


LCFC Confidential

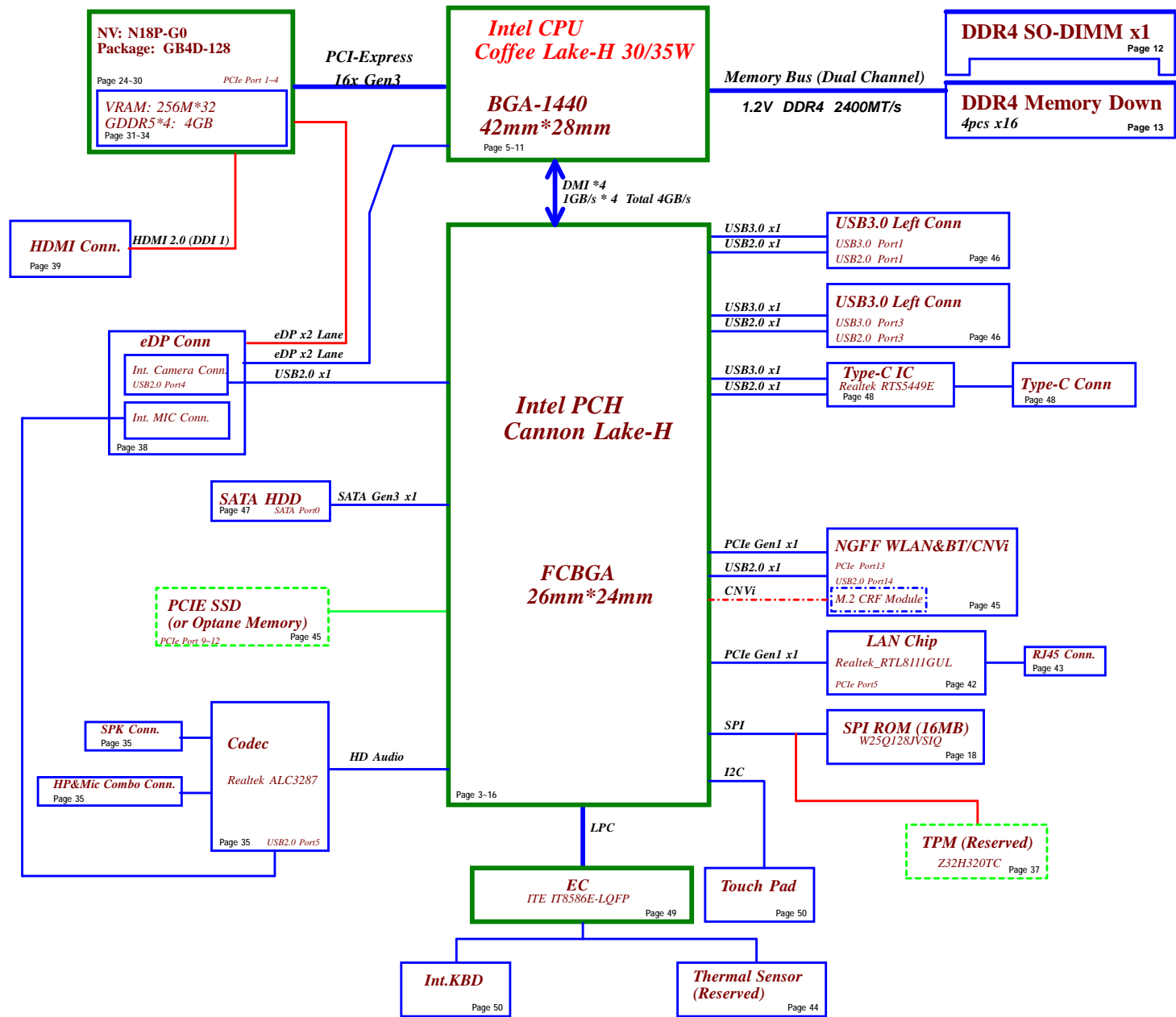
L340-IRH +N18P MB Schematics Document

Coffee Lake-R with DDR4 + Nvidia N18P-G0

2018-09-21

REV:0.1

Security Classification	LC Future Center Secret Data			Title		
Issued Date	2015/08/20	Deciphered Date	2018/09/20	Cover Page		
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 FG541/FG741	
				Date:	Thursday, January 03, 2019	Sheet 1 of 69



Security Classification		LC Future Center Secret Data		Title	
Issued Date	2015/08/20	Deciphered Date	2018/09/20	Block Diagram	
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
				Custom	FG541/FG741
				Date	Thursday, January 03, 2019
				Sheet	2 of 69
				Rev	0.1

Voltage Rails (O --> 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	O	O	O	O
S3	O	O	O	X
S3 Battery only	O	O	O	X
S5 S4 AC Only	O	O	X	X
S5 S4 Battery only	O	X	X	X
S5 S4 AC & Battery don't exist	X	X	X	X

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
	5 LAN
	6 WLAN
	7 SATA HDD
	8 SATA ODD
	9-12 X4 PCIE
	Optane Memory
	0 HDD
SATA	1A ODD
	1B used as PCIE
	2 used as PCIE

BOM Structure	BTO Item
@	Not stuff
14@	For 14" part
15@	For 15" part
17@	For 17" part
15or17@	For 15" 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
TS@	For touch screen part
TS_NS@	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 VRAM rank part
DUALRANK@	For dual VRAM rank part
TPM@	For TPM part
UMA@	For UMA part

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	X
EC_SMB_CK2 EC_SMB_DA2	IT8586E +3VS	X	X	V +3VG_AON	V +3VS	X	V +3VALW_PCH	X	X	V	X	X
EC_SMB_CK3 EC_SMB_DA3	IT8586E +3VL_EC	X	X	X	V +3VL_EC	X	X	V	X	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	V +3VS

EC SMBus1 address

Device	Address
Smart Battery	need to update
Charger	0001 0010 b

EC SMBus2 address

Device	Address
Thermal Sensor(NCT7718W)	1001_100xb
PCH	need to update
DGPU	need to update

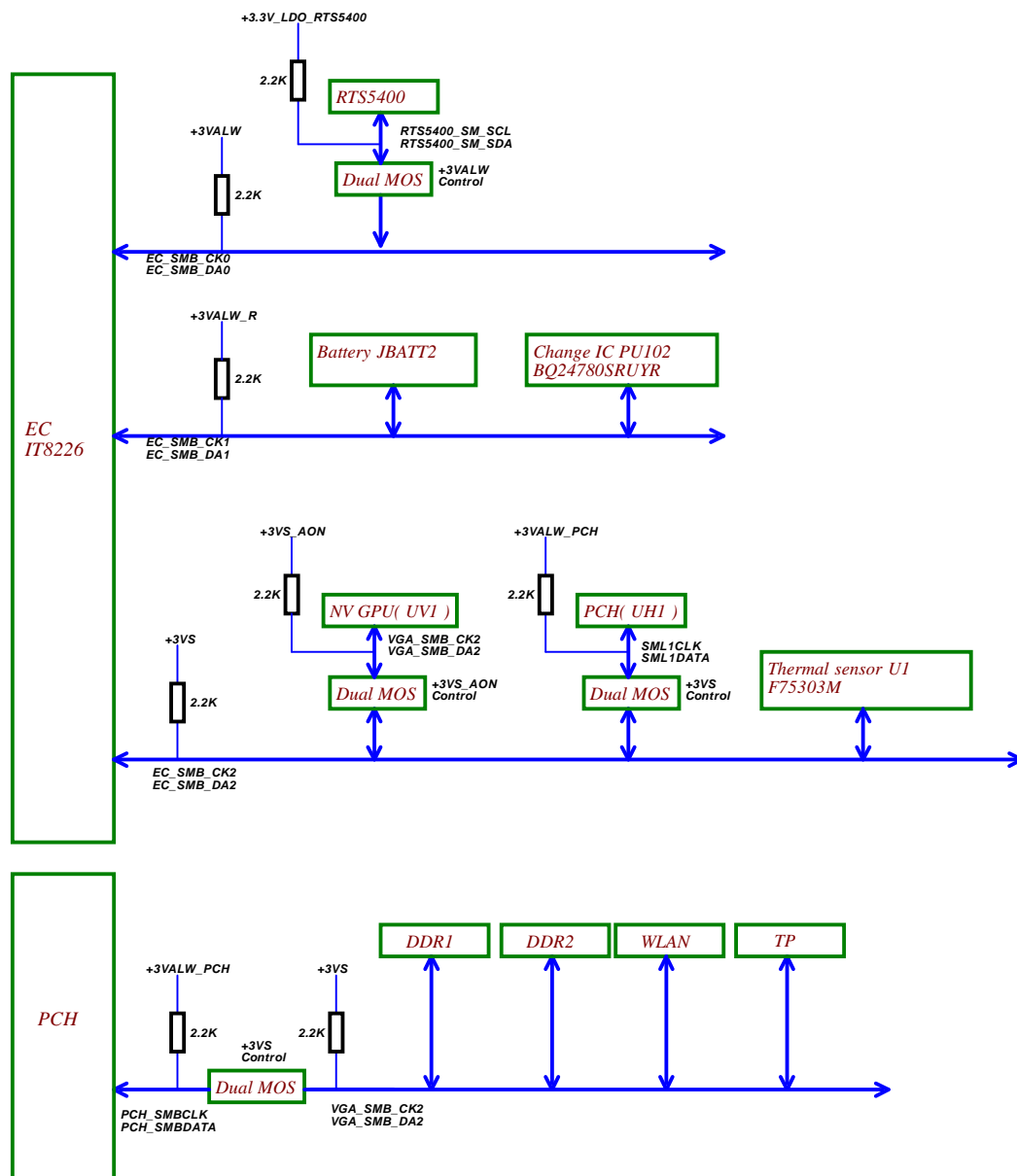
EC SMBus3 address

Device	Address
PMIC	need to update

PCH SM Bus address

Device	Address
DDR4 SODIMM	need to update
Wlan	Reserved

Security Classification	LC Future Center Secret Data				Title
Issued Date	2015/08/20	Deciphered Date	2018/09/20		Notes List
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 FG541/FG741
					Date: Thursday, January 03, 2019 Sheet 3 of 69



SMBUS Control Table

	SOURCE	VGA	BATT	ITS5400	BQ24780	WLAN	Thermal Sensor	PCH	TP Module	charger
EC_SMB_CLK1 EC_SMB_DA1	ITS5400	X	V	V	X	X	X	X	X	V
EC_SMB_CLK2 EC_SMB_DA2	ITS5400	V	X	V	X	X	V	V	X	X
PCH_SMB_CLK PCH_SMB_DATA	PCH	X	X	X	V	V	X	V	X	X

EC SM Bus1 address		EC SM Bus2 address		PCH SM Bus address	
Device	Address	Device	Address	Device	Address
Smart Battery	0x16	Thermal Sensor F75303M	1001 1000b	DDR DIMM1	1010 0000b
Charger	0001 0010 b	VGA	0x41(default)	DDR DIMM2	1010 0100b
		PCH	need to update	WLAN	Raid
		RTS5400	0x04		

Security Classification	LC Future Center Secret Data		Title
Issued Date	2015/02/09	Disciplined Date	2016/06/20
<small>THIS DOCUMENT IS UNCLASSIFIED EXCEPT WHERE SHOWN OTHERWISE. IT IS THE PROPERTY OF LG FUTURE CENTER AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS DOCUMENT IS NOT TO BE DISCLOSED OR REPRODUCED WITHOUT THE WRITTEN PERMISSION OF LG FUTURE CENTER. ANY UNAUTHORIZED DISCLOSURE OR REPRODUCTION OF THIS DOCUMENT IS PROHIBITED. THE USER SHALL BE RESPONSIBLE FOR THE PROTECTION OF THIS DOCUMENT.</small>			
Doc. Number	PG541/P07 41		Page
Version	1.0		Page

(25) PCIE_CRX_GTX_N[0..15] (25)
(25) PCIE_CRX_GTX_P[0..15] (25)
PCIE_CTX_C_GRX_N[0..15] (25)
PCIE_CTX_C_GRX_P[0..15] (25)

VCCIO

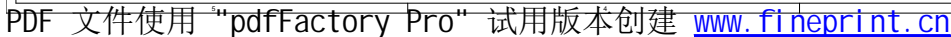
CAD Note:
Place R_comp inside CPU cavity
Trace width=12 mils ,Spacing=15mil
Max length= 400 mils.

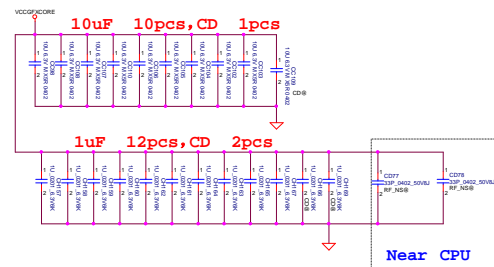
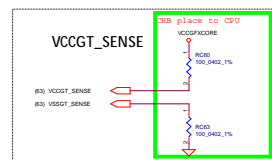
RC1 2 1 24.9 0.402 1%
PEG_COMP
G2
PEG_ROMP
D8 DMI_CRX_PTX_P0 DMI_CRX_PTX_N0 D8 DMI_RXP_0 DMI_TXN_0 B8 DMI_CTX_PRX_P0 DMI_CTX_PRX_N0 (19)
E8 DMI_CRX_PTX_P1 DMI_CRX_PTX_N1 E6 DMI_RXP_1 DMI_TXN_1 C6 DMI_CTX_PRX_P1 DMI_CTX_PRX_N1 (19)
F6 DMI_CRX_PTX_P2 DMI_CRX_PTX_N2 D5 DMI_RXP_2 DMI_TXN_2 B5 DMI_CTX_PRX_P2 DMI_CTX_PRX_N2 (19)
E5 DMI_CRX_PTX_P3 DMI_CRX_PTX_N3 J8 DMI_RXP_3 DMI_TXN_3 D4 DMI_CTX_PRX_P3 DMI_CTX_PRX_N3 (19)
J8 DMI_CRX_PTX_P3 DMI_CRX_PTX_N3 J9 DMI_RXP_3 DMI_TXN_3 B4 DMI_CTX_PRX_P3 DMI_CTX_PRX_N3 (19)
J9 DMI_CRX_PTX_P3 DMI_CRX_PTX_N3 J9 DMI_RXP_3 DMI_TXN_3 B4 DMI_CTX_PRX_P3 DMI_CTX_PRX_N3 (19)

UC1C

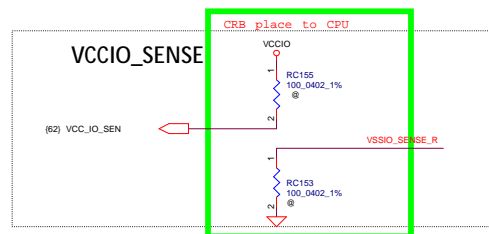
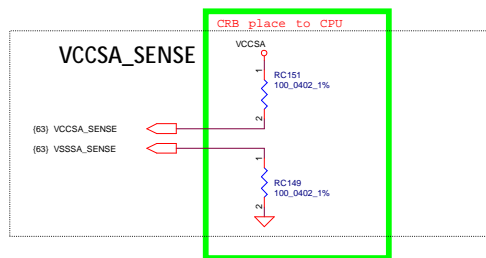
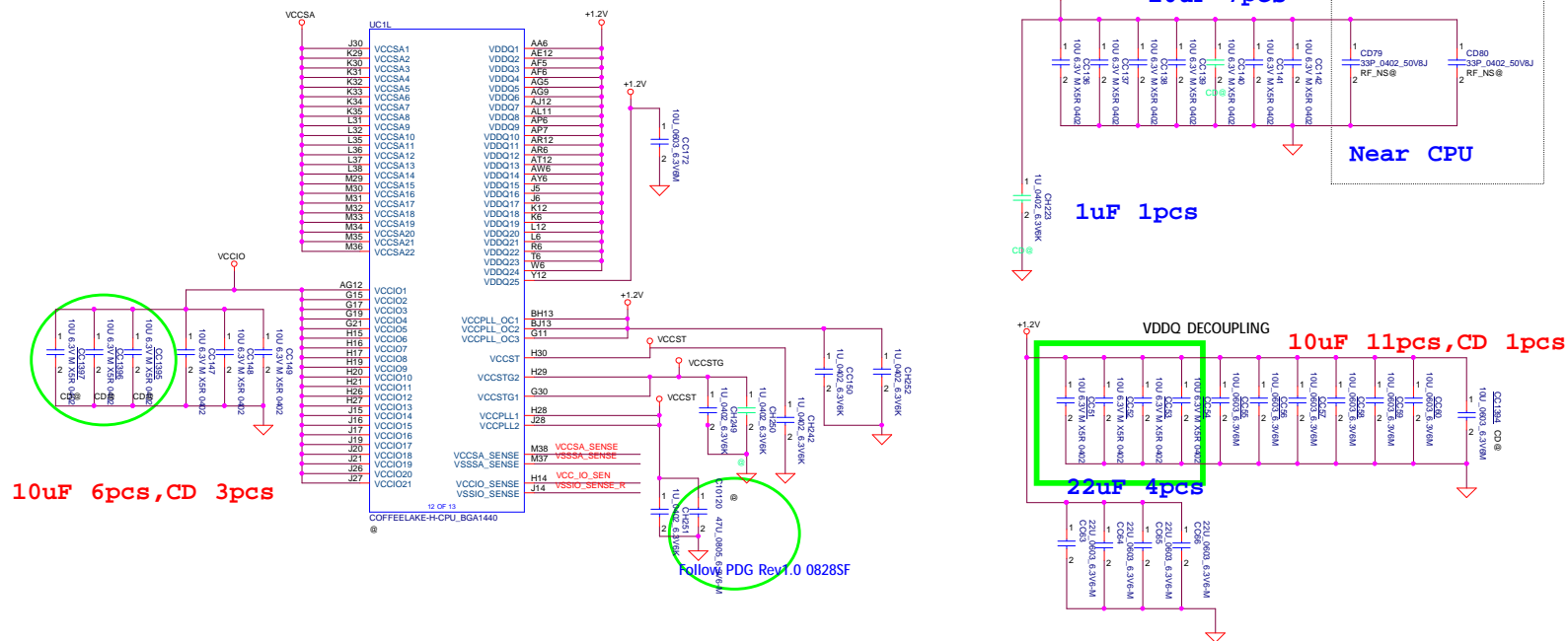
PCIE_CRX_GTX_P15 E25 PEG_RXP_0 PEG_TXP_0 B25 PCIE_CTX_GRX_P15 OPT@ CC32 1 2 0.22U 0201 6.3V6-K PCIE_CTX_C_GRX_P15
PCIE_CRX_GTX_N15 D25 PEG_RXN_0 PEG_TXN_0 A25 PCIE_CTX_GRX_N15 OPT@ CC16 1 2 0.22U 0201 6.3V6-K PCIE_CTX_C_GRX_N15
PCIE_CRX_GTX_P14 E24 PEG_RXP_1 PEG_TXP_1 B24 PCIE_CTX_GRX_P14 OPT@ CC31 1 2 0.22U 0201 6.3V6-K PCIE_CTX_C_GRX_P14
PCIE_CRX_GTX_N14 F24 PEG_RXN_1 PEG_TXN_1 C24 PCIE_CTX_GRX_N14 OPT@ CC15 1 2 0.22U 0201 6.3V6-K PCIE_CTX_C_GRX_N14
PCIE_CRX_GTX_P13 E23 PEG_RXP_2 PEG_TXP_2 B23 PCIE_CTX_GRX_P13 OPT@ CC30 1 2 0.22U 0201 6.3V6-K PCIE_CTX_C_GRX_P13
PCIE_CRX_GTX_N13 D23 PEG_RXN_2 PEG_TXN_2 A23 PCIE_CTX_GRX_N13 OPT@ CC14 1 2 0.22U 0201 6.3V6-K PCIE_CTX_C_GRX_N13
PCIE_CRX_GTX_P12 E22 PEG_RXP_3 PEG_TXP_3 B22 PCIE_CTX_GRX_P12 OPT@ CC29 1 2 0.22U 0201 6.3V6-K PCIE_CTX_C_GRX_P12
PCIE_CRX_GTX_N12 F22 PEG_RXN_3 PEG_TXN_3 C22 PCIE_CTX_GRX_N12 OPT@ CC13 1 2 0.22U 0201 6.3V6-K PCIE_CTX_C_GRX_N12
PCIE_CRX_GTX_P11 E21 PEG_RXP_4 PEG_TXP_4 B21 PCIE_CTX_GRX_P11 OPT@ CC28 1 2 0.22U 0201 6.3V6-K PCIE_CTX_C_GRX_P11
PCIE_CRX_GTX_N11 D21 PEG_RXN_4 PEG_TXN_4 A21 PCIE_CTX_GRX_N11 OPT@ CC12 1 2 0.22U 0201 6.3V6-K PCIE_CTX_C_GRX_N11
PCIE_CRX_GTX_P10 E20 PEG_RXP_5 PEG_TXP_5 B20 PCIE_CTX_GRX_P10 OPT@ CC27 1 2 0.22U 0201 6.3V6-K PCIE_CTX_C_GRX_P10
PCIE_CRX_GTX_N10 F20 PEG_RXN_5 PEG_TXN_5 C20 PCIE_CTX_GRX_N10 OPT@ CC11 1 2 0.22U 0201 6.3V6-K PCIE_CTX_C_GRX_N10
PCIE_CRX_GTX_P9 E19 PEG_RXP_6 PEG_TXP_6 B19 PCIE_CTX_GRX_P9 OPT@ CC26 1 2 0.22U 0201 6.3V6-K PCIE_CTX_C_GRX_P9
PCIE_CRX_GTX_N9 D19 PEG_RXN_6 PEG_TXN_6 A19 PCIE_CTX_GRX_N9 OPT@ CC10 1 2 0.22U 0201 6.3V6-K PCIE_CTX_C_GRX_N9
PCIE_CRX_GTX_P8 E18 PEG_RXP_7 PEG_TXP_7 B18 PCIE_CTX_GRX_P8 OPT@ CC25 1 2 0.22U 0201 6.3V6-K PCIE_CTX_C_GRX_P8
PCIE_CRX_GTX_N8 F18 PEG_RXN_7 PEG_TXN_7 C18 PCIE_CTX_GRX_N8 OPT@ CC9 1 2 0.22U 0201 6.3V6-K PCIE_CTX_C_GRX_N8
PCIE_CRX_GTX_P7 E17 PEG_RXP_8 PEG_TXP_8 B17 PCIE_CTX_GRX_P7 OPT@ CC24 1 2 0.22U 0201 6.3V6-K PCIE_CTX_C_GRX_P7
PCIE_CRX_GTX_N7 D17 PEG_RXN_8 PEG_TXN_8 A17 PCIE_CTX_GRX_N7 OPT@ CC8 1 2 0.22U 0201 6.3V6-K PCIE_CTX_C_GRX_N7
PCIE_CRX_GTX_P6 E16 PEG_RXP_9 PEG_TXP_9 B16 PCIE_CTX_GRX_P6 OPT@ CC23 1 2 0.22U 0201 6.3V6-K PCIE_CTX_C_GRX_P6
PCIE_CRX_GTX_N6 F16 PEG_RXN_9 PEG_TXN_9 C16 PCIE_CTX_GRX_N6 OPT@ CC7 1 2 0.22U 0201 6.3V6-K PCIE_CTX_C_GRX_N6
PCIE_CRX_GTX_P5 E15 PEG_RXP_10 PEG_TXP_10 B15 PCIE_CTX_GRX_P5 OPT@ CC22 1 2 0.22U 0201 6.3V6-K PCIE_CTX_C_GRX_P5
PCIE_CRX_GTX_N5 D15 PEG_RXN_10 PEG_TXN_10 A15 PCIE_CTX_GRX_N5 OPT@ CC6 1 2 0.22U 0201 6.3V6-K PCIE_CTX_C_GRX_N5
PCIE_CRX_GTX_P4 E14 PEG_RXP_11 PEG_TXP_11 B14 PCIE_CTX_GRX_P4 OPT@ CC21 1 2 0.22U 0201 6.3V6-K PCIE_CTX_C_GRX_P4
PCIE_CRX_GTX_N4 F14 PEG_RXN_11 PEG_TXN_11 C14 PCIE_CTX_GRX_N4 OPT@ CC5 1 2 0.22U 0201 6.3V6-K PCIE_CTX_C_GRX_N4
PCIE_CRX_GTX_P3 E13 PEG_RXP_12 PEG_TXP_12 B13 PCIE_CTX_GRX_P3 OPT@ CC20 1 2 0.22U 0201 6.3V6-K PCIE_CTX_C_GRX_P3
PCIE_CRX_GTX_N3 D13 PEG_RXN_12 PEG_TXN_12 A13 PCIE_CTX_GRX_N3 OPT@ CC4 1 2 0.22U 0201 6.3V6-K PCIE_CTX_C_GRX_N3
PCIE_CRX_GTX_P2 E12 PEG_RXP_13 PEG_TXP_13 B12 PCIE_CTX_GRX_P2 OPT@ CC19 1 2 0.22U 0201 6.3V6-K PCIE_CTX_C_GRX_P2
PCIE_CRX_GTX_N2 F12 PEG_RXN_13 PEG_TXN_13 C12 PCIE_CTX_GRX_N2 OPT@ CC3 1 2 0.22U 0201 6.3V6-K PCIE_CTX_C_GRX_N2
PCIE_CRX_GTX_P1 E11 PEG_RXP_14 PEG_TXP_14 B11 PCIE_CTX_GRX_P1 OPT@ CC18 1 2 0.22U 0201 6.3V6-K PCIE_CTX_C_GRX_P1
PCIE_CRX_GTX_N1 D11 PEG_RXN_14 PEG_TXN_14 A11 PCIE_CTX_GRX_N1 OPT@ CC2 1 2 0.22U 0201 6.3V6-K PCIE_CTX_C_GRX_N1
PCIE_CRX_GTX_P0 E10 PEG_RXP_15 PEG_TXP_15 B10 PCIE_CTX_GRX_P0 OPT@ CC17 1 2 0.22U 0201 6.3V6-K PCIE_CTX_C_GRX_P0
PCIE_CRX_GTX_N0 F10 PEG_RXN_15 PEG_TXN_15 C10 PCIE_CTX_GRX_N0 OPT@ CC1 1 2 0.22U 0201 6.3V6-K PCIE_CTX_C_GRX_N0

Security Classification	LC Future Center Secret Data		Title	CPU (1/7) DMI,PEG	LCFC	
Issued Date	2015/02/26	Deciphered Date	2018/09/20			
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 FG541/FG741	Rev 0.1
Date:				Thursday, January 03, 2019	Sheet 5 of 69	



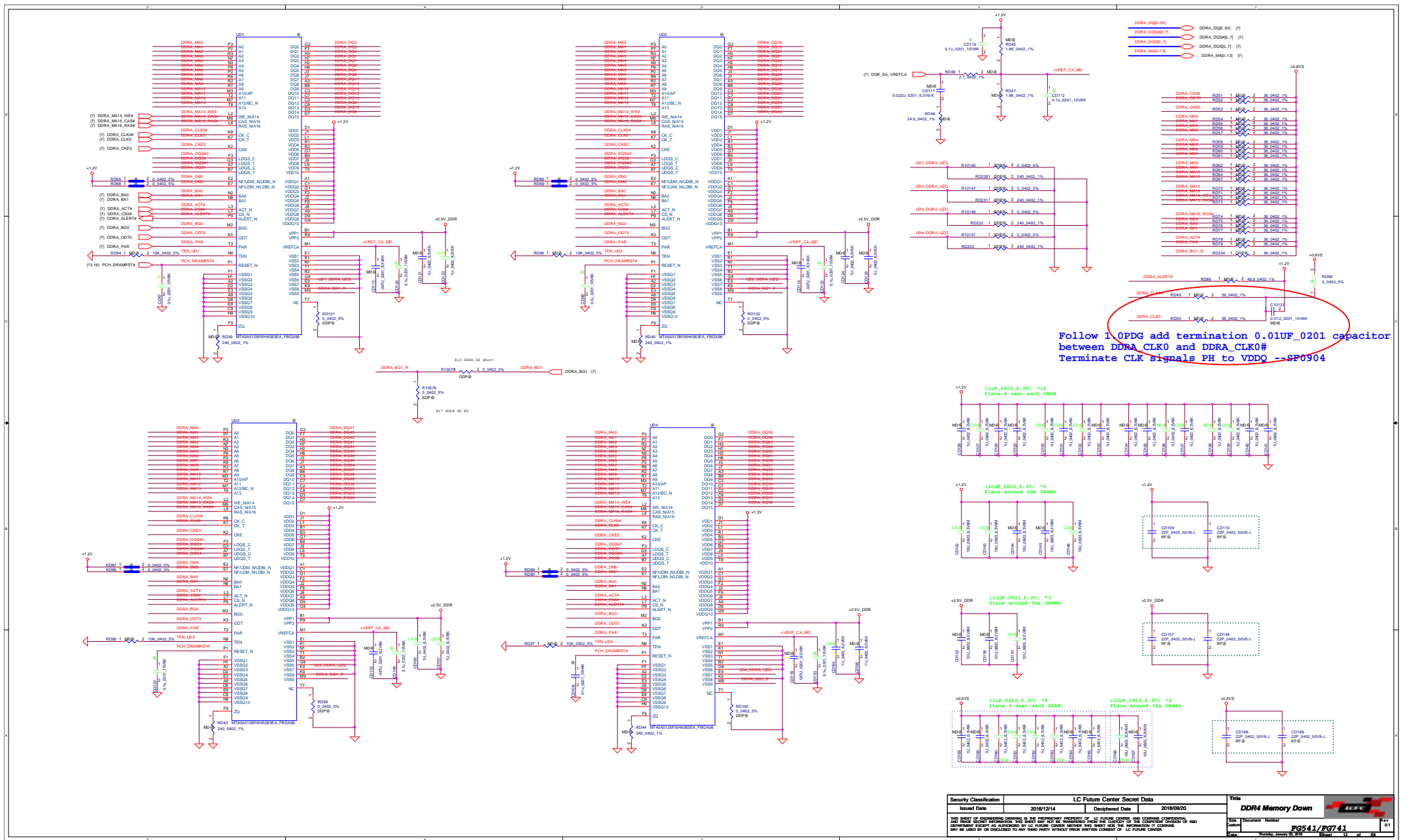


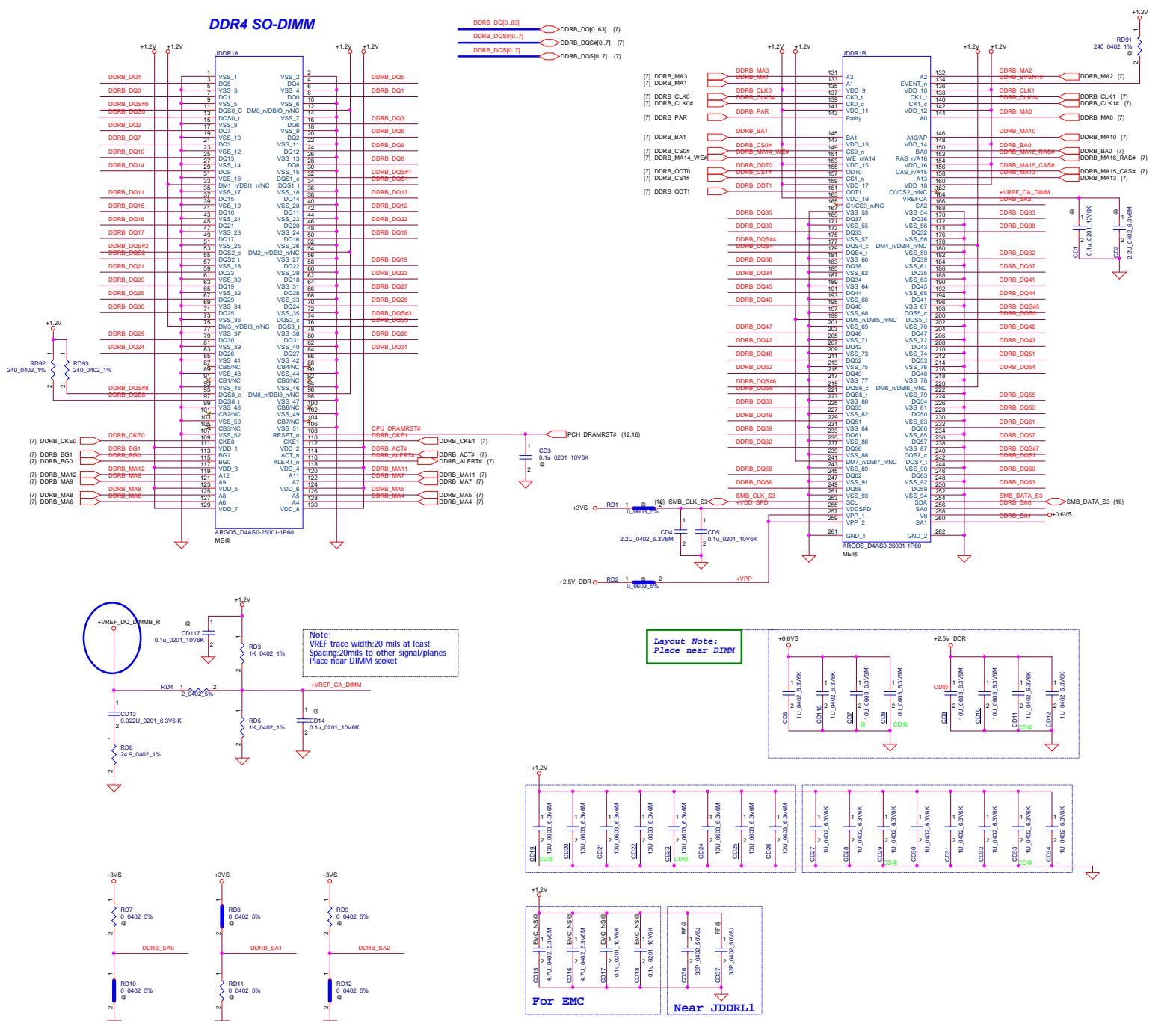
Security Classification	LC FUTURE Center Secret Data		Title	
Issued Date	2015/02/26	Declassified Date	2018/09/20	
<p>THE SECRET OF INVENTING DRAWINGS IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SECRET MAY NOT BE TRANSMITTED FROM THE CUSTODY OF THE CORRESPONDING DIVISION OF THE SECRETARY OF DEFENSE AS AUTHORIZED BY THE SECRETARY OF DEFENSE INFORMATION CATEGORIES AND MAY BE USED OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.</p>			Item ID Document Number PG541/PG741	Page 741




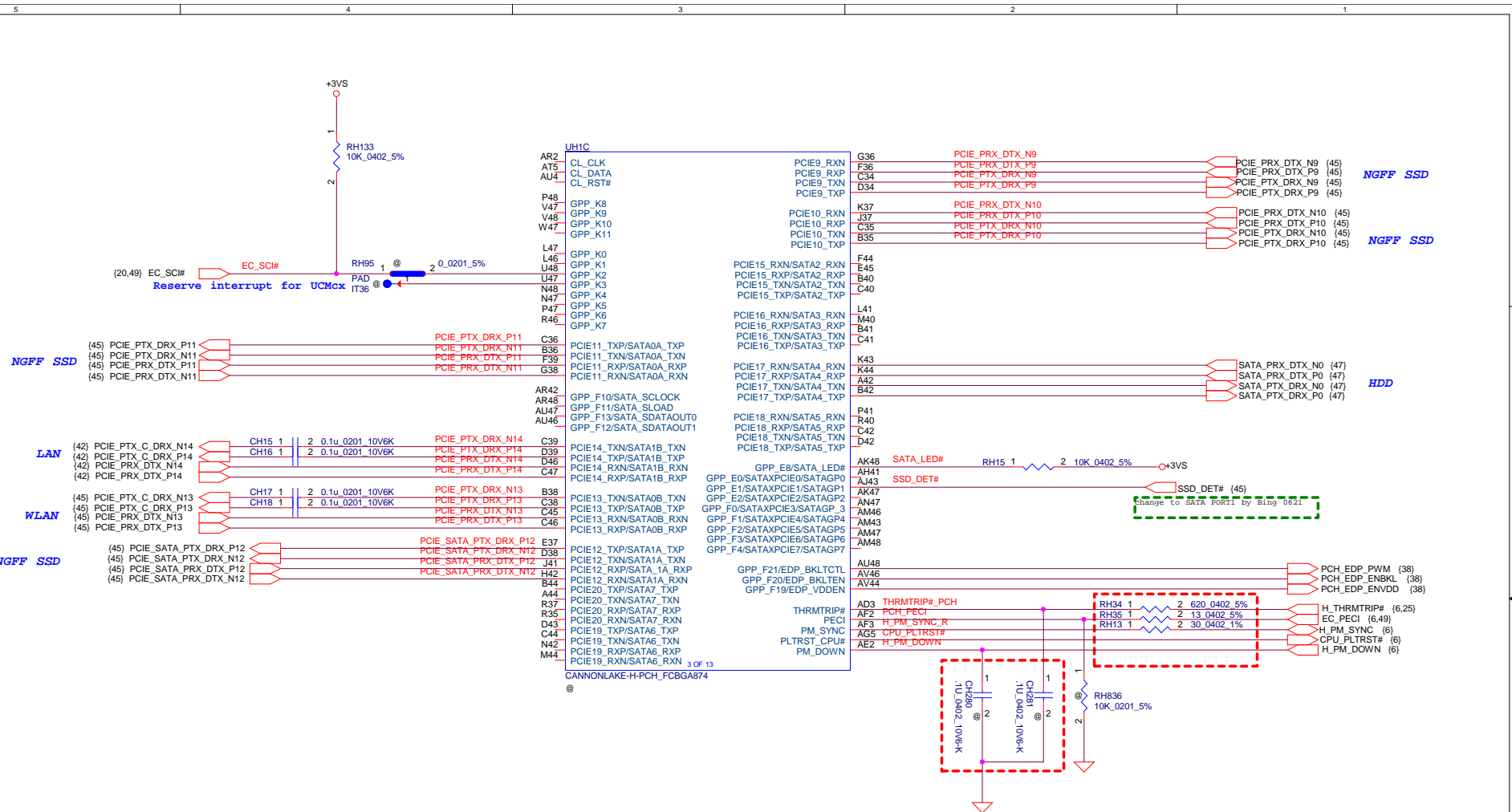
Security Classification		LC Future Center Secret Data		Title	
Issued Date	2015/02/26	Deciphered Date	2018/09/20	CPU (6/7) PWR, BYPASS	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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.				Size C	Document Number
				FG541/FG741	Rev 0.1
				Date: Saturday, February 02, 2019	Sheet 10 of 69

5		4		3		2		1	
D									
D									
C									
C									
B									
B									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									
A									



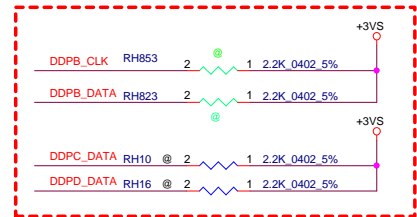
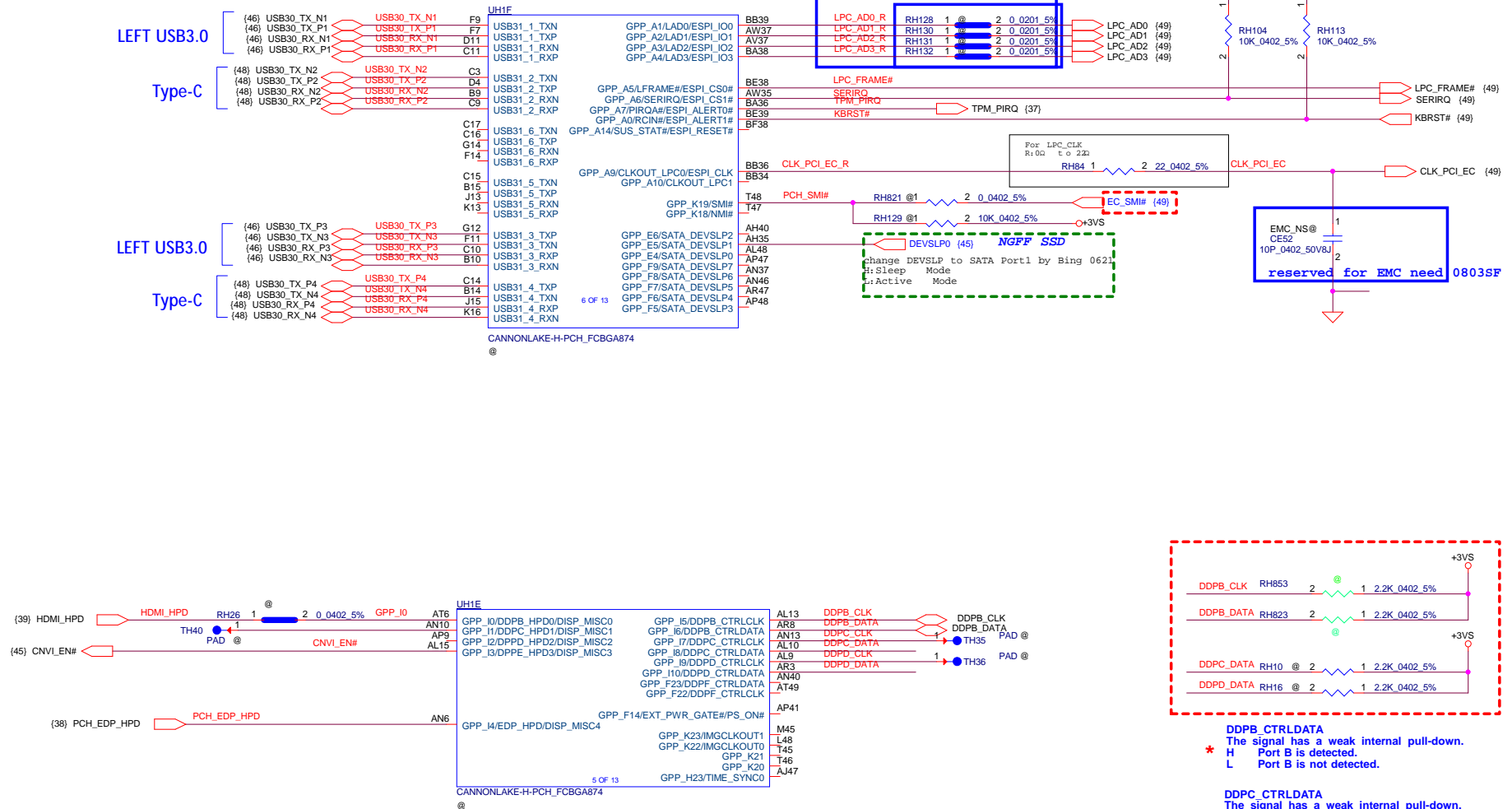


Security Classification	LC Future Center Secret Data		Title	
Issued Date	2015/08/20	Deciphered Date	2018/09/20	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF R&D OPERATIONS TO ANY OTHER DIVISION OR TO ANY OTHER PERSON WITHOUT THE WRITTEN CONSENT OF LC FUTURE CENTER.			Size Count Date	Rev. 00
			Tuesday, January 29, 2019 11:09 AM	00



Security Classification		LC Future Center Secret Data		Title	
Issued Date	2015/02/26	Deciphered Date	2018/09/20	PCH (1/9) PCIe/SATA/GPPFG	
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 A3	Document Number FG541/FG741
				Date: Tuesday, February 26, 2019	Sheet 14 of 69

HM370 only have 4(#1-#4) USB3.1 GEN2 port



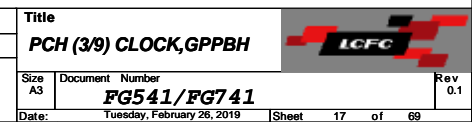
DDPB_CTRLDATA
The signal has a weak internal pull-down.
* H Port B is detected.
* L Port B is not detected.

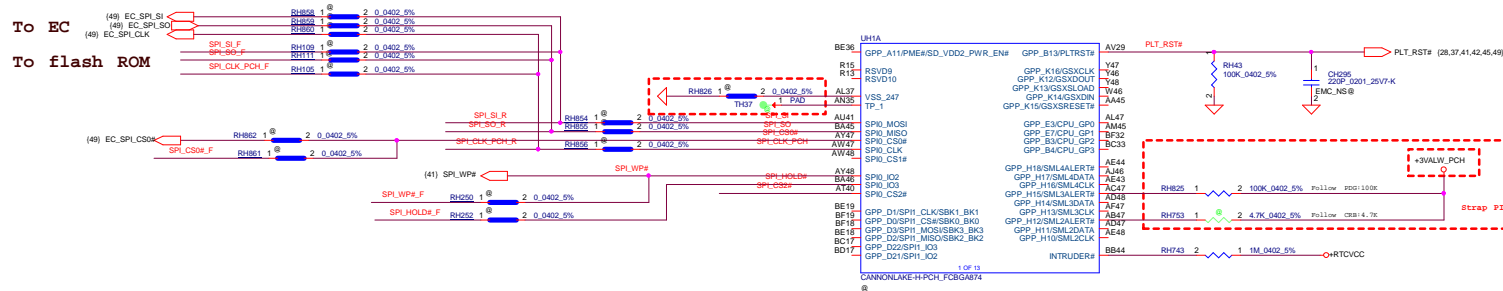
DDPC_CTRLDATA
The signal has a weak internal pull-down.
* H Port C is detected.
* L Port C is not detected. (Default)

DDPD_CTRLDATA
The signal has a weak internal pull-down.
* H Port D is detected.
* L Port D is not detected. (Default)

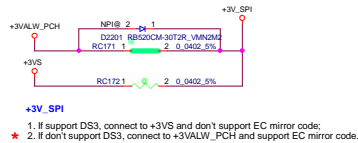
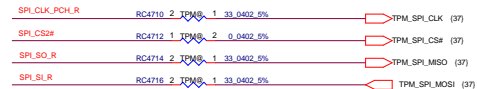
Security Classification		LC Future Center Secret Data	
Issued Date	2015/02/26	Deciphered Date	2018/09/20
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE 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.			

Title		LCFC	
PCH (2/9) USB3/GPPAEFGHI			
Size	Document Number	Rev	
A3	FG541/FG741	0.1	
Date:	Tuesday, February 26, 2019	Sheet	15 of 69

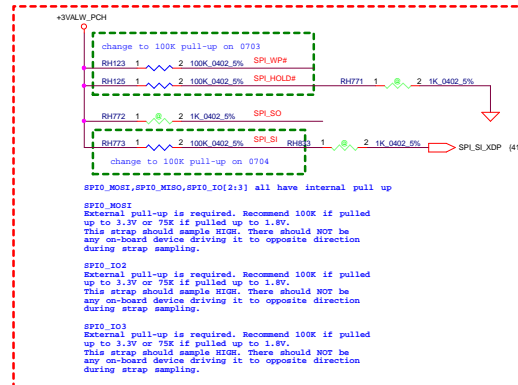
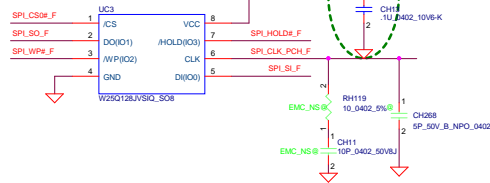




change TPM interface to SPI, need double check_SF20180530




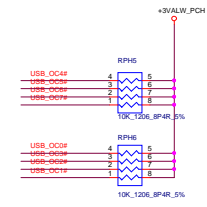
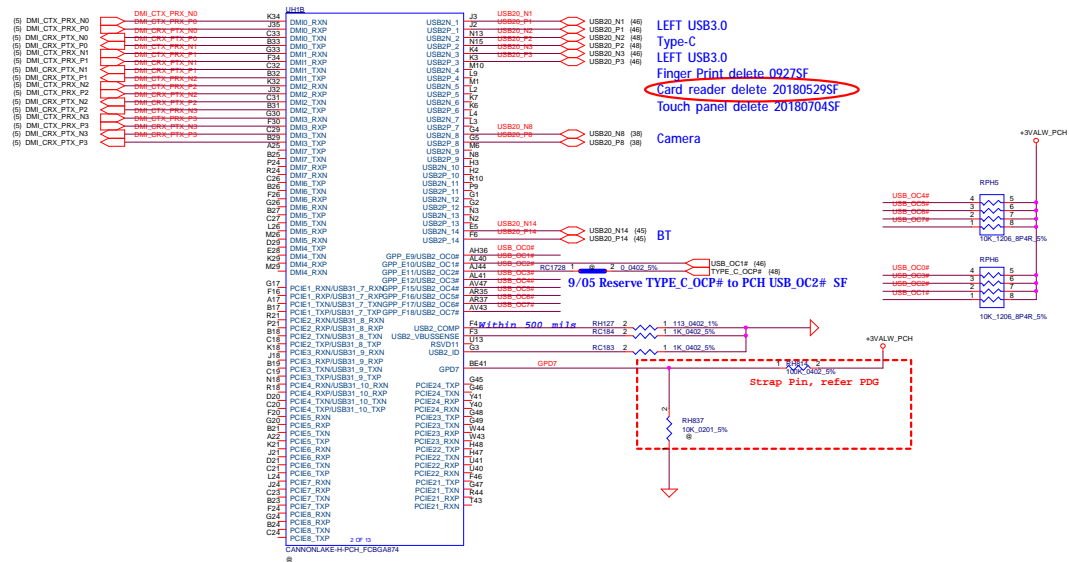
128Mb Flash ROM, change to SA00008A300 SF0911



GPP_M15 /SML2ALERST# (strap reserved)
External pull-up is required. Recommend 100K if pulled up to 3.3V or 75K if pulled up to 1.8V.
This strap should sample HIGH. There should NOT be any on-board device driving it to opposite direction during strap sampling.
Power Plane: Primary Well

GPP_M12 /SML2ALERST#
This signal has a weak internal pull-down.
0 = Master Attached Flash Sharing (MAFS) enabled (Default)
1 = Slave Attached Flash Sharing (SAFS) enabled.
Warning: This strap must be configured to '0' (SAFS is disabled) if the eSPI or I2C strap is configured to '0' (eSPI is disabled).
Notes:
1. The internal pull-down is disabled after RMNRST# de-asserts.
2. This signal is in the primary well.

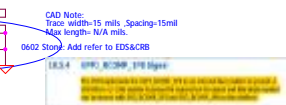
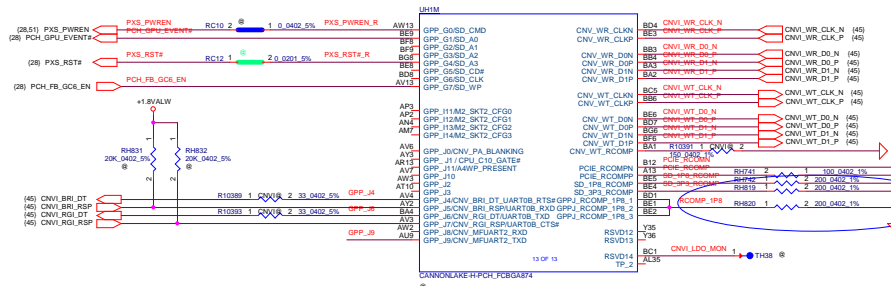
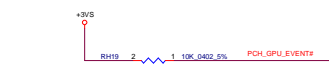
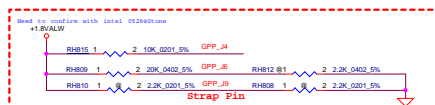
Security Classification		LC Future Center Secret Data		Title	
Issued Date	2015/02/26	Deciphered Date	2018/09/20	PCH (5/9) SPI,SMBUS,GPPBEGH	
<p>THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE REPRODUCED, COPIED, 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 OF LC FUTURE CENTER. ANY UNAUTHORIZED USE OR DISCLOSURE OF THIS INFORMATION IS STRICTLY PROHIBITED AND WILL BE PUNISHED BY LAW.</p>					
Size	A2	Document Number	FG541/FG741		Rev 0.1
Date:	Tuesday, February 26, 2019	Sheet	18	of	89



LEFT USB3.0
Type-C
LEFT USB3.0
Finger Print delete 09275F
Card reader delete 201805295F
Touch panel delete 201807045F
Camera


9/05 Reserve TYPE_C_OCP# to PCH_USB_OC2# SF

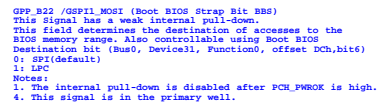
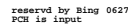
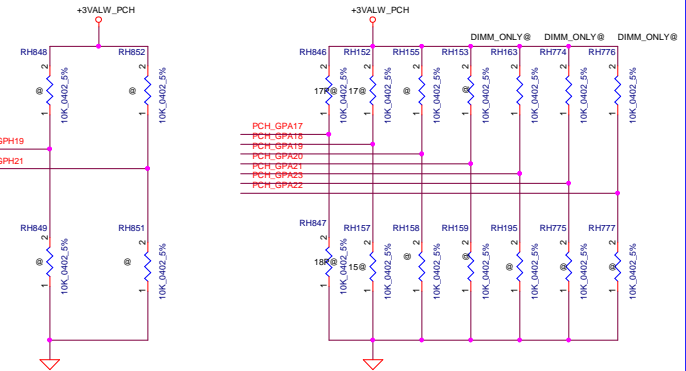
Strap Pin, refer PDG



Primary Well Group J (1.8 V Only)

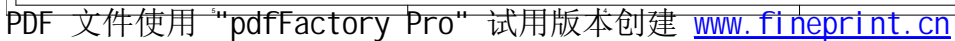
Signal	Usage	When Sampled	Comment
GPP_34 / CNV_BR1_DT / UART0_RTS#	XTAL Frequency Select	Rising edge of RSMRST#	This signal has a weak internal pull-down. An external pull-up is required on this strap since 38.4 MHz XTAL is not supported on the PCH. 0 = 38.4 XTAL frequency selected. (Default) 1 = 24MHz XTAL frequency selected. Notes: 1. The internal pull-down is disabled after RSMRST# de-asserts. 2. This signal is in the primary well.
GPP_36 / CNV_RQ1_DT / UART0_TXD	M.2 CNV Mode Select	Rising edge of RSMRST#	An external pull-up or pull-down is required. 0 = Integrated CNVi enable. 1 = Integrated CNVi disable.
GPP_39	1.8V VCCSPI	Rising edge of RSMRST#	The signal has a weak internal pull-down 0 = VCCSPI is connected to 3.3V rail 1 = VCCSPI is connected to 1.8V rail Note: If VCCSPI is connected to 1.8V rail, this pin strap must be a "1" for the proper functionality of the SPI (Flash) I/Os

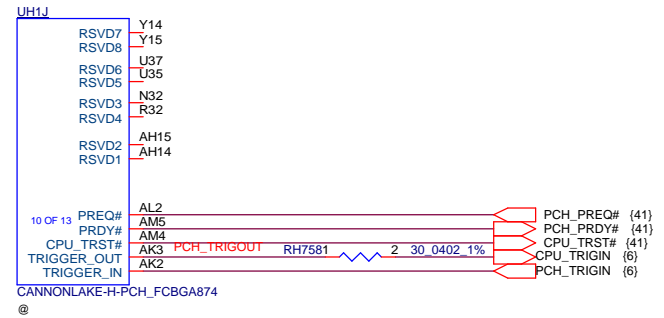
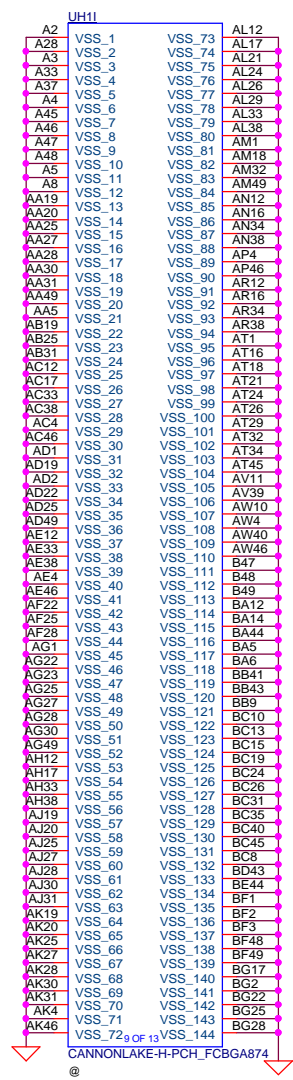
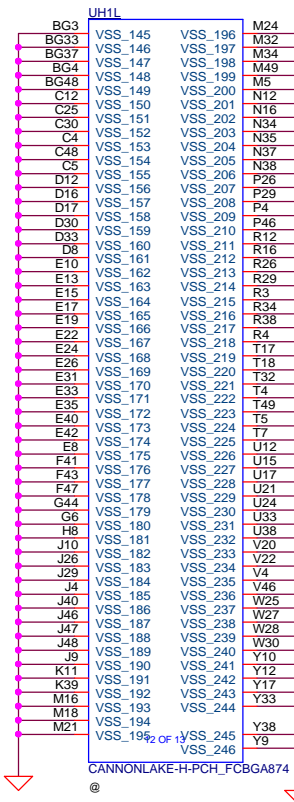
Security Classification		LC Future Center Secret Data		Title	
Issued Date	2015/02/26	Despatched Date	2018/09/20	Blank	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF RAD DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. WITHOUT THIS SHEET, THE INFORMATION CONTAINED HEREIN MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.					
Doc Number	PG541/PG741		Doc Date	2018/09/20	Doc Rev 0.1
Tuesday, February 25, 2019 19:04					

Add Board ID reserve 1130SI[illegible]

DRAM	Memory Down(DDR4)	DRAMCFG	PCH_GPA23	PCH_GPA22	PCH_GPA2
8Gb	Samsung 8Gb 2666 MT/s	0(0x000)	L/RH775	L/RH777	L/RH195
	Hynix 8Gb 2666 MT/s	1(0x001)	L/RH775	L/RH777	H/RH163
	Micron 8Gb 2666 MT/s	2(0x010)	L/RH775	H/RH776	L/RH195
	Samsung 4Gb 2400 MT/s	3(0x011)	L/RH775	H/RH776	H/RH163
8Gb	Hynix 4Gb 2400 MT/s	4(0x100)	H/RH774	L/RH777	L/RH195
	Micron 4Gb 2400 MT/s	5(0x101)	H/RH774	L/RH777	H/RH163
	X	6(0x110)	H/RH774	H/RH776	L/RH195
	SO-DIMM	7(0x111)	H/RH774	H/RH776	H/RH163

PDF 文件使用 "pdfFactory Pro" 试用版本创建 www.fineprint.cn





Security Classification		LC Future Center Secret Data		Title	
Issued Date	2015/02/26	Deciphered Date	2018/09/20	PCH (9/9) VSS	
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 B	Document Number
				FG541/FG741	
				Date:	Thursday, January 03, 2019
				Sheet	22 of 69
				Rev	0.1

N17P-G1 GPIO

GPIO	I/O	ACTIVE	Function Description	I/O Termination
GPIO0	OUT	-	PWM Output to control NVVDD	
GPIO1	OUT	-	FB Enable for GC6 2.1	
GPIO2	IN	-	GPU wake signal for GC6 2.1	
GPIO3	OUT	-	PWM Output to control the SRAM power supply	
GPIO4	OUT	-	GPU power sequencing for GC6 2.1 --- 1V8_MAIN_EN	
GPIO5	IN	N/A	Active low Frame Lock	
GPIO6	OUT	-	Phase Shedding, NVVDD_PSI	
GPIO7	OUT	N/A	Panel Backlight enable	
GPIO8	OUT	-	Memory voltage Control	
GPIO9	I/O	-	Active Low Thermal Alert	
GPIO10	OUT	-	Memory VREF Control (100K pull Down)	
GPIO11	OUT	-	Panel Power enable	
GPIO12	IN	-	AC power detect or power supply overdraw input (10K pull High)	
GPIO13	OUT	N/A	LCD Panel Backlight Enable	
GPIO14	IN	N/A	Hot Plug Detect for IFPA	
GPIO15	IN	N/A	Hot Plug Detect for IFPB	
GPIO16	OUT	-	System side PCIe reset monitor	
GPIO17	IN	N/A	Hot Plug Detect for IFPD	
GPIO18	IN	N/A	Hot Plug Detect for IFPE	
GPIO19	OUT	N/A	3D Vision L/R Signal	
GPIO20		N/A	GC5_MODE	
GPIO21	I/O	N/A	UNUSED	
GPIO22	I/O	N/A	UNUSED	
GPIO23	OUT	-	GPU PCIe self-reset control	
GPIO24	IN	N/A	Hot Plug Detect for IFPF	
GPIO25		N/A	UNUSED	
GPIO26		N/A	UNUSED	
GPIO27	IN	N/A	Hot Plug Detect for IFPC	

STRAP2	STRAP1	STRAP0	RAMCFG[4:0]
L	L	L	00000
L	H	L	00010
L	H	H	00011
H	H	L	00110
H	H	H	00111

H=High: Tied to 1.8V
M=Middle: Tied to 0.9V
L=Low: Tied to 0V

ROM_SO	ROM_SI	ROM_SCLK	SOR_EXPOSED[3:0]
L	L	L	1111 DEFAULT
L	L	H	1110
L	H	L	1101
L	H	H	1100
H	L	L	1011
H	L	H	1010
H	H	L	1001
H	H	H	1000
L	L	M	0111
L	M	L	0110
L	M	H	0101
L	H	M	0100
H	L	M	0011
H	M	L	0010
H	M	H	0001
H	H	M	0000

1:ENABLE 0:DISABLE
SOR0/1/2/3 ENABLE

STRAP5	STRAP4	STRAP3	SMB_ALT_ADDR	DEVID_SEL	PCIE_CFG	VGA_DEVICE
M	H	H	1	1	1	1
M	H	L	1	1	1	0
M	L	H	1	1	0	1
M	L	L	1	1	0	0
L	H	M	1	0	1	1
L	M	H	1	0	1	0
L	M	L	1	0	0	1
L	L	M	1	0	0	0
H	H	H	0	1	1	1
H	H	L	0	1	1	0
H	L	H	0	1	0	1
H	L	L	0	1	0	0
L	H	H	0	0	1	1
L	H	L	0	0	1	0
L	L	H	0	0	0	1 DEFAULT
L	L	L	0	0	0	0

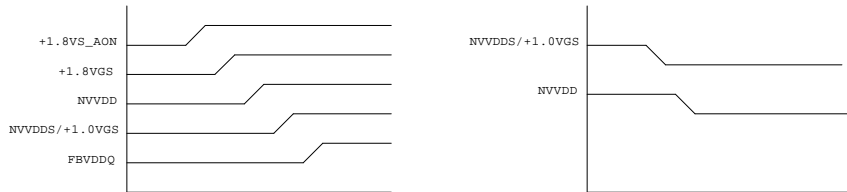
1:SMB_ALT_ADDR ENABLE
0:SMB_ALT_ADDR DISABLE

1:DEVID_SEL REBRAND
0:DEVID_SEL ORIGINAL

1:PCIE_CFG LOW POWER
0:PCIE_CFG HIGH POWER

1:VGA_DEVICE ENABLE
0:VGA_DEVICE DISABLE

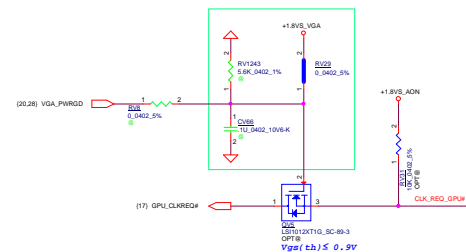
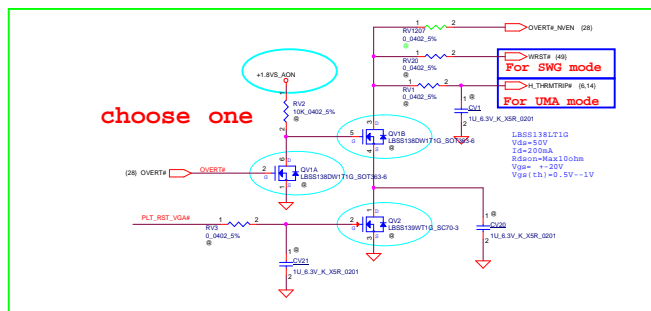
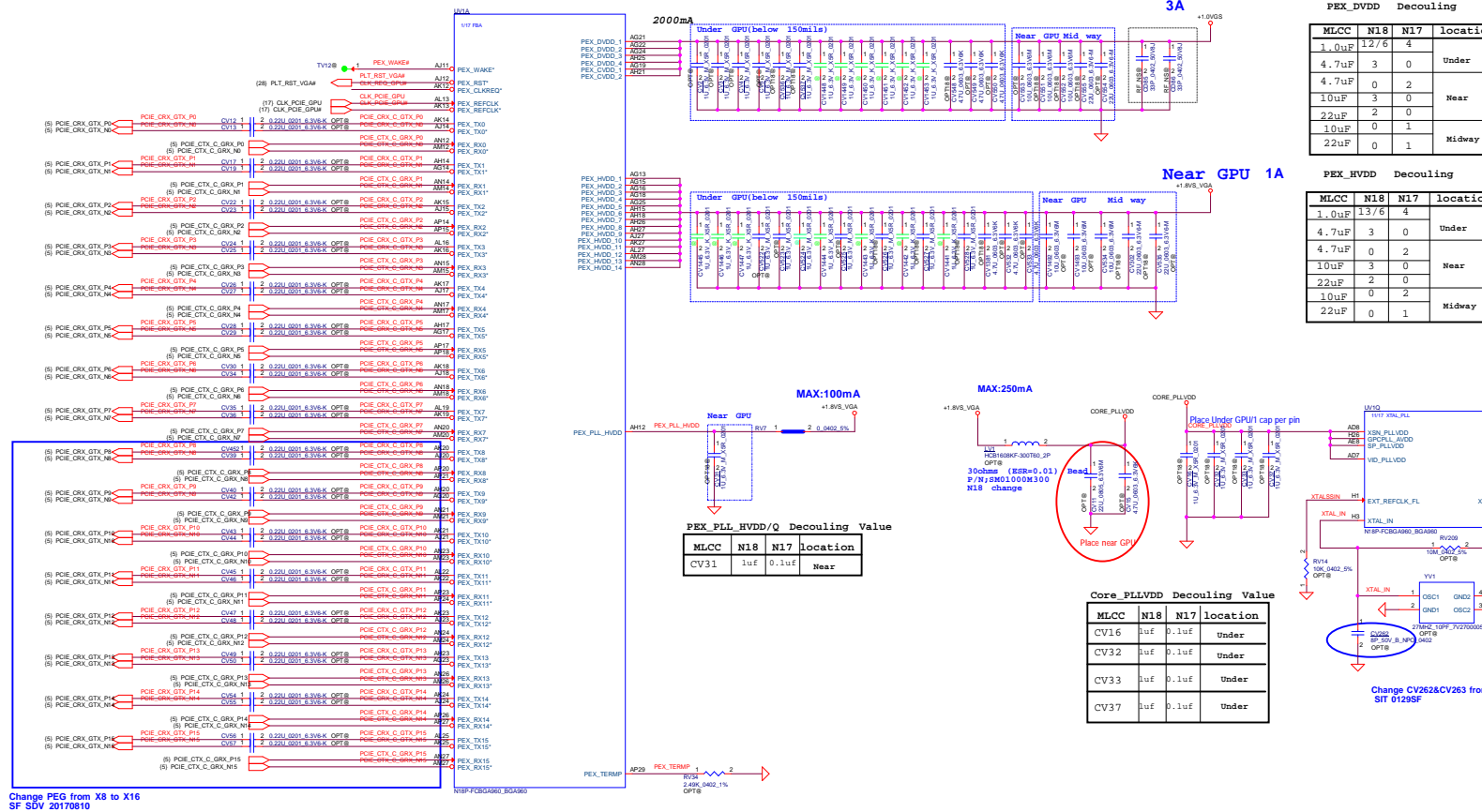
N17P-G1 Power Sequence



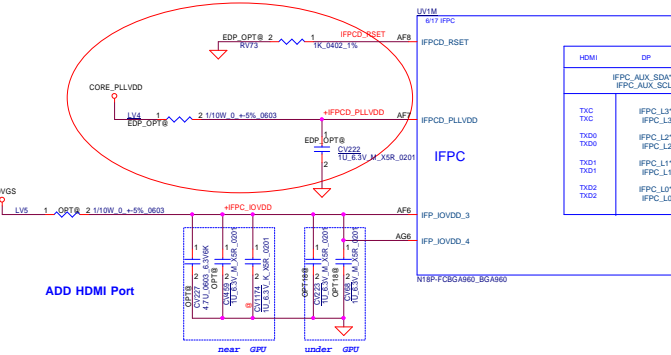
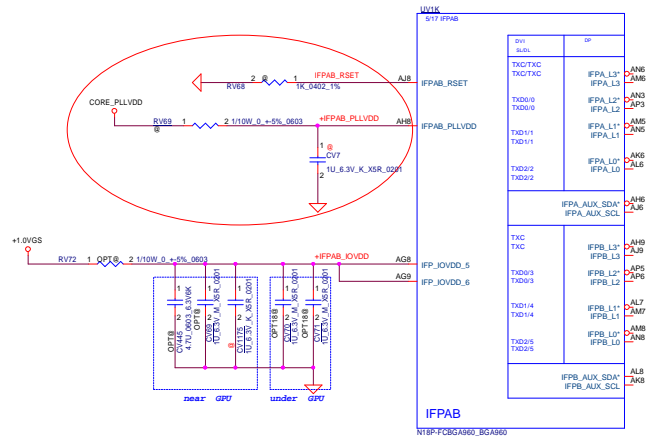
1. All power rail ramp up time should be larger than 40us and is recommended to be less than 2ms.
2. * (from 1V8_MAIN_EN to PEX_DVDD/NVVDD_Pgood) must NOT exceed 4ms.
3. All 3.3V devices that connect to the GPU must be powered after 1V8_AON; GPU can NOT have any 3.3V leakage path before 1V8_AON present.
4. The previous power rail must ramp up to 90% before the next power rail can start ramping up.

1. NVVDD/PEX_DVDD must ramp down before NVVDD, all other power rails can ramp down together with NVVDD.
2. All 3.3V devices that connect to the GPU must be ramp down before 1V8_AON; GPU can NOT have any 3.3V leakage path after 1V8_AON and 1.8V_MAIN power down.
3. The previous power rail must ramp down to 10% before the next power rail can start ramping down.

Security Classification		LC Future Center Secret Data		Title	
Issued Date		2015/08/20		Deciphered Date	
				2018/09/20	
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.				VGA Notes List	
Size		Document Number		Rev	
		PG541/PG741		0.1	
Date		Thursday, January 03, 2019		Sheet	
				24 of 69	



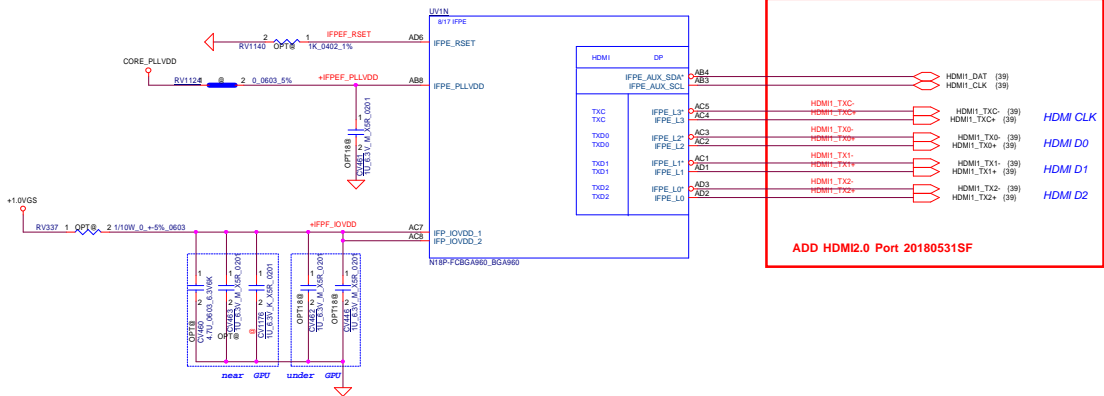
Ref NV DG-08780-001
 If an IFP link is unused, in general it should be left unconnected.
 This includes Main and Aux links.
 IFPxy_RSET and IFPxy_PLLVDD (xy=AB,CD,EF)
 can be left unconnected if neither of IFPx /IFPy is in use



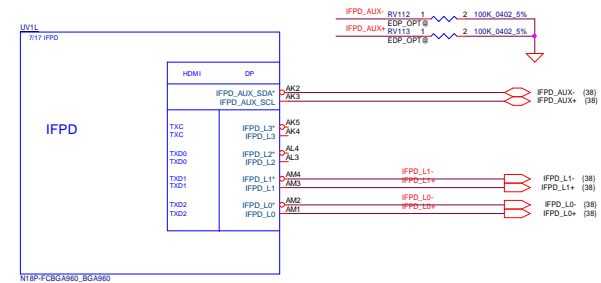
ADD HDMI Port

Decoupling Value

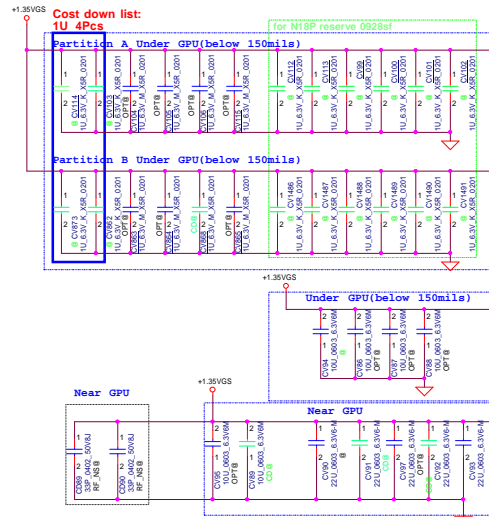
MLCC	N18	N17	location
CV7	1uF	0.1uF	Under
CV22	1uF	0.1uF	Under
CV46	1uF	0.1uF	Under
CV70	1uF	0.1uF	Under
CV71	1uF	0.1uF	Under
CV68	1uF	0.1uF	Under
CV462	1uF	0.1uF	Under
CV484	1uF	0.1uF	Under



ADD HDMI2.0 Port 20180531SF



5A Peak 8A



1.8V Total 1A (AON+MAIN)

0.5A

CALIBRATION PIN	N17P	N18P
FB_CAL_x_PD_VDDQ	40.2ohm	40.2ohm
FB_CAL_x_PU_GND	40.2ohm	40.2ohm
FB_CAL_x_TERM_GND	60.4ohm	40.2ohm

1.8VS_AON Decoupling Value

MLCC	N18	N17	location
CV205	1uF	0.1uF	Under
CV206	1uF	0.1uF	Under
CV1475			Under
CV1476			Under
RV94	40.2ohm	60.4ohm	

only for N18P

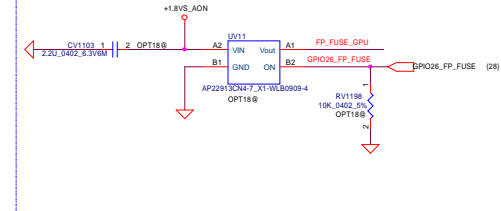
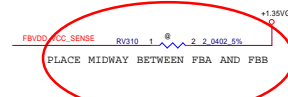


Table 15. N17/G84C-128 and N18/G84D-128 FB BOM Differences

FB Pin	What to do for N18/G84D-128	What to do for N17/G84C-128
GPU_FB_VREF	Pull down to 49.9 ohm	Leave unconnected and floating
FB_CAL_TERM_GND	Pull down to 40.2 ohm	Pull down to 60.4 ohm



2A

V20B+

Vg=16.4V@AC

Vg=7.35V@Battery

Vg=7.35V@Battery

Vg=7.35V@Battery

Vg=7.35V@Battery

Vg=7.35V@Battery

Vg=7.35V@Battery

Vg=7.35V@Battery

Vg=7.35V@Battery

Vg=7.35V@Battery

Vg=7.35V@Battery

Vg=7.35V@Battery

Vg=7.35V@Battery

Vg=7.35V@Battery

Vg=7.35V@Battery

Vg=7.35V@Battery

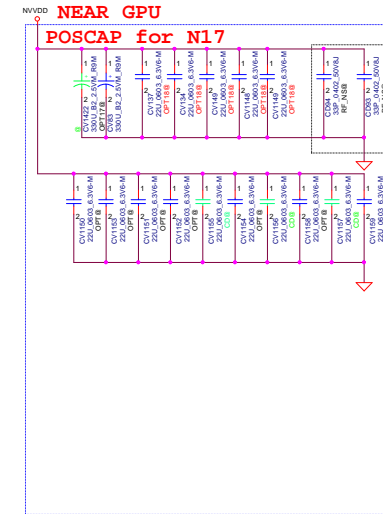
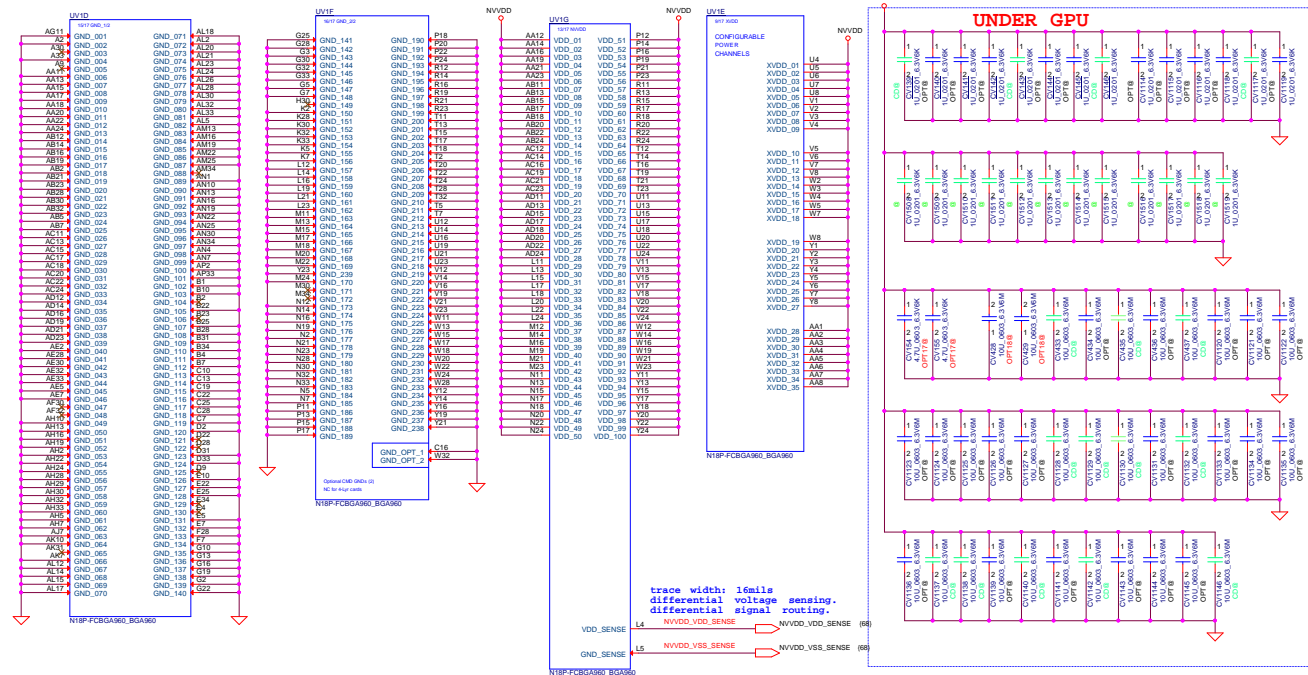
Vg=7.35V@Battery

Vg=7.35V@Battery

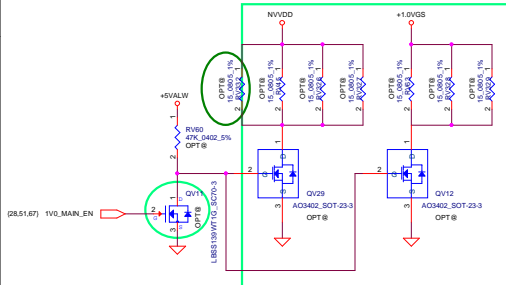
1.8V_MAIN discharger circuit

Security Classification	LC Future Center Secret Data	Title
Issued Date	2015/08/20	Deciphered Date
2015/08/20	2015/08/20	
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 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 PRIOR WRITTEN PERMISSION OF LC FUTURE CENTER.		
Size	Document Number	Rev
01	PG541/P6741	01
Date	Wednesday, February 27, 2015	Sheet
	29	of 69

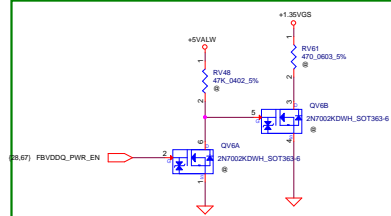
**BOTH GP107 AND N18P-G5 NEED
NC AF30,AF32,AK31,AM34,E34,H30,M30,M34,
A30,A9,B2,B23,D22,D28,D9,E4**





Add RV332 for NVVDDS discharge Hai Y520 SVT
Change NVVDDS & +1.0VGS discharge circuit
HLZ SIV 0725

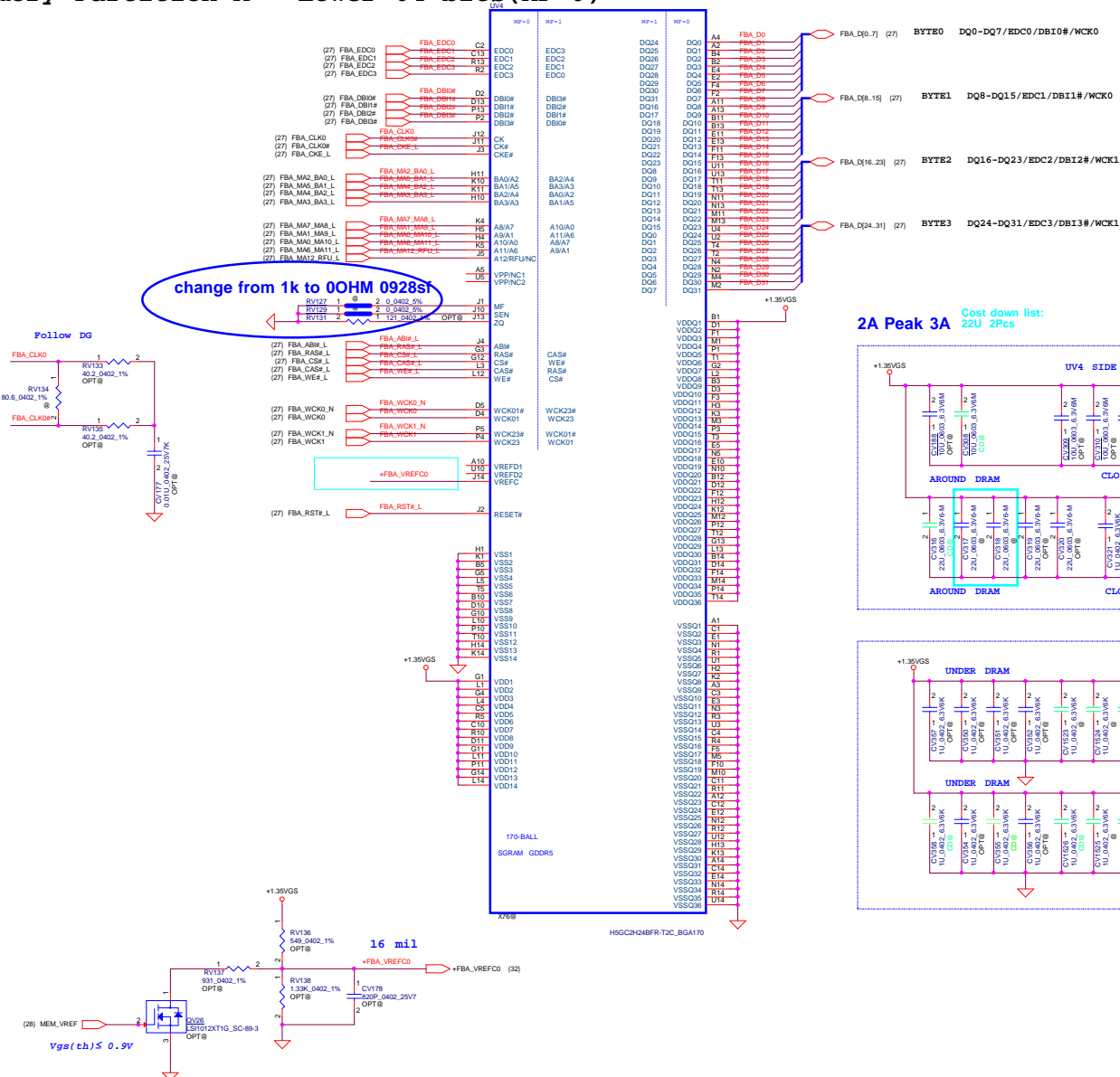


Change QV6/RV48/QV4/RV62 from REV@ to ns Hai Y520 SVT

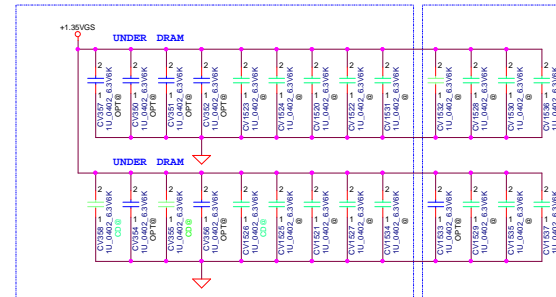
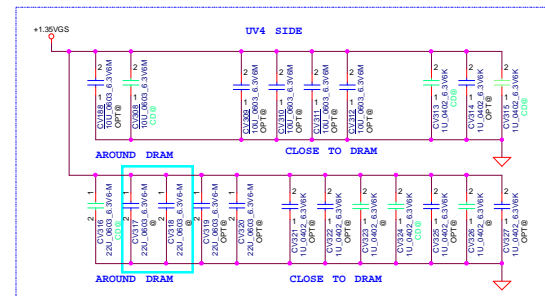


Security Classification	LC Future Center Secret Data			Title		
Issued Date	2015/08/20	Deciphered Date	2018/09/20	N17P_(6/6)-PWR,VSS		
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER AND CONTAINS CONFIDENTIAL INFORMATION. THE INFORMATION ON THIS SHEET IS THE PROPERTY OF LC FUTURE CENTER AND IS NOT TO BE DISCLOSED TO ANY THIRD PARTY WITHOUT THE WRITTEN CONSENT OF LC FUTURE CENTER.				Size	Document Number	Rev
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER AND CONTAINS CONFIDENTIAL INFORMATION. THE INFORMATION ON THIS SHEET IS THE PROPERTY OF LC FUTURE CENTER AND IS NOT TO BE DISCLOSED TO ANY THIRD PARTY WITHOUT THE WRITTEN CONSENT OF LC FUTURE CENTER.				P0541/P0741		0.1
Date	Tuesday, January 22, 2019			Sheet	3	of 66

Memory Partition A - Lower 64 bits(MF=0)




2A Peak 3A Cost down list:
22U 2Pcs

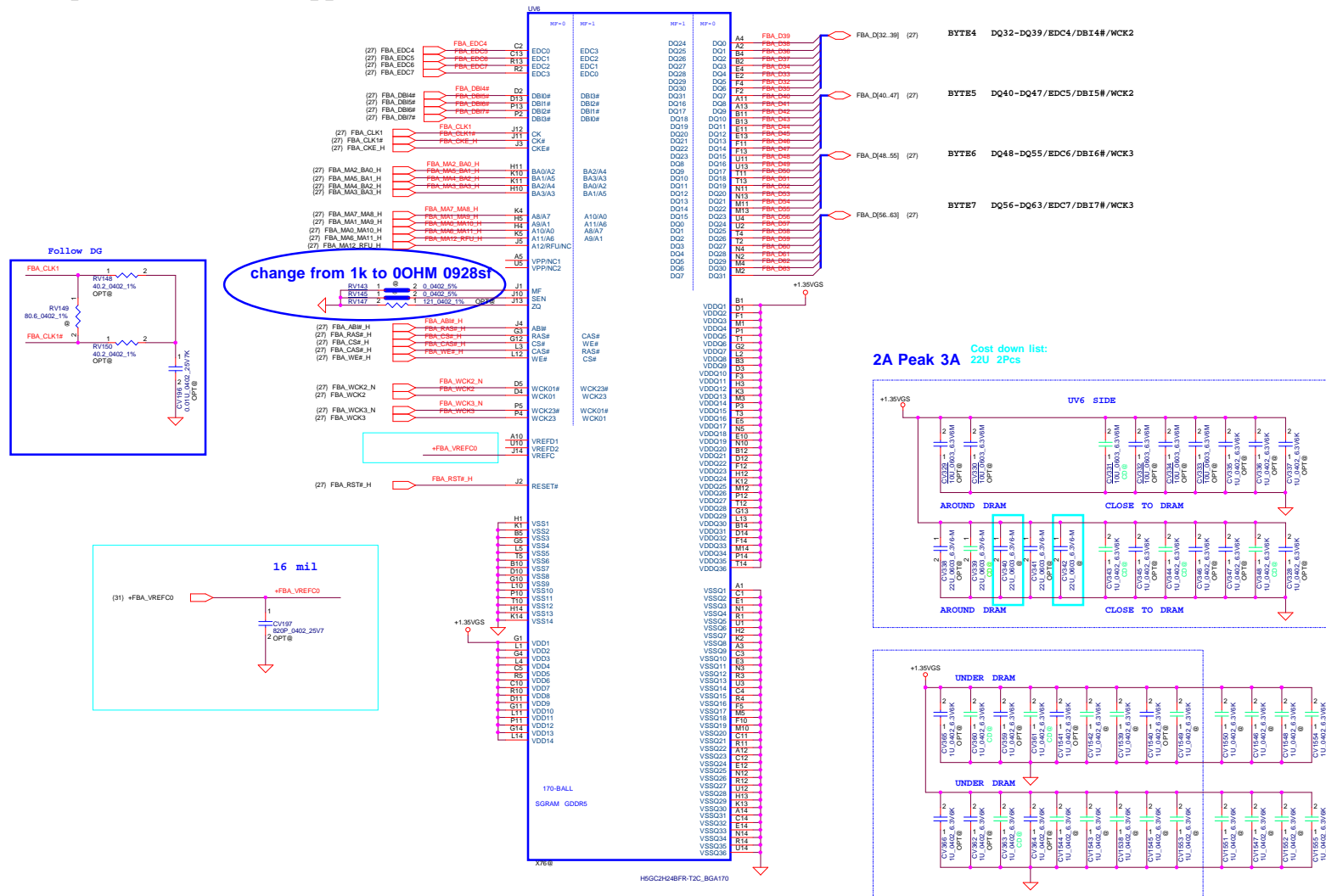


GDDR5
Mode H - Mirror Mode Mapping

DATA Bus		
Address	0..31	32..63
FBX_CMD0	CS#	
FBX_CMD1	A3_BA3	
FBX_CMD2	A2_BA0	
FBX_CMD3	A4_BA2	
FBX_CMD4	A5_BA1	
FBX_CMD5	WE#	
FBX_CMD6	A7_A8	
FBX_CMD7	A6_A11	
FBX_CMD8	AB1#	
FBX_CMD9	A12_RFU	
FBX_CMD10	A0_A10	
FBX_CMD11	A1_A9	
FBX_CMD12	RAS#	
FBX_CMD13	RST#	
FBX_CMD14	CKE#	
FBX_CMD15	CAS#	
FBX_CMD16		CS#
FBX_CMD17		A3_BA3
FBX_CMD18		A2_BA0
FBX_CMD19		A4_BA2
FBX_CMD20		A5_BA1
FBX_CMD21		WE#
FBX_CMD22		A7_A8
FBX_CMD23		A6_A11
FBX_CMD24		AB1#
FBX_CMD25		A12_RFU
FBX_CMD26		A0_A10
FBX_CMD27		A1_A9
FBX_CMD28		RAS#
FBX_CMD29		RST#
FBX_CMD30		CKE#
FBX_CMD31		CAS#


Security Classification	LC Future Center Secret Data			Title	N17P_GDDR5_A Lower 		
Issued Date	2015/08/20	Deciphered Date	2018/09/20	Size	Document Number	Rev	
<p>THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL INFORMATION. IT IS NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, WITHOUT THE WRITTEN PERMISSION OF LC FUTURE CENTER. THE INFORMATION CONTAINED HEREIN IS UNCLASSIFIED EXCEPT AS AUTHORIZED BY LC FUTURE CENTER. NEITHER THIS SHEET NOR THE INFORMATION IT CONTAINS SHALL BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.</p>				Customs	FG541/FG741		0.1
Date:	Tuesday, February 26, 2019		Sheet	31	of	60	

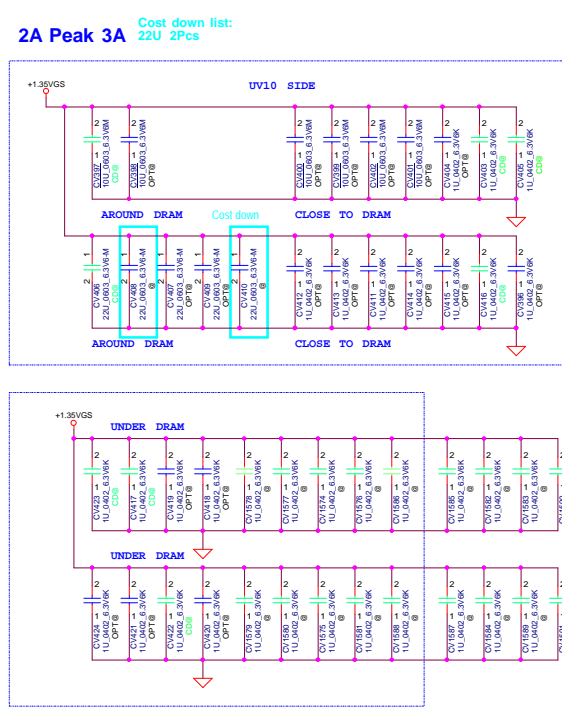
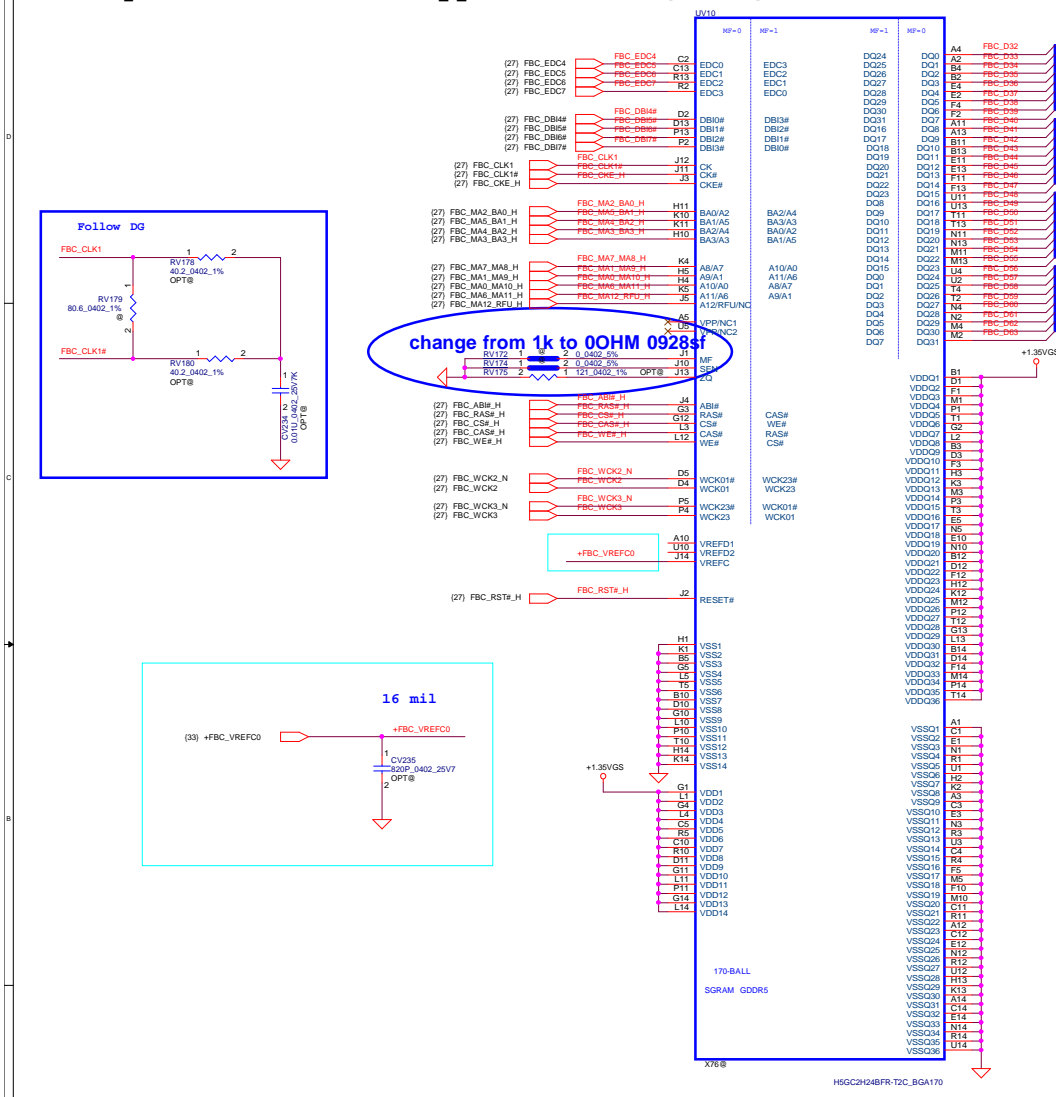
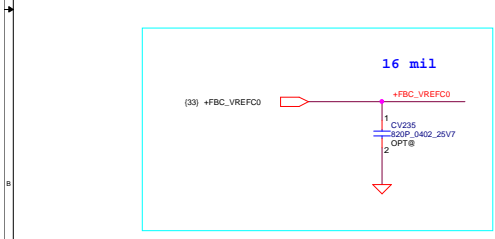
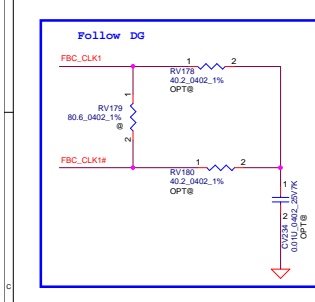
Memory Partition A- Upper 64 bits(MF=0)



GDDR5
Mode H - Mirror Mode Mapping


DATA Bus		
Address	0..31	32..63
FBX_CMD0	CS#	
FBX_CMD1	A3_BA3	
FBX_CMD2	A2_BA0	
FBX_CMD3	A4_BA2	
FBX_CMD4	A5_BA4	
FBX_CMD5	WE#	
FBX_CMD6	A7_A8	
FBX_CMD7	A6_A11	
FBX_CMD8	AB1#	
FBX_CMD9	A12_RFU	
FBX_CMD10	A0_A10	
FBX_CMD11	A1_A9	
FBX_CMD12	RAS#	
FBX_CMD13	RS1#	
FBX_CMD14	CKE#	
FBX_CMD15	CAS#	
FBX_CMD16		CS#
FBX_CMD17		A3_BA3
FBX_CMD18		A2_BA0
FBX_CMD19		A4_BA2
FBX_CMD20		A5_BA1
FBX_CMD21		WE#
FBX_CMD22		A7_A8
FBX_CMD23		A6_A11
FBX_CMD24		AB1#
FBX_CMD25		A12_RFU
FBX_CMD26		A0_A10
FBX_CMD27		A1_A9
FBX_CMD28		RAS#
FBX_CMD29		RS1#
FBX_CMD30		CKE#
FBX_CMD31		CAS#

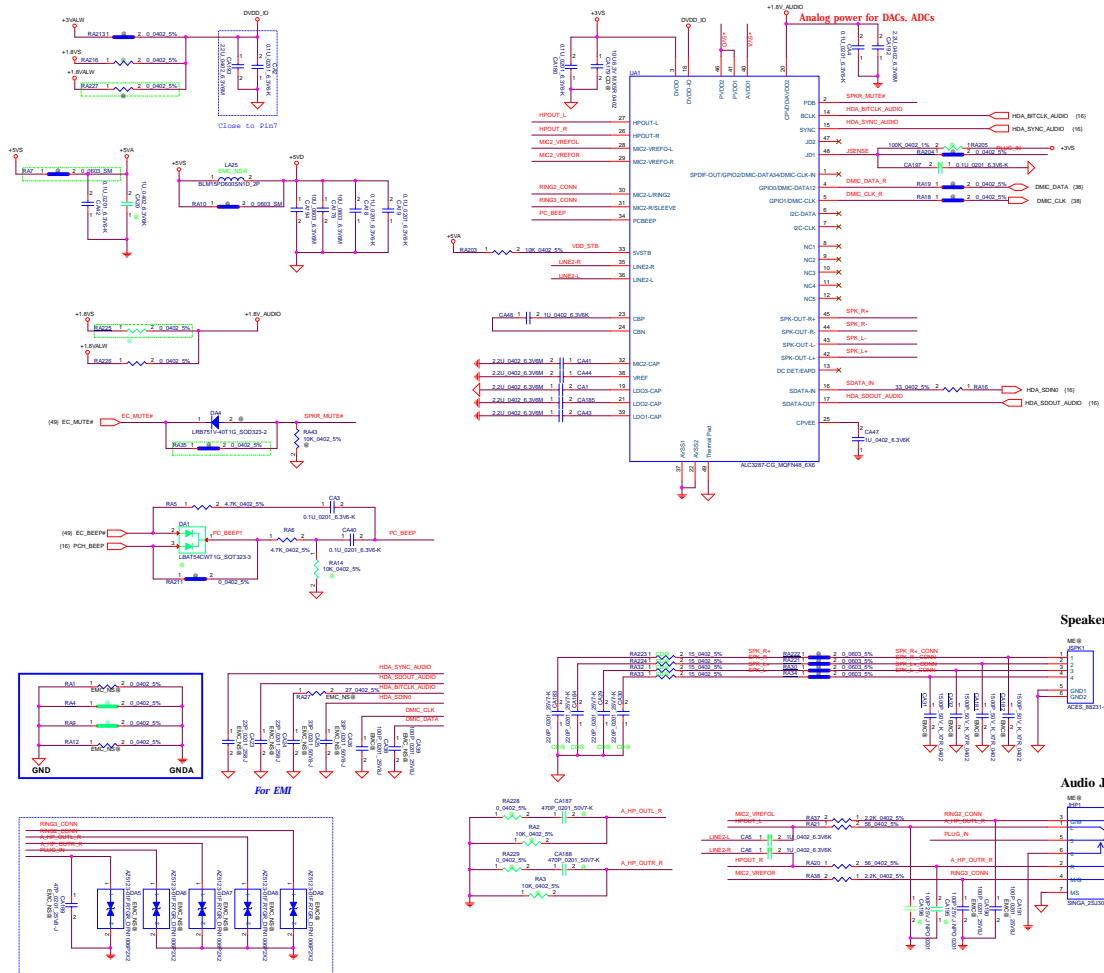
Security Classification	LC Future Center Secret Data			Title	N17P_GDDR5_A Upper		
Issued Date	2015/08/20	Deciphered Date	2018/09/20	Size	Document Number	Rev	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER AND CONTAINS CONFIDENTIAL AND PROPRIETARY INFORMATION THAT MUST NOT BE TRANSMITTED FROM THE CUSTODY OF THE COMPANY OR DIVISION OF R&D DEPARTMENT EXCEPT AS AUTHORIZED BY LC FUTURE CENTER WITHOUT THEIR SHEET NOR THE INFORMATION IT CONTAINS MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY NEITHER PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.				Date	Tuesday, February 28, 2019	Sheet	23 of 69
					FG541 / FG741		0.1




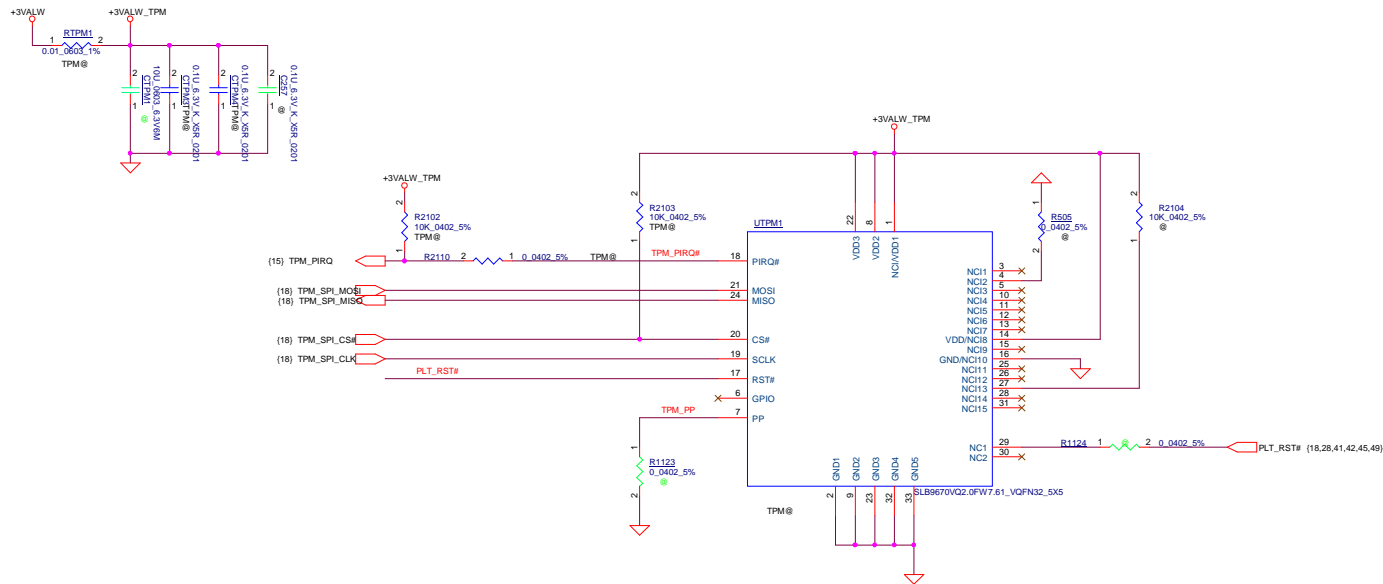
GDDR5
Mode H - Mirror Mode Mapping

Address	DATA Bus	
	0..31	32..63
FbX_CMD0	CS#	
FbX_CMD1	A3_BA3	
FbX_CMD2	A2_BA0	
FbX_CMD3	A4_BA2	
FbX_CMD4	A5_BA1	
FbX_CMD5	WE#	
FbX_CMD6	A7_A8	
FbX_CMD7	A6_A11	
FbX_CMD8	AB1#	
FbX_CMD9	A12_RFU	
FbX_CMD10	A0_A10	
FbX_CMD11	A1_A9	
FbX_CMD12	RAS#	
FbX_CMD13	RST#	
FbX_CMD14	CKE#	
FbX_CMD15	CAS#	
FbX_CMD16		CS#
FbX_CMD17		A3_BA3
FbX_CMD18		A2_BA0
FbX_CMD19		A4_BA2
FbX_CMD20		A5_BA1
FbX_CMD21		WE#
FbX_CMD22		A7_A8
FbX_CMD23		A6_A11
FbX_CMD24		AB1#
FbX_CMD25		A12_RFU
FbX_CMD26		A0_A10
FbX_CMD27		A1_A9
FbX_CMD28		RAS#
FbX_CMD29		RST#
FbX_CMD30		CKE#
FbX_CMD31		CAS#

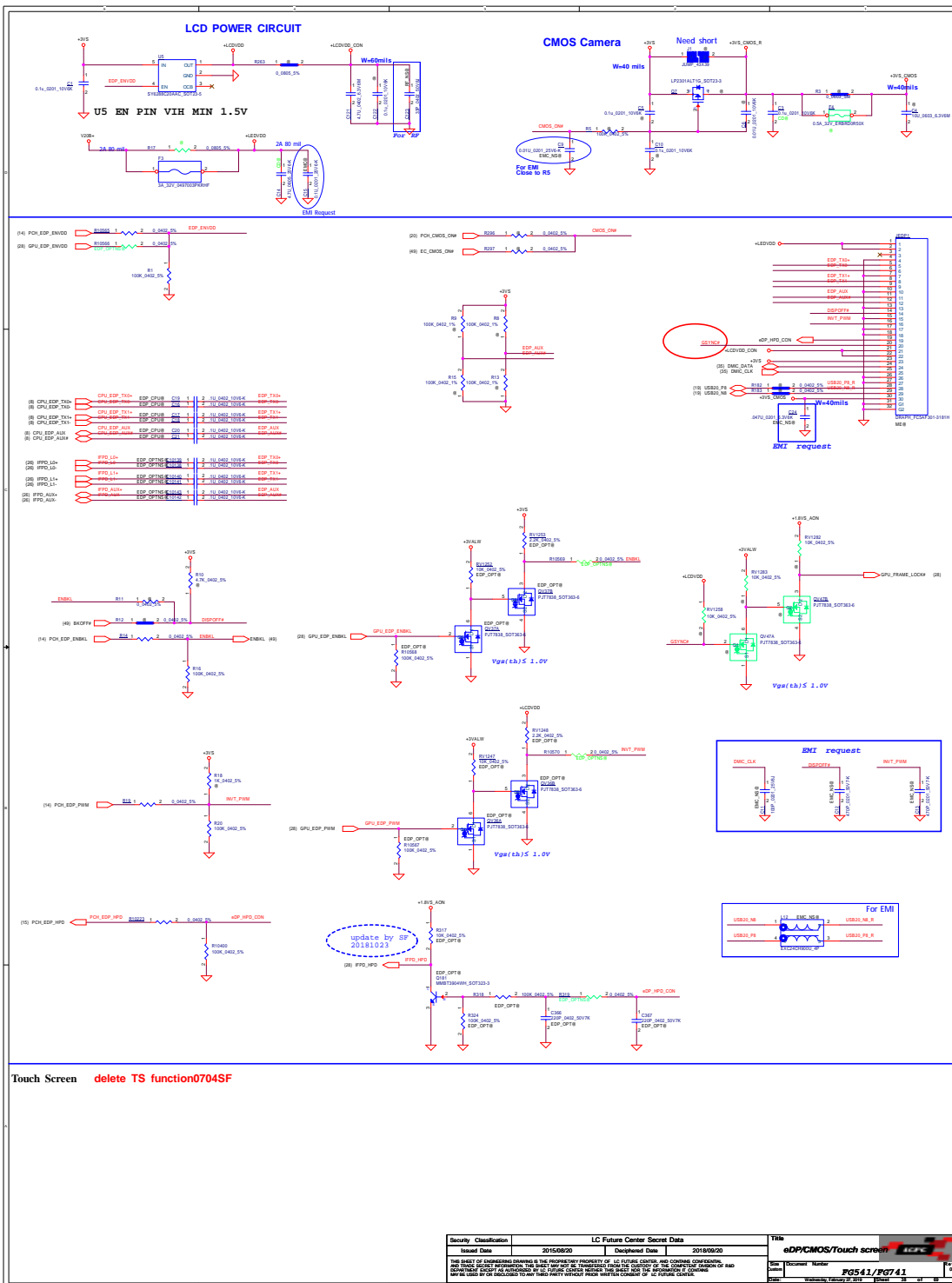
Security Classification		LC Future Center Secret Data		Title	
Issued Date		Deciphered Date		N17P_GDDR5_B Upper	
2015/08/20		2018/09/20			
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF 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.				Rev	
Doc Number				0.1	
Doc Name				FG541/FG741	
Date				Tuesday, February 26, 2019	
Sheet				34 of 69	

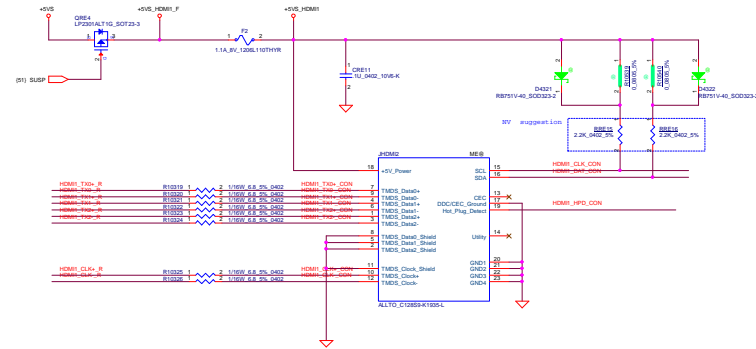
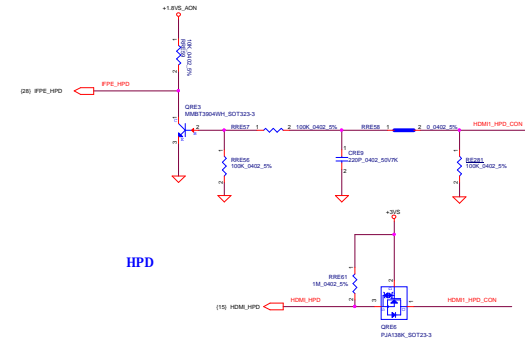
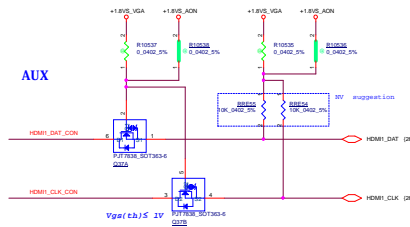
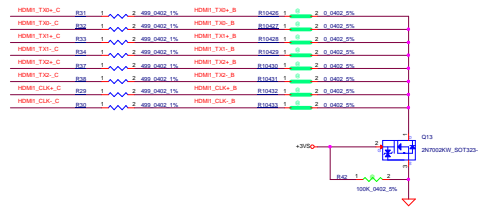
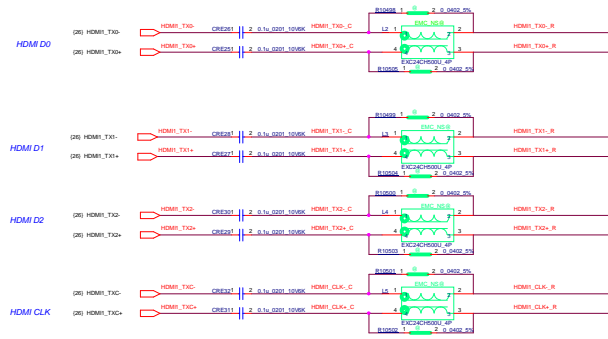


Security Classification		LC Future Center Secret Data		Title		
Issued Date	2015/08/20	Deciphered Date	2018/09/20	Cardreader		
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM 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 Custom	Document Number FG541/FG741	
				Date:	Thursday, January 03, 2019	Rev 0.1
				Sheet	36 of 69	



Security Classification		LC Future Center Secret Data		Title	
Issued Date	2015/08/20	Deciphered Date	2018/09/20	TPM	
<p>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.</p>					
Size	Document Number	Rev		0.1	
Date	Thursday, January 03, 2019	Sheet	37	of	69





Security Classification		LC Future Center Secret Data		Title
Issued Date	2015/06/20	Designated Date	2016/06/20	
<small>THE SAFETY OF ENGINEERING DRAWINGS & THE INVENTIVE PROPERTY OF LC FUTURE CENTER AND CONTAINED INFORMATION, AND THEREBY REVEALING INFORMATION, THE USER MAY NOT BE TRANSMITTED FROM THE CUSTOMER OF THE COMPANY TO ANY OTHER PARTY WITHOUT THE PERMISSION OF THE COMPANY.</small>				Doc. Number
				PG541/PG741
				Rev. 1


Security Classification	LC Future Center Secret Data			Title	
Issued Date	2015/08/20	Deciphered Date	2018/09/20	P35-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 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.				Size Custom Document Number FG541/FG741	
				Date: Thursday, January 03, 2019	Rev 0.1 Sheet 40 of 69

TABLE : CPU ITP DEBUG REPORT

	No use	Individual Port	DCI 2.0 w/o connector
R591	NO ASM	NO ASM	ASM
R593	NO ASM	NO ASM	ASM
R594	NO ASM	NO ASM	ASM
R595	NO ASM	NO ASM	ASM
R596	NO ASM	NO ASM	ASM
R657	NO ASM	NO ASM	ASM
R658	NO ASM	NO ASM	ASM
R102	NO ASM	ASM	NO ASM
R597	NO ASM	ASM	NO ASM
R9907	NO ASM	ASM	ASM
JXDP1	NO ASM	ASM	NO ASM
C70	NO ASM	ASM	NO ASM
R96	NO ASM	ASM	NO ASM
R101	NO ASM	ASM	NO ASM
R9909	NO ASM	ASM	ASM
R9910	NO ASM	ASM	ASM
R9916	NO ASM	ASM	ASM
R99	NO ASM	ASM	ASM
R9912	NO ASM	ASM	ASM
R9934	NO ASM	ASM	ASM
R9930	NO ASM	ASM	ASM
R9931	NO ASM	ASM	ASM
R9932	NO ASM	ASM	ASM
R9933	NO ASM	ASM	ASM

LOGIC

TABLE : PCH ITP DEBUG REPORT

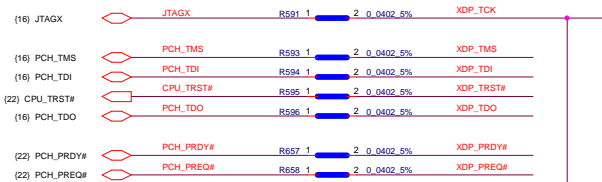
	No use	Individual Port	DCI 2.0 w/o connector
R93	NO ASM	ASM	NO ASM
JXDP1	NO ASM	ASM	NO ASM
R9917	NO ASM	ASM	NO ASM
R101	NO ASM	ASM	NO ASM
R9908	NO ASM	ASM	NO ASM
R9911	NO ASM	ASM	NO ASM
R9913	NO ASM	ASM	NO ASM
R9915	NO ASM	ASM	NO ASM

LOGIC

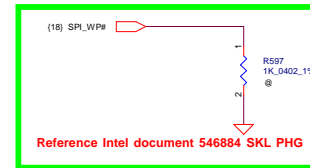
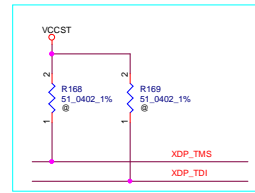
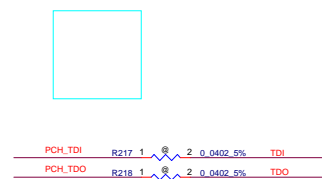
TABLE : Functional Strap

GPP_B18/GSPI0_MOSI (No Reboot)		R563
HIGH	Enable "No Reboot" Mode	ASM
LOW	Disable "No Reboot" Mode (Default)	NO ASM

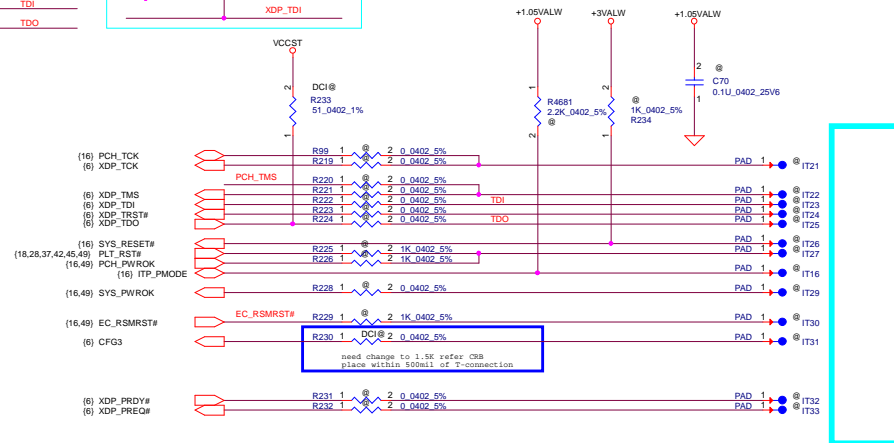
LOGIC

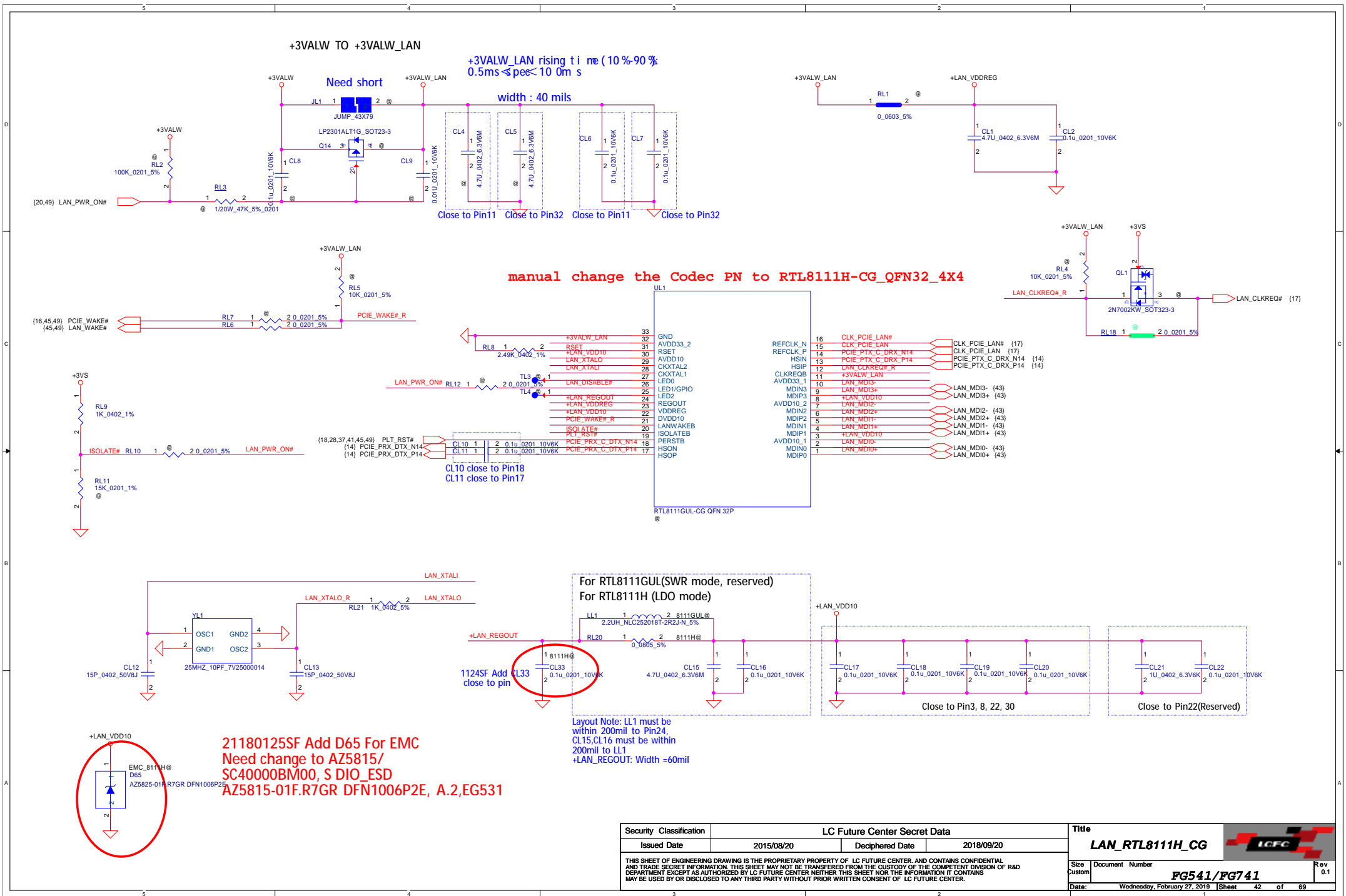


Delete R93



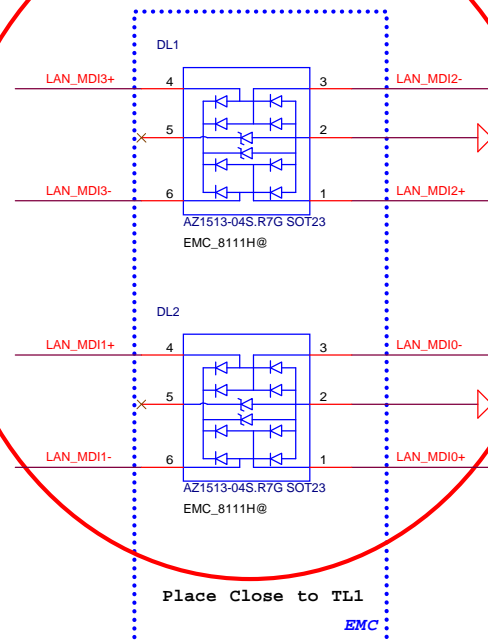
Mount RC176 to enable DCI function



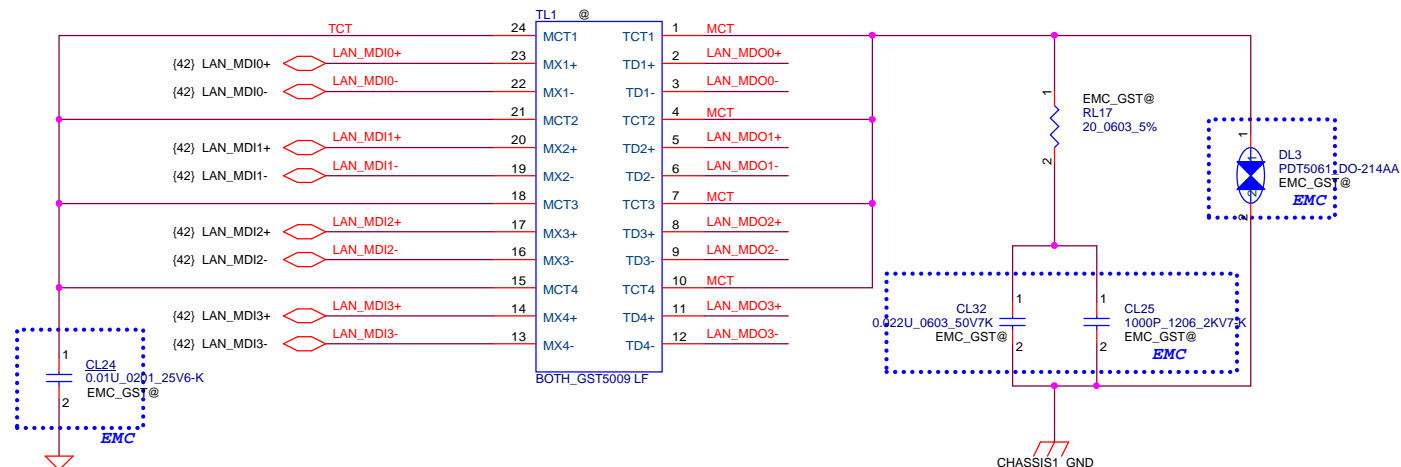
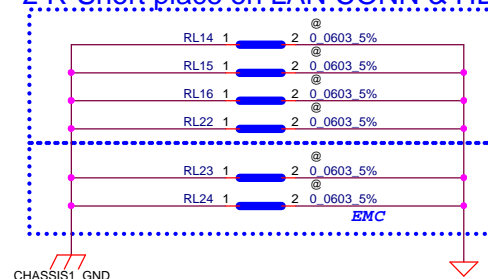


0907SF change DL1/DL2 to
S DIO(BR) AZ1215-04S.R7G SOT23-6L
PN:SC300005900 for 8111H

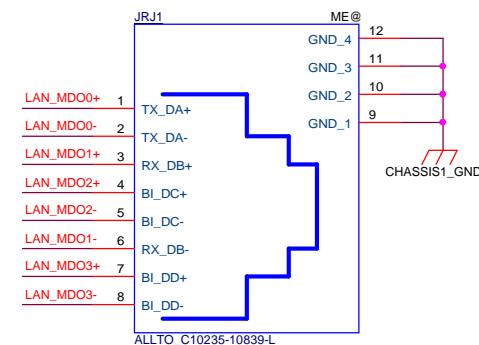
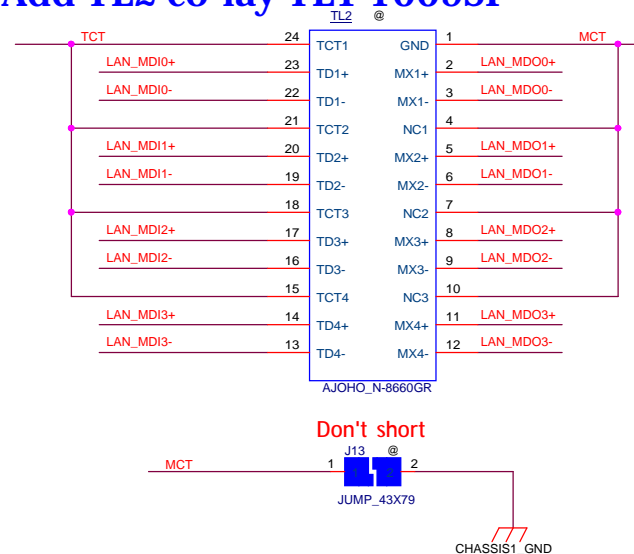
20180125SF: For EMC debug DL1 & DL2
Need change to SC300006100,
S DIO(BR) AZ1135-04S.R7G SOT23, A.1,EG531



1204SF update,
4 R-Short place on DC-IN CONN & LAN CONN,
2 R-Short place on LAN CONN & HDMI CONN



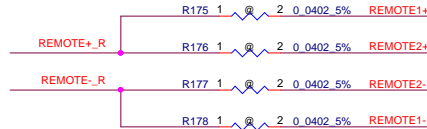
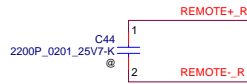
Add TL2 co-lay TL1 1009SF



8/16 Update RJ45 P/N DC021608091 wei

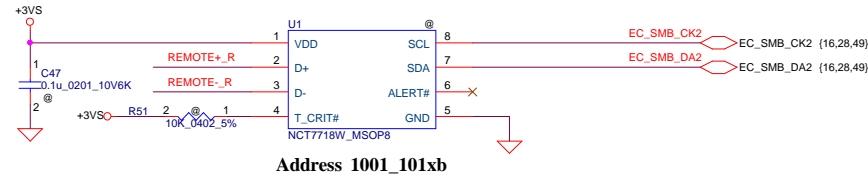
Security Classification		LC Future Center Secret Data		Title	
Issued Date	2015/08/20	Deciphered Date	2018/09/20	LAN_Transformer	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED 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
				5	FG541/FG741
Date:		Saturday, February 02, 2019		Sheet	43 of 69
				Rev	0.1

Close to U1

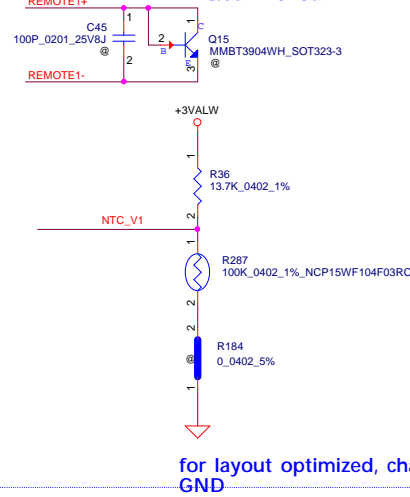


REMOTE+/-_R, REMOTE1+/-, REMOTE2+/-:
Trace width/space:10/10 mil
Trace length:<8"

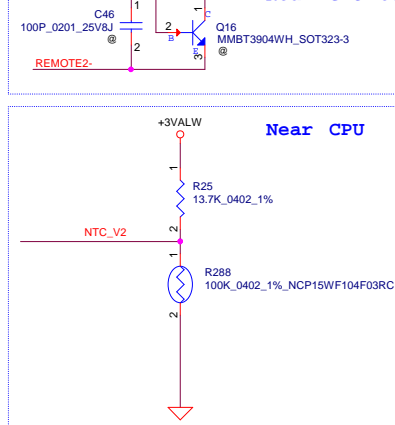
SMSC thermal sensor placed near DIMM



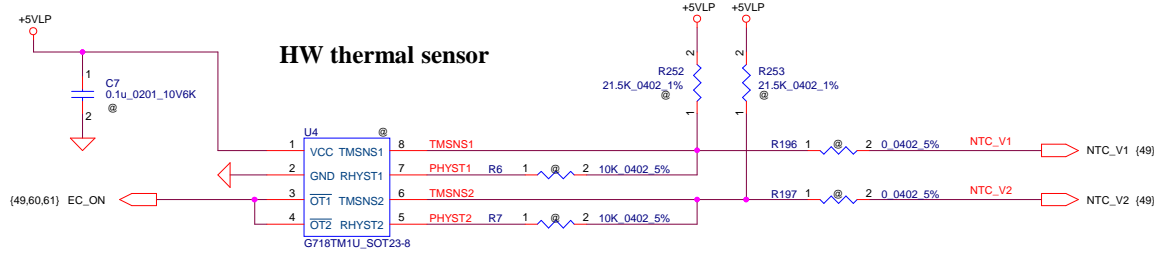
Near GPU&VRAM



Near CPU core



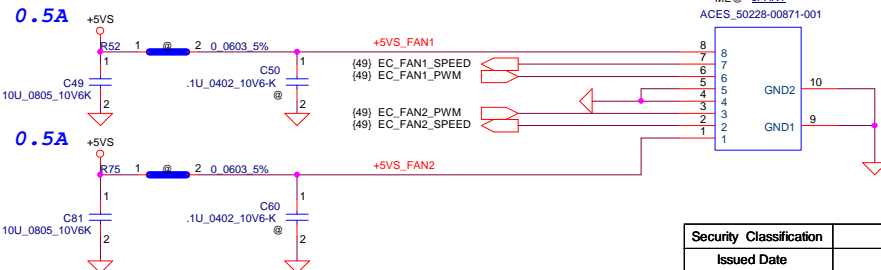
HW thermal sensor



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

FAN Conn

need check ME SDV CONN list
Change to SP011411114 ref ME conn list,20181017SF update



Security Classification	LC Future Center Secret Data		
Issued Date	2016/08/16	Deciphered Date	2018/09/20
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.			

Title		Rev	
Thermal sensor/FAN CONN		0.1	
Size	Document Number	FG541/FG741	
Date:	Tuesday, February 26, 2019	Sheet	44 of 69

change WLAN common design SCH_SF20180719



```

..... If support AOAS, NC R61;
        if not support AOAS, stuff R61

```



+3VS




For optane

```

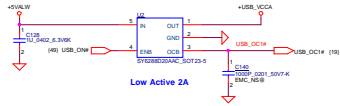
PEDET (PE_DTCT)
SATA Device      GND
PCIe Device      Open

SSD_DET#
0 - SATA
1 - PCIe

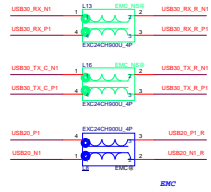
```

Security Classification	LC Future Center Secret Data		Title
Issued Date	2016/12/14	Declassified Date	2018/06/20
THIS SHEET OF ENGINEERING DRAWINGS IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THE SHEET MAY NOT BE TRANSMITTED FROM THE CUSTODY OF THE COMPETENT DIVISION OF RAO GROUP COMPANY OR REPRODUCED OR AUTHORIZED BY LC FUTURE CENTER WITHOUT WRITTEN CONSENT OF LC FUTURE CENTER. IF IT IS USED OR DISCLOSED TO ANY THIRD PARTY WITHOUT WRITTEN CONSENT OF LC FUTURE CENTER,			NGFF WLAN&SSD 
			Rev A/1 <div style="text-align: right;"> P0541/P0741 Date: Year: Month: Day: Page: of 68 </div>

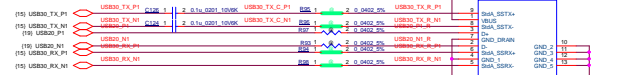
LEFT SIDE USB3.0 PORT x2



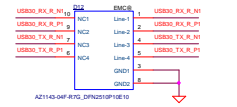
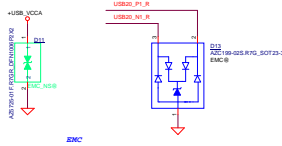
Low Active 2A



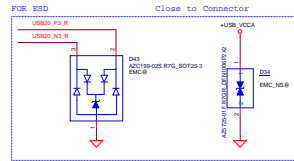
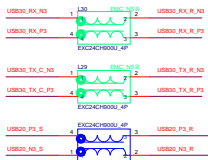
ENC



09/05 Update USBConn. P/N DC021609011 wei



AZ1143-04F-RVLS-DP02010P10E10



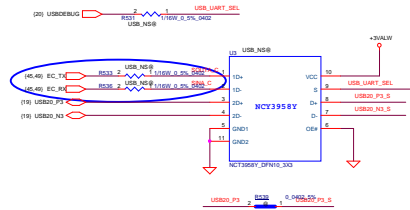
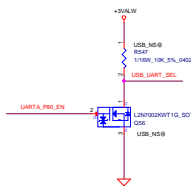
FOR BSD Close to Connector



09/20SF Update USB debug CONN GND pin follow TINY5

For USB Debug Function

09/20SF add USB debug follow TINY5
change from SA00007WL0D to SA00007WL00 SF1001
SVT non-staff0322SF



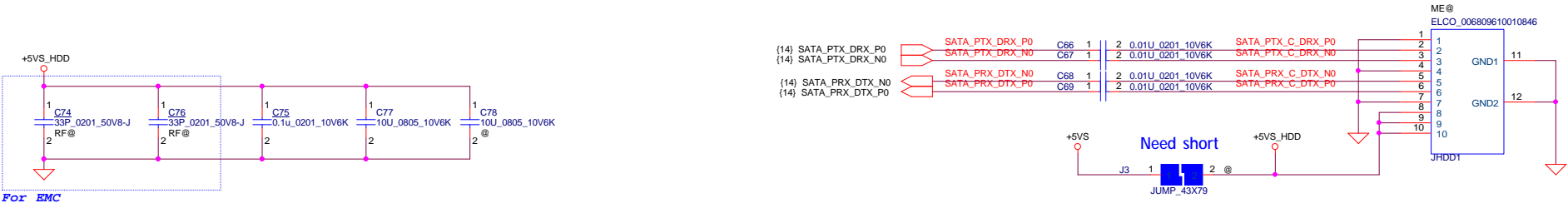
USBDEBUG	Kernel debug
USBDEBUG	USBDEBUG
USBDEBUG	USBDEBUG

JARTA_PRO_EN	POST 80
JARTA_PRO_EN	POST 80
JARTA_PRO_EN	POST 80

DE#	S	FUNCTION
DE#	S	FUNCTION
DE#	S	FUNCTION

Security Classification	LC Future Center Secret Data		Title
Issued Date	2015/06/25	Disagreed Date	2016/06/25
THE SAFETY OF INFORMATION CONTAINED HEREIN IS THE PROPERTY OF THE U.S. GOVERNMENT AND IS NOT TO BE RELEASED OR DISCLOSED TO ANY OTHER PARTY WITHOUT PRIOR WRITTEN CONSENT OF THE U.S. GOVERNMENT.			Doc#
PG541/PG741			Rev#
1			1

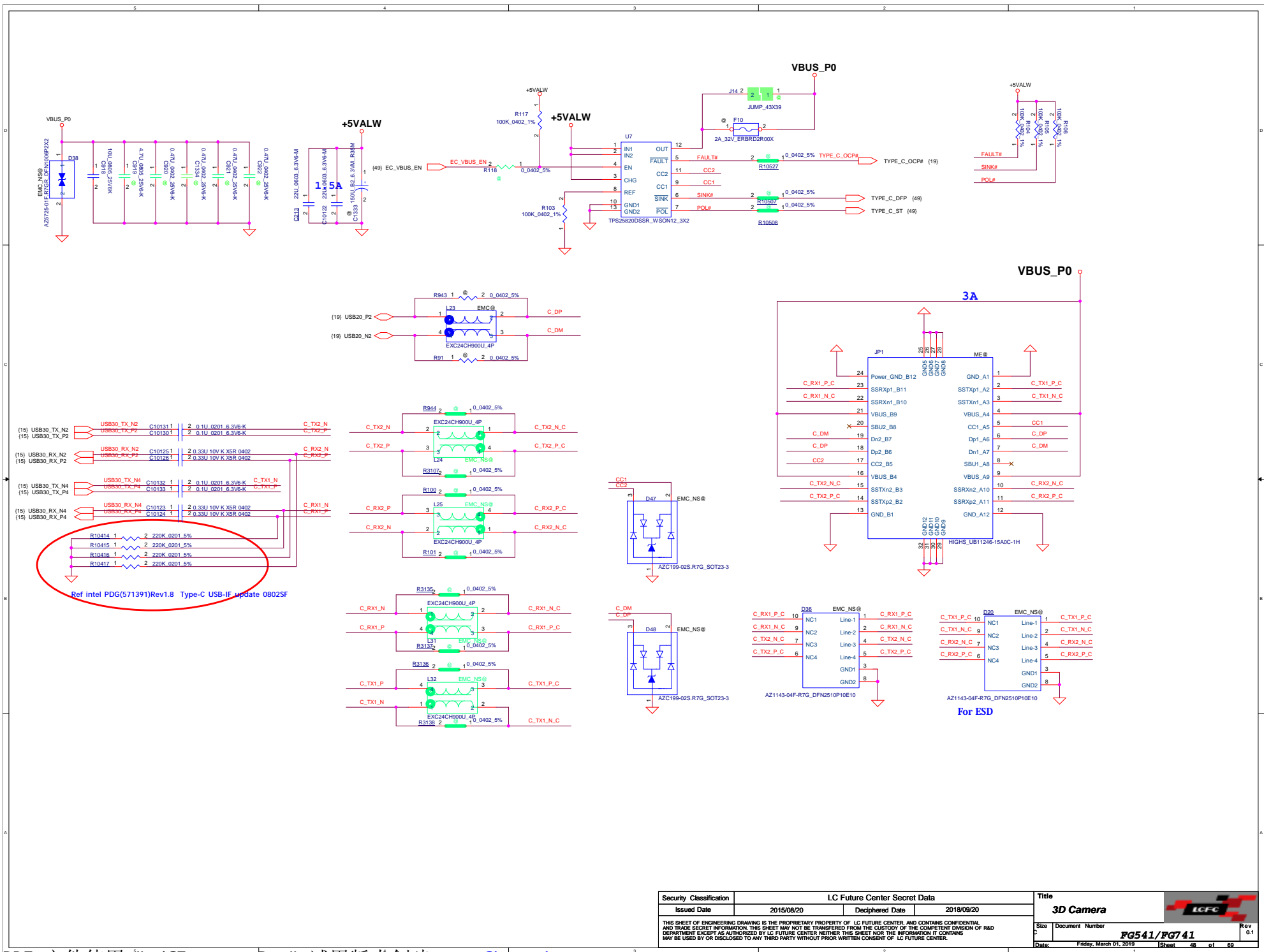
SATA HDD Conn.



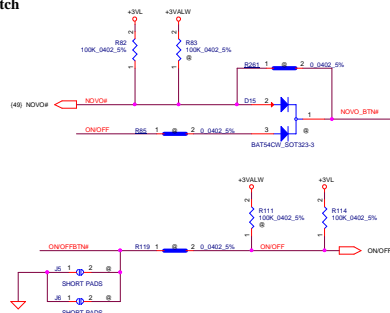
Delete SATA ODD

8/14 Update SF

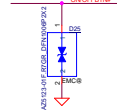
Security Classification	LC Future Center Secret Data			Title	HDD/ODD CONN	
Issued Date	2015/08/20	Deciphered Date	2018/09/20	Size	Document Number	Rev
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY 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.				Custom	FG541/FG741	0.1
				Date:	Thursday, January 03, 2019	Sheet 47 of 69



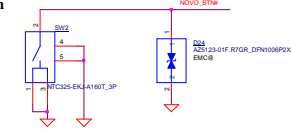
ON/OFF switch



8/16 Del Power Button wei

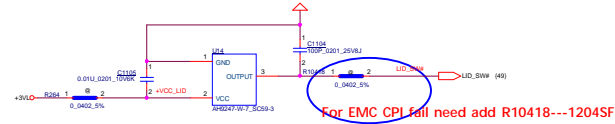


Novo button



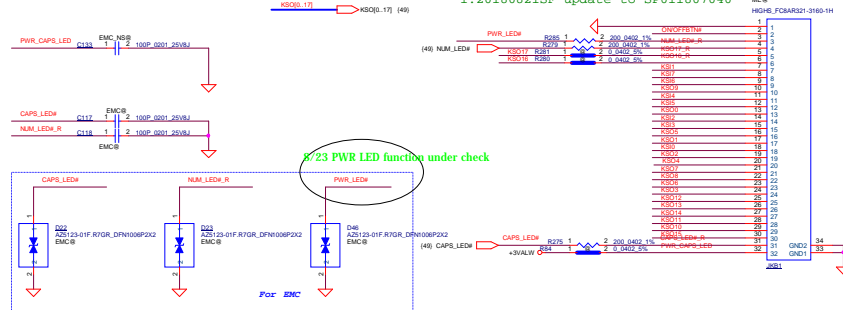
8/31 Update the P/N SN10008W00 wei

LID switch



For EMC CPI fail need add R10418---1204SF

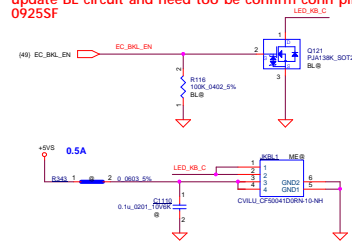
K/B Connector



8/23 PWR LED function under check

KB Backlight Connector

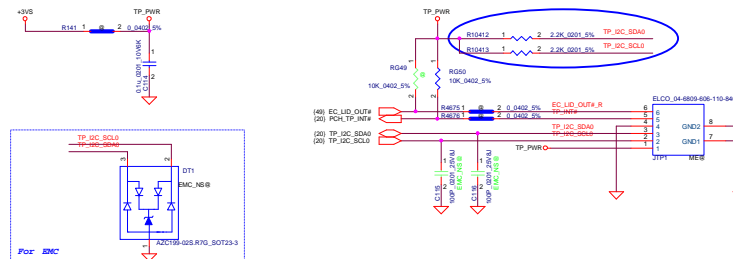
update BL circuit and need too be confirm conn pin define
0925SF



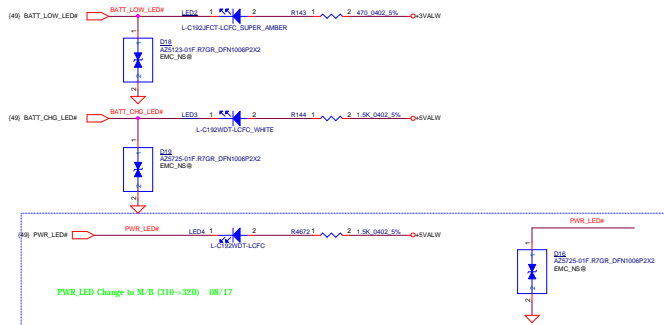
Finger Print Connector

follow OD V1.5 delete finger print function
0927SF

TP/B Connector



For EMC



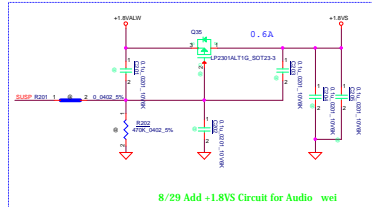
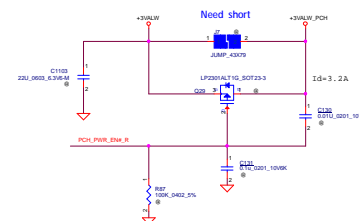
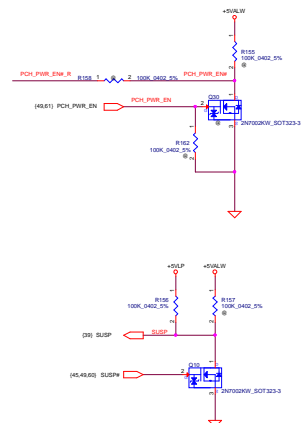
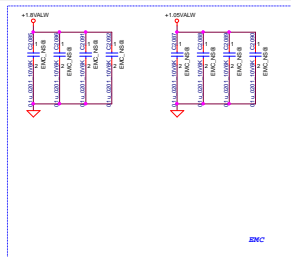
PWR_LED Change to M/B (310->320) 08/17

Security Classification	LC Future Center Secret Data		Title
Issued Date	2015/08/20	Deciphered Date	2018/09/20
<p>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 ORIGINATOR OF SAID INFORMATION TO ANY OTHER PERSON OR ENTITY WITHOUT THE WRITTEN CONSENT OF LC FUTURE CENTER. ANY UNAUTHORIZED REPRODUCTION, DISSEMINATION, OR DISCLOSURE OF ANY INFORMATION CONTAINED HEREIN TO ANY OTHER PERSON OR ENTITY WITHOUT THE WRITTEN CONSENT OF LC FUTURE CENTER IS PROHIBITED.</p>			<p>KBD/PWR/IO/LED/TP Conn</p> <p>ACFC</p>
Doc. Number	PG541		Doc. Number
		PG541/PG741	

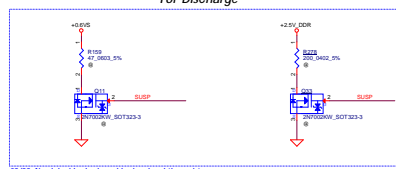
delete Load Switch 5VS and 3VS 20181101SF

Load Switch
+5VALW To +5VS
+3VALW To +3VS

+3VS, C173 --> 2.74ms
+5VS, C176 --> 2.03ms
VIN 5V and 3.3V (VBAS-5V), IMAK(per channel)-6A, Rds-16mohm

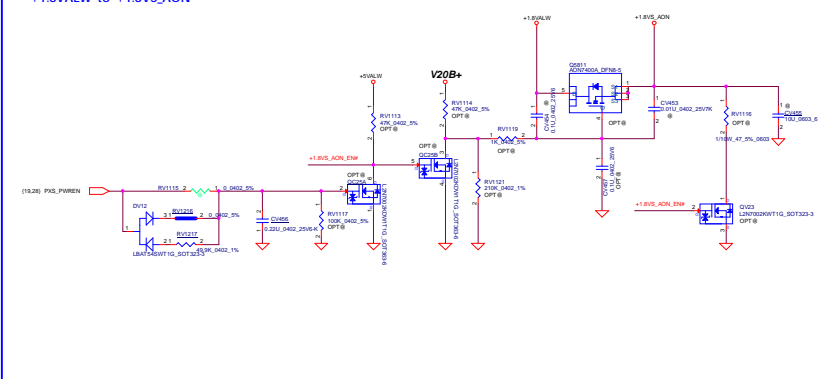


For DisCharge



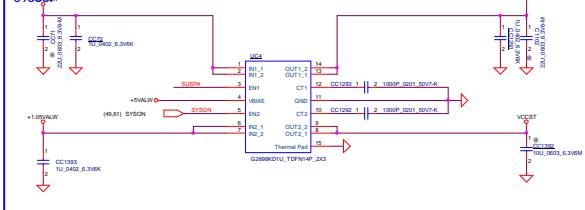
08/29 Need double check enable signal and the resistance

+1.8VALW to +1.8VS_AON

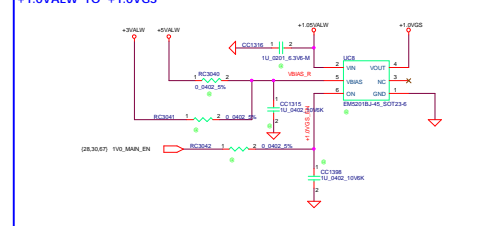


delete reserved for VCCSTG & VCCST 0928SF

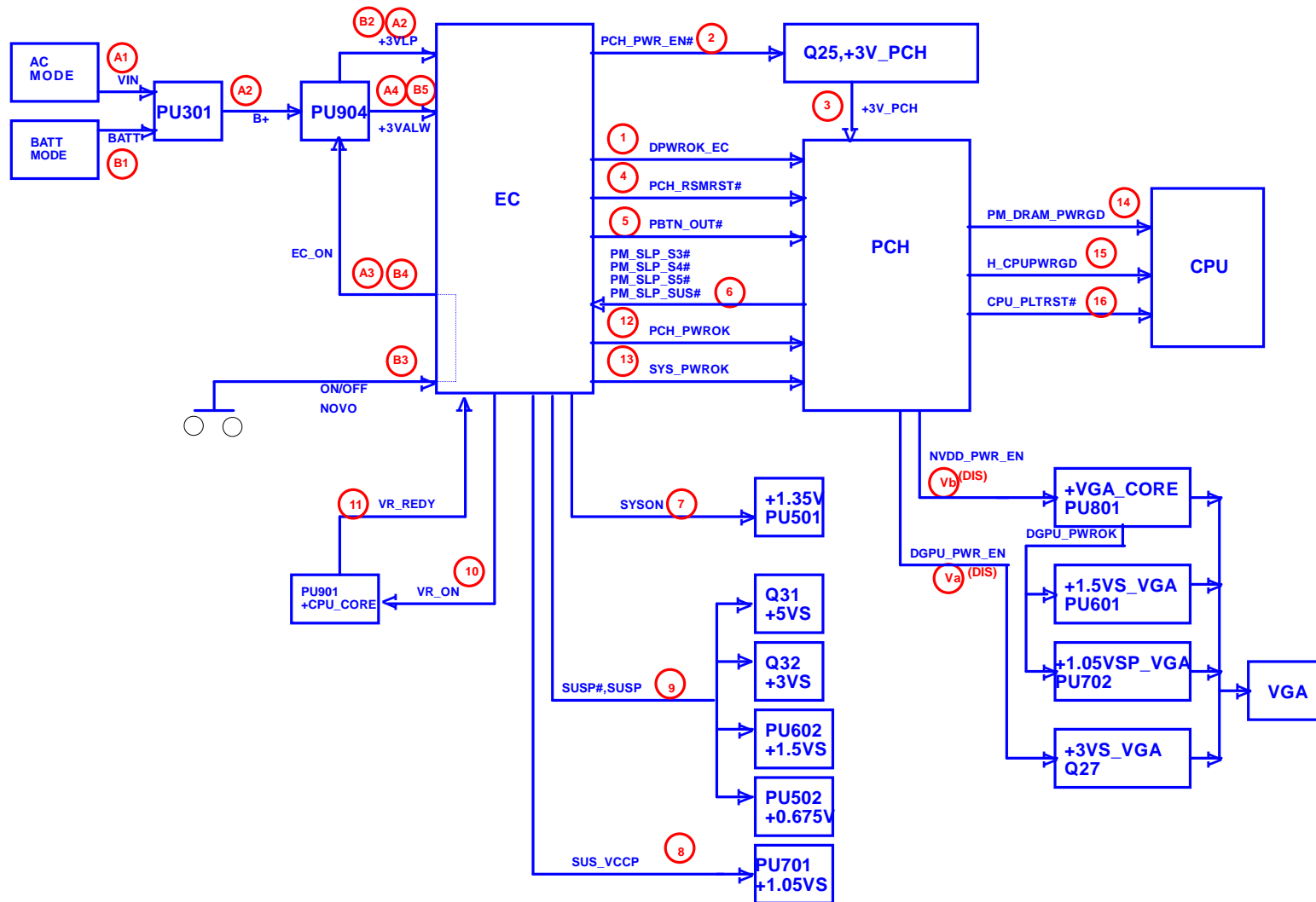
VCCSTG & VCCST change to Dual Switch
0906SF




+1.0VALW TO +1.0VGS



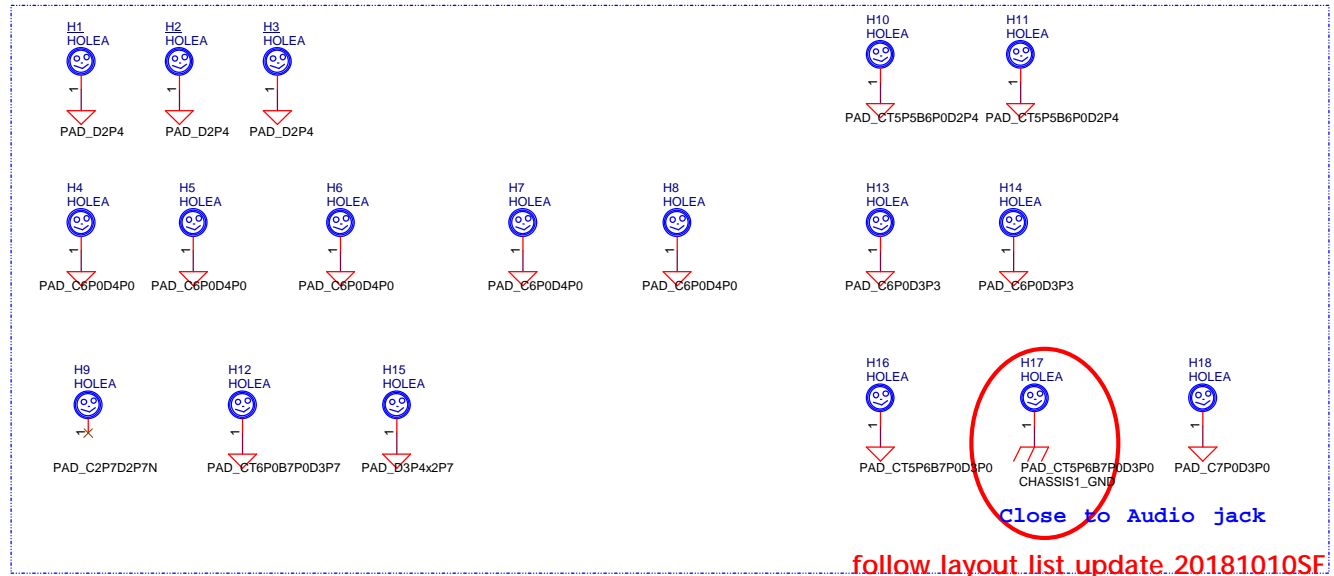
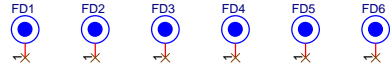
Security Classification	LC Future Center Secret Data		Title
Issued Date	2015/08/20	Dispersed Date	2016/09/20
<small>THE BASIS OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER AND CONFIDENTIAL. ANY REUSE OF ENGINEERING DRAWING WITHOUT THE WRITTEN PERMISSION OF LC FUTURE CENTER IS STRICTLY PROHIBITED. THE BASIS OF THE CONFIDENTIALITY OF THE DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER AND CONFIDENTIAL. ANY REUSE OF ENGINEERING DRAWING WITHOUT THE WRITTEN PERMISSION OF LC FUTURE CENTER IS STRICTLY PROHIBITED.</small>			Doc Number
			PG541/P0741
			Rev
			01



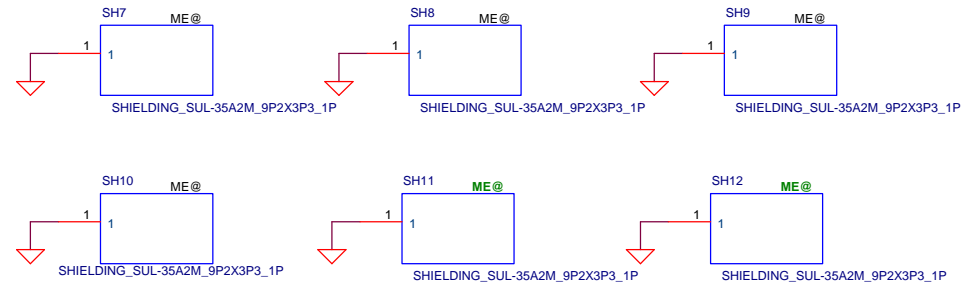
Security Classification	LC Future Center Secret Data			Title	
Issued Date	2015/08/20	Deciphered Date	2018/09/20	Power sequence block	
<small>THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE 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: Custom Document Number: FG541/FG741 Date: Thursday, January 03, 2019
					Rev: 0.1 Sheet: 52 of 69

GPU Thermal Holes2 Close to RJ45
CPU Thermal Holes3 WLAN Standoff

PCB Federal Mark PAD

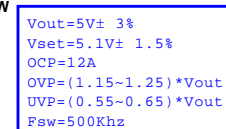


USB3.0 Shielding




DDR4 Shielding

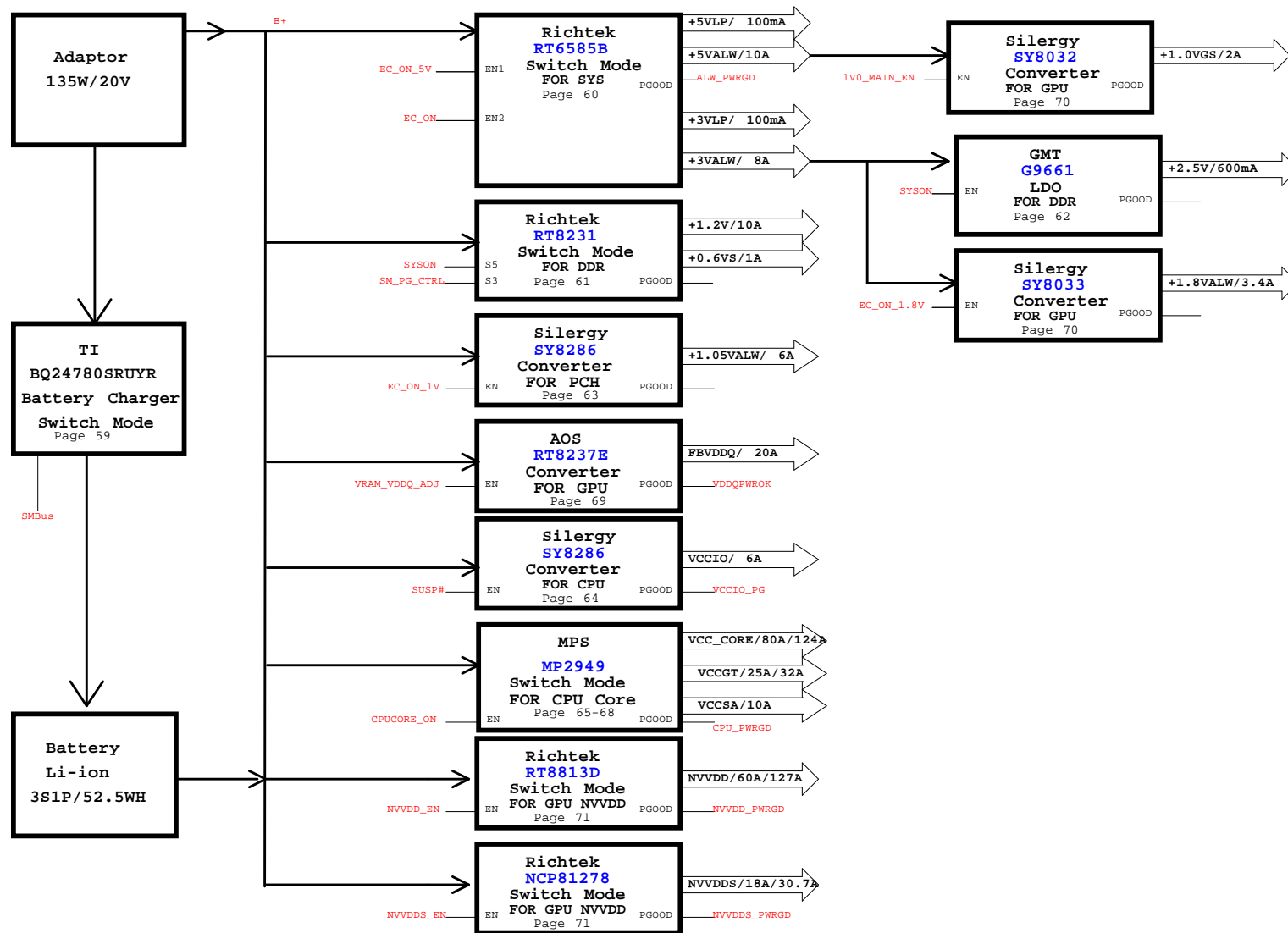
Security Classification		LC Future Center Secret Data		Title	
Issued Date	2015/08/20	Deciphered Date	2018/09/20	Hole	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY 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
				Date:	Thursday, January 03, 2019
				Sheet	54 of 69
				Rev	0.1




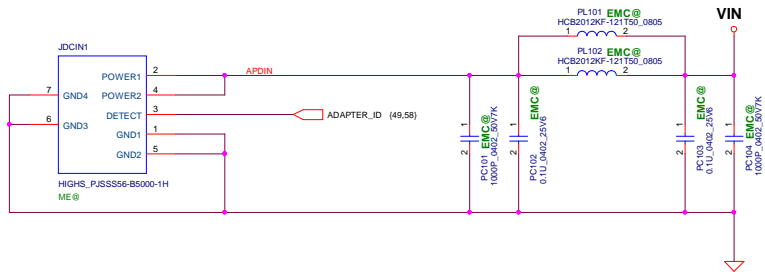
VOUT=5.01V
TDC=8A
OCP=12A
Fsw=600Khz

PDF 文件使用 "pdfFactory Pro" 试用版本创建 www.fineprint.cn

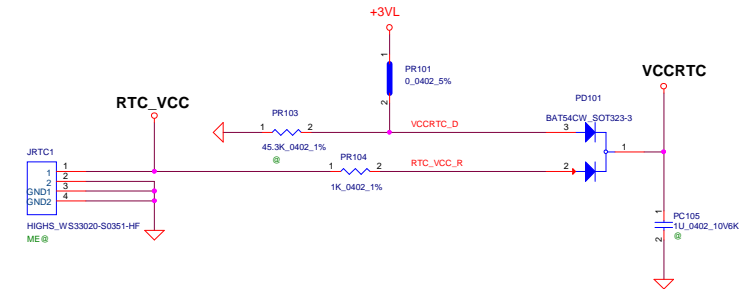
Security Classification		LC Future Center Secret Data		Title	
Issued Date		Discharged Date		Cover Page	
2015/06/20		2016/06/20			
<small>THE SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THE SHEET MAY NOT BE REPRODUCED, COPIED, 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 OF LC FUTURE CENTER. ANY UNAUTHORIZED DISCLOSURE OR USE OF THIS INFORMATION MAY BE SUBJECT TO PROSECUTION UNDER APPLICABLE LAWS.</small>					
Doc. No.		Drawing Number		PG541/P0741	
Rev.		Revision		01	



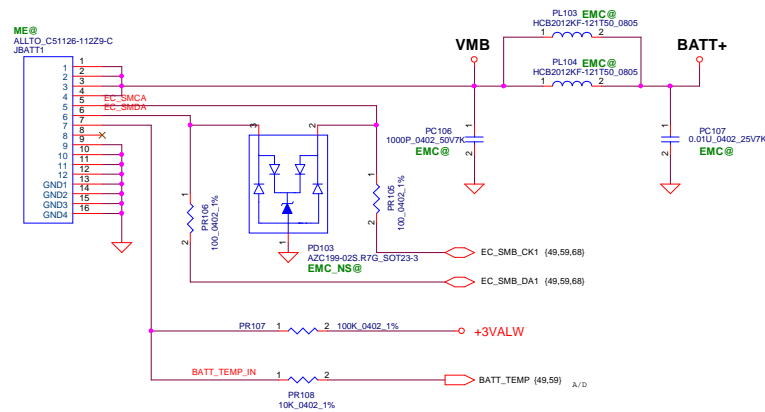
Security Classification	LC Future Center Secret Data		Title	 Power Diagram
Issued Date	2015/02/26	Deciphered Date	2018/09/20	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM 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 Document Number Rev
				Customer FG541/FG741 Date Wednesday, February 27, 2018 10:57:57 AM



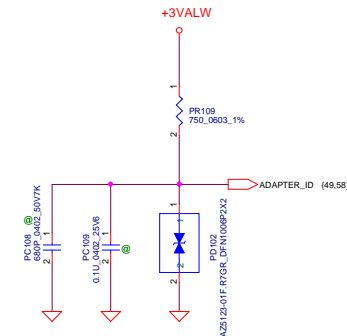
DC IN:1.DC IN connect apply for PN HIGHS_PJSS56-B5000-1H_5P-T ,need replace connector rate current 7A



RTC:1. 0ohm delete
2.the max VCCRTC < 3.2V specification
3.RTC cable 35mm

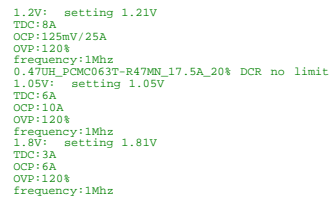


battery IN:
1.20180821SF update to SP011808066
2.battery connector 12pin per pin 4.5A

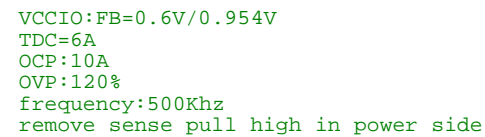


ADP_ID:1. cost down solution
2.EC initial ID function

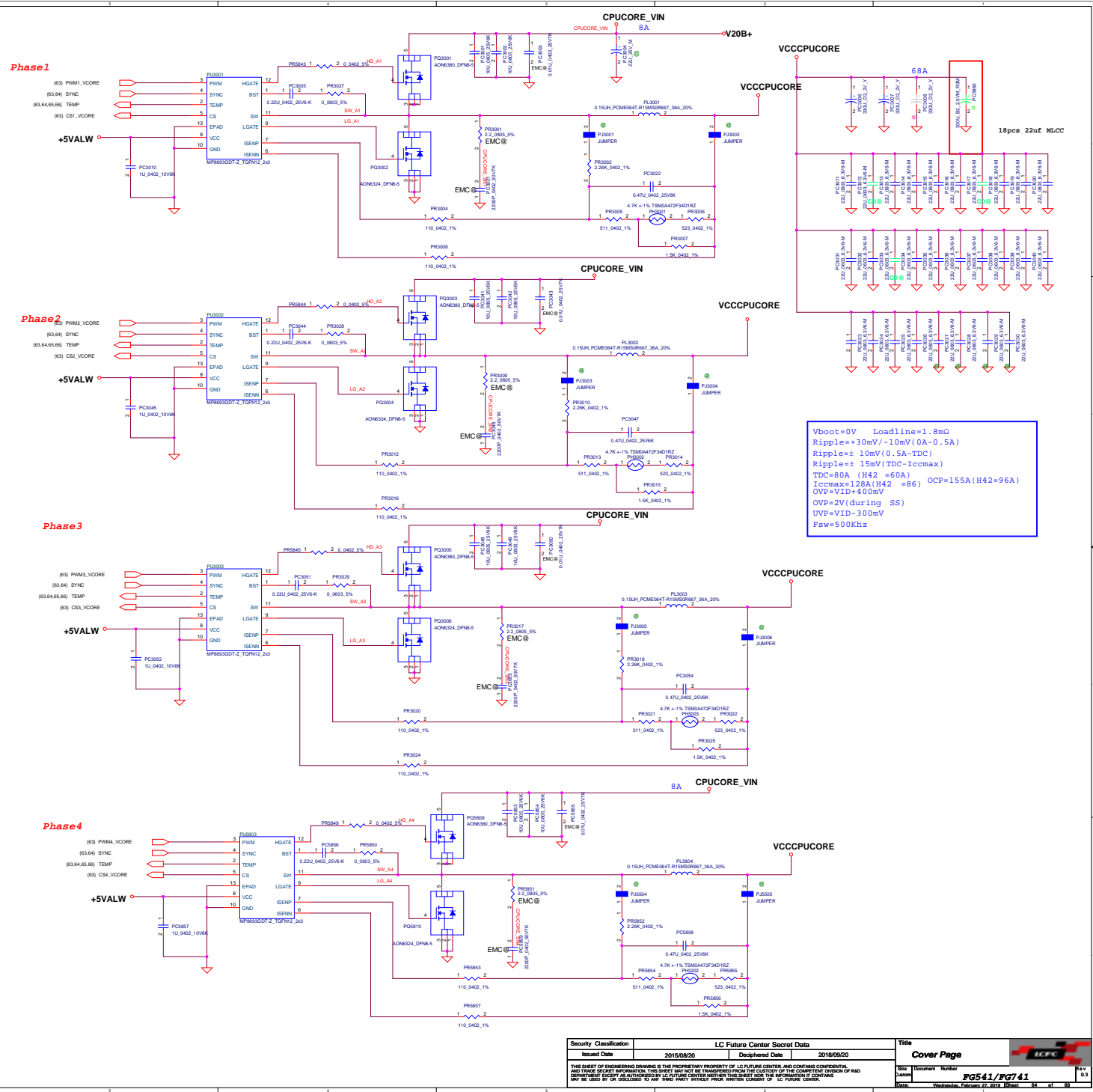
Security Classification		LC Future Center Secret Data		Title	
Issued Date		2015/08/20	Deciphered Date		2018/09/20
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY 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		Document Number		Rev	
		FG541/FG741		1.0	
Date:		Wednesday, February 27, 2019		Sheet 58 of 69	

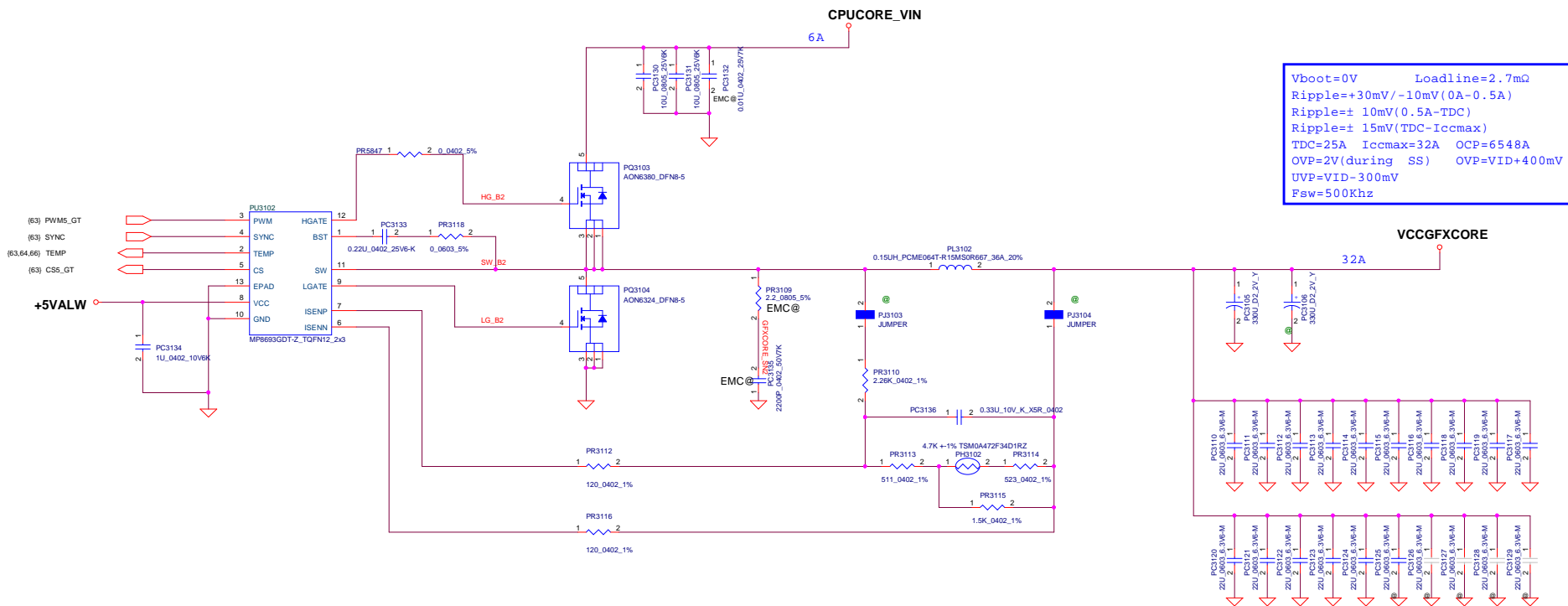



PDF 文件使用 "pdfFactory Pro" 试用版本创建 www.fineprint.cn

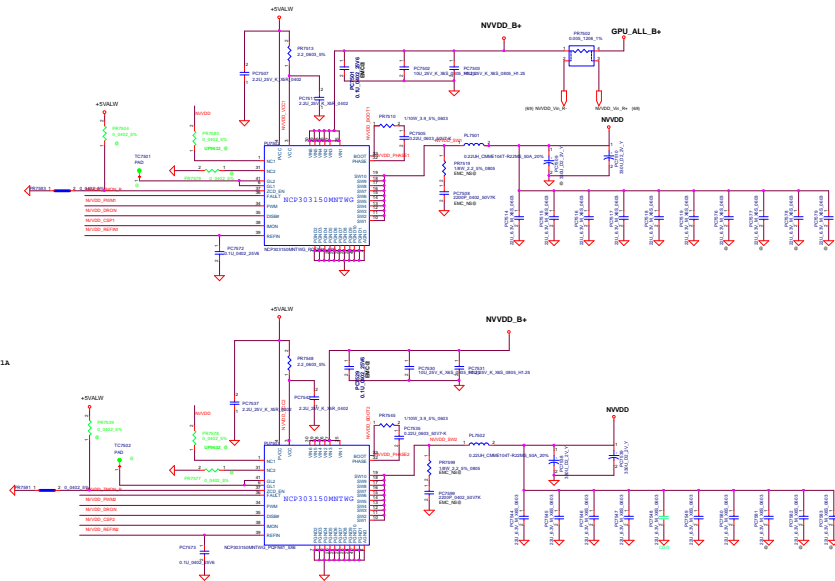
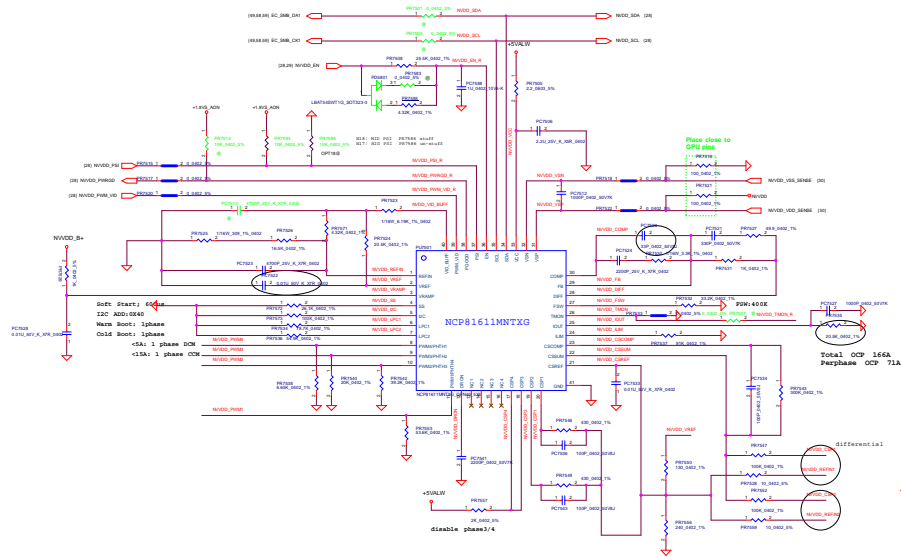


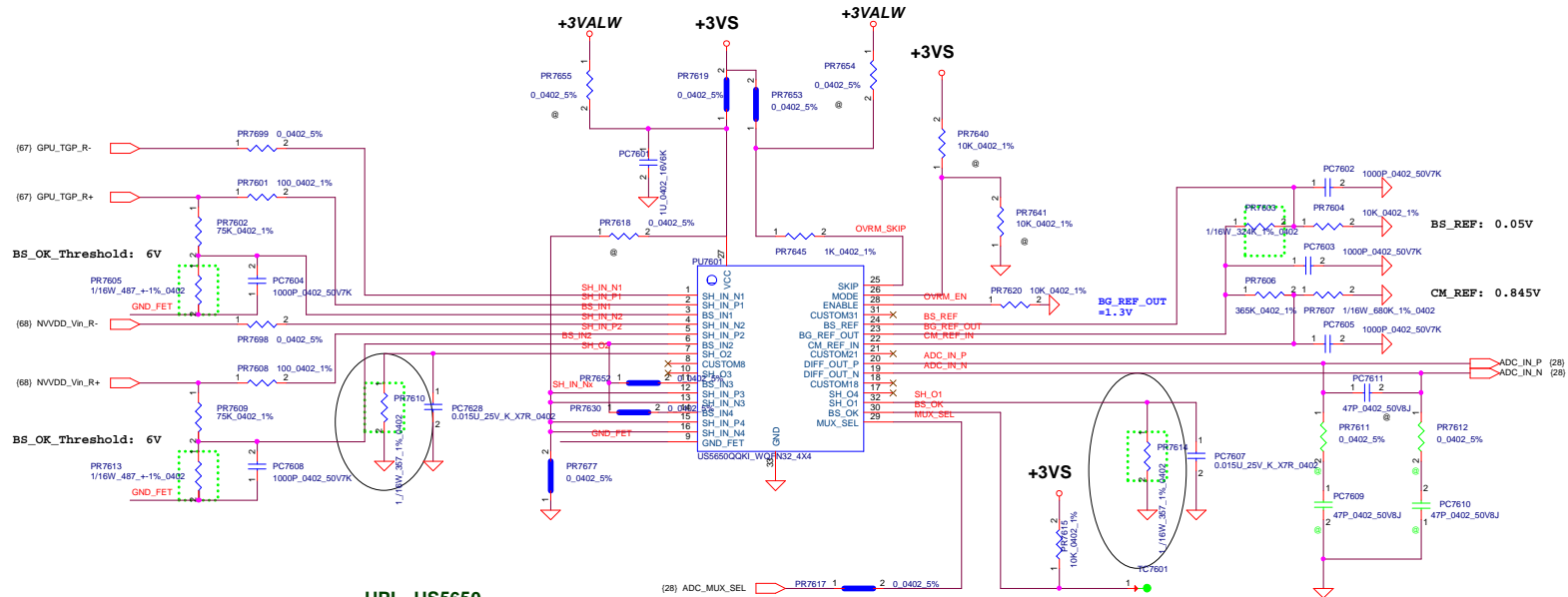
PDF 文件使用 "pdfFactory Pro" 试用版本创建 www.fineprint.cn





Security Classification		LC Future Center Secret Data		Title	
Issued Date		2015/08/20		Deciphered Date	
				2018/09/20	
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 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.				Cover Page	
					
				Size	
				Document Number	
				FG541/FG741	
				Rev	
				0.3	
				Date	
				Wednesday, February 27, 2019	
				Sheet	
				65 of 69	





UPI---US5650

PR7605=487

PR7613=487

PR7610=357ohm for Lower 70W 215 for 75W to 90W 165 for 100W to 110W

PR7614=357ohm for Lower 70W 215 for 75W to 90W 165 for 100W to 110W

PR7603=324K

PR7602=75K

PR7609=75K

PC7604=1nF

PC7608=1nF

ON---NCP45491

PR7605=649

PR7613=649

PR7610=475ohm for lower 70W 287 for 75W to 90W 221 for 100W to 110W

PR7614=475ohm for lower 70W 287 for 75W to 90W 221 for 100W to 110W

PR7603=243K

PR7602=75K

PR7609=75K

PC7604=1nF

PC7608=1nF

Security Classification		LC Future Center Secret Data		Title	
Issued Date	2015/08/20	Deciphered Date	2018/09/20	Cover Page	
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.				Size	Document Number
					FG541/FG741
				Date	Wednesday, February 27, 2019 Sheet 69 of 69