

LCFC Confidential

GYG41/GYG51(NM-D131) MB Schematics Document

Tiger Lake UP3 with DDR4 + Audio AMP + TBT

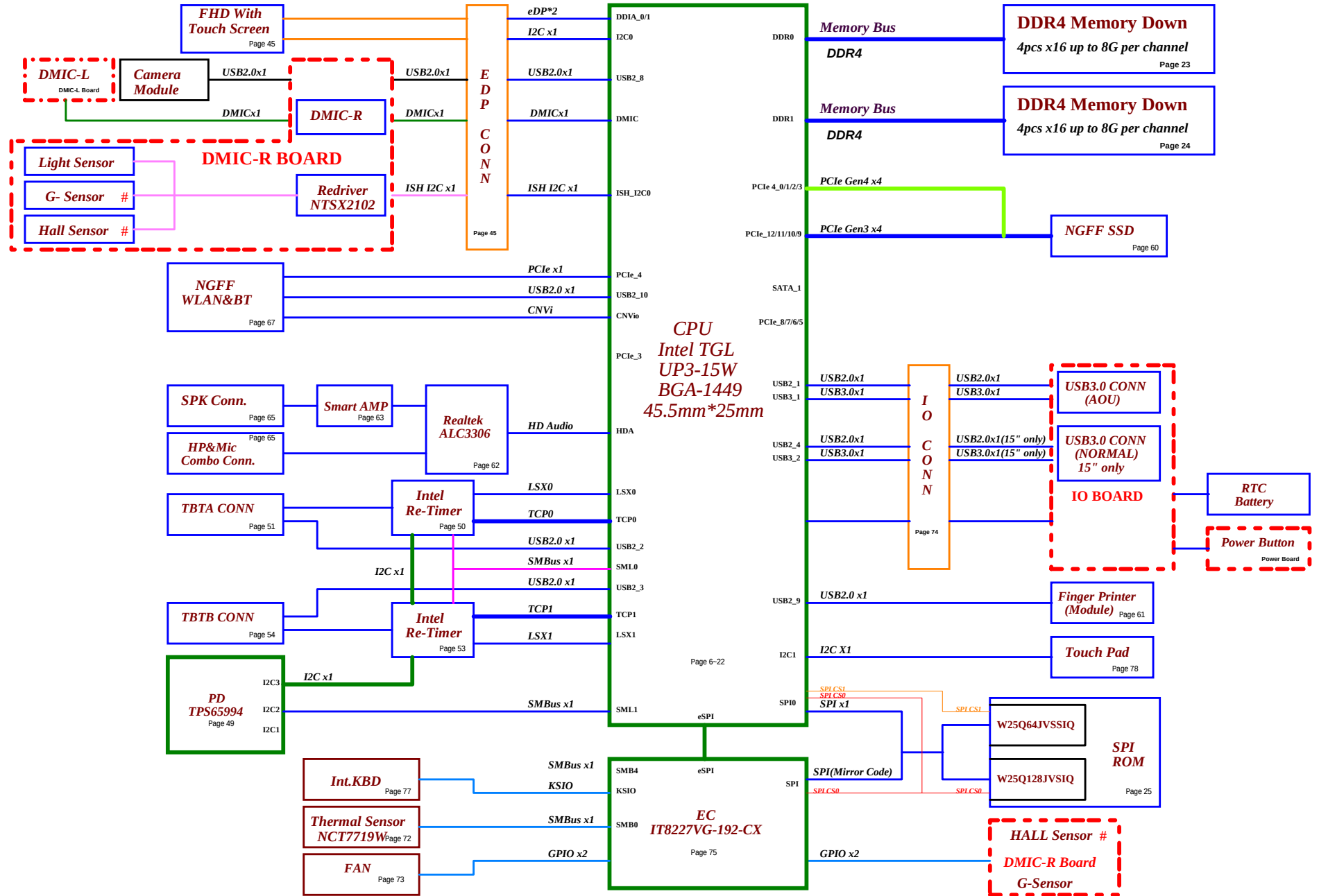
2020-02

REV: 0.2

Security Classification	LC Future Center Secret Data			Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL	
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 RESEARCH 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.				Sheet	Document Number
				Date:	Wednesday, March 18, 2020
				Sheet	1 of 103
				Rev	0.2

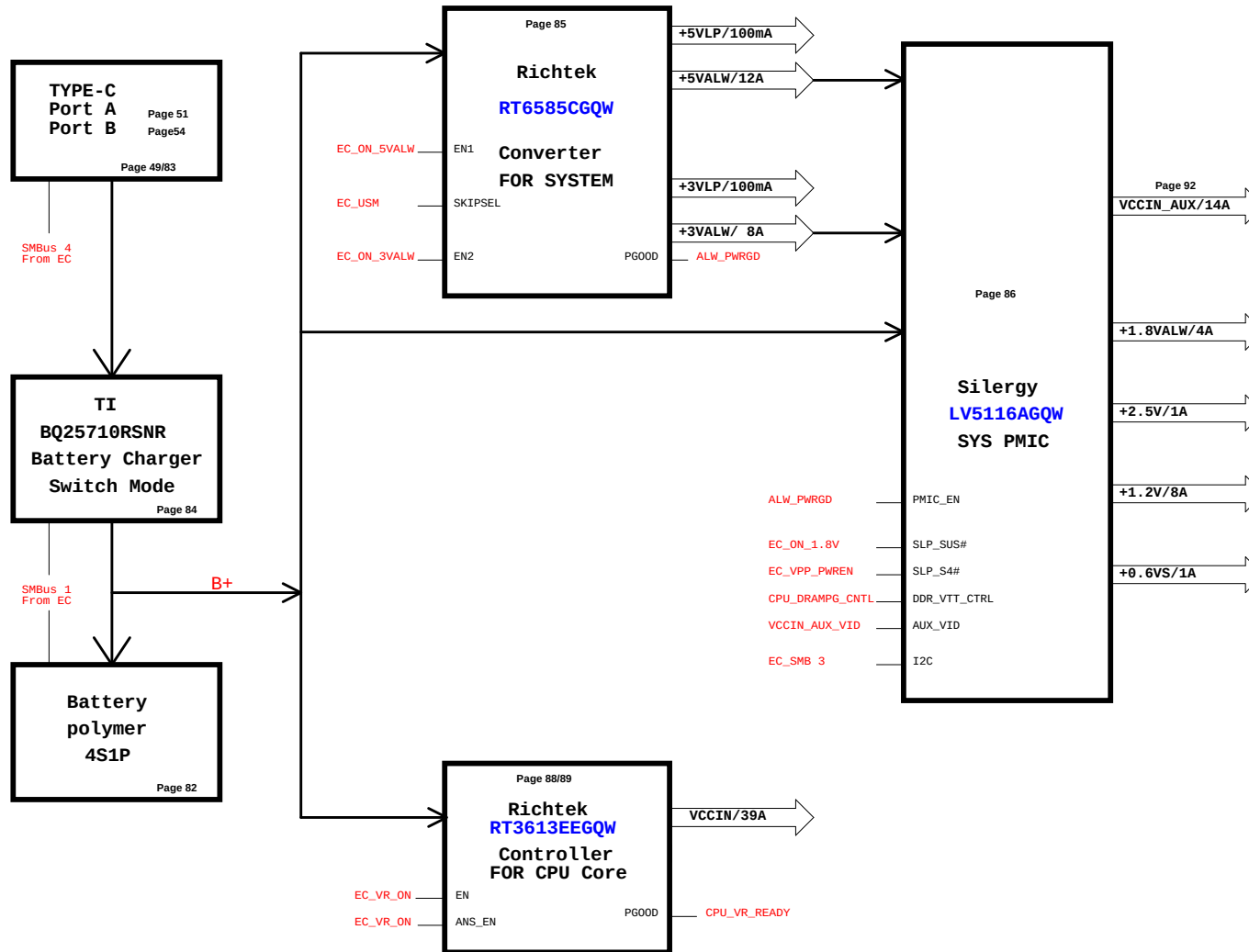
Cover Page

Block Diagram_EE



Security Classification		LC Future Center Secret Data		Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL	
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 LC FUTURE CENTER 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.				Document Number	Block Diagram_EE
				Date	Wednesday, March 18, 2020
				Sheet	2 of 101

Block Diagram_Power



Security Classification		LC Future Center Secret Data		Title			
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL			
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 RICHTEK 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.				Figure C	Document Number		
				Block Diagram PWR		Rev	
				Date	Wednesday, March 18, 2020	Sheet	3 of 103

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

Power Plane State	B+ +3VL +5VL	+3VALW +5VALW	+3VSUS +3VALW_PCH +1.8VALW +1.8VALW_PCH	+1.2V +2.5V_DDR +VCCST_CPU	+5VS +3VS +1.8VS +VCCIN +VCCIN_AUX	+VCCSTG
S0	0	0	0	0	0	0
S0Ix	0	0	0	0	0	X ***
S3	0	0	0	0	X	X
S3 Battery only	0	0	0	0	X	X
S5 S4 AC Only	0	0	X ***	X	X	X
S5 S4 Battery only	0	0	X	X	X	X
S5 S4 AC & Battery don't exist	X	X	X	X	X	X

HSIO Matrix

HSIO PORT	Function
USB2.0	1 USB3.0 A0U Port
	2 TBT A
	3 TBT B
	4 USB3.0 DB Port
	5 NC
	6 NC
	7 NC
	8 Camera
	9 Finger Print
	10 Bluetooth
USB3.0	1 USB3.0 A0U Port
	2 USB3.0 DB Port
	3 NC
	4 WLAN
PCH PCIE3	5 NC
	6 NC
	7 NC
	8 NC
	9
	10 SSD
	11
	12
CPU PCIE4	1
	2 SSD(Reserved)
	3
	4

SMBUS Control Table

Source	EC IT8227C				PCH			PD TPS65994
	EC_SMB_0 +3VS	EC_SMB_1 +3VL_EC	EC_SMB_3 +3VL_EC	EC_SMB_4 +3VL_EC	PCH_SML_0 +3VALW_PCH	PCH_SML_1 +3VALW_PCH	ISH_I2C_0 +3VS	PD_I2C_3 VCC3_LD0_PD
DGPU								
Memory Down	X	X	X	X	X	X	X	X
SODIMM								
BATT	X	V +3VL_EC	X	X	X	X	X	X
Charger	X	V +3VL_EC	X	X	X	X	X	X
WLAN	X	X	X	X	X	X	X	X
PMIC	X	X	V +3VL_EC	X	X	X	X	X
IMVP9	X	X	X	X	X	X	X	X
Thermal Sensor	V +3VS	X	X	X	X	X	X	X
TOF								
Acce Sensor	X	X	X	X	X	X	V +3VALW_PCH	X
Light Sensor	X	X	X	X	X	X	V +3VALW_PCH	X
Re-Timer	X	X	X	X	V 3VALW_TBTA	X	X	V VCC3_LD0_PD
PD	X	X	X	V +3VL_EC	X	V VCC3_LD0_PD	X	X

EC SMBus0 address

Device	Address
DGPU	
Thermal Sensor(NCT7718W)	1001_101xb
TOF	

EC SMBus1 address

Device	Address
Smart Battery	0x16
Charger	0x12

EC SMBus3 address

Device	Address
IMVP9	
PMIC	0x34

EC SMBus4 address

Device	Address
PD	TBD

PCH SML0 address

Device	Address
Re-Timer	TBD

PCH SML1 address

Device	Address
PD	TBD

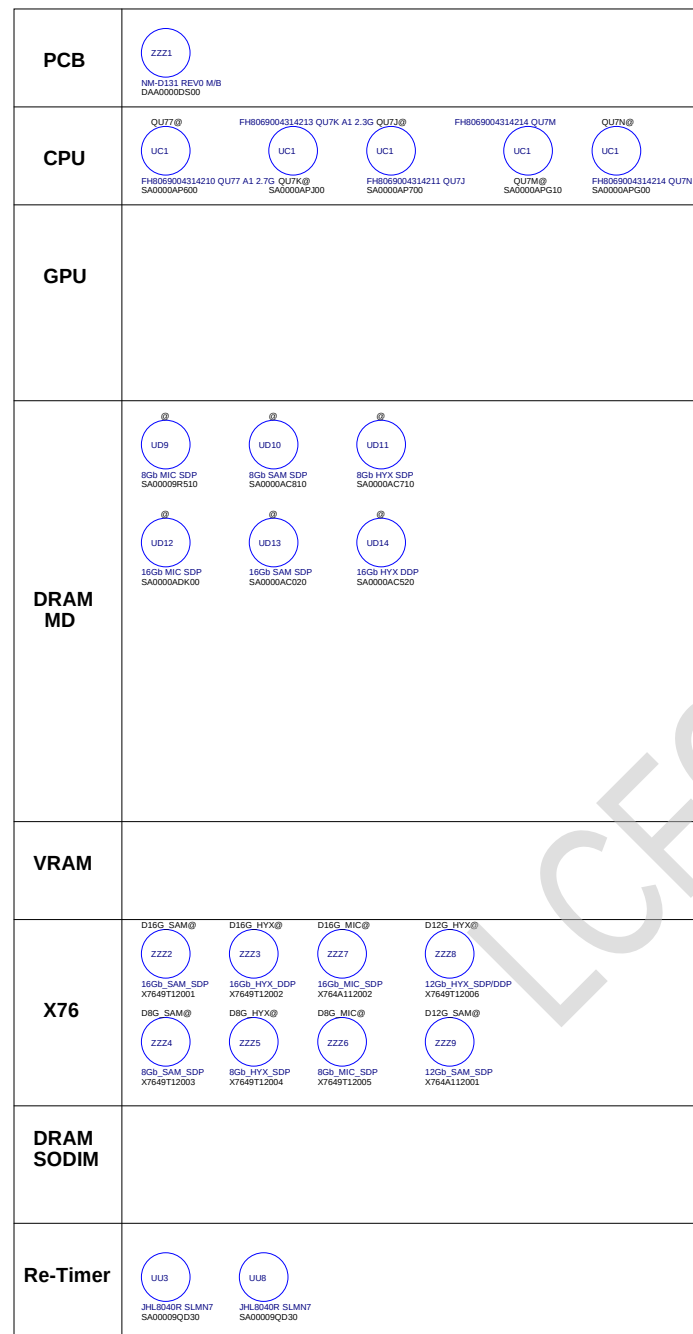
PCH ISH I2C0 address

Device	Address
TOF	
Accelerometer(MB)	001 1000b
Accelerometer(DB)	001 1001b
Light Sensor	1000 100xb

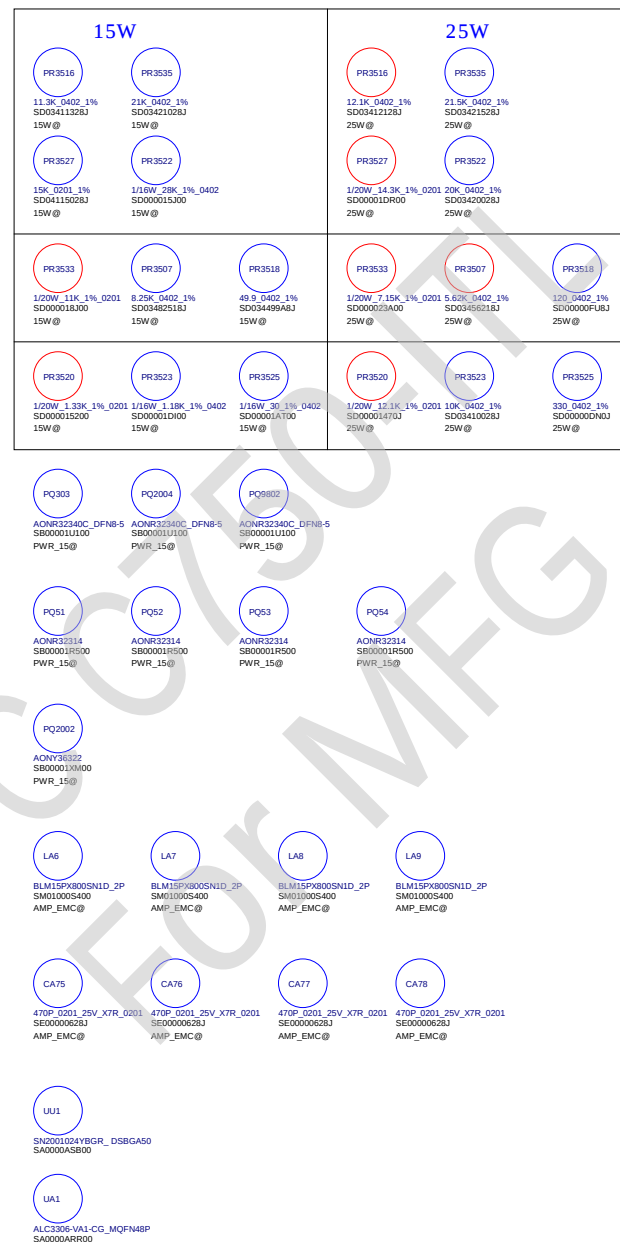
www.teknisi-indonesia.com

Security Classification	LC Future Center Secret Data		Title	Yoga C750-TGL	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Document Number	Rev 0.2
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 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.					Date: Wednesday, March 18, 2020 Sheet 4 of 103

Virtual Symbol_EE

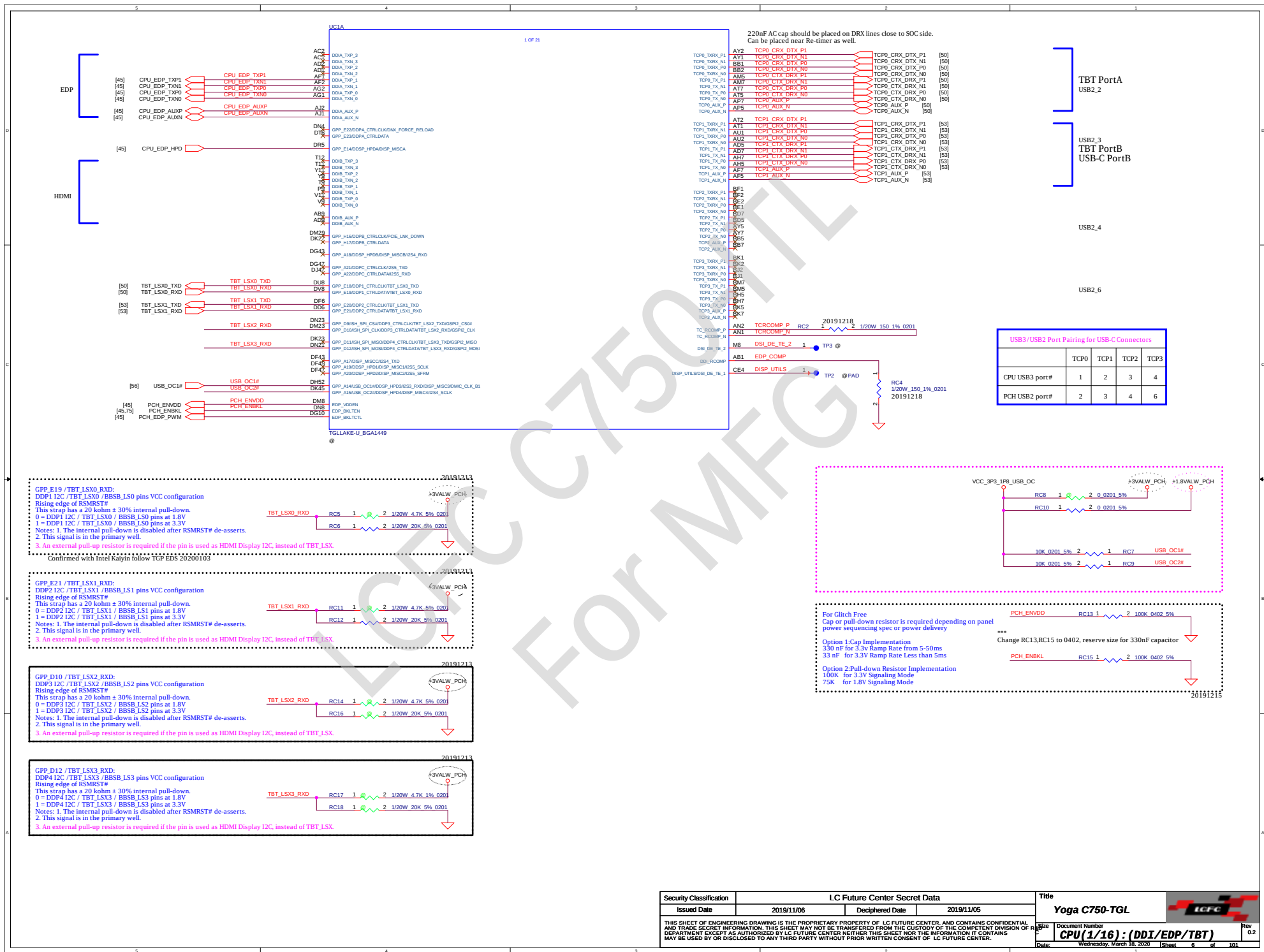


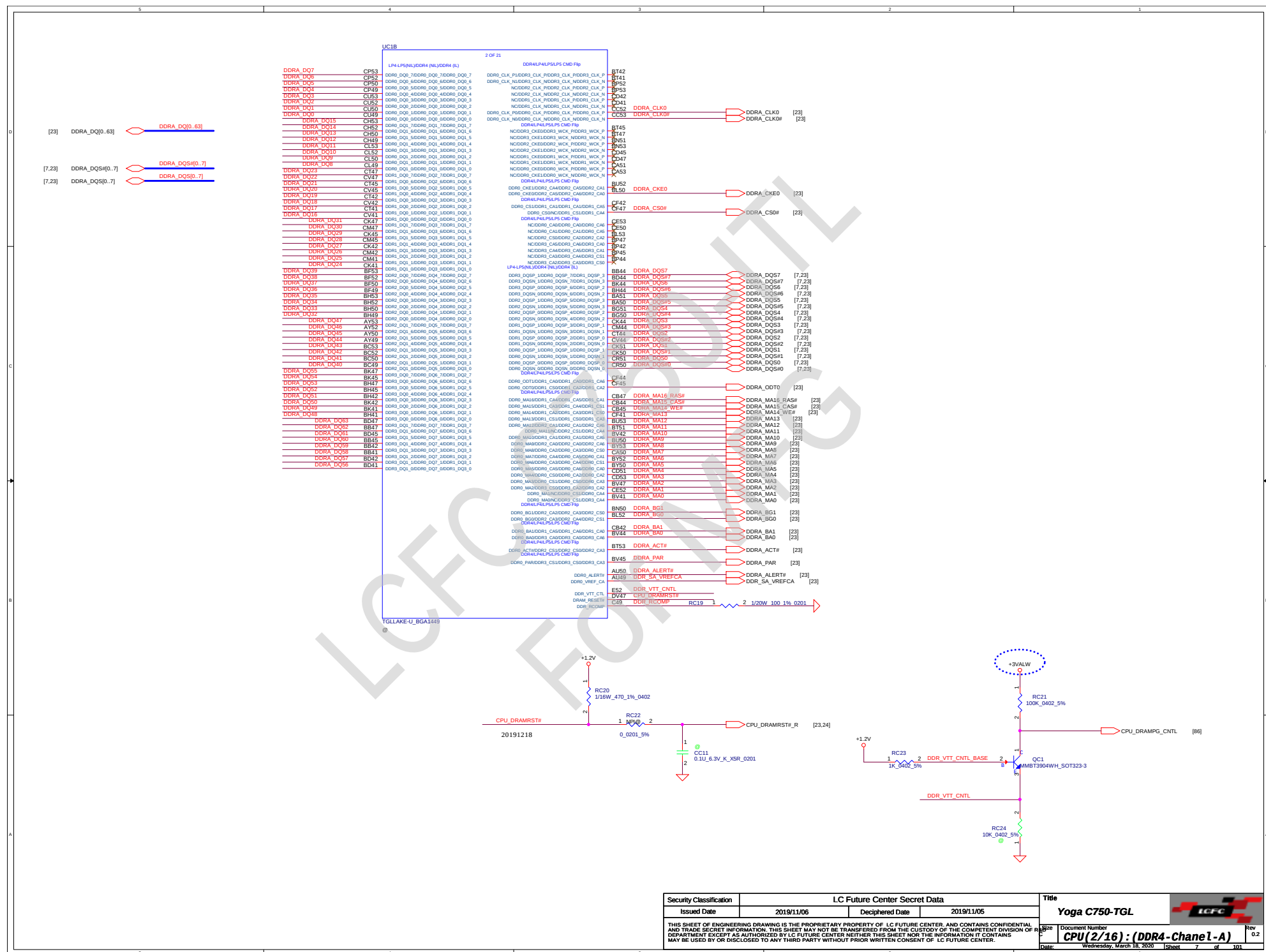
Virtual Symbol_Power



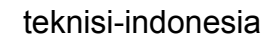
BOM Structure

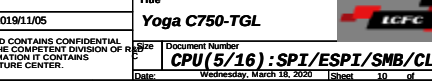
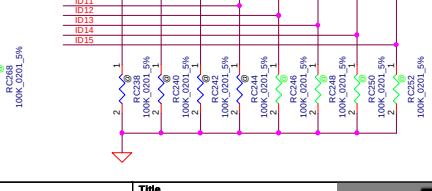
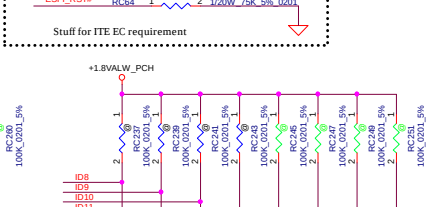
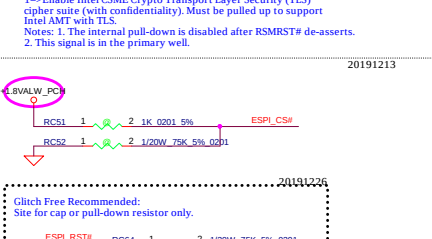
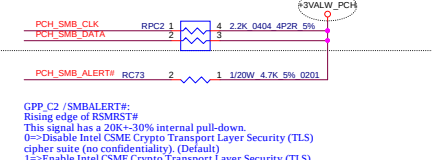
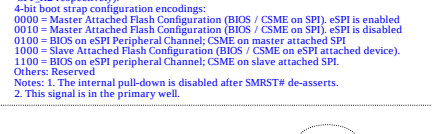
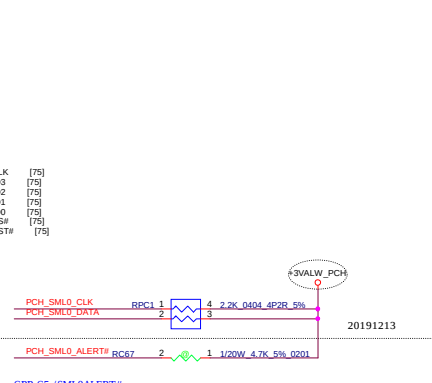
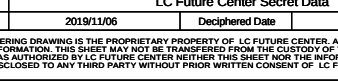
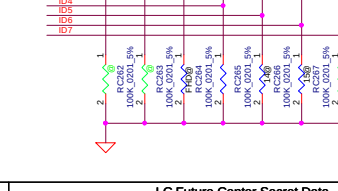
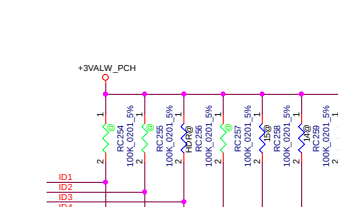
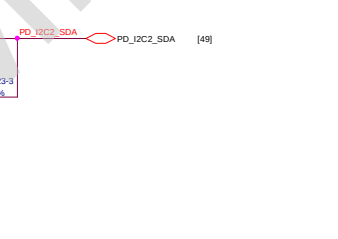
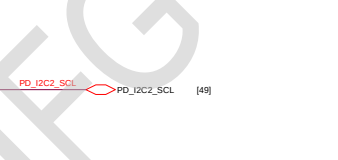
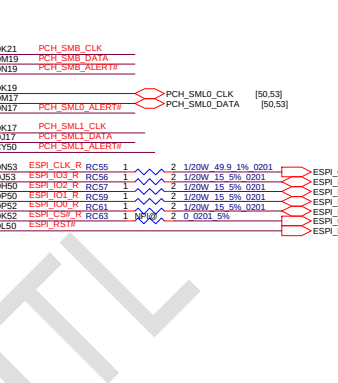
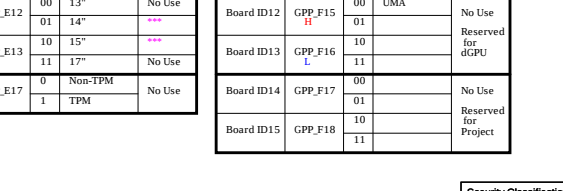
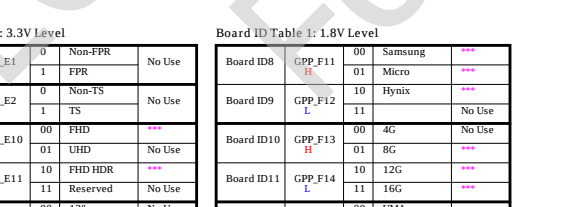
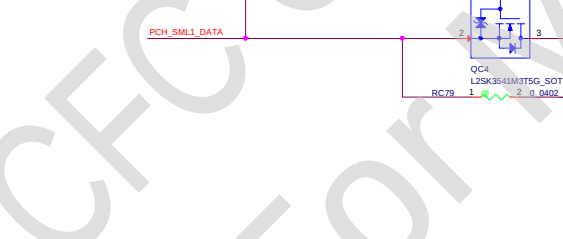
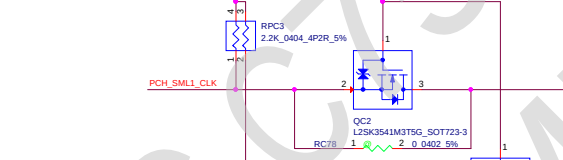
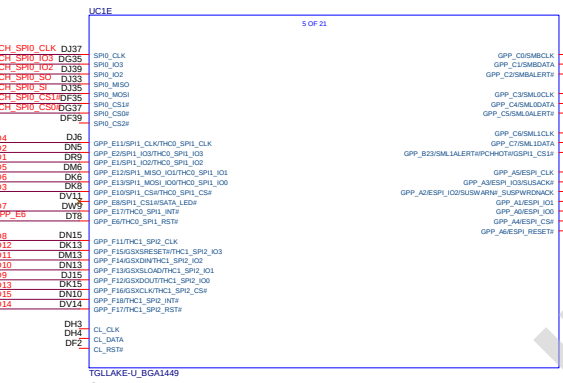
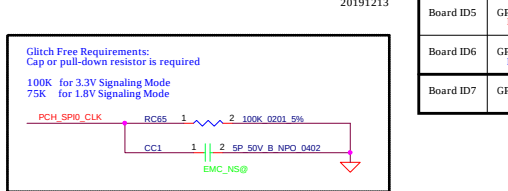
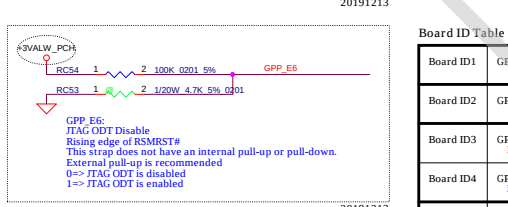
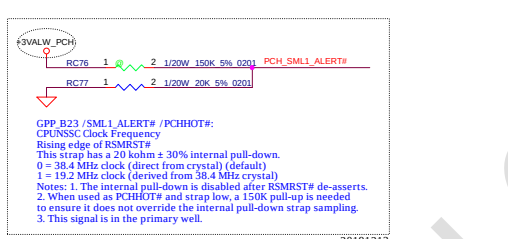
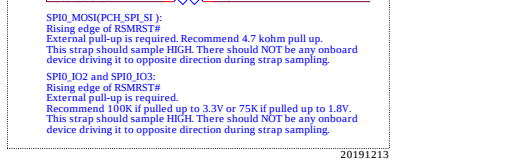
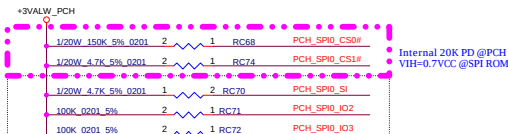
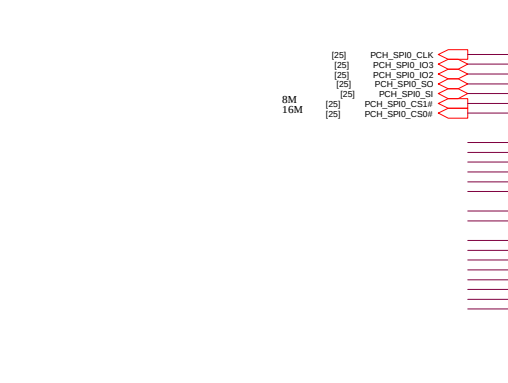
[illegible]





Security Classification	LC Future Center Secret Data			Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL	
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.				Sheet 2 of 2 Document Number CPU(2/16) : (DDR4-Chanel 1 - A)	
				Date: Wednesday, March 18, 2020 Sheet 7 of 101	Rev 0.2





Board ID Table 1: 3.3V Level

Board ID	GPP_E1	0	Non-FPR	No Use
Board ID1	GPP_E1	1	FPR	No Use
Board ID2	GPP_E2	0	Non-TS	No Use
Board ID3	GPP_E10	00	FHD	***
Board ID4	GPP_E11	01	UHD	No Use
Board ID5	GPP_E12	10	FHD HDR	***
Board ID6	GPP_E13	11	Reserved	No Use
Board ID7	GPP_E17	0	Non-TPM	No Use
		1	TPM	No Use

Board ID Table 1: 1.8V Level

Board ID	GPP_E1	00	Samsung	***
Board ID8	GPP_E1	01	Micro	***
Board ID9	GPP_E12	10	Hynix	***
Board ID10	GPP_E13	11	No Use	No Use
Board ID11	GPP_E14	00	4G	No Use
Board ID12	GPP_E15	01	8G	***
Board ID13	GPP_E16	10	12G	***
Board ID14	GPP_E17	11	16G	***
Board ID15	GPP_E18	00	UMA	No Use
		01	Reserved for dGPU	No Use
		10	Reserved for Project	No Use
		11	Reserved for Project	No Use

GPP_C5 / SML0ALERT#:
Rising edge of RSMRST#
This strap has a 20K+-30% internal pull-down.
This is bit 0 (LSB) of a total of 4-bit encoded pin straps for boot configuration.
This strap is used in conjunction with Boot Strap 1,2,3, (on GPP_H0, GPP_H1, GPP_H2 respectively).
4-bit boot strap configuration encodings:
0000 = Master Attached Flash Configuration (BIOS / CSM on SPI) eSPI is enabled
0010 = Master Attached Flash Configuration (BIOS / CSM on SPI) eSPI is disabled
0100 = BIOS on eSPI Peripheral Channel; CSM on master attached SPI
1000 = Slave Attached Flash Configuration (BIOS / CSM on eSPI attached device).
1100 = BIOS on eSPI peripheral Channel; CSM on slave attached SPI.
Others: Reserved
Notes: 1. The internal pull-down is disabled after RSMRST# de-asserts.
2. This signal is in the primary well.

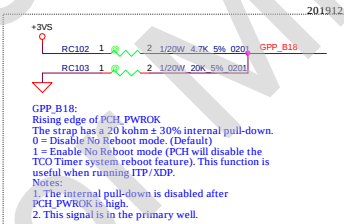
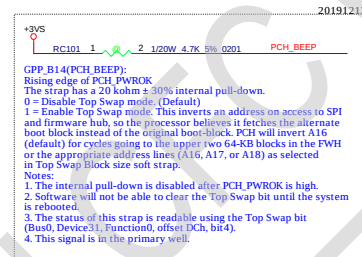
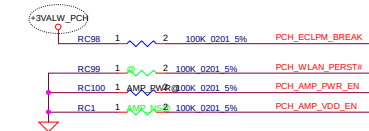
GPP_C2 / SMBALERT#:
Rising edge of RSMRST#
This signal has a 20K+-30% internal pull-down.
0=Disable Intel (CSME Crypto Transport Layer Security (TLS) cipher suite (no confidentiality). (Default)
1=Enable Intel (CSME Crypto Transport Layer Security (TLS) cipher suite (with confidentiality). Must be pulled up to support Intel AMT with TLS.
Notes: 1. The internal pull-down is disabled after RSMRST# de-asserts.
2. This signal is in the primary well.

GPP_B23 / SML1_ALERT# / PCHHOT#:
CPUNSSC Clock Frequency
Rising edge of RSMRST#
This strap has a 20 kohm + 30% internal pull-down.
0 = 38.4 Mhz clock (direct from crystal) (default)
1 = 19.2 Mhz clock (derived from 38.4 Mhz crystal)
Notes: 1. The internal pull-down is disabled after RSMRST# de-asserts.
2. When used as PCHHOT# and strap low, a 150K pull-up is needed to ensure it does not override the internal pull-down strap sampling.
3. This signal is in the primary well.

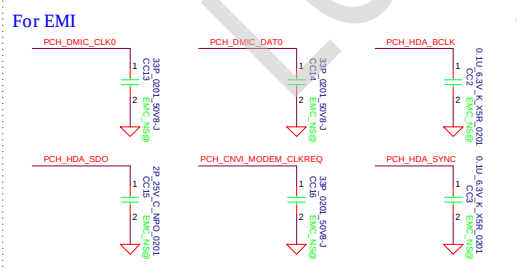
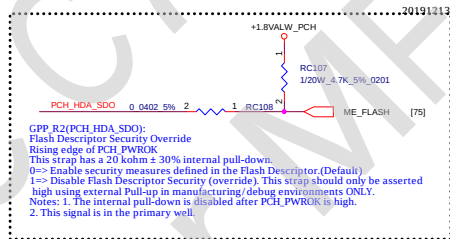
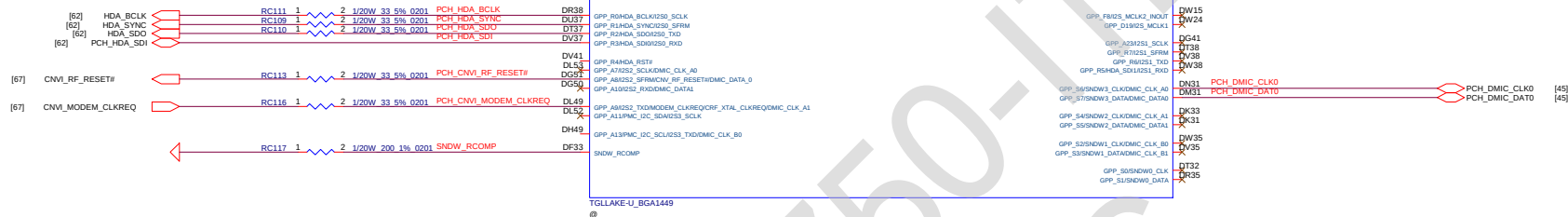
GPP_E6:
JTAG ODT Disable
Rising edge of RSMRST#
This strap does not have an internal pull-up or pull-down.
External pull-up is recommended
0=> JTAG ODT is disabled
1=> JTAG ODT is enabled

Glitch Free Requirements:
Cap or pull-down resistor is required
100K for 3.3V Signaling Mode
75K for 1.8V Signaling Mode

teknisi-indonesia



Security Classification		LC Future Center Secret Data		Title					
Issued Date		2019/11/06		Deciphered Date					
		2019/11/05		Yoga C750-TGL					
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.									
						Document Number		Rev	
						CPU/6/16: I2C/ISH/UART/GPIO		0.2	
						Date		Wednesday, March 18, 2020	
						Sheet		11 of 101	



SSD

GPU

WLAN

LAN

USB3.1 PORT2

USB3.1 PORT AOU

UC11

9 OF 21

TGLLAKE-U_BGA1449

@

UC1H

8 OF 21

TGLLAKE-U_BGA1449

@

USB2P_10

USB2N_10

USB2P_9

USB2N_9

USB2P_8

USB2N_8

USB2P_7

USB2N_7

USB2P_6

USB2N_6

USB2P_5

USB2N_5

USB2P_4

USB2N_4

USB2P_3

USB2N_3

USB2P_2

USB2N_2

USB2P_1

USB2N_1

GPP_EDSATAPCIBSATAG10

GPP_A12SATAPCIBSATAG10

GPP_EDSATAPCIBSATAG10

GPP_A12SATAPCIBSATAG10

GPP_EDSATAPCIBSATAG10

GPP_A12SATAPCIBSATAG10

GPP_EDSATAPCIBSATAG10

GPP_A12SATAPCIBSATAG10

GPP_EDSATAPCIBSATAG10

GPP_A12SATAPCIBSATAG10

GPP_EDSATAPCIBSATAG10

GPP_A12SATAPCIBSATAG10

GPP_EDSATAPCIBSATAG10

GPP_A12SATAPCIBSATAG10

GPP_EDSATAPCIBSATAG10

GPP_A12SATAPCIBSATAG10

GPP_EDSATAPCIBSATAG10

GPP_A12SATAPCIBSATAG10

GPP_EDSATAPCIBSATAG10

GPP_A12SATAPCIBSATAG10

GPP_EDSATAPCIBSATAG10

GPP_A12SATAPCIBSATAG10

GPP_EDSATAPCIBSATAG10

GPP_A12SATAPCIBSATAG10

GPP_EDSATAPCIBSATAG10

GPP_A12SATAPCIBSATAG10

GPP_EDSATAPCIBSATAG10

GPP_A12SATAPCIBSATAG10

GPP_EDSATAPCIBSATAG10

GPP_A12SATAPCIBSATAG10

GPP_EDSATAPCIBSATAG10

GPP_A12SATAPCIBSATAG10

GPP_EDSATAPCIBSATAG10

GPP_A12SATAPCIBSATAG10

GPP_EDSATAPCIBSATAG10

GPP_A12SATAPCIBSATAG10

GPP_EDSATAPCIBSATAG10

GPP_A12SATAPCIBSATAG10

GPP_EDSATAPCIBSATAG10

GPP_A12SATAPCIBSATAG10

GPP_EDSATAPCIBSATAG10

GPP_A12SATAPCIBSATAG10

GPP_EDSATAPCIBSATAG10

GPP_A12SATAPCIBSATAG10

GPP_EDSATAPCIBSATAG10

GPP_A12SATAPCIBSATAG10

GPP_EDSATAPCIBSATAG10

GPP_A12SATAPCIBSATAG10

GPP_EDSATAPCIBSATAG10

GPP_A12SATAPCIBSATAG10

GPP_EDSATAPCIBSATAG10

GPP_A12SATAPCIBSATAG10

GPP_EDSATAPCIBSATAG10

GPP_A12SATAPCIBSATAG10

GPP_EDSATAPCIBSATAG10

GPP_A12SATAPCIBSATAG10

GPP_EDSATAPCIBSATAG10

Security Classification

LC Future Center Secret Data

Issued Date

2019/11/06

Deciphered Date

2019/11/05

Title

Yoga C750-TGL

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

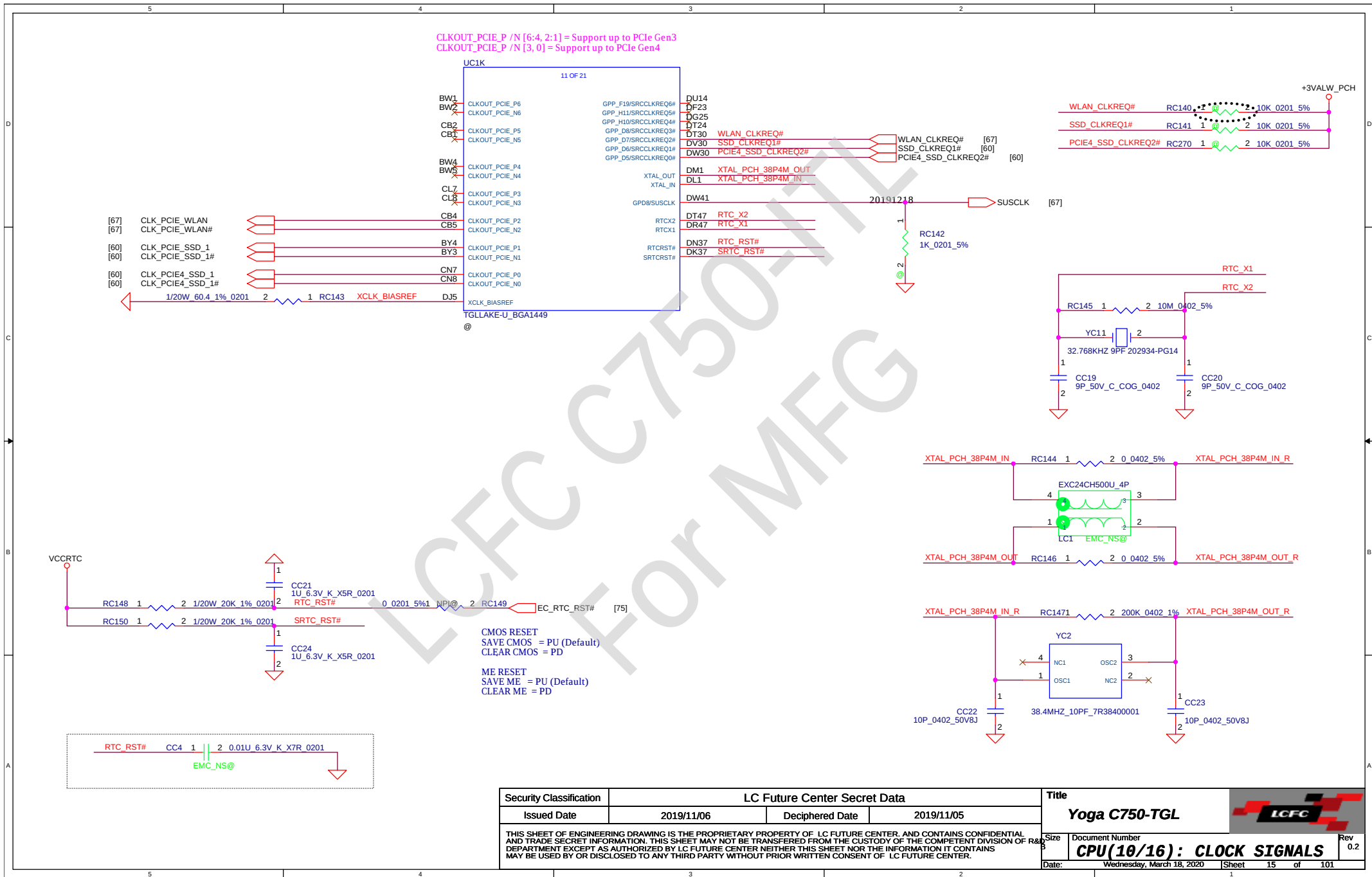
CPU(8/16): PCIE/USB/SATA

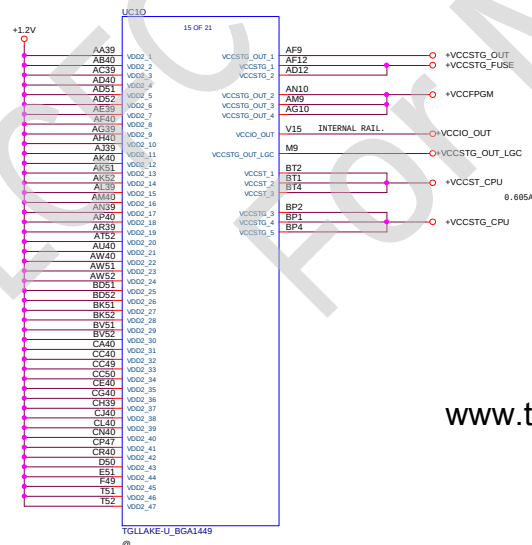
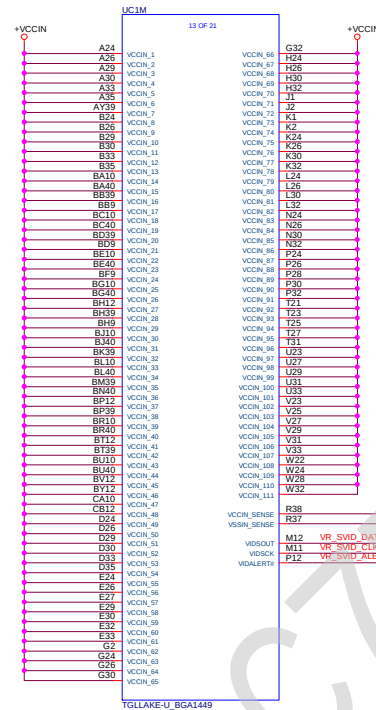
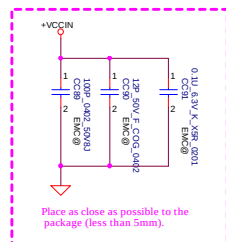
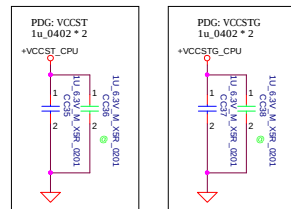
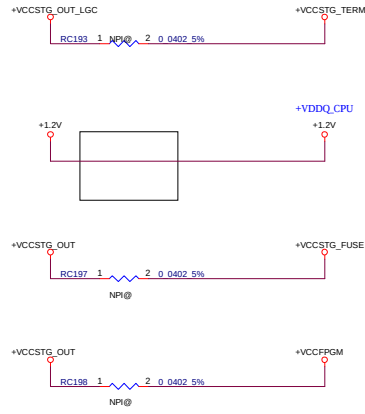
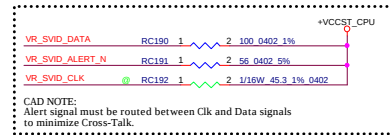
Date:

Wednesday, March 18, 2020 Sheet 13 of 101

Rev

0.2





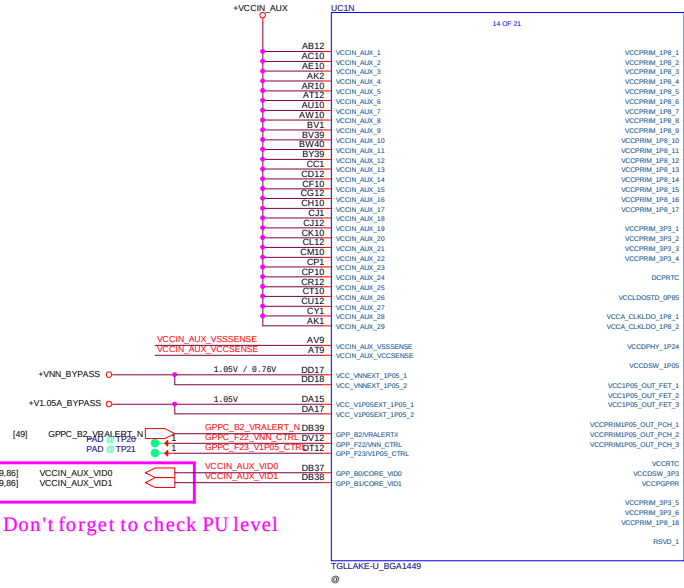
www.teknisi-indonesia.com

Security Classification	LC Future Center Secret Data		Title
Issued Date	2019/11/06	Deciphered Date	2019/11/05
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 LC FUTURE CENTER 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.			Yoga C750-TGL
Document Number	CPU(12/16):CPU Power(1/2)		Rev 0.2
Date:	Wednesday, March 18, 2020	Sheet	17 of 103

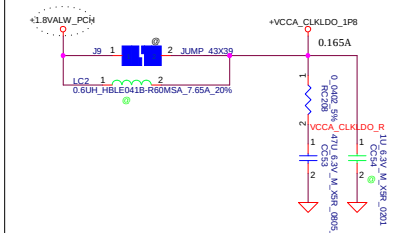
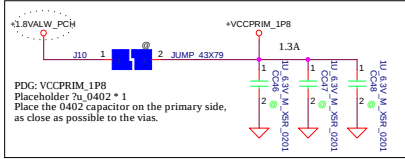
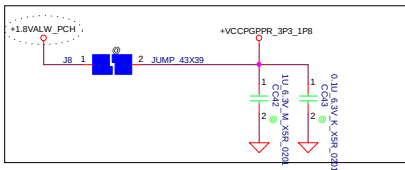
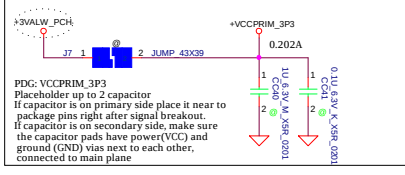
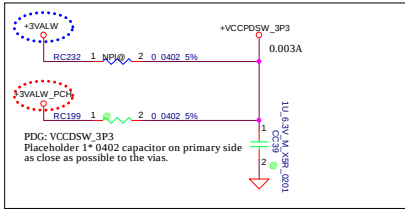
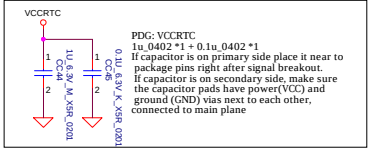
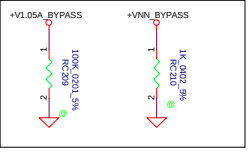
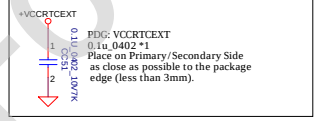
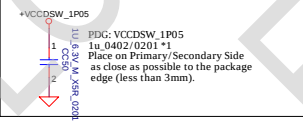
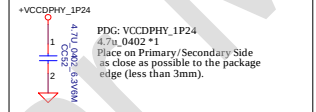
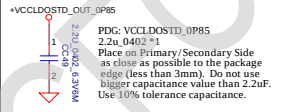
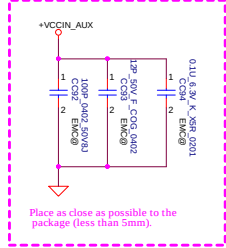
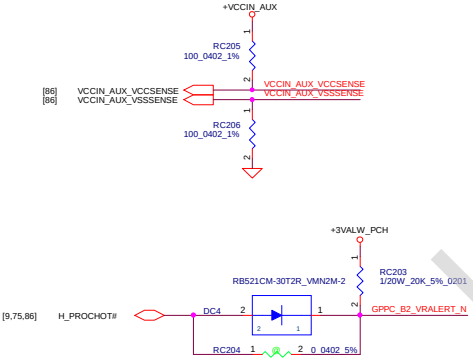
LCFC C750-ITL
For MFG

Security Classification		LC Future Center Secret Data		Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL	
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 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 0.2	
Date: Wednesday, March 18, 2020				Sheet 18 of 103	





Note: Don't forget to check PU level



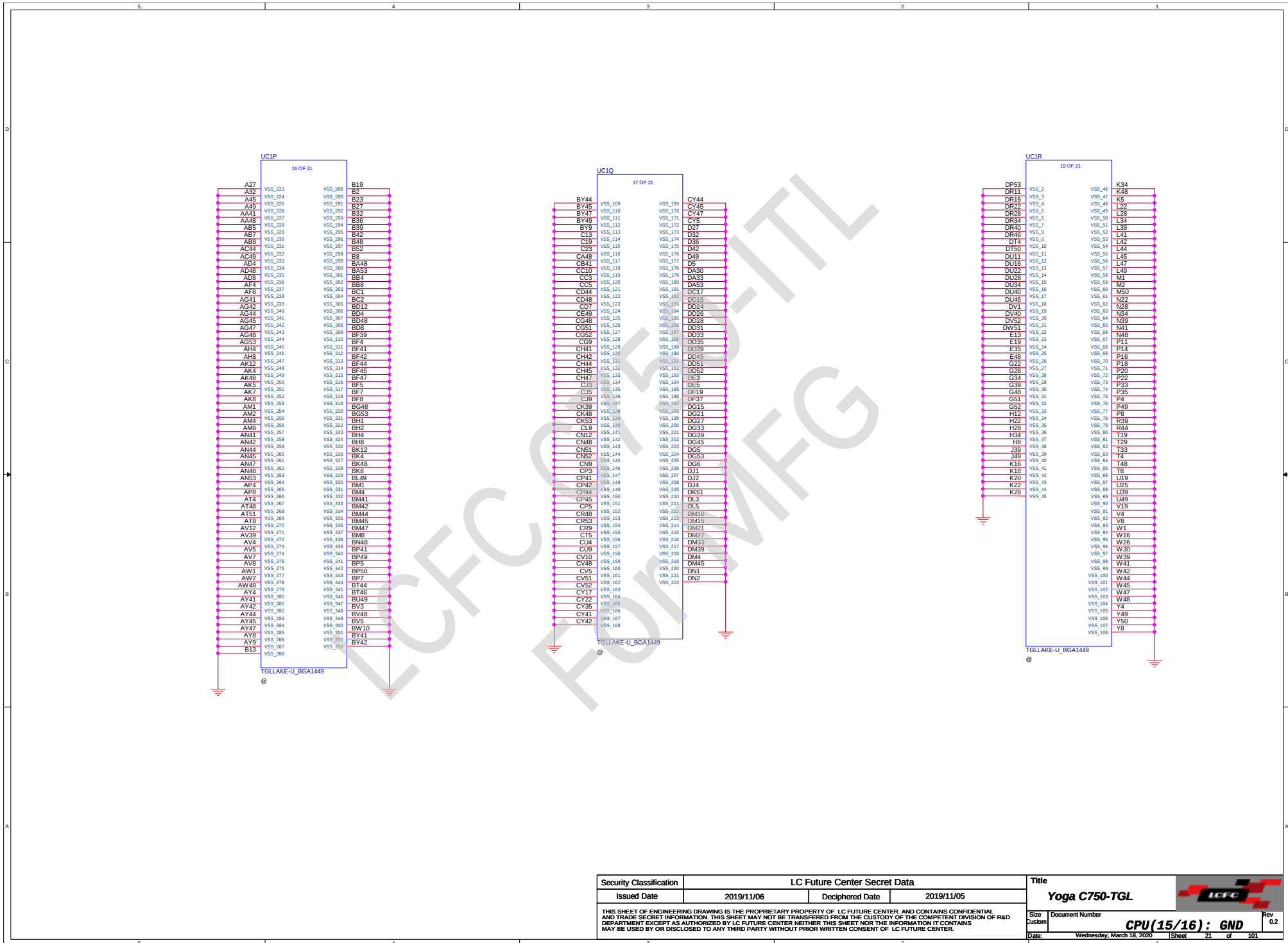
PDG: VCCA_CLKLDO_1P8		
680nF	1	Inductor by default is a placeholder. If needed, the inductor needs to meet following requirements: Based on least 10mohm, RCR = 0.01ohm +/- 20%
0 ohm_0603	1	Option 1: stuff with 0 ohm if the inductor is not needed. Option 2: stuff 100 mohm if the inductor is needed.
47u_0603	1	Place the cap near to package pin DR15 and DR12 right after signal breakout

LCFC C750-ITL
For MFG

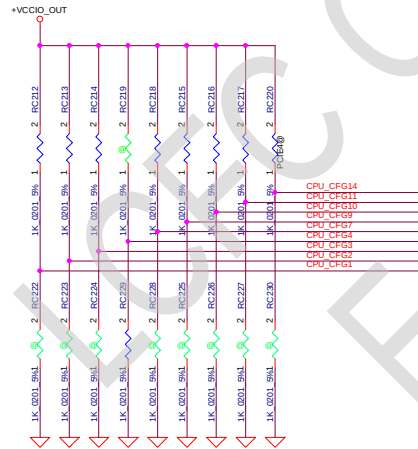
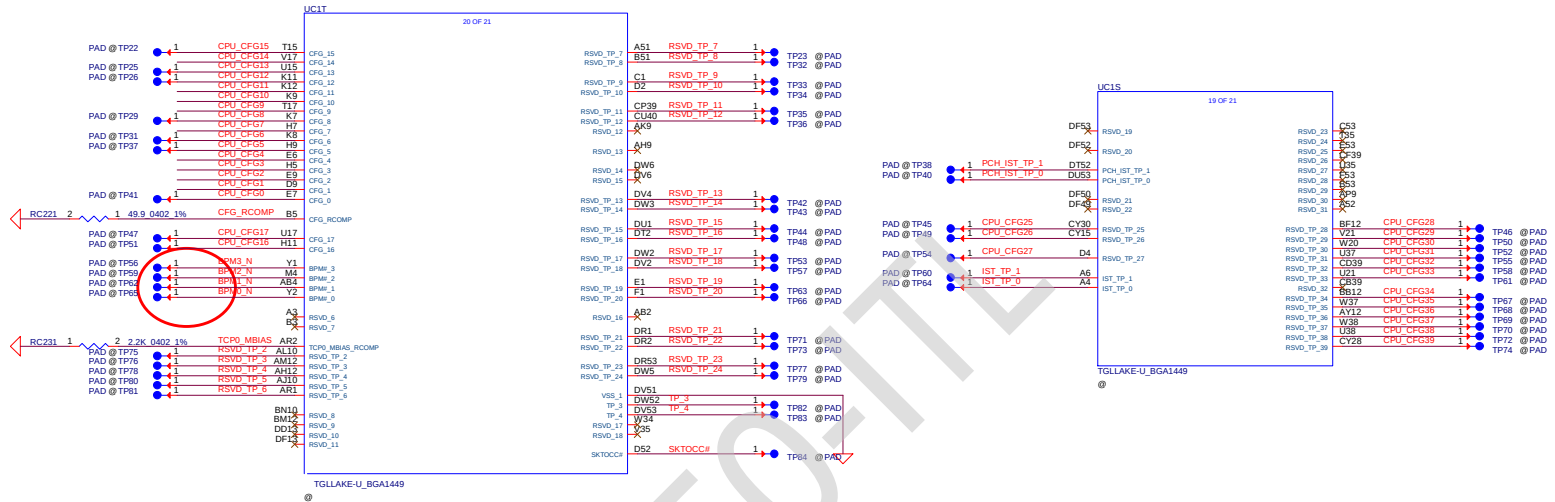
Security Classification		LC Future Center Secret Data		Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE 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 P	Document Number PCH PWR Reserved
				Date: Wednesday, March 18, 2020	Rev 0.2

Sheet 20 of 103





Security Classification		LC Future Center Secret Data		Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL	
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
				CPU(15/16): GND	
				Date: Wednesday, March 18, 2020	Sheet 21 of 101

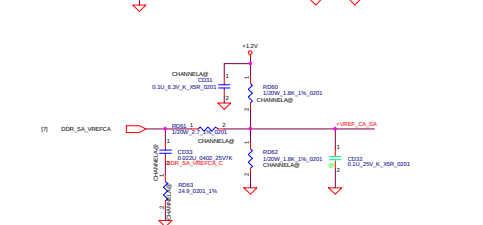
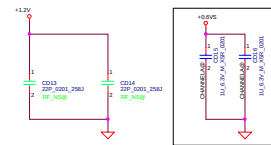


Change CFG Follow PDG_V1.0—Xukun1220

Pin Name	Strap Description	Configuration	Default Value
CFG[0]	RSVD	None	
CFG[3:1]	RSVD	Pull-up to VCCIO	1Kohm
CFG[4]	eDP enable strap 1 = Disabled 0 = Enabled	Pull-up to VCCIO / Pull-down Platform design dependent	1Kohm
CFG[6:5]	RSVD	None	
CFG[7]	PEG deferred link training 1 = (default) PEG Train immediately following RESET# de-assertion 0 = PEG Wait for BIOS for training.	Pull-up to VCCIO / Pull-down Platform design dependent	1Kohm
CFG[8]	RSVD	None	
CFG[11:9]	RSVD	Pull-up to VCCIO	1Kohm
CFG[13:12]	RSVD	None	
CFG[14]	PEG60 Lane Reversal 1 = Normal(Default) 0 = Reversed	Pull-up to VCCIO / Pull-down Platform design dependent	1Kohm
CFG[17:15]	RSVD	None	

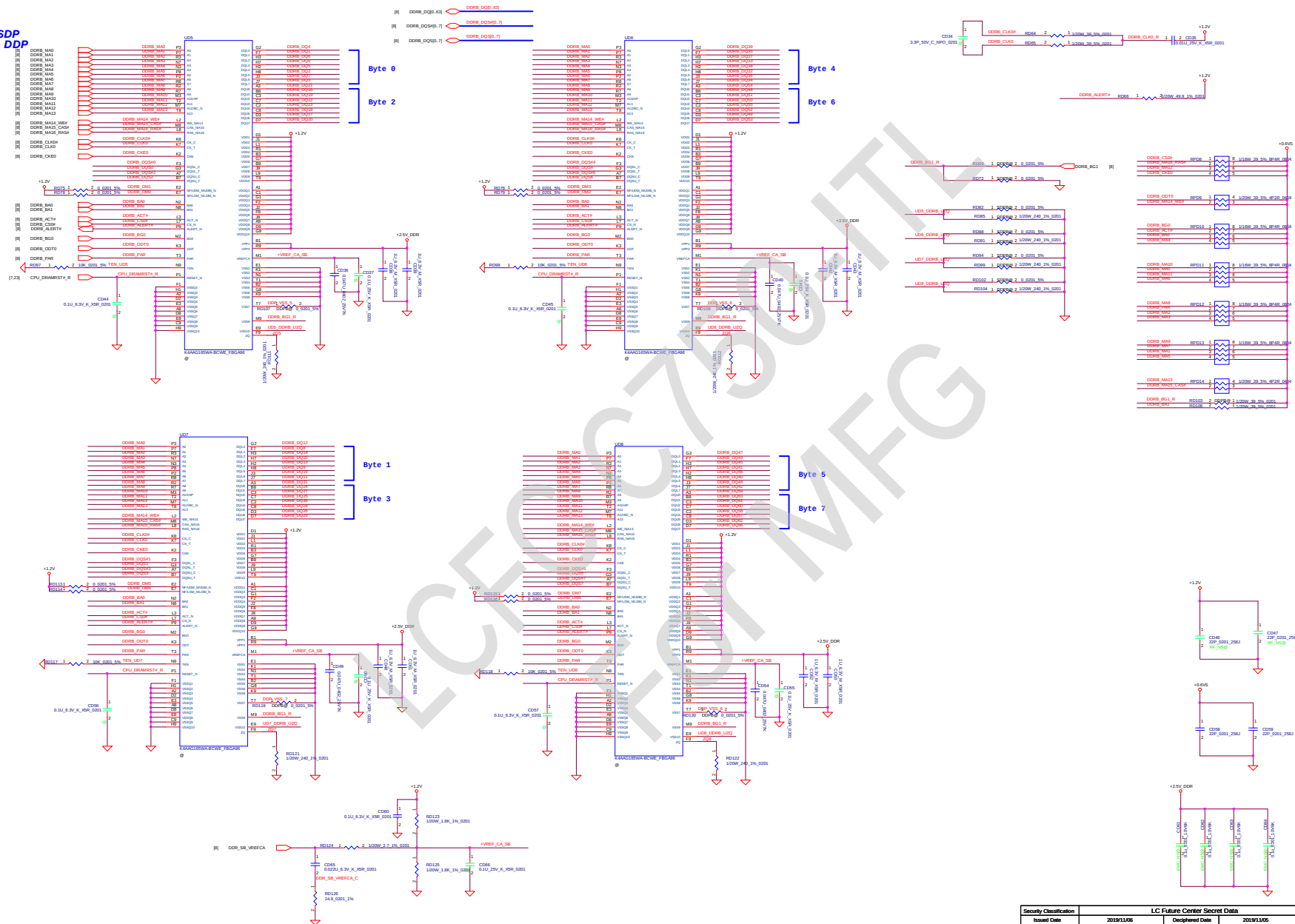
CPU PCIe Gen4 Bifurcation and Lane Reversal Mapping

Bifurcation	CFG Signals	Lanes
	CFG [14]	0 1 2 3
1x4	1	0 1 2 3
1x4(Reversed)	0	3 2 1 0

[illegible]

Security Classification	LC Future Center Secret Data		Title	Yoga C750-TGL	
Issued Date	2019/11/05	Deciphered Date	2019/11/05	Doc. Number	Memory CIA
THIS SUBJECT OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SUBJECT MAY NOT BE TRANSMITTED FROM THE CUSTODY OF THE COMPETENT DIVISION OR REPRODUCED OR DISCLOSED AS AUTHORIZED BY LC FUTURE CENTER. THIS SUBJECT MAY NOT BE REPRODUCED OR DISCLOSED AS AUTHORIZED BY LC FUTURE CENTER. THIS SUBJECT MAY BE USED OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.					

8Gb SDP
16Gb DDP



RF & EMC

Security Classification	LC Future Center Secret Data	Title	Yoga C750-TGL
Issued Date	2019/11/06	Declassified Date	2019/11/05
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 TRANSMITTED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE COMPANY WITHOUT AUTHORIZATION BY LC FUTURE CENTER. ANY DISCLOSURE OF THIS INFORMATION THAT VIOLATES THE COMPANY MAY BE USED OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.		Docuement Number	Memory CHB

LCFC C750-ITL
For MFG

www.teknisi-indonesia.com

Security Classification	LC Future Center Secret Data		Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	
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 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	Rev
P	GPU PCIE Interface		Wednesday, March 18, 2020	0.2
			Sheet	26 of 103

LCFC C750-ITL
For MFG

Security Classification		LC Future Center Secret Data		Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL	
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 LC FUTURE CENTER 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 P	Document Number GPU Display Interface
				Date: Wednesday, March 18, 2020	Rev 0.2
				Sheet 27	of 103

LCFC C750-ITL
For MFG

Security Classification		LC Future Center Secret Data		Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL	
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 LC FUTURE CENTER 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.				Sheet	Document Number
				P	GPU MEM Interface(A/B)
				Date:	Wednesday, March 18, 2020
				Sheet	28 of 103



Rev
0.2

LCFC C750-ITL
For MFG

Security Classification		LC Future Center Secret Data		Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL	
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 RESEARCH 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
				P	GPU MEM Interface(C/D)
				Date:	Wednesday, March 18, 2020
				Sheet	29 of 103
				Rev	0.2



LCFC C750-ITL
For MFG

Security Classification		LC Future Center Secret Data		Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL	
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 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
				P	GPU GPIO/JTAG
				Date:	Wednesday, March 18, 2020
				Sheet	30 of 103
				Rev	0.2



LCFC C750-ITL
For MFG

Security Classification		LC Future Center Secret Data		Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL	
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 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
				P	GPU Strap
Date: Wednesday, March 18, 2020				Sheet	31 of 103



Rev
0.2

LCFC C750-ITL
For MFG

Security Classification		LC Future Center Secret Data		Title	
Issued Date		Deciphered Date		Yoga C750-TGL	
2019/11/06		2019/11/05			
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 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	
				GPU_PWR1	
				Rev	
				0.2	
				Date: Wednesday, March 18, 2020	
				Sheet 32 of 103	



LCFC C750-ITL
For MFG

Security Classification		LC Future Center Secret Data		Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL	
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 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 0.2	
Date: Wednesday, March 18, 2020				Sheet 33 of 103	



LCFC C750-ITL
For MFG

Security Classification	LC Future Center Secret Data			Title		
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL		
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 THE 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.				Document Number	Rev	
				GPU_GND		0.2
				Date: Wednesday, March 18, 2020		Sheet 34 of 101

LCFC C750-ITL
For MFG

Security Classification		LC Future Center Secret Data		Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL	
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 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.				Document Number VRAM A [31:0]	
				Date: Wednesday, March 18, 2020 (Sheet 35 of 103)	



Rev
0.2

LCFC C750-ITL
For MFG

Security Classification		LC Future Center Secret Data		Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL	
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 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 P	Document Number VRAM_A [64:32] Date: Wednesday, March 18, 2020
				Rev 0.2	Sheet 36 of 103

LCFC C750-ITL
For MFG

Security Classification		LC Future Center Secret Data		Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL	
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 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.				Document Number VRAM B [31:0]	
				Date: Wednesday, March 18, 2020 (Sheet 37 of 103)	



Rev
0.2

LCFC C750-ITL
For MFG

Security Classification		LC Future Center Secret Data		Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL	
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 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 P	Document Number VRAM_B [64:32]
				Date: Wednesday, March 18, 2020	Rev 0.2

LCFC

Sheet 38 of 103

LCFC C750-ITL
For MFG

Security Classification		LC Future Center Secret Data		Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL	
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 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.				Document Number VRAM C [31:0]	
				Date: Wednesday, March 18, 2020 (Sheet 39 of 103)	



Rev
0.2

LCFC C750-ITL
For MFG

Security Classification		LC Future Center Secret Data		Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL	
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 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 P	Document Number VRAM C [64:32] Date: Wednesday, March 18, 2020
				Rev 0.2	Sheet 40 of 103

LCFC C750-ITL
For MFG

Security Classification		LC Future Center Secret Data		Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL	
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 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 P	Document Number VRAM_D [31:0]
				Date: Wednesday, March 18, 2020	Rev 0.2



Sheet 41 of 103

LCFC C750-ITL
For MFG

Security Classification		LC Future Center Secret Data		Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL	
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 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.				Document Number VRAM_D [64:32]	
				Date: Wednesday, March 18, 2020 (Sheet 42 of 103)	



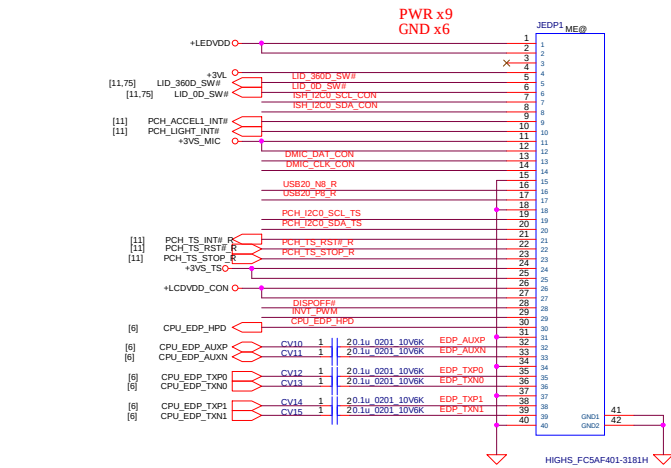
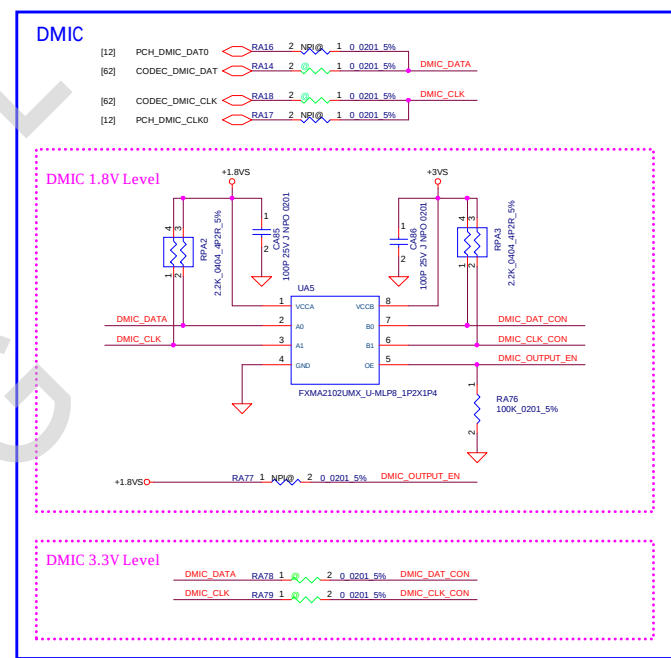
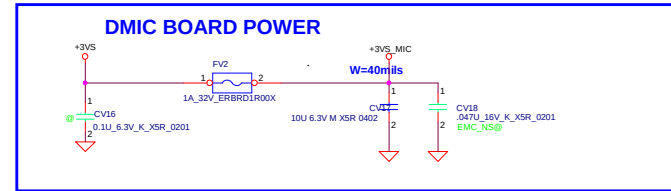
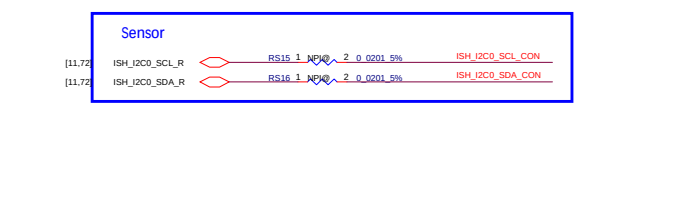
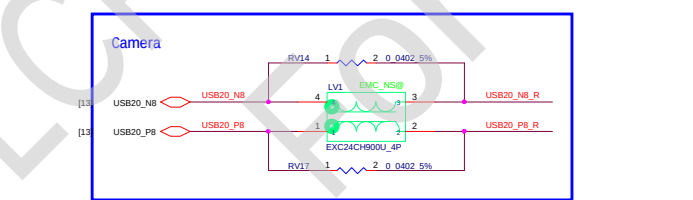
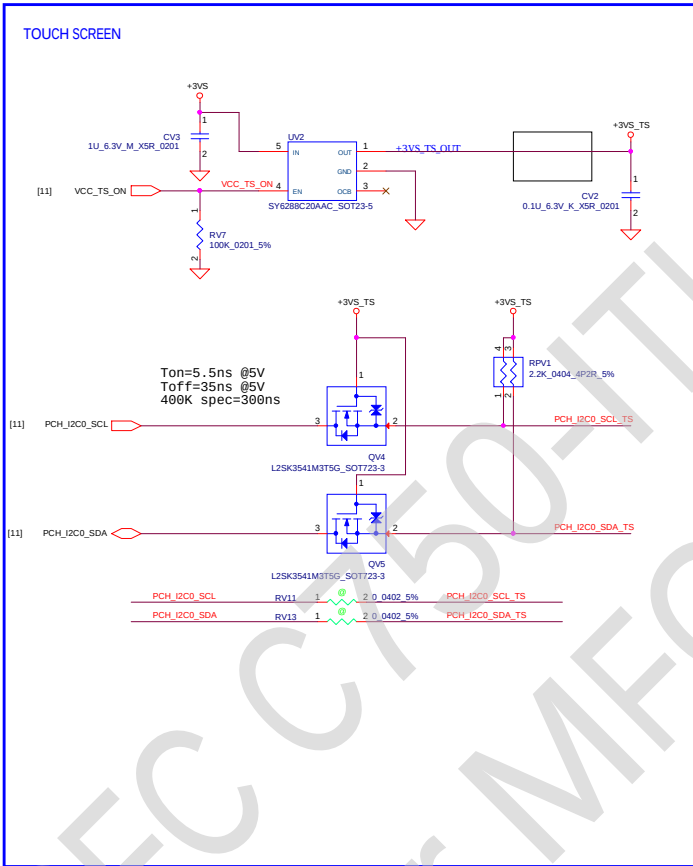
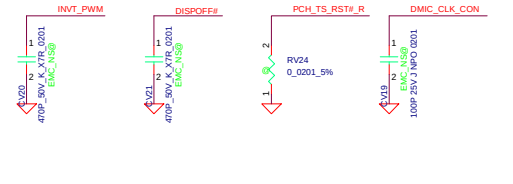
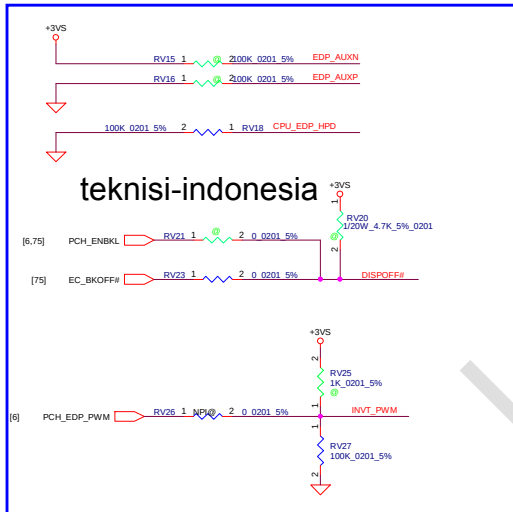
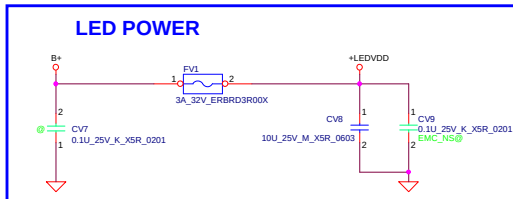
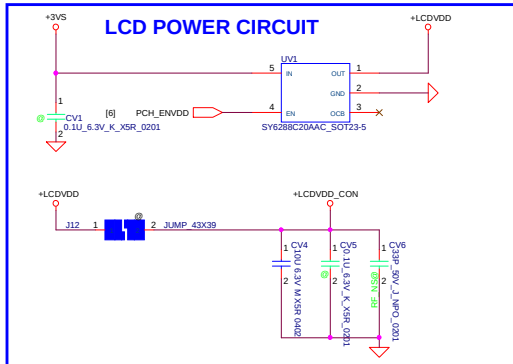
Rev
0.2

LCFC C750-ITL
For MFG

Security Classification		LC Future Center Secret Data		Title	
Issued Date		Deciphered Date		Yoga C750-TGL	
2019/11/06		2019/11/05			
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 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
				C	
				Date:	Rev
				Wednesday, March 18, 2020	0.2
				Sheet	43 of 101

LCFC C750-ITL
For MFG

Security Classification		LC Future Center Secret Data		Title	
Issued Date	2019/11/05	Declassified Date	2019/11/05	Yoga C750-TGL	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET SHALL NOT BE TRANSMITTED FROM THE CUSTODY OF THE COMPANY OR ANY OF ITS EMPLOYEES OR CONTRACTORS TO ANY THIRD PARTY WITHOUT THE WRITTEN CONSENT OF LC FUTURE CENTER. ANY VIOLATION OF THIS POLICY WILL BE SUBJECT TO LEGAL ACTION.				Docu ID MV DDS LOGIC	
				Rev 02	



LCFC C750-ITL
For MFG

Security Classification		LC Future Center Secret Data		Title	
Issued Date		Deciphered Date		Yoga C750-TGL	
2019/11/06		2019/11/05			
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 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	Rev
				Document Number	0.2
				Date:	Wednesday, March 18, 2020
				Sheet	46 of 103

LCFC C750-ITL
For MFG

Security Classification		LC Future Center Secret Data		Title		
Issued Date		Deciphered Date		Yoga C750-TGL		
2019/11/06		2019/11/06		Size		Rev
				Custom		0.2
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.				Document Number		
				Date		Wednesday, March 18, 2020
				Sheet		47 of 101

LCFC C750-ITL
For MFG

Security Classification		LC Future Center Secret Data		Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL	
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 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
				P	HDNI CONN
				Date:	Wednesday, March 18, 2020
				Sheet	48 of 103
				Rev	0.2



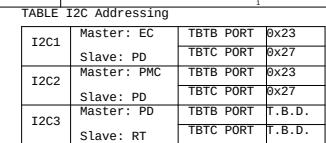
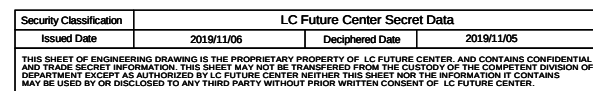


Table 7. Service Configuration using WDCN1 and WDCN2

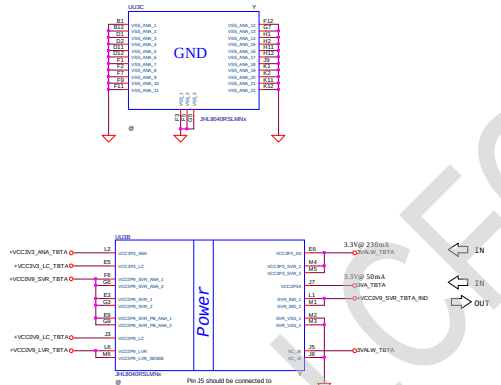
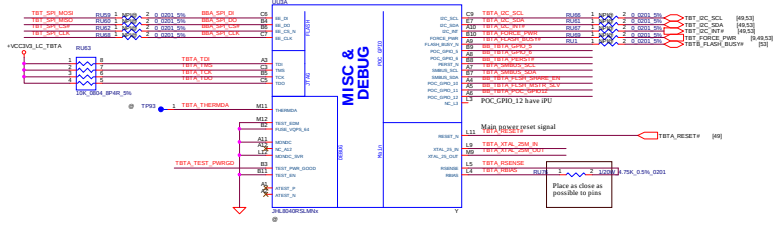
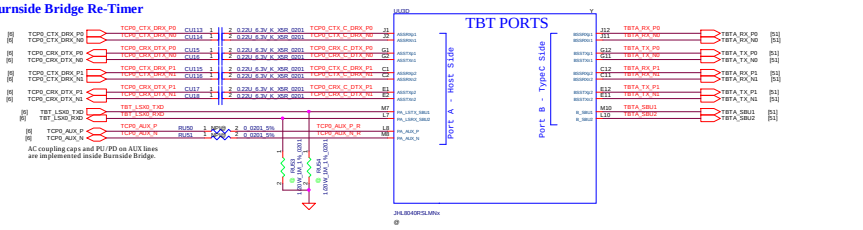
www.teknisi-indonesia.com



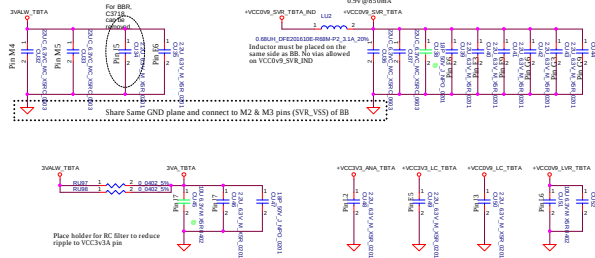
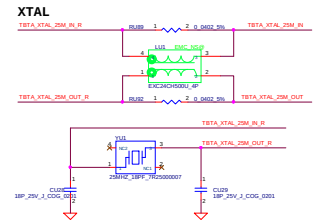
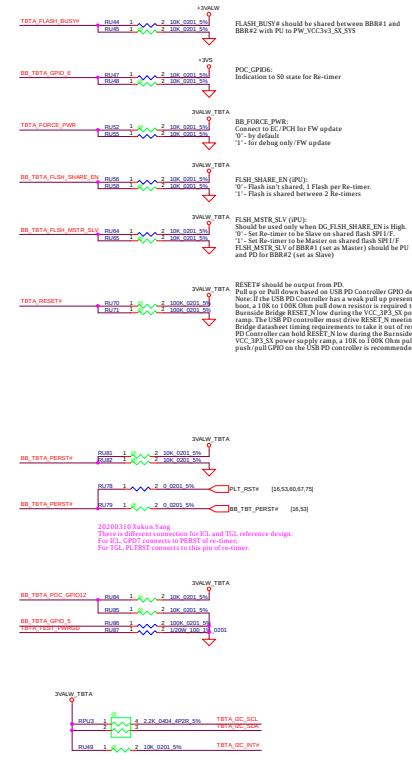
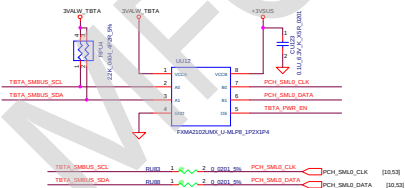
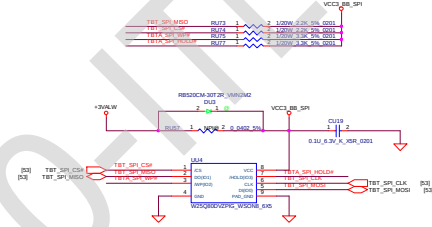
Size	Document Number
	TYPEC Controller PortA

Date: Wednesday, March 18, 2020 Sheet 49 of 101

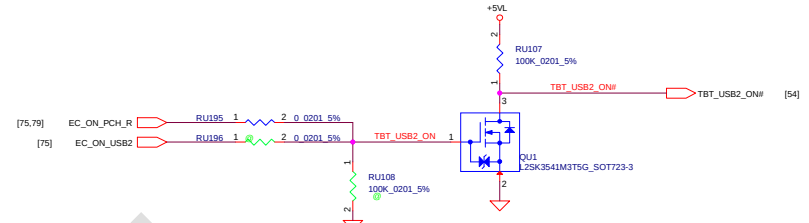
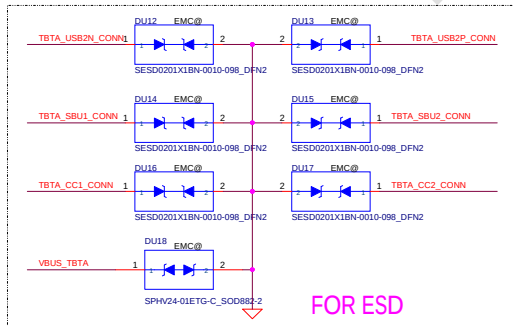
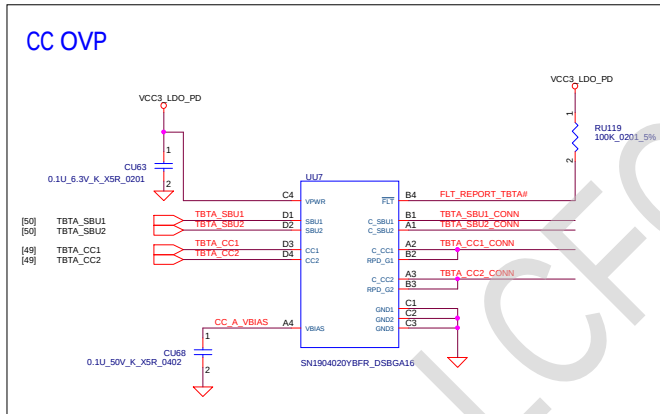
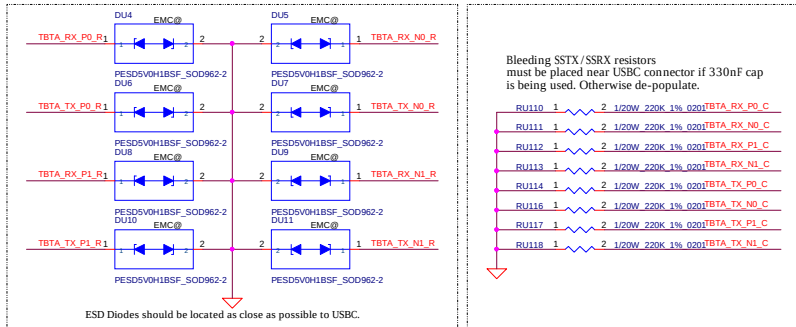
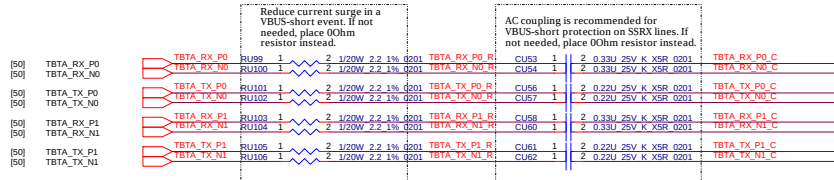
Burnside Bridge Re-Timer



Pin 35 should be connected to
GND. Pin 36 to GND.



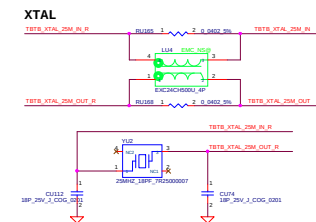
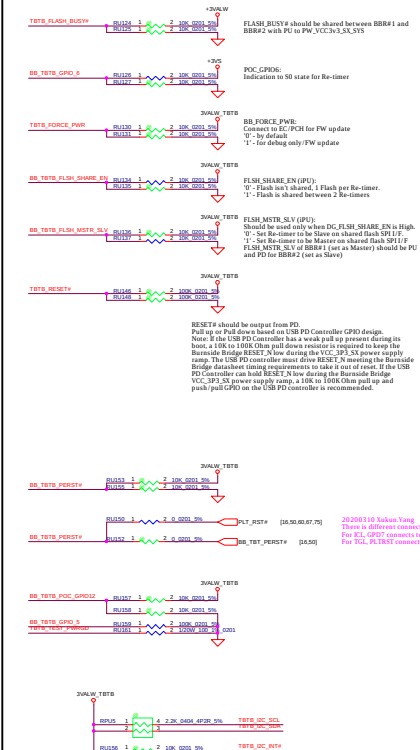
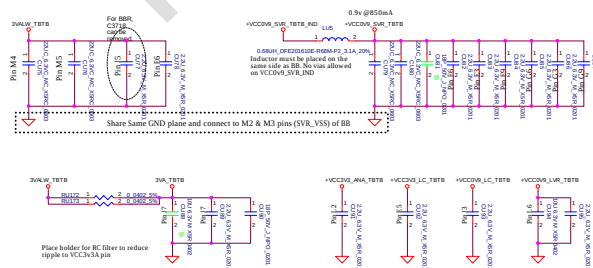
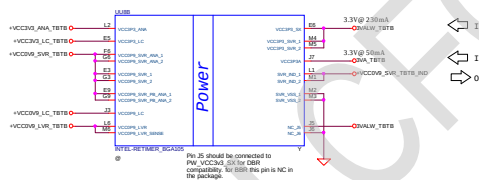
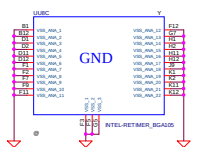
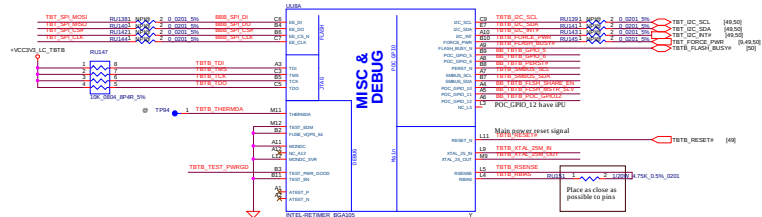
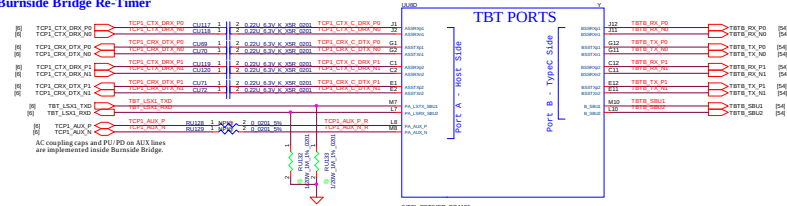
Security Classification	LC Future Center Secret Data		Title	Yoga C750-TGL	
Issued Date	2019/11/06	Declassified Date	2019/11/05	Doc Number	02
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY BE TRANSMITTED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE COMPETENT AGENCY TO THE CUSTODY OF THE COMPETENT DIVISION OF THE COMPETENT AGENCY ONLY BY THE CUSTODY OF THE COMPETENT DIVISION OF THE COMPETENT AGENCY. ANY OTHER DISSEMINATION OF THIS SHEET MAY BE TRANSMITTED FROM THE CUSTODY OF THE COMPETENT DIVISION OF THE COMPETENT AGENCY TO THE CUSTODY OF THE COMPETENT DIVISION OF THE COMPETENT AGENCY ONLY BY THE CUSTODY OF THE COMPETENT DIVISION OF THE COMPETENT AGENCY.			Doc Name	TYPEC_MUX_PortA	

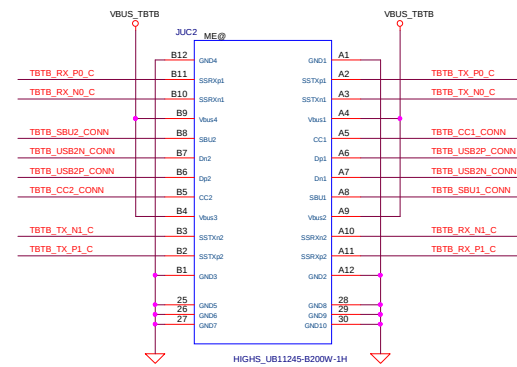
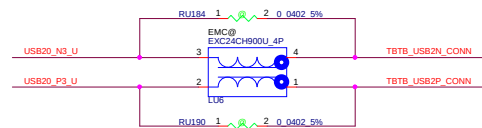
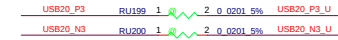
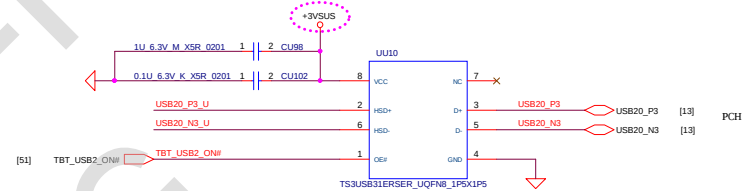
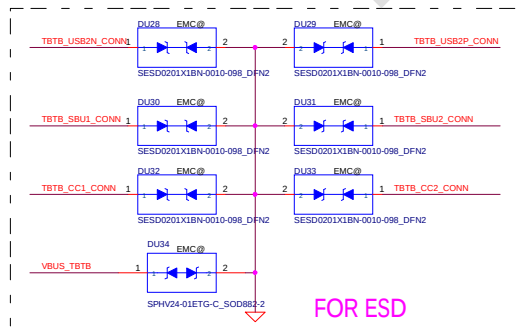
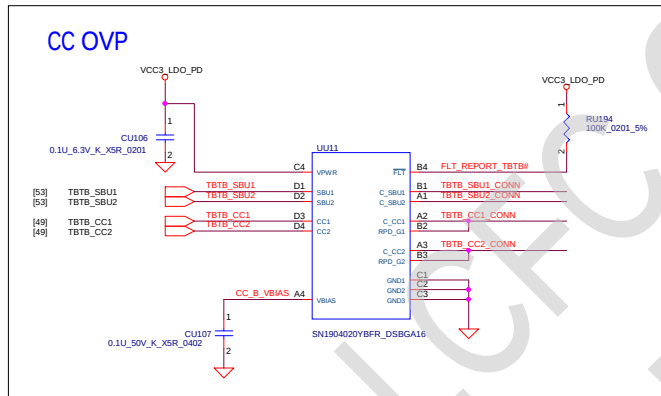
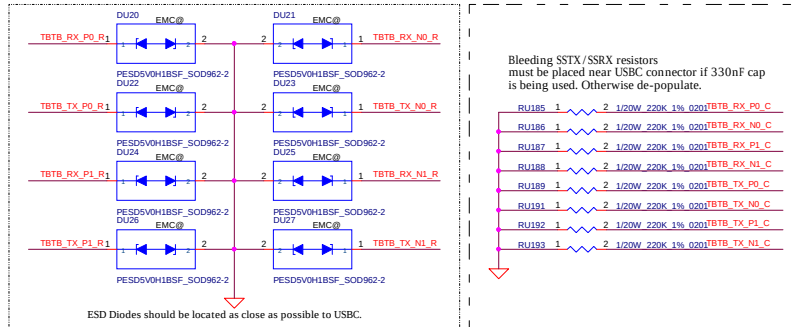
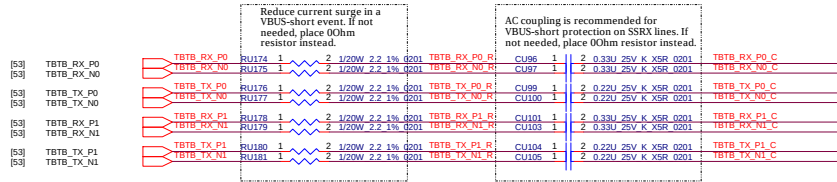


LCFC C750-ITL
For MFG

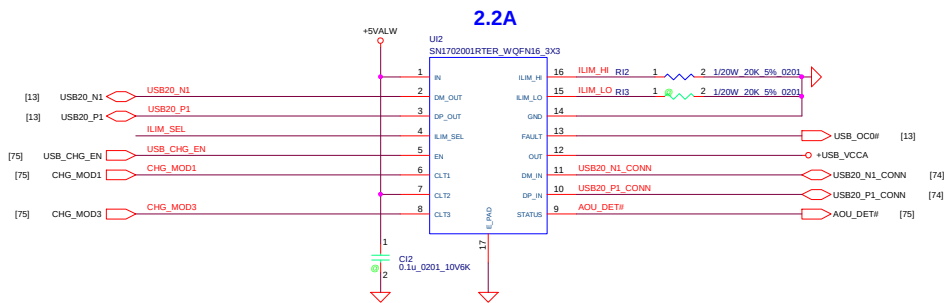
Security Classification	LC Future Center Secret Data		Title	Yoga C750-TGL	
Issued Date	2019/11/06	Deciphered Date	2019/11/05		
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM 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.					Rev 0.2
Date: Wednesday, March 18, 2020				Sheet 52 of 103	

Burnside Bridge Re-Timer

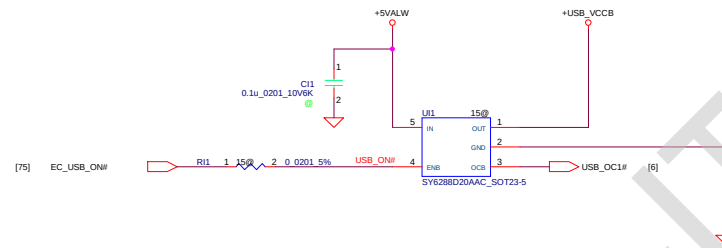




1124x
5-5" gold plating
9-30" gold plating
B200x
W: 100mm
H: 100mm



CLT1	CLT2	CLT3	ILIM_SEL	MOD	
0	0	0	X	DCH	OUT held low
1	1	1	1	CDP	Data Connected and Load Detect Active
1	1	1	0	SDP2	Data Connected
1	1	0	X	SDP1	Data Connected
0	1	0	X	SDP1	Data Connected
1	0	0	X	DCP_Short	Device Forced to stay in DCP BC 1.2 charging mode
1	0	1	X	DCP_Divider	Device Forced to stay in DCP Divider 1 Charging Mode
0	1	1	X	DCP_Auto	Data Disconnected and Load Detect Active
0	0	1	X	DCP_Auto	Data Disconnected and Load Detect Active



www.teknisi-indonesia.com

Security Classification		LC Future Center Secret Data		Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL	
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 THE 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.				Document Number	Rev
				USBA PortB	0.2
				Date:	Wednesday, March 18, 2020 (Sheet 56 of 103)

LCFC C750-ITL
For MFG

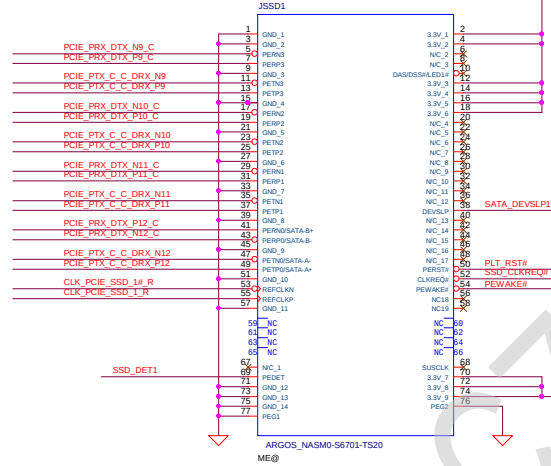
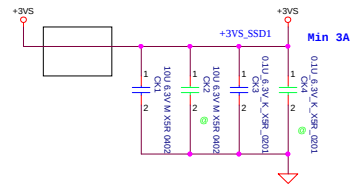
Security Classification		LC Future Center Secret Data		Title	
Issued Date		Deciphered Date		Yoga C750-TGL	
2019/11/06		2019/11/05			
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF 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	
				USBA PortC	
				Date	
				Wednesday, March 18, 2020	
				Sheet	
				57 of 103	
				Rev	
				0.2	

LCFC C750-ITL
For MFG

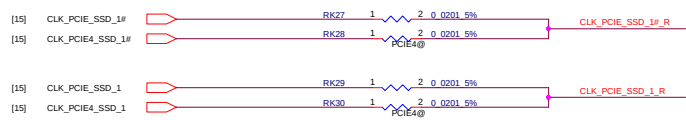
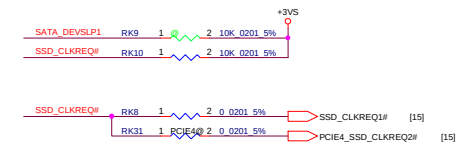
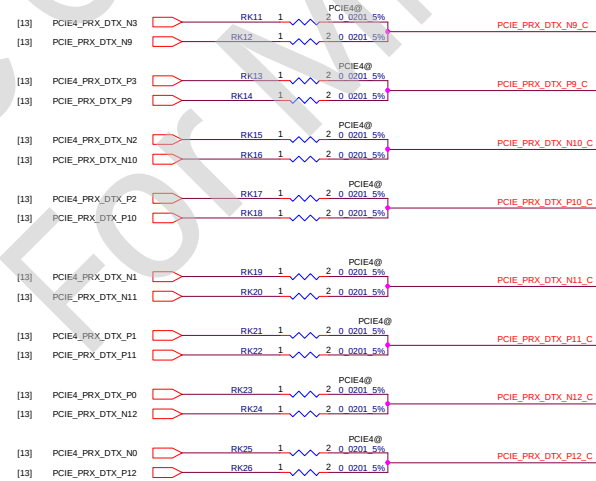
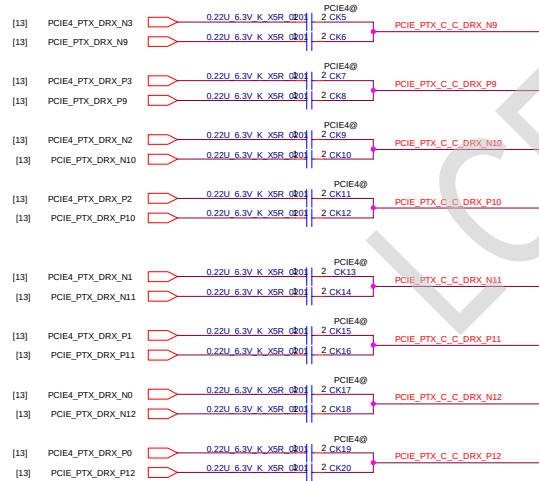
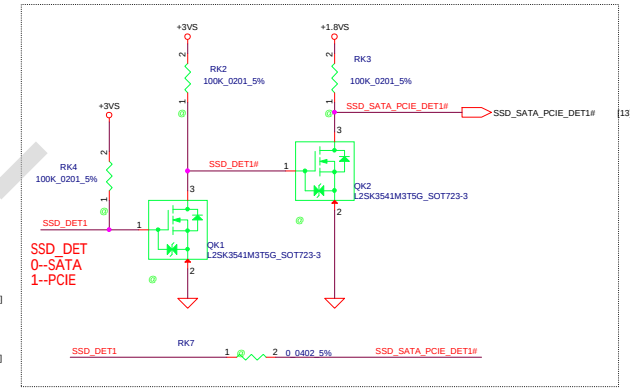
Security Classification		LC Future Center Secret Data		Title	
Issued Date		Deciphered Date		Yoga C750-TGL	
2019/11/06		2019/11/05			
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF 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	Rev
				Document Number	0.2
				HDD	
				Date:	Wednesday, March 18, 2020
				Sheet	58 of 103

LCFC C750-TL
For MFG

Security Classification		LC Future Center Secret Data		Title				
Issued Date		Deciphered Date		Yoga C750-TGL				
2019/11/06		2019/11/05						
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 THE 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
						C	0DD	0.2
						Date:	Wednesday, March 18, 2020	Sheet 59 of 103

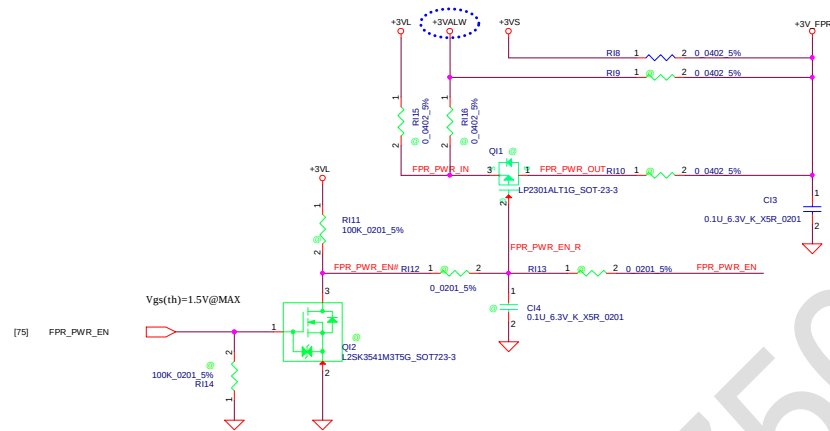


teknisi-indonesia

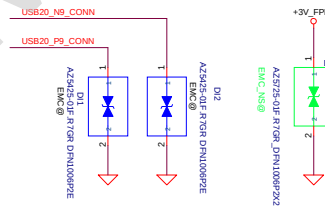
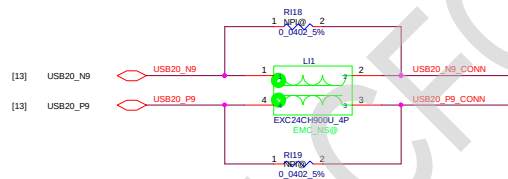
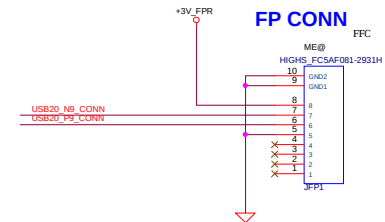


Security Classification		LC Future Center Secret Data		Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF LC FUTURE CENTER 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.				Document Number	SSD
				Date:	Wednesday, March 18, 2020
				Sheet	60 of 103

FPR POWER

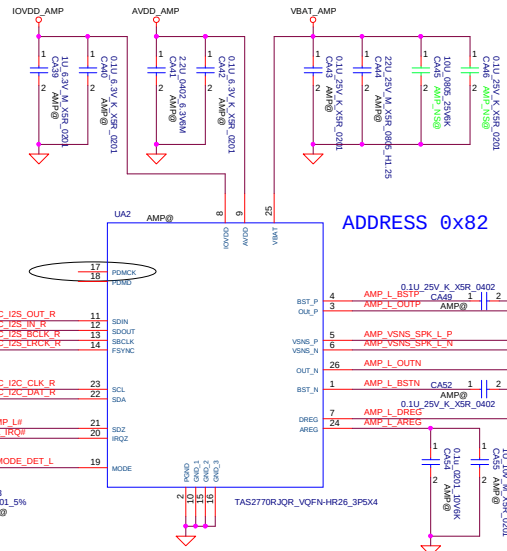


FP CONN



Security Classification	LC Future Center Secret Data		Title	Yoga C750-TGL	
Issued Date	Deciphered Date	2019/11/05	Document Number	FPR	
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 THE 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.			Date:	Wednesday, March 18, 2020	Sheet 61 of 101

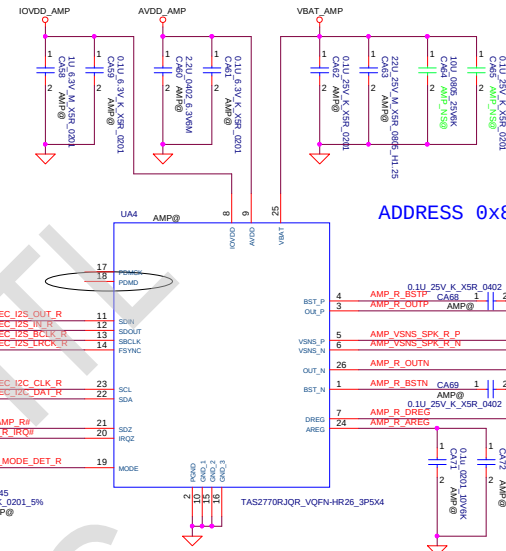
AMP_L



ADDRESS 0x82

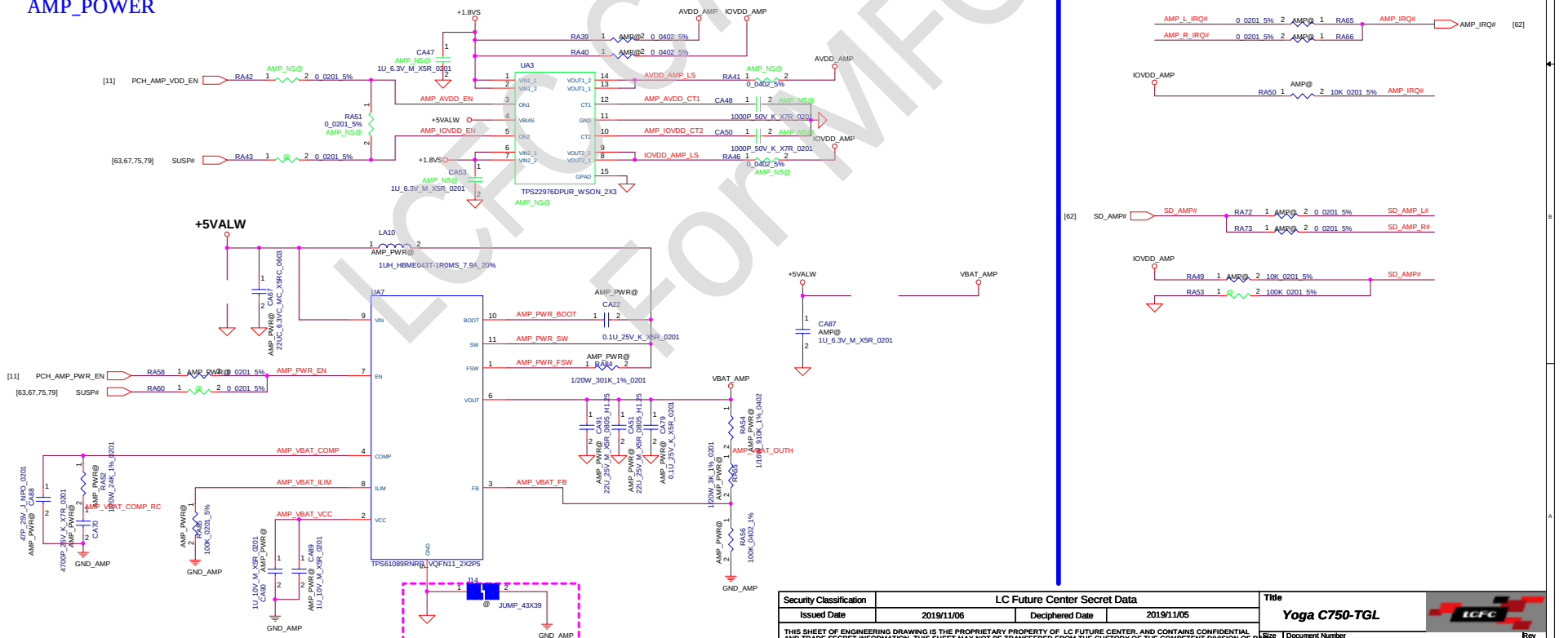
TDM/I2C Mode Address Selection	
Mode Pin	I2C Slave Address
Short to GND	0x82 *L
470ohm to GND	0x84
470ohm to IOVDD	0x86
2.2K to GND	0x88
2.2K to IOVDD	0x8A
10K to GND	0x8C *R
10K to IOVDD	0x8E
47K to IOVDD	0x90

AMP_R



ADDRESS 0x8C

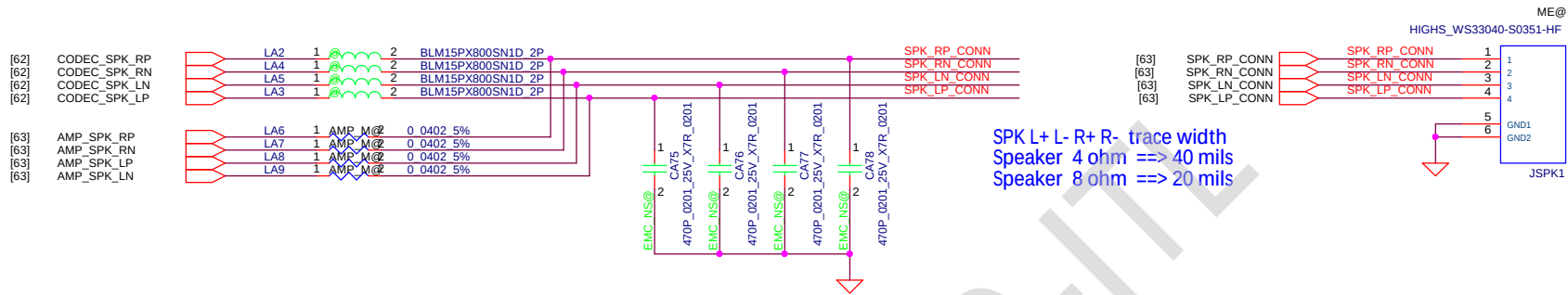
AMP_POWER



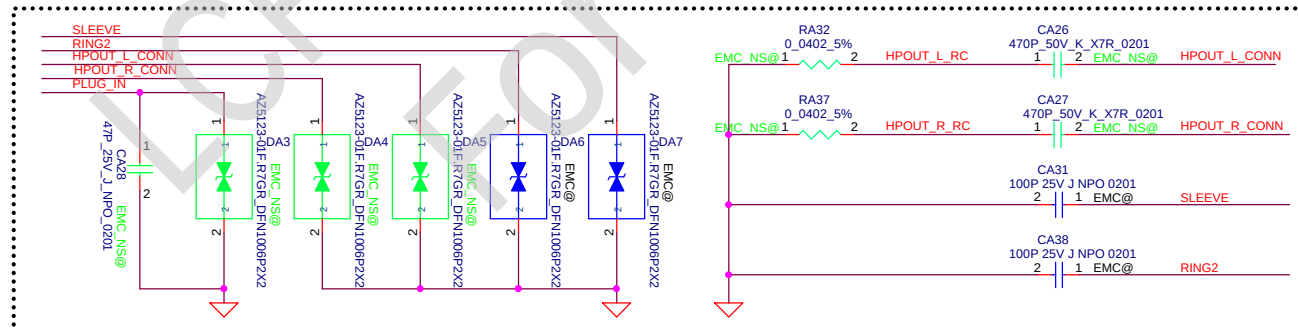
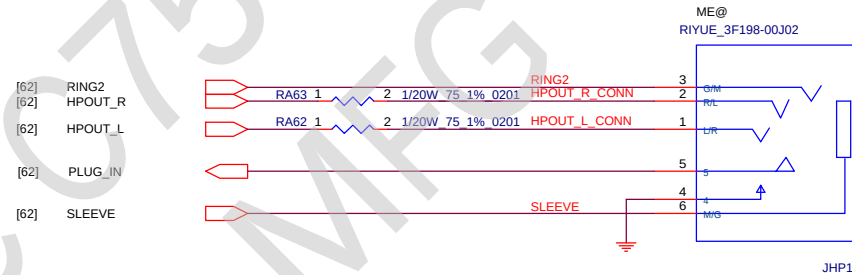
LCFC C750-TL
For MFG

Security Classification		LC Future Center Secret Data		Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL	
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 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
				P	Audio DSP
				Date:	Wednesday, March 18, 2020
				Sheet	64 of 103
				Rev	0.2

Speaker



Audio Jack



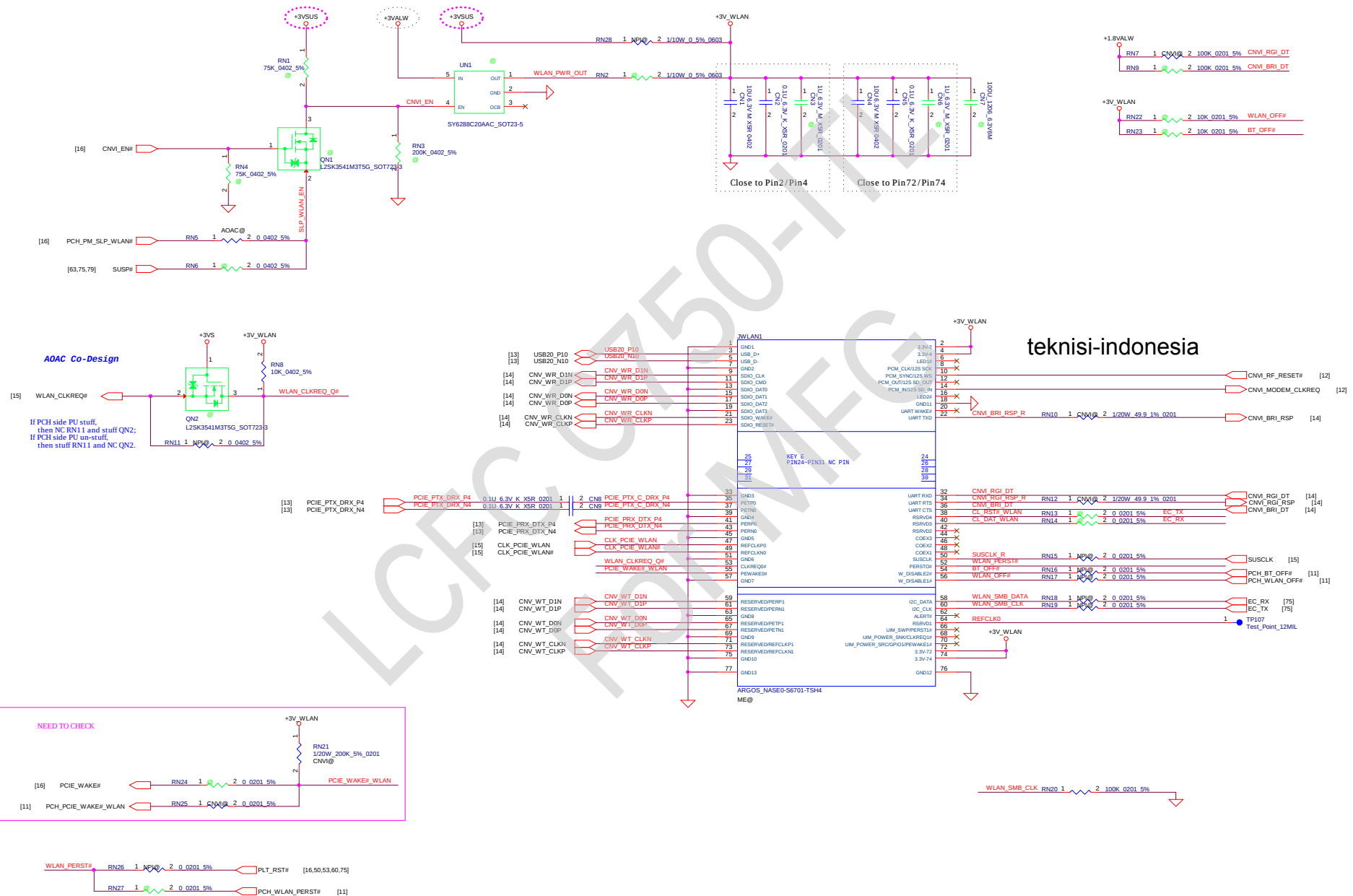
Security Classification	LC Future Center Secret Data		Title	Yoga C750-TGL	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Size	Document Number
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT 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.					
				Date:	Wednesday, March 18, 2020
				Sheet	65 of 101
				Rev	0.2

Audio_SPK/Jack

LCFC C750-ITL
For MFG

Security Classification		LC Future Center Secret Data		Title		
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL		
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 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.				Revision C	Document Number	
				Card Reader		Rev 0.2
				Date: Wednesday, March 18, 2020		Sheet 66 of 101

Mini-Express Card(WLAN/WiMAX)



Security Classification	LC Future Center Secret Data			Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL	
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 RESEARCH AND TECHNOLOGY AUTHORIZED BY LC FUTURE CENTER. 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 WLAN Date Wednesday, March 10, 2020 Sheet 67 of 101

LCFC C750-TL
For MFG

Security Classification		LC Future Center Secret Data		Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL	
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 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
				P	W/AN
				Date:	Wednesday, March 18, 2020
				Sheet	68 of 103
				Rev	0.2



LCFC C750-ITL
For MFG

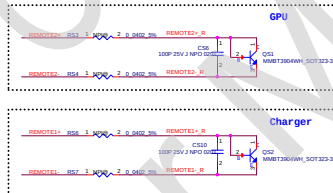
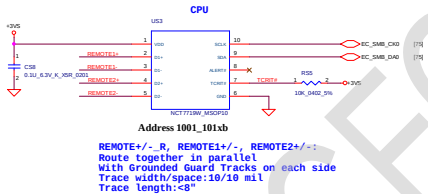
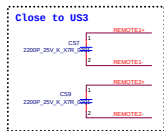
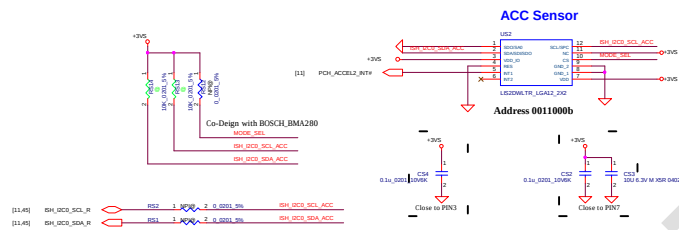
Security Classification	LC Future Center Secret Data		Title		
Issued Date	2019/11/06	Deciphered Date	2019/11/05		Yoga C750-TGL
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF 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
			P	LAN Chipset	0.2
			Date:	Wednesday, March 18, 2020	Sheet 69 of 103

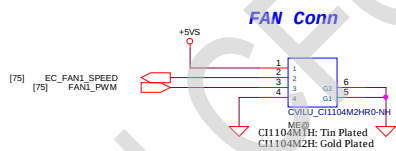
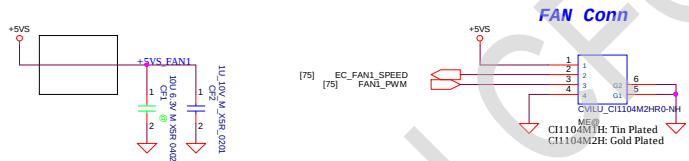
LCFC C750-ITL
For MFG

Security Classification		LC Future Center Secret Data		Title		
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL		
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 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	0.2	
				Date: Wednesday, March 18, 2020 Sheet 70 of 101		

LCFC C750-ITL
For MFG

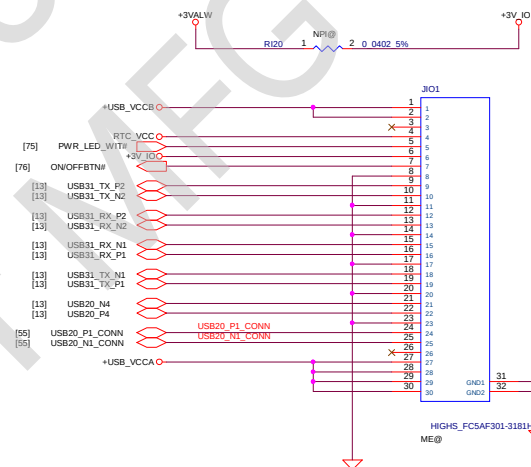
Security Classification		LC Future Center Secret Data		Title		
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL		
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF 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	0.2	
				Date	Wednesday, March 18, 2020	



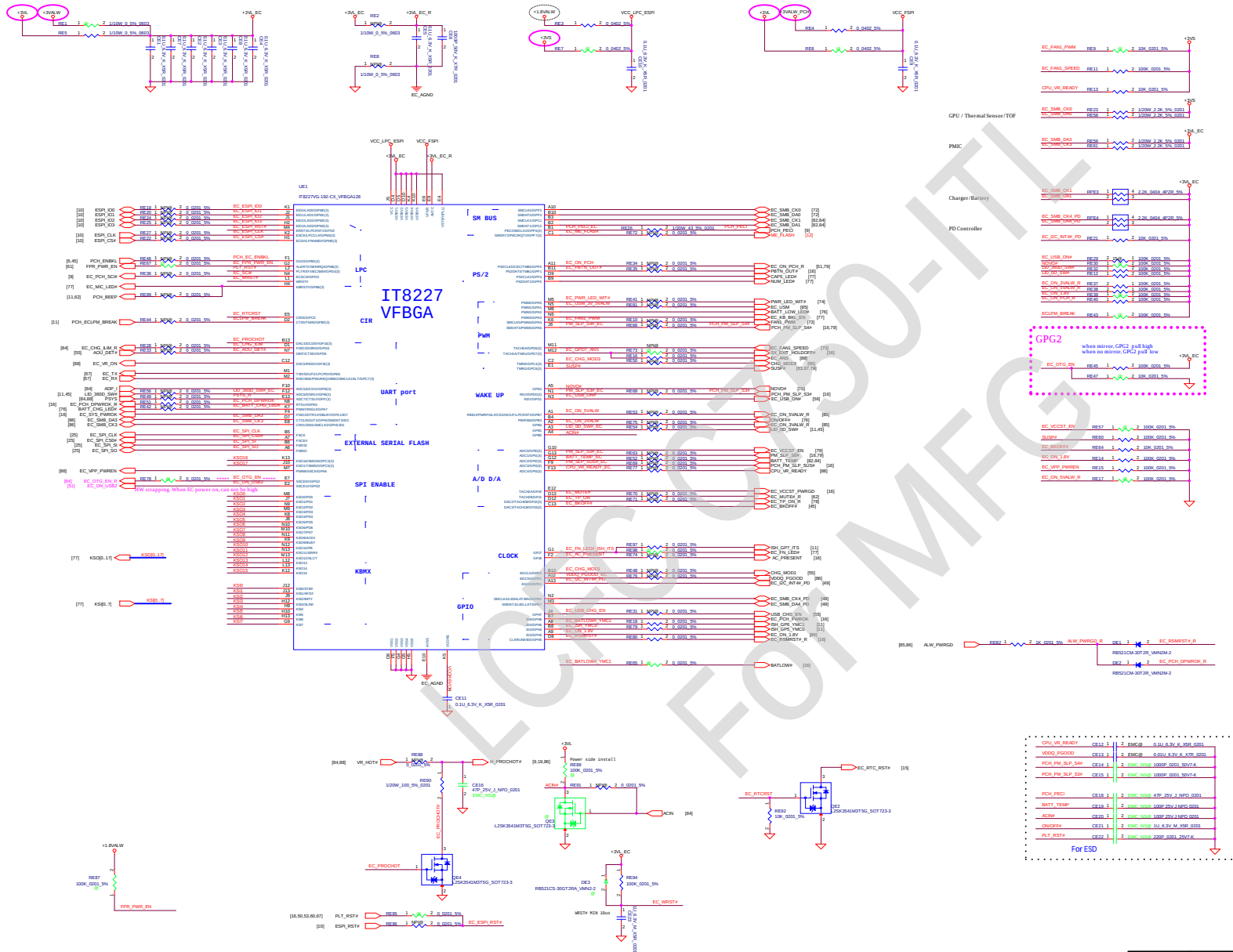


www.teknisi-indonesia.com

Security Classification	LC Future Center Secret Data		Title	Yoga C750-TGL
Issued Date	2019/11/06	Deciphered Date	2019/11/05	
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 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.				Document Number Thermal Date: Wednesday, March 18, 2020
				Rev 0.2 Sheet 73 of 103



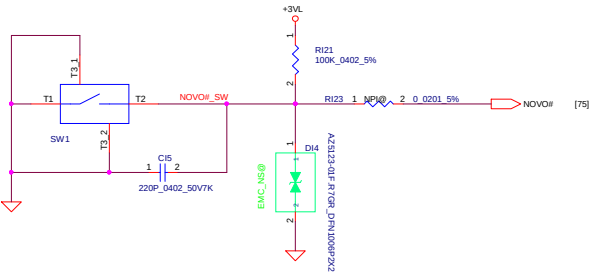
Security Classification		LC Future Center Secret Data		Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF LC FUTURE CENTER WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.				Document Number	Rev
				Sub Board CONN	0.2
				Date: Wednesday, March 18, 2020	Sheet 74 of 103



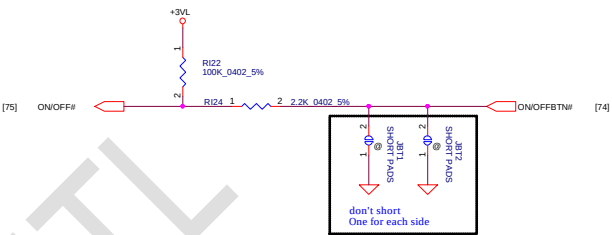
For ESD

VDDIO_PISDIO	CE13-1	2	100K	0.01uF	100K	0.01uF
VDDIO_PISDIO	CE13-2	2	100K	0.01uF	100K	0.01uF
VDDIO_PISDIO	CE13-3	2	100K	0.01uF	100K	0.01uF
VDDIO_PISDIO	CE13-4	2	100K	0.01uF	100K	0.01uF
VDDIO_PISDIO	CE13-5	2	100K	0.01uF	100K	0.01uF
VDDIO_PISDIO	CE13-6	2	100K	0.01uF	100K	0.01uF
VDDIO_PISDIO	CE13-7	2	100K	0.01uF	100K	0.01uF
VDDIO_PISDIO	CE13-8	2	100K	0.01uF	100K	0.01uF
VDDIO_PISDIO	CE13-9	2	100K	0.01uF	100K	0.01uF
VDDIO_PISDIO	CE13-10	2	100K	0.01uF	100K	0.01uF
VDDIO_PISDIO	CE13-11	2	100K	0.01uF	100K	0.01uF
VDDIO_PISDIO	CE13-12	2	100K	0.01uF	100K	0.01uF
VDDIO_PISDIO	CE13-13	2	100K	0.01uF	100K	0.01uF
VDDIO_PISDIO	CE13-14	2	100K	0.01uF	100K	0.01uF
VDDIO_PISDIO	CE13-15	2	100K	0.01uF	100K	0.01uF
VDDIO_PISDIO	CE13-16	2	100K	0.01uF	100K	0.01uF
VDDIO_PISDIO	CE13-17	2	100K	0.01uF	100K	0.01uF
VDDIO_PISDIO	CE13-18	2	100K	0.01uF	100K	0.01uF
VDDIO_PISDIO	CE13-19	2	100K	0.01uF	100K	0.01uF
VDDIO_PISDIO	CE13-20	2	100K	0.01uF	100K	0.01uF
VDDIO_PISDIO	CE13-21	2	100K	0.01uF	100K	0.01uF
VDDIO_PISDIO	CE13-22	2	100K	0.01uF	100K	0.01uF

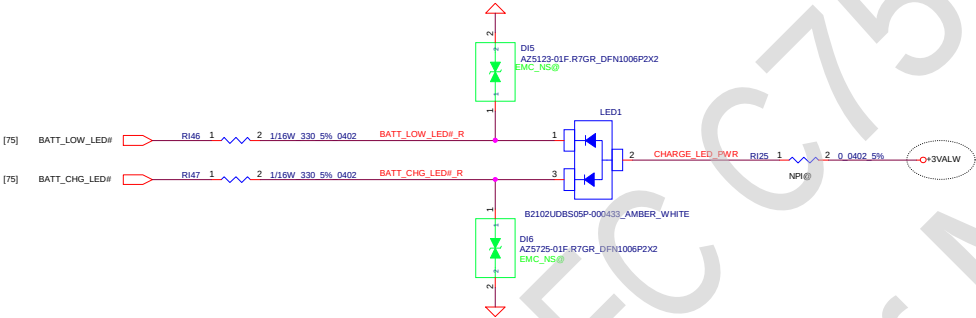
NOVO BUTTON



PWR BUTTON

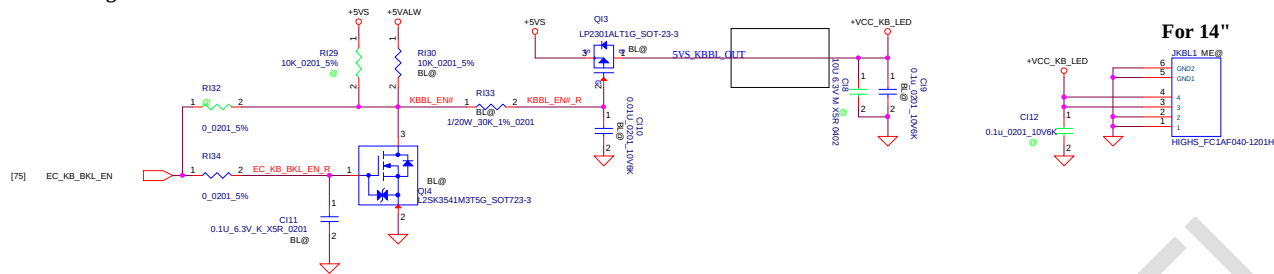


Charging LED



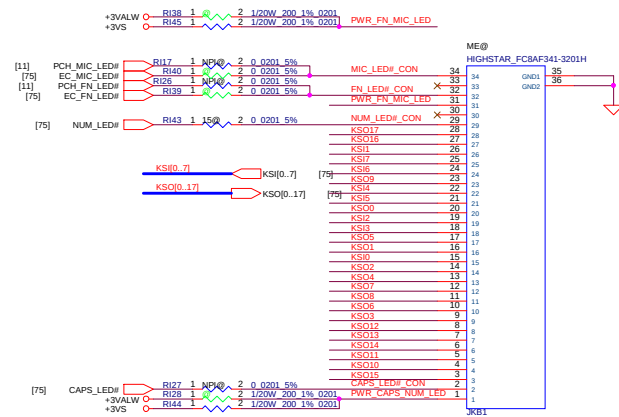
LED	State	LED Behavior
State (Same as the power button LED)	System on	White_on(battery: 25%-100%)
	Standby LED closed	500ms on, 500ms off(battery: 8%-20%)
	System off	OFF
	Battery only	OFF
Charging	Charging	Amber_on(battery: 1%-99%)
		White_on(battery: 91%-100%)

KB Backlight Connector

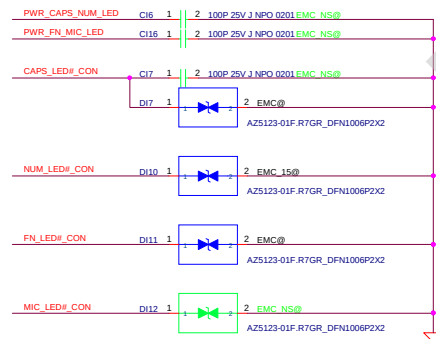


K/B Connector

If Power Button and PWR LED on KeyBoard , then use +3VALW



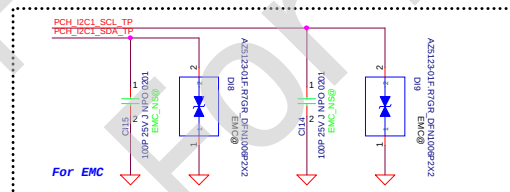
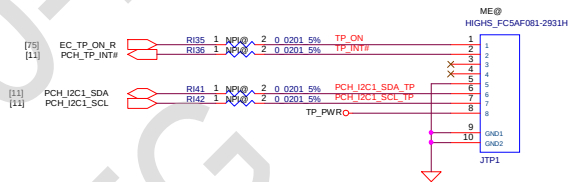
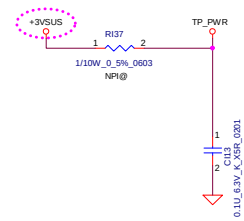
For EMC



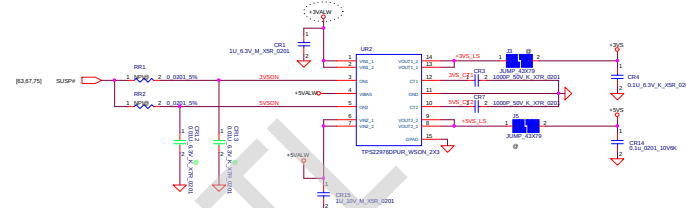
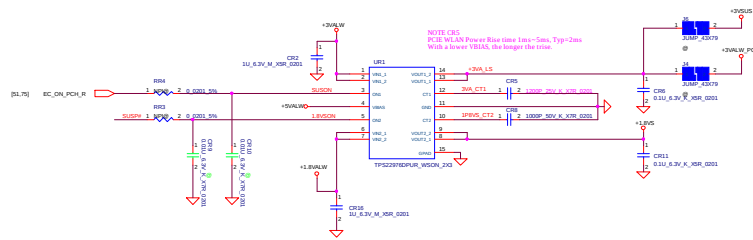
Security Classification		LC Future Center Secret Data		Title			
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL			
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF RESEARCH AND TECHNOLOGY AUTHORIZED BY LC FUTURE CENTER. ANY DISCLOSURE OF THIS INFORMATION TO ANY OTHER PARTY OR ANY USE OF THIS INFORMATION MAY BE USED BY OR DISCLOSED TO ANY THIRD PARTY WITHOUT PRIOR WRITTEN CONSENT OF LC FUTURE CENTER.				Size Document Number		Rev	
				KB/KBLL CN		0.2	
				Date: Wednesday, March 18, 2020		Sheet 17 of 101	

TP/B Connector

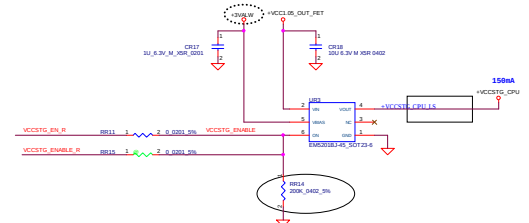
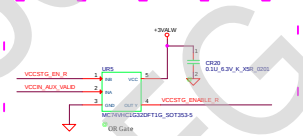
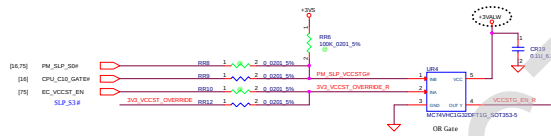
Need support wake up by touch pad
Follow latest UE spec



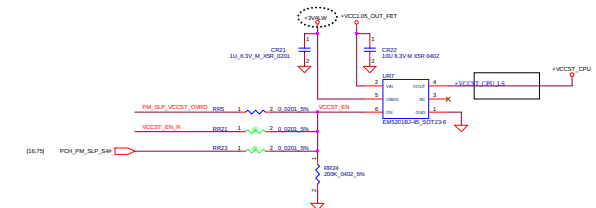
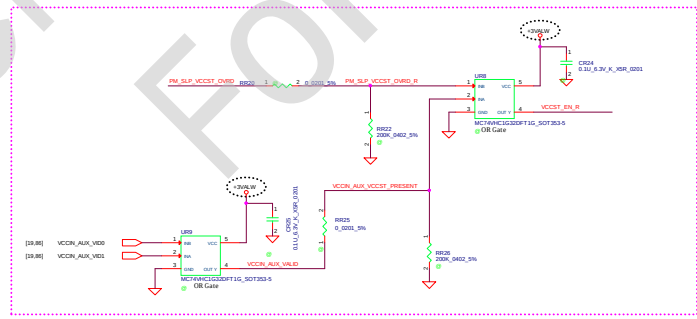
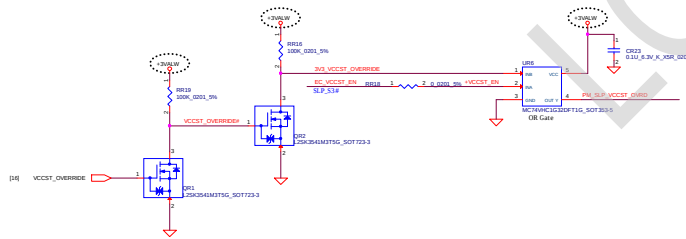
Security Classification		LC Future Center Secret Data		Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF 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.				Document Number	Rev
				TouchPad CONN	0.2
				Date:	Wednesday, March 18, 2020
				Sheet	78 of 103



VCCSTG

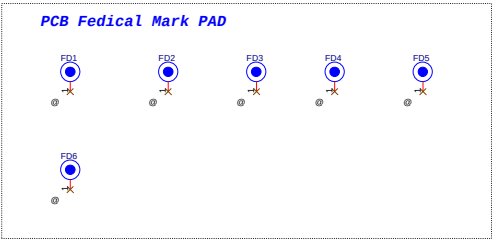
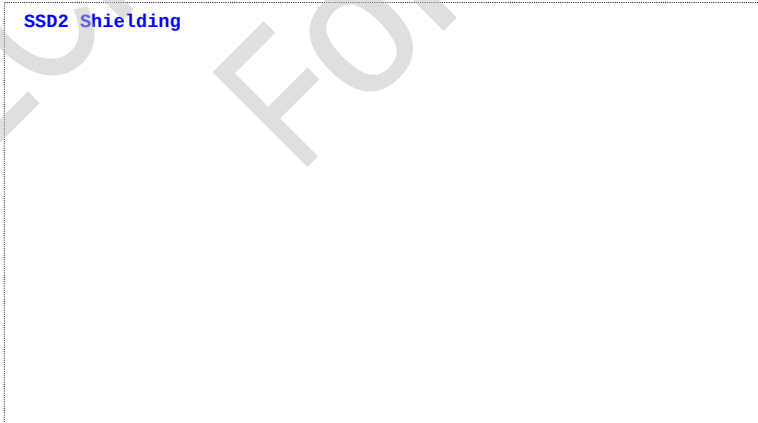
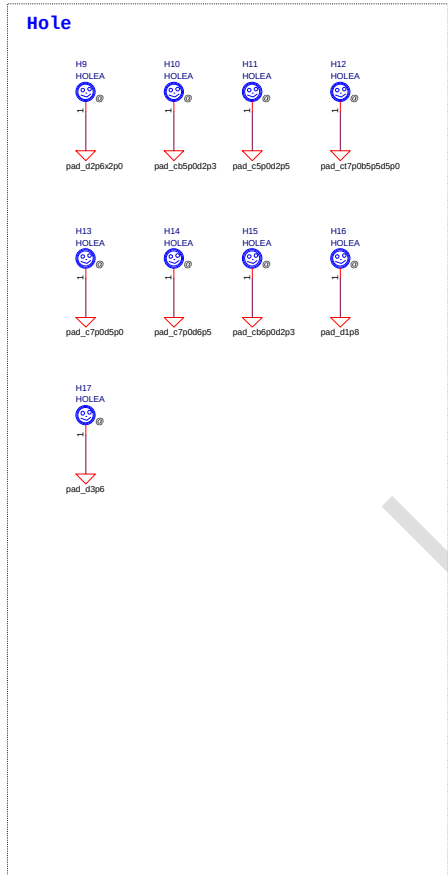
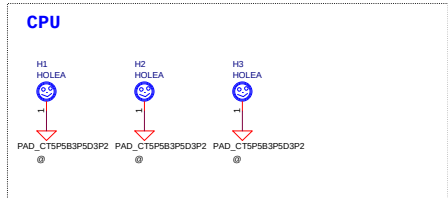


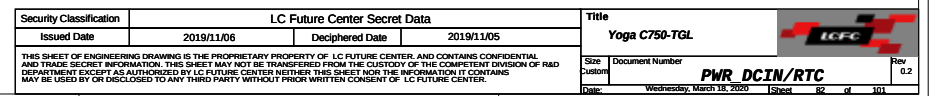
VCCST

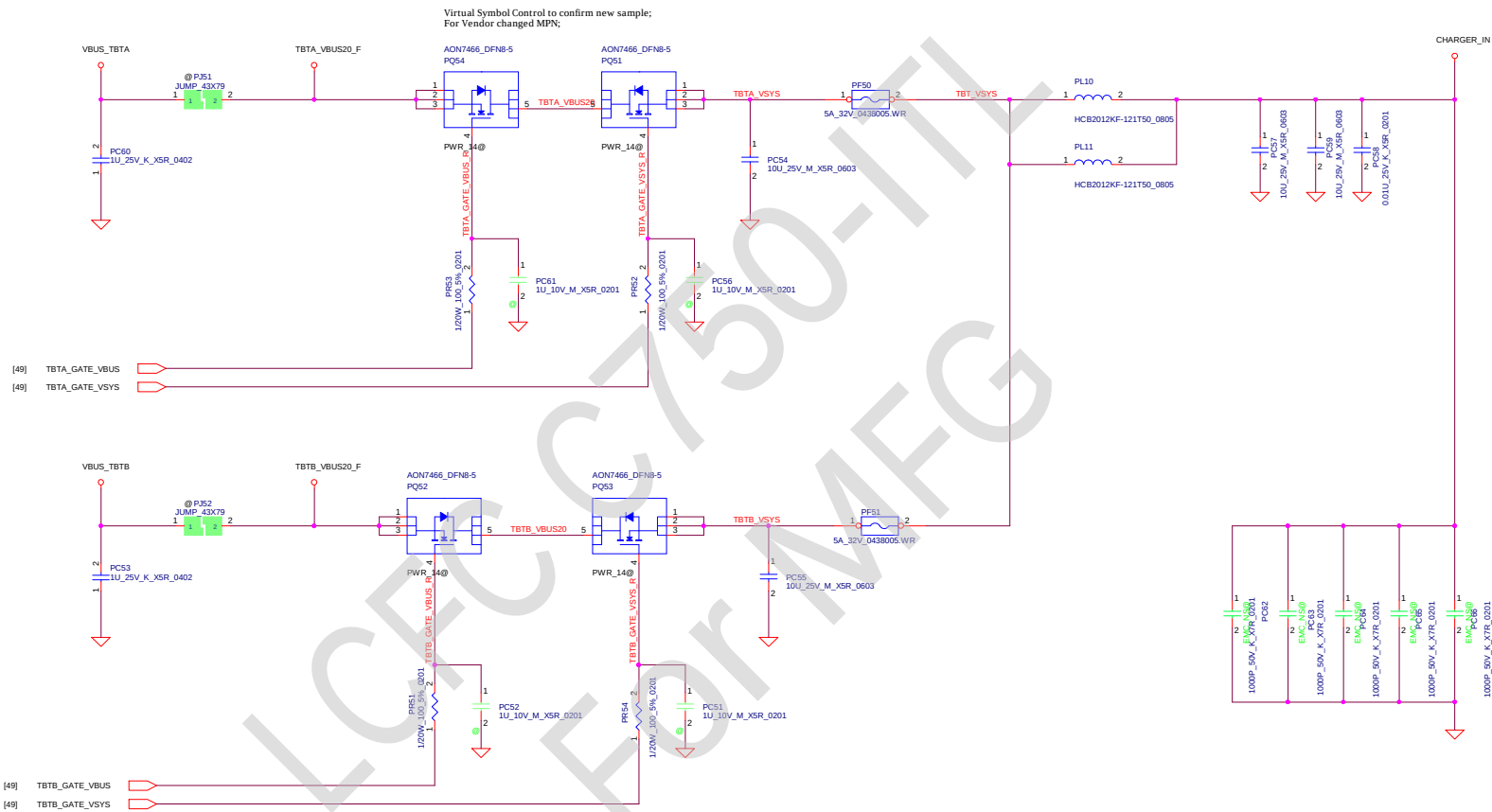


LCFC C750-TL
For MFG

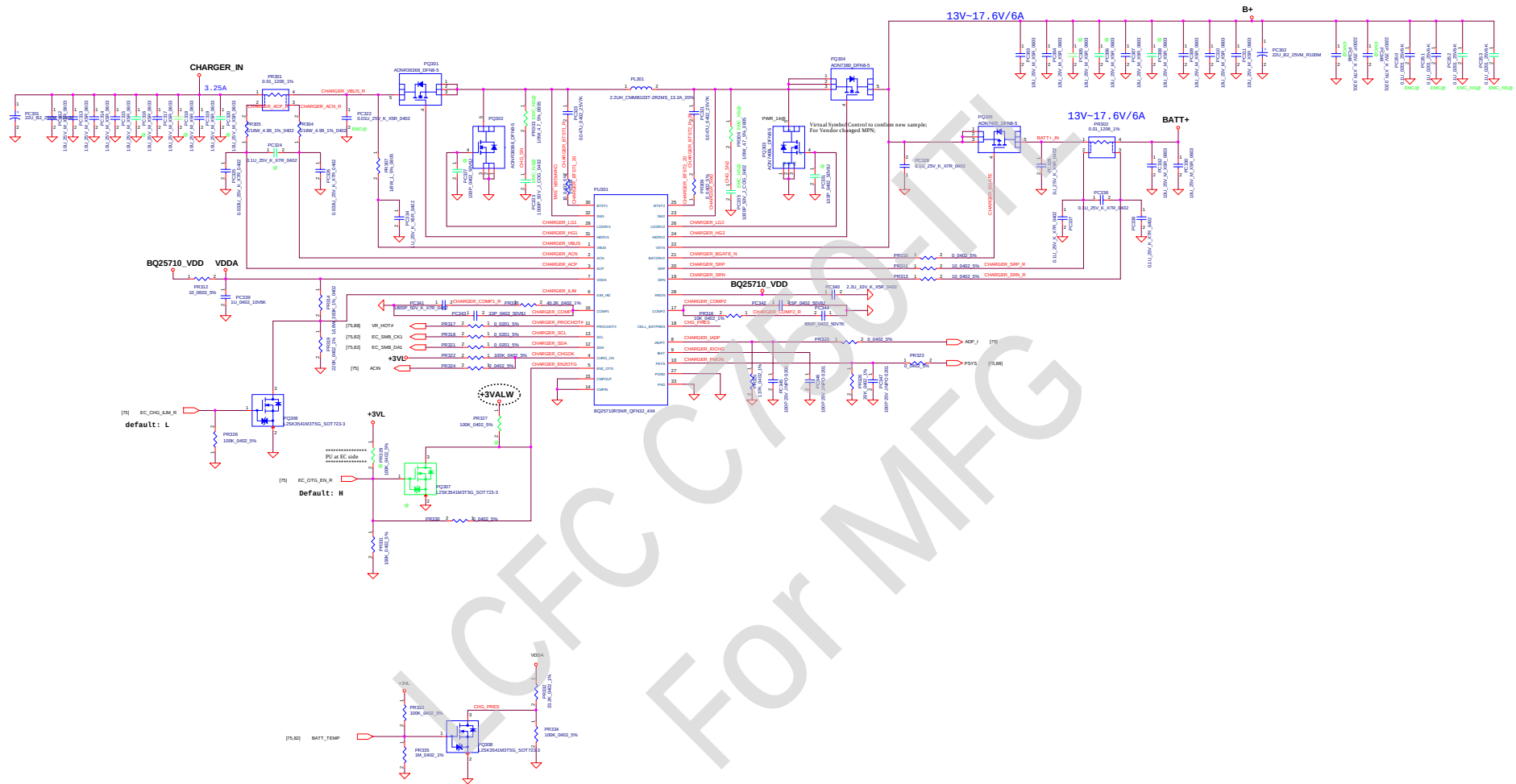
Security Classification		LC Future Center Secret Data		Title	
Issued Date	2019/11/05	Discarded Date	2019/11/05	Yoga C750-TGL	
THIS OBJECT OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS OBJECT SHALL NOT BE TRANSMITTED FROM THE CUSTODY OF THE COMPANY WITHOUT PERMISSION OF THE COMPANY. IF ANY INFORMATION IS DISCLOSED TO ANY THIRD PARTY WITHOUT THE COMPANY'S PERMISSION, THE COMPANY SHALL BE RESPONSIBLE FOR THE DAMAGES. ANY INFORMATION DISCLOSED TO ANY THIRD PARTY WITHOUT THE COMPANY'S PERMISSION SHALL BE DEEMED AS A VIOLATION OF THE COMPANY'S POLICY.				DocuName DCDC_MS_PMR	
Date				2019/11/05	



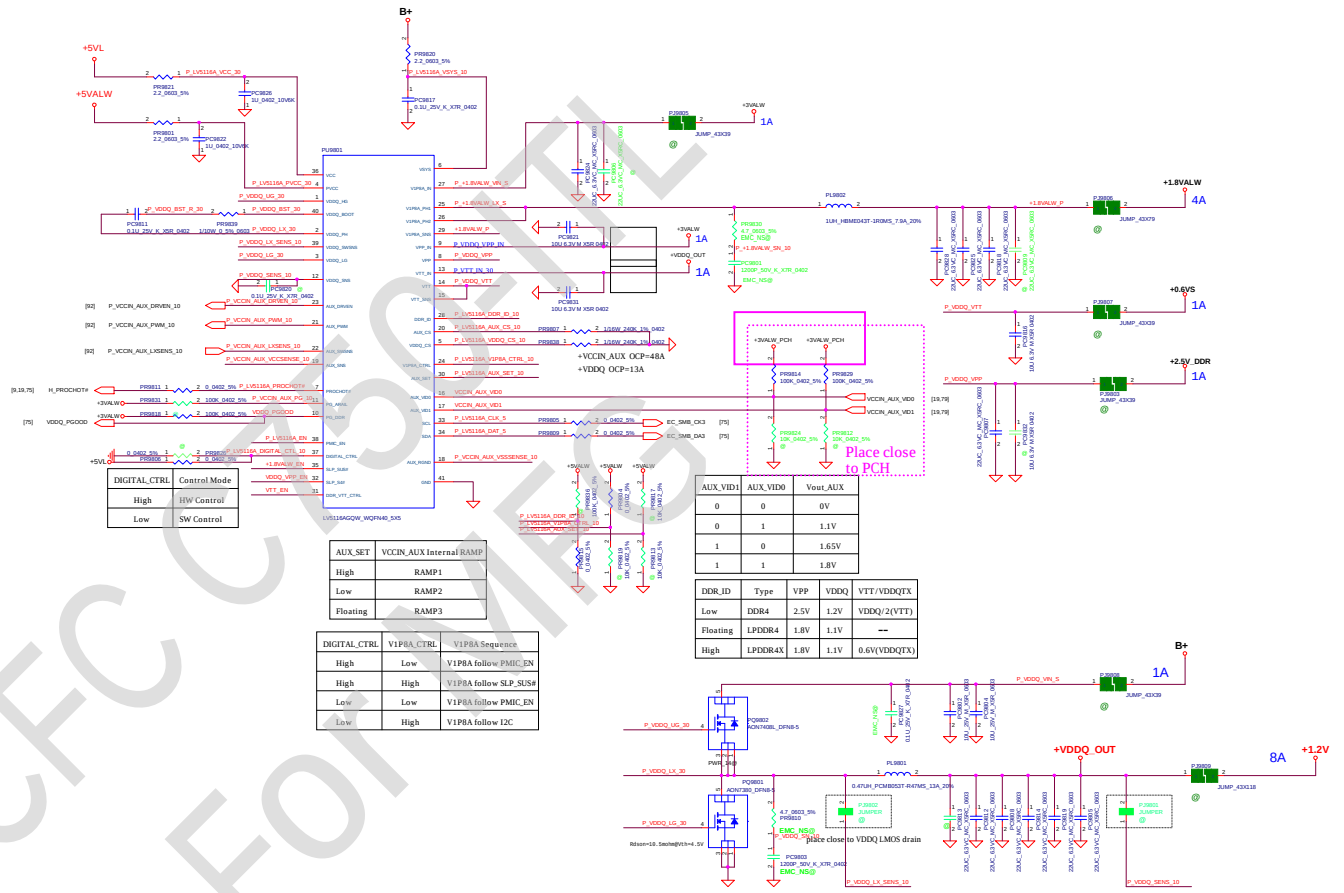
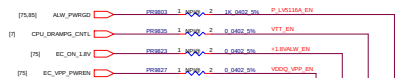


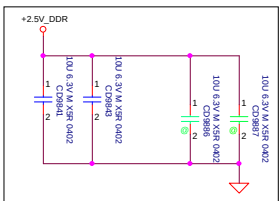
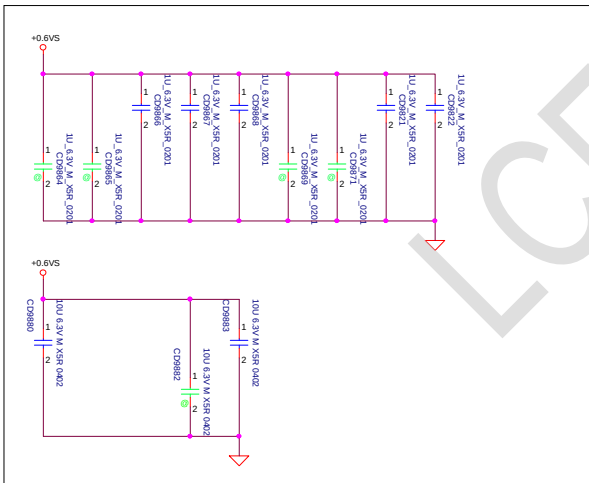
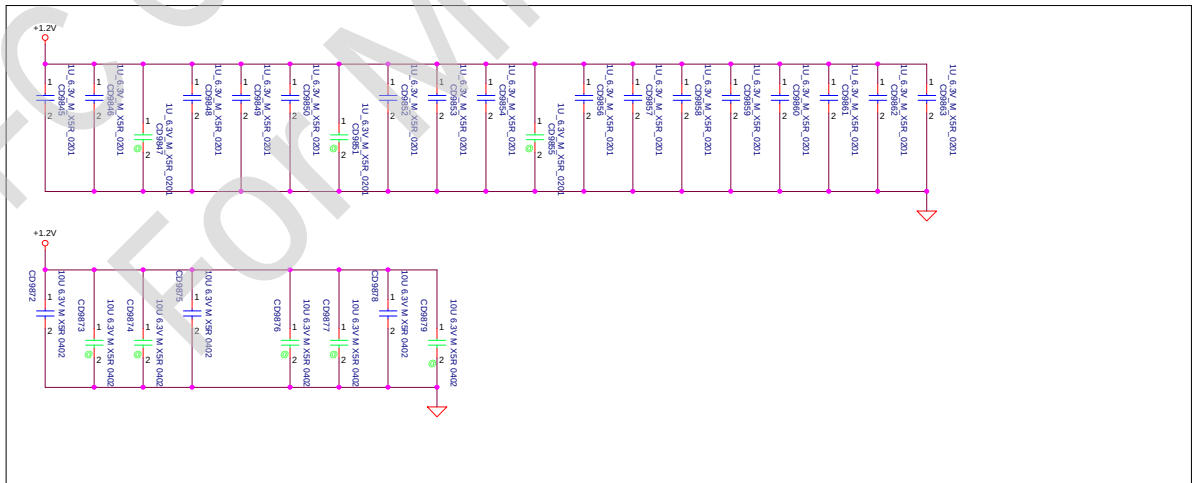
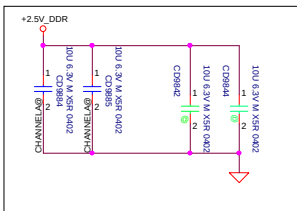
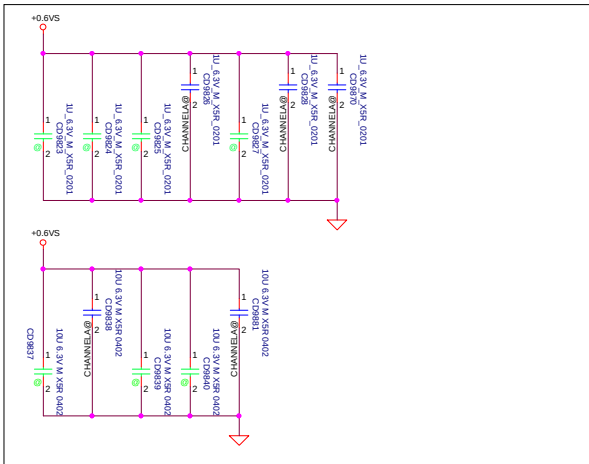
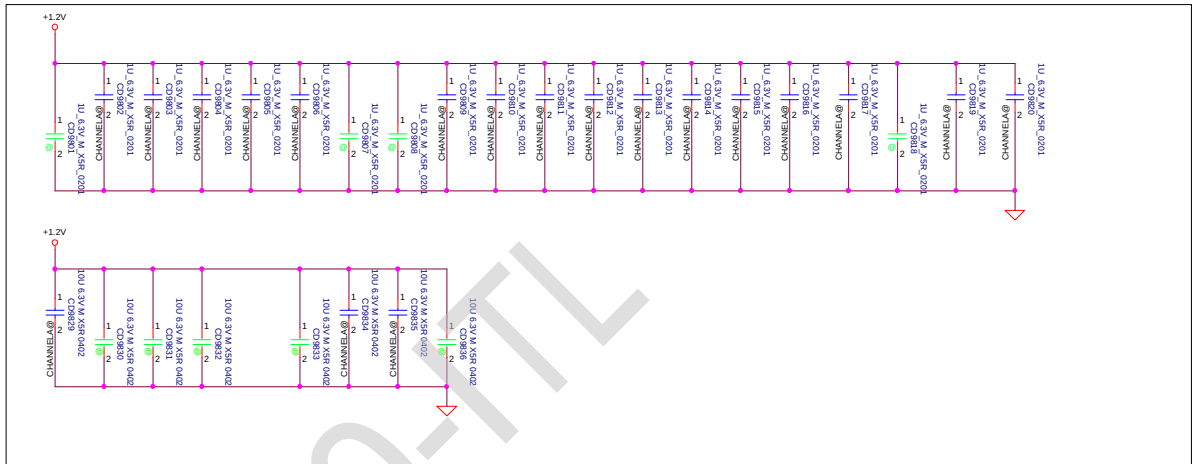


Security Classification		LC Future Center Secret Data		Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSFERRED FROM THE CUSTODY OF THE COMPETENT DIVISION OF LC FUTURE CENTER 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.				Document Number	Rev
				PWR ACIN	0.2
				Date:	Wednesday, March 28, 2020
				Sheet	83 of 103



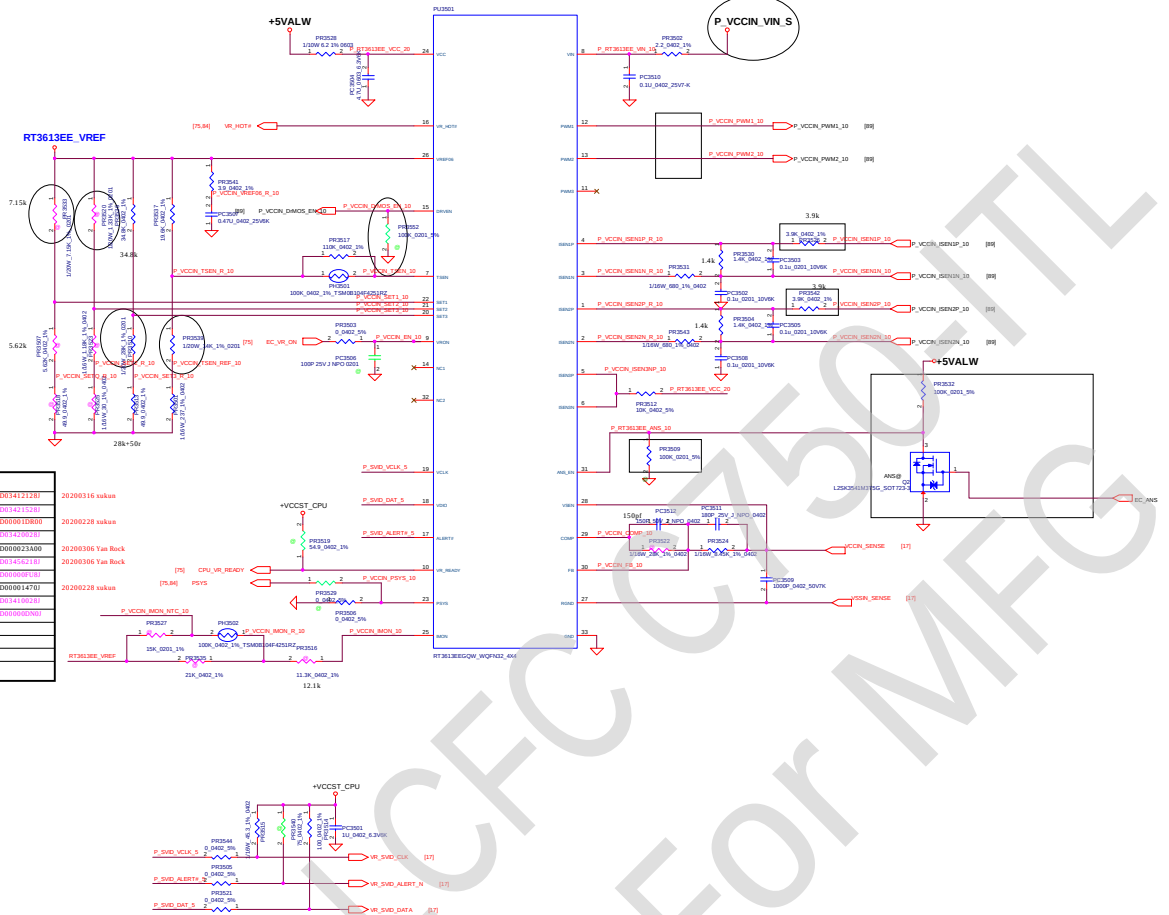
# of CELL	VCELL_PRES	PR332
1-CELL	1.5V	301K
2-CELL	2.4V	150K
3-CELL	3.3V	82K
4-CELL	4.5V	33.2K



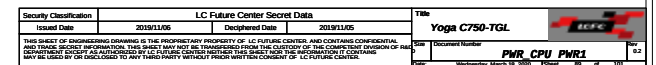


Virtual Symbol

	15W	25W
PR3516	11.3K	SD034113280
PR3515	21K	SD034210280
PR3527	15K	SD041150280
PR3522	28K	SD000015300
PR3533	11K	SD000018300
PR3507	8.25K	SD034025100
PR3518	4K50K	SD034495300
PR3520	1.33K	SD000015200
PR3523	1.18K	SD000010000
PR3525	30K	SD000013200
PR3553		



Vboot=1.8V Loadline= 2mohm
 Ripple=30mV(0A-1A)
 Ripple=30mV(1A-5A)
 Ripple=15mV(5A-TDC)
 TDC=48A Icomax=65A
 OCP=85A
 Max Overshoot=200mV/500us
 OVP=V1D+400mV
 UVP=V1D-150mV
 Fsw=1000 KHz

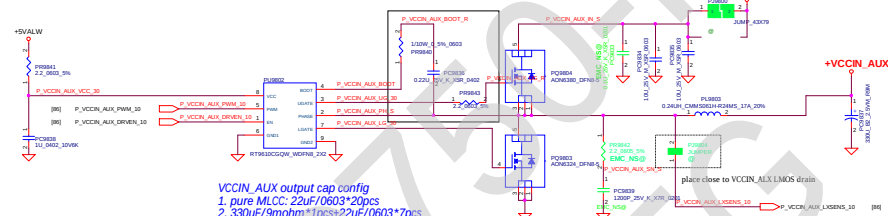


LCFC C750-ITL
For MFG

Security Classification		LC Future Center Secret Data		Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL	
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 C	Document Number PWR CPU PWR2
				Date: Wednesday, March 18, 2020	Rev 0.2
				Sheet 90	of 103

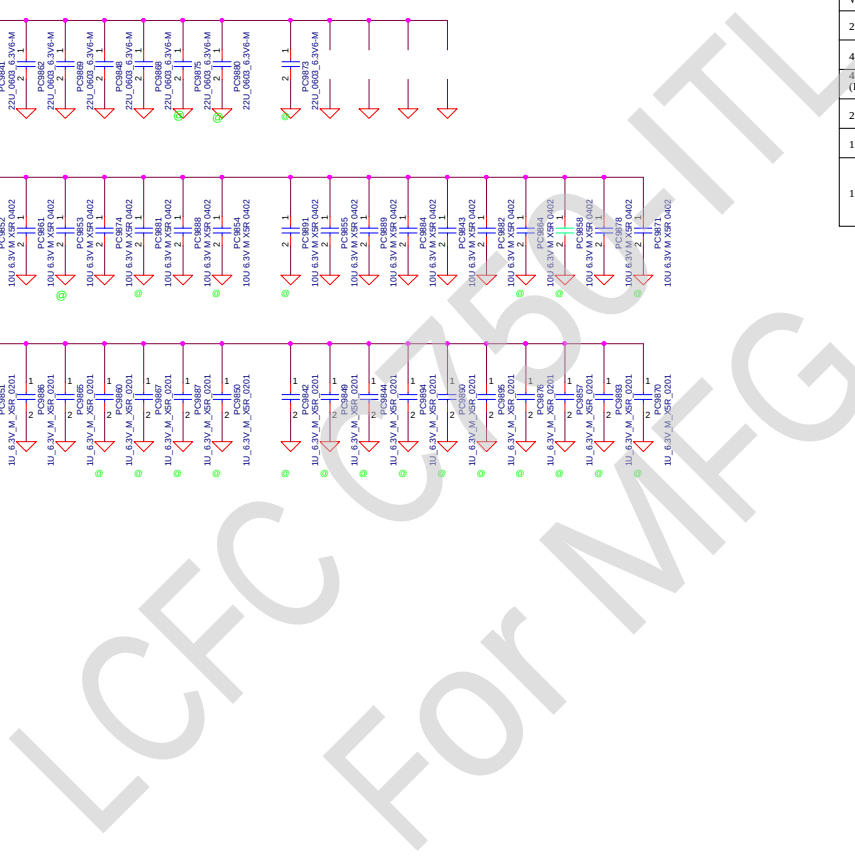






VCCIN_AUX output cap config
 1. pure MLCC: 22uF/0603*20pcs
 2. 330uF/9mohm*1pcs+22uF/0603*7pcs

Vboot=1.8V LoadLine=6mΩ
 AC-DC Ripple=(-10%~+5%)*VOUT
 TDC=14A Iccmax=27A
 CURRENT LIMIT=45A
 Max Overshoot=2.13V/500us
 OVP=(1.2~1.3)*Vref
 UVP=(0.45~0.55)*Vref
 Fsw=666KHz



Value	Qty	Note
220u_7343	1	Primary Side Use 250 rating caps. MLCC cap recommendation based on VR solution with 150kVdc VR bandwidth, or otherwise switching frequency assuming RSW= 7 uF Eqv. Place board caps as close as possible to package in this order where 0402 is the closest to package pins.
47u_0805	3	VR= 343= 0.000333 = 0.002 = package. Use board caps with primary 1000V 0.002F. Align caps along current flow path from VR to package pins.
47u_0805 (Place holder)	3	
22u_0603	12	
10u_0402	15	
10u_0402	1	Secondary Side Use 250 rating caps. MLCC cap recommendation based on VR solution with 150kVdc VR bandwidth, or otherwise switching frequency assuming RSW= 7 uF Eqv. Place board caps as close as possible to package

Value	Qty	Note
220u_7343	1	Primary Side Use 250' rating caps. MLCC cap recommendation based on VR solution with 150kVdc VR bandwidth, or otherwise switching frequency assuming RSW = 7 uF Eqv. Place board caps as close as possible to package in this order where 0402 is the closest to package pins.
47u_0805	3	VR = 343 - 0805 = 0402 = package. Use board caps with primary 1000' VR. Align caps along current flow path from VR to package pins.
47u_0805 (Place holder)	3	
22u_0603	12	Secondary Side Use 250' rating caps. MLCC cap recommendation based on VR solution with 150kVdc VR bandwidth, or otherwise switching frequency assuming RSW = 7 uF Eqv.
10u_0402	15	Place board caps as close as possible to package
10u_0402	10	

LCFC C750-ITL
For MFG

Security Classification	LC Future Center Secret Data		Title
Issued Date	2019/11/06	Deciphered Date	2019/11/05
THIS SHEET OF ENGINEERING DRAWINGS IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MAY NOT BE TRANSMITTED FROM THE CUSTODY OF THE CORRESPONDING DIVISION OF LC FUTURE CENTER, OR REPRODUCED OR TRANSMITTED IN ANY MANNER WITHOUT THE WRITTEN CONSENT OF LC FUTURE CENTER.			Yoga C750-TGL
PWR GPU PWR Controller			DocuSign Number

LCFC C750-TL
For MFG

Security Classification		LC Future Center Secret Data		Title	
Issued Date	2019/11/05	Deciphered Date	2019/11/05	Yoga C750-TGL	
THIS SHEET OF ENGINEERING DRAWING IS THE PROPRIETARY PROPERTY OF LC FUTURE CENTER, AND CONTAINS CONFIDENTIAL AND TRADE SECRET INFORMATION. THIS SHEET MUST NOT BE TRANSMITTED FROM THE CUSTODY OF THE COMPANY OR DIVISION OF THE COMPANY. IT MUST BE KEPT IN A SECURE PLACE AND NOT BE LOANED TO ANY THIRD PARTY WITHOUT THE WRITTEN CONSENT OF LC FUTURE CENTER.				Docu Number	52
				PWR GPU PWR	

LCFC C750-ITL
For MFG

Security Classification		LC Future Center Secret Data		Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL	
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 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 PWR GPU PWR Monitor
				Date Wednesday, March 18, 2020	Rev 0.2
				Sheet 98	of 103

LCFC C750-ITL
For MFG

Security Classification		LC Future Center Secret Data		Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL	
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 RESEARCH AND DEVELOPMENT 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
				C	PWR GPU PWR Decoupling
				Date:	Rev
				Wednesday, March 18, 2020	0.2
				Sheet	97 of 103

LCFC C750-ITL
For MFG

Security Classification	LC Future Center Secret Data		Title		
Issued Date	2019/11/06	Deciphered Date	2019/11/05		Yoga C750-TGL
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 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
			P	PWR VRAM PWR	0.2
			Date:	Wednesday, March 28, 2020	Sheet 98 of 103

LCFC C750-ITL
For MFG

Security Classification	LC Future Center Secret Data			Title	Yoga C750-TGL		
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Document Number	PWR VRAM PWR Decoupling		
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 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.							
Date					Wednesday, March 18, 2020	Sheet	99 of 101

20200115
1. P063: Change RA52 from 30K to 61.9K; Change CA70 from 1000pF to 680pF; Follow vendor's suggestion;
2. P011: Add RC3,RC80,RC81; RC94,R95,RC96, and net ISH_GP7_ITS, ISH_GP6_YMC0; for sensor design requirement;

20200131
1. P051: Change RU108.1 from TBTA_USB2_ON# to TBT_USB2_ON; Change net name TBTA_USB2_ON# to TBT_USB2_ON#;
2. P054: Delete RU182,QU2,RU183; Change net name TBTB_USB2_ON# to TBT_USB2_ON#;
3. P075: Stuff RE38; Un-Stuff RE17; For EC Mirror need +3VALW_PCH, then need +5VALW;

20200219
1. P050: Change RU44.2 power rail from 3VALW_TBTA to +3VALW; For share ROM solution, FLASH_BUSY# should be shared between BBR#1 and BBR#2 with PU to PW_VCC3v3_SX_SYS(+3VALW);
2. P053: Change RU124.2 power rail from 3VALW_TBTA to +3VALW; For share ROM solution;
3. P009: Delete QC3, RC66; EC can not support CATERR# debug function;
4. P075: Delete signal PCH_CATERR#_EC, change RE18.2 connect to ISH_GP6_YMC1;
Change net name EC_BATLOW#_CATERR# to EC_BATLOW#_YMC1; Stuff RE18;
5. P075: Delete RE55,CE17 and net SYSON; Change RE79.2 connect to ISH_GP5_YMC0,
change net name EC_SYSON to EC_ISH_YMC0; Stuff RE79;
6. P086: Delete PR9837 and net SYSON;
7. P075: Add RE97,RE98; Un-Stuff RE98; Connect RE97.1, RE98.1 to net EC_FN_LED#_ISH_ITS;
Connect RE97.2 to net ISH_GP7_ITS; Connect RE98.2 to net EC_FN_LED#;
8. P009: Stuff RC112; Design error;

20200219
1. P063: Change UA7 from TPS61372 to TPS61089; Change LA10 from SH00001Z00 to SH000016V00; Add RA84, CA88, CA89, CA90;

20200224
1. P063:
Change CA88 from 24p to 47p; Follow vendor's suggest;
Change RA52 from 61.9K_0402 to 24K_0201; Follow vendor's suggest;
Change CA70 from 680pF_0402 to 4700pF_0201; Follow vendor's suggest;
Change CA27 from 0.1u_10V_0402 to 0.1u_25V_0201;
Change CA51 from 10uF_25V_0805 to 22uF_25V_0805;
Change RA54 from 2M to 910K; For power solution changed;
Change RA55 from 0 ohm to 3K; For power solution changed;

20200225
1. P023: Delete RD43,RD4; RD36,RD46; RD29,RD16; RD22,RD31,RD25,RD10; RD17,RD39,RD20,RD9; RD13,RD47; RD28,RD42,RD32,RD7;
Add RPD1, RPD2, RPD3, RPD4, RPD5, RPD6, RPD7;
2. P024: Delete RD67,RD100,RD92,RD70; RD68,RD95; RD101,RD109,RD105,RD80; RD89,RD71,RD90,RD83; RD86,RD110,RD74,RD77; RD87,RD84,RD73,RD81; RD93,RD96;
Add RPD8, RPD9, RPD10, RPD11, RPD12, RPD13, RPD14;
3. P075: Add RE99; Connect RE99.1 to PCH_BEEP, RE99.2 to EC_MIC_LED#; Enabled Top Swap function;
4. P016: Change the power rail of RC170,RC171,RC173,RC175,RC176,RC165 from +3VALW to +VCCPDSW_3P3; For common design;

20200227
1. P023: Change RPD4_0804 to RPD4_0404, Add RPD15_0404; For Layout;

20200227
1. P023:
Change RPD5_0804 to RPD5_0404, Add RPD16_0404; For Layout;
Change RPD7_0804 to RPD7_0404, Add RPD17_0404; For Layout;

20200229
1. P075: Change PN of DE1,DE2 from SCS00006J00 to SCS00007L00; Follow GCM's suggestion;

20200302
1. P063:
Change LA10 from SH000016V00_2.2uH to SH00001XS00_1uH; Follow vendor's suggestion;
Delete CA66 input CAP_22U_6.3V; Add CA91 output CAP_22U_25V; Follow vendor's suggestion;
Delete J13, no need; Add J14 for AMP_GND and GND;

20200306:
1. Add BOM Structure @ for UA1, UU1, UU7, UU11; Need use new LCFC P/N, use virtual symbol to control;

20200306:
1. P051/P054: Update UU7/UU11 from SN1904020YBGR to SN1904020YBFR; For vendor update MPN, and height up from 0.5mm to 0.55mm;

20200310:
1. P51: Stuff RU195, RU107, QU1, UU6, CU55, CU59; Un-stuff RU197, RU198; DC S5 state, plug type-C device, 3VALW_PCH have voltage leakage through USB DP;
2. P54: Stuff CU98, CU102, UU10; Un-stuff RU199, RU200;
3. P50: Un-stuff DUC3; Stuff RU57; For no need update TBT FW on board;
Stuff RU78, Un-stuff RU79; Follow CR8, and confirmed with intel;
4. P53: Stuff RU150, Un-stuff RU152; Follow CR8, and confirmed with intel;
5. P48: Un-stuff RU11; need PU at PCH side for voltage leakage;

20200314:
1. P9: Add BOM structure NPI@ for RC112;
2. P45: Add BOM structure NPI@ for RA77;
3. P63: Change P/N of RA52 to LBG P/N;

20200316:
1. P015: Change CC22 from 8pF to 10pF; Follow vendor's crystal test;
2. Change RE80 from 1K to 0R; Change RC163 from 10K to 100K; to solve BSMRST overshoot
3. Change RE82 from 0R to 1K; Change PR9803 from 0R to 1K; to solve ALW_PWRGD overshoot
4. Change RE51 from 1K to 0R; Change RC160 from 10K to 100K; to solve DPWR0K overshoot

20200318:
1. P79: Un-stuff UR5, CR20; UR9, CR25, RR25, UR8, CR24;
2. P16: Change RC170 from 10K to 1K follow Intel Schckh;

Security Classification		LC Future Center Secret Data		Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL	
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 LC FUTURE CENTER 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.				Document Number	Rev
Date:				Thursday, March 18, 2020	0.2
				Sheet	100 of 100

2019.11.07:
1. Replace all part references by common design table
2. 3VALW MOSFET change to C740 discrete MOSFET solution
3. VCCIN_AUX change to S550 driver + discrete MOSFETs solution

2019.11.014:
1. Replace PC9801 PC2002 PC2001 by B2 size sample
2. Correct PQ2002 connecting

2019.11.25:
1. Replace PC2007,2008,2009,2010,3519,3521,9834,9835 with 0603 size part. delete PC3514 location
2. Delete Vccin, Vccin_aux input resistors, add input beads
3. Modify Capacitors RBOM with vendor's optimize

2020.02.28:
1. change PC3563, and 8 10uf VCCIN MLCC to be mounted
2. Add PR9843, and change PR9840 to 00HM
3. Modify some resitors value in VR
4. Modify 3V5V Ics resistor value

2020.03.02:
1. change PL2001's PN from SH000011200 to SH000016N00;

2020.03.02:
1. P91: Stuff PC3563; PC3558,PC3537,PC3568,PC3547,PC3579,PC3546,PC3553,PC3538; For VRTT test;
2. P88: Delete PR3547,Q3; Change PR3532 from 1K to 100K;
3. P92: Change PR9840 from 2.2R to 0R; Add PR9843 at Gate of PQ9804;

2020.03.05:
1. Change PC2007,PC2008,PC2009,PC2010 from 10u_0603 to 4.7u_0402;
2. Add PC2032,PC2033,PC2034,PC2035;

2020.03.06:
1. P88: Change PR3533 from 10K to 7.15K, PR3507 from 8.25K to 5.62K;
Change PR3536 from 33.2K to 34.8K, PR3510 from 28.7K to 28K, PR3513 from 1.5K to 49.9R;
Change PR3526 and PR3542 from 3.74K to 3.9K;
Change PC3512 from 100pF to 150pF
2. P85: Change PR2001 from 62K to 15K, PR2002 from 24K to 5.1K

2020.03.14:
1. Change PC2007,PC2008,PC2009,PC2010 from 10u_0603 to 4.7u_0402;
2. Add PC2032,PC2033,PC2034,PC2035;

2020.03.16:
1. Change PR3504,PR3530 FROM 1.33K TO 1.4K;
2. CHANGE PR3516 FROM 13K TO 12.1K FOR 25W@;

Security Classification	LC Future Center Secret Data			Title	
Issued Date	2019/11/06	Deciphered Date	2019/11/05	Yoga C750-TGL	
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 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	Rev 0.2
				Date: Wednesday, March 18, 2020	Sheet 101 of 101