

# Yoda-2 SVT Logic Schematics

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46.BLANK

47.BLANK

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69.DC/DC VCCGFXCORE\_I(MP86901C)

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76.BLANK

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78.DD/DC VCC1R8\_SUS(BU90104GWZ)

79.DD/DC VCCPCHCORE(NB695)

80.BLANK

81.BLANK

82.LOAD SW PCH SUS/MS

83.LOAD SW LAN/VCC1R2B\_HDMI

84.LOAD SW B

85.LOAD SW WLAN

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EC HISTORY

TABLE: Chip Capacitor Thermal Characteristics

		Code
-55 to 150degC -55 to 125degC	+/-30ppm/degC +/-30ppm/degC	NPO C0G
-55 to 125degC -55 to 105degC -55 to 85degC	+/-15% +/-22% +/-15%	X7R X6S X5R

TABLE: Chip Capacitor Tolerance

Tolerance	Code
+/-0.25pF +/-0.5pF	C D
+/-5% +/-10% +/-20% +80/-20%	J K M Z

TABLE: Chip Part Dimension

Size [mm]	mm Size Code	Inch Size Code
0.40 x 0.20	0402	01005
0.60 x 0.30	0603	0201
1.00 x 0.50	1005	0402
1.60 x 0.80	1608	0603
2.00 x 1.25	2125	0805
2.00 x 1.60	2016	0806
2.50 x 2.00	2520	1008
3.20 x 1.60	3216	1206
3.20 x 2.50	3225	1210
4.50 x 1.60	4516	1806
4.50 x 2.50	4525	1810
4.50 x 3.20	4532	1812
5.00 x 2.50	5025	2010
6.40 x 3.20	6432	2512

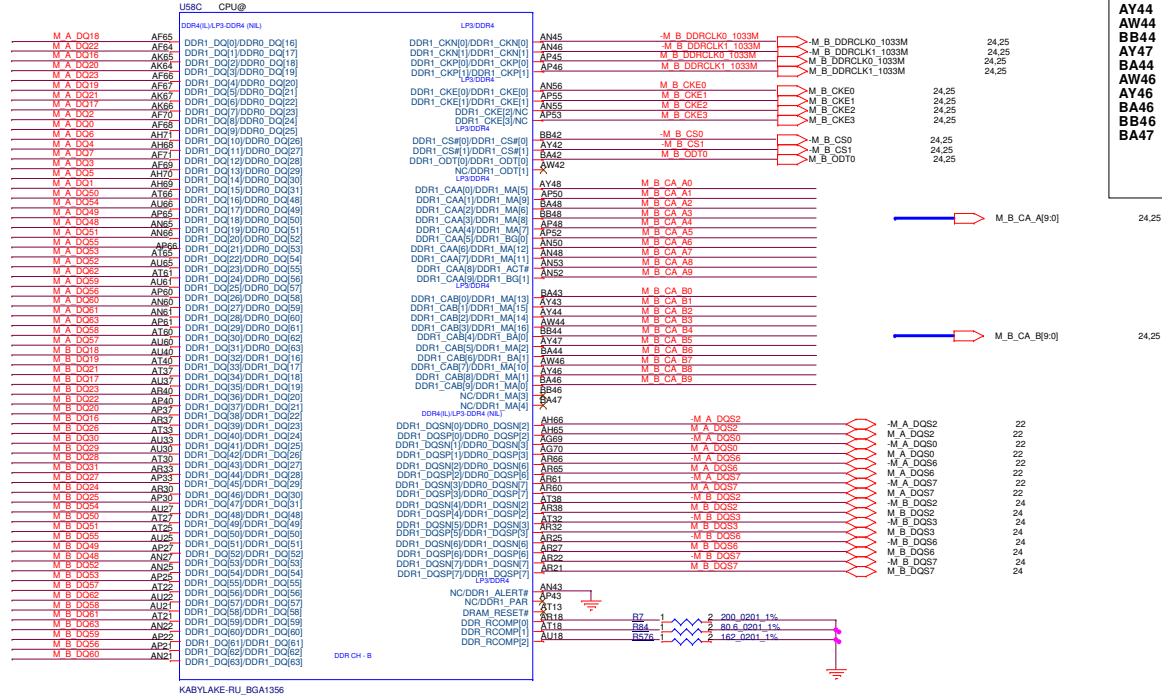
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LOGIC





TABLE

	Pin	Interleave	Non-Interleave
Block 1	AF65	DDR1_DQ[0]	DDR0_DQ[16]
	AF64	DDR1_DQ[1]	DDR0_DQ[17]
	AK65	DDR1_DQ[2]	DDR0_DQ[18]
	AK64	DDR1_DQ[3]	DDR0_DQ[19]
	AF66	DDR1_DQ[4]	DDR0_DQ[20]
	AF67	DDR1_DQ[5]	DDR0_DQ[21]
	AK66	DDR1_DQ[6]	DDR0_DQ[22]
	AF70	DDR1_DQ[7]	DDR0_DQ[23]
	AF68	DDR1_DQ[8]	DDR0_DQ[24]
	AH71	DDR1_DQ[9]	DDR0_DQ[25]
	AH68	DDR1_DQ[10]	DDR0_DQ[26]
	AF71	DDR1_DQ[11]	DDR0_DQ[27]
	AF69	DDR1_DQ[12]	DDR0_DQ[28]
	AH70	DDR1_DQ[13]	DDR0_DQ[29]
	AH69	DDR1_DQ[14]	DDR0_DQ[30]
		DDR1_DQ[15]	DDR0_DQ[31]
Block 3	AT66	DDR1_DQ[16]	DDR0_DQ[48]
	AU66	DDR1_DQ[17]	DDR0_DQ[49]
	AP65	DDR1_DQ[18]	DDR0_DQ[50]
	AN65	DDR1_DQ[19]	DDR0_DQ[51]
	AN66	DDR1_DQ[20]	DDR0_DQ[52]
	AP66	DDR1_DQ[21]	DDR0_DQ[53]
	AT65	DDR1_DQ[22]	DDR0_DQ[54]
	AU65	DDR1_DQ[23]	DDR0_DQ[55]
	AT61	DDR1_DQ[24]	DDR0_DQ[56]
	AU60	DDR1_DQ[25]	DDR0_DQ[57]
	AN60	DDR1_DQ[26]	DDR0_DQ[58]
	AN61	DDR1_DQ[27]	DDR0_DQ[59]
	AP61	DDR1_DQ[28]	DDR0_DQ[60]
	AT60	DDR1_DQ[29]	DDR0_DQ[61]
	AU60	DDR1_DQ[30]	DDR0_DQ[62]
		DDR1_DQ[31]	DDR0_DQ[63]
Block 5	AU40	DDR1_DQ[32]	DDR1_DQ[16]
	AT40	DDR1_DQ[33]	DDR1_DQ[17]
	AT37	DDR1_DQ[34]	DDR1_DQ[18]
	AU37	DDR1_DQ[35]	DDR1_DQ[19]
	AP40	DDR1_DQ[36]	DDR1_DQ[20]
	AP37	DDR1_DQ[37]	DDR1_DQ[21]
	AR37	DDR1_DQ[38]	DDR1_DQ[22]
	AT33	DDR1_DQ[39]	DDR1_DQ[23]
	AU33	DDR1_DQ[40]	DDR1_DQ[24]
	AU30	DDR1_DQ[41]	DDR1_DQ[25]
	AT30	DDR1_DQ[42]	DDR1_DQ[26]
	AR33	DDR1_DQ[43]	DDR1_DQ[27]
	AP33	DDR1_DQ[44]	DDR1_DQ[28]
	AR30	DDR1_DQ[45]	DDR1_DQ[29]
	AP30	DDR1_DQ[46]	DDR1_DQ[30]
		DDR1_DQ[47]	DDR1_DQ[31]
Block 7	AU27	DDR1_DQ[48]	DDR1_DQ[48]
	AT27	DDR1_DQ[49]	DDR1_DQ[49]
	AT25	DDR1_DQ[50]	DDR1_DQ[50]
	AU25	DDR1_DQ[51]	DDR1_DQ[51]
	AP27	DDR1_DQ[52]	DDR1_DQ[52]
	AN27	DDR1_DQ[53]	DDR1_DQ[53]
	AN25	DDR1_DQ[54]	DDR1_DQ[54]
	AP25	DDR1_DQ[55]	DDR1_DQ[55]
	AT22	DDR1_DQ[56]	DDR1_DQ[56]
	AU22	DDR1_DQ[57]	DDR1_DQ[57]
	AU21	DDR1_DQ[58]	DDR1_DQ[58]
	AT21	DDR1_DQ[59]	DDR1_DQ[59]
	AN22	DDR1_DQ[60]	DDR1_DQ[60]
	AP22	DDR1_DQ[61]	DDR1_DQ[61]
	AP21	DDR1_DQ[62]	DDR1_DQ[62]
	AN21	DDR1_DQ[63]	DDR1_DQ[63]

↑  
LOGIC

TABLE

	Pin	Interleave	Non-Interleave
Block 1	AH66	DDR1_DQSN[0]	DDR0_DQSN[2]
	AH65	DDR1_DQSP[0]	DDR0_DQSP[2]
	AG69	DDR1_DQSN[1]	DDR0_DQSN[3]
	AG70	DDR1_DQSP[1]	DDR0_DQSP[3]
Block 3	AR66	DDR1_DQSN[2]	DDR0_DQSN[6]
	AR65	DDR1_DQSP[2]	DDR0_DQSP[6]
	AR61	DDR1_DQSN[3]	DDR0_DQSN[7]
	AR60	DDR1_DQSP[3]	DDR0_DQSP[7]
Block 5	AT38	DDR1_DQSN[4]	DDR1_DQSN[2]
	AR38	DDR1_DQSP[4]	DDR1_DQSP[2]
	AT32	DDR1_DQSN[5]	DDR1_DQSN[3]
	AR32	DDR1_DQSP[5]	DDR1_DQSP[3]
Block 7	AR25	DDR1_DQSN[6]	DDR1_DQSN[6]
	AR27	DDR1_DQSP[6]	DDR1_DQSP[6]
	AR22	DDR1_DQSN[7]	DDR1_DQSN[7]
	AR21	DDR1_DQSP[7]	DDR1_DQSP[7]

↑  
LOGIC

TABLE

Pin	DDR3L	LPDDR3	DDR4
AY48	DDR1_MA[5]	DDR1_CAA[0]	DDR1_MA[5]
AP50	DDR1_MA[9]	DDR1_CAA[1]	DDR1_MA[9]
BA48	DDR1_MA[6]	DDR1_CAA[2]	DDR1_MA[6]
BB48	DDR1_CAA[3]	DDR1_CAA[4]	DDR1_MA[8]
AP48	DDR1_MA[7]	DDR1_CAA[4]	DDR1_MA[7]
AP52	DDR1_BA[2]	DDR1_CAA[5]	DDR1_BG[0]
AN50	DDR1_MA[12]	DDR1_CAA[6]	DDR1_MA[12]
AN48	DDR1_MA[11]	DDR1_CAA[7]	DDR1_MA[11]
AN53	DDR1_MA[15]	DDR1_CAA[8]	DDR1_ACT#
AN52	DDR1_MA[14]	DDR1_CAA[9]	DDR1_BG[1]
BA43	DDR1_MA[13]	DDR1_CAB[0]	DDR1_MA[13]
AY43	DDR1_CAS#	DDR1_CAB[1]	DDR1_MA[15]
AY44	DDR1_WE#	DDR1_CAB[2]	DDR1_MA[14]
AW44	DDR1_RAS#	DDR1_CAB[3]	DDR1_MA[16]
BB44	DDR1_BA[0]	DDR1_CAB[4]	DDR1_BA[0]
AY47	DDR1_MA[2]	DDR1_CAB[5]	DDR1_MA[2]
BA44	DDR1_BA[1]	DDR1_CAB[6]	DDR1_BA[1]
AW46	DDR1_MA[10]	DDR1_CAB[7]	DDR1_MA[10]
AY46	DDR1_MA[11]	DDR1_CAB[8]	DDR1_MA[11]
BA46	DDR1_MA[0]	DDR1_CAB[9]	DDR1_MA[0]
BB46	DDR1_MA[3]	Not Used	DDR1_MA[3]
BA47	DDR1_MA[4]	Not Used	DDR1_MA[4]

↑  
LOGIC





SPI0_MOSI (Boot Halt)	
HIGH	Disabled (Default)
LOW	Enabled

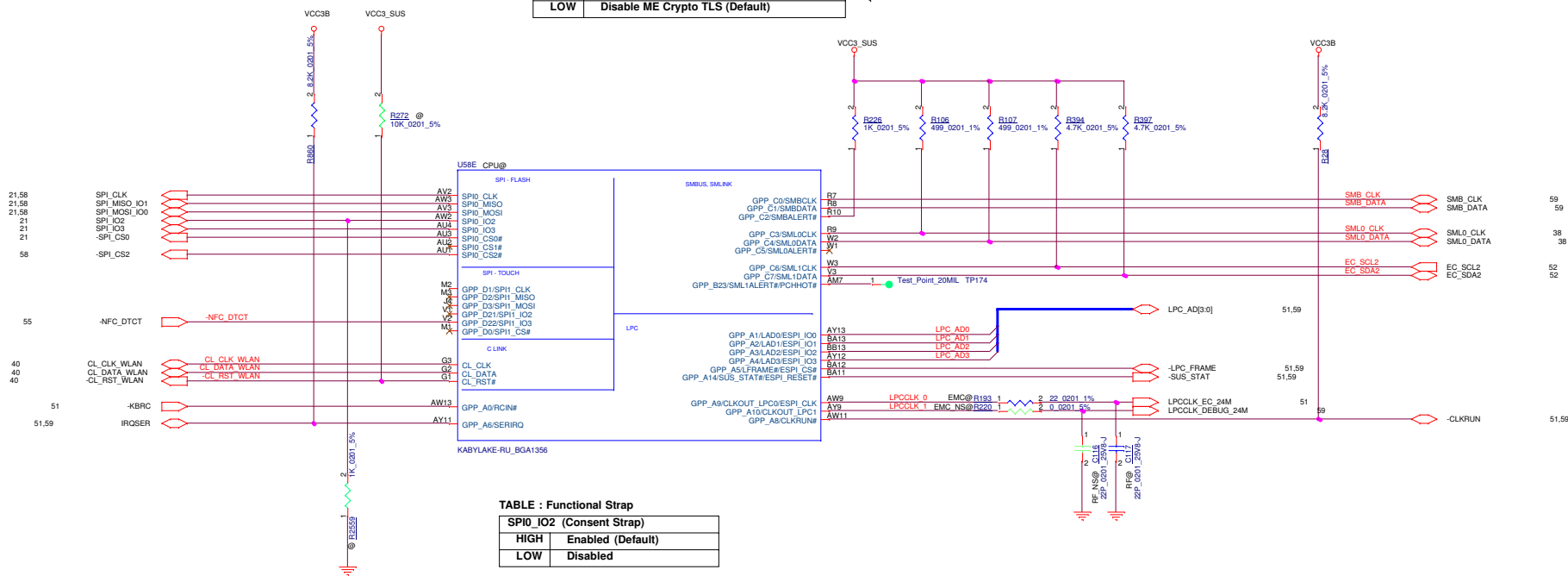
SPI0_MISO (JTAG ODT Disable)	
HIGH	Enabled (Default)
LOW	Disabled

GPP_C5/SML0ALERT # (LPC or eSPI)	
HIGH	eSPI is selected
LOW	LPC is selected (Default)

## LOGIC


GPP_C2/SMBALERT# (TLS Confidentiality)	
HIGH	Enable ME Crypto TLS with Confidentiality
LOW	Disable ME Crypto TLS (Default)

## LOGIC



SPI0_IO2 (Consent Strap)	
HIGH	Enabled (Default)
LOW	Disabled

SPI0_IO3 (A0 Personality Strap)	
HIGH	Disabled (Default)
LOW	Enabled

Security Classification	LC Future Center Secret Data			Title			
Issued Date	2017/02/17	Deciphered Date	2014/07/01	CPU(5/16) : LPC/SPV5MBUS/C-LINK			
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Date: Friday, November 03, 2017					Sheet	7	of 86

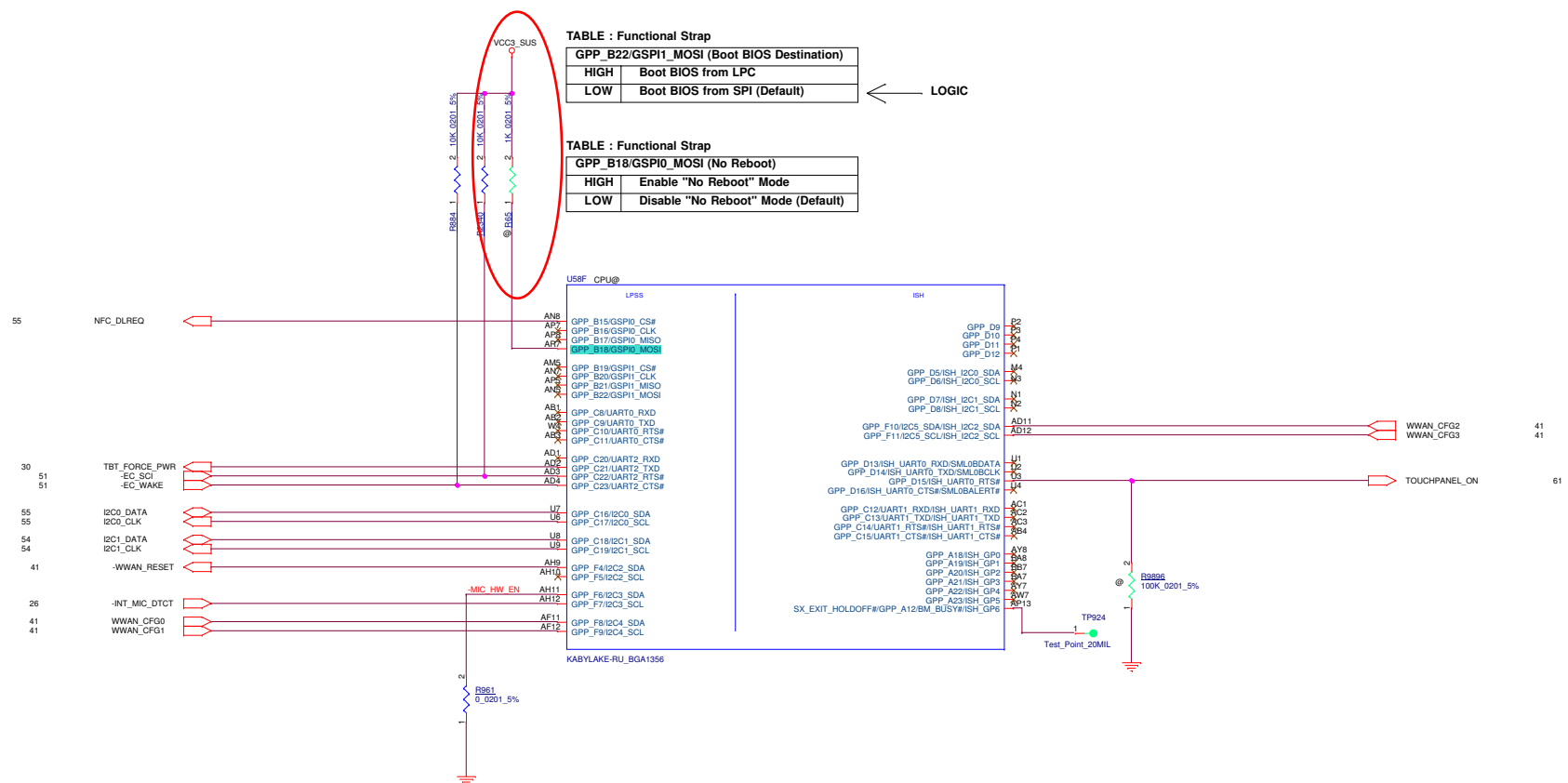


TABLE : Functional Strap

GPP_B22/GSPI1_MOSI (Boot BIOS Destination)	
HIGH	Boot BIOS from LPC
LOW	Boot BIOS from SPI (Default)

← LOGIC

TABLE : Functional Strap

GPP_B18/GSPI0_MOSI (No Reboot)	
HIGH	Enable "No Reboot" Mode
LOW	Disable "No Reboot" Mode (Default)

Vinafix



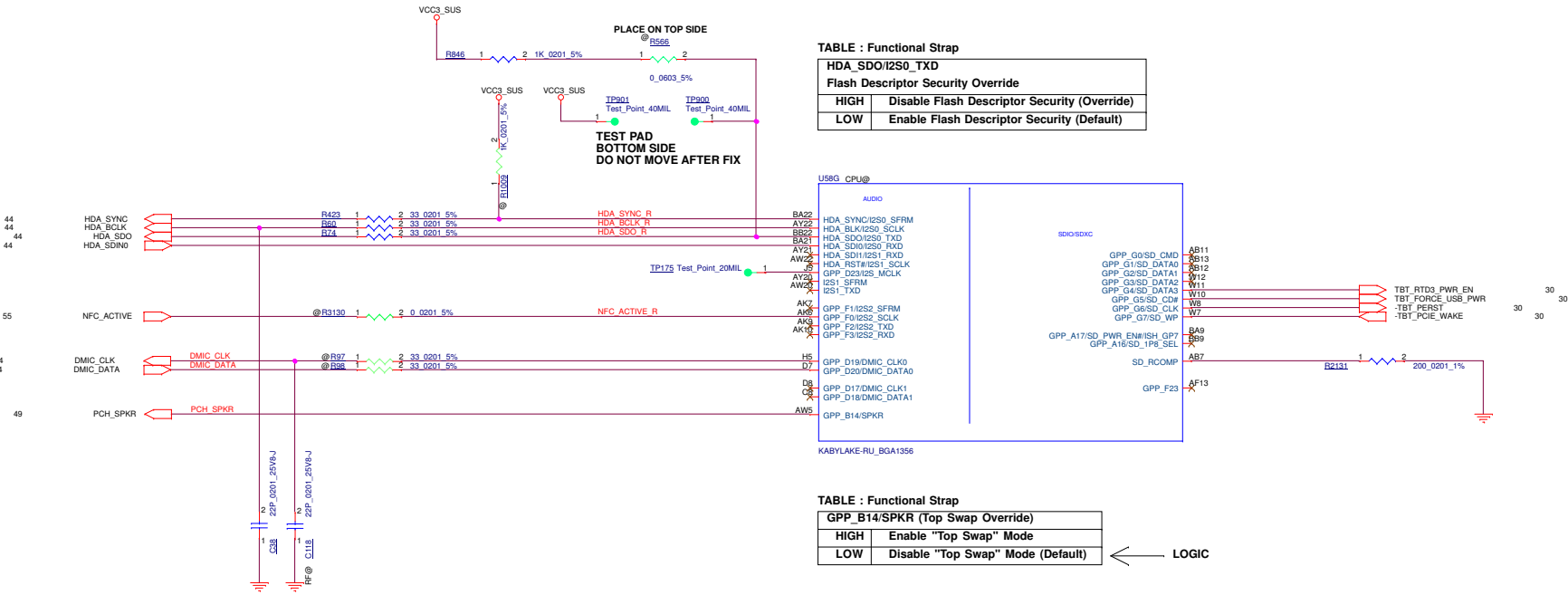


TABLE : Functional Strap

HDA_SDO/I2S0_TXD	
Flash Descriptor Security Override	
HIGH	Disable Flash Descriptor Security (Override)
LOW	Enable Flash Descriptor Security (Default)

TABLE : Functional Strap

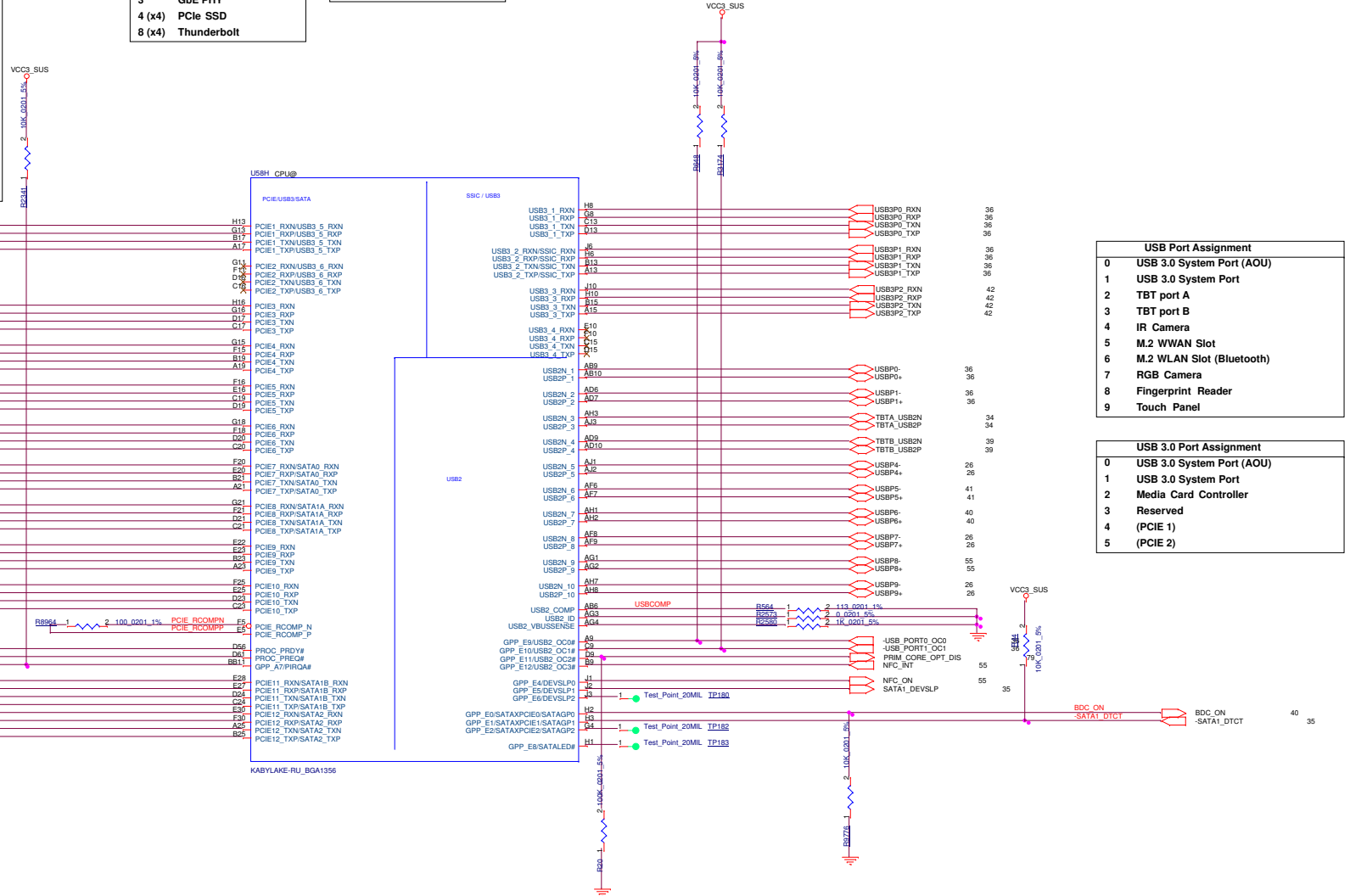
GPP_B14/SPKR (Top Swap Override)	
HIGH	Enable "Top Swap" Mode
LOW	Disable "Top Swap" Mode (Default)

← LOGIC

Flexible I/O Configuration			
I/O	High Speed Signals	Configuration	Net Name
Port 1	USB3 1	USB3 1	USB3P0
Port 2	USB3 2/SSIC	USB3 2	USB3P1
Port 3	USB3 3	USB3 3	USB3P2
Port 4	USB3 4	USB3 4	N/A
Port 5	USB3 5/PCIE 1	PCIE 1	PCIE0
Port 6	USB3 6/PCIE 2	PCIE 2	N/A
Port 7	PCIE 3 (GbE)	PCIE 3	PCIE2
Port 8	PCIE 4 (GbE)	PCIE 4 (GbE)	PCIE3
Port 9	PCIE 5 (GbE)	PCIE 5 (x4)	PCIE4_L3
Port 10	PCIE 6	PCIE 6 (x4)	PCIE4_L2
Port 11	PCIE 7/SATA 0	PCIE 7 (x4)	PCIE4_L1
Port 12	PCIE 8/SATA 1A	GPIO STRAP	PCIE4_L0_SATA1
Port 13	PCIE 9 (GbE)	PCIE 9 (x4)	PCIE8_L0
Port 14	PCIE 10 (GbE)	PCIE 10 (x4)	PCIE8_L1
Port 15	PCIE 11/SATA 1B	PCIE 11 (x4)	PCIE8_L2
Port 16	PCIE 12/SATA 2	PCIE 12 (x4)	PCIE8_L3

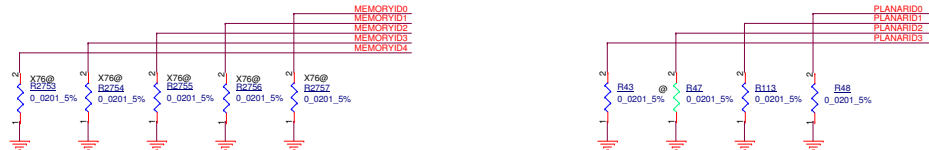
PCIe Port Assignment	
0	M.2 WLAN Slot Port 0
1	N/A
2	WWAN
3	GbE PHY
4 (x4)	PCIe SSD
8 (x4)	Thunderbolt

SATA Port Assignment	
0	(PCIE 7)
1A	SATA SSD
1B	(PCIE 11)
2	(PCIE 12)



TABLE

MEMORYID[4..0]	U170, U171, U172, U173			
00000b 00001b 00010b 00011b	Micron	MT52L512M32D2PF-093WT:B MT52L1G32D4PG-093WT:B	16Gbit DDP 32Gbit QDP	Reserved Reserved 8GB (2133) 16GB (2133)
00100b 00101b 00110b 00111b	Samsung	K4E6E304EB-EGCG K4EBE304EB-EGCG	16Gbit DDP 32Gbit QDP	Reserved Reserved 8GB (2133) 16GB (2133)
01000b 01001b 01010b 01011b	SK Hynix	H9CCNNNBJTALAR-NVD H9CCNNNCLGALAR-NVD	16Gbit DDP 32Gbit QDP	Reserved Reserved 8GB (2133) 16GB (2133)

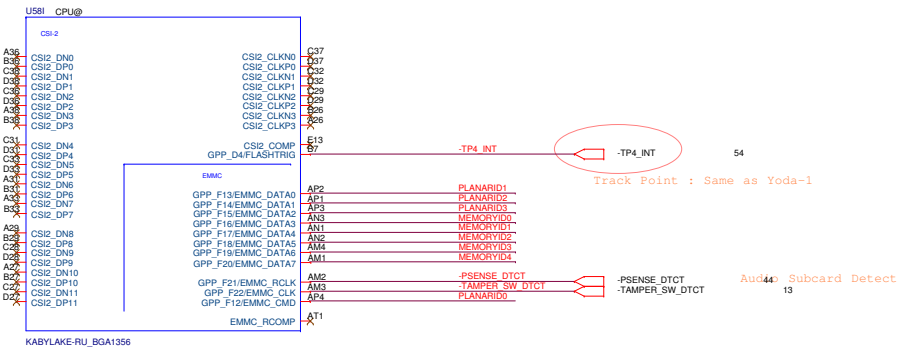


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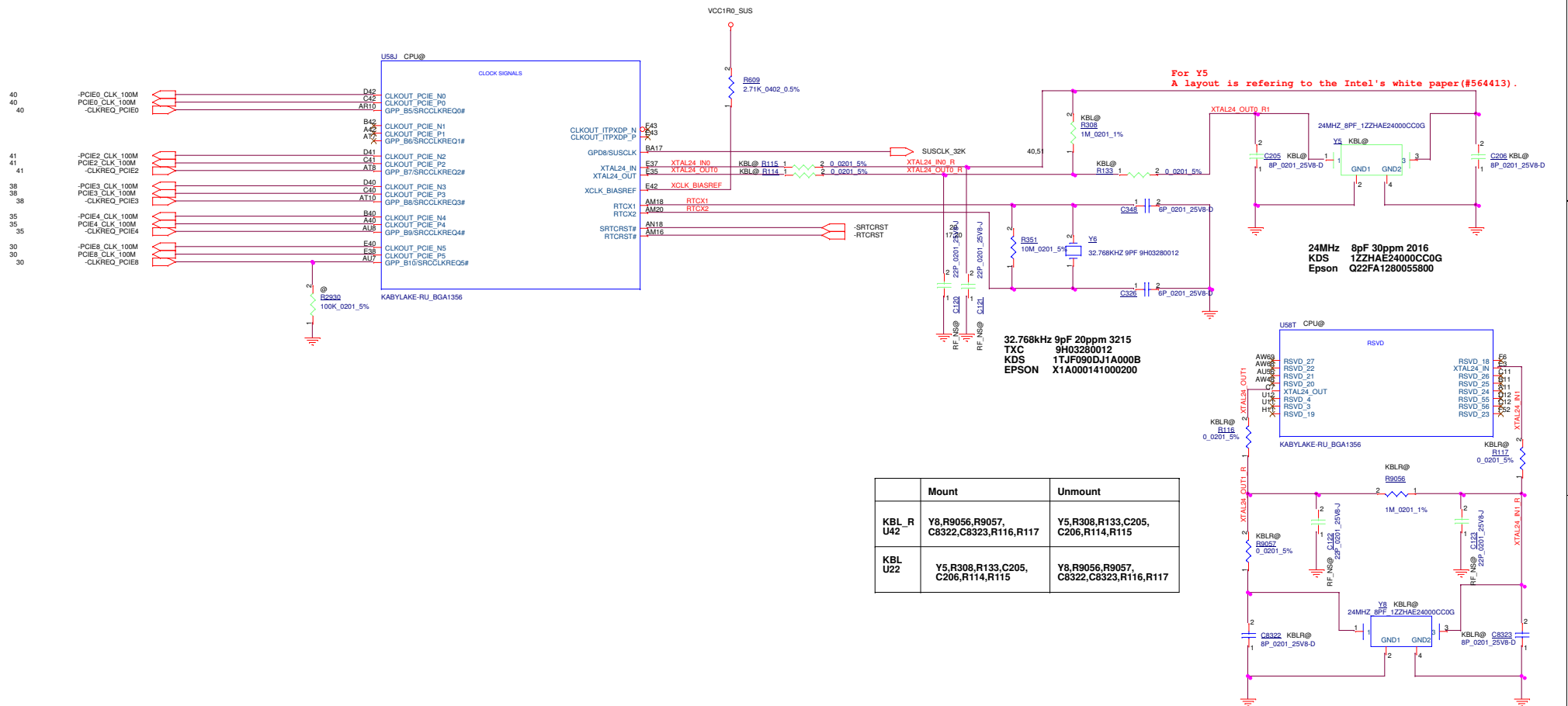
LEVEL	PLANAR ID			
	3	2	1	0
1	NA	NA	NA	NA
0	ASM	ASM	ASM	ASM

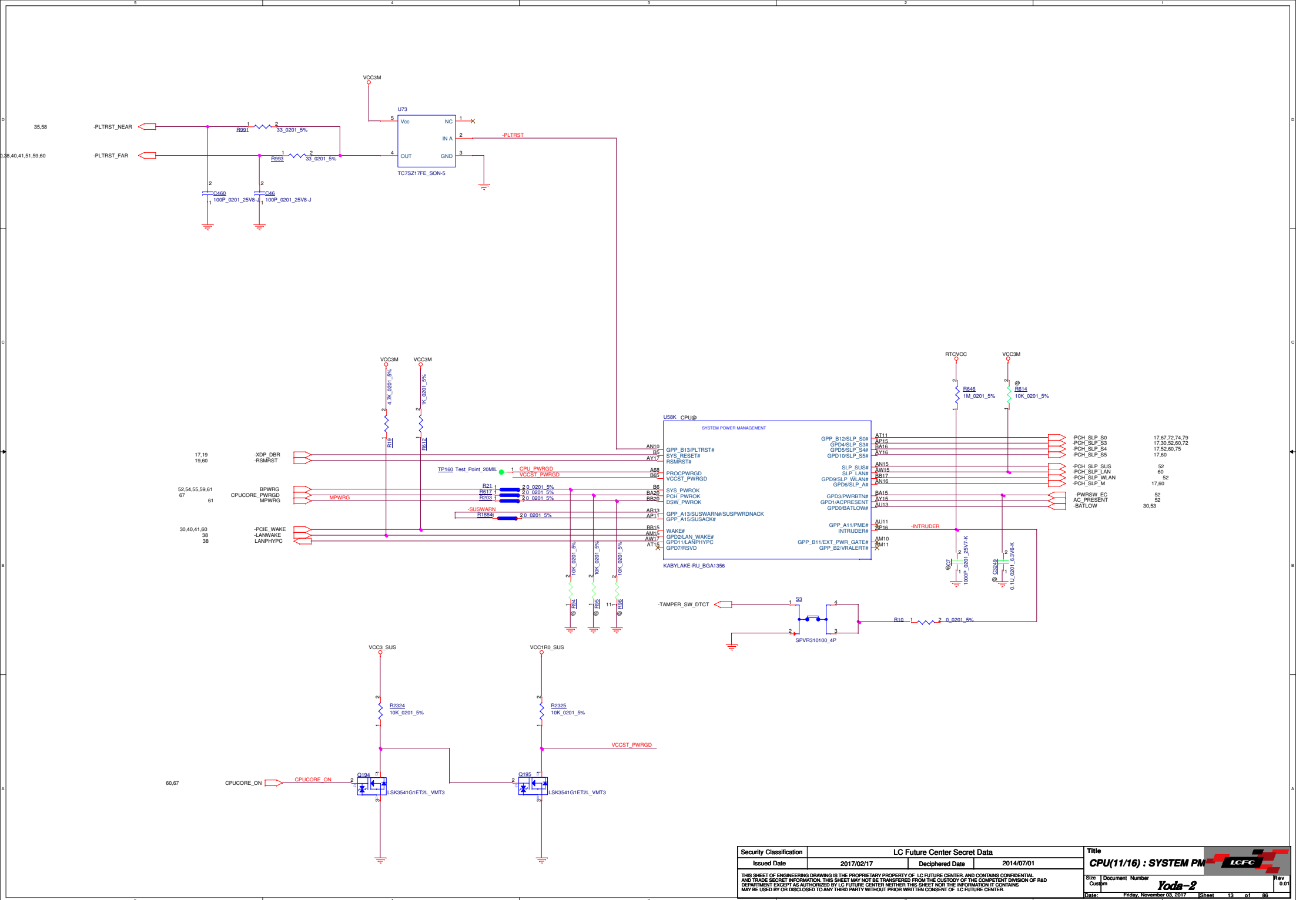
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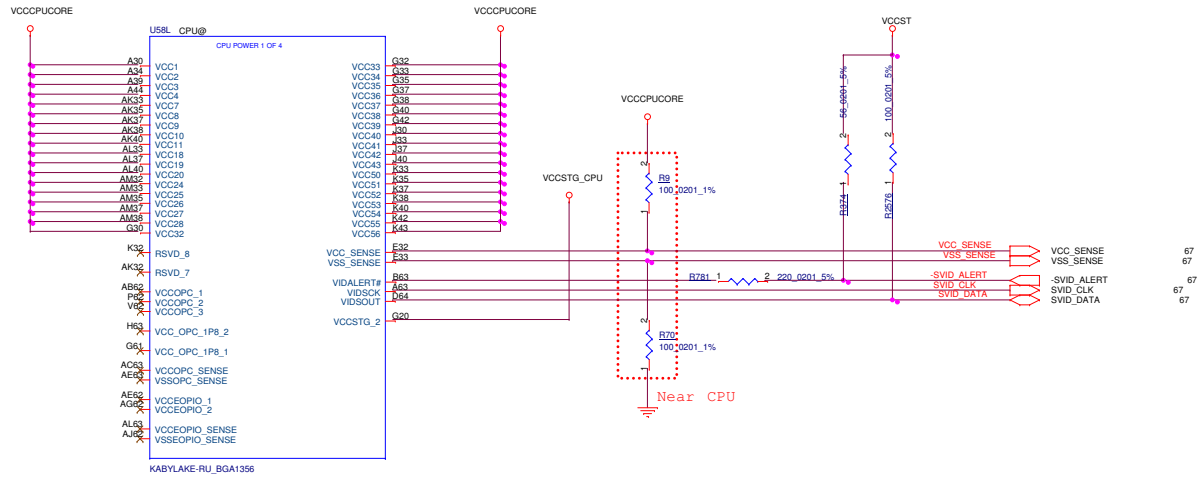
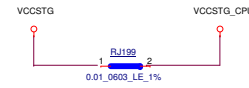
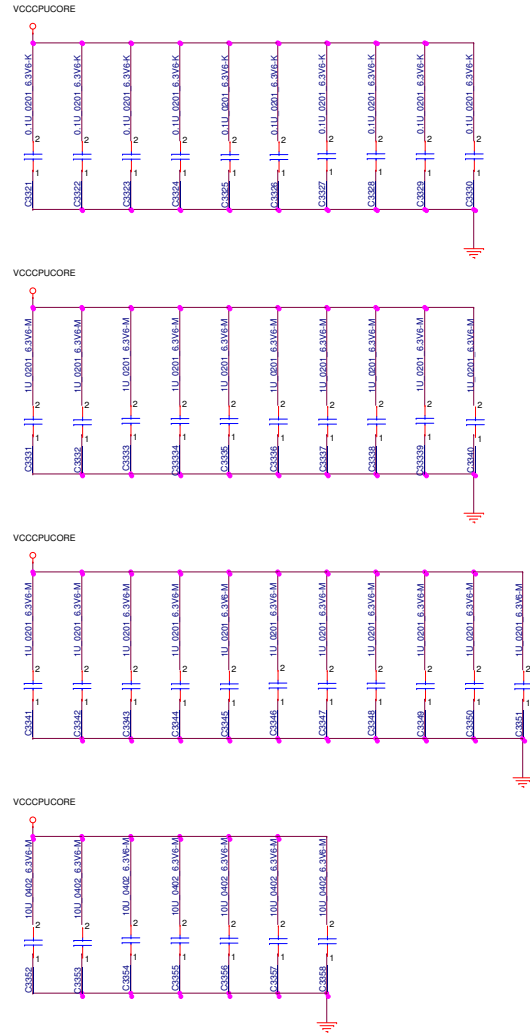
LEVEL	PLANARID[3..0]
EVT	0000B
FVT	0001B
SIT	0010B
SIT-R	0011B
SVT/SOVP	0100B



Security Classification	LC Future Center Secret Data		Title	CPU(9/16) : CSI-2/EMMC	LGFC					
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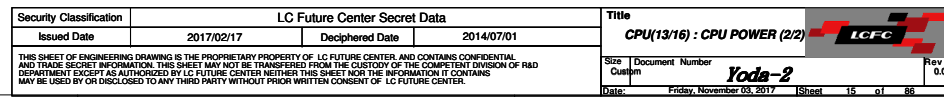




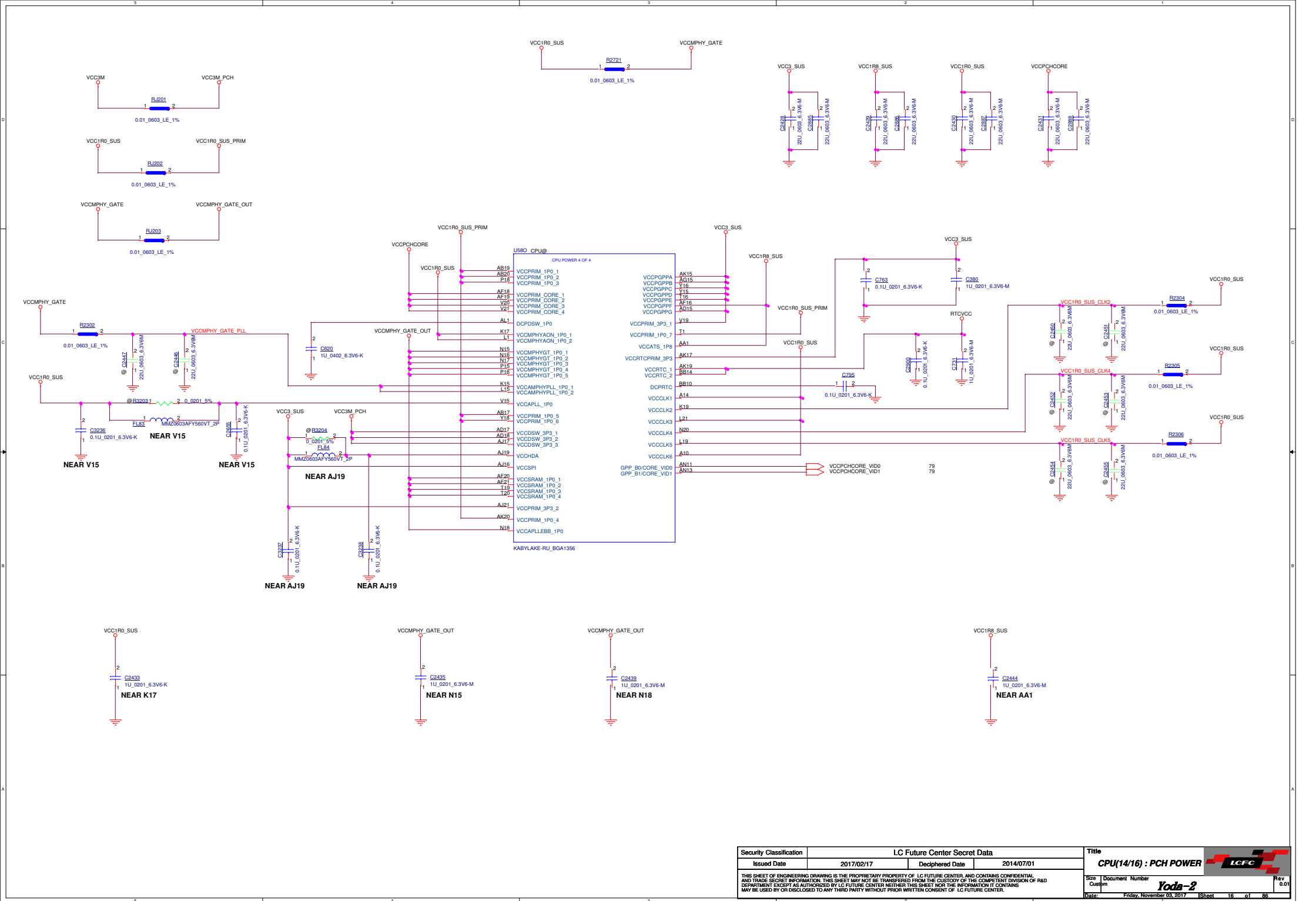
Security Classification		LC Future Center Secret Data		Title	
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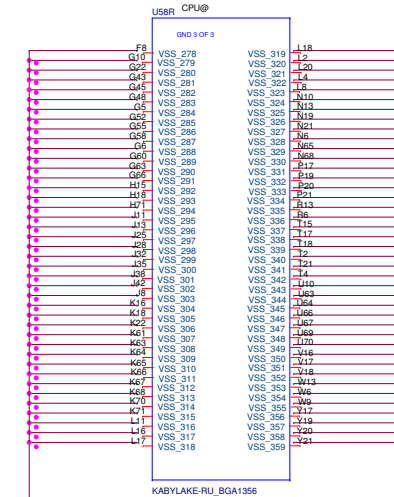
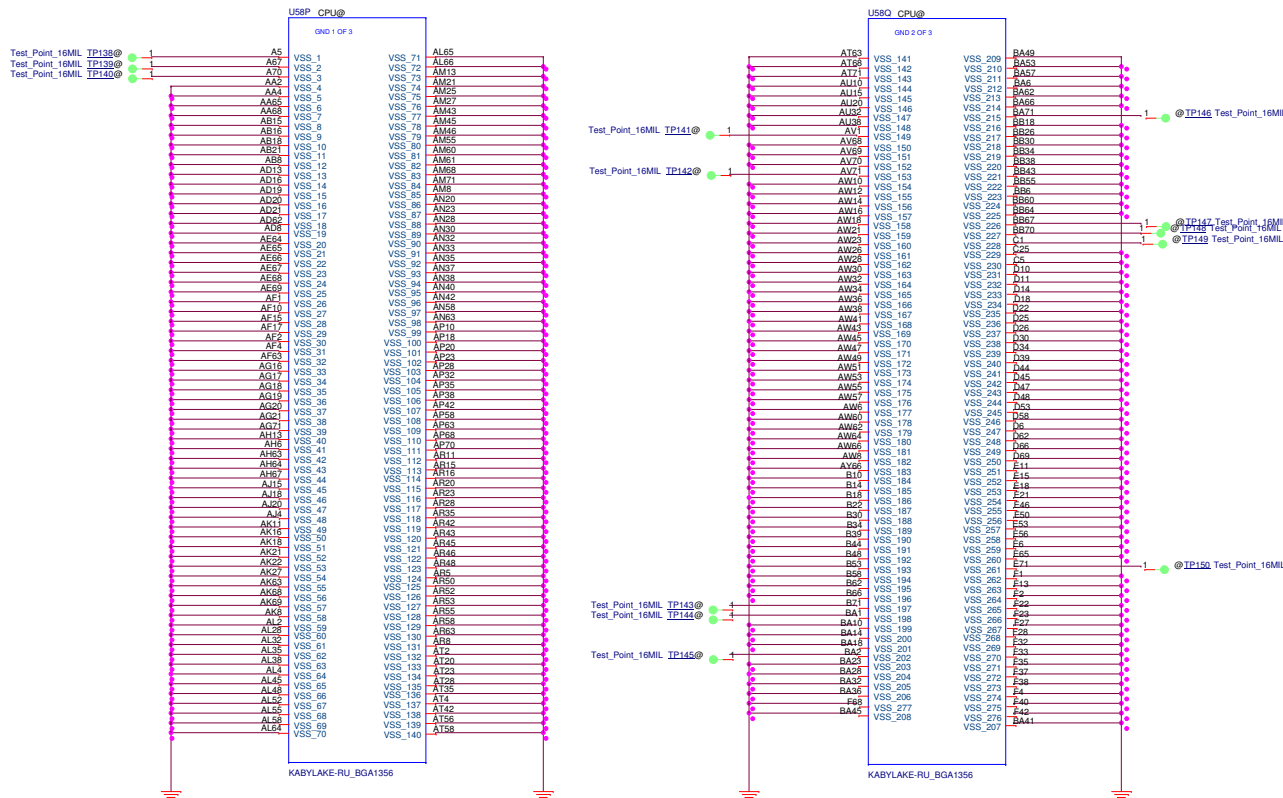
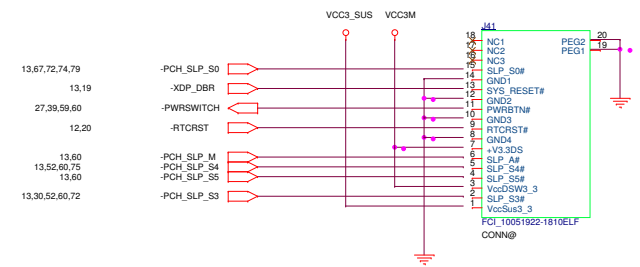
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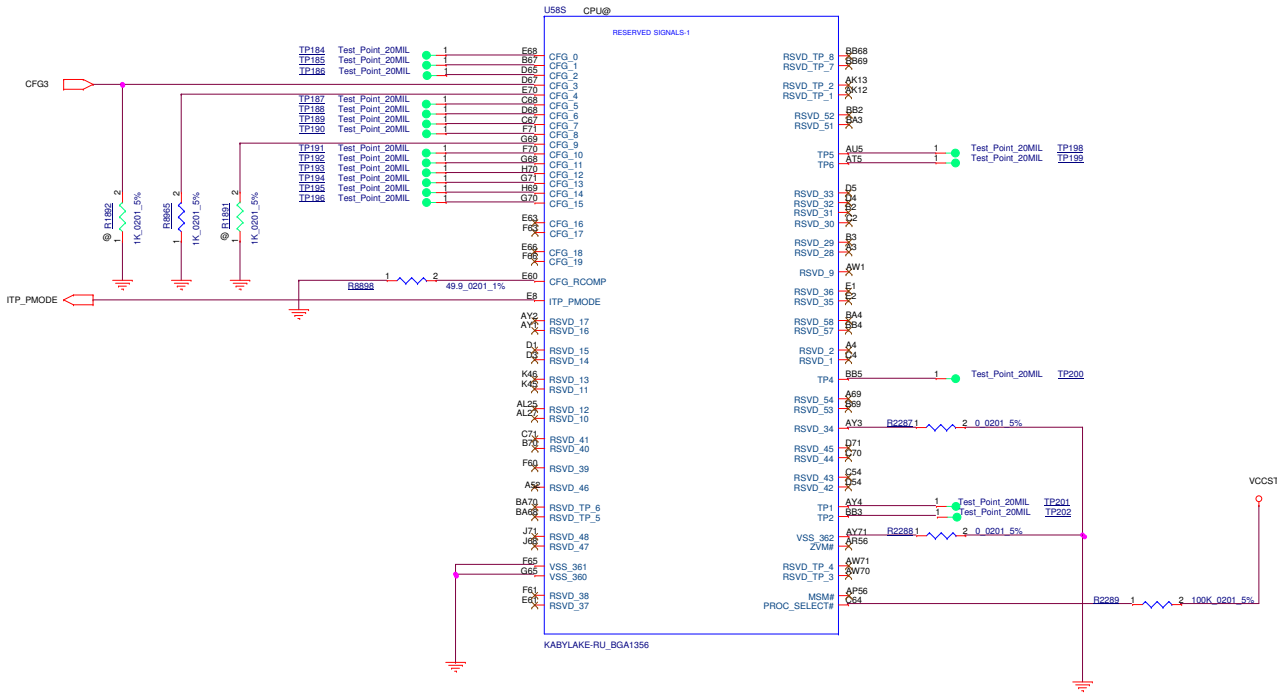
## APS/PETS Interface



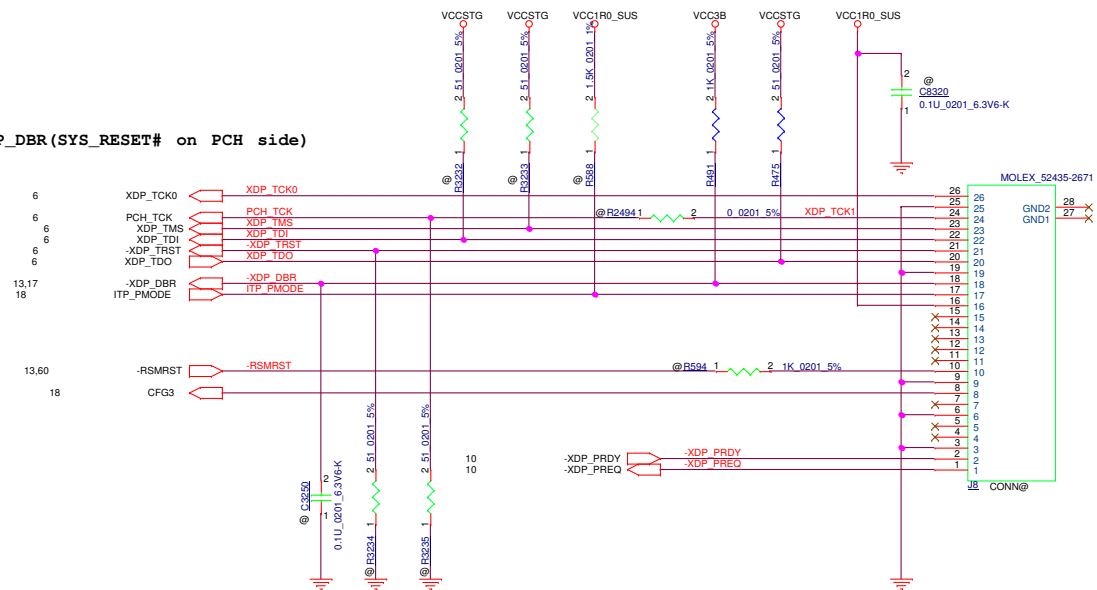
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TABLE

CFG0 : Stall Reset Sequence after PCU PLL Lock until de-asserted 1 : No Stall 0 : Stall
CFG3 : MSR Privacy Bit Feature 1 : MSR (C80h) bit[0] setting 0 : MSR (C80h) bit[0] overridden
CFG4 : eDP Enable 1 : Disabled 0 : Enabled
CFG9 : SVID Bus Communication 1 : Enabled 0 : Disabled




Never remove pull-up on -XDP\_DBR(SYS\_RESET# on PCH side)

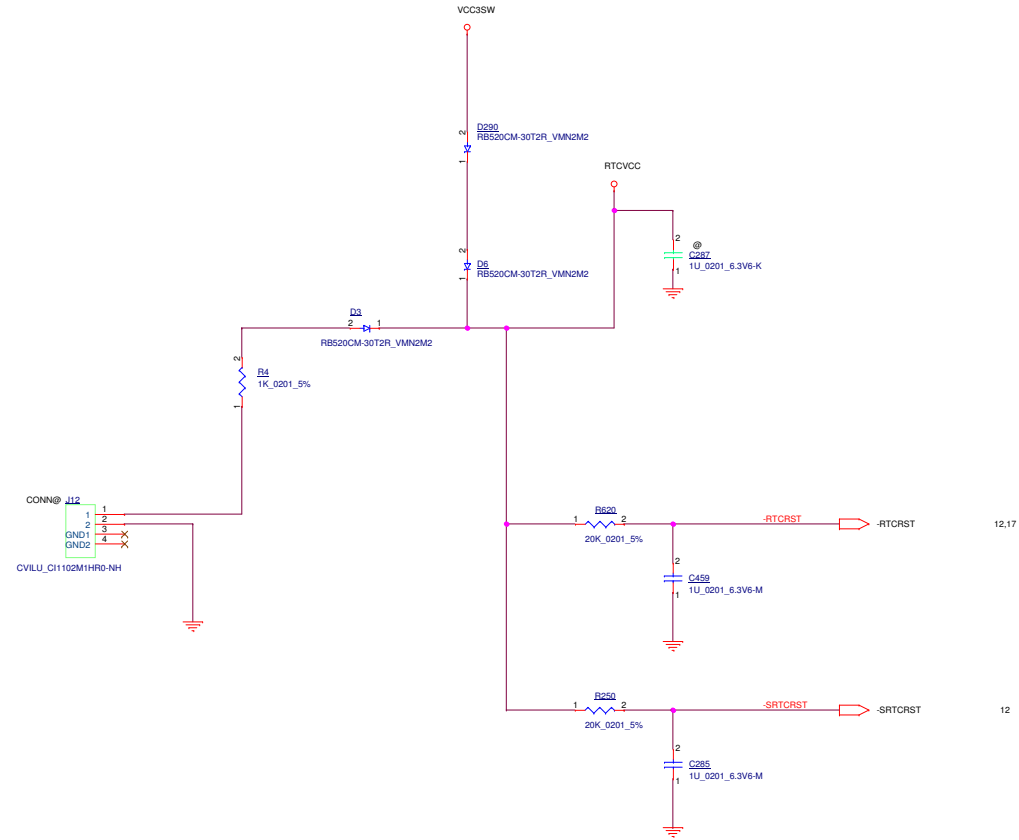


TABLE

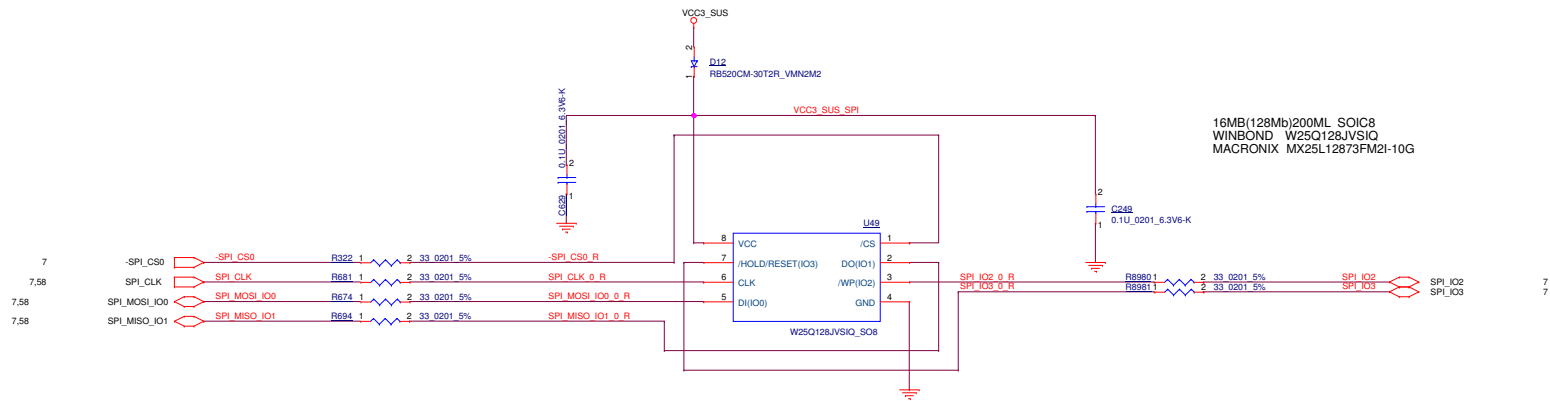
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Page 7	R2559	ASM	NO_ASM
Page 18	R1892	ASM	NO_ASM
Page 19	J8	ASM	NO_ASM
	C8320	ASM	NO_ASM
	R475	ASM	ASM
	R491	ASM	ASM
	R588	ASM	NO_ASM
	R594	ASM	NO_ASM
	R2494	ASM	NO_ASM

↑  
LOGIC

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				Cuuhm	Yoda-2
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				Sheet	20 of 88
				Rev	0.01



TABLE

SF100 PIN HEADER INTERFACE (TOP VIEW)							
1	VCC	D12.1	GND	GND	2		
3	CS#	R322.2	R681.2	CLK	4		
5	MISO	R684.2	R674.2	MOSI	6		
7	(KEY)	N/A	N/A	(RESET)	8		

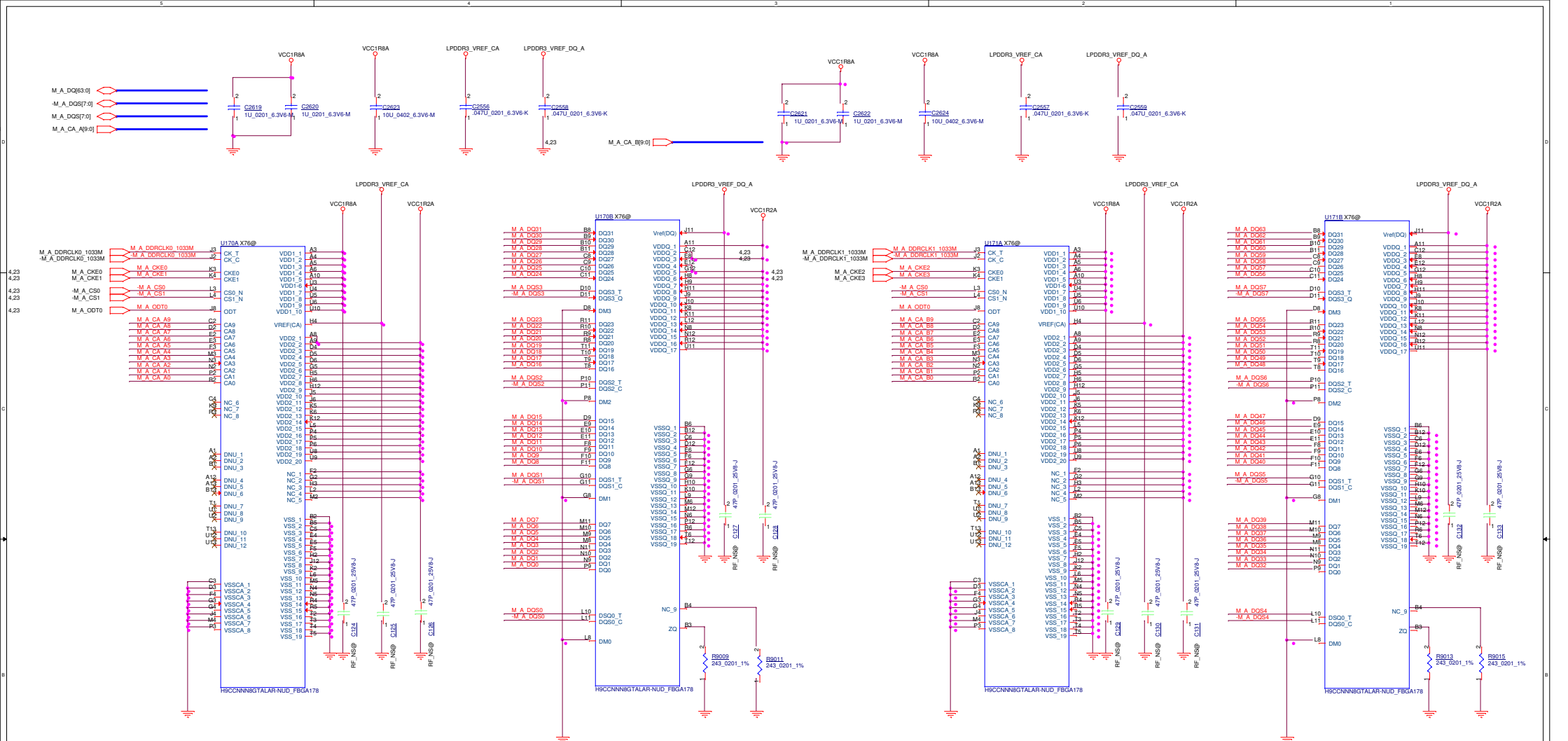


TABLE: LPDDR3 SDRAM Source

Supplier	Capacity	Supplier's P/N	Package Size	Die	Configuration	ZQ0 / ZQ	ZQ1 / NC	CKE0 / CKE	CKE1 / NC	CS0# / CS#	CS1# / NC	Dual Ch	
Micron	16Gb	MT52L512M32D2PF-093 WT-B	11.0 x 11.5 mm	DDP	8Gb (256Mx32)	2 Rank x (256Mx32)	ZQ0	NC	CKE0	CKE1	CS0#	CS1#	8Gb
	32Gb	MT52L1G32D4PG-093 WT-B	12.0 x 11.5 mm	QDP	8Gb (512Mx16)	2 Rank x (512Mx32)	ZQ0	ZQ1	CKE0	CKE1	CS0#	CS1#	16Gb
Samsung	16Gb	K4E6E304EB-EGCG	11.0 x 11.5 mm	DDP	8Gb (256Mx32)	2 Rank x (256Mx32)	ZQ	NC	CKE0	CKE1	CS0#	CS1#	8Gb
	32Gb	K4E6E304EB-EGCG	11.0 x 11.5 mm	QDP	8Gb (512Mx16)	2 Rank x (512Mx32)	ZQ0	ZQ1	CKE0	CKE1	CS0#	CS1#	16Gb
SK hynix	16Gb	H9CCNNNB1TALAR-NVD	11.0 x 11.5 mm	DDP	8Gb (256Mx32)	2 Rank x (256Mx32)	ZQ	NC	CKE0	CKE1	CS0#	CS1#	8Gb
	32Gb	H9CCNNNB1TALAR-NVD	11.0 x 11.5 mm	QDP	8Gb (512Mx16)	2 Rank x (512Mx32)	ZQ0	ZQ1	CKE0	CKE1	CS0#	CS1#	16Gb





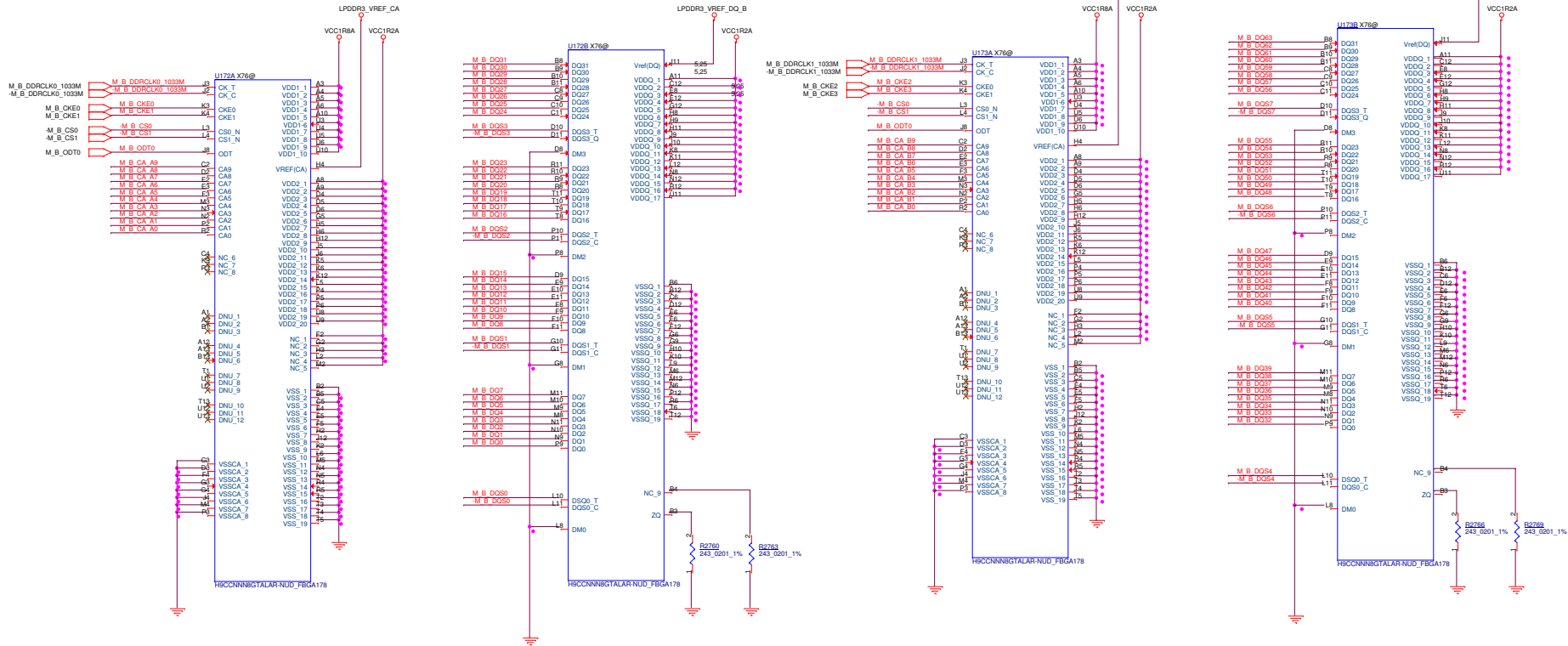
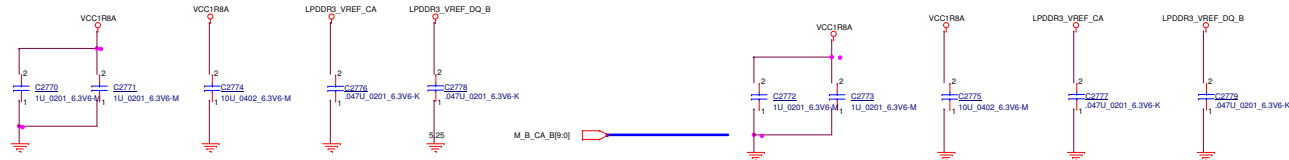
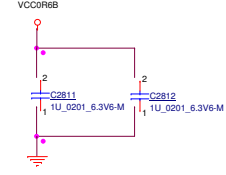
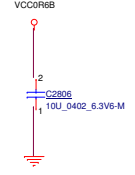
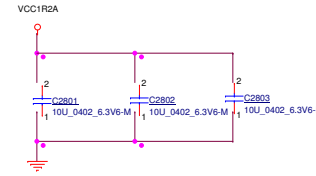
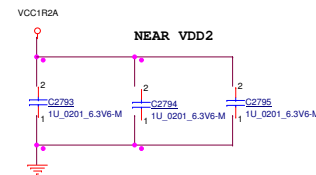
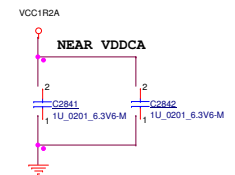
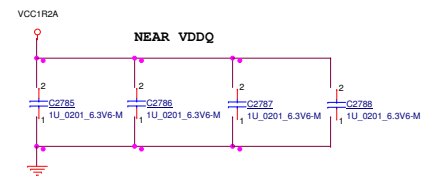
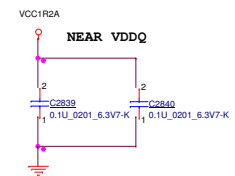
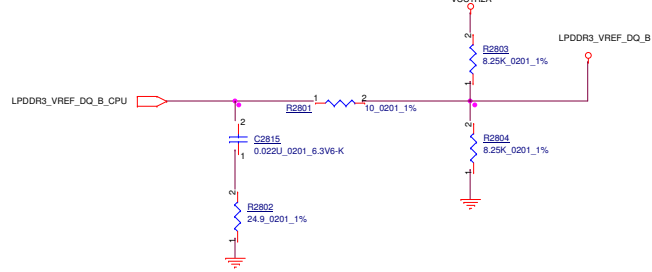
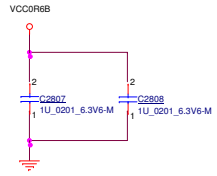
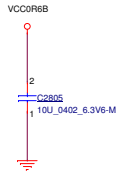
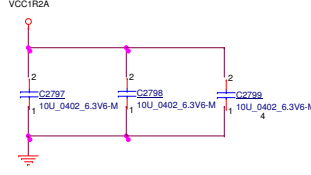
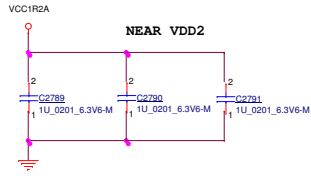
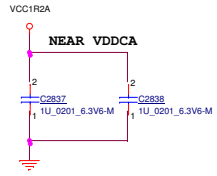
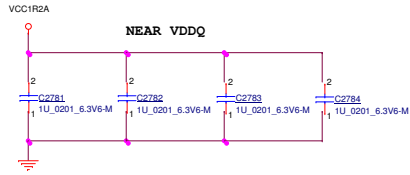
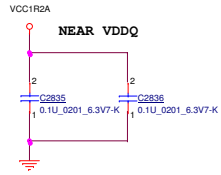
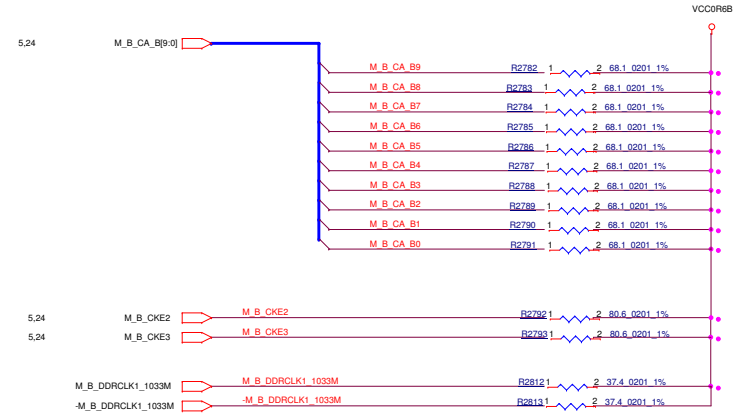
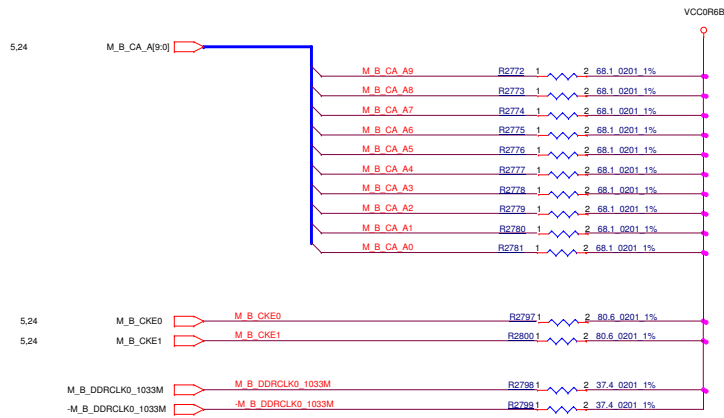


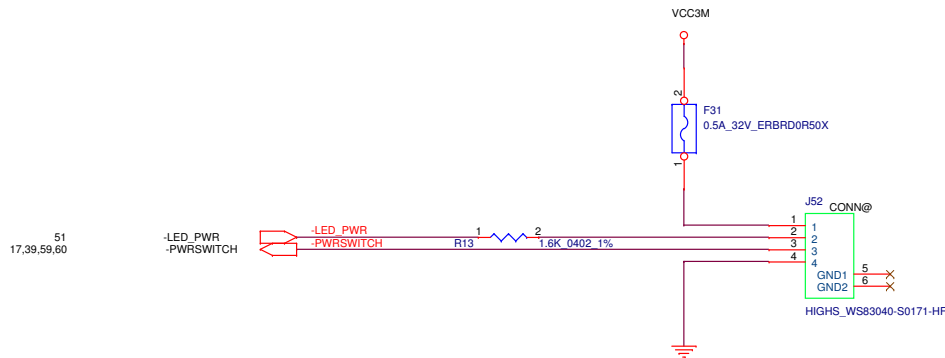
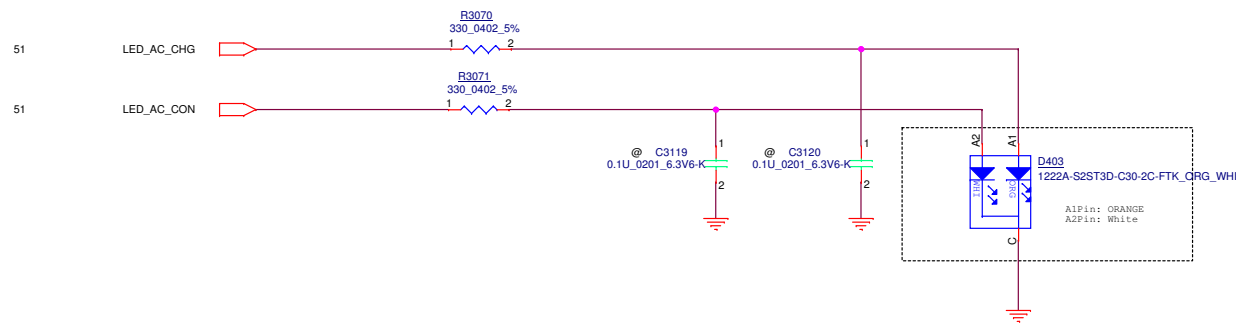
TABLE: LPDDR3 SDRAM Source

Supplier	Capacity	Supplier's P/N	Package Size	Die	Configuration	ZQ0 / ZQ1	ZQ1 / NC	CKE0 / CKE1	CKE1 / NC	CS0# / CS#	CS1# / NC	Dual Ch	
Micron	16Gb	MT52L512M32D2PF-093 WT-B	11.0 x 11.5 mm	DDP	8Gb (256Mx32)	2 Rank x (256Mx32)	ZQ	NC	CKE0	CKE1	CS0#	CS1#	8Gb
	32Gb	MT52L1G32D4PG-093 WT-B	12.0 x 11.5 mm	QDP	8Gb (512Mx16)	2 Rank x (512Mx32)	ZQ0	ZQ1	CKE0	CKE1	CS0#	CS1#	16Gb
Samsung	16Gb	K4EBE304EB-EGCG	11.0 x 11.5 mm	DDP	8Gb (256Mx32)	2 Rank x (256Mx32)	ZQ	NC	CKE0	CKE1	CS0#	CS1#	8Gb
	32Gb	K4EBE304EB-EGCG	11.0 x 11.5 mm	QDP	8Gb (512Mx16)	2 Rank x (512Mx32)	ZQ0	ZQ1	CKE0	CKE1	CS0#	CS1#	16Gb
SK hynix	16Gb	H9CCNNNBJTALAR-NVD	11.0 x 11.5 mm	DDP	8Gb (256Mx32)	2 Rank x (256Mx32)	ZQ	NC	CKE0	CKE1	CS0#	CS1#	8Gb
	32Gb	H9CCNNNCLGALAR-NVD	11.0 x 11.5 mm	QDP	8Gb (512Mx16)	2 Rank x (512Mx32)	ZQ0	ZQ1	CKE0	CKE1	CS0#	CS1#	16Gb

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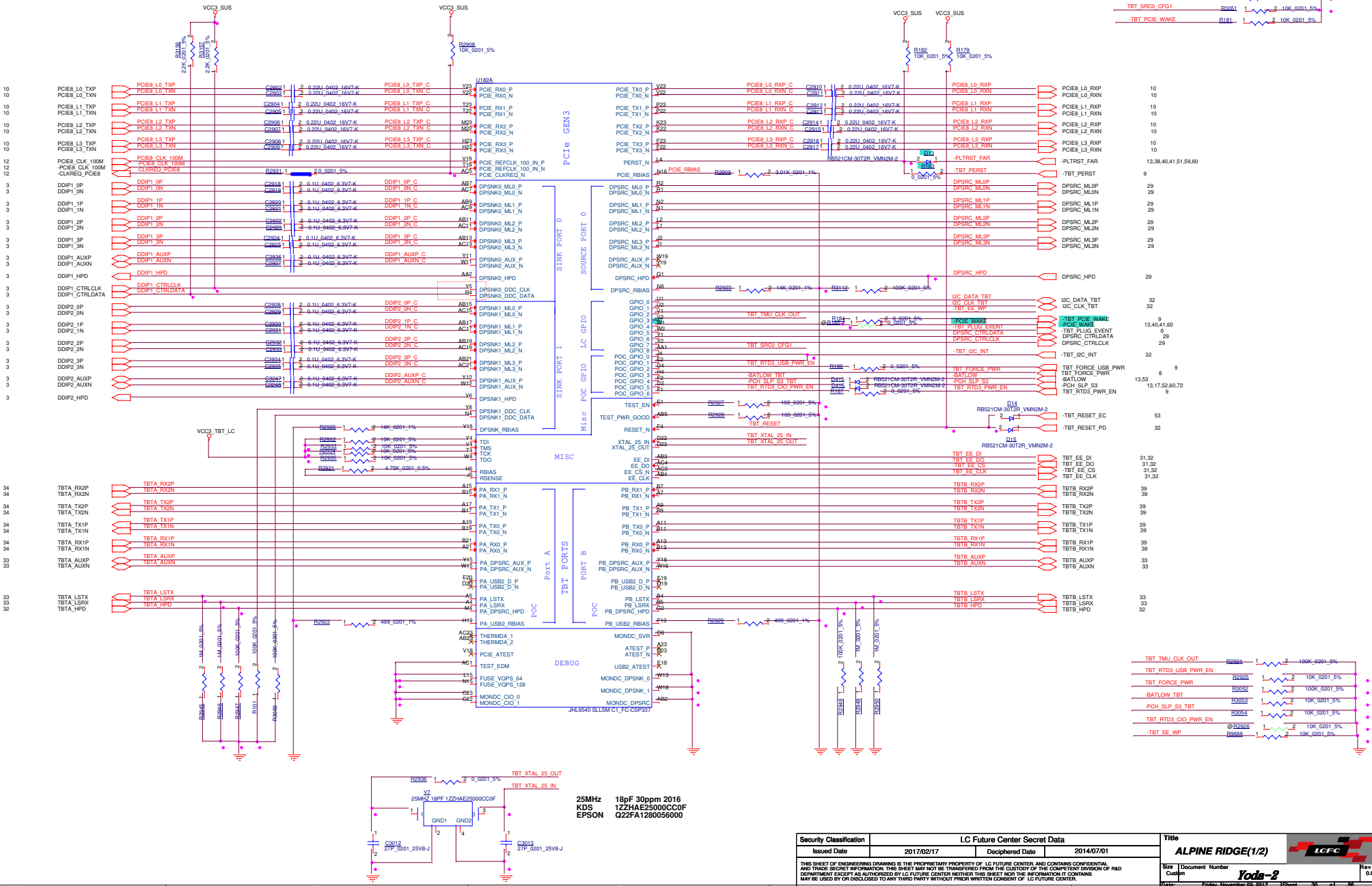
Change from YD-1.  
Take distance between VCC3M pin and GND pin.

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25MHz 18pF 30ppm 2016  
KDS 12ZHA25000C0F  
EPSON Q22FA1280056000

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Custm		30		041	
Date		Friday, November 08, 2017		18:00	

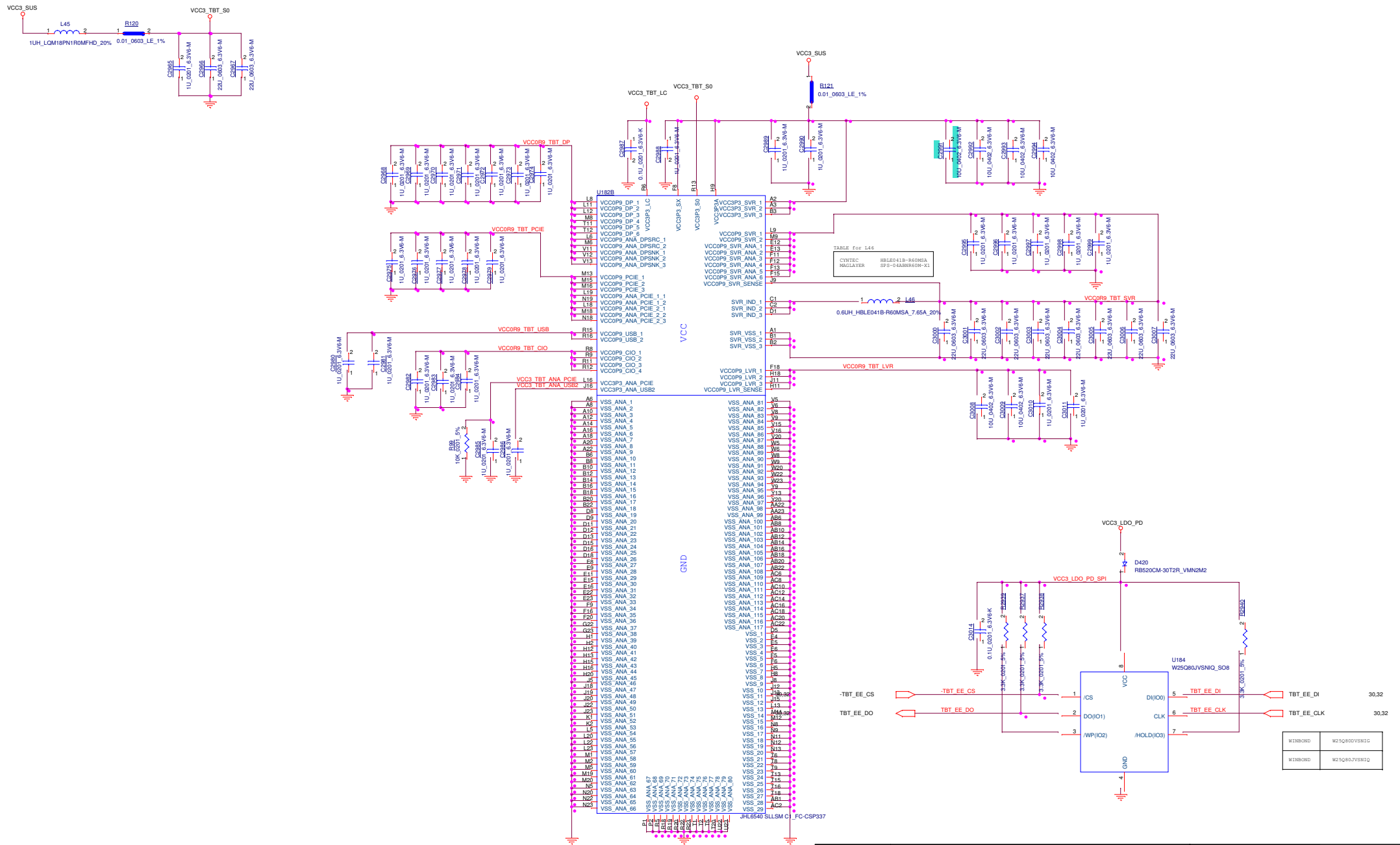
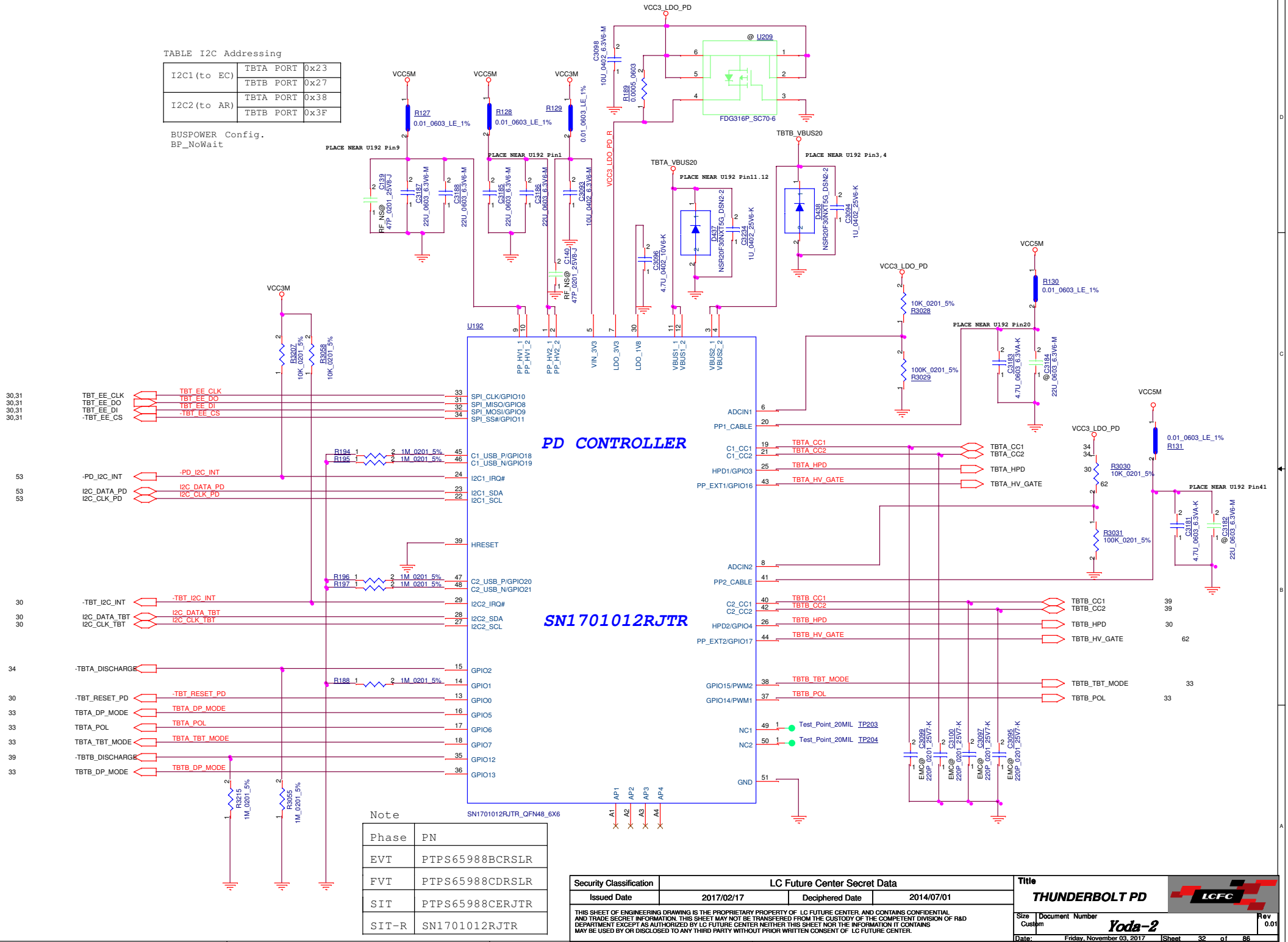
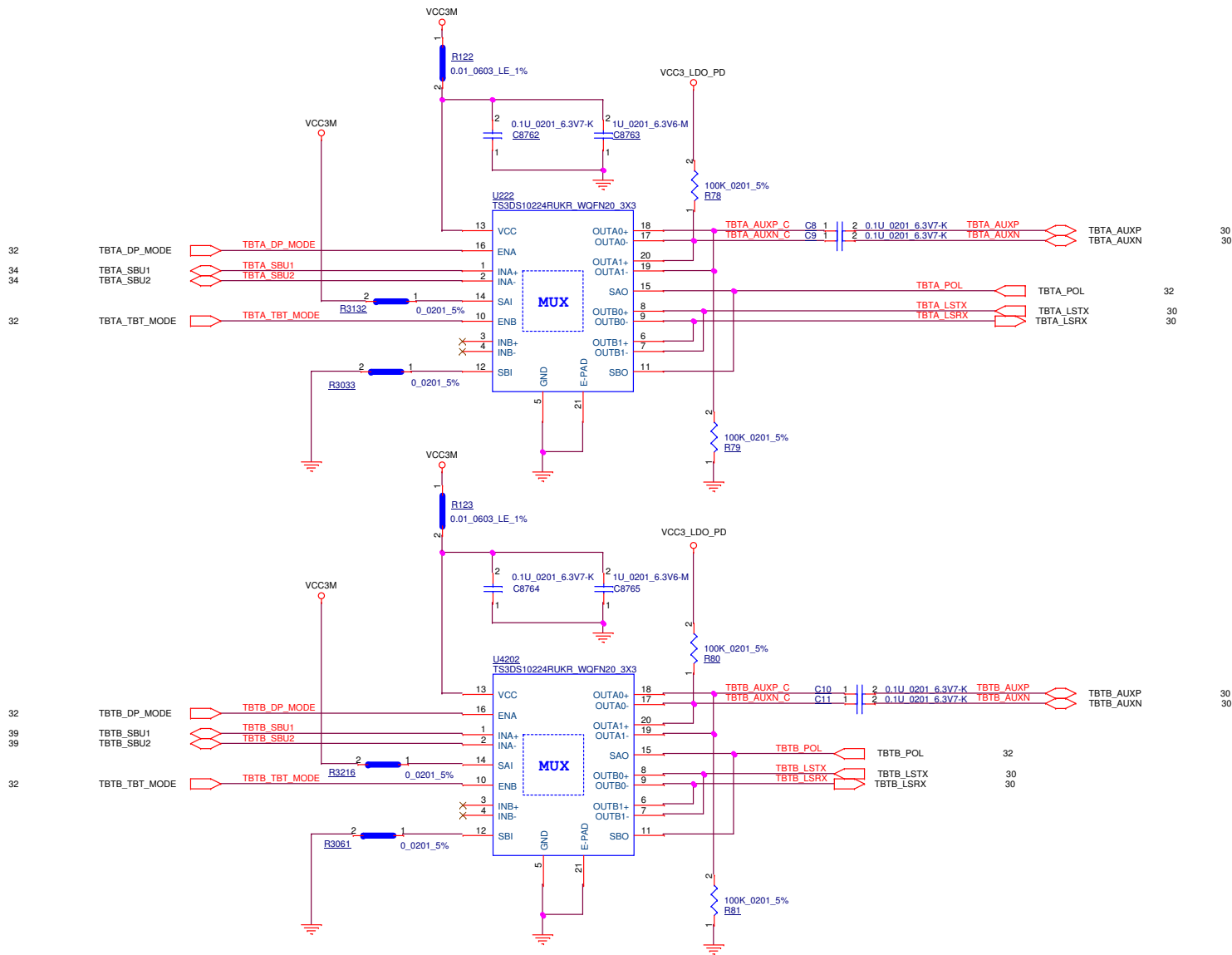


TABLE I2C Addressing

I2C1(to EC)	TBTA PORT	0x23
	TBTB PORT	0x27
I2C2(to AR)	TBTA PORT	0x38
	TBTB PORT	0x3F

BUSPOWER Config.  
BP\_NoWait





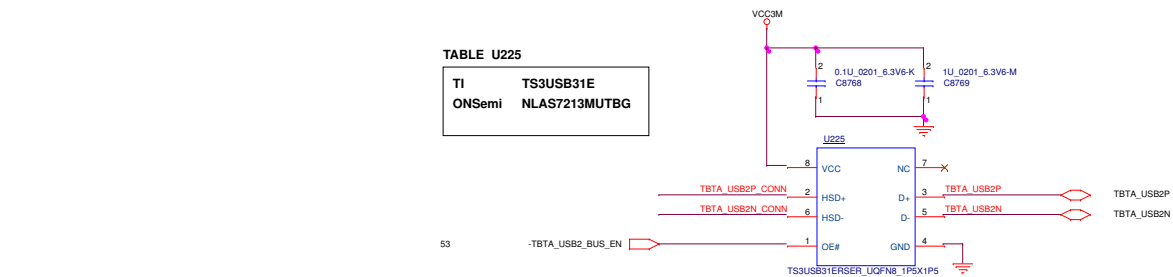
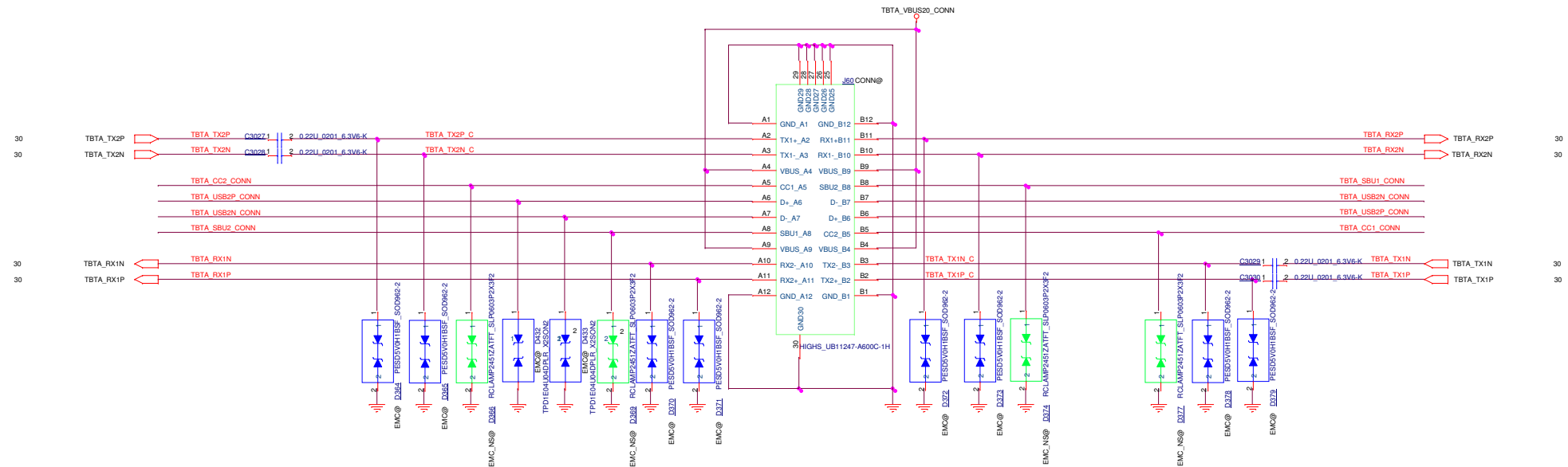
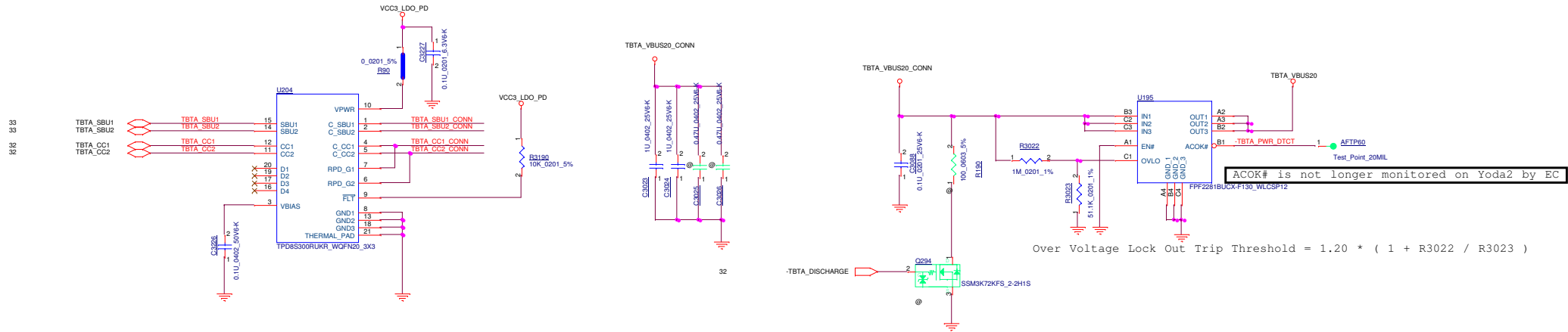
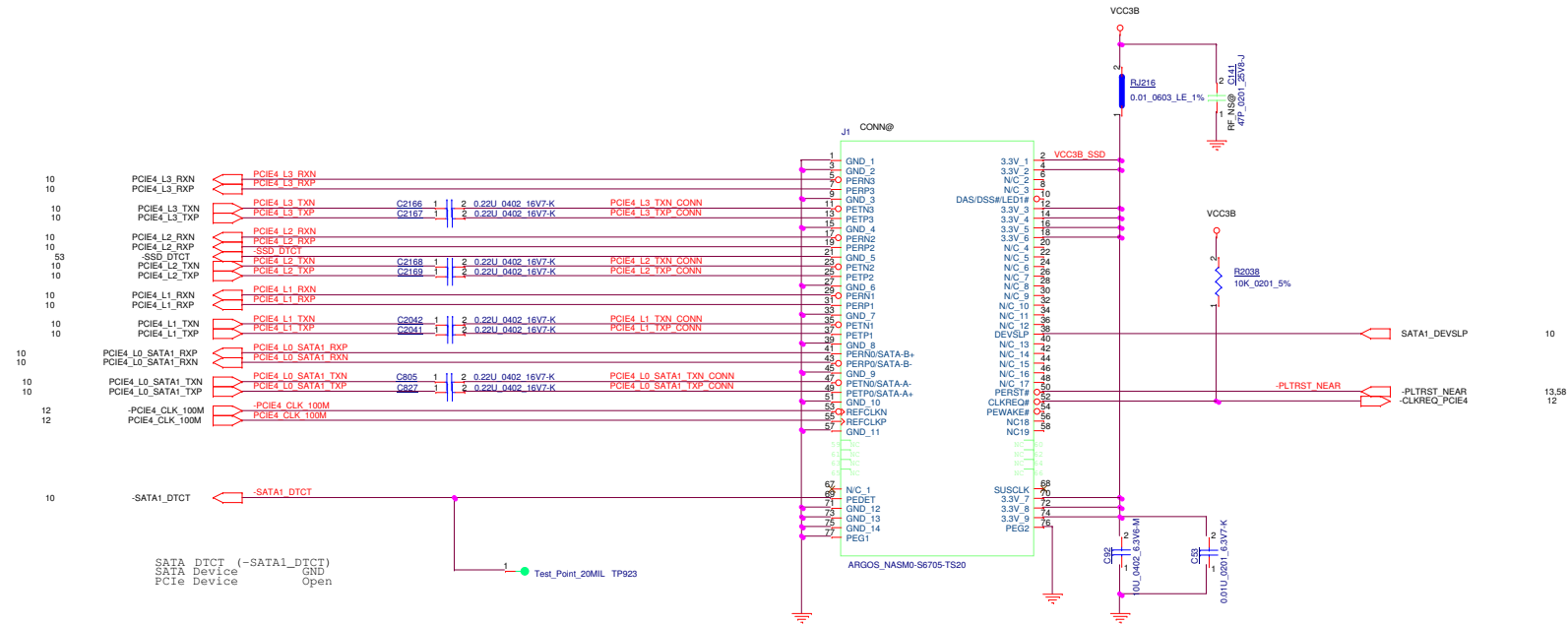



TABLE U225

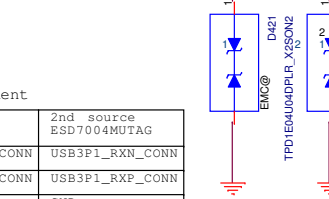
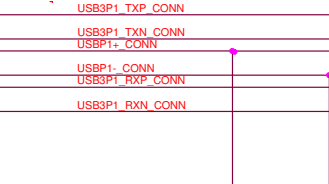
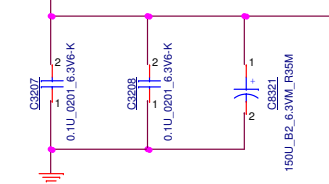
T1	TS3USB31E
ONsemi	NLAS7213MUTBG

H=2.00mm Connector



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USB\_PWR\_S2  
WIDE PATTERN(MIN 500mA)  
PLACE NEAR USB CONN



D423 Pin assignment

	1st source DF10G5M4N	2nd source ESD7004MUTAG
Pin1	USB3P1_RXN_CONN	USB3P1_RXN_CONN
Pin2	USB3P1_RXP_CONN	USB3P1_RXP_CONN
Pin3	GND	GND
Pin4	USB3P1_TXN_CONN	USB3P1_TXN_CONN
Pin5	USB3P1_TXP_CONN	USB3P1_TXP_CONN
Pin6	USB3P1_TXP_CONN	USB3P1_TXP_CONN
Pin7	USB3P1_TXN_CONN	USB3P1_TXN_CONN
Pin8	-	-
Pin9	USB3P1_RXP_CONN	USB3P1_RXP_CONN
Pin10	USB3P1_RXN_CONN	USB3P1_RXN_CONN

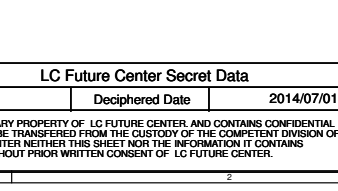
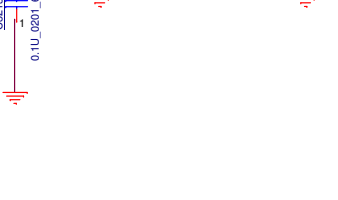
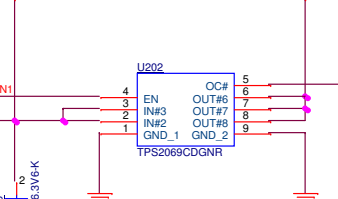
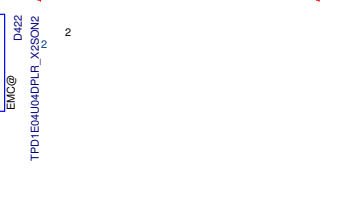
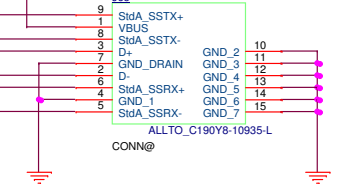
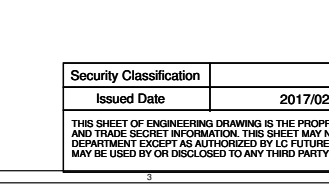
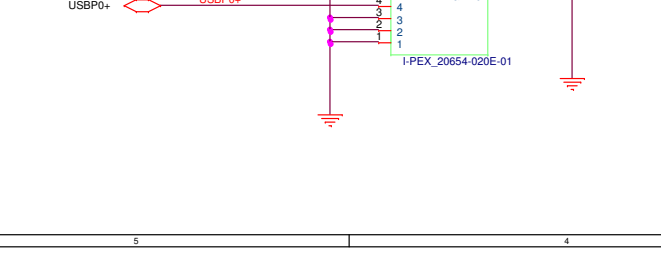
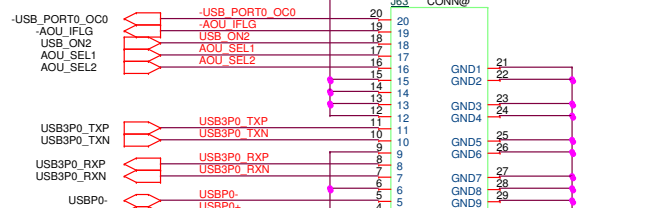
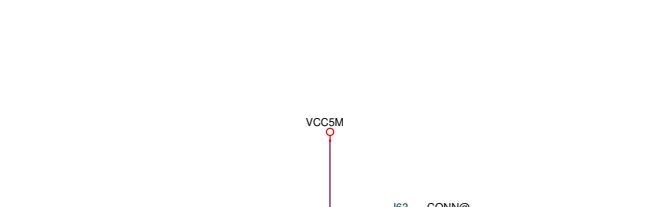
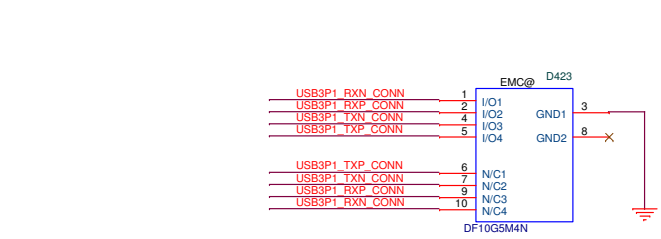
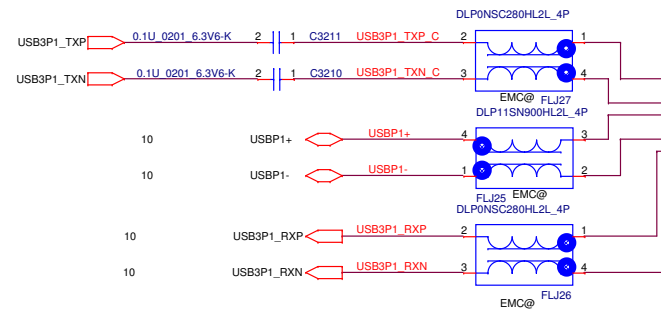


TABLE of USB3.0 Single

TI	TPS2069CDGMR
ROHM	BD82032FVJ-GE2



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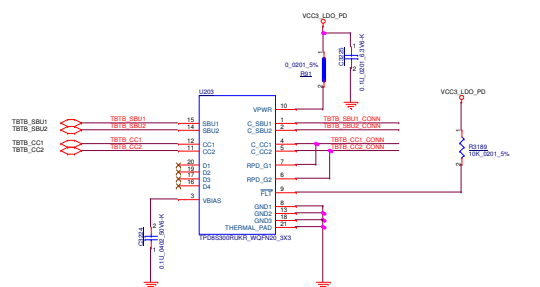


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TABLE FL85-FL88

Trace through package

MDI 2P CONN  
MDI 2N CONN  
MDI 3P CONN  
MDI 3N CONN

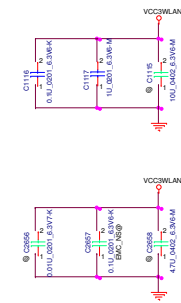
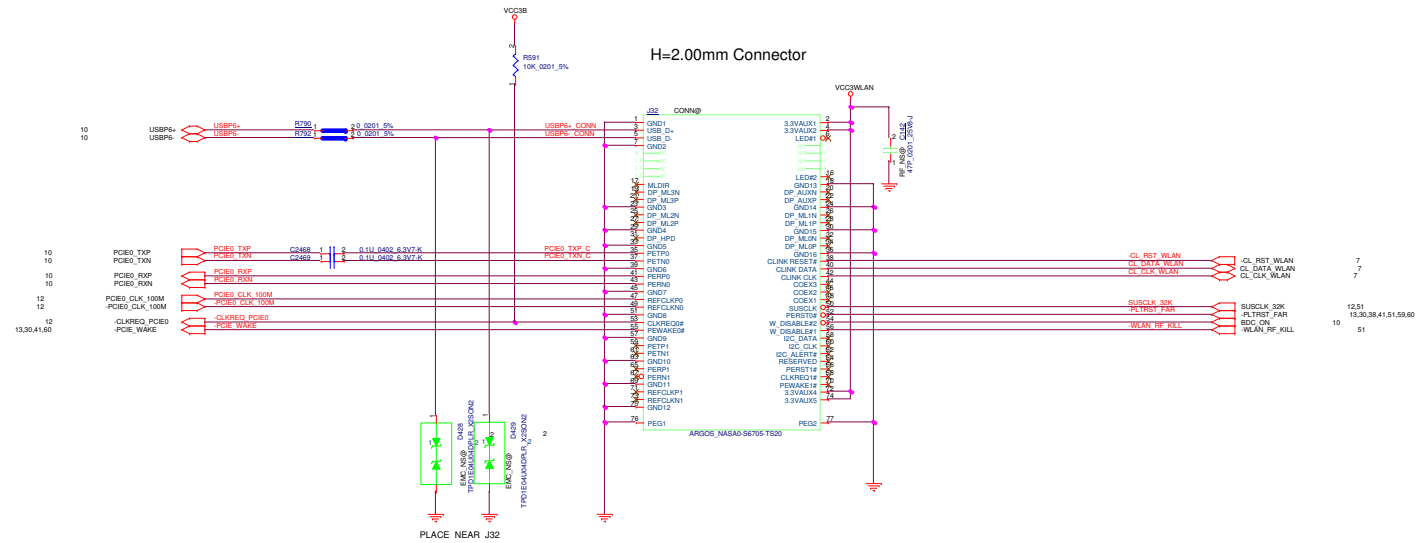
EMC@D147

NC4  
NC1  
NC2  
NC3  
NC5

ACQ8808DI-05 DFN-10

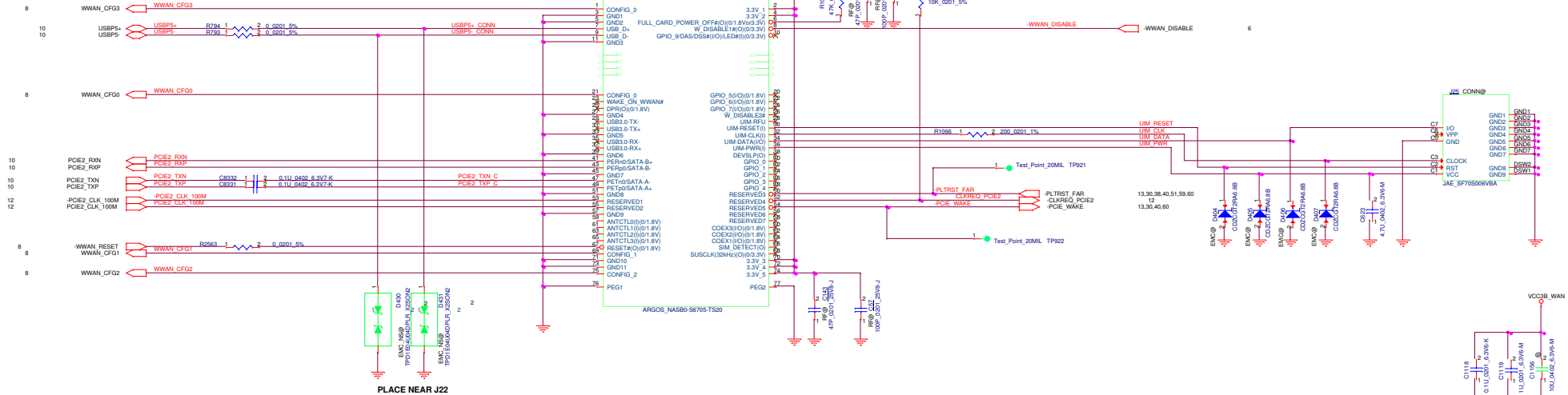
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M.2 Socket 1 (Key-A) for 2230 S3 WLAN / Bluetooth

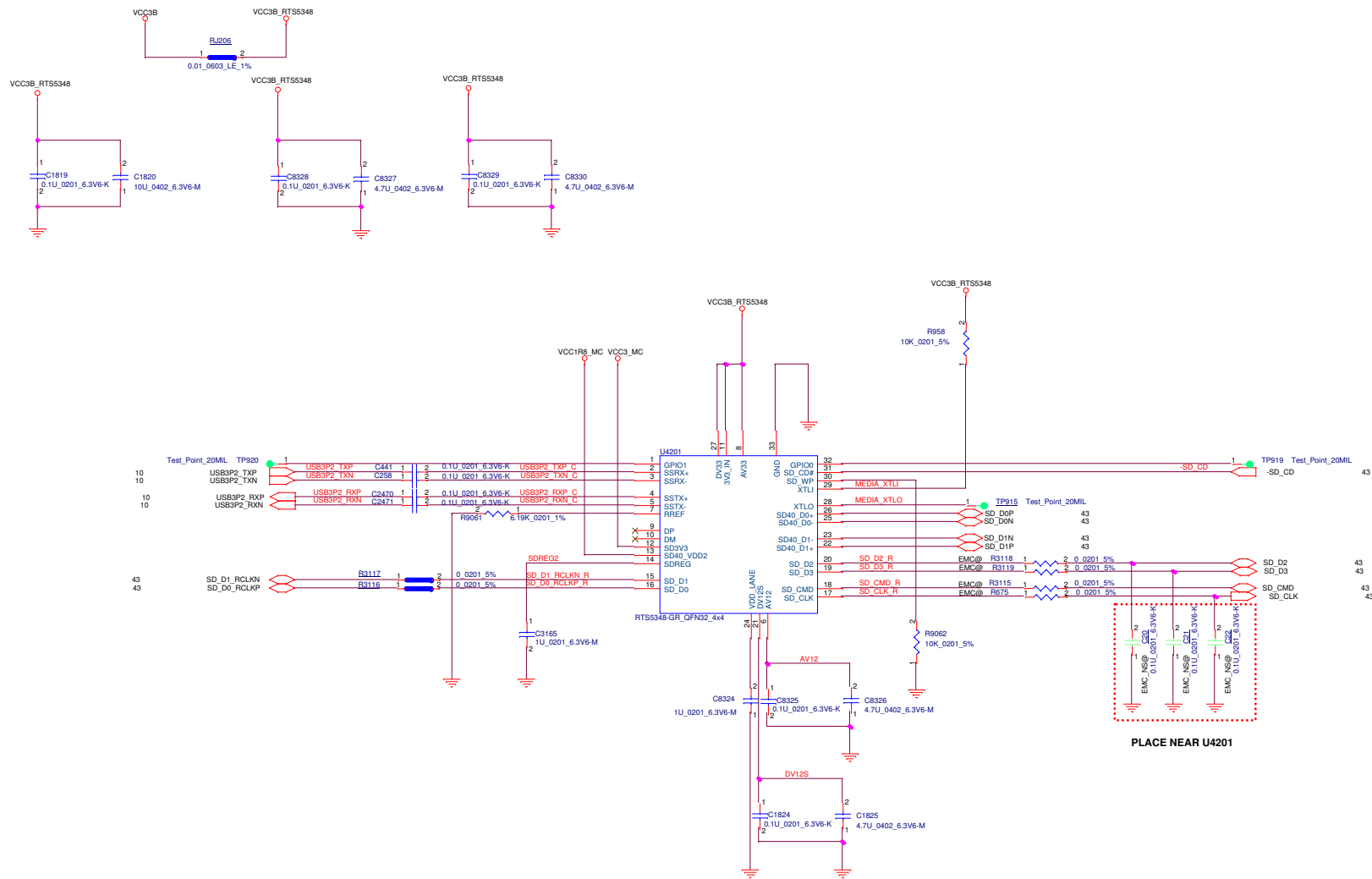


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Date: Friday, November 03, 2017			Sheet: 42 of 58	

## H=2.00mm Connector



State#	Module Configuration Decodes				Module Type and Main Host Interface	Port Configuration
	CONFIG_0 (Pin 21)	CONFIG_3 (Pin 1)	CONFIG_2 (Pin 75)	CONFIG_1 (Pin 69)		
0	GND	GND	GND	GND	SSD - SATA	N/A
1	GND	GND	GND	NC	SSD - PCIe	N/A
2	GND	GND	NC	GND	WWAN - PCIe	0
3	GND	GND	NC	NC	WWAN - PCIe	1
4	GND	NC	GND	GND	WWAN - PCIe, USB 3.1 Gen1	0
5	GND	NC	GND	NC	WWAN - PCIe, USB 3.1 Gen1	1
6	GND	NC	NC	GND	WWAN - PCIe, USB 3.1 Gen1	2
7	GND	NC	NC	NC	WWAN - PCIe, USB 3.1 Gen1	3
8	NC	GND	GND	GND	WWAN - SSIC	0
9	NC	GND	GND	NC	WWAN - SSIC	1
10	NC	GND	NC	GND	WWAN - SSIC	2
11	NC	GND	NC	NC	WWAN - SSIC	3
12	NC	NC	GND	GND	WWAN - PCIe	2
13	NC	NC	GND	NC	WWAN - PCIe	3
14	NC	NC	NC	GND	WWAN - PCIe, USB 3.1 Gen1	Vendor Defined
15	NC	NC	NC	NC	No Module Present	N/A



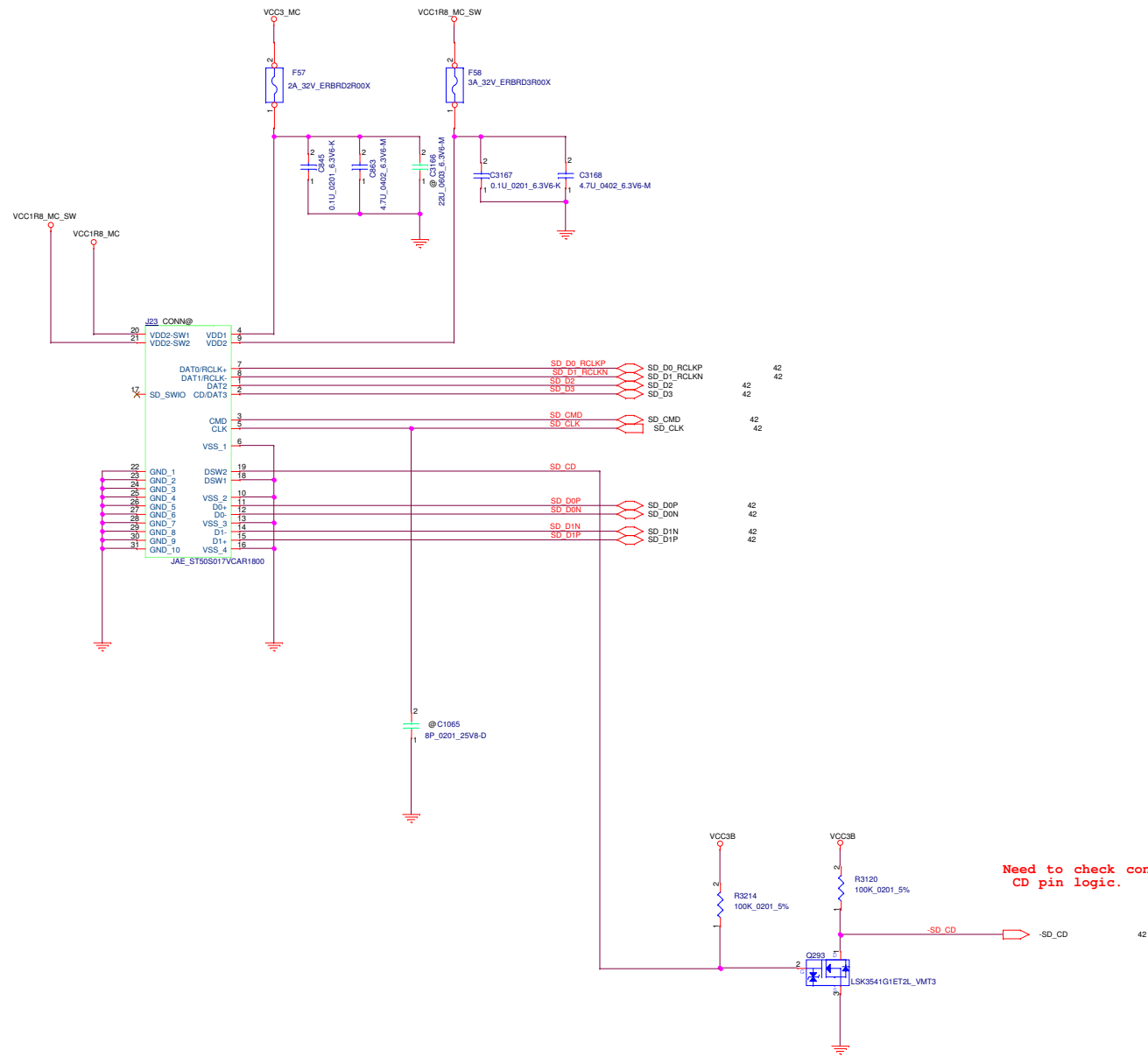


TABLE MIC HW ENABLE/DISABLE

	ENABLE	DISABLE
R961	ASM	NO_ASM
R119	ASM	NO_ASM

↑  
LOGIC

1.3A

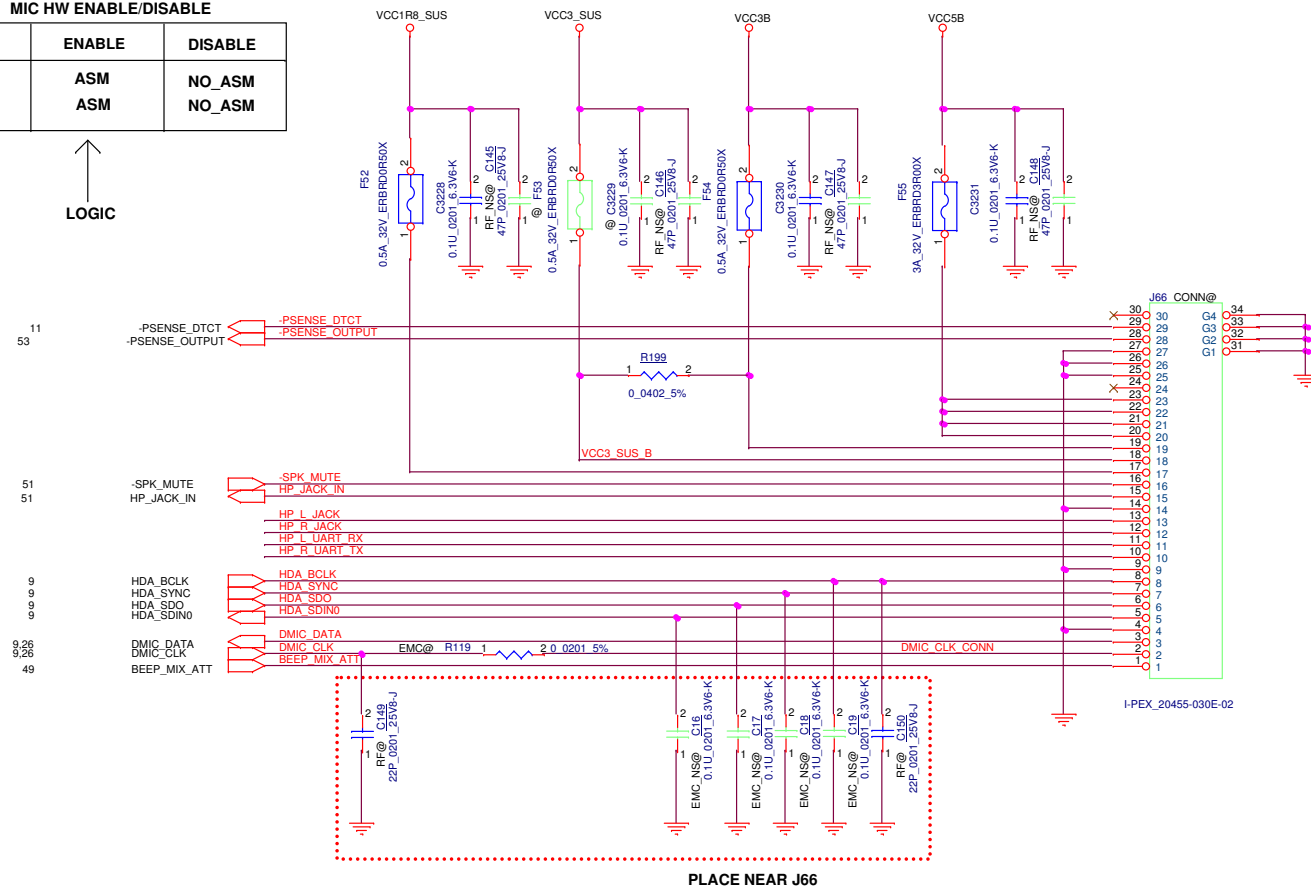


TABLE:

Mode	Audio	UART
VBUS	L	H

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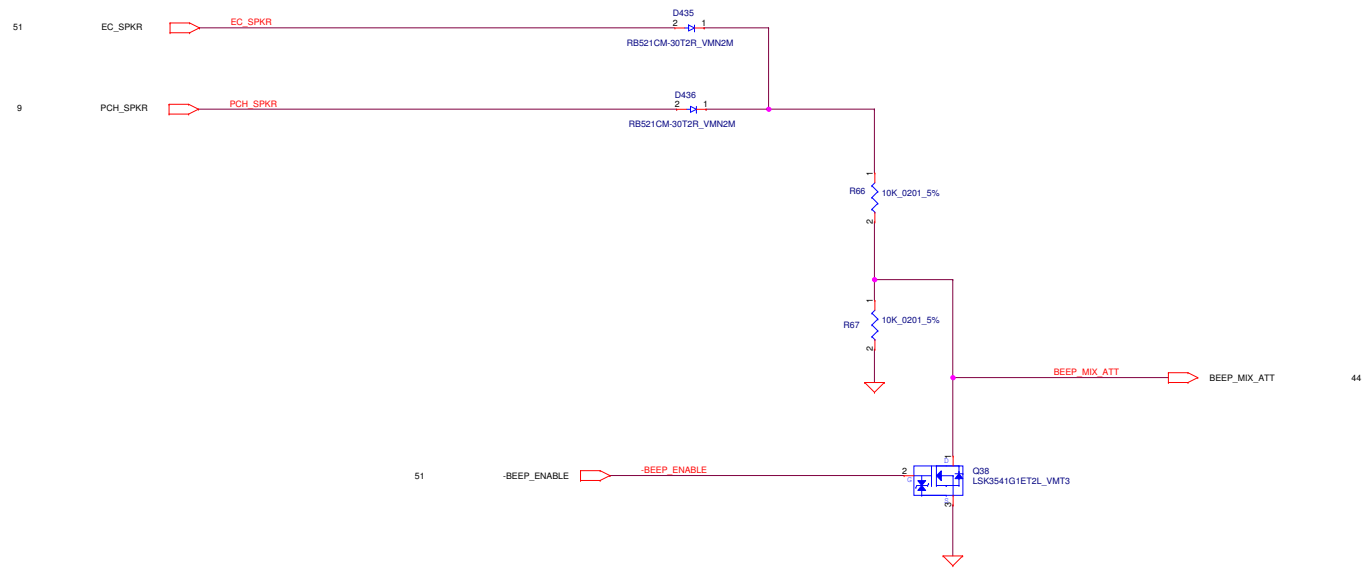
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2017/02/17		2014/07/01			
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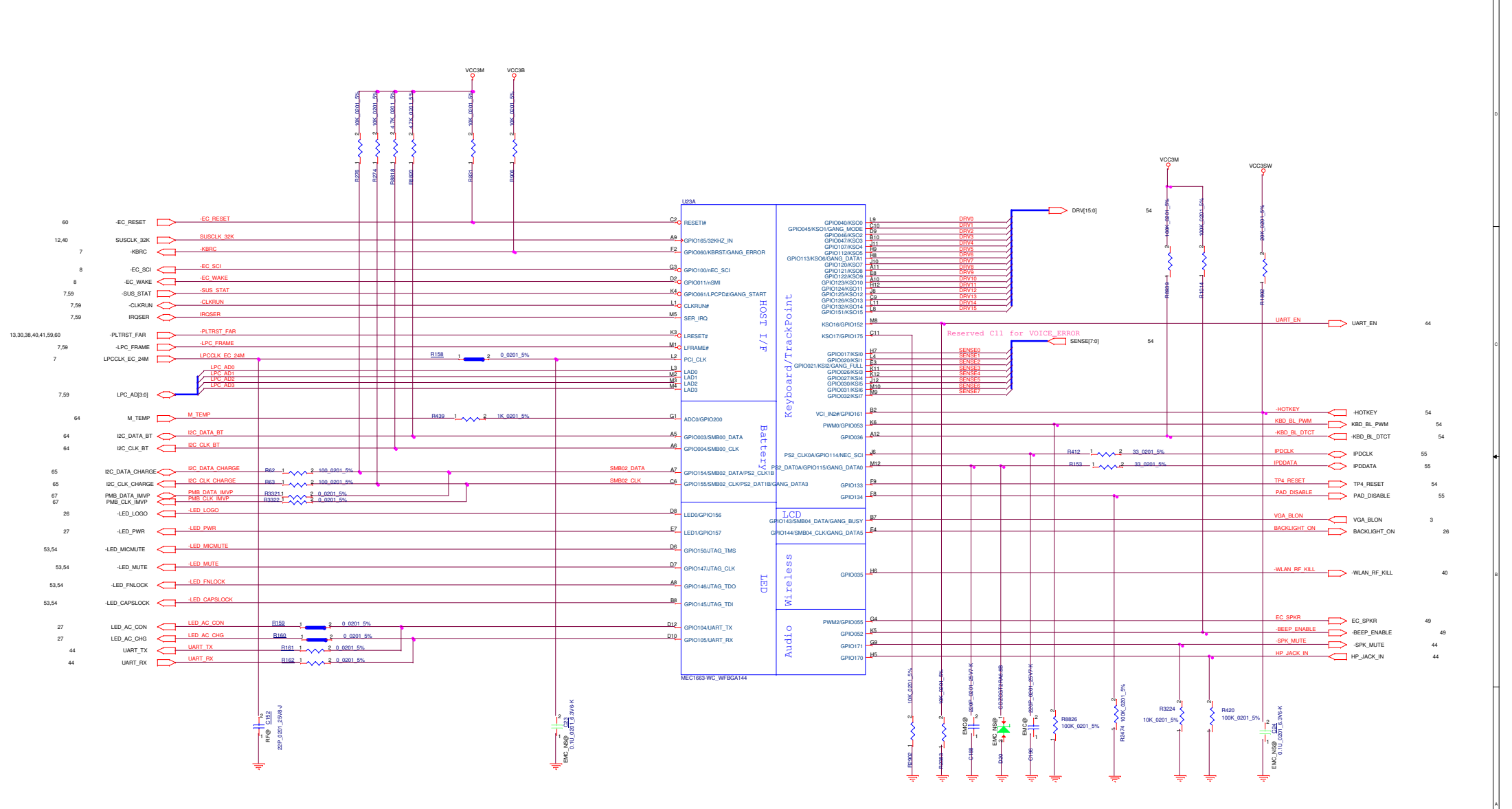


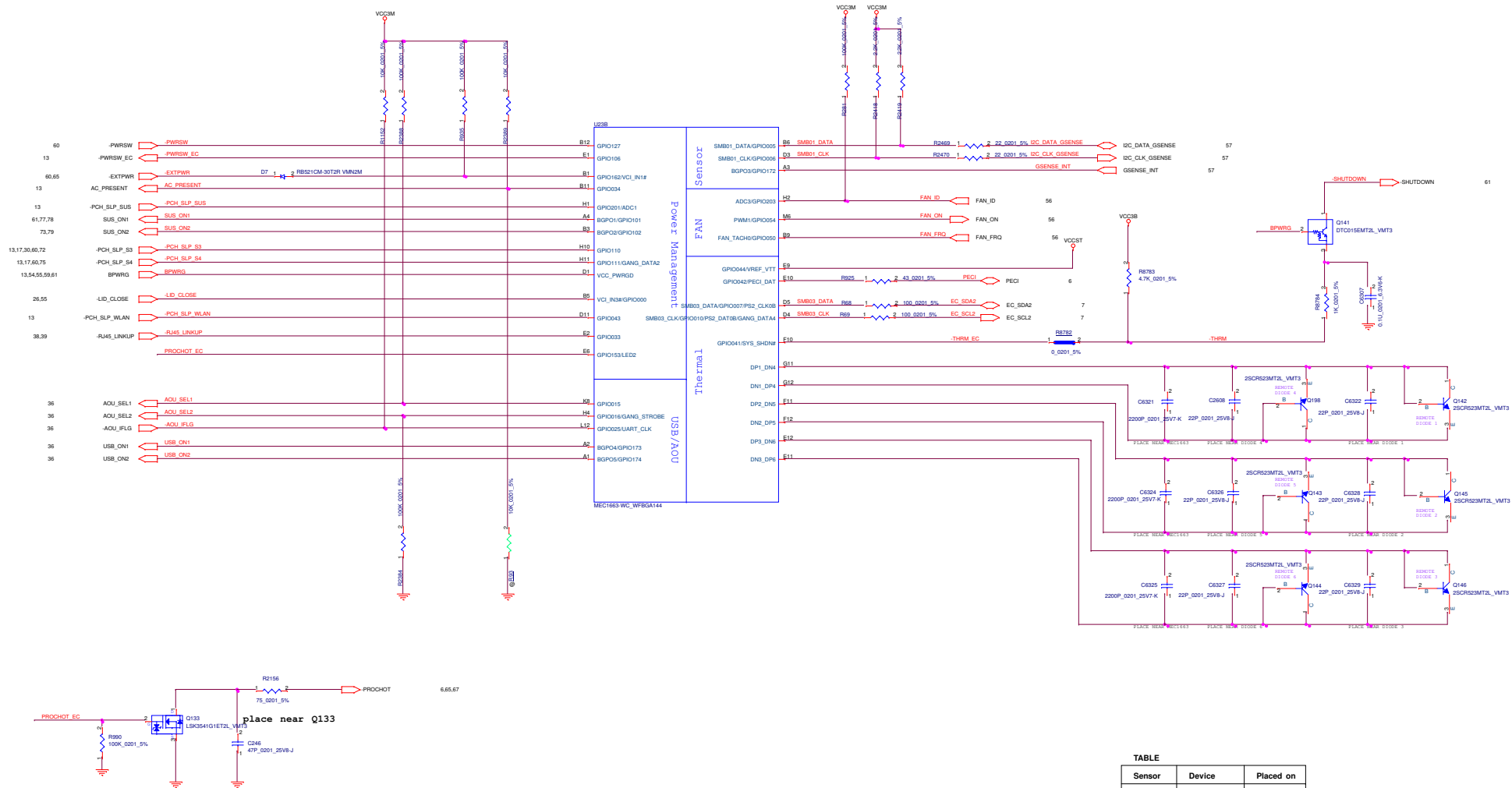


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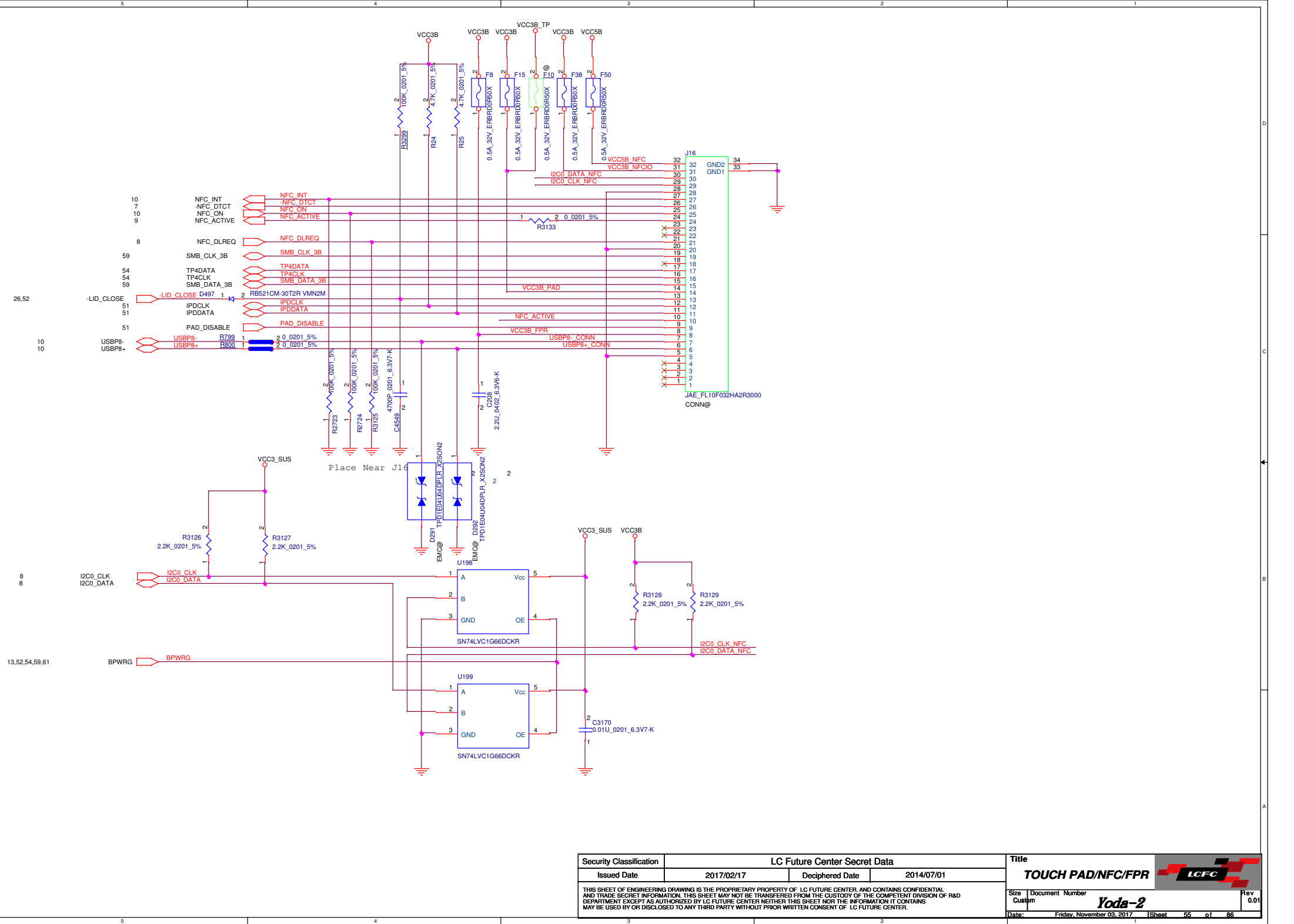


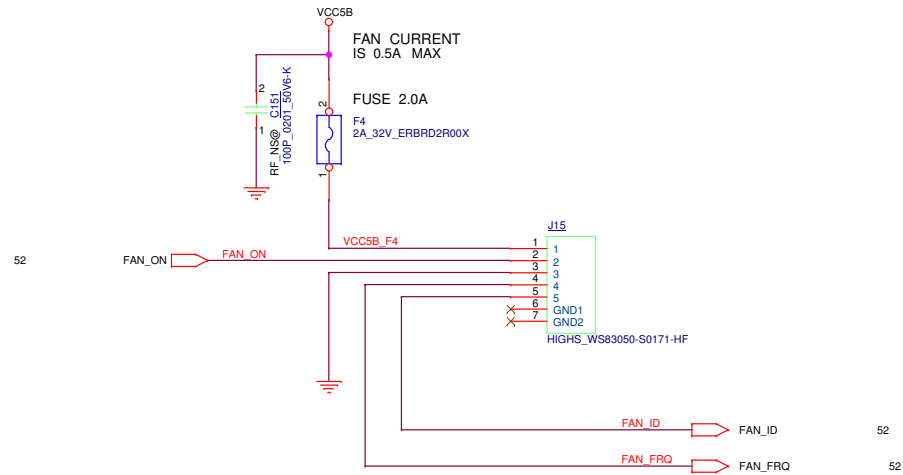
Sensor	Device	Placed on
DIODE0	EC Internal	TOP
DIODE1	CPU DC/DC	BOTTOM
DIODE2	Charger	BOTTOM
DIODE3	FAN	BOTTOM
DIODE4	SSD	BOTTOM
DIODE5	WLAN	BOTTOM
DIODE6	LPDDR3	BOTTOM











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				Rev	0.01

Table with 3 columns: P/N, ADDR\_SEL, Address. It lists two sensor models: BMA255 and KX022-1020, their address selection pins (H/L), and their corresponding I2C addresses.

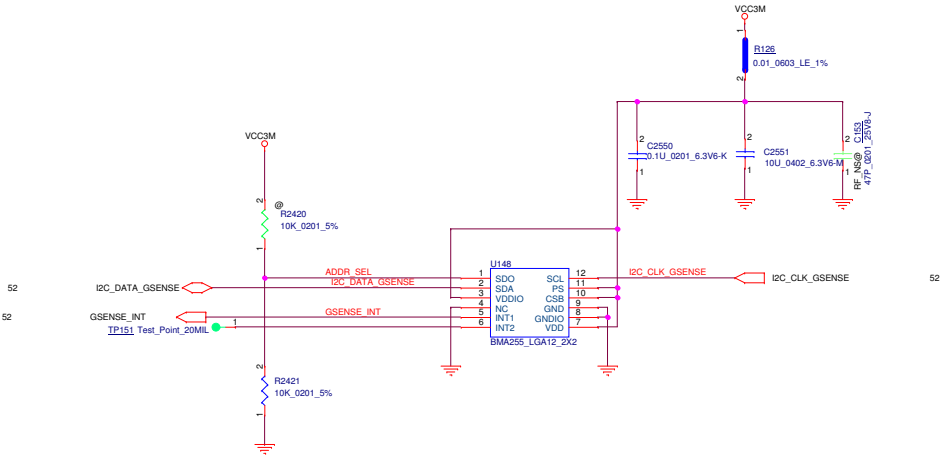
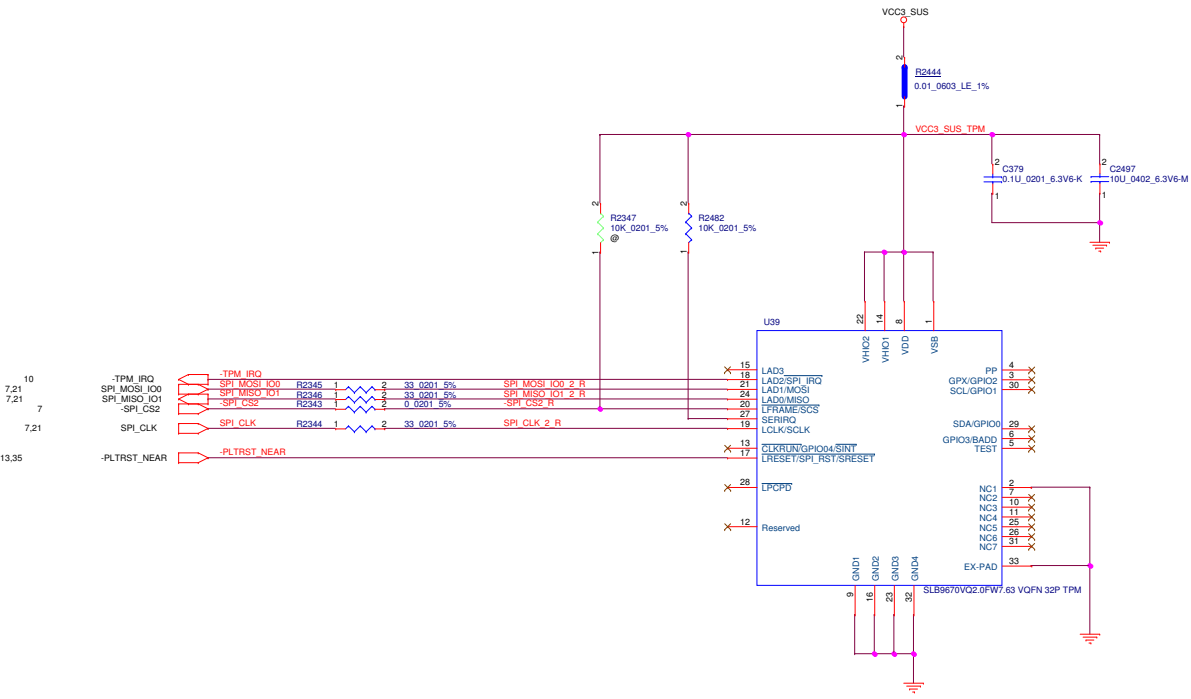


TABLE of G-Sensor (U148)

Vendor	P/N	LCFC P/N
BOSCH	BMA255	SA00005YJ00
Kionix	KX022-1020	SA000081E00



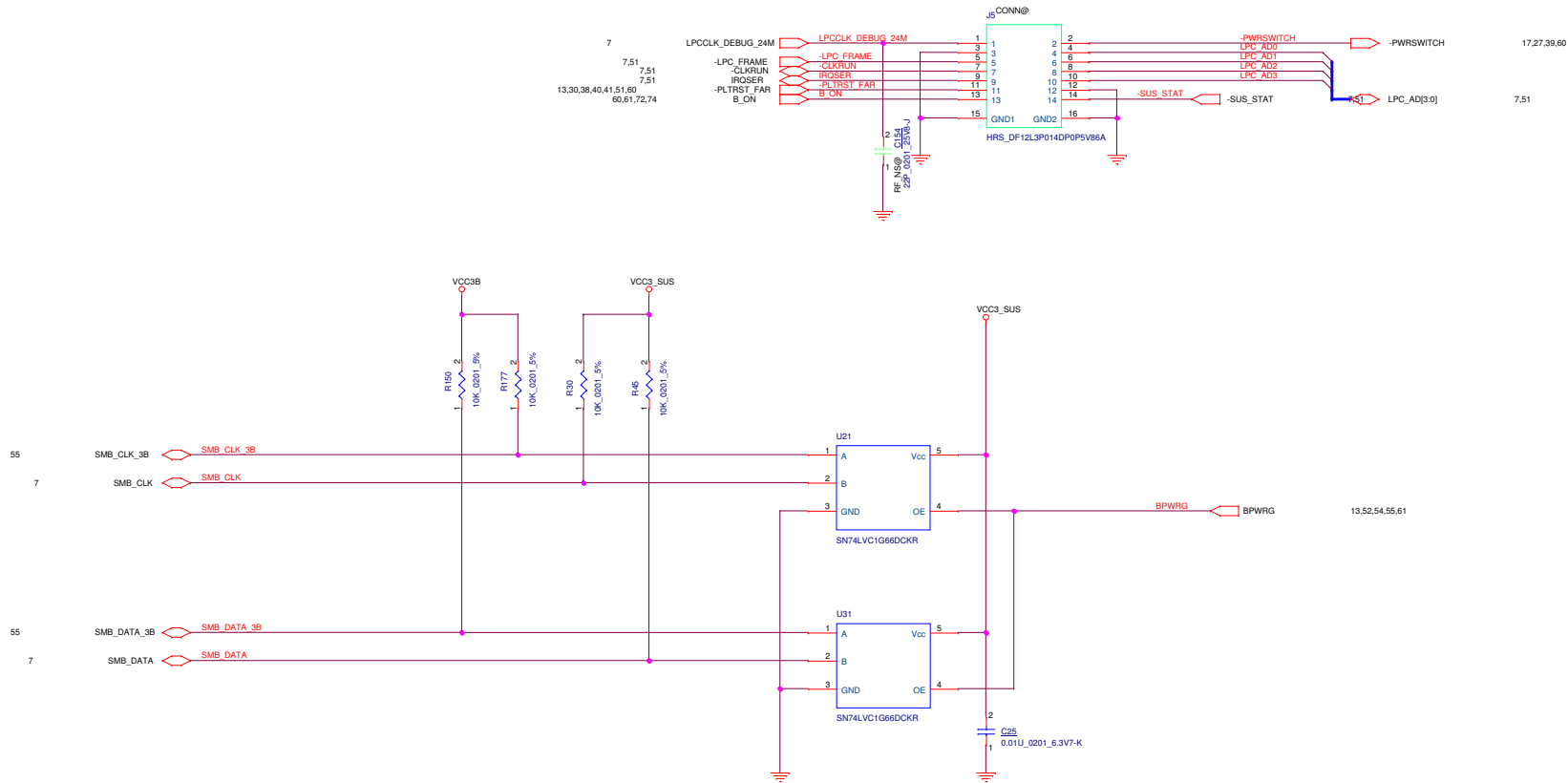
TABLE


Pin No	TCG PTP Spec (v38)	Infineon SLB9670VQ2.0 FW 7.63	ST Micro ST33HTPH2E32AHB4
1	VDD	VDD	NC
2	GND	GND	GND
3	GPIO	NC	NC
4	GPIO	NC	PP
5	NC	NC	NC
6	VNC/GPIO	GPIO	NC
7	GPIO/VDD	PP	GPIO
8	VDD	VDD	NC
9	GND	GND	NC
10	VNC	NC	NC
11	NC	NC	NC
12	NC	NC	NC
13	VNC/GPIO	NC	NC
14	VDD	NC	NC
15	NC	NC	NC
16	GND	NC	NC
17	SPI_RST#	RST#	SPI_RST#
18	SPI_PIRQ#	PIRQ#	SPI_PIRQ#
19	SPI_CLK	SCLK	SPI_CLK
20	SPI_CS#	CS#	SPI_CS#
21	MOSI	MOSI	MOSI
22	VDD	VDD	VPS
23	GND	GND	NC
24	MISO	MISO	MISO
25	NC	NC	NC
26	NC	NC	NC
27	NC	NC	NC
28	NC	NC	NC
29	VNC/GPIO	NC	NC
30	VNC/GPIO	NC	NC
31	VNC	NC	NC
32	GND	GND	NC

TABLE

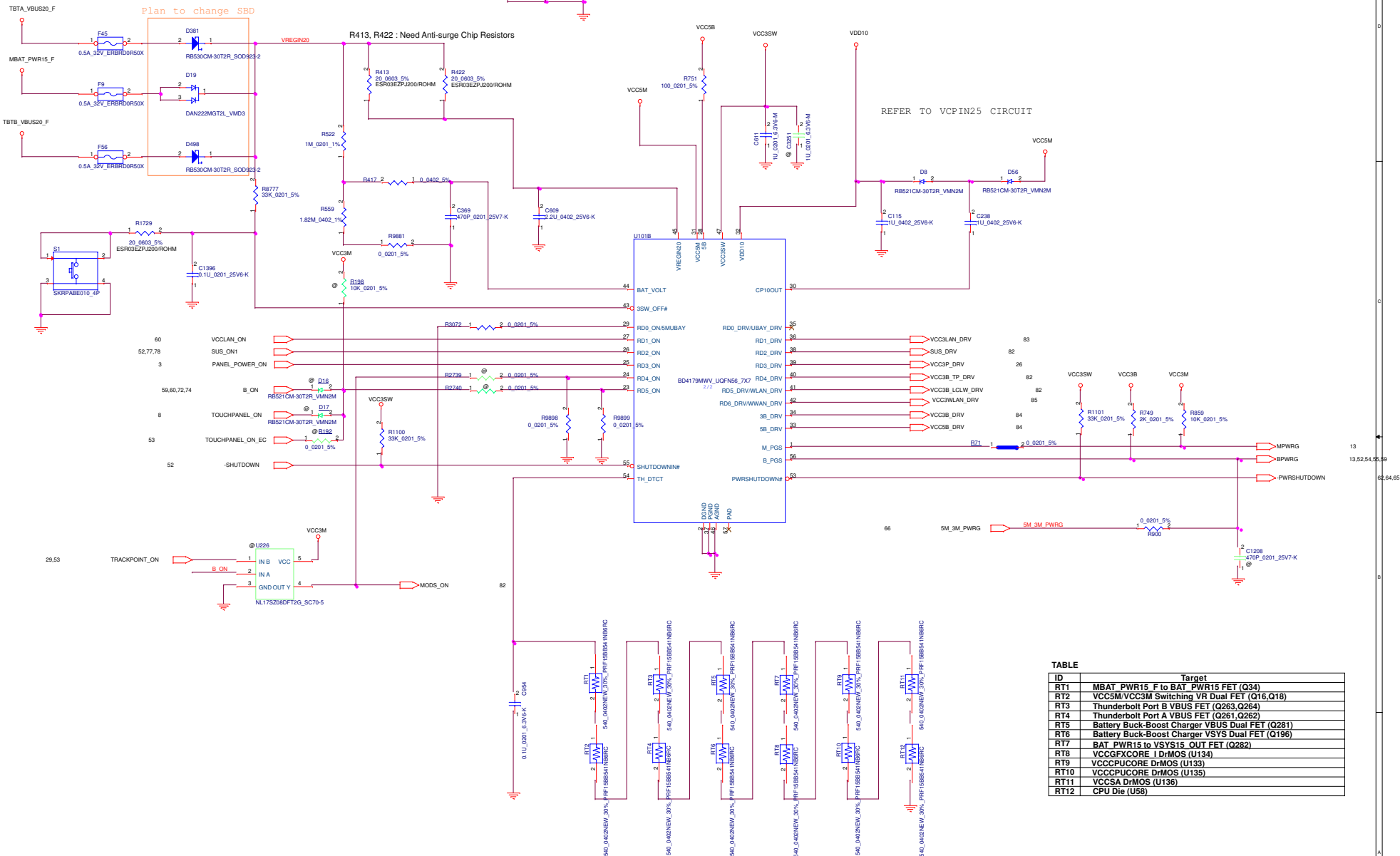
REF DES	ENABLE	DISABLE
J5	ASM	NO_ASM
R220	ASM	NO_ASM

↑  
LOGIC




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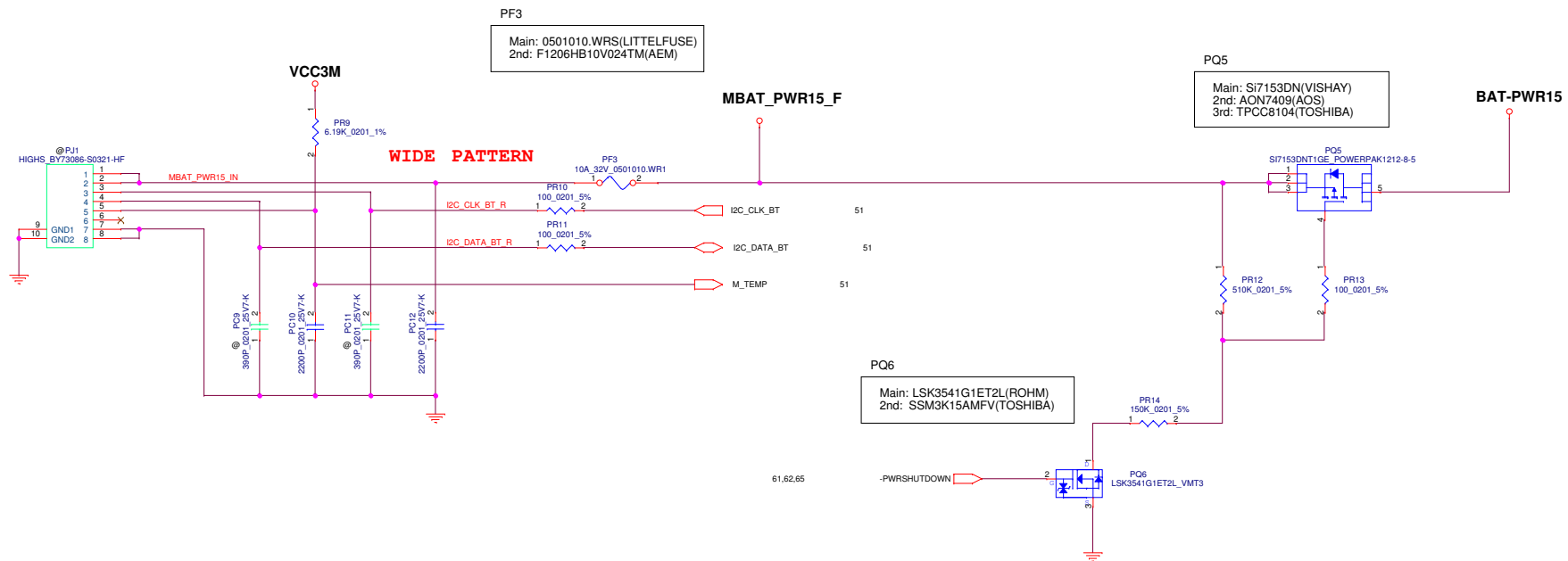






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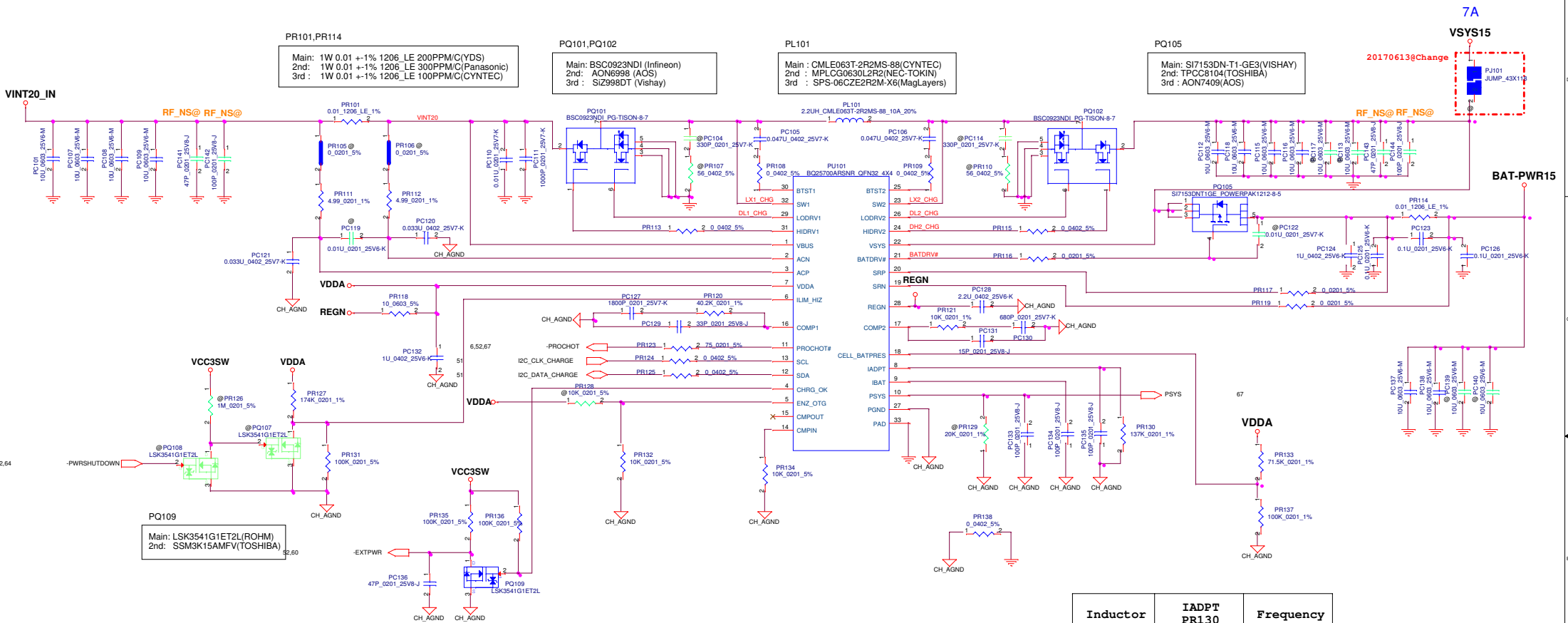


TABLE:ILIM\_HIZ

IDPM	V (ILIM)	PR127
500mA	1.2V	402K
1.0A	1.4V	332K
1.5A	1.6V	280K
2.0A	1.8V	237K
3.0A	2.2V	174K
3.25A	2.3V	162K

← LOGIC

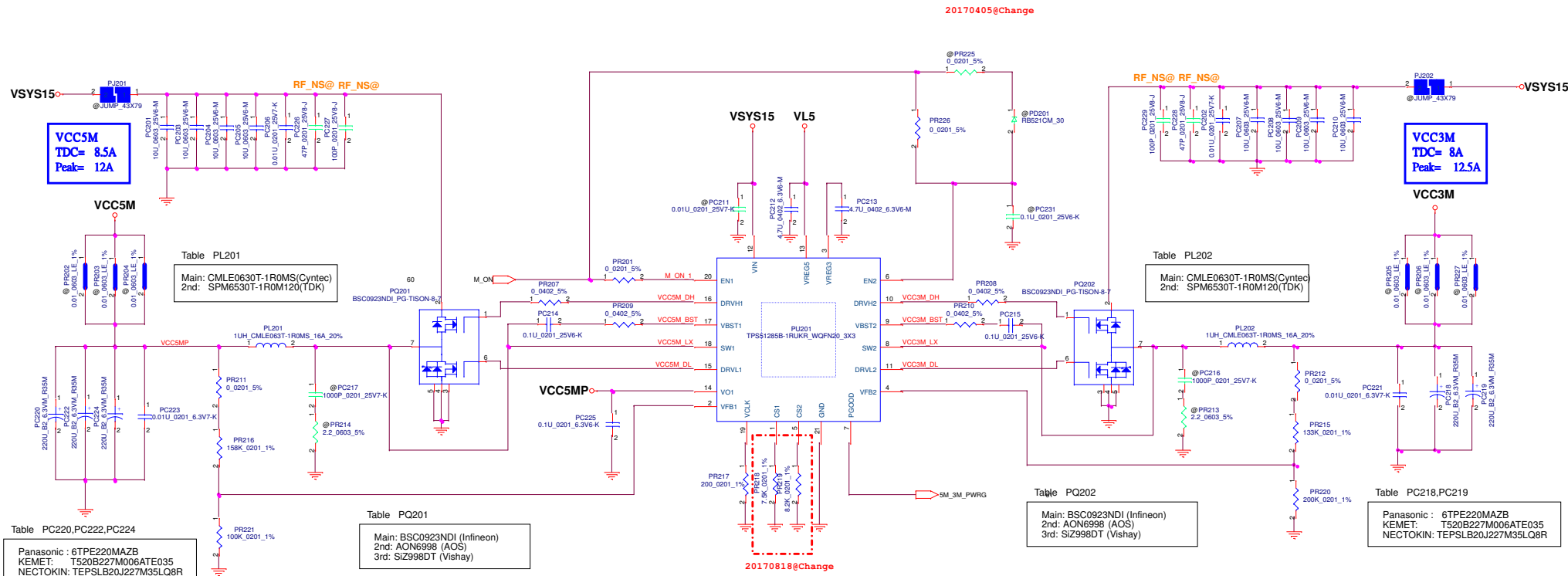
TABLE:CELL BATPRES

# of CELL	VCELL PRES	PR133
1-CELL	1.5V	301K
2-CELL	2.5V	140K
3-CELL	3.5V	71.5K
4-CELL	4.5V	33.2K

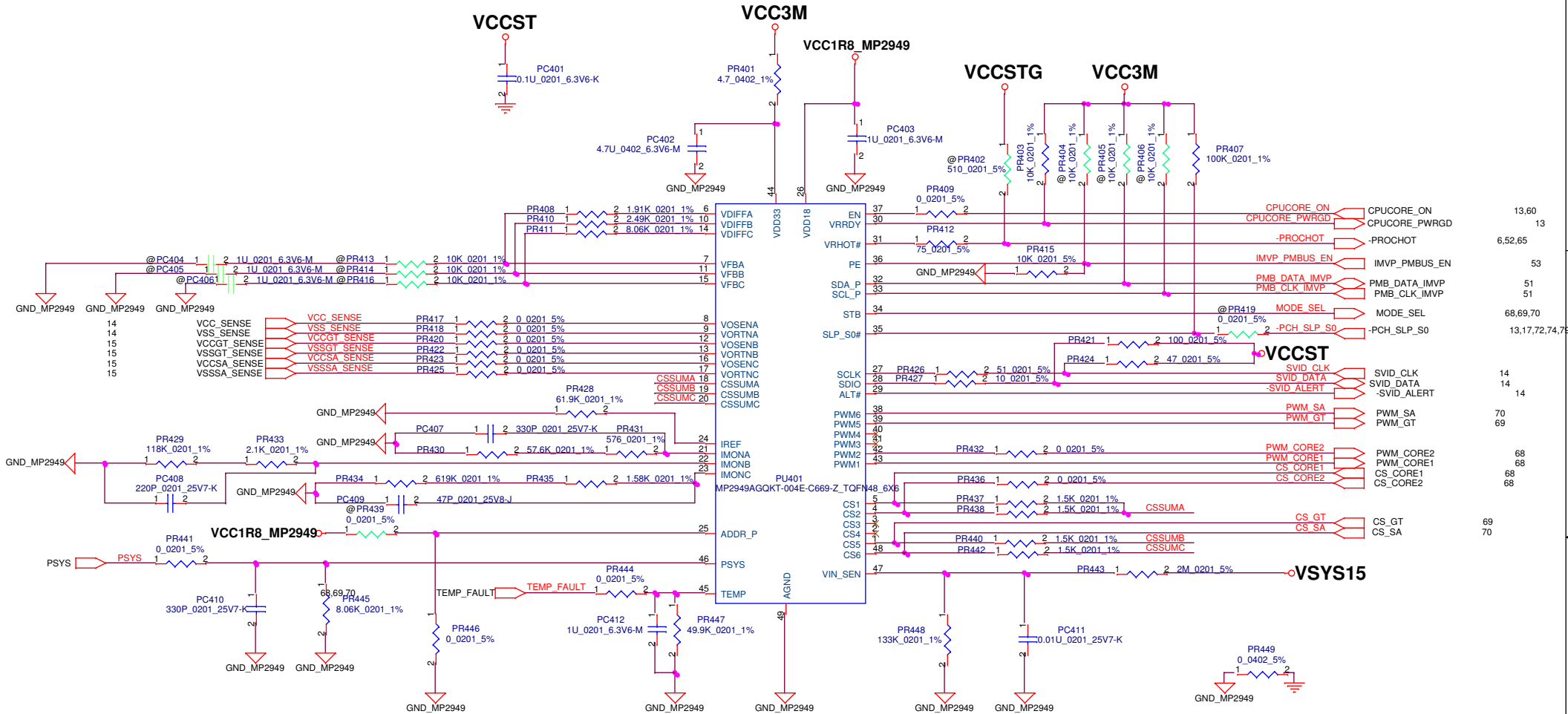
← LOGIC

TABLE

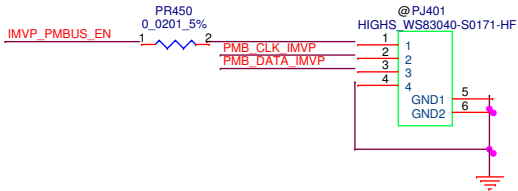
Inductor	IADPT PR130	Frequency
1.0uH	93kohm	800kHz
1.5uH	108kohm	800kHz
2.2uH	137kohm	800kHz
3.3uH	168kohm	800kHz



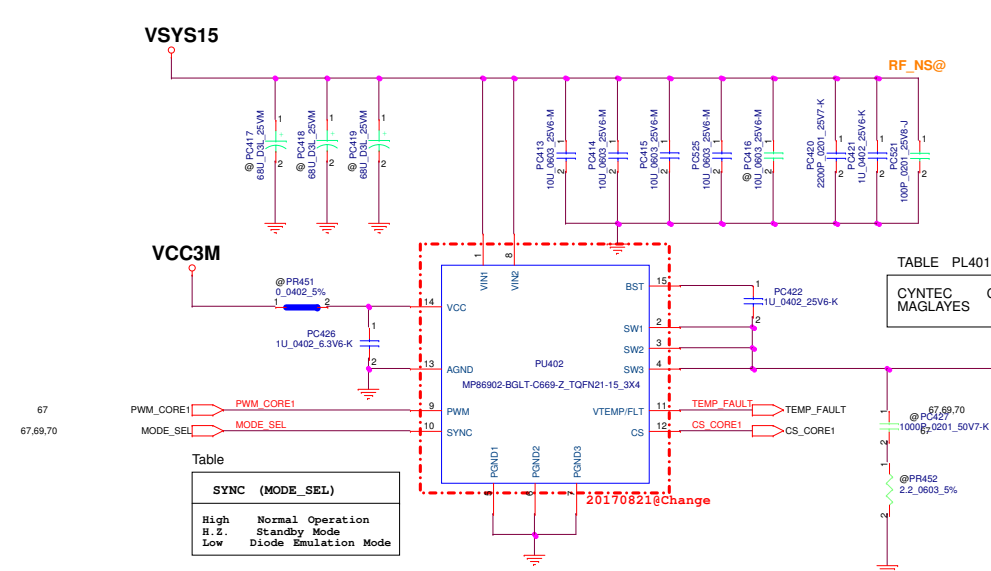
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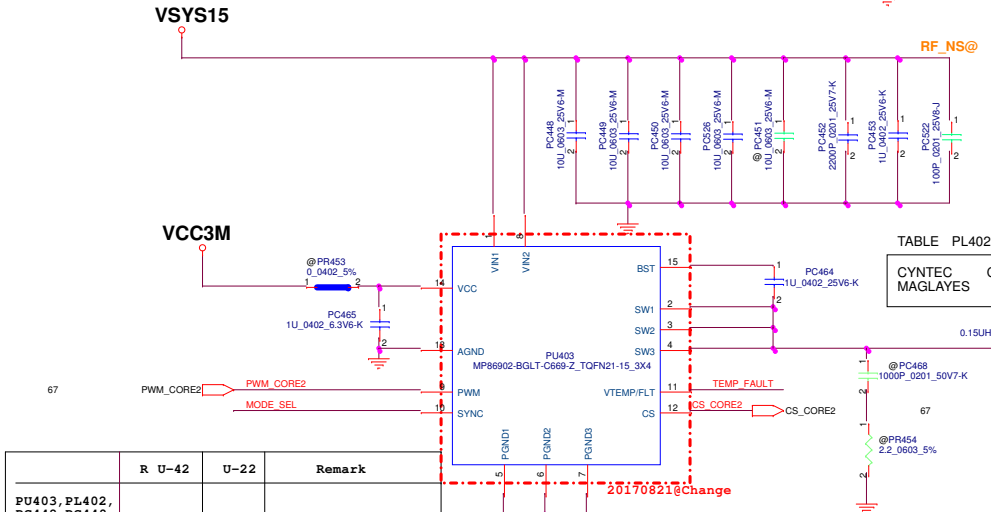
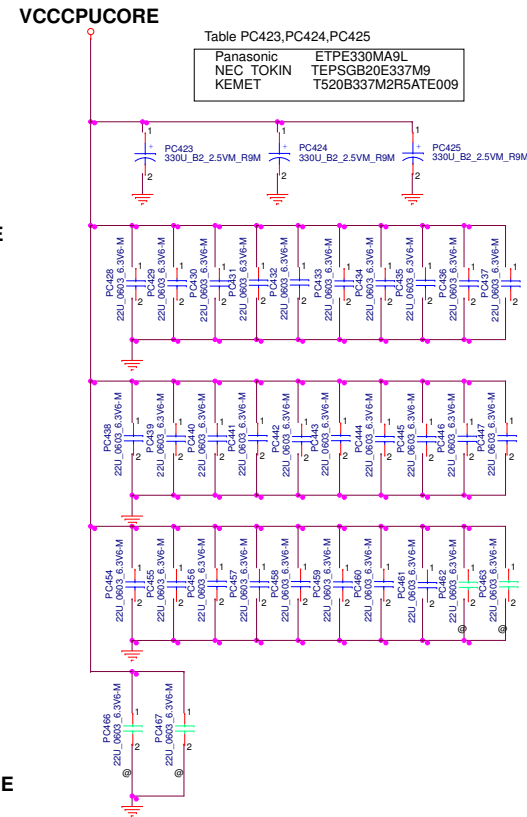
	R U42	U22
PU401	MP2949AGQKT-004E-C669-Z	MP2949AGQKT-004F-C669-Z
PR432	0_0201_5%	NA
PR436	0_0201_5%	NA
PR438	1.5K_0201_1%	NA
PR431	576_0201_1%	1.37K_0201_1%
PR430	57.6K_0201_1%	115K_0201_1%
PC407	330P_0201_25V7-K	220P_0201_25V7-K
PR439	NA	2.8K_0201_1%
PR446	0_0201_5%	20K_0201_1%



MFR_PHASE_CFG[4:0]	Active PWM Pins		
	Rail A	Rail B	Rail C
00100b	1, 2, 3, 4	5	6
00111b	1, 2, 3	4, 5	6
01001b	1, 2, 3	5	6
01100b	1, 2	4, 5	6
01110b	1, 2	5	6
10001b	1	5	6

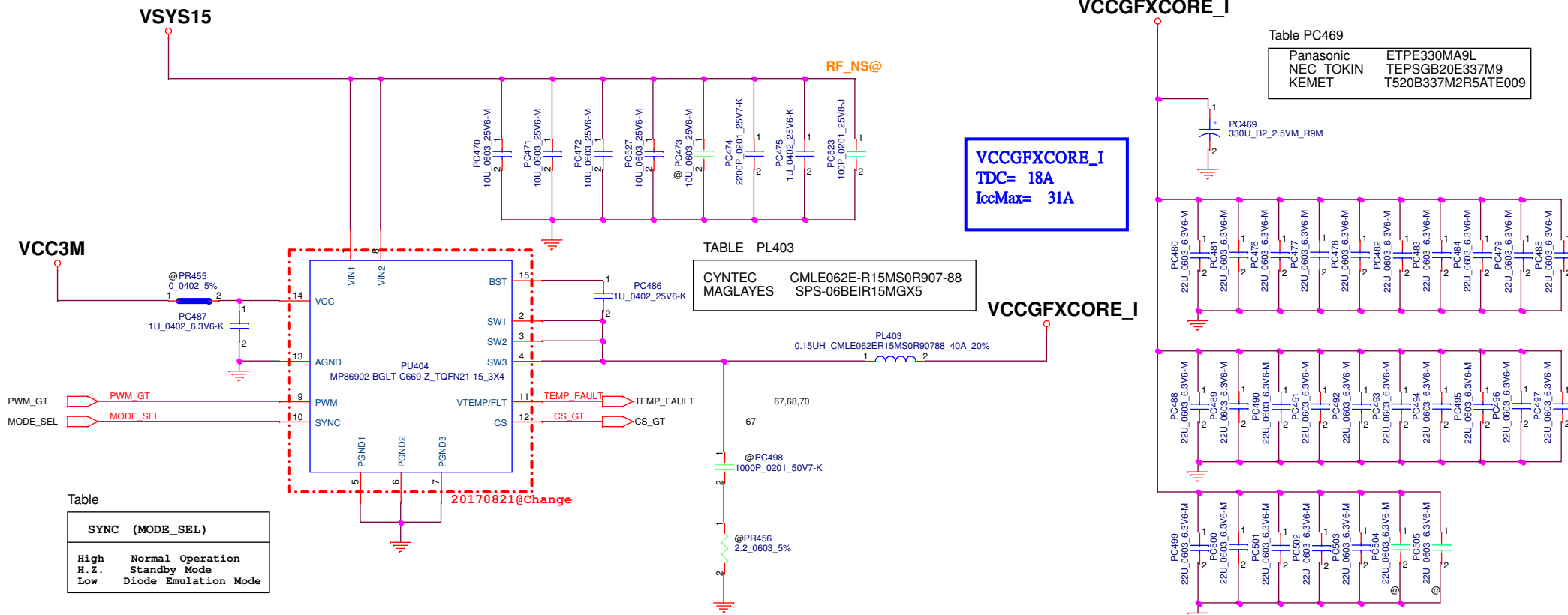


3pcs 330uF + 28pcs for KBL-R U42 VCCCPUCORE  
1pcs 330uF + 25pcs for KBL U22 VCCCPUCORE



	R U-42	U-22	Remark
PU403, PL402, PC448, PC449, PC450, PC526, PC451, PC452, PC453, PR453, PC465, PC464	ASM	NO ASM	
PC424, PC425	ASM	NO ASM	The Number of 330uF KBL R U-42: 3pcs KBL U-22: 1pcs
PC459, PC460, PC461	ASM	NO ASM	The Number of 22uF KBL R U-42: 28pcs KBL U-22: 25pcs





1pcs 330uF + 25pcs for KBL-R U42 VCCGFXCORE\_I  
1pcs 330uF + 25pcs for KBL U22 VCCGFXCORE\_I

Table PC469

Panasonic	ETPE330MA9L
NEC TOKIN	TEPSGB20E337M9
KEMET	T520B337M2R5ATE009

VSYS15

RF\_NS@

VCC3M

PU405  
MP86901-AGQT-C669-Z\_TQFN13\_3X3

PWM\_SA PWM\_SA  
MODE\_SEL MODE\_SEL

Table

SYNC (MODE_SEL)	
High	Normal Operation
H.Z.	Standby Mode
Low	Diode Emulation Mode

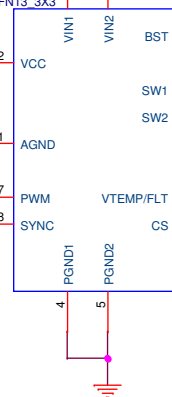


TABLE PL404

CYNTEC CMLB051H-R33MS-88  
NEC-Tokin MPLCH0520LR33

VCCSA

0.33UH\_CMLB051H-R33MS-88\_16A\_+20%

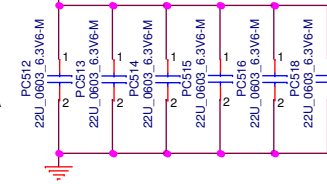
@PC520  
1000P\_0201\_50V7-K

@PR458  
2.2\_0603\_5%

VCCSA  
TDC= 4A  
IccMax= 6A

6pcs 22uF for VCCSA

VCCSA



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Table PD701,PD702

ROHM: RB521CM-30T2R  
ONSEMI: NSR0140P2T5G  
NXP: PMEG4002EL

Table PL701

TOKO: FDSD0420-H-1ROM  
Cyntec: CMLB042T-1ROMS  
TDK: SPM4020T-1ROM-LR

VCCCPUIO  
Max= 3.1A

VCCCPUIO

Different Lines

If remote sense is used, PR712 should be 0 ohm and PR708 be 6.8 ohm.  
If not , PR712 should be not stuffed and PR708 = 0 ohm.

TABLE : NB695 MODE M1 (0 to GND)

LP#	C1	C0	VOUT
0	X	X	0.000V
1	0	0	0.850V
1	0	1	0.875V
1	1	0	0.950V
1	1	1	0.975V

← SLP\_S0#

← LOGIC

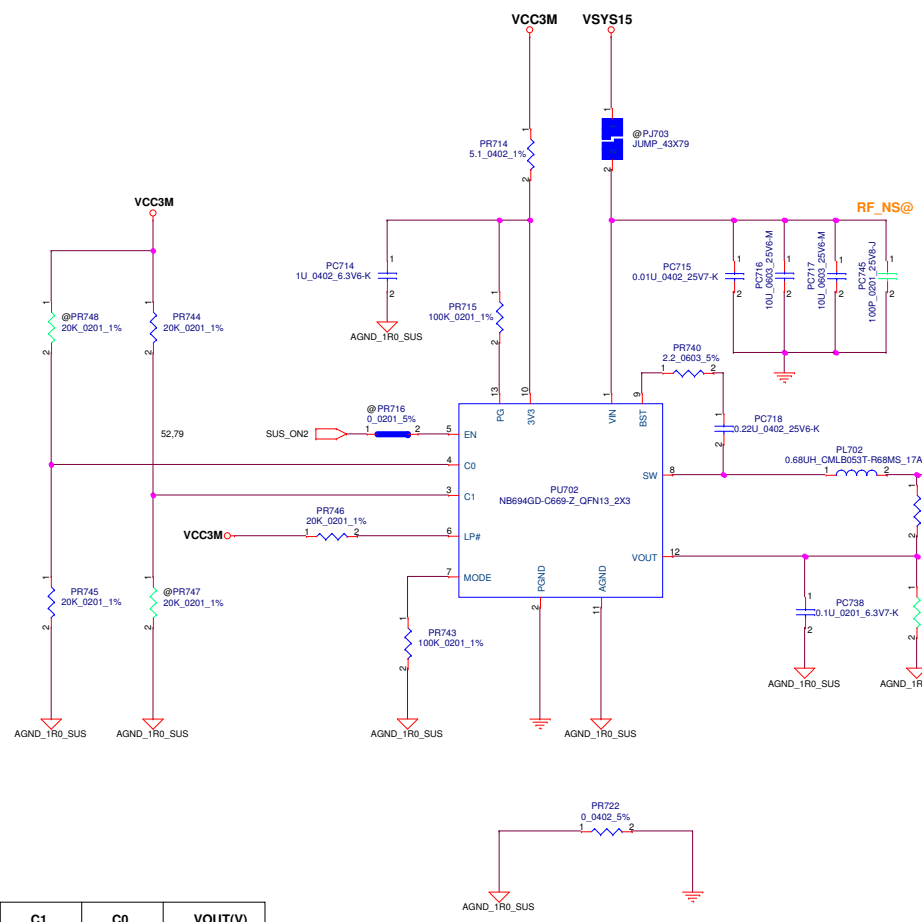


Table PL702

Cyntec : CMLB053T-R68MS  
NEC TOKIN : MPLCH0530LR68G

VCC1R0\_SUS  
Max= 4A

VCC1R0\_SUS

Table PR717 0603 SIZE

Rohm:ESR03EZPJ2R0  
Pana:ERJPA3J2R0V  
YDS:RN73S2CL-2R00-F


Table PQ702

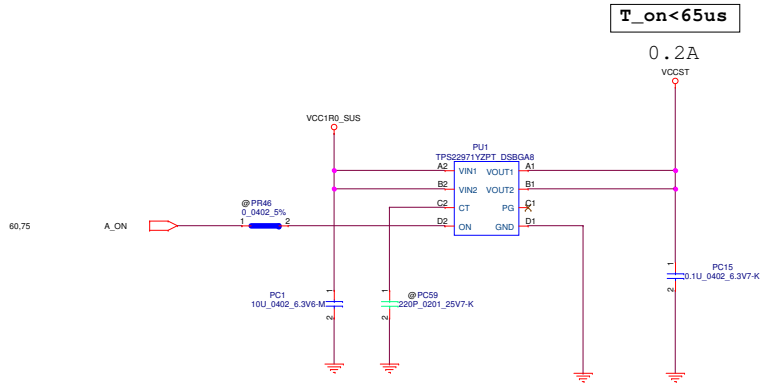
ROHM : RV2C010UNT2L  
Toshiba : SSM3K56ACT

Control Bit Logics

	LP#	C1	C0	VOUT(V)
V1.0A	0	X	X	0V
	1	0	0	0.85V
	1	0	1	0.95V
	1	1	0	1V
	1	1	1	1.05V

← Default Value

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				Date:	Friday, November 03, 2017		Sheet



59.60,61.72

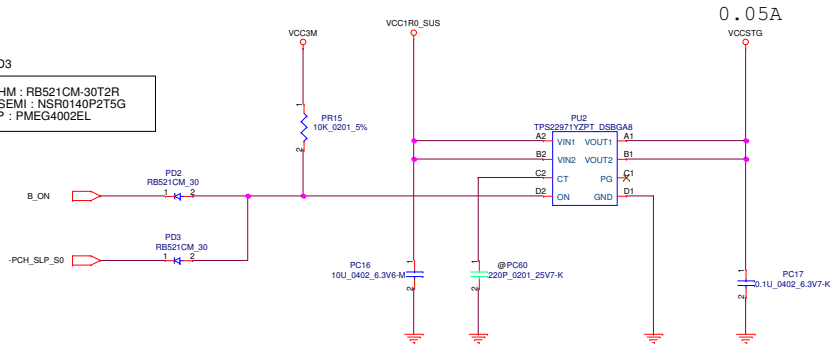
13.17,87.72,79

PD2,PD3

ROHM : RB521CM-30T2R

ONSEMI : NSR0140P2T5G

NXP : PMEG4002EL



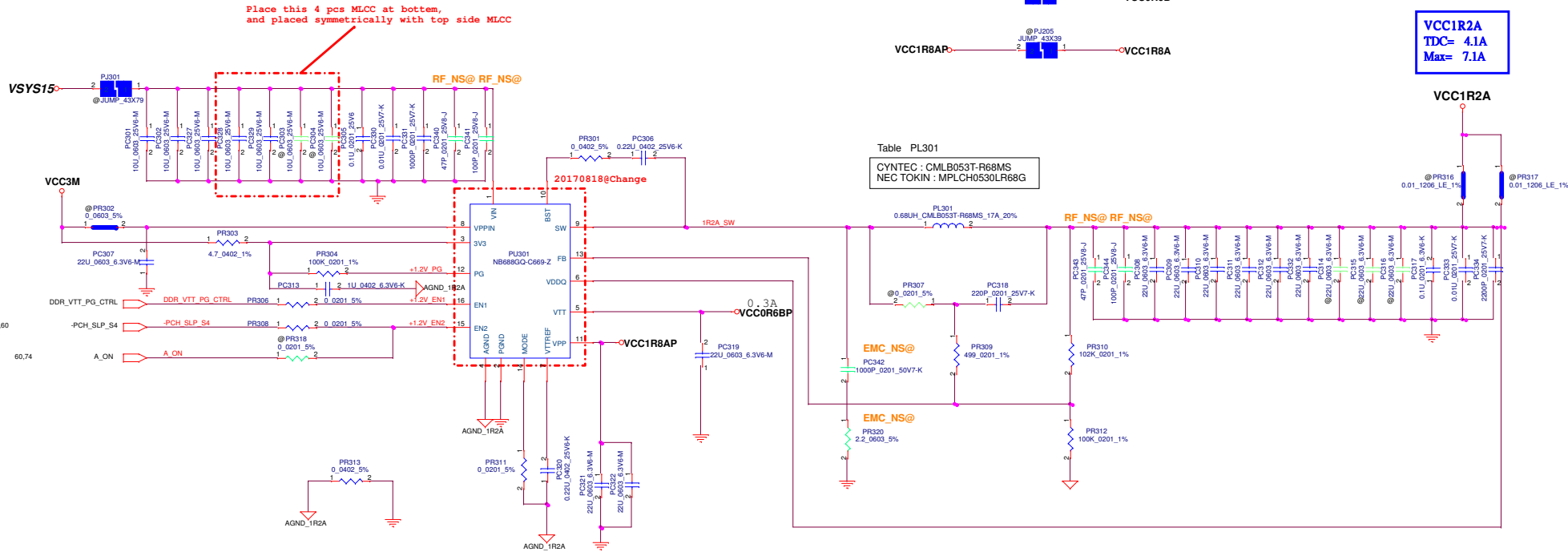


TABLE NB688GQ:EN1/EN2

State	EN1	EN2	VDDQ	VTTREF	VTT	VPP
S0	High	High	ON	ON	ON	ON
S3	Low	High	ON	ON	OFF (High-Z)	ON
S4/S5	Low	Low	OFF	OFF	OFF	OFF
Others	High	Low	OFF	OFF	OFF	OFF


TABLE NB688GQ:MODE

State	USM	Fs	Resistor to GND
M1	NO	700KHz	0
M2	YES	700KHz	90K
M3	NO	500KHz	150K
M4	YES	500KHz	>230K or Float

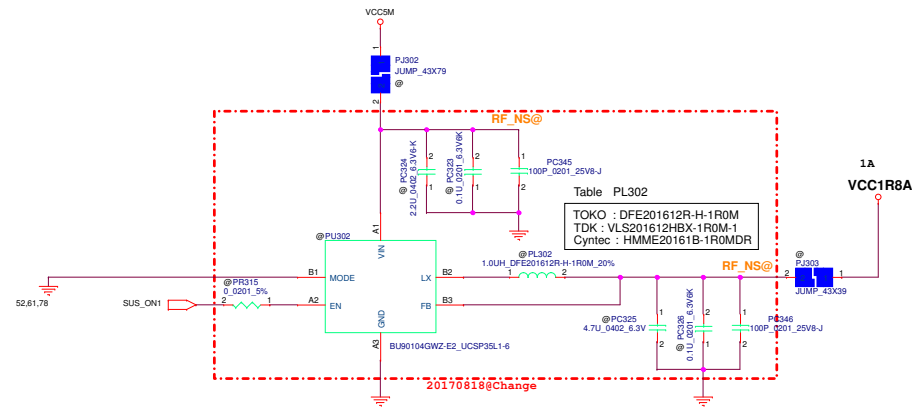
Component Name	EVT	FVT	SIT
PJ301	NB687	NB687	NB688
PR302	NO_ASM	NO_ASM	ASM
PC307	NO_ASM	NO_ASM	ASM
PC321	NO_ASM	NO_ASM	ASM
PC322	NO_ASM	NO_ASM	ASM
PJ205	NO_ASM	NO_ASM	ASM

Security Classification	LC Future Center Secret Data		Title
Issued Date	2016/12/29	Deciphered Date	2014/12/31
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Size	Document Number	Rev	0.01
Custom	Yoda-2	Date: Friday, November 03, 2017 15:00:00	75 01 86

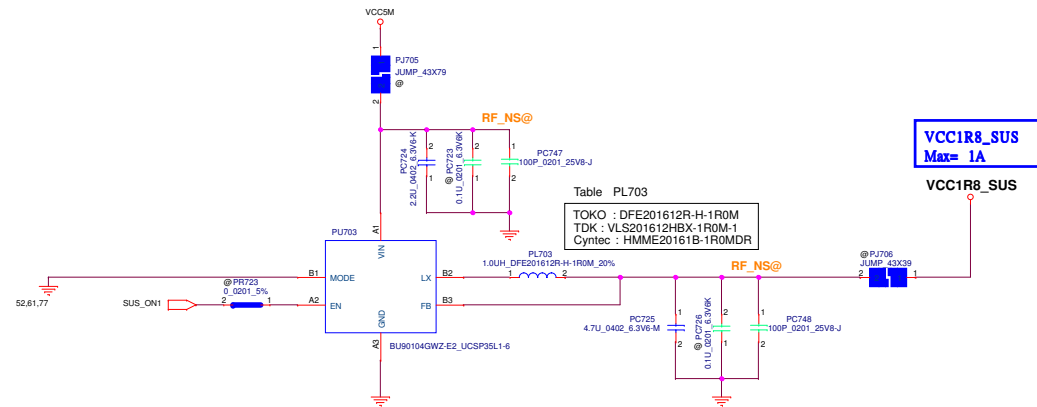
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				Date:	Friday, November 03, 2017	Sheet 76 of 86	





Component Name	EVT	FVT	SIT
PU302	ASM	ASM	NO_ASM
PC324	ASM	ASM	NO_ASM
PC323	NO_ASM	NO_ASM	NO_ASM
PC345	NO_ASM	NO_ASM	NO_ASM
PL302	ASM	ASM	NO_ASM
PC325	ASM	ASM	NO_ASM
PC326	NO_ASM	NO_ASM	NO_ASM
PC346	NO_ASM	NO_ASM	NO_ASM
PR315	ASM	ASM	NO_ASM
PJ302	ASM	ASM	NO_ASM
PJ303	ASM	ASM	NO_ASM



Security Classification		LC Future Center Secret Data		Title	
Issued Date		Deciphered Date		DC/DC VCC1R8_SUS(BU90104GWZ)	
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		Custom		Yoda-2	0.01
		Date:	Friday, November 03, 2017	Sheet	78 of 86

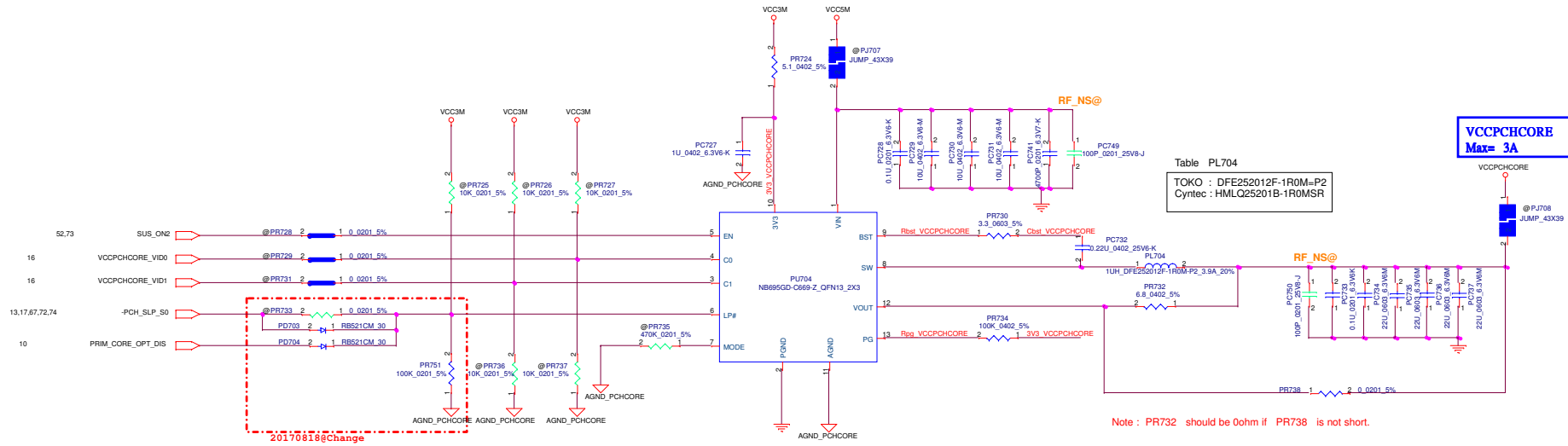
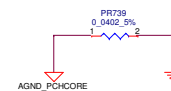


TABLE : NB695 MODE M2 (Float)


LP#	C1	C0	VOUT
0	X	X	0.700V
1	0	0	0.850V
1	0	1	0.900V
1	1	0	0.950V
1	1	1	1.000V

← SLP\_S0#


← DEFAULT



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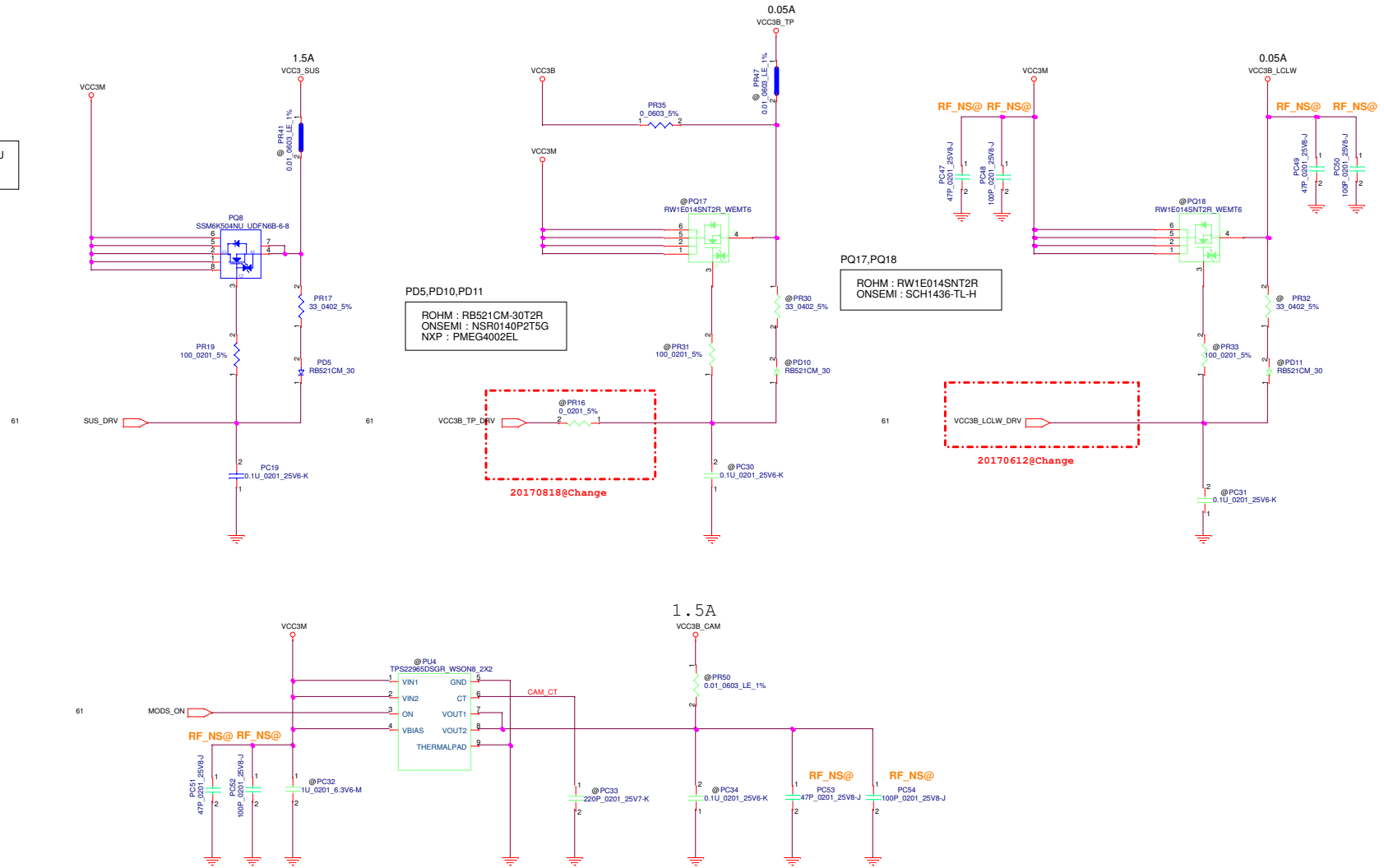
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				Date:	Friday, November 03, 2017	Sheet 80 of 86

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Issued Date		2014/07/01	Deciphered Date	2015/12/31	BLANK		
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					Custom	Yoda-2	0.01
					Date:	Friday, November 03, 2017	Sheet 81 of 86

PQ8

TOSHIBA : SSM6K504NU  
AOS : AON2420 1N DFN  
FAIRCHILD : FDMA8878

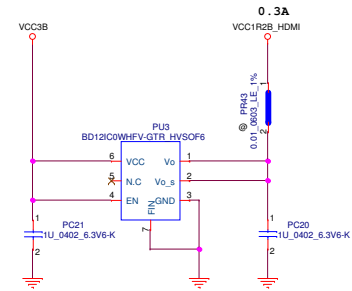
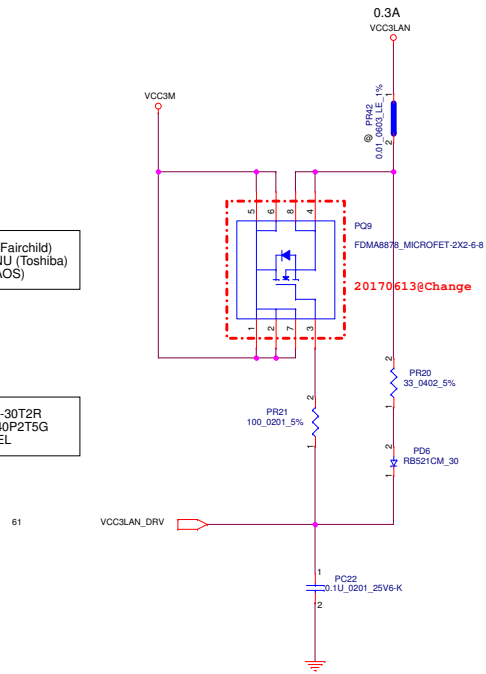


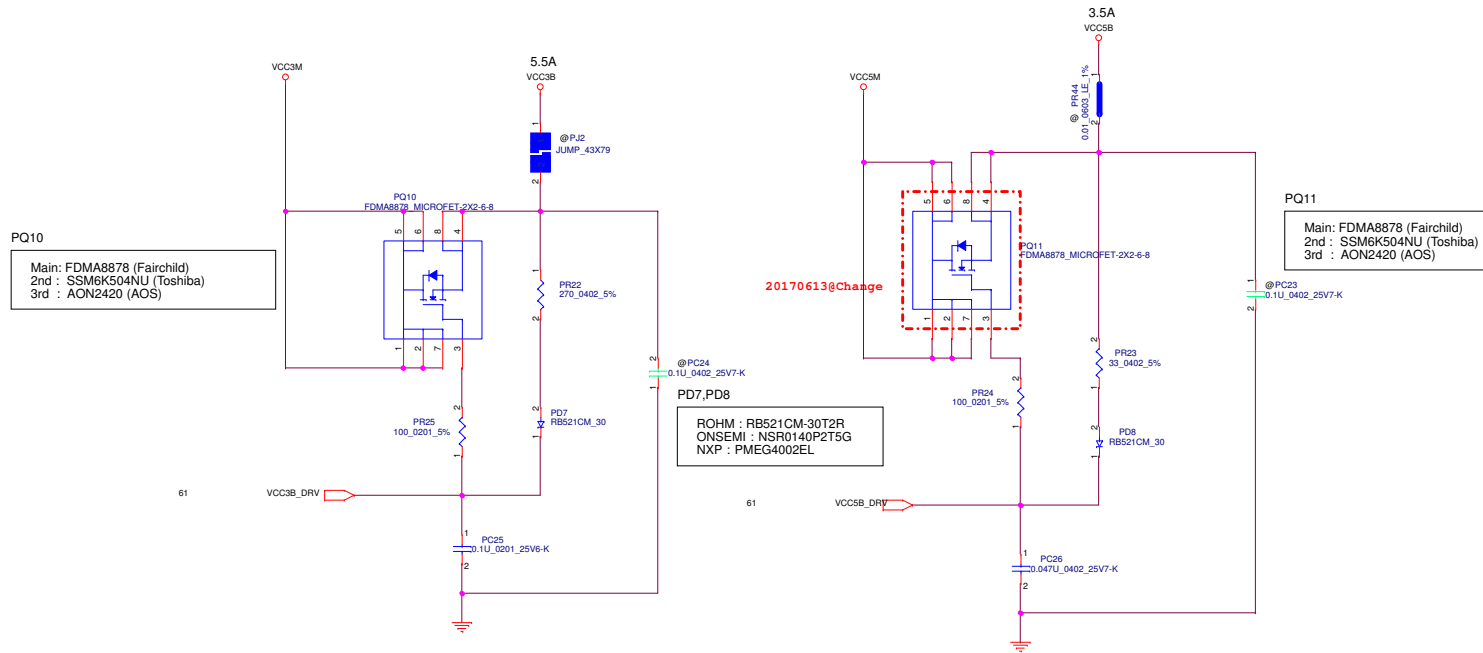
PQ9

Main: FDMA8878 (Fairchild)  
2nd : SSM6K504NU (Toshiba)  
3rd : AON2420 (AOS)

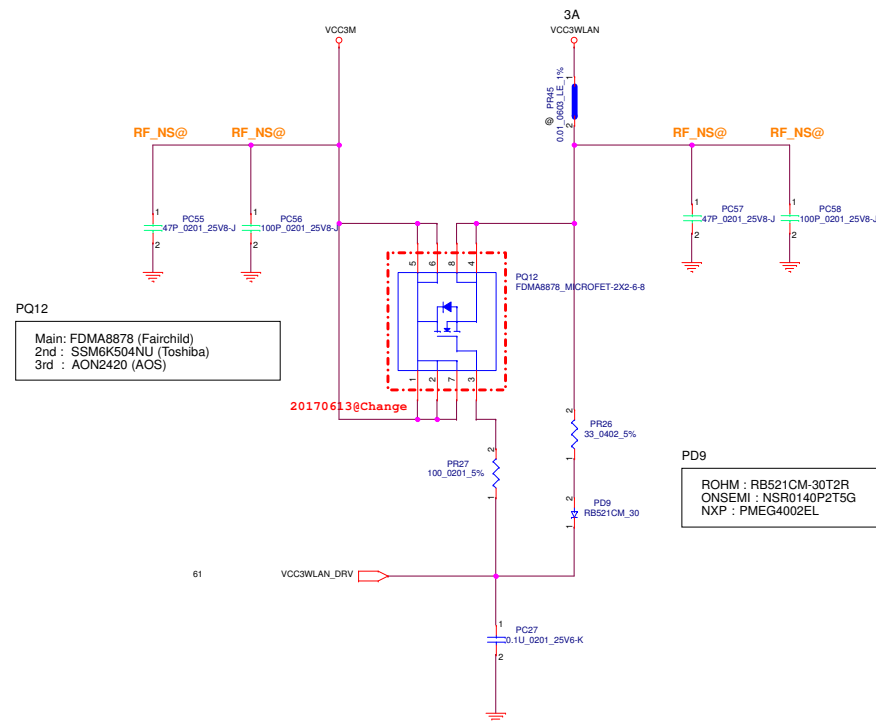
PD6

ROHM : RB521CM-30T2R  
ONSEMI : NSR0140P2T5G  
NXP : PMEG4002EL









PQ12

Main: FDMA8878 (Fairchild)  
2nd : SSM6K504NU (Toshiba)  
3rd : AON2420 (AOS)

PD9

ROHM : RB521CM-30T2R  
ONSEMI : NSR0140P2T5G  
NXP : PMEG4002EL

PTH FOR SCREW HOLE

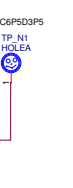
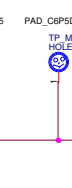
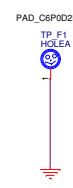
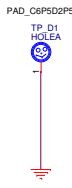
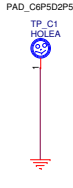
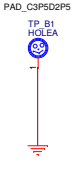
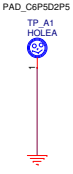
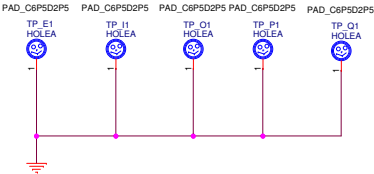
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		TOP	BOTTOM	
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TESTPIN_2P5_02	2.5	6.5	6.0	1
TESTPIN_2P5_03	2.5	6.0	6.0	1
TESTPIN_2P5_04	2.5	6.5	5.6	1
TESTPIN_2P5_05	2.5	6.5	sha	1
TESTPIN_2P5_06	2.5	6.5	shb	1
TESTPIN_3P5_01	3.5	6.5	6.5	4
STUD_3P3_01 (SM20L66621)	3.3	6.5	6.5	3

Need to Apply New PCBFootprint

Need to Apply New PCBFootprint

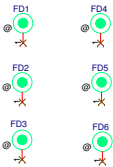
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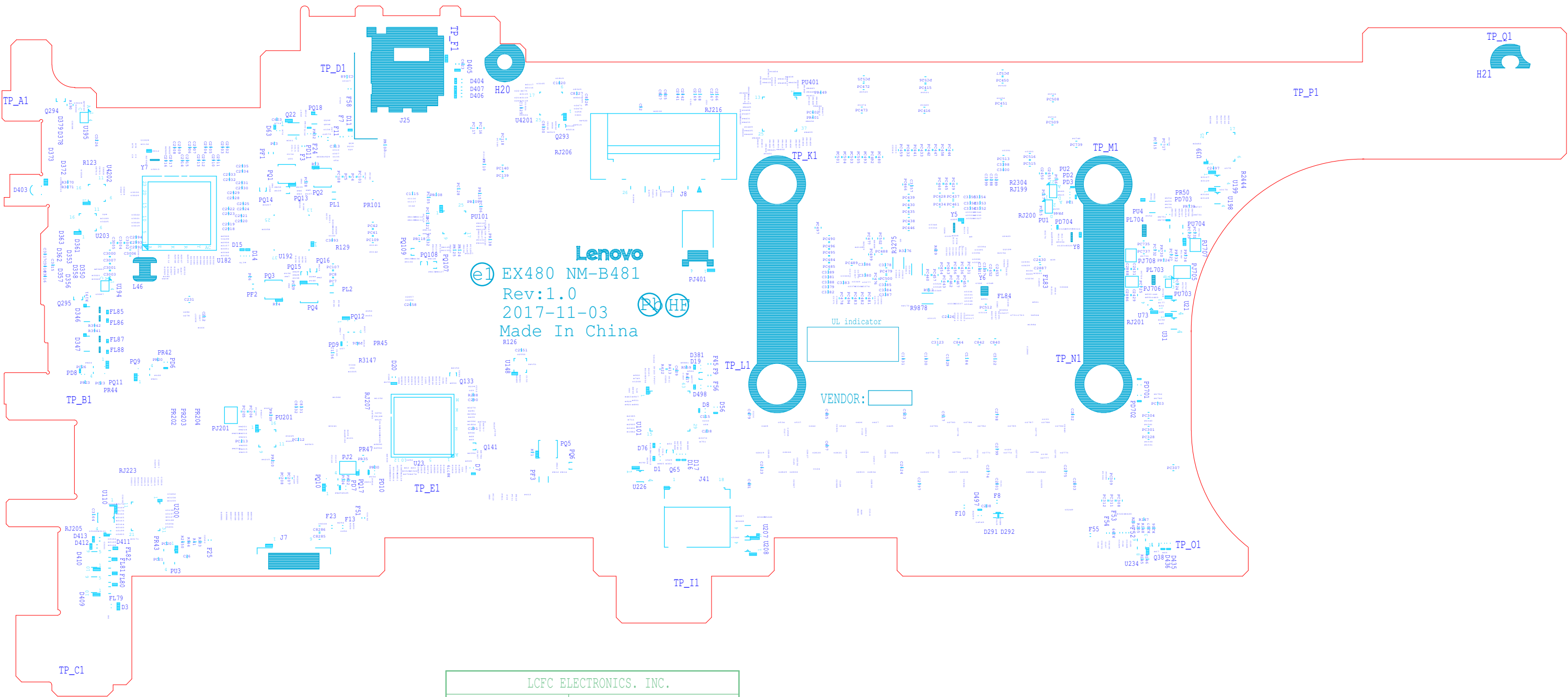
NPTH



FID  
Board Area

FID  
Component Area





LCFC ELECTRONICS. INC.	
PROJECT	EX480
BOARD NO.	NM-B481 REV:1.0
LAYER NO.	
DRAW BY	Ruby.Chen
Issued Date	2017-11-03
Security level	Confidential
Decipherment date	2018-11-03

