


LCFC Confidential

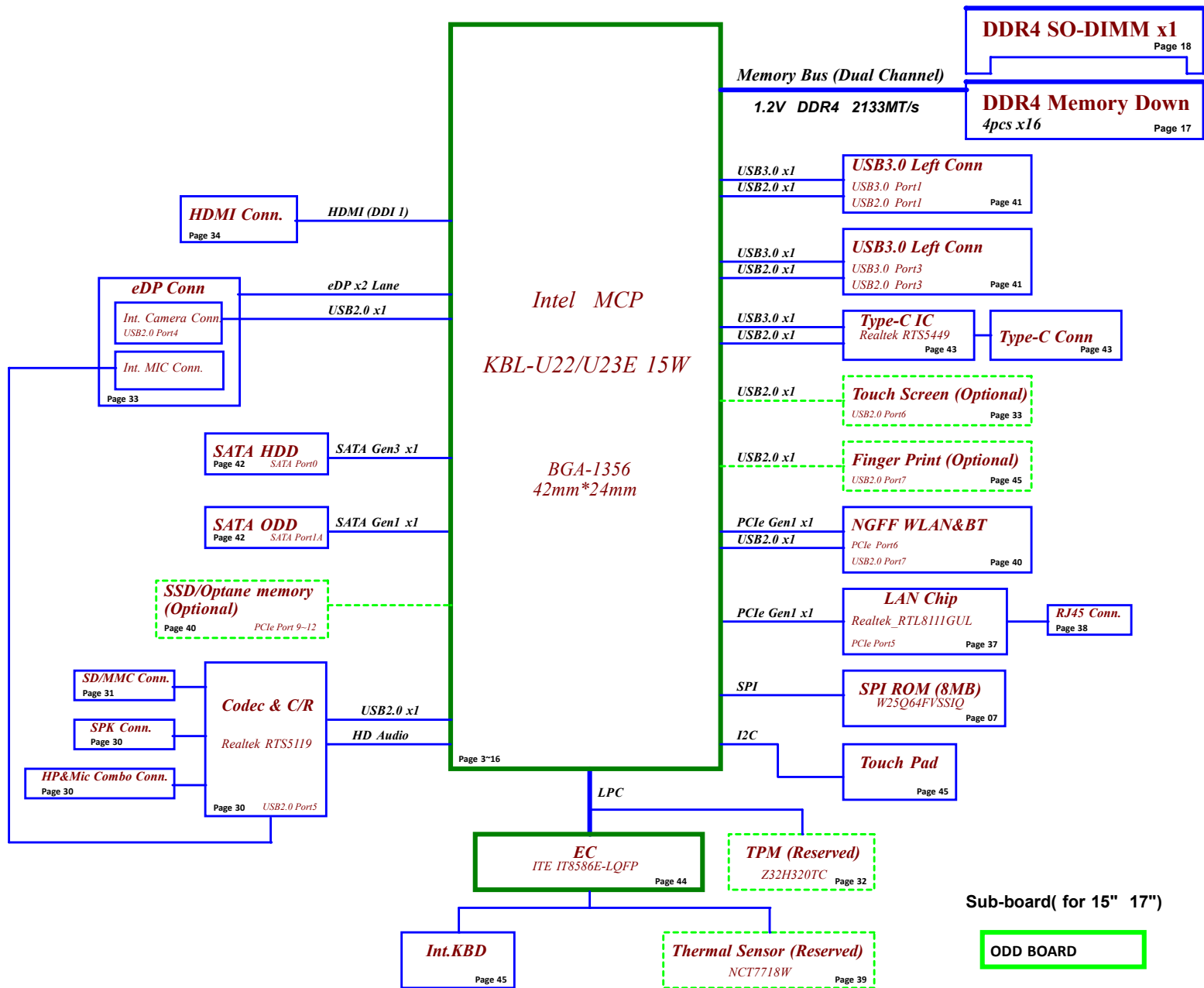
EG521/EG522 MB Schematics Document

Kabylake-U42 with DDR4

2017-04-25

REV: 0.2

Security Classification		LC Future Center Secret Data		Title					
Issued Date		2015/08/20		Deciphered Date		2016/08/20			
<small>THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.</small>				Size		Document Number		Rev	
				Custom		EG521		0.2	
				Date:		Tuesday, April 25, 2017		Sheet 1 of 60	



Voltage Rails (0 --> Means ON , X --> Means OFF)

Power Plane				
State	V20B+	+3VALW +5VALW +3VALW_PCH +1.8VALW +1.0VALW	+1.2V +2.5V_DDR +VCCST	+5VS +3VS +VCCIO +VCCSTG +VCCSA +VCC_GT +CPU_CORE +0.6VS
S0	0	0	0	0
S3	0	0	0	X
S3 Battery only	0	0	0	X
S5 S4 AC Only	0	0	X	X
S5 S4 Battery only	0	X	X	X
S5 S4 AC & Battery don't exist	X	X	X	X

SMBUS Control Table

	SOURCE	BATT	Charger	DGPU	IT8586E	Memory Down	PCH	PMIC	SODIMM	Thermal Sensor	WLAN WiMAX
EC_SMB_CK1 EC_SMB_DA1	IT8586E +3VL_EC	V	V	X	V +3VL_EC	X	X	X	X	X	X
EC_SMB_CK2 EC_SMB_DA2	IT8586E +3VS	X	X	V +3VG_AON	V +3VS	X	V +3VALW_PCH	X	X	V	X
EC_SMB_CK3 EC_SMB_DA3	IT8586E +3VL_EC	X	X	X	V +3VL_EC	X	X	V	X	X	X
PCH_SMB_CLK PCH_SMB_DATA	PCH +3VALW_PCH	X	X	X	X	X	V +3VALW_PCH	X	V +3VS	X	V +3VS

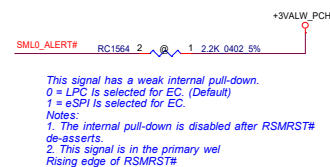
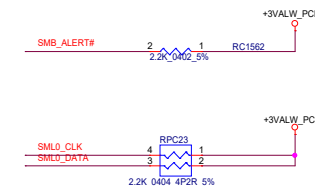
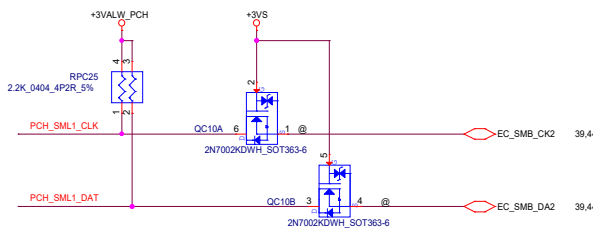
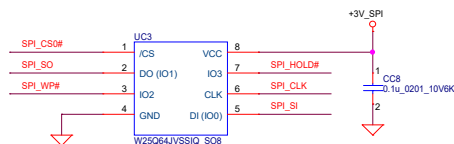
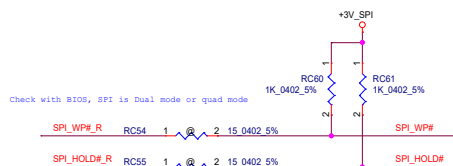
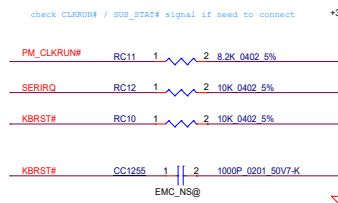
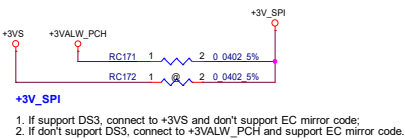
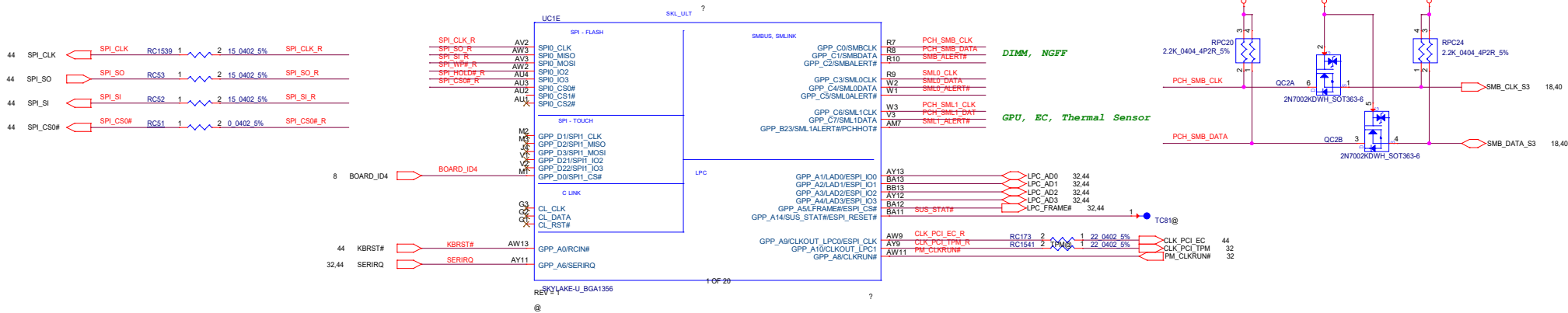
EC SMBus1 address EC SMBus2 address EC SMBus3 address PCH SM Bus address

Device	Address	Device	Address	Device	Address	Device	Address
Smart Battery	need to update	Thermal Sensor(NCT7718W)	1001_100xb	DDR4 SODIMM	need to update	Wlan	need to update
Charger	0001 0010 b	PCH	need to update				
		DGPU	need to update				

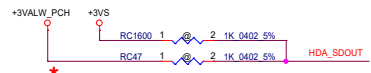
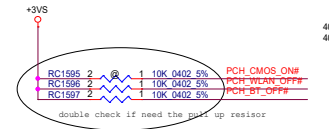
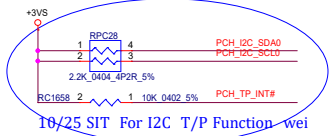
STATE	SIGNAL	SLP_S3#	SLP_S4#	SLP_S5#	+VALW	+V	+VS	Clock
Full ON		HIGH	HIGH	HIGH	ON	ON	ON	ON
S3 (Suspend to RAM)		LOW	HIGH	HIGH	ON	ON	OFF	OFF
S4 (Suspend to Disk)		LOW	LOW	LOW	ON	OFF	OFF	OFF
S5 (Soft OFF)		LOW	LOW	LOW	ON	OFF	OFF	OFF

HSIO PORT		Function
USB3.0	1	USB3.0 Conn Left
	2	USB Type-C
	3	USB3.0 Conn Left
	4	NC
	5	NC
	6	NC
USB2.0	1	USB3.0 Conn Left
	2	USB Type-C
	3	USB3.0 Conn Left
	4	Finger Print
	5	Cardreader
	6	Touch Panel
	7	Bluetooth
	8	Camera
	9	NC
	10	NC
PCIE	1~4 X4 PCIE	DGPU
	5	LAN
	6	WLAN
	7	SATA HDD
	8	SATA ODD
	9~12 X4 PCIE	Optane Memory
SATA	0	HDD
	1A	ODD
	1B	used as PCIE
	2	used as PCIE

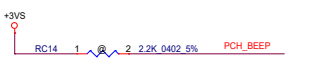
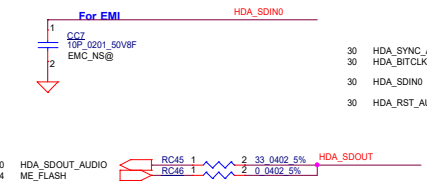
BOM Structure	BTO Item
@	Not stuff
14@	For 14" part
15@	For 15" part
14or15@	For 14" or 15" part
14or17@	For 14" or 17" part
Cannonlake@	For Cannonlake part
CD@	For C cost down
DUALMIC@	For Dual MIC part
EMC@	For EMC part
EMC_15@	For EMC 15" part
EMC_NS@	For EMC nu-stuff part
EMC_PX@	For EMC PX part
EMC_PXNS@	For EMC PX nu-stuff part
ES@	For ES CPU
EXO@	For EXO GPU
ME@	For ME part
NTS@	For nu-touch part
DIS@	For GPU part
OPT@	For NV GPU part
PX@	For AMD GPU part
RANKA@	For VRAM rank A part
RANKB@	For VRAM rank B part
Realtek SD@	For Realtek SD part
SINGLEMIC@	For single MIC part
SINGLERANK@	For single VRAN rank part
DUALRANK@	For dual VRAN rank part
TS@	For touch screen part
TPM@	For TPM part
UMA@	For UMA part



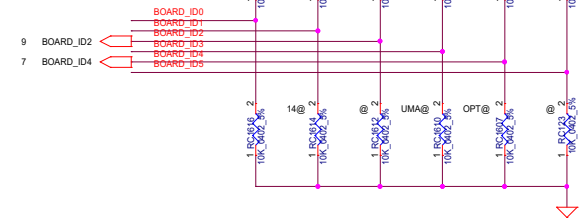
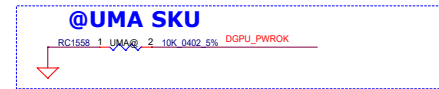
To enable Direct Connect Interface (DCI), a 150K pull up resistor will need to be added to PCHHOT# pin. This pin must be low during the rising edge of RSMRST# (Refer to WW52_MOW)



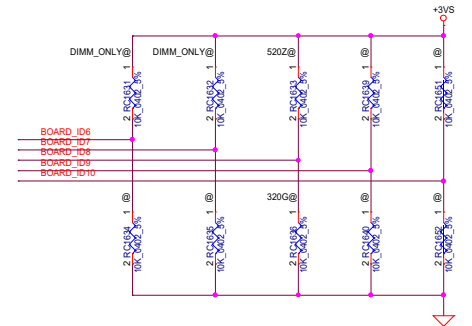
HDA_SDO This signal has a weak internal pull-down.
0 = Enable security measures defined in the Flash Descriptor.
1 = Disable Flash Descriptor Security(override). This strap
should only be asserted high during external pull-up in
manufacturing/debug environments ONLY.



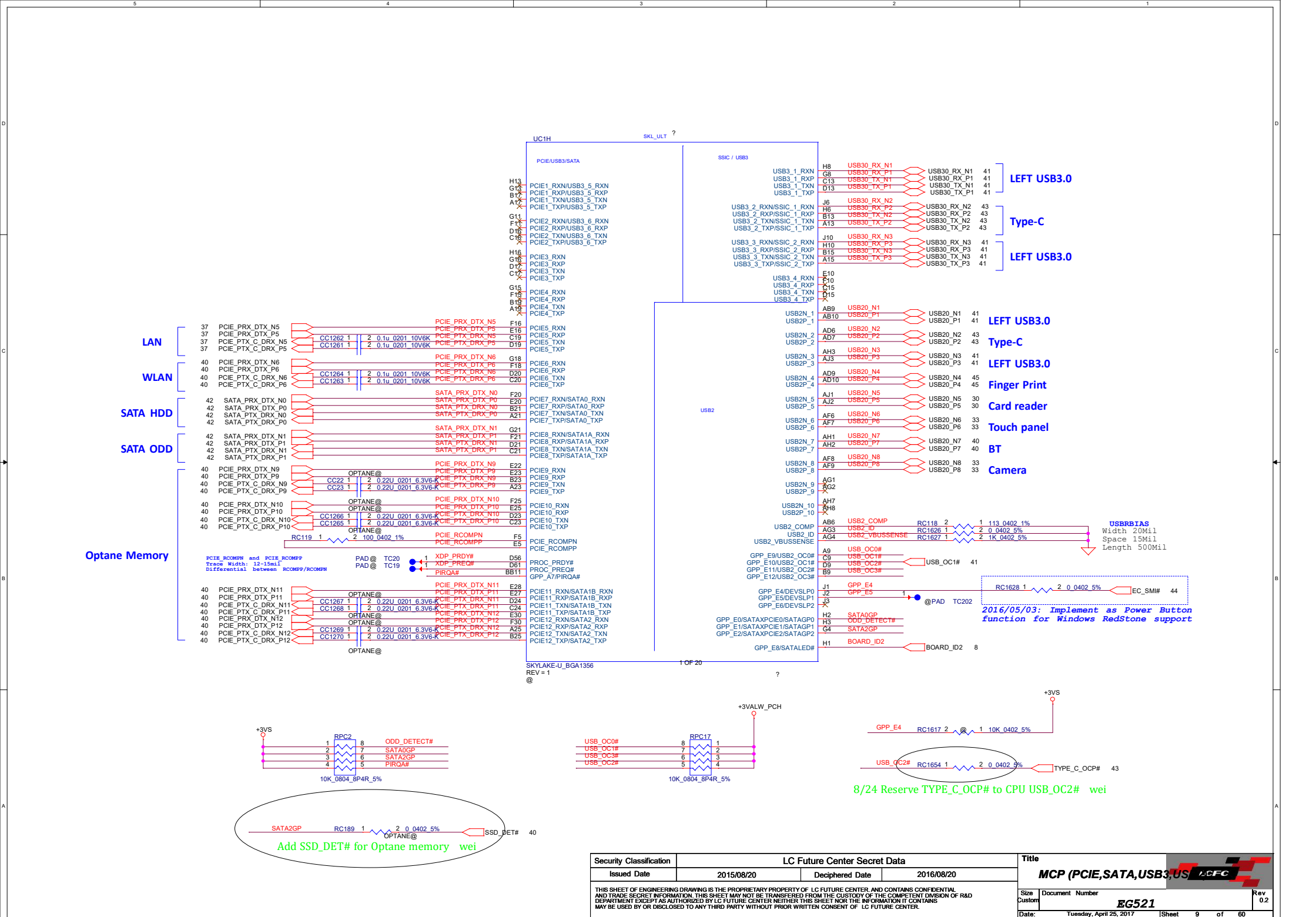
Pin Name	Strap Description	Configuration	Default Value	When Sampled
SPKR / GPP_B14	Top Swap Override	0 = Disable "Top Swap" mode. (Default) 1 = Enable "Top Swap" mode.	0	Rising edge of PCH_PWR0K
GSPI0 MOSI /GPP_B18	No Reboot	0 = Disable "No Reboot" mode. (Default) 1 = Enable "No Reboot" mode	0	Rising edge of PCH_PWR0K
GSPI1 MOSI /GPP_B22	Boot BIOS Strap Bit BBS	Internal PD 0 = SPI (Default) 1 = LPC	0	Rising edge of PCH_PWR0K

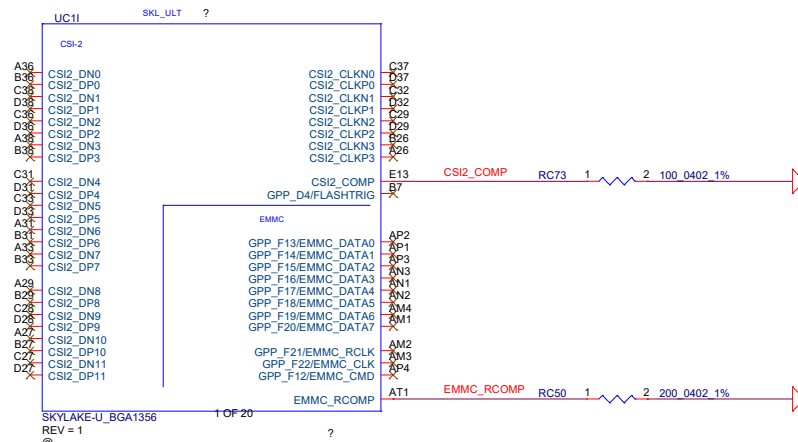
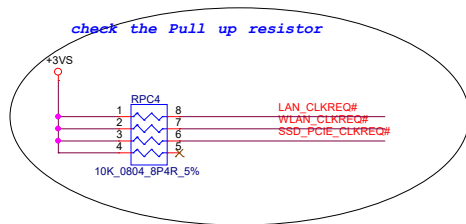


Board ID	Description	Stuff R
Board_ID[0:1]	00 14"	RC1616 RC1614
	01 15"	RC1616 RC1613
	10 17"	RC1615 RC1614
	11 Reserved	RC1615 RC1613
Board_ID2	0 Reserved	RC1612
	1 Reserved	RC1611
Board_ID3	0 UMA	RC1610
	1 DIS	RC1609
Board_ID4	0 NV GPU	RC1607
	1 AMD GPU	RC1608
Board_ID5	0 Reserved	RC123
	1 Reserved	RC1606



Board ID	Description	Stuff R
Board_ID [6,7]	00 Samsung 8Gb 2400 MT/s	RC1634 RC1635
	01 Hynix 8Gb 2400 MT/s	RC1634 RC1632
	10 Micron 8Gb 2400 MT/s	RC1631 RC1635
	11 SO-DIMM Only	RC1631 RC1632
Board_ID8	0 320G	RC1636
	1 520Z	RC1633
Board_ID9	0 Reserved	RC1640
	1 Reserved	RC1639
Board_ID10	0 Reserved	RC1652
	1 Reserved	RC1651





Optane memory

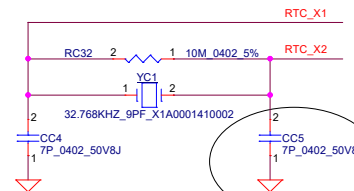
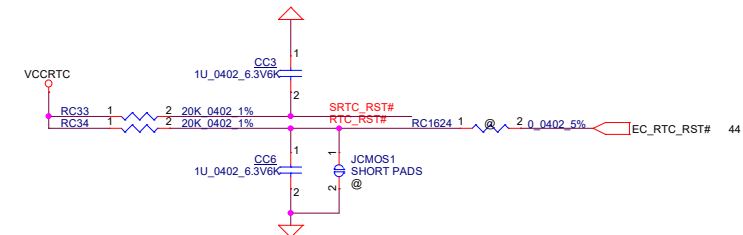
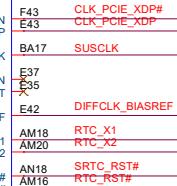
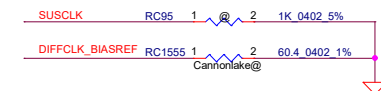
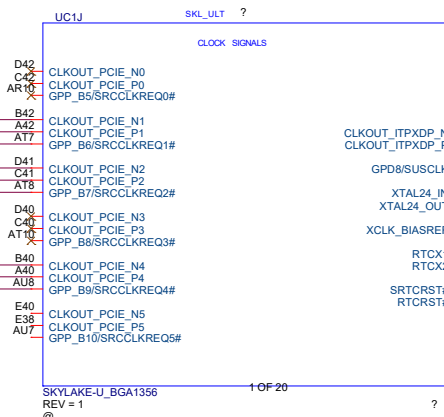
PCIE CLK5 WLAN

PCIE CLK4 LAN

40 CLK_PCIE_SSD#
40 CLK_PCIE_SSD
40 SSD_PCIE_CLKREQ#

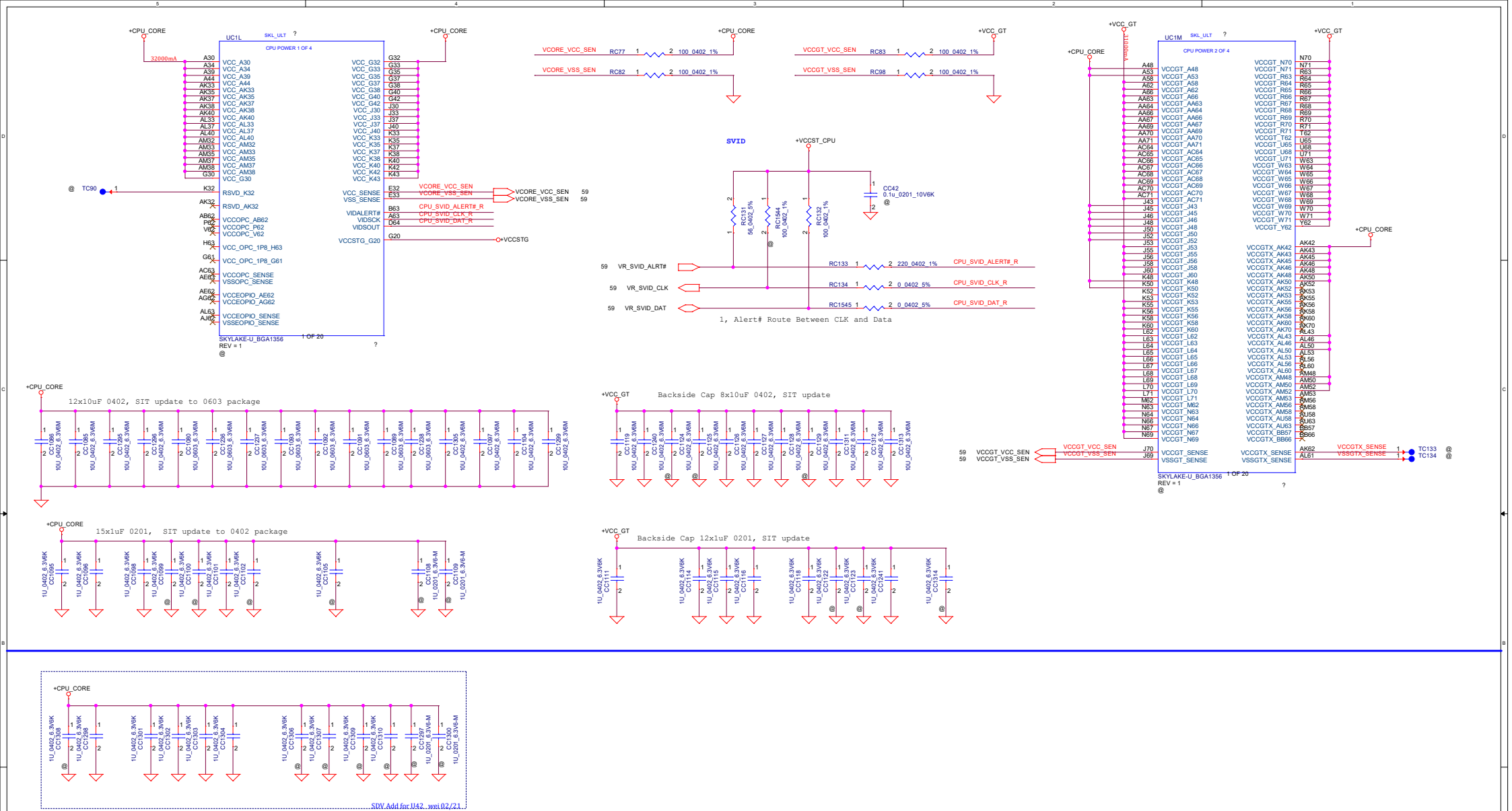
40 CLK_PCIE_WLAN#
40 CLK_PCIE_WLAN
40 WLAN_CLKREQ#

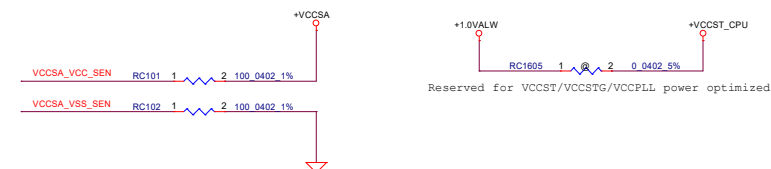
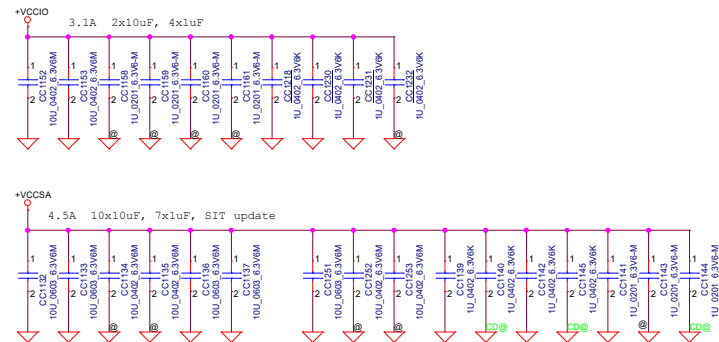
37 CLK_PCIE_LAN#
37 CLK_PCIE_LAN
37 LAN_CLKREQ#




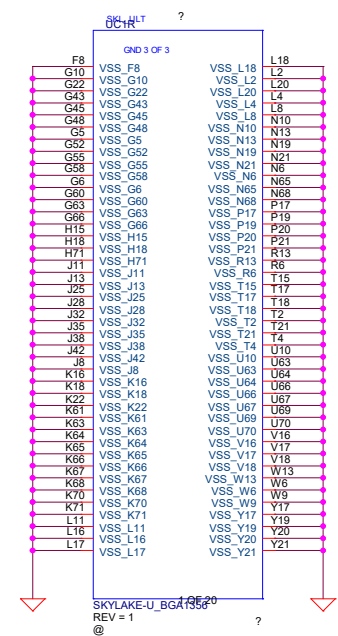
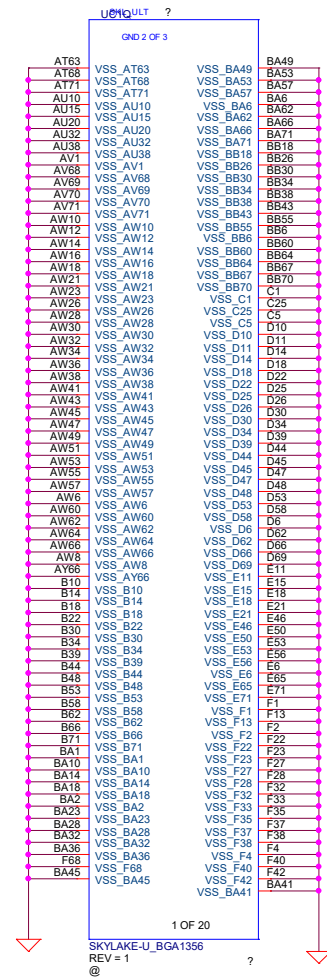
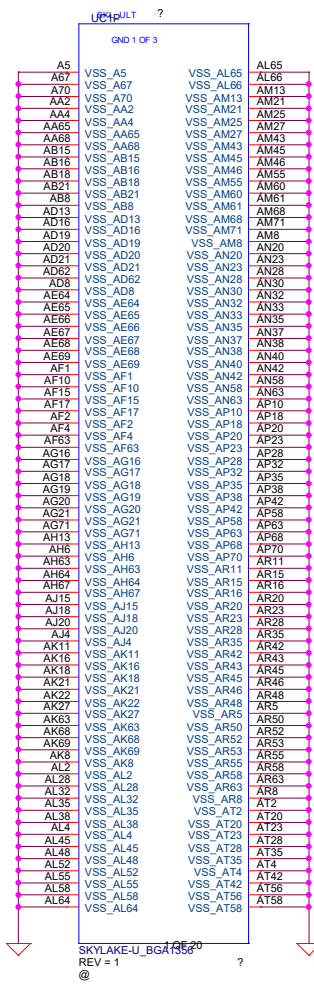
when single end external clock generator used, this pin should be grounded

Security Classification		LC Future Center Secret Data		Title	
Issued Date		2015/08/20	Deciphered Date		2016/08/20
<div>THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.</div>					
Size Custom		Document Number		Rev	
		EG521		0.2	
Date:		Tuesday, April 25, 2017		Sheet 10 of 60	



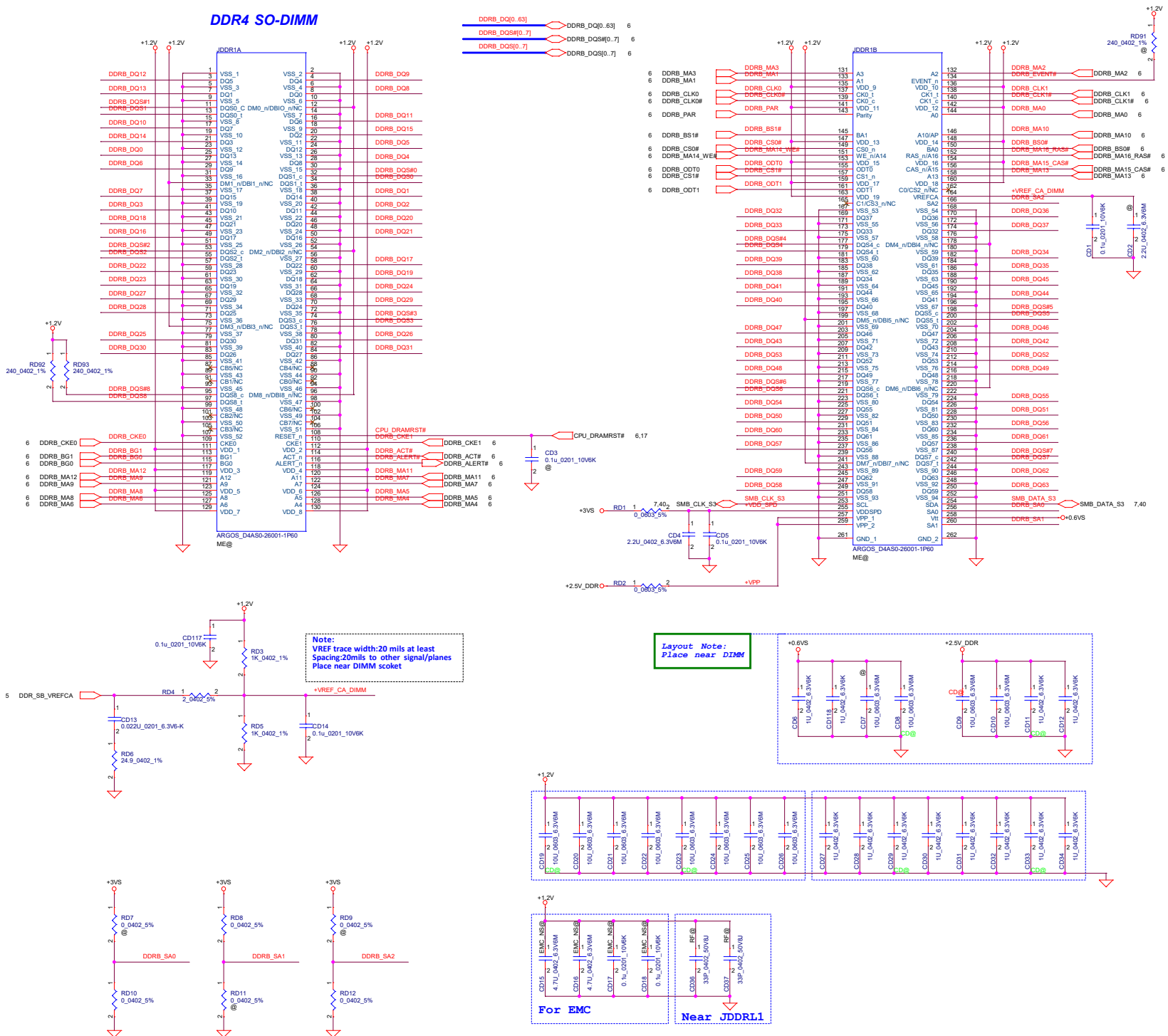


Security Classification				LC Future Center Secret Data				Title			
Issued Date		2015/08/20		Deciphered Date		2016/08/20		MCP (CPU PWR2)			
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.											
Size		Custom		Document Number		EG521		Rev		0.2	
Date:		Tuesday, April 26, 2017				Sheet		13		of 60	








DDR4 SO-DIMM





SPD Address = 2H


5	4	3	2	1
D				D
C				C
B				B
A				A
<div><div><div>Security Classification</div><div>LC Future Center Secret Data</div><div>Issued Date</div><div>2015/08/20</div><div>Deciphered Date</div><div>2016/08/20</div></div><div><div>THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF RAD DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.</div><div><div><div>Title</div><div>Blank</div></div><div><div>Size</div><div>Document Number</div><div>Rev</div></div><div><div>Date:</div><div>Tuesday, April 25, 2017</div><div>Sheet</div><div>19</div><div>of</div><div>60</div></div></div></div><div><div>EG521</div><div>02</div></div><div></div></div>				
5	4	3	2	1

Security Classification		LC Future Center Secret Data			Title		
Issued Date		2015/08/20	Deciphered Date	2016/08/20	Blank		
THIS SET OF ENGINEERING DRAWINGS IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION FROM THE COMPETENT DIVISION OF ROAD DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT THE WRITTEN CONSENT OF LC FUTURE CENTER.					Size Document Number EGS21		
					Date:	Tuesday, April 25, 2017	Sheet 20 of 60

5	4	3	2	1																								
D				D																								
C				C																								
B				B																								
A				A																								
<div><table><tr><td>Security Classification</td><td colspan="3">LC Future Center Secret Data</td><td>Title</td></tr><tr><td>Issued Date</td><td>2015/08/20</td><td>Deciphered Date</td><td>2016/08/20</td><td>Blank</td></tr><tr><td colspan="4">THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.</td><td><table><tr><td>Size</td><td>Document Number</td><td>Rev</td></tr><tr><td>C</td><td>EG521</td><td>02</td></tr><tr><td colspan="3">Date: Tuesday, April 25, 2017</td></tr></table></td></tr></table></div>					Security Classification	LC Future Center Secret Data			Title	Issued Date	2015/08/20	Deciphered Date	2016/08/20	Blank	THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.				<table><tr><td>Size</td><td>Document Number</td><td>Rev</td></tr><tr><td>C</td><td>EG521</td><td>02</td></tr><tr><td colspan="3">Date: Tuesday, April 25, 2017</td></tr></table>	Size	Document Number	Rev	C	EG521	02	Date: Tuesday, April 25, 2017		
Security Classification	LC Future Center Secret Data			Title																								
Issued Date	2015/08/20	Deciphered Date	2016/08/20	Blank																								
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.				<table><tr><td>Size</td><td>Document Number</td><td>Rev</td></tr><tr><td>C</td><td>EG521</td><td>02</td></tr><tr><td colspan="3">Date: Tuesday, April 25, 2017</td></tr></table>	Size	Document Number	Rev	C	EG521	02	Date: Tuesday, April 25, 2017																	
Size	Document Number	Rev																										
C	EG521	02																										
Date: Tuesday, April 25, 2017																												
5	4	3	2	1																								


5	4	3	2	1																								
D				D																								
C				C																								
B				B																								
A				A																								
<div><table><tr><td>Security Classification</td><td colspan="3">LC Future Center Secret Data</td><td>Title</td></tr><tr><td>Issued Date</td><td>2015/08/20</td><td>Deciphered Date</td><td>2016/08/20</td><td>Blank</td></tr><tr><td colspan="4">THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.</td><td><table><tr><td>Size</td><td>Document Number</td><td>Rev</td></tr><tr><td>C</td><td>EG521</td><td>02</td></tr><tr><td colspan="3">Date: Tuesday, April 25, 2017</td></tr></table></td></tr></table></div>					Security Classification	LC Future Center Secret Data			Title	Issued Date	2015/08/20	Deciphered Date	2016/08/20	Blank	THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.				<table><tr><td>Size</td><td>Document Number</td><td>Rev</td></tr><tr><td>C</td><td>EG521</td><td>02</td></tr><tr><td colspan="3">Date: Tuesday, April 25, 2017</td></tr></table>	Size	Document Number	Rev	C	EG521	02	Date: Tuesday, April 25, 2017		
Security Classification	LC Future Center Secret Data			Title																								
Issued Date	2015/08/20	Deciphered Date	2016/08/20	Blank																								
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.				<table><tr><td>Size</td><td>Document Number</td><td>Rev</td></tr><tr><td>C</td><td>EG521</td><td>02</td></tr><tr><td colspan="3">Date: Tuesday, April 25, 2017</td></tr></table>	Size	Document Number	Rev	C	EG521	02	Date: Tuesday, April 25, 2017																	
Size	Document Number	Rev																										
C	EG521	02																										
Date: Tuesday, April 25, 2017																												
5	4	3	2	1																								


5	4	3	2	1																								
D				D																								
C				C																								
B				B																								
A				A																								
<div><table><tr><td>Security Classification</td><td colspan="3">LC Future Center Secret Data</td><td>Title</td></tr><tr><td>Issued Date</td><td>2015/08/20</td><td>Deciphered Date</td><td>2016/08/20</td><td>Blank</td></tr><tr><td colspan="4">THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.</td><td><table><tr><td>Size</td><td>Document Number</td><td>Rev</td></tr><tr><td>C</td><td>EG521</td><td>02</td></tr><tr><td colspan="3">Date: Tuesday, April 25, 2017</td></tr></table></td></tr></table></div>					Security Classification	LC Future Center Secret Data			Title	Issued Date	2015/08/20	Deciphered Date	2016/08/20	Blank	THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.				<table><tr><td>Size</td><td>Document Number</td><td>Rev</td></tr><tr><td>C</td><td>EG521</td><td>02</td></tr><tr><td colspan="3">Date: Tuesday, April 25, 2017</td></tr></table>	Size	Document Number	Rev	C	EG521	02	Date: Tuesday, April 25, 2017		
Security Classification	LC Future Center Secret Data			Title																								
Issued Date	2015/08/20	Deciphered Date	2016/08/20	Blank																								
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.				<table><tr><td>Size</td><td>Document Number</td><td>Rev</td></tr><tr><td>C</td><td>EG521</td><td>02</td></tr><tr><td colspan="3">Date: Tuesday, April 25, 2017</td></tr></table>	Size	Document Number	Rev	C	EG521	02	Date: Tuesday, April 25, 2017																	
Size	Document Number	Rev																										
C	EG521	02																										
Date: Tuesday, April 25, 2017																												
5	4	3	2	1																								

5	4	3	2	1																								
D				D																								
C				C																								
B				B																								
A				A																								
<div><table><tr><td>Security Classification</td><td colspan="3">LC Future Center Secret Data</td><td>Title</td></tr><tr><td>Issued Date</td><td>2015/08/20</td><td>Deciphered Date</td><td>2016/08/20</td><td>Blank</td></tr><tr><td colspan="4">THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.</td><td><table><tr><td>Size</td><td>Document Number</td><td>Rev</td></tr><tr><td>C</td><td>EG521</td><td>02</td></tr><tr><td colspan="3">Date: Tuesday, April 25, 2017</td></tr></table></td></tr></table></div>					Security Classification	LC Future Center Secret Data			Title	Issued Date	2015/08/20	Deciphered Date	2016/08/20	Blank	THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.				<table><tr><td>Size</td><td>Document Number</td><td>Rev</td></tr><tr><td>C</td><td>EG521</td><td>02</td></tr><tr><td colspan="3">Date: Tuesday, April 25, 2017</td></tr></table>	Size	Document Number	Rev	C	EG521	02	Date: Tuesday, April 25, 2017		
Security Classification	LC Future Center Secret Data			Title																								
Issued Date	2015/08/20	Deciphered Date	2016/08/20	Blank																								
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.				<table><tr><td>Size</td><td>Document Number</td><td>Rev</td></tr><tr><td>C</td><td>EG521</td><td>02</td></tr><tr><td colspan="3">Date: Tuesday, April 25, 2017</td></tr></table>	Size	Document Number	Rev	C	EG521	02	Date: Tuesday, April 25, 2017																	
Size	Document Number	Rev																										
C	EG521	02																										
Date: Tuesday, April 25, 2017																												
5	4	3	2	1																								

5	4	3	2	1																													
D				D																													
C				C																													
B				B																													
A				A																													
<table><tr><td>Security Classification</td><td colspan="3">LC Future Center Secret Data</td><td>Title</td></tr><tr><td>Issued Date</td><td>2015/08/20</td><td>Deciphered Date</td><td>2016/08/20</td><td>Blank</td></tr><tr><td colspan="4">THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.</td><td><table><tr><td>Size</td><td>Document Number</td><td>Rev</td></tr><tr><td>C</td><td>EG521</td><td>02</td></tr><tr><td colspan="3">Date: Tuesday, April 25, 2017</td></tr></table></td></tr><tr><td colspan="4">Sheet 25 of 60</td><td></td></tr></table>					Security Classification	LC Future Center Secret Data			Title	Issued Date	2015/08/20	Deciphered Date	2016/08/20	Blank	THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.				<table><tr><td>Size</td><td>Document Number</td><td>Rev</td></tr><tr><td>C</td><td>EG521</td><td>02</td></tr><tr><td colspan="3">Date: Tuesday, April 25, 2017</td></tr></table>	Size	Document Number	Rev	C	EG521	02	Date: Tuesday, April 25, 2017			Sheet 25 of 60				
Security Classification	LC Future Center Secret Data			Title																													
Issued Date	2015/08/20	Deciphered Date	2016/08/20	Blank																													
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.				<table><tr><td>Size</td><td>Document Number</td><td>Rev</td></tr><tr><td>C</td><td>EG521</td><td>02</td></tr><tr><td colspan="3">Date: Tuesday, April 25, 2017</td></tr></table>	Size	Document Number	Rev	C	EG521	02	Date: Tuesday, April 25, 2017																						
Size	Document Number	Rev																															
C	EG521	02																															
Date: Tuesday, April 25, 2017																																	
Sheet 25 of 60																																	

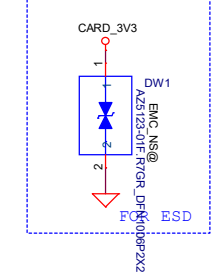
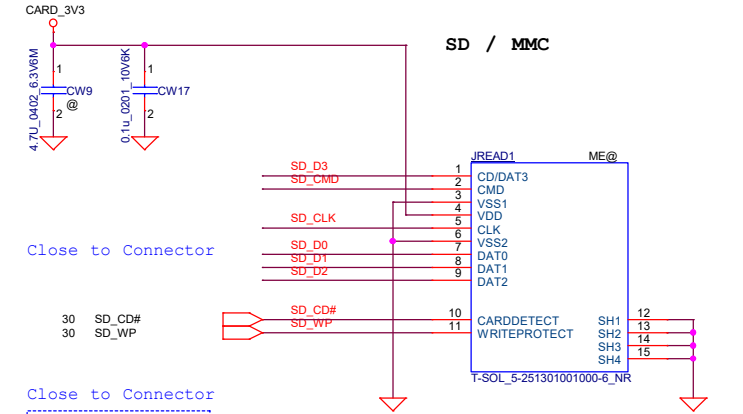
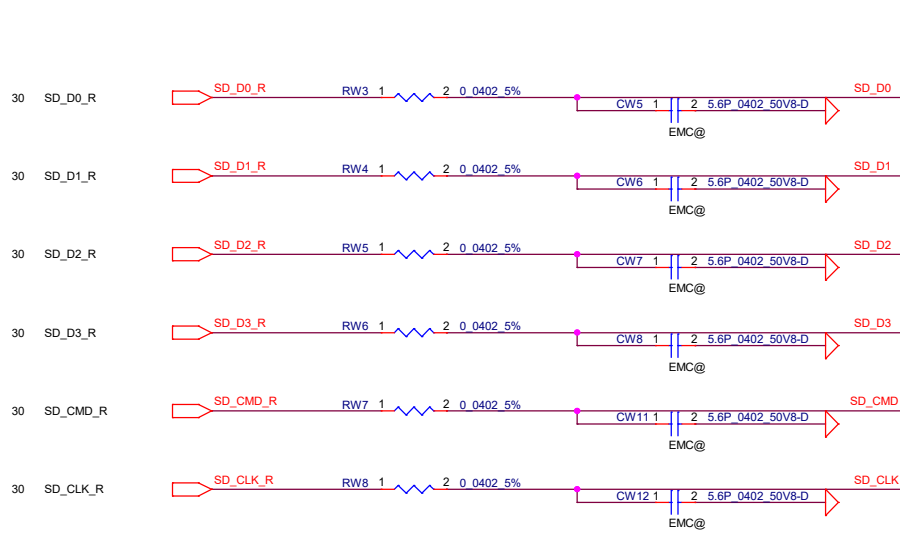


5	4	3	2	1																								
D				D																								
C				C																								
B				B																								
A				A																								
<div><table><tr><td>Security Classification</td><td colspan="3">LC Future Center Secret Data</td><td>Title</td></tr><tr><td>Issued Date</td><td>2015/08/20</td><td>Deciphered Date</td><td>2016/08/20</td><td>Blank</td></tr><tr><td colspan="4">THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.</td><td><table><tr><td>Size</td><td>Document Number</td><td>Rev</td></tr><tr><td>C</td><td>EG521</td><td>02</td></tr><tr><td colspan="3">Date: Tuesday, April 25, 2017</td></tr></table></td></tr></table></div>					Security Classification	LC Future Center Secret Data			Title	Issued Date	2015/08/20	Deciphered Date	2016/08/20	Blank	THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.				<table><tr><td>Size</td><td>Document Number</td><td>Rev</td></tr><tr><td>C</td><td>EG521</td><td>02</td></tr><tr><td colspan="3">Date: Tuesday, April 25, 2017</td></tr></table>	Size	Document Number	Rev	C	EG521	02	Date: Tuesday, April 25, 2017		
Security Classification	LC Future Center Secret Data			Title																								
Issued Date	2015/08/20	Deciphered Date	2016/08/20	Blank																								
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.				<table><tr><td>Size</td><td>Document Number</td><td>Rev</td></tr><tr><td>C</td><td>EG521</td><td>02</td></tr><tr><td colspan="3">Date: Tuesday, April 25, 2017</td></tr></table>	Size	Document Number	Rev	C	EG521	02	Date: Tuesday, April 25, 2017																	
Size	Document Number	Rev																										
C	EG521	02																										
Date: Tuesday, April 25, 2017																												
5	4	3	2	1																								


5	4	3	2	1																								
D				D																								
C				C																								
B				B																								
A				A																								
<div><table><tr><td>Security Classification</td><td colspan="3">LC Future Center Secret Data</td><td>Title</td></tr><tr><td>Issued Date</td><td>2015/08/20</td><td>Deciphered Date</td><td>2016/08/20</td><td>Blank</td></tr><tr><td colspan="4">THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.</td><td><table><tr><td>Size</td><td>Document Number</td><td>Rev</td></tr><tr><td>C</td><td>EG521</td><td>02</td></tr><tr><td colspan="3">Date: Tuesday, April 25, 2017</td></tr></table></td></tr></table></div>					Security Classification	LC Future Center Secret Data			Title	Issued Date	2015/08/20	Deciphered Date	2016/08/20	Blank	THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.				<table><tr><td>Size</td><td>Document Number</td><td>Rev</td></tr><tr><td>C</td><td>EG521</td><td>02</td></tr><tr><td colspan="3">Date: Tuesday, April 25, 2017</td></tr></table>	Size	Document Number	Rev	C	EG521	02	Date: Tuesday, April 25, 2017		
Security Classification	LC Future Center Secret Data			Title																								
Issued Date	2015/08/20	Deciphered Date	2016/08/20	Blank																								
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.				<table><tr><td>Size</td><td>Document Number</td><td>Rev</td></tr><tr><td>C</td><td>EG521</td><td>02</td></tr><tr><td colspan="3">Date: Tuesday, April 25, 2017</td></tr></table>	Size	Document Number	Rev	C	EG521	02	Date: Tuesday, April 25, 2017																	
Size	Document Number	Rev																										
C	EG521	02																										
Date: Tuesday, April 25, 2017																												
5	4	3	2	1																								

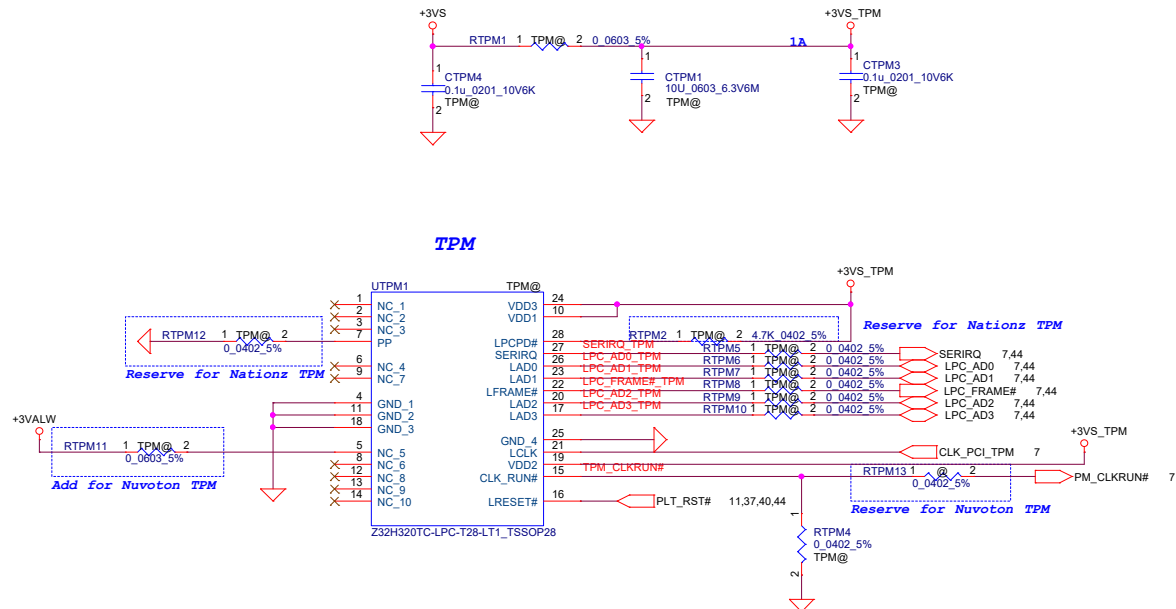
5	4	3	2	1																													
D				D																													
C				C																													
B				B																													
A				A																													
<table><tr><td>Security Classification</td><td colspan="3">LC Future Center Secret Data</td><td>Title</td></tr><tr><td>Issued Date</td><td>2015/08/20</td><td>Deciphered Date</td><td>2016/08/20</td><td>Blank</td></tr><tr><td colspan="4">THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.</td><td><table><tr><td>Size</td><td>Document Number</td><td>Rev</td></tr><tr><td>C</td><td>EG521</td><td>02</td></tr><tr><td colspan="3">Date: Tuesday, April 25, 2017</td></tr></table></td></tr><tr><td colspan="4">Sheet 29 of 60</td><td></td></tr></table>					Security Classification	LC Future Center Secret Data			Title	Issued Date	2015/08/20	Deciphered Date	2016/08/20	Blank	THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.				<table><tr><td>Size</td><td>Document Number</td><td>Rev</td></tr><tr><td>C</td><td>EG521</td><td>02</td></tr><tr><td colspan="3">Date: Tuesday, April 25, 2017</td></tr></table>	Size	Document Number	Rev	C	EG521	02	Date: Tuesday, April 25, 2017			Sheet 29 of 60				
Security Classification	LC Future Center Secret Data			Title																													
Issued Date	2015/08/20	Deciphered Date	2016/08/20	Blank																													
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.				<table><tr><td>Size</td><td>Document Number</td><td>Rev</td></tr><tr><td>C</td><td>EG521</td><td>02</td></tr><tr><td colspan="3">Date: Tuesday, April 25, 2017</td></tr></table>	Size	Document Number	Rev	C	EG521	02	Date: Tuesday, April 25, 2017																						
Size	Document Number	Rev																															
C	EG521	02																															
Date: Tuesday, April 25, 2017																																	
Sheet 29 of 60																																	






8/16 Update Conn. P/N SP07000WG00 wei

Security Classification		LC Future Center Secret Data		Title			
Issued Date	2015/08/20	Deciphered Date	2016/08/20	Cardreader			
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.				Size	Document Number	Rev	0.2
				Custom	EG521		
				Date:	Tuesday, April 25, 2017	Sheet	31 of 60
3		2		1			



	Nationz TPM	Nuvoton TPM
RTPM2	Stuff	NC
RTPM12	Stuff	NC
RTPM11	NC	Stuff

Security Classification				LC Future Center Secret Data				Title		
Issued Date		2015/08/20		Deciphered Date		2016/08/20		TPM		
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.								Size Custom		
								EG521		Rev 0.2
Date:								Tuesday, April 25, 2017		Sheet 32 of 60

[illegible]

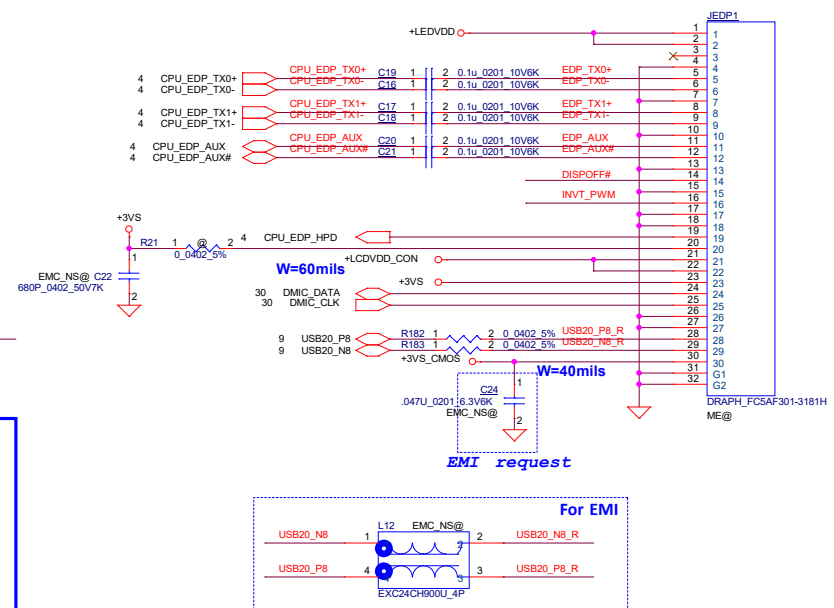
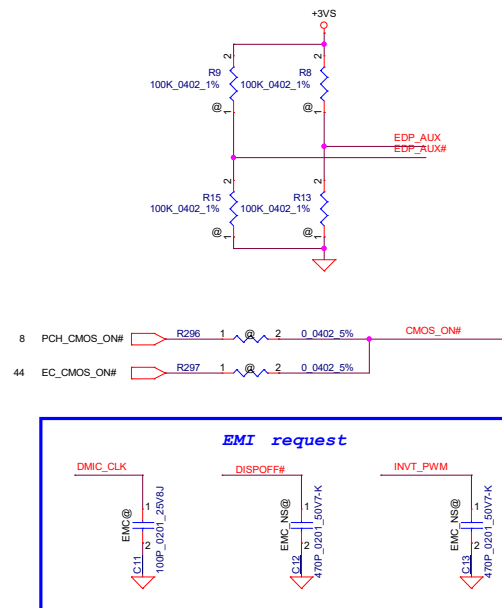
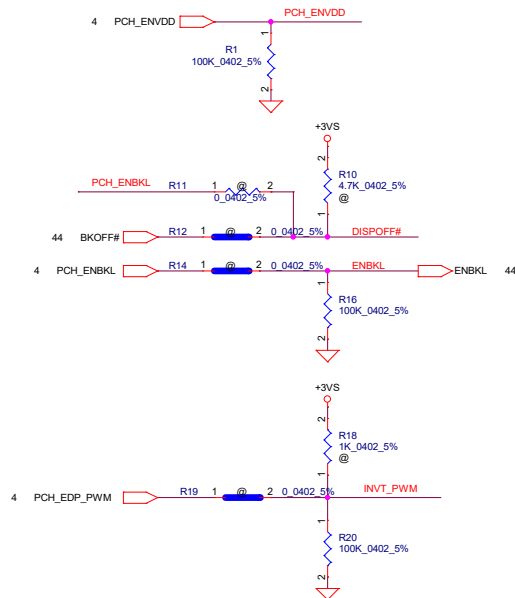
CMOS Camera

Need short

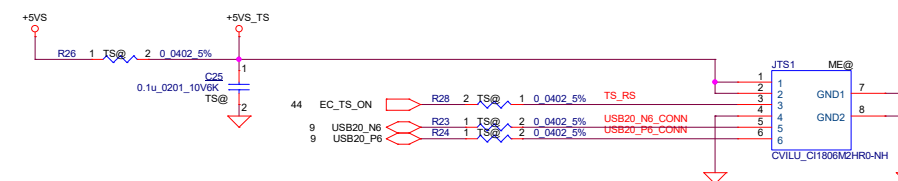
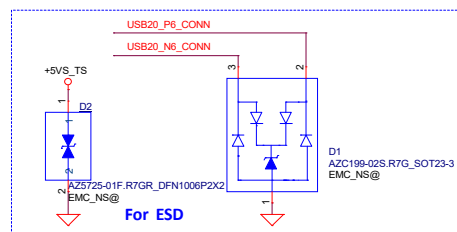
W=40 mils

W=40mils

For EMI Close to R5

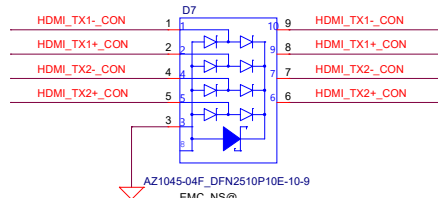
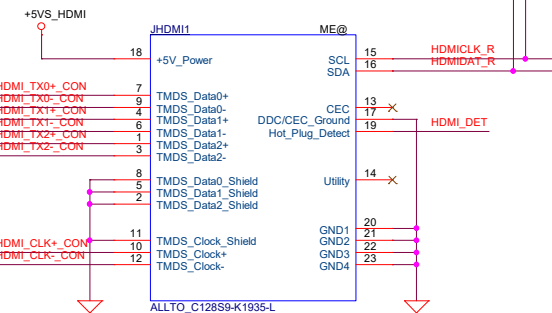
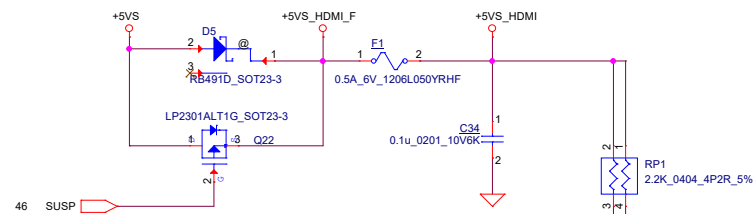
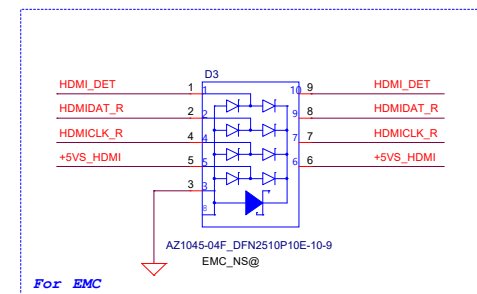


For EMI




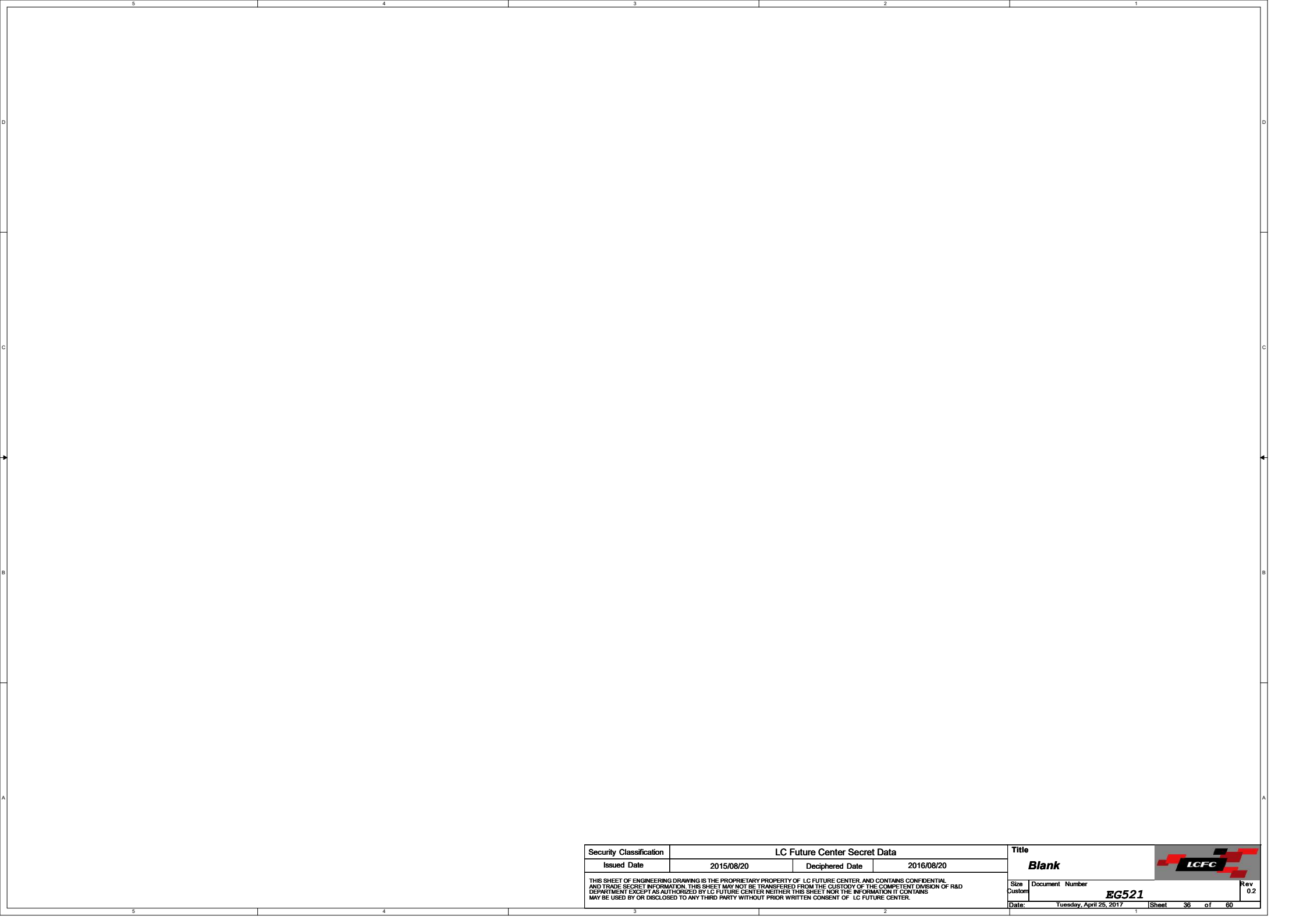
Title	eDP/CMOS/Touch screen
-------	-----------------------


Size	Document Number	Rev
Custom	EG521	0.2

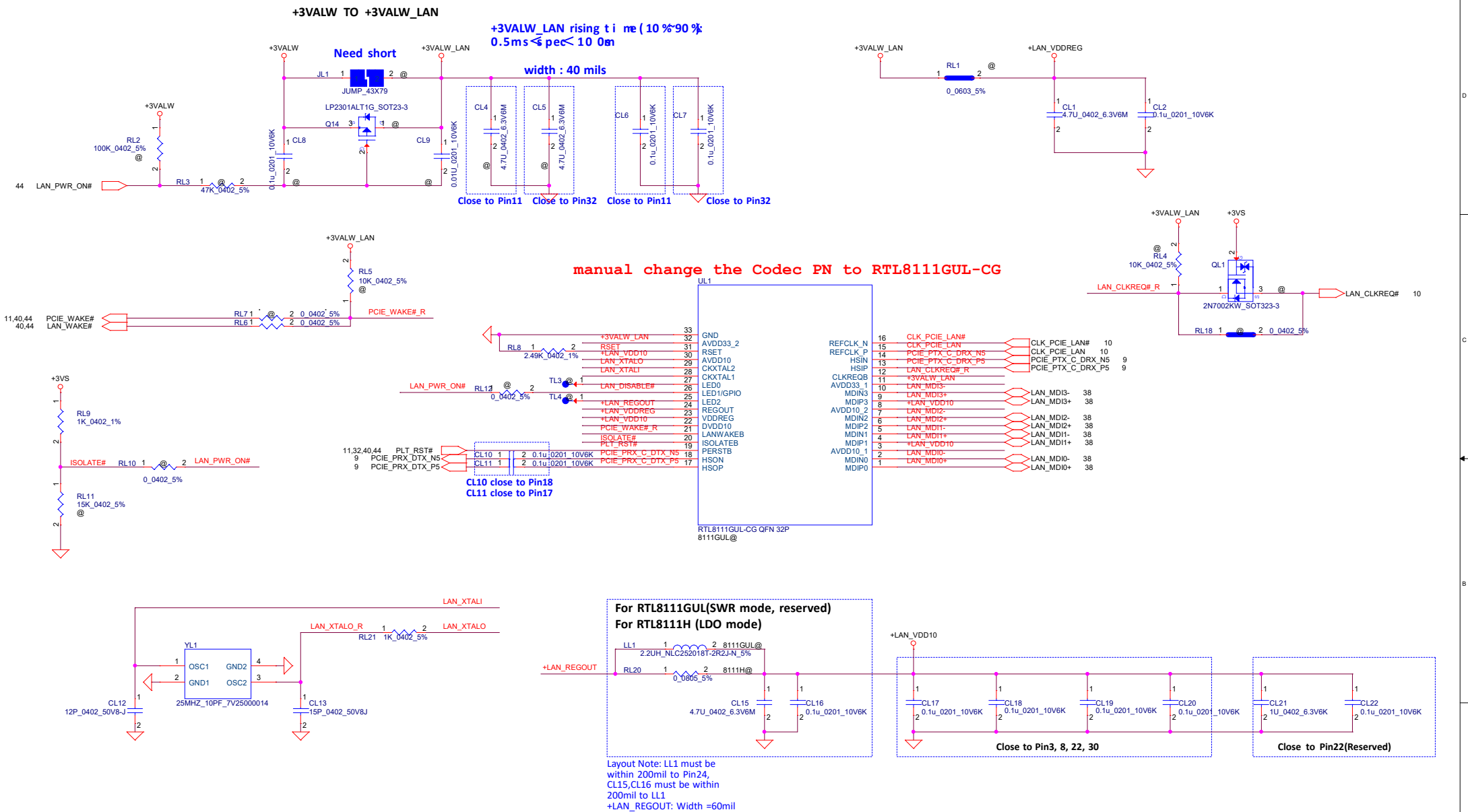


Title			
HDMI_CONN			
Size Custom	Document Number	Rev	
	EG521	0.2	
Date	Tuesday, April 25, 2017	Sheet	34 of 60

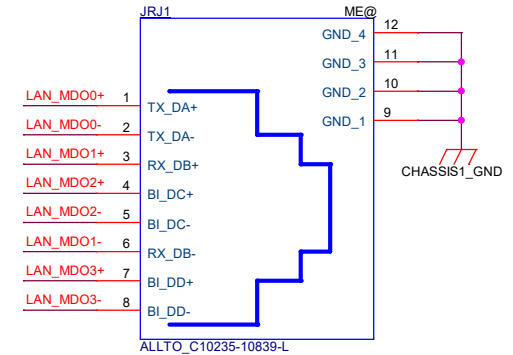
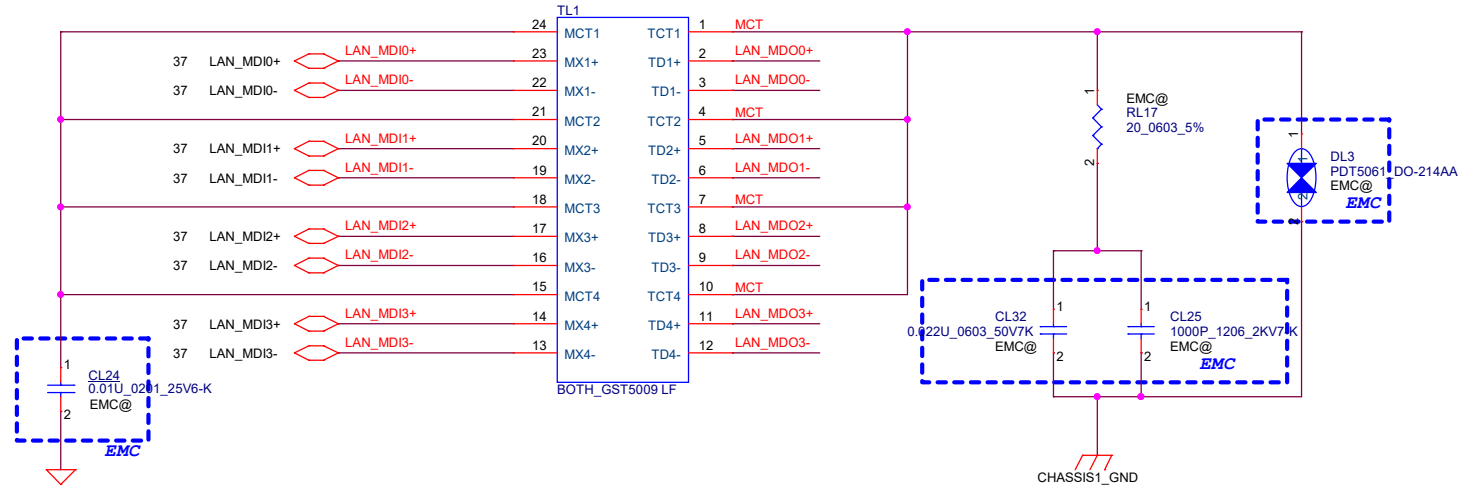
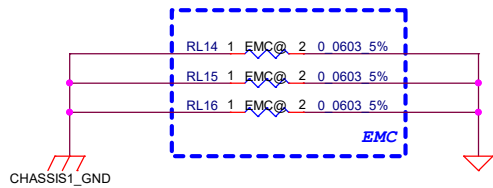
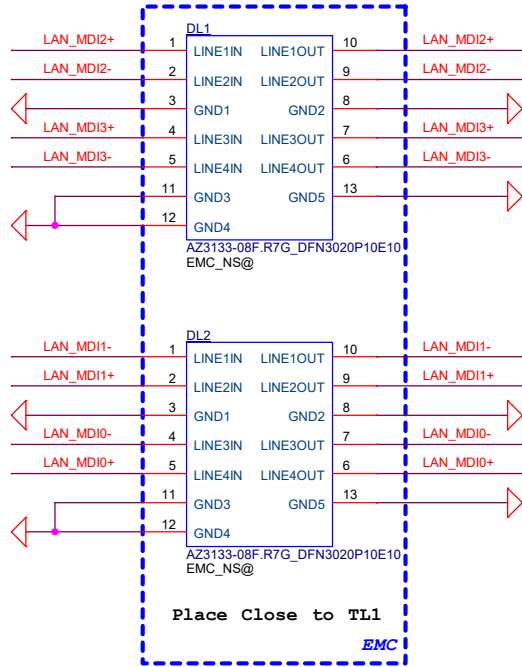
Security Classification		LC Future Center Secret Data		Title			
Issued Date		2015/08/20		Deciphered Date			
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.							
Size Custom		Document Number		EG521		Rev 0.2	
Date:		Tuesday, April 25, 2017		Sheet 35 of 60			



Security Classification		LC Future Center Secret Data		Title			
Issued Date	2015/08/20	Deciphered Date	2016/08/20	Blank			
<small>THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.</small>				Size	Document Number	Rev	
				Custom	EG521	0.2	
Date:				Tuesday, April 25, 2017 1 Sheet 36 of 60			



DL1/DL2 1'S PN:SC300003M00



8/16 Update RJ45 P/N DC021608091 wei

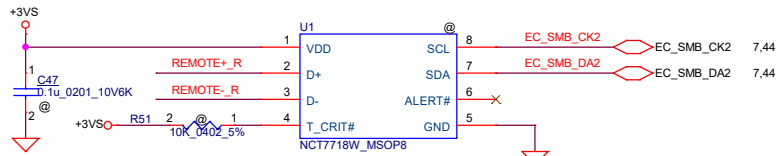
Security Classification		LC Future Center Secret Data		Title	
Issued Date	2015/08/20	Deciphered Date	2016/08/20	LAN_Transformer	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.				Size	Document Number
				Rev	0.2
				Date:	Tuesday, April 25, 2017
				Sheet	38 of 60

Close to U1

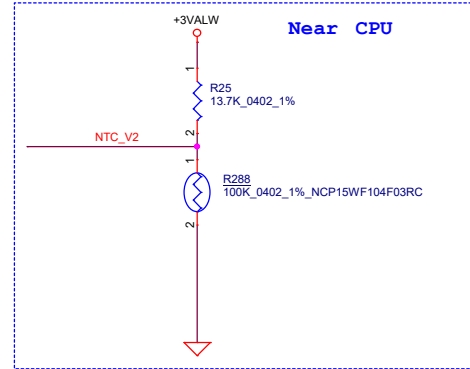
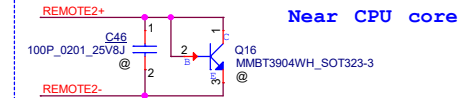


REMOTE+/-_R, REMOTE1+/-, REMOTE2+/-:
Trace width/space:10/10 mil
Trace length:<8"

SMSC thermal sensor placed near DIMM

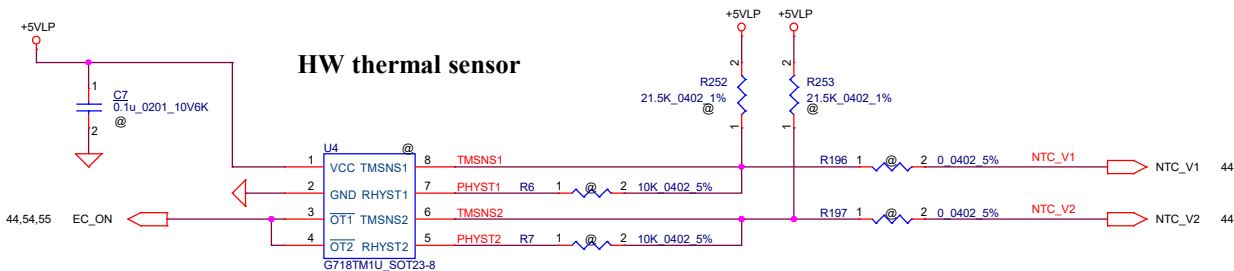


Address 1001_101xb



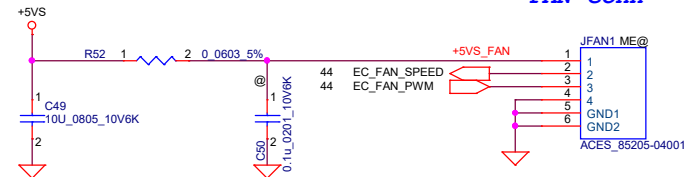
for layout optimized, change the EC_AGND to GND

HW thermal sensor



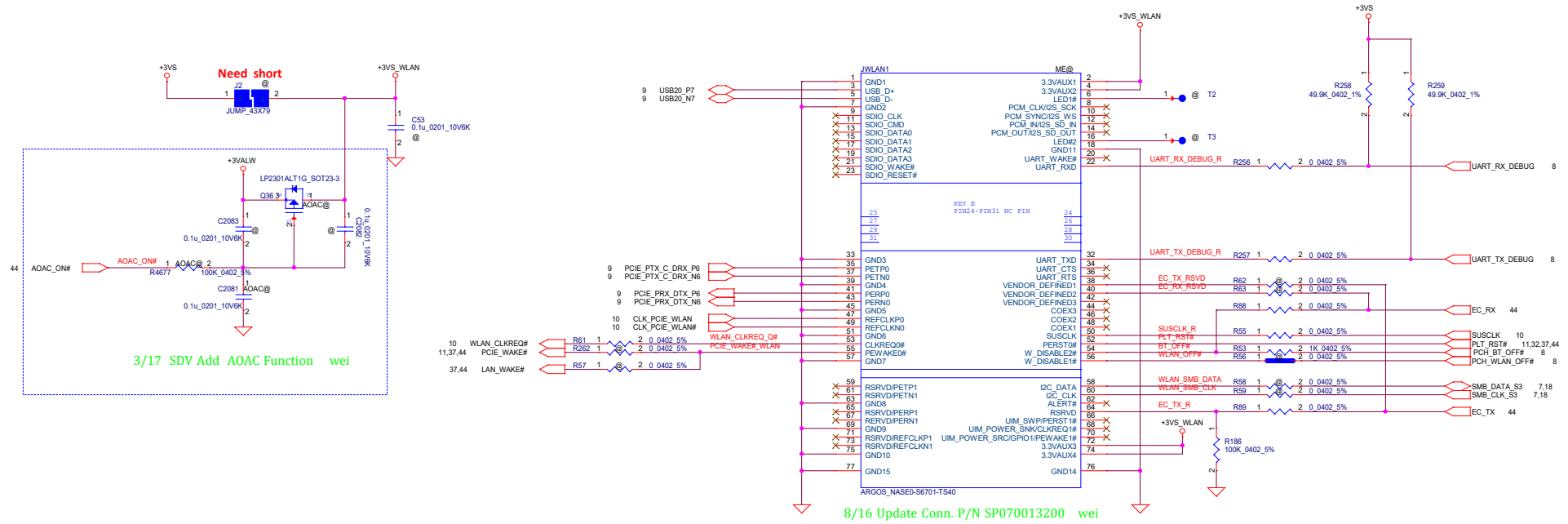
over temperature threshold:
 $RSET = 3 * RTMH$
92+/-30C
Hysteresis temperature threshold.
 $RHYST = (RSET * RTML) / (3 * RTML - RSET)$
56+/-30C

FAN Conn

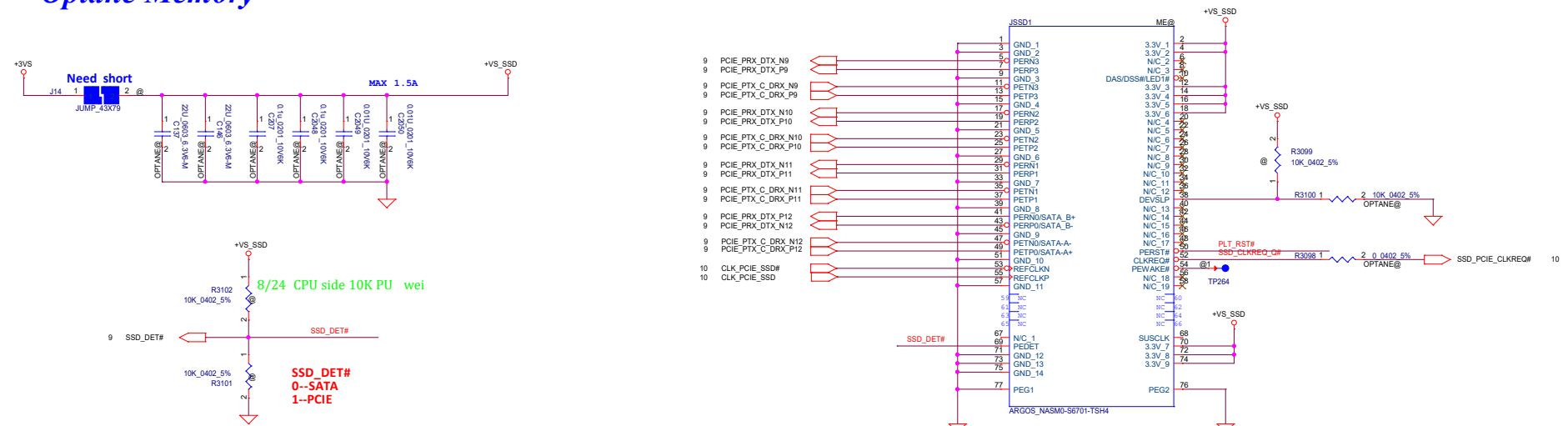



Security Classification		LC Future Center Secret Data		Title	
Issued Date	2015/08/20	Deciphered Date	2016/08/20	Thermal sensor/FAN CONN	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER. AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.				Size Custom	Document Number
				EG521	
				Date: Tuesday, April 25, 2017	Sheet 39 of 60
				Rev 0.2	

Mini-Express Card(WLAN/WiMAX)

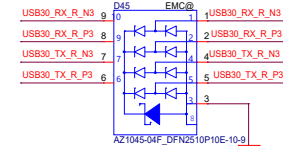
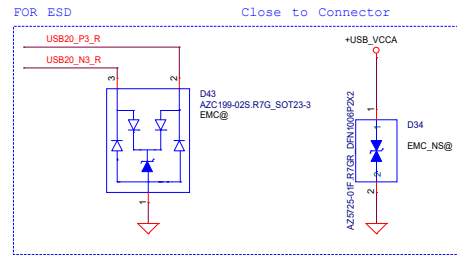
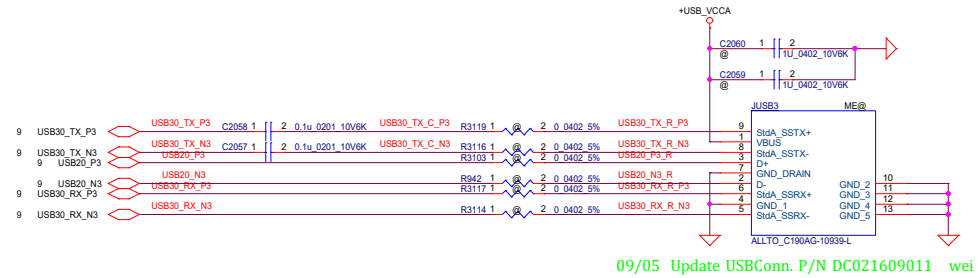
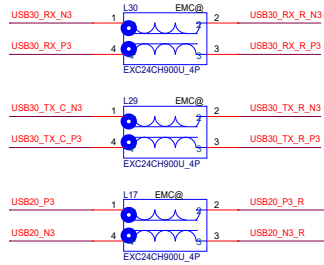
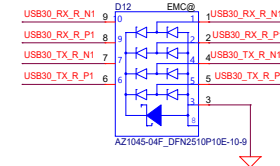
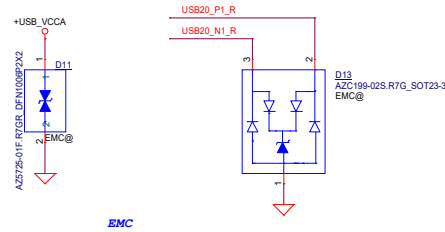
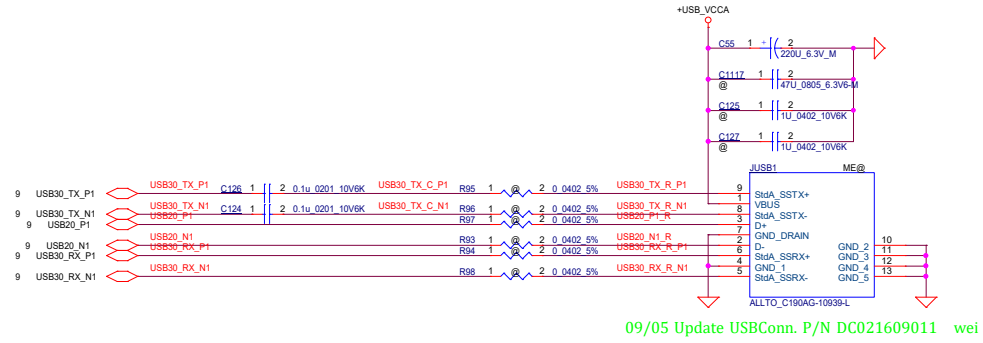
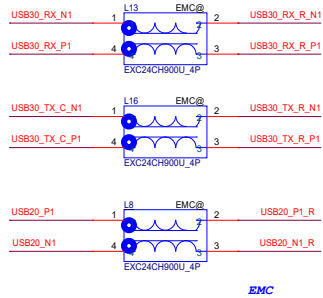
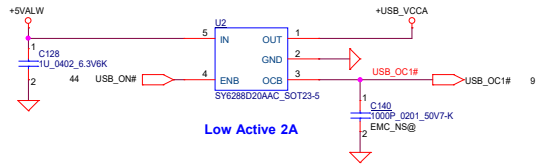


Optane Memory

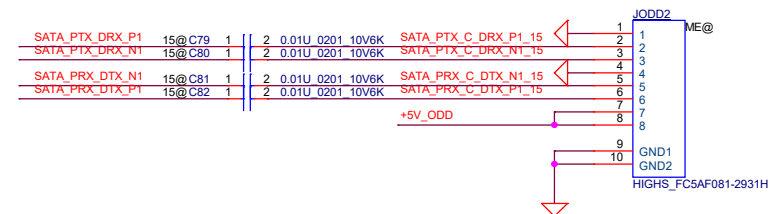
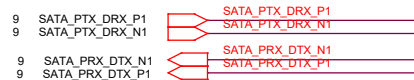
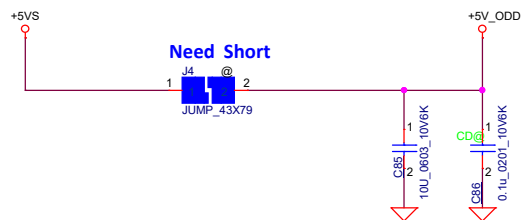
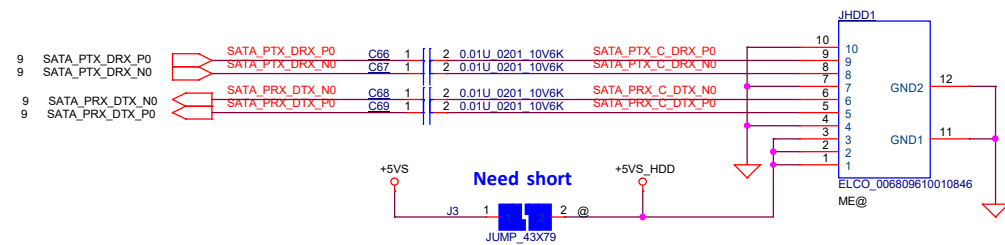
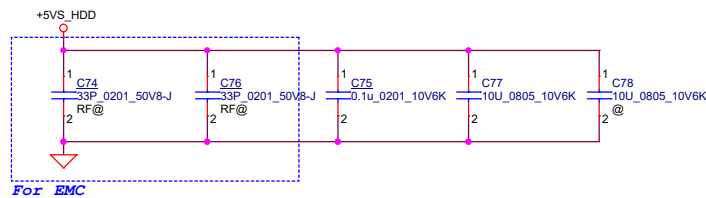


Security Classification		LC Future Center Secret Data		Title			
Issued Date		2016/12/14	Deciphered Date		2017/12/13		
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.				Size	Document Number		Rev
					EG523		0.2
				Date:	Tuesday, April 25, 2017		Sheet 40 of 60

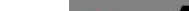
LEFT SIDE USB3.0 PORT x2

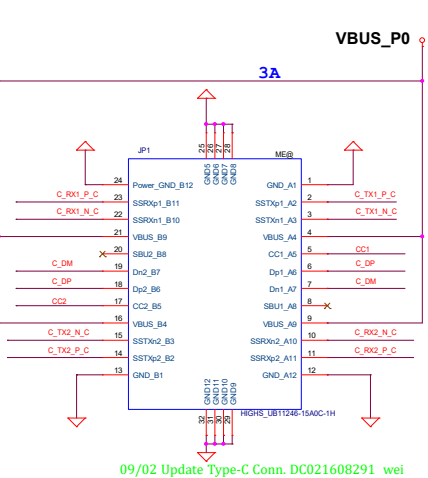
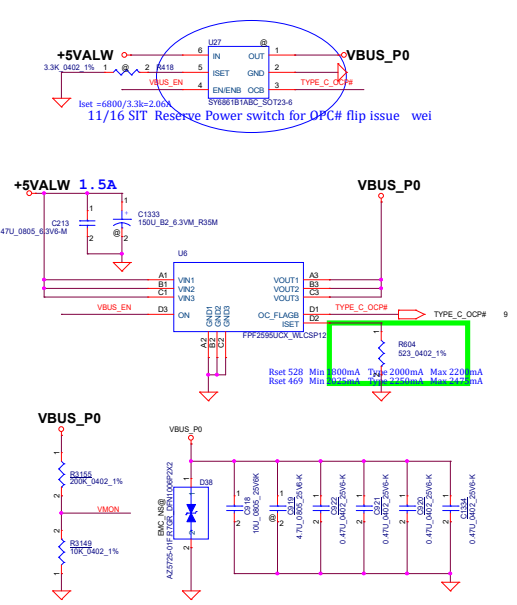
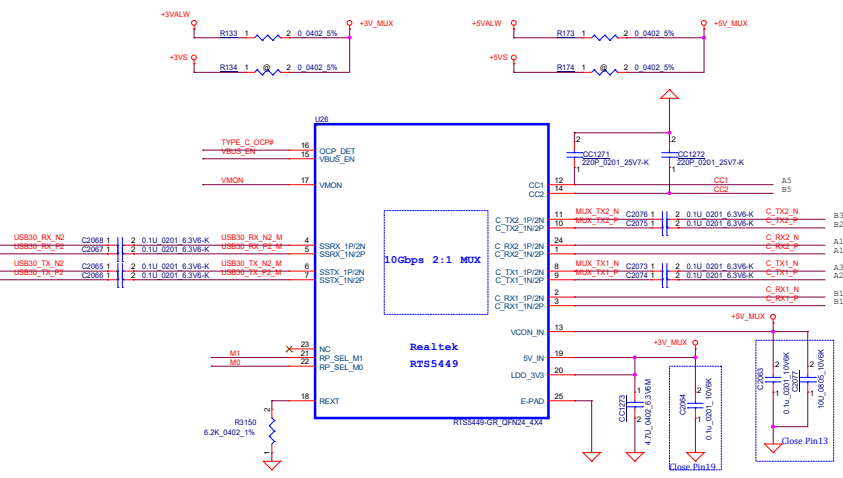
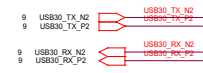


Security Classification	LC Future Center Secret Data		Title	USB3.0 PORT (LEFT)	
Issued Date	2015/08/20	Deciphered Date	2016/08/20	Size	Document Number
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.				EG521	Rev 02
				Date: Tuesday, April 25, 2017	Sheet 41 of 80

SATA HDD Conn.

8/16 Update Conn. P/N SP01001YV00 wei

Security Classification		LC Future Center Secret Data		Title			
Issued Date	2015/08/20	Deciphered Date	2016/08/20	HDD/ODD CONN			
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.				Size Document Number		Rev	
				Custom EG521		0.2	
Date: Tuesday, April 25, 2017				Sheet 42 of 60			



Rs configuration

Rp:1.5A (now)

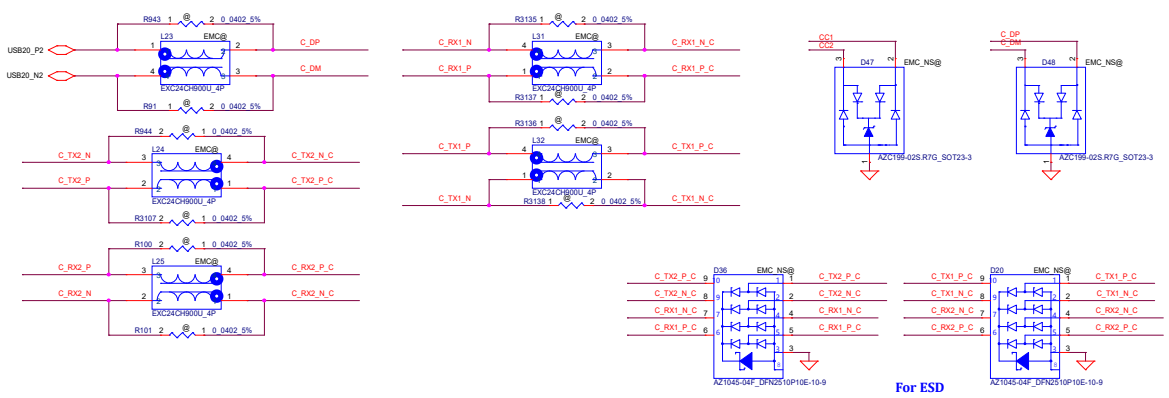
Rp	M1	M0	Note
Rp:900mA	0	1	R3144/R3142 mount
Rp:1.5A	1	0	R3139/R3143 mount
Rp:3.0A	1	1	R3139/R3142 mount

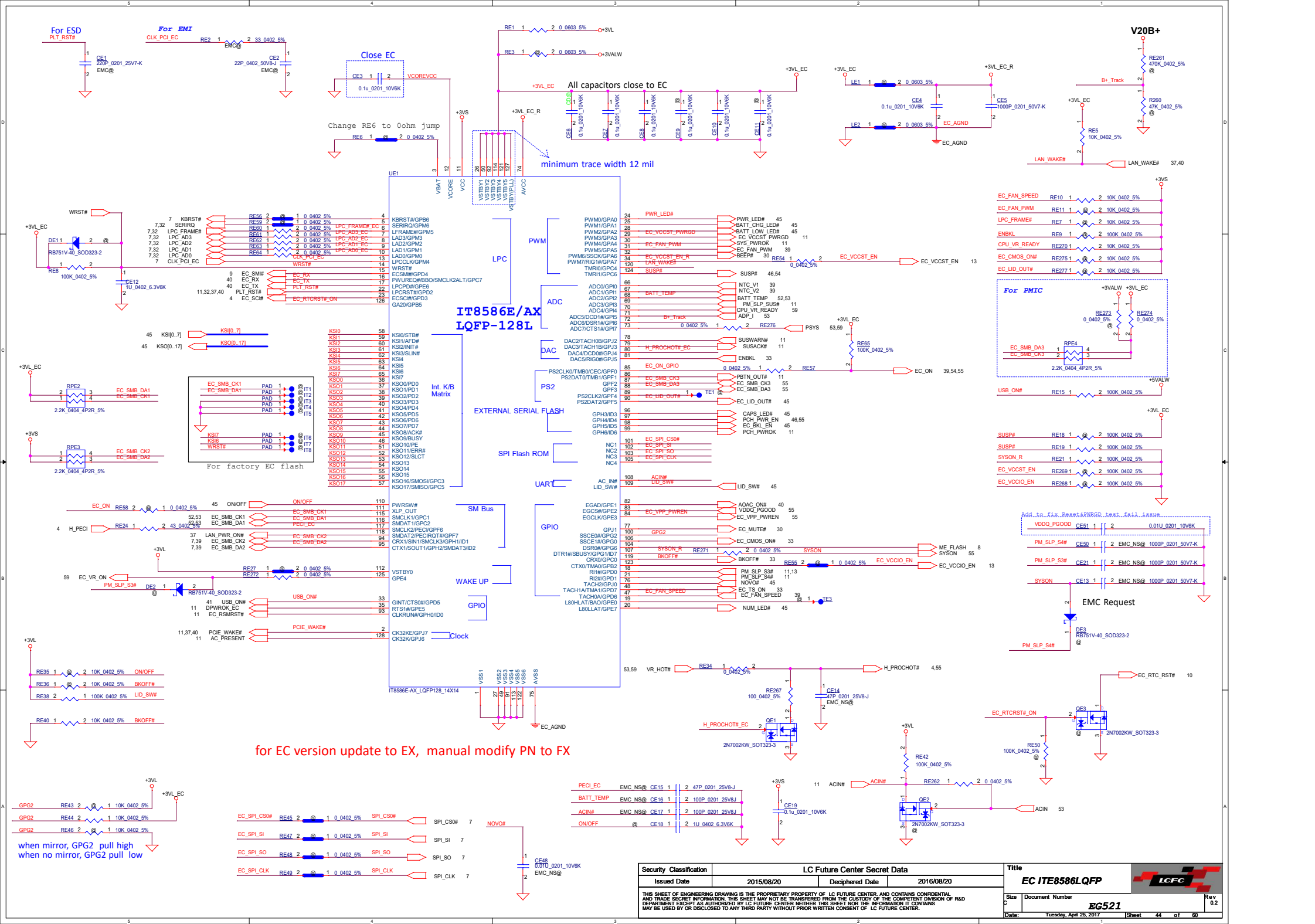
For C_VBUS power switch enable pin

Power switch enable pin	Note
Low Active	R3146 mount
High Active	R3141 mount

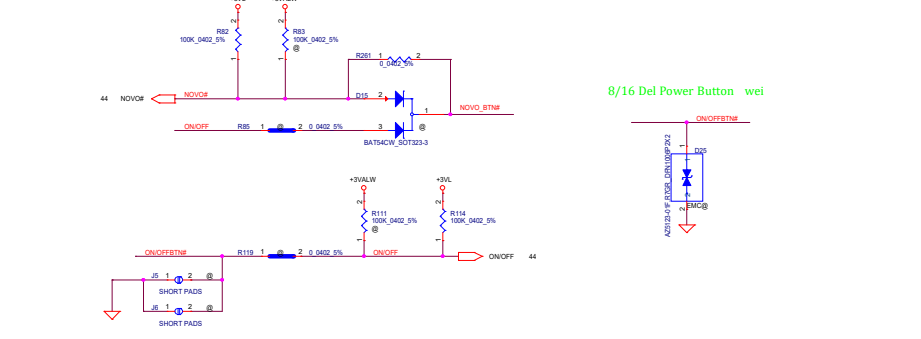
For C_VBUS power switch OCP pin

Power switch OCP pin	Note
Low Active	R3147 mount
High Active	R3140 mount



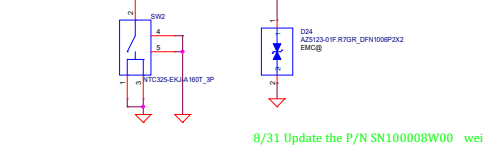


ON/OFF switch



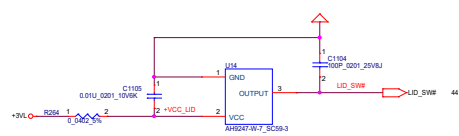
8/16 Del Power Button wei

Novo button

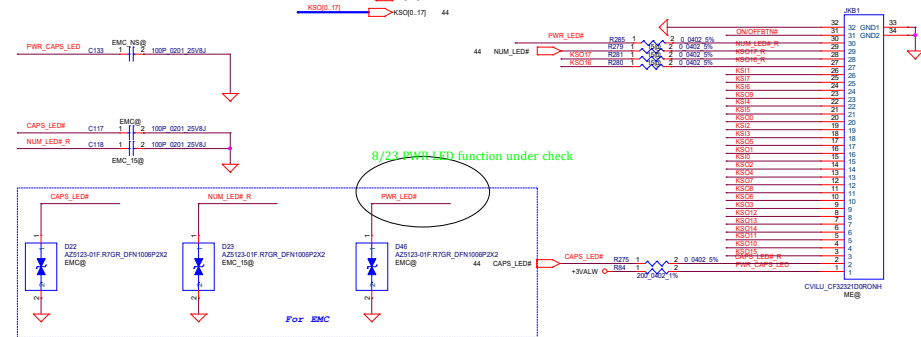


8/31 Update the P/N SN100008W00 wei

LID switch

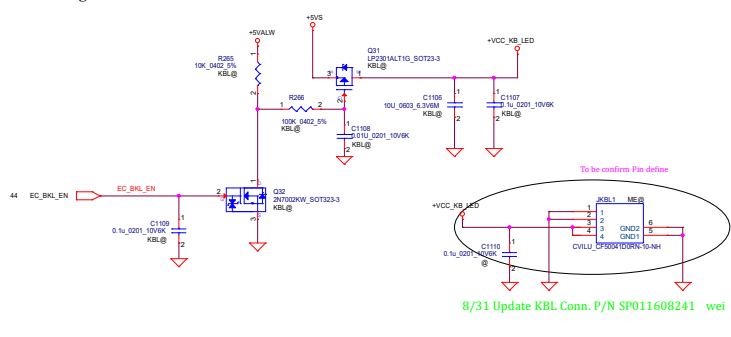


K/B Connector



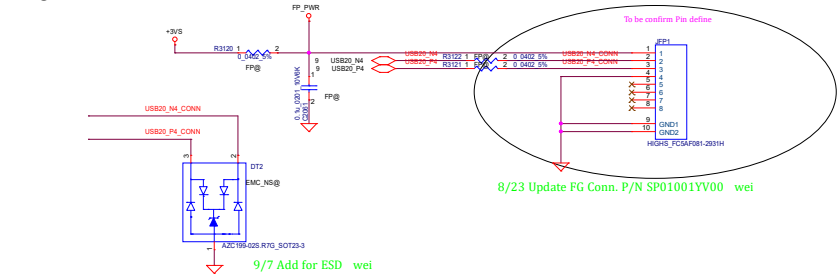
8/23 PWR-LED function under check

KB Backlight Connector



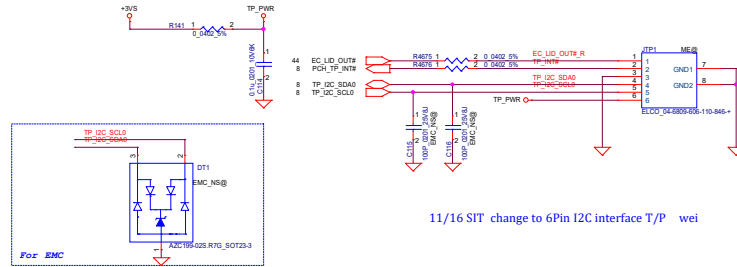
8/31 Update KBL Conn. P/N SP011608241 wei

Finger Print Connector

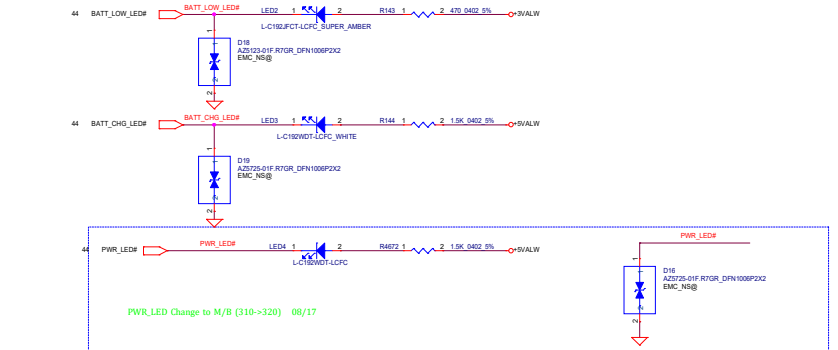


8/23 Update FG Conn. P/N SP01001YV00 wei

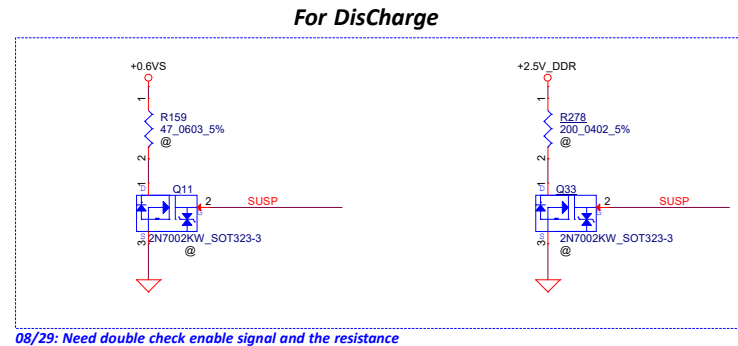
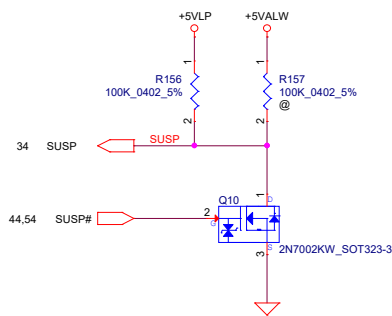
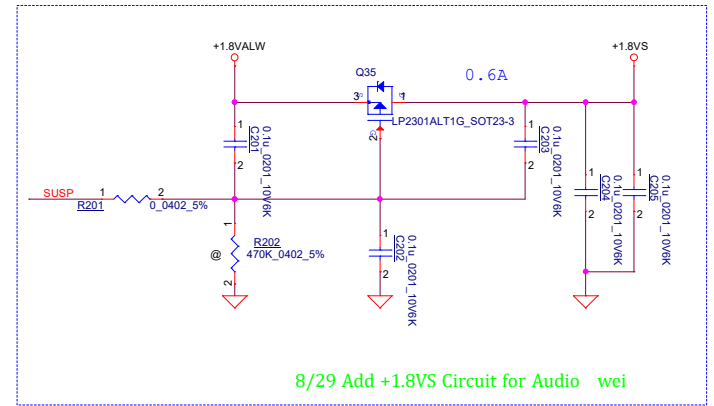
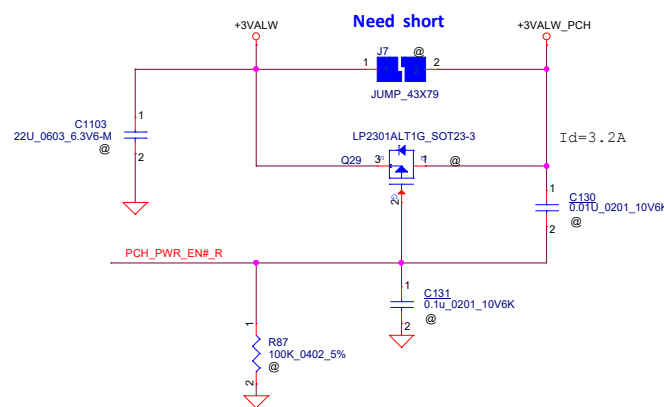
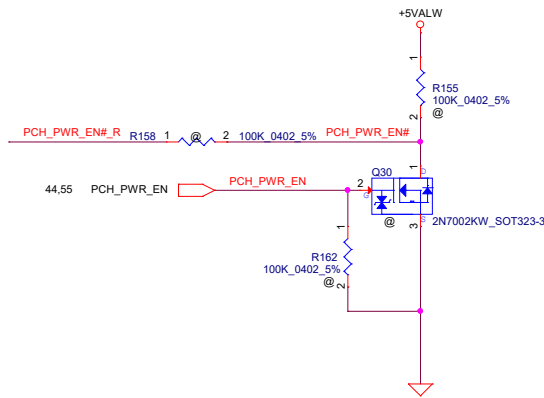
TP/B Connector




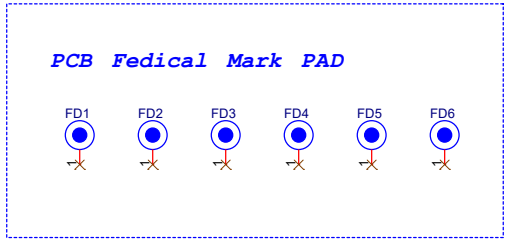
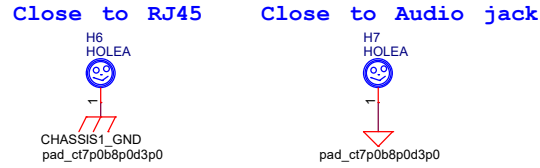
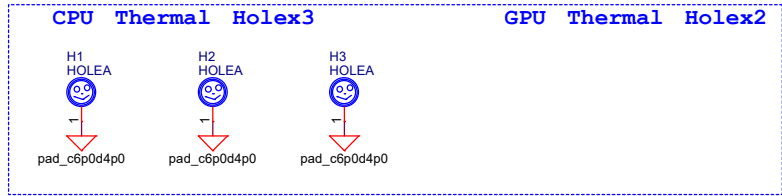
11/16 SIT change to 6Pin I2C interface T/P wei



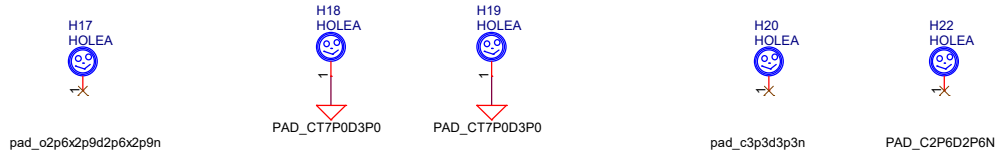
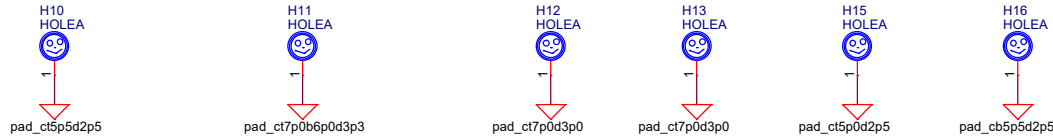
PWR-LED Change to M/B (310->320) 08/17



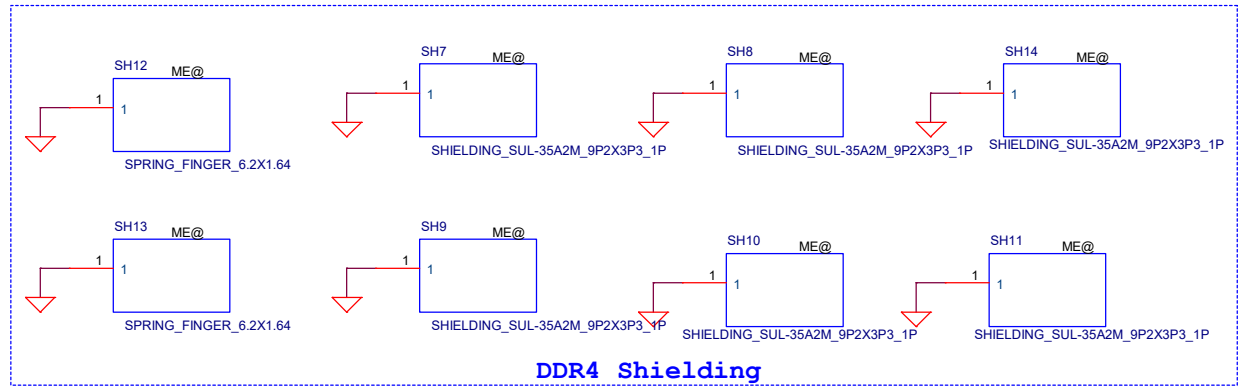
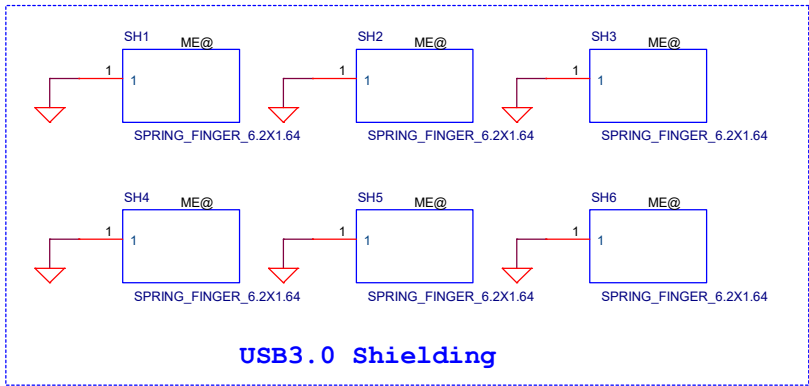
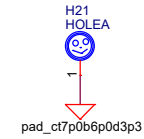
Security Classification	LC Future Center Secret Data			Title	
Issued Date	2015/08/20	Deciphered Date	2016/08/20	Virtual symbol	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.				Size Document Number EG521	
Date: Tuesday, April 25, 2017				Sheet 48 of 60	Rev 0




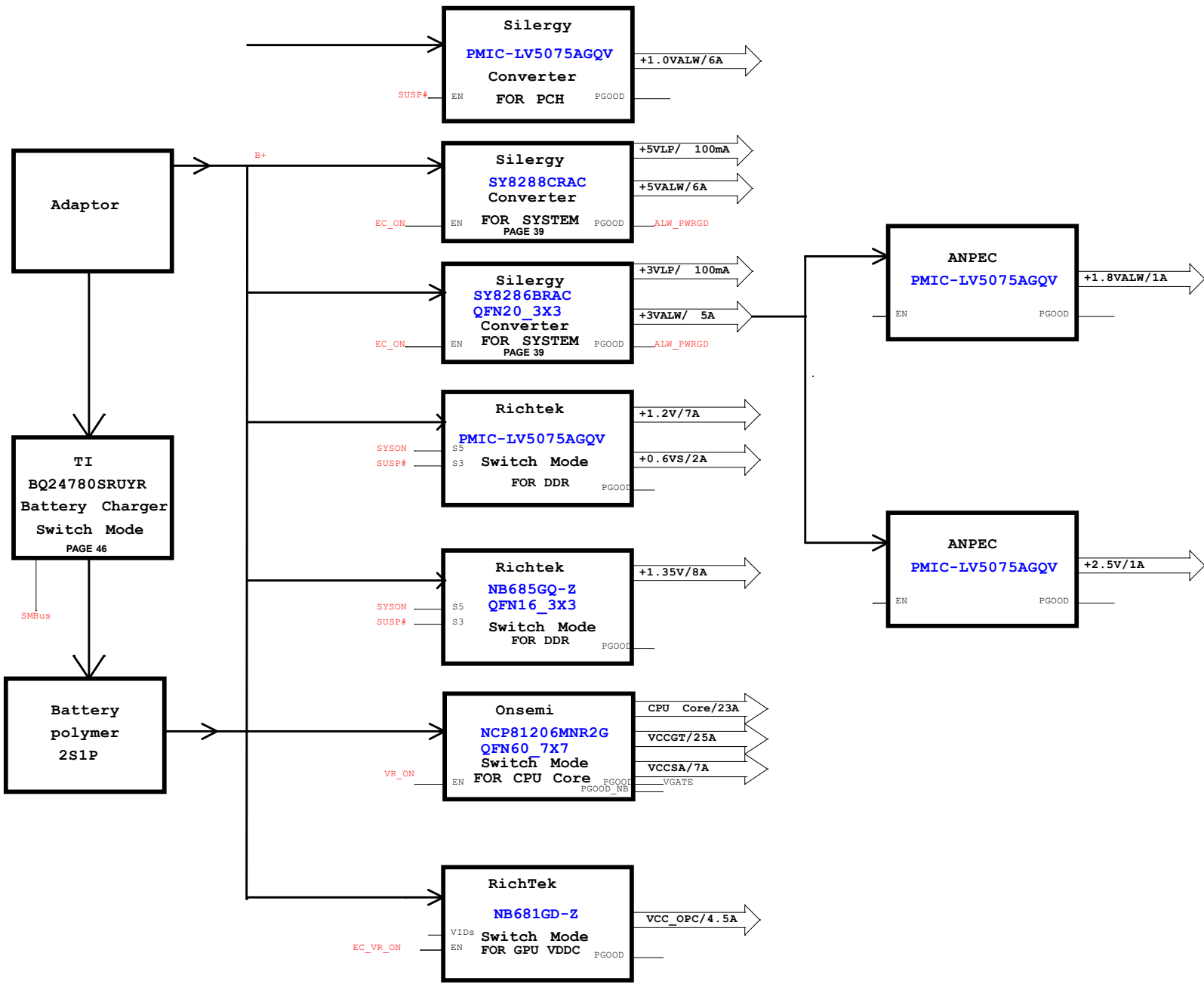
WLAN Standoff

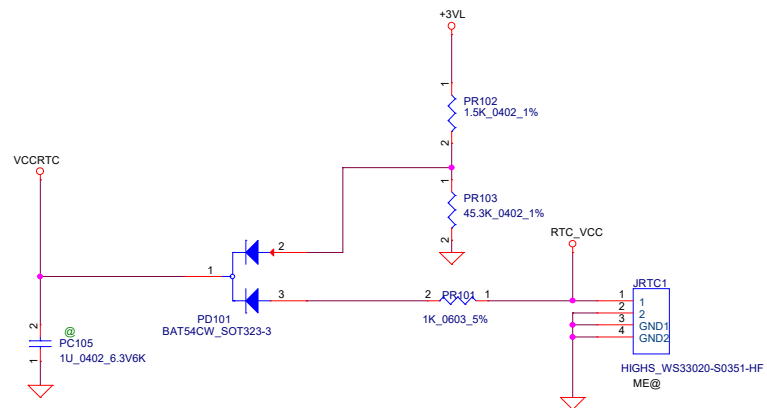
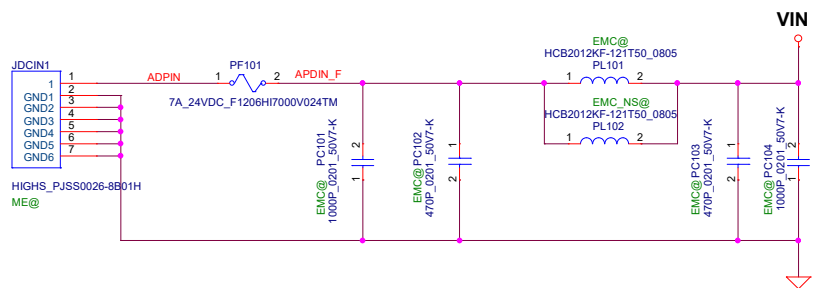


Optane Standoff



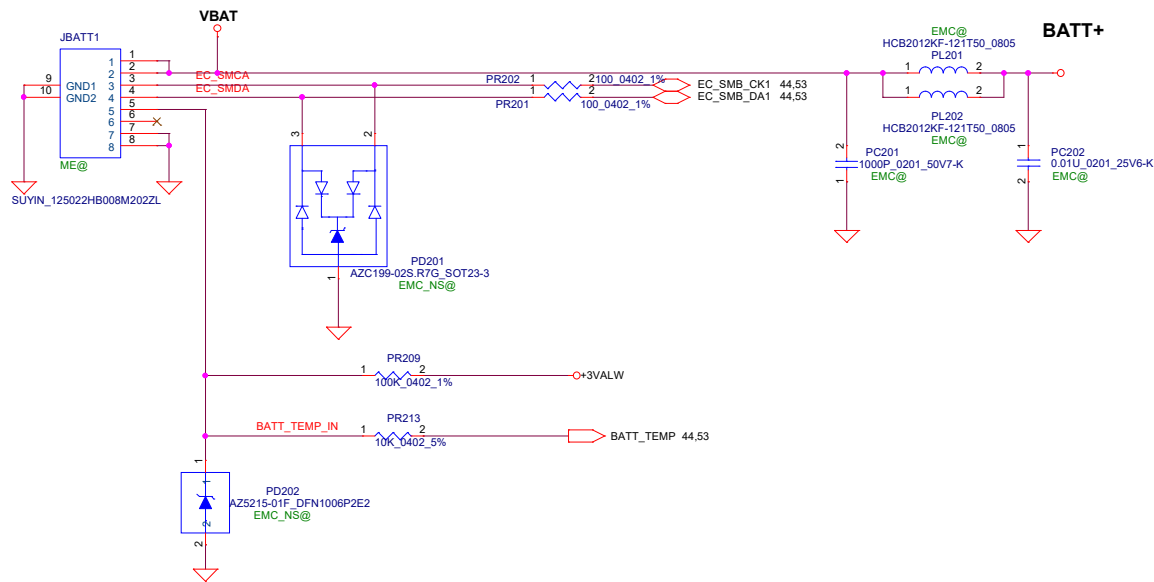
Security Classification		LC Future Center Secret Data		Title		
Issued Date	2015/08/20	Deciphered Date	2016/08/20	Hole		
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.				Size	Document Number	Rev
				B	EG521	0.2
				Date:	Tuesday, April 25, 2017	Sheet 49 of 60



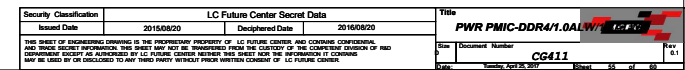



RTC_VCC 20MIL
+3VL 20MIL
VCCRTC 20MIL

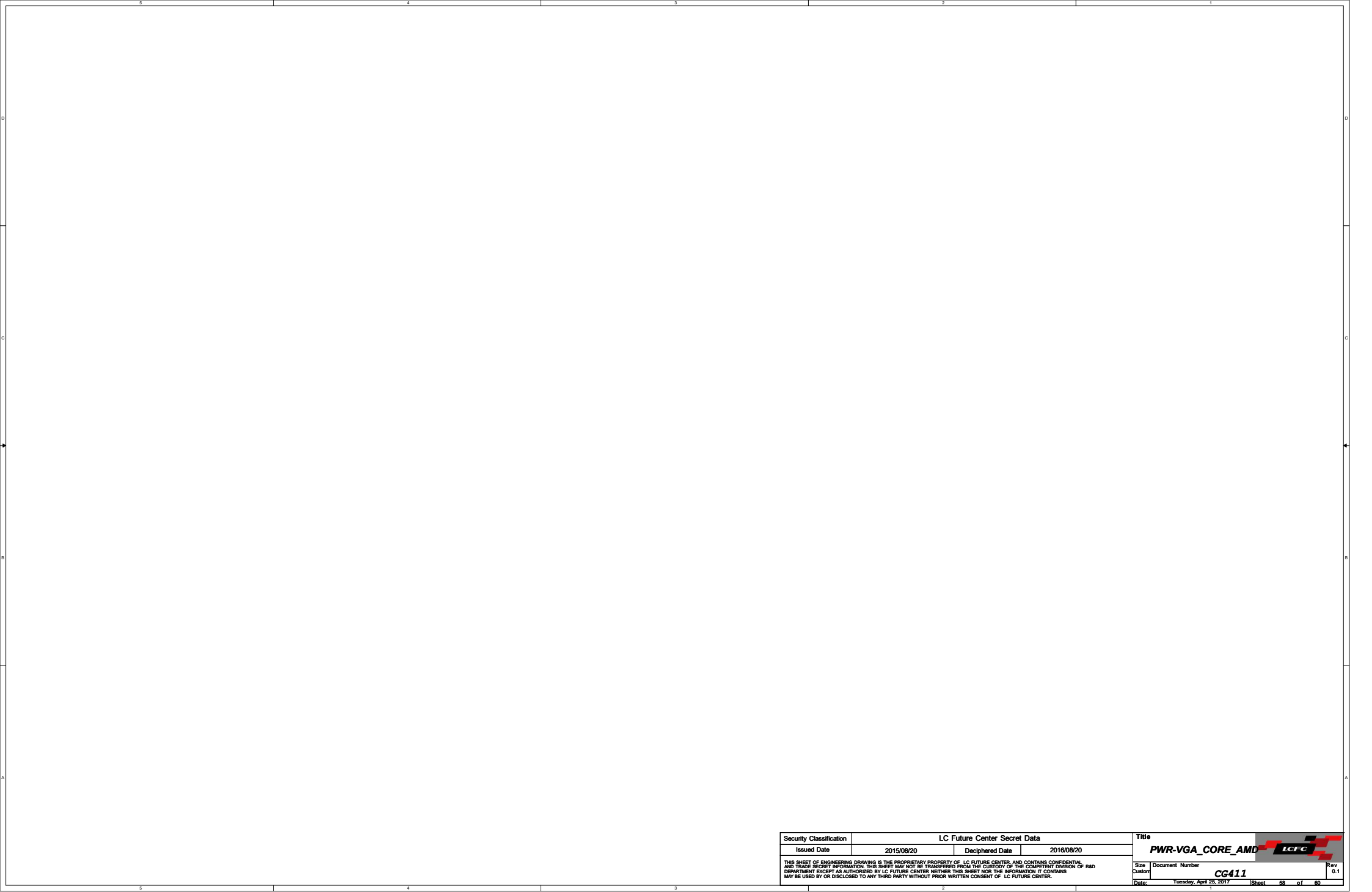
No charge RTC with 35mm cable
RTC Battery for GCM BOM
(2nd source and quoted price)



2S1P polymer battery
voltage level: +6V ~
8.4 V



Security Classification		LC Future Center Secret Data		<div><div>Title</div><div>PWR</div><div></div></div>		
Issued Date	2015/08/20	Deciphered Date	2016/08/20			
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.				Size Custom	Document Number CG411	Rev 0.1
Date:				Tuesday, April 25, 2017	Sheet 56 of 60	



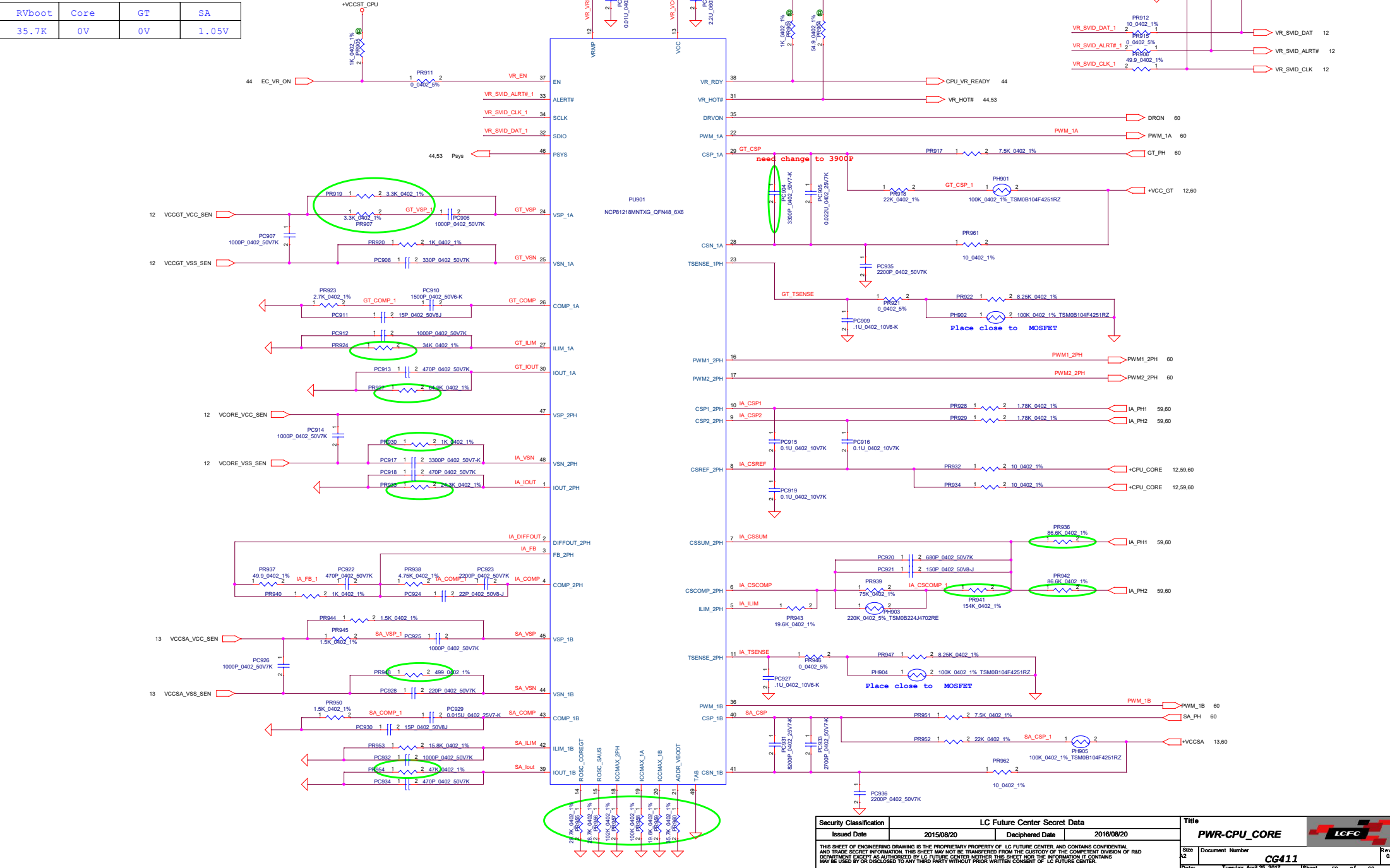
Security Classification	LC Future Center Secret Data		Title	
Issued Date	2015/08/20	Deciphered Date	2016/08/20	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.			Size Custom	Document Number CG411
			Date Tuesday, April 25, 2017	Rev 0.1
			Sheet 58 of 60	

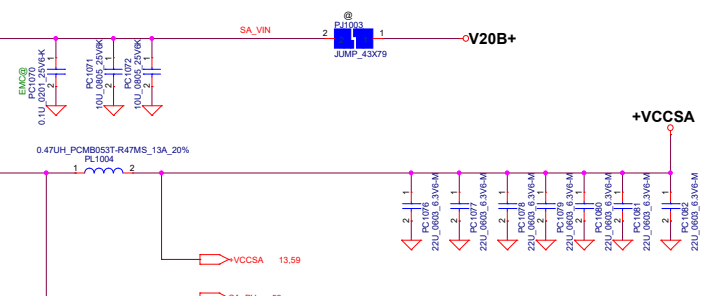
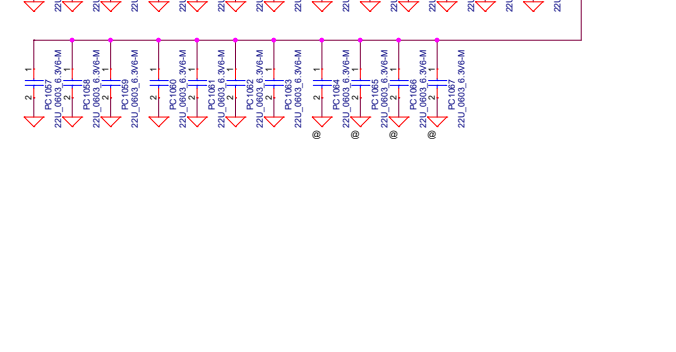
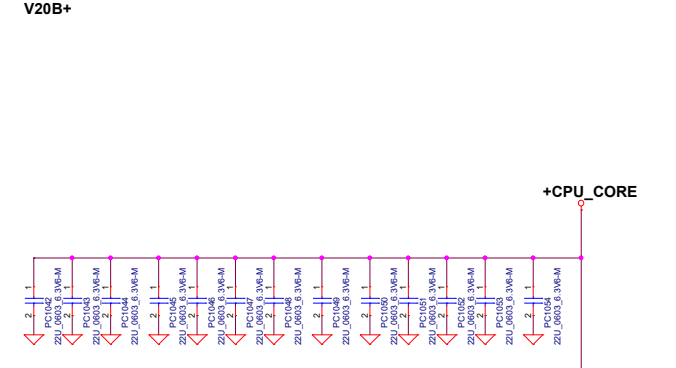
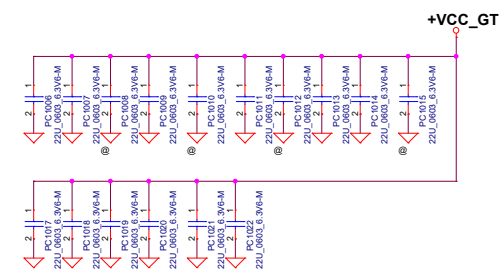



SVID Specification	
Config	
Vmin(V)	0
Vmax(V)	1.52
Vstep(mV)	5

RFsw	Core/GT	SA
28.7K	550K	550K

RVboot	Core	GT	SA
35.7K	0V	0V	1.05V





Security Classification		LC Future Center Secret Data		Title			
Issued Date	2015/08/20	Deciphered Date	2016/08/20	PWR-CPU_CORE			
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D DEPARTMENT OFFICE OF AUTHORIZED, BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION CONTAINS MAY BE USED OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.						Size <input type="text"/> Document Number CG411 Rev 0.1	
Date	Tuesday, April 28, 2015		Sheet	60	of	60	