

ZZZ1
PCB DAZ@
DA60010L000
PCB 10F LA-A391P REV0 M/B HDI

S1
FRAME
ECOMV000200
@

S4
FRAME
ECOMV000200
for GLONASS
@

Compal Confidential

Schematics Document

ZSJEV

LA-A391P

2013-03-13

REV: 0.1

Security Classification		Compal Secret Data		Compal Electronics, Inc.	
Issued Date	2012/11/09	Deciphered Date	2014/11/09	Title Cover Page	
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giordano2 WIFI SKU block diagram

The diagram illustrates the hardware architecture of the giordano2 WIFI SKU. At the center is the **MT8125 Cortex-A7 1.2GHz Quad-Core**. It connects to several key components:

- Memory:** DDR3L 1GB (4Gb X16 *2 Pcs) via External Memory Interface (P6).
- Power Management:** MT6320 PMIC (F23-F25) connected to a Battery (P22) and a Switching Charger (P22). The PMIC provides LDO Output, BUCK Output, and VIBR_PMU.
- Audio:** Audio board conn. (P8) connected to Speaker (P16), MIC (P16), and LSA401P (Audio/B) via combo JACK (P18).
- Sensors & I/O:** Includes Front Camera (P10), Gyro Sensor MPU-3050 (P12), G Sensor Kionix_KXTF9-4100 (P13), Sidekey (volume up/down) (P15), Debug Port (P11), micro USB client (P17), and Capacitive Touch Panel CONN. (P14).
- Connectivity:** WiFi/BT4.0 GPS* (P9) and Russian SK MT3332 GLONASS (P21) are shown as optional or specific configurations.

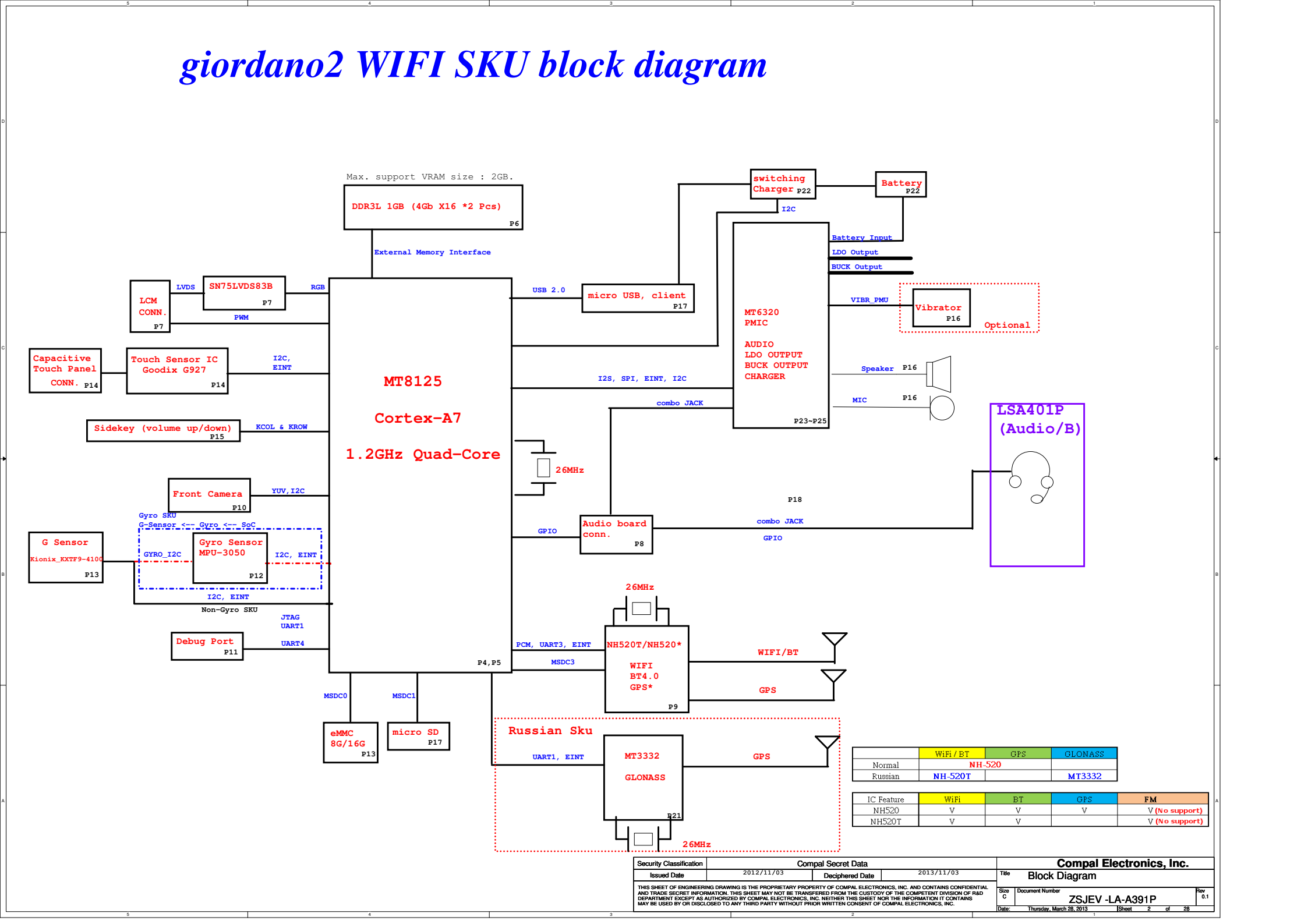
Optional Components: Vibrator (P16) and Russian SK MT3332 GLONASS (P21) are indicated as optional features.

	WiFi / BT	GPS	GLONASS
Normal	NH-520		
Russian	NH-520T		MT3332

IC Feature	WiFi	BT	GPS	FM
NH520	V	V	V	V (No support)
NH520T	V	V	V	V (No support)

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Issued Date: 2012/11/03
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Title: Block Diagram
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giordano2 WIFI SKU block diagram

Max. support VRAM size : 2GB.

DDR3L 1GB (4Gb X16 *2 Pcs) P6

External Memory Interface

LCM CONN. P7

SN75LVDS83B P7

RGB

PWM

Capacitive Touch Panel CONN. P14

Touch Sensor IC Goodix G927 P14

I2C, EINT

Sidekey (volume up/down) P15

KCOL & KROW

Front Camera P10

YUV, I2C

Gyro SKU

G-Sensor <-- Gyro <-- SoC

G Sensor Kionix KXTF9-4100 P13

GYRO I2C

Gyro Sensor MPU-3050 P12

I2C, EINT

I2C, EINT

Non-Gyro SKU

Debug Port P11

JTAG

UART1

UART4

eMMC 8G/16G P13

MSDC0

MSDC1

micro SD P17

micro USB, client P17

USB 2.0

MT6320 PMIC P23-P25

I2S, SPI, EINT, I2C

combo JACK

26MHz

Audio board conn. P8

GPIO

26MHz

NH520T/NH520* P9

PCM, UART3, EINT

MSDC3

WIFI/BT

GPS

MT3332 GLONASS P21

UART1, EINT

GPS

switching Charger P22

Battery P22

I2C

BATTERY Input

LDO Output

BUCK Output

VIBR PMU

Vibrator P16

Optional

Speaker P16

MIC P16

LSA401P (Audio/B)

	WiFi / BT	GPS	GLONASS
Normal	NH-520		
Russian	NH-520T		MT3332

IC Feature	WiFi	BT	GPS	FM
NH520	V	V	V	V (No support)
NH520T	V	V	V	V (No support)

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giordano2 WIFI SKU block diagram

Max. support VRAM size : 2GB.

DDR3L 1GB (4Gb X16 *2 Pcs) P6

External Memory Interface

LCM Conn. P7

SN75LVDS83B P7

RGB

PWM

Capacitive Touch Panel Conn. P14

Touch Sensor IC Goodix G927 P14

I2C, EINT

Sidekey (volume up/down) P15

KCOL & KROW

Front Camera P10

YUV, I2C

Gyro Sensor MPU-3050 P12

I2C, EINT

Gyro Sensor Kionix KXTF9-4100 P13

I2C, EINT

Debug Port P11

JTAG, UART1, UART4

eMMC 8G/16G P13

MSDC0

micro SD P17

MSDC1

micro USB, client P17

USB 2.0

MT6320 PMIC P23-P25

I2S, SPI, EINT, I2C

combo JACK

Audio board conn. P8

GPIO

26MHz

NH520T/NH520* P9

PCM, UART3, EINT

MSDC3

WIFI/BT

GPS

MT3332 GLONASS P21

UART1, EINT

GPS

Battery P22

switching Charger P22

I2C

Battery Input

LDO Output

BUCK Output

VIBR_PMU

Vibrator P16

Optional

Speaker P16

MIC P16

LSA401P (Audio/B)

	WiFi / BT	GPS	GLONASS
Normal	NH-520		
Russian	NH-520T		MT3332

IC Feature	WiFi	BT	GPS	FM
NH520	V	V	V	V (No support)
NH520T	V	V	V	V (No support)

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giordano2 WIFI SKU block diagram

Max. support VRAM size : 2GB.

DDR3L 1GB (4Gb X16 *2 Pcs) P6

External Memory Interface

MT8125 Cortex-A7 1.2GHz Quad-Core

LCM CONN. P7

SN75LVDS83B P7

RGB

PWM

Capacitive Touch Panel CONN. P14

Touch Sensor IC Goodix G927 P14

I2C, EINT

Sidekey (volume up/down) P15

KCOL & KROW

Front Camera P10

YUV, I2C

Gyro Sensor MPU-3050 P12

I2C, EINT

Gyro Sensor Kionix KXTF9-4100 P13

I2C, EINT

Non-Gyro SKU

Debug Port P11

JTAG, UART1, UART4

eMMC 8G/16G P13

MSDC0

micro SD P17

MSDC1

micro USB, client P17

USB 2.0

MT6320 PMIC P23-P25

I2S, SPI, EINT, I2C

combo JACK

Audio board conn. P8

GPIO

26MHz

NH520T/NH520* P9

PCM, UART3, EINT

MSDC3

WIFI/BT

GPS

MT3332 GLONASS P21

UART1, EINT

GPS

Battery P22

switching Charger P22

BATTERY Input

LDO Output

BUCK Output

VIBR PMU

Vibrator P16

Optional

Speaker P16

MIC P16

LSA401P (Audio/B)

	WiFi / BT	GPS	GLONASS
Normal	NH-520		
Russian	NH-520T		MT3332

IC Feature	WiFi	BT	GPS	FM
NH520	V	V	V	V (No support)
NH520T	V	V	V	V (No support)

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Voltage Rails

MT6320 Power Plane	Function	Power Level	IDLE	Sleep mode
VCORE_PMU	VCORE switching output	0.75 ~ 1.3	ON	Low voltage
VPROC_PMU	VPROC switching output	0.75 ~ 1.3	ON	Low voltage
VTCXO_1_PMU	LDO output for TCXO	2.8V	ON	OFF
VCAMA_PMU	LDO output for camaera analog	2.8V	ON	Gating by SW
VSRAM_PMU	LDO output used for 1.2V SRAM	1.2V	ON	Low voltage
VDD28_6583	LDO output used for 2.8V IO	2.8V	ON	Gating by SW
VGP2_PMU	LDO output for camaera 1.8V	1.8V	ON	Gating by SW
VEMC_3V3_PMU	LDO output for eMMC	3.3V	ON	Gating by SW
VMCH_PMU	LDO output for SD card	3.3V	ON	Gating by SW
VGP5_PMU	LDO output for Touch panel	2.8V	ON	Gating by SW
DDR3VCCIO	LDO output for DDR3L	1.35V	ON	Gating by SW
VDD33_6583	LCD & Bridge power	3.3V	ON	Gating by SW
VDD18_6583	LDO output used for 1.8V IO	1.8V	ON	Gating by SW

Main board ID

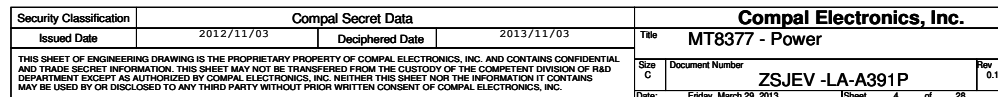
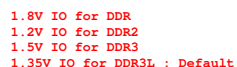
MB_ID0	MB_ID1	
0	0	EVT
0	1	DVT
1	0	PVT
1	1	MP

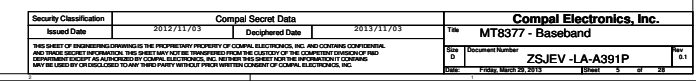
I2C address

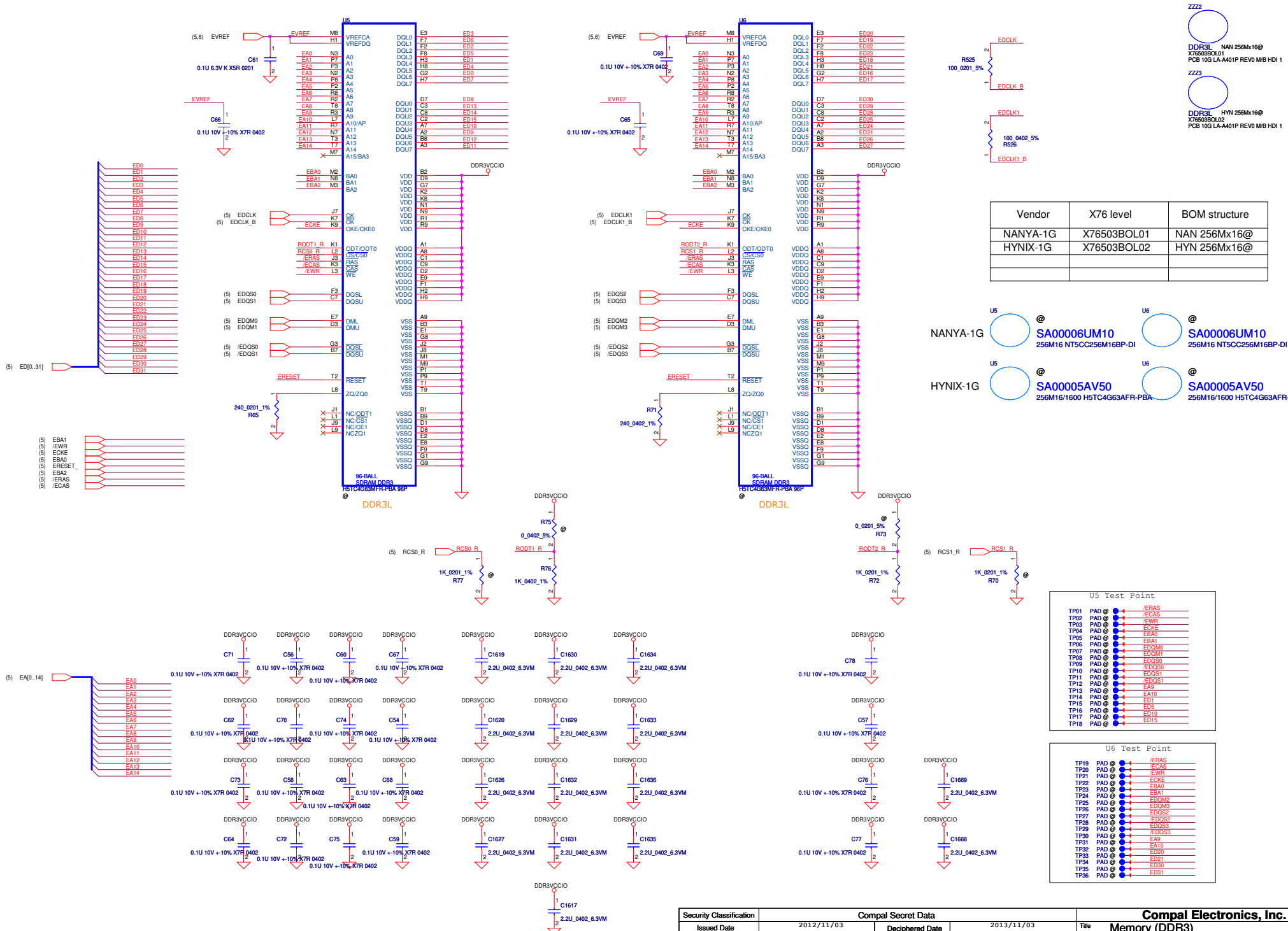
Device	Address(7 bit)	Address(8bit)	
		Write	Read
Gyro (MPU-3050)	0x68	0xD0	0xD1
G-sensor (KXTIK-1004)	0x0F	0x1E	0x1F
Touch screen (GT927)	0x5D	0xBA	0xBB
Camera (OV7675)	0x21	0x42	0x43
Charge (BQ24196)	0x6B	0xD6	0xD7
G-sensor(STK-8313)			

BOM structure

Name	Function	
DAZ@	PCB	
EMC@	for EMC request	
NH520@	AW-NH520	
NH520_EMC@	GPS EMC	
GLONASS@	MT3332	





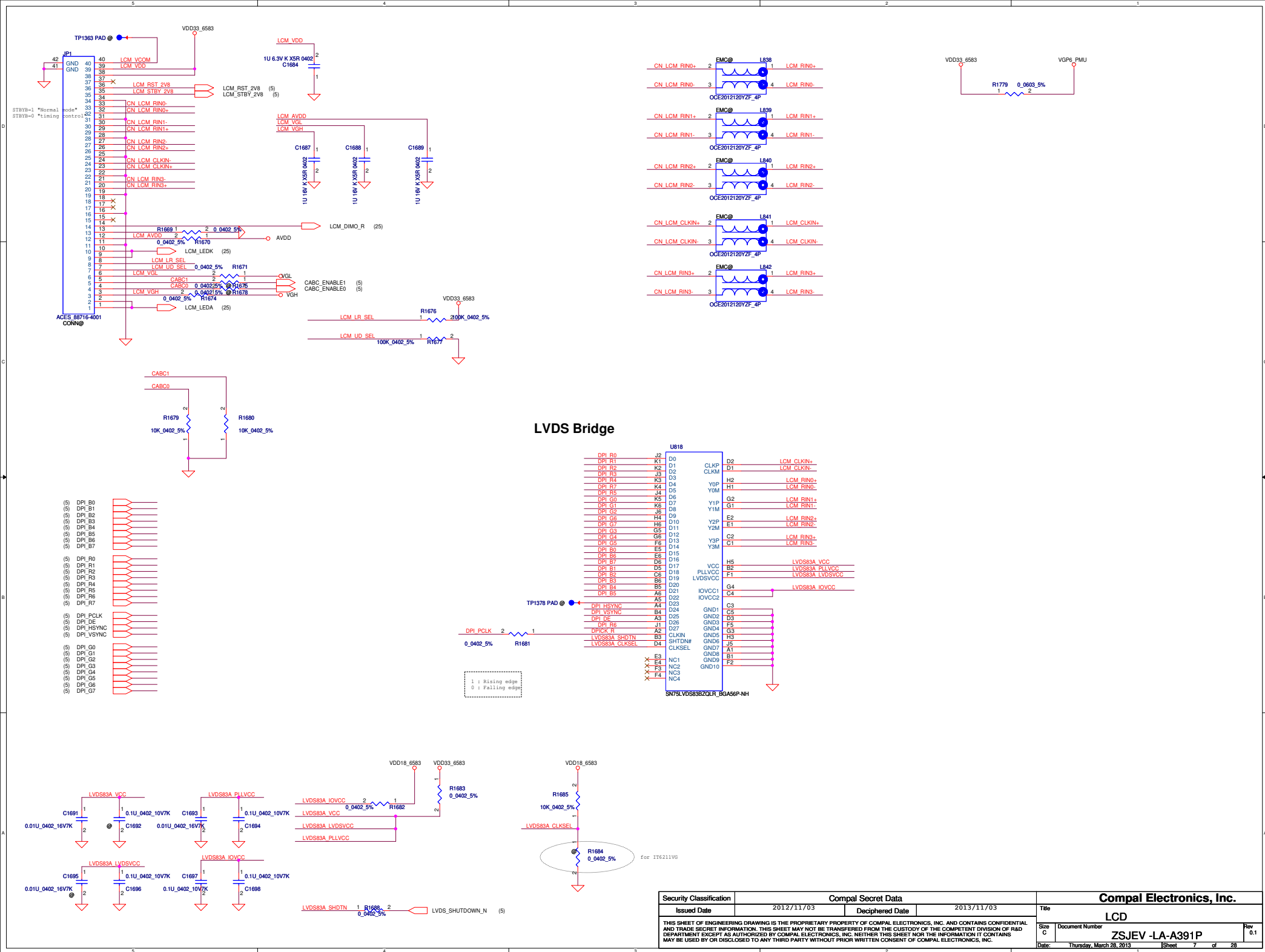


Vendor	X76 level	BOM structure
NANYA-1G	X76503BOL01	NAN 256Mx16@
HYNIX-1G	X76503BOL02	HYN 256Mx16@



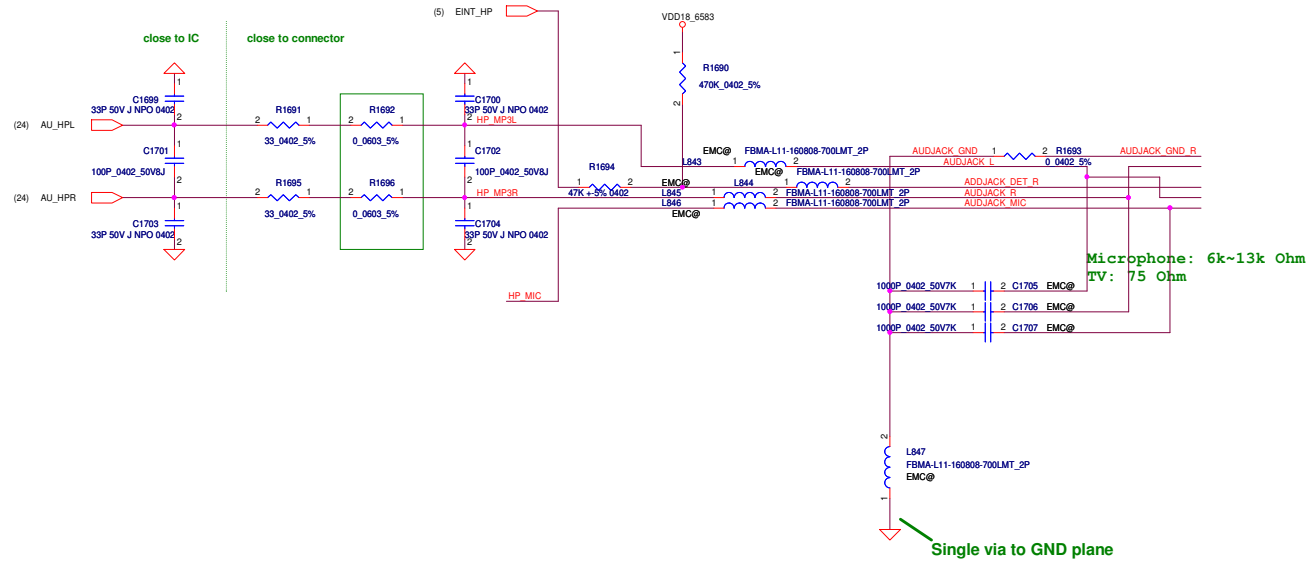
U5 Test Point	
TP01	PAD @ EREF
TP02	PAD @ EREF
TP03	PAD @ EREF
TP04	PAD @ EREF
TP05	PAD @ EREF
TP06	PAD @ EREF
TP07	PAD @ EREF
TP08	PAD @ EREF
TP09	PAD @ EREF
TP10	PAD @ EREF
TP11	PAD @ EREF
TP12	PAD @ EREF
TP13	PAD @ EREF
TP14	PAD @ EREF
TP15	PAD @ EREF
TP16	PAD @ EREF
TP17	PAD @ EREF
TP18	PAD @ EREF

U6 Test Point	
TP19	PAD @ EREF
TP20	PAD @ EREF
TP21	PAD @ EREF
TP22	PAD @ EREF
TP23	PAD @ EREF
TP24	PAD @ EREF
TP25	PAD @ EREF
TP26	PAD @ EREF
TP27	PAD @ EREF
TP28	PAD @ EREF
TP29	PAD @ EREF
TP30	PAD @ EREF
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TP32	PAD @ EREF
TP33	PAD @ EREF
TP34	PAD @ EREF
TP35	PAD @ EREF
TP36	PAD @ EREF

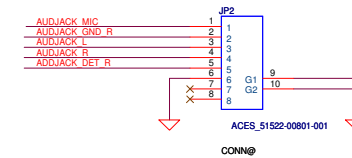


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Size		Document Number		ZSJEV-LA-A391P	
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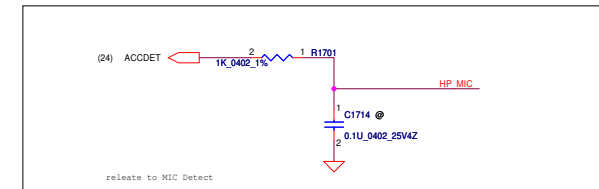
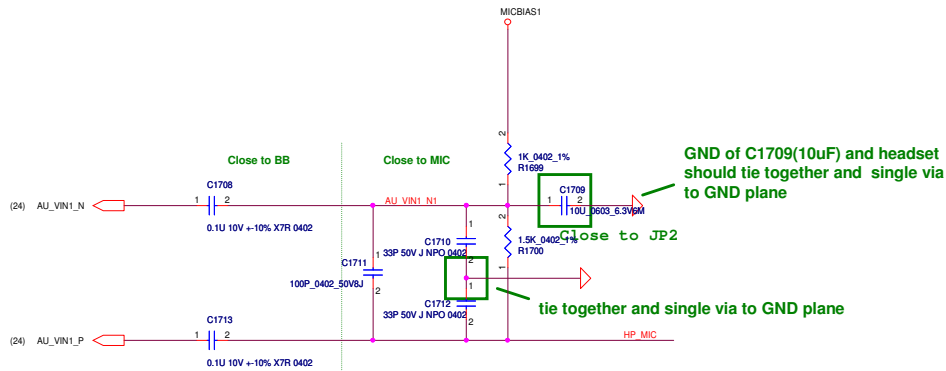
Earphone RECEIVER



To Audio board

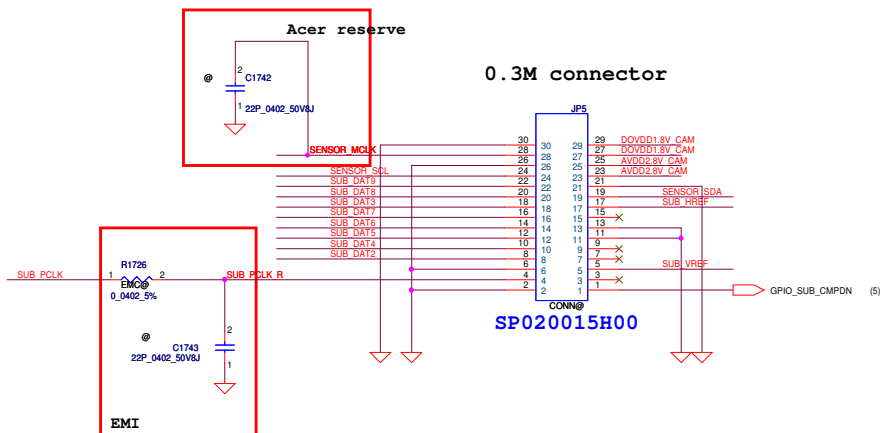
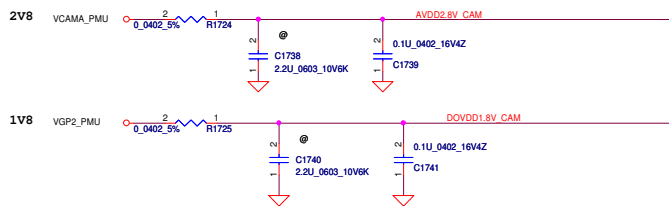
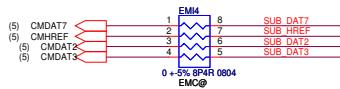
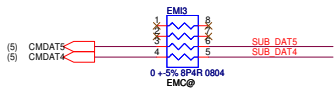
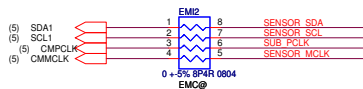
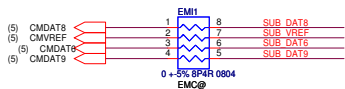


Earphone MICPHONE



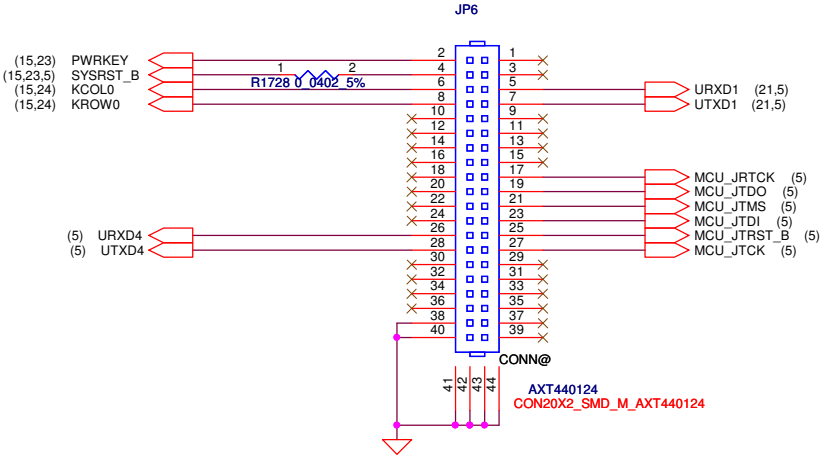
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Sub Camera

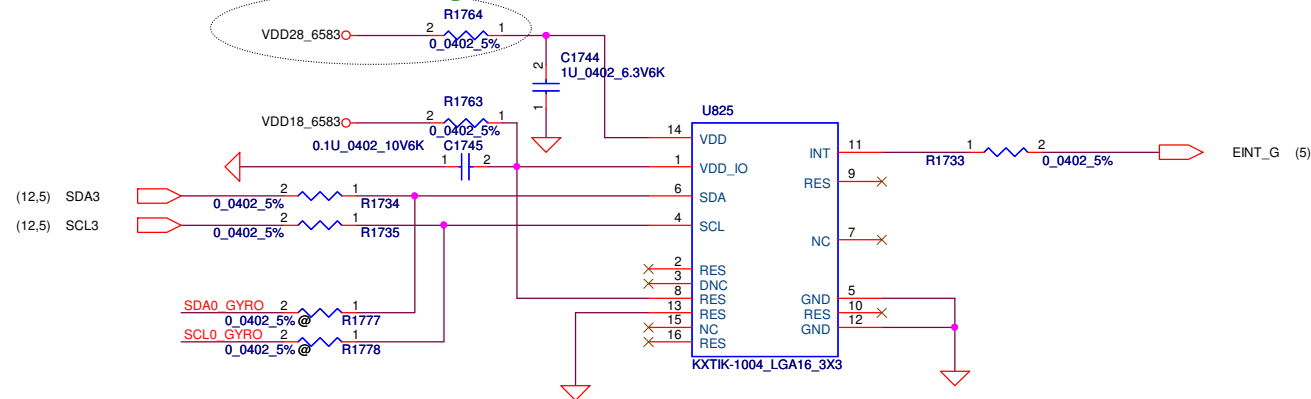


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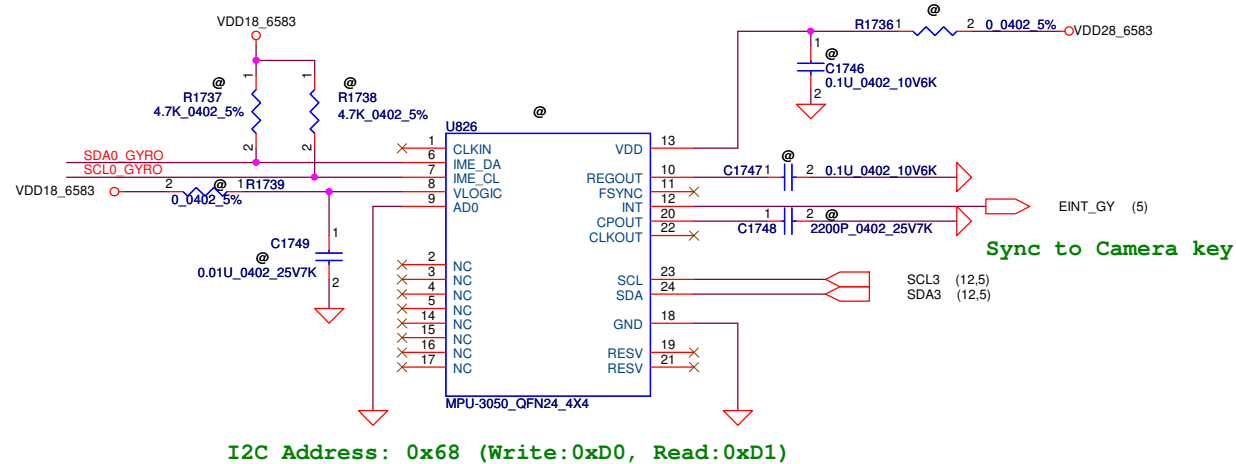
Common Debug



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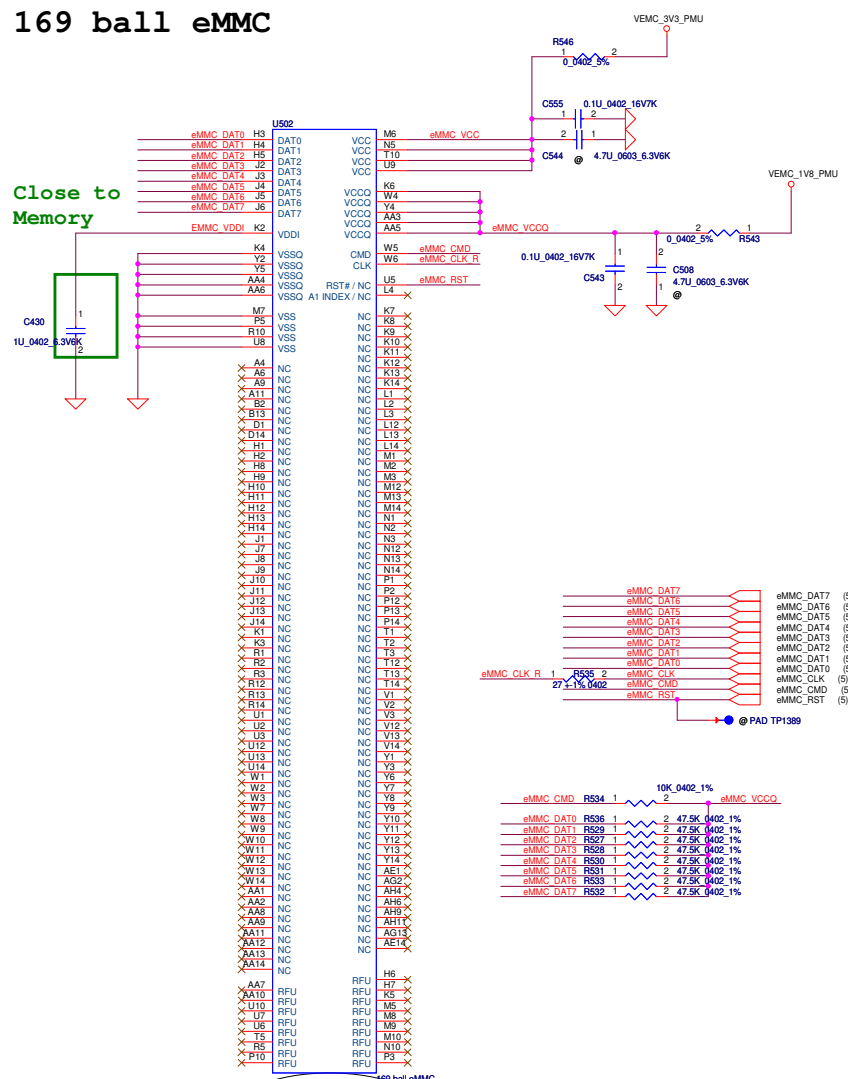
Gyro Sensor



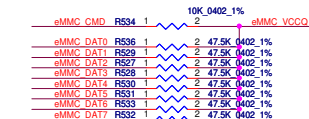
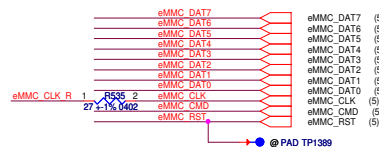
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169 ball eMMC

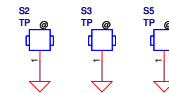
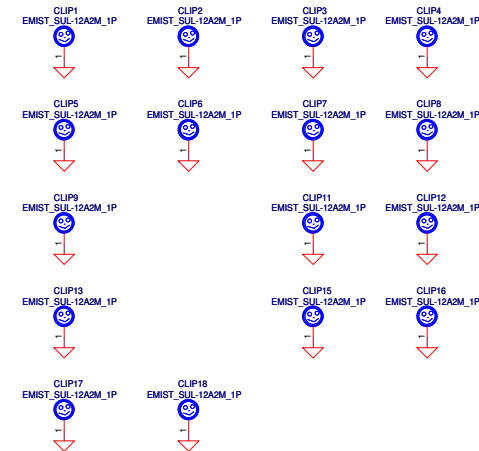
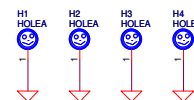
Close to
Memory



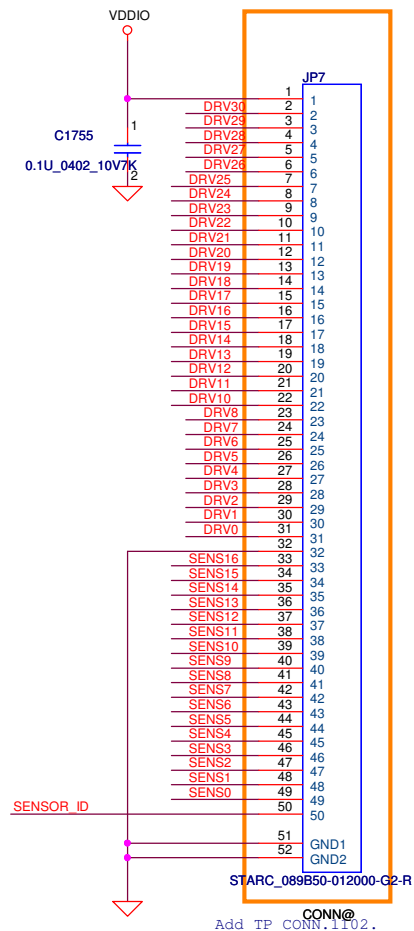
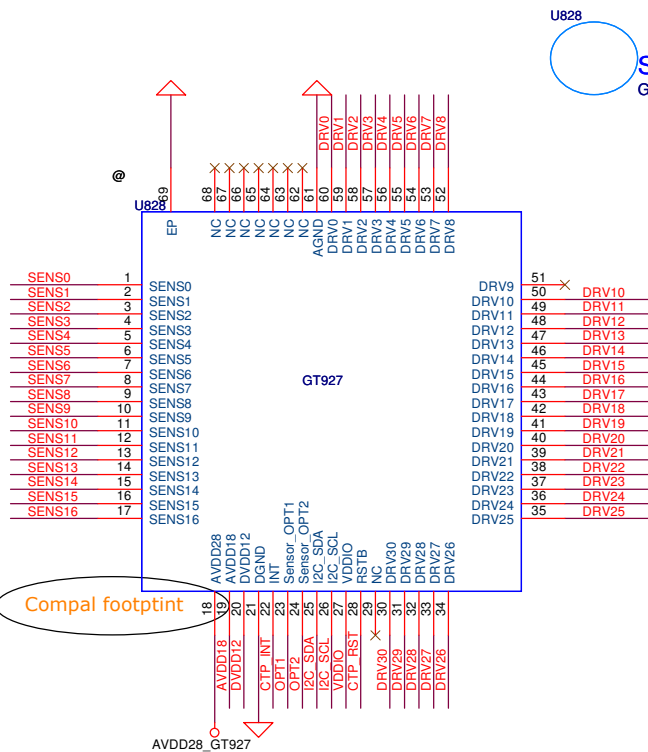
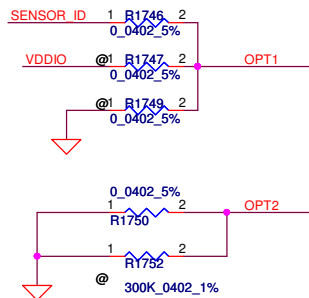
U502	KIN 8GB@ SA00006MF30 Kingston 8G KE4CN3K6A FBGA 169P	U502	KIN 16GB@ SA00006MG30 Kingston 16G KE4CN4K6A FBGA 169P
U502	HYN 8GB@ SA00006VJ10 HYNIX 8G H26M42003GMR FBGA 153P	U502	HYN 16GB@ SA00006VJ10 HYNIX 16G H26M52003EQR FBGA 169P



SCREW HOLE

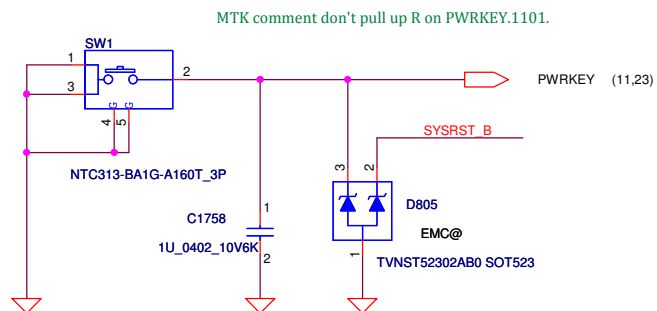


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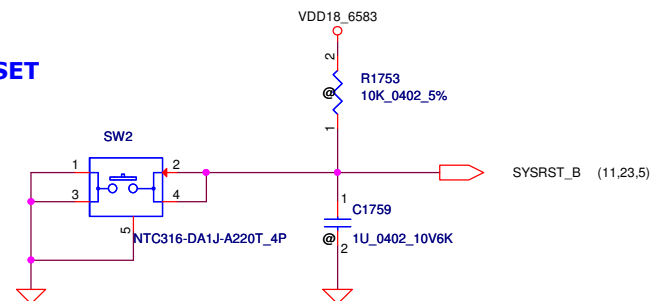
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Issued Date	2012/11/03	Deciphered Date	2013/11/03	Title	Touch Panel	
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Power-on Button

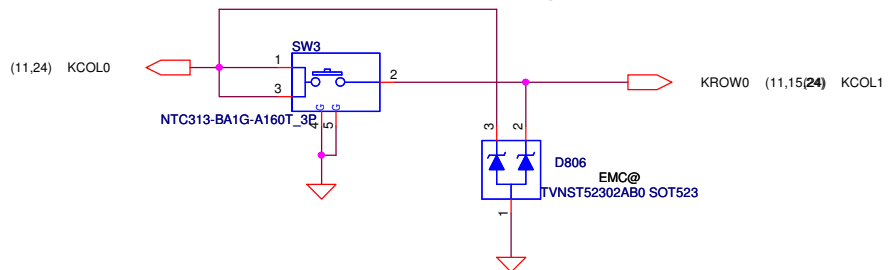


Compal GND MTK GND

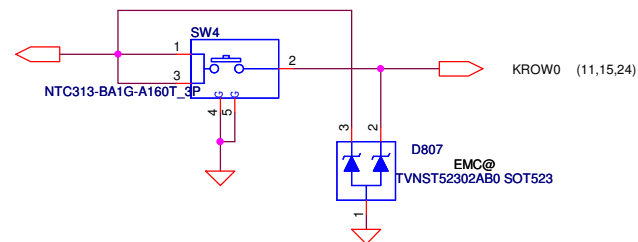
RESET



Volume Up (Download Key)

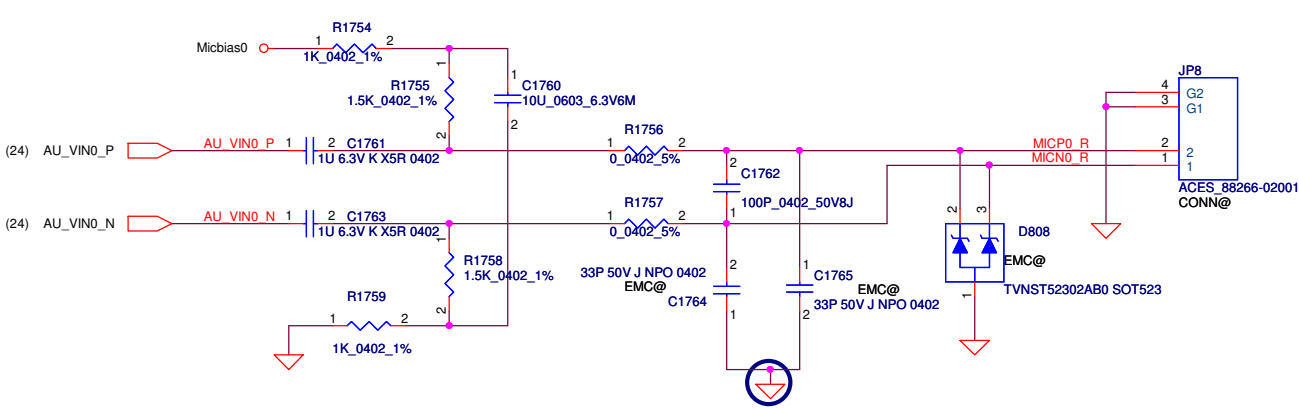


Volume Down



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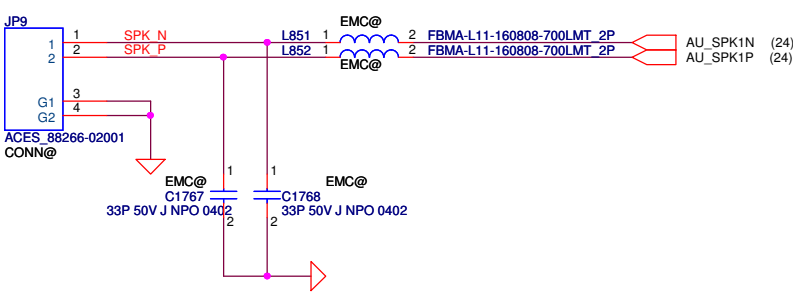
MIC



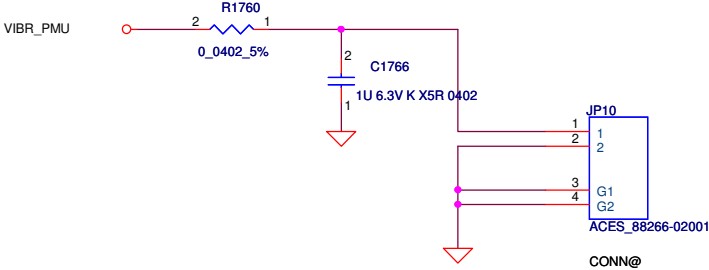
Modify MIC CONN SCH.1102.



SPAKER



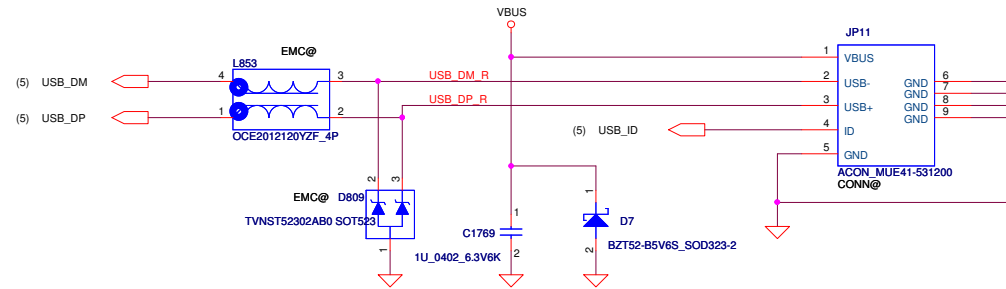
Vibrator



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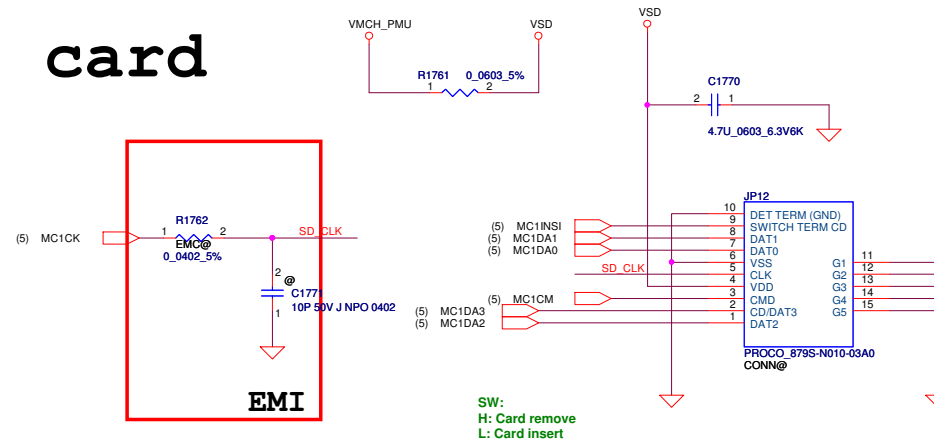
Micro-USB

If mini-A connector insert => CID < 0V => Low
 If mini-B connector insert => CID > 1.2V => High
 IDPULLUP pin is replaced by 1.2V power source.



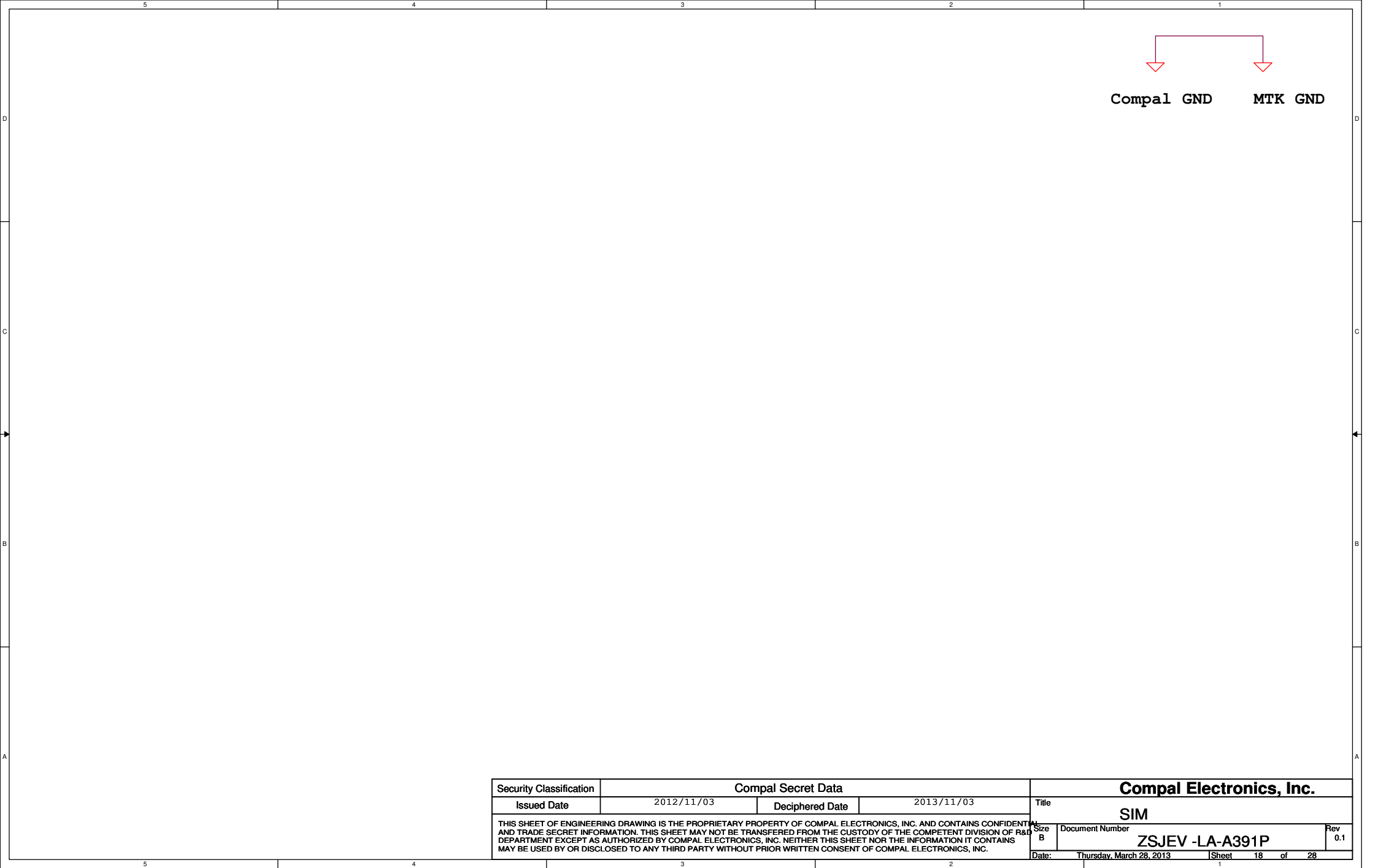
Compal GND MTK GND

SD card



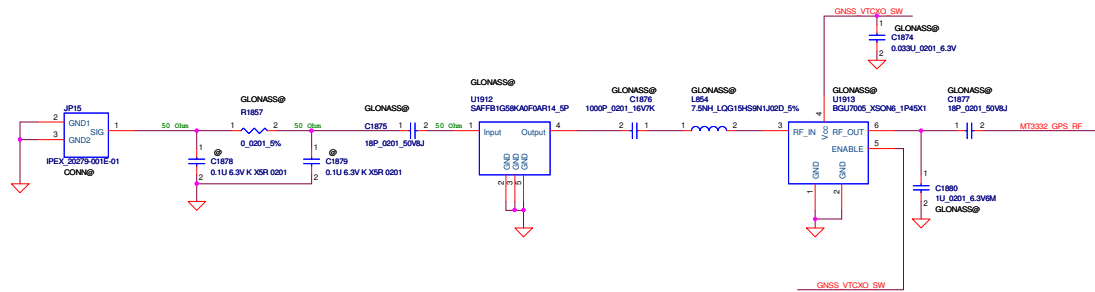
SW:
 H: Card remove
 L: Card insert

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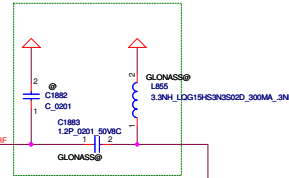


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MT3332 on-chip LNA Matching



U1907
SA00006M400
S IC MT3332N QFN 48P GPS

MT3332
QFN-48pins

C1891 is close to pin11

C1893 is close to pin11

pin14 connect to C1894 GND net first, then connect to reference GND

RTC Voltage (2.8V)

Connect GNSS_HOST_VRTC to always alive voltage source, and keep the voltage swing of GNSS_HOST_32K RTC clock same as GNSS_HOST_VRTC.

1.8V / 2.8V IO Voltage Selection

2.8V IO : U1907 pin30 - 42 need change to GNSS_VTLDO
1.8V IO : U1907 pin30 - 42 (IO voltage is SMP5_VB8)

Reserved for GPS HRST from host, connect to Host (MT62xx) GPIO pin

Reserved for improving GNSS Hot-Start performance.

Reference Frequency Selection

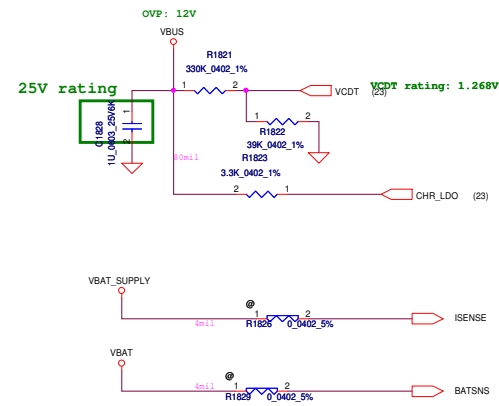
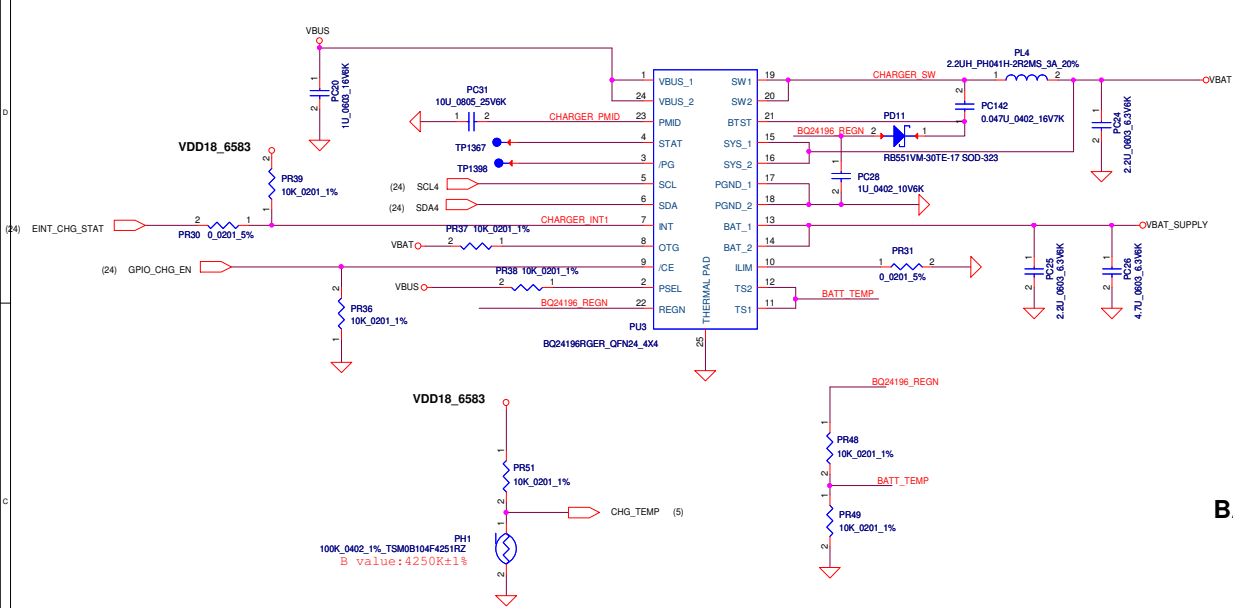
16.368MHz TCXO : R1864 = NC, PIN_41 = NC
26MHz TCXO : R1864 = 10K, PIN_41 = NC
26MHz XTAL : R1864 = 10K, PIN_41 contact 10K

As EINT to Host

Connect to HOST UART (TX/RX) interface

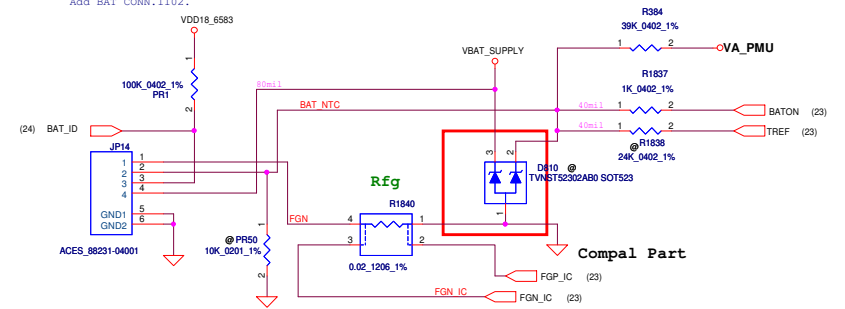
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Charger



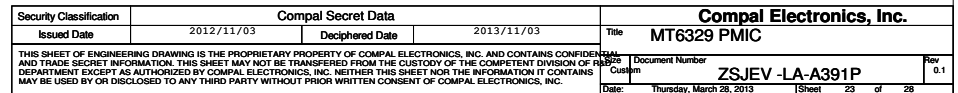
BATTERY CONNECTOR

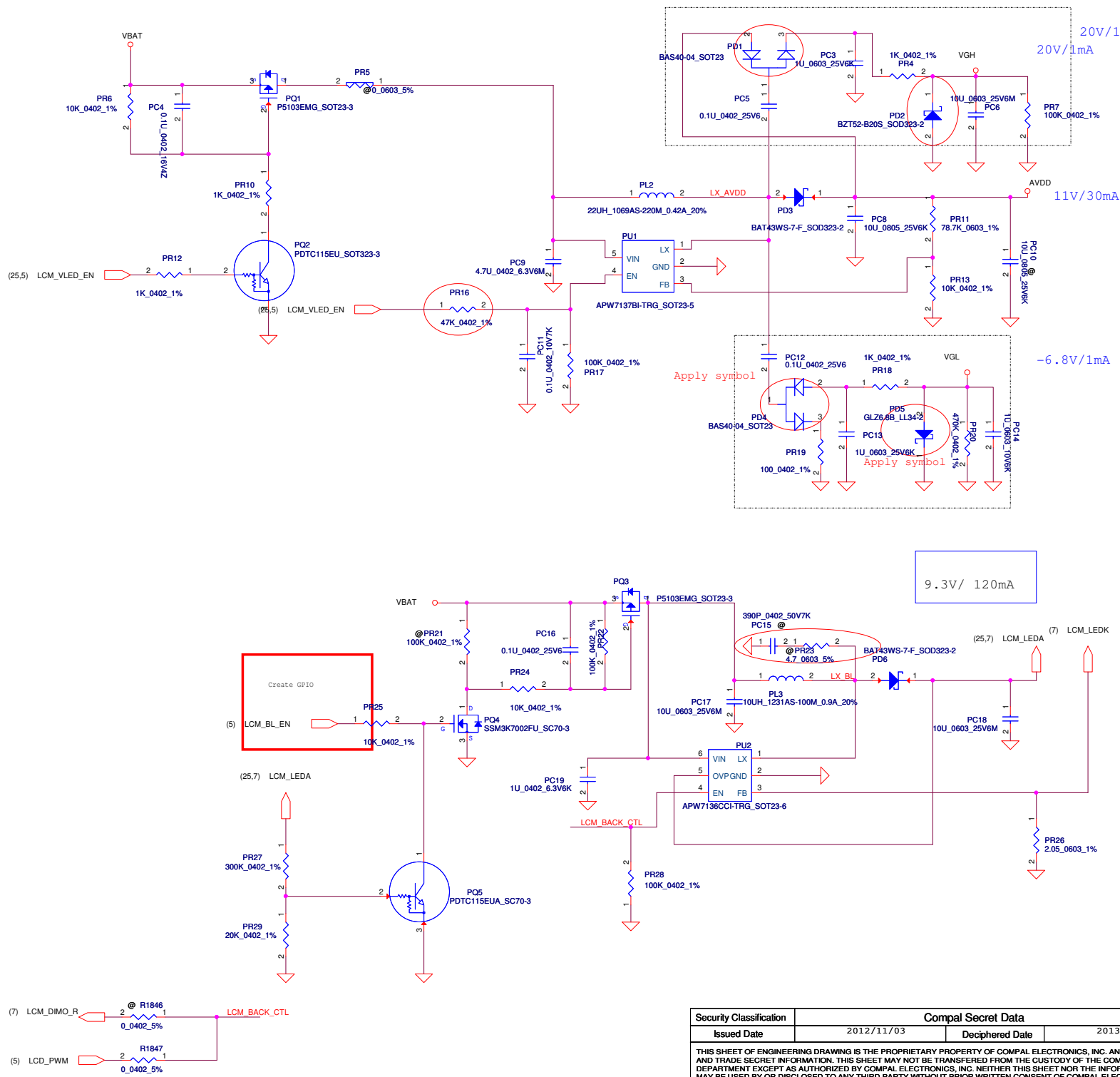
Add BAT_CONN.1102.



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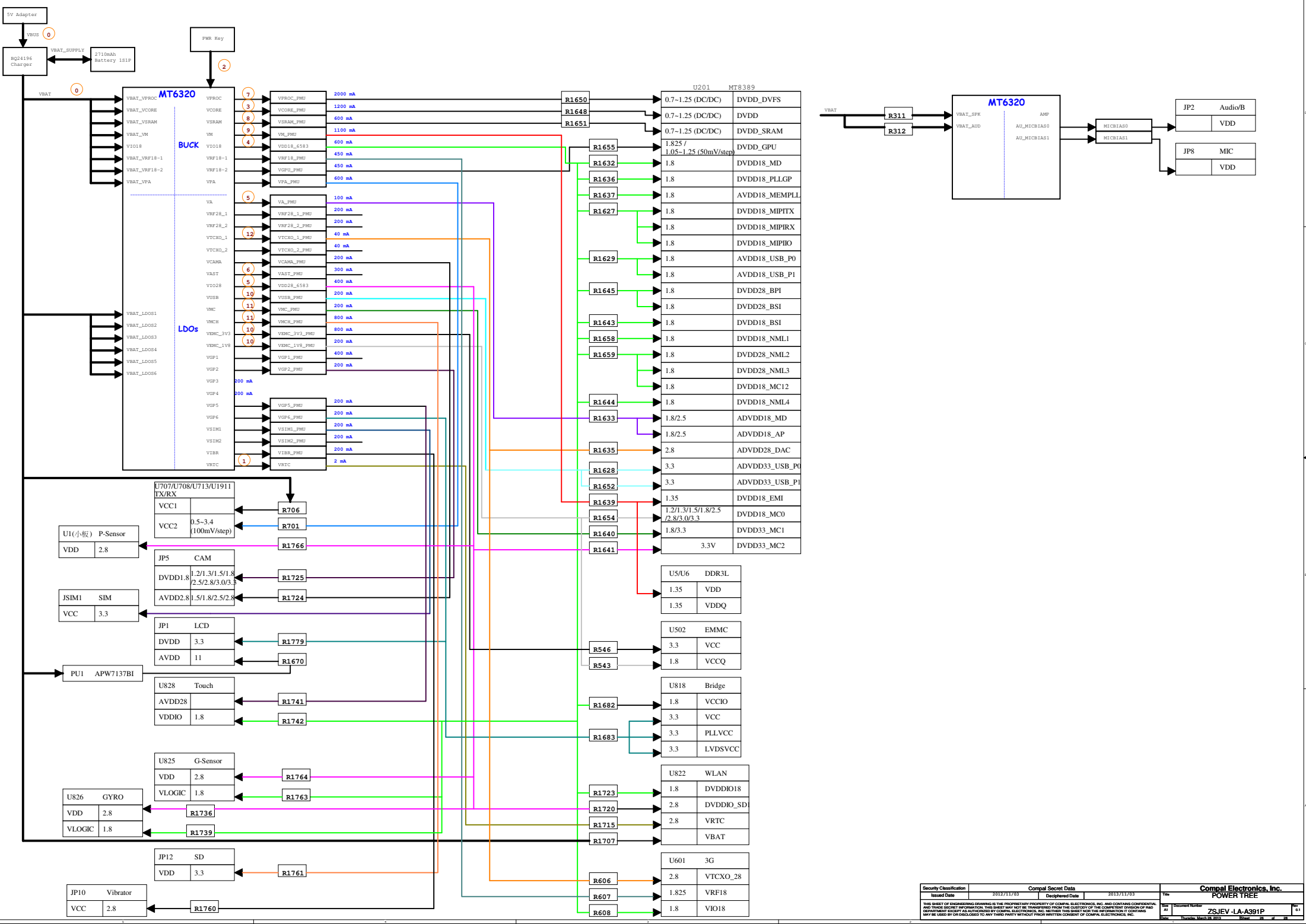
	LPDDR2/1.2V	DDR3U/1.25V	DDR3L/1.35V	DDR3/1.5V
VMSEL1	L	L	H	H
VMSEL2	L	H	L	H





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						LED Backlight Driver
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2013/3/11
Update PD11 , D308 , D309 , D310 , D311 , L301 ,
L302 , L303 , L304 , L307 , C647 , C646 , C635 ,
C638 compal P/N
Change to un-pop : PR50 , R1838 , R314 ,R315
Change to pop : R1855

2013/3/22
Add C318
Del R332,R348

2013/3/25
Delete TP324, TP325, TP327, TP328 test point

2013/3/28
Delete net SIM1_SCLK, SIM1_SIO, SIM1_SRST,
SIM1_CLK, SIM1_DATA, SIM1_RST

2013/3/29
R1847 change to 0-ohm

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2013/3/13
ADD NH520@,NH520_EMC@
modify RAM BOM structure
P01 Add S4 for GLONASS frame
P04. R1639 to 0_R_0805
 R1648,R1650 to 0_R_0603
 Del R1653
P05. Del TP1373,R634,R1765,R1766
 Del U201A no function net
P06. C70,C64,C68 to 0.luf_0402
P07 R1675,R1678 to @
P08. Del R213, net POUT
 JP2_FIN8 to NC
P09. update U823 symbol
P13. R535 to 27ohm(MTK advice)
P15. R1753,C1759 to @ (MTK advice)

2013/3/22
ADD S4,S5
L838,L839,L840,L841,L842,L853 --> SM070001R00
update EMMC PN.
P05. ADD TP1366,TP1369
 R1520 to GLONASS@, R1521 to NH520@
P10. C1743 to @, R1726 to 0 ohm for EMI reserve
P13. DEL CILP19,CLIP20
P16. C1766,R1760 del @
P17. C1771 to @, R1762 to 0 ohm for EMI reserve
P21.C1887,C1902-->SE000000WN00
 C1880,C1884,C1888,C1889,C1891,C1893-->SE000000UC00
 C1890-->SE000000V600
 R1859 to U1915 PIN1

2013/3/26
P06. R72,R73,R65,R70,R525,R77 to 0201 size

2013/3/26A
P06. C61 to 0201 size

2013/3/28
P15. SW1,3,4 co-layout SN100008300

2013/3/29
P04. R1650 change to short pad
P05. del net: SIM1_SCLK, SIM1_SIO, SIM1_SRST, EINT_A

2013/ 4/ 1
P15. del co-layout switch button(SW5,6,7)

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