
25	Gasket Motor FPCB	MGAZ0071001	1	

12.2 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	APAY00	PACKAGE	APAY0133211	BL40 VDF(VDF Label/9501_WD)	WITHOUT COLOR	
3	APLY00	PALLET ASSY	APLY0003806	BL40 VDF Pallet(300ea/9501_WD)	WITHOUT COLOR	
4	MPCY01	PALLET	MPCY0009501	PALLET(G7100 for Orange UK_EUR)	BLACK	
3	MLAC00	LABEL,BARCODE	MLAC0004541	PRINTING, (empty), , , , ,	Without Color	
3	MLAZ00	LABEL	MLAZ0050901	PRINTING, (empty), , , , ,	WITHOUT COLOR	
2	APEY00	PHONE	APEY0746001	UADS : BL40 GBRBK (APEY0746002-DD)	BLACK	
3	ACGV00	COVER ASSY,BAR	ACGV0007301	BL40 GBRBK (ACGV0007312-MP)	BLACK	
4	ACGM00	COVER ASSY,REAR	ACGM0129101		BLACK	2'
5	MCCE00	CAP,RECEPTACLE	MCCE0049001	PRESS, STS, , , , ,	BLACK	R
5	MCCF00	CAP,MOBILE SWITCH	MCCF0058101	COMPLEX, (empty), , , , ,	BLACK	L
5	MCJN00	COVER,REAR	MCJN0098401	MOLD, PC LUPOY SC-1004A, , , , ,	BLACK	A
5	MDAC00	DECO,SIDE	MDAC0027901	MOLD, PC LEXAN 121R, , , , ,	BLACK	B
5	MDAD00	DECO,CAMERA	MDAD0045001	PRESS, STS, , , , ,	SILVER	G
5	MFBD00	FILTER,MIKE	MFBD0036701	COMPLEX, (empty), , , , ,	WITHOUT COLOR	M
5	MLCE00	LENS,FLASH	MLCE0012501	MOLD, PC LEXAN 141R, , , , ,	TRANSPARENT	E
5	MPBF00	PAD,FLEXIBLE PCB	MPBF0039701	COMPLEX, (empty), , , , ,	WITHOUT COLOR	P
5	MPBT00	PAD,CAMERA	MPBT0071901	COMPLEX, (empty), , , , ,	WITHOUT COLOR	N
5	MPBZ00	PAD	MPBZ0235401	COMPLEX, (empty), , , , ,	WITHOUT COLOR	O
5	MPBZ01	PAD	MPBZ0242501	COMPLEX, (empty), , , , ,	WITHOUT COLOR	S
5	MTAA00	TAPE,DECO	MTAA0181201	COMPLEX, (empty), , , , ,	WITHOUT COLOR	Q
5	MTAA01	TAPE,DECO	MTAA0196401	COMPLEX, (empty), , , , ,	WITHOUT COLOR	F
5	MTAB00	TAPE,PROTECTION	MTAB0320301	COMPLEX, (empty), , , , ,	WITHOUT COLOR	J
5	MTAB01	TAPE,PROTECTION	MTAB0289301	COMPLEX, (empty), , , , ,	WITHOUT COLOR	K

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
5	MTAD00	TAPE,WINDOW	MTAD0101901	COMPLEX, (empty), , , , ,	WITHOUT COLOR	H
5	MWAE00	WINDOW,CAMERA	MWAE0044901	CUTTING, Tempered Glass, , , , ,	WITHOUT COLOR	I
4	ACGZ00	COVER ASSY	ACGZ0019601		BLACK	1'
5	ACGK00	COVER ASSY,FRONT	ACGK0130201		BLACK	
6	MCJK00	COVER,FRONT	MCJK0101401	MOLD, PC LUPOY SC-1004A, , , , ,	BLACK	3
6	MFBC00	FILTER,SPEAKER	MFBC0052401	COMPLEX, (empty), , , , ,	WITHOUT COLOR	2
6	MGAZ00	GASKET	MGAZ0070001	COMPLEX, (empty), , , , ,	WITHOUT COLOR	5
6	MGAZ01	GASKET	MGAZ0069901	COMPLEX, (empty), , , , ,	WITHOUT COLOR	4
6	MPBZ01	PAD	MPBZ0249601	COMPLEX, (empty), , , , ,	WITHOUT COLOR	7
6	MPBZ02	PAD	MPBZ0249701	COMPLEX, (empty), , , , ,	WITHOUT COLOR	8
5	ADBY00	DECO ASSY	ADBY0013701	TOP	BLACK	
6	MDAG00	DECO,FRONT	MDAG0046301	MOLD, PC LUPOY SC-1004A, , , , ,	SILVER	22
6	MDAG01	DECO,FRONT	MDAG0046401	COMPLEX, (empty), , , , ,	RED	23, 12'
6	MTAB00	TAPE,PROTECTION	MTAB0319901	COMPLEX, (empty), , , , ,	WITHOUT COLOR	29
5	ADBY01	DECO ASSY	ADBY0013801	BOTTOM	BLACK	
6	MDAG00	DECO,FRONT	MDAG0046601	COMPLEX, (empty), , , , ,	RED	28
6	MDAG01	DECO,FRONT	MDAG0046501	MOLD, PC LUPOY SC-1004A, , , , ,	SILVER	26
6	MFBD00	FILTER,MIKE	MFBD0038801	COMPLEX, (empty), , , , ,	WITHOUT COLOR	27
6	MLAN	LABEL,QUALCOMM	MLAN0000603	White,95C	TRANSPARENT	
5	MBJL00	BUTTON,SIDE	MBJL0081901	MOLD, PC LUPOY GP-1000L, , , , ,	RED	24
5	MDAC00	DECO,SIDE	MDAC0025001	MOLD, ABS MP-220, , , , ,	SILVER	16
5	MDAC01	DECO,SIDE	MDAC0025101	MOLD, ABS MP-220, , , , ,	SILVER	17
5	MDAC02	DECO,SIDE	MDAC0025201	MOLD, ABS MP-220, , , , ,	SILVER	18
5	MDAC03	DECO,SIDE	MDAC0025301	MOLD, ABS MP-220, , , , ,	SILVER	19
5	MDAC04	DECO,SIDE	MDAC0026501	MOLD, ABS MP-220, , , , ,	SILVER	20
5	MGAD00	GASKET,SHIELD FORM	MGAD0198501	MOLD, ABS MP-220, , , , ,	WITHOUT COLOR	14
5	MGAZ00	GASKET	MGAZ0070601	COMPLEX, (empty), , , , ,	WITHOUT COLOR	9

Level	Location No.	Description	Part Number	Spec	Color	Remark
5	MHGF00	HOLDER,MIKE	MHGF0006701	MOLD, Urethane Rubber S190A, , , , ,	WITHOUT COLOR	13
5	MPBN00	PAD,SPEAKER	MPBN0068101	COMPLEX, (empty), , , , ,	WITHOUT COLOR	12
5	MPBT00	PAD,CAMERA	MPBT0078801	COMPLEX, (empty), , , , ,	WITHOUT COLOR	11
5	MPBU00	PAD,CONNECTOR	MPBU0071101	COMPLEX, (empty), , , , ,	WITHOUT COLOR	10
5	MPBU01	PAD,CONNECTOR	MPBU0072101	PRESS, STS, , , , ,	WITHOUT COLOR	15
5	MTAA00	TAPE,DECO	MTAA0180601	COMPLEX, (empty), , , , ,	WITHOUT COLOR	21
5	MTAA01	TAPE,DECO	MTAA0180701	COMPLEX, (empty), , , , ,	WITHOUT COLOR	25
5	MTAB00	TAPE,PROTECTION	MTAB0320101	COMPLEX, (empty), , , , ,	WITHOUT COLOR	30
5	MTAB01	TAPE,PROTECTION	MTAB0320201	COMPLEX, (empty), , , , ,	WITHOUT COLOR	31
5	MTAB02	TAPE,PROTECTION	MTAB0342201	COMPLEX, (empty), , , , ,	WITHOUT COLOR	32
5	MTAB03	TAPE,PROTECTION	MTAB0342301	COMPLEX, (empty), , , , ,	WITHOUT COLOR	33
5	MTAB04	TAPE,PROTECTION	MTAB0342401	COMPLEX, (empty), , , , ,	WITHOUT COLOR	34
4	GGZZ	SCREW TAPPING	GGZZ0005701	1.6 mm,4.0 mm,MSWR3(FZW) ,B ,+ ,- ,White ,; ,BH ,+ ,2 ,1.6 ,4.0 ,SWRCH ,ZN	WHITE	7'
4	GMEY00	SCREW MACHINE,BIND	GMEY0009201	1.4 mm,3.5 mm,MSWR3(BK) ,B ,+ ,HEAD D=2.7mm	Black	20'
4	MBJL00	BUTTON,SIDE	MBJL0089701	MOLD, ABS MP-220, , , , ,	SILVER	16'
4	MBJL01	BUTTON,SIDE	MBJL0081301	MOLD, ABS MP-220, , , , ,	SILVER	18'
4	MBJL03	BUTTON,SIDE	MBJL0082001	COMPLEX, (empty), , , , ,	SILVER	19'
4	MGAZ00	GASKET	MGAZ0072001	COMPLEX, (empty), , , , ,	WITHOUT COLOR	21'
4	MGAZ01	GASKET	MGAZ0067601	MOLD, Silicone Rubber K-770, , , , ,	WITHOUT COLOR	4'
4	MGAZ02	GASKET	MGAZ0071001	COMPLEX, (empty), , , , ,	WITHOUT COLOR	25'
4	MLAZ00	LABEL	MLAZ0038303	PRINTING, (empty), , , , ,	White	
4	MPBZ00	PAD	MPBZ0242601	COMPLEX, (empty), , , , ,	WITHOUT COLOR	8'
4	MPBZ01	PAD	MPBZ0243101	COMPLEX, (empty), , , , ,	WITHOUT COLOR	5'
4	MPBZ03	PAD	MPBZ0245401	COMPLEX, (empty), , , , ,	WITHOUT COLOR	17'

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
4	MTAB00	TAPE,PROTECTION	MTAB0342501	COMPLEX, (empty), , , , ,	WITHOUT COLOR	
4	MTAZ00	TAPE	MTAZ0249101	COMPLEX, (empty), , , , ,	WITHOUT COLOR	
6	ACKA00	CAN ASSY,SHIELD	ACKA0020301	TOP	WITHOUT COLOR	
7	MCBA00	CAN,SHIELD	MCBA0044201	PRESS, STS, 0.15, , , ,	WITHOUT COLOR	
7	MGAZ00	GASKET	MGAZ0070901	COMPLEX, (empty), , , , ,	WITHOUT COLOR	6
7	MIDZ00	INSULATOR	MIDZ0230601	COMPLEX, (empty), , , , ,	WITHOUT COLOR	
7	MIDZ01	INSULATOR	MIDZ0230501	COMPLEX, (empty), , , , ,	WITHOUT COLOR	
6	ACKA01	CAN ASSY,SHIELD	ACKA0020401	Bottom	WITHOUT COLOR	
7	MCBA00	CAN,SHIELD	MCBA0044301	PRESS, STS, 0.15, , , ,	WITHOUT COLOR	
7	MGAZ00	GASKET	MGAZ0071901	COMPLEX, (empty), , , , ,	WITHOUT COLOR	
7	MGAZ01	GASKET	MGAZ0070801	COMPLEX, (empty), , , , ,	WITHOUT COLOR	
6	MLAZ00	LABEL	MLAZ0038301	PID Label 4 Array	WITHOUT COLOR	
7	ANT100	CONTACT,ANTENNA	MCIA0021401	PRESS, BeCu, , , , ,	WITHOUT COLOR	
7	ANT101	CONTACT,ANTENNA	MCIA0021401	PRESS, BeCu, , , , ,	WITHOUT COLOR	
7	ANT1	CONTACT,ANTENNA	MCIA0019501	PRESS, BeCu, , , , ,	Without Color	
6	MPBU00	PAD,CONNECTOR	MPBU0072201	COMPLEX, (empty), , , , ,	WITHOUT COLOR	
3	MLAA00	LABEL,APPROVAL	MLAA0062304	COMPLEX, (empty), , , , ,	WITHOUT COLOR	

12.2 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		IMT,BAR/FLIP	TIMT0004801		BLACK	
5	SNGF00	ANTENNA,GSM,FIXED	SNGF0045802	3.0 ,-2.0 dBd, ,BT(WiFi), FPCB ,; ,SINGLE ,-2.0 ,50 ,3.0		C
5	SNGF01	ANTENNA,GSM,FIXED	SNGF0045902	3.0 ,-2.0 dBd, ,GPS, FPCB ,; ,SINGLE ,-2.0 ,50 ,3.0		D
6	SVLM00	LCD MODULE	SVLM0032301	Main ,4.0" ,345*800 ,47.4*125.2*3.11 ,16.7M ,TFT ,TM ,LG4571 ,Touch Window		1
4	SACY00	PCB ASSY,FLEXIBLE	SACY0102701	BL40 SIDE FPCB		3'
5	SACE00	PCB ASSY,FLEXIBLE,SMT	SACE0093201		BLACK	
6	SACC00	PCB ASSY,FLEXIBLE,SMT BOTTOM	SACC0068501			
7	BAT101	BATTERY,CELL,LITHIUM	SBCL0002001	3 V,1 mAh,COIN ,3V, SMT type Backup Batt, Coin(4.8mm, 1.4t) , Pb-Free ,; ,3 ,1mAh ,COIN		
7	C104	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
7	CN1	CONNECTOR,BOARD TO BOARD	ENBY0045801	14 PIN, mm,STRAIGHT , , ,; , ,0.40MM ,STRAIGHT ,FEMALE ,SMD ,[empty] , ,		
7	D101	DIODE,TVS	EDTY0008606	DFN-2 ,7.82 V,150 mW,R/TP ,PB-FREE		
7	R101	RES,CHIP,MAKER	ERHZ0000404	1 Kohm,1/16W ,J ,1005 ,R/TP		
7	R102	RES,CHIP,MAKER	ERHZ0000493	51 Kohm,1/16W ,J ,1005 ,R/TP		
7	SW101	SWITCH,TACT	ESCY0006101	15 V,20 mA,HORIZONTAL ,1 G, ,; ,1C1P ,[empty] ,[empty] ,[empty] , ,[empty]		
7	VA101	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
7	VA102	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
7	VA103	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
7	VA104	VARISTOR	SEVY0003601	5.6 V, ,SMD ,100pF, 1005		
6	SACD00	PCB ASSY,FLEXIBLE,SMT TOP	SACD0081001			
7	C101	CAP,CERAMIC,CHIP	ECCH0000110	10 pF,50V,D,NP0,TC,1005,R/TP		
7	C102	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C103	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
7	D102	DIODE,TVS	EDTY0008606	DFN-2 ,7.82 V,150 mW,R/TP ,PB-FREE		
7	D103	DIODE,TVS	EDTY0008606	DFN-2 ,7.82 V,150 mW,R/TP ,PB-FREE		
7	MIC101	MICROPHONE	SUMY0010609	UNIT ,-42 dB,3.76*2.95*1.1 ,mems smd mic ,; , , ,OMNI ,[empty] , ,[empty]		
6	SPCY	PCB,FLEXIBLE	SPCY0171101	POLYI ,.2 mm,MULTI-3 ,F_KEY ,; , , , , , , , , ,		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
4	SACY01	PCB ASSY,FLEXIBLE	SACY0102901	BL40 SPEAKER FPCB		24'
5	SACE00	PCB ASSY,FLEXIBLE,SMT	SACE0093301			
6	SACC00	PCB ASSY,FLEXIBLE,SMT BOTTOM	SACC0068601			
7	CN101	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	CN102	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	CN103	CONNECTOR,BOARD TO BOARD	ENBY0041901	50 PIN,0.4 mm,STRAIGHT , ,H=1.0,SOCKET ,; , ,0.40MM ,STRAIGHT ,FEMALE ,SMD ,P/TR , ,		
7	J101	CONN,JACK/PLUG,EARPHONE	ENJE0007201	4 ,10 , ,; ,4P ,6P ,ANGLE ,[empty] , ,BLACK ,		
7	U101	IC	EUSY0343701	WSOF6 ,6 PIN,R/TP ,Luminance sensor ,; ,IC,A/D Converter		
7	U102	IC	EUSY0376201	,8 ,R/TP , ,; ,IC,PMIC		
6	SACD00	PCB ASSY,FLEXIBLE,SMT TOP	SACD0081201			
7	C1	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C101	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
7	C102	CAP,CERAMIC,CHIP	ECCH0000110	10 pF,50V,D,NP0,TC,1005,R/TP		
7	C103	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C104	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C106	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
7	C107	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C108	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
7	C109	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C2	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C3	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C4	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C5	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	C6	CAP,CHIP,MAKER	ECZH0000846	8.2 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	D101	DIODE,TVS	EDTY0008606	DFN-2 ,7.82 V,150 mW,R/TP ,PB-FREE		
7	D102	DIODE,TVS	EDTY0008606	DFN-2 ,7.82 V,150 mW,R/TP ,PB-FREE		
7	D103	DIODE,TVS	EDTY0008606	DFN-2 ,7.82 V,150 mW,R/TP ,PB-FREE		
7	D104	DIODE,TVS	EDTY0008606	DFN-2 ,7.82 V,150 mW,R/TP ,PB-FREE		

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	D105	DIODE,TVS	EDTY0008606	DFN-2 ,7.82 V,150 mW,R/TP ,PB-FREE		
7	D107	DIODE,TVS	EDTY0008606	DFN-2 ,7.82 V,150 mW,R/TP ,PB-FREE		
7	D108	DIODE,TVS	EDTY0008606	DFN-2 ,7.82 V,150 mW,R/TP ,PB-FREE		
7	D109	DIODE,TVS	EDTY0008606	DFN-2 ,7.82 V,150 mW,R/TP ,PB-FREE		
7	FB1	FILTER,BEAD,CHIP	SFBH0009901	120 ohm,1005 ,		
7	FB101	FILTER,BEAD,CHIP	SFBH0008105	1800 ohm,1005 ,Chip bead ,; ,1800ohm ,; ,[empty] ,R/TP		
7	FB103	FILTER,BEAD,CHIP	SFBH0008105	1800 ohm,1005 ,Chip bead ,; ,1800ohm ,; ,[empty] ,R/TP		
7	FB104	FILTER,BEAD,CHIP	SFBH0000909	60 ohm,1005 ,		
7	FB105	FILTER,BEAD,CHIP	SFBH0008105	1800 ohm,1005 ,Chip bead ,; ,1800ohm ,; ,[empty] ,R/TP		
7	LD101	DIODE,LED,MODULE	EDLM0009401	WHITE ,1 LED,3.5X2.8X0.6T ,R/TP ,		
7	LD102	DIODE,LED,CHIP	EDLH0007901	RED ,1608 ,R/TP ,Indicator,0.4T Red LED		
7	LD103	DIODE,LED,CHIP	EDLH0008501	Blue ,1608 ,R/TP ,0.35T		
7	MIC101	MICROPHONE	SUMY0010609	UNIT ,-42 dB,3.76*2.95*1.1 ,mems smd mic ,; , , ,OMNI ,[empty] , ,[empty]		
7	R1	RES,CHIP,MAKER	ERHZ0000434	1 ohm,1/16W ,J ,1005 ,R/TP		
7	R101	RES,CHIP,MAKER	ERHZ0000478	3.3 ohm,1/16W ,J ,1005 ,R/TP		
7	R102	RES,CHIP,MAKER	ERHZ0000463	33 ohm,1/16W ,J ,1005 ,R/TP		
7	R103	RES,CHIP,MAKER	ERHZ0000402	10 ohm,1/16W ,J ,1005 ,R/TP		
7	U103	CAMERA	SVCY0019901	CMOS ,VGA ,Toshiba(1/10"), 4x4x2.23t, Reflow Type		
7	VA1	VARISTOR	SEVY0003601	5.6 V, ,SMD ,100pF, 1005		
7	VA101	VARISTOR	SEVY0003601	5.6 V, ,SMD ,100pF, 1005		
7	VA102	VARISTOR	SEVY0003601	5.6 V, ,SMD ,100pF, 1005		
7	ZD101	DIODE,TVS	EDTY0009601	SLP1006P2 ,5 V,100 W,R/TP ,1.0x0.6x0.5t ,; , , , , , ,[empty] ,[empty] ,[empty] ,[empty]		
7	ZD102	DIODE,TVS	EDTY0009601	SLP1006P2 ,5 V,100 W,R/TP ,1.0x0.6x0.5t ,; , , , , , ,[empty] ,[empty] ,[empty] ,[empty]		
7	ZD103	DIODE,TVS	EDTY0009601	SLP1006P2 ,5 V,100 W,R/TP ,1.0x0.6x0.5t ,; , , , , , ,[empty] ,[empty] ,[empty] ,[empty]		
7	ZD104	DIODE,TVS	EDTY0009601	SLP1006P2 ,5 V,100 W,R/TP ,1.0x0.6x0.5t ,; , , , , , ,[empty] ,[empty] ,[empty] ,[empty]		
6	SPCY	PCB,FLEXIBLE	SPCY0171701	POLYI ,0.22 mm,BUILD-UP 4 ,WHITE SBL 3L ,; , , , , , , , , , ,		
4	SAFY	PCB ASSY,MAIN	SAFY0313901			
5	SAFB00	PCB ASSY,MAIN,INSERT	SAFB0107901			
6	BRAH00	RESIN,PC	BRAH0001301	; , , , ,[empty]	Black	

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
5	SAFF00	PCB ASSY,MAIN,SMT	SAFF0227201			13'
6	SAFC00	PCB ASSY,MAIN,SMT BOTTOM	SAFC0124701			
7	C100	CAP,CERAMIC,CHIP	ECCH0000175	2.7 pF,50V ,B ,NP0 ,TC ,1005 ,R/TP		
7	C101	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C102	CAP,CHIP,MAKER	ECZH0000844	68 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C103	CAP,CERAMIC,CHIP	ECCH0000175	2.7 pF,50V ,B ,NP0 ,TC ,1005 ,R/TP		
7	C104	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C105	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
7	C106	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
7	C107	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
7	C108	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
7	C109	CAP,CERAMIC,CHIP	ECCH0000901	2.2 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C110	INDUCTOR,CHIP	ELCH0004709	3.3 nH,S ,1005 ,R/TP ,		
7	C111	CAP,CHIP,MAKER	ECZH0000844	68 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C112	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C113	CAP,CERAMIC,CHIP	ECCH0009216	22 pF,25V ,J ,X7R ,TC ,0603 ,R/TP		
7	C114	CAP,CERAMIC,CHIP	ECCH0000901	2.2 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C115	CAP,CERAMIC,CHIP	ECCH0009216	22 pF,25V ,J ,X7R ,TC ,0603 ,R/TP		
7	C116	CAP,CERAMIC,CHIP	ECCH0009216	22 pF,25V ,J ,X7R ,TC ,0603 ,R/TP		
7	C117	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C118	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C119	CAP,CERAMIC,CHIP	ECCH0009216	22 pF,25V ,J ,X7R ,TC ,0603 ,R/TP		
7	C12	CAP,CERAMIC,CHIP	ECCH0017301	1 uF,6.3V ,M ,X5R ,HD ,0603 ,R/TP ,; ,1 ,20% ,6.3V ,X5R ,-55TO+85C ,0603 ,R/TP ,0.15 mm		
7	C120	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C121	CAP,CERAMIC,CHIP	ECCH0009103	100 pF,50V ,J ,X7R ,TC ,0603 ,R/TP , , ,[empty] ,[empty] ,C0G ,[empty] ,[empty] ,[empty] ,0.3 mm		
7	C122	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C123	CAP,CHIP,MAKER	ECZH0000806	5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C124	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
7	C125	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C126	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	C127	CAP,CHIP,MAKER	ECZH0000806	5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C128	CAP,CERAMIC,CHIP	ECCH0000175	2.7 pF,50V ,B ,NP0 ,TC ,1005 ,R/TP		
7	C129	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
7	C130	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C131	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	C132	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C133	CAP,CERAMIC,CHIP	ECCH0009104	33 pF,50V ,J ,X7R ,TC ,0603 ,R/TP		
7	C134	CAP,CERAMIC,CHIP	ECCH0009216	22 pF,25V ,J ,X7R ,TC ,0603 ,R/TP		
7	C135	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C136	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
7	C137	CAP,CERAMIC,CHIP	ECCH0000175	2.7 pF,50V ,B ,NP0 ,TC ,1005 ,R/TP		
7	C138	RES,CHIP	ERHY0009504	1 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	C139	RES,CHIP	ERHY0009504	1 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	C140	CAP,CERAMIC,CHIP	ECCH0009216	22 pF,25V ,J ,X7R ,TC ,0603 ,R/TP		
7	C141	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	C142	RES,CHIP	ERHY0009504	1 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	C143	RES,CHIP	ERHY0009504	1 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	C144	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C145	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
7	C146	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C147	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
7	C148	CAP,CERAMIC,CHIP	ECCH0009103	100 pF,50V ,J ,X7R ,TC ,0603 ,R/TP , , ,[empty] ,[empty] ,C0G ,[empty] ,[empty] ,[empty] ,0.3 mm		
7	C149	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C150	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C151	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C152	CAP,CERAMIC,CHIP	ECCH0009103	100 pF,50V ,J ,X7R ,TC ,0603 ,R/TP , , ,[empty] ,[empty] ,C0G ,[empty] ,[empty] ,[empty] ,0.3 mm		
7	C153	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C154	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C155	CAP,TANTAL,CHIP	ECTH0003704	4.7 uF,10V ,M ,STD ,1608 ,R/TP		
7	C156	CAP,CERAMIC,CHIP	ECCH0009216	22 pF,25V ,J ,X7R ,TC ,0603 ,R/TP		

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	C157	CAP,CERAMIC,CHIP	ECCH0000129	120 pF,50V,J,NP0,TC,1005,R/TP		
7	C158	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C159	CAP,CERAMIC,CHIP	ECCH0000123	51 pF,50V,J,NP0,TC,1005,R/TP		
7	C160	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C161	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C162	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C163	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C164	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	C165	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	C166	CAP,CHIP,MAKER	ECZH0000841	56 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C167	INDUCTOR,CHIP	ELCH0001056	2.7 nH,S ,1005 ,R/TP ,PBFREE		
7	C168	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP		
7	C169	CAP,CERAMIC,CHIP	ECCH0000110	10 pF,50V,D,NP0,TC,1005,R/TP		
7	C170	CAP,CHIP,MAKER	ECZH0004402	0.1 uF,16V ,Z ,X7R ,TC ,1005 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty]		
7	C171	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C173	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	C174	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	C175	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C176	CAP,CERAMIC,CHIP	ECCH0000185	5.6 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C177	CAP,CHIP,MAKER	ECZH0000844	68 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C178	CAP,TANTAL,CHIP	ECTH0004807	10 uF,10V ,M ,STD ,1608 ,R/TP ,; , ,[empty] ,[empty] , ,-55TO+125C , ,[empty] ,[empty] ,[empty] ,[empty]		
7	C179	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
7	C180	CAP,CERAMIC,CHIP	ECCH0009206	68 pF,25V ,J ,X7R ,TC ,0603 ,R/TP		
7	C181	CAP,CHIP,MAKER	ECZH0000844	68 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C183	CAP,CHIP,MAKER	ECZH0001002	0.5 pF,50V ,B ,NP0 ,TC ,1005 ,R/TP		
7	C184	CAP,CHIP,MAKER	ECZH0000822	1.5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C185	CAP,CHIP,MAKER	ECZH0000822	1.5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C186	CAP,CERAMIC,CHIP	ECCH0009103	100 pF,50V ,J ,X7R ,TC ,0603 ,R/TP , , ,[empty] ,[empty] ,C0G ,[empty] ,[empty] ,[empty] ,0.3 mm		
7	C187	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	C188	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	C189	CAP,CERAMIC,CHIP	ECCH0000109	8 pF,50V,D,NP0,TC,1005,R/TP		
7	C191	CAP,CHIP,MAKER	ECZH0000844	68 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C192	CAP,CERAMIC,CHIP	ECCH0009216	22 pF,25V ,J ,X7R ,TC ,0603 ,R/TP		
7	C193	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C194	CAP,CHIP,MAKER	ECZH0000839	4.7 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C195	CAP,CHIP,MAKER	ECZH0000839	4.7 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C196	CAP,CERAMIC,CHIP	ECCH0009103	100 pF,50V ,J ,X7R ,TC ,0603 ,R/TP , , ,[empty] ,[empty] ,C0G ,[empty] ,[empty] ,[empty] ,0.3 mm		
7	C197	INDUCTOR,CHIP	ELCH0004701	12 nH,J ,1005 ,R/TP ,		
7	C198	CAP,CERAMIC,CHIP	ECCH0000185	5.6 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C199	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
7	C2	CAP,CHIP,MAKER	ECZH0000802	1 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C200	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C201	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C202	CAP,CERAMIC,CHIP	ECCH0000104	3 pF,50V,C,NP0,TC,1005,R/TP		
7	C203	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	C254	CAP,CHIP,MAKER	ECZH0001120	3.9 nF,50V ,K ,X7R ,HD ,1005 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty]		
7	C255	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C3	CAP,CHIP,MAKER	ECZH0001002	0.5 pF,50V ,B ,NP0 ,TC ,1005 ,R/TP		
7	C313	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
7	C315	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C320	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C321	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
7	C322	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
7	C326	CAP,CHIP,MAKER	ECZH0004402	0.1 uF,16V ,Z ,X7R ,TC ,1005 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty]		
7	C327	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C328	CAP,CERAMIC,CHIP	ECCH0000161	33 nF,16V,K,X7R,HD,1005,R/TP		
7	C340	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
7	C4	CAP,CHIP,MAKER	ECZH0001002	0.5 pF,50V ,B ,NP0 ,TC ,1005 ,R/TP		
7	C5	CAP,CERAMIC,CHIP	ECCH0000175	2.7 pF,50V ,B ,NP0 ,TC ,1005 ,R/TP		

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	C523	CAP,TANTAL,CHIP	ECTH0001901	10 uF,6.3V ,M ,L_ESR ,1608 ,R/TP		
7	C524	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C526	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C527	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C533	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	C534	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	C535	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C536	CAP,CERAMIC,CHIP	ECCH0009514	10 pF,25V ,D ,X7R ,HD ,0603 ,R/TP		
7	C537	CAP,CERAMIC,CHIP	ECCH0009514	10 pF,25V ,D ,X7R ,HD ,0603 ,R/TP		
7	C538	CAP,CERAMIC,CHIP	ECCH0009514	10 pF,25V ,D ,X7R ,HD ,0603 ,R/TP		
7	C539	CAP,CERAMIC,CHIP	ECCH0009514	10 pF,25V ,D ,X7R ,HD ,0603 ,R/TP		
7	C550	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C6	CAP,CERAMIC,CHIP	ECCH0000175	2.7 pF,50V ,B ,NP0 ,TC ,1005 ,R/TP		
7	C614	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	C615	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	C616	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	C617	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
7	C618	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
7	C619	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
7	C620	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C621	CAP,CERAMIC,CHIP	ECCH0017301	1 uF,6.3V ,M ,X5R ,HD ,0603 ,R/TP ,; ,1 ,20% ,6.3V ,X5R ,-55TO+85C ,0603 ,R/TP ,0.15 mm		
7	C700	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C703	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C705	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C710	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C711	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
7	C712	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C713	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C714	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	C715	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C716	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
7	C717	CAP,CERAMIC,CHIP	ECCH0007802	4.7 uF,10V ,M ,X5R ,TC ,1608 ,R/TP		
7	C719	CAP,CHIP,MAKER	ECZH0025920	1 nF,16V ,K ,X7R ,HD ,0603 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty]		
7	C720	CAP,CHIP,MAKER	ECZH0025920	1 nF,16V ,K ,X7R ,HD ,0603 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty]		
7	C721	CAP,CHIP,MAKER	ECZH0025920	1 nF,16V ,K ,X7R ,HD ,0603 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty]		
7	C722	CAP,CHIP,MAKER	ECZH0025920	1 nF,16V ,K ,X7R ,HD ,0603 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty]		
7	C723	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C724	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
7	C725	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
7	C726	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
7	C733	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C735	CAP,CERAMIC,CHIP	ECCH0017301	1 uF,6.3V ,M ,X5R ,HD ,0603 ,R/TP ,; ,1 ,20% ,6.3V ,X5R ,-55TO+85C ,0603 ,R/TP ,0.15 mm		
7	C737	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C738	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C739	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C740	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C741	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C742	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C743	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C744	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C745	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
7	C746	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
7	C747	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C748	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C749	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C750	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C751	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C752	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	C753	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C754	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C755	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
7	C756	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
7	C758	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	C780	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C781	CAP,CERAMIC,CHIP	ECCH0009104	33 pF,50V ,J ,X7R ,TC ,0603 ,R/TP		
7	C8	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C811	CAP,CERAMIC,CHIP	ECCH0000112	15 pF,50V,J,NP0,TC,1005,R/TP		
7	C812	CAP,CERAMIC,CHIP	ECCH0000112	15 pF,50V,J,NP0,TC,1005,R/TP		
7	C813	CAP,CERAMIC,CHIP	ECCH0000112	15 pF,50V,J,NP0,TC,1005,R/TP		
7	C814	CAP,CERAMIC,CHIP	ECCH0000112	15 pF,50V,J,NP0,TC,1005,R/TP		
7	C815	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C816	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
7	C828	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
7	C9	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
7	CN1	CONNECTOR,BOARD TO BOARD	ENBY0042001	50 PIN,0.4 mm,STRAIGHT , , ,; , ,0.40MM ,STRAIGHT ,MALE ,SMD ,P/TR , ,		
7	CN2	CONNECTOR,BOARD TO BOARD	ENBY0045901	14 PIN,0.4 mm,STRAIGHT , , ,; , ,0.40MM ,STRAIGHT ,MALE ,SMD ,[empty] , ,		
7	CN500	CONNECTOR,BOARD TO BOARD	ENBY0040301	34 PIN,0.4 mm,ETC , ,H=1.0, Socket		
7	CN601	CONNECTOR,BOARD TO BOARD	ENBY0031401	70 PIN,0.4 mm,ETC , ,H=1.5, Header		
7	CN700	CONNECTOR,ETC	ENZY0022901	3 ,2.5 mm,ETC , ,		
7	CN701	CONNECTOR,I/O	ENRY0008801	5 , mm,ANGLE , , ,; , ,0.64MM ,ANGLE ,[empty] ,DIP ,[empty] ,		
7	CN800	CONNECTOR,BOARD TO BOARD	ENBY0045401	60 PIN,0.4 mm,STRAIGHT , , ,; , ,0.40MM ,STRAIGHT ,MALE ,SMD ,[empty] , ,		
7	D700	DIODE,SWITCHING	EDSY0010501	ESC ,30 V,100 mA,R/TP ,SWITCH DIODE		
7	D701	DIODE,TVS	EDTY0008606	DFN-2 ,7.82 V,150 mW,R/TP ,PB-FREE		
7	FB1	FILTER,BEAD,CHIP	SFBH0000909	60 ohm,1005 ,		
7	FB2	FILTER,BEAD,CHIP	SFBH0000909	60 ohm,1005 ,		
7	FB3	FILTER,BEAD,CHIP	SFBH0000909	60 ohm,1005 ,		
7	FB500	FILTER,BEAD,CHIP	SFBH0000909	60 ohm,1005 ,		

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	FB601	FILTER,BEAD,CHIP	SFBH0009801	600 ohm,1005 ,DC Res.0.6ohm, R.C.500mA		
7	FB602	FILTER,BEAD,CHIP	SFBH0008105	1800 ohm,1005 ,Chip bead ,; ,1800ohm ,; ,[empty] ,R/TP		
7	FL100	FILTER,SEPERATOR	SFAY0011901	, , dB, dB, dB, dB,4532 ,WCDMA Quad Triple 6280 IFX		
7	FL101	FILTER,SAW	SFSY0033403	1575.42 MHz,1.4*1.1*0.4 ,SMD ,1574.42M~1576.42M, IL 1.2, 5pin, U-U, 50-50, GPS HIGH ATTEN. ,; ,1575.42 ,1.4*1.1*0.4 ,SMD ,R/TP		
7	FL102	DUPLEXER,IMT	SDMY0002101	897.5 MHz,942.5 MHz,2.8 dB,3.5 dB,50 dB,43 dB,2.5*2.0*0.55 ,SMD ,SAW, Band8 Rx balanced type ,; ,942.5 ,925.48 to 959.52 ,897.5 ,880.48 to 914.52 ,3.5 ,2.8 ,2.5x2.0x0.55 ,DUAL ,SMD ,R/TP		
7	FL103	FILTER,SAW	SFSY0037601	897.5 MHz,1.4*1.1*0.4 ,SMD ,880M~915M, IL 3.6, 5pin, U-U, 50-50, W-BAND VIII Tx ,; ,897.5 ,1.4*1.1*0.4 ,SMD ,R/TP		
7	FL104	FILTER,SAW	SFSY0035101	1950 MHz,1.4*1.1*0.45 ,SMD ,1920M~1980M, IL 3.2, 5pin, U-U, 50-50, WCDMA BAND I Tx ,; ,1950 ,1.4*1.1*0.45 ,SMD ,R/TP		
7	FL105	DUPLEXER,IMT	SDMY0001901	1950 MHz,2140 MHz,1.8 dB,2.4 dB,52 dB,43 dB,2.5*2.0*0.55 ,SMD ,Band1, 2520size, SAW, Rx unbal ,; ,2140 ,2110 to 2170 ,1950 ,1920 to 1980 ,2.4 ,1.8 ,2.5x2.0x0.55 ,DUAL ,SMD ,R/TP		
7	FL106	FILTER,SAW	SFSY0035001	2140 MHz,1.4*1.1*0.45 ,SMD ,2110M~2170M, IL 2.3, 5pin, U-B, 50-100_20, WCDMA BAND I Rx ,; ,2140 ,1.4*1.1*0.45 ,SMD ,R/TP		
7	FL500	FILTER,EMI/POWER	SFEY0011701	SMD ,SMD ,18 V,4ch. EMI_ESD Filter (10 Ohm,7.5pF)		
7	FL501	FILTER,EMI/POWER	SFEY0011701	SMD ,SMD ,18 V,4ch. EMI_ESD Filter (10 Ohm,7.5pF)		
7	FL800	FILTER,EMI/POWER	SFEY0013701	SMD ,18 V,4ch. EMI_ESD Filter (100 Ohm, 7.5pF)		
7	FL801	FILTER,EMI/POWER	SFEY0013701	SMD ,18 V,4ch. EMI_ESD Filter (100 Ohm, 7.5pF)		
7	FL802	FILTER,EMI/POWER	SFEY0013701	SMD ,18 V,4ch. EMI_ESD Filter (100 Ohm, 7.5pF)		
7	FL803	FILTER,EMI/POWER	SFEY0013701	SMD ,18 V,4ch. EMI_ESD Filter (100 Ohm, 7.5pF)		
7	FL804	FILTER,EMI/POWER	SFEY0013701	SMD ,18 V,4ch. EMI_ESD Filter (100 Ohm, 7.5pF)		
7	FL805	FILTER,EMI/POWER	SFEY0013701	SMD ,18 V,4ch. EMI_ESD Filter (100 Ohm, 7.5pF)		
7	FL806	FILTER,EMI/POWER	SFEY0013701	SMD ,18 V,4ch. EMI_ESD Filter (100 Ohm, 7.5pF)		
7	L1	INDUCTOR,CHIP	ELCH0001054	5.6 nH,S ,1005 ,R/TP ,PBFREE		
7	L100	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	L101	INDUCTOR,CHIP	ELCH0004714	18 nH,J ,1005 ,R/TP ,		
7	L102	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	L103	INDUCTOR,CHIP	ELCH0004714	18 nH,J ,1005 ,R/TP ,		
7	L104	INDUCTOR,CHIP	ELCH0004727	100 nH,J ,1005 ,R/TP ,		

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	L105	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	L106	INDUCTOR,CHIP	ELCH0004704	4.7 nH,S ,1005 ,R/TP ,		
7	L107	INDUCTOR,CHIP	ELCH0004710	15 nH,J ,1005 ,R/TP ,		
7	L108	INDUCTOR,CHIP	ELCH0003815	2.7 nH,S ,1005 ,R/TP ,		
7	L109	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	L110	INDUCTOR,CHIP	ELCH0004712	3.9 nH,S ,1005 ,R/TP ,		
7	L111	INDUCTOR,CHIP	ELCH0001403	1 nH,S ,1005 ,R/TP ,PBFREE		
7	L112	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	L113	INDUCTOR,CHIP	ELCH0004713	6.8 nH,J ,1005 ,R/TP ,		
7	L114	INDUCTOR,CHIP	ELCH0004710	15 nH,J ,1005 ,R/TP ,		
7	L115	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	L116	INDUCTOR,CHIP	ELCH0001048	10 nH,J ,1005 ,R/TP ,PBFREE		
7	L117	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	L118	INDUCTOR,CHIP	ELCH0001048	10 nH,J ,1005 ,R/TP ,PBFREE		
7	L120	INDUCTOR,CHIP	ELCH0004714	18 nH,J ,1005 ,R/TP ,		
7	L121	INDUCTOR,CHIP	ELCH0004708	2.7 nH,S ,1005 ,R/TP ,		
7	L122	INDUCTOR,CHIP	ELCH0004709	3.3 nH,S ,1005 ,R/TP ,		
7	L123	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	L124	INDUCTOR,CHIP	ELCH0004708	2.7 nH,S ,1005 ,R/TP ,		
7	L127	INDUCTOR,CHIP	ELCH0004709	3.3 nH,S ,1005 ,R/TP ,		
7	L128	INDUCTOR,CHIP	ELCH0001034	3.3 nH,S ,1005 ,R/TP ,PBFREE		
7	L129	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	L130	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	L131	INDUCTOR,CHIP	ELCH0004720	1.2 nH,S ,1005 ,R/TP ,		
7	L132	INDUCTOR,CHIP	ELCH0004721	2.2 nH,S ,1005 ,R/TP ,		
7	L134	INDUCTOR,CHIP	ELCH0004720	1.2 nH,S ,1005 ,R/TP ,		
7	L135	INDUCTOR,CHIP	ELCH0004727	100 nH,J ,1005 ,R/TP ,		
7	L2	INDUCTOR,CHIP	ELCH0001412	1.8 nH,S ,1005 ,R/TP ,PBFREE		

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	L3	INDUCTOR,CHIP	ELCH0004713	6.8 nH,J ,1005 ,R/TP ,		
7	L4	INDUCTOR,CHIP	ELCH0004709	3.3 nH,S ,1005 ,R/TP ,		
7	L700	INDUCTOR,SMD,POWER	ELCP0008005	4.7 uH,M ,2.5X2.0X1.0 ,R/TP ,MLCI ,; ,; ,20% ,; ,; ,; ,; ,; ,SHIELD ,2.5X2X1MM ,[empty] ,R/TP ,Inductor,Wire Wound,Chip		
7	L701	INDUCTOR,SMD,POWER	ELCP0008005	4.7 uH,M ,2.5X2.0X1.0 ,R/TP ,MLCI ,; ,; ,20% ,; ,; ,; ,; ,; ,SHIELD ,2.5X2X1MM ,[empty] ,R/TP ,Inductor,Wire Wound,Chip		
7	L702	INDUCTOR,SMD,POWER	ELCP0008004	4.7 uH,M ,1 ,R/TP , ,; , ,0.3NH , , , , , ,NON SHIELD ,2.5X2X1MM ,11MM ,R/TP		
7	L703	INDUCTOR,SMD,POWER	ELCP0008004	4.7 uH,M ,1 ,R/TP , ,; , ,0.3NH , , , , , ,NON SHIELD ,2.5X2X1MM ,11MM ,R/TP		
7	LD1	DIODE,LED,CHIP	EDLH0012001	RED ,ETC ,R/TP ,side view(PB-FREE)		
7	R100	PCB ASSY,MAIN,PAD SHORT	SAFP0000501			
7	R101	RES,CHIP,MAKER	ERHZ0000456	2.2 ohm,1/16W ,J ,1005 ,R/TP		
7	R102	RES,CHIP,MAKER	ERHZ0000402	10 ohm,1/16W ,J ,1005 ,R/TP		
7	R103	RES,CHIP,MAKER	ERHZ0003801	5.1 ohm,1/16W ,J ,1005 ,R/TP		
7	R104	RES,CHIP,MAKER	ERHZ0003801	5.1 ohm,1/16W ,J ,1005 ,R/TP		
7	R105	PCB ASSY,MAIN,PAD SHORT	SAFP0000501			
7	R106	RES,CHIP,MAKER	ERHZ0000212	12 Kohm,1/16W ,F ,1005 ,R/TP		
7	R107	PCB ASSY,MAIN,PAD SHORT	SAFP0000401			
7	R108	PCB ASSY,MAIN,PAD OPEN	SAFO0000401	0OHM DNI		
7	R109	RES,CHIP,MAKER	ERHZ0000457	30 ohm,1/16W ,J ,1005 ,R/TP		
7	R111	RES,CHIP,MAKER	ERHZ0000443	2200 ohm,1/16W ,J ,1005 ,R/TP		
7	R112	RES,CHIP,MAKER	ERHZ0000327	180 ohm,1/16W ,F ,1005 ,R/TP		
7	R113	RES,CHIP,MAKER	ERHZ0000327	180 ohm,1/16W ,F ,1005 ,R/TP		
7	R115	RES,CHIP,MAKER	ERHZ0000490	51 ohm,1/16W ,J ,1005 ,R/TP		
7	R116	RES,CHIP,MAKER	ERHZ0000348	12 ohm,1/16W ,F ,1005 ,R/TP		
7	R117	RES,CHIP,MAKER	ERHZ0000411	120 ohm,1/16W ,J ,1005 ,R/TP		
7	R118	RES,CHIP,MAKER	ERHZ0000411	120 ohm,1/16W ,J ,1005 ,R/TP		
7	R119	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
7	R120	PCB ASSY,MAIN,PAD SHORT	SAFP0000501			
7	R121	RES,CHIP,MAKER	ERHZ0000495	56 ohm,1/16W ,J ,1005 ,R/TP		

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	R122	RES,CHIP,MAKER	ERHZ0000408	110 ohm,1/16W ,J ,1005 ,R/TP		
7	R123	RES,CHIP,MAKER	ERHZ0000408	110 ohm,1/16W ,J ,1005 ,R/TP		
7	R124	RES,CHIP	ERHY0000104	49.9 ohm,1/16W,F,1005,R/TP		
7	R125	RES,CHIP,MAKER	ERHZ0000404	1 Kohm,1/16W ,J ,1005 ,R/TP		
7	R19	RES,CHIP,MAKER	ERHZ0000222	150 Kohm,1/16W ,F ,1005 ,R/TP		
7	R21	RES,CHIP,MAKER	ERHZ0000265	300 Kohm,1/16W ,F ,1005 ,R/TP		
7	R23	RES,CHIP,MAKER	ERHZ0000443	2200 ohm,1/16W ,J ,1005 ,R/TP		
7	R257	RES,CHIP,MAKER	ERHZ0000252	240 Kohm,1/16W ,F ,1005 ,R/TP		
7	R308	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
7	R318	RES,CHIP,MAKER	ERHZ0000437	2 Kohm,1/16W ,J ,1005 ,R/TP		
7	R340	RES,CHIP,MAKER	ERHZ0000249	22 ohm,1/16W ,F ,1005 ,R/TP		
7	R4	RES,CHIP,MAKER	ERHZ0000443	2200 ohm,1/16W ,J ,1005 ,R/TP		
7	R5	PCB ASSY,MAIN,PAD OPEN	SAFO0000401	0OHM DNI		
7	R504	RES,CHIP,MAKER	ERHZ0000463	33 ohm,1/16W ,J ,1005 ,R/TP		
7	R505	RES,CHIP	ERHY0009526	4.7 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R506	RES,CHIP	ERHY0009526	4.7 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R507	RES,CHIP,MAKER	ERHZ0000206	10 ohm,1/16W ,F ,1005 ,R/TP		
7	R508	RES,CHIP,MAKER	ERHZ0000402	10 ohm,1/16W ,J ,1005 ,R/TP		
7	R509	RES,CHIP,MAKER	ERHZ0000402	10 ohm,1/16W ,J ,1005 ,R/TP		
7	R510	RES,CHIP,MAKER	ERHZ0000402	10 ohm,1/16W ,J ,1005 ,R/TP		
7	R511	RES,CHIP,MAKER	ERHZ0000402	10 ohm,1/16W ,J ,1005 ,R/TP		
7	R6	PCB ASSY,MAIN,PAD SHORT	SAFP0000401			
7	R600	RES,CHIP	ERHY0009541	470 ohm,1/20W(0.05W) ,F ,0603 ,R/TP		
7	R603	RES,CHIP,MAKER	ERHZ0000443	2200 ohm,1/16W ,J ,1005 ,R/TP		
7	R604	RES,CHIP,MAKER	ERHZ0000434	1 ohm,1/16W ,J ,1005 ,R/TP		
7	R605	RES,CHIP,MAKER	ERHZ0000434	1 ohm,1/16W ,J ,1005 ,R/TP		
7	R606	RES,CHIP,MAKER	ERHZ0000203	10 Kohm,1/16W ,F ,1005 ,R/TP		
7	R607	RES,CHIP,MAKER	ERHZ0000203	10 Kohm,1/16W ,F ,1005 ,R/TP		
7	R614	RES,CHIP,MAKER	ERHZ0000439	200 Kohm,1/16W ,J ,1005 ,R/TP		
7	R704	RES,CHIP,MAKER	ERHZ0000402	10 ohm,1/16W ,J ,1005 ,R/TP		
7	R705	RES,CHIP	ERHY0009505	10 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	R707	RES,CHIP,MAKER	ERHZ0000265	300 Kohm,1/16W ,F ,1005 ,R/TP		
7	R708	RES,CHIP,MAKER	ERHZ0000222	150 Kohm,1/16W ,F ,1005 ,R/TP		
7	R710	RES,CHIP	ERHY0009504	1 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R714	RES,CHIP,MAKER	ERHZ0004201	121000 ohm,1/16W ,F ,1005 ,R/TP		
7	R715	RES,CHIP	ERHY0000105	51 ohm,1/16W,F,1005,R/TP		
7	R718	RES,CHIP	ERHY0009547	200 Kohm,1/20W(0.05W) ,F ,0603 ,R/TP		
7	R807	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
7	R808	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
7	R809	RES,CHIP	ERHY0003301	100 ohm,1/16W ,J ,1005 ,R/TP		
7	R810	RES,CHIP,MAKER	ERHZ0000434	1 ohm,1/16W ,J ,1005 ,R/TP		
7	R812	RES,CHIP	ERHY0009526	4.7 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R815	RES,CHIP	ERHY0009526	4.7 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R817	RES,CHIP	ERHY0009505	10 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R821	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
7	SW100	CONN,RF SWITCH	ENWY0005301	,SMD , dB,H=1.85 ,; ,3.00MM ,STRAIGHT ,RF ADAPTER ,SMD ,R/TP ,AU , ,		
7	SW101	CONN,RF SWITCH	ENWY0003901	,SMD , dB,		
7	U1	MODULE,ETC	SMZY0021701	GPS LNA Module integrated Filter, 3.3x2.1x1.1 ,; ,RF Module		
7	U100	IC	EUSY0344001	QFN ,68 ,R/TP ,Quad GSM, Tri WCDMA RF Transceiver ,; ,IC,Tx/Rx		
7	U102	PAM	SMPY0019101	dBm, %, A, dBc, dB,5x5 ,SMD ,Polar Edge for QCT ,; , , , , , , , ,LGA ,R/TP ,		
7	U103	COUPLER,RF DIRECTIONAL	SCDY0004401	19.4 dB,0.25 dB,32 dB,1.0*0.5*0.4 ,SMD ,Pb-free_DCN+JCDMA ,; ,[empty] ,874.5MHz ,101MHz ,SMD ,R/TP		
7	U104	PAM	SMPY0018801	28 dBm, %, A, dBc,28 dB,3x5 ,SMD ,3G Dual PAM B1+8. HELP ,; , , , , , , , ,LGA ,R/TP ,14		
7	U105	COUPLER,RF DIRECTIONAL	SCDY0004301	20.5 dB,0.22 dB,34 dB,1.0*0.5*0.4 ,SMD ,Pb_free_KPCS+USPCS+WCDMA ,; ,[empty] ,1865MHz ,230MHz ,SMD ,R/TP		
7	U252	IC	EUSY0200803	MFL ,8 ,R/TP ,Haptic Driver IC,2X2 ,; ,IC,Motor Driver		
7	U301	IC	EUSY0306201	Micro pak ,8 PIN,R/TP ,D Flip Flip		
7	U601	IC	EUSY0355501	PLP1010-4 ,4 PIN,R/TP ,1.8V 150mA Single LDO ,; ,IC,LDO Voltage Regulator		
7	U701	IC	EUSY0342201	CSP ,137 PIN,R/TP ,PMIC, for MSM7xxx ,; ,IC,PMIC		
7	VA1	VARISTOR	SEVY0003601	5.6 V, ,SMD ,100pF, 1005		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	VA500	VARISTOR	SEVY0004301	18 V, ,SMD ,10pF, 1005		
7	VA501	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	VA502	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	VA600	VARISTOR	SEVY0005202	5.5 V,+-30 ,SMD ,1005, 100 pF, Pb free		
7	X300	VCTCXO	EXSK0004802	19.2 MHz,1.5 PPM,10 pF,SMD ,3.2*2.5*1.2 , ,; ,19.2 Mhz ,1.5PPM ,2.8V ,3.2 ,2.5 ,1.2 , ,SMD ,P/TP		
7	X700	X-TAL	EXXY0018701	32.768 KHz,20 PPM,12.5 pF,70 Kohm,SMD ,3.2*1.5*0.9 ,		
6	SAFD00	PCB ASSY,MAIN,SMT TOP	SAFD0122501			
7	C1	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
7	C10	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C13	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	C14	CAP,CERAMIC,CHIP	ECCH0009103	100 pF,50V ,J ,X7R ,TC ,0603 ,R/TP , , ,[empty] ,[empty] ,C0G ,[empty] ,[empty] ,[empty] ,0.3 mm		
7	C250	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C251	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
7	C252	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C253	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C257	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
7	C260	CAP,CHIP,MAKER	ECZH0001503	0.47 uF,10V ,Z ,Y5V ,HD ,1608 ,R/TP		
7	C261	CAP,CHIP,MAKER	ECZH0001503	0.47 uF,10V ,Z ,Y5V ,HD ,1608 ,R/TP		
7	C262	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
7	C263	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C264	CAP,CERAMIC,CHIP	ECCH0000179	22 nF,16V ,K ,X5R ,HD ,1005 ,R/TP		
7	C265	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C266	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
7	C267	CAP,CERAMIC,CHIP	ECCH0000163	47 nF,10V,K,X5R,HD,1005,R/TP		
7	C268	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C300	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	C301	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	C302	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	C303	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C304	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C305	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C306	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
7	C307	CAP,TANTAL,CHIP	ECTH0001903	22 uF,6.3V ,M ,L_ESR ,1608 ,R/TP		
7	C308	CAP,CERAMIC,CHIP	ECCH0000110	10 pF,50V,D,NP0,TC,1005,R/TP		
7	C309	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C310	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
7	C311	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C312	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C314	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C316	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C317	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C318	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C319	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C323	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C324	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C325	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C329	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
7	C400	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C401	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C402	CAP,CERAMIC,CHIP	ECCH0000147	2.2 nF,50V,K,X7R,HD,1005,R/TP		
7	C403	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C404	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C405	CAP,CHIP,MAKER	ECZH0025920	1 nF,16V ,K ,X7R ,HD ,0603 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty]		
7	C406	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C407	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
7	C408	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C409	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C410	CAP,CHIP,MAKER	ECZH0025920	1 nF,16V ,K ,X7R ,HD ,0603 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty]		

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	C411	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C412	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C413	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
7	C414	CAP,CERAMIC,CHIP	ECCH0009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
7	C415	CAP,CHIP,MAKER	ECZH0025920	1 nF,16V ,K ,X7R ,HD ,0603 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty]		
7	C416	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C417	CAP,CHIP,MAKER	ECZH0025920	1 nF,16V ,K ,X7R ,HD ,0603 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty]		
7	C418	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C419	CAP,CHIP,MAKER	ECZH0025920	1 nF,16V ,K ,X7R ,HD ,0603 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty]		
7	C420	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C421	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
7	C422	CAP,CERAMIC,CHIP	ECCH0009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
7	C423	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C424	CAP,CERAMIC,CHIP	ECCH0009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
7	C425	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C426	CAP,CERAMIC,CHIP	ECCH0009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
7	C427	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C428	CAP,CERAMIC,CHIP	ECCH0009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
7	C429	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
7	C430	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
7	C431	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C432	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C433	CAP,CERAMIC,CHIP	ECCH0009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
7	C434	CAP,CHIP,MAKER	ECZH0025920	1 nF,16V ,K ,X7R ,HD ,0603 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty]		
7	C435	CAP,CHIP,MAKER	ECZH0000839	4.7 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP		
7	C436	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
7	C437	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C438	CAP,CERAMIC,CHIP	ECCH0009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	C439	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C440	CAP,CHIP,MAKER	ECZH0025920	1 nF,16V ,K ,X7R ,HD ,0603 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty]		
7	C441	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C442	CAP,CERAMIC,CHIP	ECCH0009105	82 pF,50V ,J ,X7R ,TC ,0603 ,R/TP		
7	C443	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
7	C444	CAP,CHIP,MAKER	ECZH0025920	1 nF,16V ,K ,X7R ,HD ,0603 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty]		
7	C445	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C446	CAP,CERAMIC,CHIP	ECCH0009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
7	C447	CAP,CHIP,MAKER	ECZH0025920	1 nF,16V ,K ,X7R ,HD ,0603 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty]		
7	C448	CAP,CERAMIC,CHIP	ECCH0009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
7	C449	CAP,CHIP,MAKER	ECZH0000844	68 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C500	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C501	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C502	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C503	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C504	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C505	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C506	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C507	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C508	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C509	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C510	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C511	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C512	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C513	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C514	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C515	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C516	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C517	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C518	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	C519	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C520	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
7	C521	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
7	C522	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C528	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C529	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C530	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C531	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C532	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C600	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
7	C601	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
7	C602	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
7	C603	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
7	C604	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
7	C605	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
7	C606	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
7	C607	CAP,CHIP,MAKER	ECZH0001216	220 nF,10V ,K ,X5R ,TC ,1005 ,R/TP		
7	C608	CAP,CHIP,MAKER	ECZH0001216	220 nF,10V ,K ,X5R ,TC ,1005 ,R/TP		
7	C609	CAP,CHIP,MAKER	ECZH0001102	18000 pF,16V ,K ,X7R ,HD ,1005 ,R/TP		
7	C610	CAP,CHIP,MAKER	ECZH0001102	18000 pF,16V ,K ,X7R ,HD ,1005 ,R/TP		
7	C611	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
7	C612	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP		
7	C613	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
7	C7	RES,CHIP	ERHY0019401	5.6 ohm,1/20W(0.05W) ,J ,0603 ,R/TP ,; ,5.6 ,5% ,1/20W ,0603 ,R/TP		
7	C706	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C707	CAP,CERAMIC,CHIP	ECCH0007802	4.7 uF,10V ,M ,X5R ,TC ,1608 ,R/TP		
7	C708	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C709	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C718	CAP,CERAMIC,CHIP	ECCH0007802	4.7 uF,10V ,M ,X5R ,TC ,1608 ,R/TP		
7	C727	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	C728	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C729	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C730	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C731	CAP,CERAMIC,CHIP	ECCH0007802	4.7 uF,10V ,M ,X5R ,TC ,1608 ,R/TP		
7	C732	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C734	CAP,TANTAL,CHIP	ECTH0005203	33 uF,10V ,M ,STD ,2012 ,R/TP ,; , ,[empty] ,[empty] , ,[empty] , ,[empty] ,[empty] ,[empty] ,[empty]		
7	C736	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C757	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C759	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C760	CAP,CHIP,MAKER	ECZH0003503	1 uF,25V ,K ,X5R ,HD ,1608 ,R/TP		
7	C761	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
7	C762	CAP,TANTAL,CHIP	ECTH0005203	33 uF,10V ,M ,STD ,2012 ,R/TP ,; , ,[empty] ,[empty] , ,[empty] , ,[empty] ,[empty] ,[empty] ,[empty]		
7	C763	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
7	C764	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C765	CAP,CERAMIC,CHIP	ECCH0009226	39 pF,25V ,J ,X7R ,TC ,0603 ,R/TP		
7	C766	CAP,CERAMIC,CHIP	ECCH0009106	10 nF,16V ,K ,X7R ,TC ,0603 ,R/TP		
7	C767	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C768	CAP,CERAMIC,CHIP	ECCH0007802	4.7 uF,10V ,M ,X5R ,TC ,1608 ,R/TP		
7	C769	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP		
7	C800	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C801	CAP,CERAMIC,CHIP	ECCH0009103	100 pF,50V ,J ,X7R ,TC ,0603 ,R/TP , , ,[empty] ,[empty] ,C0G ,[empty] ,[empty] ,[empty] ,0.3 mm		
7	C802	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C803	CAP,CERAMIC,CHIP	ECCH0009103	100 pF,50V ,J ,X7R ,TC ,0603 ,R/TP , , ,[empty] ,[empty] ,C0G ,[empty] ,[empty] ,[empty] ,0.3 mm		
7	C804	CAP,CERAMIC,CHIP	ECCH0000182	0.1 uF,10V ,K ,X5R ,HD ,1005 ,R/TP		
7	C805	CAP,CERAMIC,CHIP	ECCH0009103	100 pF,50V ,J ,X7R ,TC ,0603 ,R/TP , , ,[empty] ,[empty] ,C0G ,[empty] ,[empty] ,[empty] ,0.3 mm		
7	C806	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C807	CAP,CERAMIC,CHIP	ECCH0009103	100 pF,50V ,J ,X7R ,TC ,0603 ,R/TP , , ,[empty] ,[empty] ,C0G ,[empty] ,[empty] ,[empty] ,0.3 mm		
7	C808	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C809	CAP,CERAMIC,CHIP	ECCH0009103	100 pF,50V ,J ,X7R ,TC ,0603 ,R/TP , , ,[empty] ,[empty] ,C0G ,[empty] ,[empty] ,[empty] ,0.3 mm		

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	C810	CAP,CERAMIC,CHIP	ECCH0000151	4.7 nF,25V,K,X7R,HD,1005,R/TP		
7	C817	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP		
7	C820	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C821	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C822	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C823	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C824	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
7	C825	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C826	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	CN801	CONNECTOR,ETC	ENZY0023801	10 , mm,STRAIGHT , ,		
7	D300	DIODE,SWITCHING	EDSY0010501	ESC ,30 V,100 mA,R/TP ,SWITCH DIODE		
7	D301	DIODE,SWITCHING	EDSY0010501	ESC ,30 V,100 mA,R/TP ,SWITCH DIODE		
7	D302	DIODE,TVS	EDTY0008606	DFN-2 ,7.82 V,150 mW,R/TP ,PB-FREE		
7	D702	DIODE,SWITCHING	EDSY0011901	EMD2 ,30 V,1 A,R/TP ,VF=1.5V(IF=200mA) , IR=30uA(VR=10V)		
7	D703	DIODE,SWITCHING	EDSY0011901	EMD2 ,30 V,1 A,R/TP ,VF=1.5V(IF=200mA) , IR=30uA(VR=10V)		
7	FB4	FILTER,BEAD,CHIP	SFBH0009601	220 ohm,1005 ,DCR : 0.35 , Rated current : 500mA,PBFREE		
7	FB5	FILTER,BEAD,CHIP	SFBH0009601	220 ohm,1005 ,DCR : 0.35 , Rated current : 500mA,PBFREE		
7	FB700	FILTER,BEAD,CHIP	SFBH0008101	600 ohm,1005 ,		
7	FB800	FILTER,BEAD,CHIP	SFBH0000909	60 ohm,1005 ,		
7	FL700	FILTER,EMI/POWER	SFEY0015301	SMD ,Pb-free_Bais ,; ,Filter,LCR		
7	IC600	IC	EUSY0360201	CSP ,20 ,R/TP ,Class D(mono) + Capless HP + A/S ,; ,IC,Audio Sub System		
7	IC700	IC	EUSY0371201	WLP ,20 ,R/TP ,MUIC for 5Pin Micro USB ,; ,IC,Analog Switch		
7	L250	INDUCTOR,CHIP	ELCH0001430	100 nH,J ,1005 ,R/TP ,PBFREE		
7	L251	INDUCTOR,CHIP	ELCH0001430	100 nH,J ,1005 ,R/TP ,PBFREE		
7	L253	INDUCTOR,CHIP	ELCH0005019	68 nH,J ,1005 ,R/TP ,		
7	L254	INDUCTOR,SMD,POWER	ELCP0008008	1 uH,M ,2.0x2.5x1.0 ,R/TP ,MLCI ,; ,1uH ,2% ,; ,; ,0.09ohm ,; , ,SHIELD ,2.5X2X1MM ,[empty] ,R/TP ,Inductor,Wire Wound,Chip		
7	L300	INDUCTOR,CHIP	ELCH0004910	100 nH,J ,1608 ,R/TP ,		

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	L400	INDUCTOR,SMD,POWER	ELCP0008014	4.7 uH,N ,2.0X1.2X1.0 ,R/TP ,; ,; ,4.7uH ,30% ,; ,; ,; ,; ,; ,NON SHIELD ,2X1.25X1MM ,[empty] ,[empty] ,Inductor,Wire Wound,Chip		
7	L500	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		
7	Q250	TR,BJT,NPN	EQBN0012401	ESM ,100 mW,R/TP ,NPN TRANSISTOR		
7	R1	RES,CHIP	ERHY0009526	4.7 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R10	PCB ASSY,MAIN,PAD SHORT	SAFP0000501			
7	R2	RES,CHIP	ERHY0009526	4.7 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R20	RES,CHIP,MAKER	ERHZ0000249	22 ohm,1/16W ,F ,1005 ,R/TP		
7	R22	RES,CHIP	ERHY0000129	18K ohm,1/16W,F,1005,R/TP		
7	R24	PCB ASSY,MAIN,PAD SHORT	SAFP0000501			
7	R250	RES,CHIP,MAKER	ERHZ0000204	100 Kohm,1/16W ,F ,1005 ,R/TP		
7	R251	RES,CHIP,MAKER	ERHZ0000404	1 Kohm,1/16W ,J ,1005 ,R/TP		
7	R252	RES,CHIP,MAKER	ERHZ0000530	5.1 Kohm,1/16W ,J ,1005 ,R/TP		
7	R253	RES,CHIP,MAKER	ERHZ0000486	47 Kohm,1/16W ,J ,1005 ,R/TP		
7	R254	RES,CHIP,MAKER	ERHZ0000486	47 Kohm,1/16W ,J ,1005 ,R/TP		
7	R256	RES,CHIP,MAKER	ERHZ0000518	910 ohm,1/16W ,J ,1005 ,R/TP		
7	R258	RES,CHIP,MAKER	ERHZ0000204	100 Kohm,1/16W ,F ,1005 ,R/TP		
7	R265	PCB ASSY,MAIN,PAD SHORT	SAFP0000401			
7	R266	RES,CHIP,MAKER	ERHZ0000439	200 Kohm,1/16W ,J ,1005 ,R/TP		
7	R267	RES,CHIP	ERHY0009506	100 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R268	RES,CHIP	ERHY0009506	100 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R3	RES,CHIP,MAKER	ERHZ0000463	33 ohm,1/16W ,J ,1005 ,R/TP		
7	R300	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
7	R301	RES,CHIP,MAKER	ERHZ0000404	1 Kohm,1/16W ,J ,1005 ,R/TP		
7	R302	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
7	R303	PCB ASSY,MAIN,PAD OPEN	SAFO0000501	0OHM_1005_DNI		
7	R304	PCB ASSY,MAIN,PAD OPEN	SAFO0000501	0OHM_1005_DNI		
7	R305	RES,CHIP,MAKER	ERHZ0000404	1 Kohm,1/16W ,J ,1005 ,R/TP		
7	R307	RES,CHIP,MAKER	ERHZ0000243	2200 ohm,1/16W ,F ,1005 ,R/TP		

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	R311	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
7	R312	RES,CHIP,MAKER	ERHZ0000463	33 ohm,1/16W ,J ,1005 ,R/TP		
7	R315	RES,CHIP	ERHY0000254	4.7K ohm,1/16W,J,1005,R/TP		
7	R316	RES,CHIP	ERHY0000254	4.7K ohm,1/16W,J,1005,R/TP		
7	R317	RES,CHIP	ERHY0009526	4.7 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R319	RES,CHIP	ERHY0009526	4.7 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R320	RES,CHIP	ERHY0009526	4.7 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R321	RES,CHIP	ERHY0009526	4.7 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R322	RES,CHIP,MAKER	ERHZ0000484	470 ohm,1/16W ,J ,1005 ,R/TP		
7	R323	RES,CHIP,MAKER	ERHZ0000463	33 ohm,1/16W ,J ,1005 ,R/TP		
7	R324	RES,CHIP,MAKER	ERHZ0000443	2200 ohm,1/16W ,J ,1005 ,R/TP		
7	R325	RES,CHIP,MAKER	ERHZ0000443	2200 ohm,1/16W ,J ,1005 ,R/TP		
7	R328	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	R329	RES,CHIP,MAKER	ERHZ0000407	1000 Kohm,1/16W ,J ,1005 ,R/TP		
7	R330	RES,CHIP,MAKER	ERHZ0000438	20 Kohm,1/16W ,J ,1005 ,R/TP		
7	R331	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
7	R400	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	R401	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
7	R403	RES,CHIP,MAKER	ERHZ0000326	330 ohm,1/16W ,F ,1005 ,R/TP		
7	R404	RES,CHIP,MAKER	ERHZ0000326	330 ohm,1/16W ,F ,1005 ,R/TP		
7	R500	RES,CHIP	ERHY0009503	100 ohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R501	RES,CHIP	ERHY0009503	100 ohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R502	RES,CHIP	ERHY0009503	100 ohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R503	RES,CHIP	ERHY0009526	4.7 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R601	RES,CHIP,MAKER	ERHZ0000206	10 ohm,1/16W ,F ,1005 ,R/TP		
7	R602	RES,CHIP,MAKER	ERHZ0000206	10 ohm,1/16W ,F ,1005 ,R/TP		
7	R608	RES,CHIP	ERHY0009561	56 Kohm,1/20W(0.05W) ,F ,0603 ,R/TP		
7	R609	RES,CHIP	ERHY0009561	56 Kohm,1/20W(0.05W) ,F ,0603 ,R/TP		
7	R610	RES,CHIP,MAKER	ERHZ0000298	560 ohm,1/16W ,F ,1005 ,R/TP		
7	R611	RES,CHIP,MAKER	ERHZ0000298	560 ohm,1/16W ,F ,1005 ,R/TP		
7	R612	RES,CHIP,MAKER	ERHZ0000298	560 ohm,1/16W ,F ,1005 ,R/TP		

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	R613	RES,CHIP,MAKER	ERHZ0000298	560 ohm,1/16W ,F ,1005 ,R/TP		
7	R7	RES,CHIP	ERHY0009536	100 Kohm,1/20W(0.05W) ,F ,0603 ,R/TP		
7	R706	RES,CHIP,MAKER	ERHZ0000204	100 Kohm,1/16W ,F ,1005 ,R/TP		
7	R709	RES,CHIP	ERHY0009504	1 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R711	RES,CHIP,MAKER	ERHZ0000212	12 Kohm,1/16W ,F ,1005 ,R/TP		
7	R712	RES,CHIP	ERHY0009307	470 Kohm,1/20W(0.05W) ,F ,0603 ,R/TP		
7	R713	RES,CHIP,MAKER	ERHZ0000537	680000 ohm,1/16W ,F ,1005 ,R/TP		
7	R716	RES,CHIP,MAKER	ERHZ0000318	80.6 Kohm,1/16W ,F ,1005 ,R/TP		
7	R717	RES,CHIP,MAKER	ERHZ0000201	100 ohm,1/16W ,F ,1005 ,R/TP		
7	R719	RES,CHIP,MAKER	ERHZ0003901	0.1 ohm,1/4W ,F ,2012 ,R/TP ,; ,0.1 ,1% ,1/4W ,2012 ,R/TP		
7	R722	PCB ASSY,MAIN,PAD SHORT	SAFP0000401			
7	R724	RES,CHIP	ERHY0009505	10 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R725	RES,CHIP,MAKER	ERHZ0000352	75 ohm,1/16W ,F ,1005 ,R/TP		
7	R8	RES,CHIP,MAKER	ERHZ0000434	1 ohm,1/16W ,J ,1005 ,R/TP		
7	R811	RES,CHIP,MAKER	ERHZ0000201	100 ohm,1/16W ,F ,1005 ,R/TP		
7	R818	RES,CHIP,MAKER	ERHZ0000201	100 ohm,1/16W ,F ,1005 ,R/TP		
7	R820	RES,CHIP,MAKER	ERHZ0000267	3300 ohm,1/16W ,F ,1005 ,R/TP		
7	R9	RES,CHIP	ERHY0013101	2.7 ohm,1/16W ,J ,1005 ,R/TP		
7	SPFY00	PCB,MAIN	SPFY0203301	FR-4 ,0.8 mm,LX-BUMP 10 ,WHITE-BL40 CHANGE ,; , , , , , , , , ,		
7	U2	IC	EUSY0144701	SC70-5 ,5 PIN,R/TP ,INVERTER(Schmitt trigger), Pb Free		
7	U250	IC	EUSY0372801	PLP1010 ,4 ,R/TP ,150mA Single LDO ,; ,IC,LDO Voltage Regulator		
7	U251	IC	EUSY0349001	BGA ,8 PIN,R/TP ,Class AB SPK AMP ,; ,IC,Audio Amplifier		
7	U254	IC	EUSY0380001	QFN ,20 ,R/TP ,FM Transceiver(RDS), Digital Audio Input, 3*3*0.55 ,; ,IC Assembly		
7	U255	IC	EUSY0264502	DFN ,14 PIN,R/TP ,700mA Boost converter ,; ,IC,DC,DC Converter		
7	U3	IC	EUSY0240001	MICROPAK ,6 PIN,R/TP ,SINGLE BIT UNIT-DIRECTIONAL TRANSLATOR / PB FREE		
7	U300	IC	EUSY0144701	SC70-5 ,5 PIN,R/TP ,INVERTER(Schmitt trigger), Pb Free		
7	U302	IC	EUSY0344203	BGA ,543 ,R/TP ,543CSP,HSUPA, Standalone AP, H.264, WVGA, 8MCAM,Turbo 32MB ,; ,IC,Digital Baseband Processor		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	U401	IC	EUSY0380601	TFBGA ,137 ,ETC ,FULLY 1.8V 4G(LB/256Mx16) NAND+2G(DDR/16Mx4x32) SDRAM ,; ,IC,MCP		
7	U500	IC	EUSY0388801	BGA ,100 ,R/TP ,5M ISP Parallel ,; ,IC,Digital Signal Processors		
7	U501	IC	EUSY0227205	Micro SMC ,20 PIN,R/TP ,MM PM ,; ,IC,DC,DC Converter		
7	U600	IC	EUSY0347001	MiniQFN-10L ,10 PIN,R/TP ,1.8X1.4X0.55,0.6 Dual SPDT Analog Switch ,; ,IC,Analog Switch		
7	U700	IC	EUSY0320201	TFBGA ,36 PIN,R/TP ,USB2.0 Transceiver, 3.5X3.5X0.8		
7	U702	IC	EUSY0374601	TDFN ,8 ,R/TP ,Programmable OVP ,; ,IC,Charger		
7	U703	TR,FET,P-CHANNEL	EQFP0008601	DFN8 ,1.3 W,-20 V,-3.9 A,R/TP ,Intergrated power MOSFET with PNP Transistor		
7	U800	IC	EUSY0366801	BGA ,96 ,R/TP ,MDDI, SCALIER ,; ,IC,Mobile Pixel Link(MPL)		
7	U801	IC	EUSY0383101	CSP ,35 ,R/TP ,3.15x3.15x0.55 ,; ,IC,Sub PMIC		
7	VA250	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
7	VA251	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
7	VA601	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
7	VA602	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
7	VA700	VARISTOR	SEVY0003601	5.6 V, ,SMD ,100pF, 1005		
7	ZD1	DIODE,TVS	EDTY0010501	1.0 x 0.6 x 0.5mm ,15 V,120 W,R/TP , ,; , ,16.7V (min) ,28V (max) ,4A , ,[empty] ,R/TP ,2P ,1		
7	ZD250	DIODE,TVS	EDTY0010501	1.0 x 0.6 x 0.5mm ,15 V,120 W,R/TP , ,; , ,16.7V (min) ,28V (max) ,4A , ,[empty] ,R/TP ,2P ,1		
7	ZD700	DIODE,TVS	EDTY0008601	SOD-323 ,6 V,400 W,R/TP ,PB-FREE		
4	SAJY	PCB ASSY,SUB	SAJY0039801			15'
5	SAJB00	PCB ASSY,SUB,INSERT	SAJB0022201			
6	BRAH00	RESIN,PC	BRAH0001301	; , , , ,[empty]	Black	
6	SPKY	PCB,SIDEKEY	SPKY0075401	POLYI ,0.2 mm,DOUBLE , ,; , , , , , , , , ,		
5	SAJE00	PCB ASSY,SUB,SMT	SAJE0032101			
6	SAJC00	PCB ASSY,SUB,SMT BOTTOM	SAJC0030701			
7	C1	CAP,CERAMIC,CHIP	ECCH0002001	0.1 uF,6.3V ,K ,B ,HD ,1005 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,..5 mm		
7	C100	CAP,CHIP,MAKER	ECZH0003103	0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP		
7	C101	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C102	CAP,CHIP,MAKER	ECZH0000830	33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C103	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	C104	CAP,CHIP,MAKER	ECZH0000826	27 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C105	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C2	CAP,CERAMIC,CHIP	ECCH0000109	8 pF,50V,D,NP0,TC,1005,R/TP		
7	C200	CAP,CHIP,MAKER	ECZH0000813	100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP		
7	C202	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	C203	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	C206	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
7	C208	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
7	C209	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C210	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C211	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
7	C212	CAP,CERAMIC,CHIP	ECCH0007802	4.7 uF,10V ,M ,X5R ,TC ,1608 ,R/TP		
7	C213	CAP,CERAMIC,CHIP	ECCH0002001	0.1 uF,6.3V ,K ,B ,HD ,1005 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,.5 mm		
7	C214	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C215	CAP,CERAMIC,CHIP	ECCH0002001	0.1 uF,6.3V ,K ,B ,HD ,1005 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,.5 mm		
7	C216	CAP,CHIP,MAKER	ECZH0001215	1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP		
7	C217	CAP,CERAMIC,CHIP	ECCH0005604	10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm		
7	C218	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C219	CAP,CERAMIC,CHIP	ECCH0009101	0.1 uF,6.3V ,K ,X5R ,TC ,0603 ,R/TP		
7	C220	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP		
7	C221	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C224	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP		
7	C225	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C226	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	C227	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP		
7	C228	CAP,CERAMIC,CHIP	ECCH0000198	2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP		
7	CN101	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	CN102	CONNECTOR,BOARD TO BOARD	ENBY0045201	10 PIN,0.4 mm,STRAIGHT , , ,; , ,0.40MM ,STRAIGHT ,MALE ,SMD ,[empty] , ,		

12. EXPLODED VIEW & REPLACEMENT PART LIST

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	CN200	CONNECTOR,ETC	ENZY0026301	2 , mm,ETC , ,1.5 x 3.5 x 1.3t, Antenna Contact		
7	CN201	CONNECTOR,ETC	ENZY0026301	2 , mm,ETC , ,1.5 x 3.5 x 1.3t, Antenna Contact		
7	D100	DIODE,TVS	EDTY0008607	SC70-6L ,6 V,200 W,R/TP ,PB-FREE		
7	FB200	FILTER,BEAD,CHIP	SFBH0008101	600 ohm,1005 ,		
7	J100	CONN,SOCKET	ENSY0018101	6 PIN,ETC , ,2.54 mm,H=1.5		
7	L201	INDUCTOR,SMD,POWER	ELCP0008007	3.3 uH,N ,2.5*2.0*1.0 ,R/TP ,MLCI Power ,; ,3.3 ,30% ,; ,; ,; ,; ,; ,SHIELD ,2.5X2X1MM ,[empty] ,[empty] ,Inductor,Wire Wound,Chip		
7	L202	INDUCTOR,SMD,POWER	ELCP0008001	4.7 uH,M ,2.5*2.0*1.0 ,R/TP ,		
7	R1	PCB ASSY,MAIN,PAD SHORT	SAFP0000501			
7	R100	RES,CHIP,MAKER	ERHZ0000422	15 Kohm,1/16W ,J ,1005 ,R/TP		
7	R101	RES,CHIP	ERHY0009527	47 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R102	RES,CHIP	ERHY0009527	47 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R103	RES,CHIP	ERHY0009527	47 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R104	RES,CHIP	ERHY0009506	100 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R105	RES,CHIP	ERHY0009527	47 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R106	RES,CHIP	ERHY0009527	47 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R107	RES,CHIP,MAKER	ERHZ0000405	10 Kohm,1/16W ,J ,1005 ,R/TP		
7	R108	NOT ASSEMBLE	99999999999	NOT ASSEMBLE	Color Unfixed	
7	R200	RES,CHIP	ERHY0009558	68 Kohm,1/20W(0.05W) ,F ,0603 ,R/TP		
7	R201	RES,CHIP	ERHY0009558	68 Kohm,1/20W(0.05W) ,F ,0603 ,R/TP		
7	R202	RES,CHIP	ERHY0009558	68 Kohm,1/20W(0.05W) ,F ,0603 ,R/TP		
7	R203	RES,CHIP	ERHY0009558	68 Kohm,1/20W(0.05W) ,F ,0603 ,R/TP		
7	R204	RES,CHIP	ERHY0009505	10 Kohm,1/20W(0.05W) ,J ,0603 ,R/TP		
7	R208	PCB ASSY,MAIN,PAD SHORT	SAFP0000501			
7	R209	RES,CHIP,MAKER	ERHZ0000406	100 Kohm,1/16W ,J ,1005 ,R/TP		
7	S100	CONN,SOCKET	ENSY0021401	8 PIN,ETC , , mm,		
7	U100	IC	EUSY0378301	DFN ,10 ,R/TP ,3-Axis Acceleration Sensor, 3*3 ,; ,IC,PMIC		
7	U200	MODULE,ETC	SMZY0019601	WLAN(11b/g)+Bluetooth+FM Module 9 x 7.8 x 1.2 (BCM4325) ,; ,Bluetooth		
7	U202	IC	EUSY0354501	FBGA ,153 PIN,ETC ,1GB eMMC / 11.5x13 / moviNAND ,; ,IC,NAND Flash Memory		

Level	Location No.	Description	Part Number	Spec	Color	Remark
7	U203	IC	EUSY0355701	PLP1010-4 ,4 PIN,R/TP ,150mA 2.8V Single LDO ,; ,IC,Voltage Regulator		
7	VA102	VARISTOR	SEVY0001001	14 V, ,SMD ,50pF, 1005		
7	VA103	VARISTOR	SEVY0004401	18 V, ,SMD ,40pF, 1005		
7	VA104	VARISTOR	SEVY0004401	18 V, ,SMD ,40pF, 1005		
7	VA105	VARISTOR	SEVY0004401	18 V, ,SMD ,40pF, 1005		
7	VA106	VARISTOR	SEVY0004401	18 V, ,SMD ,40pF, 1005		
7	VA107	VARISTOR	SEVY0004401	18 V, ,SMD ,40pF, 1005		
7	VA108	VARISTOR	SEVY0004401	18 V, ,SMD ,40pF, 1005		
7	X200	TCXO	EXST0001901	26 MHz,2.5 PPM,10 pF,SMD ,32*15*1.0 ,TI_WL1251 ,; , ,2.5PPM ,2.8V , , , ,SMD ,R/TP		
6	SAJD00	PCB ASSY,SUB,SMT TOP	SAJD0033101			
7	CN100	CONNECTOR,BOARD TO BOARD	ENBY0031501	70 PIN,0.4 mm,ETC , ,H=1.5, Socket		
7	VA100	VARISTOR	SEVY0003601	5.6 V, ,SMD ,100pF, 1005		
7	VA101	VARISTOR	SEVY0003601	5.6 V, ,SMD ,100pF, 1005		
6	SPJY	PCB,SUB	SPJY0064701	FR-4 ,0.4 mm,BUILD-UP 4 ,WHTE SUB ,; , , , , , , , , ,		
4	SJMY00	VIBRATOR,MOTOR	SJMY0008509	2 V,.1 A,10*3.6 ,linear, no wire 2.0vrms ,; ,3V , , , , , , ,		
4	SJMY01	VIBRATOR,MOTOR	SJMY0007908	2.7 V,105 mA,3.5*6 ,3.5pi cylinder motor ,; ,3V , , , , , , ,		11'
4	SNGF00	ANTENNA,GSM,FIXED	SNGF0044302	3.0 ,-2.0 dBd, ,GSM QUAD+W-BAND I+II+V, INTERNAL ,; ,MULTI ,-2.0 ,50 ,3.0		9', 10'
4	SUSY00	SPEAKER	SUSY0027612	FPCB ,8 ohm,85 dB,1810 mm,BL40 module ,; , , , , , , ,FPC		6'
4	SVCY00	CAMERA	SVCY0023101	CMOS ,MEGA ,5M AF Toshiba(1/3.2"), 9.5x9.5x6.6t,Parallel,90degree,FPCB		14'
4	SWCC00	CABLE,COAXIAL	SWCC0008701	63.5 mm,1 LINE,Ant contact cable with clip ,; ,[empty] ,[empty] ,0.06M , ,[empty] , ,[empty]		