

REMARKS :

1. The "NM" is for no mount. (Ex. NM_1K 0402 5%)
2. Document number: 60xxxx
It is first six characters of SMT P/N, and change second character to " 0" .
Ex. If SMT P/N is 6610090001W or 6310090001W, the document number is 601009.
3. Title :SCHEMATIC, x/B Gx-xxx (Function title)
It is the description & specification of SMT P/N, and function of each page.
Ex. 6310090001W is " SMT M/B T31I GA-010" , and function is " Power Supply".
The title is " SCHEMATIC, M/B GA-010 (Power Supply)".
4. Rev. :
The schematic revision from TRY1, after EN modify CML to control TRY2, TRY3..... by EDC
From DVT phase, the schematic revision change to 0A, after ECO/EN modify CML to control 0B, 0C... by EDC.
If PCB version changes to 1.0, the schematic revision will change to 1A.
5. Size Units by Millimeters, Size by A3 for standard.
6. Copyright reserved Each page must have CCI' s copyright reserved .
7. One schematic file for one PCB number
8. Function "Mechanical Parts Template" must include shield-case,
and each shield-case must write P/N in this symbol "Part Number" filed.

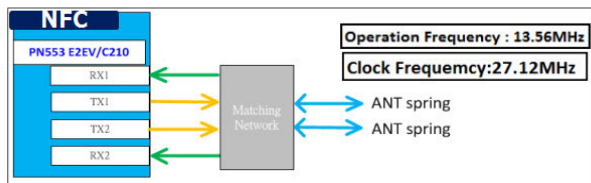
Project Name : PY7-67442A
PCB Number : GA-527
PCB Revision : 0D



PY7-67442A GA-527 REV:0D MB



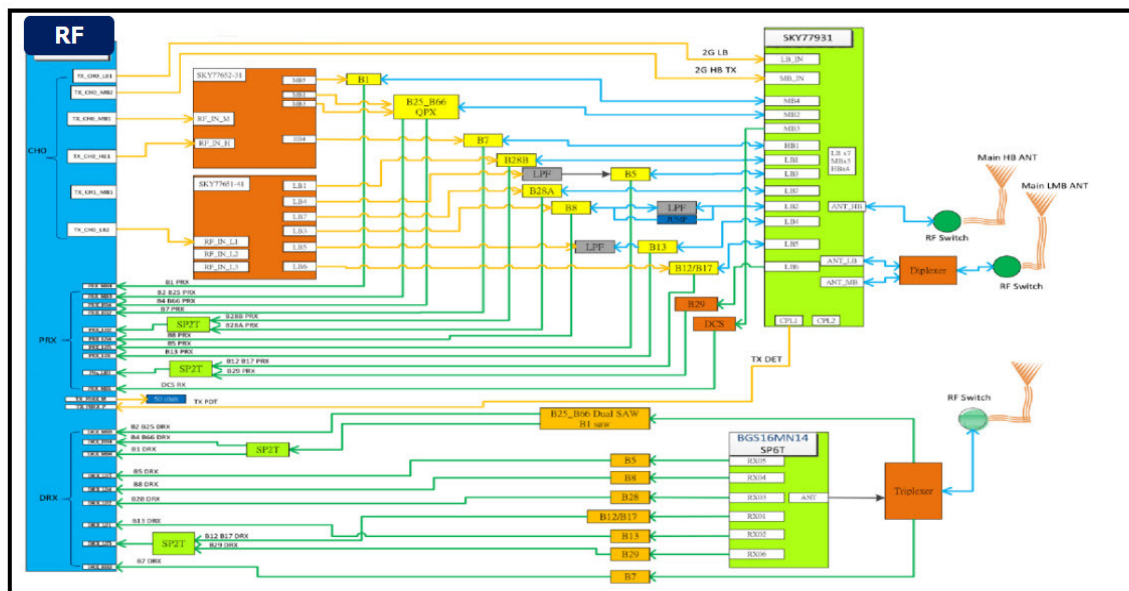
Page	Description :			
Item	Function Category	Function Description / Contents	Option	Page
1	Cover Page	EDC's cover page for EN/ECO revision control (EXCEL File)	Necessary	1
2	Page Summary	Project Name , PCB Number , PCB Revision , Pages Description	Necessary	2
3	Block Diagram	System Block Diagram	MB necessary	3
4	Power Tree	Power tree definition	MB necessary	4
5	DBB -1,-2,-3,-4,-5,-6,-7,-8,-9	Digital baseband or application processor	Yes	5,8~15
6	GPIO	GPIO	Yes	6,7
7	PMIC-1,-2,-3,-4,-5,-6,-7,-8,-9,-10,-11	PMIC Power	Yes	16~26
8	Power Supply	Discrete Power: LDO, Switching Regulator ...		
9	USB / Charger	USB, USB PHY, USB Charger, Gas Guage , OVP, EMU... & c	Yes	35
10	Memory	MCP Memory, Embedded Memory	Yes	27
11	Audio -1,-2	Microphone(s), Receiver, Speaker(s), Headset, Audio Amplifier ... & c	Yes	39,40
12	Camera/Flash Light	Camera , Camera ISP , Camera Flash Light	Yes	42
13	LCM	LCM, LCM Bridge IC , LCM Backlight Driver , Touch Screen ... & c	Yes	41
14	RF Transceiver	RF Transceiver	Yes	29
15	RF PA	RF PA	Yes	30
16	RF Front End -1,-2	RF Front End	Yes	31,32
17	BT / WiFi / FM -1,-2	BT / WiFi / FM	Yes	33,34
18	GPS	GPS , Galileo	Yes	34
19	Mobile TV	Mobile TV , DVB-H/T , MedioFLO , TV-Out , Analog TV, HDMI , ... & c		
20	Sensors	G-Sensor, Ambient Light Sensor, Proximity Sensor, e-compass, Hall sensor ... & c	Yes	44
21	Keypad / Backlight	Keypad and keypad backlight driver & LED or EL	Yes	45
22	SIM / uSD Card	SIM Connector, uSD Card	Yes	28
23	Connectors / Vibrator-1,-2,-3	Battery connector, Board to Board Connector, Keypad connector	Yes	36,37,38
24	Debug Conn / TPs	Debug connecgtor, Test points (for factory test requirements)	Yes	47
25	Clock / Others	Clock , VCTCXO, Haptic Driver, others	Yes	46
26	Mechanical Parts Template	Screw hole, PADs , Shielding Case , Antenna ...	Yes	47
27	Modem part DBB	Modem Part's DBB		
28	Modem Part ABB	Modem Part's ABB		
29	Modem Part Memory	Modem Part's Memory		
30	Modem Part Power	Modem Part's Power		

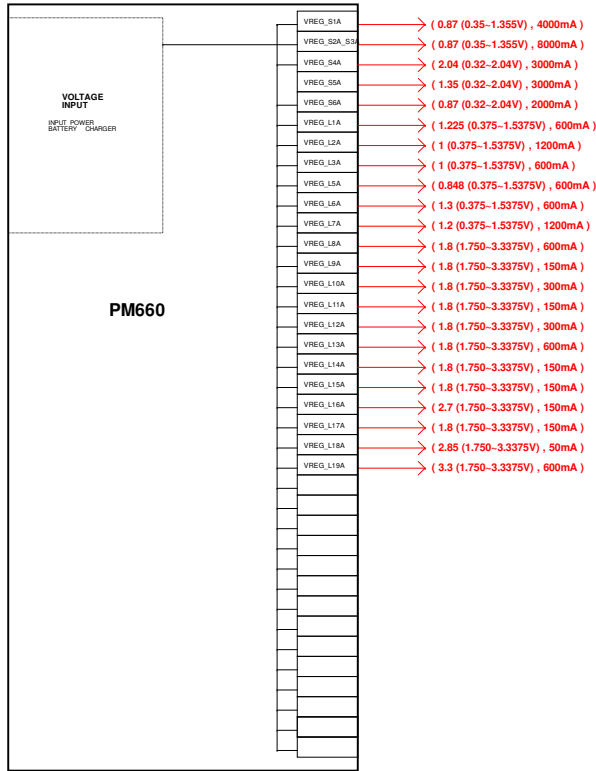


WCDMA Band 2, 4, 5		
WCDMA	UL	DL
2	1850 - 1910	1930 - 1990
4	1710-1755	2110-2155
5	824 - 849	869 - 894

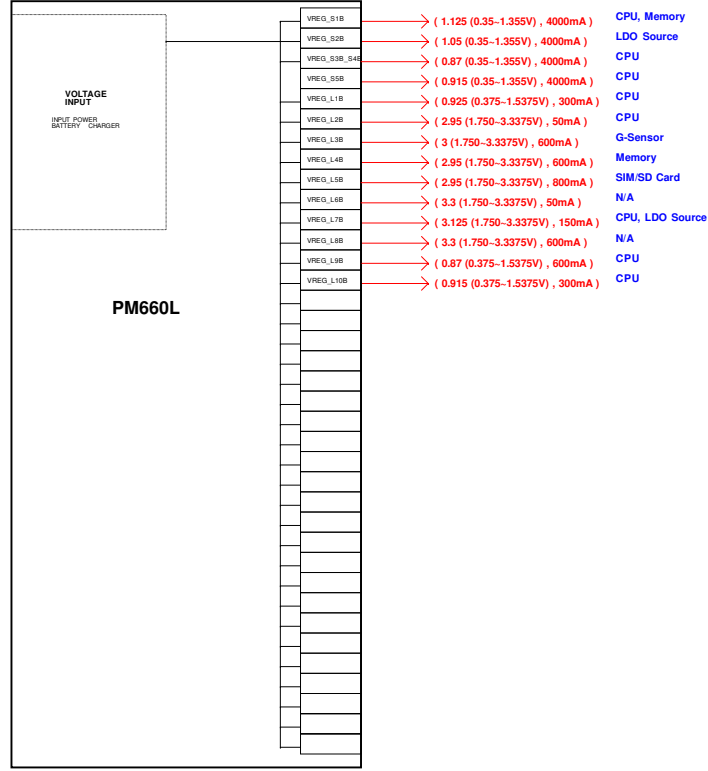
LTE Band2, 4, 5, 7, 12, 13, 17, 25, 29, 66		
LTE	UL	DL
2	1850 - 1910	1930 - 1990
4	1710-1755	2110-2155
5	824 - 849	869 - 894
7	2500 - 2570	2620 - 2690
12	699 - 716	729 - 746
13	777 - 787	746 - 756
17	704 - 716	734 - 746
25	1850-1915	1930-1995
29	n/a	717 - 728
66	1710-1780	2110-2200

Clock Frequency:38.4MHz





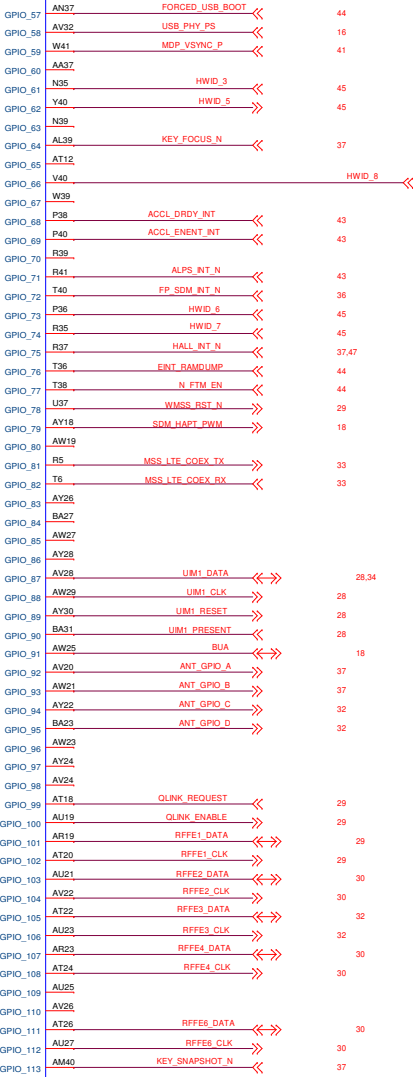
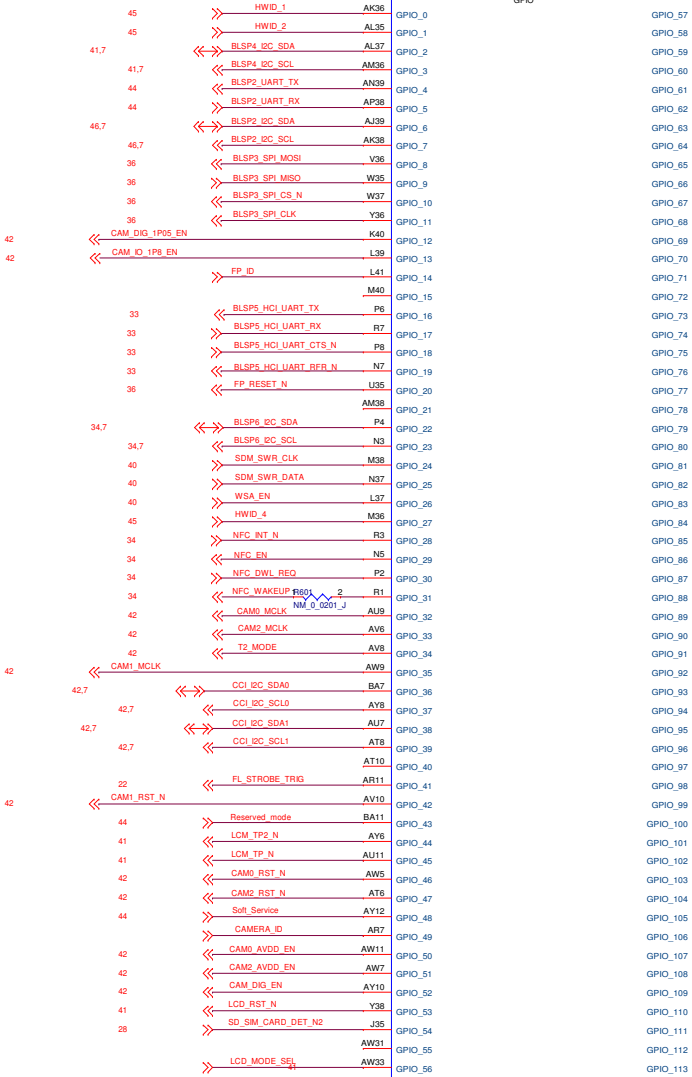
- CPU
- CPU
- Audio Codec, LDO Source
- LDO Source
- CPU
- CPU
- RF Transceiver
- RF Transceiver
- CPU
- CPU, BT_WiFi
- RF Transceiver, RF Front End
- Memory
- CPU, BT_WiFi
- CPU
- CPU, LCM, Camera, Logic IC
- RF Transceiver, BT_WiFi
- CPU, Memory, SIM/SD Card, Audio, Fingerprint, BAT ID, HWID, RF Transceiver, BT_WiFi, RF Front End, RF PA
- CPU, Main to Sub CONN, Sensors
- CPU, SIM/SD Card, BT_WiFi
- RF Transceiver, RF Front End
- CPU, SIM/SD Card, BT_WiFi
- Main to Sub CONN, Camera
- BT_WiFi



- CPU, Memory
- LDO Source
- CPU
- CPU
- CPU
- CPU
- G-Sensor
- Memory
- SIM/SD Card
- N/A
- CPU, LDO Source
- N/A
- CPU
- CPU

U501B
SDM330

-BLOCKID-
GPIO



BOOT CONFIG GPIOs	FUNCTIONALITY
GPIO_57	FORCED_USB_BOOT
GPIO_96	WDOG_DISABLE
GPIO_97	FASTBOOT_SEL[0]
GPIO_98	FASTBOOT_SEL[1]
GPIO_99	FASTBOOT_SEL[2]
GPIO_111	FASTBOOT_SEL[3]
GPIO_30	PK_HASH_INDEX_SRC
GPIO_32	ALL_USE_SERIAL_NUM
GPIO_33	MSA_PK_HASH_IN_FUSE
GPIO_34	MSA_AUTH_EN
GPIO_113	AP_PK_HASH_IN_FUSE
GPIO_53	AP_AUTH_EN
GPIO_93	FORCE_MSA_AUTH_EN

FASTBOOT_SEL[3:0]	BOOT OPTIONS
0b0000	eMMC @SDC1 -> SD @SDC2 -> USB
0b0001	SD @SDC2 -> eMMC @SDC1
0b0010	SD @SDC2
0b0011	USB
0b0100	UFS HS-G1
0b0101	SD @SDC2 -> UFS

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File SCHEMATIC, M/B GA-527(GPIO-1: GPIOs)

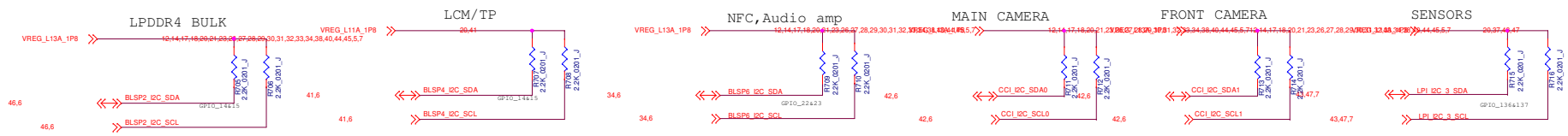
Size A2 Document Number 601FP2 Rev BF

Date: Friday, November 03, 2017 Sheet 8 of 47

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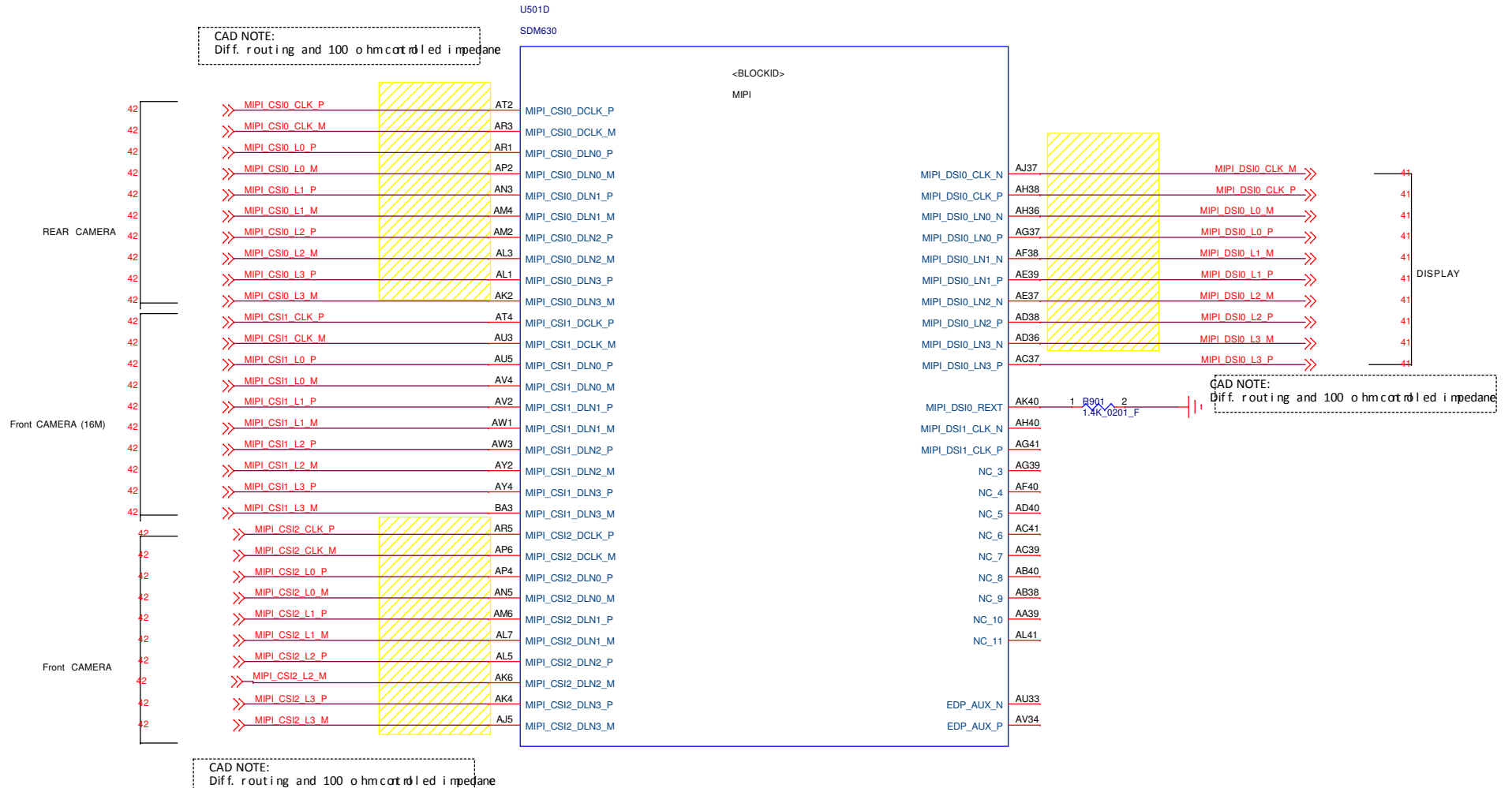
I2C BUS PULL-UPS

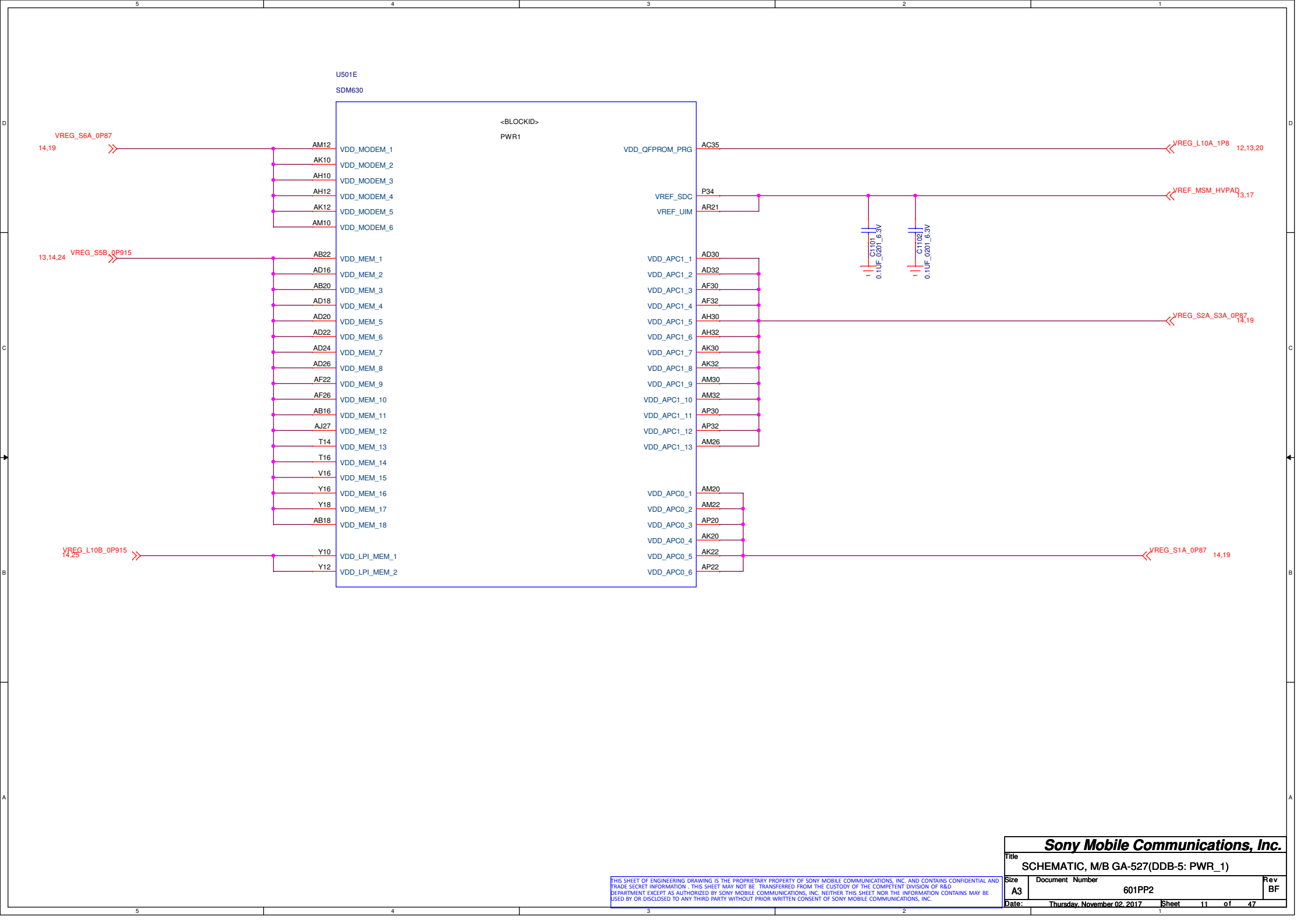


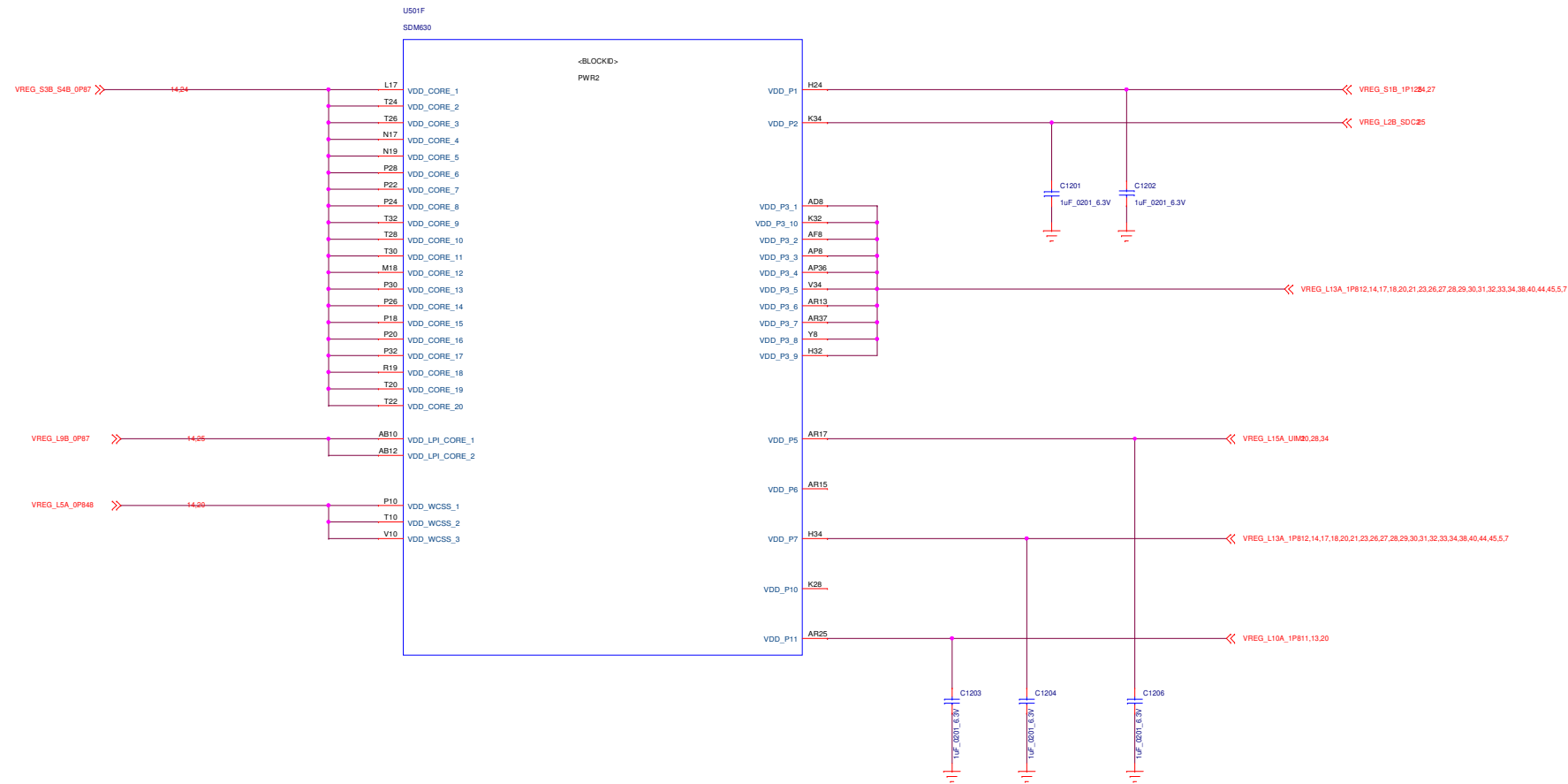
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Size	Document Number	601PP2	Rev
A2			BF
Date	Thursday, November 02, 2017	Sheet	7 of 47

MSM: MIPI



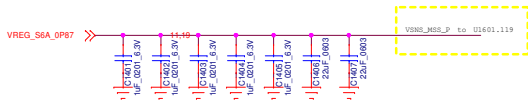




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SCHEMATIC, M/B GA-527(DDB-6: PWR_2)			
File	Document Number	Rev	
A2	601PP2	BF	
Date:	Thursday, November 02, 2017	Sheet	12 of 47

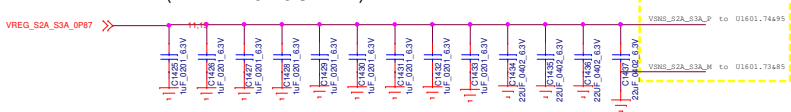
MODEM



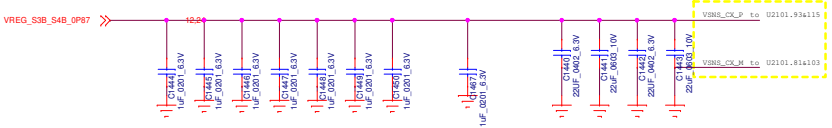
SILVER APC
(PWR CLUSTER)



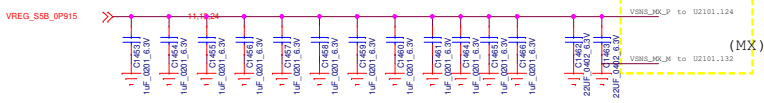
GOLD APC
(PERF CLUSTER)



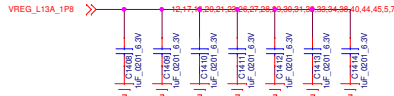
CX



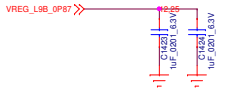
MX



SDM PX_3



LPI (SSC) CX

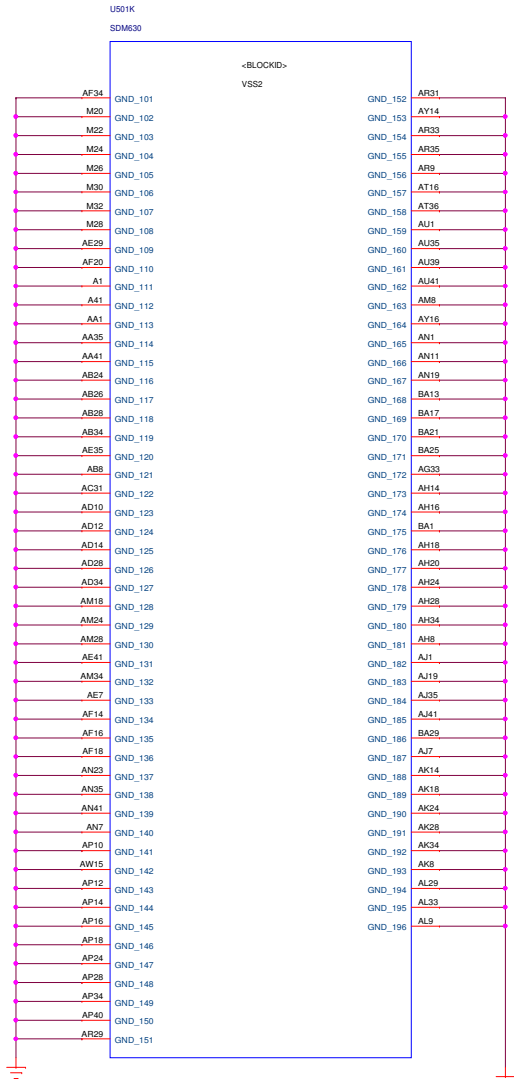
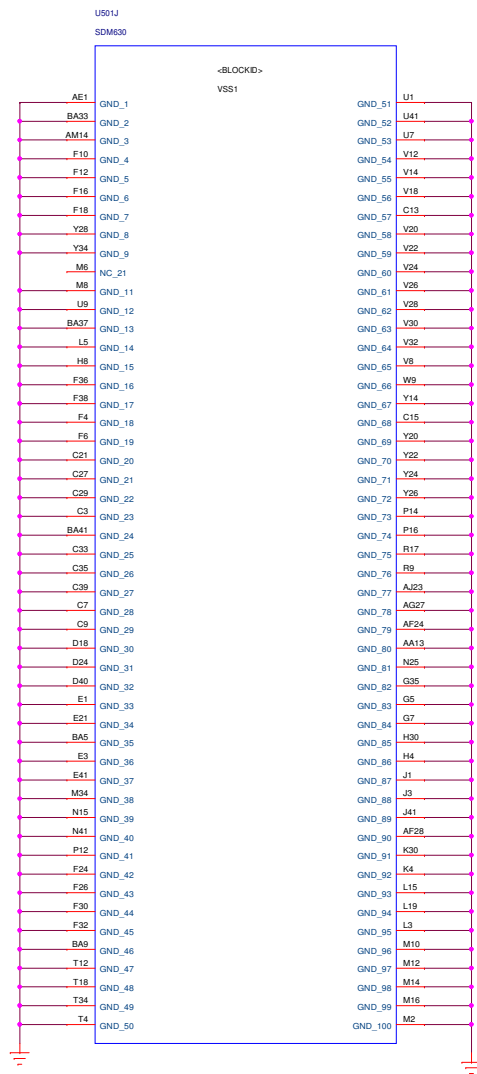


LPI (SSC) MX



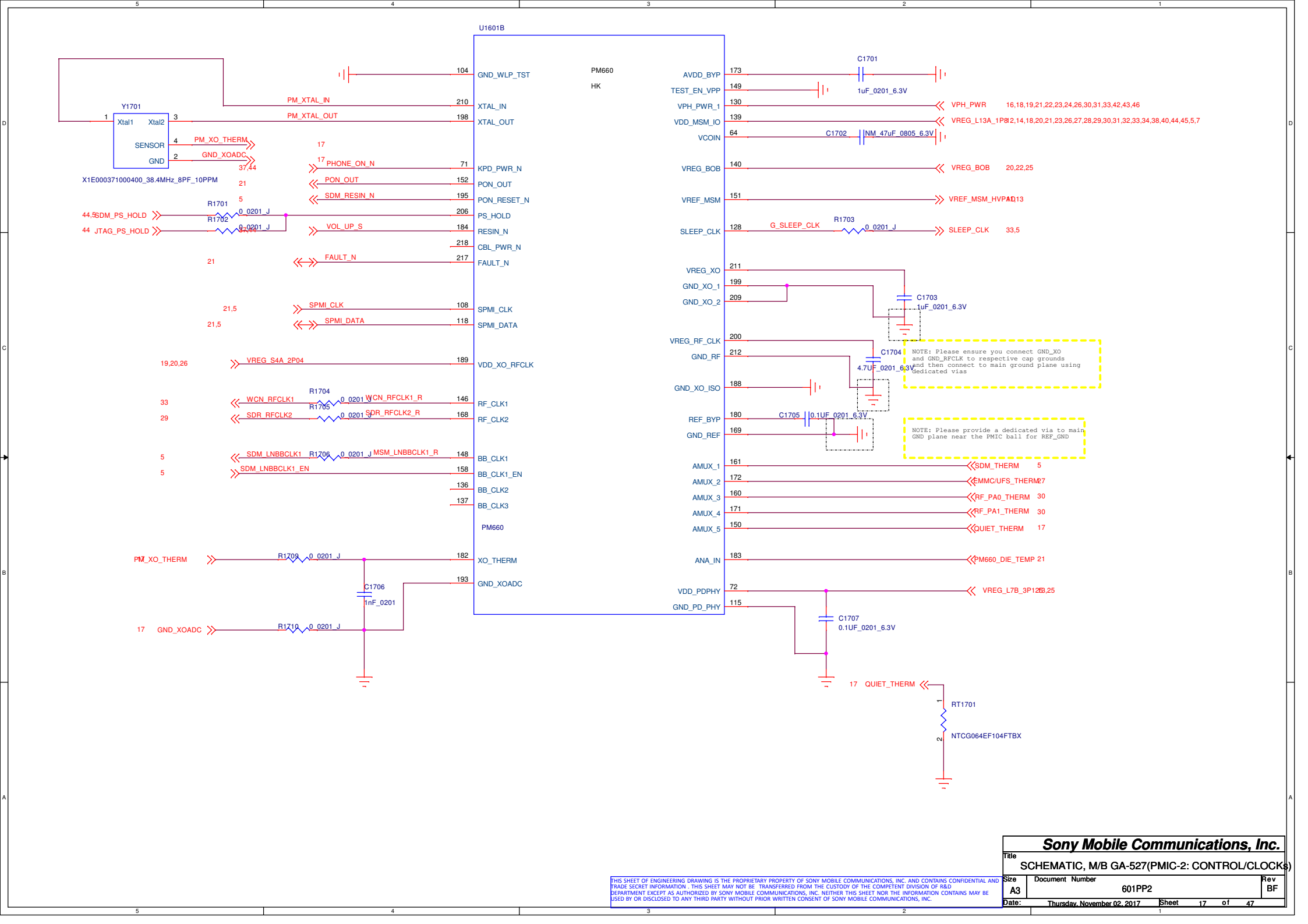
WCSS CX&MX

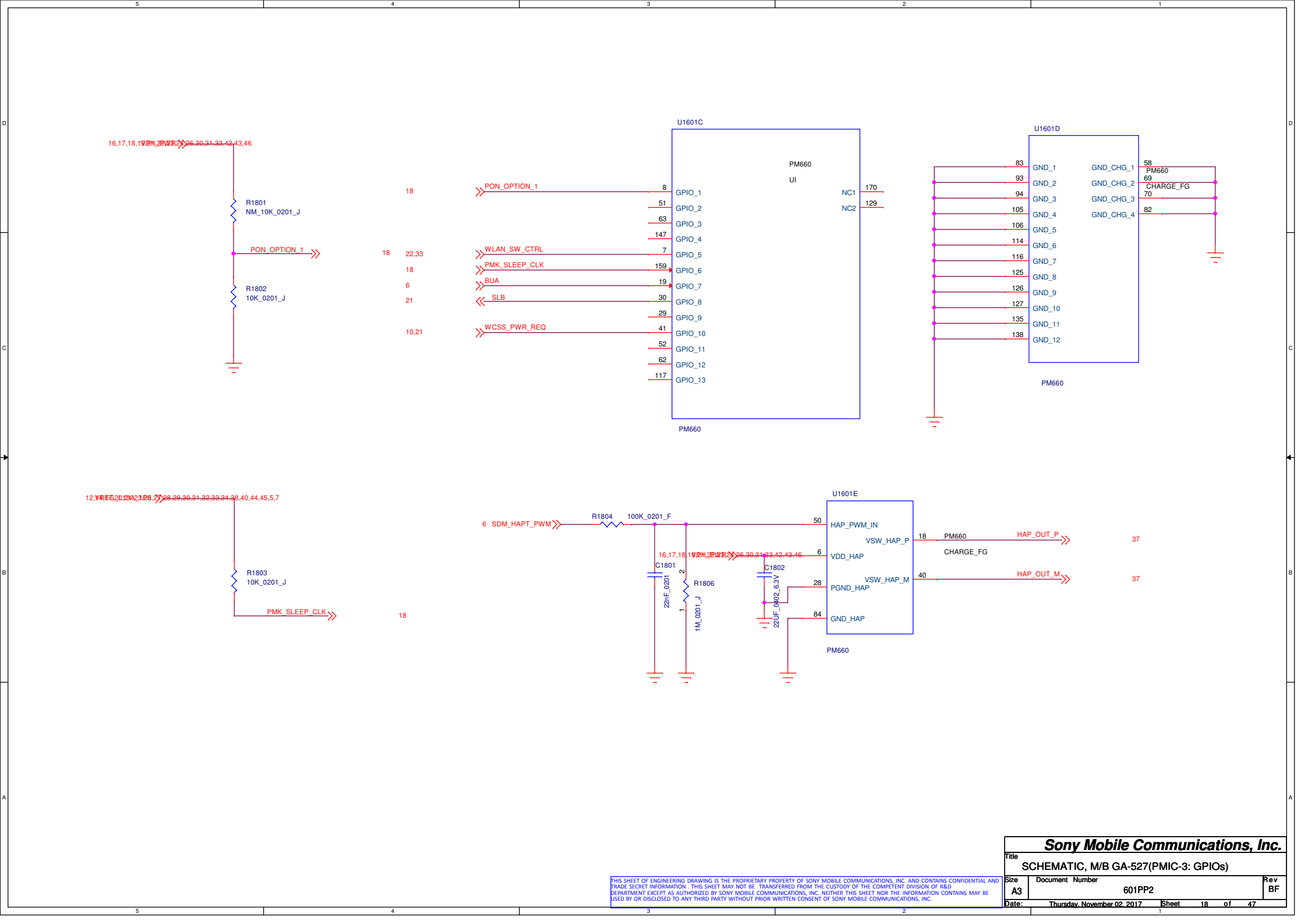




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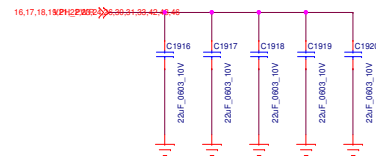
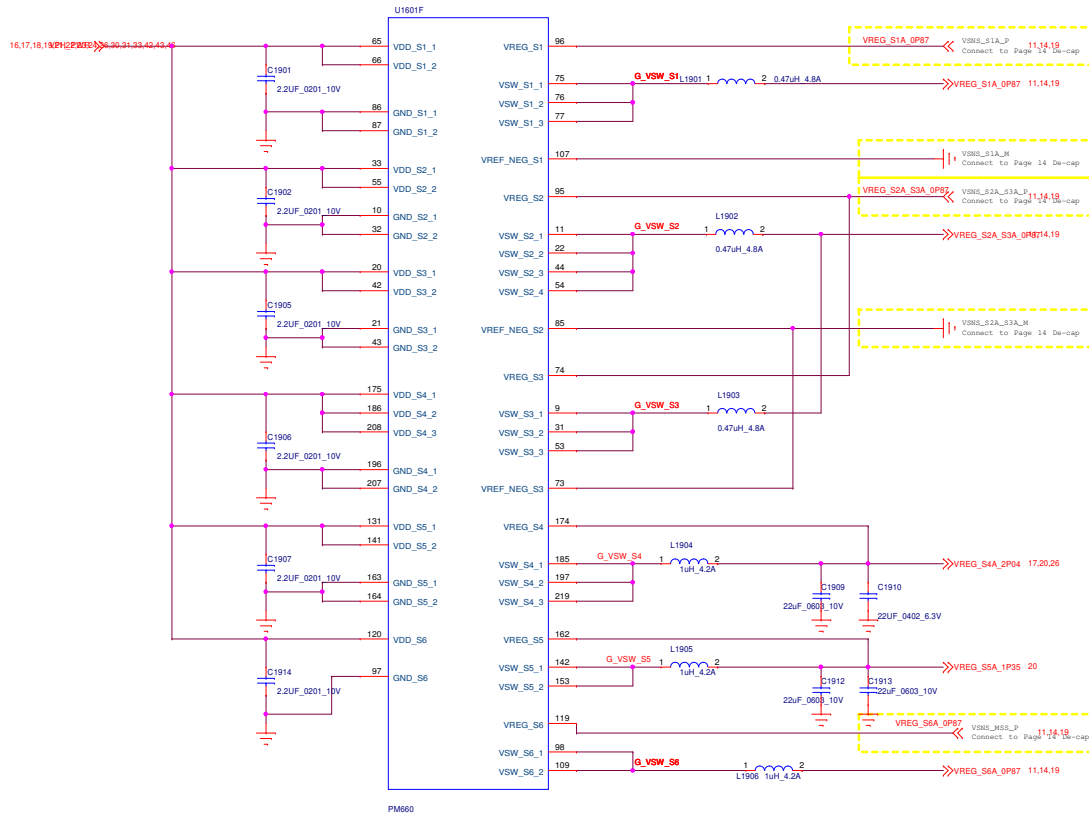
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Title			
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Size	Document Number	Rev	Rev
A2	601PP2	BF	BF
Date:	Thursday, November 02, 2017	Sheet	15 of 47





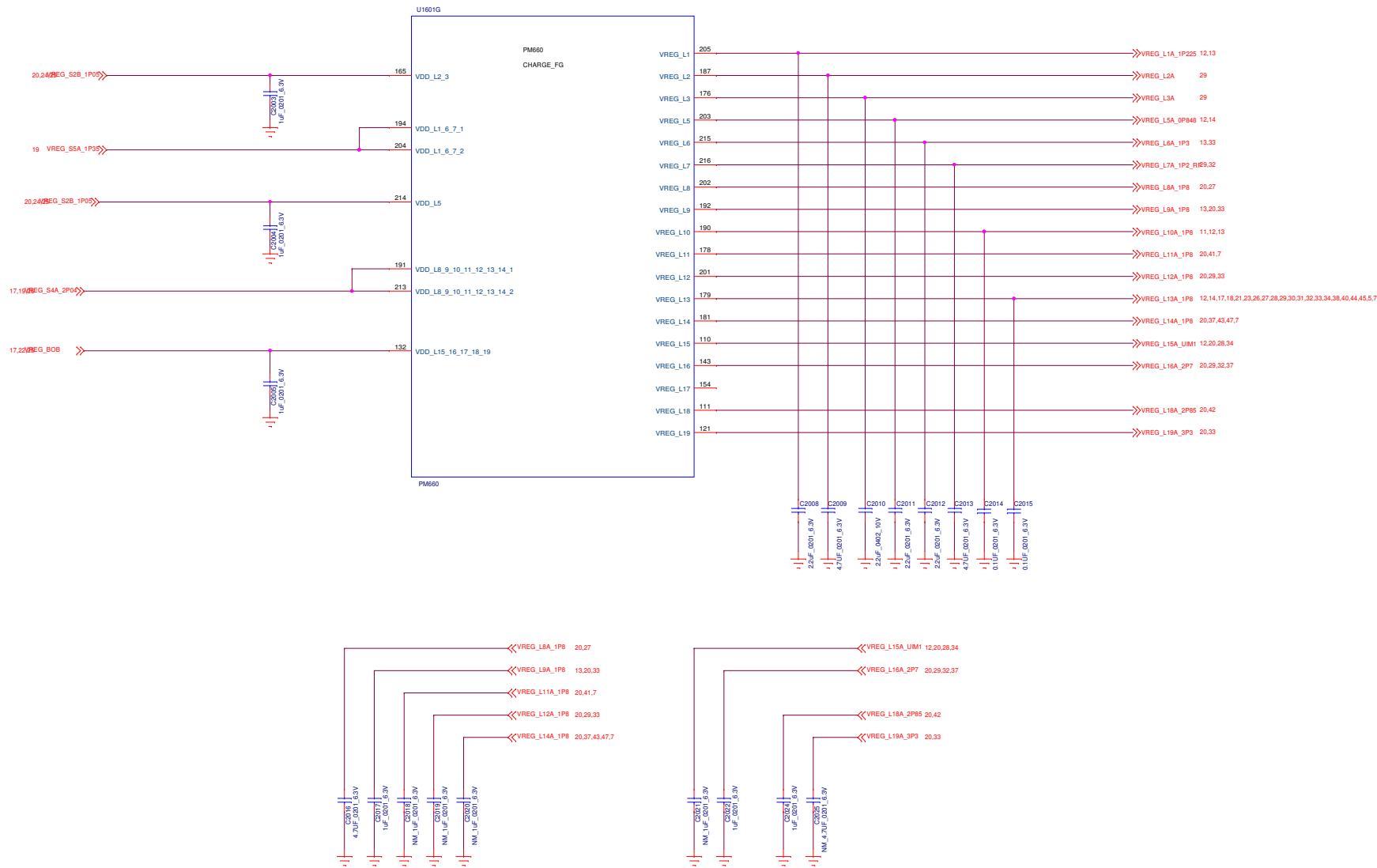
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Size	Document Number	601PP2	Rev
A3			BF
Date:	Thursday, November 02, 2017	Sheet	18 of 47



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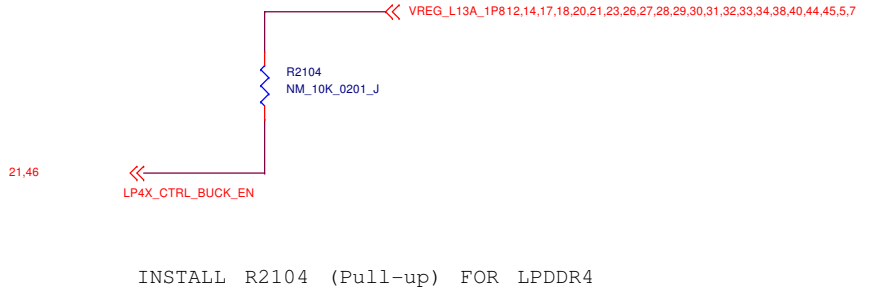
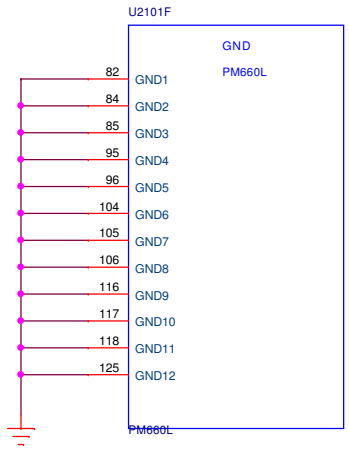
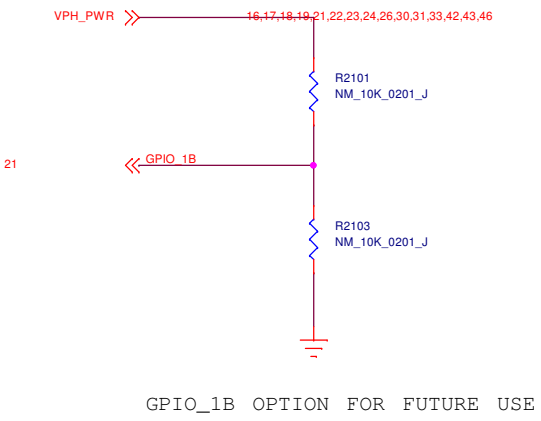
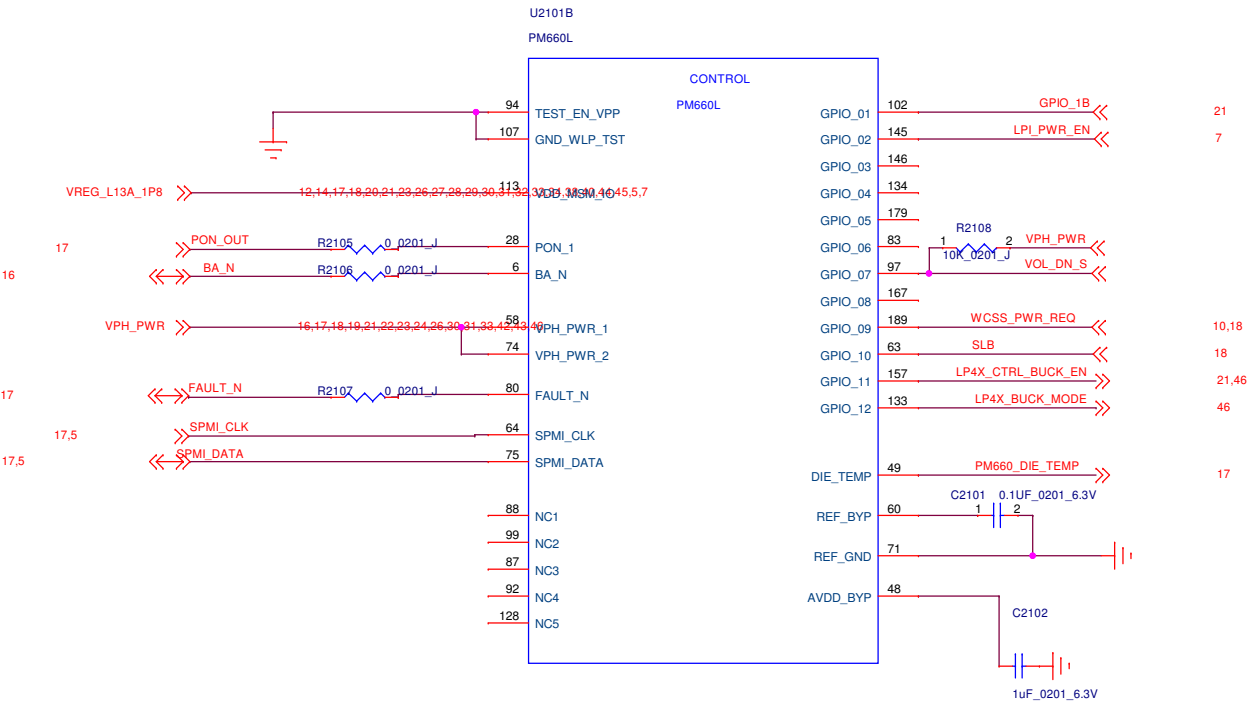
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Title			
SCHEMATIC, MB GA-527(PMIC-4: SMPS)			
Size	Document	Number	Rev
A2		601PP2	BF
Date:	Thursday, November 02, 2017		
Sheet	18	of	67



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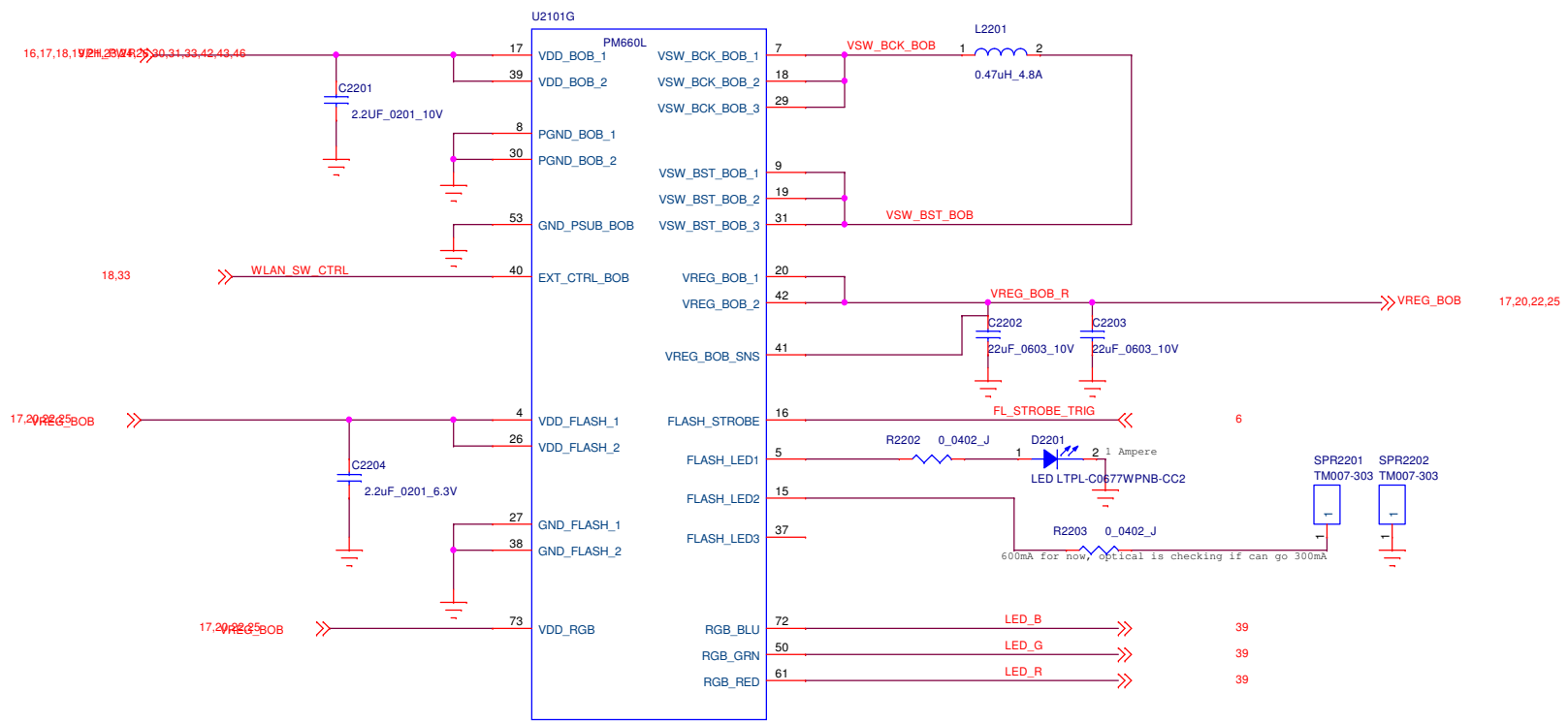
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SCHEMATIC, M/B GA-527(PMIC-5LDOs)			
Size	Document Number	Rev	BF
A2	601PP2		
Date:	Thursday, November 02, 2017	Sheet	20 of 47

PM660L OPTION PINS SELECTION

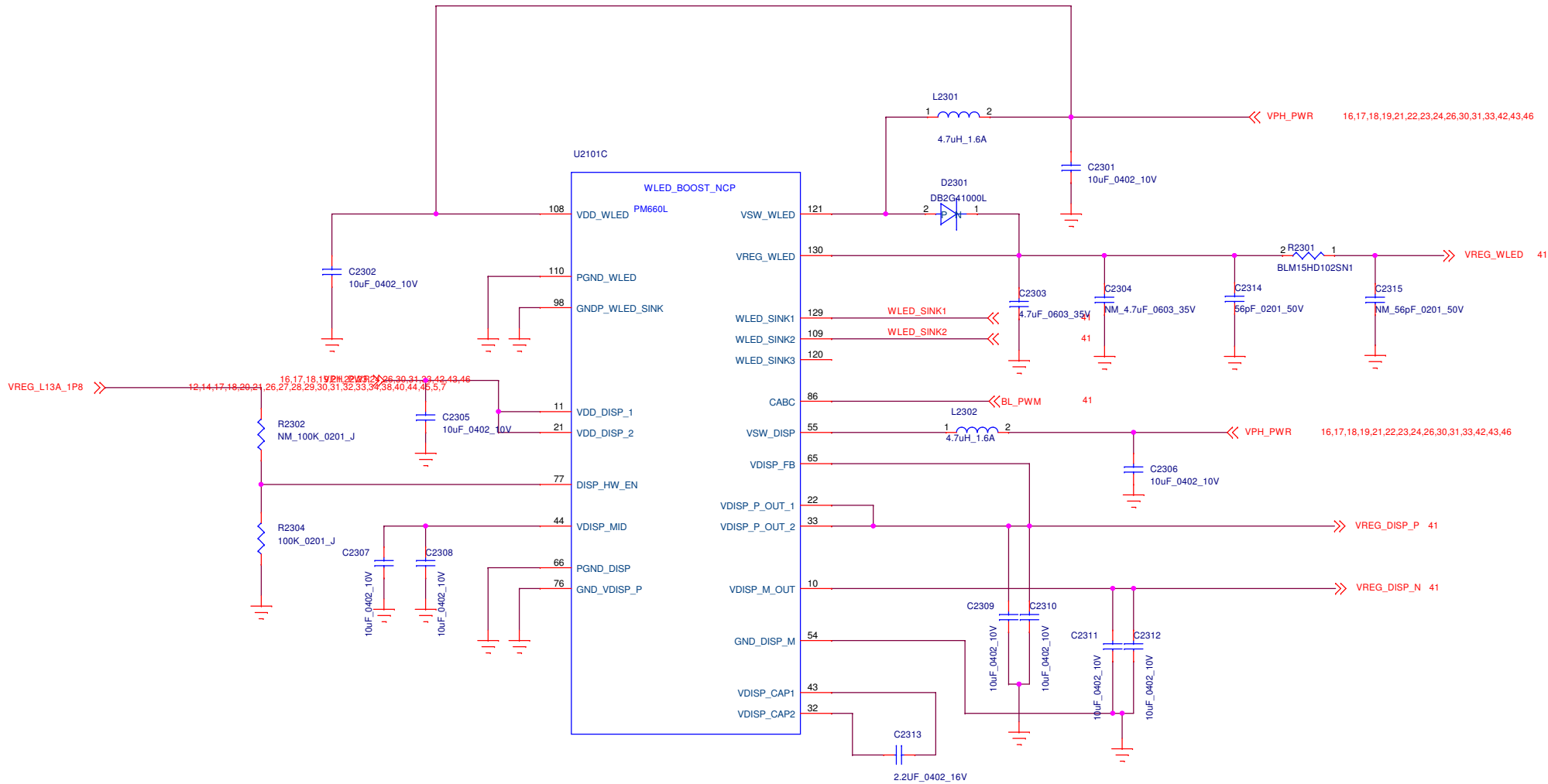


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Size	Document Number		Rev	
A3	601PP2		BF	
Date:	Thursday, November 02, 2017		Sheet	21 of 47

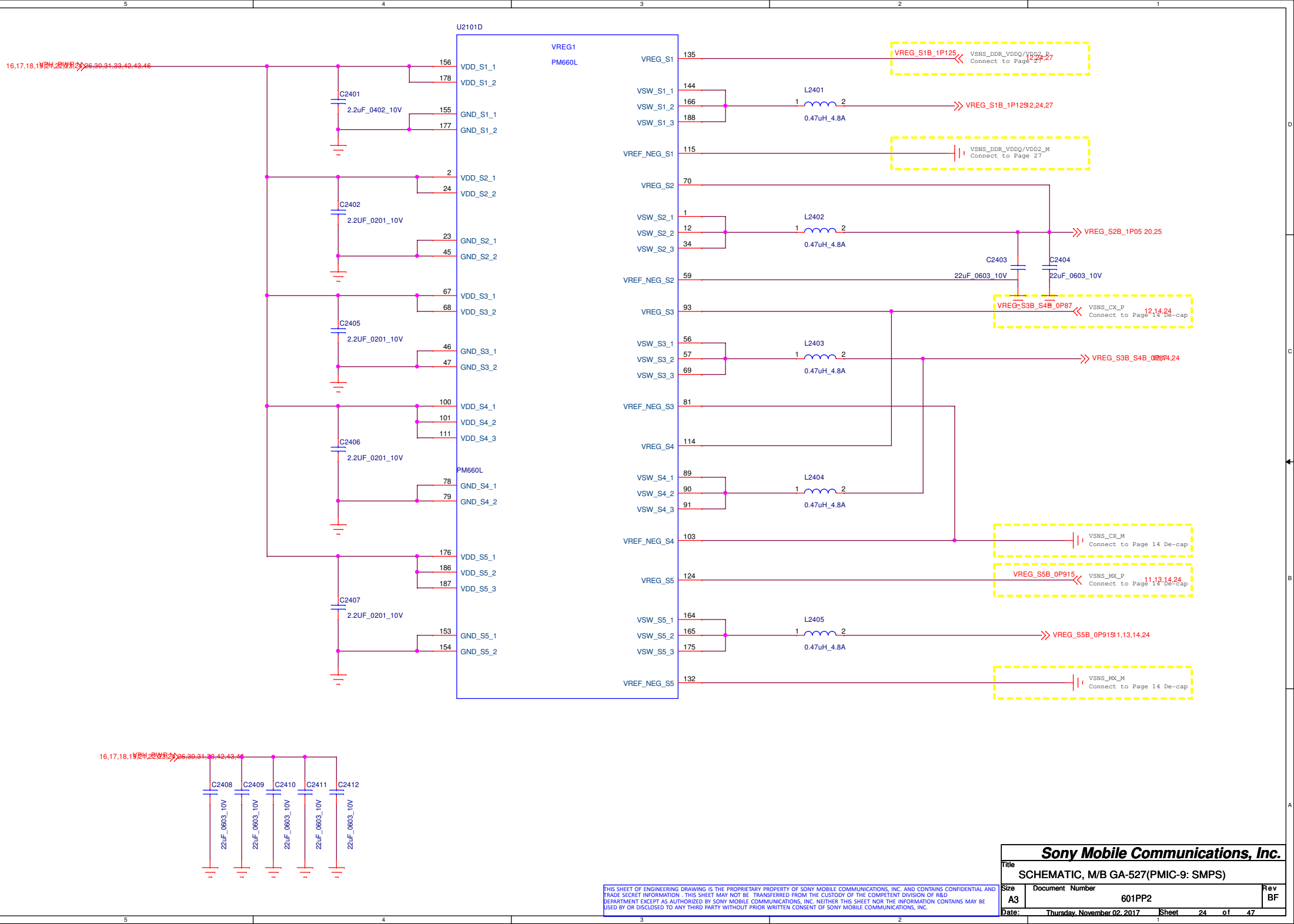


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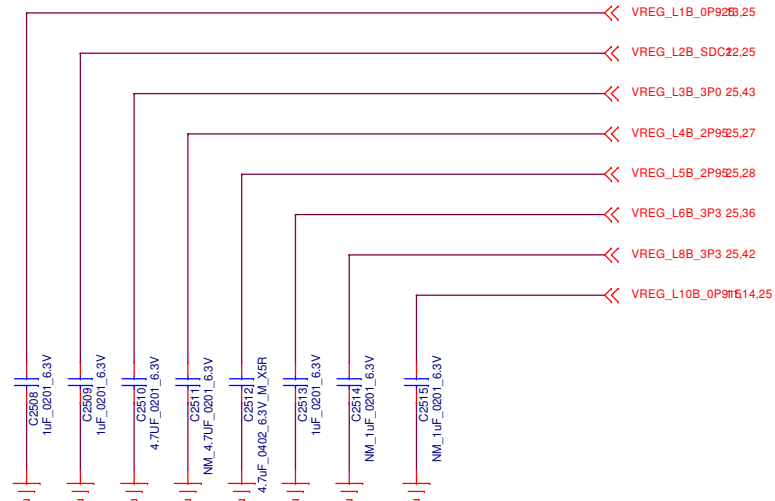
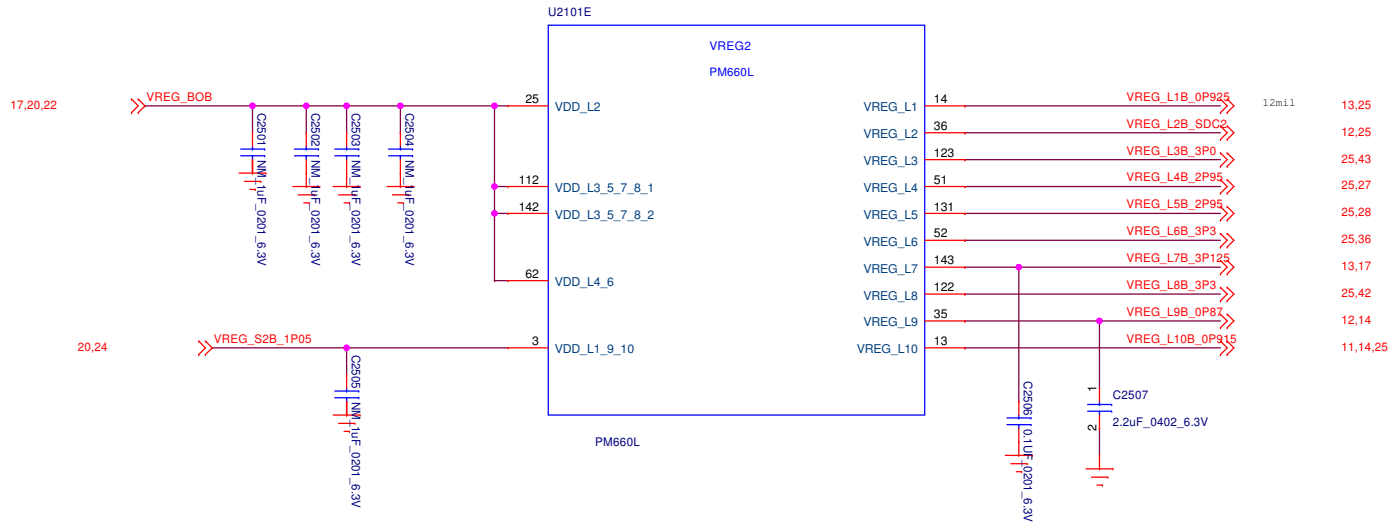
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Size	Document Number	601PP2		Rev
A3				BF
Date:	Thursday, November 02, 2017	Sheet	23	of 47



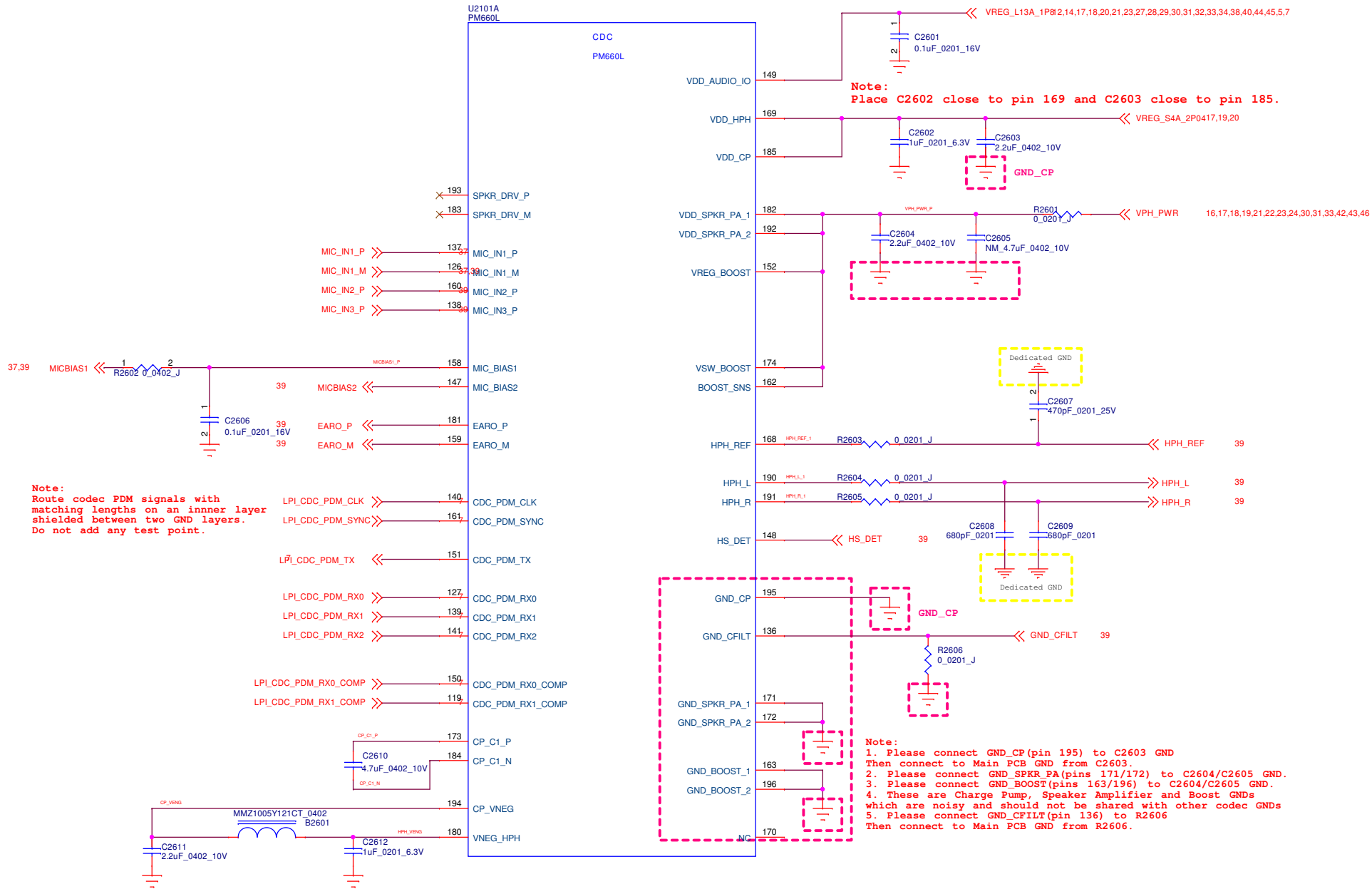
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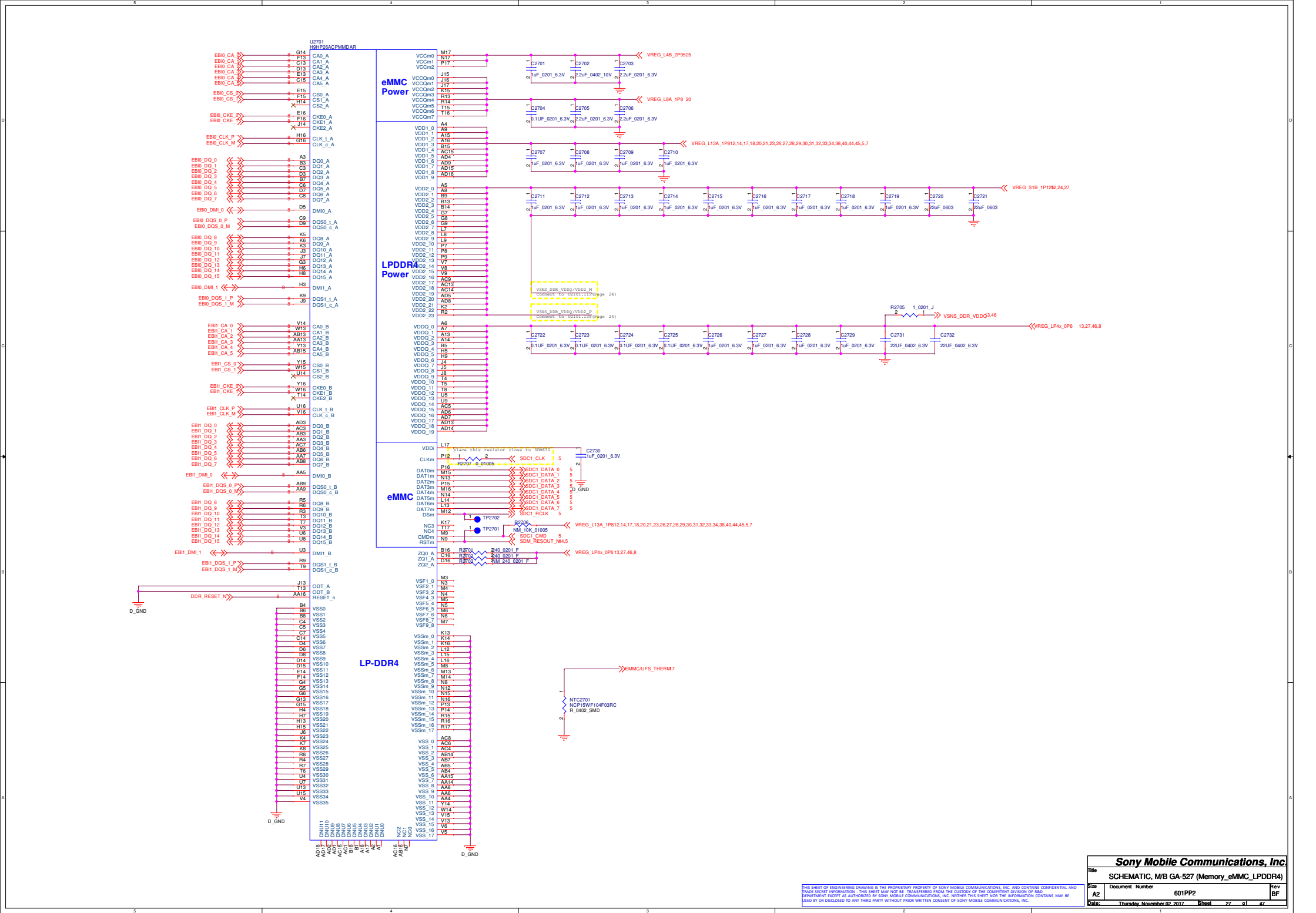
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Size	Document Number	Rev	
A3	601PP2	BF	
Date:	Thursday, November 02, 2017	Sheet	24 of 47

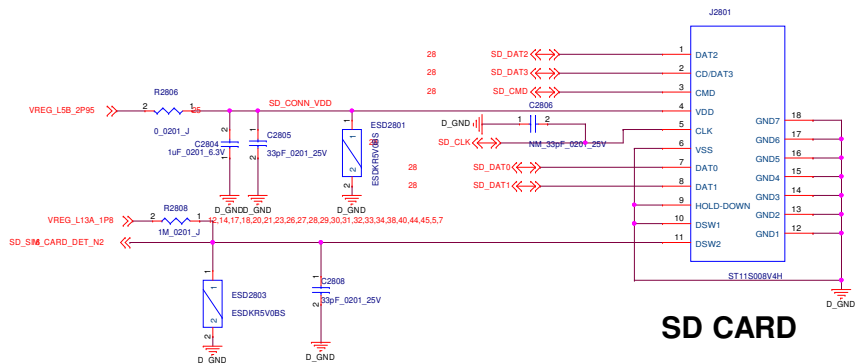
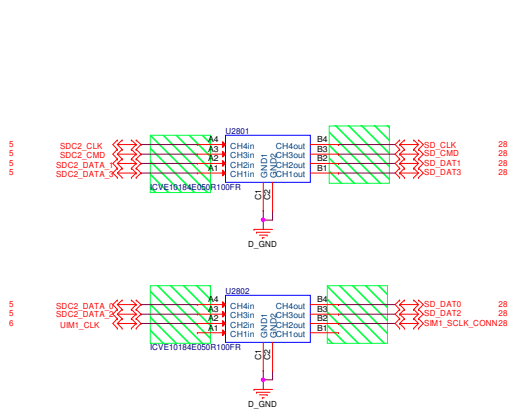
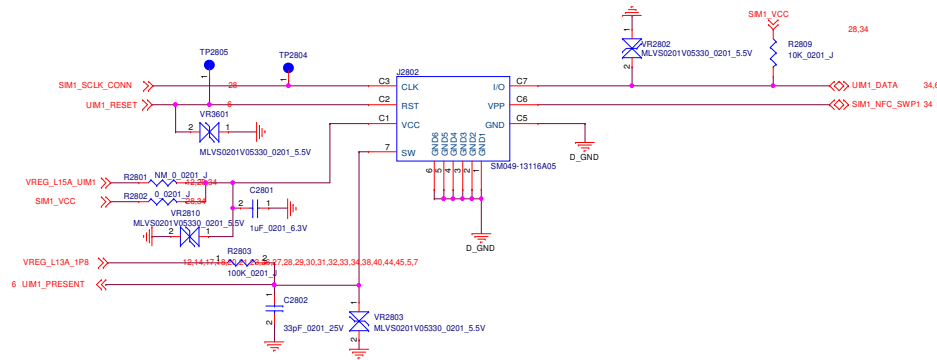


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Size	Document Number	Rev	
A3	601PP2	BF	
Date:	Thursday, November 02, 2017	Sheet	25 of 47



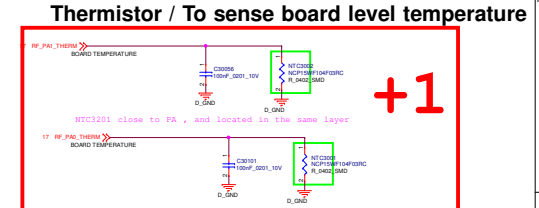
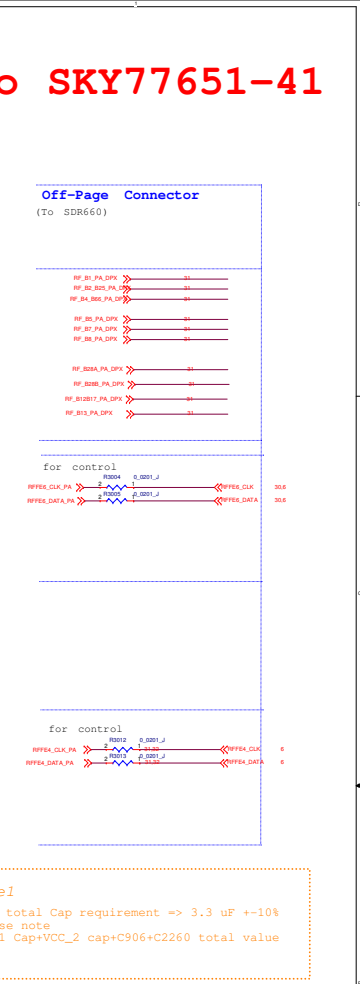
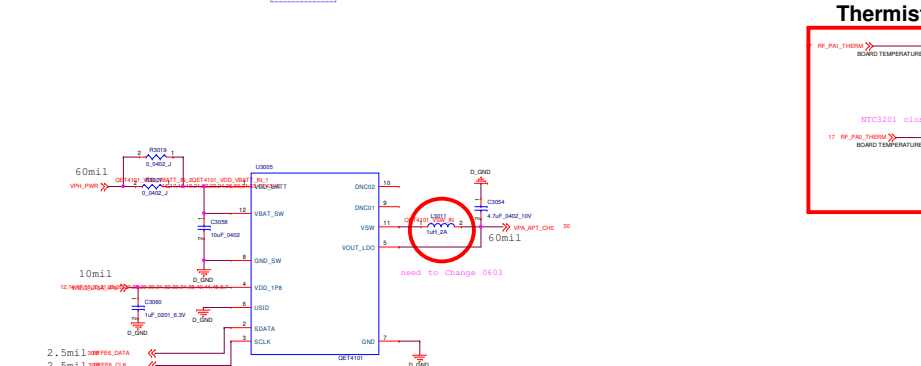
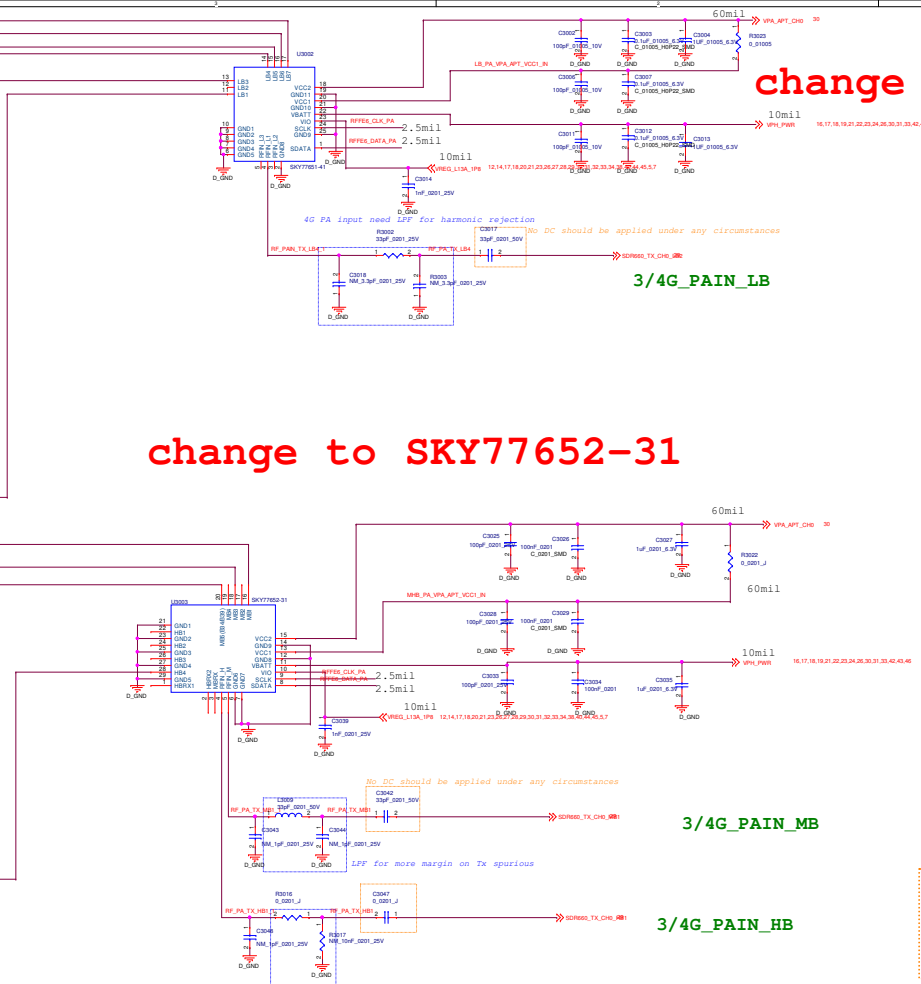
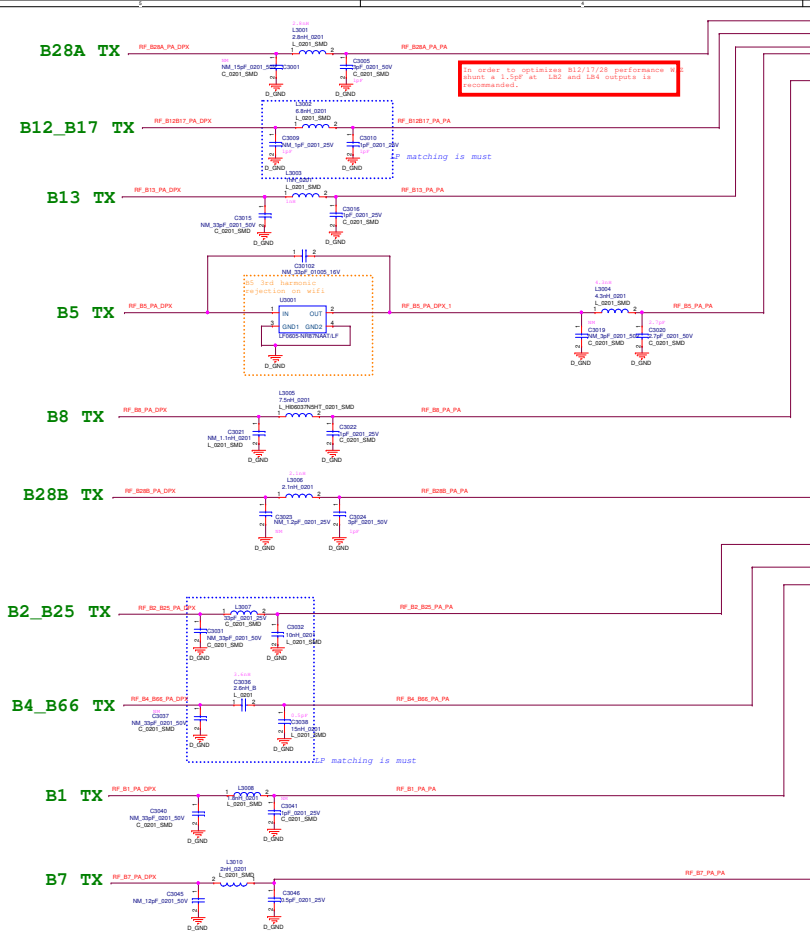


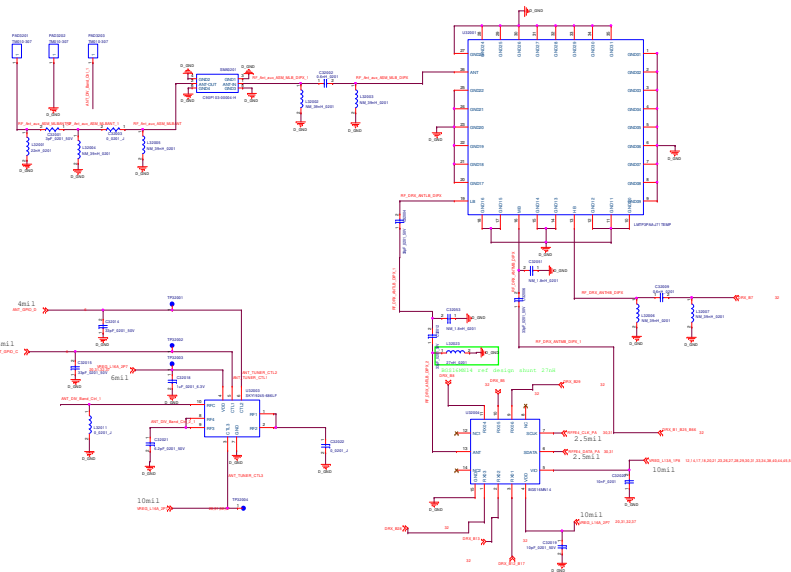


SD CARD

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Size	Document	Number	Rev	
A2		601PP2	BF	
Date:	Thursday, November 02, 2017	Sheet	28	of 47





B25_B66_DRX & non CA B1_B4_DRX

Note: B66 is able to cover B1&B4
B25 is able to cover B2

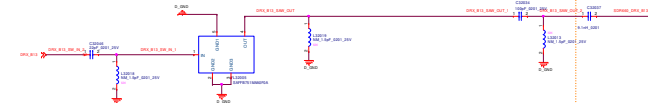
B7_DRX



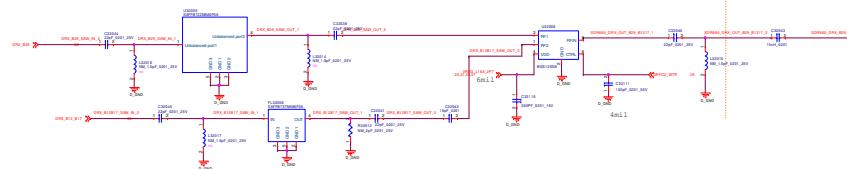
B8_DRX



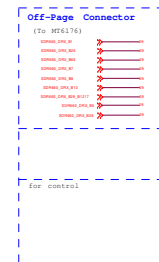
B13_DRX



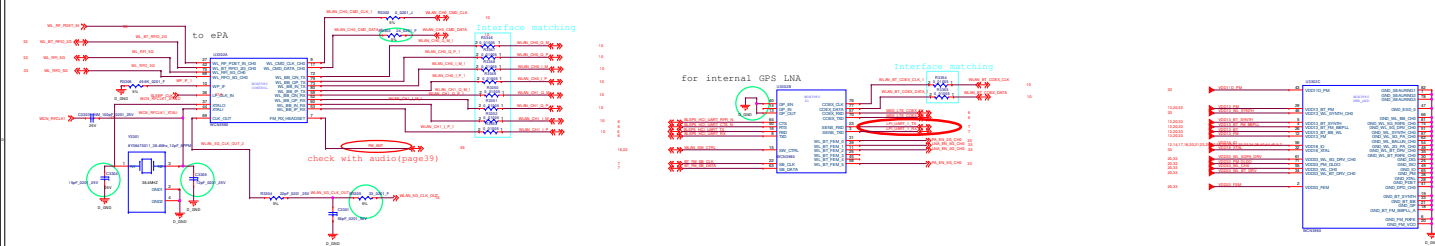
B29_ & B12B17_DRX



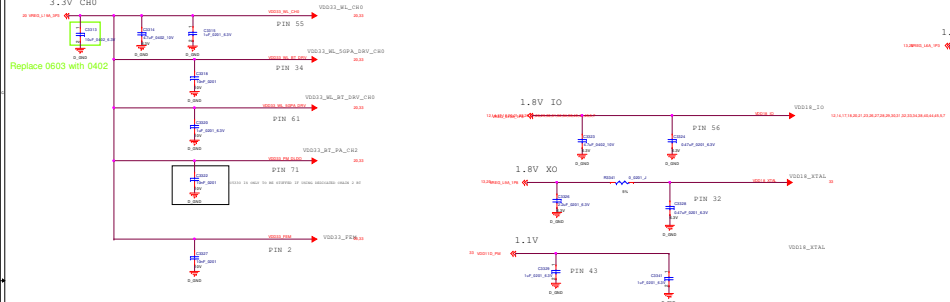
Note: B12 and B17 are using the same SAW filter



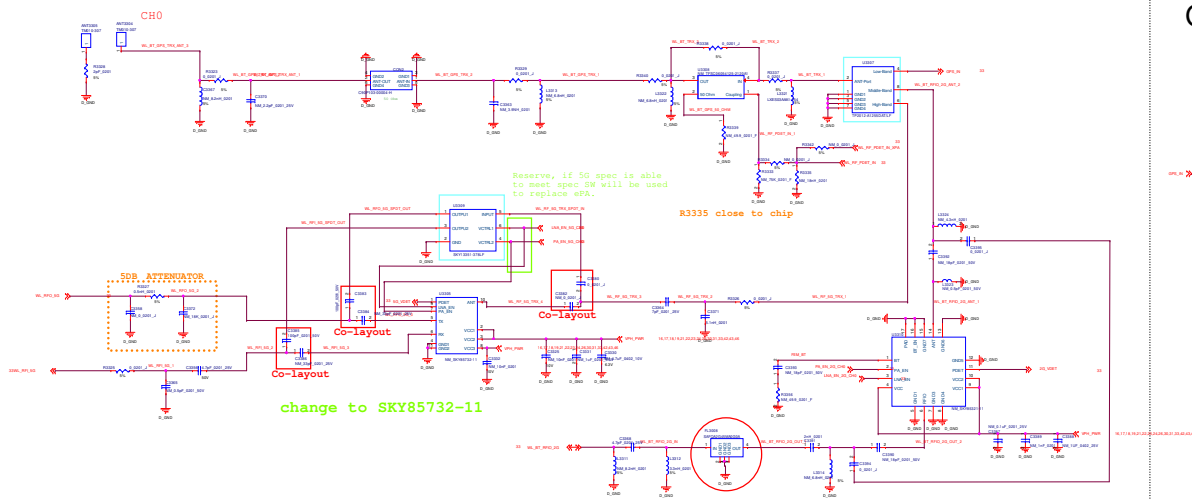
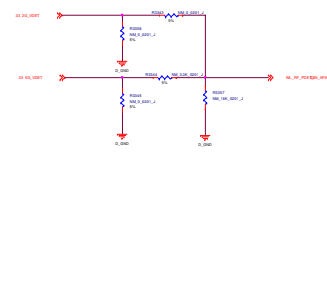
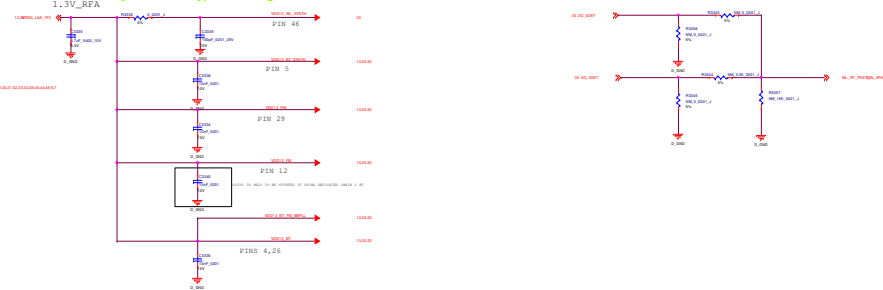
Place these two 240hm less than 1.5 inches from chip.



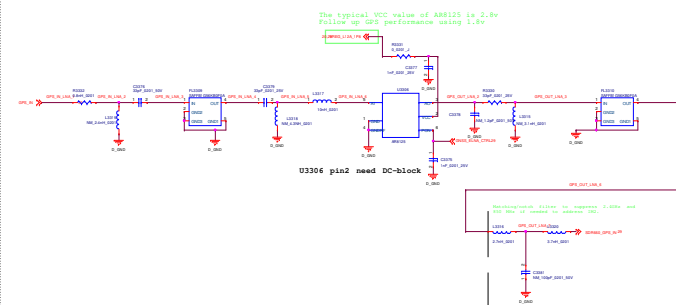
Layout: Star-Type Routing



Layout: Star-Type Routing



GPS RX



ENB (NFC_VEN)
1.Input pin
2.Internal pull low
3.Low active
4.If default NFC
would like to disable,
please configure to high

XRCGB27M120F3M10R0_27.12MHz_10PF_30PPM

BLSP6_I2C_SDA
BLSP6_I2C_SCL
NFC_INT_N
NFC_EN
NFC_DWL_REQ
NFC_WAKEUP

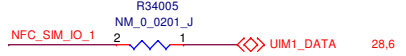
IRQ (NFC_IRQ)
1. IRQ is output pin and high active
2. IRQ is also a NFC strap pin
3. Host EINT connected with IRQ must be
default low

EINT (NFC_EINT)
1. Input pin
2. Internal pull low
3. High active

PN553E2EV/C210

U3401

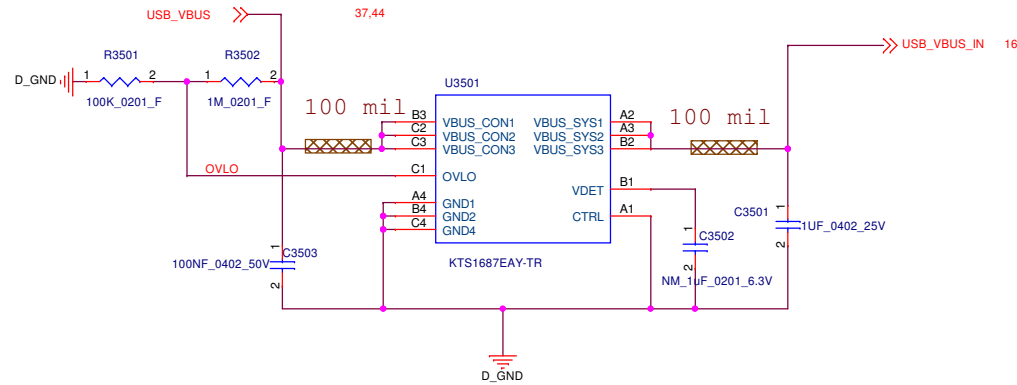
NFC
ADDRESS: (write 0X50,read 0X51)



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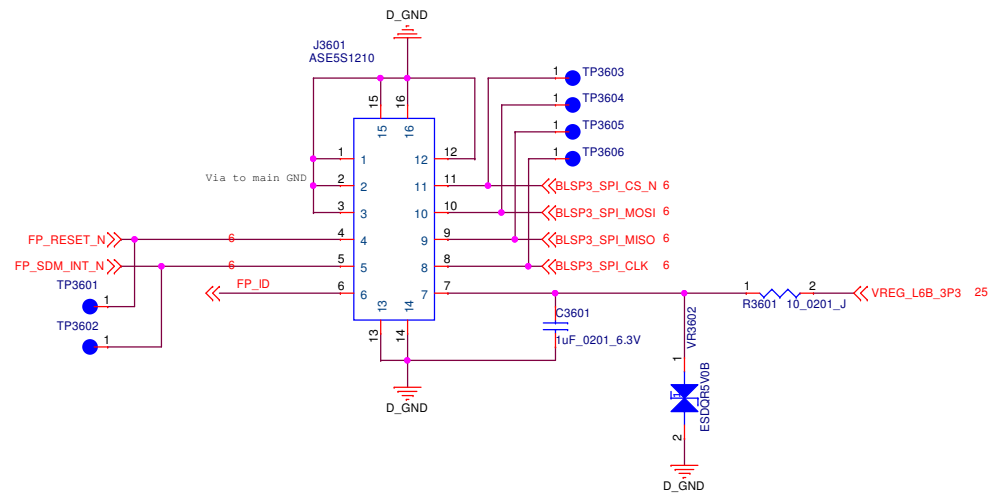
Sony Mobile Communications, Inc.			
Title			
SCHEMATIC, M/B GA-524(BT/ WiFi / FM-2_NXP553(NFC))			
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Date:	Thursday, November 02, 2017	Sheet	34 of 47

Change resistance follow charger voltage



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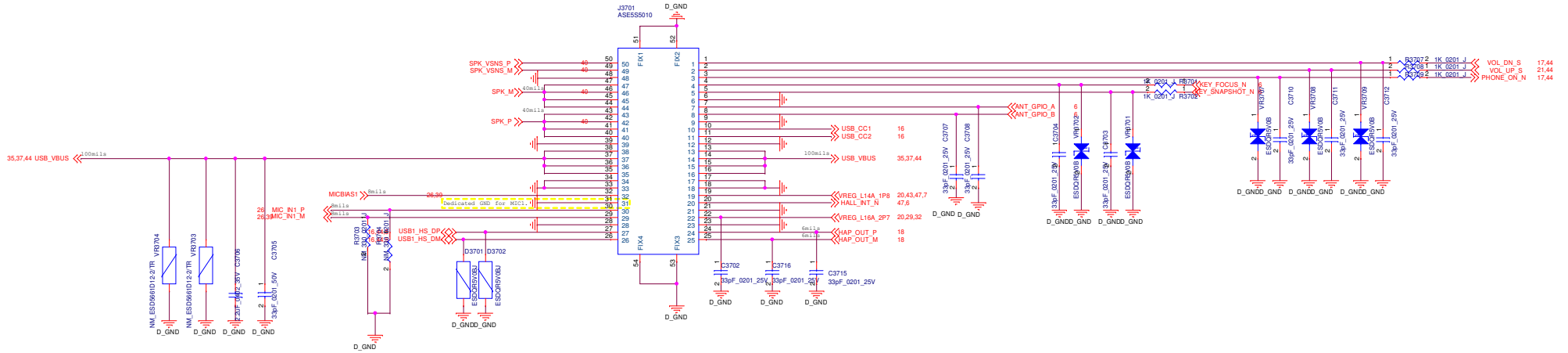
Sony Mobile Communications, Inc.			
Title			
SCHEMATIC, M/B GA-527(OVP)			
Size	Document Number	Rev	
A3	601PP2	BF	
Date:	Thursday, November 02, 2017	Sheet	35 of 47



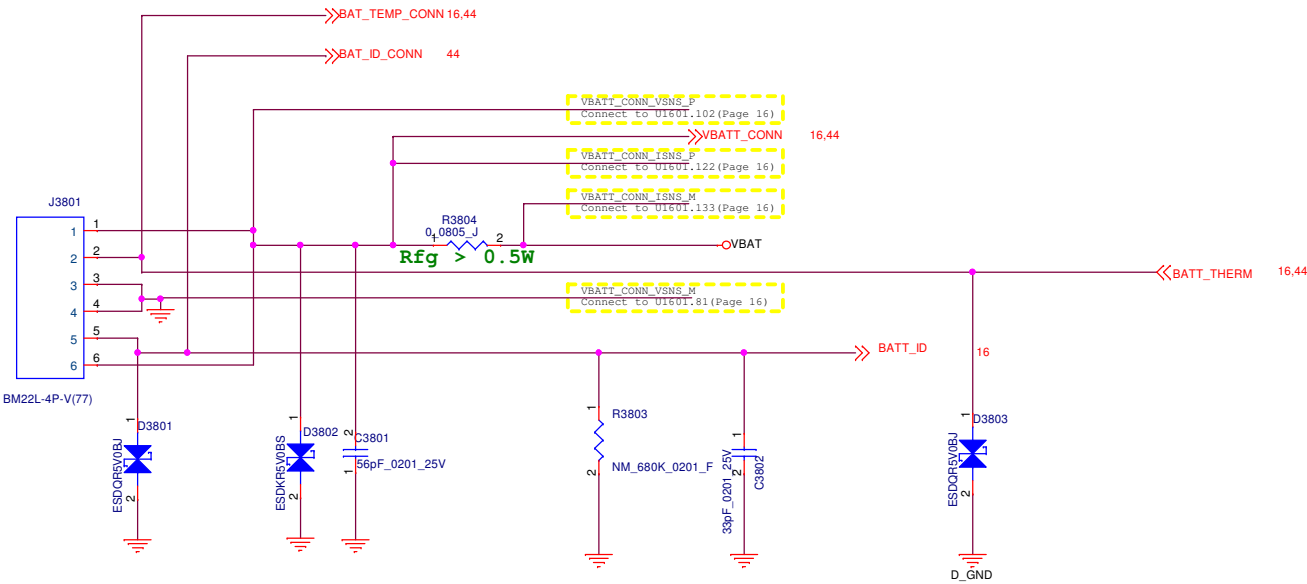
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Sony Mobile Communications, Inc.			
Title			
SCHEMATIC, M/B GA-527(Connector-1: Fingerprint)			
Size	Document Number	Rev	
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Date:	Thursday, November 02, 2017	Sheet	36 of 47

Main to Sub CONN

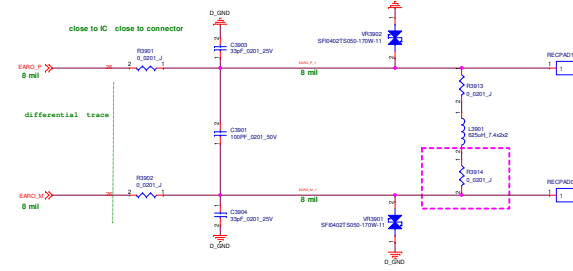


BATTERY CONNECTOR



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Sony Mobile Communications, Inc.			
Title			
SCHEMATIC, M/B GA-527(Connectors-3: BATT)			
Size	Document Number		Rev
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Date:	Thursday, November 02, 2017	Sheet	38 of 47



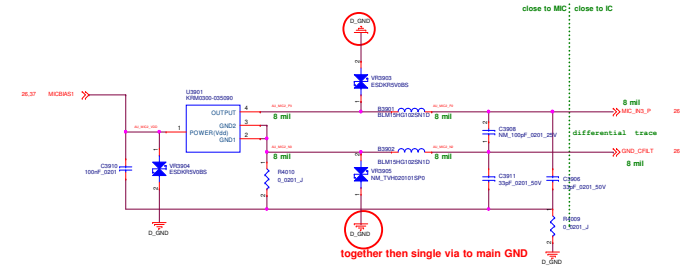
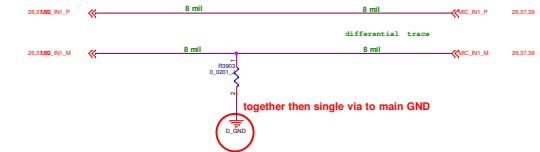
Receiver

(in the sub-board)

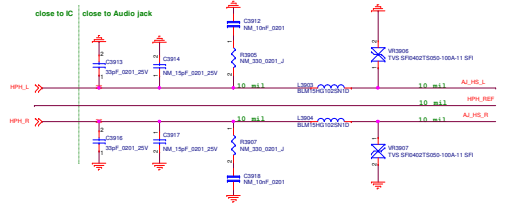
1st MIC

2nd MIC

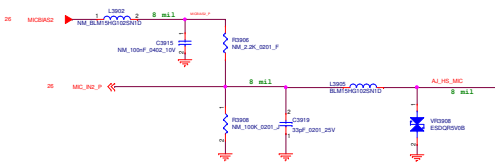
Speaker components (in the bottom)



Earphone Audio



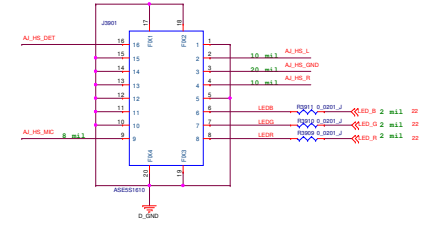
Notes: Place all components shown on this block close to headset jack connector.
Notes: Bead L3906 and L3904 are needed to reduce noise generated by audio/FM concurrency.
These components can be removed if FM radio is not supported.



Notes: Place all components shown on this block close to headset jack connector.
Notes: Bead L3906 is needed to reduce noise generated by audio/FM concurrency.
These component can be removed if FM radio is not supported.

AJ CONN

Audio Jack use FPC type_2016/11/28

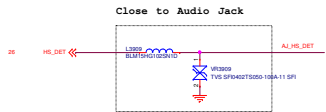


HS_OUT L/R

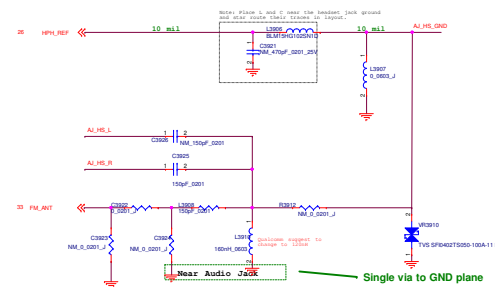
HS_MIC

HS_DET

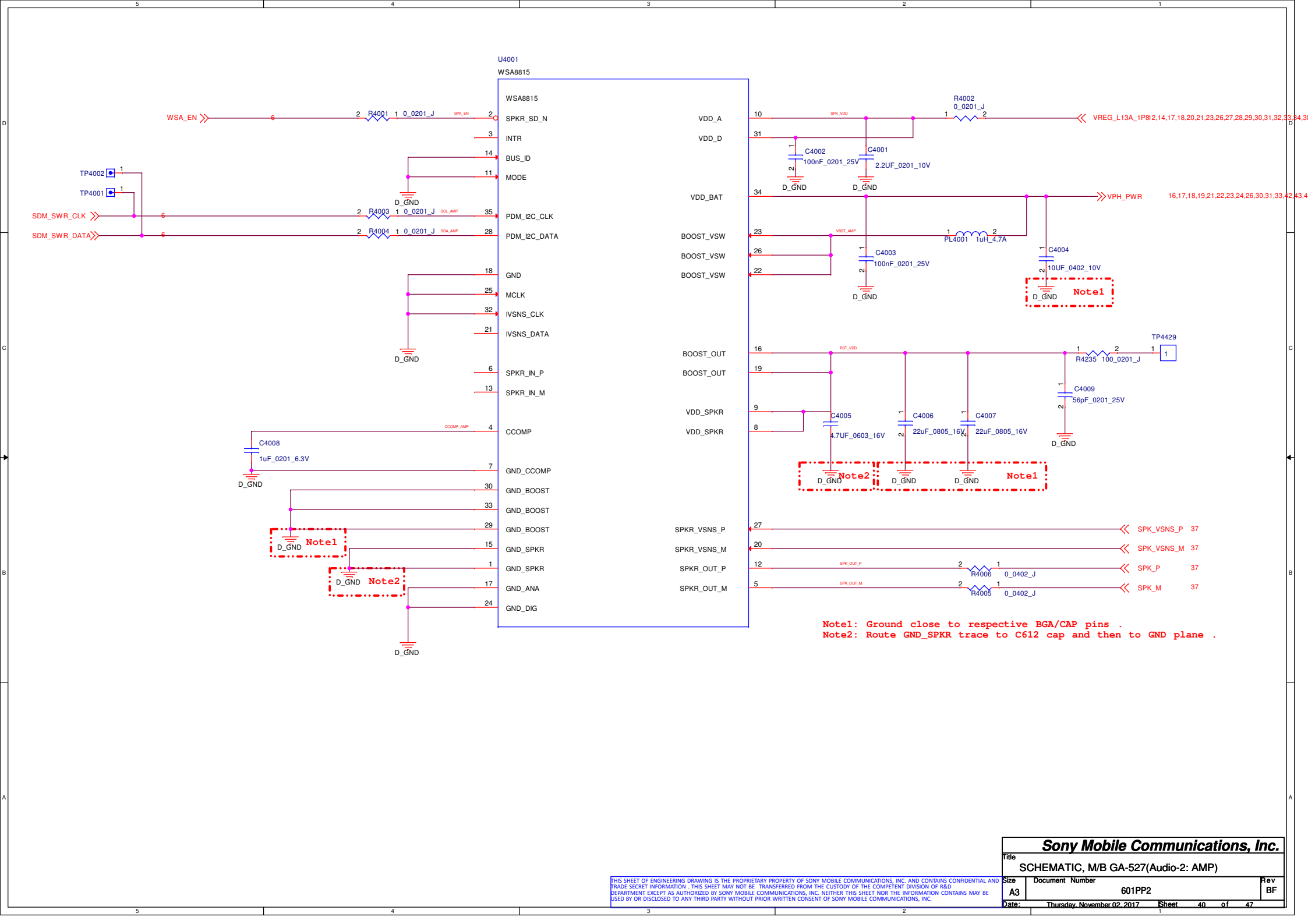
HS_GND/FM



Notes: Place all components shown on this block close to headset jack connector.
Notes: Bead L3909 is needed to reduce noise generated by audio/FM concurrency.
These components can be removed if FM radio is not supported.



Notes: Place all components shown on this block close to headset jack connector.
Notes: Bead L3906 is needed to reduce noise generated by audio/FM concurrency.
These component can be removed if FM radio is not supported.

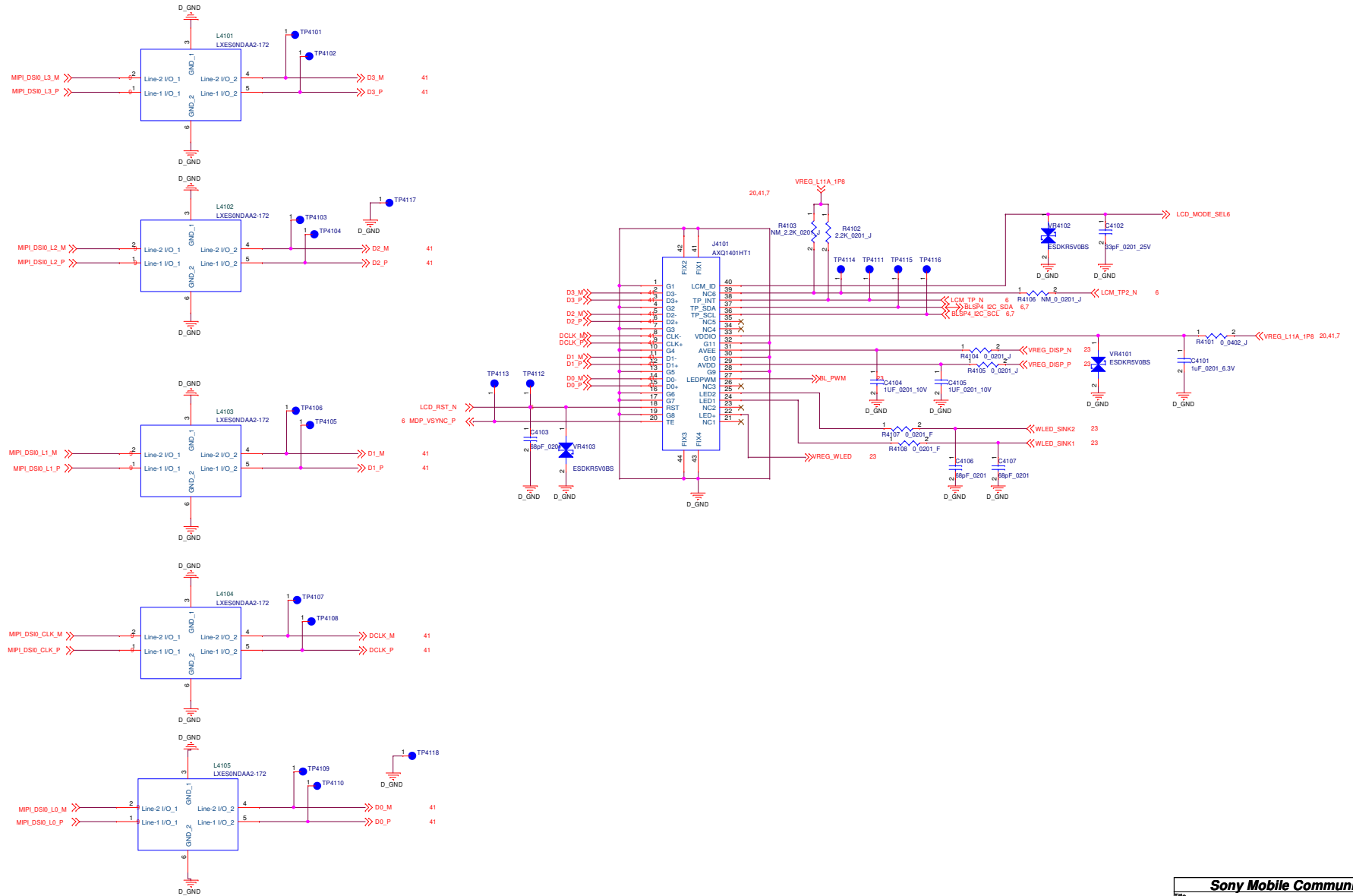


Note1: Ground close to respective BGA/CAP pins .
Note2: Route GND_SPKR trace to C612 cap and then to GND plane .

Sony Mobile Communications, Inc.			
Title			
SCHEMATIC, M/B GA-527(Audio-2: AMP)			
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Date:	Thursday, November 02, 2017	Sheet	40 of 47

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Main LCM

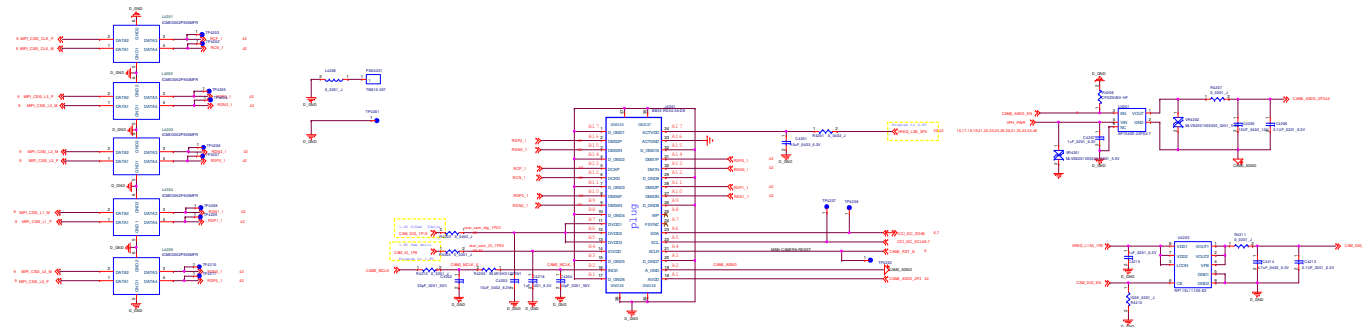


Waiting for pin define. 12/2

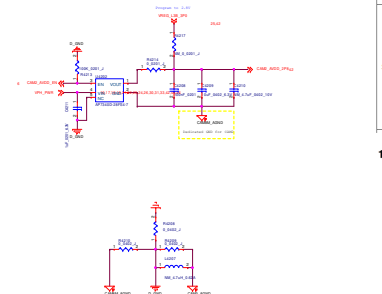
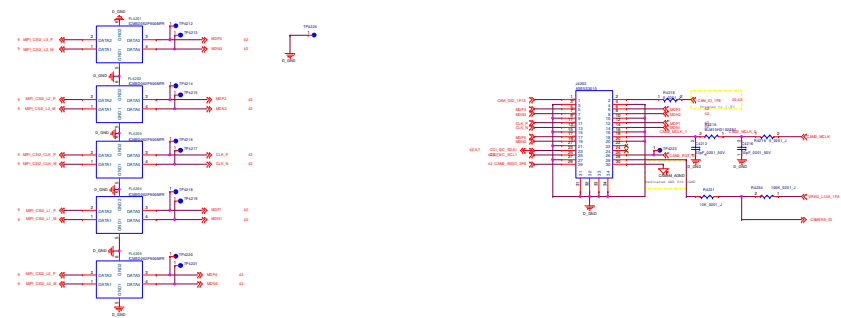
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Rear Camera 23M (IMX300)



Front Camera (8M) IMX219



Item	Pins	Symbol	Min.	Typ.	Max.	Unit	Comment
Supply voltage	VDDHFI1,2	V _{max}	2.6	2.8	3.0	V	
	VDDHCM1,2						
	VDDH1AN						
	VDDHPL						
	VDDHSN1,2	V _{min}	1.02	1.8	1.98	V	
	VDDCMCO						
	VDDLSC1-8						
	VDDLCH1,2						
	VDDLIO1,2	V _{min}	1.08	1.20	1.30	V	

10-5 Electrical Characteristics

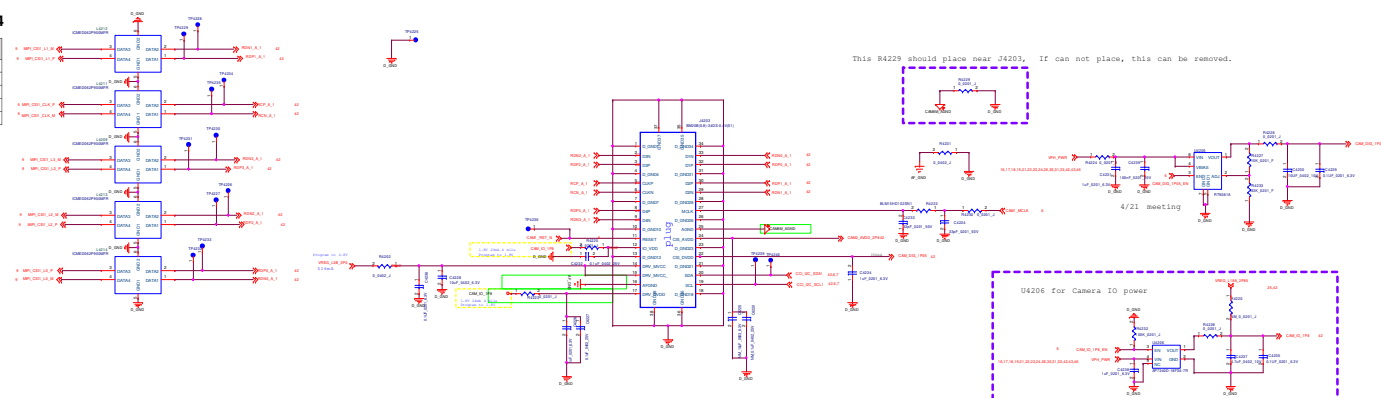
Table 45 Electrical Characteristics

($V_{ANA} = 3.0$ V, $V_{DDL} = 1.3$ V, $V_{DIG} = 1.98$ V, $T_j = 60$ °C)

Item	Symbol	Min.	Typ.	Max.	Unit	Comment
Current consumption (Full,30 frame/s)	IVAVA_stm		33	38	mA	VTmax is max speed read out from pixel array CS12 4 lanes, VANA current
	IVDDL_stm		100	160	mA	VTmax is max speed read out from pixel array CS12 4 lanes, VDD0 current Defect Correction, L.S.C. function off
HW-Standby current	ISTB_ana			50	μA	XCLR = Lo, VANA current
	ISTB_dig			10	μA	XCLR = Lo, VDD0 current
	ISTB_lddi			50	μA	XCLR = Lo, VDD0 current

Front Camera (16M) IMX234

	Symbol	StandBy(μA)	Operating(μA)
Driver IC	DRV_DVDD_I2V8	88	24
	DRV_MVCC_I2V8	10	616
Sensor	CIR_DVDD_I2V8	88.60	196.1
	GVDD_I2V8	23.9	20
	CIR_VAIO_I2V8	43.3	83
26	U0VDD	7	U0VDD
27	MCUK	8	DAP
26	DGND	9	DAN
25	AGND	10	DGND
24	CELVDD	11	RESET
23	DGND	12	IOVDD
22	GLVDD	13	DGND
21	DGND	14	DRV_MVCC
20	SDA	15	DRV_MVCC
19	SEL	16	AFDND
18	DGND	17	DRV_DVDD



This R4229 should place near J4203, If can not place, this can be removed

4/21 meet

U4206 for Camera IO power:

E-COMPASS

G-Sensor

I2C Address:

Slave Address	R/W Command Bit	Remark
0x0C-7bit follow by RW	R: 1 ; W: 0	

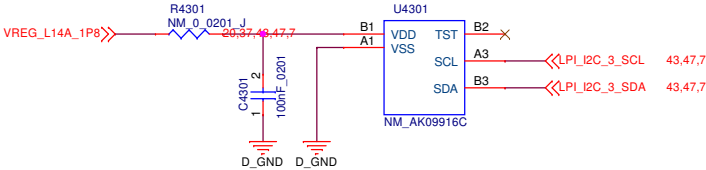
I2C Address:

Slave Address	R/W Command Bit	Remark
0x19-7bit follow by RW	R: 1 ; W: 0	

10.1.1.4. Slave Address
The slave address of AK09916 is 0Ch.



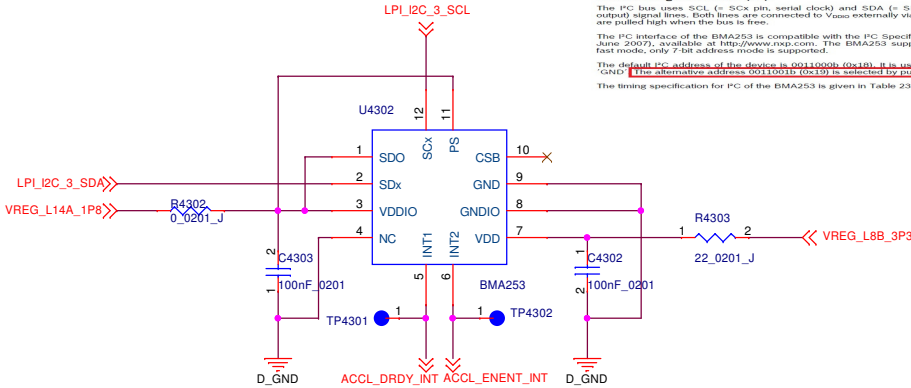
Figure 10.4. Slave Address



For stock,only KS BOM have mount 2nd location E-compass for verifaction.
U4301, NM on CQ BOM

BOSCH	BMA253	Page 3 of 4
	Data sheet	

7.2 Inter-Integrated Circuit (I2C)
The I2C bus uses SCL (= SCL pin, serial clock) and SDA (= SDA pin, serial data input and output) signal lines. Both lines are connected to VDD externally via pull-up resistors so that they are pulled high when the bus is free.
The I2C interface of the BMA253 is compatible with the I2C Specification UM10204 Rev. 03 (19 June 2007), available at <http://www.st.com>. The BMA253 supports I2C standard mode and fast mode, only 7-bit address mode is supported.
The default I2C address of the device is 0x1000h (0x10). It is used if the SDO pin is pulled to GND. If the alternative address 0x1001h (0x11) is selected by pulling the SDO pin to VDD.
The timing specification for I2C of the BMA253 is given in Table 23.



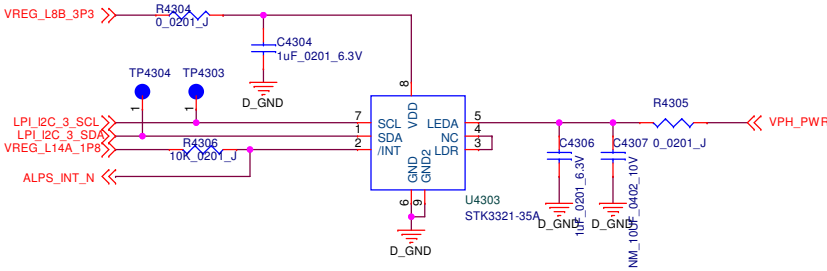
P+L Sensor

I2C Address:

Slave Address	R/W Command Bit	Remark
0x48 follow by RW	R: 1 ; W: 0	

Slave Address
STK3321-35A provides fixed I2C slave address of 0x48 using 7 bit addressing protocol.

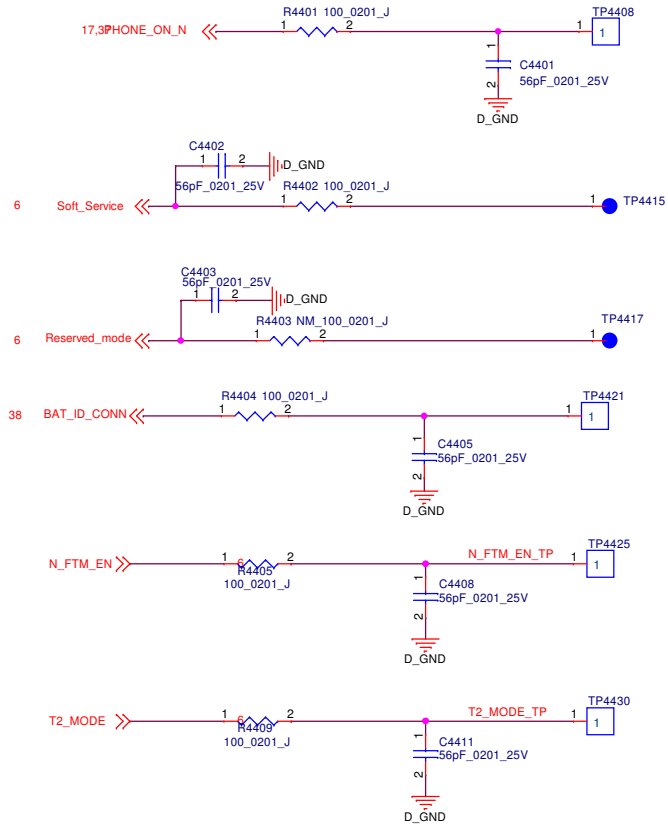
Slave Address	R/W Command Bit	OPERATION
0x48	0	Write Command to STK3321-35A
(followed by the RW bit)	1	Read Data from STK3321-35A



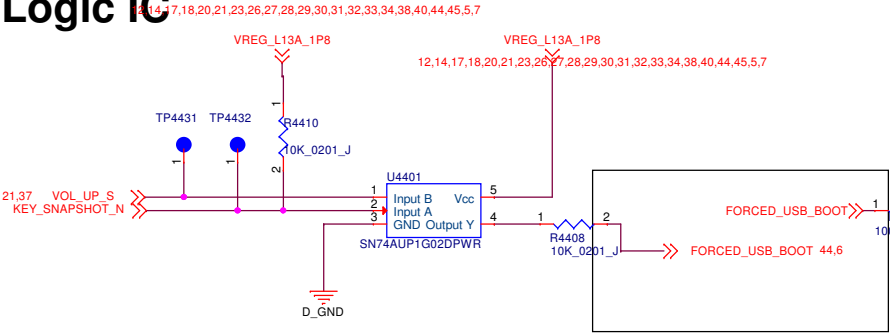
Sony Mobile Communications, Inc.			
SCHEMATIC, M/B GA-527 (Sensors)			
Size	Document Number	Rev	
A3	601PP2	BF	
Date:	Thursday, November 02, 2017	Sheet	43 of 47

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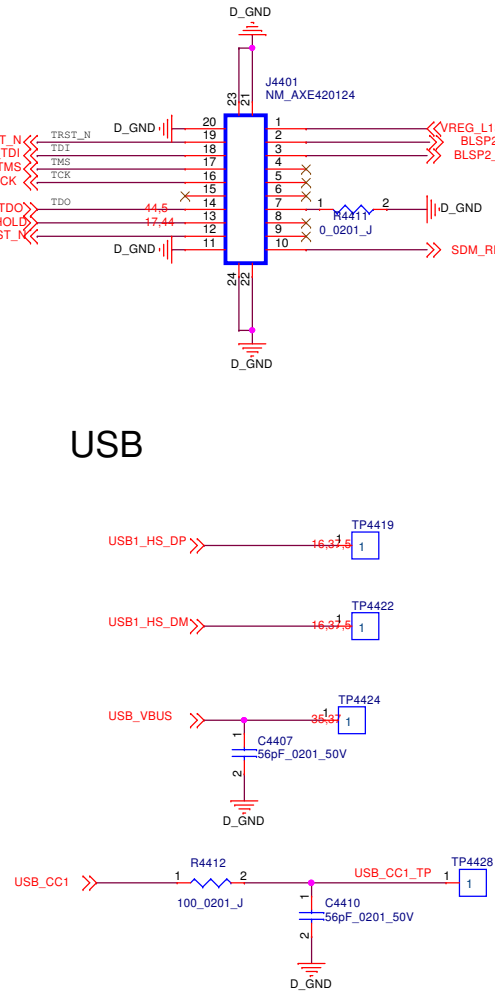
Power Key / Key Pad



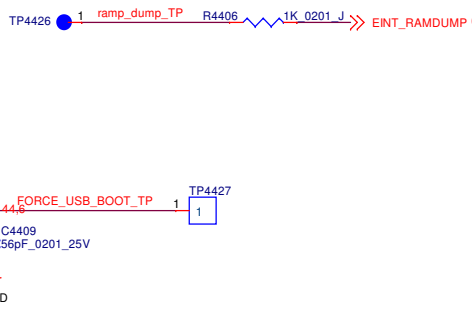
Logic IC



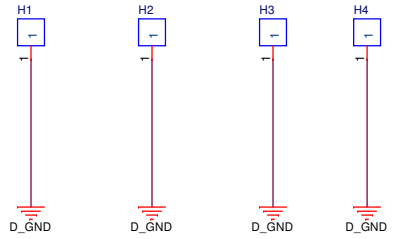
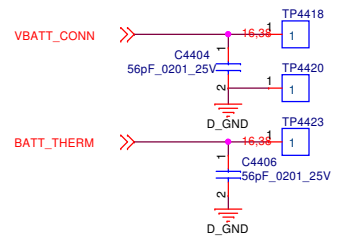
USB



RAM DUMP key



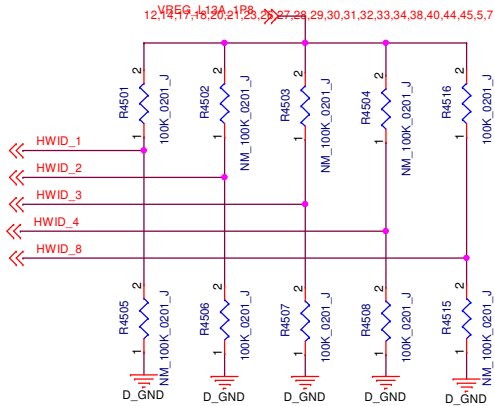
Battery



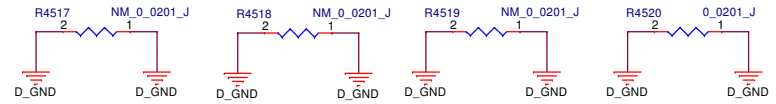
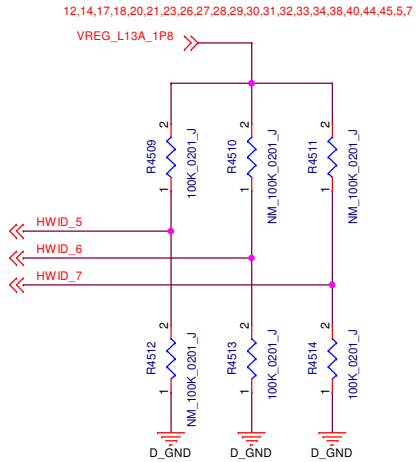
Sony Mobile Communications, Inc.			
Title			
SCHEMATIC, M/B GA-527 (Keypad)			
Size	Document	Number	Rev
A3		601PP2	BF
Date:	Thursday, November 02, 2017	Sheet	44 of 47

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6
6
6
6
6

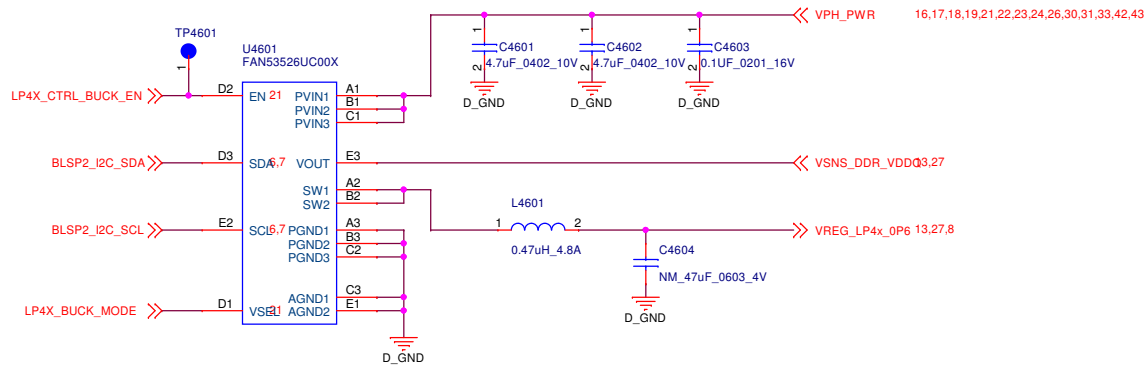


6
6
6



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Date:	Thursday, November 02, 2017	Sheet	45 of 47



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A3	601PP2	BF	
Date:	Thursday, November 02, 2017	Sheet	46 of 47

I2C Address:

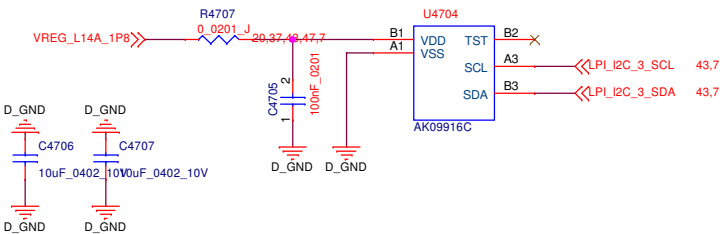
Slave Address	R/W Command Bit	Remark
0x0C-7bit follow by RW	R: 1 ; W: 0	

10.1.1.4. Slave Address
The slave address of AK09916 is 0Ch.

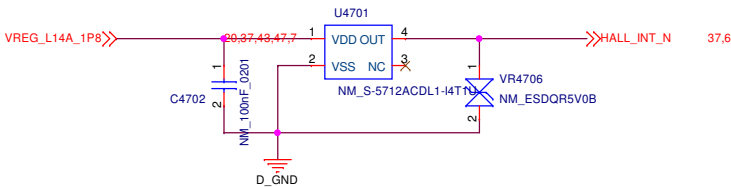
MSB	0	0	0	1	1	0	0	LSB
								R/W

Figure 10-4. Slave Address

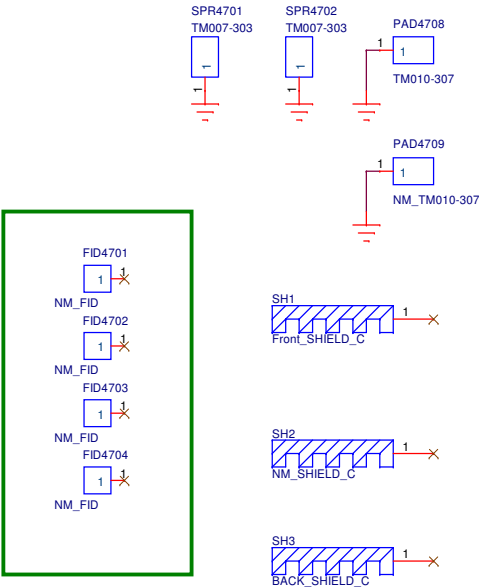
Backup Compass



Backup Hall Sensor



2 grounding springs on Top side



光學點