


WD-2 Logic Schematics

- 1.TITLE PAGE
- 2.EC HISTORY
- 3.CPU(1/16) : DDI/EDP
- 4.CPU(2/16) : DDR CHANNEL-A
- 5.CPU(3/16) : DDR CHANNEL-B
- 6.CPU(4/16) : MISC/JTAG
- 7.CPU(5/16) : LPC/SPI/SMBUS/C-LINK
- 8.CPU(6/16) : LPSS/ISH
- 9.CPU(7/16) : AUDIO/SDXC
- 10.CPU(8/16) : PCIE/USB/SATA
- 11.CPU(9/16) : CSI-2/EMMC
- 12.CPU(10/16) : CLOCK SIGNALS
- 13.CPU(11/16) : SYSTEM PM
- 14.CPU(12/16) : CPU POWER (1/2)
- 15.CPU(13/16) : CPU POWER (2/2)
- 16.CPU(14/16) : PCH POWER
- 17.CPU(15/16) : GND
- 18.CPU(16/16) : CFG/RESERVED
- 19.XDP CONNECTOR
- 20.RTC BATTERY
- 21.SPI FLASH
- 22.DDR4 SO DIMM CHANNEL-A (1/2)
- 23.DDR4 SO DIMM CHANNEL-A (2/2)
- 24.DDR4 SO DIMM CHANNEL-B (1/2)
- 25.DDR4 SO DIMM CHANNEL-B (2/2)
- 26.LCD/LID/MIC/CAMERA/PWR SW
- 27.BLANK
- 28.DDI DEMULTIPLEXER
- 29.USB TYPE-C SWITCH
- 30.BLANK
- 31.ALPIKE RIDGE (1/2)
- 32.ALPIKE RIDGE (2/2)
- 33.USB PD CONTROLLER(1/2)
- 34.USB PD CONTROLLER(1/2)
- 35.DOCKING CONNECTOR
- 36.USB TYPE-C CONNECTOR
- 37.HDMI CONNECTOR
- 38.STORAGE I/F REDRIVER
- 39.SATA EXPRESS CONNECTOR
- 40.USB POWER/CONN
- 41.GBE JACKSONVILLE
- 42.GBE LAN SWITCH
- 43.GBE MAGNETICS
- 44.RJ45 CONNECTOR
- 45.M.2 SOCKET 1 MODULE I/F
- 46.M.2 SOCKET 2 MODULE I/F
- 47.MEDIA CARD CONTROLLER
- 48.MEDIA CARD INTERFACE
- 49.AUDIO ALC3287-CG
- 50.AUDIO CONNECTOR
- 51.BLANK
- 52.AUDIO EXT MIC I/F
- 53.AUDIO SPEAKER
- 54.AUDIO BEEP
- 55.MEC1653(1/3)
- 56.MEC1653(2/3)
- 57.MEC1653(3/3)
- 58.KEYBOARD/TRACK POINT
- 59.TOUCH PAD/NFC/FPR/SCR
- 60.BLANK
- 61.FAN CONNECTOR
- 62.APS G-SENSOR
- 63.DISCRETE TPM 2.0
- 64.SMBUS SWITCH/LPC DEBUG PORT
- 65.THINK ENGINE-2(1/2)
- 66.THINK ENGINE-2(2/2)
- 67.DC-IN
- 68.BATTERY INPUT
- 69.BATTERY CHARGER(BQ25700A)
- 70.CHARGER SELECTOR
- 71.DC/DC VCC5M/VCC3M (TPS71285B-1)
- 72.DC/DC IMVP8 (NCP81218)
- 73.DC/DC CPUCORE(NCP302035)
- 74.DC/DC VCCGFXCORE_I(NCP302035)
- 75.DC/DC VCCSA(NCP302035)
- 76.BLANK
- 77.BLANK
- 78.DC/DC VCC1R0_SUS(TPS51367RV)
- 79.LOAD SW VCCST & VCCSTG
- 80.DC/DC VCC1R2A/0R6B/2R5A(NB687)
- 81.BLANK
- 82.BLANK
- 83.DC/DC VCC1R8_SUS(BU90104GWZ)
- 84.BLANK
- 85.BLANK
- 86.BLANK
- 87.LOAD SW PCH SUS/TRACK POINT
- 88.LOAD SW LAN
- 89.LOAD SW B
- 90.LOAD SW WWAN & WLAN
- 91.SCREW
- 92.N17S-G1 (1/6) : PEG I/F
- 93.N17S-G1 (2/6) : VRAM I/F
- 94.N17S-G1 (3/6) : POWER 1
- 95.N17S-G1 (4/6) : POWER 2
- 96.N17S-G1 (5/6) : GND
- 97.N17S-G1 (6/6) : GPIO / XTAL
- 98.VRAM CHANNEL-A
- 99.MEMORY TERMINATION
- 100.DC/DC VCC1R0VIDEO(BD9B304QWZ)
- 101.DC/DC VCCGFXCORE_D(NCP81278T)
- 102.DC/DC VCC1R35VIDEO(NB693)
- 103.DC/DC VCC1R8VIDEO_AON(BD9B304QWZ)
- 104.LOAD SW VIDEO



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Issued Date	2015/11/02	Deciphered Date	2015/6/10	
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Windu Block Diagram

Project Code: ET480

2017 Feb ' 20

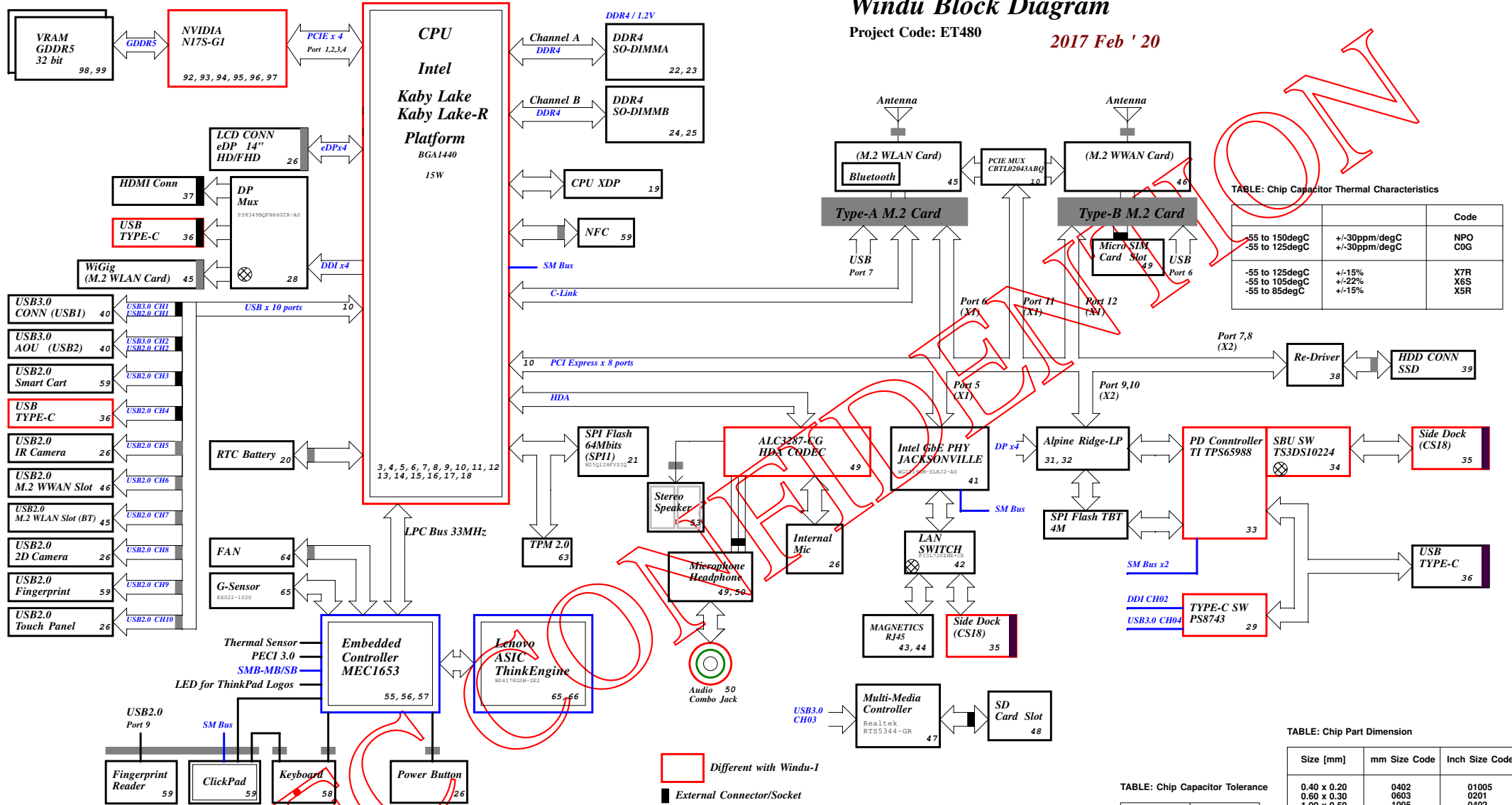


TABLE: Chip Capacitor Thermal Characteristics

Code	Temperature Range	Capacitance Change
NPO	-55 to 150degC	+/-30ppm/degC
COG	-55 to 125degC	+/-30ppm/degC
X7R	-55 to 125degC	+/-15%
X6S	-55 to 105degC	+/-22%
X5R	-55 to 85degC	+/-15%

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	1812
4.50 x 3.20	4532	1806
5.00 x 2.50	5025	2010
6.40 x 3.20	6432	2512

TABLE: Chip Capacitor Tolerance

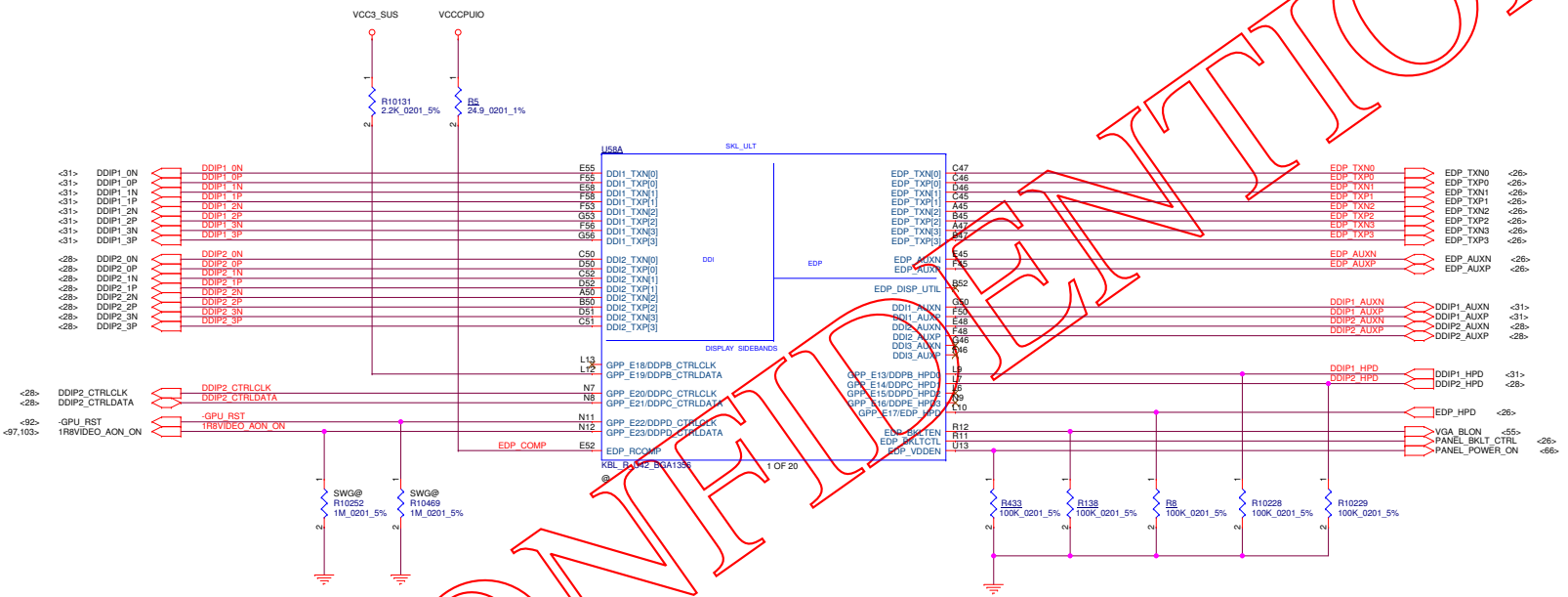
Tolerance	Code
+/-0.25pF	C
+/-0.5pF	D
+/-5%	J
+/-10%	K
+/-20%	M
+80/-20%	Z

- Different with Windu-1
- External Connector/Socket
- Internal Connector/Socket
- Internal Switch

LOCH

TABLE : Functional Strap

DDPB_CTRLDATA	
HIGH	Port B is detected.
LOW	Port B is not detected.
DDPC_CTRLDATA	
HIGH	Port C is detected.
LOW	Port C is not detected.



LCFC

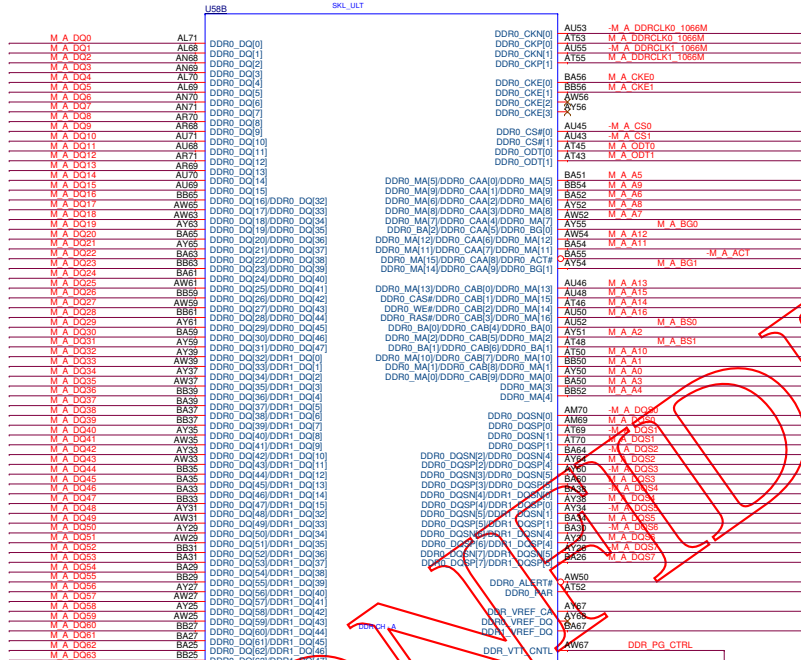
PCB	KabyLake (MP)			KabyLake-R (MP)			
ZZZZ	USB	USB	USB	USB	USB	USB	USB
NM-B501 REV1	i3-7130U non-vPro	i5-7300U vPro	i5-7200U non-vPro	i5-8350U vPRO	i7-8650U vPRO	i5-8250U non-vPRO	i7-8550U non-vPRO
DAZ1600J100	SA00008LM20	SA00008M10	SA000080320	SA00008J10	SA00008J10	SA00008J20	SA00008J20
SVT@	ISNV@	ISV@	ISNV@	RISV@	R7V@	RSNV@	R7NV@

Security Classification	LC Future Center Secret Data		Title	 CPU(1/16) : DDI/EDP
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<22> M_A_DQ[63:0]

TABLE

	Pin	Interleave	Non-Interleave
Block 0	AL71	DDR0_DQ[0]	DDR0_DQ[0]
	AL68	DDR0_DQ[1]	DDR0_DQ[1]
	AN68	DDR0_DQ[2]	DDR0_DQ[2]
	AN69	DDR0_DQ[3]	DDR0_DQ[3]
	AL70	DDR0_DQ[4]	DDR0_DQ[4]
	AL69	DDR0_DQ[5]	DDR0_DQ[5]
	AN70	DDR0_DQ[6]	DDR0_DQ[6]
	AN71	DDR0_DQ[7]	DDR0_DQ[7]
	AR70	DDR0_DQ[8]	DDR0_DQ[8]
	AR68	DDR0_DQ[9]	DDR0_DQ[9]
	AU71	DDR0_DQ[10]	DDR0_DQ[10]
	AU68	DDR0_DQ[11]	DDR0_DQ[11]
	AR71	DDR0_DQ[12]	DDR0_DQ[12]
	AR69	DDR0_DQ[13]	DDR0_DQ[13]
AU70	DDR0_DQ[14]	DDR0_DQ[14]	
AU69	DDR0_DQ[15]	DDR0_DQ[15]	
Block 2	BB65	DDR0_DQ[16]	DDR0_DQ[32]
	AW65	DDR0_DQ[17]	DDR0_DQ[33]
	AW63	DDR0_DQ[18]	DDR0_DQ[34]
	AY63	DDR0_DQ[19]	DDR0_DQ[35]
	BA65	DDR0_DQ[20]	DDR0_DQ[36]
	AY65	DDR0_DQ[21]	DDR0_DQ[37]
	BA63	DDR0_DQ[22]	DDR0_DQ[38]
	BB63	DDR0_DQ[23]	DDR0_DQ[39]
	BA61	DDR0_DQ[24]	DDR0_DQ[40]
	BB59	DDR0_DQ[25]	DDR0_DQ[41]
	AW59	DDR0_DQ[26]	DDR0_DQ[42]
	BB61	DDR0_DQ[27]	DDR0_DQ[43]
	AY61	DDR0_DQ[28]	DDR0_DQ[44]
	BA59	DDR0_DQ[29]	DDR0_DQ[45]
AY59	DDR0_DQ[30]	DDR0_DQ[46]	
	DDR0_DQ[31]	DDR0_DQ[47]	
Block 4	AY39	DDR0_DQ[32]	DDR1_DQ[0]
	AW39	DDR0_DQ[33]	DDR1_DQ[1]
	AY37	DDR0_DQ[34]	DDR1_DQ[2]
	BB39	DDR0_DQ[35]	DDR1_DQ[3]
	BA39	DDR0_DQ[36]	DDR1_DQ[4]
	BA37	DDR0_DQ[37]	DDR1_DQ[5]
	BB37	DDR0_DQ[38]	DDR1_DQ[6]
	AY35	DDR0_DQ[39]	DDR1_DQ[7]
	AW35	DDR0_DQ[40]	DDR1_DQ[8]
	AY33	DDR0_DQ[41]	DDR1_DQ[9]
	BB33	DDR0_DQ[42]	DDR1_DQ[10]
	BA35	DDR0_DQ[43]	DDR1_DQ[11]
	BA35	DDR0_DQ[44]	DDR1_DQ[12]
	BA33	DDR0_DQ[45]	DDR1_DQ[13]
BB33	DDR0_DQ[46]	DDR1_DQ[14]	
	DDR0_DQ[47]	DDR1_DQ[15]	
Block 6	AY31	DDR0_DQ[48]	DDR1_DQ[32]
	AW31	DDR0_DQ[49]	DDR1_DQ[33]
	AY29	DDR0_DQ[50]	DDR1_DQ[34]
	AW29	DDR0_DQ[51]	DDR1_DQ[35]
	BB31	DDR0_DQ[52]	DDR1_DQ[36]
	BA31	DDR0_DQ[53]	DDR1_DQ[37]
	BA29	DDR0_DQ[54]	DDR1_DQ[38]
	BB29	DDR0_DQ[55]	DDR1_DQ[39]
	AY27	DDR0_DQ[56]	DDR1_DQ[40]
	AW27	DDR0_DQ[57]	DDR1_DQ[41]
	AW25	DDR0_DQ[58]	DDR1_DQ[42]
	BB27	DDR0_DQ[59]	DDR1_DQ[43]
	BA27	DDR0_DQ[60]	DDR1_DQ[44]
	BA25	DDR0_DQ[61]	DDR1_DQ[45]
BB25	DDR0_DQ[62]	DDR1_DQ[46]	
	DDR0_DQ[63]	DDR1_DQ[47]	



TABLE

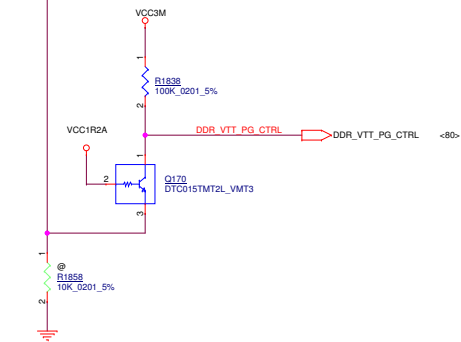
Pin	DDR3L	LPDDR3	DDR4
BA51	DDR0_MA[5]	DDR0_CAA[0]	DDR0_MA[5]
BB54	DDR0_MA[9]	DDR0_CAA[1]	DDR0_MA[9]
BA52	DDR0_MA[6]	DDR0_CAA[2]	DDR0_MA[6]
AY52	DDR0_MA[8]	DDR0_CAA[3]	DDR0_MA[8]
AW52	DDR0_MA[7]	DDR0_CAA[4]	DDR0_MA[7]
AY55	DDR0_BA[2]	DDR0_CAA[5]	DDR0_BG[0]
AW54	DDR0_MA[12]	DDR0_CAA[6]	DDR0_MA[12]
BA54	DDR0_MA[11]	DDR0_CAA[7]	DDR0_MA[11]
BA55	DDR0_MA[15]	DDR0_CAA[8]	DDR0_ACT#
AY54	DDR0_MA[14]	DDR0_CAA[9]	DDR0_BG[1]
AU46	DDR0_MA[13]	DDR0_CAB[0]	DDR0_MA[13]
AU48	DDR0_CAS#	DDR0_CAB[1]	DDR0_MA[15]
AT46	DDR0_WES#	DDR0_CAB[2]	DDR0_MA[14]
AU50	DDR0_RAS#	DDR0_CAB[3]	DDR0_MA[16]
AY52	DDR0_BA[0]	DDR0_CAB[4]	DDR0_BA[0]
AY51	DDR0_BA[2]	DDR0_CAB[5]	DDR0_BA[2]
AT48	DDR0_BA[1]	DDR0_CAB[6]	DDR0_BA[1]
AT50	DDR0_MA[10]	DDR0_CAB[7]	DDR0_MA[10]
BB50	DDR0_MA[11]	DDR0_CAB[8]	DDR0_MA[11]
AY50	DDR0_MA[0]	DDR0_CAB[9]	DDR0_MA[0]
BB50	DDR0_MA[3]	Not Used	DDR0_MA[3]
BB52	DDR0_MA[4]	Not Used	DDR0_MA[4]

LOGIC

TABLE

	Pin	Interleave	Non-Interleave
Block 0	AM70	DDR0_DQSN[0]	DDR0_DQSN[0]
	AM69	DDR0_DQSP[0]	DDR0_DQSP[0]
	AT69	DDR0_DQSN[1]	DDR0_DQSN[1]
Block 2	BA64	DDR0_DQSN[2]	DDR0_DQSN[4]
	AY64	DDR0_DQSP[2]	DDR0_DQSP[4]
	AY60	DDR0_DQSN[3]	DDR0_DQSN[5]
	BA60	DDR0_DQSP[3]	DDR0_DQSP[5]
Block 4	BA38	DDR0_DQSN[4]	DDR1_DQSN[0]
	AY38	DDR0_DQSP[4]	DDR1_DQSP[0]
	AY34	DDR0_DQSN[5]	DDR1_DQSN[1]
	BA34	DDR0_DQSP[5]	DDR1_DQSP[1]
Block 6	BA30	DDR0_DQSN[6]	DDR1_DQSN[4]
	AY30	DDR0_DQSP[6]	DDR1_DQSP[4]
	AY26	DDR0_DQSN[7]	DDR1_DQSN[5]
	BA26	DDR0_DQSP[7]	DDR1_DQSP[5]

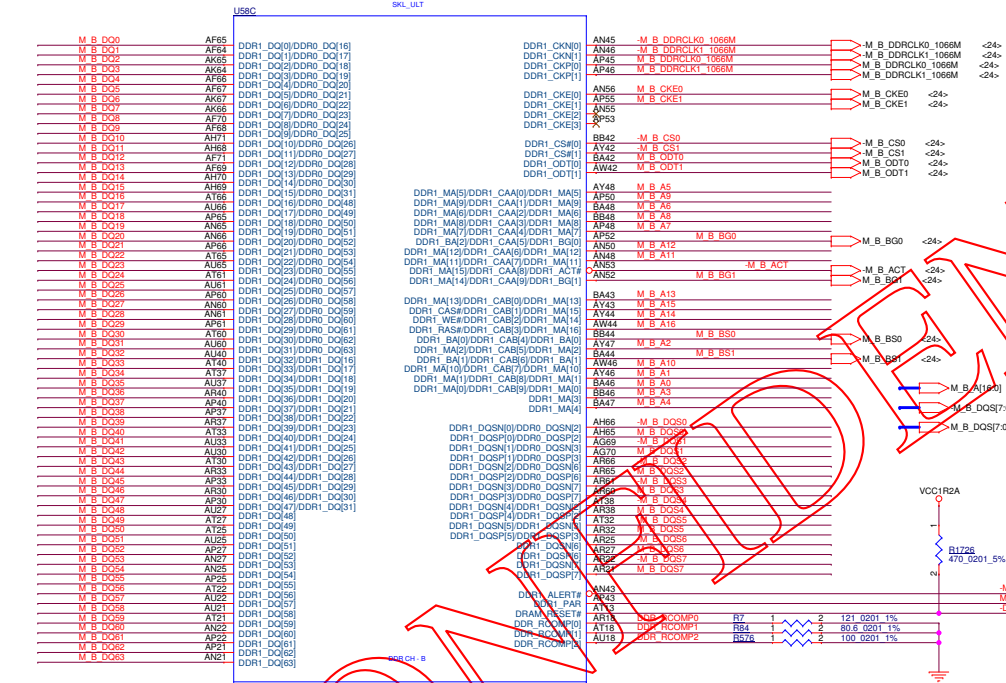
LOGIC



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]
	AK67	DDR1_DQ[6]	DDR0_DQ[22]
	AK66	DDR1_DQ[7]	DDR0_DQ[23]
	AF70	DDR1_DQ[8]	DDR0_DQ[24]
	AF68	DDR1_DQ[9]	DDR0_DQ[25]
	AH71	DDR1_DQ[10]	DDR0_DQ[26]
	AH68	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]
	AU61	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]
	AR40	DDR1_DQ[36]	DDR1_DQ[20]
	AP40	DDR1_DQ[37]	DDR1_DQ[21]
	AP37	DDR1_DQ[38]	DDR1_DQ[22]
	AR37	DDR1_DQ[39]	DDR1_DQ[23]
	AT33	DDR1_DQ[40]	DDR1_DQ[24]
	AU33	DDR1_DQ[41]	DDR1_DQ[25]
	AU30	DDR1_DQ[42]	DDR1_DQ[26]
	AT30	DDR1_DQ[43]	DDR1_DQ[27]
	AR33	DDR1_DQ[44]	DDR1_DQ[28]
	AP30	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]	

<24> M_B_DQ[63:0]



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]

TABLE

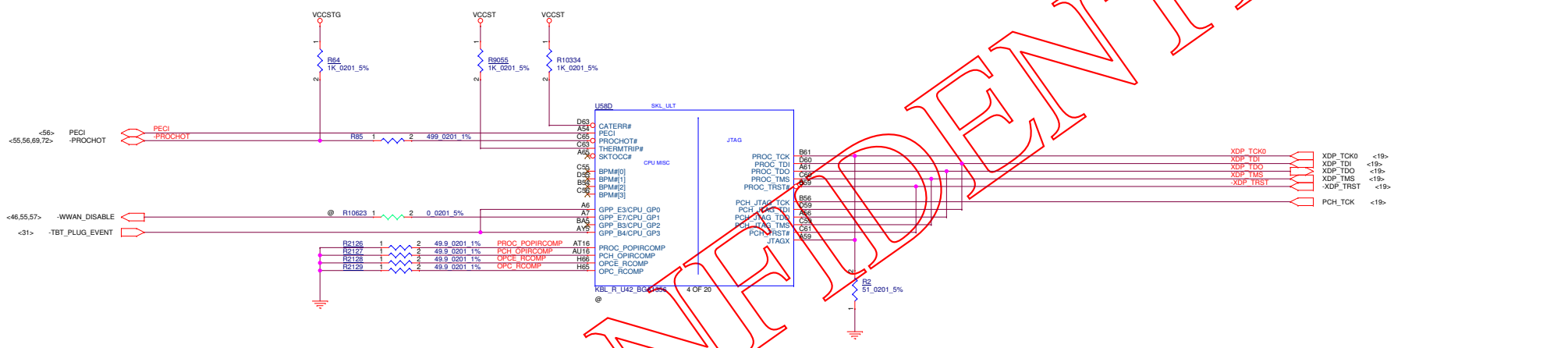
Pin	DDR3L	LPDDR3	DDR4
AY48	DDR1_MA[5]	DDR1_CAA[0]	DDR1_MA[5]
AP50	DDR1_MA[9]	DDR1_CAA[1]	DDR1_MA[9]
BA48	DDR1_MA[6]	DDR1_CAA[2]	DDR1_MA[6]
AP48	DDR1_MA[7]	DDR1_CAA[3]	DDR1_MA[7]
AP52	DDR1_BA[2]	DDR1_CAA[5]	DDR1_BG[0]
AN50	DDR1_MA[12]	DDR1_CAA[6]	DDR1_MA[12]
AN48	DDR1_CAA[11]	DDR1_CAA[7]	DDR1_MA[11]
AN53	DDR1_CAA[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]
AY44	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]
AY46	DDR1_BA[10]	DDR1_CAB[7]	DDR1_MA[10]
BA46	DDR1_MA[1]	DDR1_CAB[8]	DDR1_MA[1]
BB46	DDR1_MA[0]	DDR1_CAB[9]	DDR1_MA[0]
BA47	DDR1_MA[3]	Not Used	DDR1_MA[3]
BA47	DDR1_MA[4]	Not Used	DDR1_MA[4]

LOGIC

LOGIC

LOGIC

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Security Classification	LC Future Center Secret Data		Title	 CPU(4/16) : MISC/JTAG
Issued Date	2015/11/02	Deciphered Date	2015/8/10	
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Size	Document Number	Rev	 0.1	
Custom	C		Date: Thursday, November 05, 2017 Sheet 6 of 104	

TABLE : Functional Strap

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

TABLE : Functional Strap

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

TABLE : Functional Strap

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

TABLE : Functional Strap

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

TABLE : Functional Strap

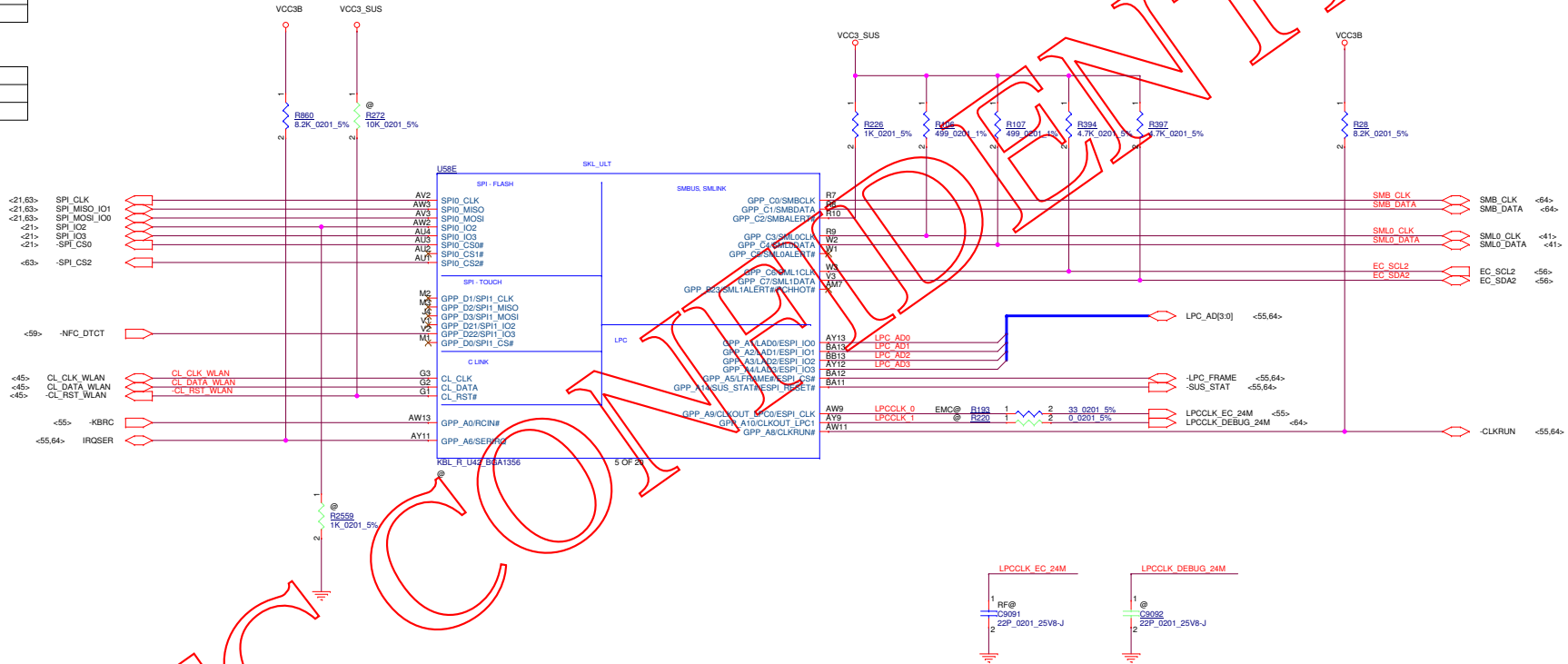
GPP_C5/SMBALERT# (LPC or eSPI)	
HIGH	eSPI is selected
LOW	LPC is selected (Default)

← LOGIC

TABLE : Functional Strap

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

← LOGIC



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TABLE : Functional Strap

GPP_B22/GSP11_MOSI (Boot BIOS Destination)	
HIGH	Boot BIOS from LPC
LOW	Boot BIOS from SPI (Default)

← LOGIC

TABLE : Functional Strap

GPP_B18/GSP10_MOSI (No Reboot)	
HIGH	Enable "No Reboot" Mode
LOW	Disable "No Reboot" Mode (Default)

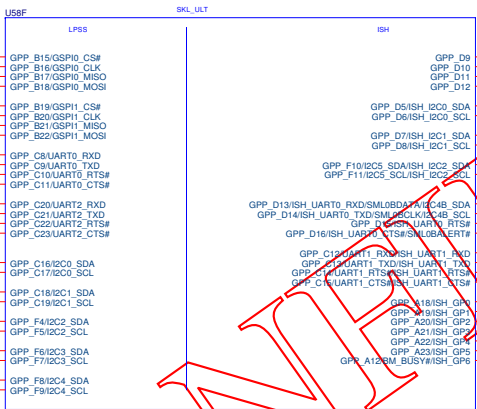


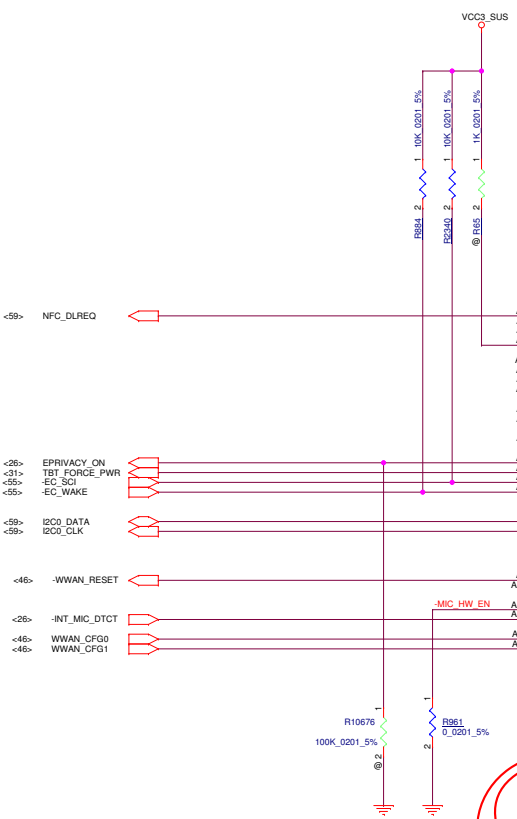
TABLE : --DISCRETE_PRESENCE

Model	R10126
SWG	ASM
UMA	NO ASM

TABLE : DGFY_VRAM_ID

DFX_VRAM_ID [1..0]	
00B	1GB
01B	2GB
10B	4GB
11B	N/A

← LOGIC



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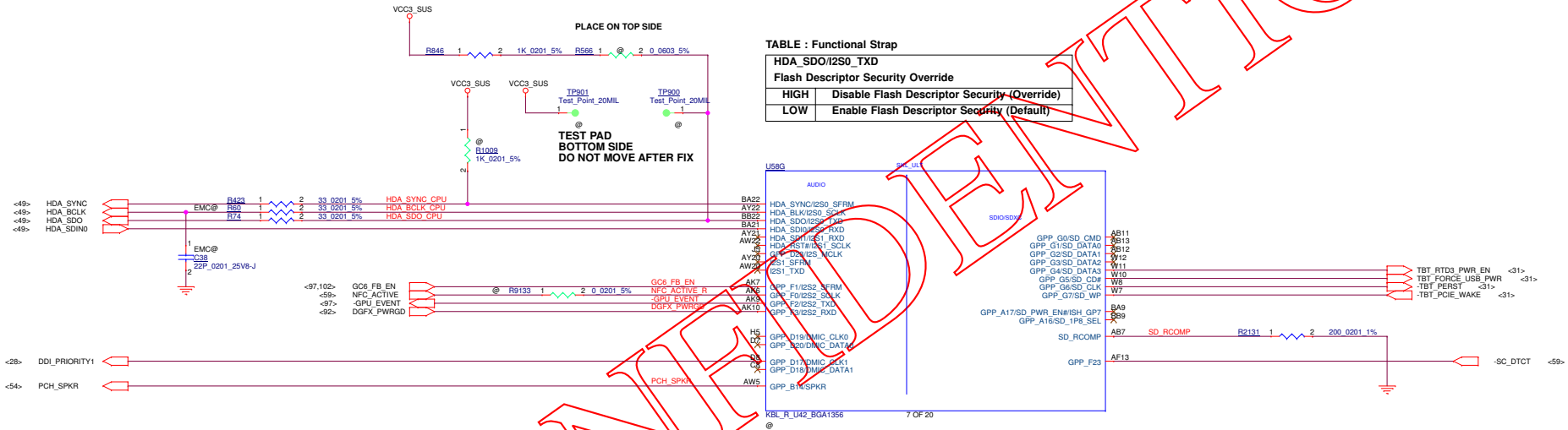


TABLE : Functional Strap

HDA_SDO/I2SO_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

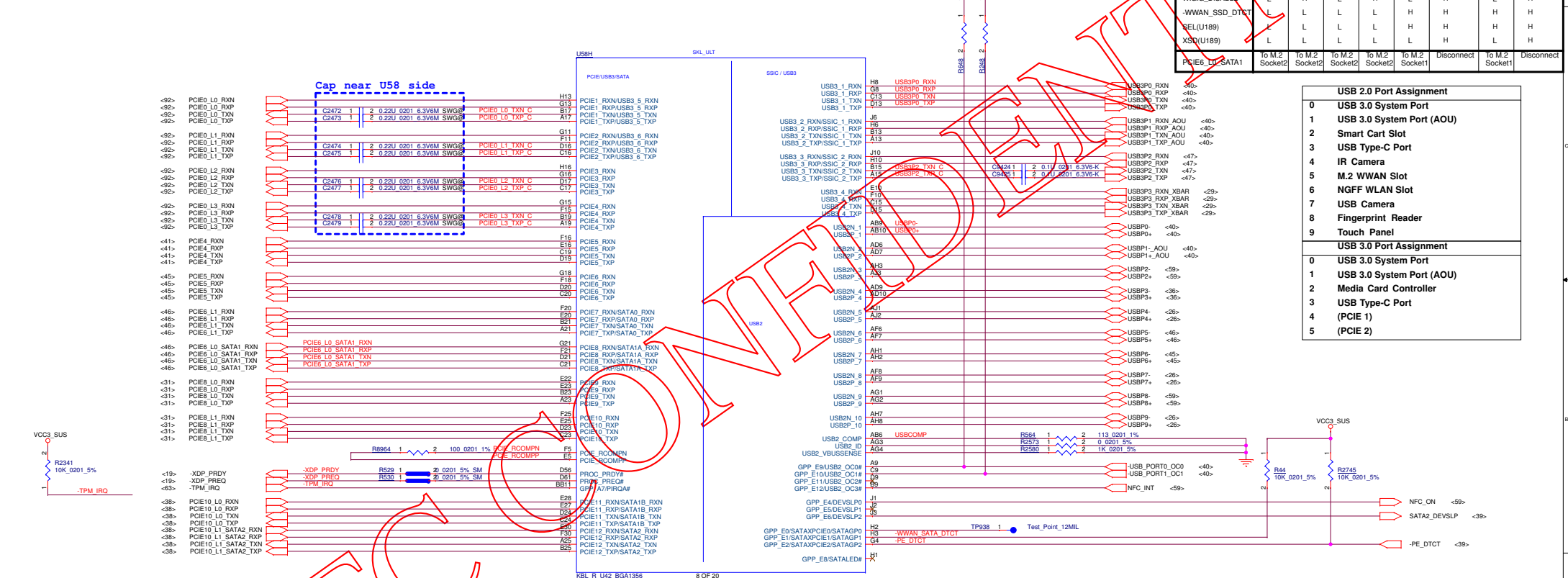
Flexible I/O Configuration			
I/O	High Speed Signals	Configuration	Net Name
Port 1	USB3 1	USB3 1	USB3P0
Port 2	USB3 2/SSIC	USB3 2	USB3P1
Port 3	USB3 3	USB3 3	USB3P2
Port 4	USB3 4	USB3 4	USB3P3
Port 5	USB3 5/PCIE 1	PCIE 1 (x4)	PCIE0
Port 6	USB3 6/PCIE 2	PCIE 2 (x4)	PCIE0
Port 7	PCIE 3 (GbE)	PCIE 3 (x4)	PCIE0
Port 8	PCIE 4 (GbE)	PCIE 4 (x4)	PCIE0
Port 9	PCIE 5 (GbE)	PCIE 5 (GbE)	PCIE4
Port 10	PCIE 6	PCIE 6	PCIE5
Port 11	PCIE 7/SATA 0	PCIE 7 (x2)	PCIE6_L1
Port 12	PCIE 8/SATA 1A	GPIO STRAP	PCIE6_L0_SATA1
Port 13	PCIE 9 (GbE)	PCIE 9 (x2)	PCIE8_L0
Port 14	PCIE 10 (GbE)	PCIE 9 (x2)	PCIE8_L1
Port 15	PCIE 11/SATA 1B	PCIE 11 (x2)	PCIE10_L0
Port 16	PCIE 12/SATA 2	GPIO STRAP	PCIE10_L1_SATA2

PCIe Port Assignment		SATA Port Assignment	
0 (x4)	Discrete GPU	0	(PCIe 7)
4	GbE PHY	1A	SATA SSD on WWAN slot
5	M.2 WLAN Slot Port 0	1B	(PCIe 11)
6 (x2)	Optane x2 (M.2 WWAN Slot)	2	SATA SSD Main Storage
8 (x2)	Alpine Ridge-LP		
10 (x2)	Main Storage x 2		

	WWAN Slot							
	Optane		SATA Cache		WWAN Card		None	
WLAN_DISABLE	L	H	L	H	L	H	L	H
WWAN_SSD_DTCT	L	L	L	L	L	H	H	H
REL(U189)	L	L	L	L	L	H	H	H
XSD(U189)	L	L	L	L	L	H	H	H
PCIE6_L0_SATA1	To M.2 Socket2	To M.2 Socket2	To M.2 Socket2	To M.2 Socket2	To M.2 Socket1	Disconnect	To M.2 Socket1	Disconnect

USB 2.0 Port Assignment	
0	USB 3.0 System Port
1	USB 3.0 System Port (AOU)
2	Smart Card Slot
3	USB Type-C Port
4	IR Camera
5	M.2 WWAN Slot
6	NGFF WLAN Slot
7	USB Camera
8	Fingerprint Reader
9	Touch Panel

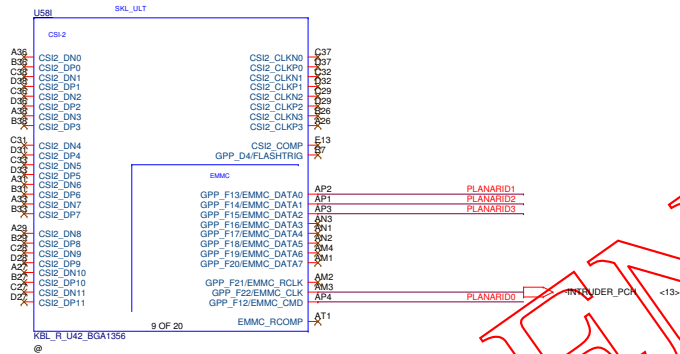
USB 3.0 Port Assignment	
0	USB 3.0 System Port
1	USB 3.0 System Port (AOU)
2	Media Card Controller
3	USB Type-C Port
4	(PCIe 1)
5	(PCIe 2)



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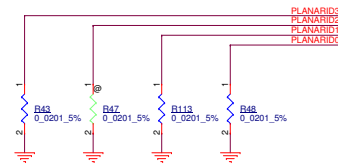


TABLE

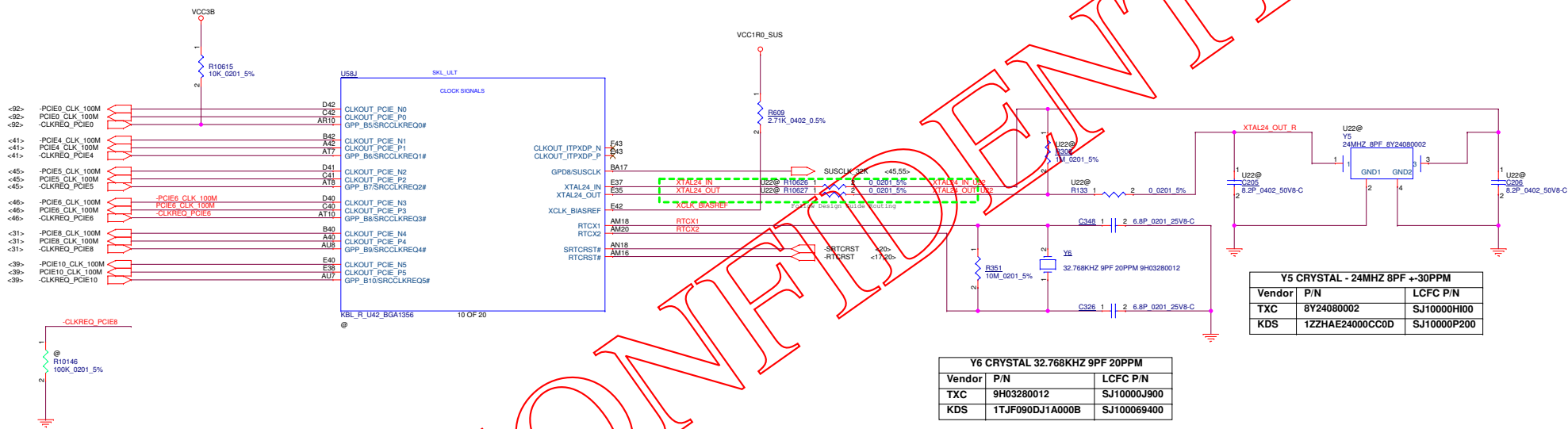
LEVEL	PLANAR ID			
	3	2	1	0
	R43	R47	R113	R48
1	NA	NA	NA	NA
0	ASM	ASM	ASM	ASM

TABLE

LEVEL	PLANARID[3..0]
SDV	0000B
FVT	0001B
SIT	0010B
SIT	1010B(For RTD3 rework)
SIT-R	0011B
SVT	0100B



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Y5 CRYSTAL - 24MHZ 8PF ±30PPM		
Vendor	P/N	LCFC P/N
TXC	8Y24080002	SJ10000HI00
KDS	1ZZHAE24000CC0D	SJ10000P200

Y6 CRYSTAL 32.768KHZ 9PF 20PPM		
Vendor	P/N	LCFC P/N
TXC	9H03280012	SJ10000J900
KDS	1TJF090DJ1A000B	SJ100069400

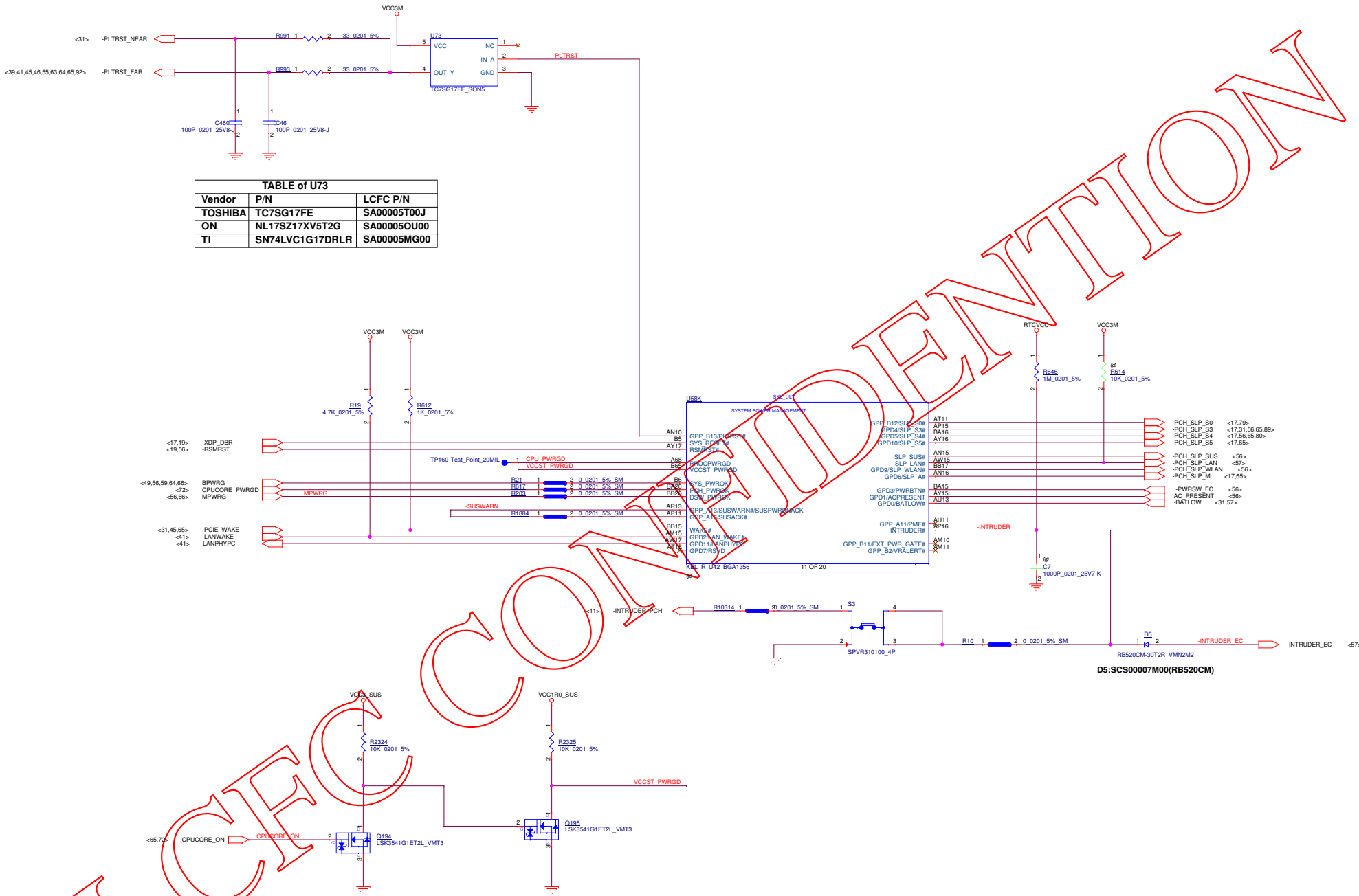


TABLE of U73

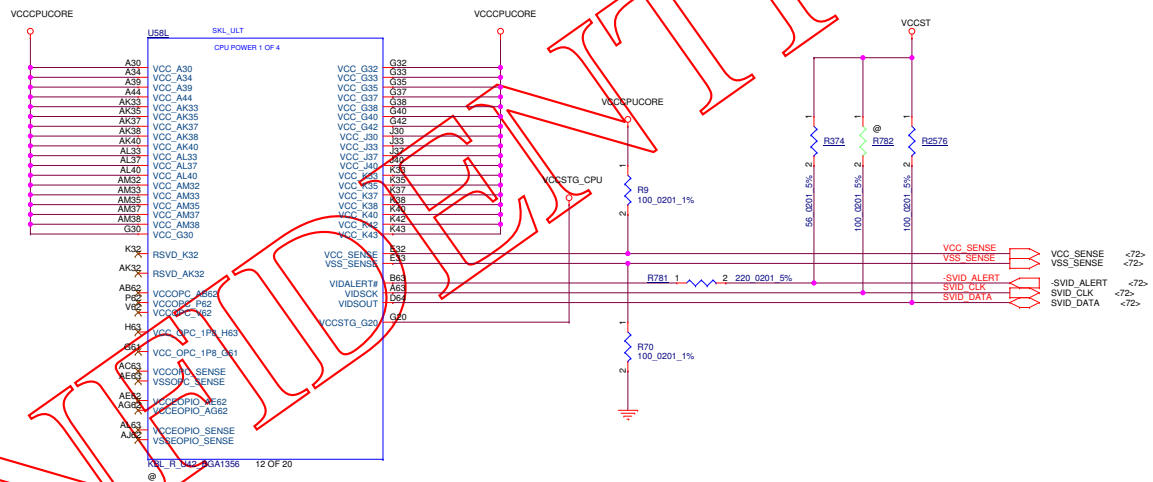
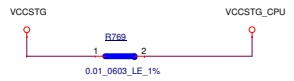
Vendor	P/N	LCFC P/N
TOSHIBA	TC7SG17FE	SA00005T00J
ON	NL17SZ17XV5T2G	SA00005OU00
TI	SN74LVC1G17DRLR	SA00005MG00


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Custom	C	Windu-2	
Date:	Thursday, November 05, 2017	Sheet	13 of 104

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Size	Document Number	Rev		0.1	
Custom	C	Windu-2			
Date:	Thursday, November 05, 2017	Sheet	14	of	104

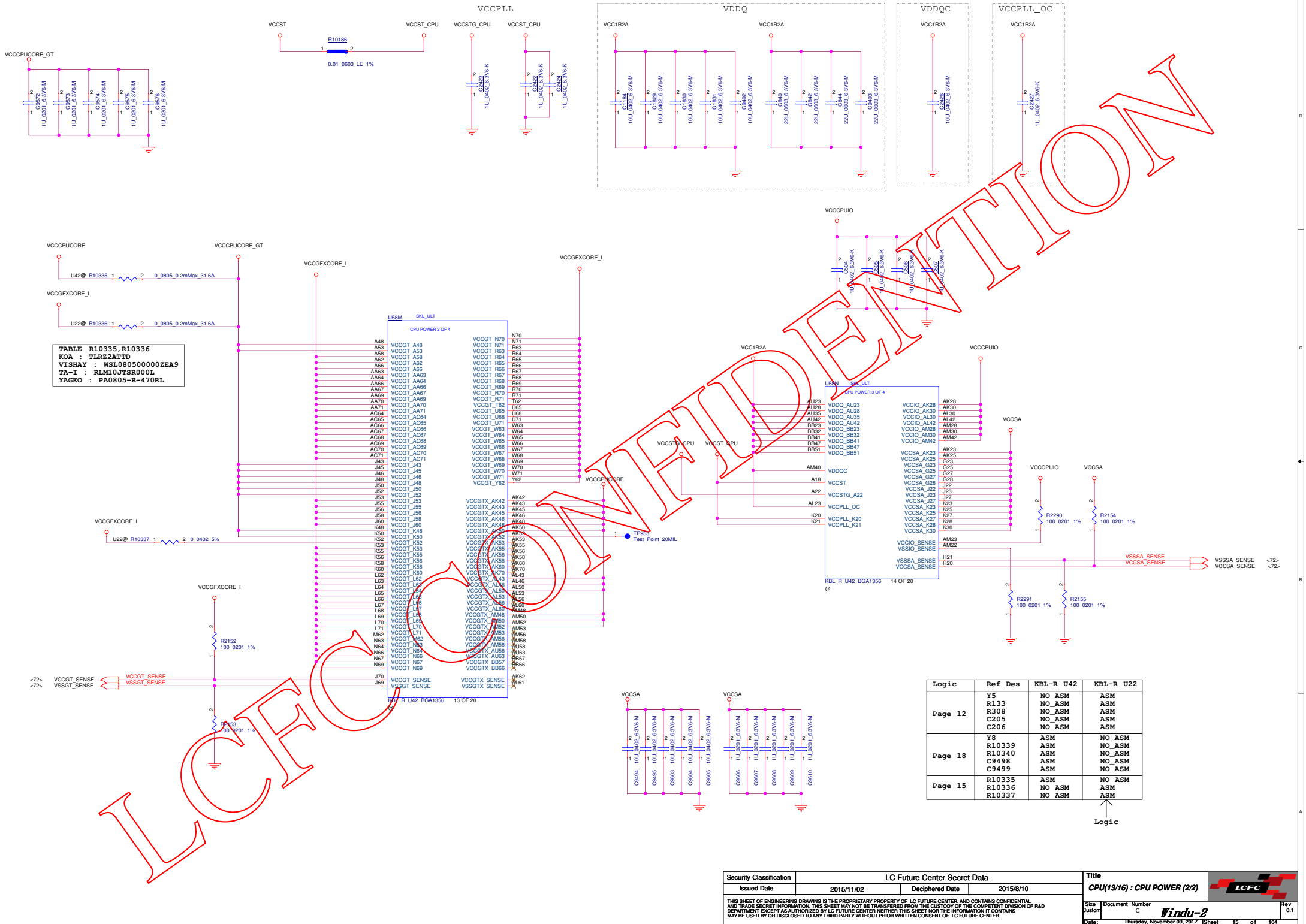
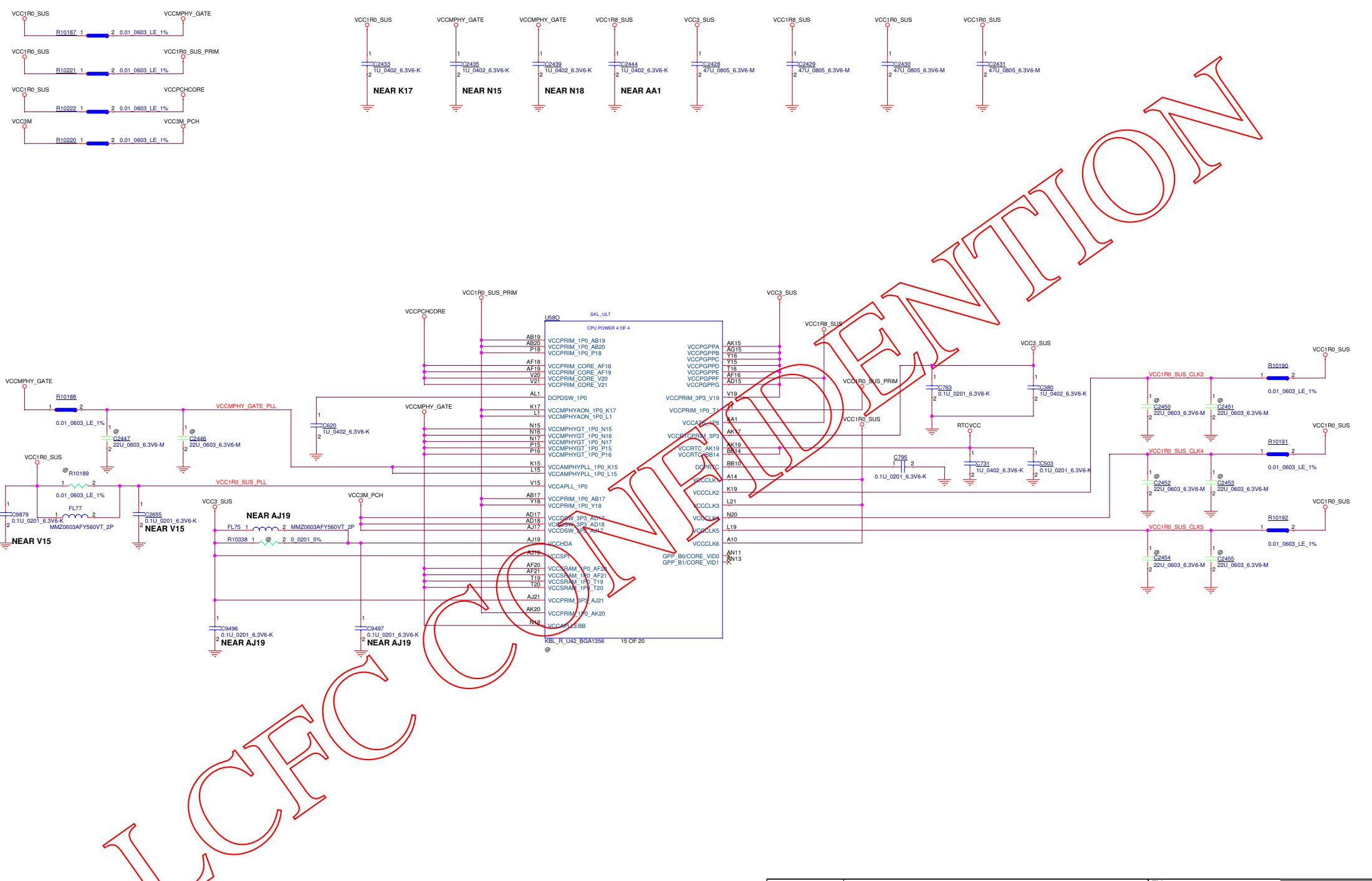


TABLE R10335, R10336
KOA : TLRZ2ATTD
VISHAY : WSL080500000ZE9
TA-1 : RLMI0JTSR000L
YAGEO : PA0805-R-470RL

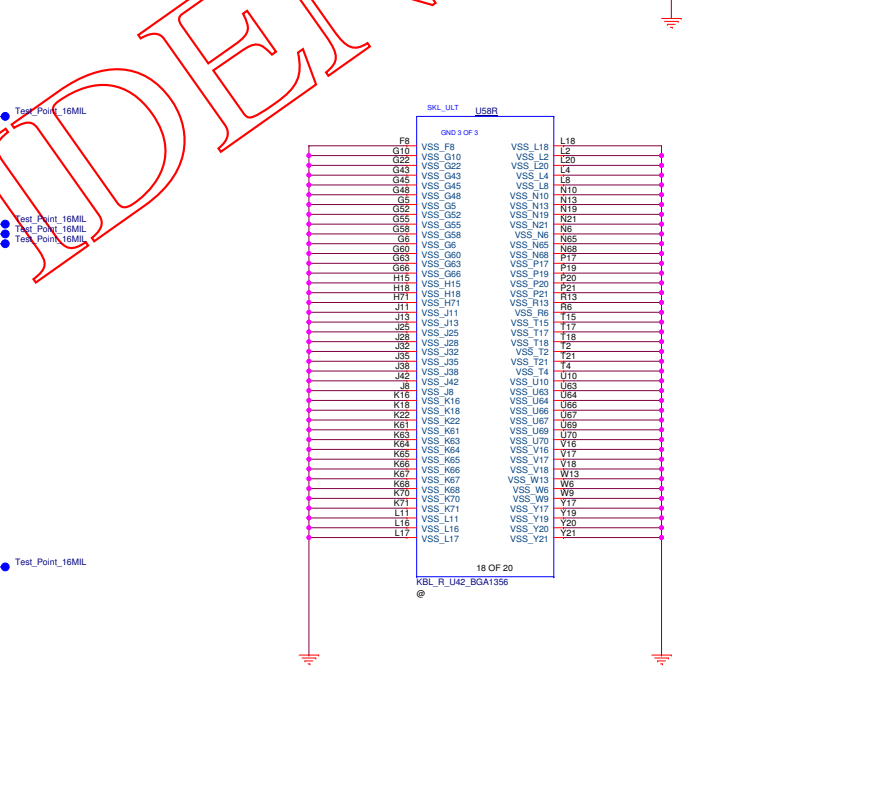
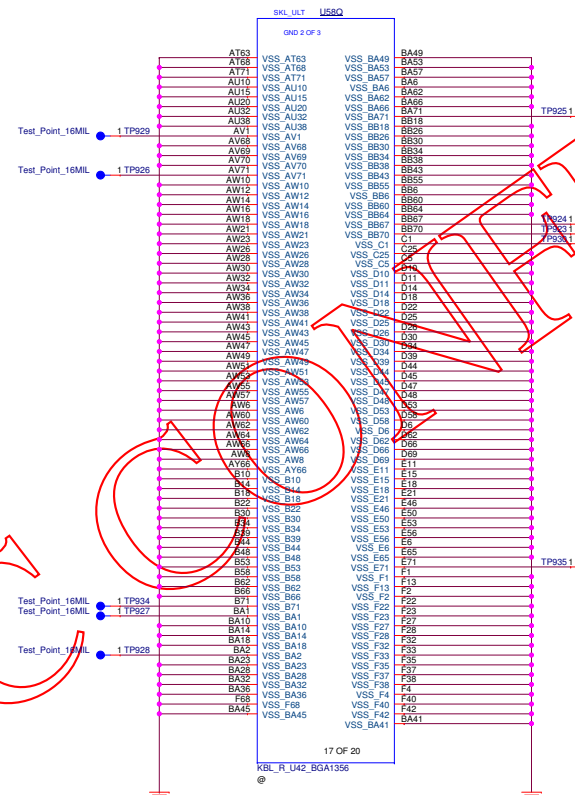
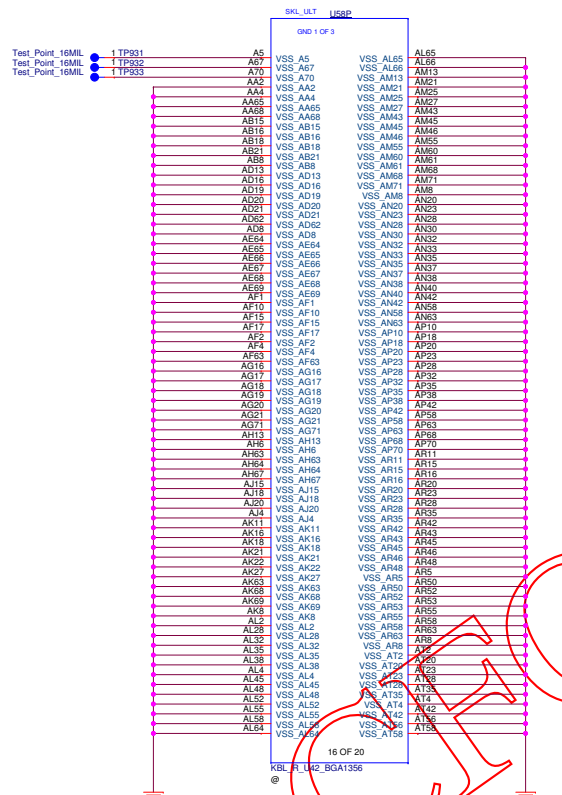
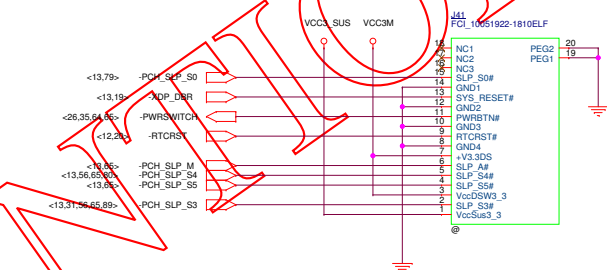
Logic	Ref Des	KBL-R U42	KBL-R U22
Page 12	Y5	NO_ASM	ASM
	R133	NO_ASM	ASM
	R308	NO_ASM	ASM
	C205	NO_ASM	ASM
Page 18	Y8	ASM	NO_ASM
	R10339	ASM	NO_ASM
	R10340	ASM	NO_ASM
	C9498	ASM	NO_ASM
Page 15	R10335	ASM	NO_ASM
	R10336	NO_ASM	ASM
	R10337	NO_ASM	ASM

Logic



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Size	Document Number	Date:		Revision	Rev
Custom	Windu-2	Thursday, November 09, 2017 1:58 PM		0.1	0.1
				Page	16 of 104

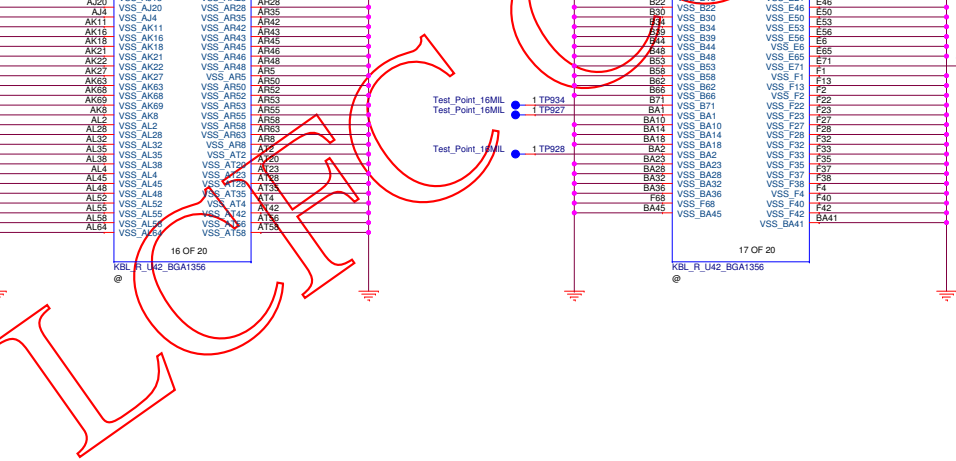
APS/PETS Interface



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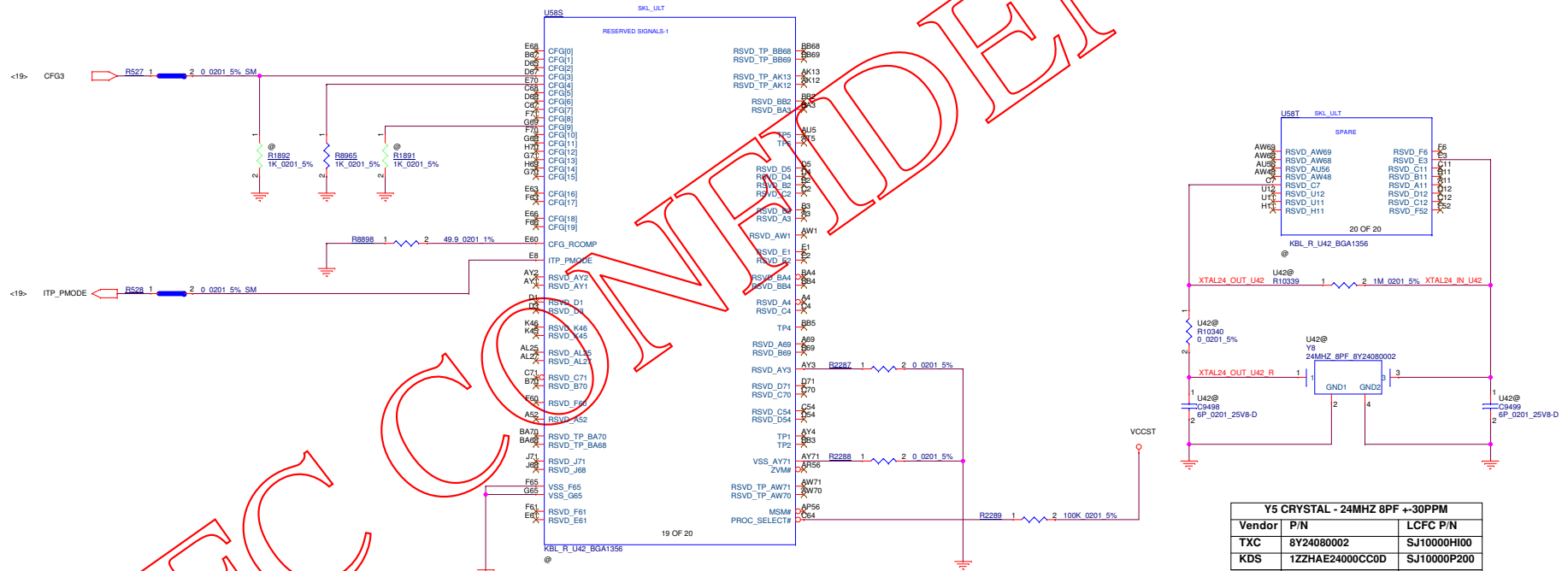
Title	CPU(15/16) : GND
Size	Document Number
Custom	C
Date:	Thursday, November 09, 2017 (Sheet 17 of 104)

Rev 0.1



TABLE

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

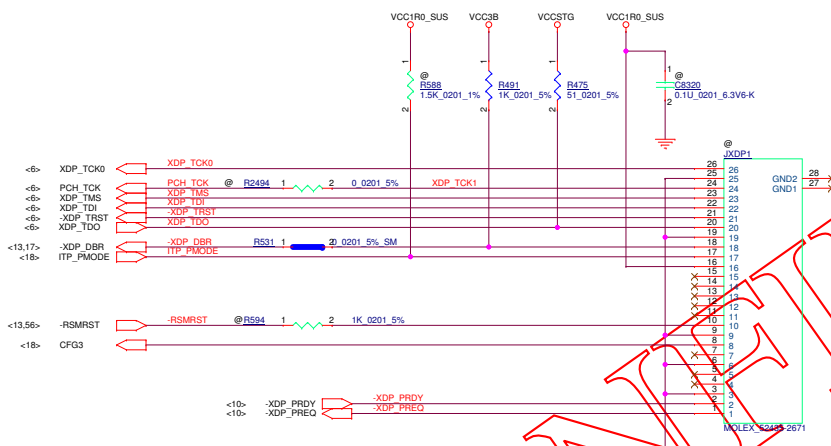


Y5 CRYSTAL - 24MHZ 8PF +-30PPM		
Vendor	P/N	LCFC P/N
TXC	8Y24080002	SJ10000H100
KDS	1ZZHAE24000CC0D	SJ10000P200

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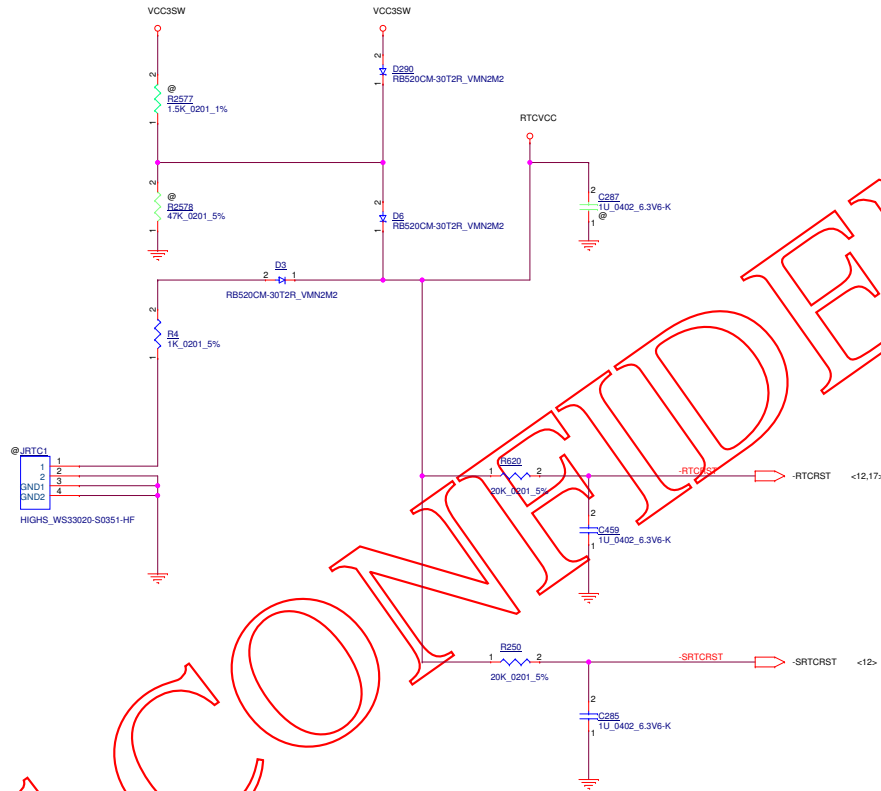
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TABLE

Logic	Ref Des	Merged	DCI 2.0
Page 6	R2	ASM	ASM
Page 7	R2559	ASM	NO_ASM
Page 18	R1892	ASM	NO_ASM
Page 19	JXDP1	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

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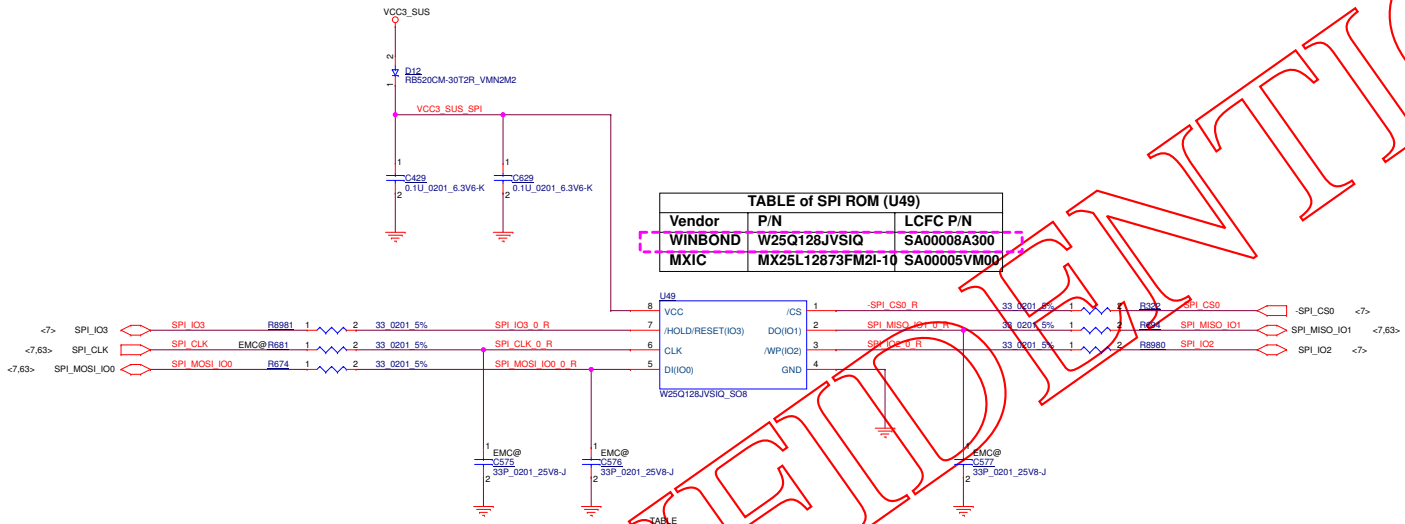
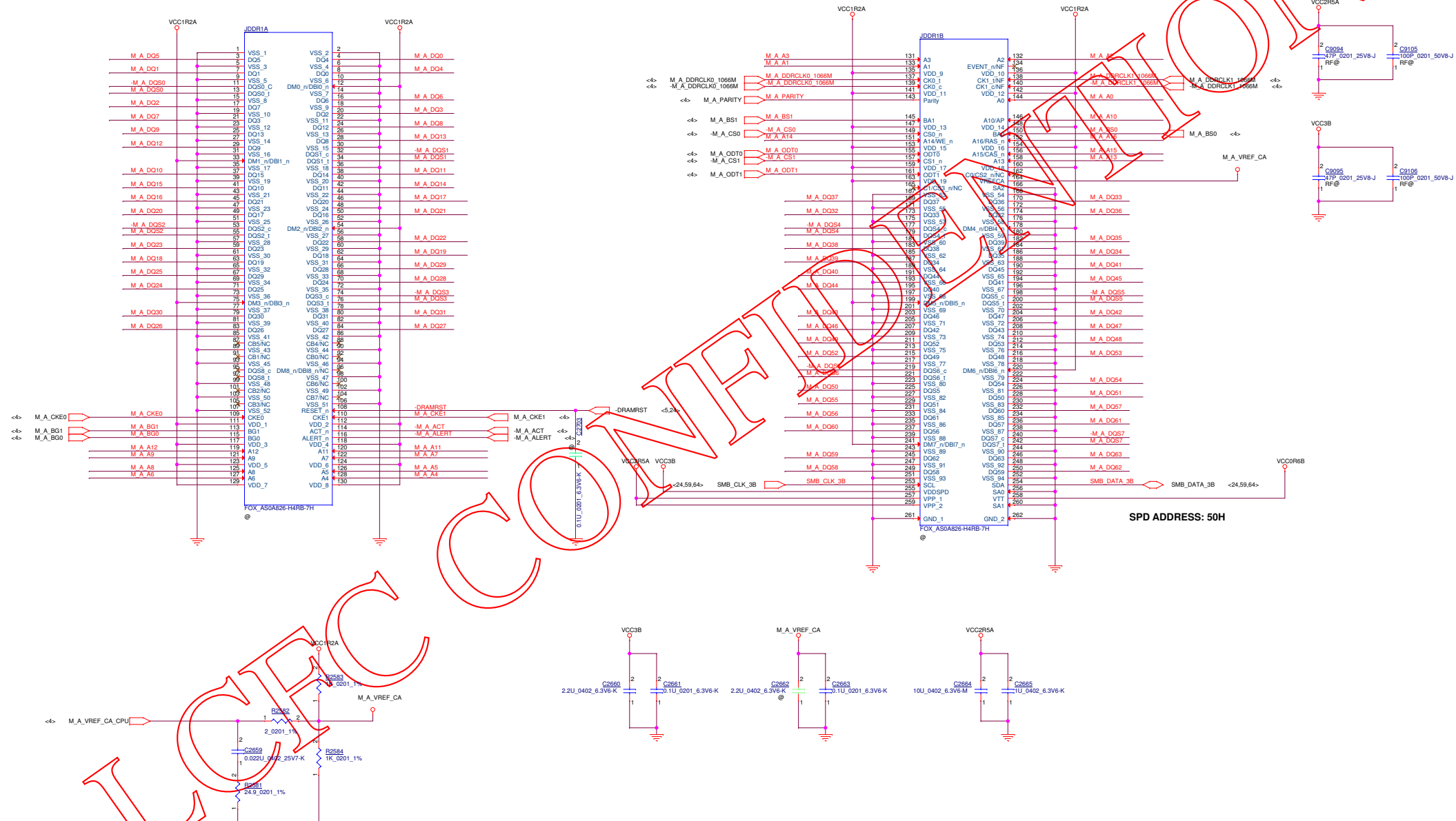


TABLE of SPI ROM (U49)		
Vendor	P/N	LCFC P/N
WINBOND	W25Q128JVSQ	SA00008A300
MXIC	MX25L12873FM2I-10	SA00005VM00

SF100	PIN	HEADER	INTERFACE (TOP VIEW)
1	VCC	D12.1	GND
3	CS#	R22.2	CLK
5	MISO	R64.2	MDSI (RESET)
7	TRST#	N/A	N/A

Security Classification	LC Future Center Secret Data		Title	SPI FLASH
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Size	Document Number	Rev		
Custom	Windu-2	0.1		
Date:	Thursday, November 05, 2015	Sheet	21	of 104

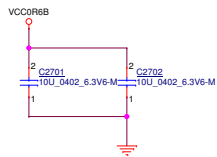
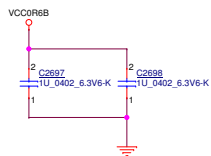
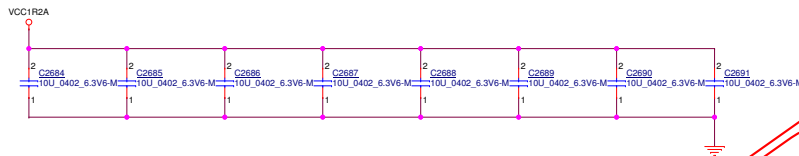
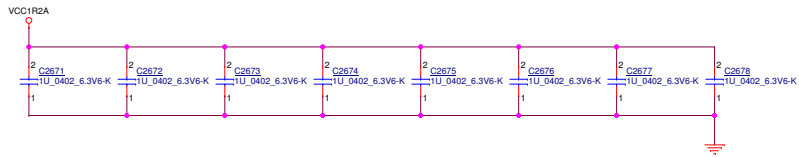
- <-> M_A_DQ[63:0]
- <-> -M_A_DQS[7:0]
- <-> M_A_DQS[7:0]
- <-> M_A_A[16:0]



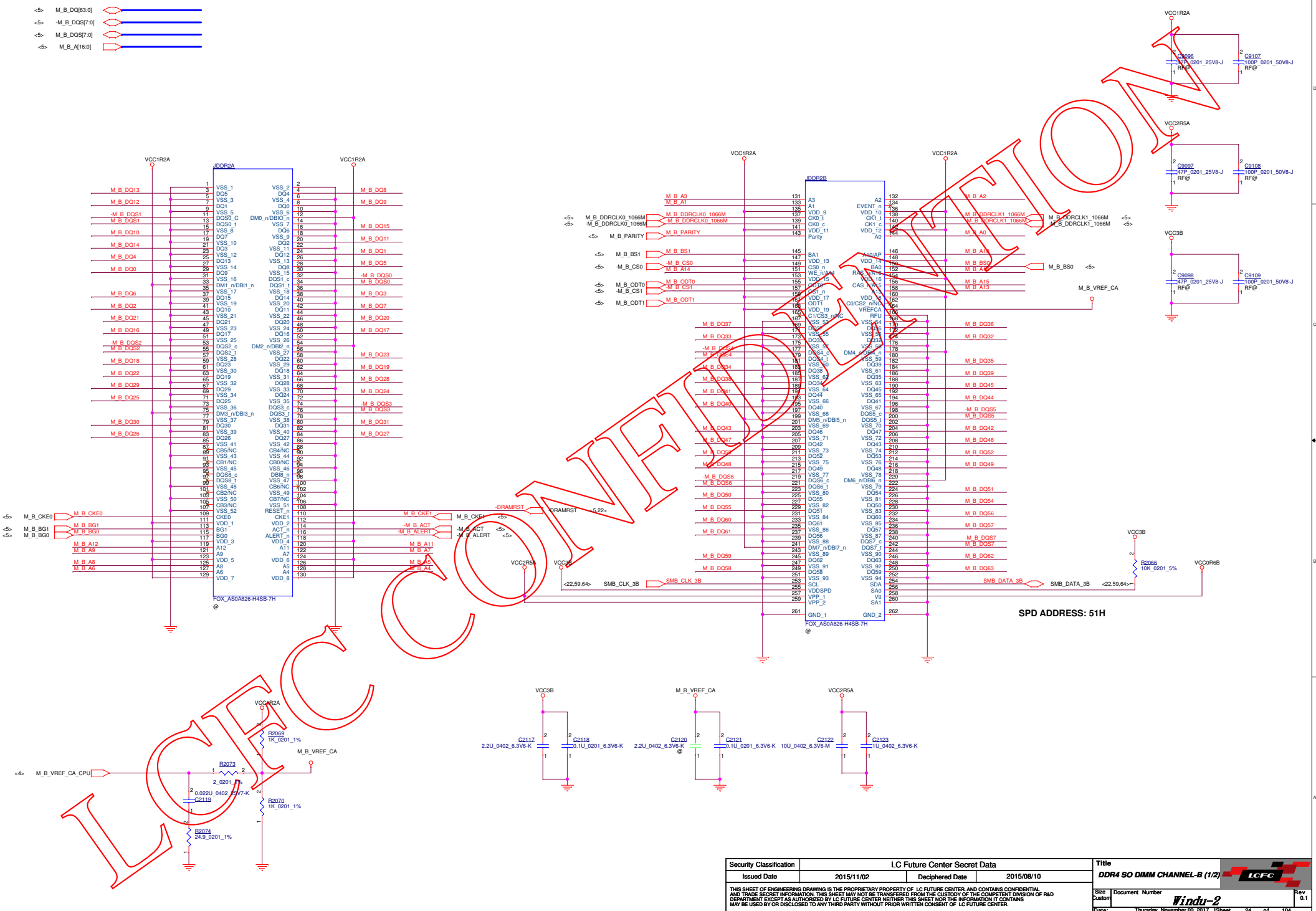
SPD ADDRESS: 50H

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Issued Date	2015/11/02	Deciphered Date	2015/08/10	DDR4 SO DIMM CHANNEL-A (1/2)	
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Size	Document Number	Windu-2		Rev 0.1	
Custom	Date:	Thursday, November 05, 2017	Sheet	22	of 104

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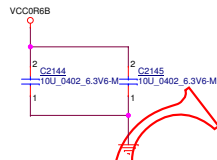
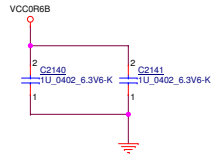
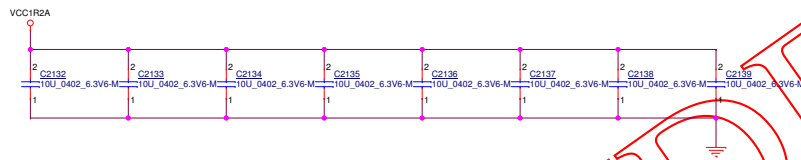
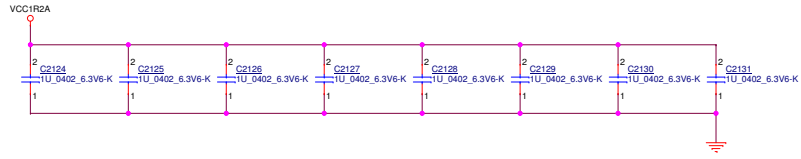


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Issued Date	2015/11/02	Deciphered Date	2015/08/10
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Security Classification		LC Future Center Secret Data		Title	
Issued Date	2015/11/02	Deciphered Date	2015/08/10	DDR4 SO DIMM CHANNEL-B (1/2)	
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Size	Document Number	Windu-2		Rev 0.1	
Custom	Date:	Thursday, November 05, 2017	Sheet	24	of 104

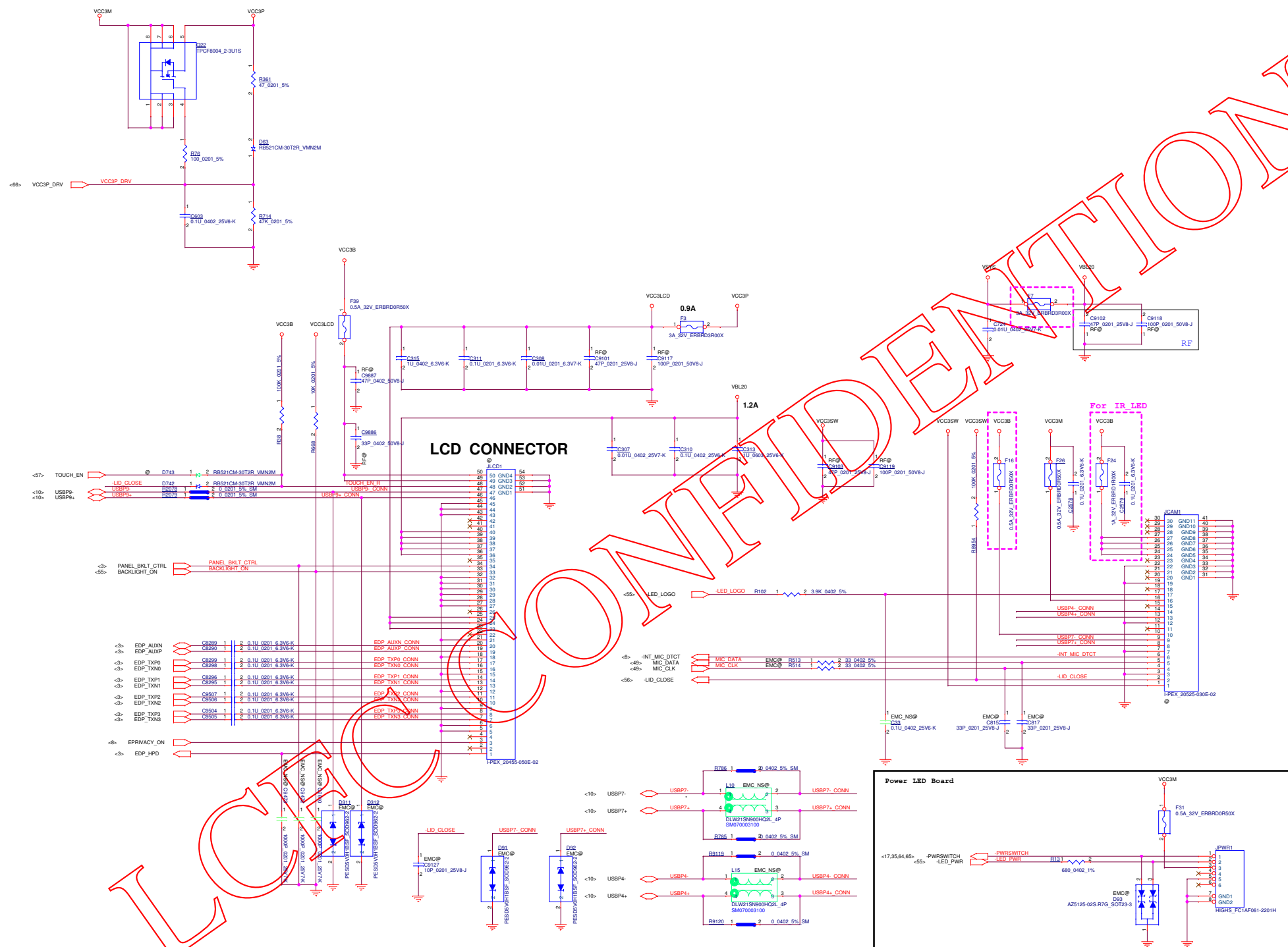
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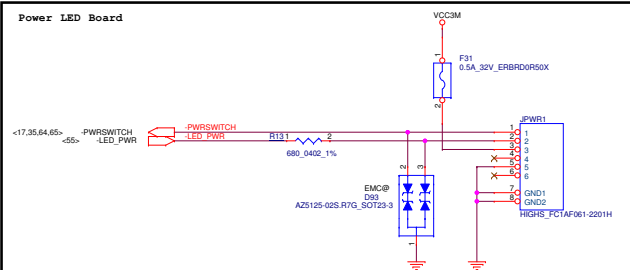
Security Classification	LC Future Center Secret Data		Title
Issued Date	2015/11/02	Deciphered Date	2015/08/10
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Rev 0.1



LCD CONNECTOR



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Size	Document Number	Date		Rev	
	Windu-2	Thursday, November 09, 2017		28 of 104	0.1

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			Size Document Number	Windu-2	
			Date	Thursday, November 09, 2017 12:01 PM	



TABLE: Automatic Switching Mode(MODE=H | M)

SW(DDI_PRIORITY1)

L DP Port has higher priority when both ports are plugged ← DEFAULT

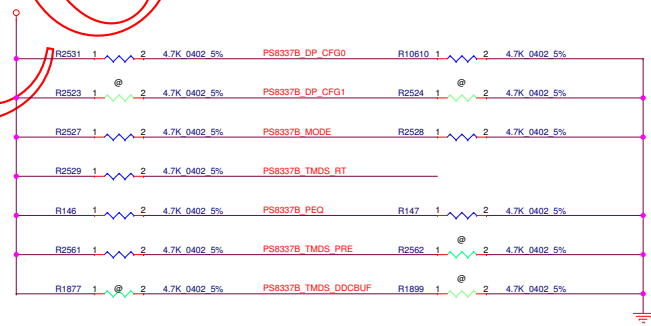
H TMDS Port has higher priority when both ports are plugged

MODE =

H : Automatic Switching mode, HDMI ID Disabled ← DEFAULT

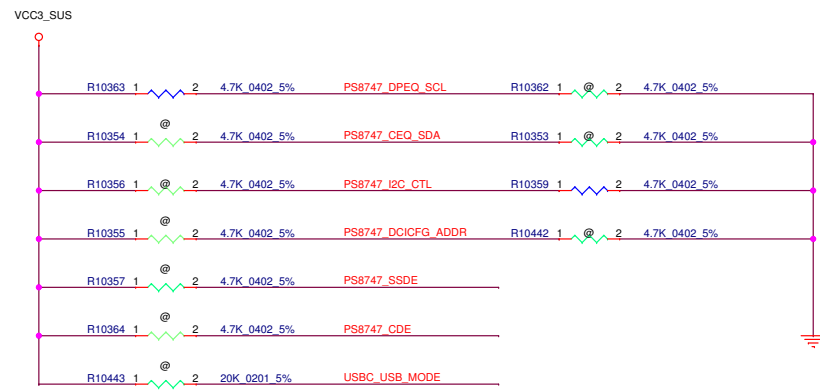
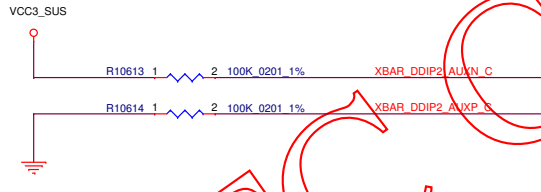
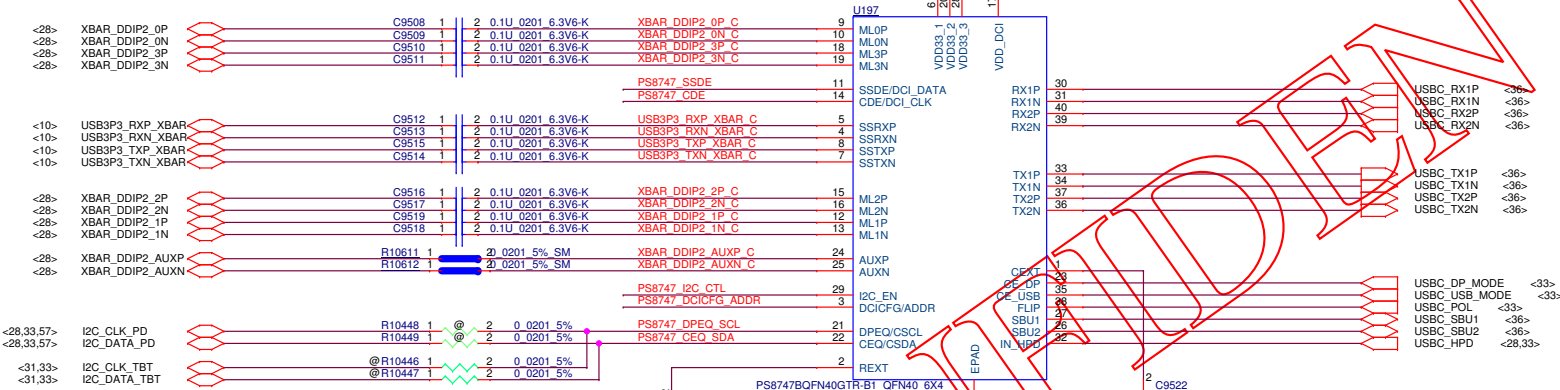
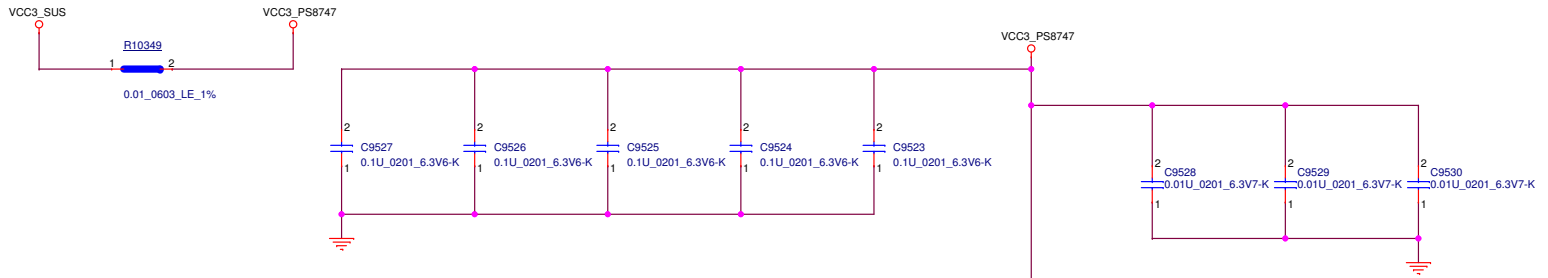
M : Automatic Switching mode, HDMI ID Enabled

L : Control Switching mode, HDMI ID Disabled



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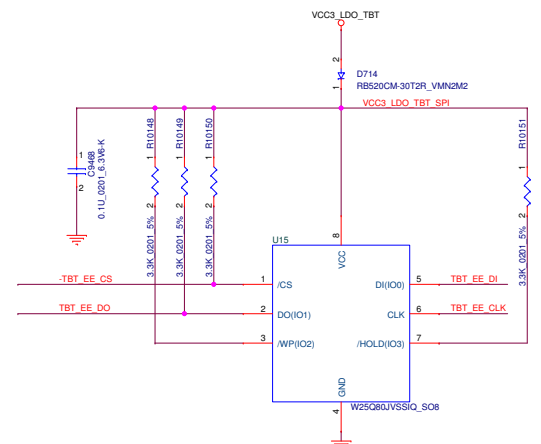
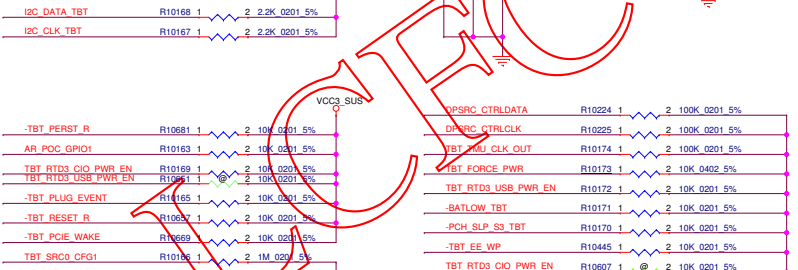
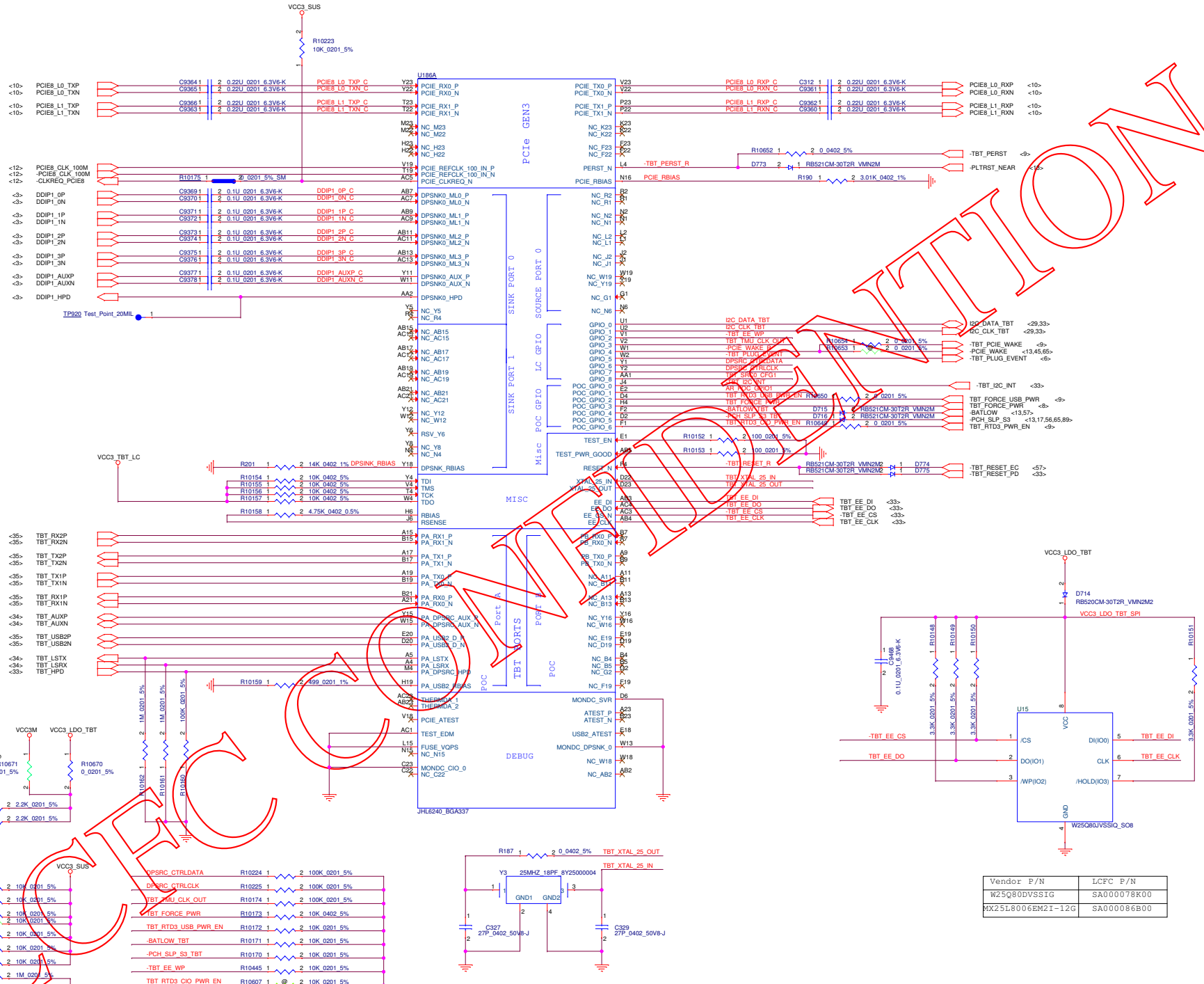
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Issued Date		Deciphered Date	
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Title		
USB TYPE-C SWITCH		
Size	Document Number	Rev
Custom	Windu-2	0.1
Date:	Thursday, November 06, 2017	Sheet 29 of 104

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Size	Document Number	Date: Thursday, November 09, 2017 12:58:01 PM		Sheet	30 of 104



-TBT_PERST_R	R10681	1	2	10K	0.001	5%
AR_POC_GPI01	R10163	1	2	10K	0.001	5%
TBT_RTDS_CIO_PWR_EN	R10189	1	2	10K	0.001	5%
TBT_RTDS_USB_PWR_EN	R10681	1	2	10K	0.001	5%
-TBT_PLUG_EVENT	R11651	1	2	10K	0.001	5%
-TBT_RESET_R	R10687	1	2	10K	0.001	5%
-TBT_PCIE_WAKE	R10689	1	2	10K	0.001	5%
TBT_SRC0_CFG1	R10186	1	2	1M	0.001	5%
DPSRC_CTRLDATA	R10224	1	2	100K	0.001	5%
DPSRC_CTRLCLK	R10225	1	2	100K	0.001	5%
TBT_TAU_CLK_OUT	R10174	1	2	100K	0.001	5%
TBT_FORCE_PWR	R10173	1	2	10K	0.402	5%
TBT_RTDS_USB_PWR_EN	R10172	1	2	10K	0.001	5%
-BATLOW_TBT	R10171	1	2	10K	0.001	5%
-PCH_SLP_S3_TBT	R10170	1	2	10K	0.001	5%
-TBT_EE_WP	R10445	1	2	10K	0.001	5%
TBT_RTDS_CIO_PWR_EN	R10607	1	2	10K	0.001	5%

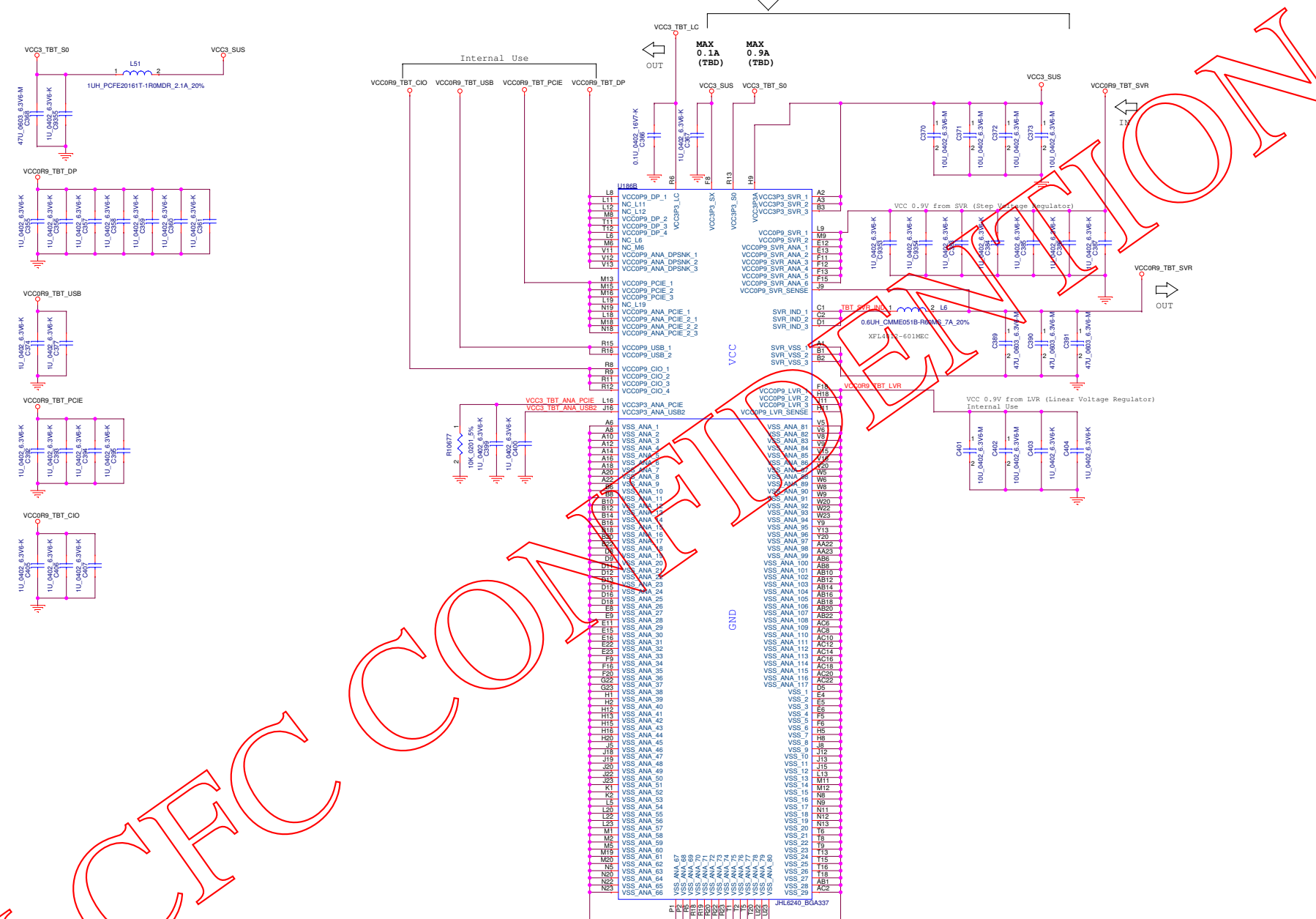
Y3 CRYSTAL 25MHZ 18PF 30PPM		
Vendor	P/N	LCFC P/N
TXC	8Y25000004	SJ10000H00J
KDS	1ZZHAE2500CCOF	SJ10000P300

Security Classification		LC Future Center Secret Data	
Issued Date	2015/11/02	Deciphered Date	2015/08/10
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Vendor P/N	LCFC P/N
W25Q80DVSS1G	SA000078K00
MX25L8006EM2I-12G	SA000086B00

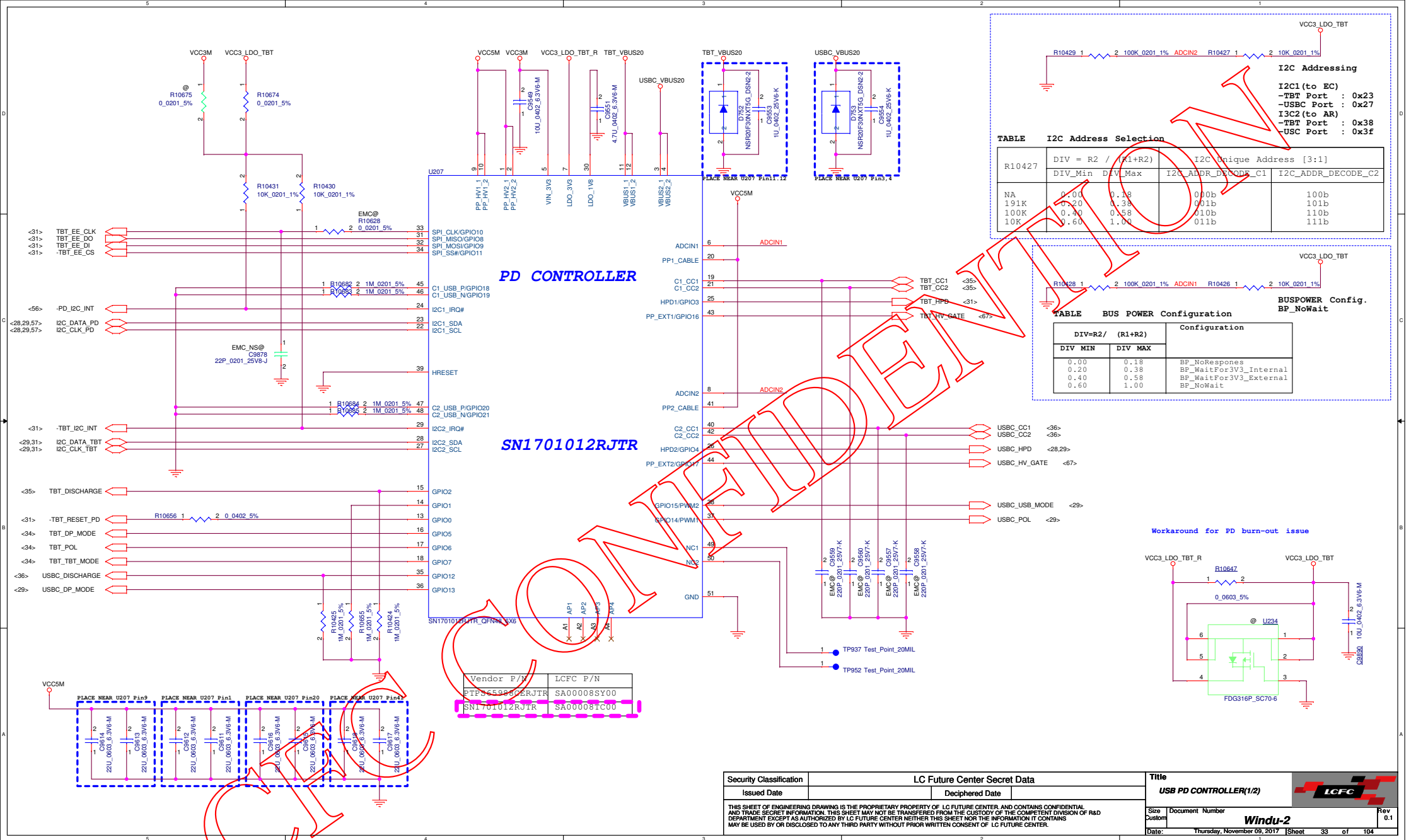
Title		ALPINE RIDGE (1/2)	
Size	Document Number	Rev 01	
Custom	Windu-2		
Date:	Thursday, November 05, 2017	Sheet	31 of 104

IN from outside of Alpine Ridge



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Issued Date	2015/11/02	Deciphered Date	2015/08/10	ALPINE RIDGE (2/2)	
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Size	Document Number	Windu-2		Rev	0.1
Custom	Date:	Thursday, November 05, 2015	Sheet	32	of 104



PD CONTROLLER

SN1701012RJTR

Vendor P/N	LCFC P/N
PTP365986ERJTR	SA00008SY00
SN1701012RJTR	SA00008TC00

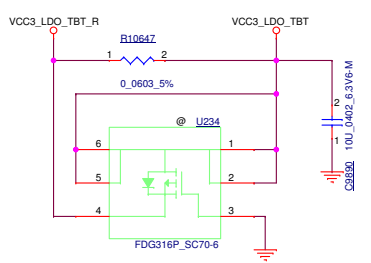
TABLE I2C Address Selection

R10427	DIV = R2 / (R1+R2)		I2C Unique Address [3:1]	
	DIV_Min	DIV_Max	I2C_ADDR_DECODE_C1	I2C_ADDR_DECODE_C2
NA	0.00	0.18	000b	100b
191K	0.20	0.38	001b	101b
100K	0.40	0.58	010b	110b
10K	0.60	1.00	011b	111b

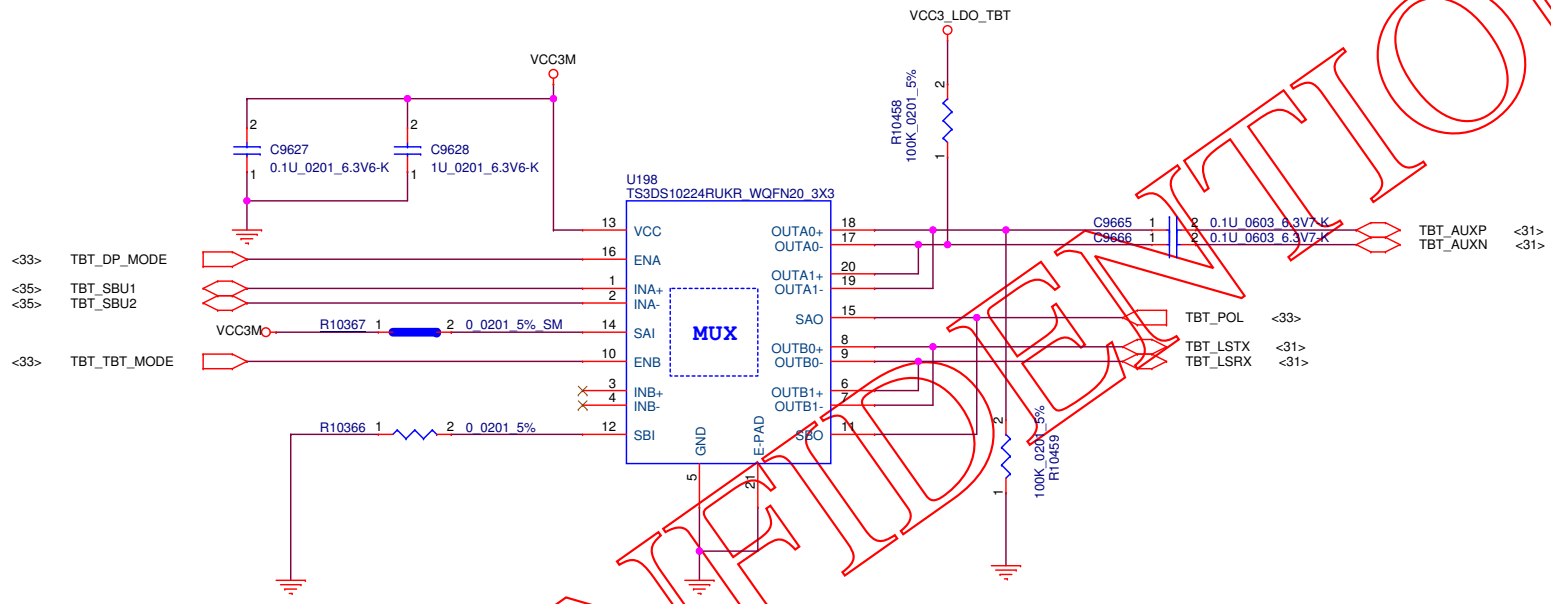
TABLE BUS POWER Configuration

DIV=R2/ (R1+R2)		Configuration
DIV MIN	DIV MAX	
0.00	0.18	BP_NoResponses
0.20	0.38	BP_WaitFor3V3_Internal
0.40	0.58	BP_WaitFor3V3_External
0.60	1.00	BP_NoWait

Workaround for PD burn-out issue




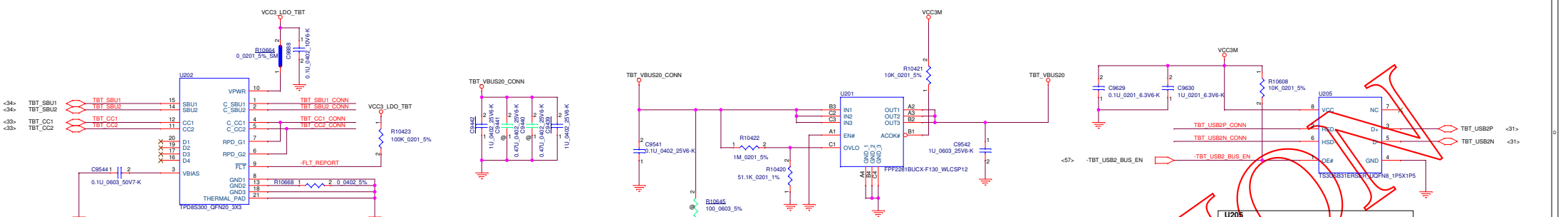
Security Classification		LC Future Center Secret Data		Title		
Issued Date		Deciphered Date		USB PD CONTROLLER(1/2)		
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Title		
USB PD CONNTRROLLER (2/2)		
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B	Windu-2	0.1
Date:	Thursday, November 09, 2017	Sheet 34 of 104

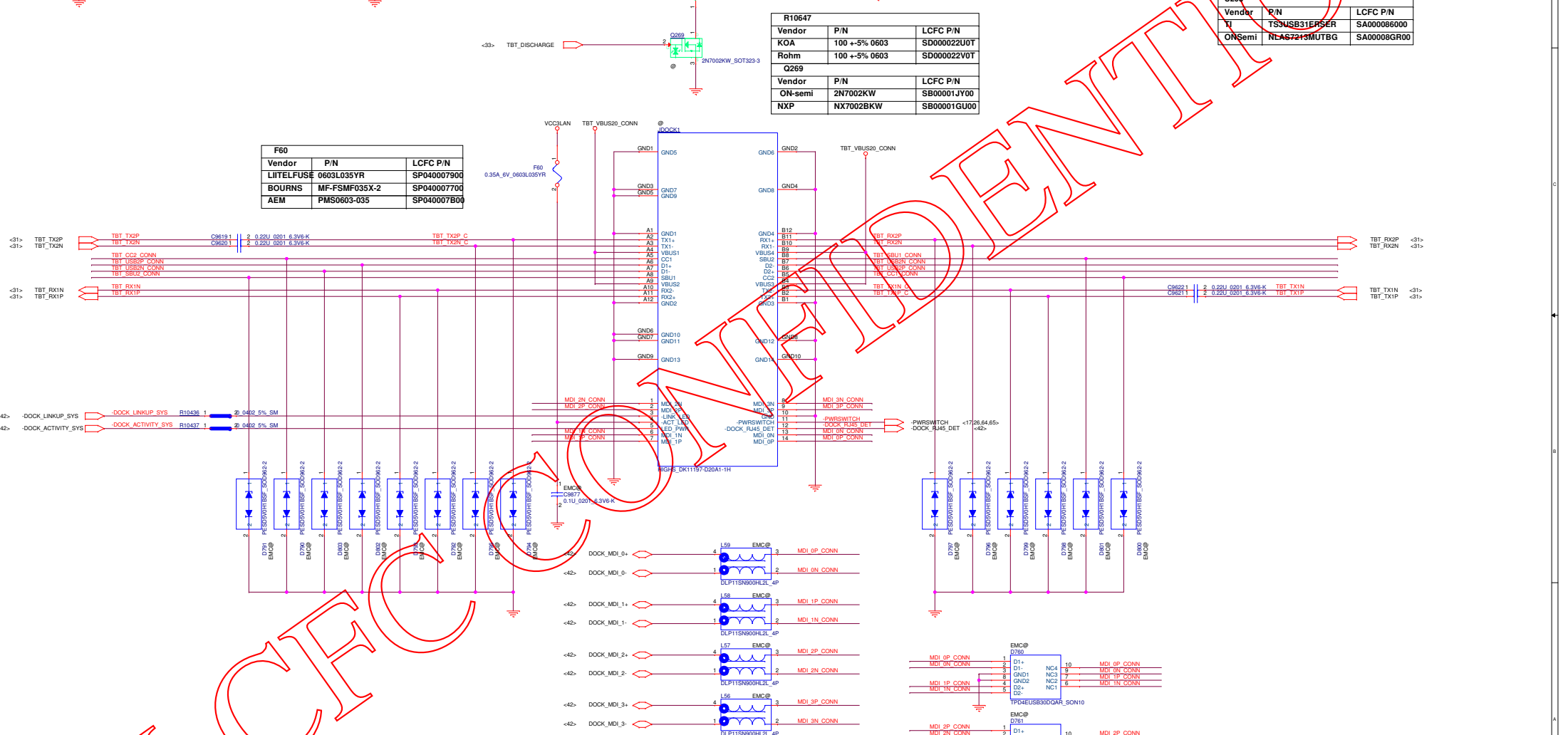


Vendor	P/N	LCFC P/N
LIITELFUSE	0603L035YR	SP040007900
BOURNS	MF-FSMF035X-2	SP040007700
AEM	PMS0603-035	SP040007800

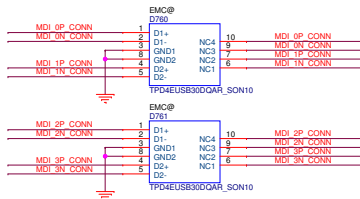
Vendor	P/N	LCFC P/N
KOA	100 ±5% 0603	SD000022U0T
Rohm	100 ±5% 0603	SD000022V0T

Vendor	P/N	LCFC P/N
ON-semi	2N7002KW	SB00001JY00
NXP	NX7002BKW	SB00001GU00

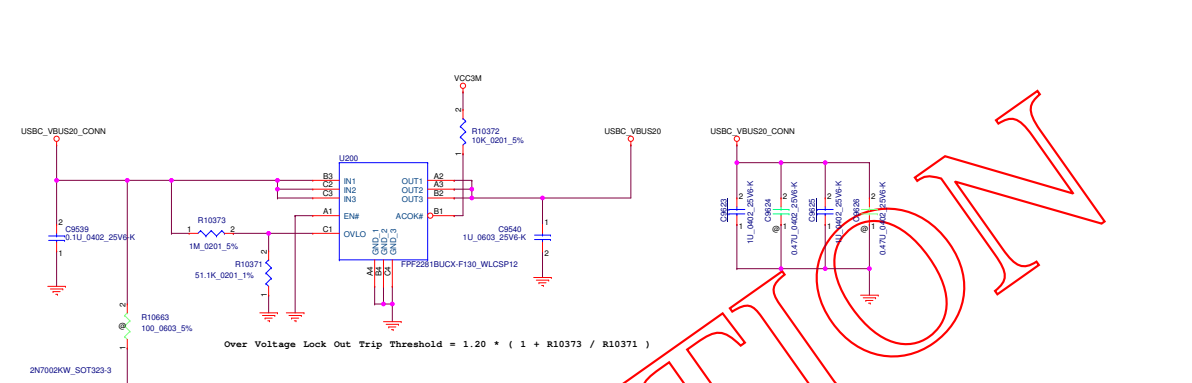
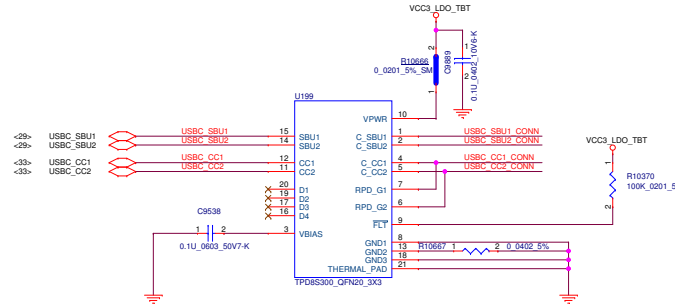
Vendor	P/N	LCFC P/N
TI	TS3USB31ERSER	SA000086000
ONsemi	NLA67213MUTBG	SA00009GR00



Vendor	P/N	LCFC P/N
1st: Murata	DLP11SN900HL2	SM07002Y00



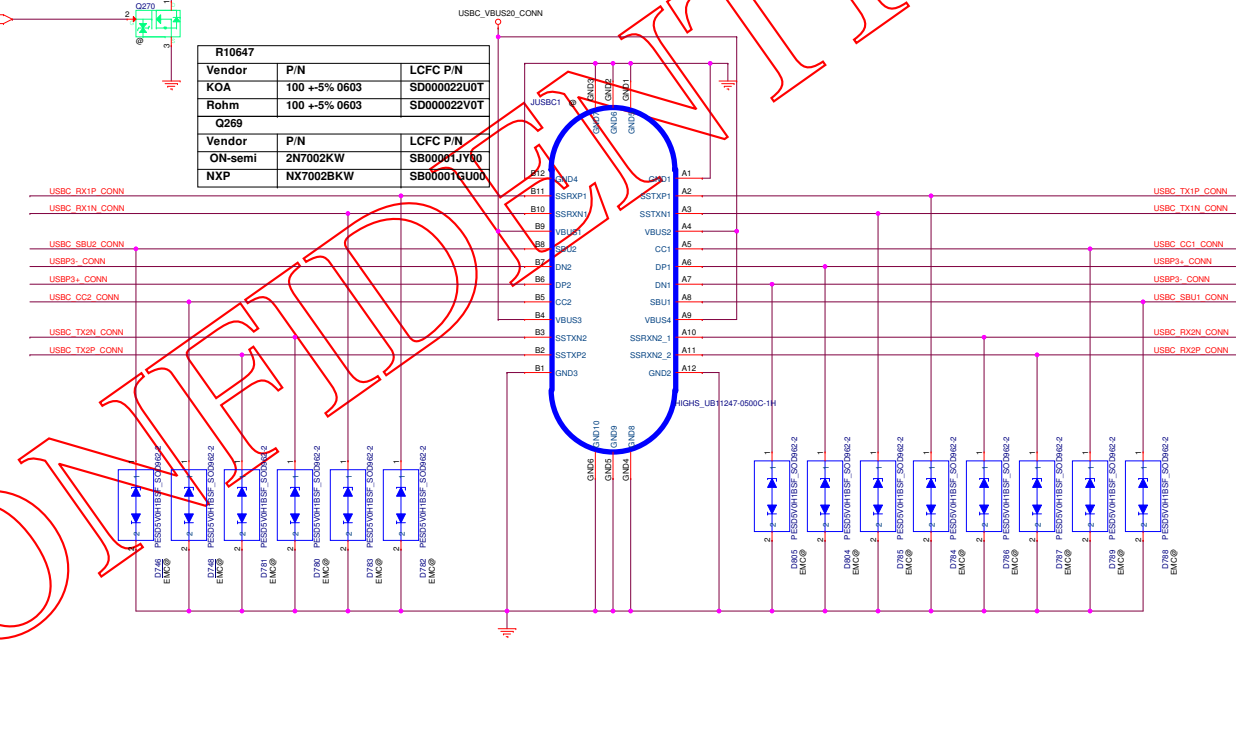
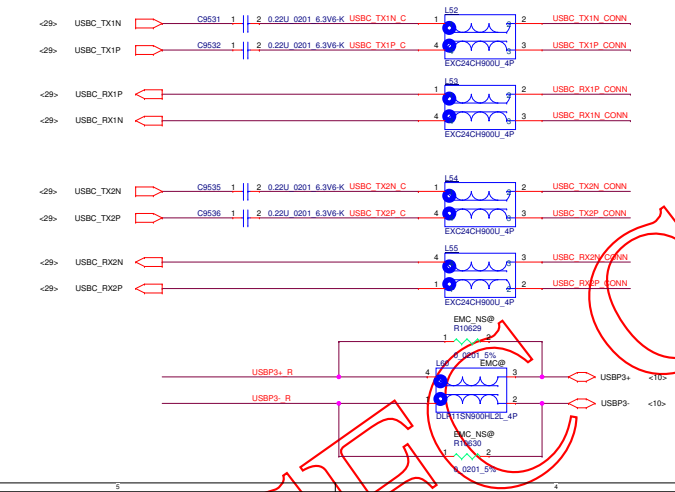
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Rev	Document Number		
0.1	Windu-2		
Date:	Thursday, November 09, 2017	Sheet	35 of 104



Vendor	P/N	LCFC P/N
KOA	100 +5% 0603	SD000022U0T
Rohm	100 +5% 0603	SD000022V0T

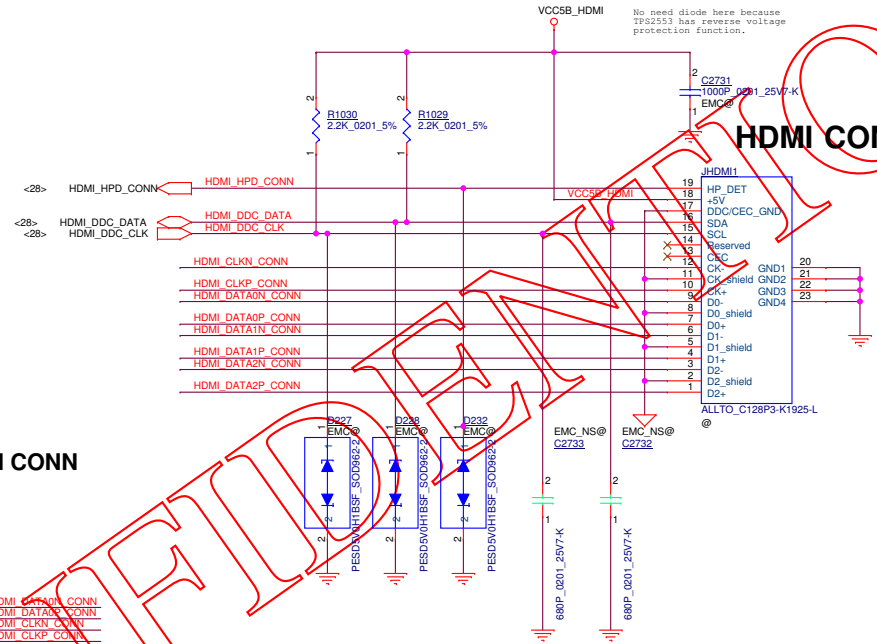
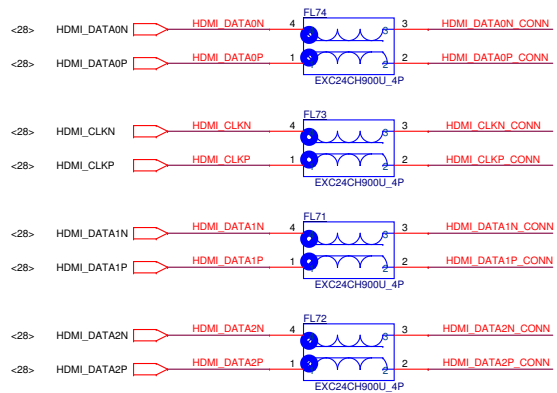
Vendor	P/N	LCFC P/N
ON-semi	2N7002KW	SB00001JV00
NXP	NX7002BKW	SB00001QU00

Vendor	P/N	LCFC P/N
TI	TSUSB31ERSER	SA000086000
ONSemi	NLAS7213MUTBG	SA00008GR00

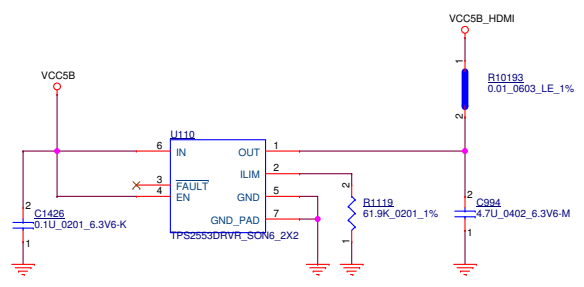
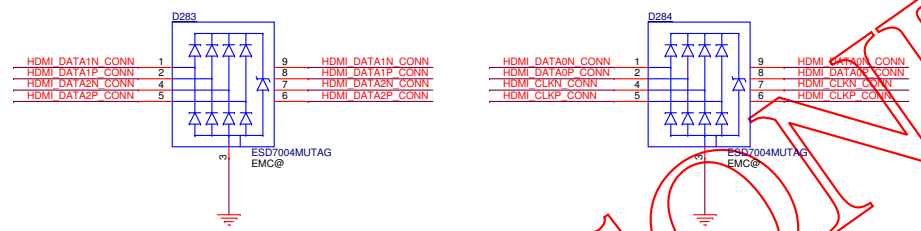


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		Sheet	36 of 104

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NEAR HDMI CONN



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HDMI CONN

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		2013/08/05

Title	HDMI CONNECTOR
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Size	Document Number	Rev
Custom	Windu-2	0.1
Date:	Thursday, November 05, 2017 1:58pm	Sheet 37 of 104



TABLE: PI3EQX862 Input Equalization Setting (EQ_A & EQ_B)

	@3GHz	@4GHz
GND	7 dB	8 dB
Open	4 dB (Default)	5 dB (Default)
VDD	10 dB	11 dB

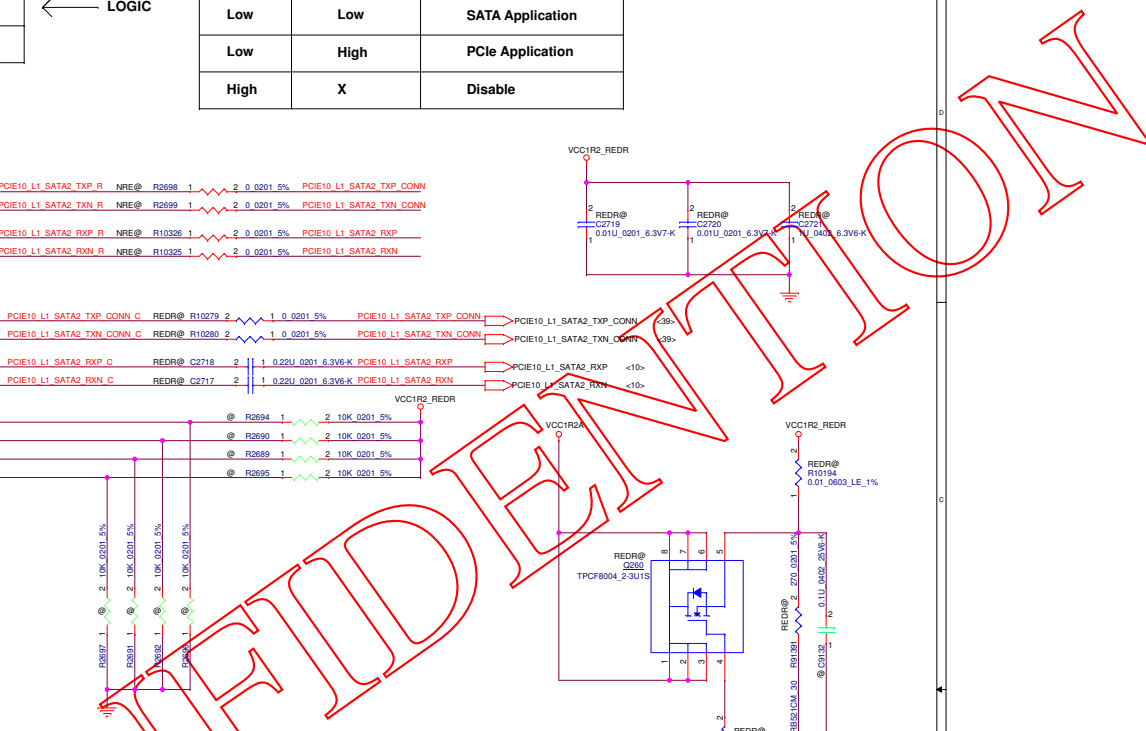
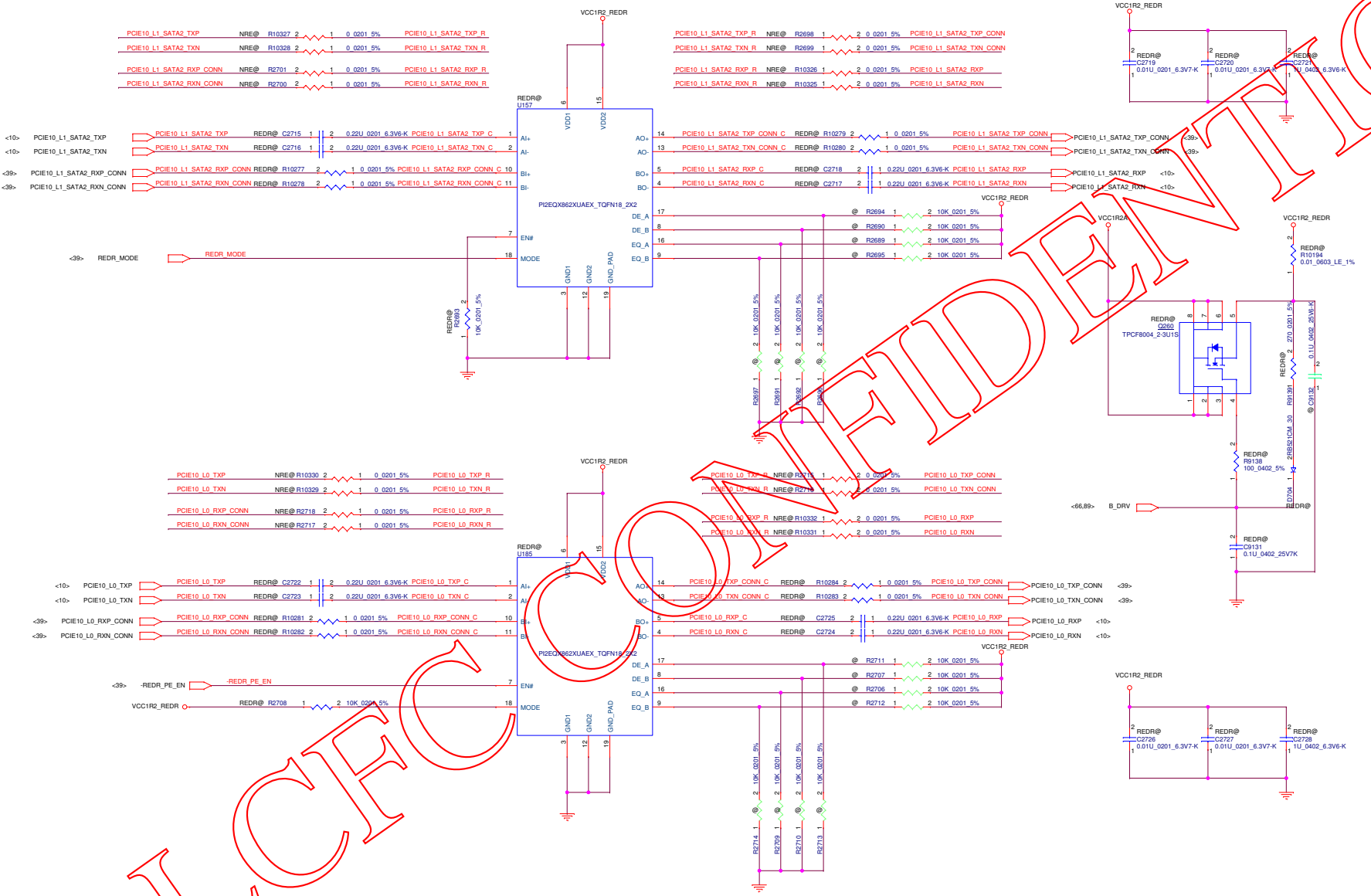
TABLE: PI3EQX862 Output De-emphasis Setting (DE_A & DE_B)

GND	-2.5 dB
Open	0 dB (Default)
VDD	-4 dB

← LOGIC

TABLE: Mode Configuration Table

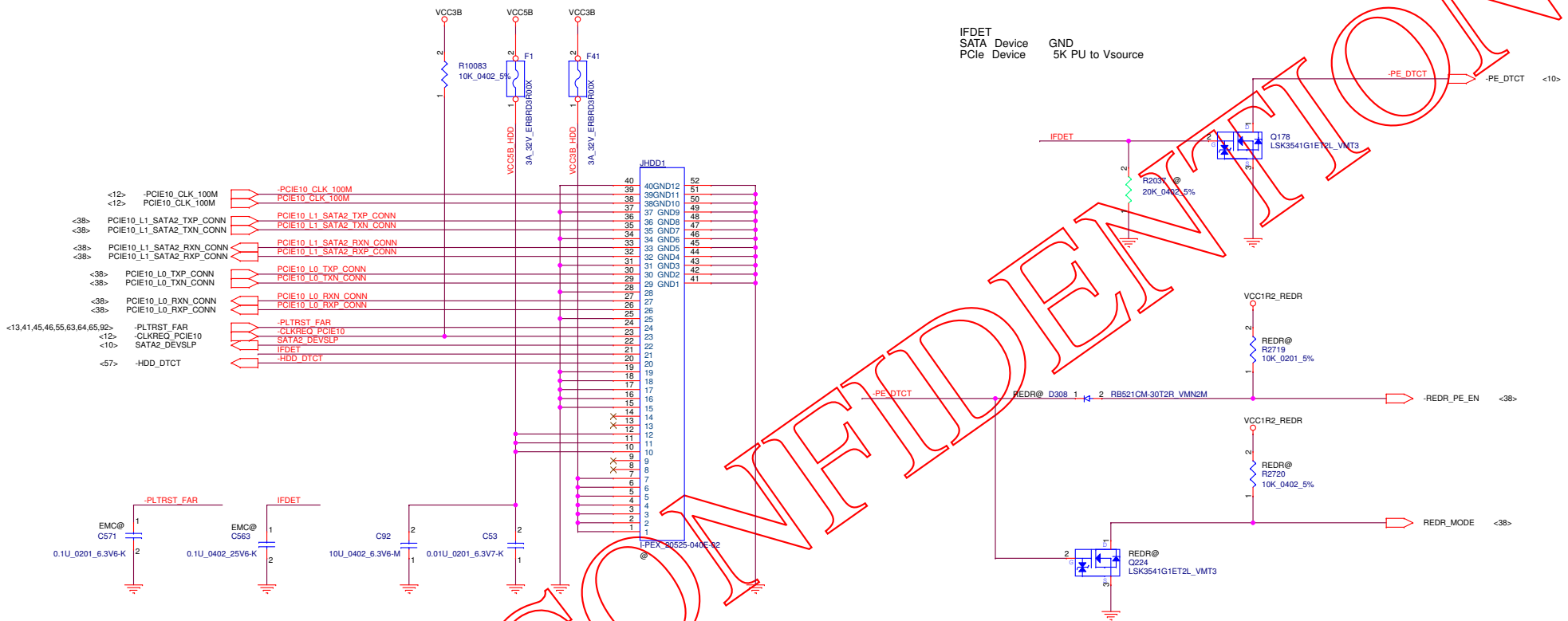
EN#	MODE	Mode
Low	Low	SATA Application
Low	High	PCIe Application
High	X	Disable



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Date	Thursday, November 05, 2017

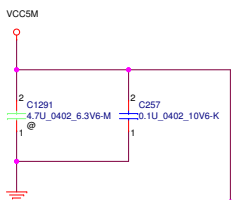
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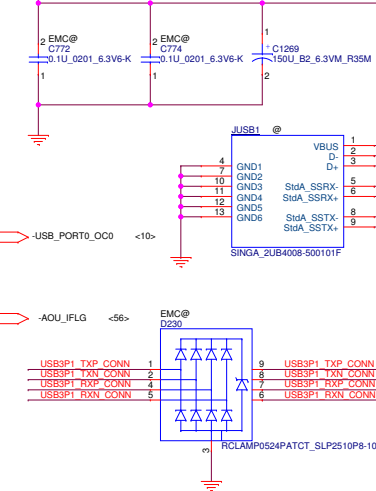
Security Classification		LC Future Center Secret Data		Title	
Issued Date	2015/11/02	Deciphered Date	2015/08/10	SATA EXPRESS CONNECTOR	
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				Windu-2	Rev 0.1
				Date: Thursday, November 05, 2017	Sheet 39 of 104



Current Limit Target:
 ILIM_Hi -> 2.27A(1.98A - 2.56A)
 ILIM_Lo -> 0.62A(0.52A - 0.72A)

TABLE of USB Charge IC (U88)		
Vendor	P/N	LCFC P/N
TI	SN1702001RTER	SA00008HF00

**PLACE NEAR USB CONNECTOR
WIDE PATTERN(MIN 500mA)**



**WIDE PATTERN(MIN 500mA)
PLACE NEAR USB CONN**

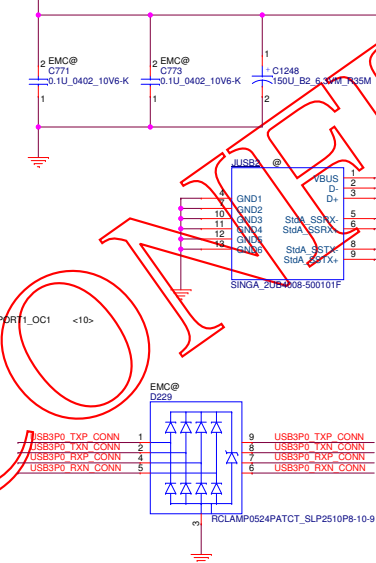
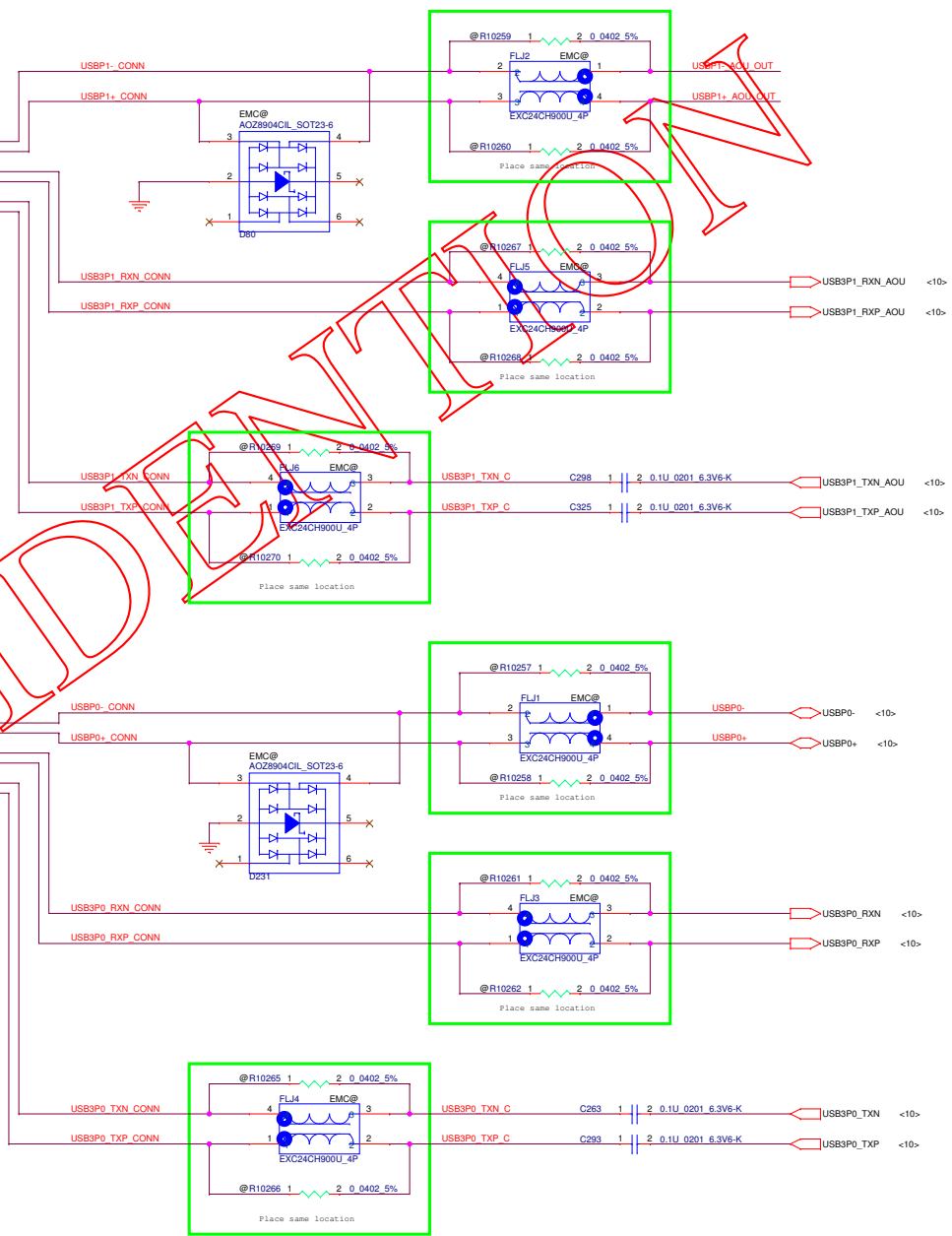


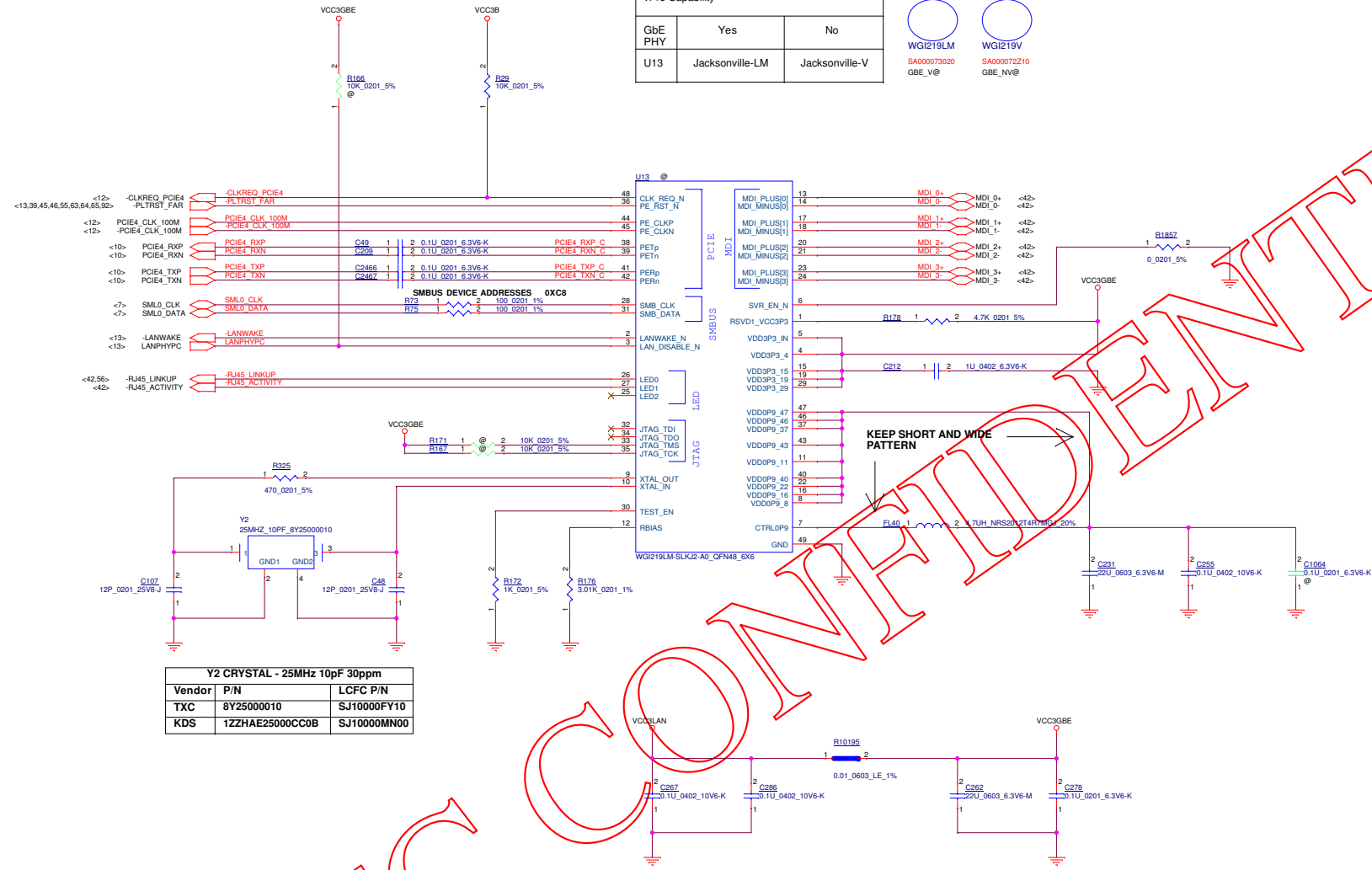
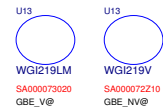
TABLE of USB3.0 Single (U53)		
Vendor	P/N	LCFC P/N
TI	TPS2069CDGNR	SA00006TE00
Rohm	BD82032FVJ-GE2	SA00006S00



LCFC

TABLE

vPro Capability		
GbE PHY	Yes	No
U13	Jacksonville-LM	Jacksonville-V



Y2 CRYSTAL - 25MHz 10pF 30ppm

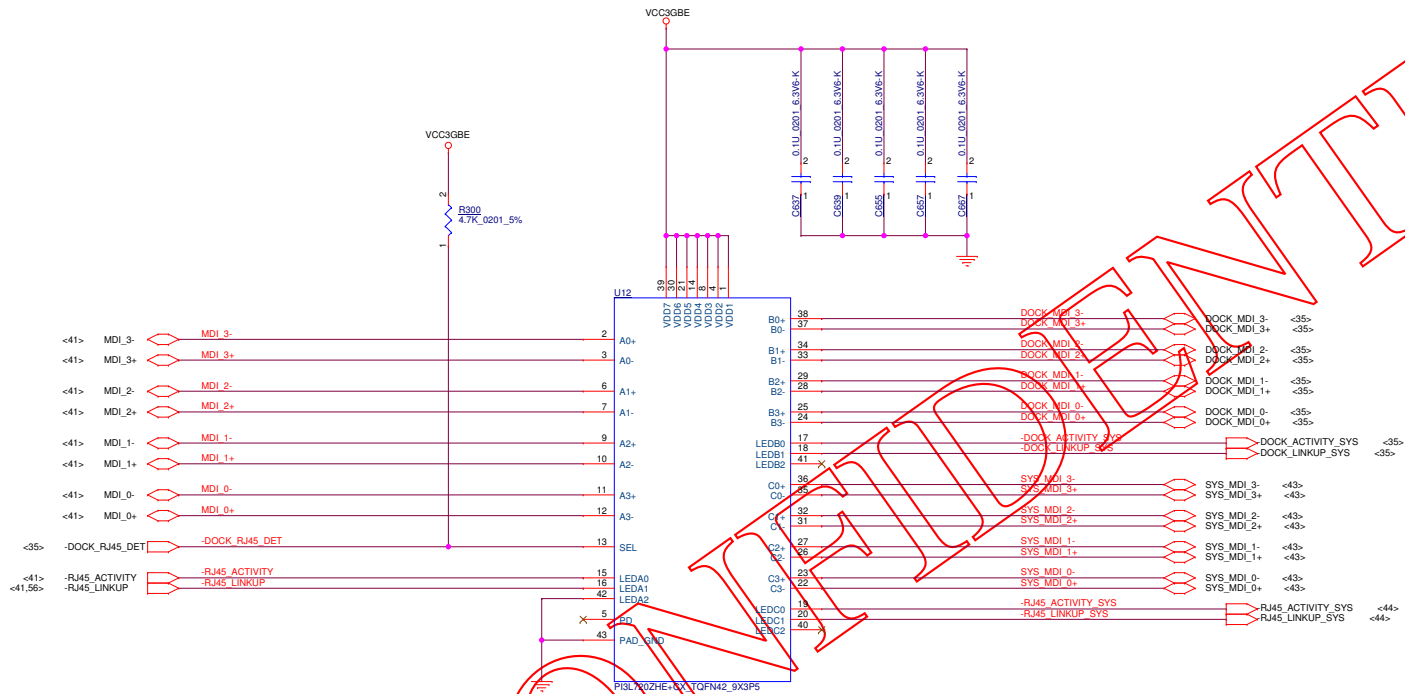
Vendor	P/N	LCFC P/N
TXC	8Y25000010	SJ10000FY10
KDS	1ZZHAE25000CC0B	SJ10000MN00

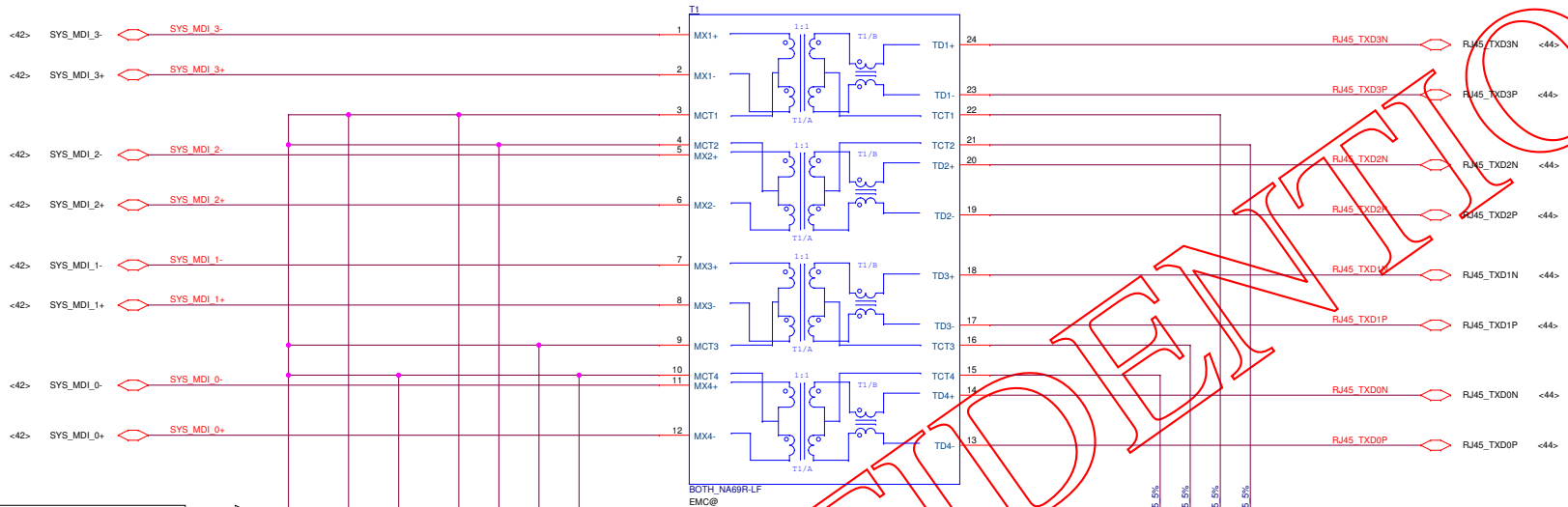
KEEP SHORT AND WIDE PATTERN

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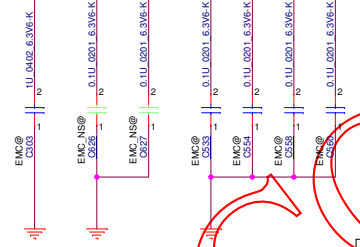
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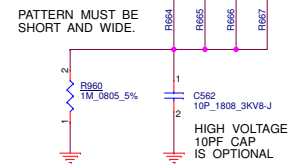
THE WIDTH OF THESE TRACE SHOULD BE WIDER THAN 35MIL TO PREVENT VOLTAGE DROP.

C303 SHOULD BE PLACED AS CLOSE TO MAGNETICS AS POSSIBLE.



ESD REASON

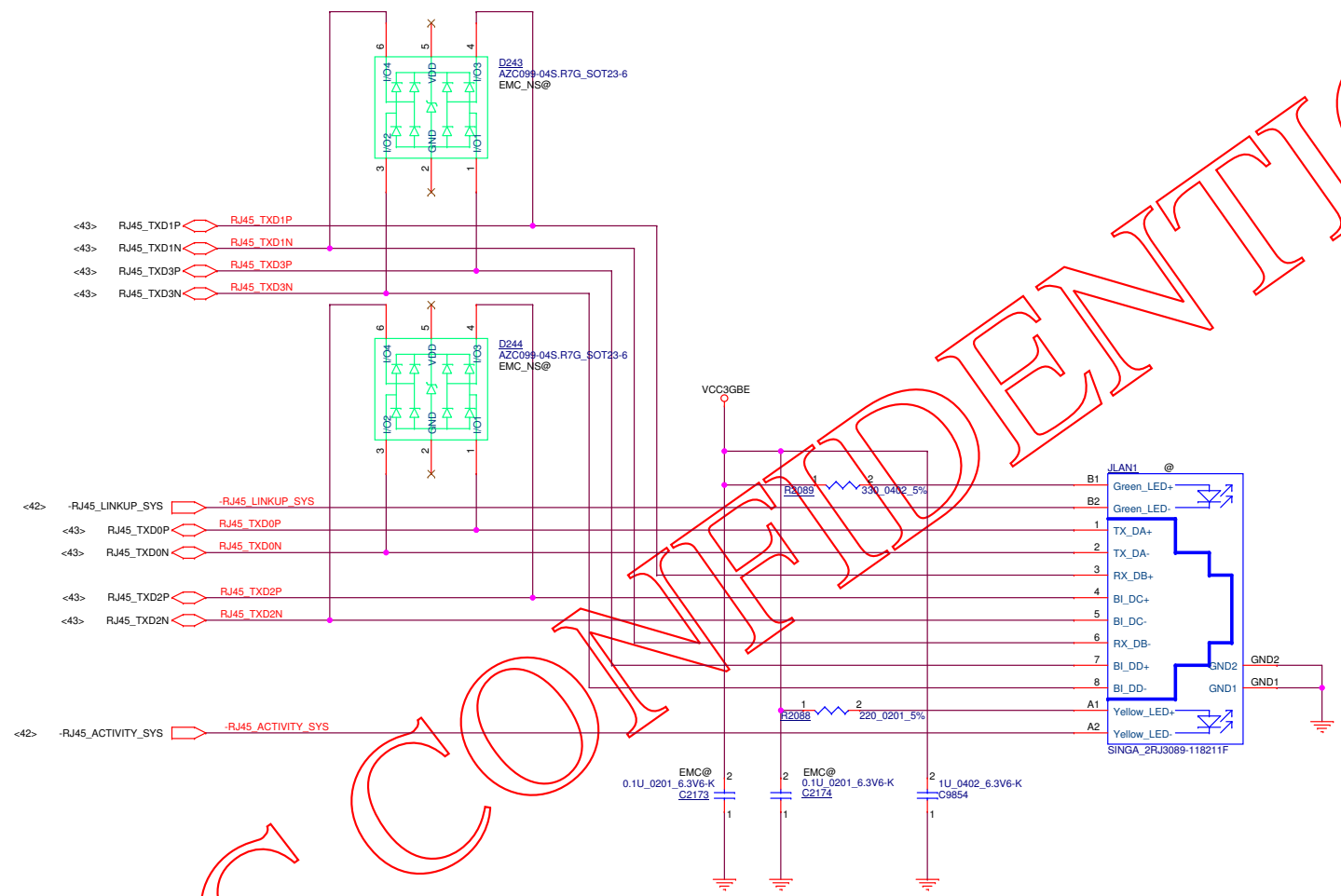
TABLE of Transformer (T1)		
Vendor	P/N	LCFC P/N
BOTHAND	NA69R-LF	SP050008B00
TAIMAG	IH-189-A	SP050007V0J



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Security Classification				LC Future Center Secret Data		Title	
Issued Date	2015/11/02	Deciphered Date	2015/08/10	RJ45 CONNECTOR			

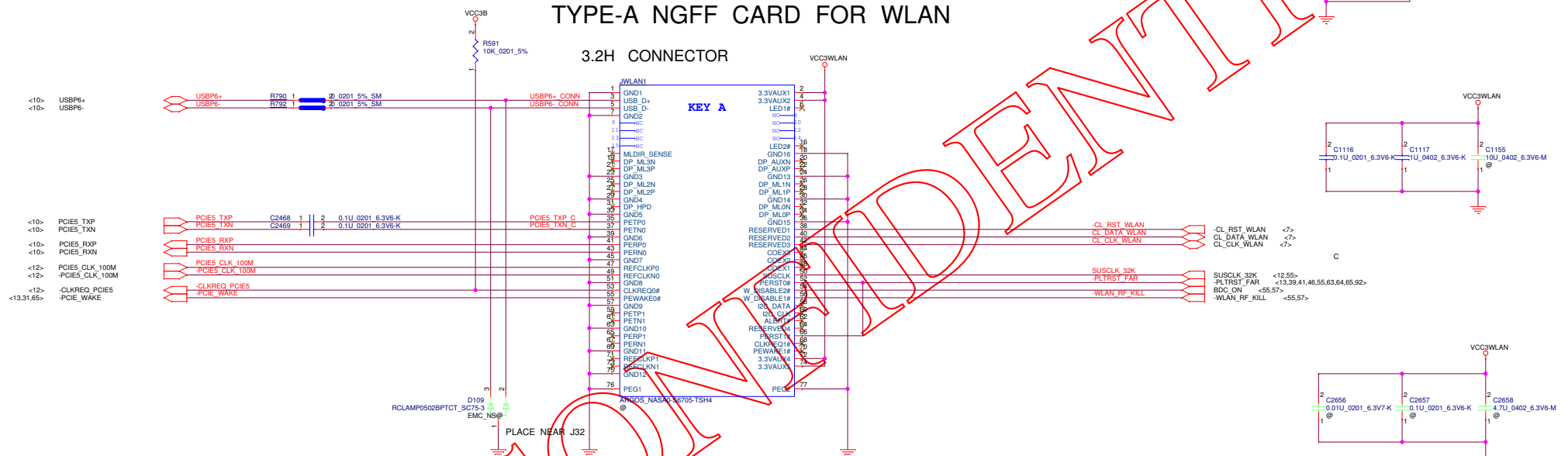
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Size	Document Number	Rev
Custom	Windu-2	0.1
Date:	Thursday, November 03, 2017	Sheet 44 of 104



TYPE-A NGFF CARD FOR WLAN

3.2H CONNECTOR



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TYPE-B NGFF CARD FOR WWAN 3.2H CONNECTOR

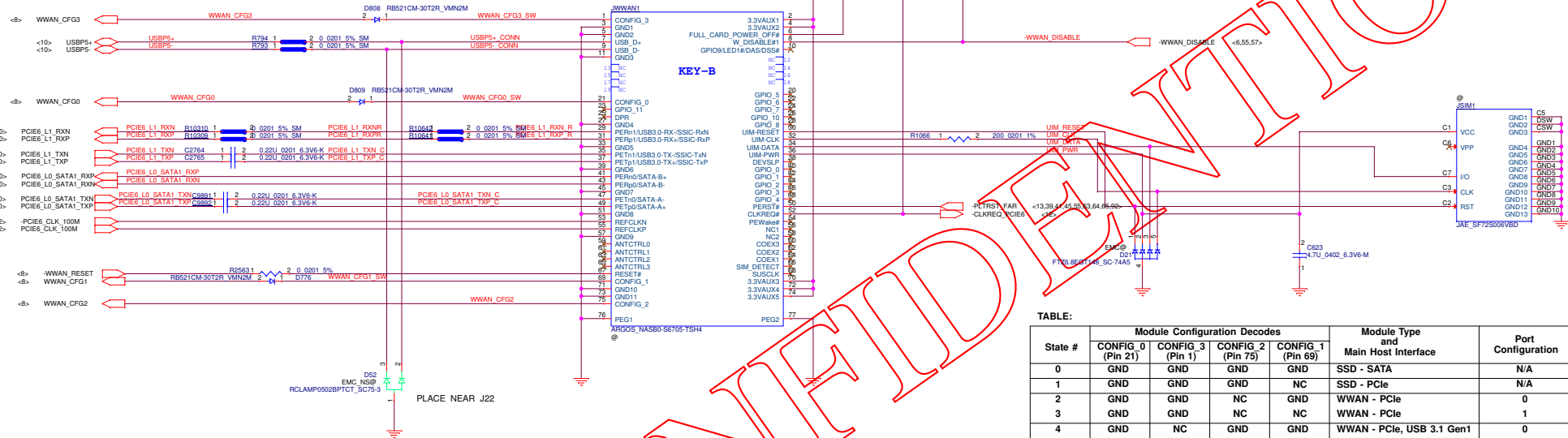


TABLE:

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:

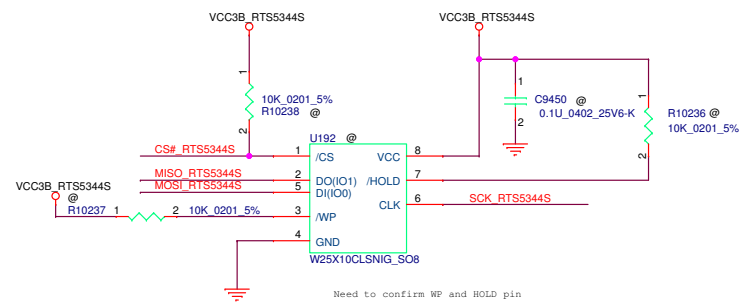
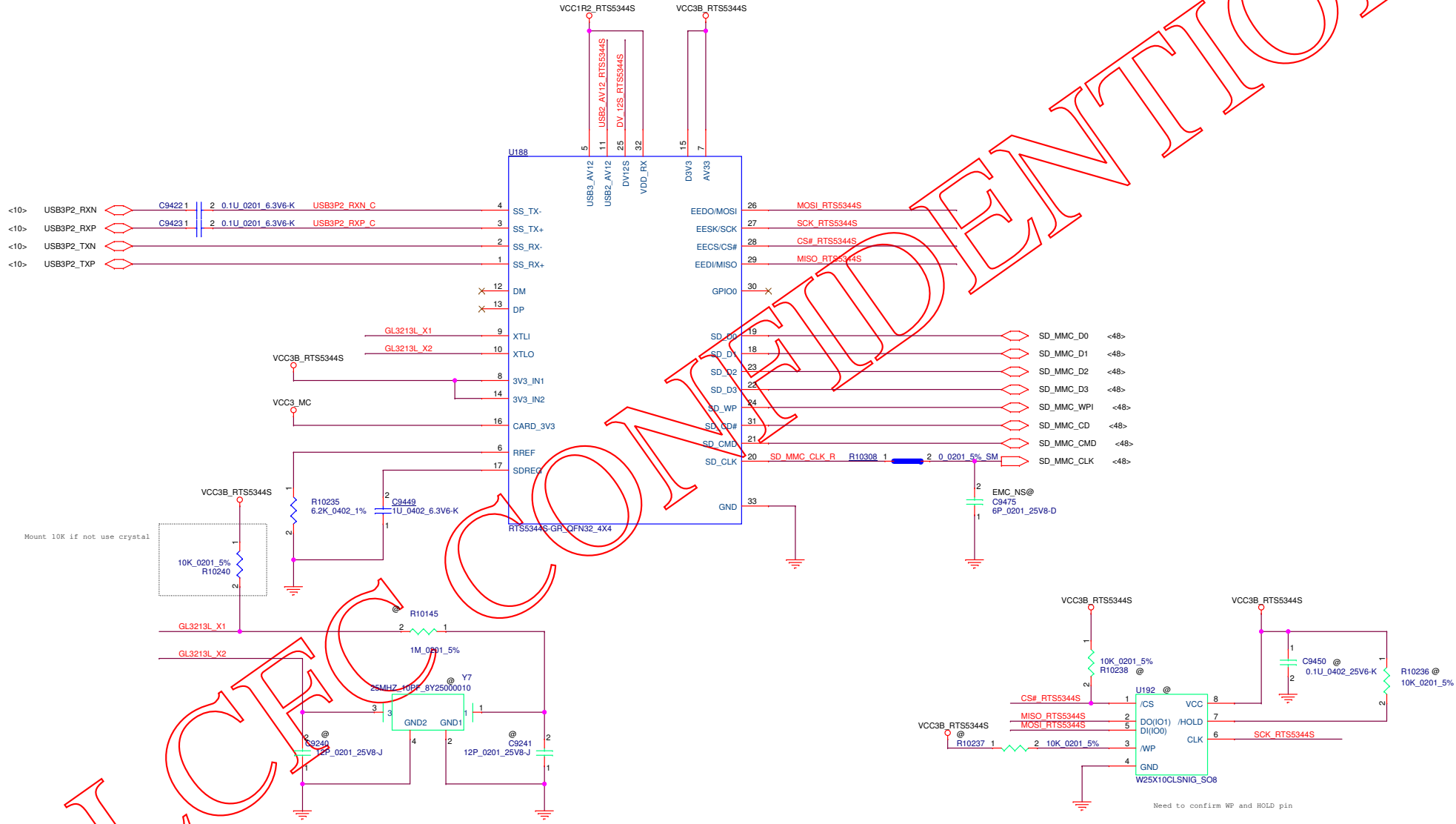
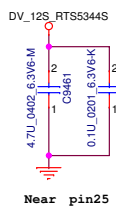
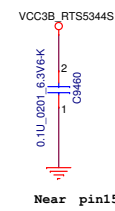
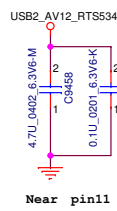
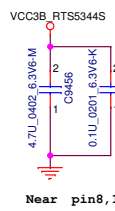
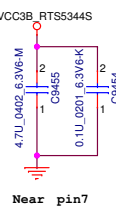
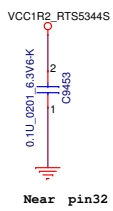
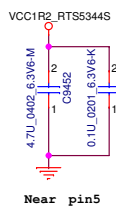
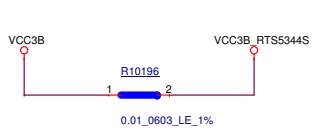
	CONFIG 0 (Pin 21)	CONFIG 3 (Pin 1)	CONFIG 2 (Pin 75)	CONFIG 1 (Pin 69)	Status#	Note
Fibcom L830-EB	NC	GND	GND	GND	Status# 8	WWAN - SSIC P0
Sierra EM7565	GND	NC	NC	GND	Status# 6	WWAN - USB3.1 G1 P2
2242 PCIe SSD	GND	GND	GND	NC	Status# 1	WWAN - PCIe

TABLE OF USB3.0 SW (U189)

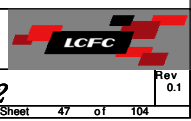
Vendor	P/N	LCFC P/N
NXP	CBTL02042ABQ	SA00005R500
PERICOM	PI3PCIE321ZBE	SA00005RJ00
TOSHIBA	TC7PCI3212MT	SA000066600

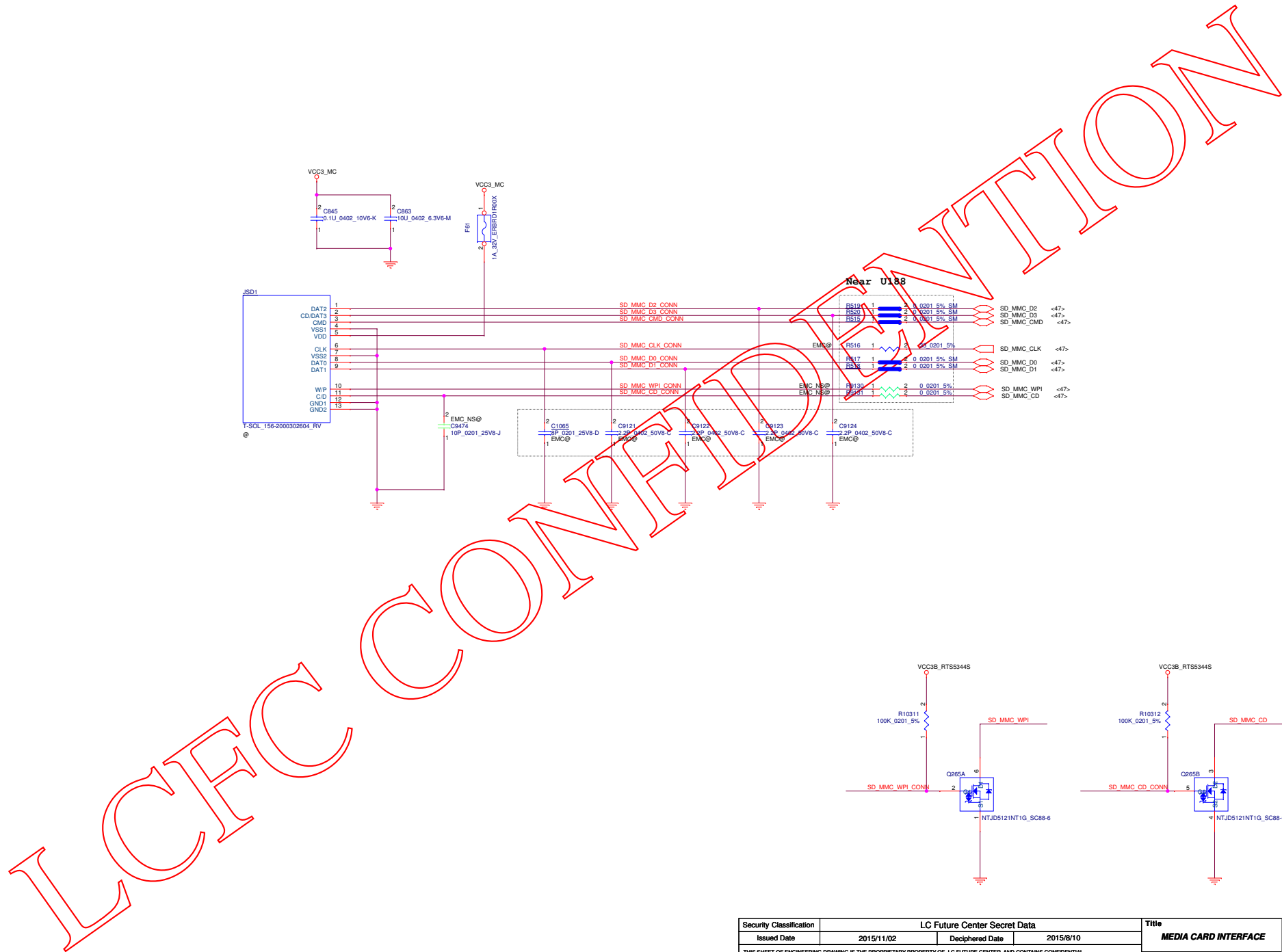
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Size	Document Number	Rev	0.1
Custom	Windu-2	Date:	Thursday, November 05, 2017 Sheet 47 of 104





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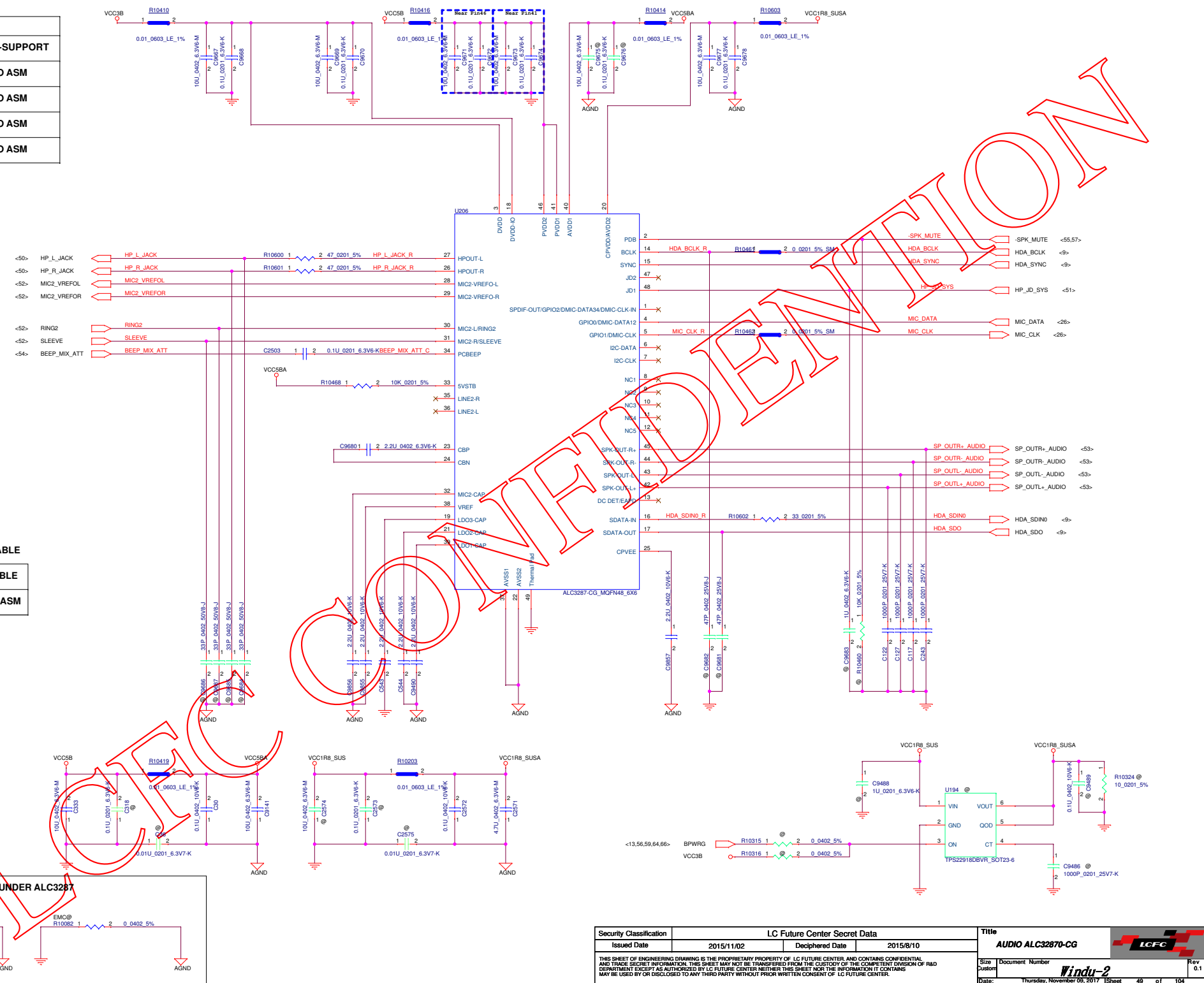
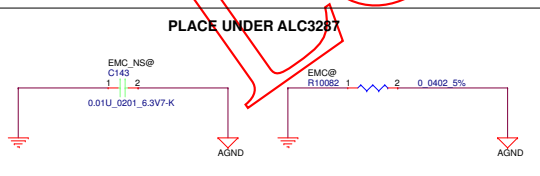
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Custom	C	Windu-2		Date: Thursday, November 05, 2017 Sheet 48 of 104	

Dock support		
	SUPPORT	NON-SUPPORT
R1235	NO ASM	NO ASM
R1236	ASM	NO ASM
R1237	ASM	NO ASM
R1238	ASM	NO ASM

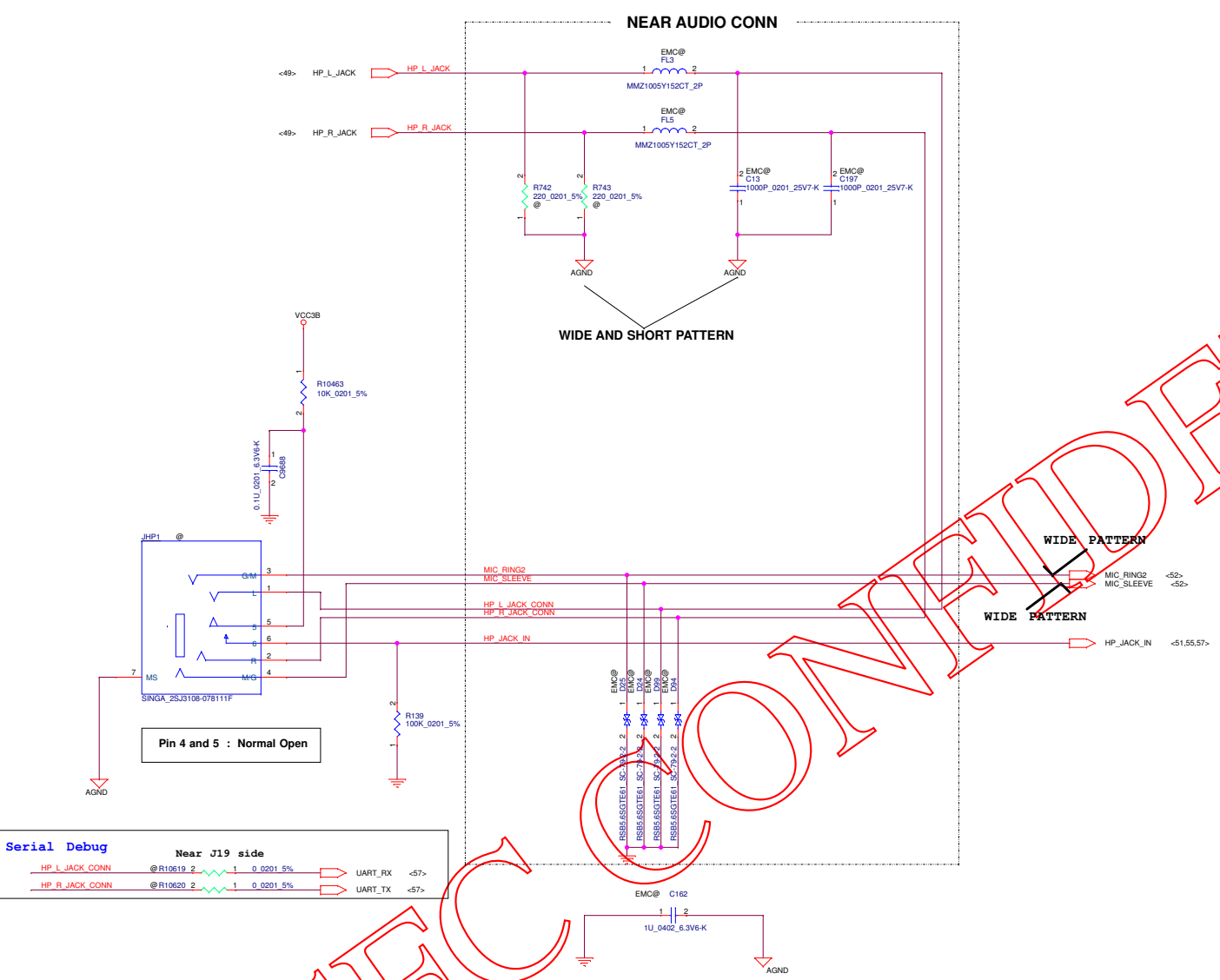
↑
LOGIC

TABLE MIC HW ENABLE/DISABLE		
	ENABLE	DISABLE
R961	ASM	NO ASM

↑
LOGIC



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		AUDIO ALC32870-CG	
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Custom	Windy-2	Date:	Thursday, November 05, 2017 Sheet 49 of 104



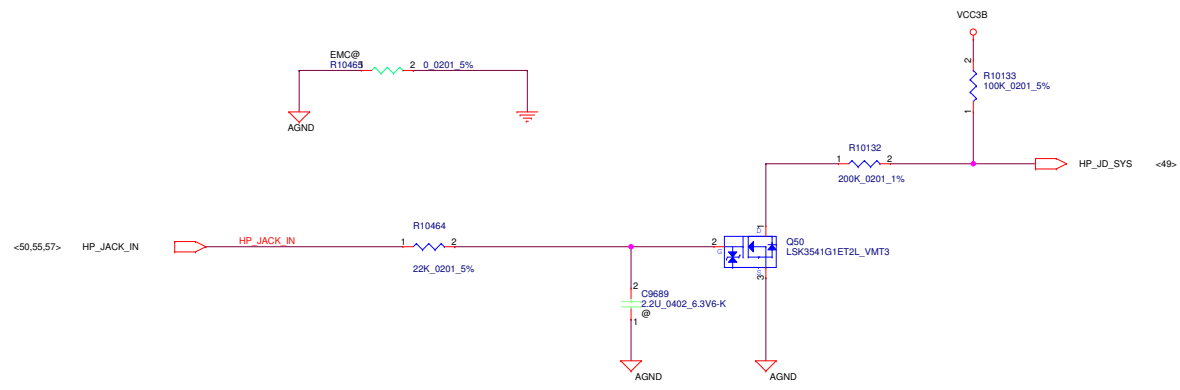
Serial Debug
Near J19 side

HP_L JACK CONN @R110619 2 1 0.0201_5% UART_RX <57>


HP_R JACK CONN @R110620 2 1 0.0201_5% UART_TX <57>

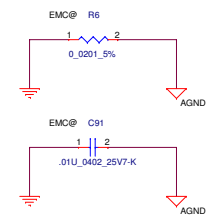
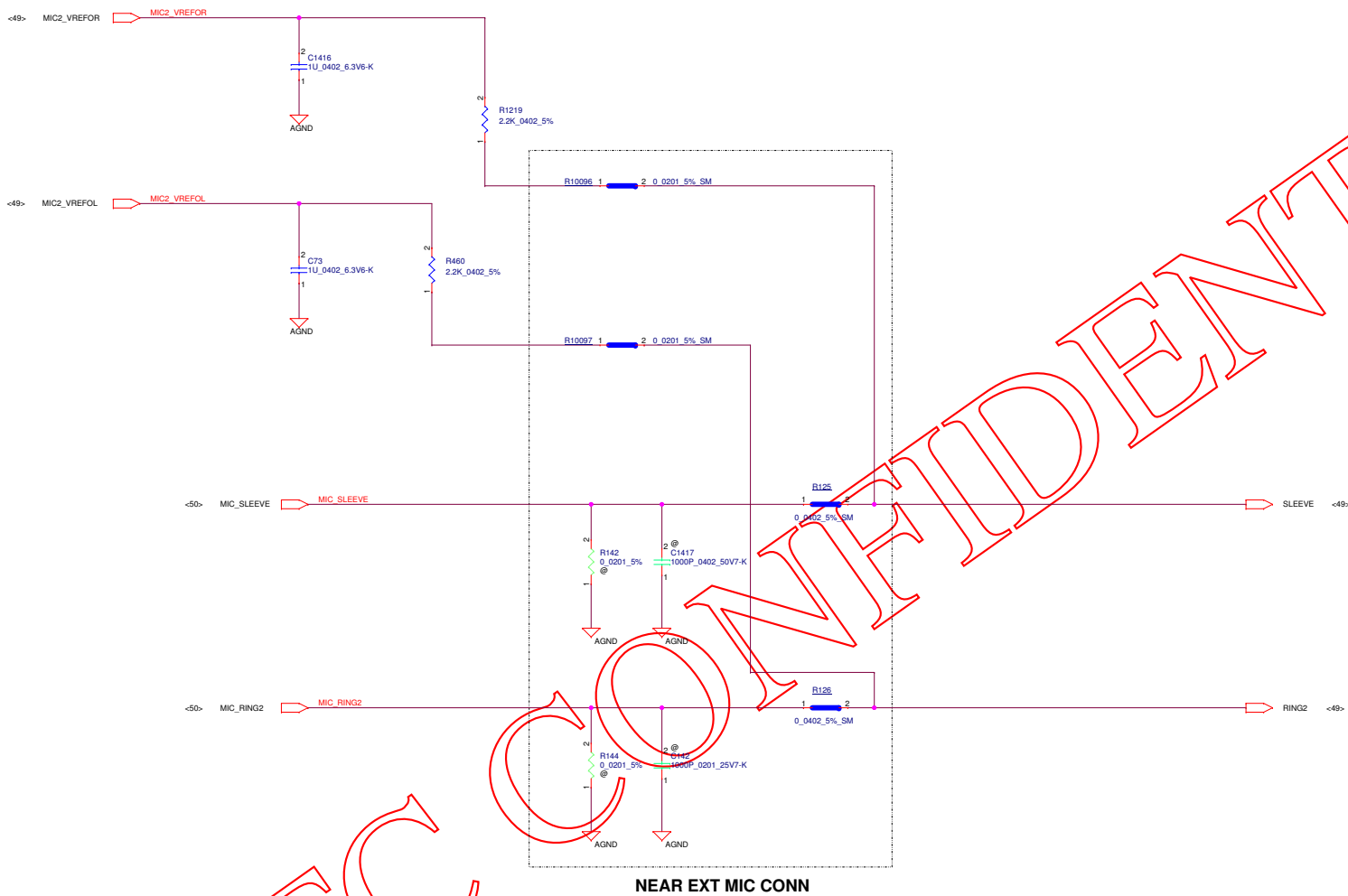
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					Windu-2	0.1
				Date:	Thursday, November 09, 2017	Sheet 51 of 104



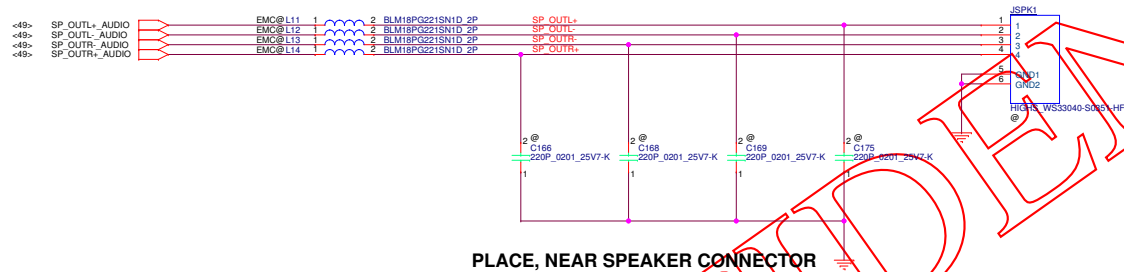
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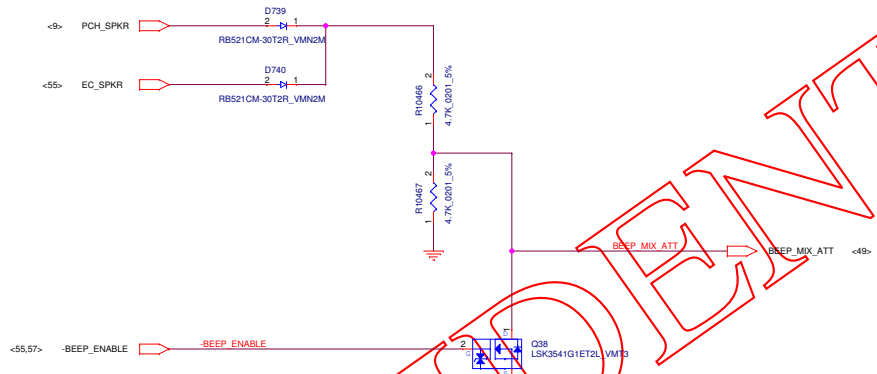
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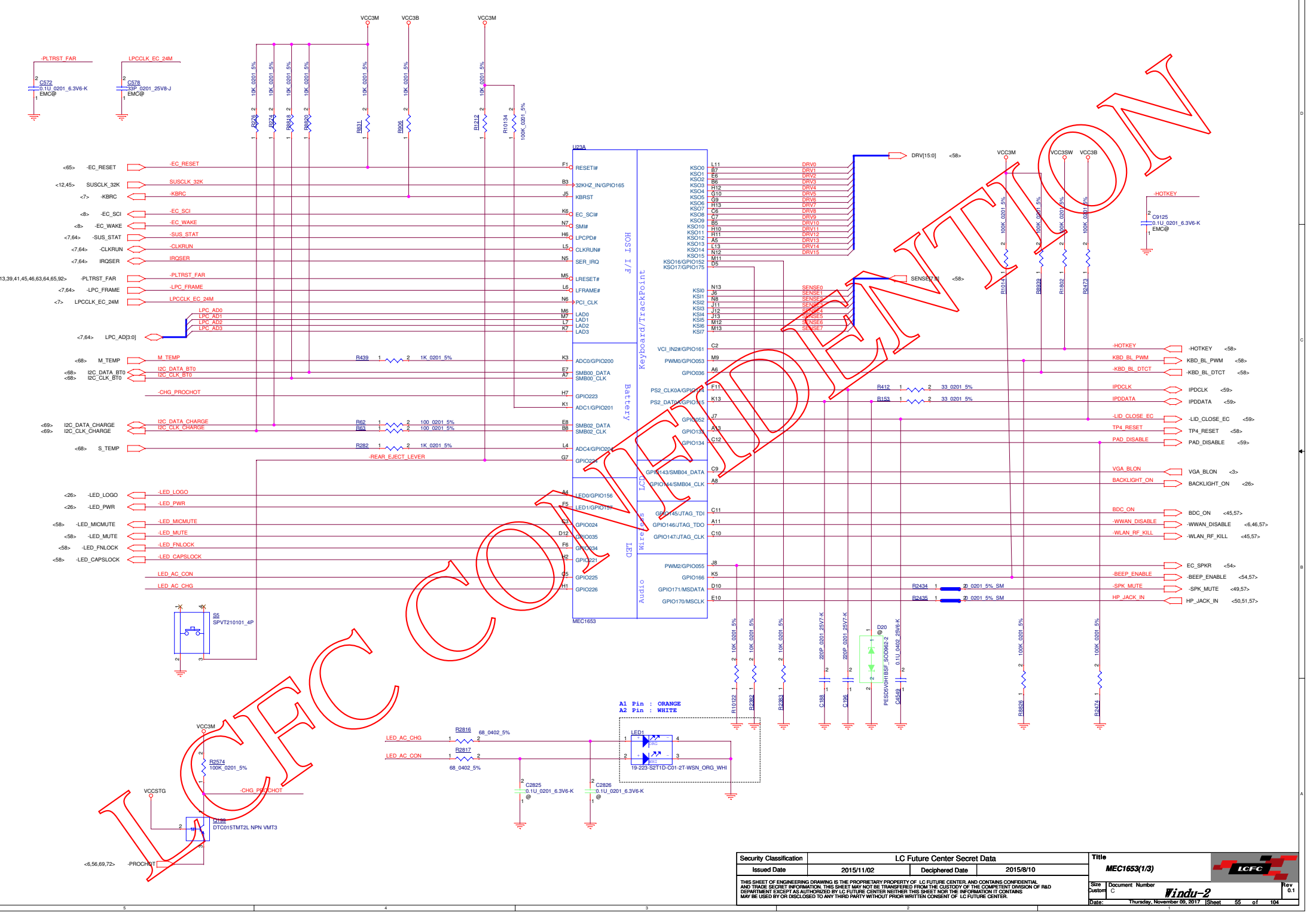
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Issued Date	2015/11/02	Deciphered Date	2015/8/10	
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Custom	C	0.1	Date:	Thursday, November 05, 2017	Sheet 85 of 104

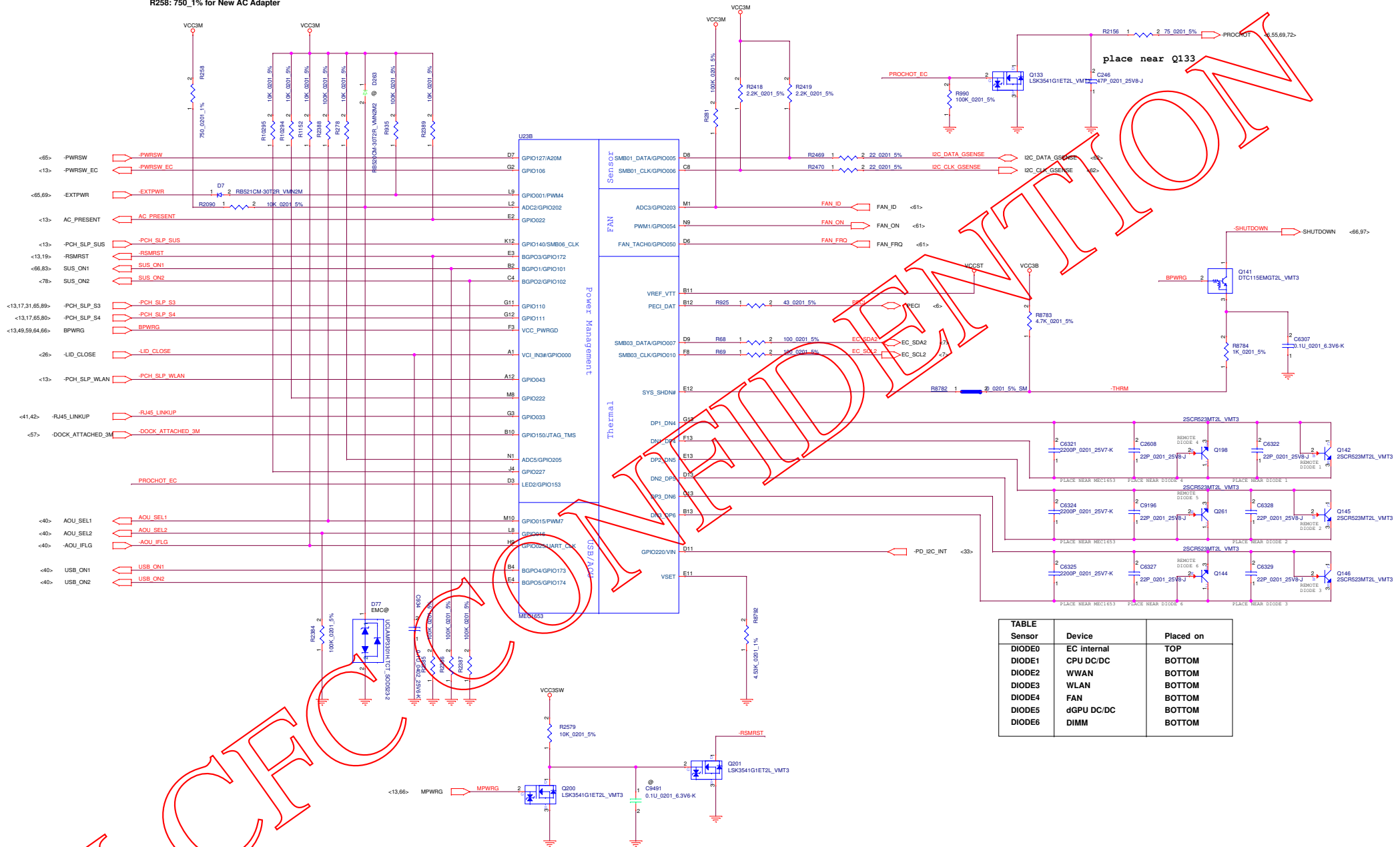


TABLE Sensor	Device	Placed on
DIODE0	EC internal	TOP
DIODE1	CPU DC/DC	BOTTOM
DIODE2	WWAN	BOTTOM
DIODE3	WLAN	BOTTOM
DIODE4	FAN	BOTTOM
DIODE5	dGPU DC/DC	BOTTOM
DIODE6	DIMM	BOTTOM

Trace FIFO Debug Port

	Enable	Disable
R2434	22_5%	0_5%
R2435	22_5%	0_5%
R420	NO_ASM	ASM

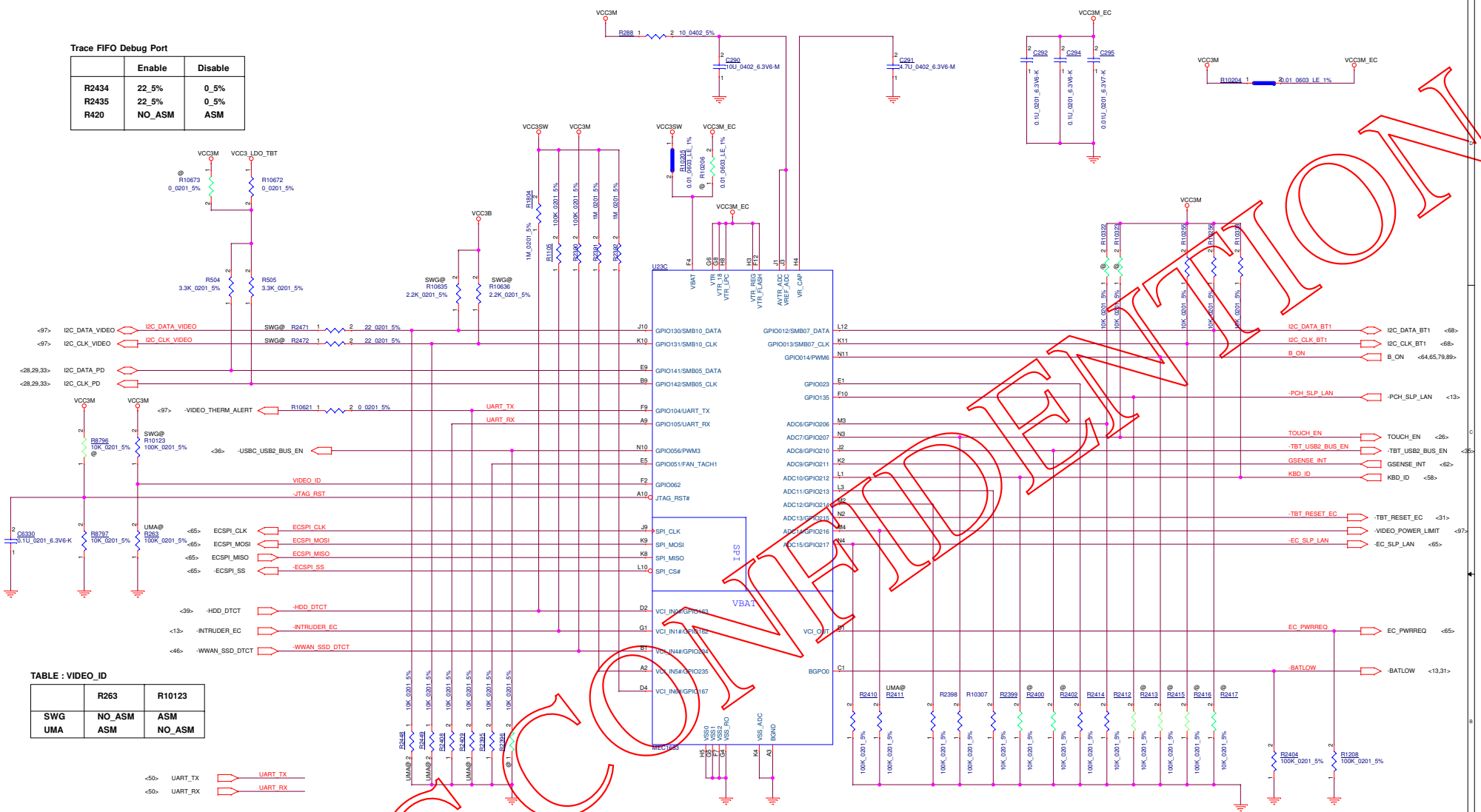
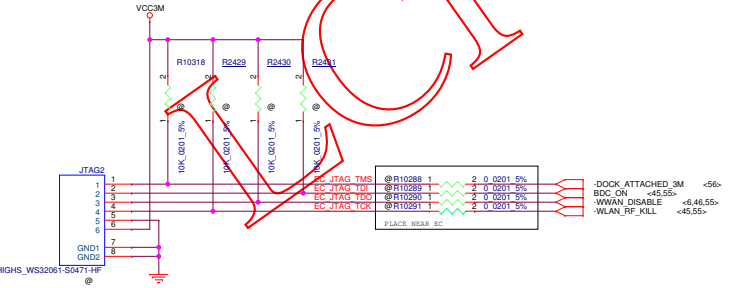


TABLE : VIDEO_ID

	R263	R10123
SWG	NO_ASM	ASM
UMA	NO_ASM	NO_ASM

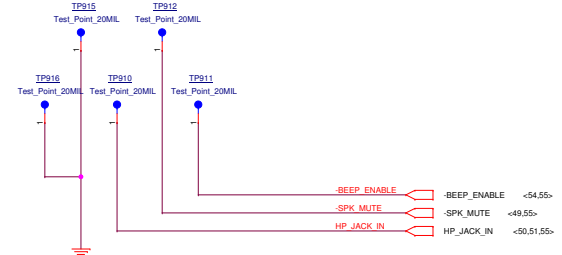


Cover with green paint in SVT



JTAG Debug Port

	Enable	Disable
R8796	ASM	NO_ASM
R8797	NO_ASM	ASM
R2429	ASM	NO_ASM
R2430	ASM	NO_ASM
R2431	ASM	NO_ASM
R10318	ASM	NO_ASM
R10288	ASM	NO_ASM
R10289	ASM	NO_ASM
R10290	ASM	NO_ASM
R10291	ASM	NO_ASM

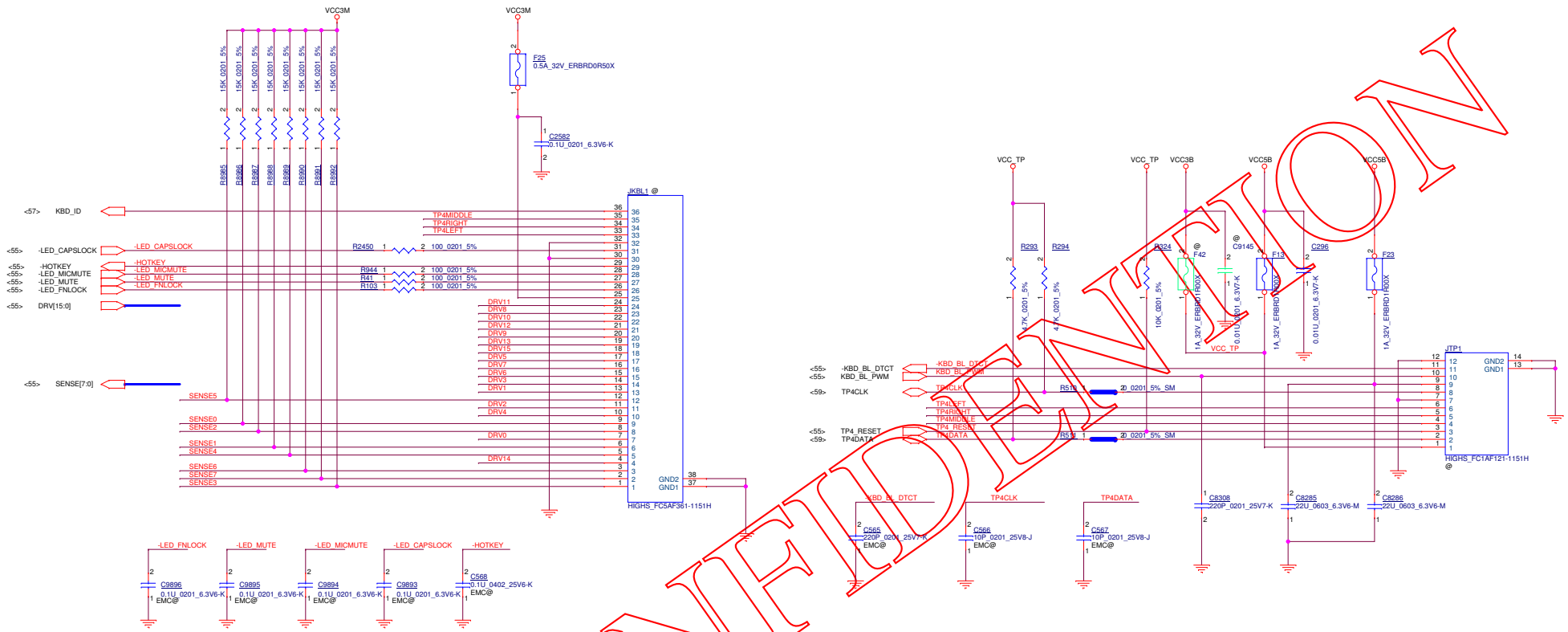


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Custom	Windu-2				
Date:	Thursday, November 05, 2017	Sheet	58	of	104

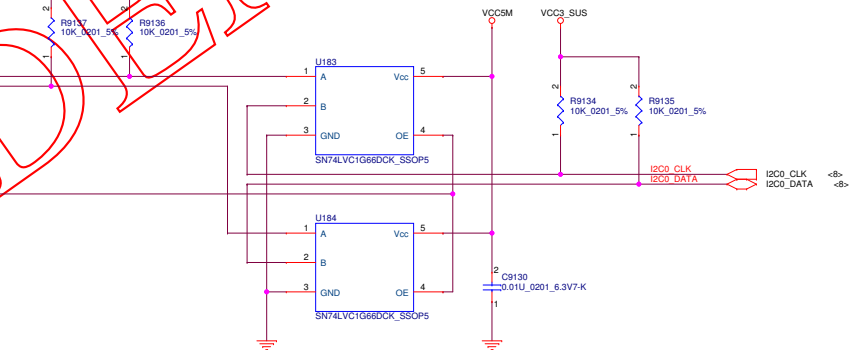
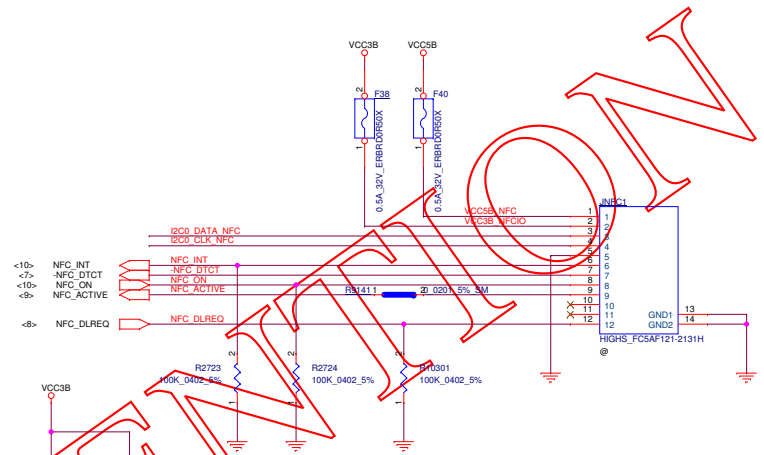
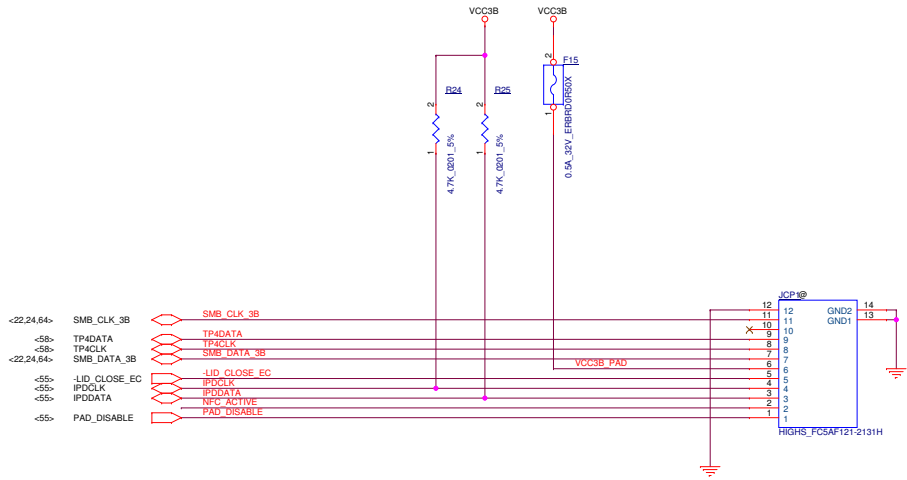
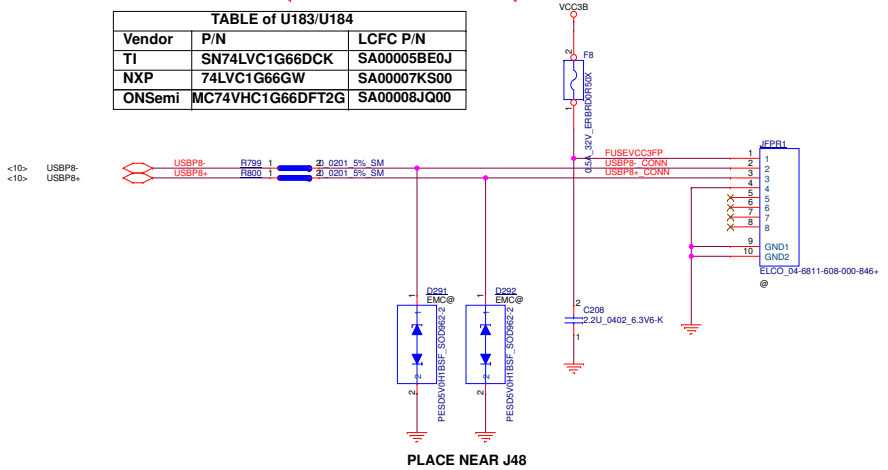
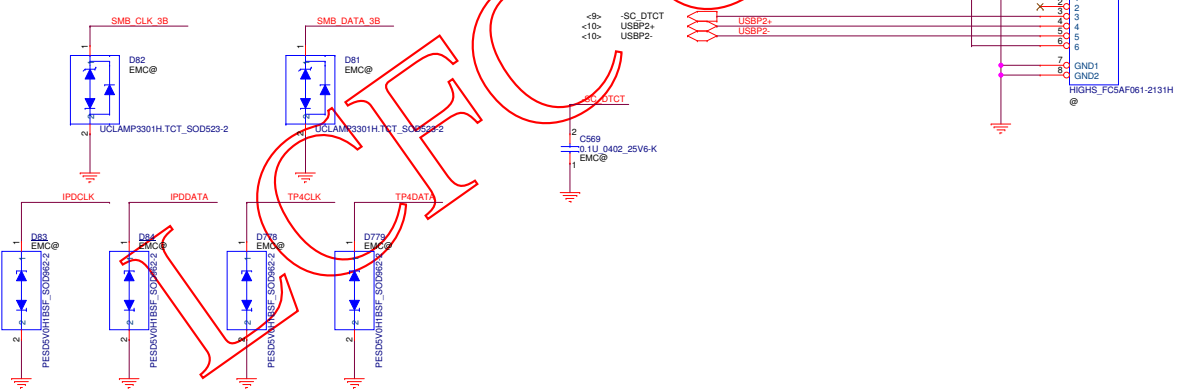


TABLE of U183/U184

Vendor	P/N	LCFC P/N
TI	SN74LVC1G66DCK	SA00005BE0J
NXP	74LVC1G66GW	SA00007K500
ONsemi	MC74VHC1G66DFT2G	SA00008JQ00




PLACE NEAR J48



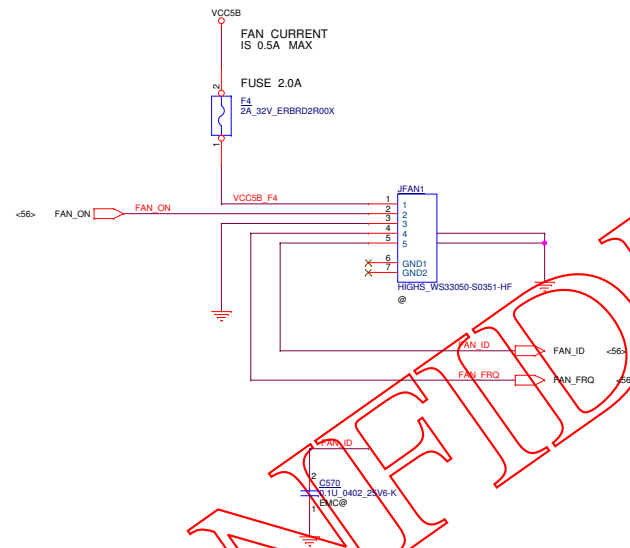
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Custom	C	Windu-2	
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TABLE

P/N	ADDR_SEL	Address
BMA255	H	32h (W) & 33h (R)
	L	30h (W) & 31h (R)
KX022-1020	H	3Eh (W) & 3Fh (R)
	L	3Ch (W) & 3Dh (R)

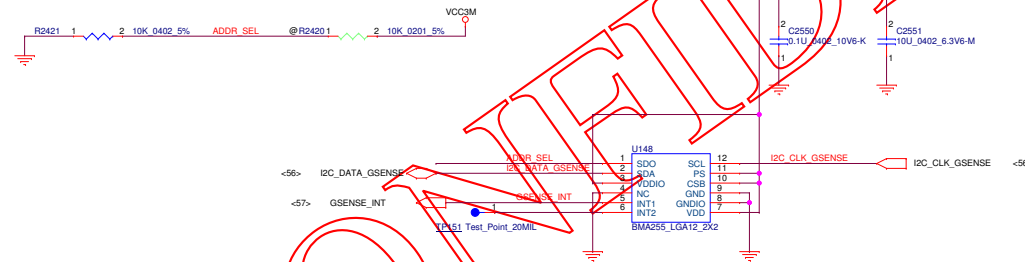
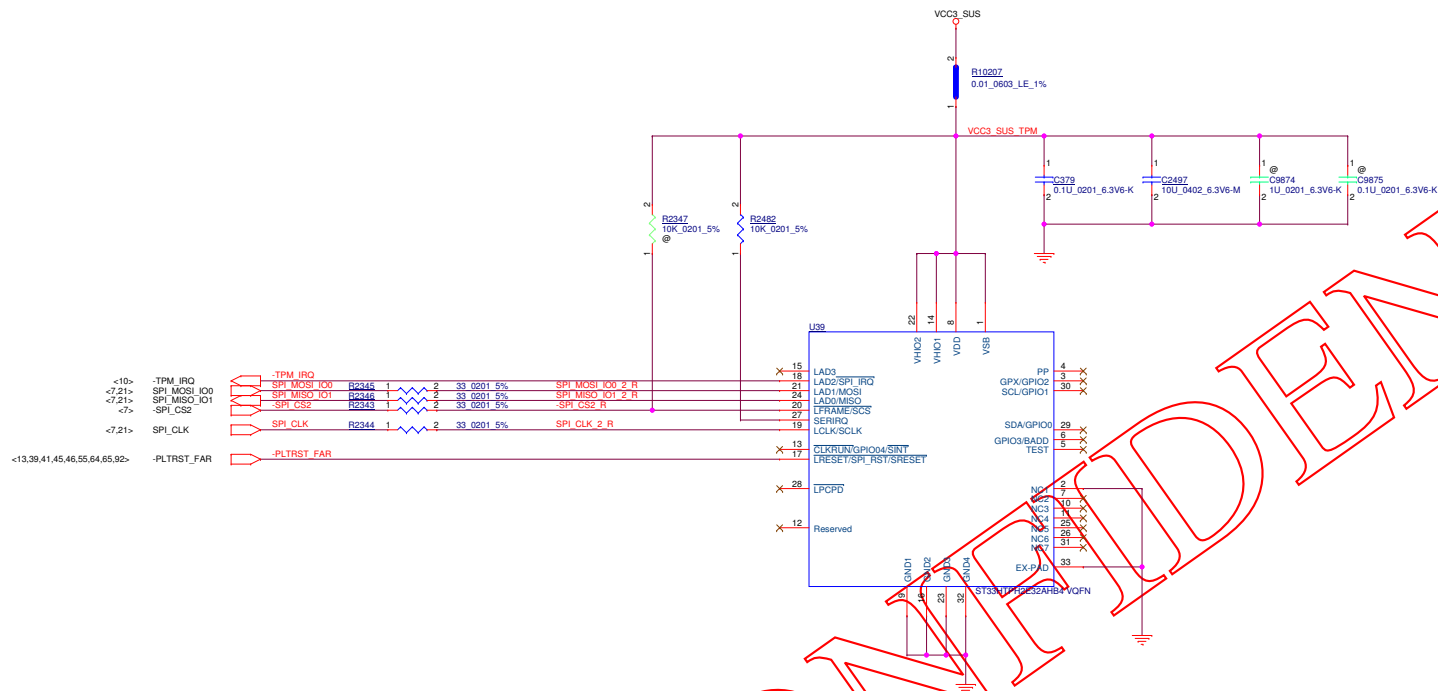


TABLE of G-Sensor (U148)

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



TABLE

Pin No	TCG PTP Spec (v38)	2nd Source	Main Source
		Infineon SLB9670VQ2.0 FW 7.43 SA000075L50	ST Micro ST33HPT2E32AHB4 SA000089E10
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

LCFC

TABLE

REF DES	ENABLE	DISABLE
J5	ASM	NO_ASM
R220	ASM	NO_ASM

LOGIC

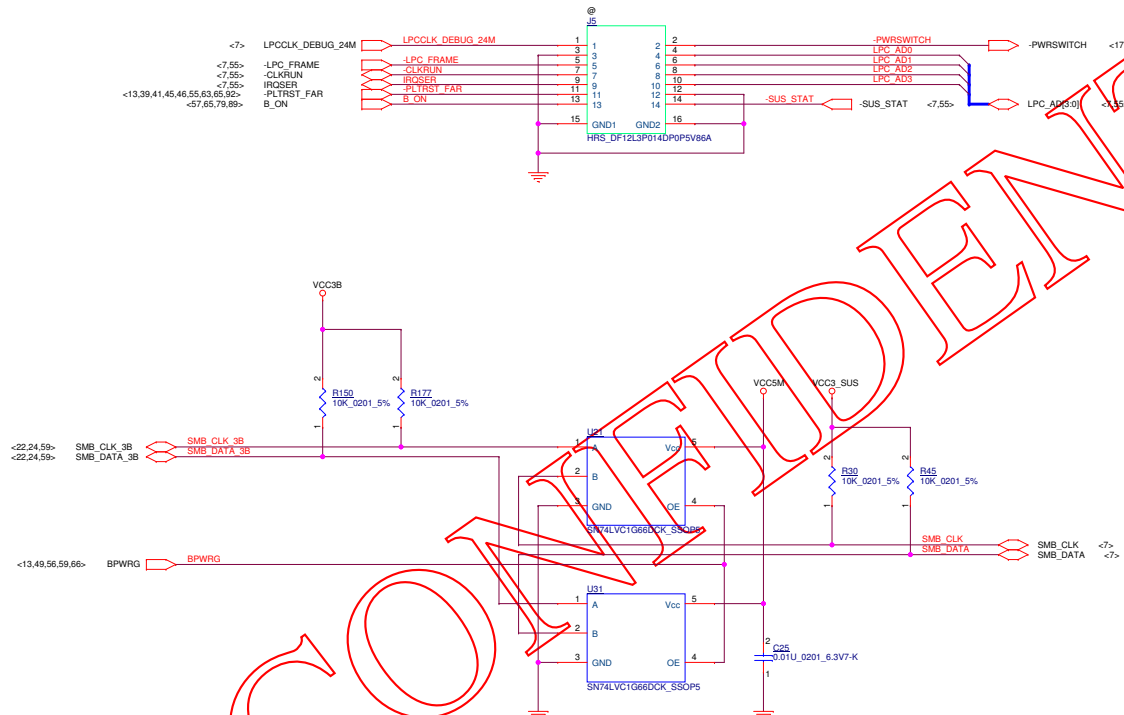
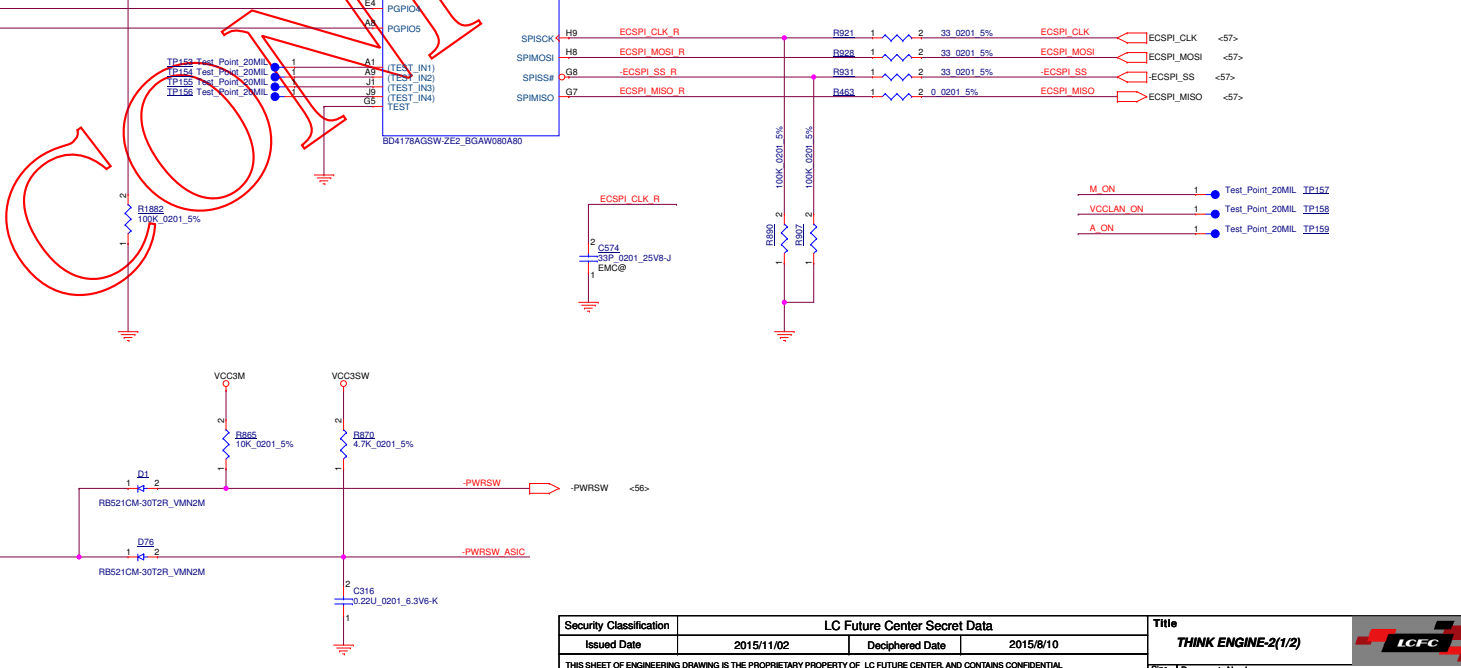
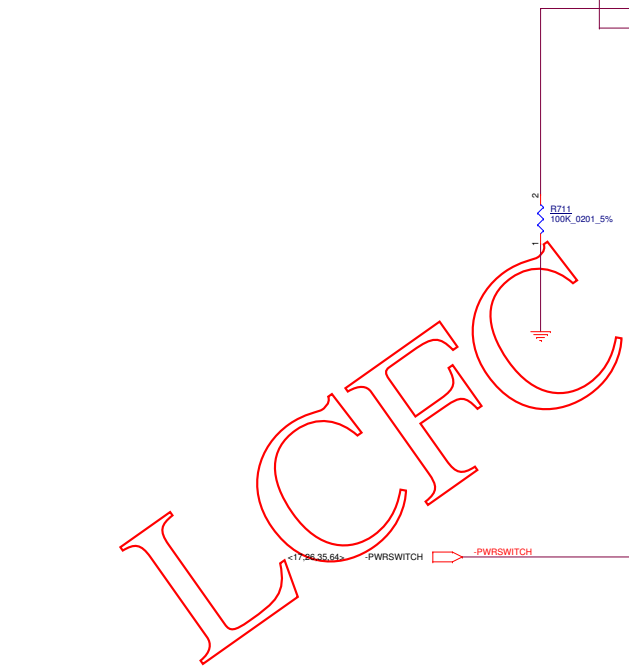
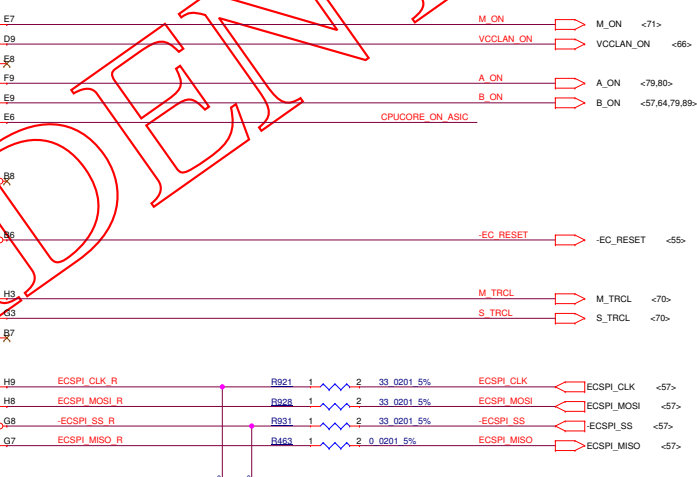
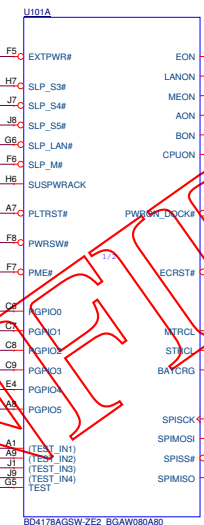
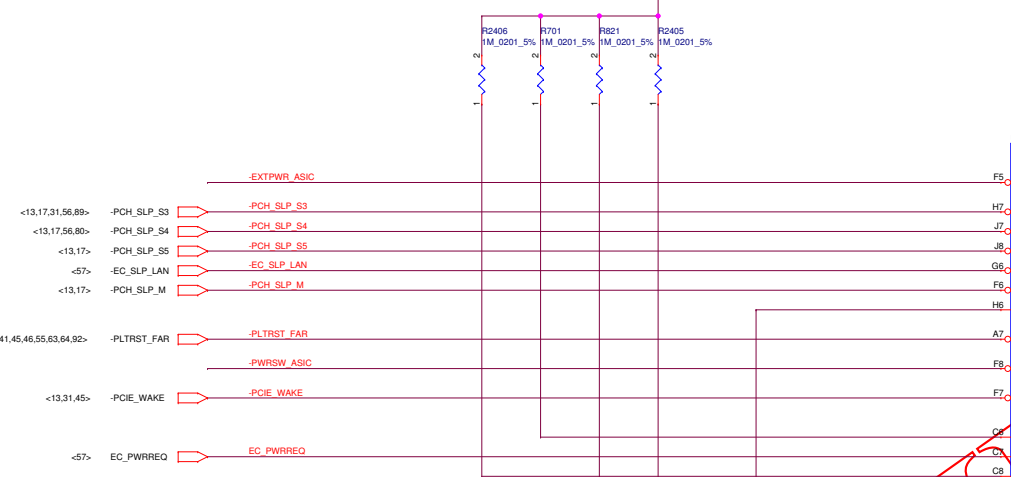
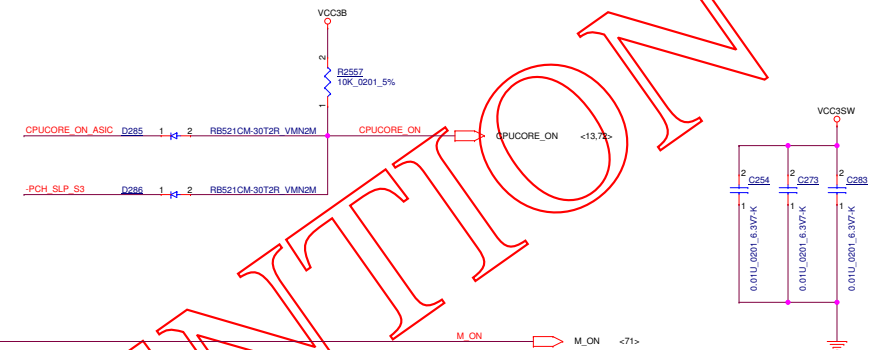
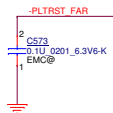
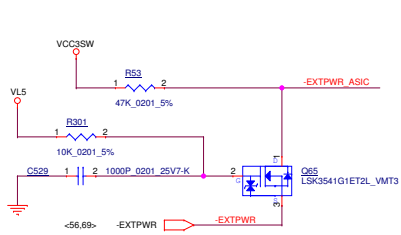


TABLE of U21/U31

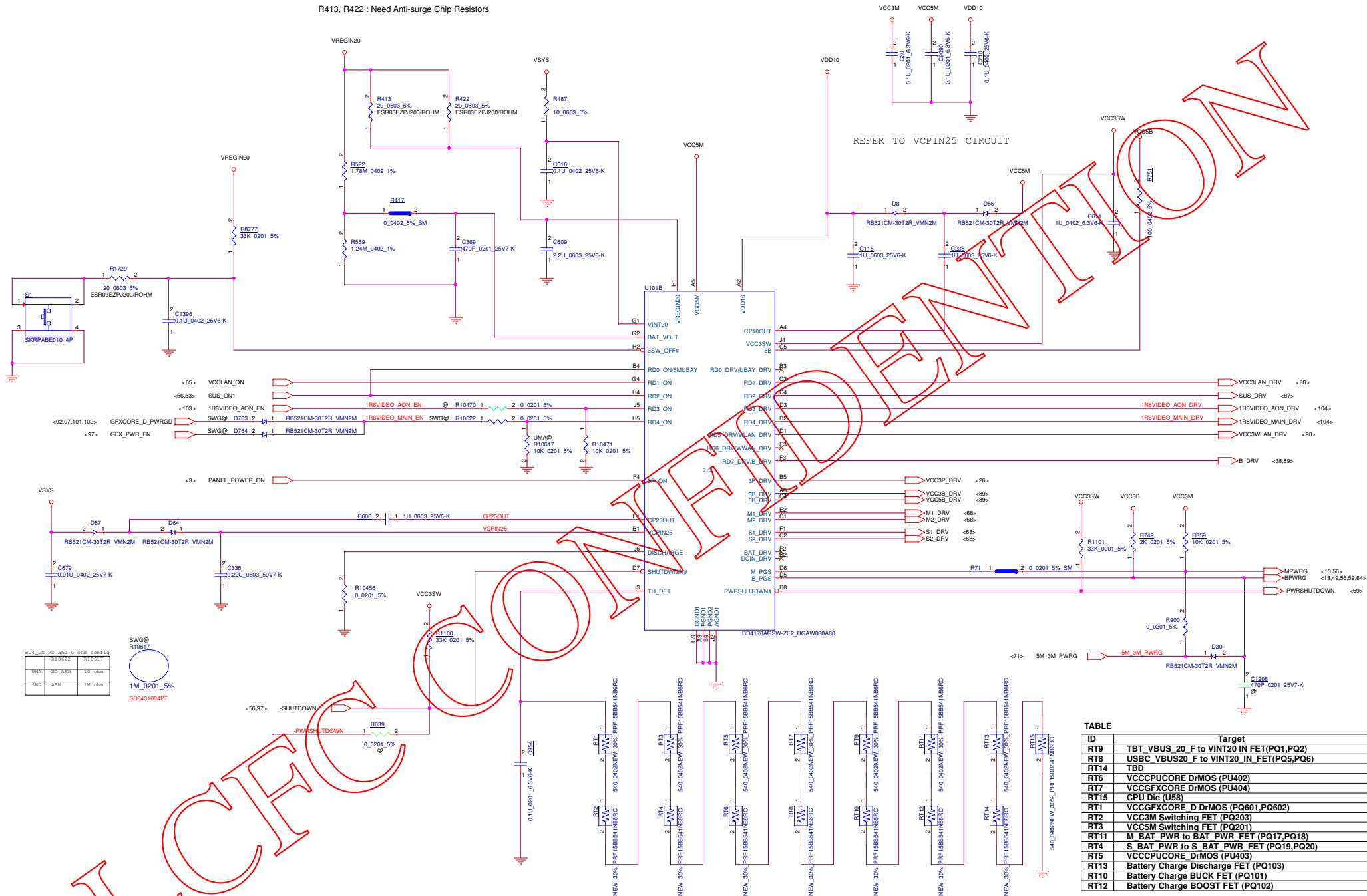
Vendor	P/N	LCFC P/N
TI	SN74LVC1G66DCK	SA00005BE0J
NXP	74LVC1G66GW	SA00007KS00
ONsemi	MC74VHC1G66DFT2G	SA00008JQ00

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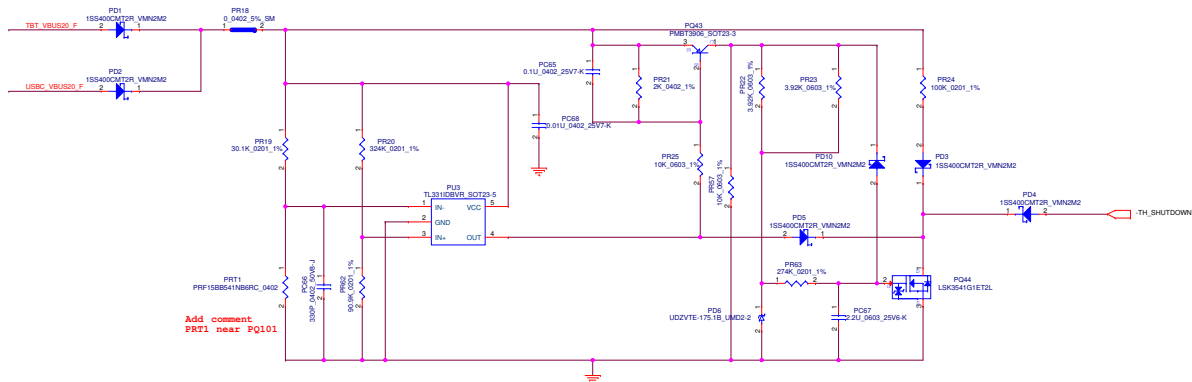
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				Custom	Windu-2
				Date:	Thursday, November 05, 2017 (Sheet 65 of 104)
				Rev	0.1

R413, R422 : Need Anti-surge Chip Resistors



ID	Target
RT9	TBT VBUS_20_F to VINT20_IN_FET(PQ1,PQ2)
RT8	USBC VBUS20_F to VINT20_IN_FET(PQ5,PQ6)
RT14	TBD
RT6	VCCCPUCORE DrMOS (PU402)
RT7	VCCGFXCORE DrMOS (PU404)
RT15	CPU Die (U58)
RT1	VCCGFXCORE_D DrMOS (PG601,PQ602)
RT2	VCC3M Switching FET (PQ203)
RT3	VCC5M Switching FET (PQ201)
RT11	M BAT_PWR to BAT_PWR_FET (PQ17,PQ18)
RT4	S BAT_PWR to S_BAT_PWR_FET (PQ19,PQ20)
RT5	VCCCPUCORE DrMOS (PU403)
RT13	Battery Charge Discharge FET (PQ103)
RT10	Battery Charge BUCK FET (PQ101)
RT12	Battery Charge BOOST FET (PQ102)

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Size	Document Number	Rev		 Windu-2	
Custom	C	0.1			
Date:	Thursday, November 05, 2017	Sheet	66	of 104	



Add comment
PRT1 near Pq101

TABLE PL1,PL2

1st: TAIYO	FBMJ2125HM210NT
2nd: MURATA	BLM21SN300SN1D

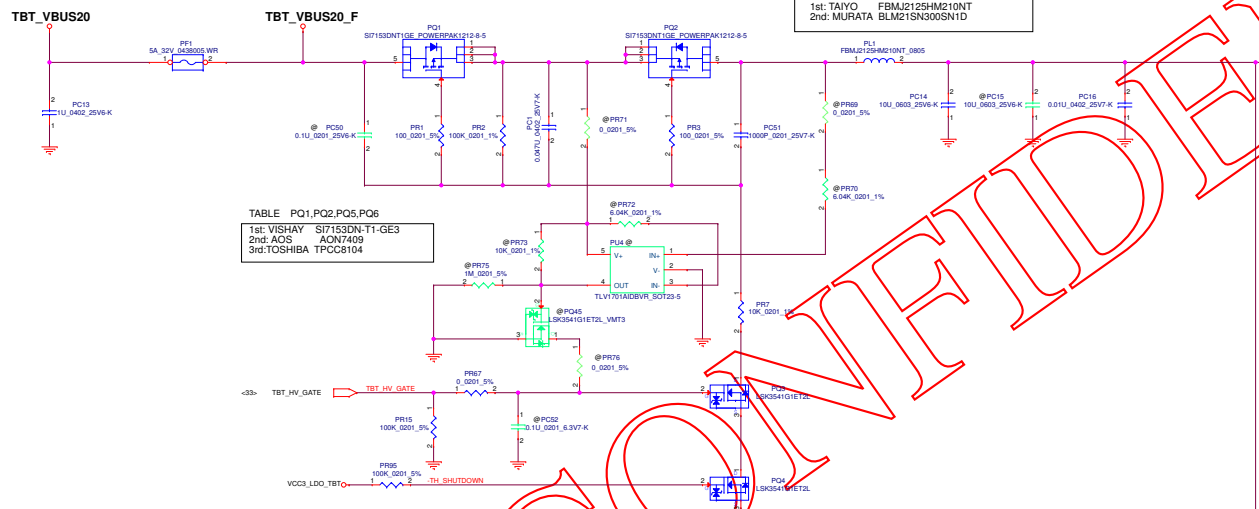
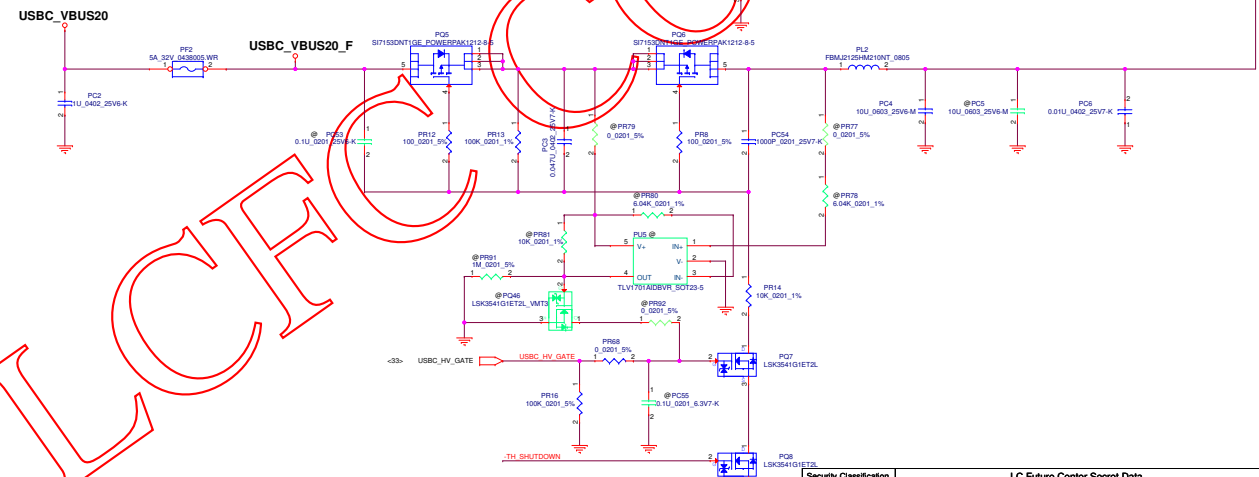


TABLE PQ1,PQ2,PQ5,PQ6

1st: Vishay	SI7153DN-T1-GE3
2nd: AOS	AON7409
3rd: TOSHIBA	TPCC8104

TABLE PL1,PL2

1st: TAIYO	FBMJ2125HM210NT
2nd: MURATA	BLM21SN300SN1D



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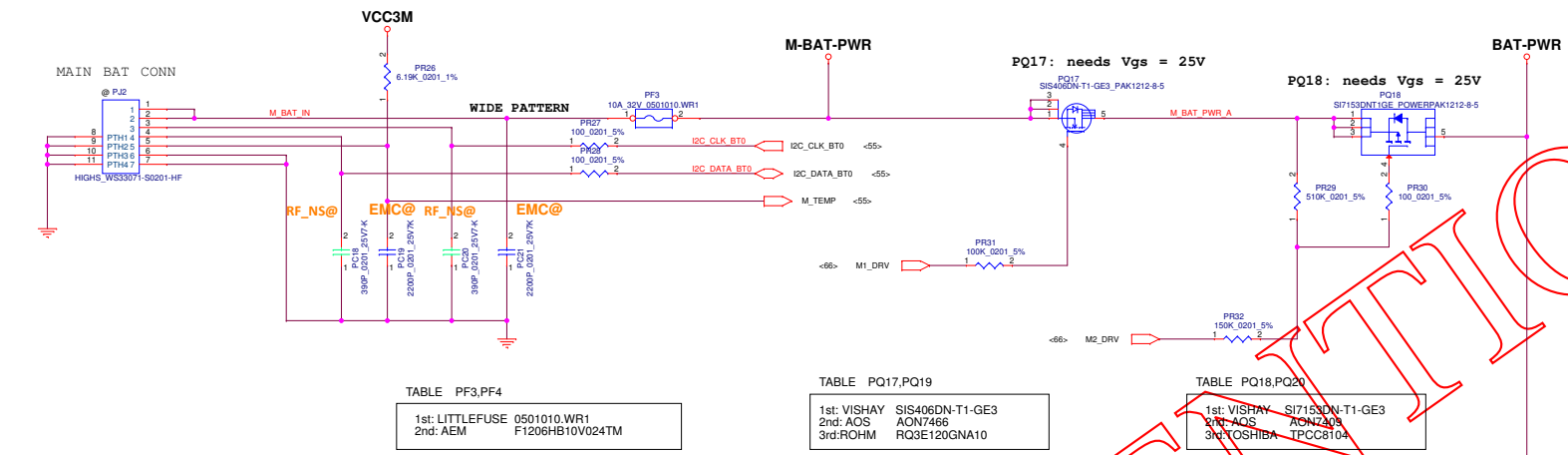


TABLE PF3,PF4

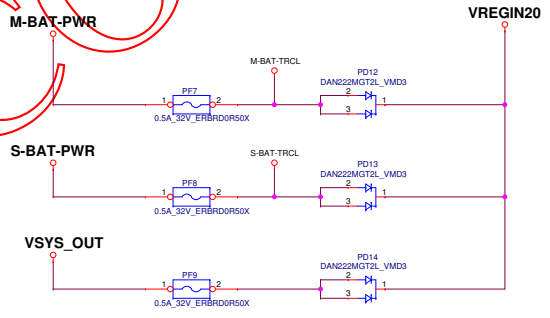
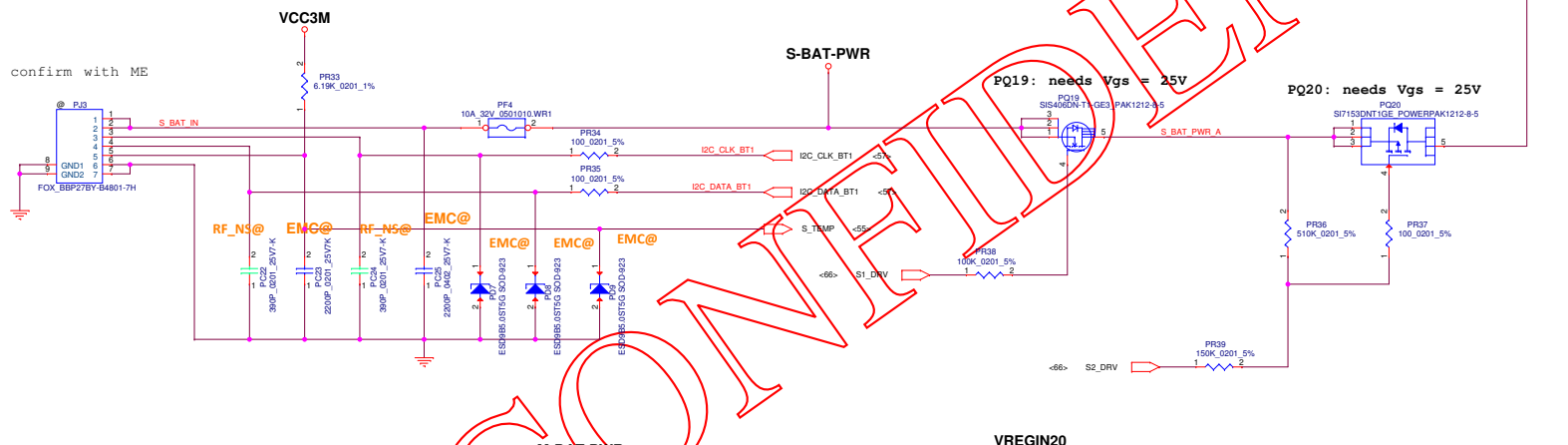
1st: LITTLEFUSE 0501010.WR1
2nd: AEM F1206HB10V024TM

TABLE PQ17,PQ19

1st: VISHAY SIS406DN-T1-GE3
2nd: AOS AON7466
3rd: ROHM RQ3E120GNA10

TABLE PQ18,PQ20

1st: VISHAY SI7153DN-T1-GE3
2nd: AOS AON7409
3rd: TOSHIBA TPCC8104



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Custom	Windu-2	0.1			
Date:	Thursday, November 09, 2017	Sheet	68	of	104

VINT20_IN
MLCCs must be placed symmetrically on Top and Bottom.

VSYS_OUT
MLCCs must be placed symmetrically on Top and Bottom.

Table PQ101

Infinion	: BSC0923 ND
ACS	: AON6998
Vishay	: S2398

Table PL101

1st: CYNTEC	CML E063T-2R2MS
2nd: TOKIN	MPLCG0630L2R2

Table PQ102

1st: VISHAY	SIZ340DT-T1-GE3
2nd: AOS	AON7934

Should be placed near ACP, ACN

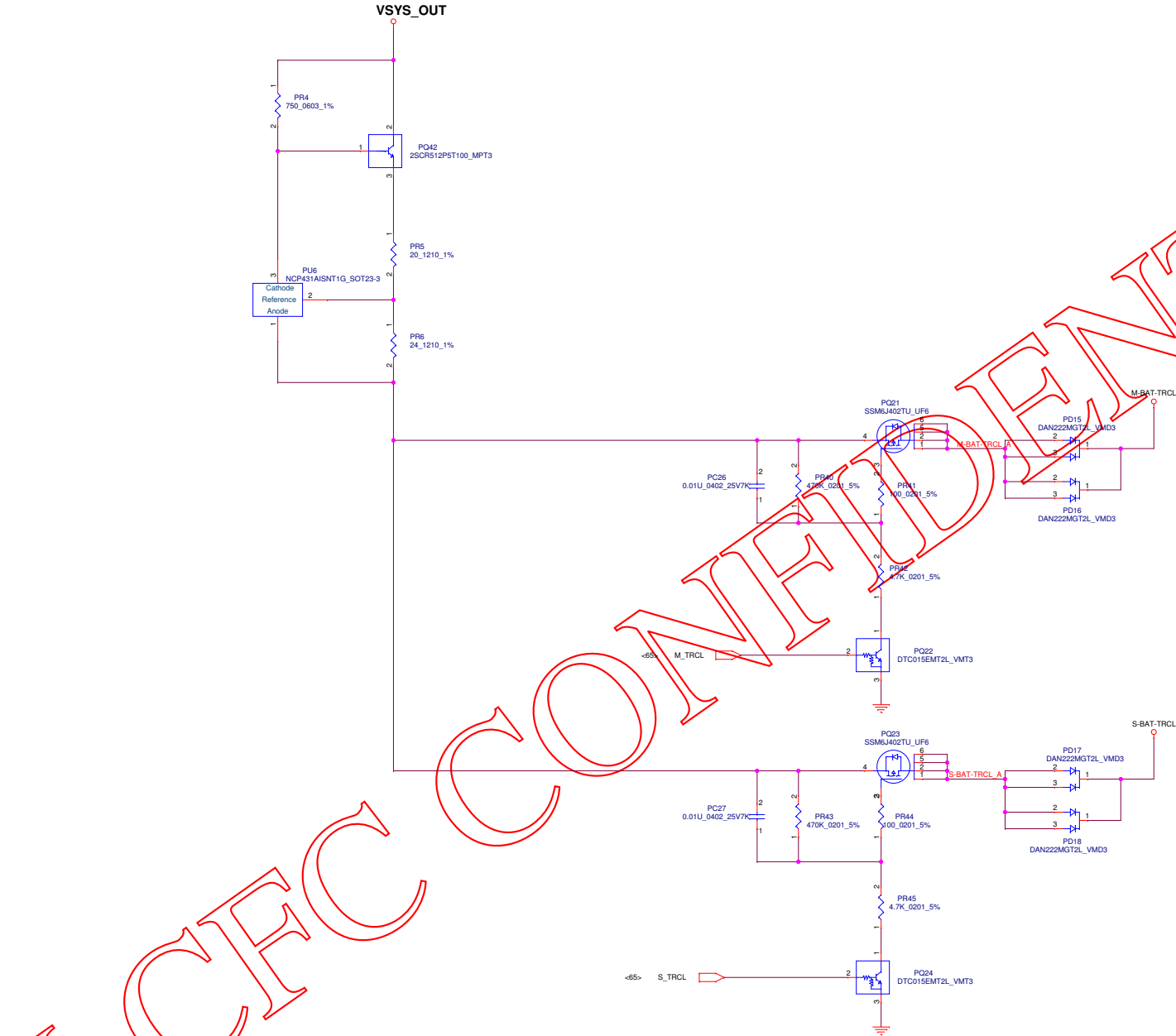
Keep these two signals as pair routing

IDPM	V(ILIM)	PR147
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


# of CELL	VCELL_PRES	PR154
1-CELL	1.5V	301K
2-CELL	2.5V	140K
3-CELL	3.5V	71.5K
4-CELL	4.5V	33.2K

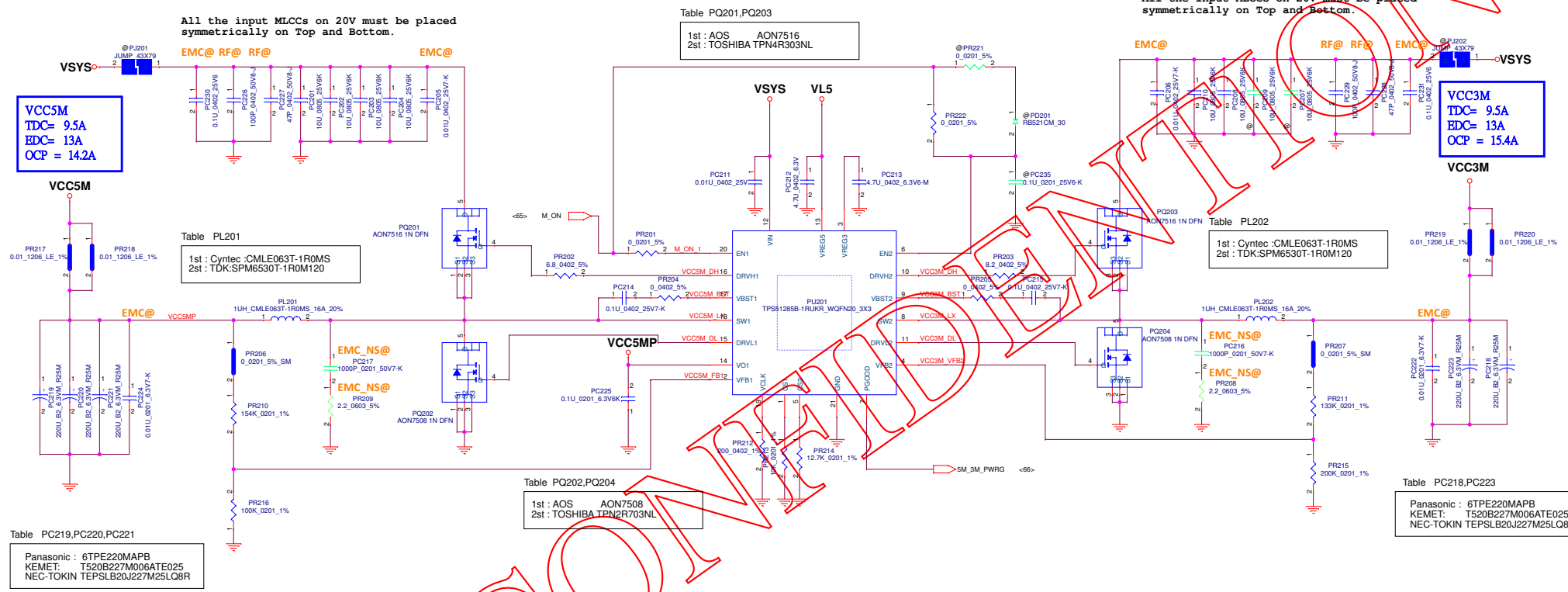
Security Classification	LC Future Center Secret Data	Title	BATTERY CHARGER(BQ25700A)
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		Custom	Windu-2
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Date:	Thursday, November 09, 2017	Sheet	89 of 104

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All the input MLCCs on 20V must be placed symmetrically on Top and Bottom.

All the input MLCCs on 20V must be placed symmetrically on Top and Bottom.

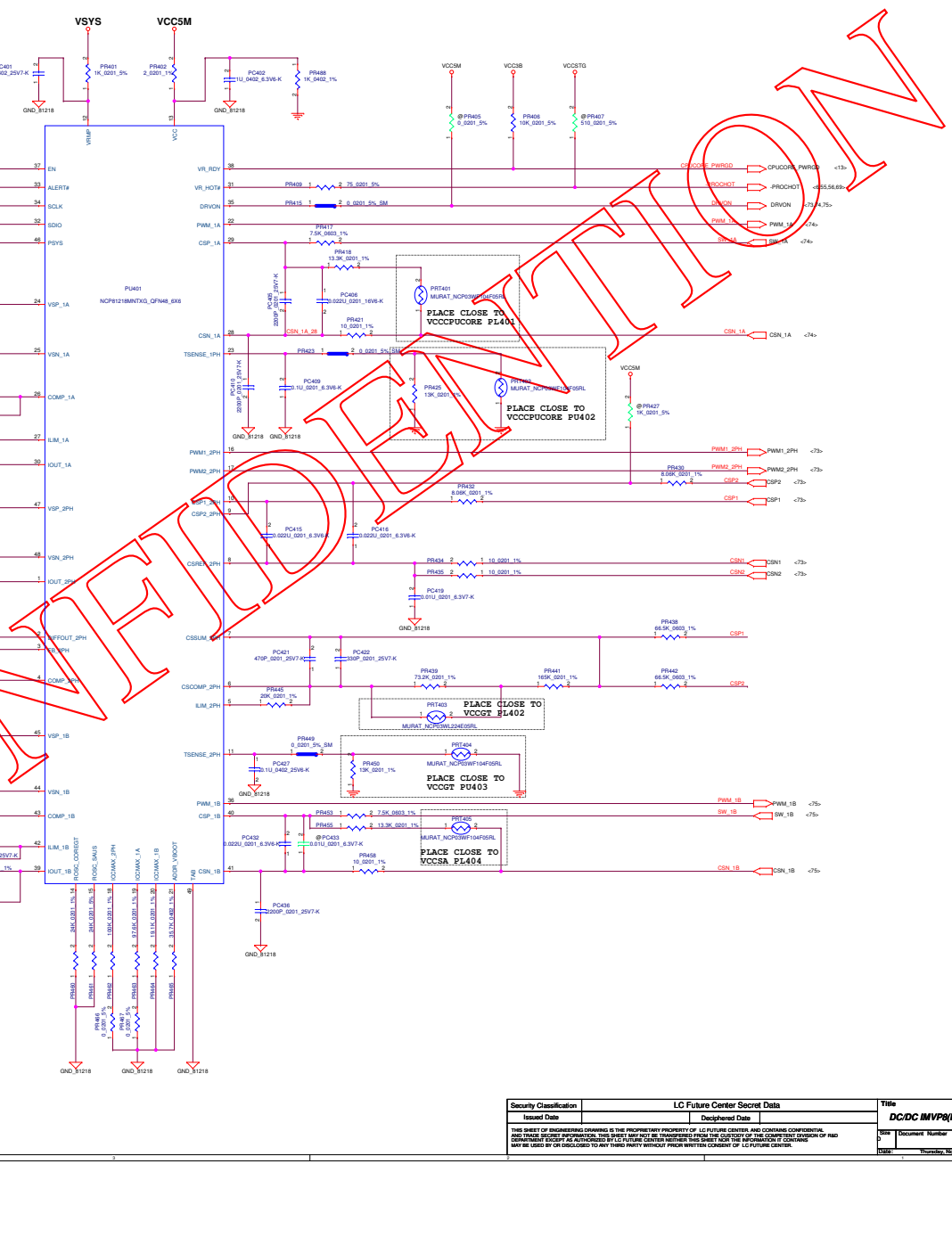
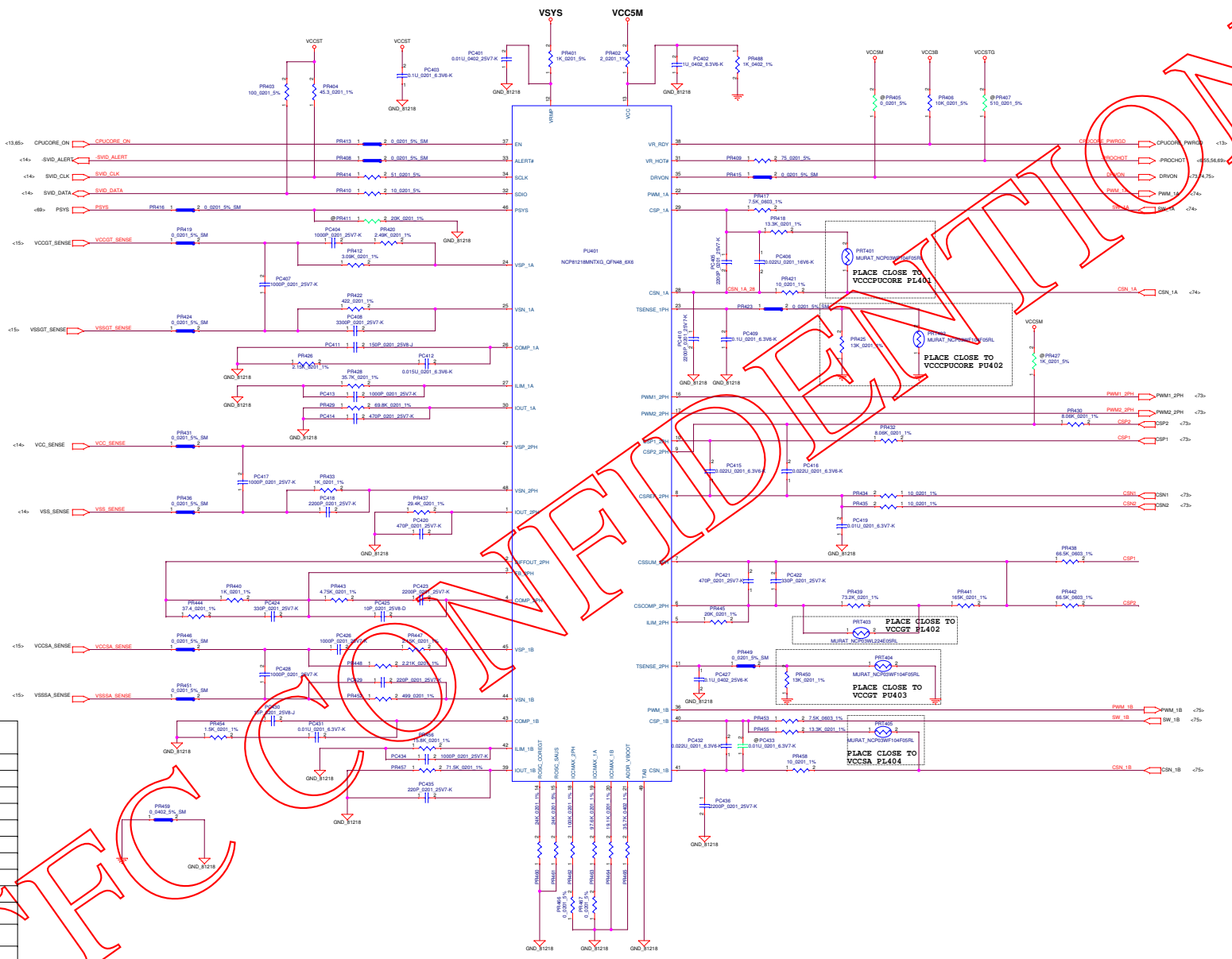
VCC5M
 TDC= 9.5A
 EDC= 13A
 OCP = 14.2A

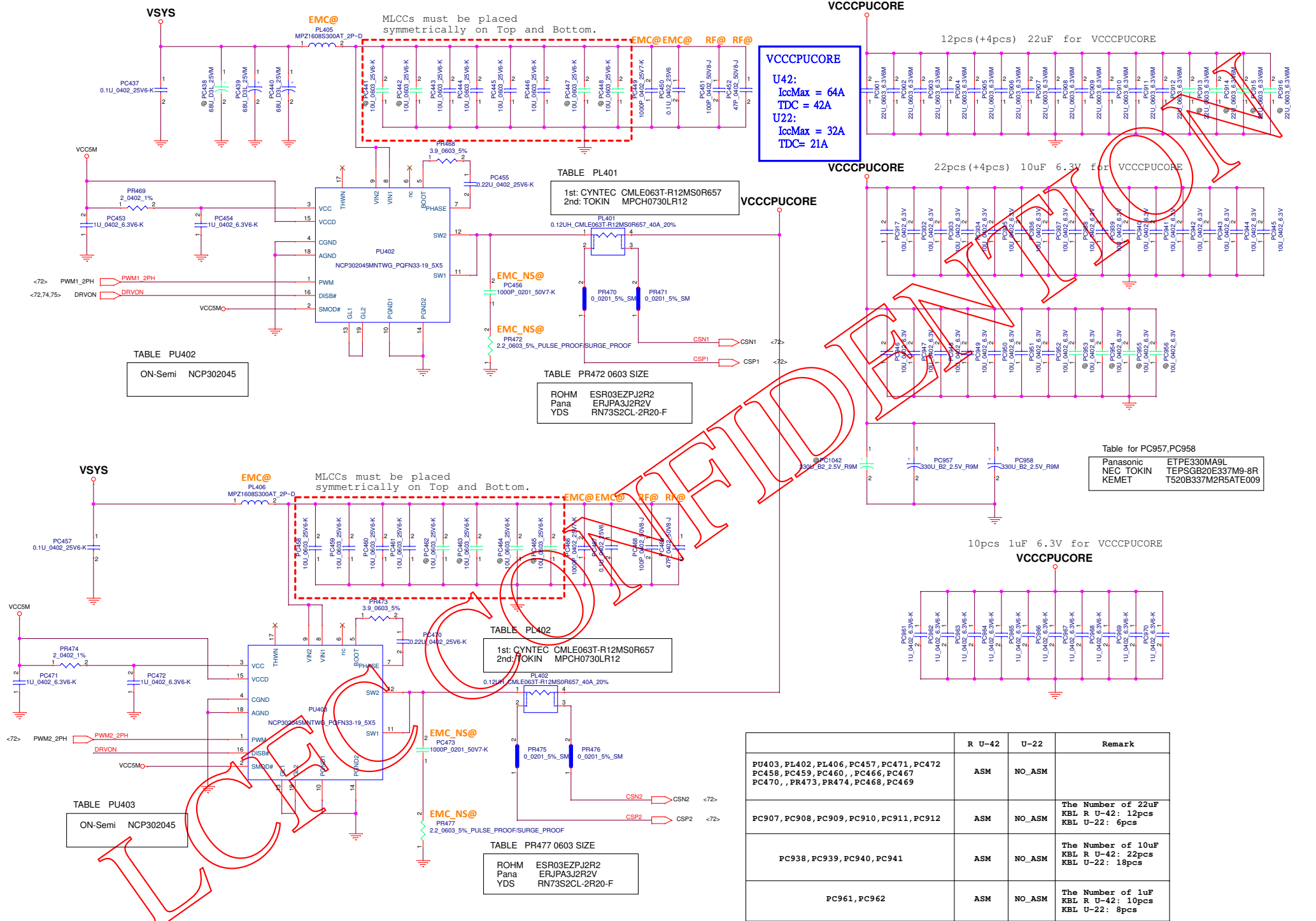
VCC3M
 TDC= 9.5A
 EDC= 13A
 OCP = 15.4A

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Location	U42	U22
PR456	15.8K	18.7K
PR457	71.5K	91K
PR462	100K	49.9K
PR464	19.1K	15.8K
PR445	20K	10K
PR442	66.5K	NA
PR435	10	NA
PR430	8.06K	NA
PR427	1K	1K
PC416	0.022u	NA
PR437	29.4K	28K
PR440	1K	680





VCCPUCORE
 U42:
 IccMax = 64A
 TDC = 42A
 U22:
 IccMax = 32A
 TDC = 21A

TABLE PL401
 1st: CYNTEC CML063T-R12MS0R657
 2nd: TOKIN MPCH0730LR12

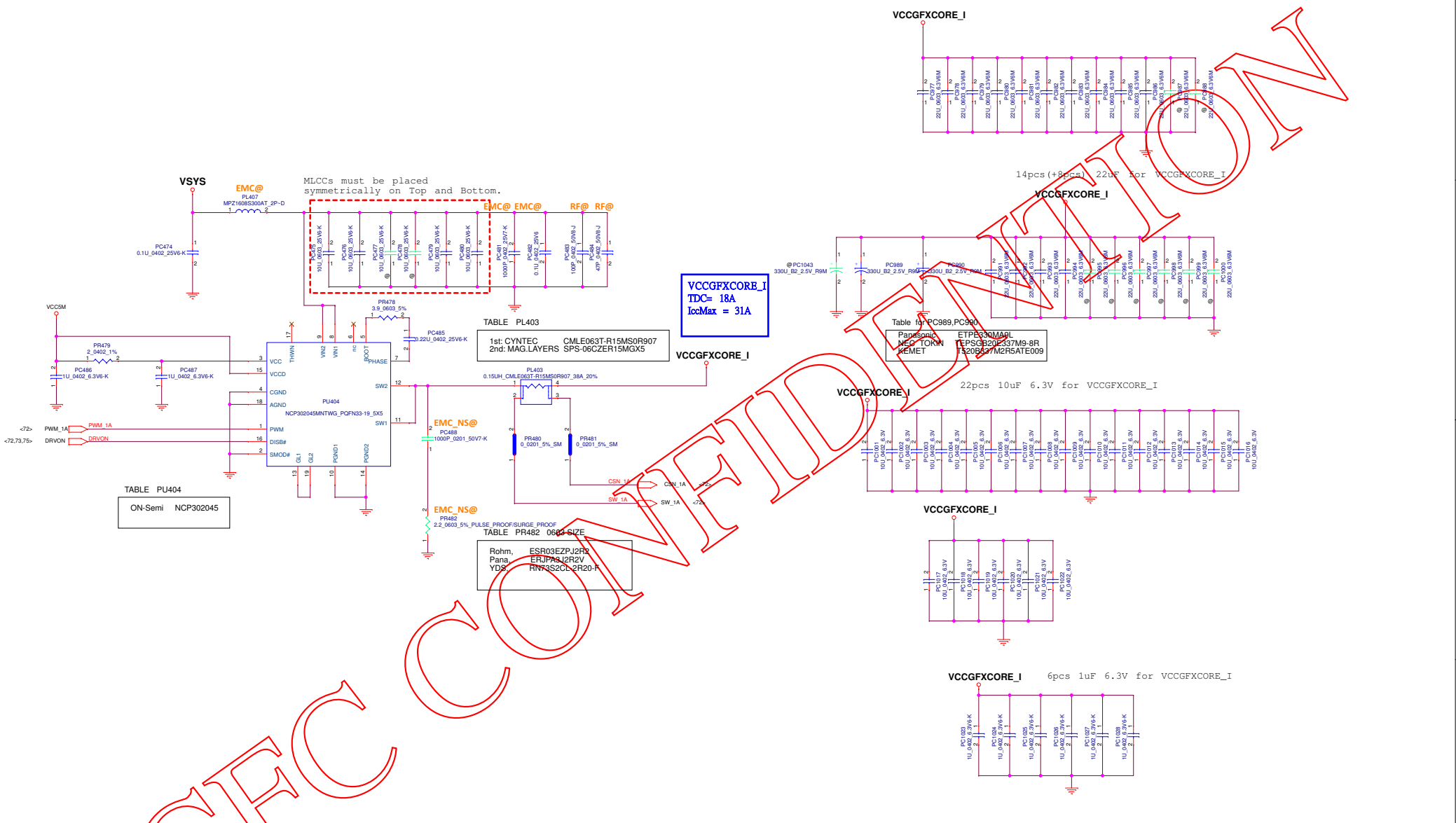
TABLE PR472 0603 SIZE
 ROHM ESR03EZPJ2R2
 Pana ERJPA3J2R2V
 YDS RN73S2CL-2R20-F

TABLE PL402
 1st: CYNTEC CML063T-R12MS0R657
 2nd: TOKIN MPCH0730LR12

TABLE PR477 0603 SIZE
 ROHM ESR03EZPJ2R2
 Pana ERJPA3J2R2V
 YDS RN73S2CL-2R20-F

Table for PC957, PC958
 Panasonic ETPE330MA9L
 NEC TOKIN TEPSGB20E337M9-8R
 KEMET T520B337M2R5ATE009

	R U-42	U-22	Remark
PU403, PL402, PL406, PC457, PC471, PC472 PC458, PC459, PC460, PC466, PC467 PC470, PR473, PR474, PC468, PC469	ASM	NO_ASM	
PC907, PC908, PC909, PC910, PC911, PC912	ASM	NO_ASM	The Number of 22uF KBL R U-42: 12pcs KBL U-22: 6pcs
PC938, PC939, PC940, PC941	ASM	NO_ASM	The Number of 10uF KBL R U-42: 22pcs KBL U-22: 18pcs
PC961, PC962	ASM	NO_ASM	The Number of 1uF KBL R U-42: 10pcs KBL U-22: 8pcs



VSYS
EMC@
MLCCs must be placed symmetrically on Top and Bottom.

VCCGFXCORE_I
TDC= 18A
IccMax = 31A

14pcs (+8pcs) 22µF for VCCGFXCORE_I

Table for PC989, PC990
Panasonic ETPSC30MA0L
NEC TORIN EPSGB20E337M9-8R
KEMET T320B337M2R5ATE009

22pcs 10µF 6.3V for VCCGFXCORE_I

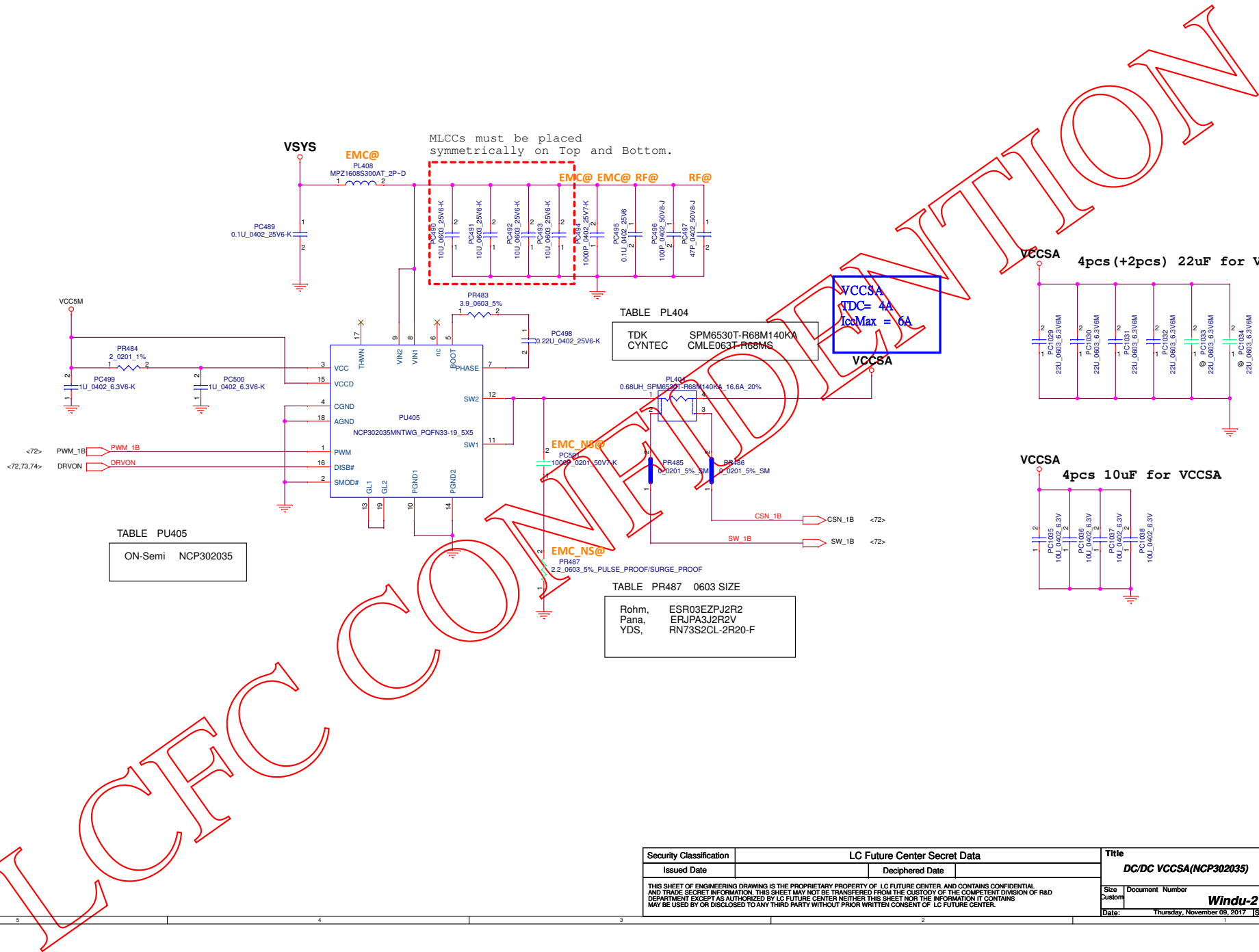
6pcs 1µF 6.3V for VCCGFXCORE_I

TABLE PU404
ON-Semi NCP302045

TABLE PL403
1st: CYNTEC CMLE063T-R15MS0R907
2nd: MAG.LAYERS SPS-06CZER15MGX5

TABLE PR482 0603 SIZE
Rohm, ESR03E2P2R2
Pana, ERJPA3J2R2V
YDS, RNV35ZCL-2R20-F

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MLCCs must be placed symmetrically on Top and Bottom.

TABLE PL404

TDK	SPM6530T-R68M140KA
CYNTec	CMLE063T-R68MS

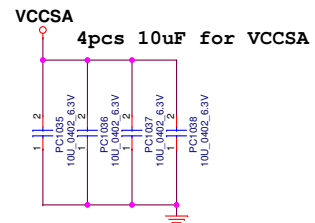
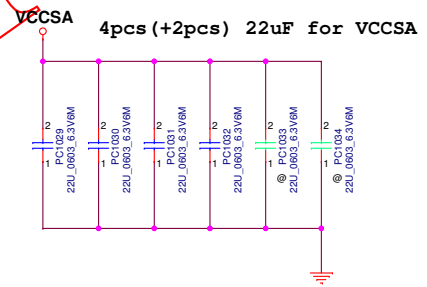
VCCSA
 TDC = 4A
 IccMax = 6A

TABLE PU405

ON-Semi	NCP302035
---------	-----------

TABLE PR487 0603 SIZE


Rohm,	ESR03EJPJ2R2
Pana,	ERJPA3J2R2V
YDS,	RN73S2CL-2R20-F



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Custom	Windu-2	0.1	Date	Thursday, November 09, 2017 Sheet 75 of 104


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					Custom	Windu-2	0.03
					Date:	Thursday, November 09, 2017	Sheet 77 of 104

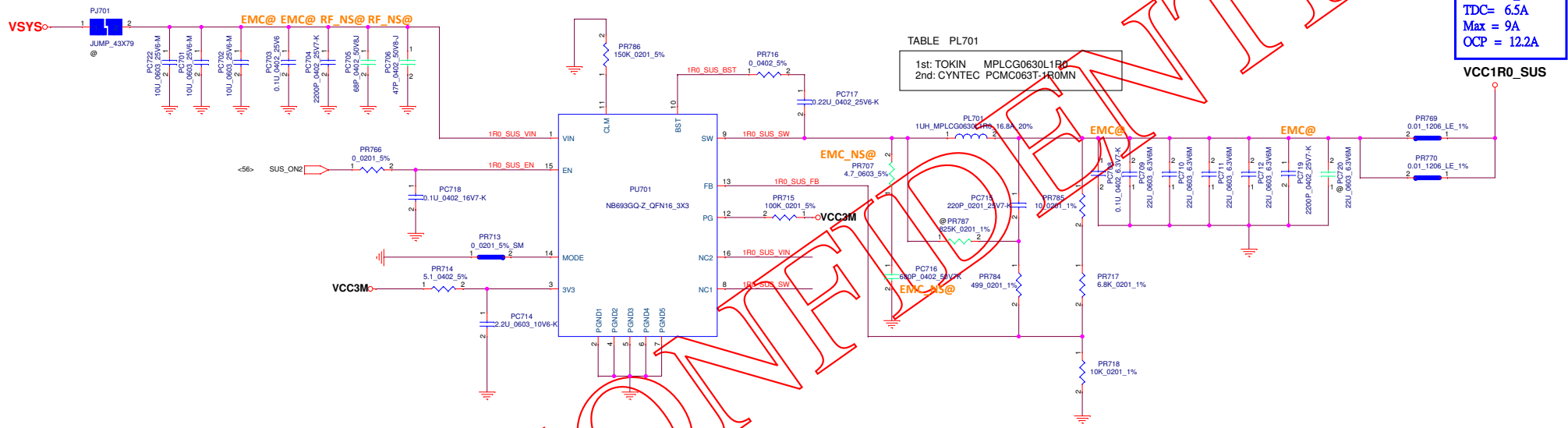




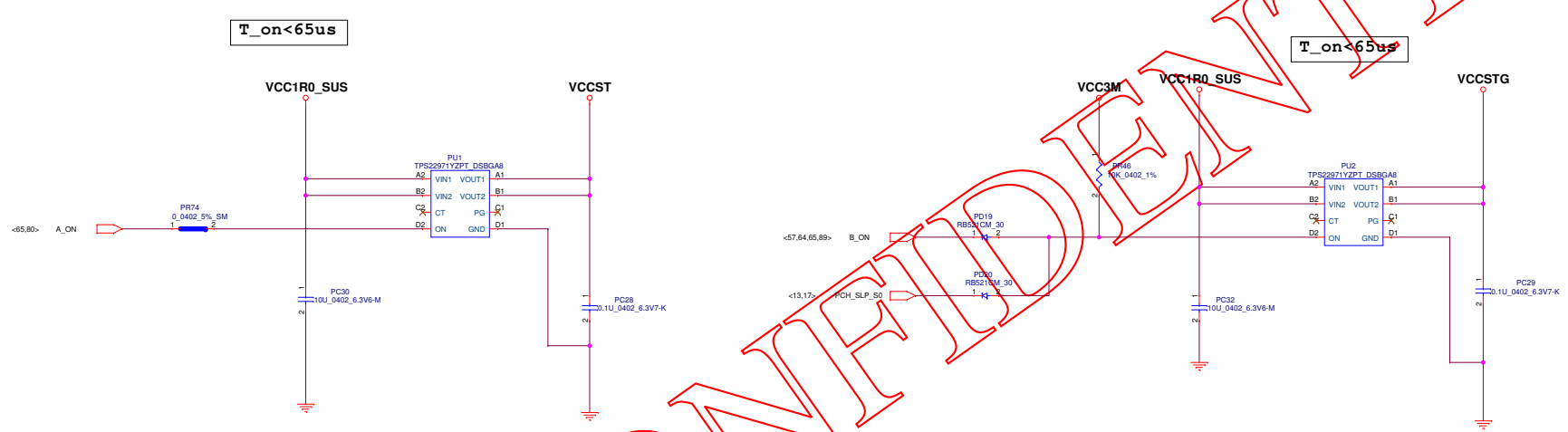
TABLE PL701
 1st: TOKIN MPLCG0630L1R0
 2nd: CYNTEC PCMC063T-1R0MN

VCC1R0_SUS
 TDC = 6.5A
 Max = 9A
 OCP = 12.2A

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T_on < 65us

T_on < 65us

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				Rev: 0.1

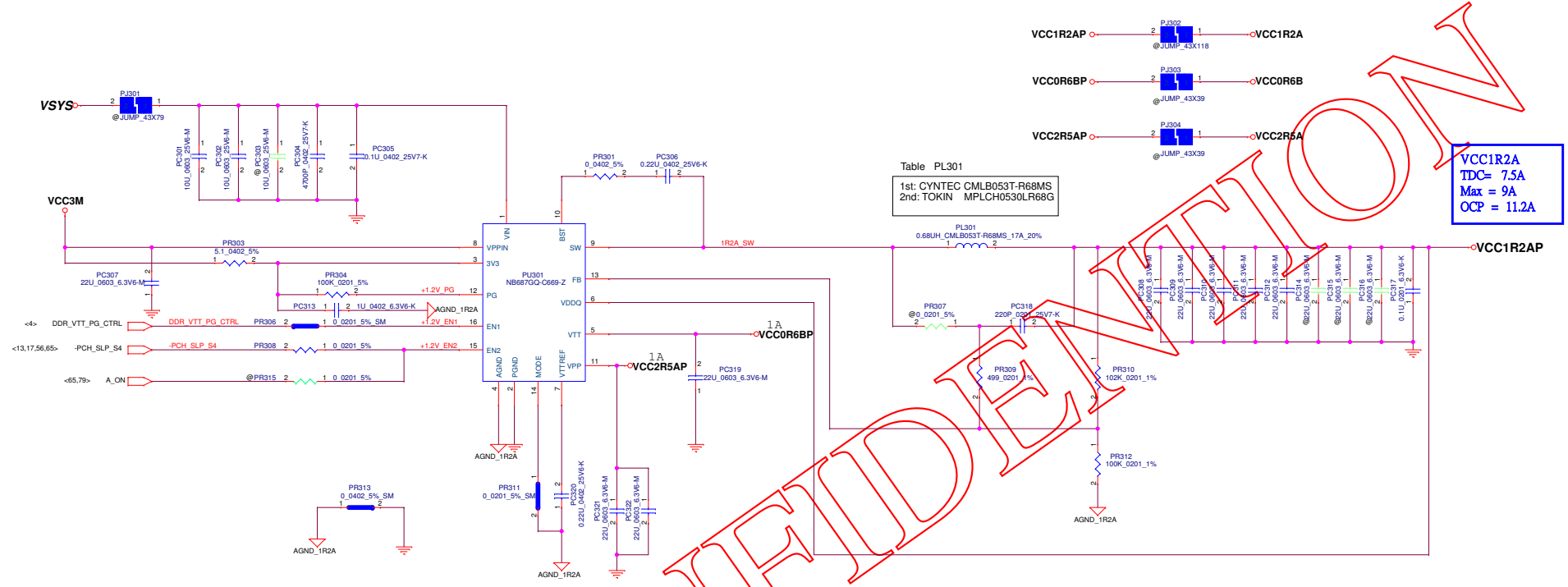


Table PL301
 1st: CYNTEC CMLB053T-R68MS
 2nd: TOKIN MPLCH0530LR68G

VCC1R2A
 TDC= 7.5A
 Max = 9A
 OCP = 11.2A

TABLE NB687GQ: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 NB687GQ: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

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		Date:	Thursday, November 09, 2017 Sheet 81 of 104

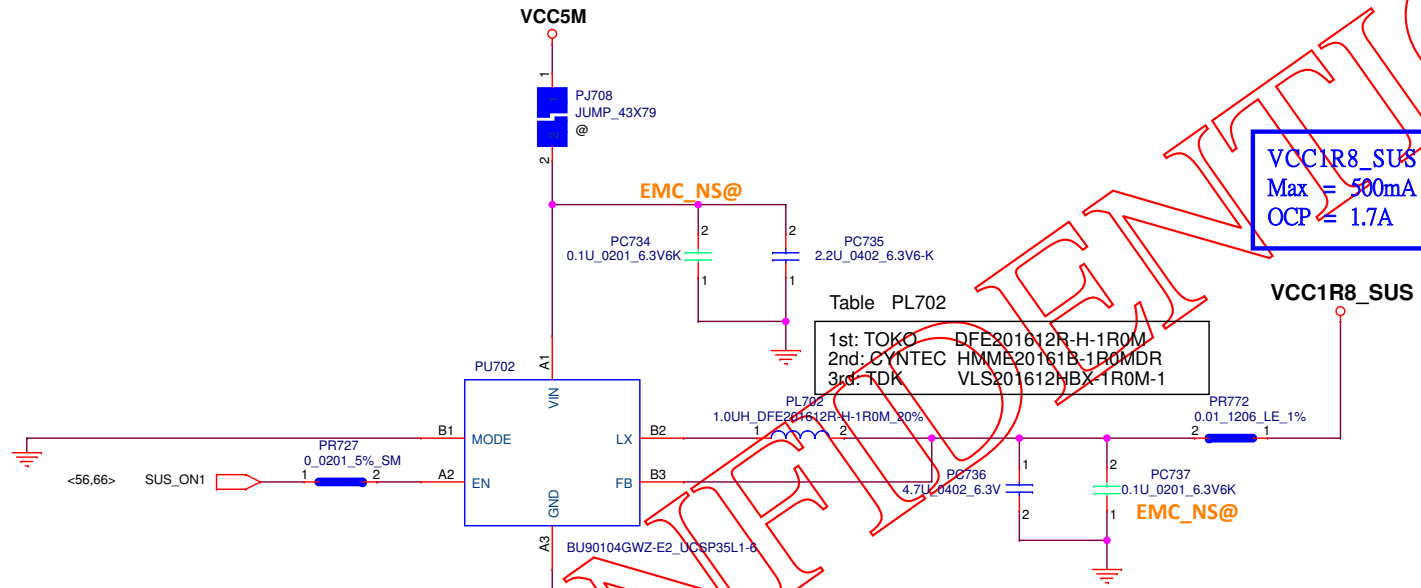


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				Date:	Thursday, November 09, 2017 Sheet 82 of 104



VCC1R8_SUS
Max = 500mA
OCP = 1.7A


Table PL702
1st: TOKO DFE201612R-H-1R0M
2nd: CYNTEC HMME20161B-1R0MDR
3rd: TDK VLS201612HBX-1R0M-1

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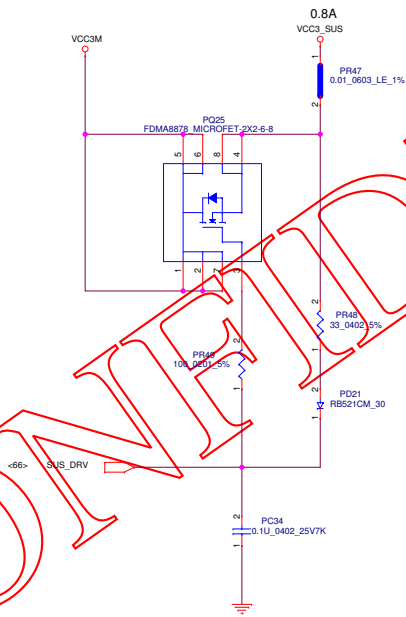
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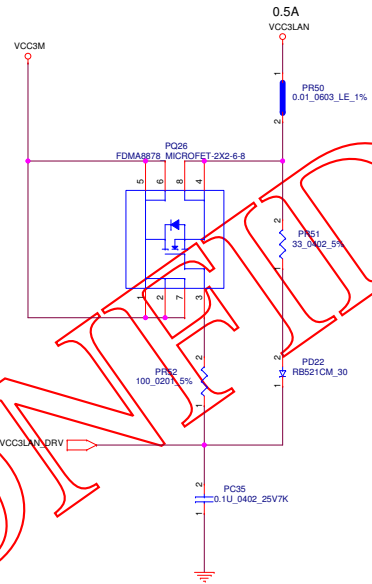
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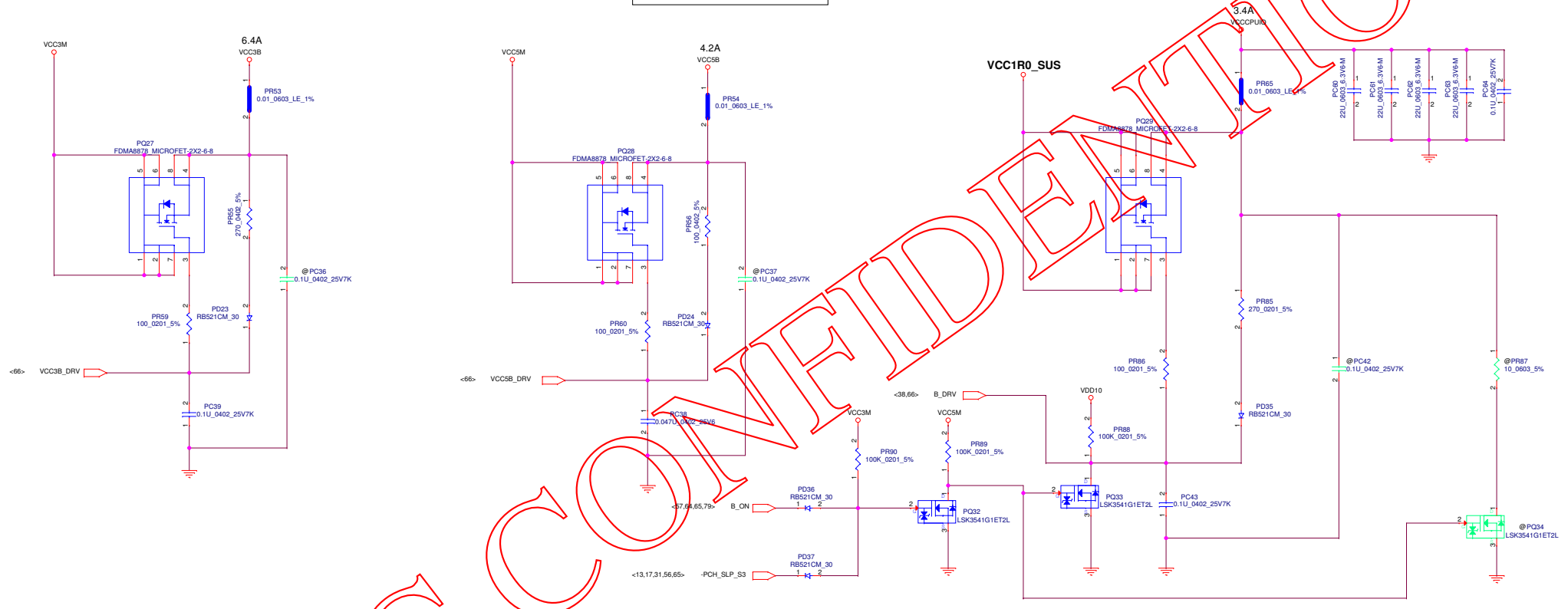
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Issued Date	2012/11/01	Deciphered Date	2013/12/31	
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			Rev: 0.24	Sheet 88 of 104

Table for PQ27 · PQ28 · PQ29

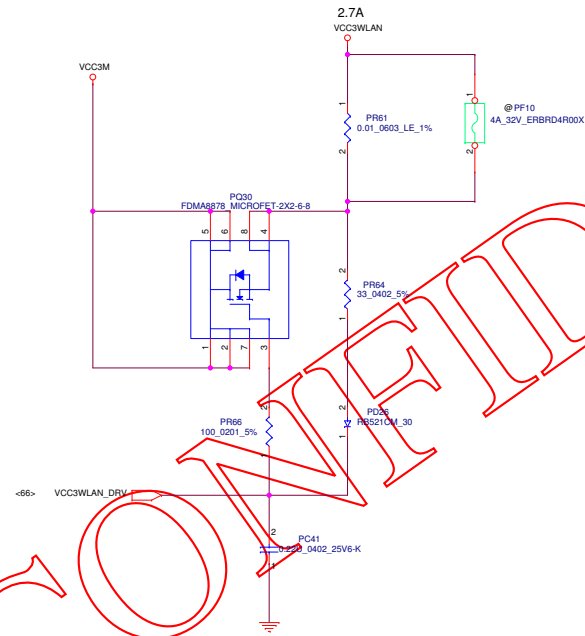
FAIRCHILD	FDMA8878
VISHAY	SIA462DJ



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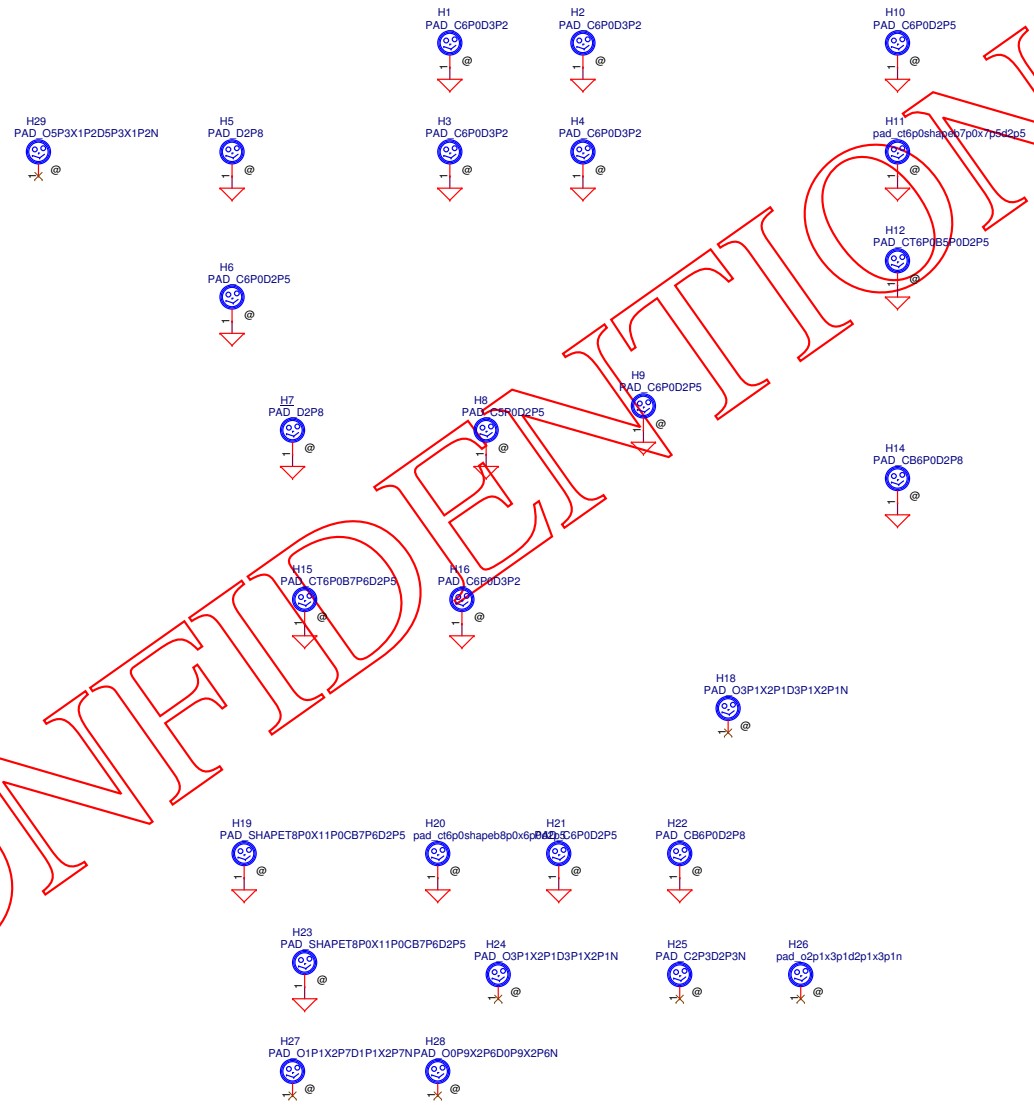
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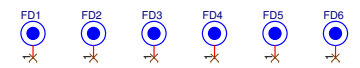
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				Sheet	90 of 104


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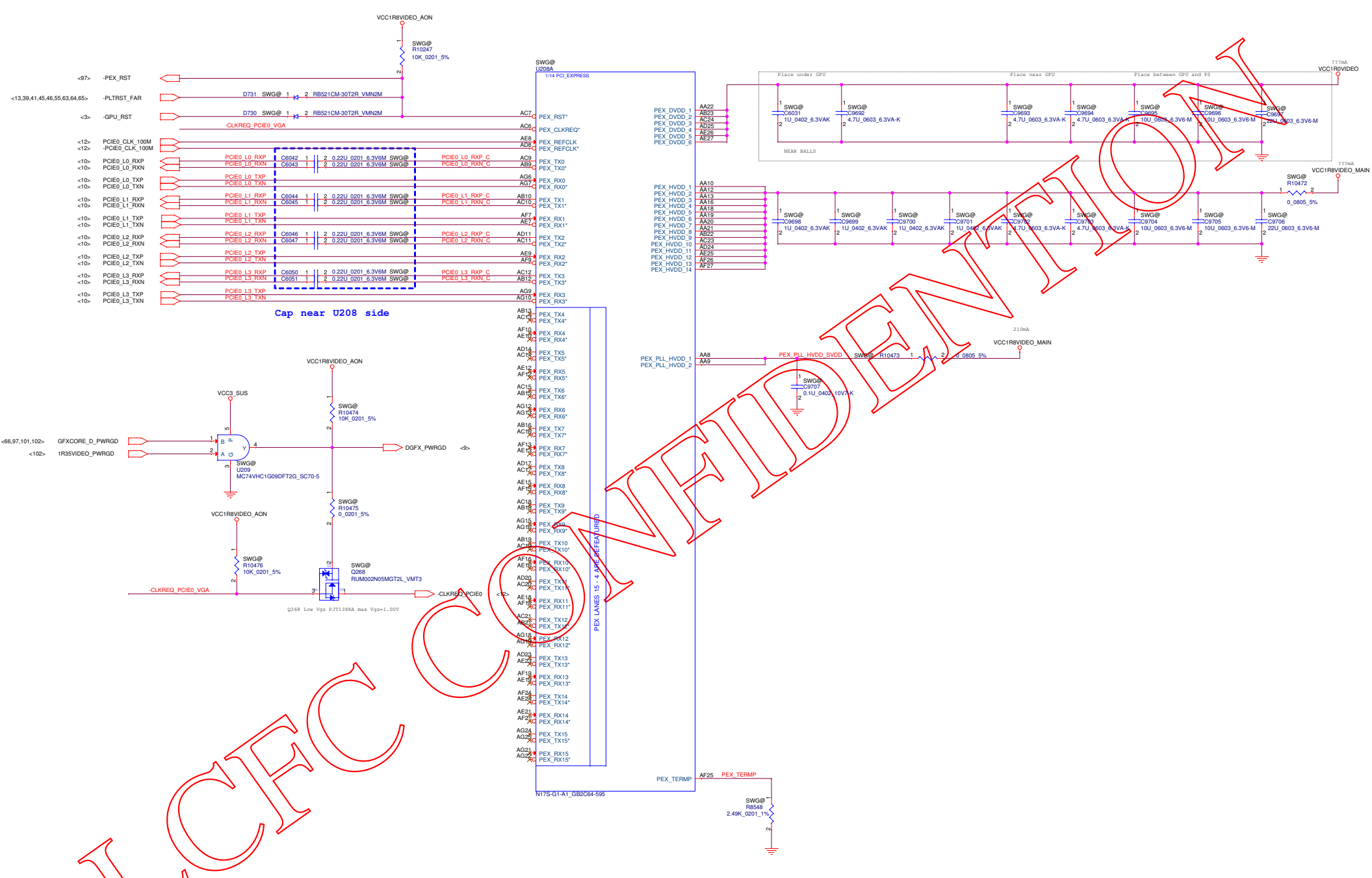
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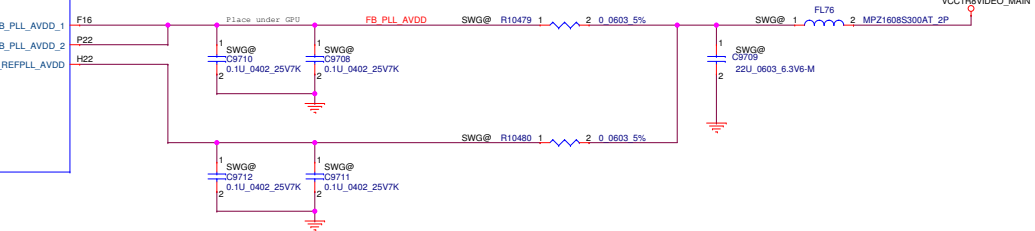
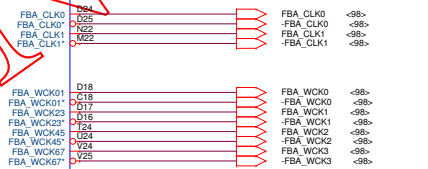
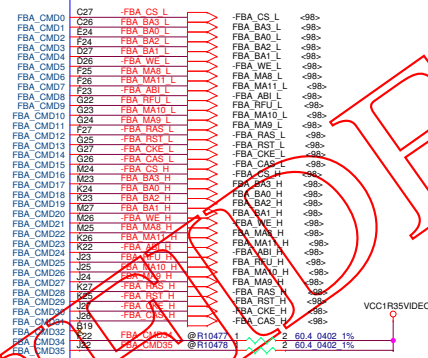
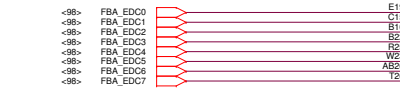
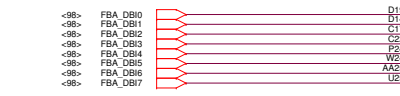
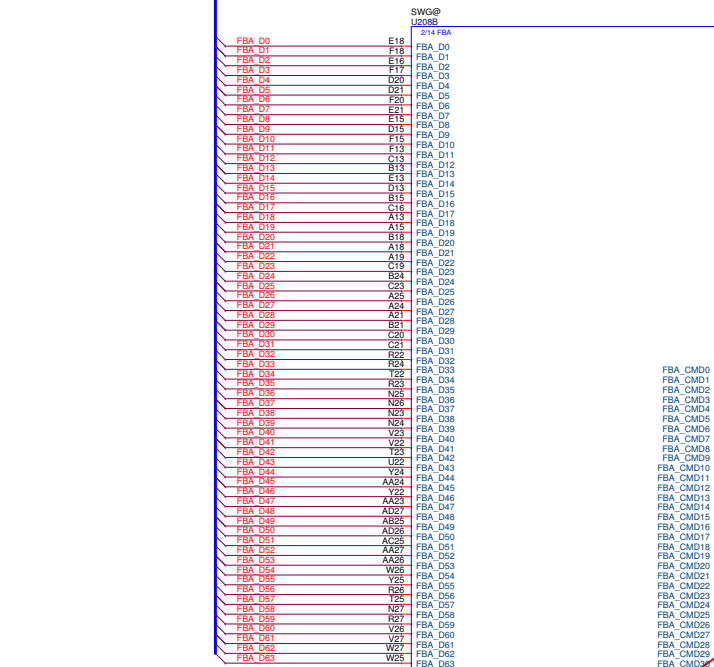
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				Date:	Thursday, November 03, 2017	Sheet 91 of 104



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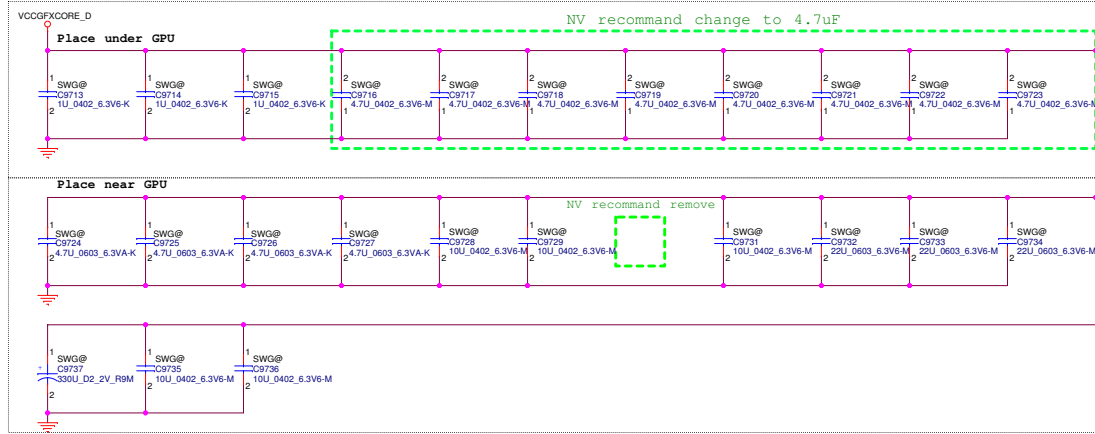
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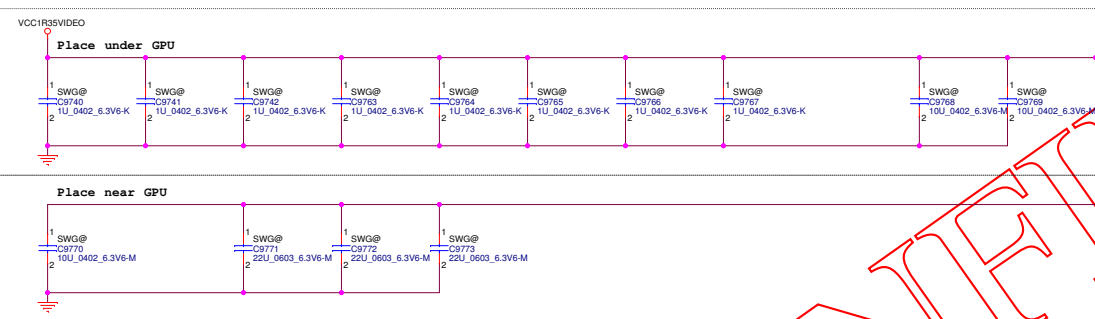
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Date:	Thursday, November 08, 2012	Sheet	93	of 104



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- K10 VDD_VDD0
- K12 VDD_001
- K14 VDD_002
- K16 VDD_003
- K18 VDD_004
- L13 VDD_005
- L15 VDD_006
- M10 VDD_007
- M12 VDD_008
- M18 VDD_009
- N11 VDD_010
- N13 VDD_011
- N15 VDD_012
- N17 VDD_013
- P14 VDD_014
- R11 VDD_015
- R13 VDD_016
- R15 VDD_017
- R17 VDD_018
- R19 VDD_019
- T10 VDD_020
- T12 VDD_021
- T16 VDD_022
- T18 VDD_023
- U13 VDD_024
- U15 VDD_025
- V10 VDD_026
- V12 VDD_027
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- V18 VDD_030
- V19 VDD_031



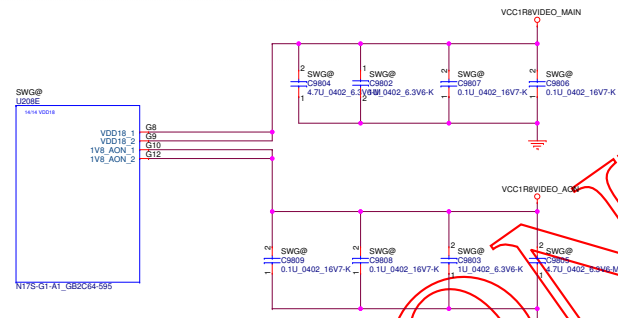
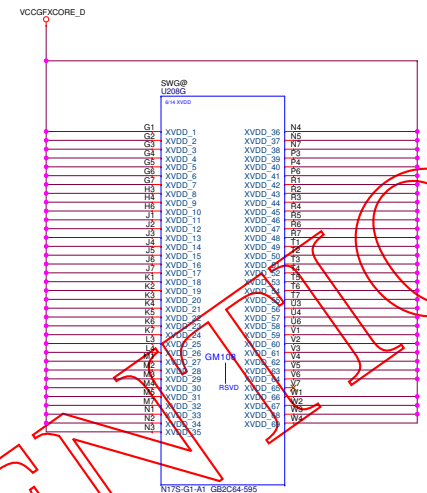
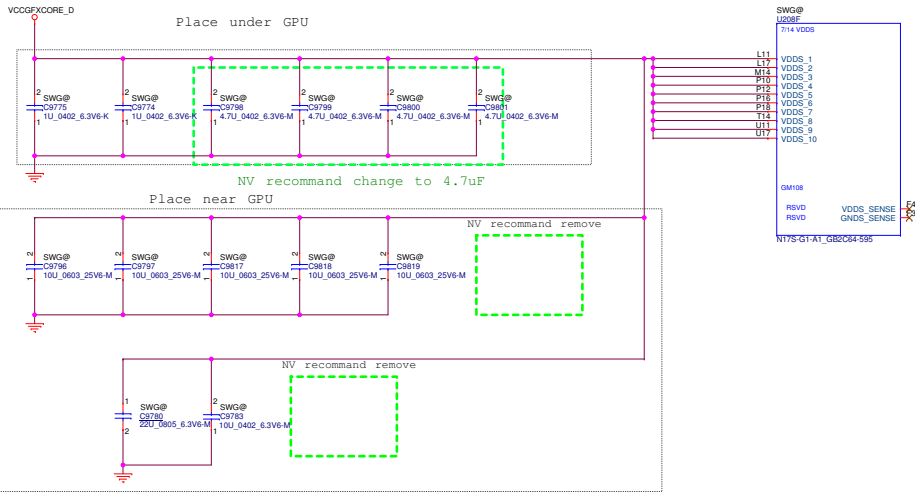
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- E23 FBVDDQ_03
- F14 FBVDDQ_04
- T11 FBVDDQ_05
- G11 FBVDDQ_06
- G14 FBVDDQ_07
- G15 FBVDDQ_08
- G16 FBVDDQ_09
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- G18 FBVDDQ_11
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- T21 FBVDDQ_25
- V21 FBVDDQ_26
- W21 FBVDDQ_27
- H24 FBVDDQ_15
- H26 FBVDDQ_16
- J21 FBVDDQ_17
- K21 FBVDDQ_18

trace width: 10mils
differential voltage sensing.
differential signal routing.




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				Date:	Thursday, November 08, 2017 [Sheet 94 of 104]
				Rev	0.1



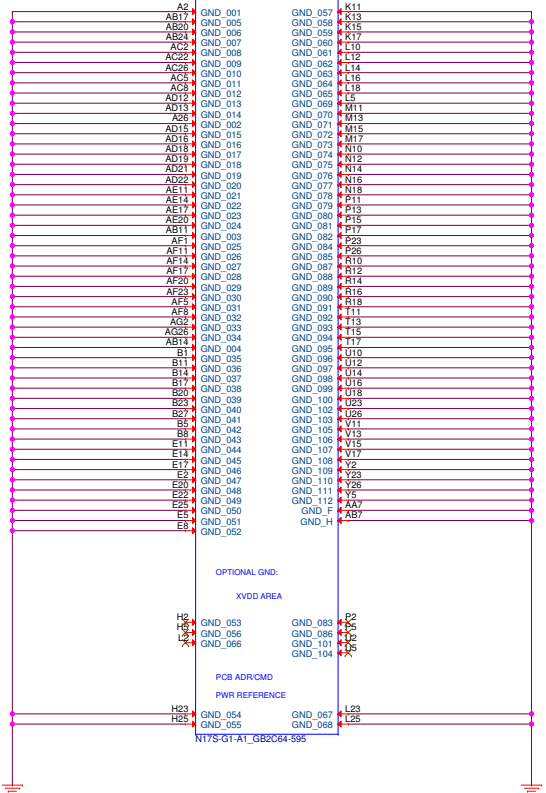
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Customer	Windu-2	0.1		
Date	Thursday, November 08, 2017	Sheet	95	of 104

SWG@
U208H

1314 GND



OPTIONAL GND:

XVDD AREA



PCB ADR/CMD

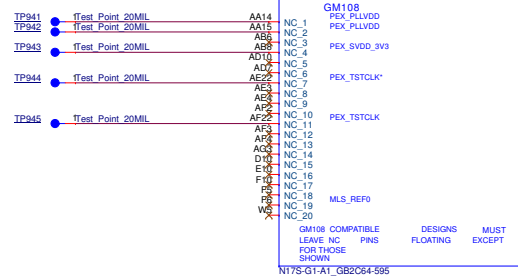
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N17S-G1-A1_GB2C64-595

SWG@
U208I

5/14 NC

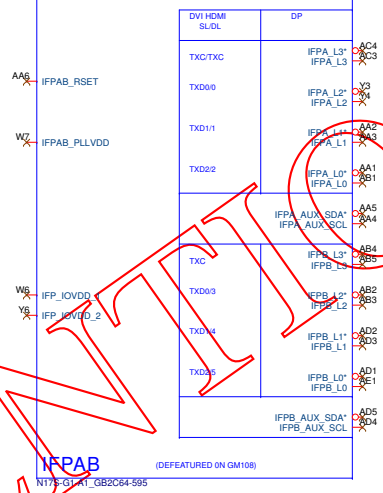


GM108 COMPATIBLE DESIGNS MUST
LEAVE NC PINS FLOATING EXCEPT
FOR THOSE SHOWN

N17S-G1-A1_GB2C64-595

SWG@
U208J

4/14 IFFAB



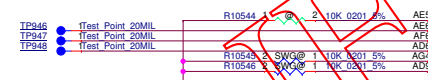
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(DEFEATURED ON GM108)

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SWG@
N089V

3/14 JTAG



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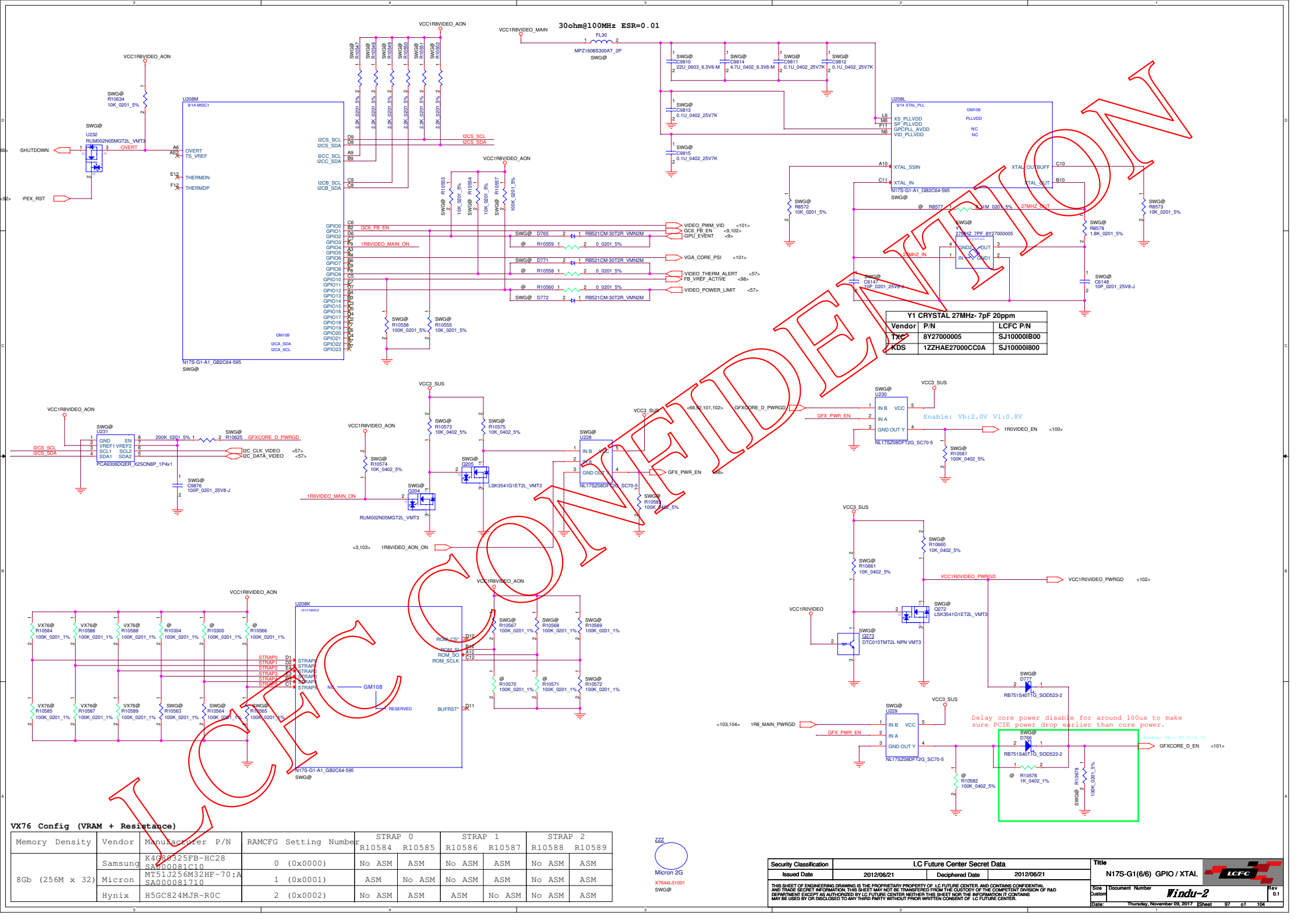
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				Custom	Windu-2
				Date:	Thursday, November 09, 2017 Sheet 96 of 104



Rev 0.1



Y1 CRYSTAL 27MHz- 7pF 20ppm

Vendor	P/N	LCFC P/N
TXC	8Y2700005	SJ10000IB00
KDS	1ZZHAE27000CC0A	SJ10000I800

VX76 Config (VRAM + Resistance)

Memory Density	Vendor	Manufacturer	P/N	RAMCFG Setting Number	STRAP 0	STRAP 1	STRAP 2
8Gb (256M x 32)	Samsung	K4084325FB-HC28	SA00081C10	0 (0x0000)	No ASM	ASM	No ASM
					ASM	No ASM	ASM
					No ASM	ASM	No ASM
8Gb (256M x 32)	Micron	MT51J256M32HF-70A	SA000081710	1 (0x0001)	ASM	No ASM	No ASM
					No ASM	ASM	No ASM
					No ASM	ASM	No ASM
8Gb (256M x 32)	Hynix	H5GC824MJR-ROC		2 (0x0002)	No ASM	ASM	No ASM
					ASM	No ASM	ASM
					No ASM	ASM	No ASM

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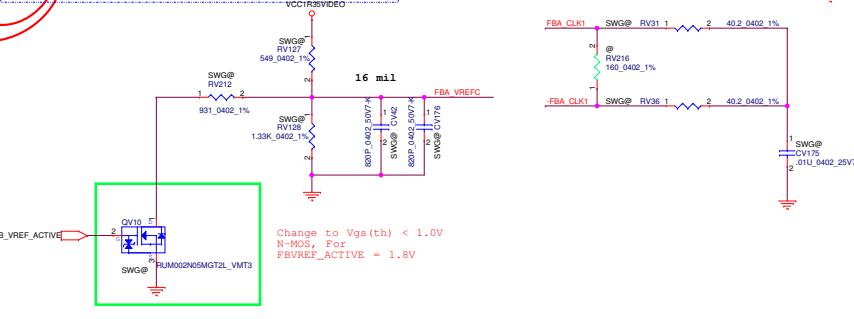
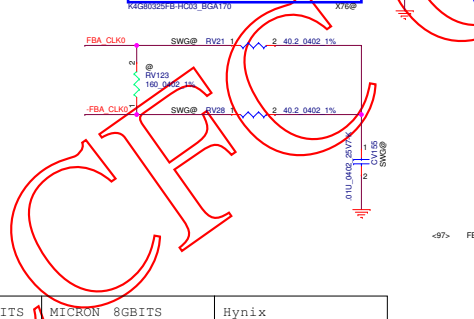
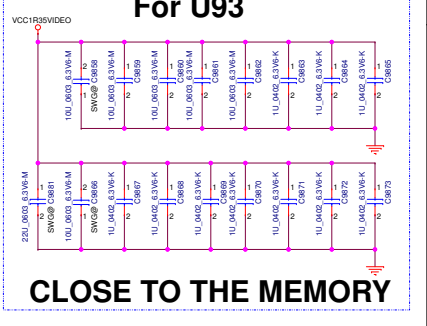
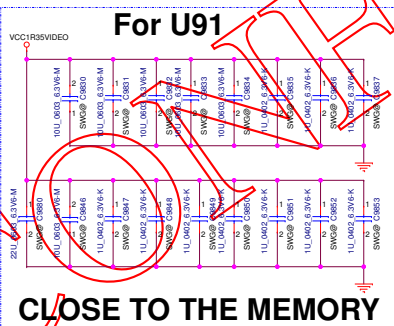
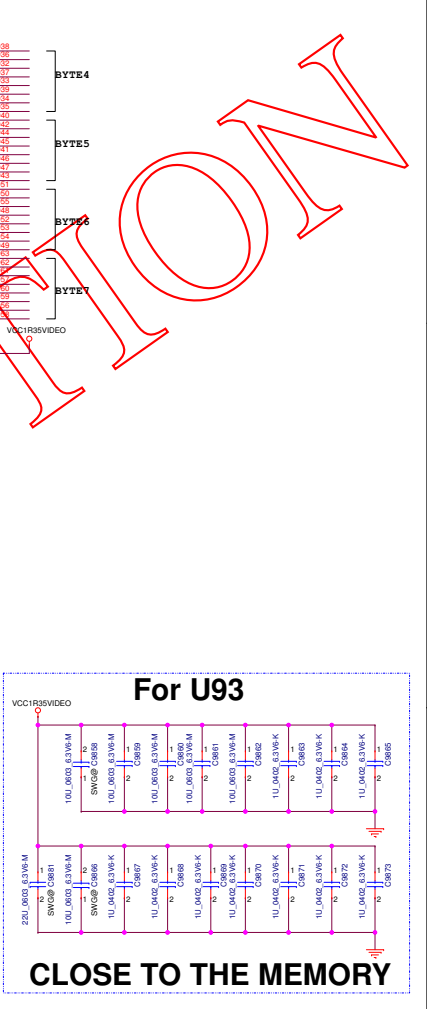
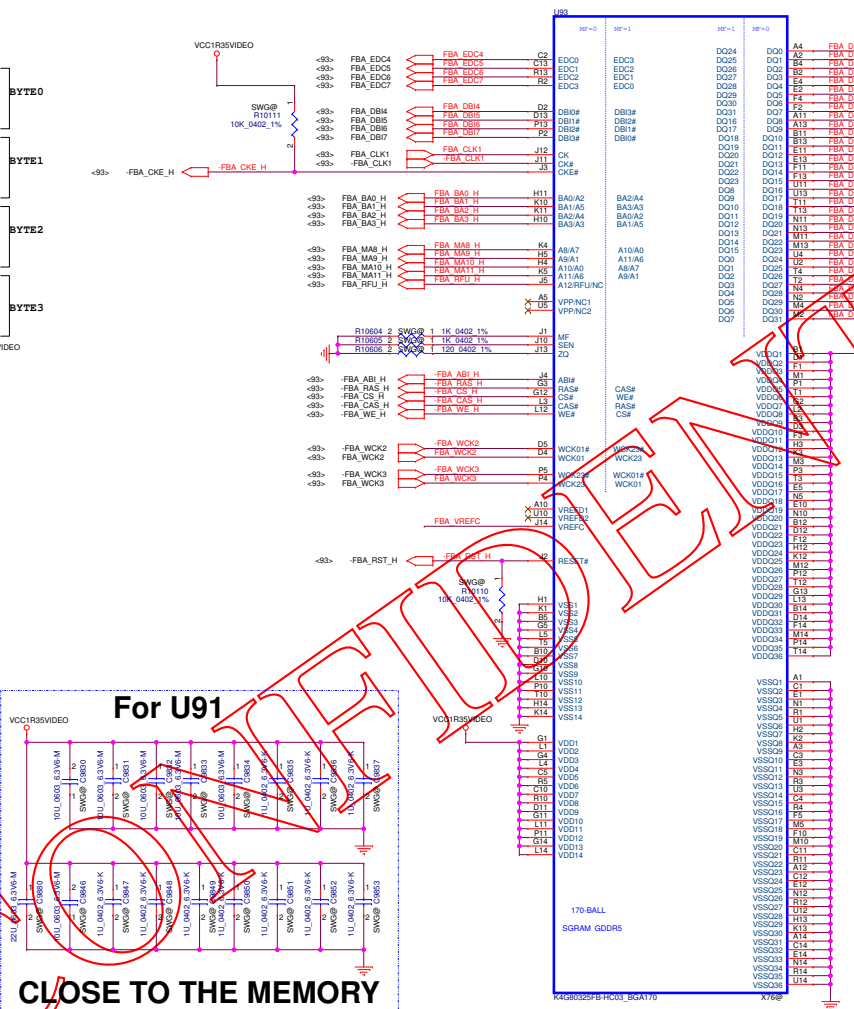
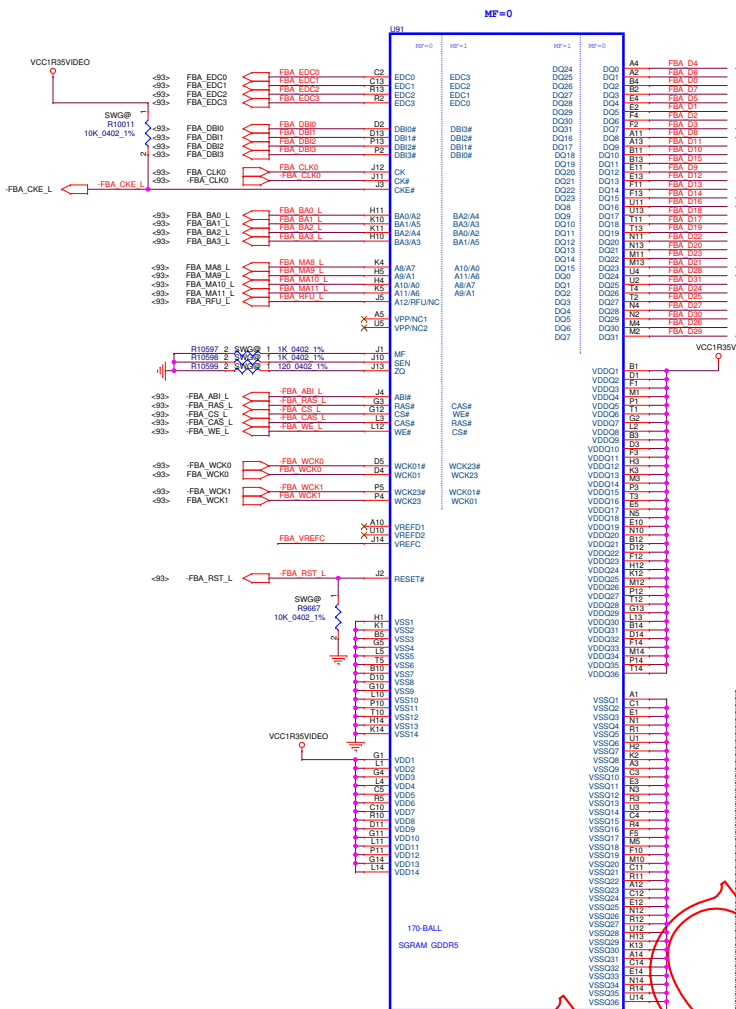



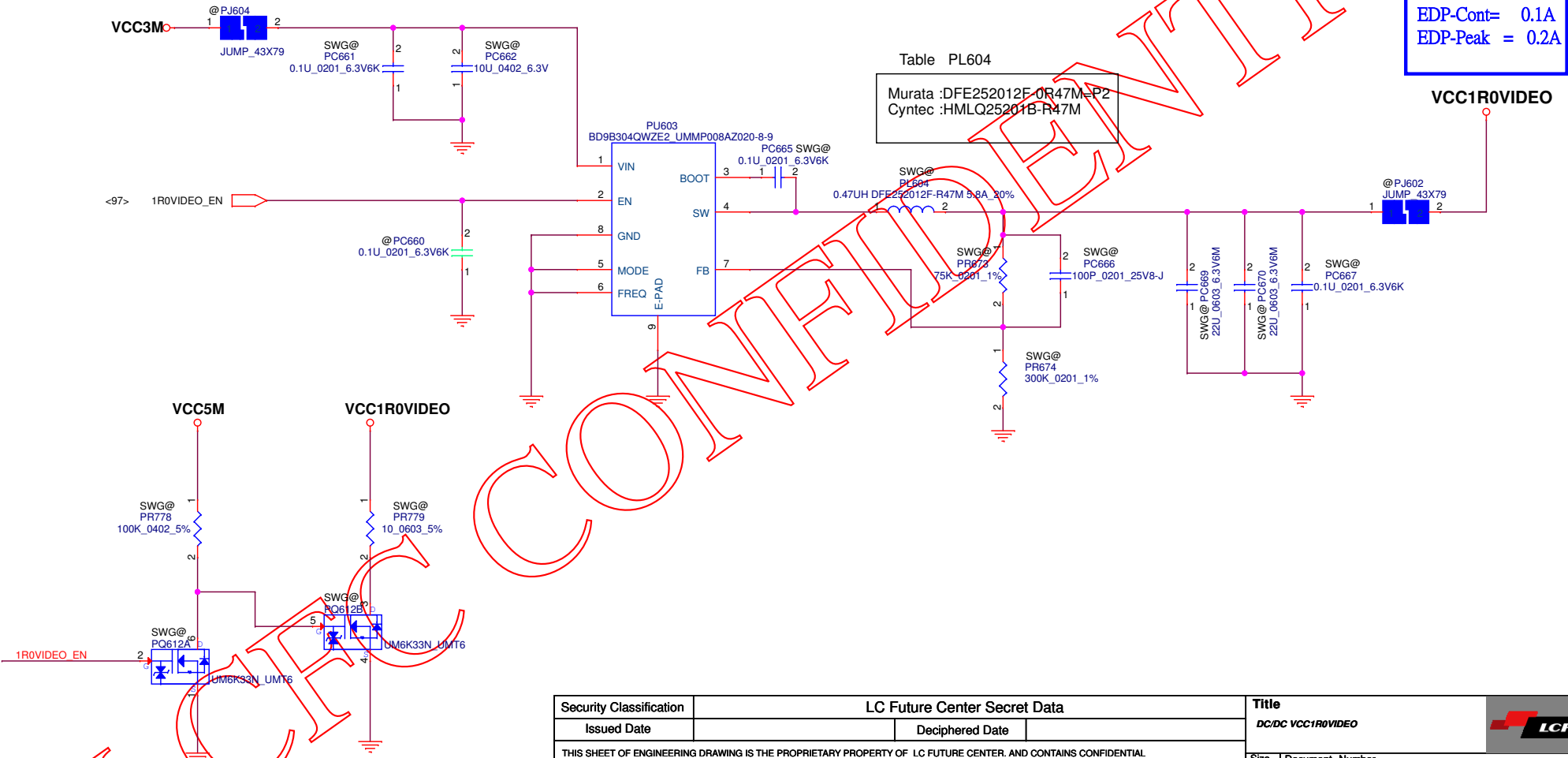
TABLE GDDR5 VIDEO MEMORY

	SAMSUNG 8GBITS	MICRON 8GBITS	Hynix
U91	K4G80325FB-HC2A	MT51J256M32HF-70:A	H5GC824MJR-ROC
U93			


LOGIC

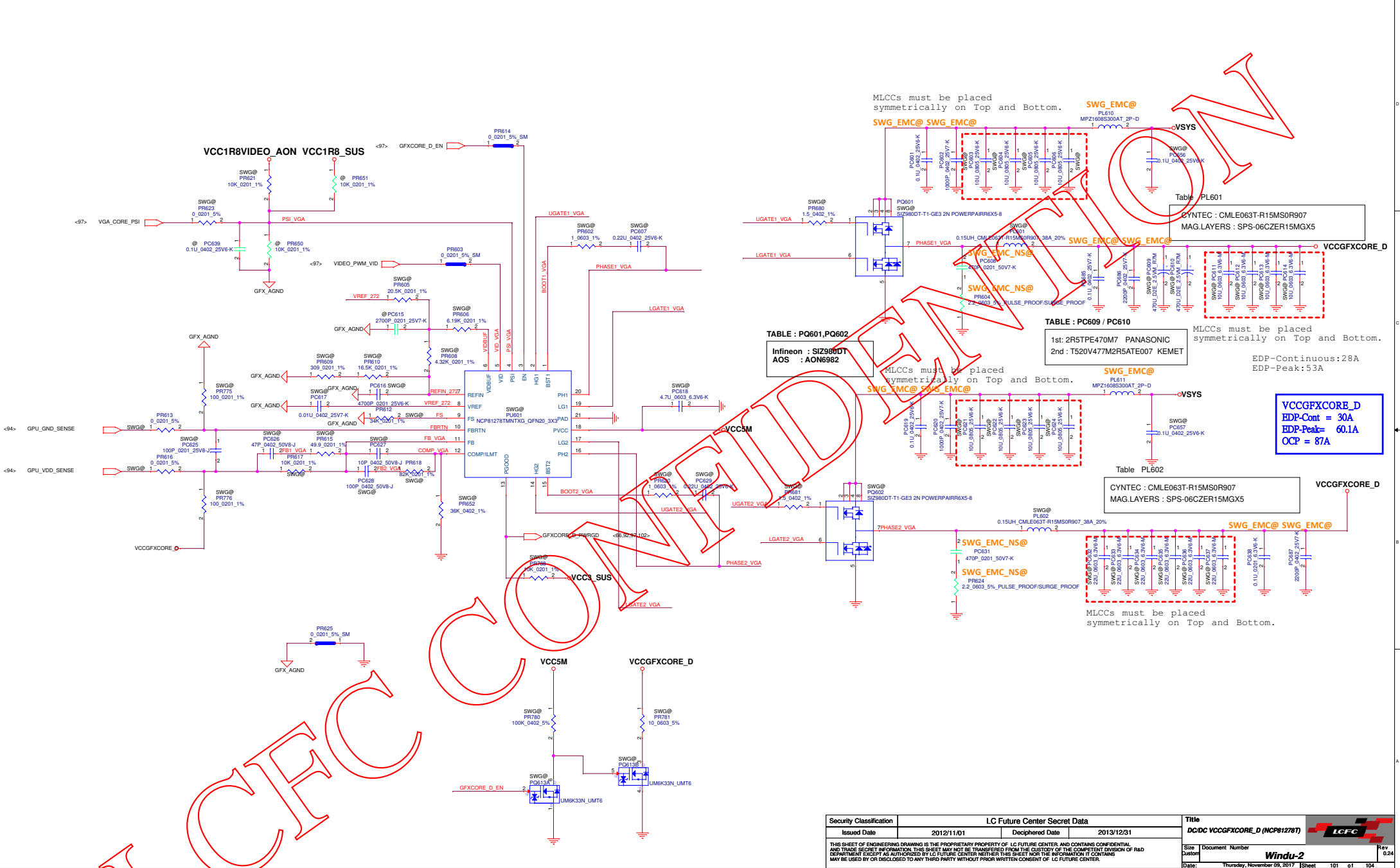
LCFC CONFIDENTIAL

Security Classification	LC Future Center Secret Data			Title	MEMORY TERMINATION 	
Issued Date	2012/05/02	Deciphered Date	2012/5/02	Size		Document Number
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				Date:	Thursday, November 09, 2017	Sheet 99 of 104



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Title		
DC/DC VCC1R0VIDEO		
Size	Document Number	Rev
	Windu-2	0.1
Date:	Thursday, November 09, 2017 Sheet 100 of 104	



MLCCs must be placed symmetrically on Top and Bottom.

Table PL601
 CYNTEC : CMLE063T-R15MSOR907
 MAG.LAYERS : SPS-06CZER15MGX5

TABLE : PG601,PG602
 Infineon : SI2980DT
 AOS : AON6982

TABLE : PC609 / PC610
 1st: 2R5TPE470M PANASONIC
 2nd: T520V47M2R5AT007 KEMET

MLCCs must be placed symmetrically on Top and Bottom.

EDP-Continuous:28A
 EDP-Peak:53A

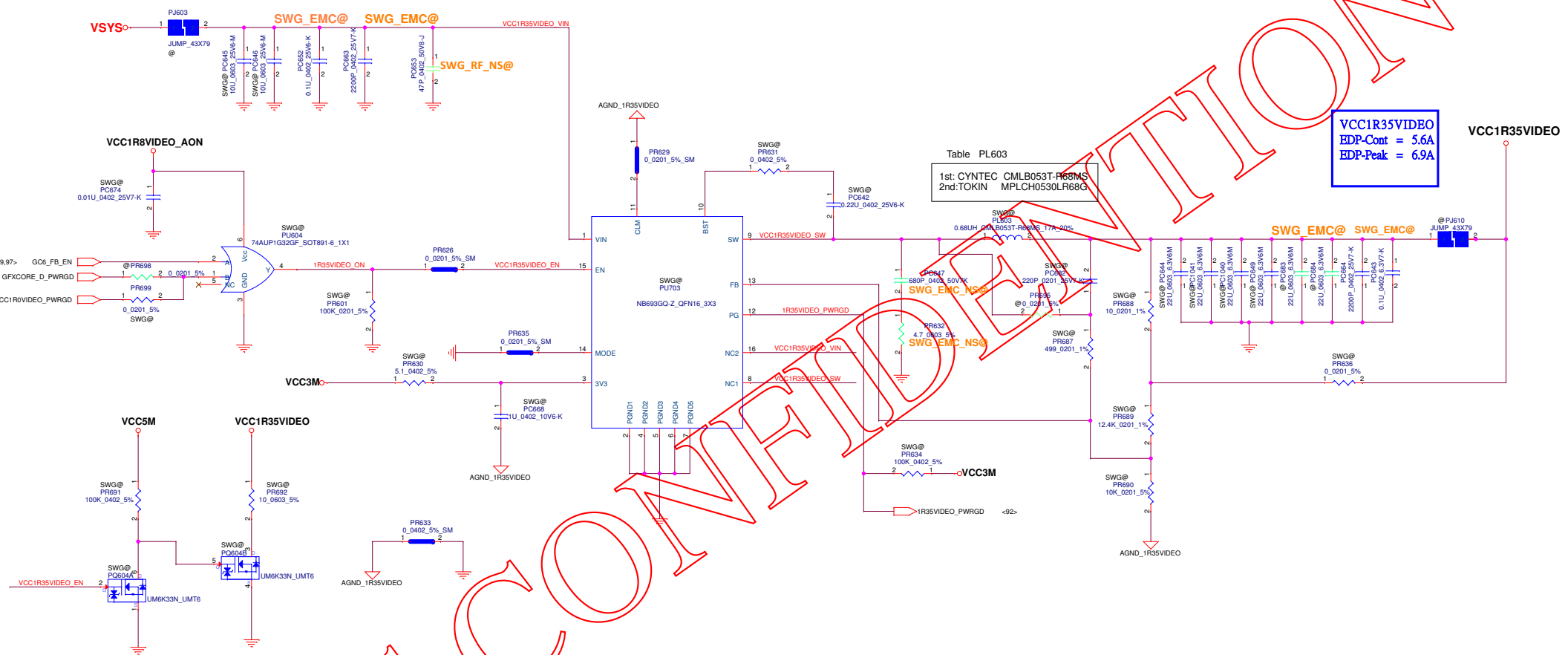
VCCGFXCORE_D
 EDP-Cont = 30A
 EDP-Peak= 60.1A
 OCP = 87A

Table PL602
 CYNTEC : CMLE063T-R15MSOR907
 MAG.LAYERS : SPS-06CZER15MGX5

MLCCs must be placed symmetrically on Top and Bottom.

Security Classification		LC Future Center Secret Data		Title	
Issued Date	2012/11/01	Deciphered Date	2013/12/31	DC/DC VCCGFXCORE_D (NCP81278T)	
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Size	Custom	Document Number	Windu-2	Rev	0.24
Date:	Thursday, November 09, 2017	Sheet	101	of	104


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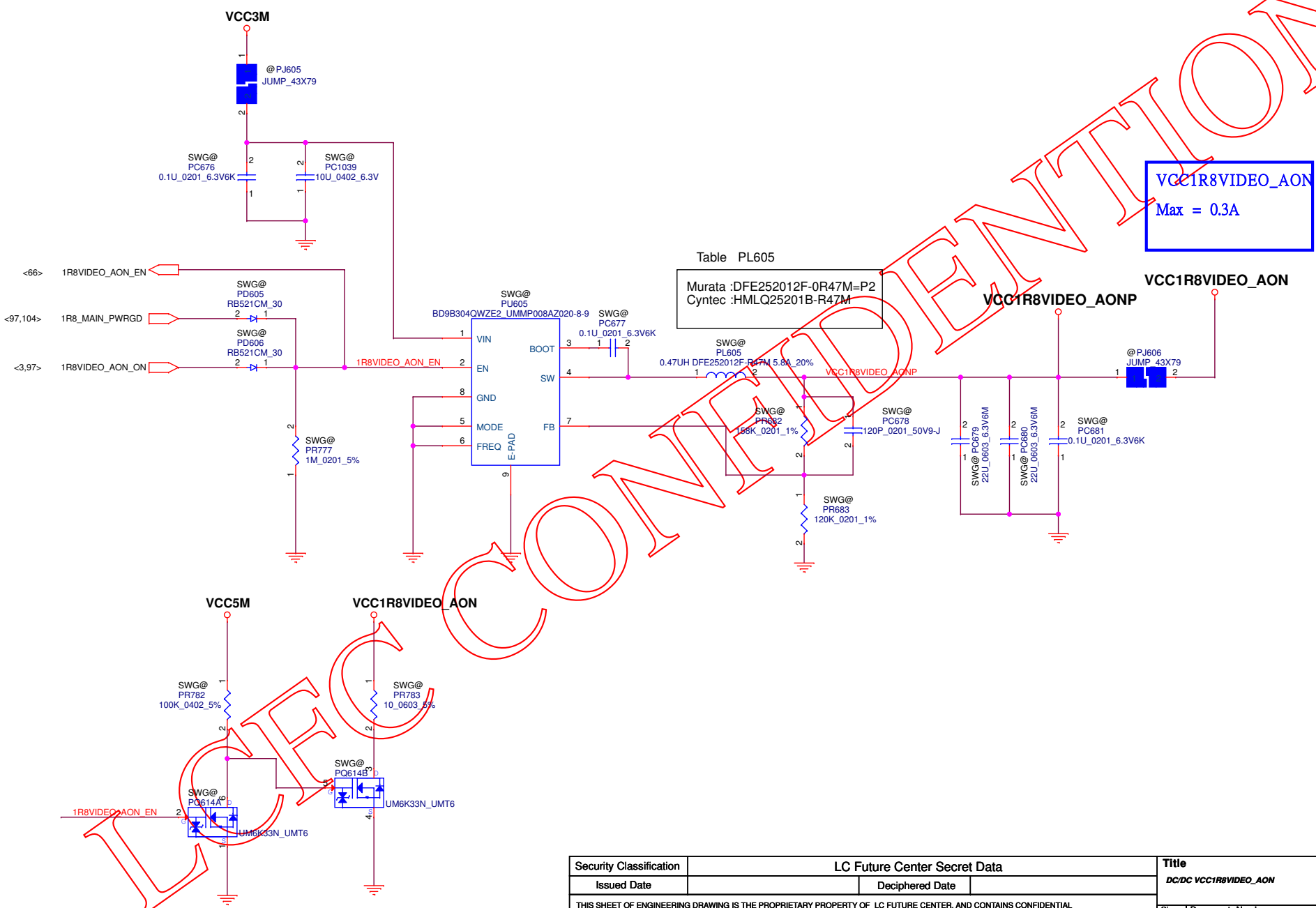
VCC1R35VIDEO
 EDP-Cont = 5.6A
 EDP-Peak = 6.9A

Table PL603

1st: CYNTEC CMLB053T-R68MS
 2nd: TOKIN MPLCH0530LR68G

Security Classification	LC Future Center Secret Data		Title	
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LCFEC



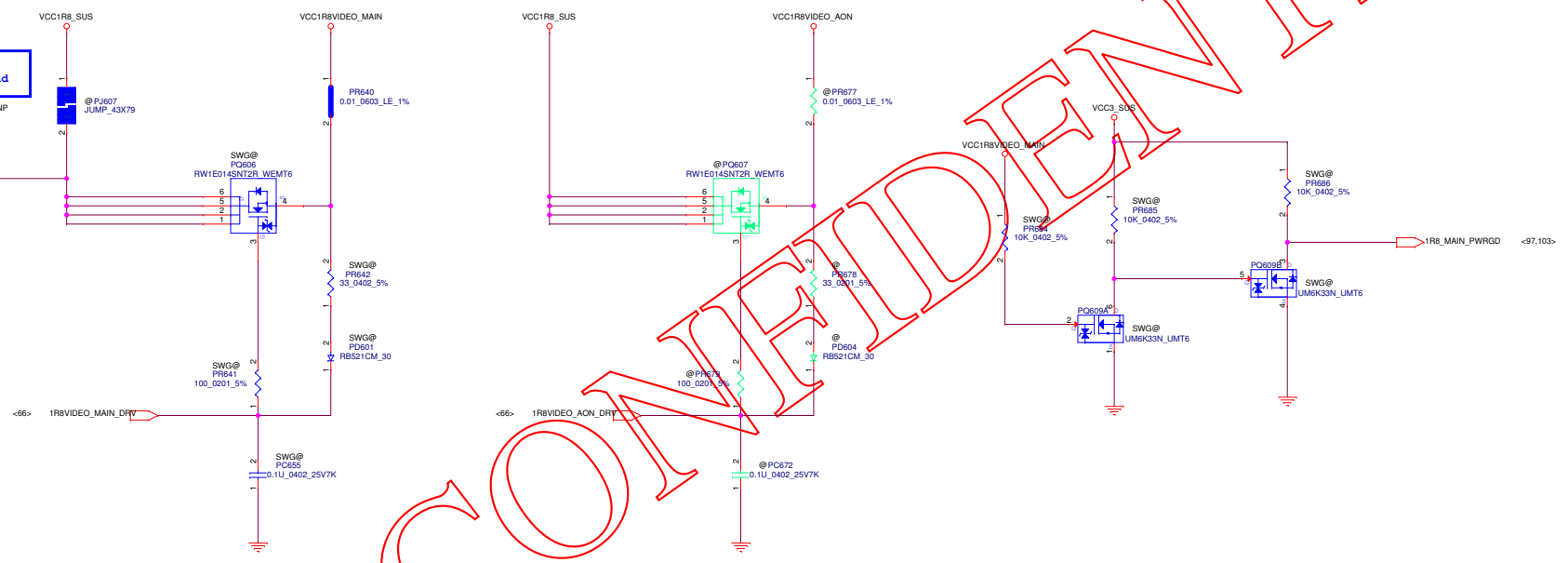
VCC1R8VIDEO_AON
Max = 0.3A

Table PL605
Murata :DFE252012F-0R47M-P2
Cynotec :HMLQ25201B-R47M

Security Classification	LC Future Center Secret Data		Title
Issued Date	Deciphered Date		DC/DC VCC1R8VIDEO_AON
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			Rev 0.1




PJ607
Not mount solder on shrtcpad



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Security Classification	LC Future Center Secret Data		Title	 LOAD SW VIDEO
Issued Date	2012/11/01	Deciphered Date	2013/12/31	
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