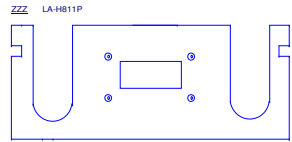


MODEL NAME : *Modena*
 PCB NO : *LA-H811P*
 BOM P/N : *451AHT31L01 ~ L32*

Vinafix.com



Dell/Compal Confidential

Schematic Document

(MODENA ICE Lake U)

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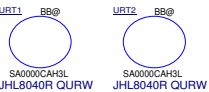
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Rev: 1.0 (A00)

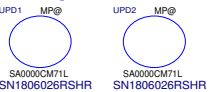
CPU Option



TBT Option



PD Option



WLAN Option



TPM Option

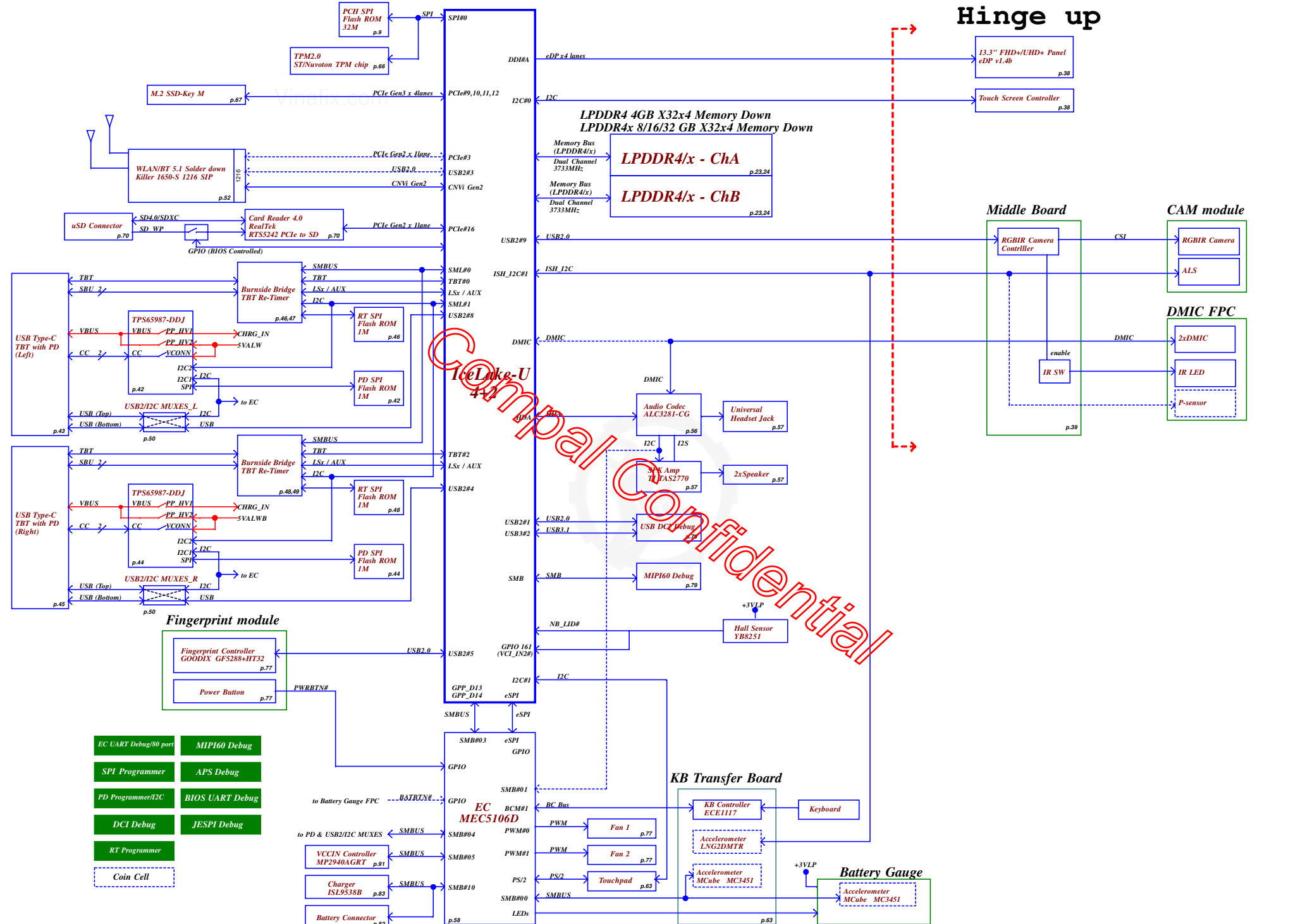


EC Option



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				Rev 0.1 (000)

Hinge up



Hinge Down

- EC UART Debug/80 port
- SPI Programmer
- PD Programmer/I2C
- DCI Debug
- RT Programmer
- MIP160 Debug
- APS Debug
- BIOS UART Debug
- JESPI Debug
- Coin Cell

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P02 - Block Diagram								
LA-H811P								

Board ID Table

Vcc	3.3V +/- 5%			
Board ID	R	C	REV	PCB Revision
0	240K +/- 1%	4700p	X00	0.1
1	130K +/- 5%	4700p	X01	0.2
2	62K +/- 5%	4700p	X02	0.3
3	33K +/- 5%	4700p		
4	8.2K +/- 5%	4700p		
5	4.3K +/- 5%	4700p		
6	2K +/- 5%	4700p	N/A	N/A
7	1K +/- 5%	4700p		

SMBUS Control Table

	SOURCE	PCH	BATT Connector	Charger	VCCIN Controller	PD Controller	MIP160	USB/I2C MUX	BurnSide Bridge	Accel	TI Amp.
PCH_SML0CLK PCH_SML0DATA	PCH								Reserve		
PCH_SML1CLK PCH_SML1DATA	PCH					V			V		
SMBCLK SMBDATA	PCH						V				
EC_SMB03_CLK EC_SMB03_DAT	MECS106	V									
EC_SMB04_CLK EC_SMB04_DAT	MECS106					V	V				
EC_SMB05_CLK EC_SMB05_DAT	MECS106				Reserve						
EC_SMB10_CLK EC_SMB10_DAT	MECS106		V	V							
EC_SMB00_CLK EC_SMB00_DAT	MECS106								V		
EC_SMB01_CLK EC_SMB01_DAT	MECS106									V	

Check

PCIe/USB3.1

Flexible I/O	Interface	DESTINATION
0	PCI-E#1 / USB 3.1#1	None
1	PCI-E#2 / USB 3.1#2	USB DCI Debug
2	PCI-E#3 / USB 3.1#3	WLAN PCIe Gen2
3	PCI-E#4 / USB 3.1#4	None
4	PCI-E#5 / USB 3.1#5	None
5	PCI-E#6 / USB 3.1#6	None
6	PCI-E#7	None
7	PCI-E#8	None
8	PCI-E#9	M.2 SSD
9	PCI-E#10	
10	PCI-E#11 / SATA#0	
11	PCI-E#12 / SATA#1a	
12	PCI-E#13	None
13	PCI-E#14	None
14	PCI-E#15 / SATA#1b	None
15	PCI-E#16 / SATA#2	Card Reader PCIe GEN2

USB 2.0

USB 2.0 PORT#	DESTINATION
1	USB DCI Debug
2	None
3	None
4	Type-C_R
5	FPR
6	None
7	None
8	Type-C_L
9	CAM
10	BT

CLK

	DIFFERENTIAL	DESTINATION
CLK	CLKOUT_PCIE0	WLAN
	CLKOUT_PCIE1	M.2 SSD
	CLKOUT_PCIE2	None
	CLKOUT_PCIE3	None
	CLKOUT_PCIE4	Card Reader
	CLKOUT_PCIE5	None
	FLEX CLOCKS	DESTINATION
	ESPI_CLK	EC eSPI

Thunderbolt

	TBT PORT#	DESTINATION
TBT	0	USB Type-C_L
	1	None
	2	USB Type-C_R
	3	None

Displayport

	DDI PORT#	DESTINATION
DDI	A	4 Lane eDP
	B	None

Symbol Note :

@ : means de-pop

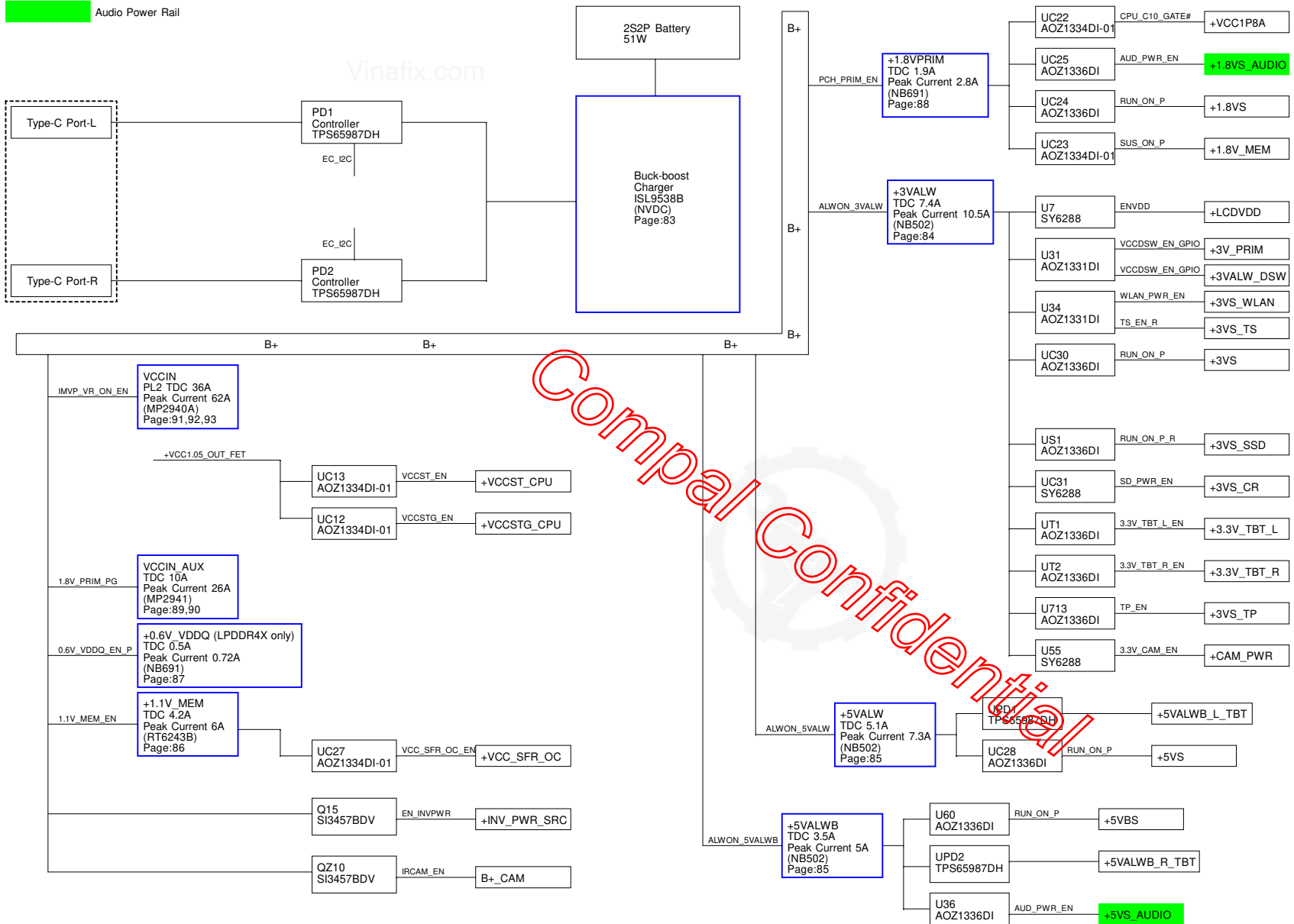
⏏ : means Digital Ground

⏏ : means Analog Ground

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Date	Yesterday, December 24, 2019	Sheet	3	of 100

Modena POWER BLOCK DIAGRAM

Power Rail
Audio Power Rail



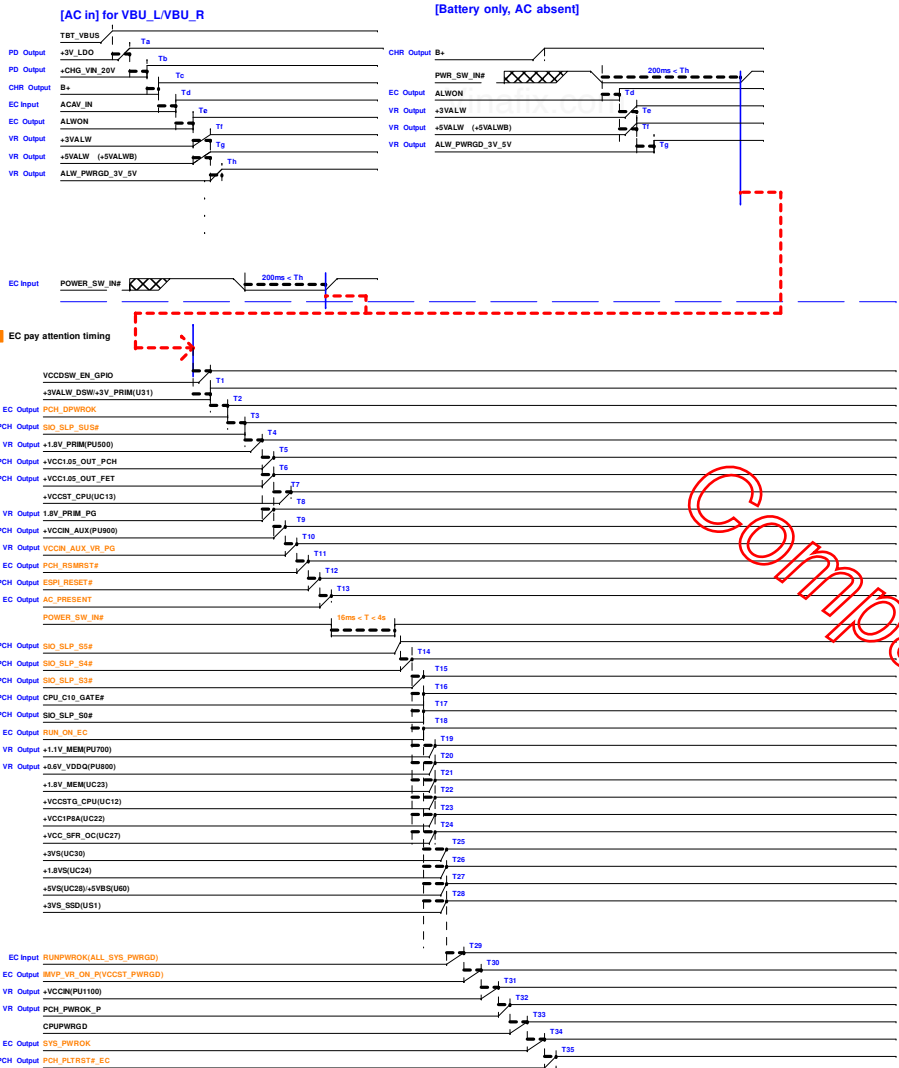
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Power On Sequence

[AC in]

[Battery only, AC absent]

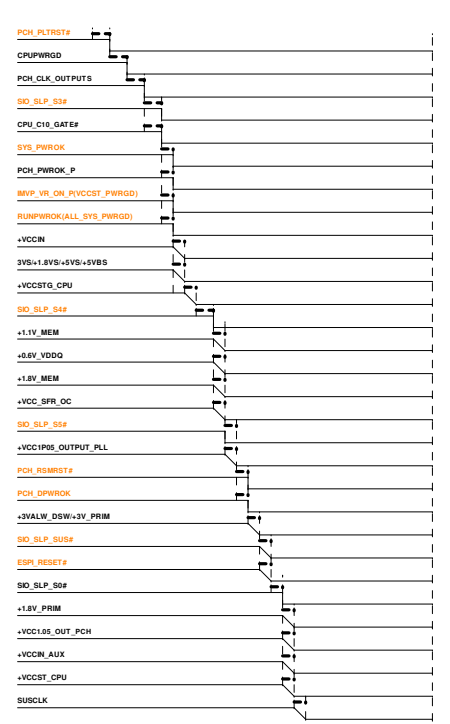


ITEM	Measure Point	Time
Ta	TBT_VBUS	To
Tb	-3V_LDO	To
Tc	+CHG_VIN_20V	To
Td	B-	To
Te	ACAW_IN	To
Tf	ALWON	To
Tg	ALWON	To
Th	-3VALW	To
Ti	+5VALW (+5VALWB)	To
Tj	-3VALW (-5VALWB)	To
Tk	ALW_PWRGD_3V_5V	To

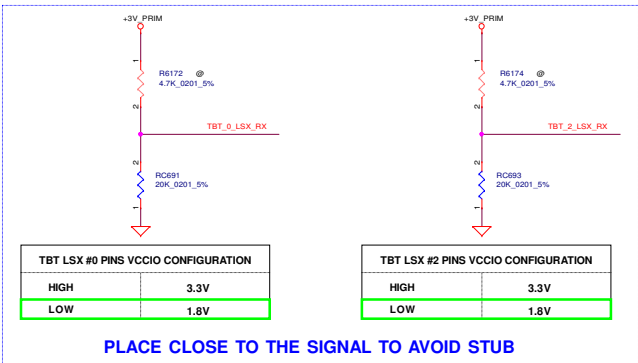
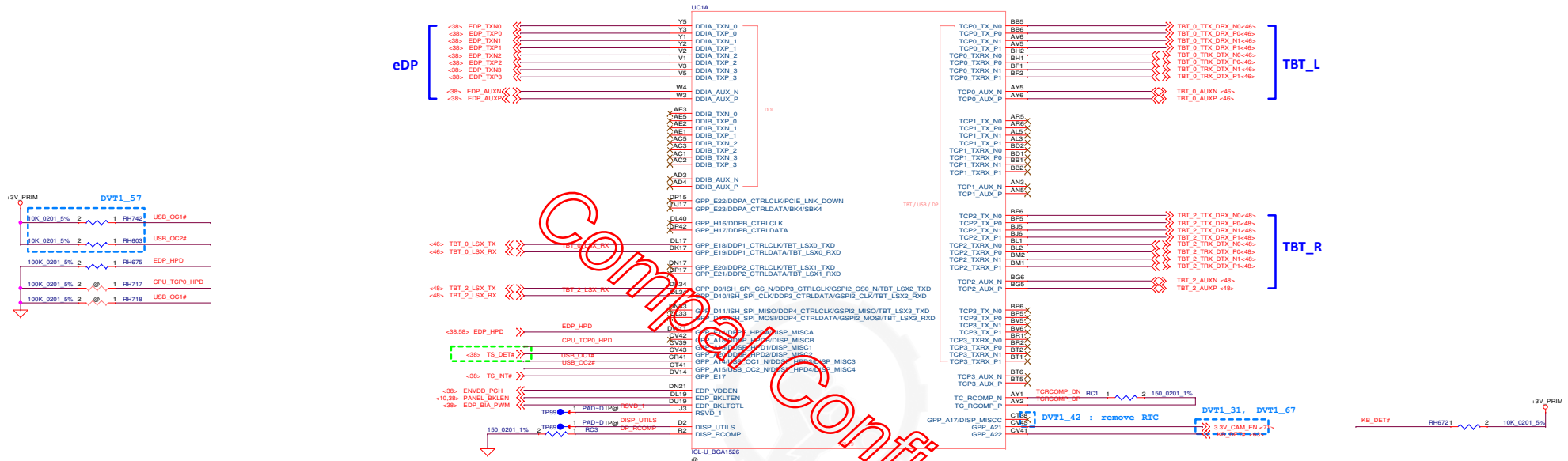
ITEM	Measure Point	Time
T1	VCCDSW_EN_GPI0	To
T2	+3VALW_DSW+3V_PRIM	To
T3	PCH_DPWRCK	To
T4	SIO_SLP_SUS#	To
T5	+1.8V_PRIM	To
T6	+1.8V_PRIM	To
T7	+VCC1.05_OUT_PCH	To
T8	+VCC1.05_OUT_FET	To
T9	+VCCSTG_CPU	To
T10	1.8V_PRIM_PG	To
T11	VCCIN_AUX	To
T12	VCCIN_AUX_VR_PG	To
T13	PCH_RSMRST#	To
T14	ESPI_RESET#	To
T15	AC_PRESENT	To
T16	SIO_SLP_S4#	To
T17	SIO_SLP_S4#	To
T18	SIO_SLP_S4#	To
T19	SIO_SLP_S4#	To
T20	SIO_SLP_S4#	To
T21	SIO_SLP_S4#	To
T22	SIO_SLP_S4#	To
T23	SIO_SLP_S4#	To
T24	SIO_SLP_S4#	To
T25	SIO_SLP_S4#	To
T26	SIO_SLP_S4#	To
T27	SIO_SLP_S4#	To
T28	SIO_SLP_S4#	To
T29	SIO_SLP_S4#	To
T30	SIO_SLP_S4#	To
T31	SIO_SLP_S4#	To
T32	SIO_SLP_S4#	To
T33	SIO_SLP_S4#	To
T34	SIO_SLP_S4#	To
T35	SIO_SLP_S4#	To

Power Down Sequence

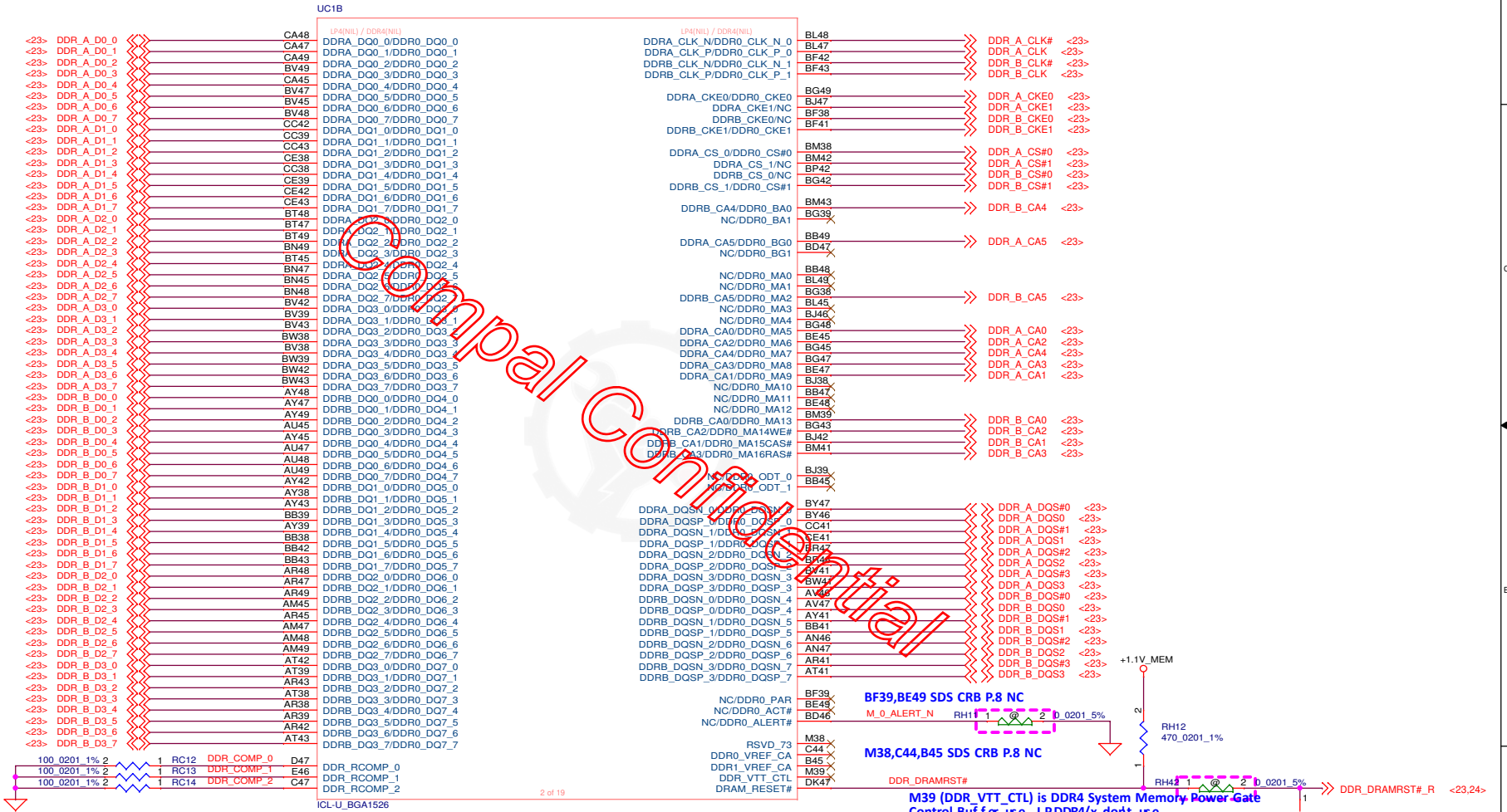
EC pay attention timing



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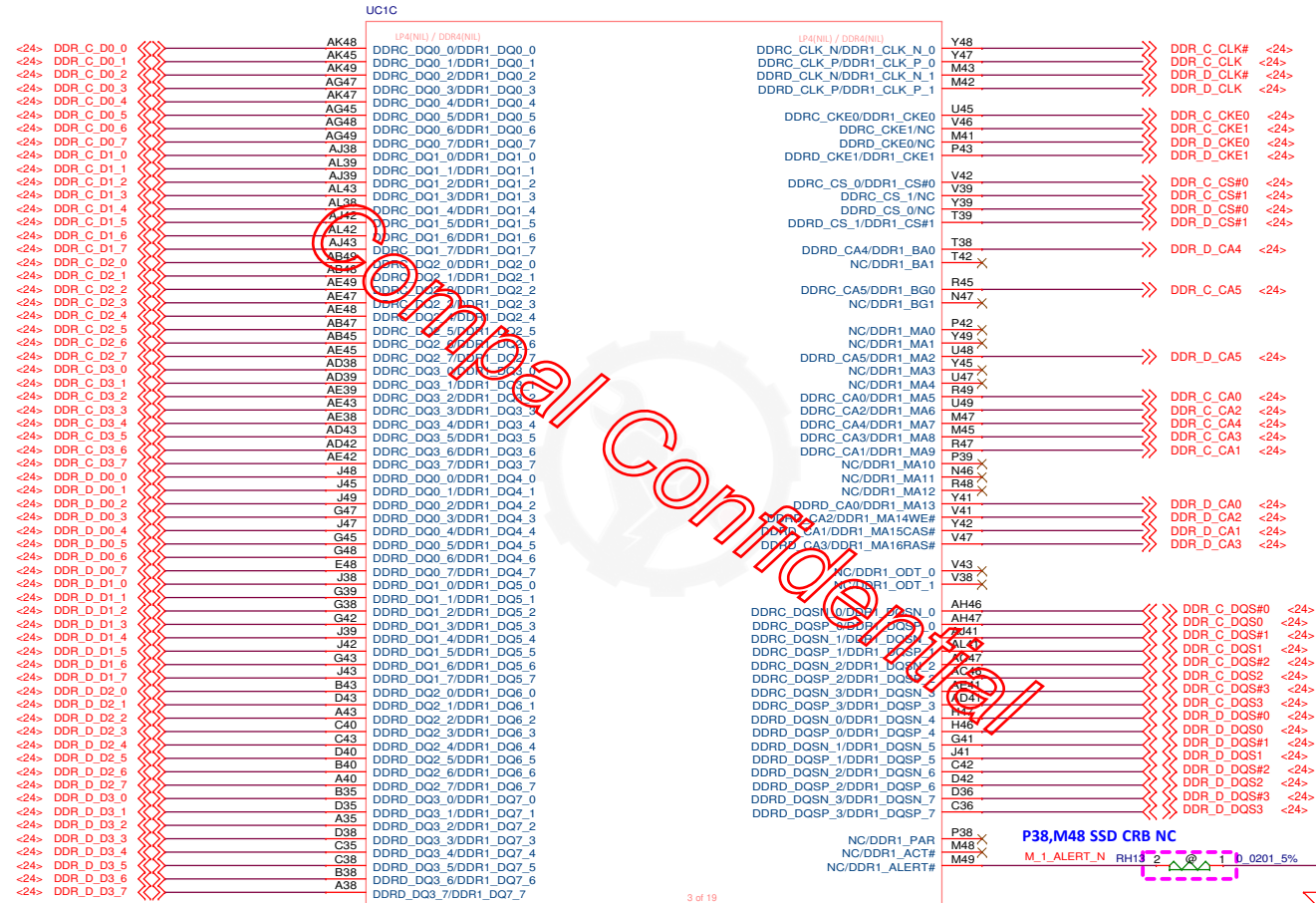


Memory connection refer 573975 Rev1P1

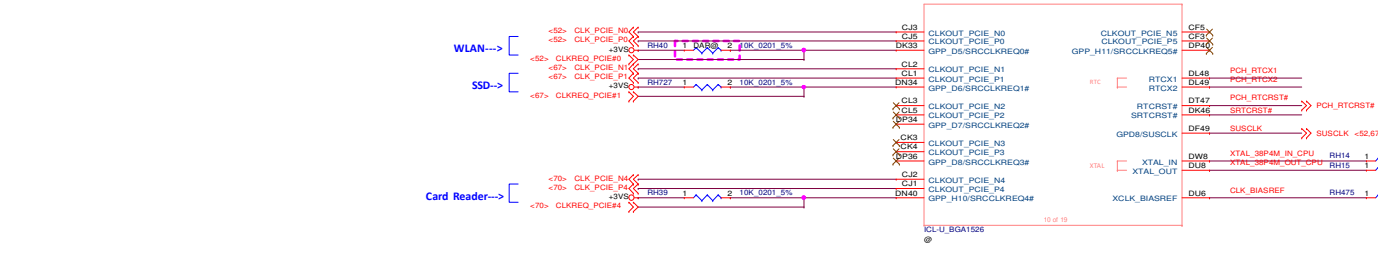
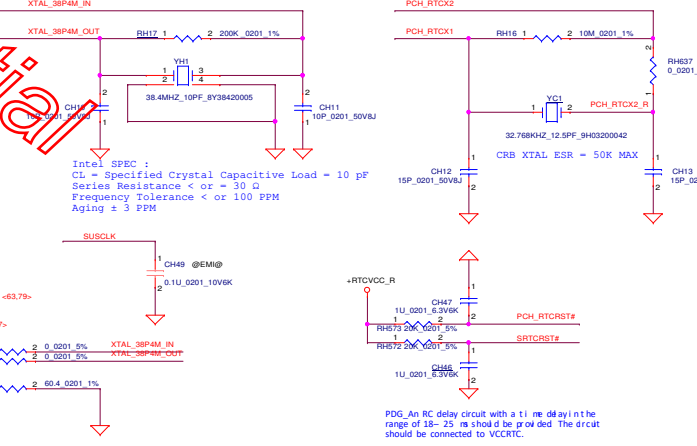
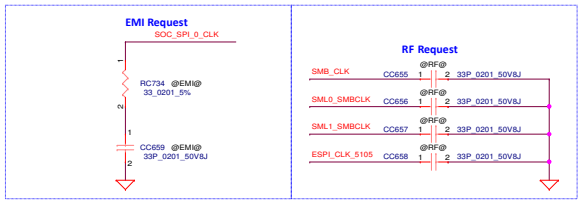
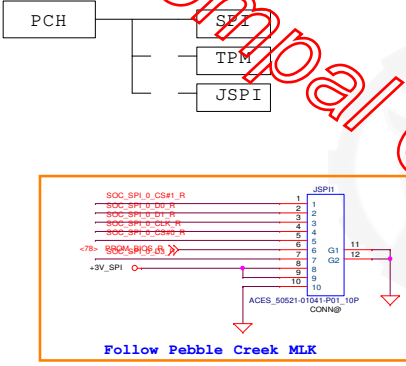
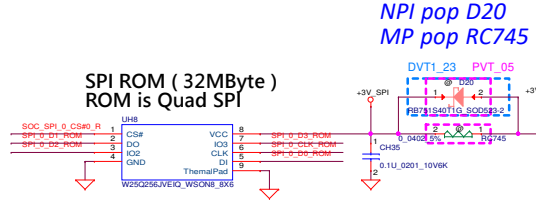
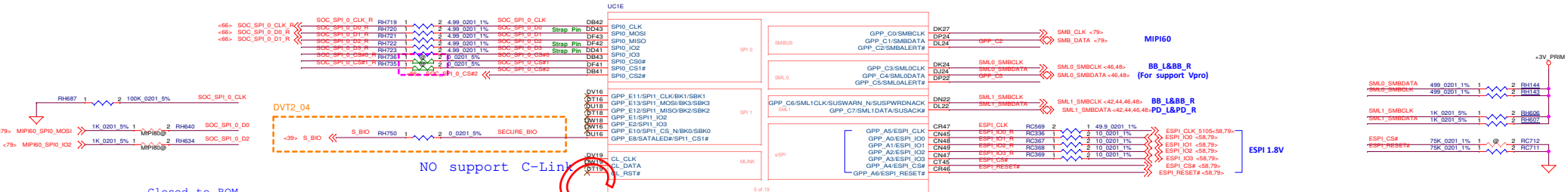
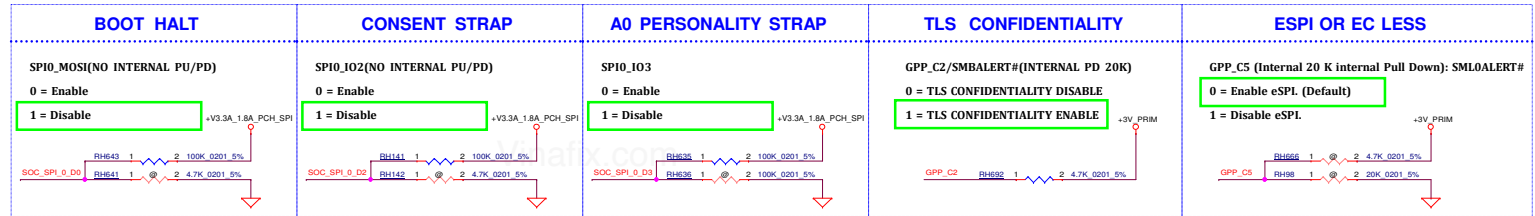


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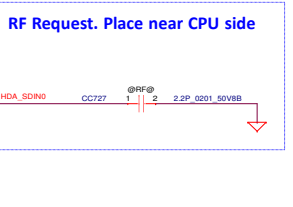
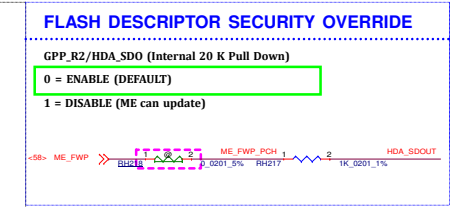
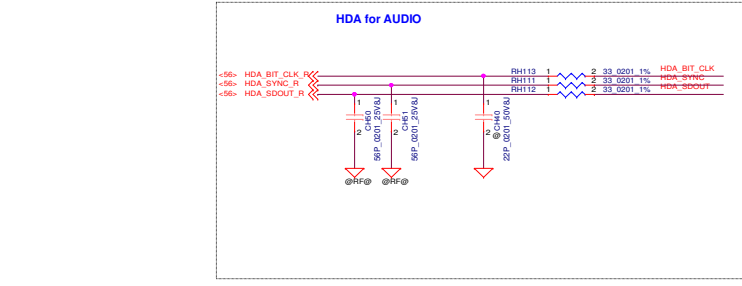
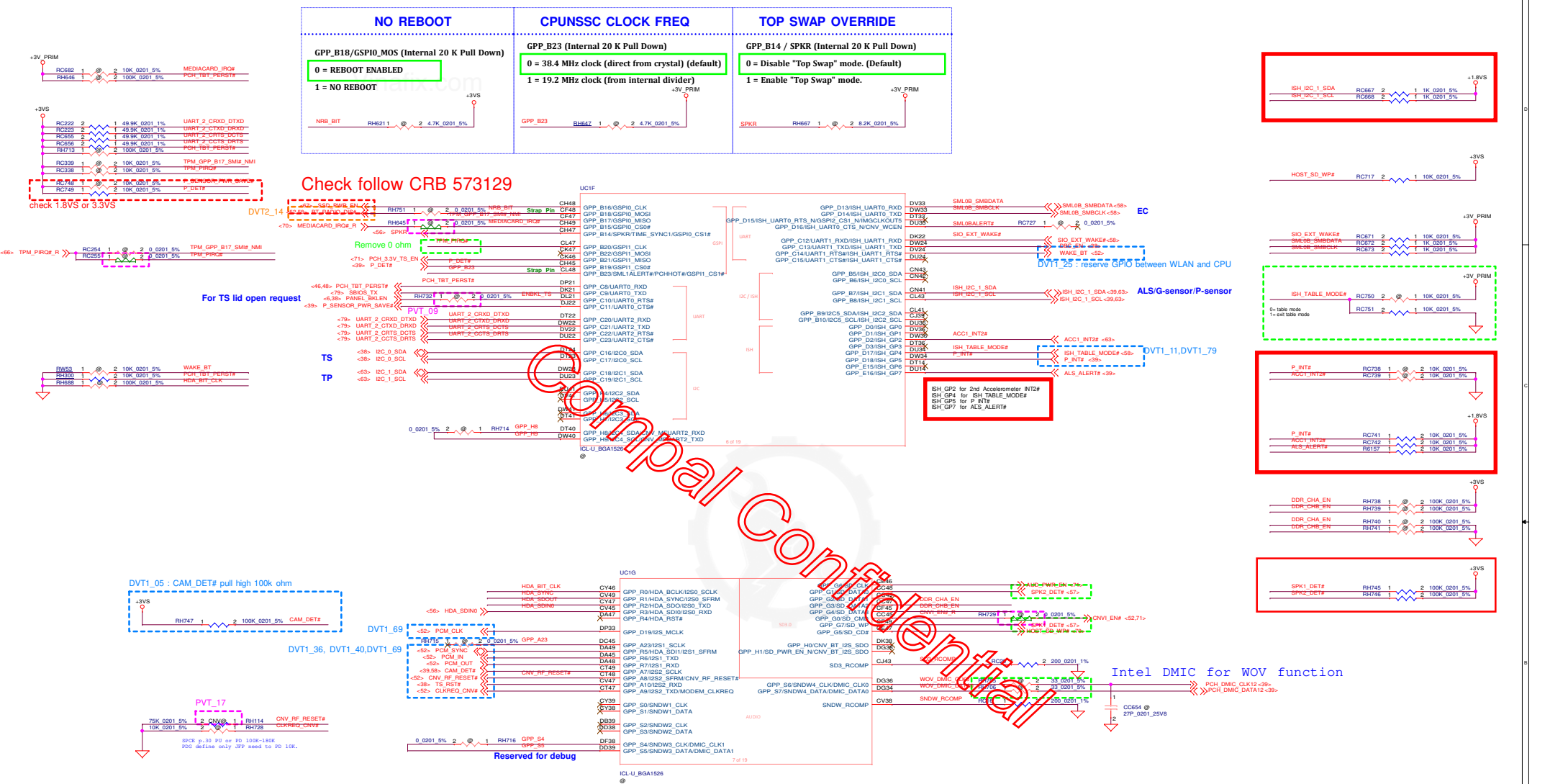
Memory connection refer 573975 Rev1P1



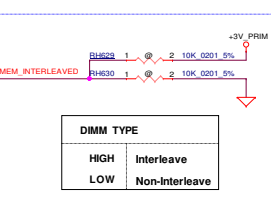
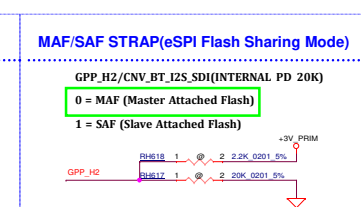
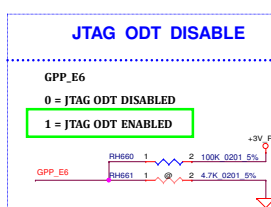
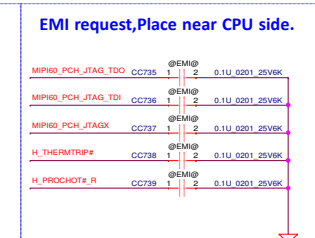
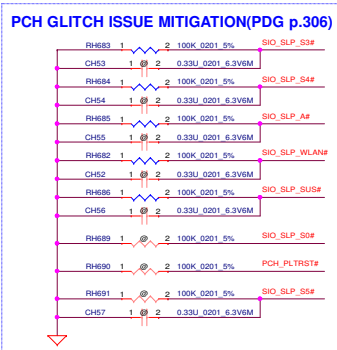
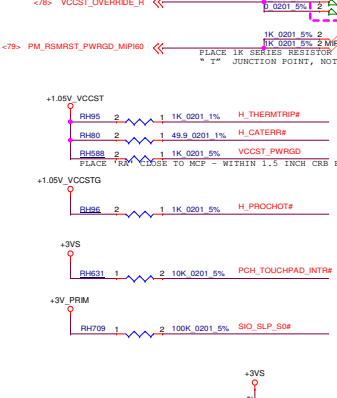
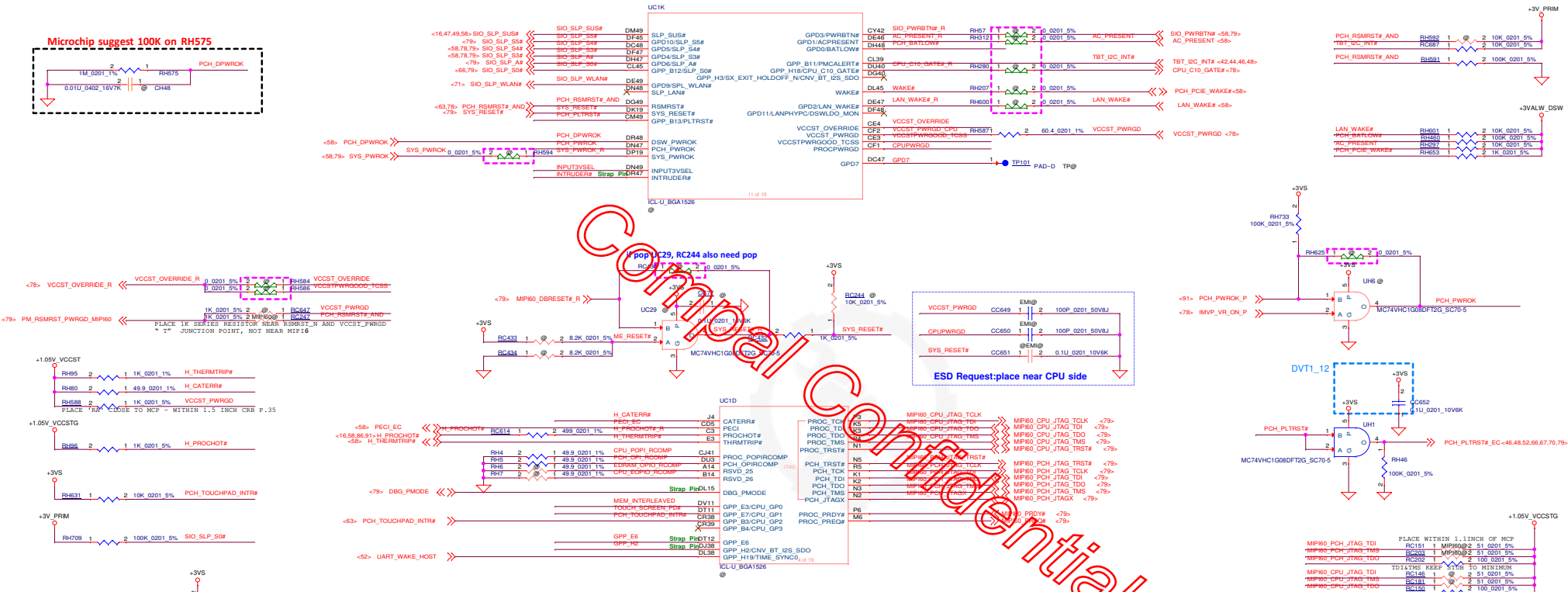
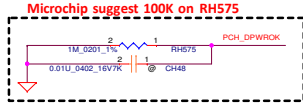
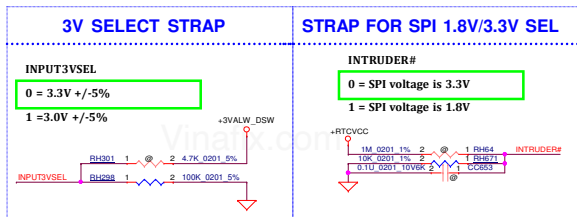
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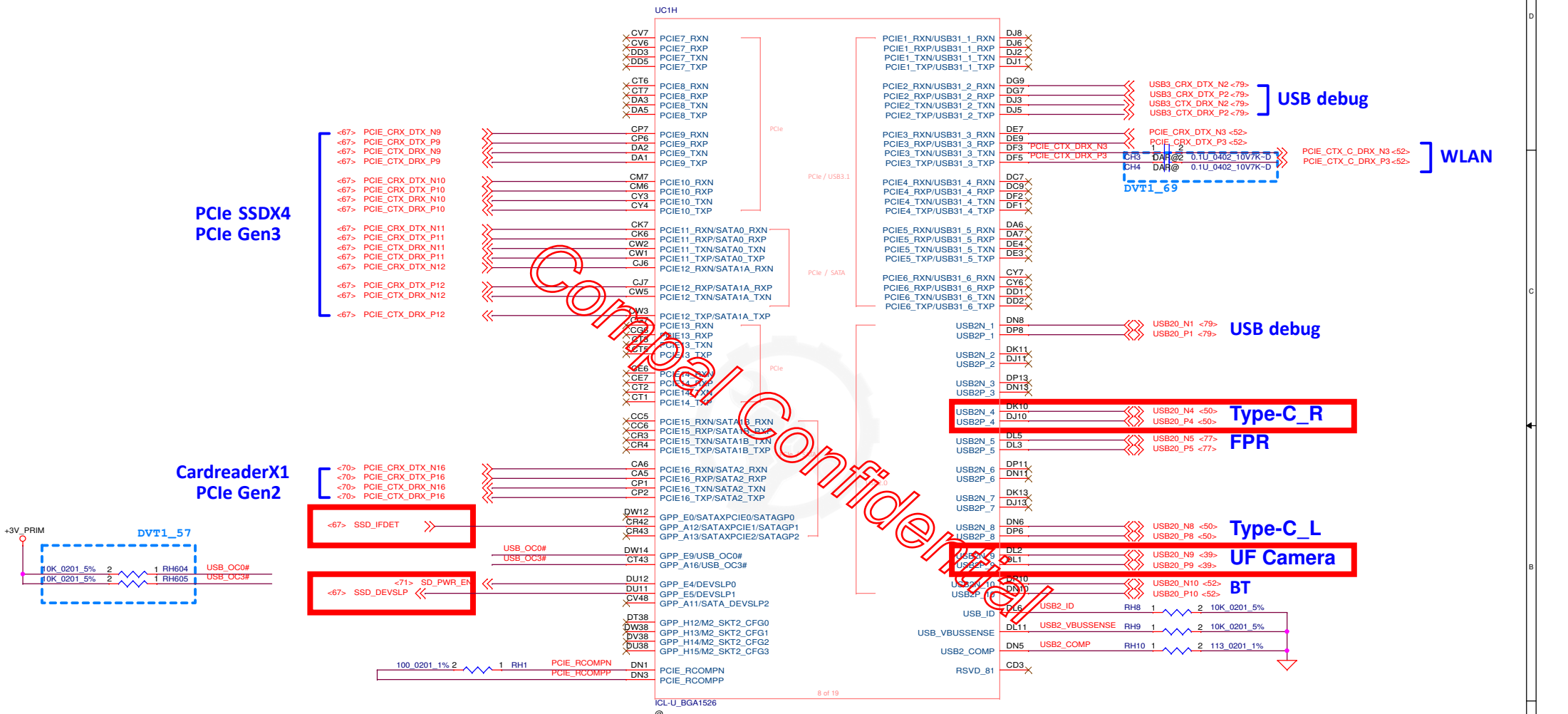


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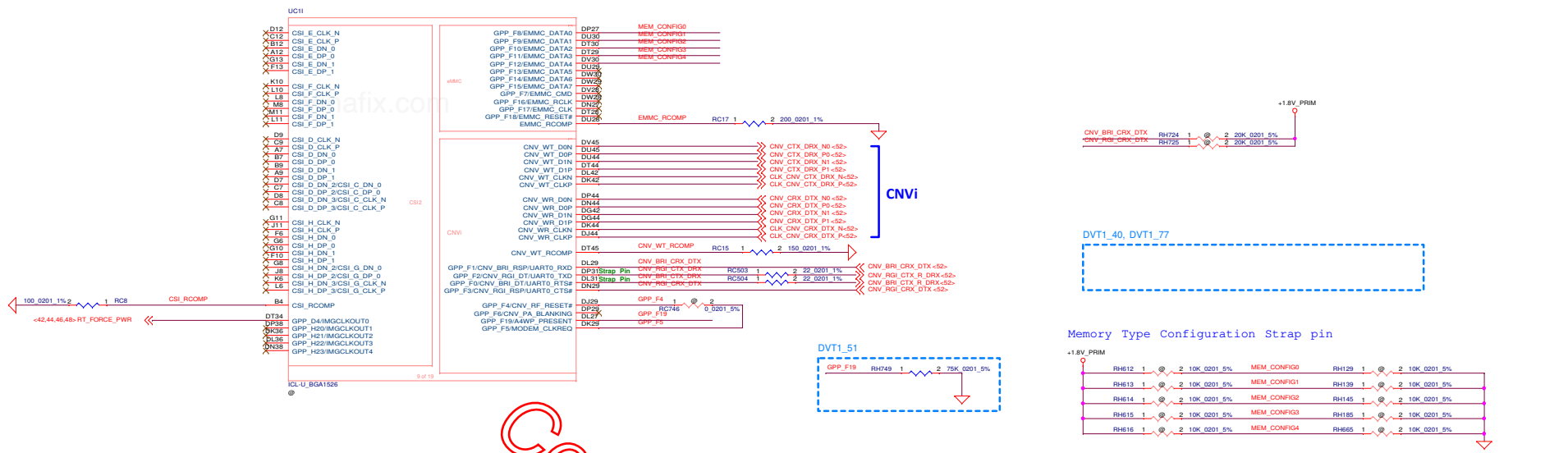


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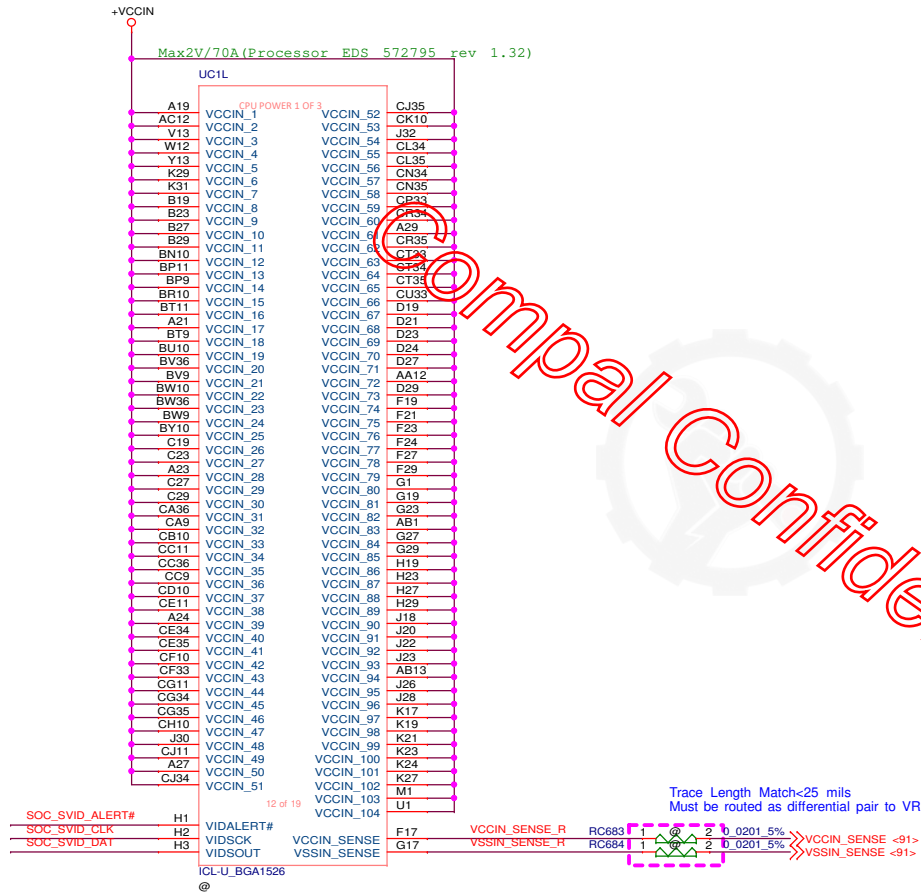
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Date		Sheet		of	
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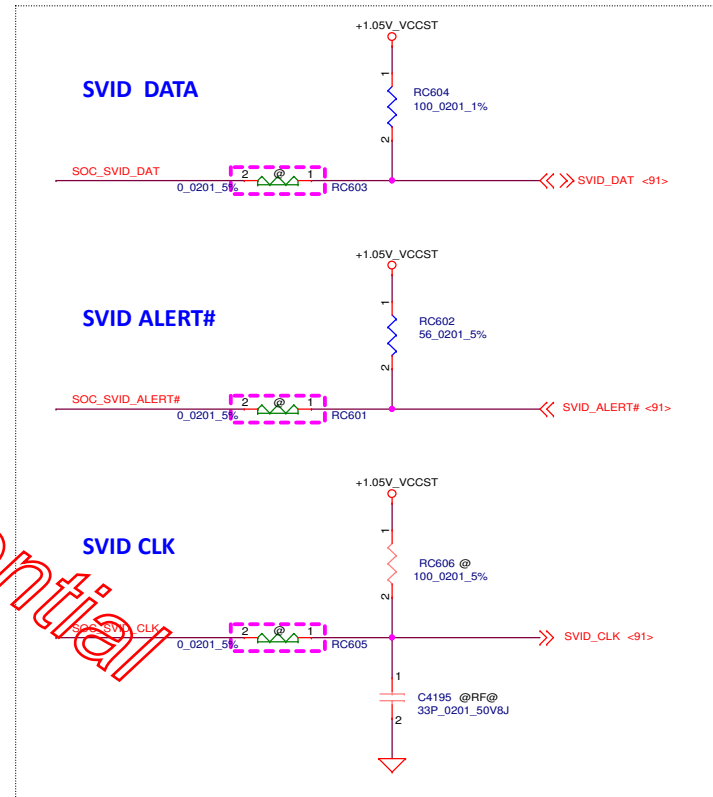
Pin Name	Micron 8GB (SA00008X1)	Micron 16GB (SA00008X1)	Micron 32GB (SA00008X1)	Hynix 4GB (SA00008X1)	Micron 4GB (SA00008X1)	Samsung 4GB (SA00008X1)	Nanya 4GB (SA00008X1)	Samsung 8GB (SA00008X1)	Samsung 16GB (SA00008X1)	Hynix 8GB (SA00008X1)	Samsung 8GB (SA00008X1)	Hynix 16GB (SA00008X1)	Samsung 16GB (SA00008X1)	Hynix 32GB (SA00008X1)
MEM_CONFIG0	0	1	0	1	0	1	0	1	0	1	0	1	0	1
MEM_CONFIG1	0	0	1	1	0	0	1	0	0	1	0	0	1	0
MEM_CONFIG2	0	0	0	0	1	1	1	1	1	1	1	1	1	1
MEM_CONFIG3	0	0	0	0	0	0	0	0	0	0	1	1	1	1
MEM_CONFIG4	0	0	0	0	0	0	0	0	0	0	0	0	0	0

X76	DRAM Option R3	DRAM Config Option (Resistor pop location)				
		MEM_CONFIG0	MEM_CONFIG1	MEM_CONFIG2	MEM_CONFIG3	MEM_CONFIG4
X7682731L01	Micron 8GB/4266	<input type="checkbox"/> X76 M8GB_R3@ U22	<input type="checkbox"/> X76 M8GB_R3@ U22	<input type="checkbox"/> X76 M8GB_R3@ U22	<input type="checkbox"/> X76 M8GB_R3@ U22	<input type="checkbox"/> X76 M8GB@ RH12
	Micron 16GB/4266	<input type="checkbox"/> X76 M16GB_R3@ U22	<input type="checkbox"/> X76 M16GB_R3@ U22	<input type="checkbox"/> X76 M16GB_R3@ U22	<input type="checkbox"/> X76 M16GB_R3@ U22	<input type="checkbox"/> X76 M16GB@ RH12
	Micron 32GB/4266	<input type="checkbox"/> X76 M32GB_R3@ U22	<input type="checkbox"/> X76 M32GB_R3@ U22	<input type="checkbox"/> X76 M32GB_R3@ U22	<input type="checkbox"/> X76 M32GB_R3@ U22	<input type="checkbox"/> X76 M32GB@ RH12
X7682731L10	Hynix 4GB/3733	<input type="checkbox"/> X76 H4GB_R3@ U22	<input type="checkbox"/> X76 H4GB_R3@ U22	<input type="checkbox"/> X76 H4GB_R3@ U22	<input type="checkbox"/> X76 H4GB_R3@ U22	<input type="checkbox"/> X76 H4GB@ RH12
	Hynix 8GB/4266	<input type="checkbox"/> X76 H8GB_R3@ U22	<input type="checkbox"/> X76 H8GB_R3@ U22	<input type="checkbox"/> X76 H8GB_R3@ U22	<input type="checkbox"/> X76 H8GB_R3@ U22	<input type="checkbox"/> X76 H8GB@ RH12
	Hynix 16GB/4266	<input type="checkbox"/> X76 H16GB_R3@ U22	<input type="checkbox"/> X76 H16GB_R3@ U22	<input type="checkbox"/> X76 H16GB_R3@ U22	<input type="checkbox"/> X76 H16GB_R3@ U22	<input type="checkbox"/> X76 H16GB@ RH12
X7682731L06	Hynix 32GB/3733	<input type="checkbox"/> X76 H32GB_R3@ U22	<input type="checkbox"/> X76 H32GB_R3@ U22	<input type="checkbox"/> X76 H32GB_R3@ U22	<input type="checkbox"/> X76 H32GB_R3@ U22	<input type="checkbox"/> X76 H32GB@ RH12

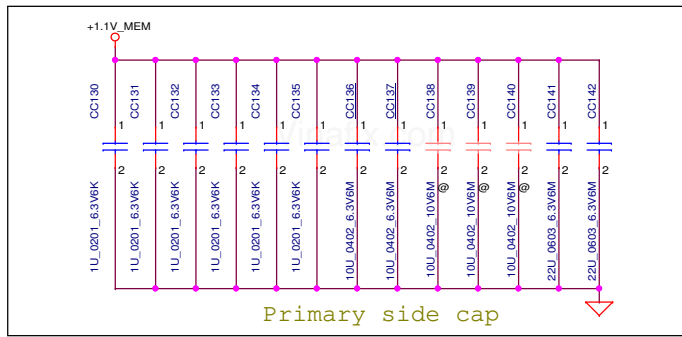
X76	DRAM Option R3	DRAM Config Option (Resistor pop location)				
		MEM_CONFIG0	MEM_CONFIG1	MEM_CONFIG2	MEM_CONFIG3	MEM_CONFIG4
X7682731L00	Samsung 4GB/3733	<input type="checkbox"/> X76 S4GB_R3@ U22	<input type="checkbox"/> X76 S4GB_R3@ U22	<input type="checkbox"/> X76 S4GB_R3@ U22	<input type="checkbox"/> X76 S4GB_R3@ U22	<input type="checkbox"/> X76 S4GB@ RH12
	Samsung 8GB/4266	<input type="checkbox"/> X76 S8GB_R3@ U22	<input type="checkbox"/> X76 S8GB_R3@ U22	<input type="checkbox"/> X76 S8GB_R3@ U22	<input type="checkbox"/> X76 S8GB_R3@ U22	<input type="checkbox"/> X76 S8GB@ RH12
	Samsung 16GB/4266	<input type="checkbox"/> X76 S16GB_R3@ U22	<input type="checkbox"/> X76 S16GB_R3@ U22	<input type="checkbox"/> X76 S16GB_R3@ U22	<input type="checkbox"/> X76 S16GB_R3@ U22	<input type="checkbox"/> X76 S16GB@ RH12
X7682731L14	Samsung 32GB/4266	<input type="checkbox"/> X76 S32GB_R3@ U22	<input type="checkbox"/> X76 S32GB_R3@ U22	<input type="checkbox"/> X76 S32GB_R3@ U22	<input type="checkbox"/> X76 S32GB_R3@ U22	<input type="checkbox"/> X76 S32GB@ RH12
	Nanya 4GB/3733 (new)	<input type="checkbox"/> X76 N4GB_R1@ U22	<input type="checkbox"/> X76 N4GB_R1@ U22	<input type="checkbox"/> X76 N4GB_R1@ U22	<input type="checkbox"/> X76 N4GB_R1@ U22	<input type="checkbox"/> X76 N4GB@ RH12



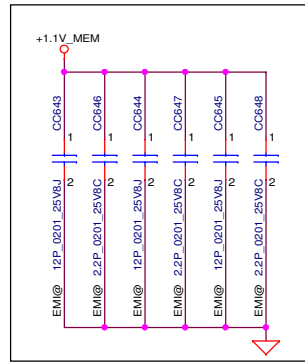
- 1.The total Length of Data and Clock (from CPU to each VR) must be equal ($\pm 0.1i$ nct).
 - 2.Route the Alert signal between the Clock and the Data signals.
- CAD Note: Place the PU resistors close to CPU



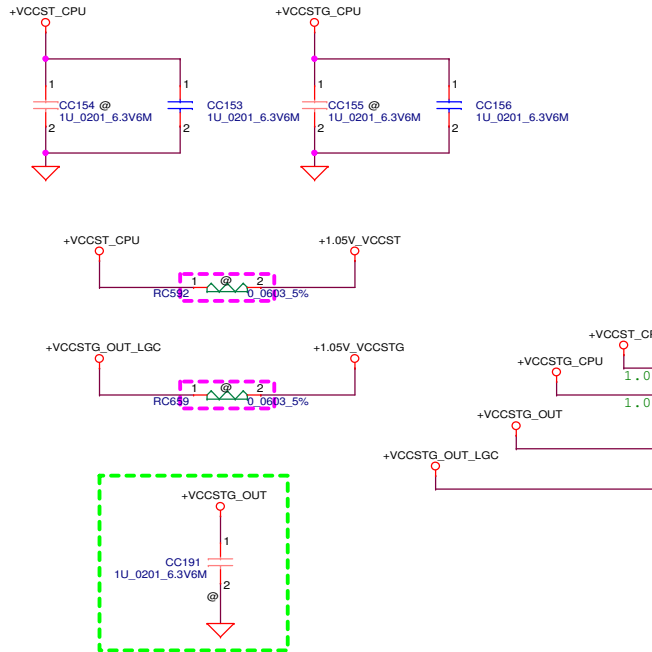
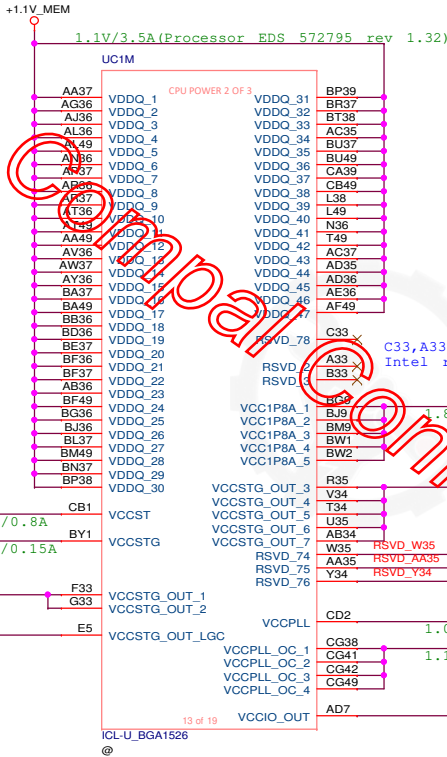
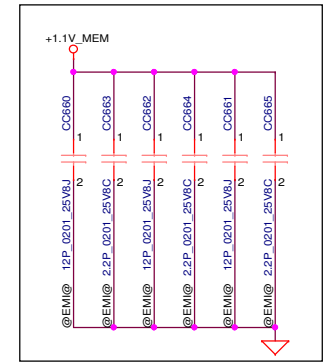
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Follow PDG rev1.1 P.545

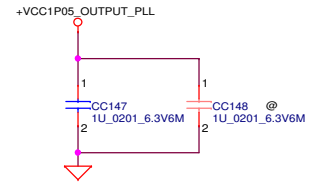
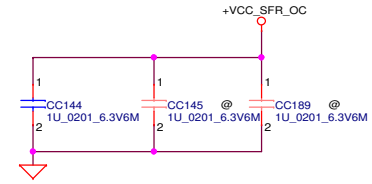
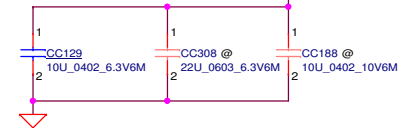


PLACE <160mil FROM SOC VDDQ,
WITH EACH PAIR <470mil APART

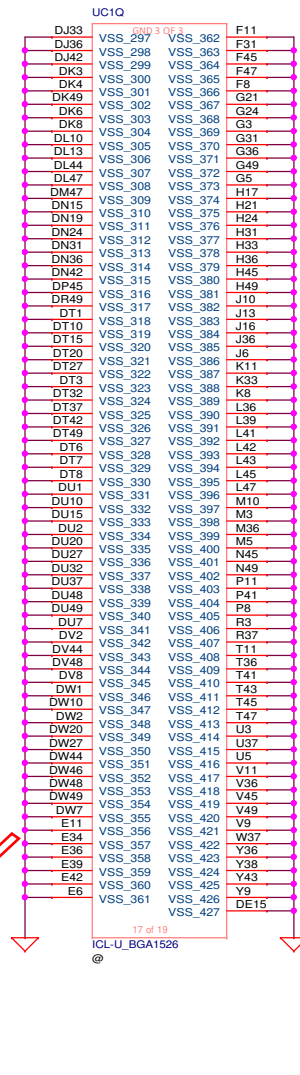
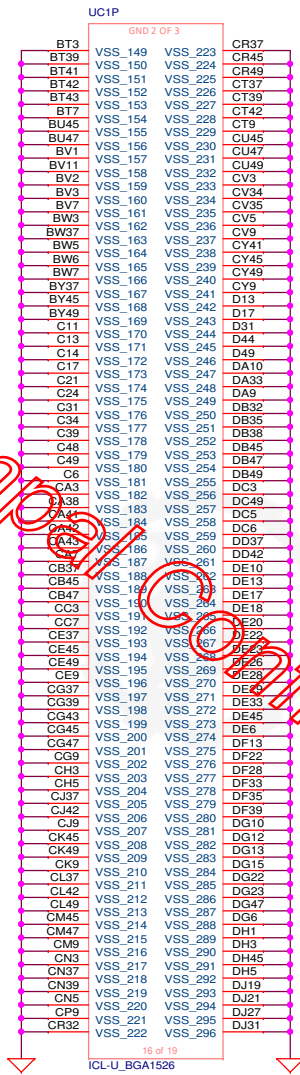
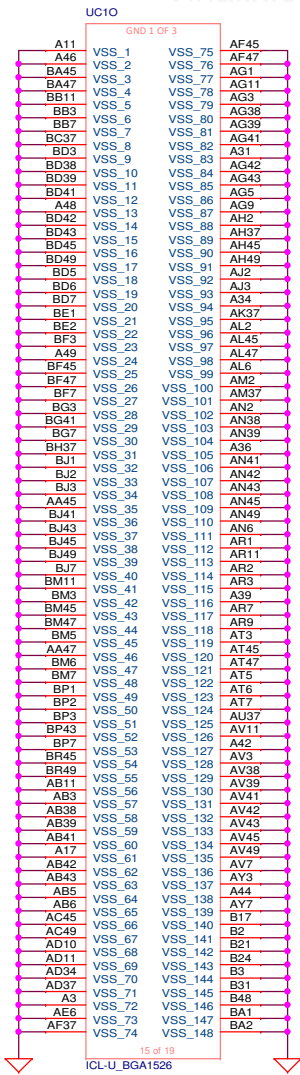


C33,A33,B33 is RSVD
Intel recommended NC

VCC1P8A shape from VR to VCC1P8A pins should have:
a. total length L of < 22mm between VR and BGA.
b. Average width W of 1.8mm.



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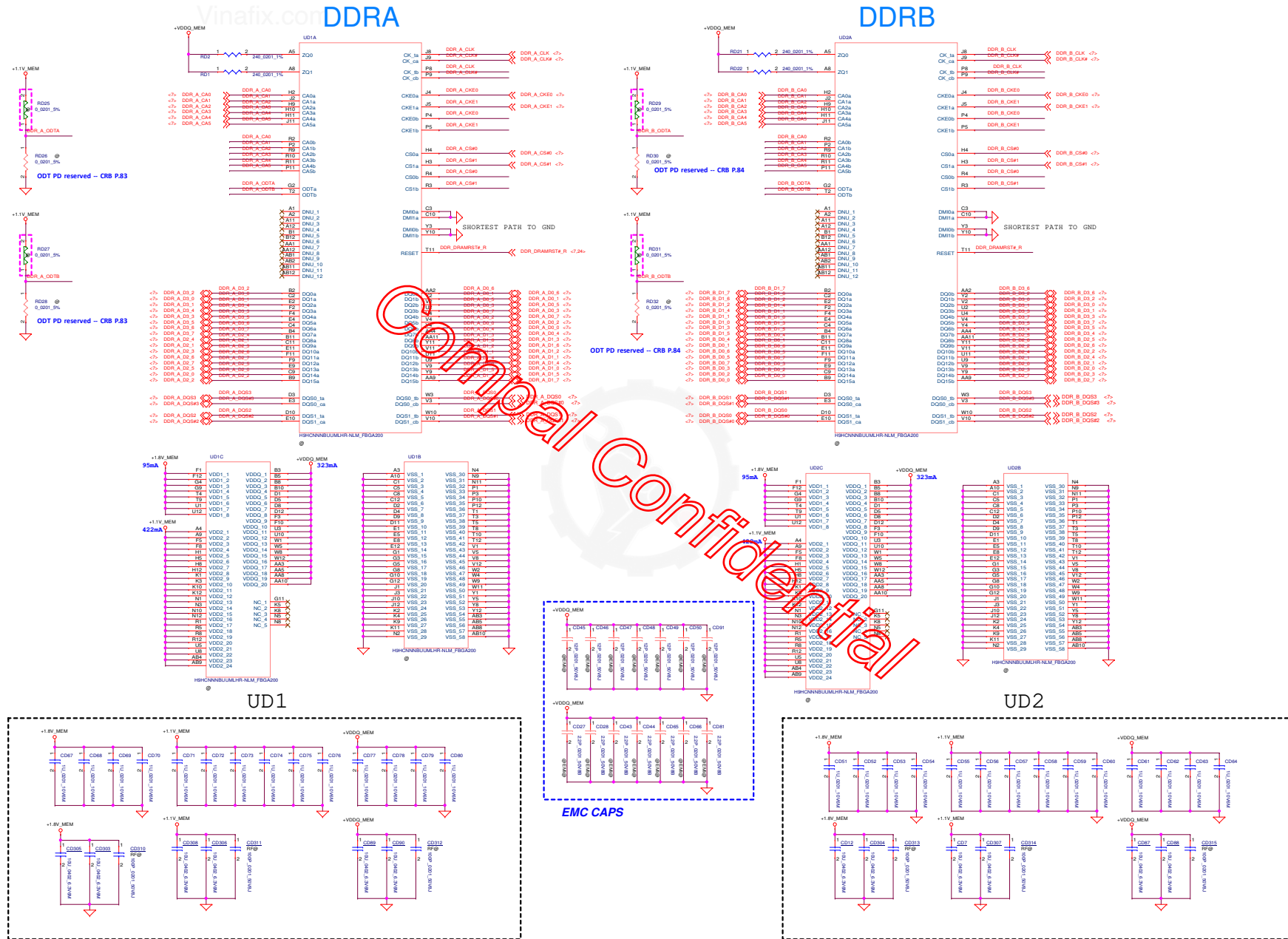
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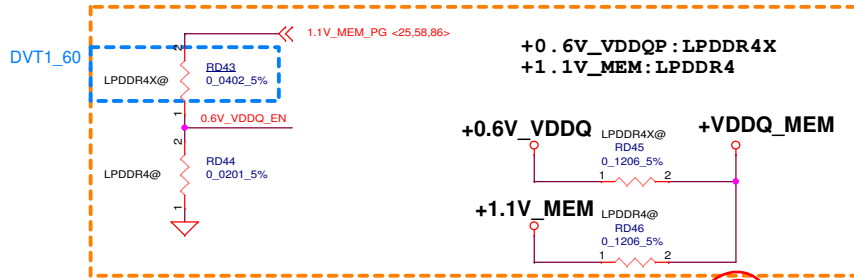
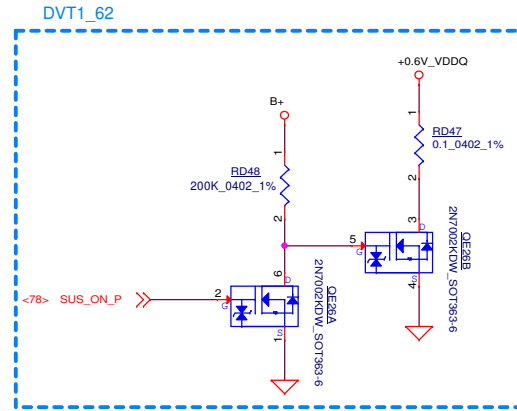
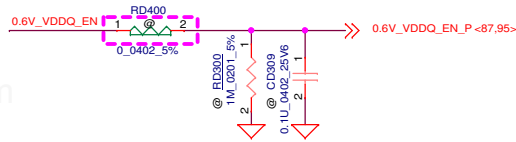
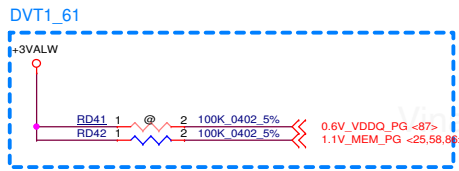
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Memory connection refer 573975 Rev1P1



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	RD43	RD45	RD44	RD46
LPDDR4 (1.1V) :	@	@		
LPDDR4X (1.1V&0.6V) :			@	@

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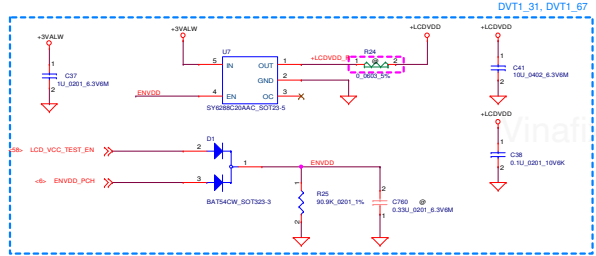
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LCD VDD POWER

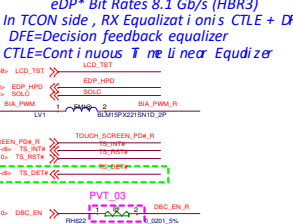


eDP Conn

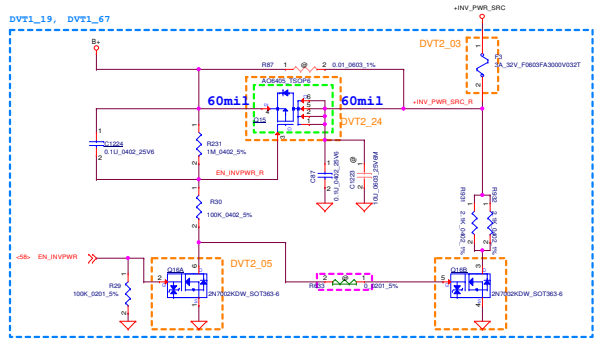


Table 6-41. eDP Bit Rates

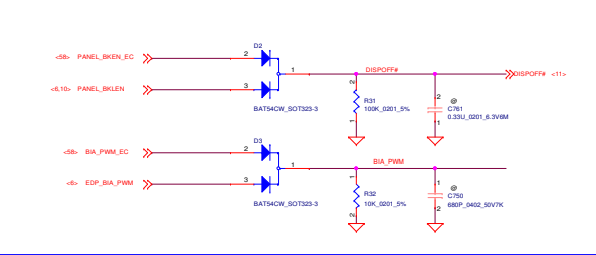
Rate	Line Support (Line # of Bits)	Pixel Rate
1.42 Gb/s (HBR)	4	1.150 Mb/s (144 MHz)
2.130 Gb/s (HBR)	4	1.725 Mb/s (216 MHz)
4.260 Gb/s (HBR)	4	3.450 Mb/s (432 MHz)
8.520 Gb/s (HBR)	4	6.900 Mb/s (864 MHz)



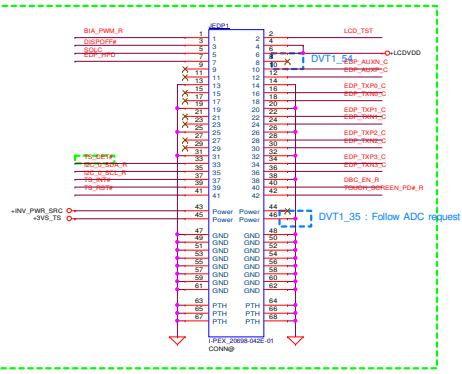
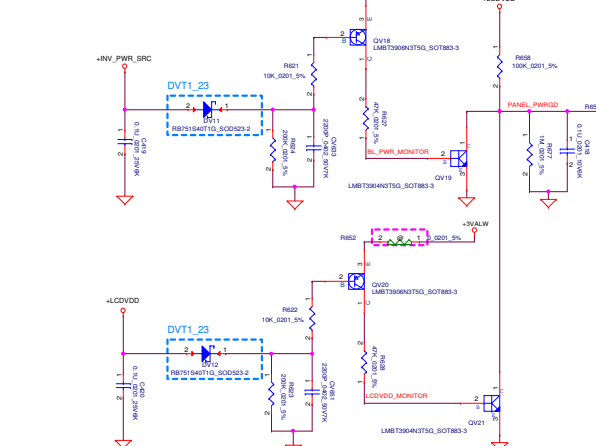
eDP BackLight Power



BackLight PWM Control



For BL_PWR_SRC & LCDVDD monitor



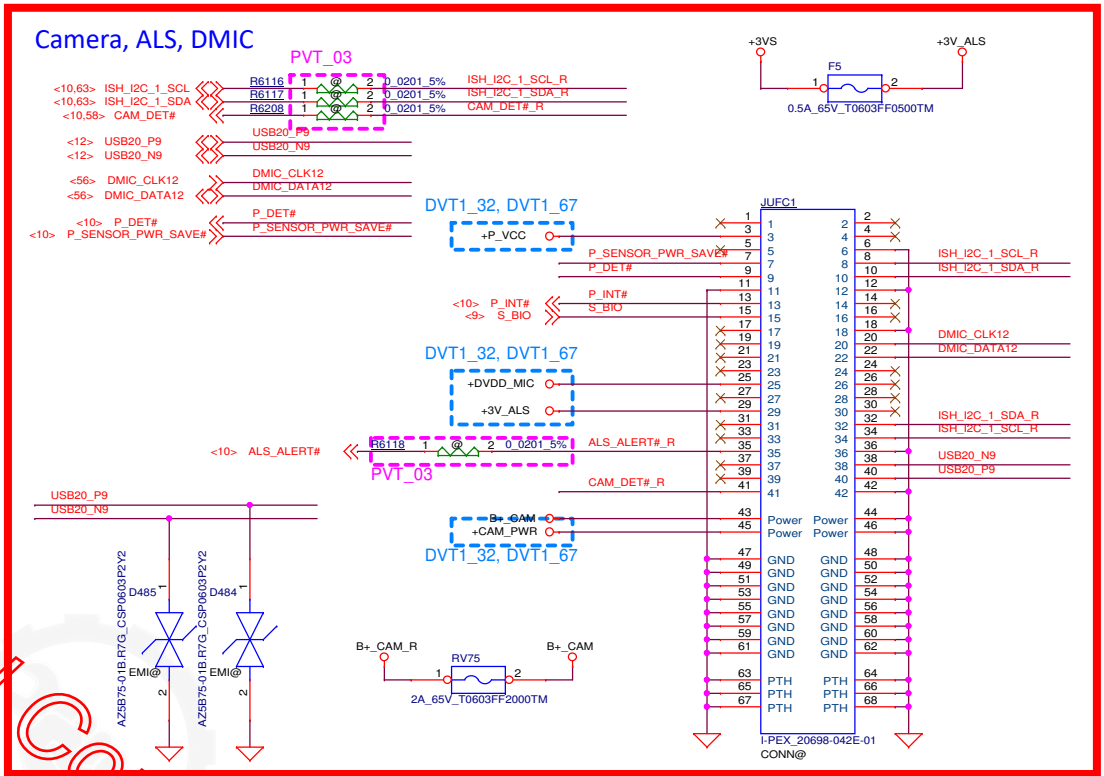
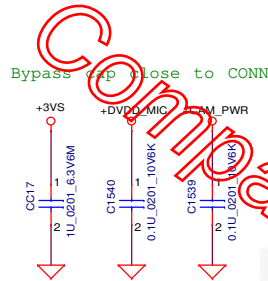
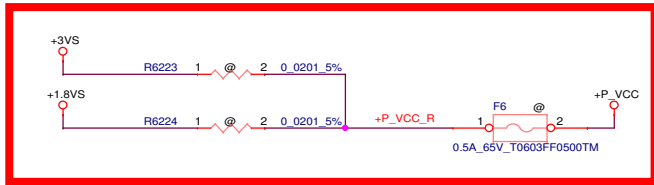
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Connector	Pin	NAME	IN/OUT	FUNCTION
OH	1	STOP	I	STOP: Normal Operation LOW: Stop Battery
	2	HC_SDA	IO	Open drain output, pull-up resistor at host & device.
	3	HC_SCL	I	Open drain output, pull-up resistor at host & device.
	4	NC	-	No Connection
	5	NC	-	No Connection
	6	HC_IRQ	O	Open drain output, pull-up resistor at host & device. Device IRQ when data needs to send
	7	RESET	I	Active low reset when pull "0" (0V). Pull-up resistor at host & device. 10K Ohm
	8	VDD-3.3V	-	3.3Vdc (typ) power input
	9	NC	-	No Connection
	10	DPDC	-	Device

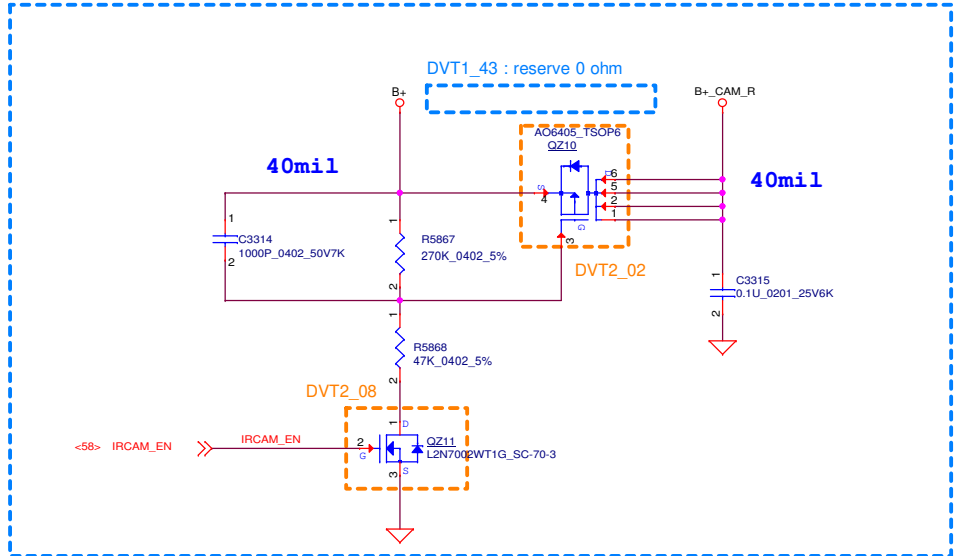
For factory test request



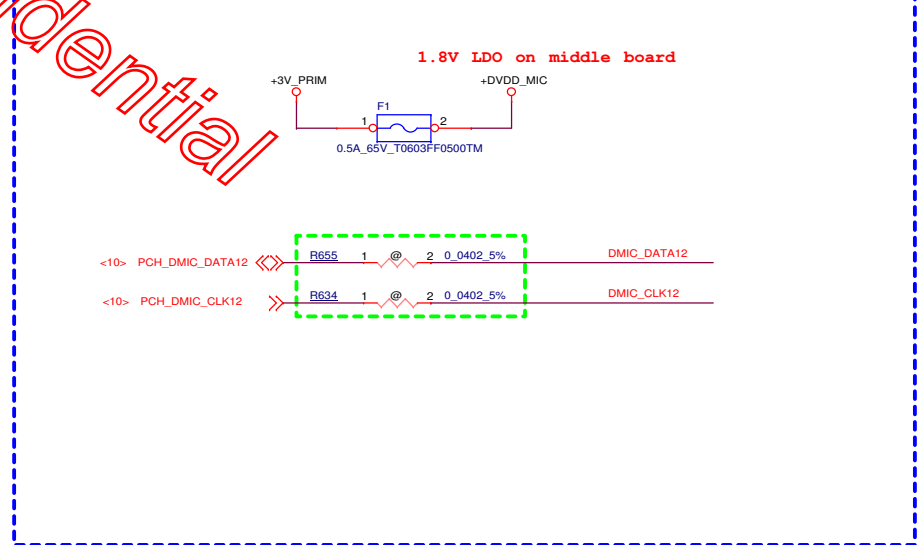
Vinafix.com



DVT1_20, DVT1_67



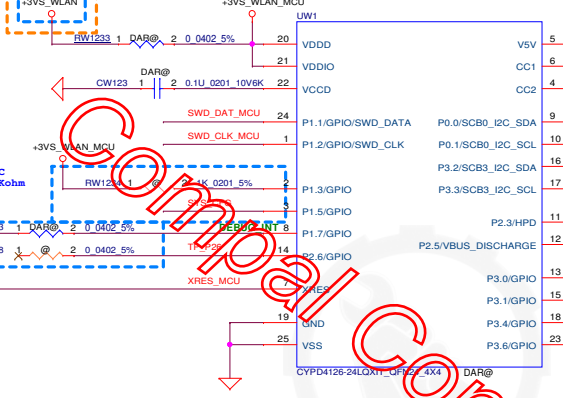
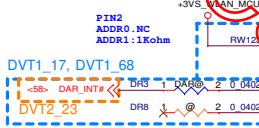
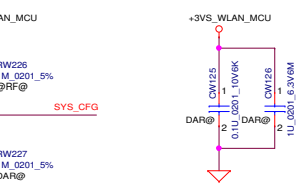
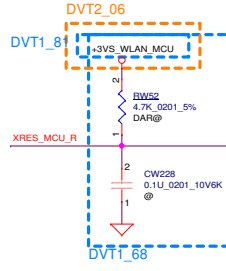
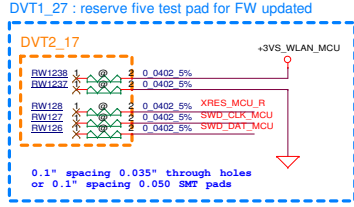
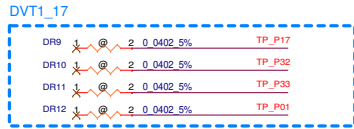
Intel DMIC for WOV function



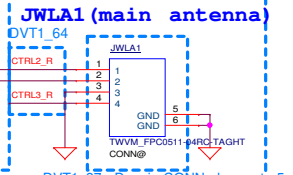
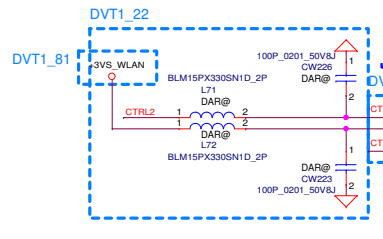
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Size	Document Number	Date		Rev	
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Darwin 2.0

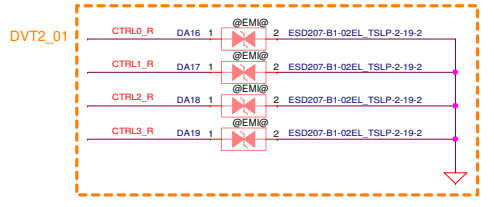
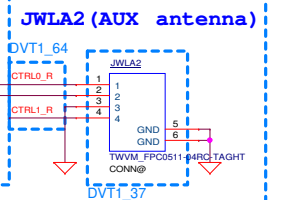
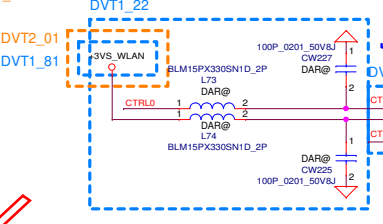
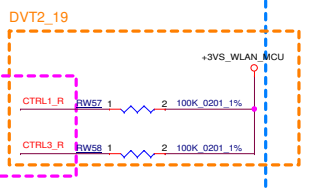
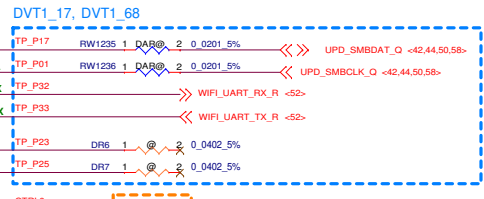
DVT1_16 : add Darwin2.0



I2C ADDR	I2C Slave Address
NC	0x72 (default)
Pull up 3.3V	0x34



DVT1_37 : Darwin CONN change to 5pin
DVT1_47 : Darwin CONN change to 4pin

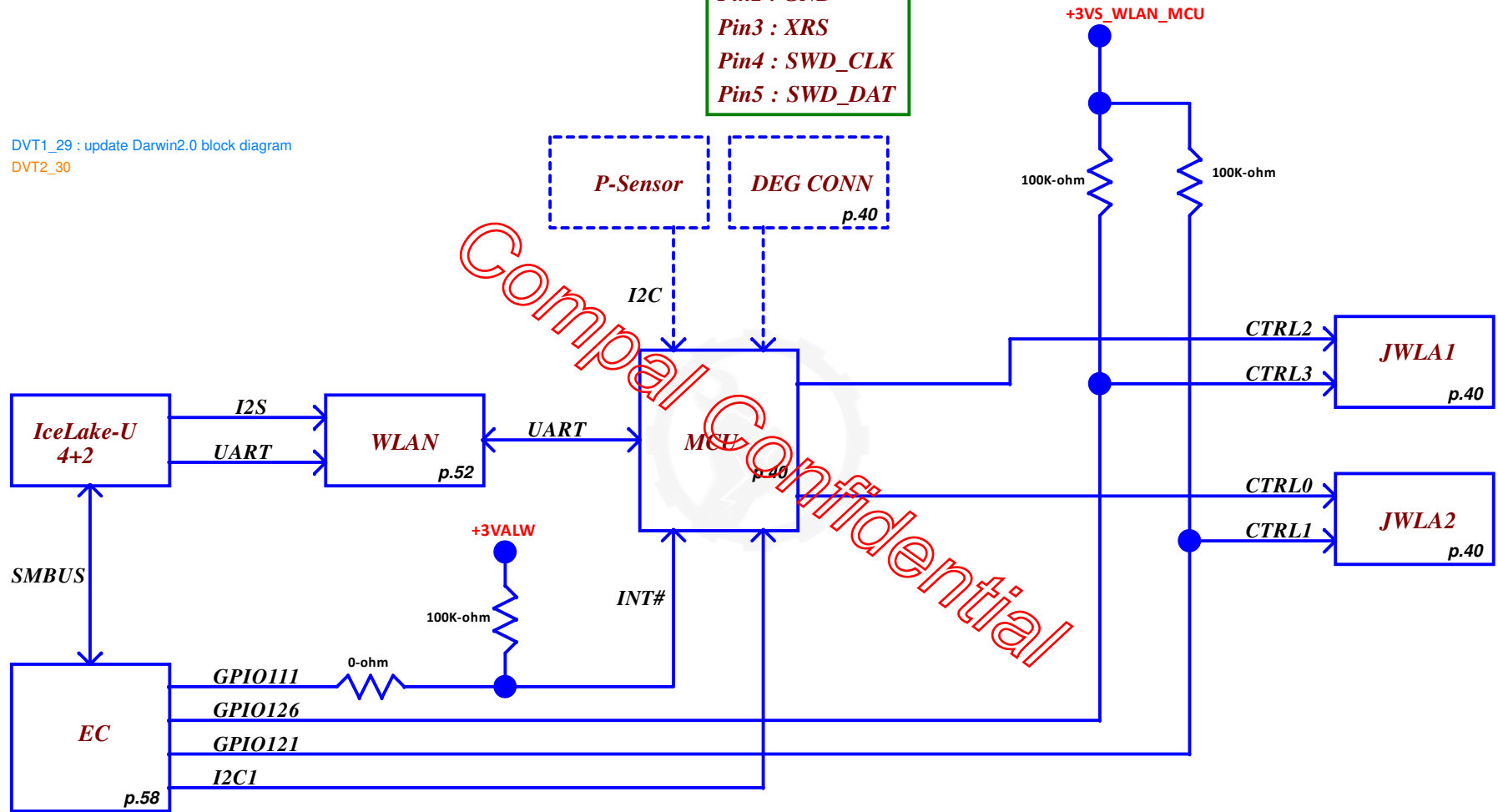


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Pin definition

- Pin1 : +3V
- Pin2 : GND
- Pin3 : XRS
- Pin4 : SWD_CLK
- Pin5 : SWD_DAT

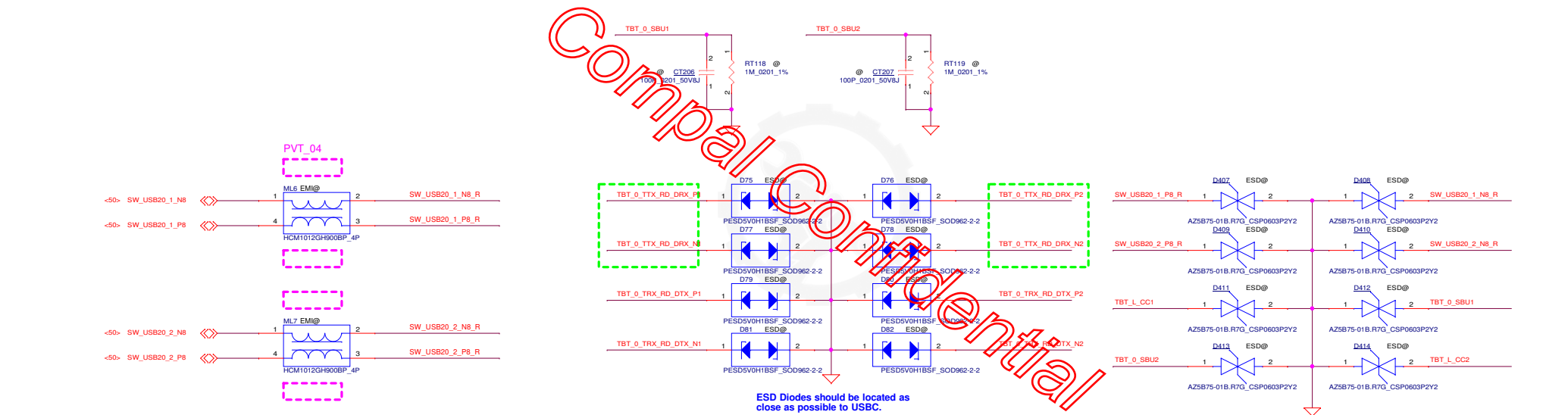
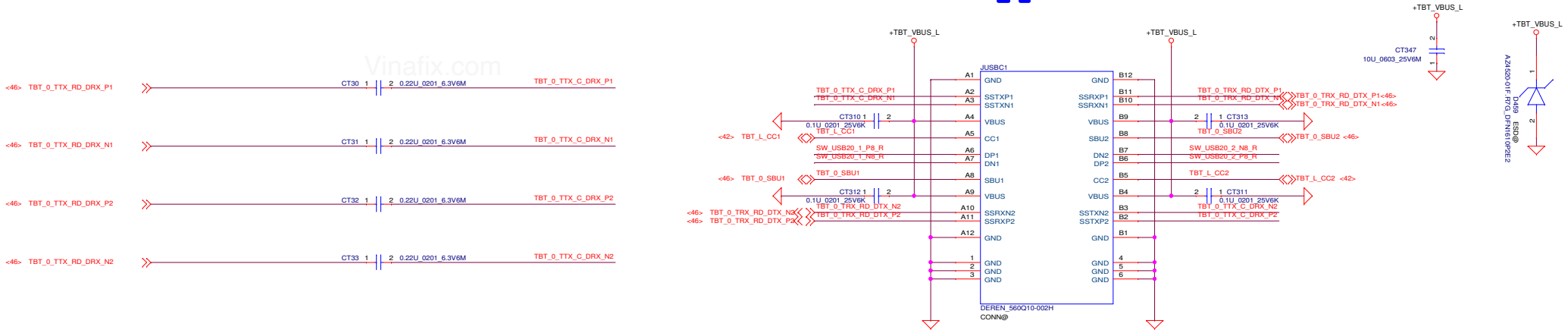
DVT1_29 : update Darwin2.0 block diagram
 DVT2_30



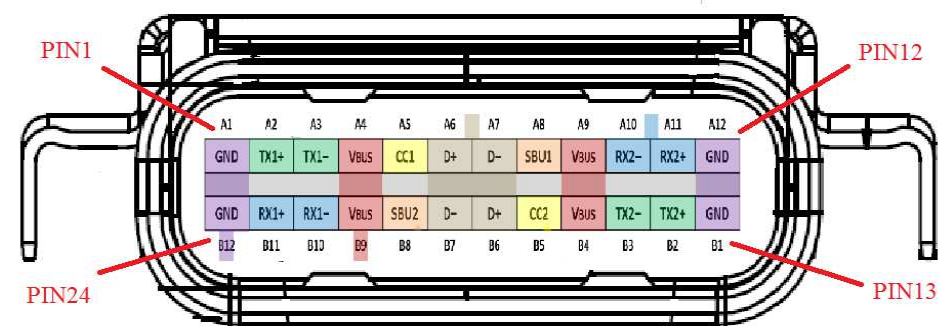
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				Size	Document Number	Rev	
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LEFT Type-C Connector



ESD Diodes should be located as close as possible to USBC.



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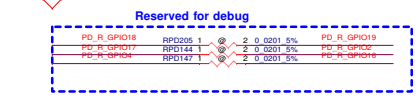
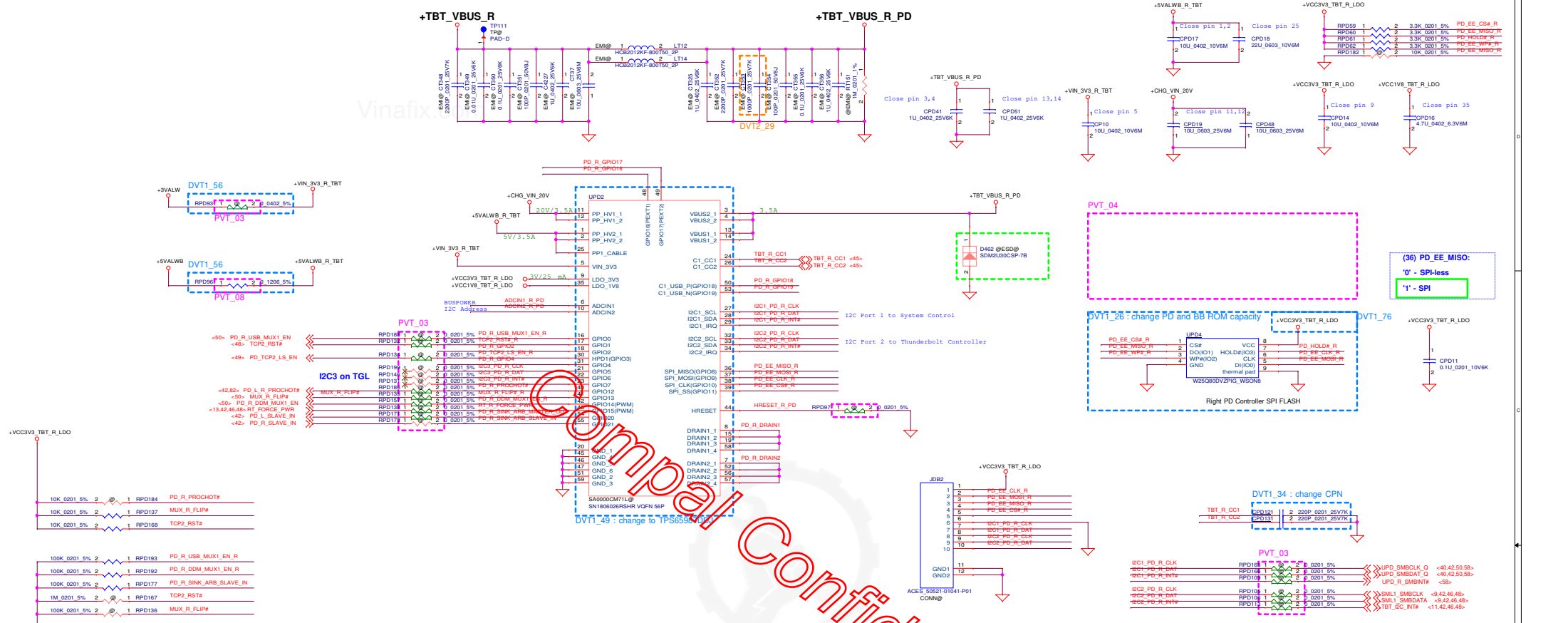
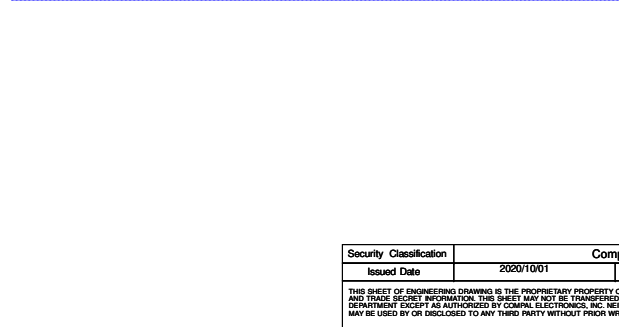
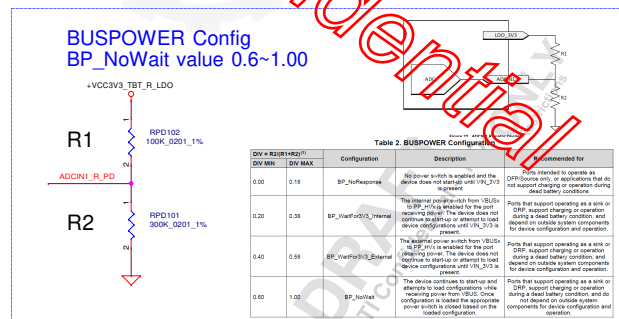


Table 2. BUSPOWER Configuration

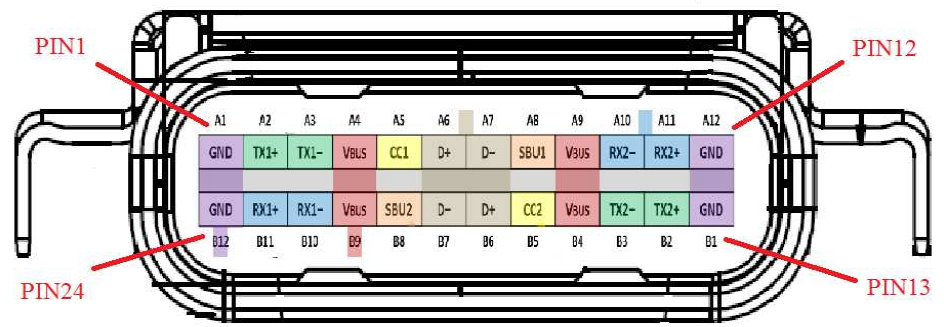
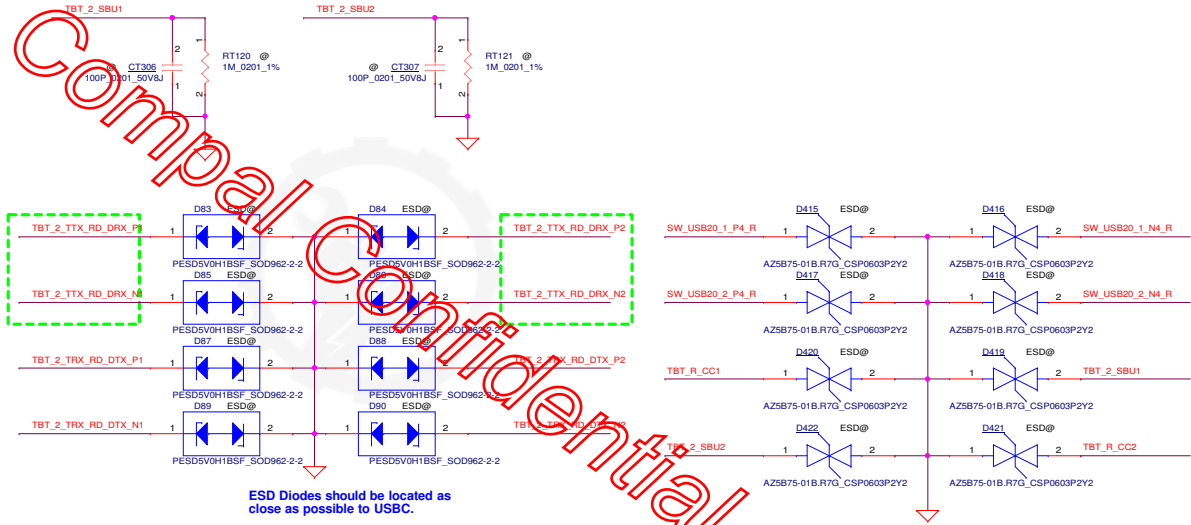
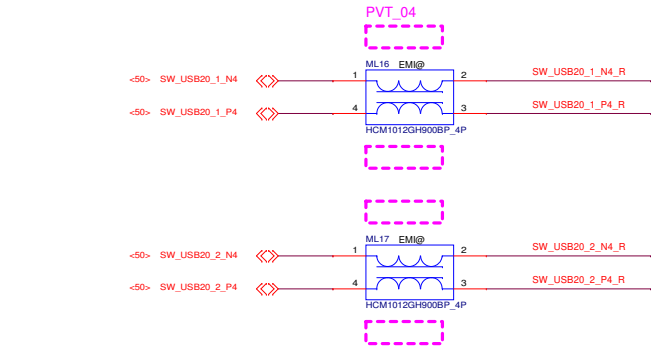
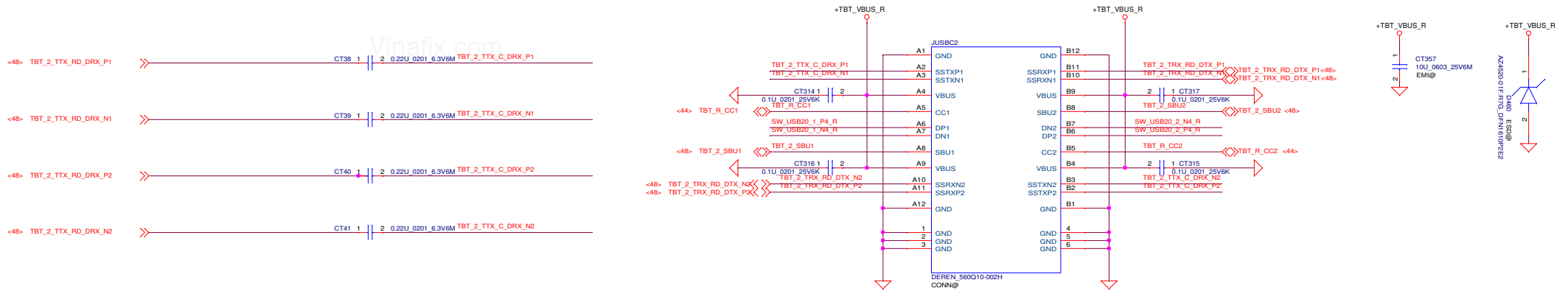
Div #	Div Min	Div Max	Configuration	Description	Recommended for
0.0	0.18		BP_NoWait	Allows a switch to be applied and the device does not delay until V _{DD} is regulated.	Devices intended to operate as CDP/Source only, or applications that do not support charging or operation during dead battery condition.
0.20	0.38		BP_NoWait333_External	The internal pull-up on V _{DD} is disabled for the port. BP_NoWait is enabled for the port. The device does not attempt to load or attempt to load device configuration and V _{DD} is in Standby.	Ports that support operating as a sink of DDP. Support charging or operation during a dead battery condition, and allows a device to be powered for device configuration and operation.
0.40	0.58		BP_NoWait333_External	The device continues to attempt and attempts to load configuration, while remaining powered from V _{DD} . Once configuration is loaded the appropriate power mode is chosen based on the loader configuration.	Ports that support operating as a sink of DDP. Support charging or operation during a dead battery condition, and is not dependent on outside system components for device configuration and operation.
0.60	1.00		BP_NoWait		

Table 4. I2C Address Selection

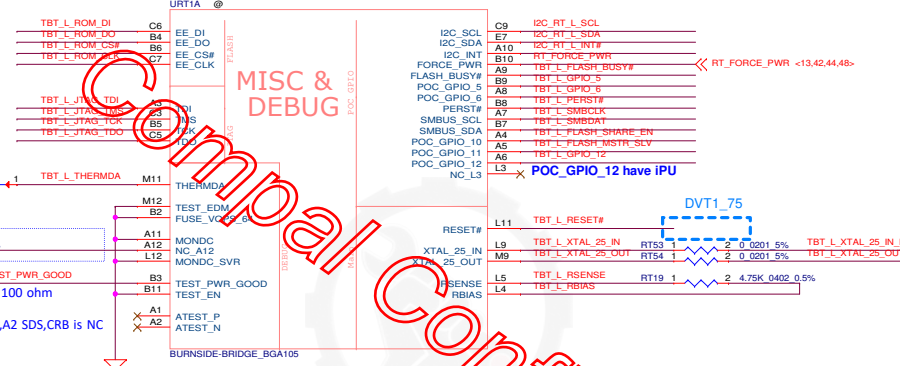
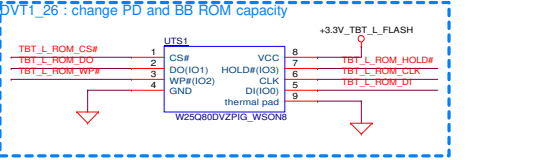
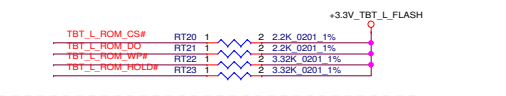
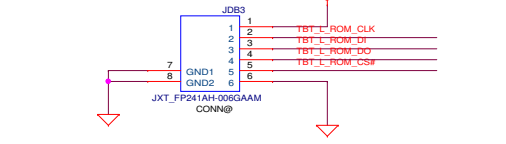
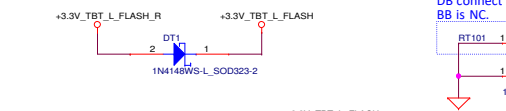
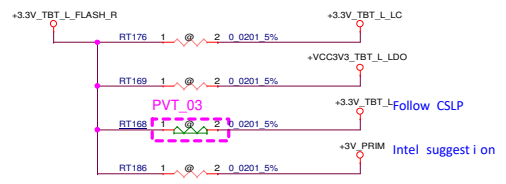
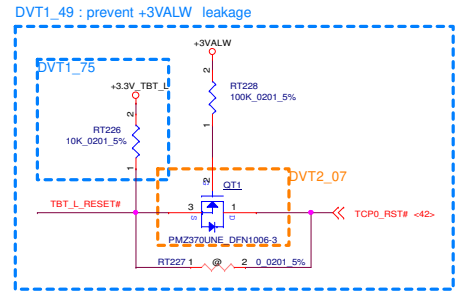
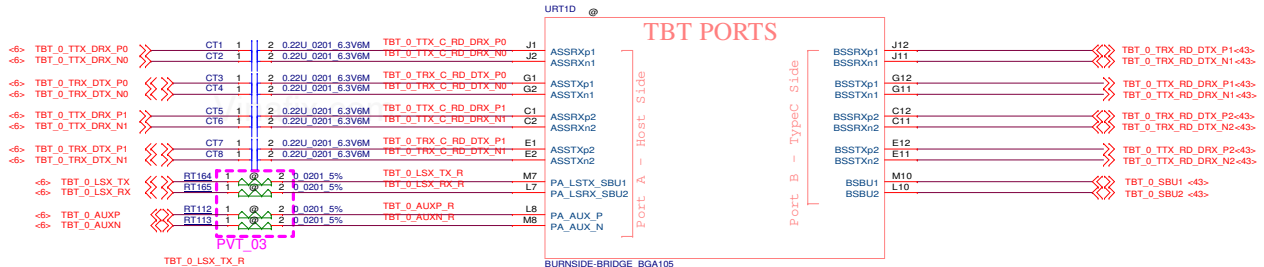
Div #	Div # Range	FC ADDR Selection	IC ADDR Selection
0.0	1.0	0x00	0x00
0.20	1.0	0x01	0x01
0.40	1.0	0x02	0x02
0.60	1.0	0x03	0x03



RIGHT Type-C Connector

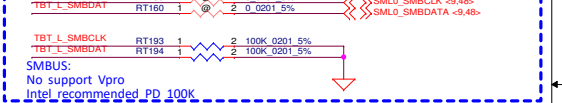
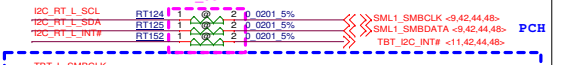
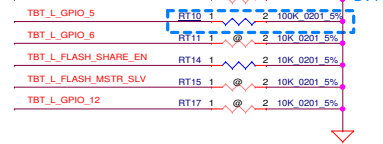
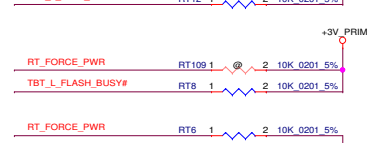
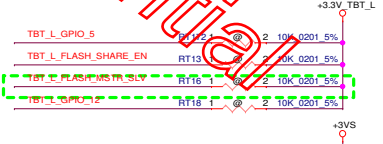
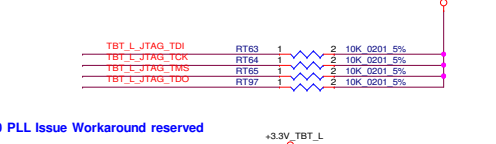
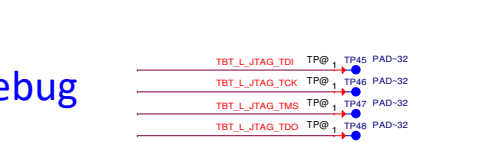
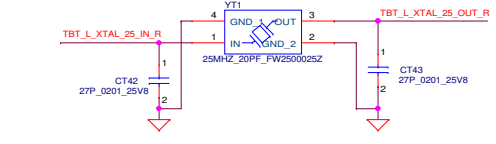


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RT ref p.5 XTAL Recommended FW25000252 by Pericom XRCGB25M00F3L12R0 by Murata

Suggest adding GND shield across Crystal and 18pF caps for better RF.



(L11) DG_P1_RST#:
For PD based systems, DG_P1_RST# should be output from PD.
For TCP based systems, DG_P1_RST# should be output from SOC/EC.

(B10) FORCE_PWR: Connect to PCH for FW update
'0' - by default
'1' - for debug only

(A9) DG_FLASH_BUSY#: connection to PU

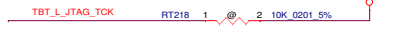
(A4) DG_FLASH_SHARE_EN (iPU):
'0' - Flash isn't shared. 1 Flash per Re-timer. Can be left NC.
'1' - Flash is shared between 2 Re-timers.

(A5) DG_FLASH_MSTR_SLV (iPU):
'0' - Set Re-timer to be Slave on shared flash SPI I/F.
'1' - Set Re-timer to be Master on shared flash SPI I/F.

(A8) DG_POC_GPIO6:
'0' - Reserved for debug
'1' - Indication to S0 state for Re-timer

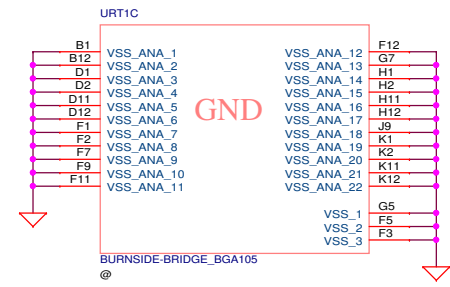
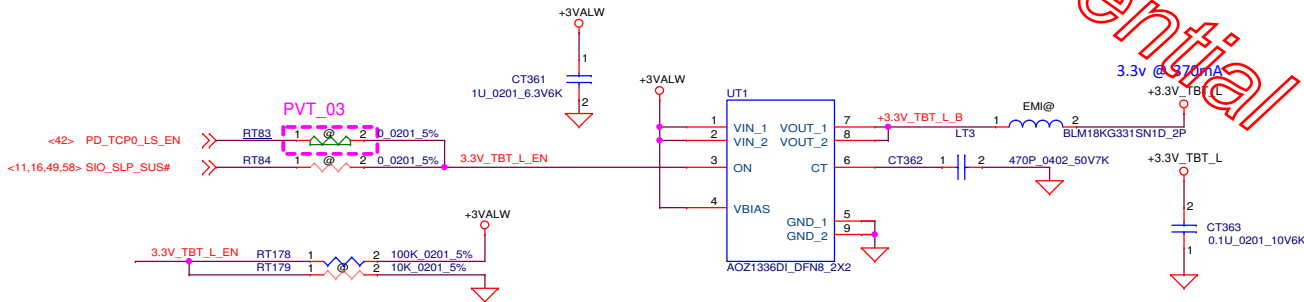
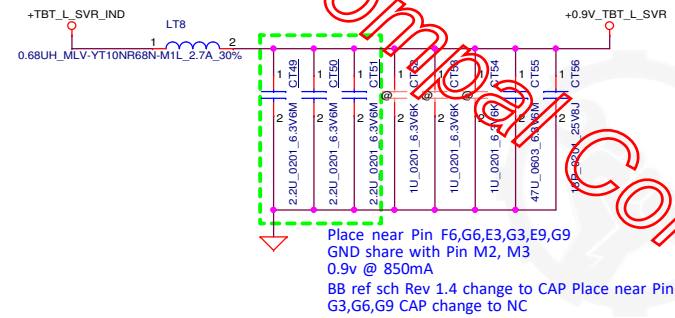
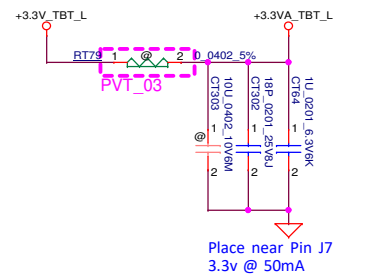
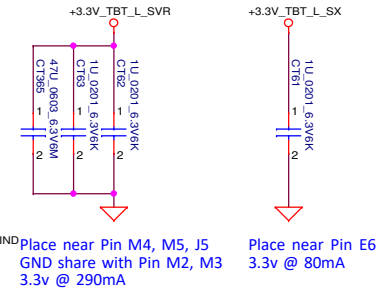
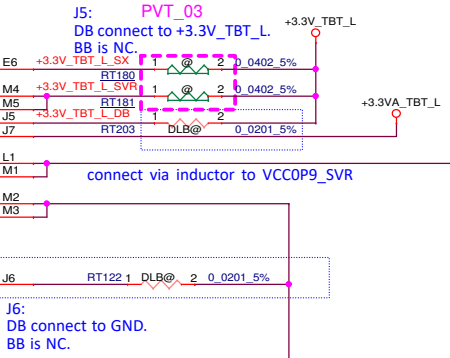
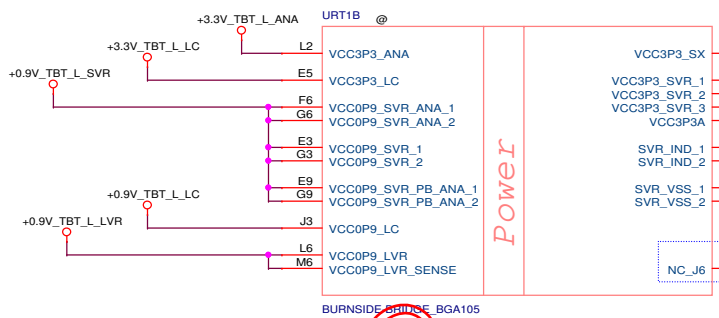
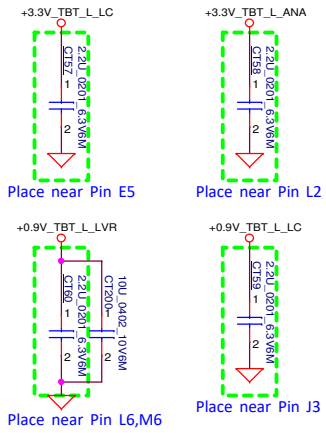
Debug

For BBR-A0 PLL Issue Workaround reserved

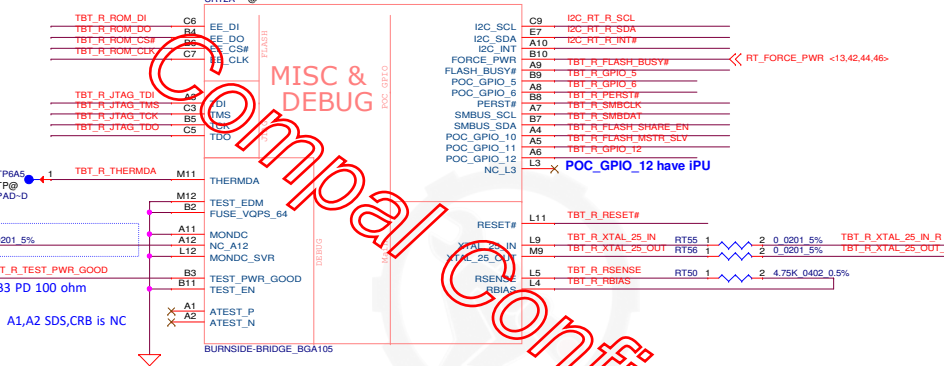
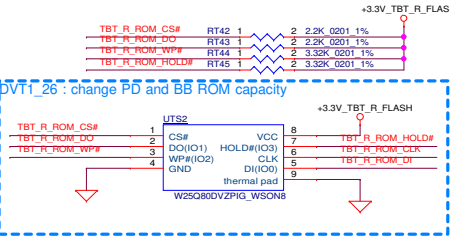
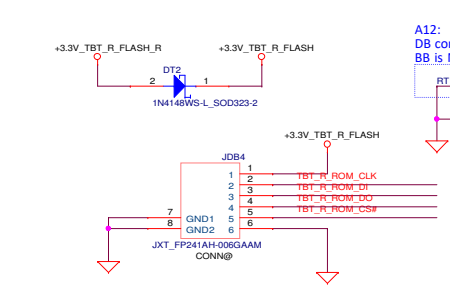
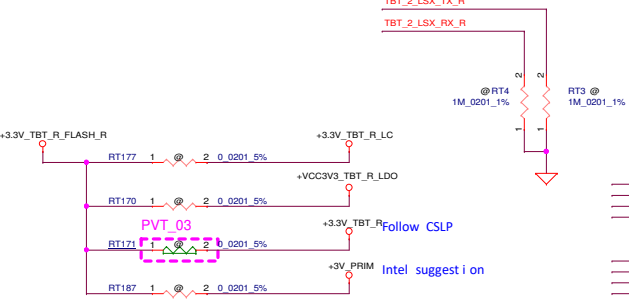
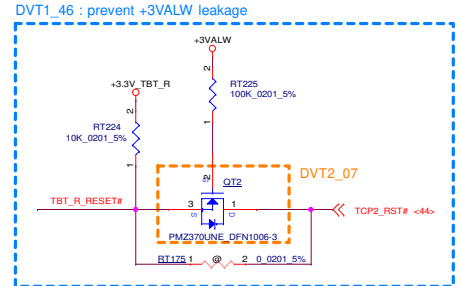
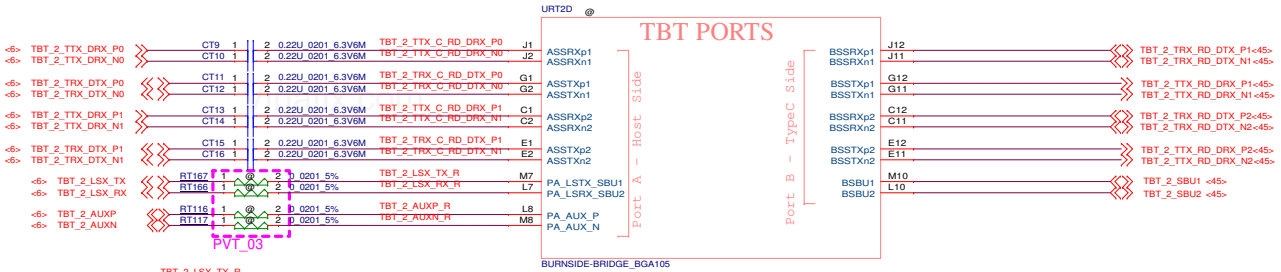


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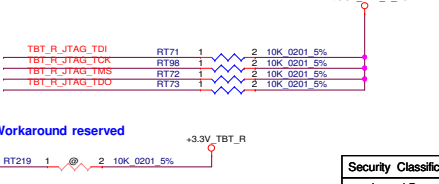
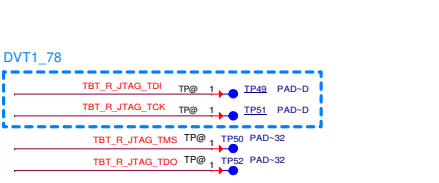
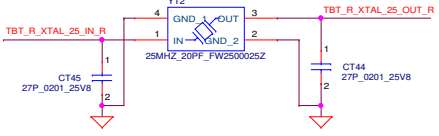
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				LA-H811P	
				Date:	Tuesday, December 24, 2019
				Sheet	47 of 100
				Rev	0.1 (X0)

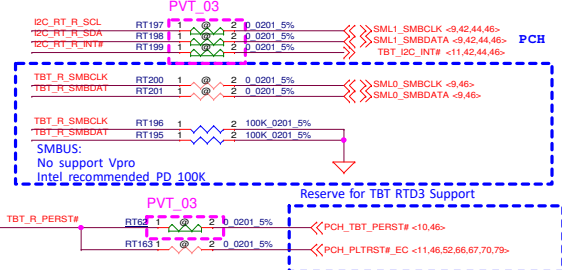


RT ref p.5 XTAL Recommended FW2500025Z by Pericom XRCGB25M000F3L12R0 by Murata
Suggest adding GND shield across Crystal and 10pF caps for better RFI



Debug

For BBR-A0 PLL Issue Workaround reserved



(L11) DG_P1_RST#: For PD based systems, DG_P1_RST# should be output from PD. For TCPC based systems, DG_P1_RST# should be output from SOC/EC.

(B10) FORCE_PWR: Connect to PCH for FW update
'0' - by default
'1' - for debug only

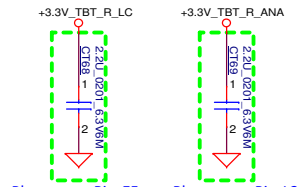
(A9) DG_FLASH_BUSY#: connection to PU

(A4) DG_FLASH_SHARE_EN (IPU):
'0' - Flash isn't shared. 1 Flash per Re-timer. Can be left NC.
'1' - Flash is shared between 2 Re-timers.

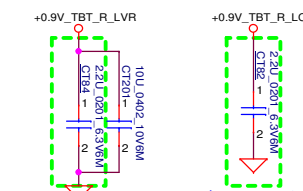
(A5) DG_FLASH_MSTR_SLV (IPU):
'0' - Set Re-timer to be Slave on shared flash SPI I/F.
'1' - Set Re-timer to be Master on shared flash SPI I/F.

(A8) DG_POC_GPIO6:
'0' - Reserved for debug
'1' - Indication to S0 state for Re-timer

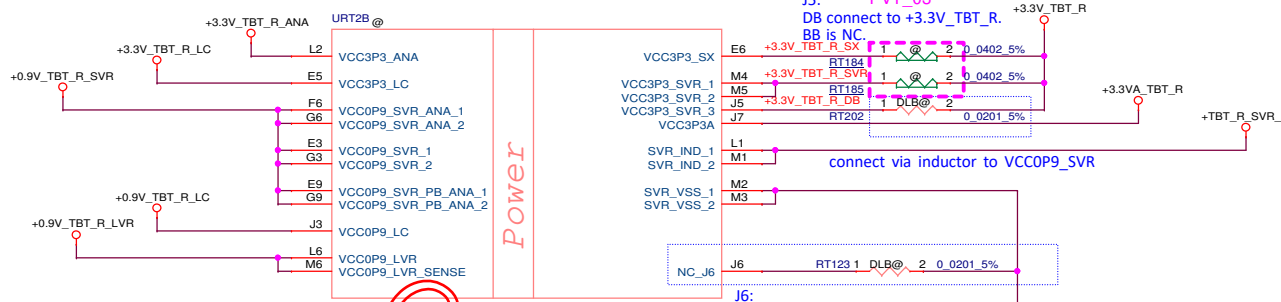
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Place near Pin E5
Place near Pin L2



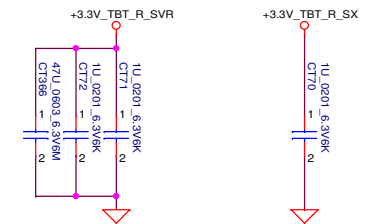
Place near Pin L6,M6
Place near Pin J3



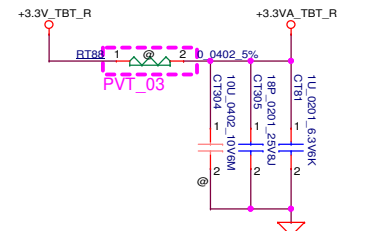
J5: PVT_03
DB connect to +3.3V_TBT_R.
BB is NC.
BB is NC.

connect via inductor to VCC0P9_SVR

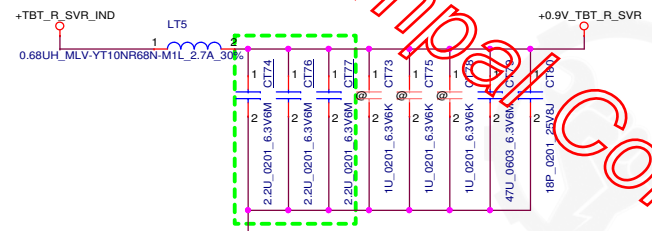
J6:
DB connect to GND.
BB is NC.



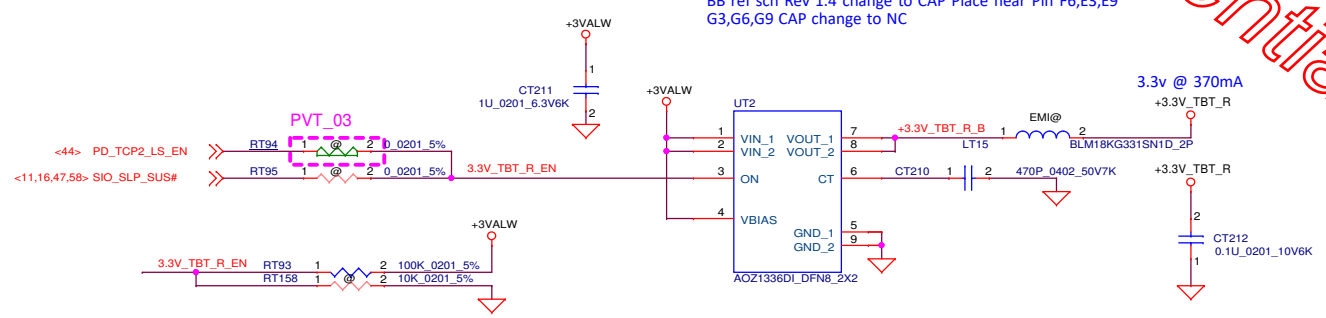
Place near Pin M4, M5, J5
GND share with Pin M2, M3
3.3v @ 290mA
Place near Pin E6
3.3v @ 80mA



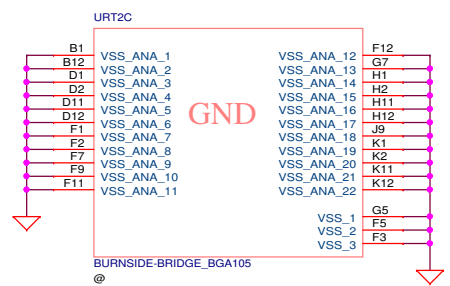
Place near Pin J7
3.3v @ 50mA



Place near Pin F6,G6,E3,G3,E9,G9
GND share with Pin M2, M3
0.9v @ 850mA
BB ref sch Rev 1.4 change to CAP Place near Pin F6,E3,E9
G3,G6,G9 CAP change to NC

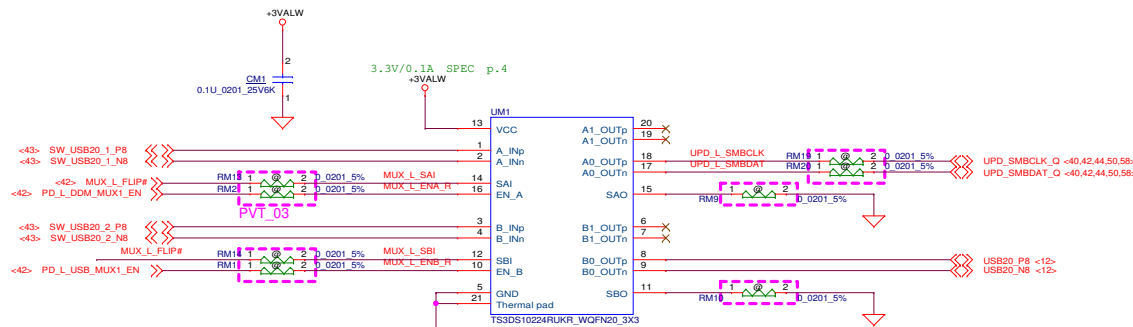


BB ref sch p.6 note
DG_P1_PWR_GATE_EN:
For PD based systems, DG_P1_PWR_GATE_EN should be output from PD.
For TPCP based systems, DG_P1_PWR_GATE_EN should be output from SOC/EC.

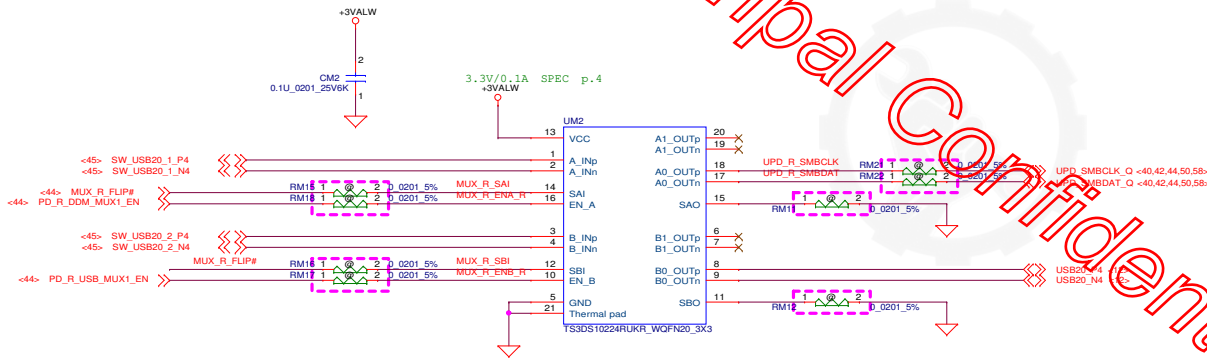


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USB2/I2C MUXES_L



USB2/I2C MUXES_R



ENA, ENB	OUTA0	OUTA1	OUTB0	OUTB1
00	Hi-Z	Hi-Z	Hi-Z	Hi-Z
01	Hi-Z	Hi-Z	-	-
10	-	-	Hi-Z	Hi-Z
11	-	-	-	-

SAI, SAO, SBI, SBO	OUTA0	OUTA1	OUTB0	OUTB1
0000	INB	-	INA	-
0001	INB	-	-	INA
0010	INB	-	INB	-
0011	INB	-	-	INB
0100	-	INB	INA	-
0101	-	INB	-	INA
0110	-	INB	INB	-
0111	-	INB	-	INB
1000	INA	-	INA	-
1001	INA	-	-	INA
1010	INA	-	INB	-
1011	INA	-	-	INB
1100	-	INA	INA	-
1101	-	INA	-	INA
1110	-	INA	INB	-
1111	-	INA	-	INB

Channel	INA	INB
Signal Name	TOP	BOT

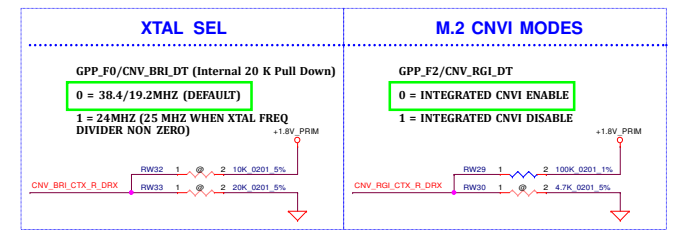
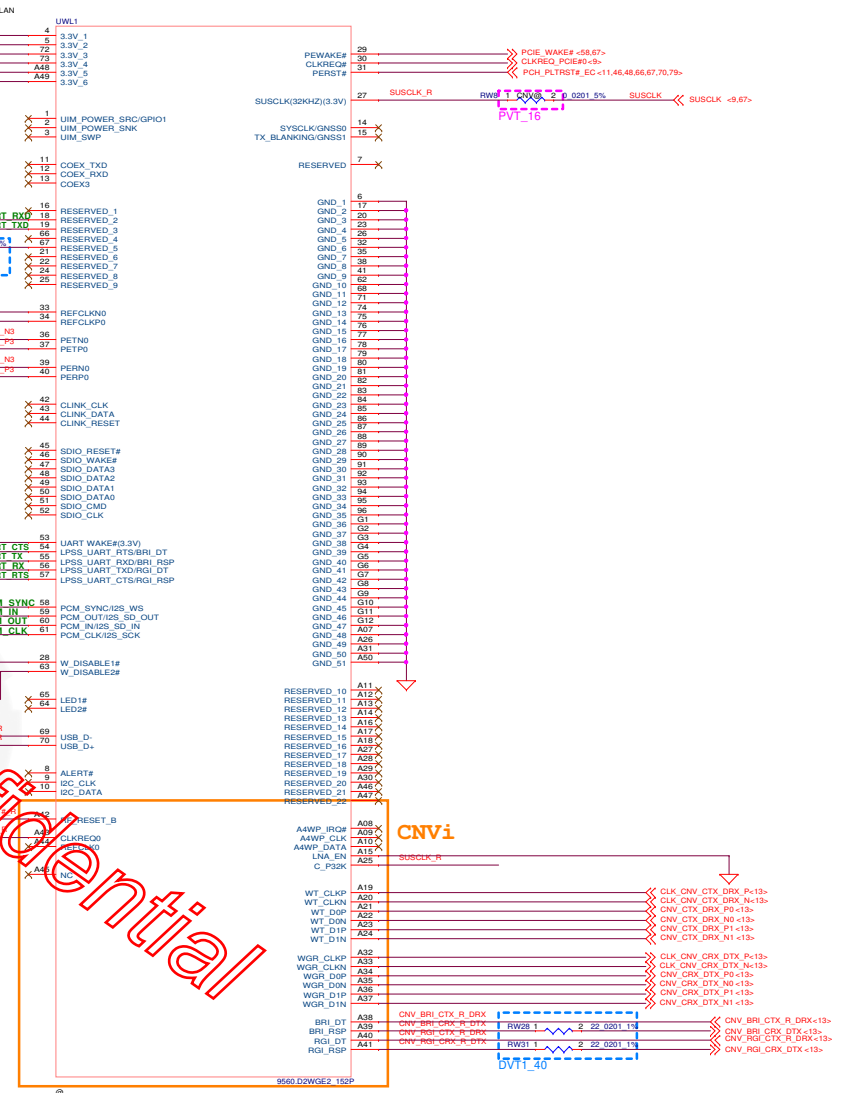
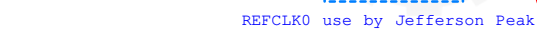
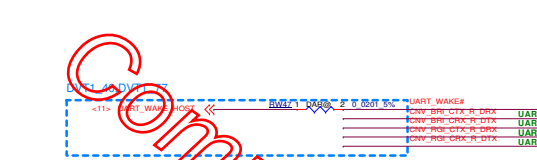
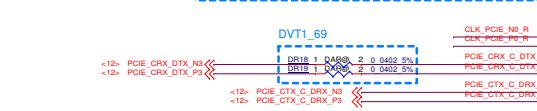
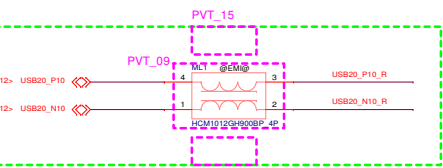
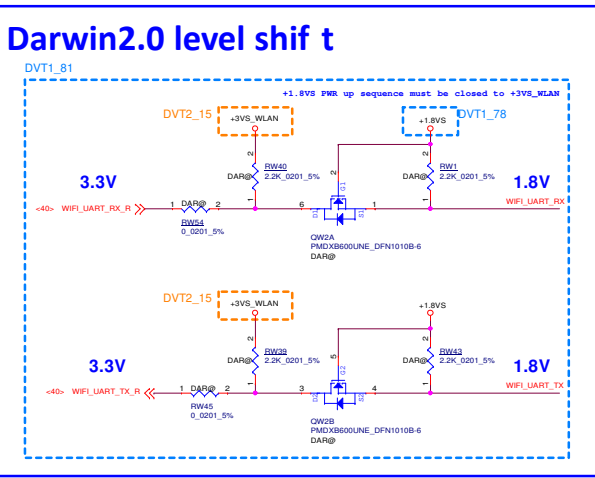
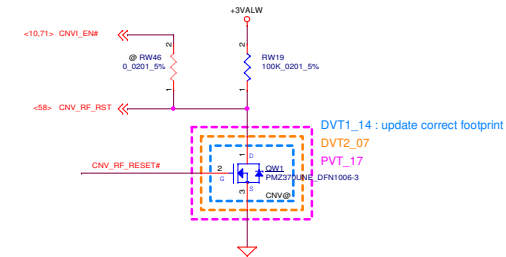
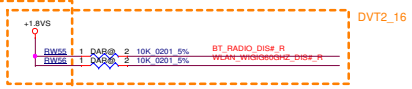
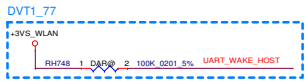
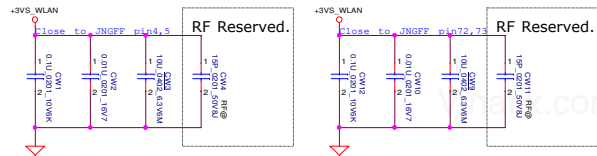
ENA	ENB	SAI	SBI	SAO	I2C / USB		Mux Functional Mode	PD Controller W/DDM
					OUTA0	OUTB0		
0	1	-	0	-	Hi-Z	TOP	-	USB only on TOP
0	1	-	1	-	Hi-Z	BOT	-	USB only on BOT
1	1	0	0	0	BOT	TOP	Crosspoint Switch	USB on TOP W/DDM
1	1	1	1	0	TOP	BOT	Crosspoint Switch	USB on BOT W/DDM

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				Rev	0.1 (X00)
				LA-H811P	

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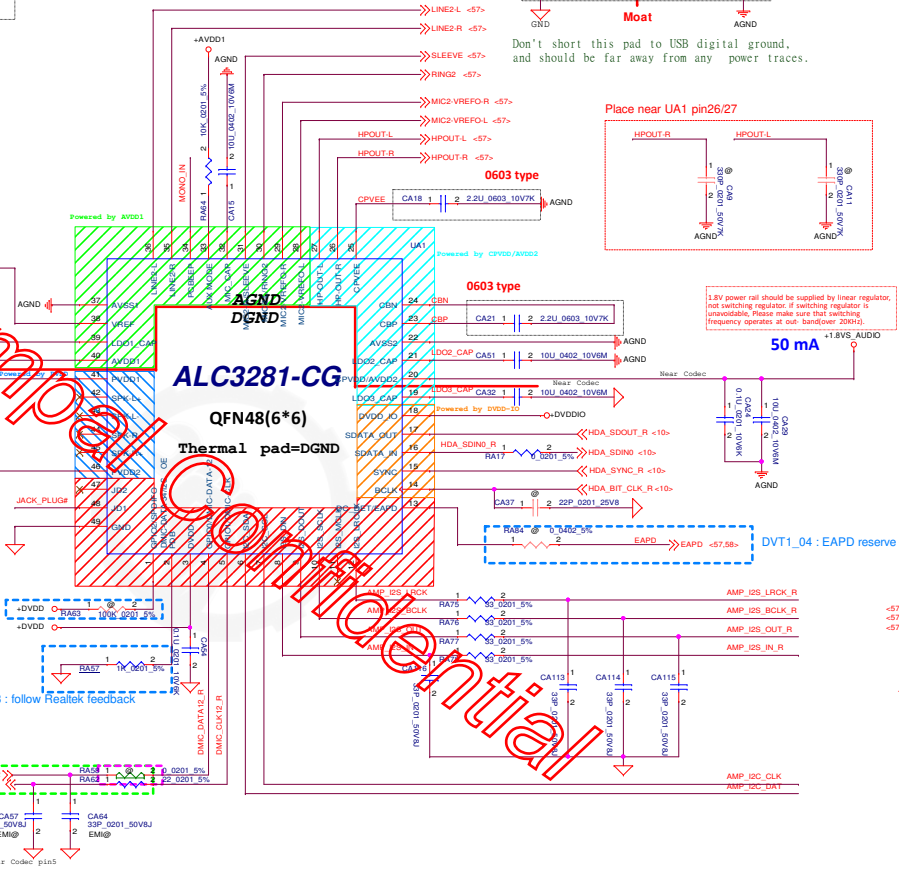
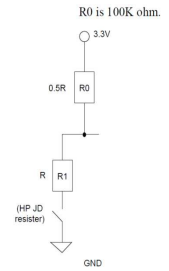
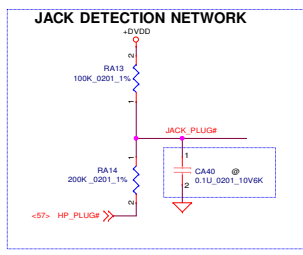
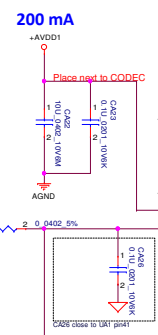
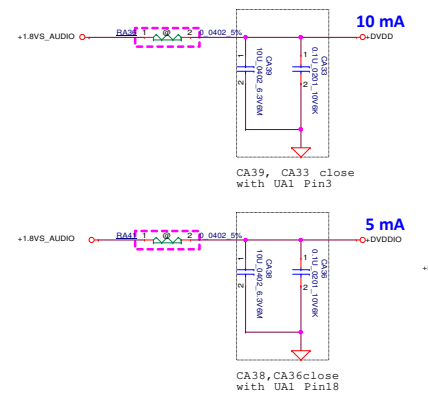
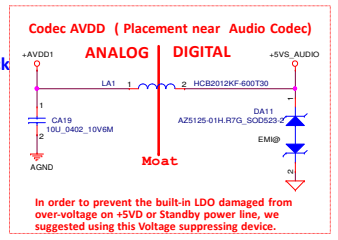
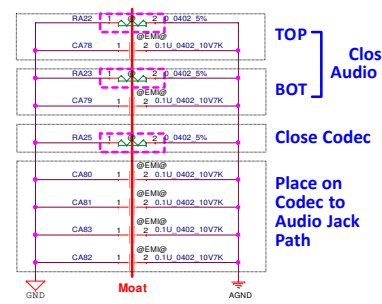
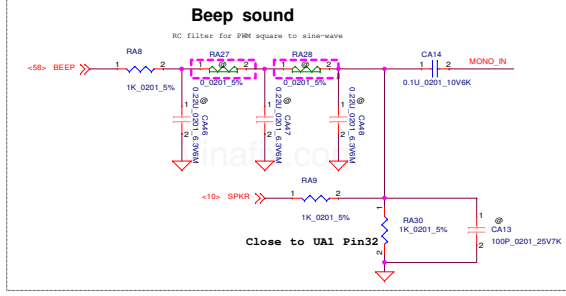
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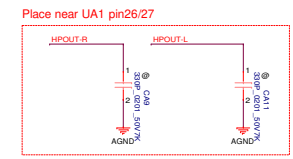
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Don't short this pad to USB digital ground, and should be far away from any power traces.

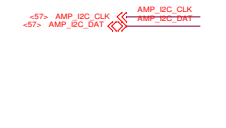
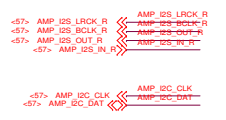
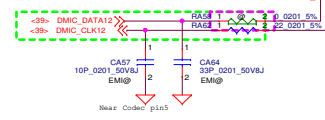


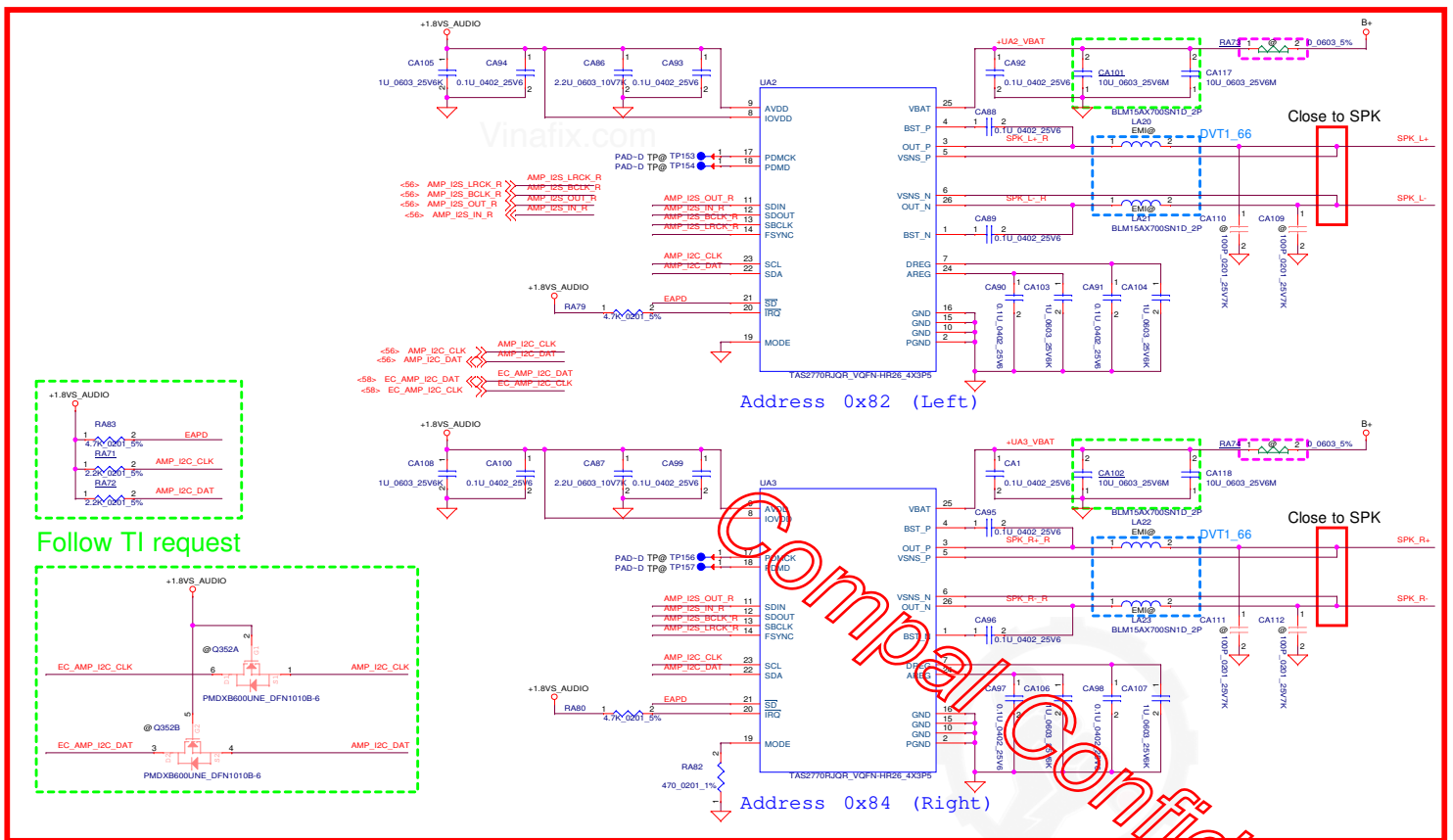
1.8V power rail should be supplied by linear regulator, not switching regulator. If switching regulator is unavoidable, please make sure that switching frequency operates at out-band(over 200KHz).

50 mA

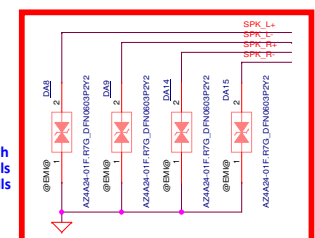
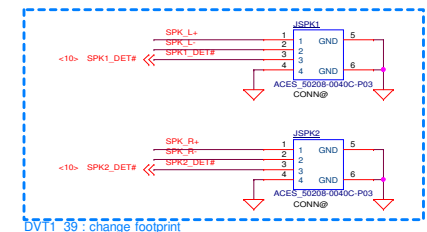
DVT1_04 : EAPD reserve 0 ohm

DVT1_13 : follow Realtek feedback



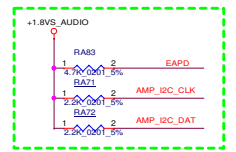
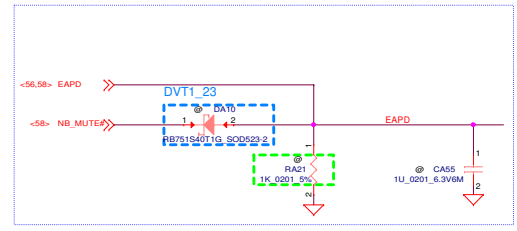


Int. Speaker Conn.

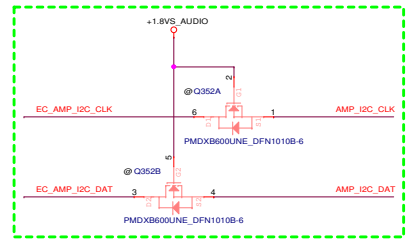


SPK L+ L- R+ R- trace width
Speaker 4 ohm ==> 40 mils
Speaker 8 ohm ==> 20 mils

Need up to 15+V, check with EMC



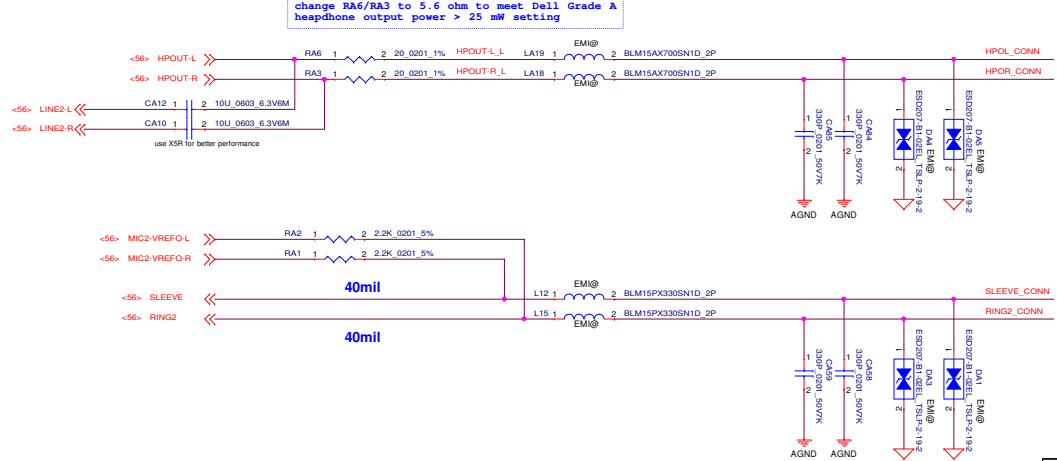
Follow TI request



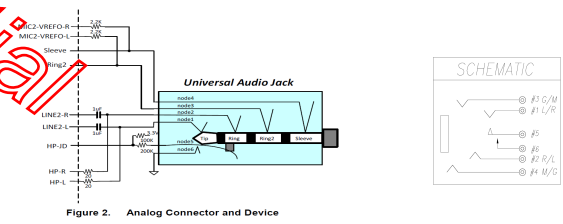
PCB trace width of MIC2-R(SLEEVE)/MIC2-L(RING2) are required at least 40 mil for HP crosstalk consideration and, its length should be as short as possible.
LA19/L15 should choose DC resistance (Rdc) < 30m-ohm to get the best audio performance for HP crosstalk.

change RA6/RA3 to 5.6 ohm to meet Dell Grade A headphone output power > 25 mW setting

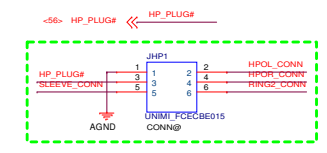
Universal Audio Jack



Universal Audio Jack CONN



Contact with PC BEAN



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				Rev	0.1 (X00)
				LA-H811P	

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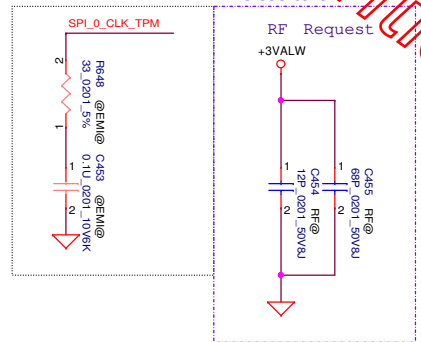
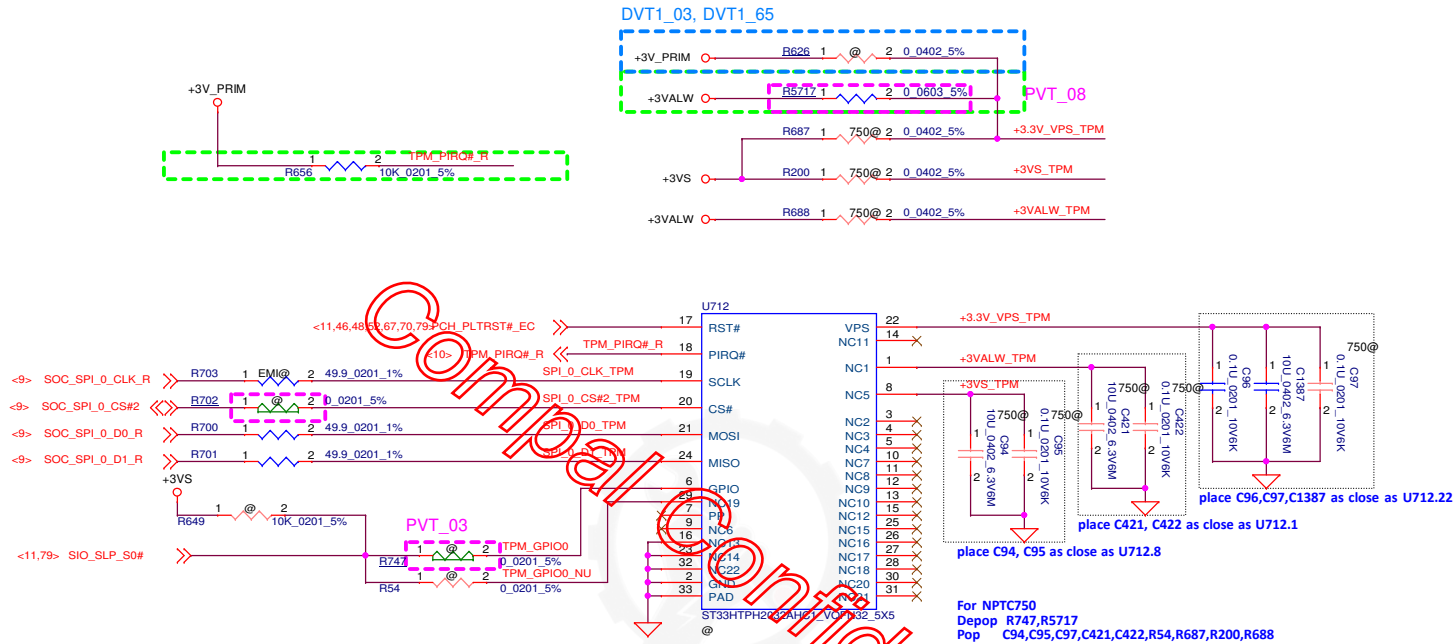
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				LA-H811P	

For ST/Nuvoton TPM



For NPCT750
 Depop R747,R5717
 Pop C94,C95,C97,C421,C422,R54,R687,R200,R688

Pin number	1	2	6	8	16	17	18	19	20	21	22	23	24	29
Chip	NC	GND	GPIO0	NC	NC	RESET	PIRQ	SCLK	SCS	MOSI	GPIO	NC	MISO	NC
ST33	NC	GND	GPIO0	NC	NC	RESET	PIRQ	SCLK	SCS	MOSI	GPIO	NC	MISO	NC
NPCT750	VDD	NC	NC	GPIO	GND						VDD	GND		GPIO

VSB Standby Power Supply. The VALW power rail 3.3V
 VHIO Host Interface Power Supply 3.3V
 VPS: Power Supply 3.3V
 NPCT750: GPIO0 can be used as a backup option for entering Low-Power mode.

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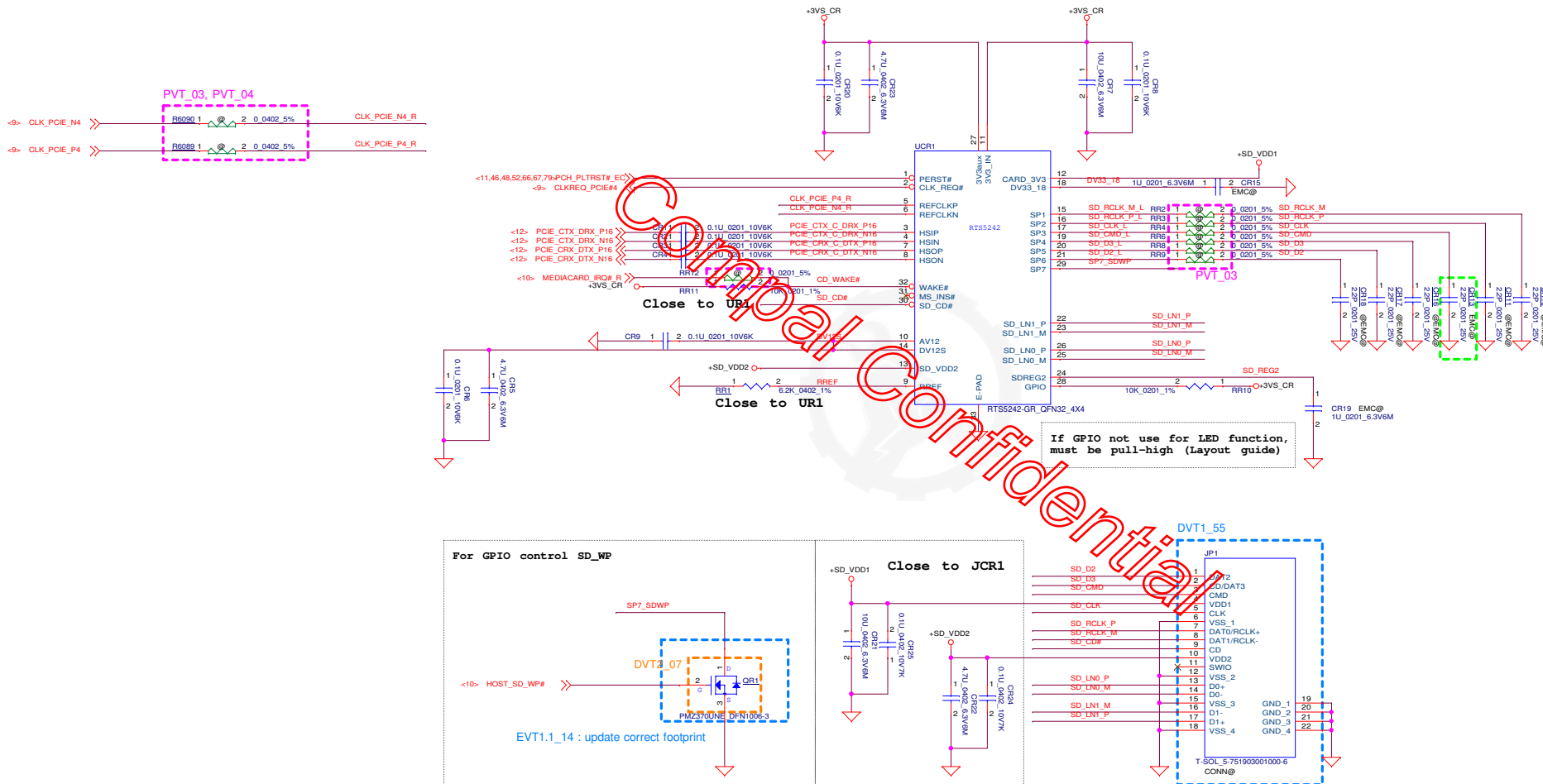
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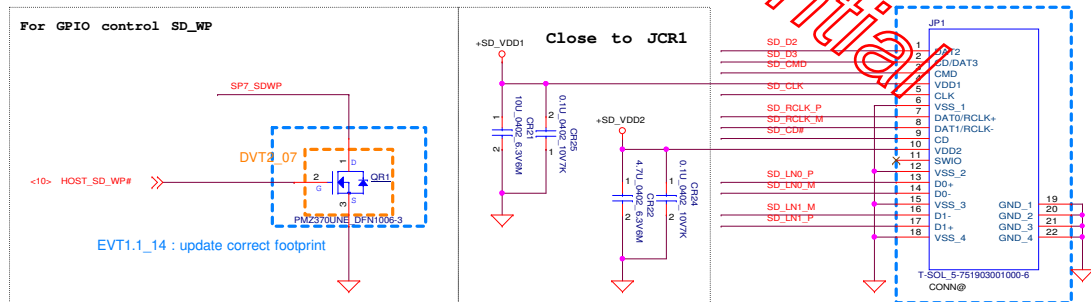
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Card Reader

- 1) Placing the RTS5242 chip and flash card socket locate to suit trace routing for SI / EMI / ESD.
- 2) Keep bulk and de-coupling capacitors as close as possible to the RTS5242 chip and flash card socket.
 - Bulk capacitor for Card_3V3 place closed to flash card socket.
 - Bulk capacitor for 3V3_IN / 3V3aux / DV12S place closed to RTS5242 chip.
- 3) Keep damping resistor (ex, for SD CLK / MS CLK) as close as possible to the RTS5242 chip.
- 4) Keep these capacitors for SD card / MS card signals as close as possible to flash card socket.

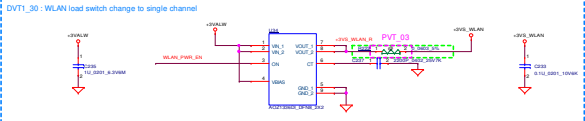


If GPIO not use for LED function, must be pull-high (Layout guide)

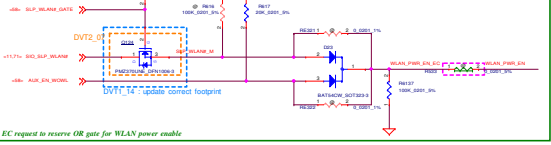


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				Size	Document Number	Rev
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WLAN

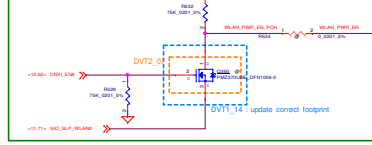


EC

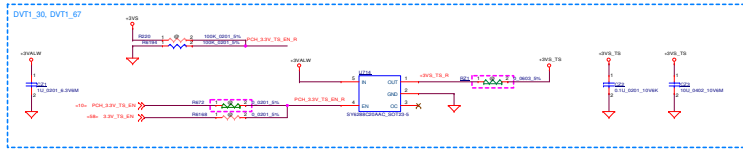


EC request to resume OR gate for WLAN power enable

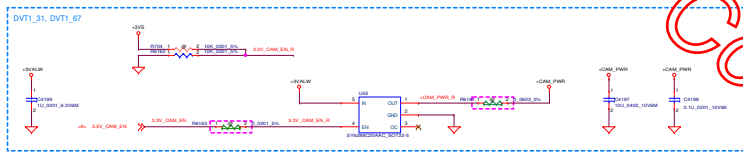
PCH



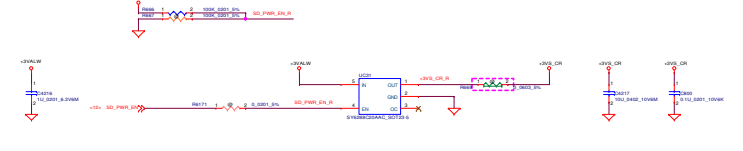
TS



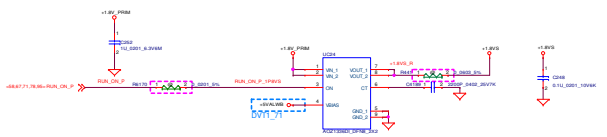
Camera



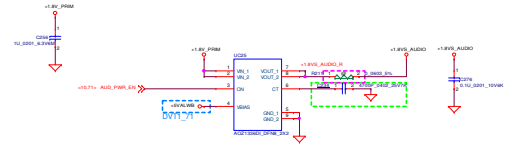
Card Reader



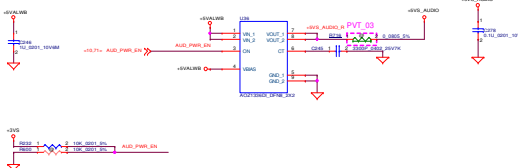
1.8VS



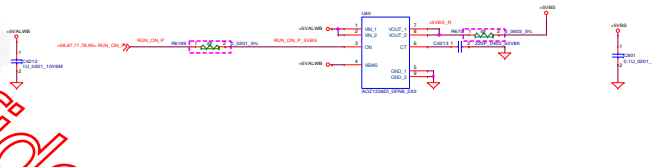
1.8VS_AUDIO



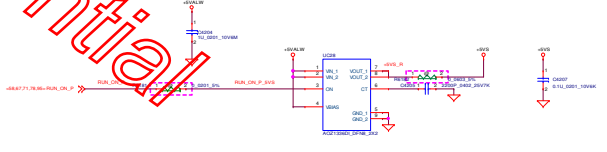
5VS_AUDIO



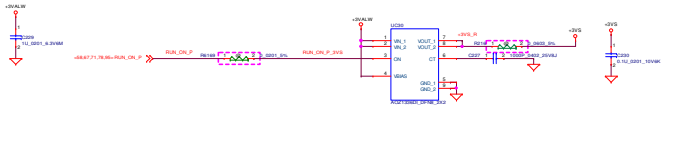
5VBS



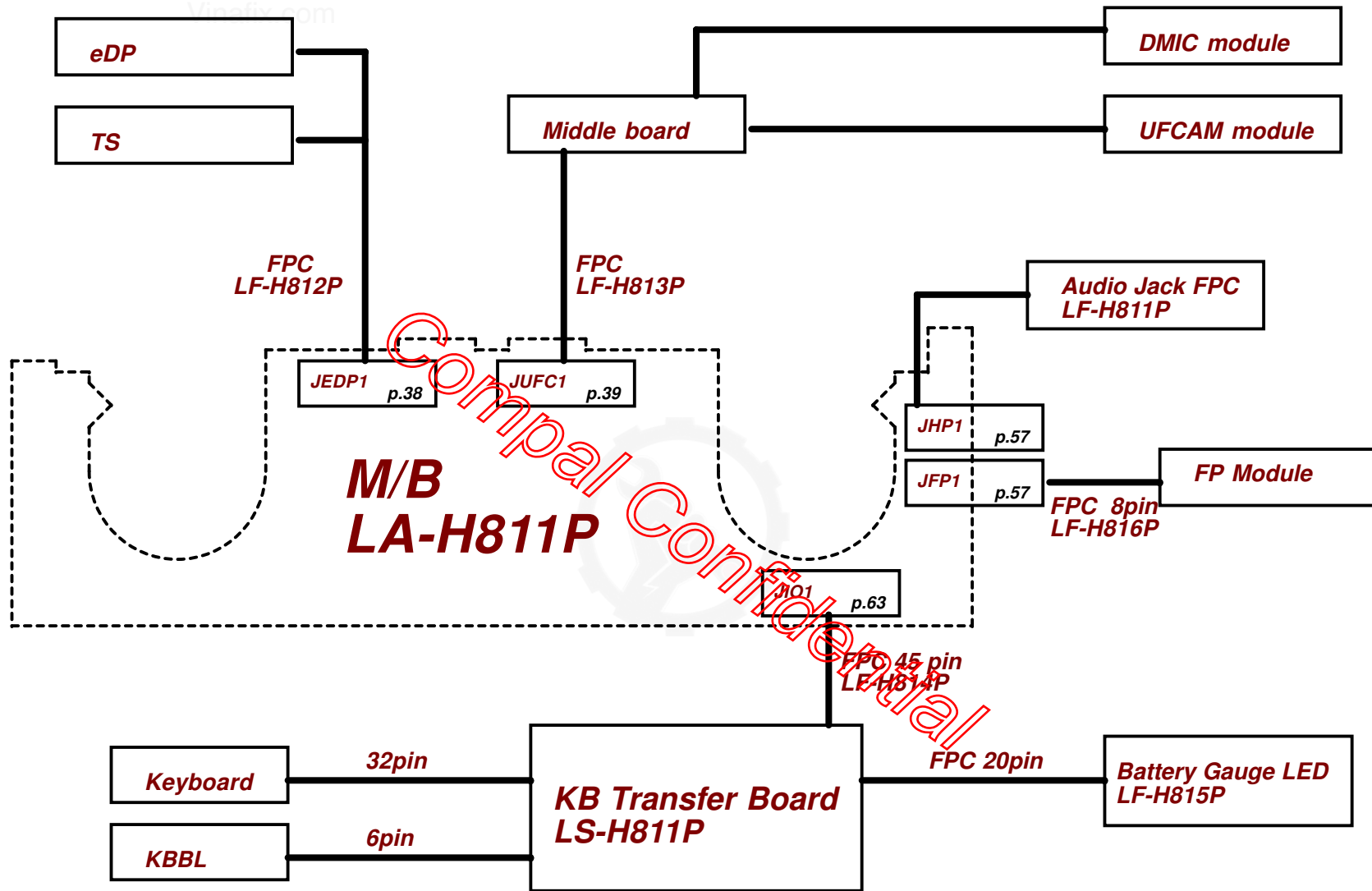
5VS



3VS



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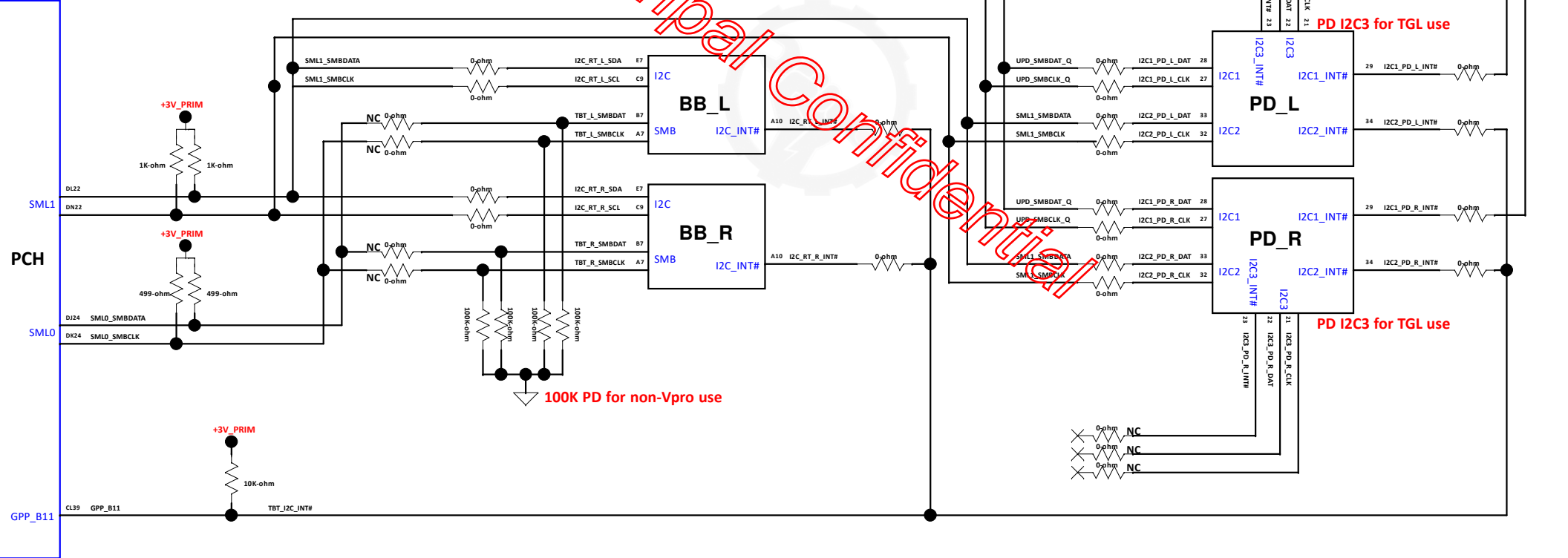


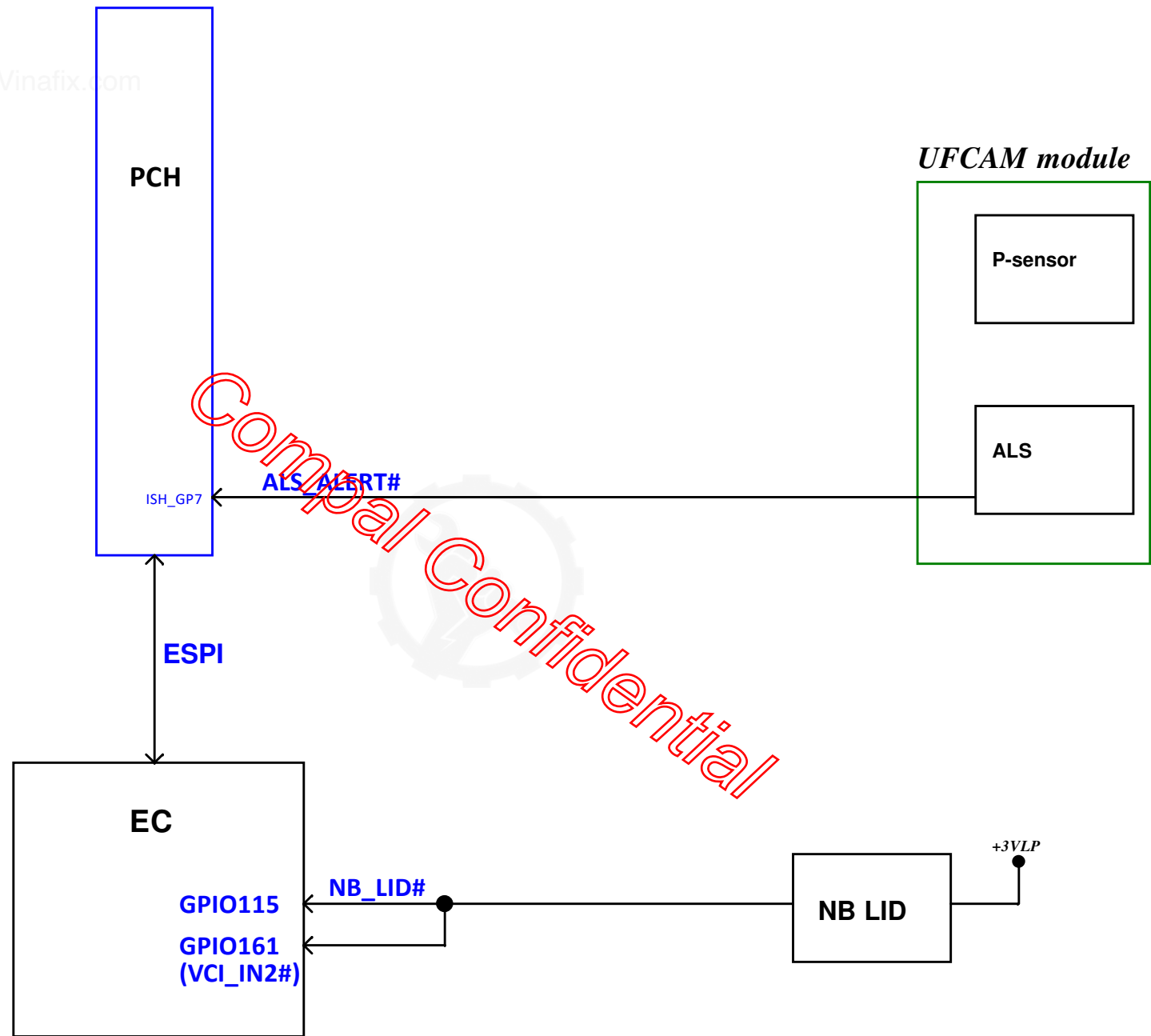
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Size	Document Number	Rev		0.1 (X00)	
LA-H811P		Date:		Tuesday, December 24, 2019	
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To LEFT Type-C Connector

To RIGHT Type-C Connector

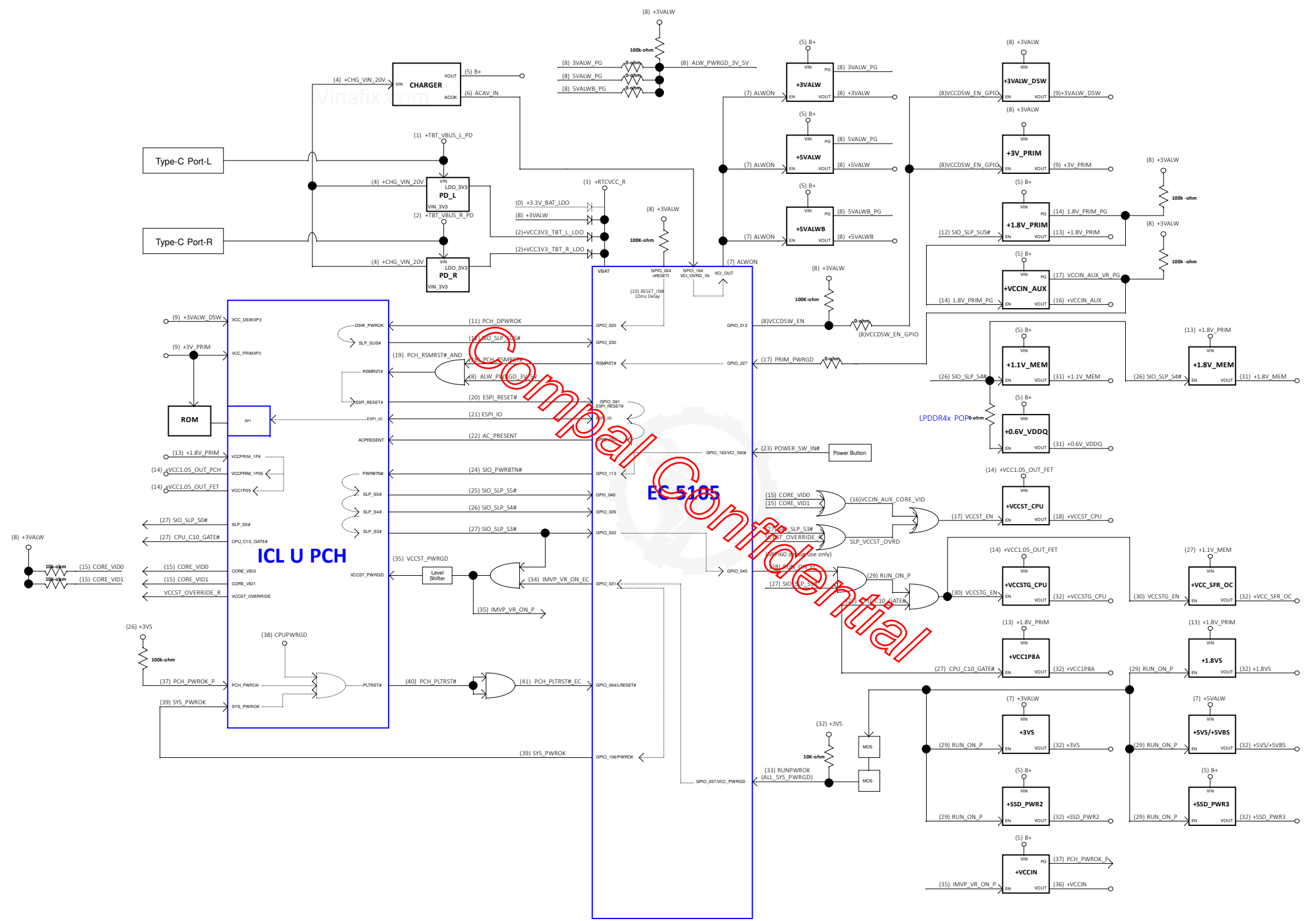
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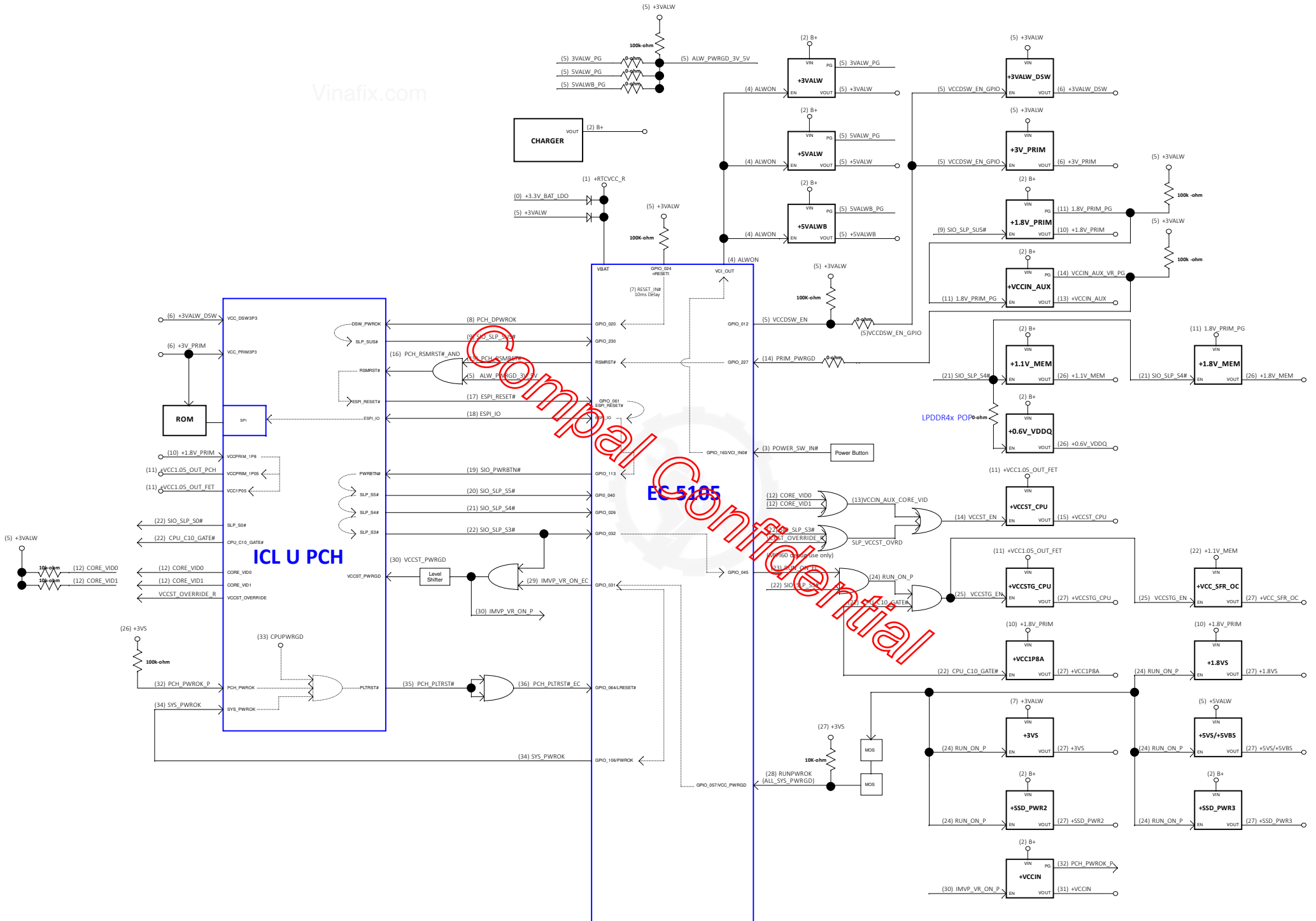
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EC-5105

ICL U PCH

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P075 - AC Power up Sequence				Doc No	LA-011P
Date				Rev	1

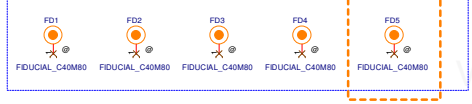


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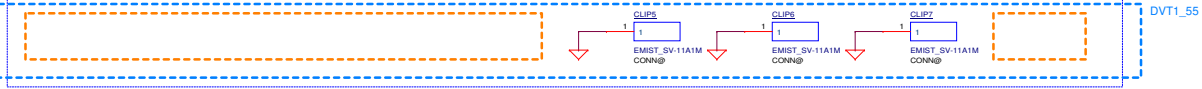
EC-5105

Screw Hole

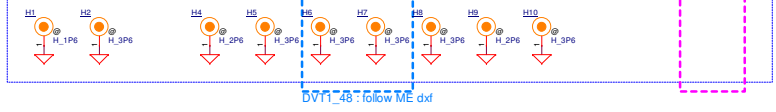
Fiducial Mark



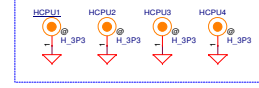
ME Spring for 1.13mm cable



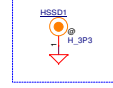
PCB X 12 (PTH)



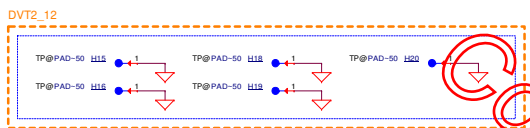
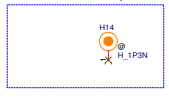
CPU X 5



SSD stand-off

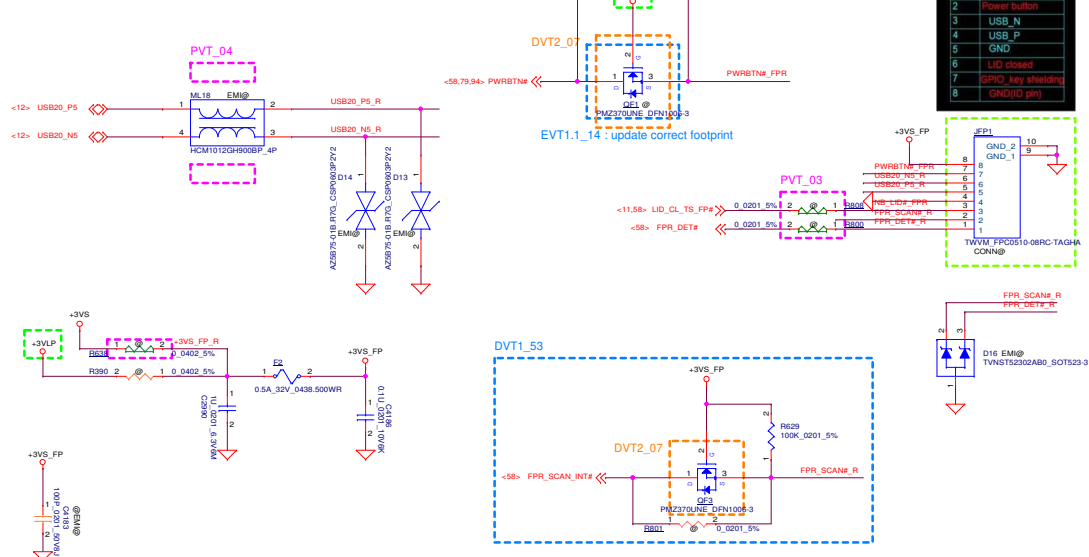


PCB X 2 (NPTH)

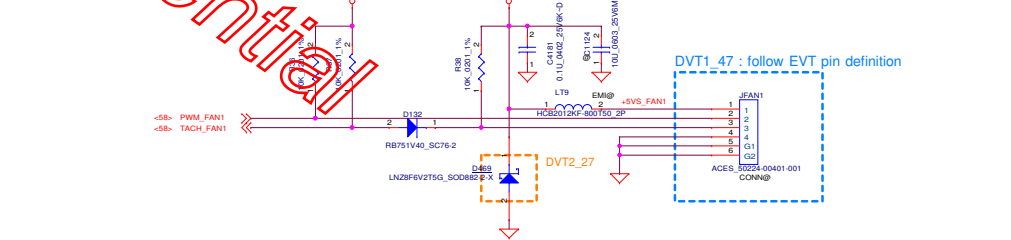


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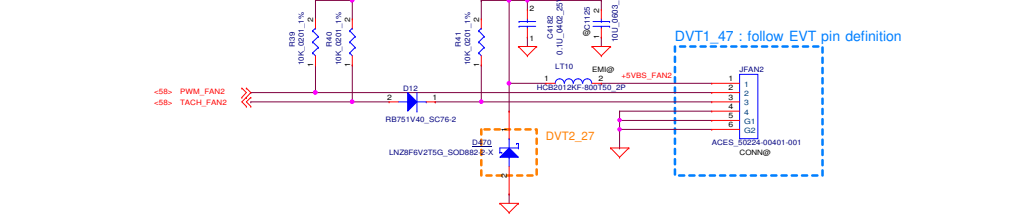
Power button & Finger print



FAN1

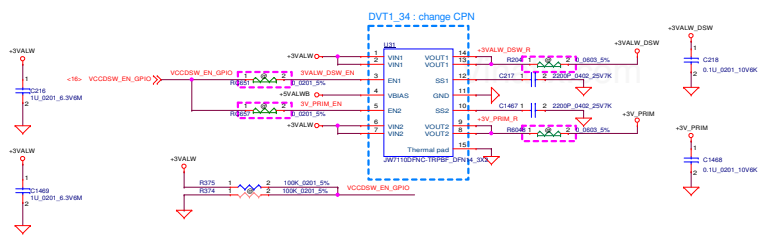


FAN2

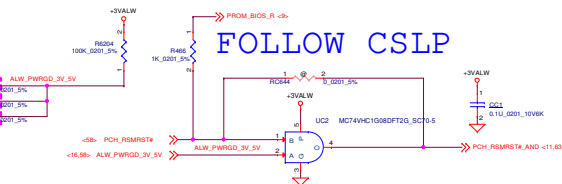


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Compal Electronics, Inc. P077 - PWRBTN&FPR/SCREW/FAN Document Number LA-H811P			Rev 1.1 (X09)

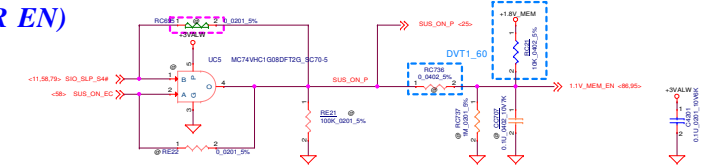
+3VALW_DSW&+3V_PRIM



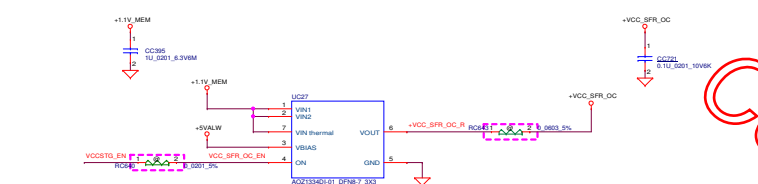
RSMRST#



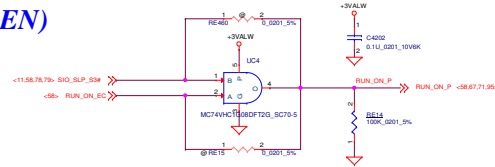
SUS_ON(DDR EN)



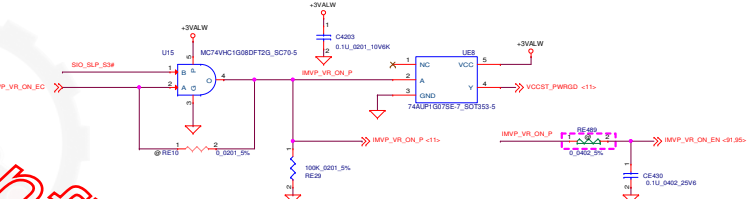
VCC_SFR_OC(VCCPLL_OC)



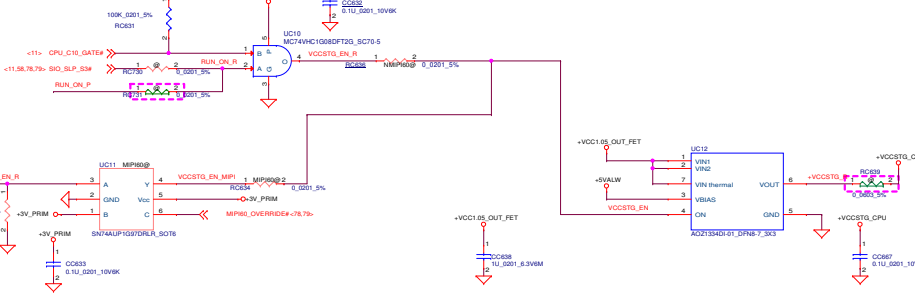
RUN_ON(VS EN)



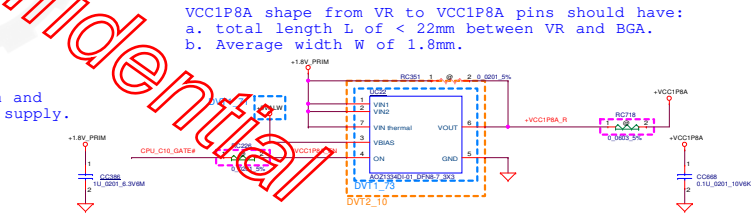
IMVP_VR_ON&VCCST_PWRGD



VCCSTG



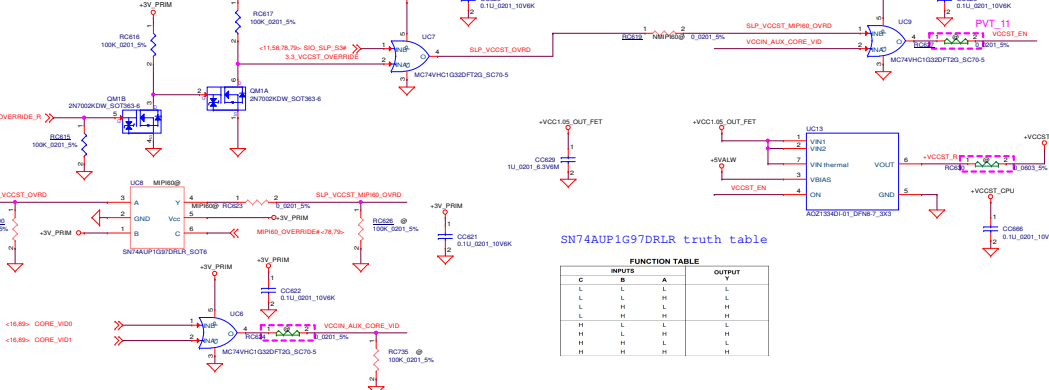
+VCCIP8A



PDG p.615
TCSS and AGSH
Type C Sub system and
processor analog supply.

VCCIP8A shape from VR to VCCIP8A pins should have:
a. total length L of < 22mm between VR and BGA.
b. Average width W of 1.8mm.

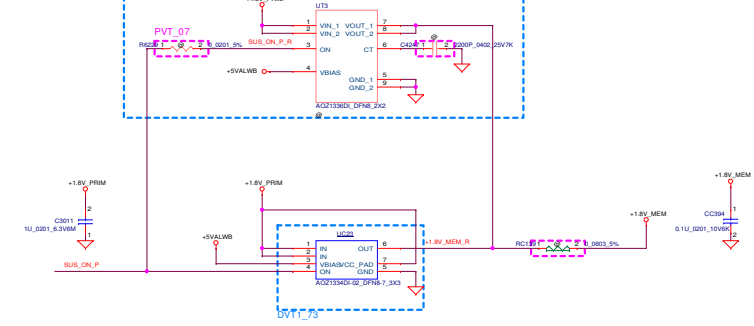
VCCST



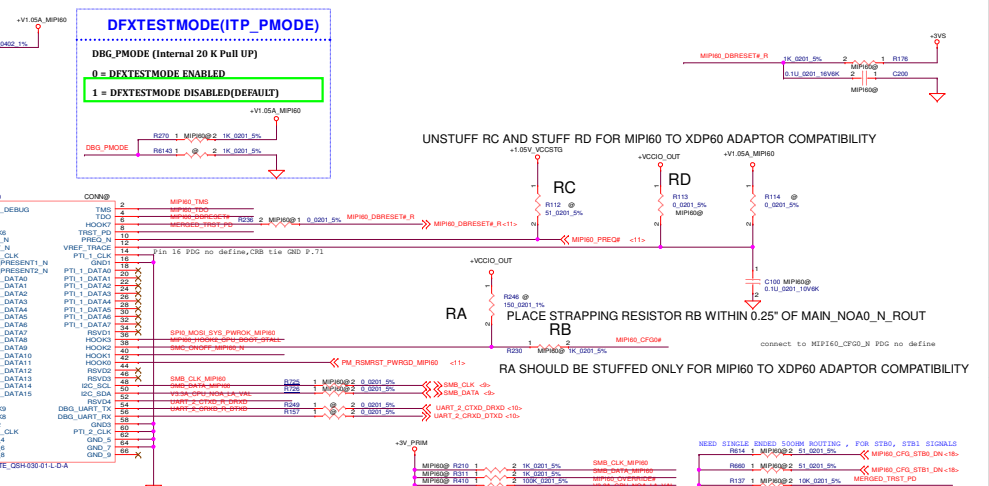
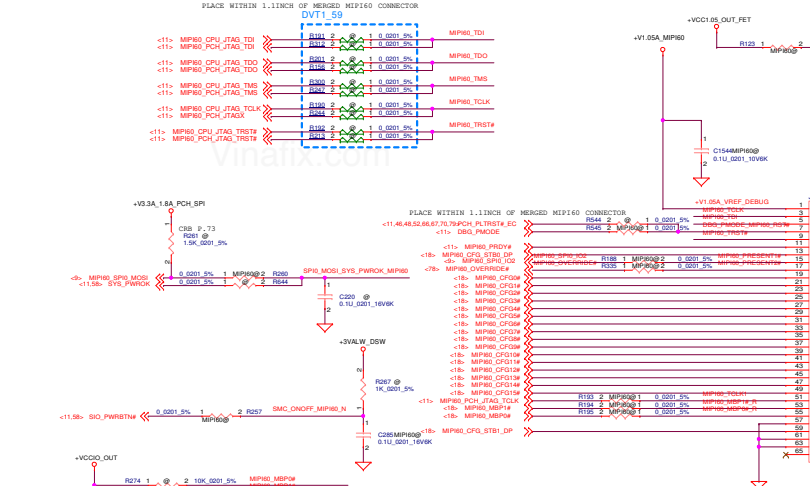
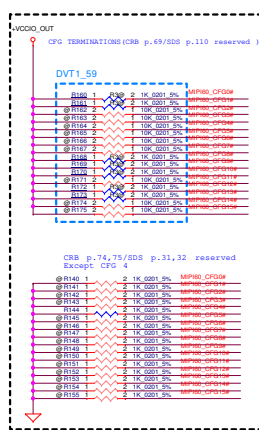
SN74AUP1G97DRLR truth table

FUNCTION TABLE		
INPUTS	A	OUTPUT
L	L	L
L	L	H
L	H	L
L	H	H
H	L	L
H	L	H
H	H	L
H	H	H

+1.8_MEM

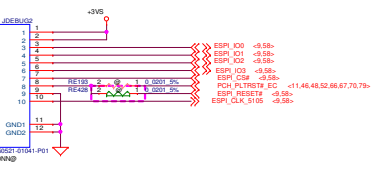


MIPI 60



JESPI

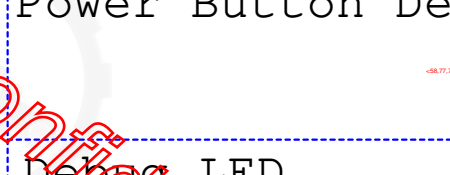
ICP	ESPI	ESPI
1	ESPI_1	ESPI_1
2	ESPI_2	ESPI_2
3	ESPI_3	ESPI_3
4	ESPI_4	ESPI_4
5	ESPI_5	ESPI_5
6	ESPI_6	ESPI_6
7	ESPI_7	ESPI_7
8	ESPI_8	ESPI_8
9	ESPI_9	ESPI_9
10	ESPI_10	ESPI_10



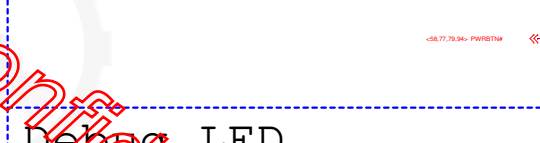
APS



BIOS UART Debug



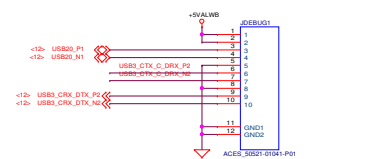
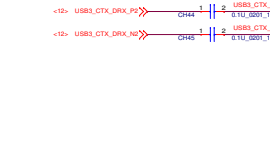
Power Button Debug



Debug LED

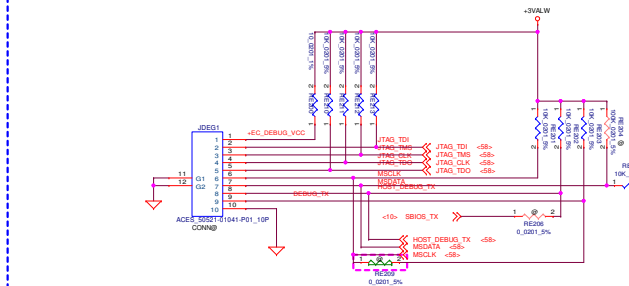


DCI Debug



JDEG1

EC UART Debug/80 port



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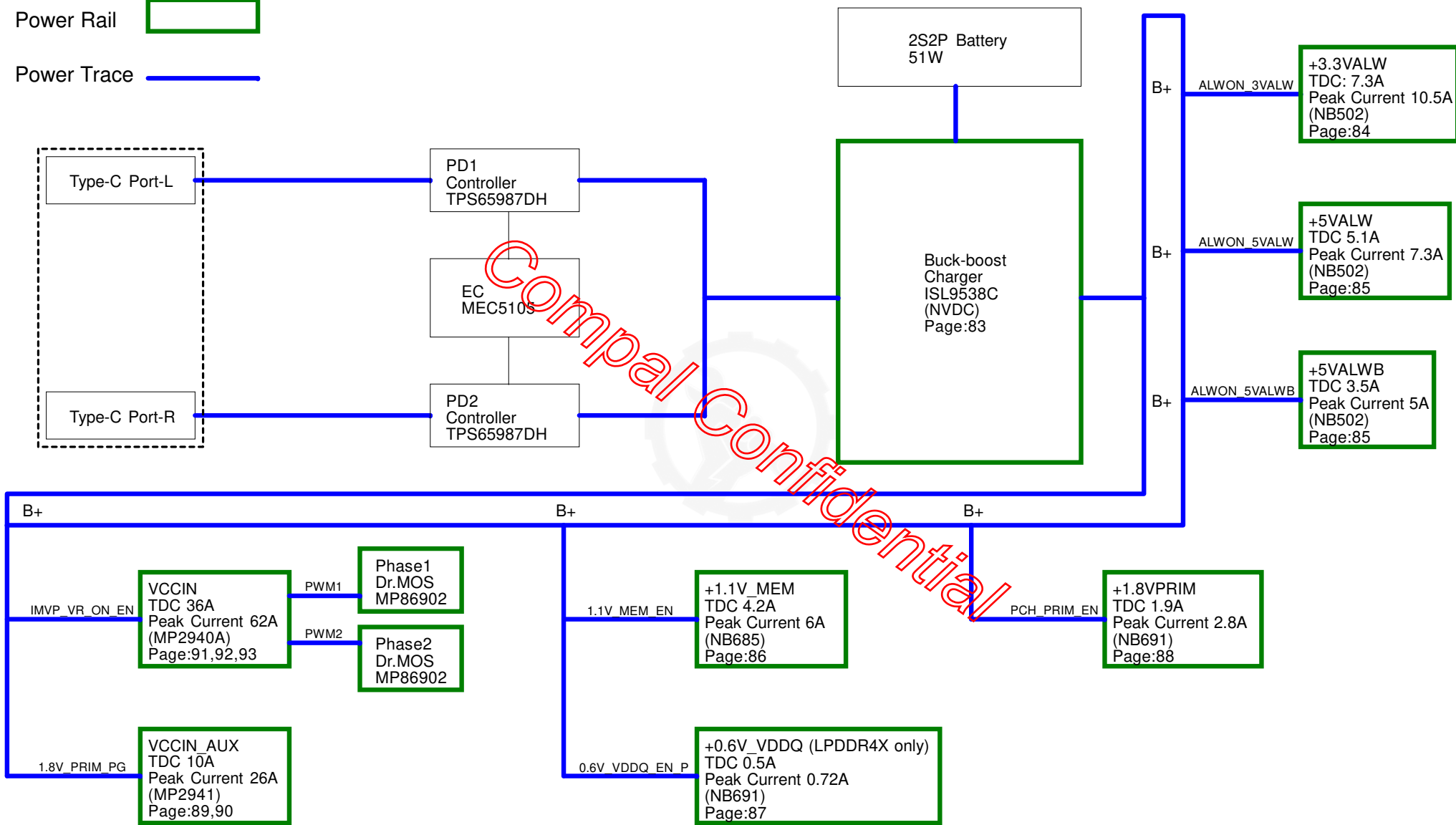
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				Date	Tuesday, December 24, 2019
				Rev	0.1 (X00)
				LA-H811P	

Modena POWER BLOCK DIAGRAM

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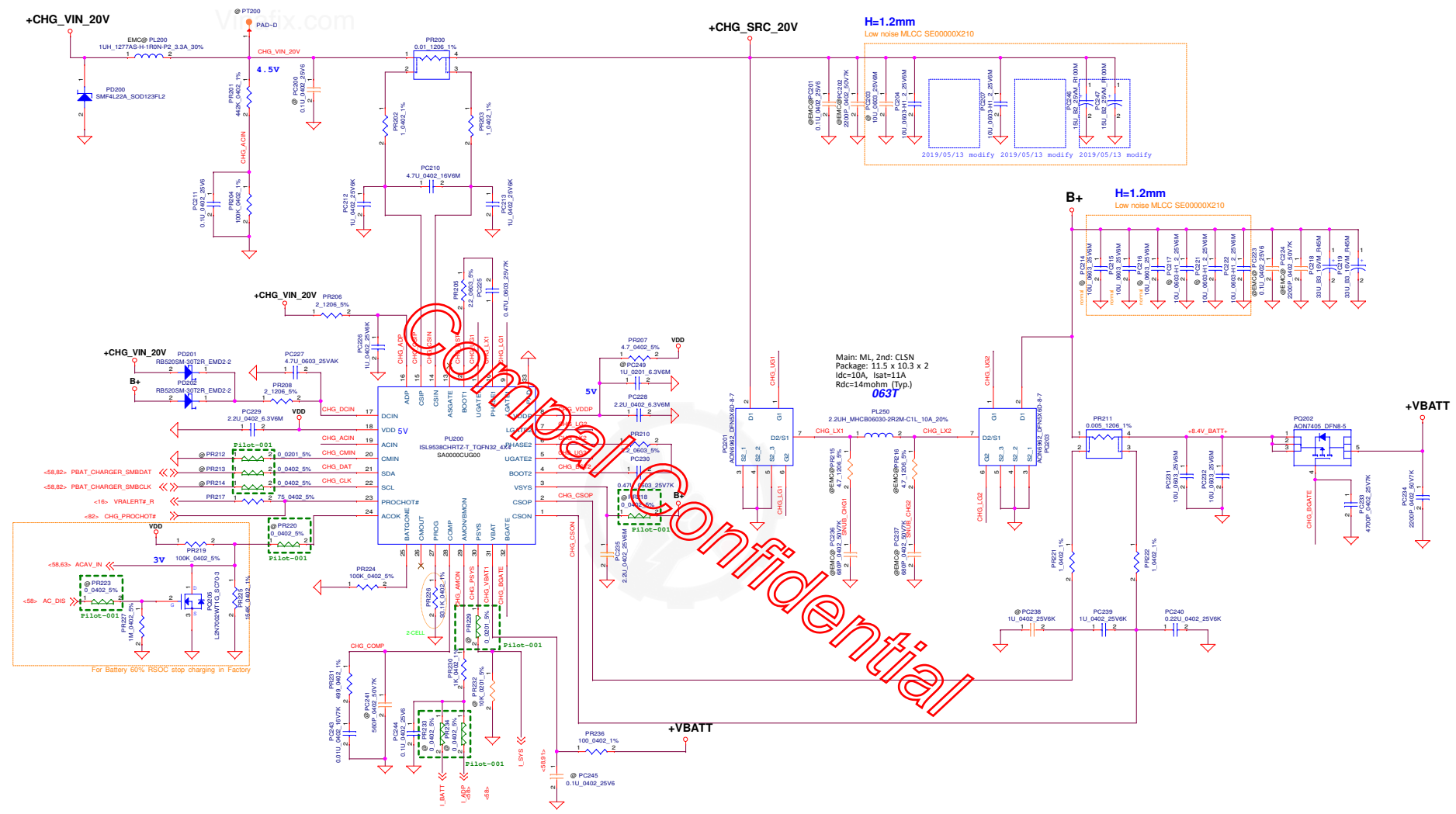
Power Rail

Power Trace



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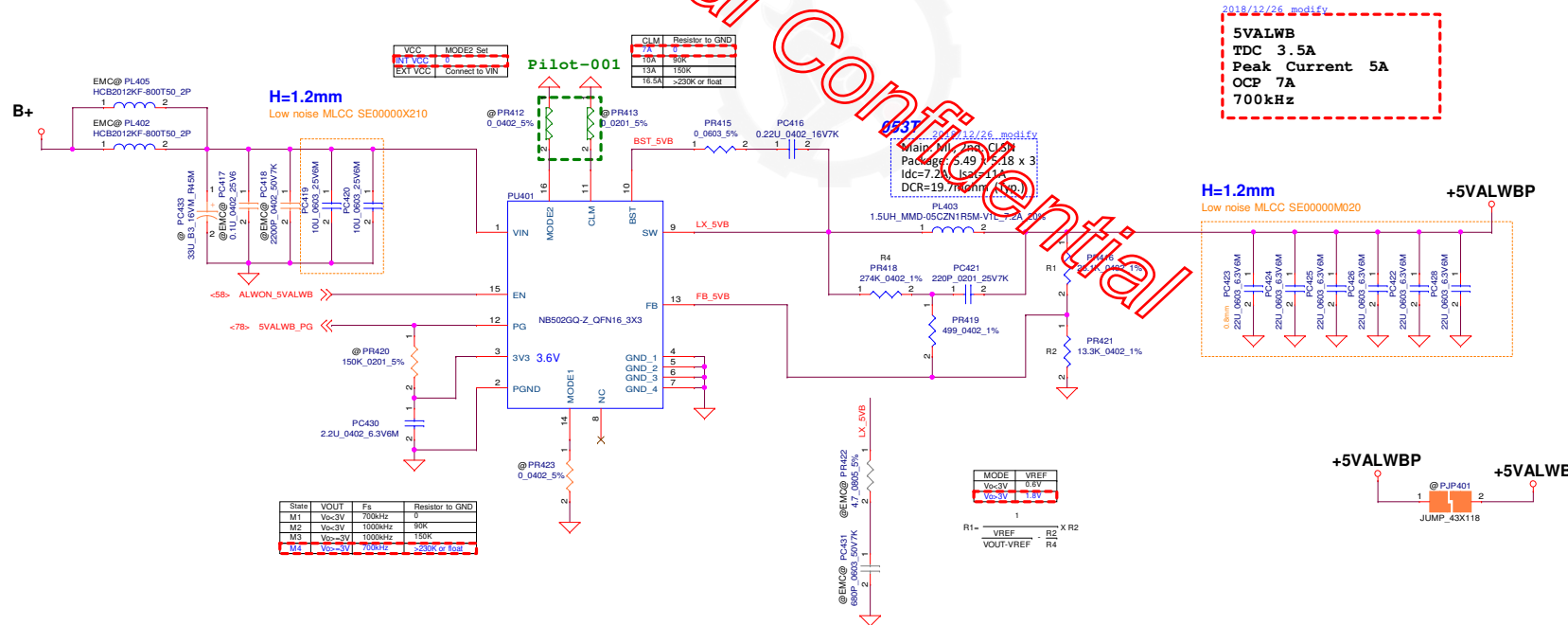
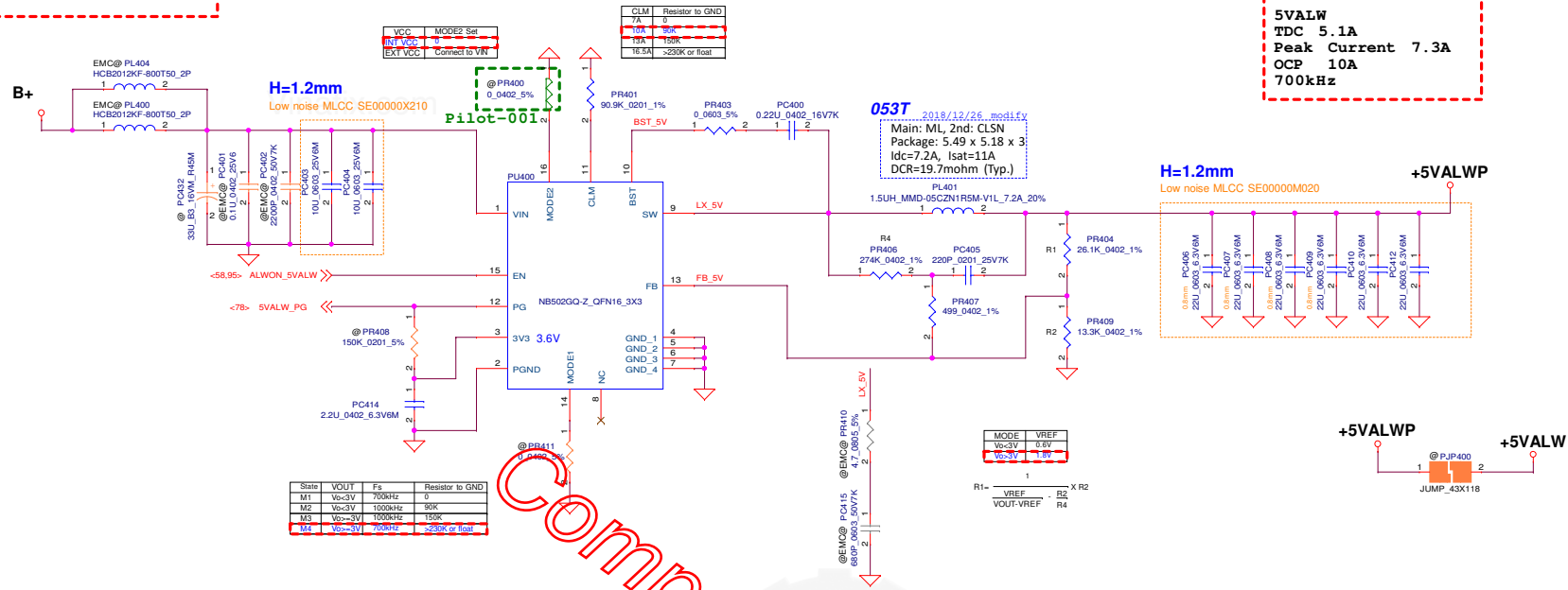
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For Battery 60% RSOC stop charging in Factory

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Issued Date	2017/08/24	Deciphered Date	2017/08/24	PWR Charger
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Controller(35.1), Support component(35.2)



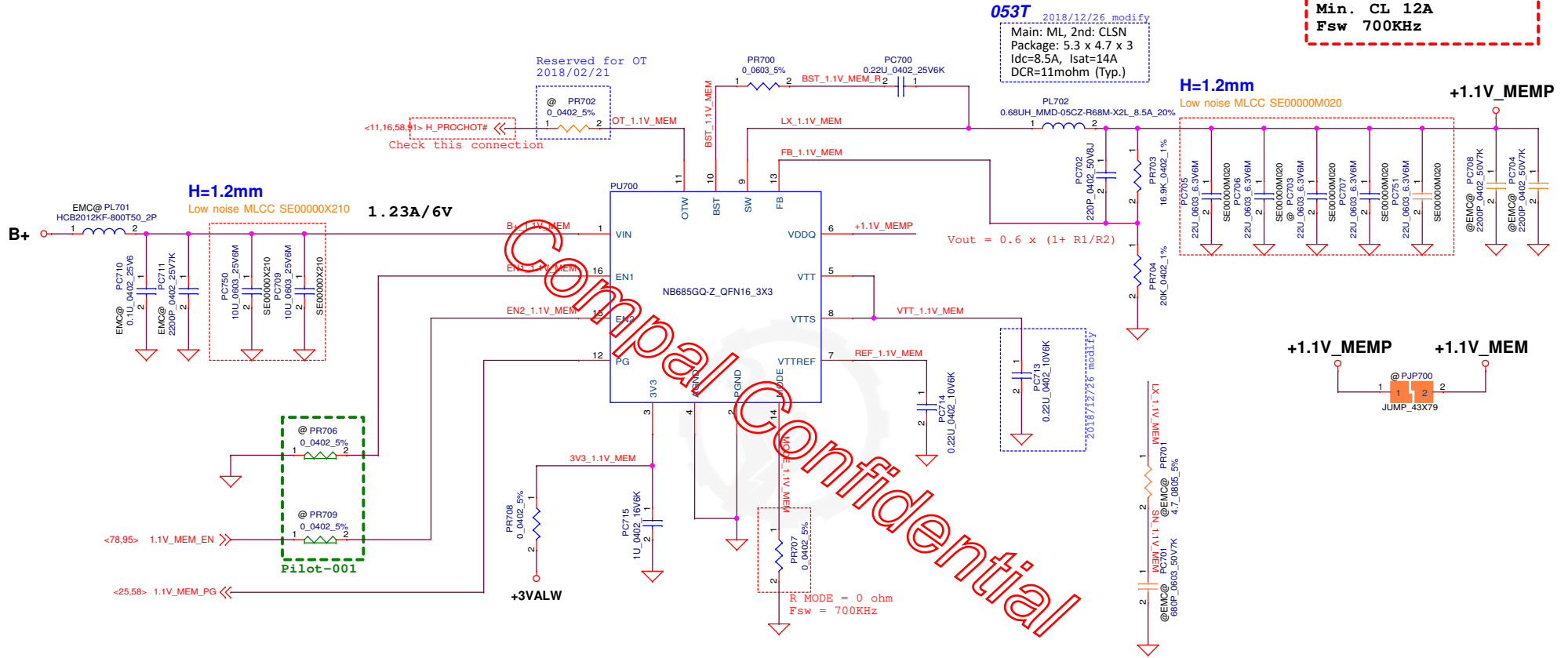
State	VOUT	Fs	Resistor to GND
M1	V _o -3V	700kHz	0
M2	V _o -3V	1000kHz	90K
M3	V _o -3V	1000kHz	150K
M4	V _o -3V	700kHz	>230K or float

State	VOUT	Fs	Resistor to GND
M1	V _o -3V	700kHz	0
M2	V _o -3V	1000kHz	90K
M3	V _o -3V	1000kHz	150K
M4	V _o -3V	700kHz	>230K or float

Controller(35.3), Support component(35.4)

Vinafix.com

2018/12/26 modify
+1.1V_MEM
TDC 4.2A
Peak Current 6A
Min. CL 12A
Fsw 700KHz



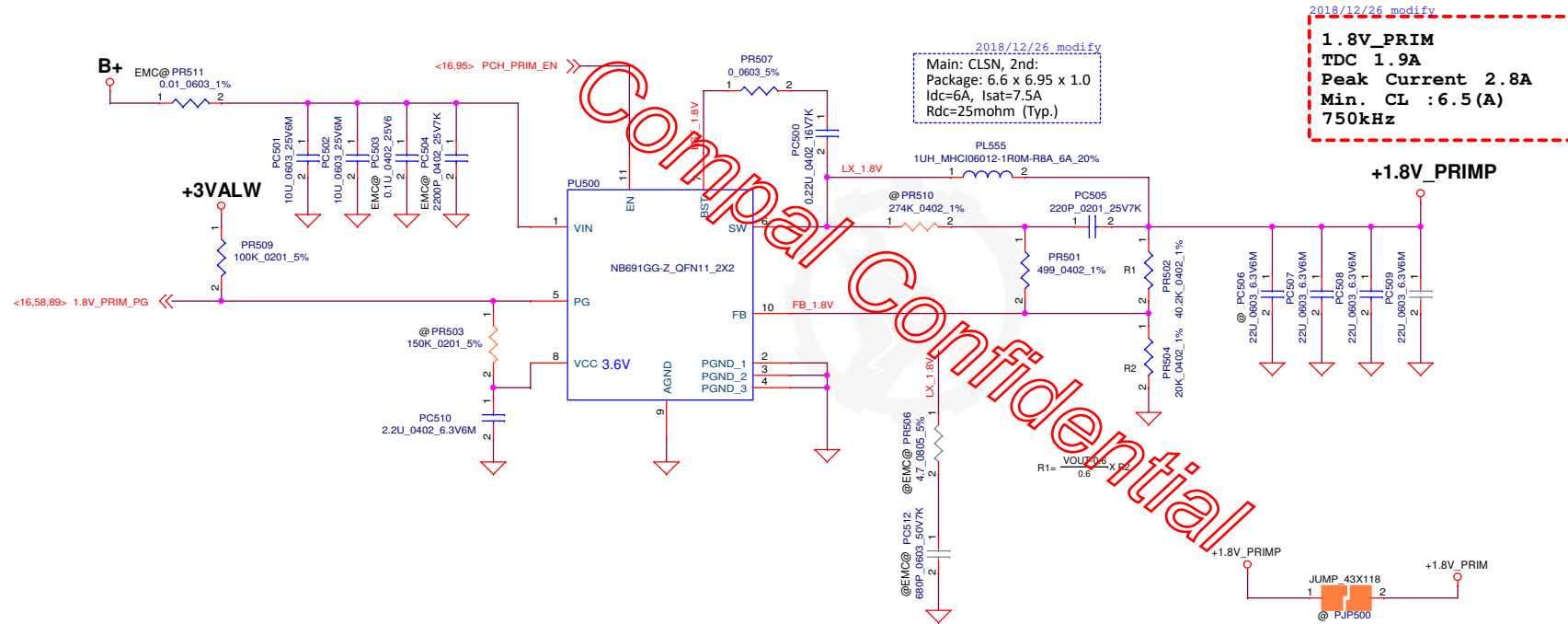
Mode	EN1	EN2	VDDQ	VTT
S0	H	H	on	on
S3	L	H	on	off
S4/S5	L	L	off	off

Note: S3 - sleep ; S5 - power off

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Controller(35.13), Support component(35.14)

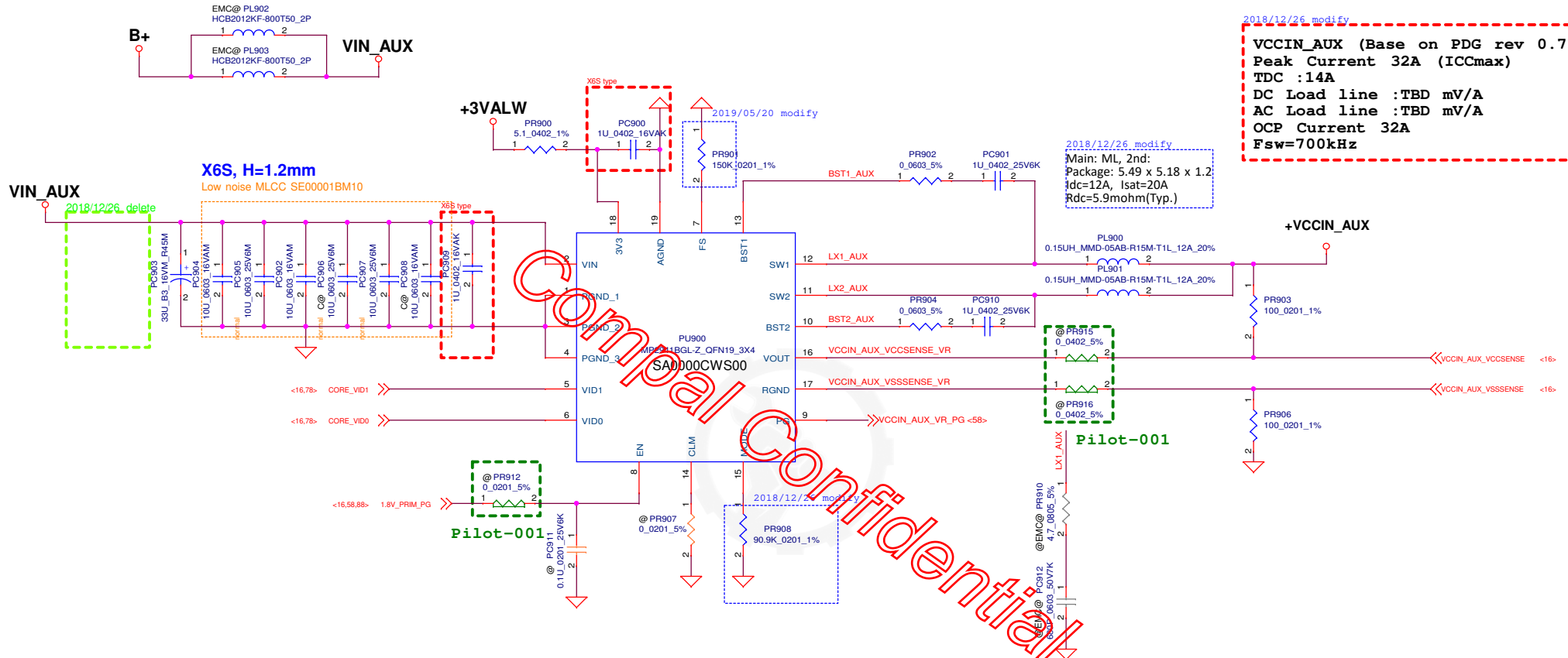
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Controller(36.1), Support component(36.3)

Vinafix.com



2018/12/26 modify
VCCIN_AUX (Base on PDG rev 0.71)
Peak Current 32A (ICCmax)
TDC :14A
DC Load line :TBD mV/A
AC Load line :TBD mV/A
OCF Current 32A
Fsw=700kHz

2018/12/26 modify
 Main: ML, 2nd:
 Package: 5.49 x 5.18 x 1.2
 Idc=12A, Isat=20A
 Rdc=5.9mohm(Typ.)

<-16.78> CORE_VID1 >>
 <-16.78> CORE_VID0 >>

<-16.58.88> 1.8V_PRIM_PG >>

Table---1:VID control Bit logics

VID1	VID0	VOUT (V)
0	0	0
0	1	1.1
1	0	1.65
1	1	1.8

Table---2:CLM Select

State	CLM	Resistor to GND
M1	7A	0
M2	10A	90k
M3	13A	150k
M4	16A	>230k or float

Table---3:MODE Select

State	Interleaving	VID Down option	Resistor to GND
M1	N	Slew down	0
M2	Y	Slew down	90k
M3	Y	Decay	150k
M4	N	Decay	>230k or float

Table---4:FS Select

State	Fs(kHz)	Resistor to GND
M1	500	0
M2	700	90k
M3	1000	150k
M4	1200	>230k or float

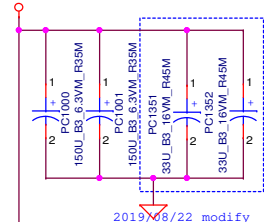
Support component(36.4)

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PDG ver 1.1 Primary side:
 2x 330uF 7343
 3x 22uF 0603
 12x 10uF 0402
 1x 47uF 0805

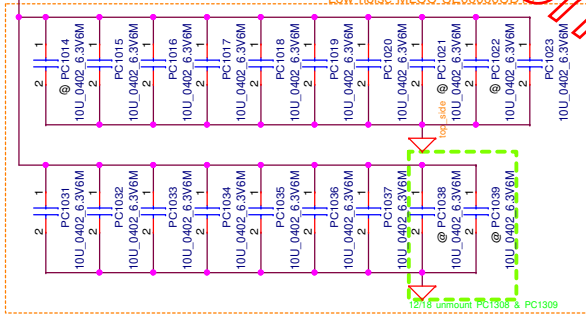
Primary side

+VCCIN_AUX



2019/08/22 modify

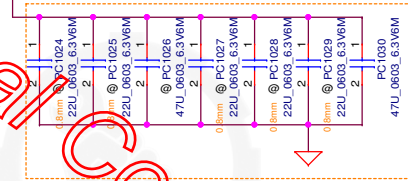
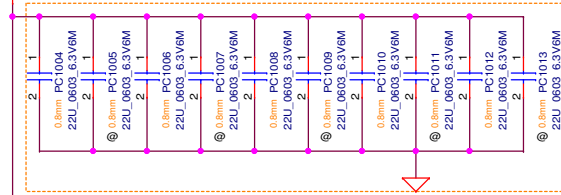
H=0.8mm
 Low noise MLCC SE0000000000



12018 unmount: PC1308 & PC1309

+VCCIN_AUX

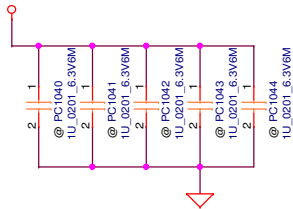
H=1.2mm
 Low noise MLCC SE00000M020



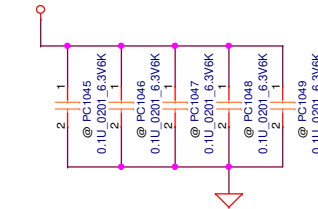
H=1.2mm
 Low noise MLCC SE000015510

Backside

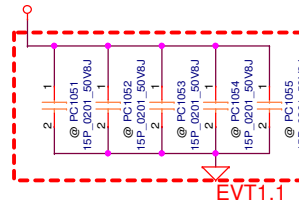
+VCCIN_AUX



+VCCIN_AUX



+VCCIN_AUX



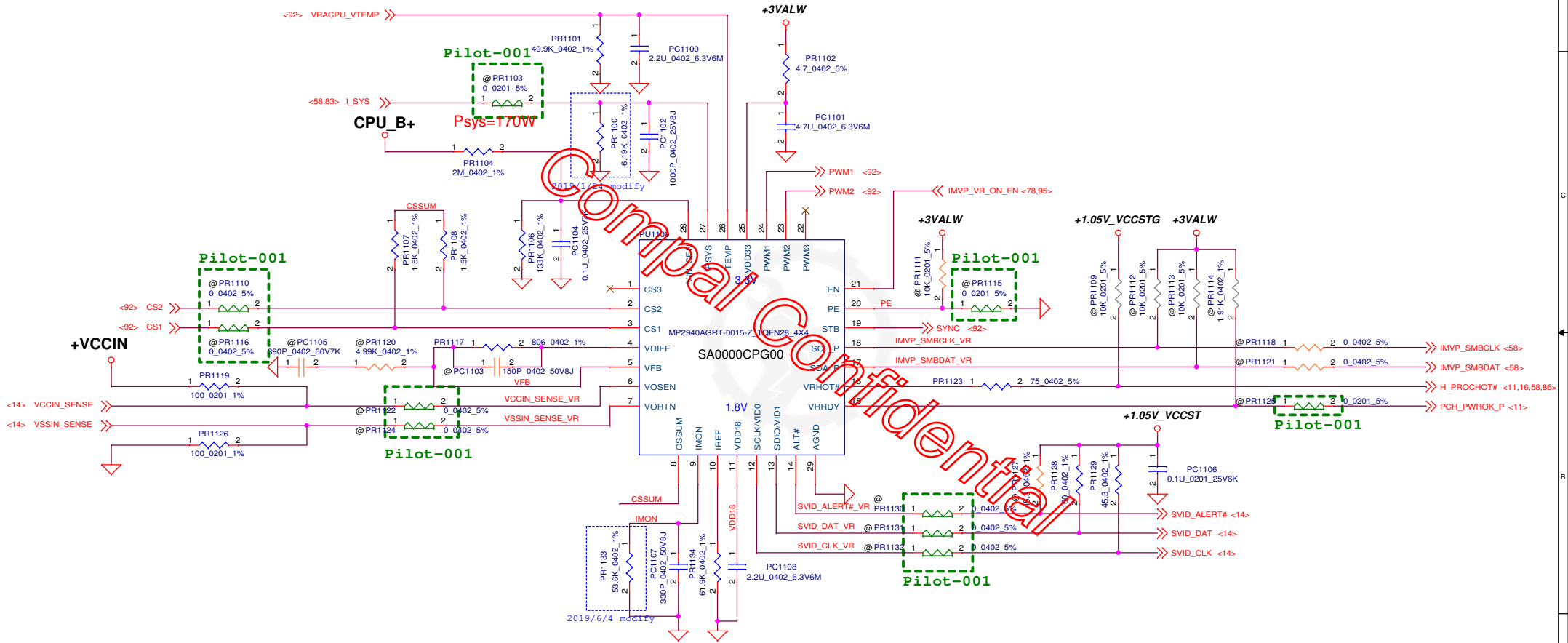
EVT1.1

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Controller(36.1), Support component(36.3)

Vinafix.com

VCCIN (Base on PDG rev 0.71)
 Peak Current 54A (ICCmax)
 TDC :25A
 DC Load line :2mV/A
 AC Load line :4mV/A
 OCP Current TBDA
 Fsw=800kHz



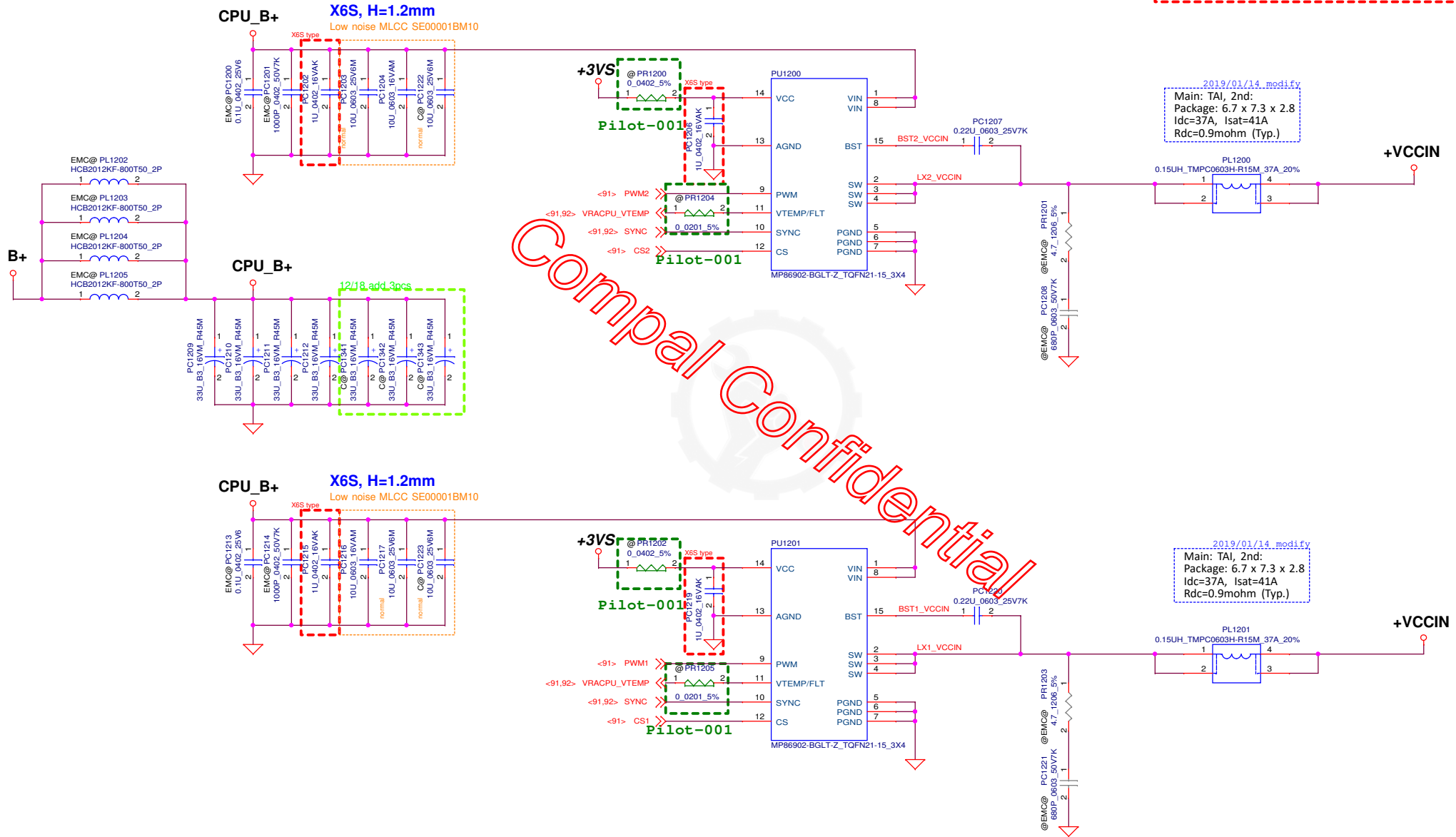
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				PWR VCCIN CTRL	
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Support component(36.2),(36.3)

2018/12/26_modify

VCCIN (Base on PDG rev 0.71)
 Peak Current 62A (ICCmax)
 PL2 TDC :36A
 DC Load line :2mV/A
 AC Load line :4mV/A
 OCP Current TBDA
 Fsw=800kHz

Vinafix.com



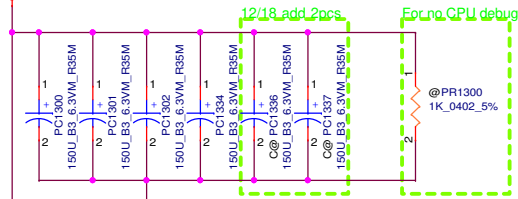
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Size	Document Number			Rev	0.4 (202)
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Support component(36.4)

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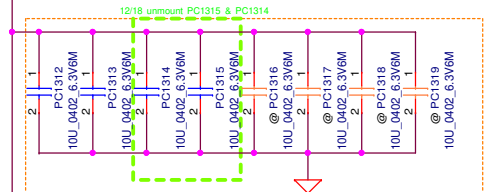
Primary side

+VCCIN



12/18_add_2pcs

For no CPU debug



12/18_unmount_PC1315 & PC1314

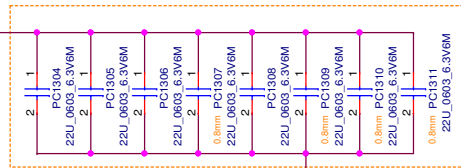
Low noise MLCC SE0000UD10

H=0.8mm

+VCCIN

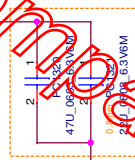
H=1.2mm

Low noise MLCC SE0000M020



H=1.2mm

Low noise MLCC SE000015510



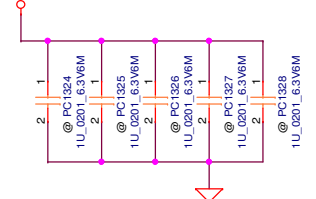
- 150U_B3 * 4 (pop*2, NC*2)
- 10U_0402 * 8 (pop*4, NC*4)
- 22U_0603 * 8 (pop*7, NC*1)
- 47U_0603 * 2 (NC*2)
- 1U0402 * 2
- 1U_0201 * 5 (NC*5)
- 0.1U_0201 * 5 (NC*5)

PDG ver 1.1 Primary side:

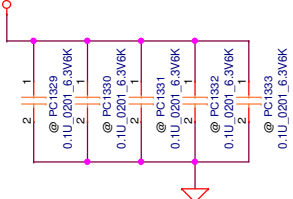
- 2x 1uF 0402
- 4x 10uF 0402
- 8x 22uF 0603
- 1x 47uF 0805
- 2x 330uF 7343

Backside

+VCCIN

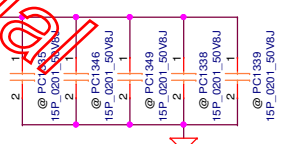


+VCCIN

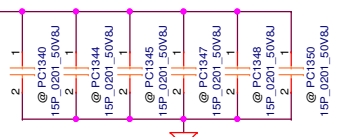


+VCCIN

EVT1.1



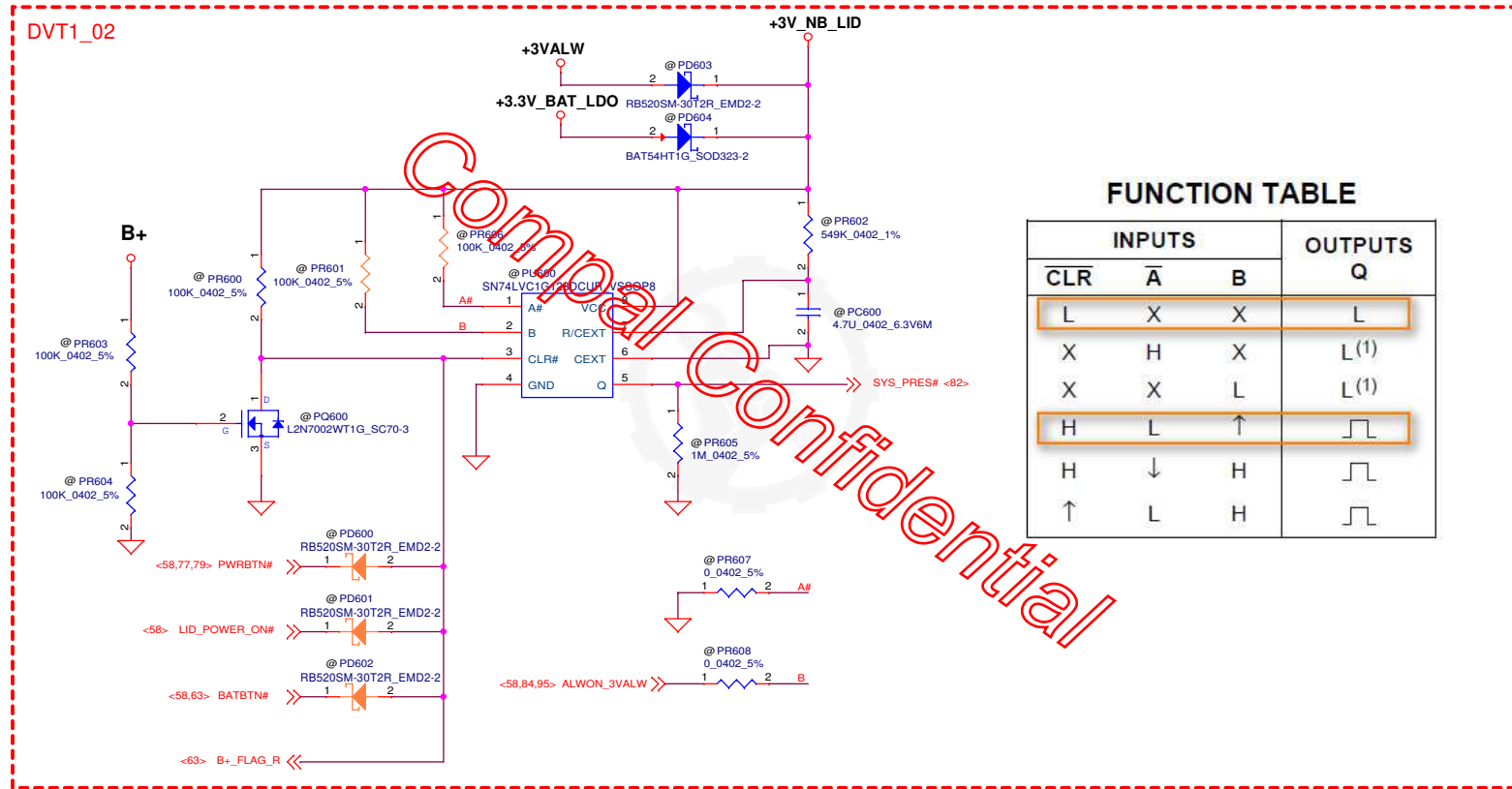
+VCCIN

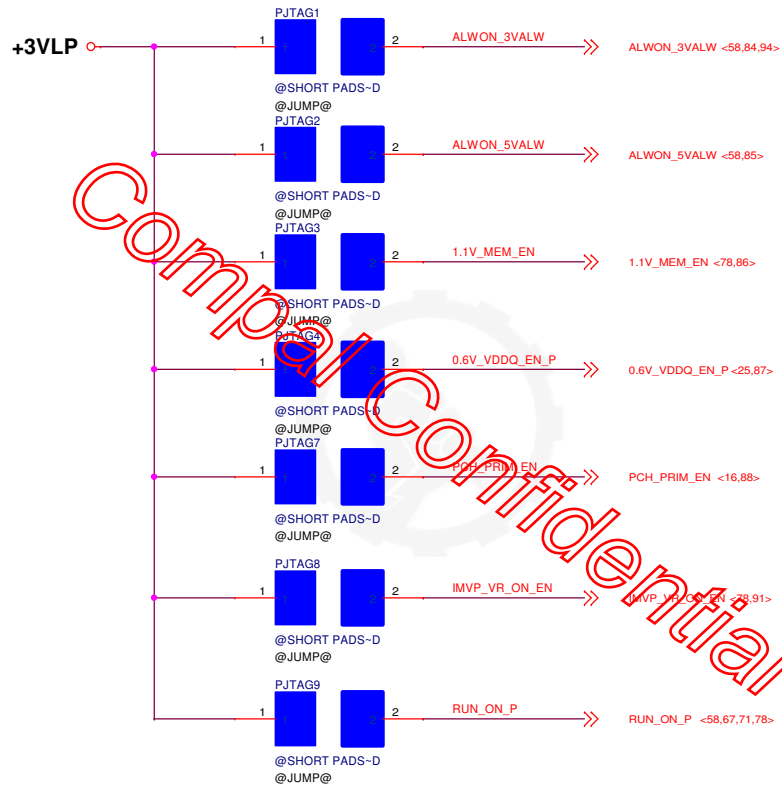


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Support component(37.1)

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