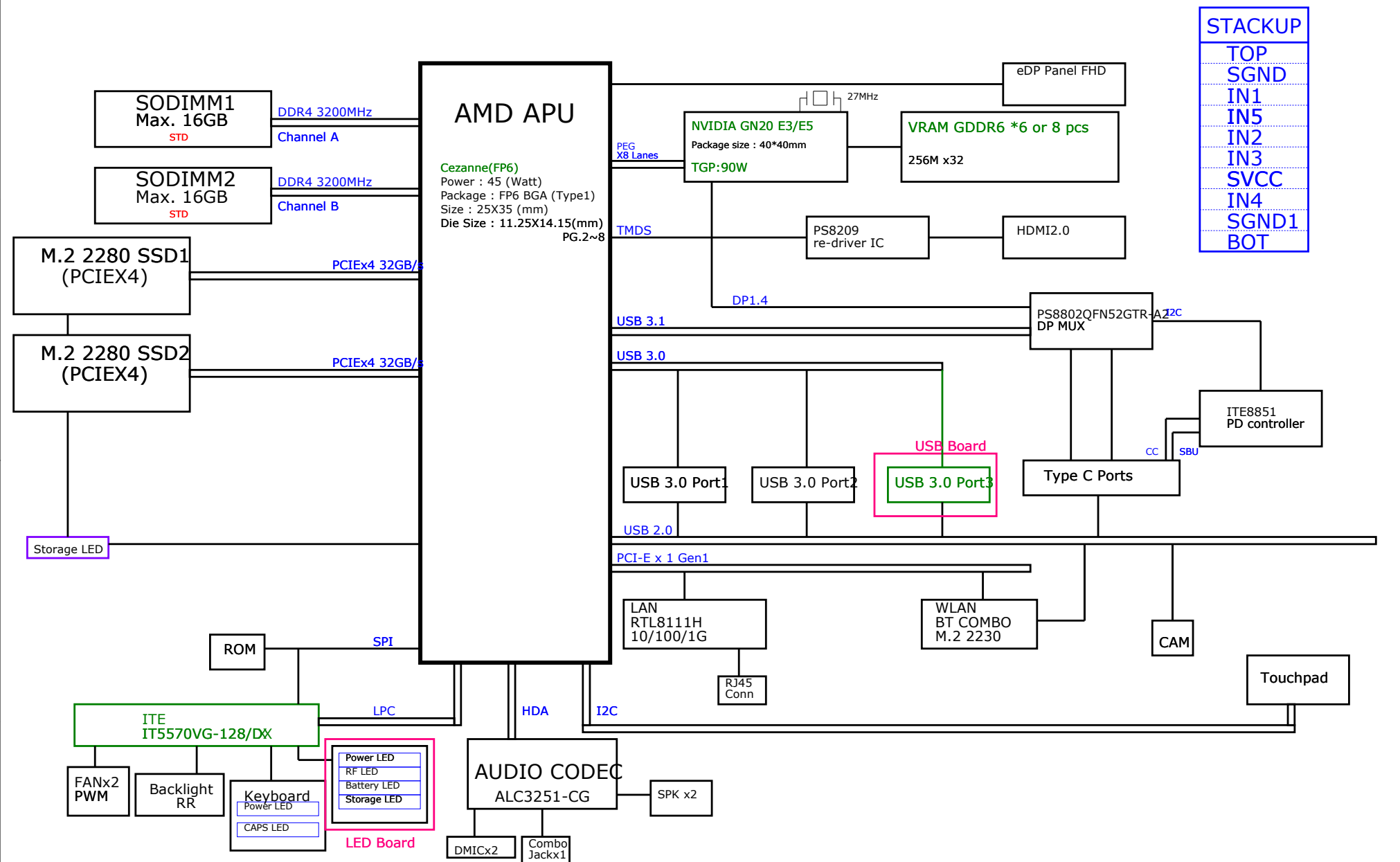


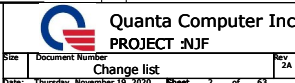
Asus 2021 " AMD+GN20 E3/E5 Block Diagram"

01



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02

Model	REV	CHANGE LIST							
FA506/706 (QM/QR)	SR to ER	Item	Stage	Page	Owner	Change explanation			
		01	ER	33	EE	ER01	: Support PLDR add BT_Disable# and WLAN_Disable#		
		02	ER	30	EE	ER02	: Change USB2.0 ESD SD19 .SD20. SD21 Diode for ASUS request.		
		03	ER	31	EE	ER02	: Change USB2.0 ESD SD19 .SD20. SD21 Diode for ASUS request.		
		04	ER	06	EE	ER03	: Add R886 for EC initial (SPICK_EN) .		
		05	ER	06	EE	ER04	: Change GPIO pin AGPIO91 to AGPIO21 for Modern Standby request.		
		06	ER	08	EE	ER05	: Reserved for APU power sequence (+0.75V_S5 --> +1.8V_S5 --> +3V_S5)		
		07	ER	36	EE	ER06	: Reserved SPDIF-OUT pull-down 10kohm		
		08	ER	39	EE	ER07	: Change FAN connector from 5-pin to 4-pin for CN13 and CN14 .		
	09	ER	29	EE	ER08	: Reserved SD22 for ESD request .			
	ER to PR	01	PR	05	EE	PR01	: R4,R6,R22 Change 1K from 100K for LCD panel PSR issue.		
		02	PR	06	EE	PR02	: Add R890 and short pad R94 for SPI_CLK waceform.		
		03	PR	17	EE	PR03	: Add S13 GASKET for EMI request.		
		04	PR	22	EE	PR04	: Reserved VC5729 ,VC5730 for Power malfunction, GPU lost.		
		05	PR	22	EE	PR05	: ROM_SCLK follow NVDIA CRB board pull-up.		
		06	PR	23	EE	PR06	: Remove VR5087 , follow NVDIA CRB baord.		
		07	PR	29	EE	PR07	: Change F1 from 1.5A to 2.5A for Factory issue.		
		08	PR	30	EE	PR08	: Change CC1 & CC2 ESD to single pin for SD19 leakage issue on Type C port.		
		09	PR	30	EE	PR09	: Change SU13 VIN (pin3) from +1.8V_S5 to +3V_S5 for power plane is not enough.		
		10	PR	33	EE	PR10	: Un-mount R853 for power management by customer's table list.		
		11	PR	33	EE	PR11	: Un-mount R887 , R888 (WLAN & BT do not support PLDR)		
		12	PR	35	EE	PR12	: Change TU1 power rail from 51225_LDO3 to +3V for power consumption under 0.4mA on bettery mode .		
		13	PR	35	EE	PR13	: Change TU2 power rail from 51225_LDO3 to +3V for power consumption under 0.4mA on bettery mode .		
		14	PR	37	EE	PR14	: Change KU1 LPC LAD0~LAD3 topology for ESD issue.		
		15	PR	37	EE	PR15	: Reserved KR128 for S0i3 , EC GPC3 used for dGPU ID for E5 & E3		
		16	PR	37	EE	PR16	: Reserved KR118 for LID_SW CMOS type ; Reserved KR121 for bettery mode power consumption.		
		17	PR	38	EE	PR17	: Un-mount KPSW1 , debug only for SR & ER stage .		
		18	PR	38	EE	PR18	: Change KHE1 power rail from +3VPCU to +3V_S5 for power consumption under 0.4mA on bettery mode .		
		19	PR	41	EE	PR19	: Reserved R855 for power management by customer's table list.		
		20	PR	37	EE	PR20	: Mount KESD3 , KESD4 for ESD issue.		
	PR to MP	01	MP	06	EE	MP01	: Mount R83 for PCIe_WAKE#		
02		MP	35	EE	MP02	: Change TU1 and TU2 power rail from +3V to 51225_LDO3			
03		MP	38	EE	MP03	: Add KHE1 power rail from +3V_S5 to +3V_PCU.			
DOC NO.		PROJECT MODEL :		NJF	APPROVED BY:		DATE:	2019/06/15	
		PART NUMBER:			DRAWING BY:		REVISION:	1A	

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dGPU

dGPU

GLAN

GLAN

WLAN

WLAN

HDD

DEL HDD for GN20E35....Tommy0504

M.2 SSD1

M.2 SSD1

M.2 SSD2

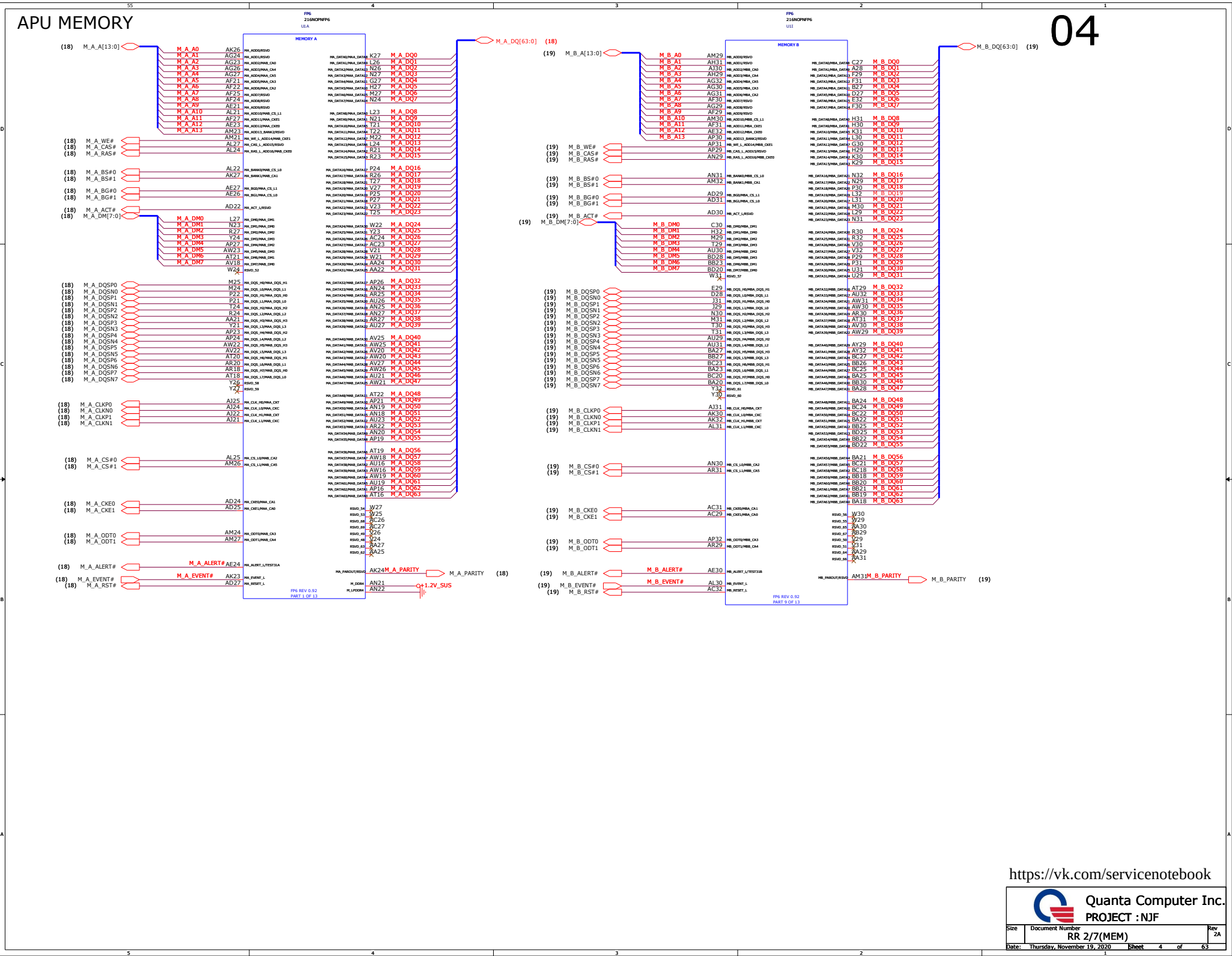
M.2 SSD2

FP6 REV 0.92
PART 2 OF 13<https://vk.com/servicenotebook>Quanta Computer Inc.
PROJECT :NJF

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	RR 1/7(PCIE/SATA)	1A
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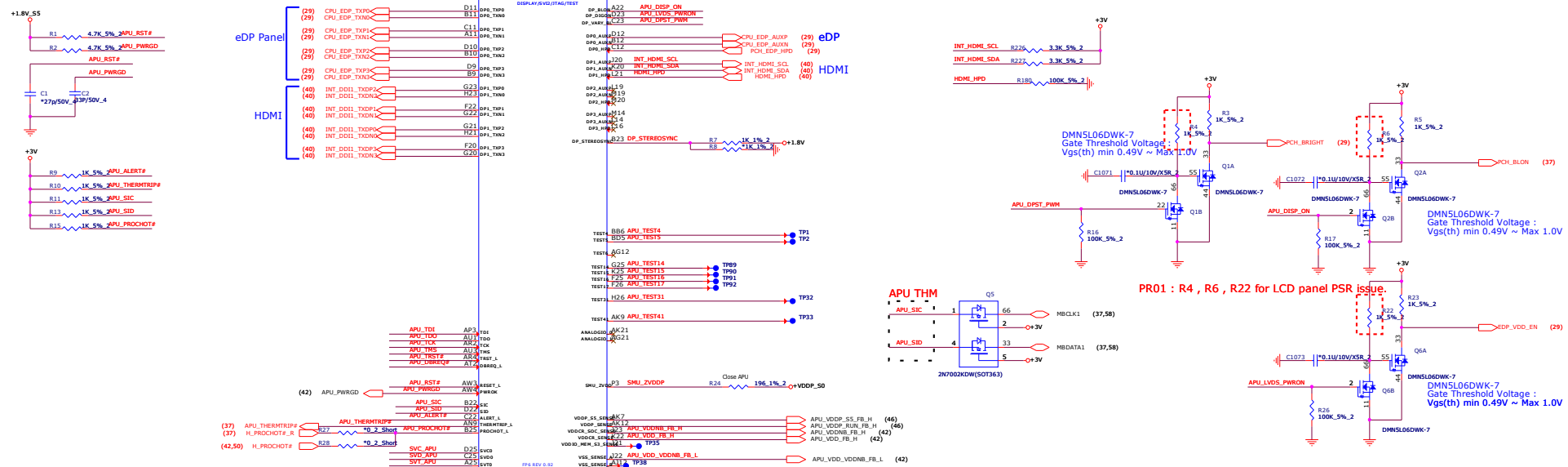
APU MEMORY

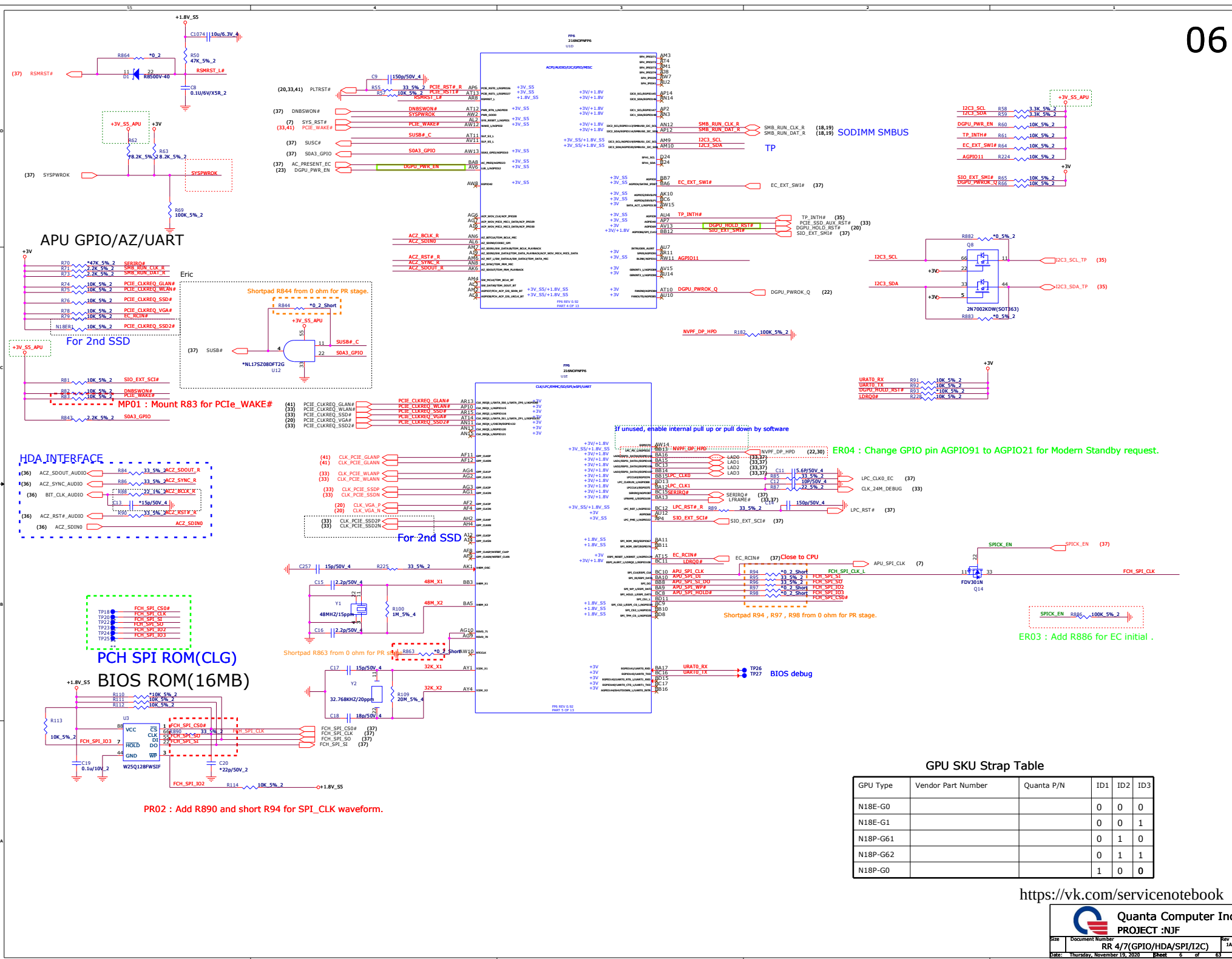
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APU DISPLAY and MISC

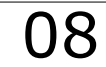
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Add 22 x13 for CZ requestl...Tommy

Add 22 x13 for CZ requestl...Tommy



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APU GND

09



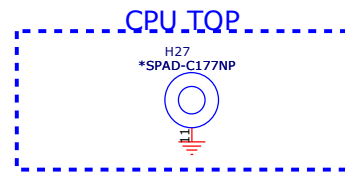
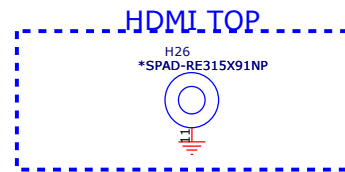
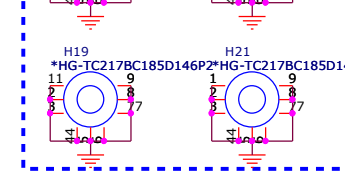
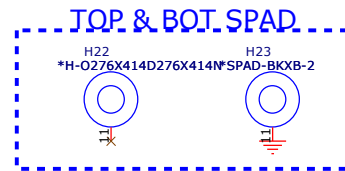
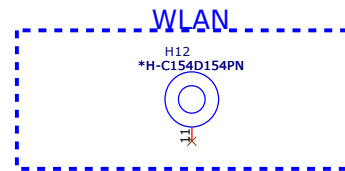
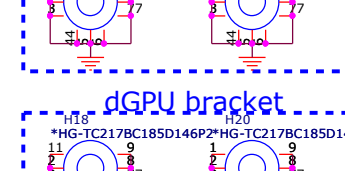
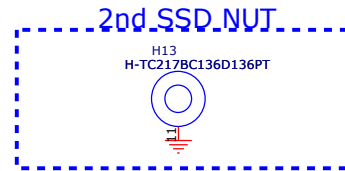
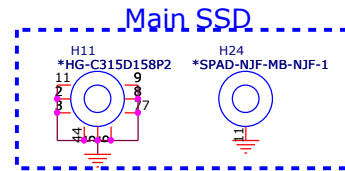
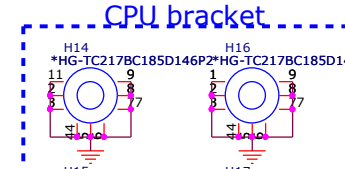
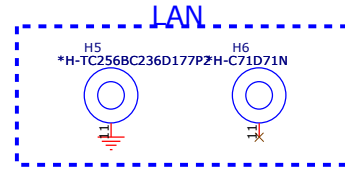
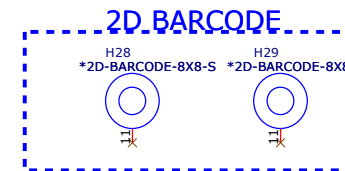
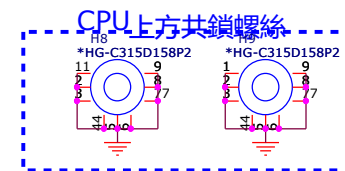
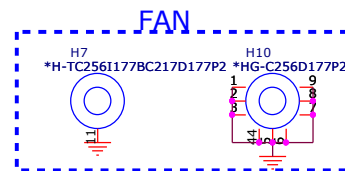
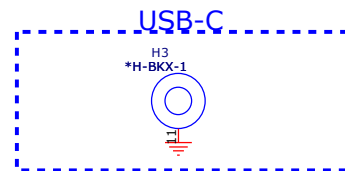
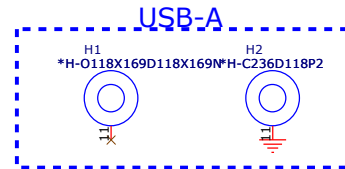
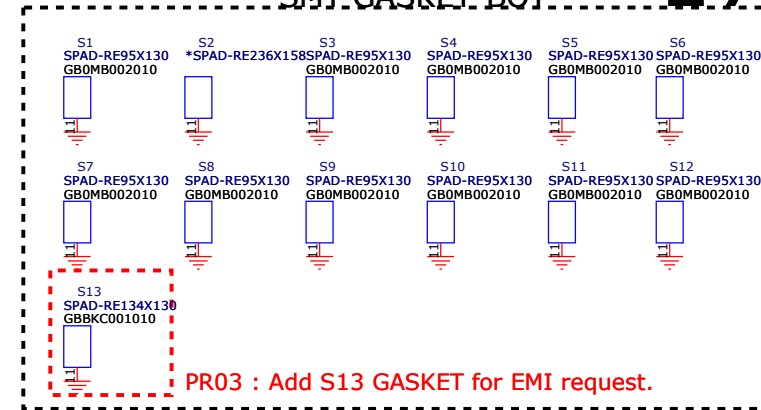
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	RR 7/7(GND/RSVD)	1A
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SMT GASKET-BOT



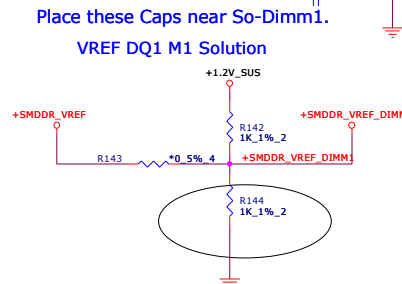
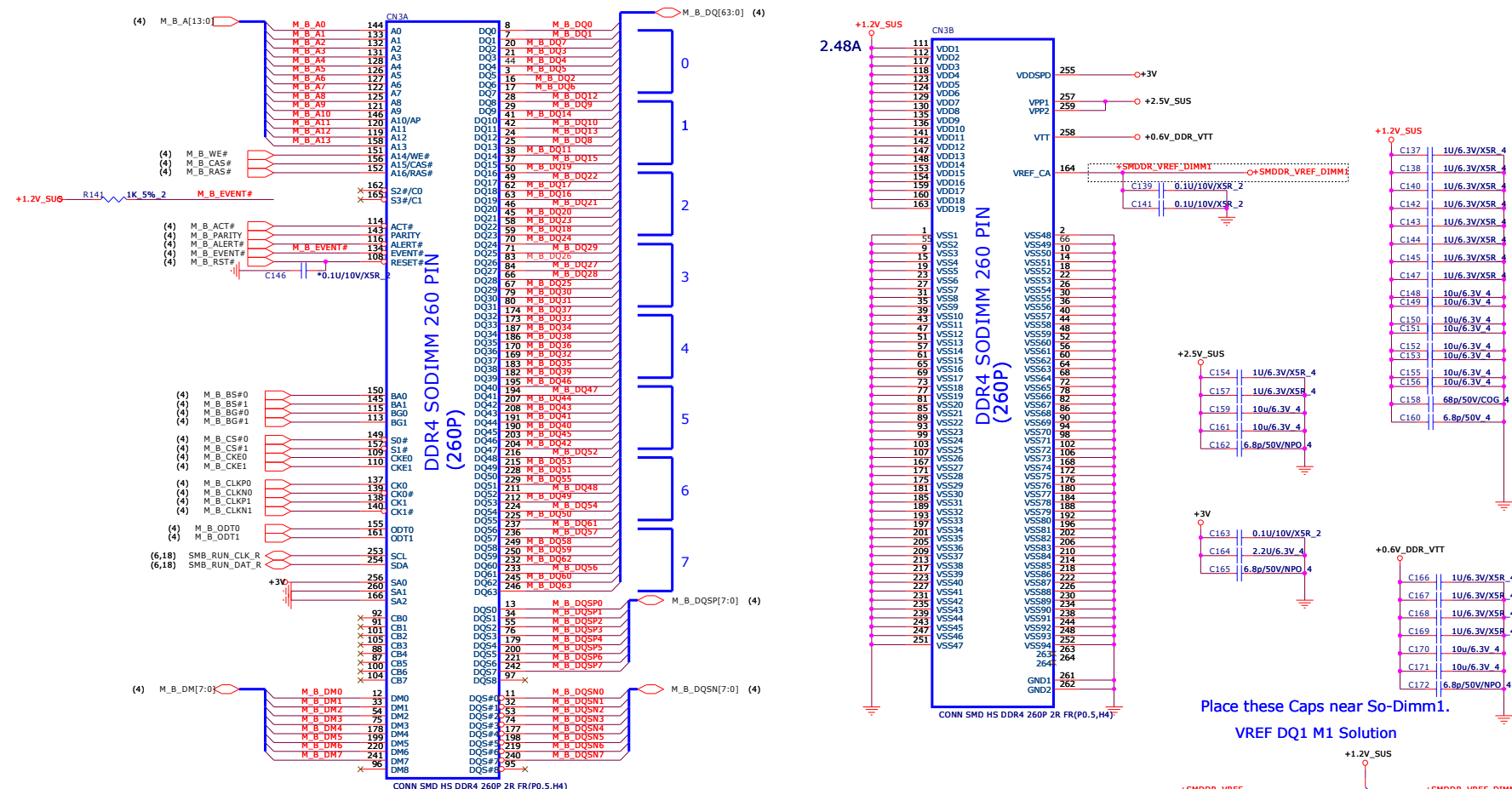
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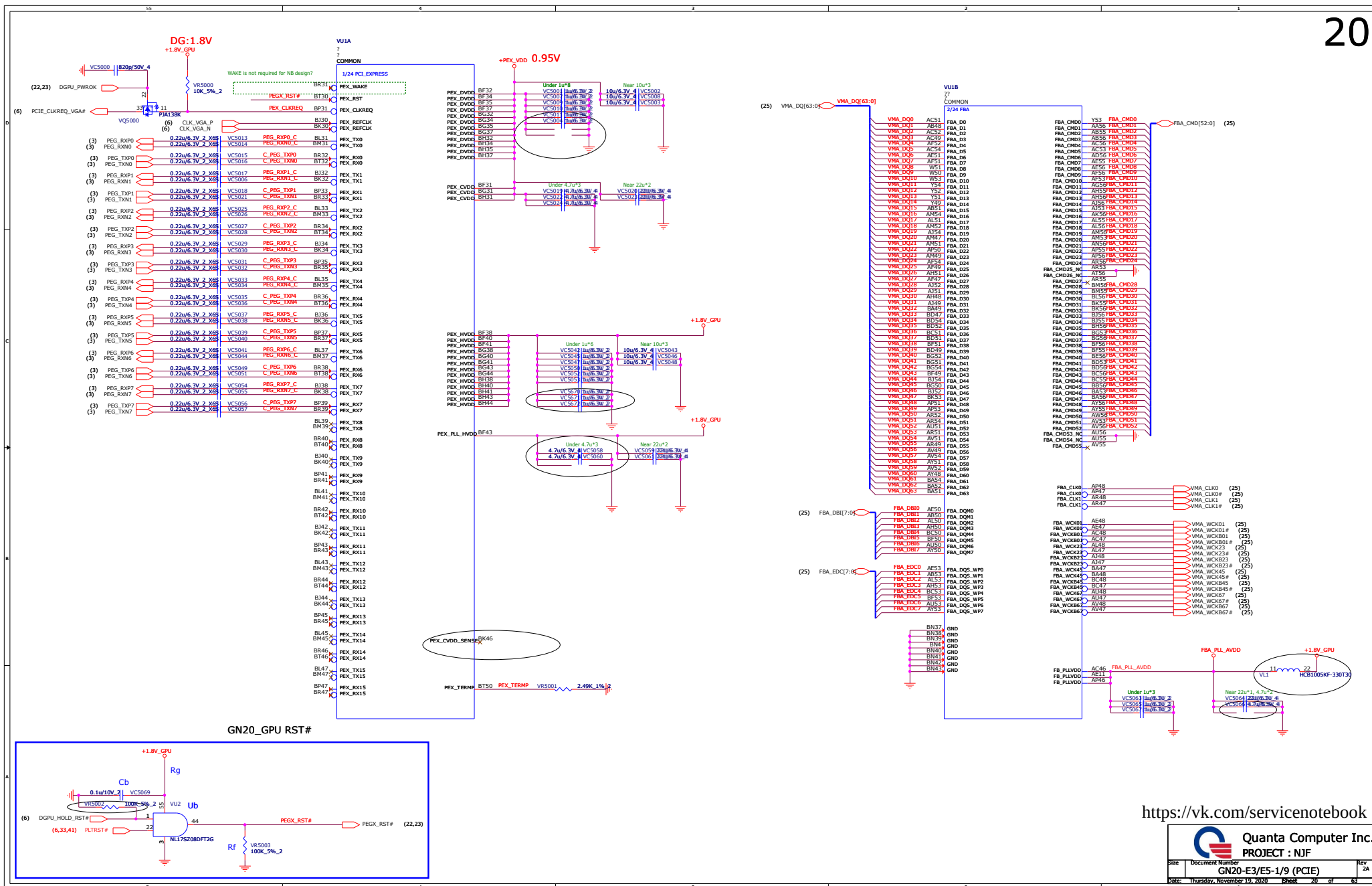
Quanta Computer Inc.
PROJECT NJF

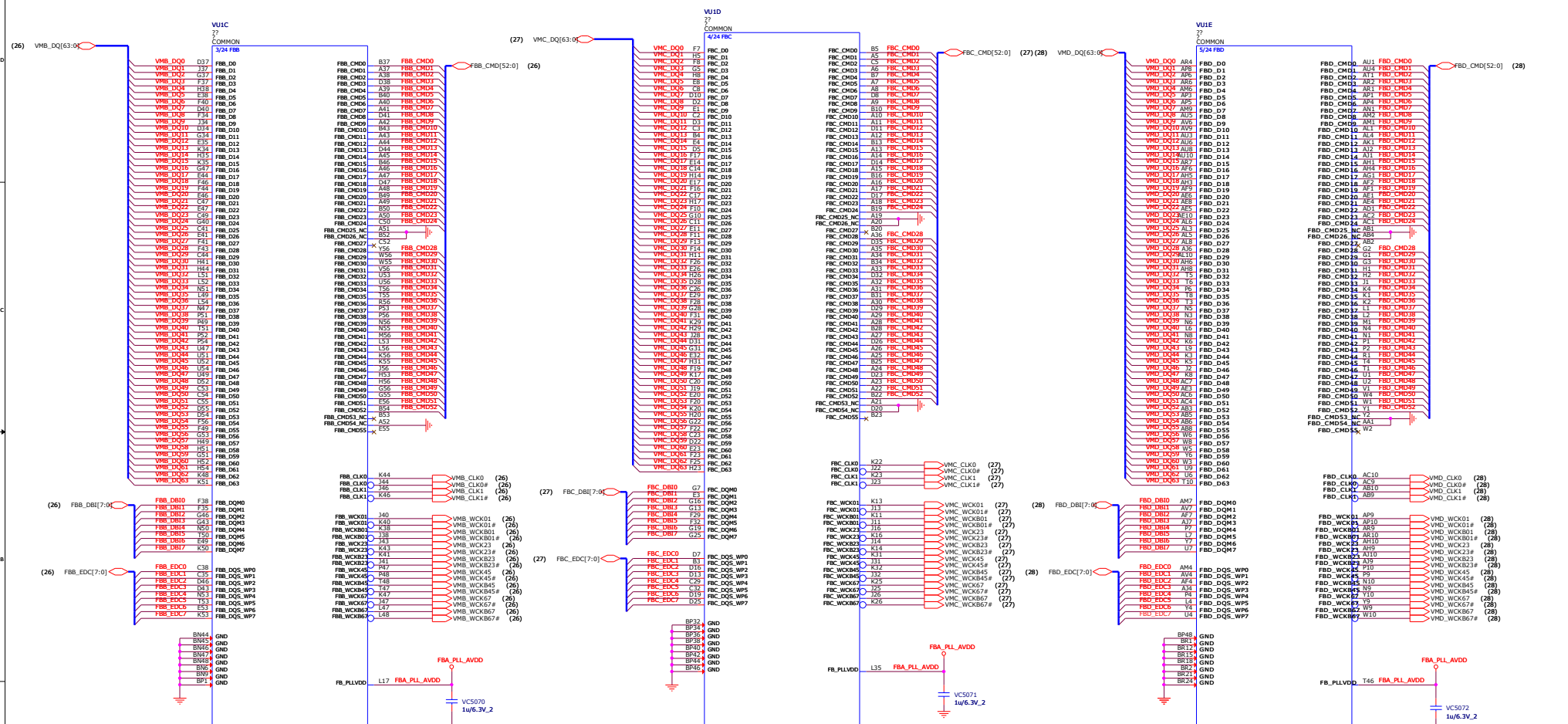
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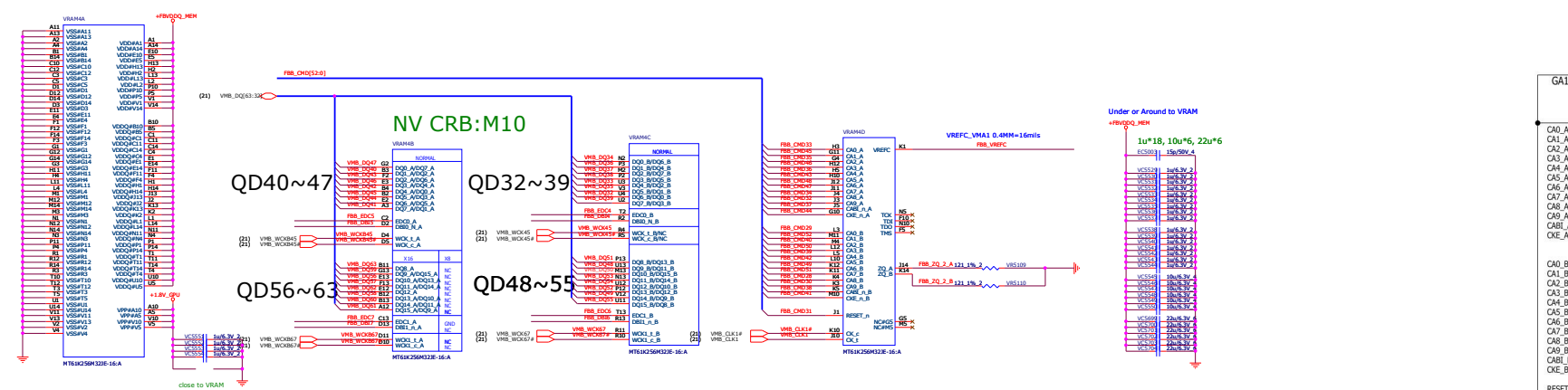
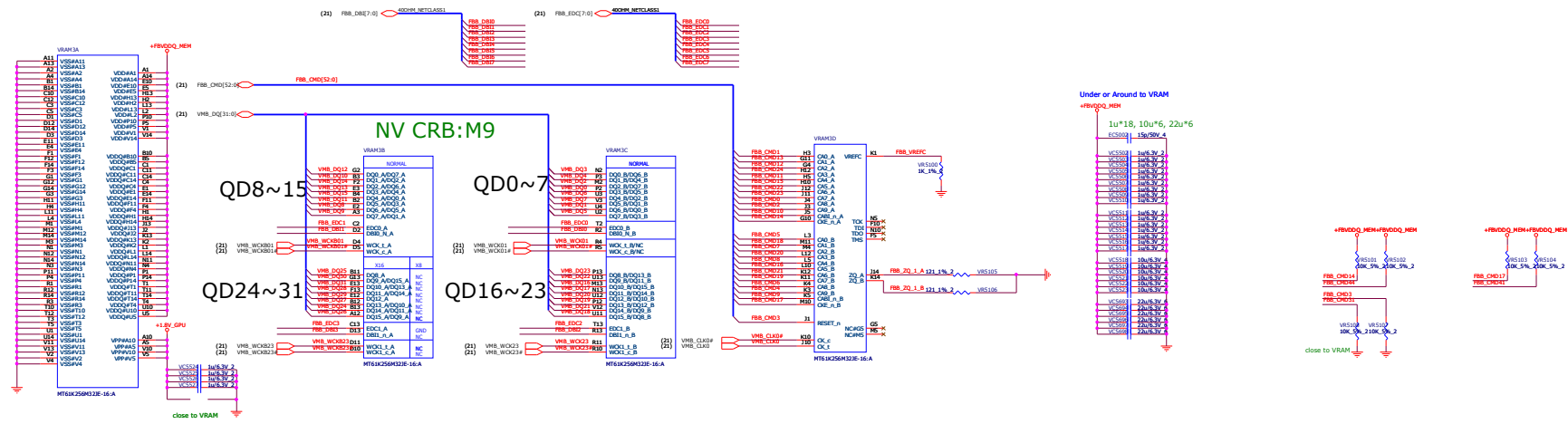
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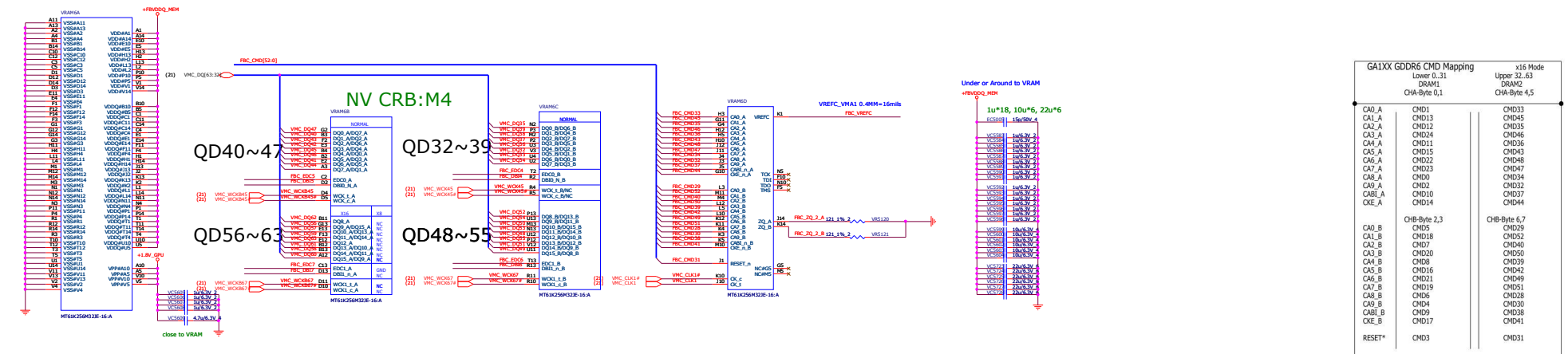
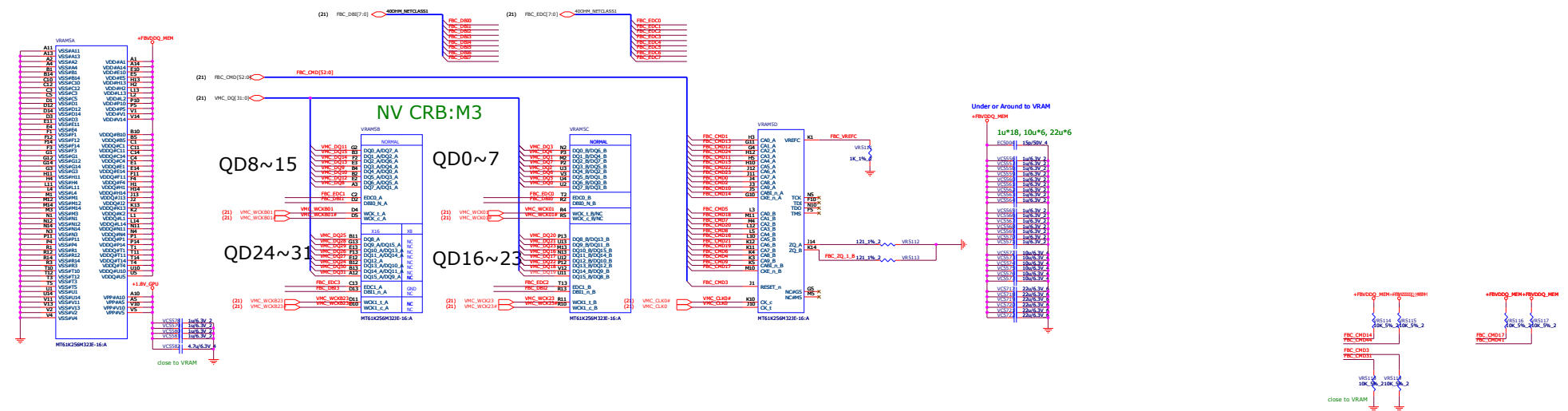






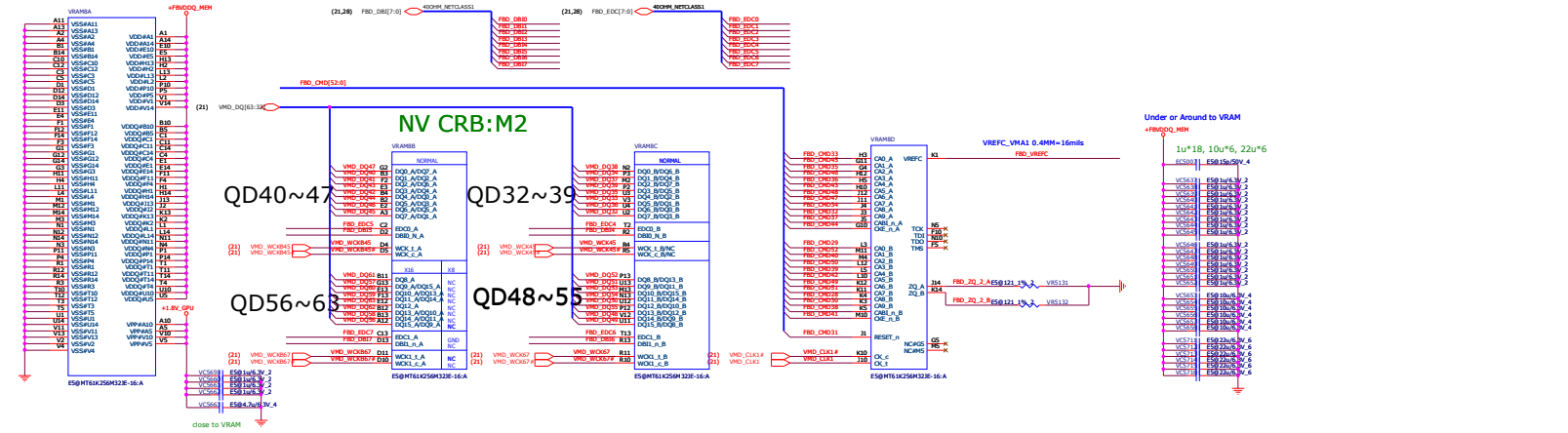
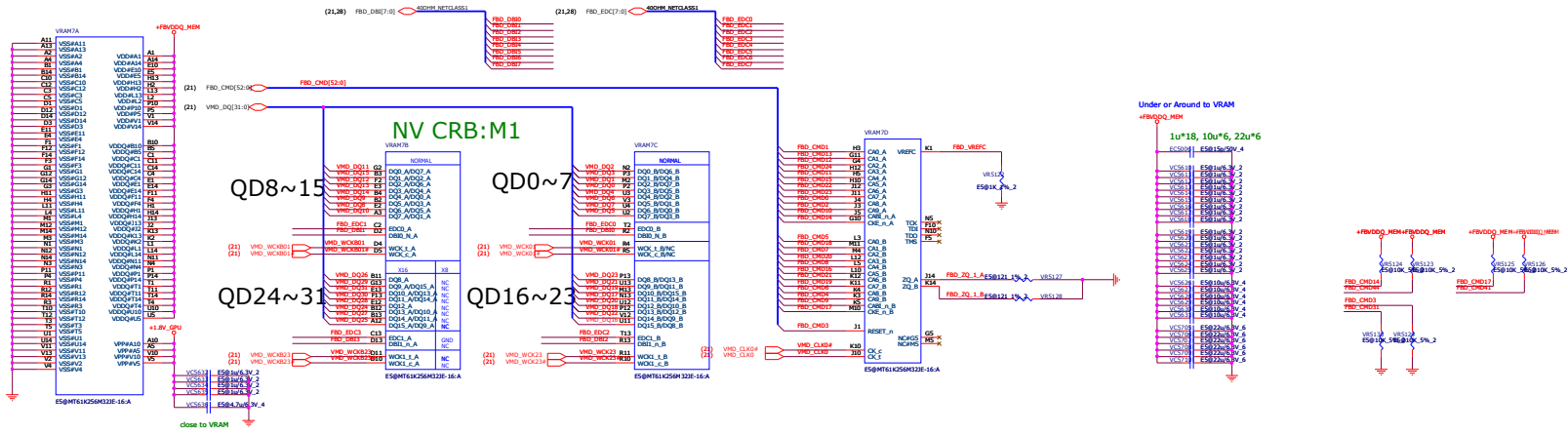
GA1XX GDDR6 CMD Mapping			
Lower 0..31		Upper 32..63	
DRAM1		DRAM2	
CHA-Byte 0,1		CHA-Byte 4,5	
CA0_A	CHD1	CHD33	
CA1_A	CHD13	CHD45	
CA2_A	CHD12	CHD35	
CA3_A	CHD24	CHD46	
CA4_A	CHD11	CHD36	
CA5_A	CHD15	CHD43	
CA6_A	CHD22	CHD48	
CA7_A	CHD23	CHD47	
CA8_A	CHD0	CHD34	
CA9_A	CHD2	CHD32	
CAB_A	CHD10	CHD37	
CAE_A	CHD14	CHD44	
CHB-Byte 2,3			
CA0_B	CHD5	CHD29	
CA1_B	CHD18	CHD52	
CA2_B	CHD7	CHD40	
CA3_B	CHD20	CHD50	
CA4_B	CHD8	CHD39	
CA5_B	CHD16	CHD42	
CA6_B	CHD21	CHD49	
CA7_B	CHD19	CHD51	
CA8_B	CHD6	CHD28	
CA9_B	CHD4	CHD30	
CAB_B	CHD9	CHD38	
CAE_B	CHD17	CHD41	
RESET*	CHD3	CHD31	

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GAIXX GDDR6 CMD Mapping		x16 Mode
Lower 0..31		Upper 32..63
DRAM1		DRAM2
CH0-Byte 0,1		CH0-Byte 4,5
CA0_A	CMD1	CMD33
CA1_A	CMD13	CMD45
CA2_A	CMD12	CMD35
CA3_A	CMD24	CMD46
CA4_A	CMD11	CMD36
CA5_A	CMD15	CMD43
CA6_A	CMD22	CMD48
CA7_A	CMD23	CMD47
CA8_A	CMD0	CMD34
CA9_A	CMD2	CMD32
CAB_A	CMD10	CMD37
CAC_A	CMD14	CMD44
CHB-Byte 2,3		CHB-Byte 6,7
CA0_B	CMD5	CMD29
CA1_B	CMD18	CMD52
CA2_B	CMD7	CMD40
CA3_B	CMD20	CMD50
CA4_B	CMD8	CMD39
CA5_B	CMD16	CMD42
CA6_B	CMD21	CMD49
CA7_B	CMD19	CMD51
CAB_B	CMD6	CMD28
CA9_B	CMD9	CMD38
CAC_B	CMD4	CMD41
RESET*	CMD3	CMD31

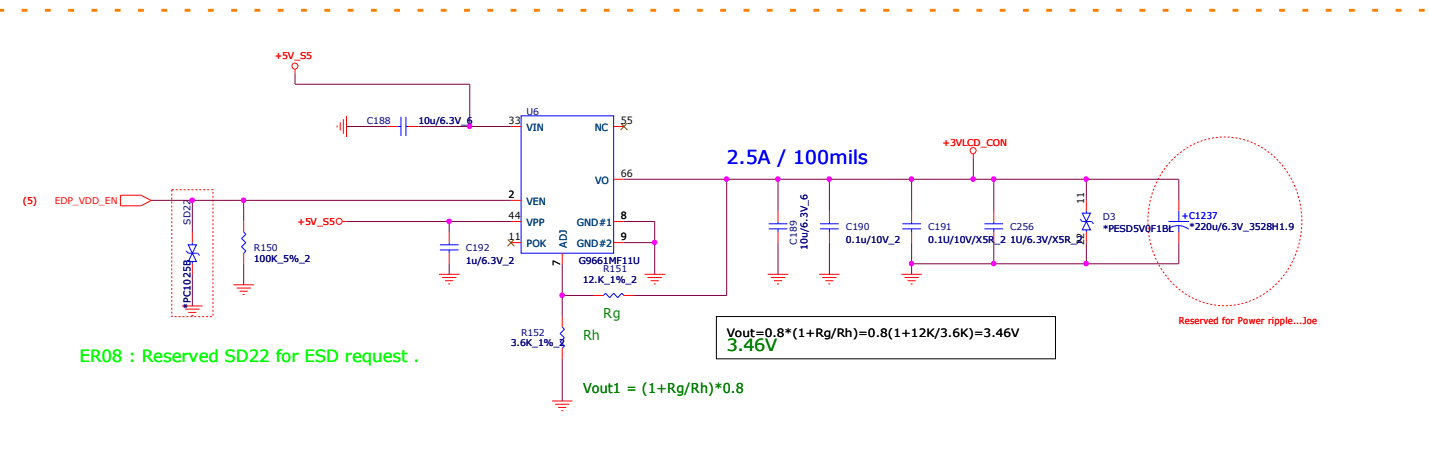
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GA1XX GDDR6 CMD Mapping

Lower 0..31		Upper 32..63	
DRAM1		DRAM2	
CHA-Byte 0,1		CHA-Byte 4,5	
CA0_A	CHD1	CHD33	
CA1_A	CHD13	CHD45	
CA2_A	CHD12	CHD35	
CA3_A	CHD4	CHD46	
CA4_A	CHD11	CHD36	
CA5_A	CHD15	CHD43	
CA6_A	CHD22	CHD48	
CA7_A	CHD23	CHD47	
CA8_A	CHD0	CHD34	
CA9_A	CHD2	CHD32	
CAB_A	CHD10	CHD37	
CAE_A	CHD14	CHD44	
CHB-Byte 2,3	CHB-Byte 6,7		
CA0_B	CHD5	CHD29	
CA1_B	CHD18	CHD52	
CA2_B	CHD7	CHD40	
CA3_B	CHD20	CHD50	
CA4_B	CHD8	CHD39	
CA5_B	CHD16	CHD42	
CA6_B	CHD21	CHD49	
CA7_B	CHD6	CHD51	
CA8_B	CHD28	CHD38	
CA9_B	CHD4	CHD30	
CAB_B	CHD17	CHD41	
CAE_B	CHD3	CHD31	
RESET*	CHD3	CHD31	

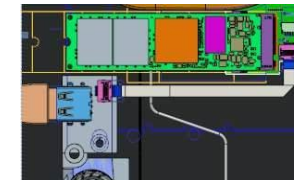
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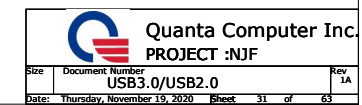
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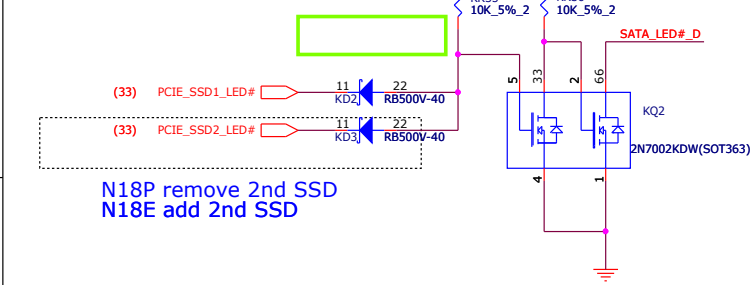
USB 3.0 PORT3 31



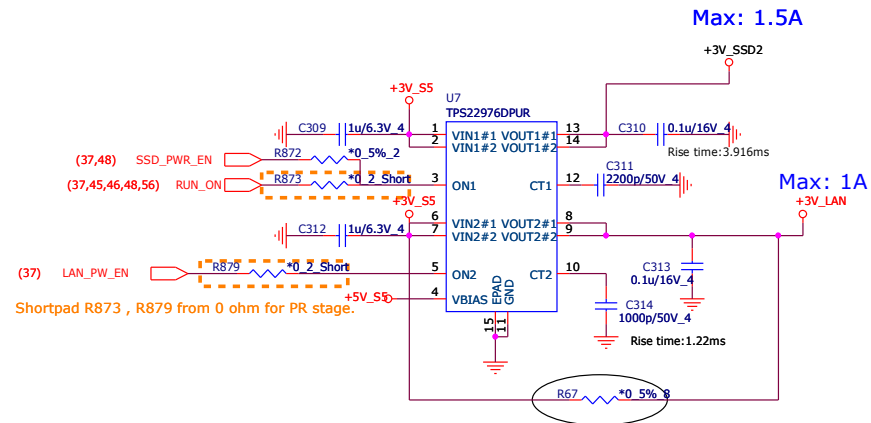
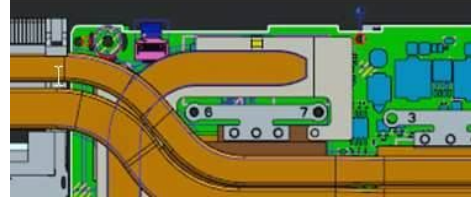
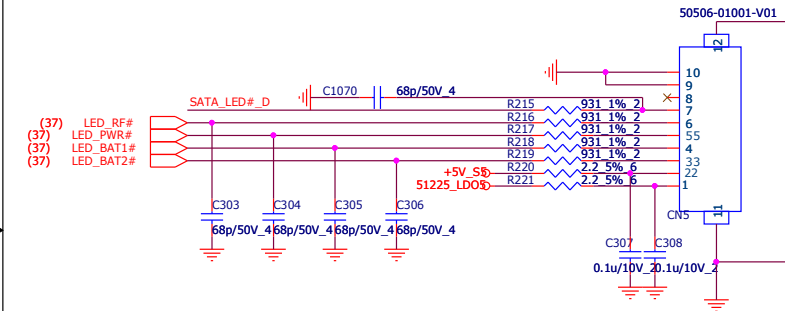
USB 3.0 PORT2




GN20_P must add SATA_ACT# for HDD SKU....Joe

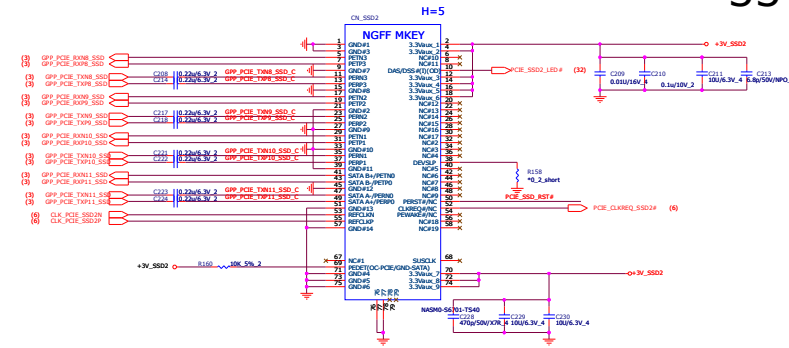


N18P remove 2nd SSD
N18E add 2nd SSD

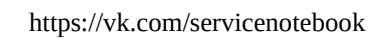


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 Quanta Computer Inc. PROJECT :NJF		
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	HDD/LED	1A
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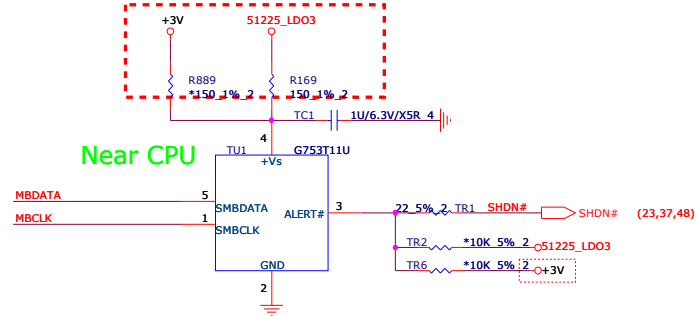


NGFF Wifi/BT (Hybrid Type E)



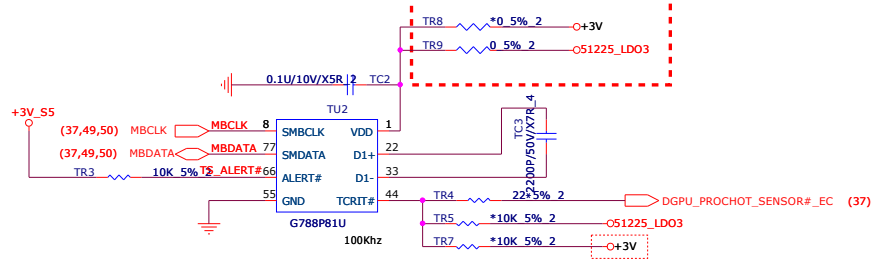
Thermal

PR12 :Change TU1 power rail from 51225_LDO3 to +3V for power consumption under 0.4mA on battery mode.

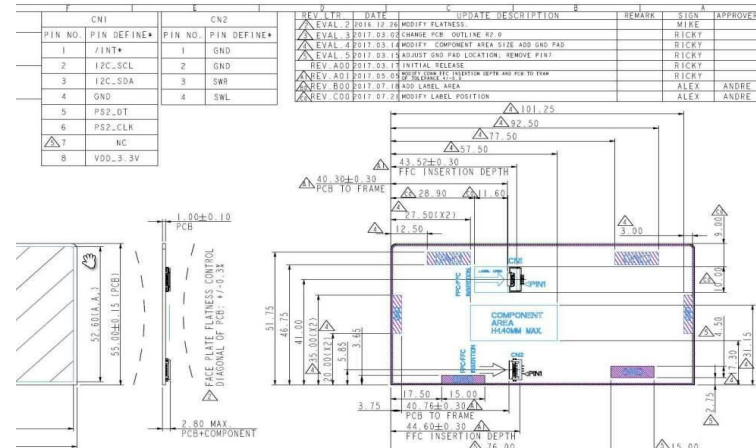
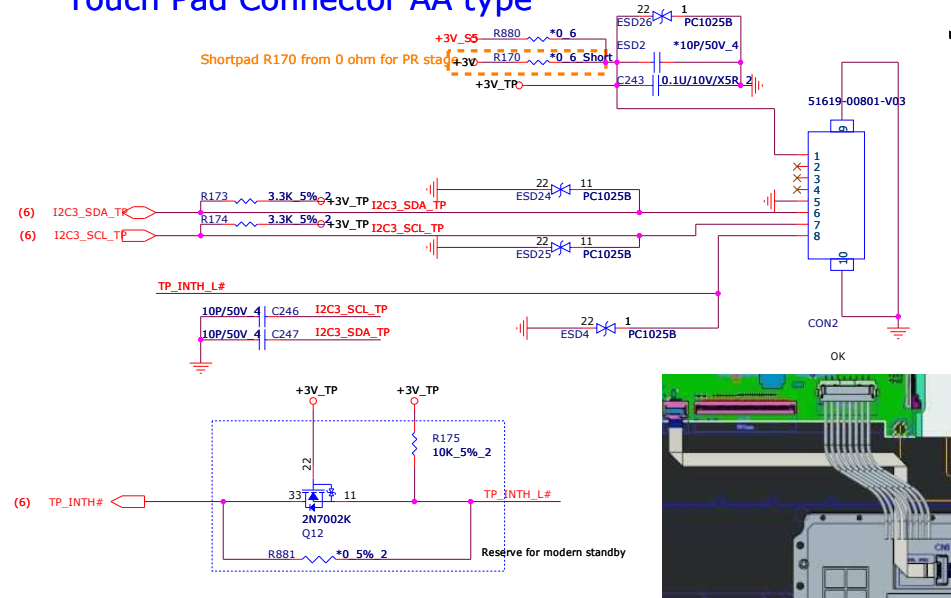


MP02 : Change TU1 and TU2 power rail from +3V to 51225_LDO3

PR13 :Change TU2 power rail from 51225_LDO3 to +3V for power consumption under 0.4mA on battery mode.

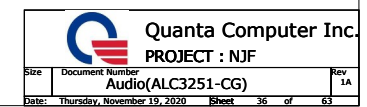


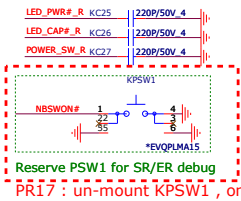
Touch Pad Connector AA type



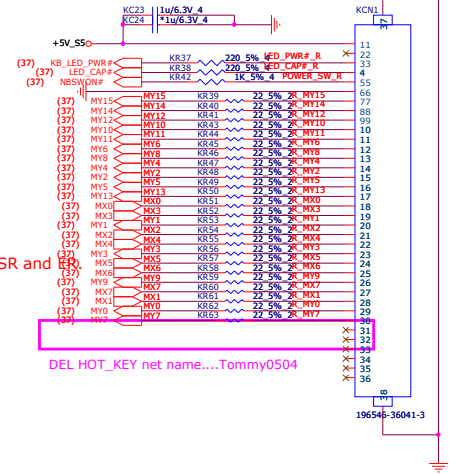
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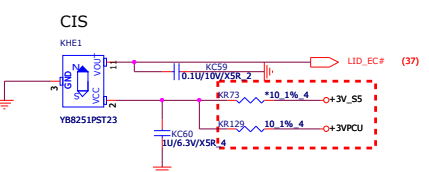
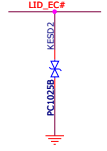
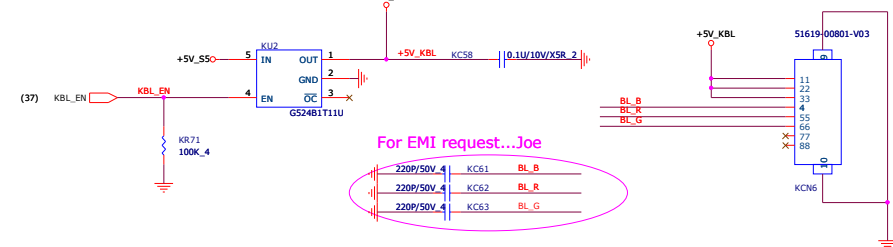


R_MY0	KC28	33P/25V	2
R_MY1	KC29	33P/25V	2
R_MY2	KC30	33P/25V	2
R_MY3	KC31	33P/25V	2
R_MY4	KC32	33P/25V	2
R_MY5	KC37	33P/25V	2
R_MY6	KC38	33P/25V	2
R_MY7	KC39	33P/25V	2
R_MY8	KC42	33P/25V	2
R_MY9	KC43	33P/25V	2
R_MY10	KC44	33P/25V	2
R_MY11	KC45	33P/25V	2
R_MY12	KC46	33P/25V	2
R_MY13	KC47	33P/25V	2
R_MY14	KC48	33P/25V	2
R_MY15	KC49	33P/25V	2
R_MX0	KC50	33P/25V	2
R_MX1	KC51	33P/25V	2
R_MX2	KC52	33P/25V	2
R_MX3	KC53	33P/25V	2
R_MX4	KC54	33P/25V	2
R_MX5	KC55	33P/25V	2
R_MX6	KC56	33P/25V	2
R_MX7	KC57	33P/25V	2

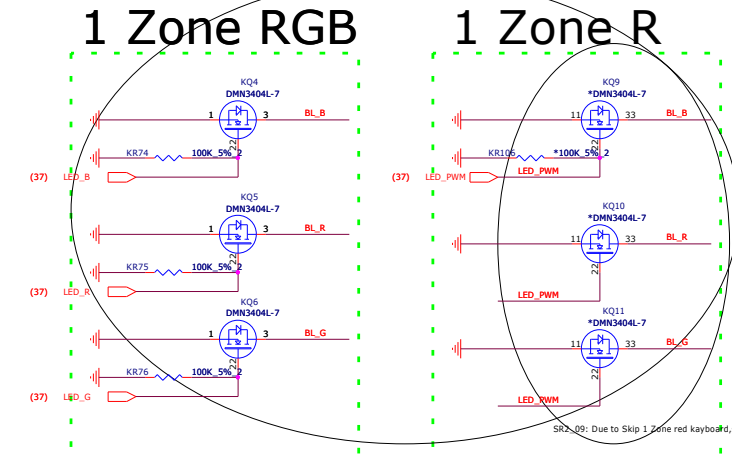


KEYBOARD BACKLIGHT Con.

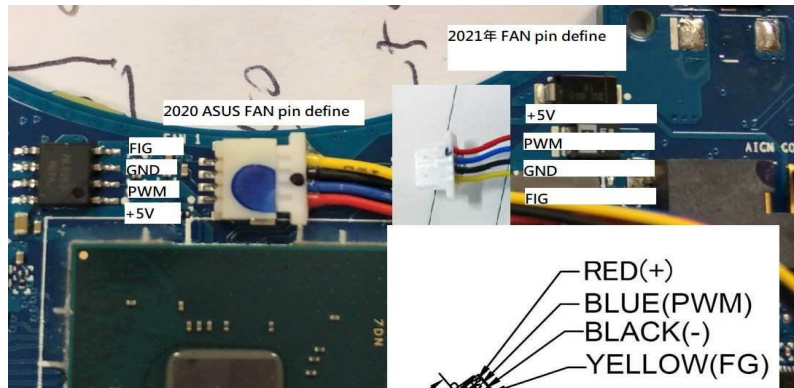
ESD23 CLOSE TO KHE1



PR18 : Change KHE1 power rail from +3VPCU to +3V_S5 for power consumption under 0.4mA on battery mode .
MP03 : Add KHE1 power rail from +3V_S5 to +3V_PCU.



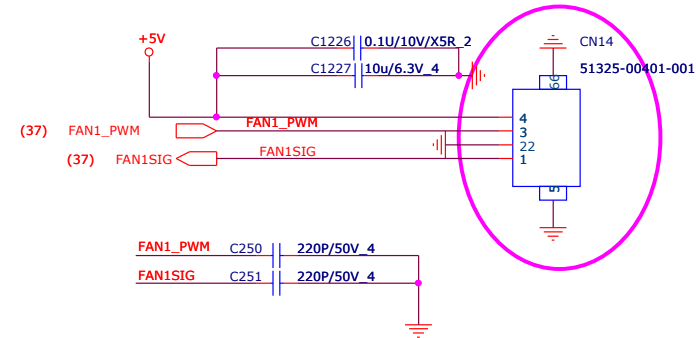
<https://vk.com/servicenotebook>



FAN1 for CPU

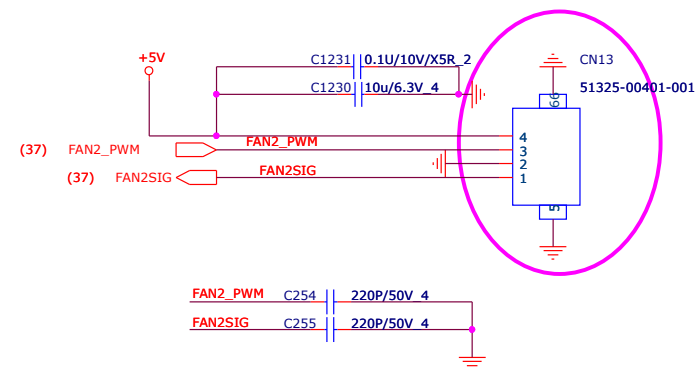
Add +12V power rail and change CAP to 25V....Tommy0504

39




ER07 : Change FAN connector from 5-pin to 4-pin for CN13 and CN14 .

FAN2 for GPU



<https://vk.com/servicenotebook>

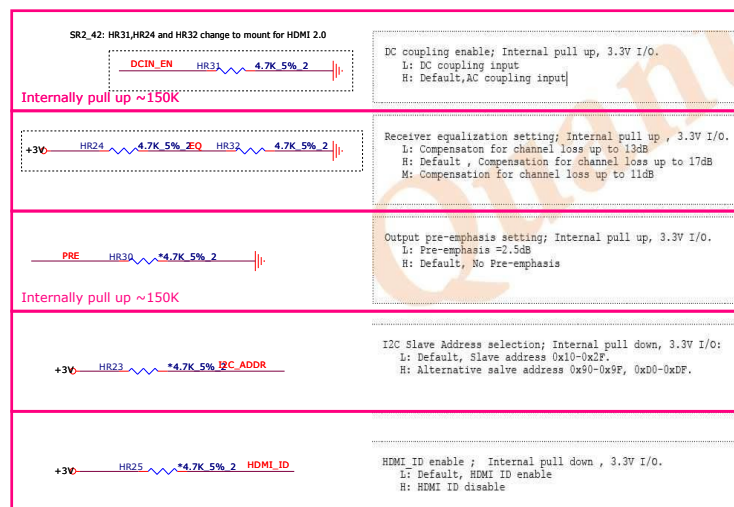
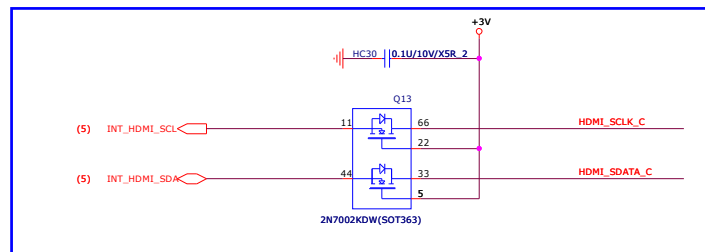
		Quanta Computer Inc.	
		PROJECT :NJF	
Size	Document Number	Rev	
	FAN	1A	
Date:	Thursday, November 19, 2020	Sheet	39 of 63

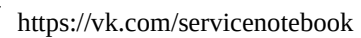
HDMI_HPD to APU and Level shift to NV

From APU

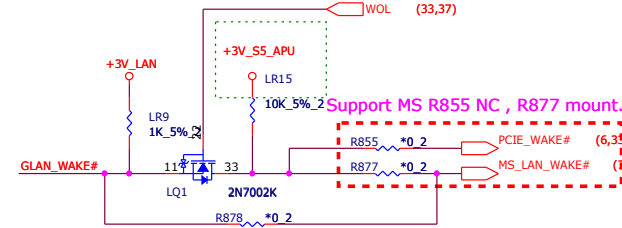
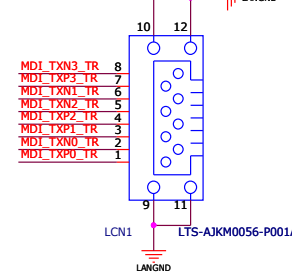
3.3V and 5V Level shifter

Optional


<https://vk.com/servicenotebook>



LAN_ISOLATE#	WOL_Enable	WOL_Disable
S0iX	H	L
S4/S5	L	L



PR19 : Reserved R855 for power management by customer's table list.

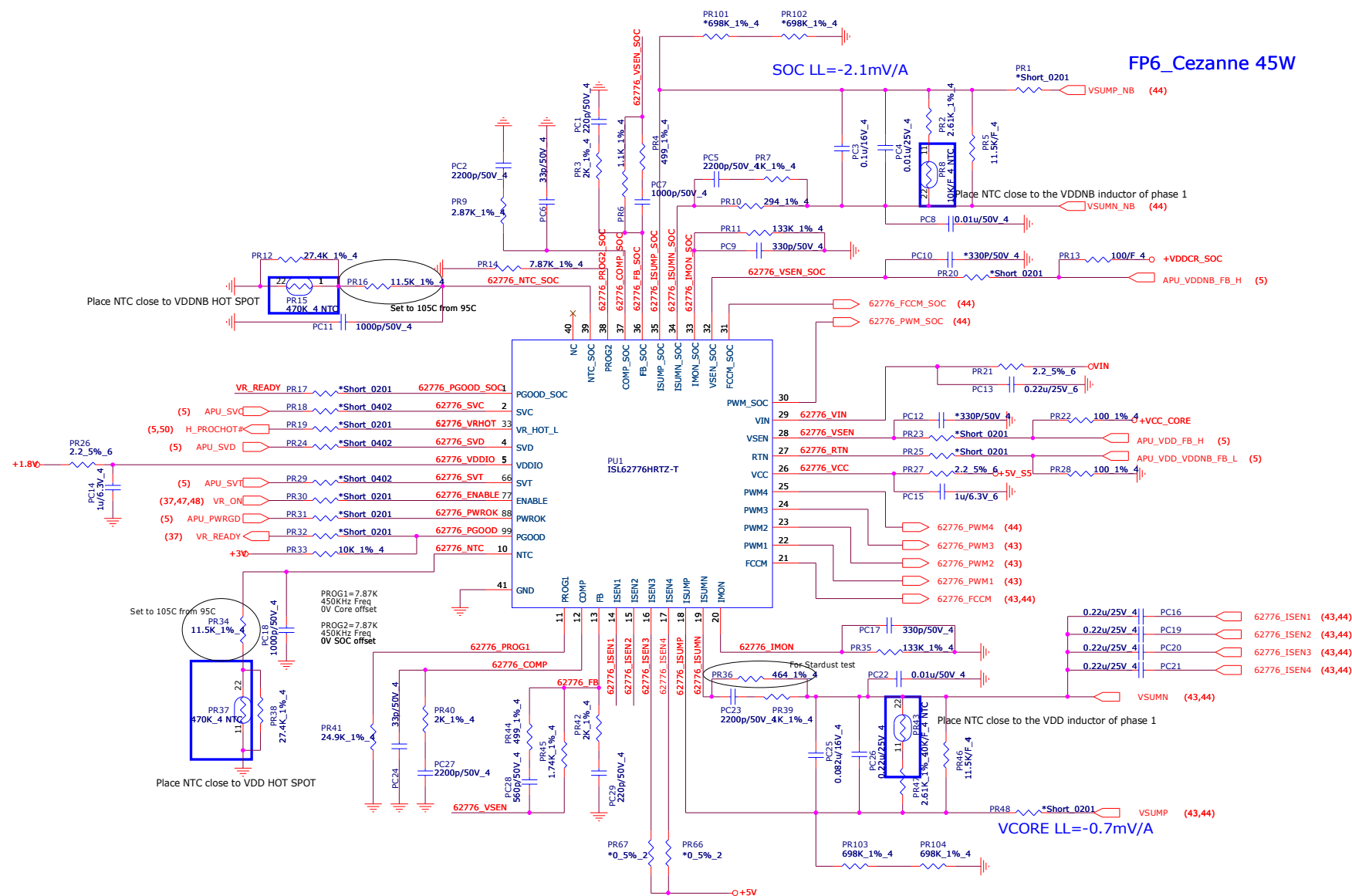
AC Mode : Support wakle on LAN
DC Mode : Don't support wake on LAN

BIOS Setup	WOLAN DISABLE		WOLAN ENABLE	
	LAN_PWEN	WOL	LAN_PWEN	WOL
S3	H	H	H	H
S4	L	L	H	H
S5	L	L	L	L



Quanta Computer Inc.
PROJECT : NJF

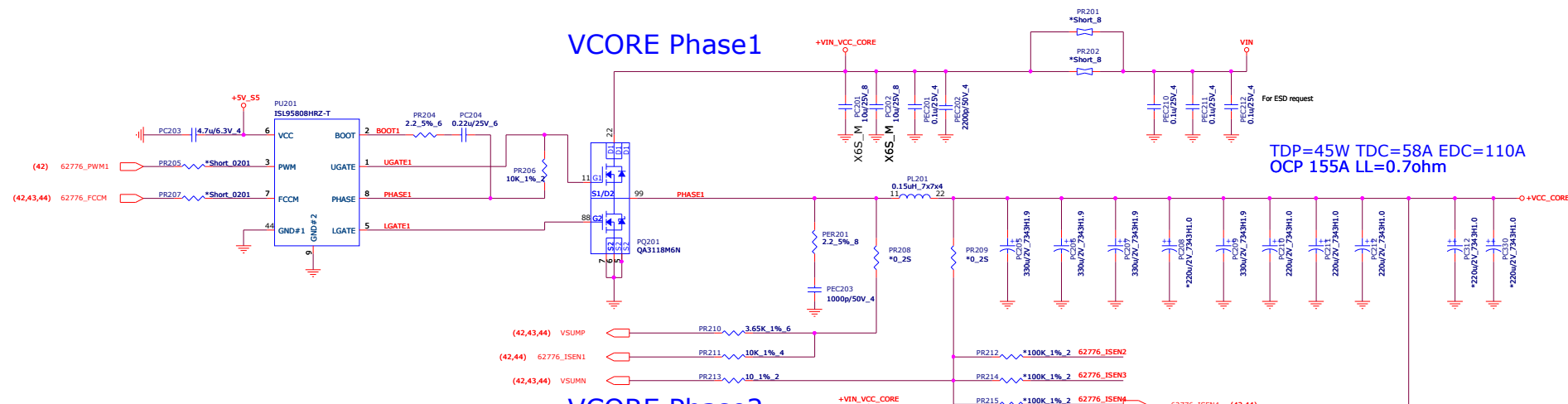
Size Document Number LAN RTL8111H Rev 1A
Date: Thursday, November 19, 2020 Sheet 41 of 63



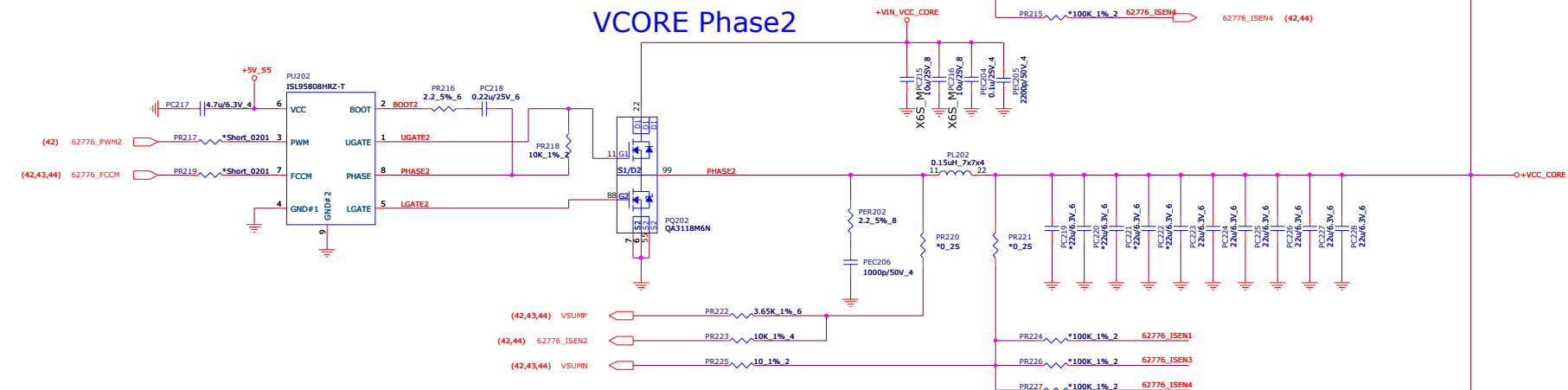
VR_A: VCORE, 4-Phase, I_{max}=110A, IOCP=155A, FSW=600K
VR_B: VDDCR_SOC, 1-Phase, I_{max}=20A, IOCP=30A, FSW=600K

<https://vk.com/servicenotebook>

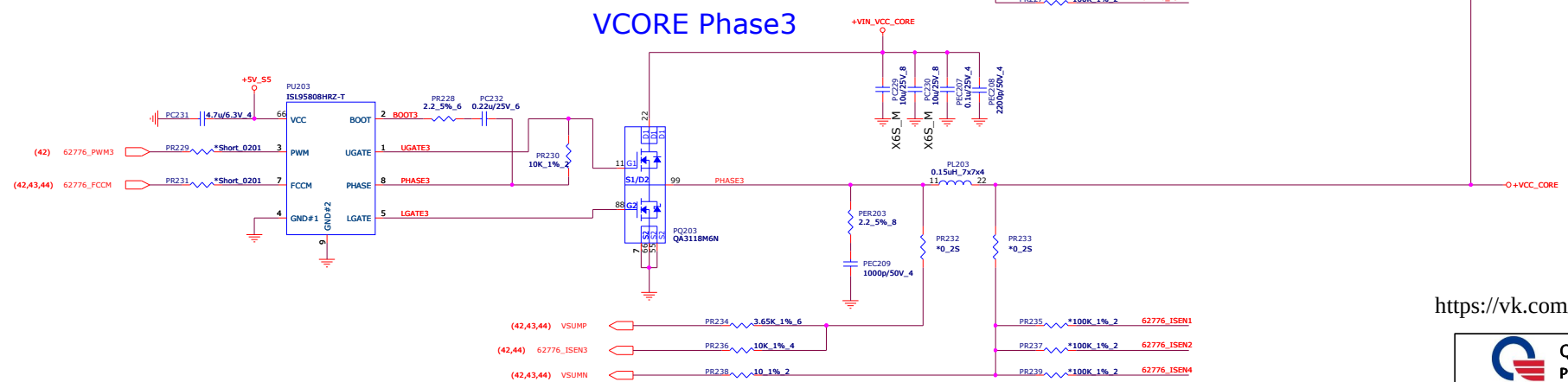
VCORE Phase1



VCORE Phase2

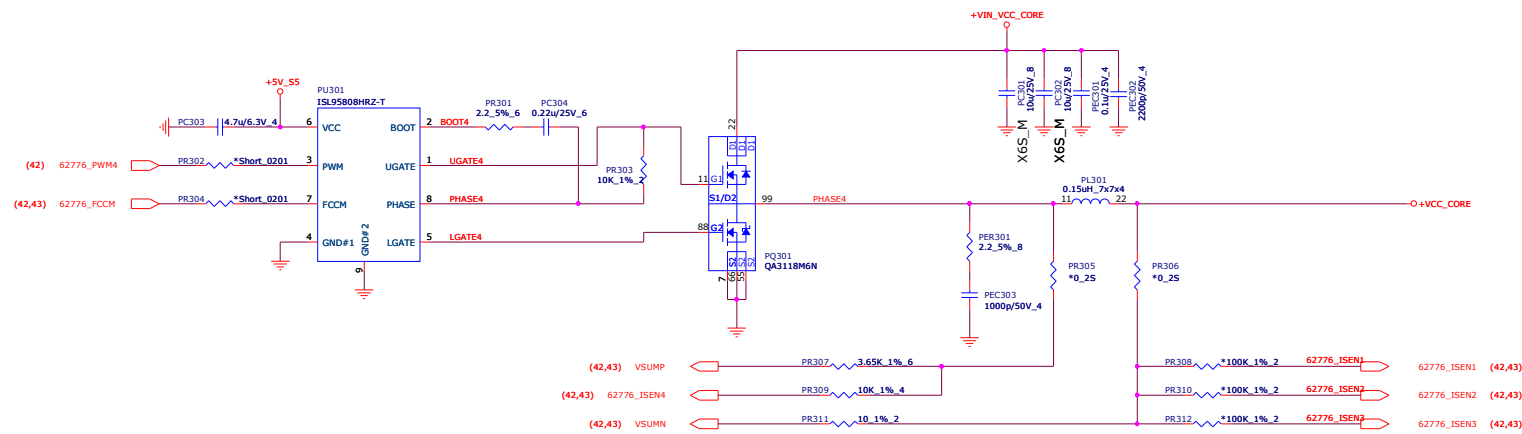


VCORE Phase3

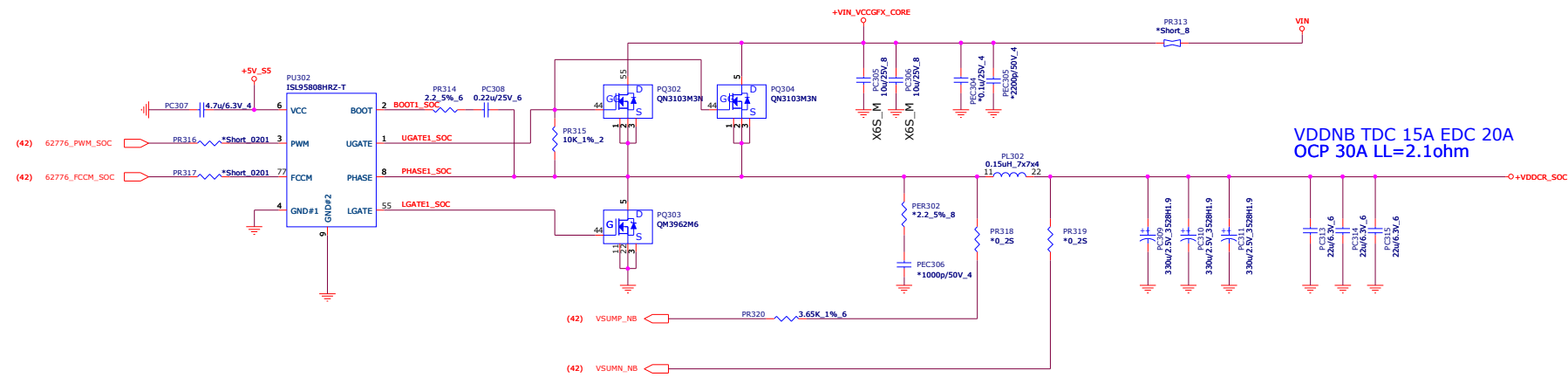


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VCORE Phase4



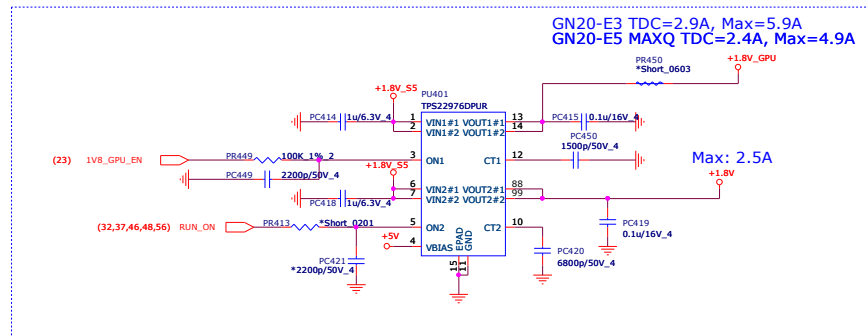
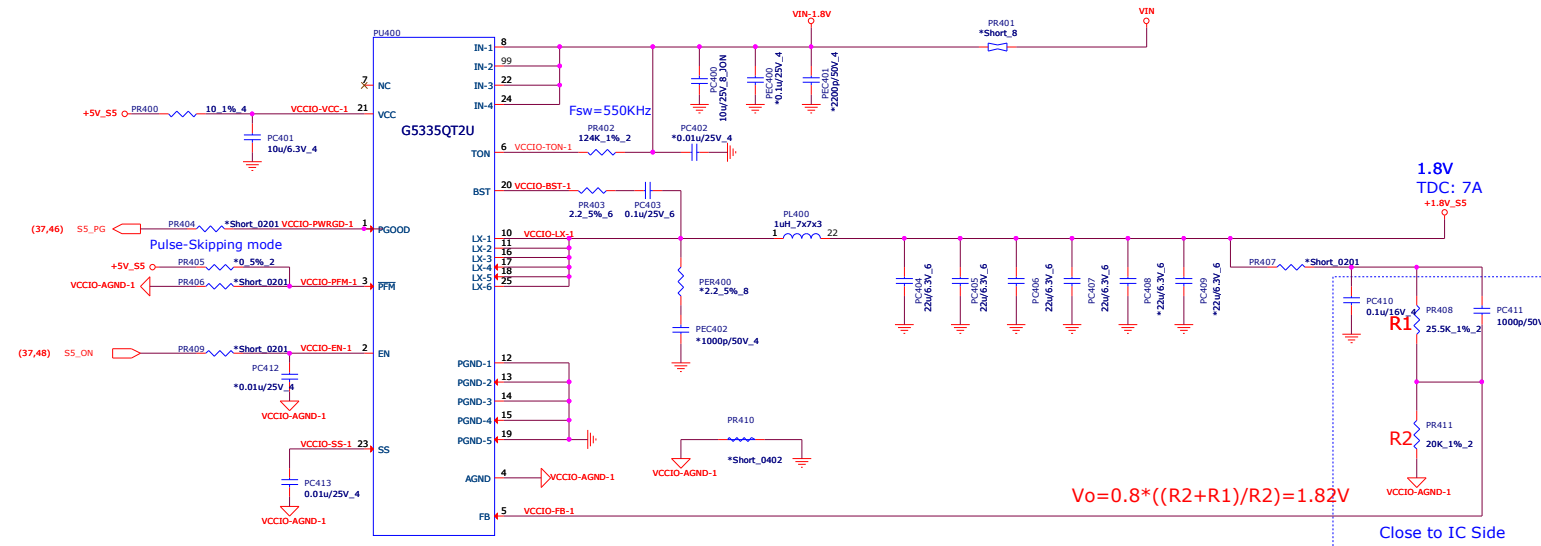
VDDCR_SOC



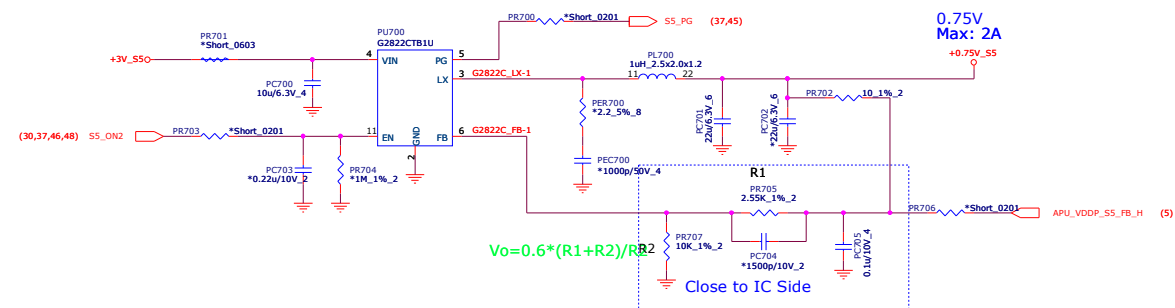
VDDNB TDC 15A EDC 20A
OCP 30A LL=2.1ohm

<https://vk.com/servicenotebook>

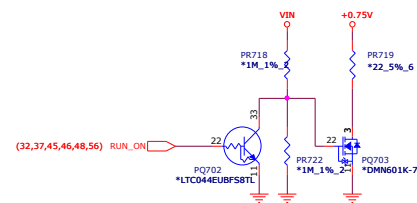
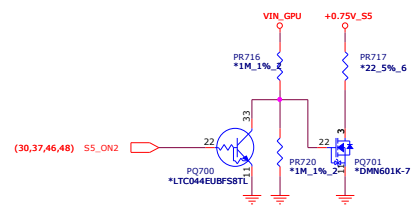
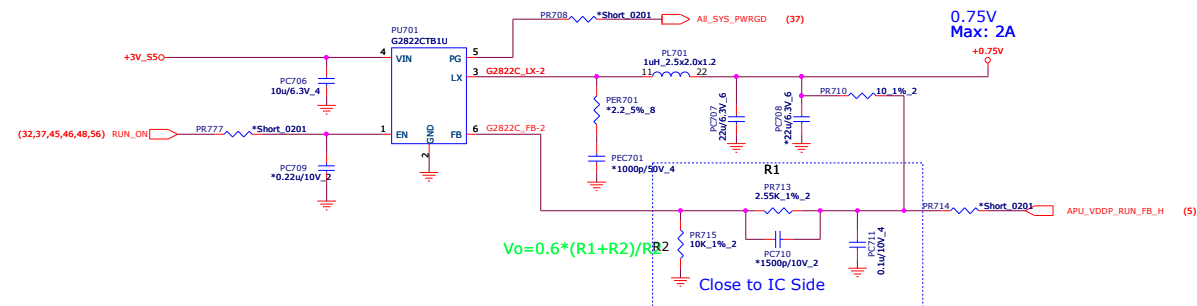
+1.8V_S5


<https://vk.com/servicenotebook>

+0.75V_S5

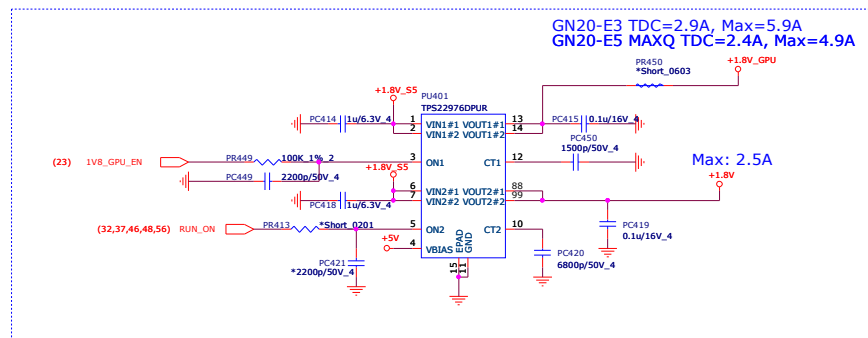
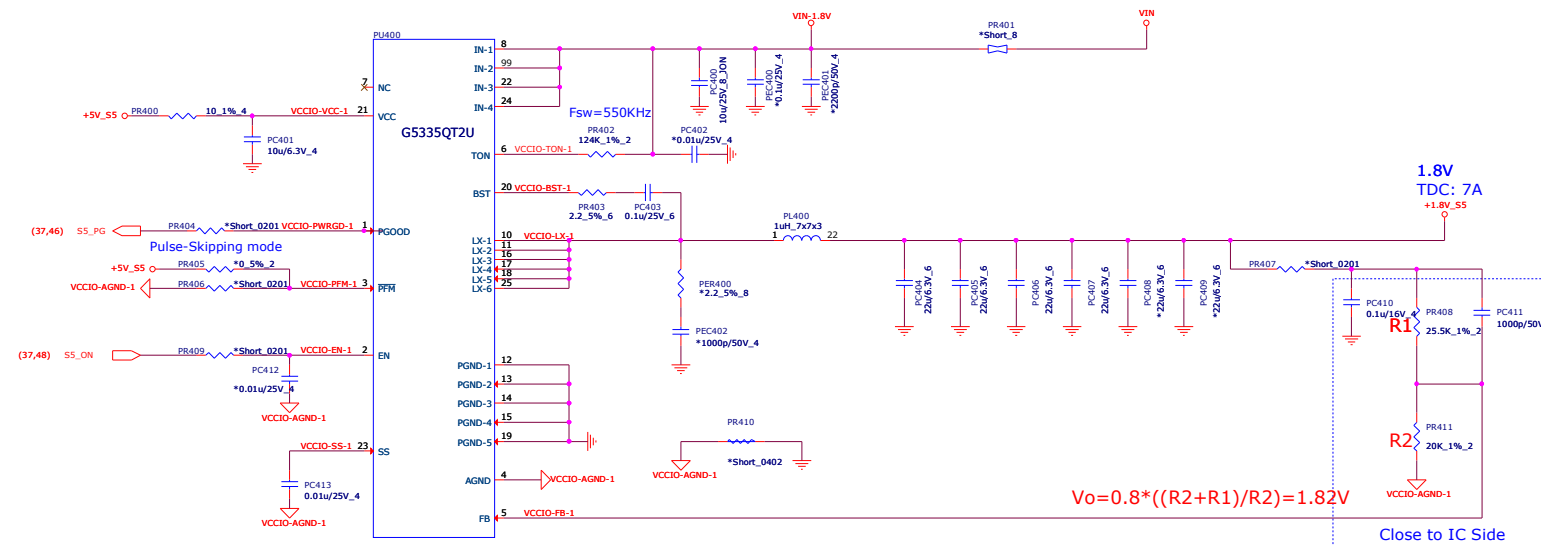


+0.75V

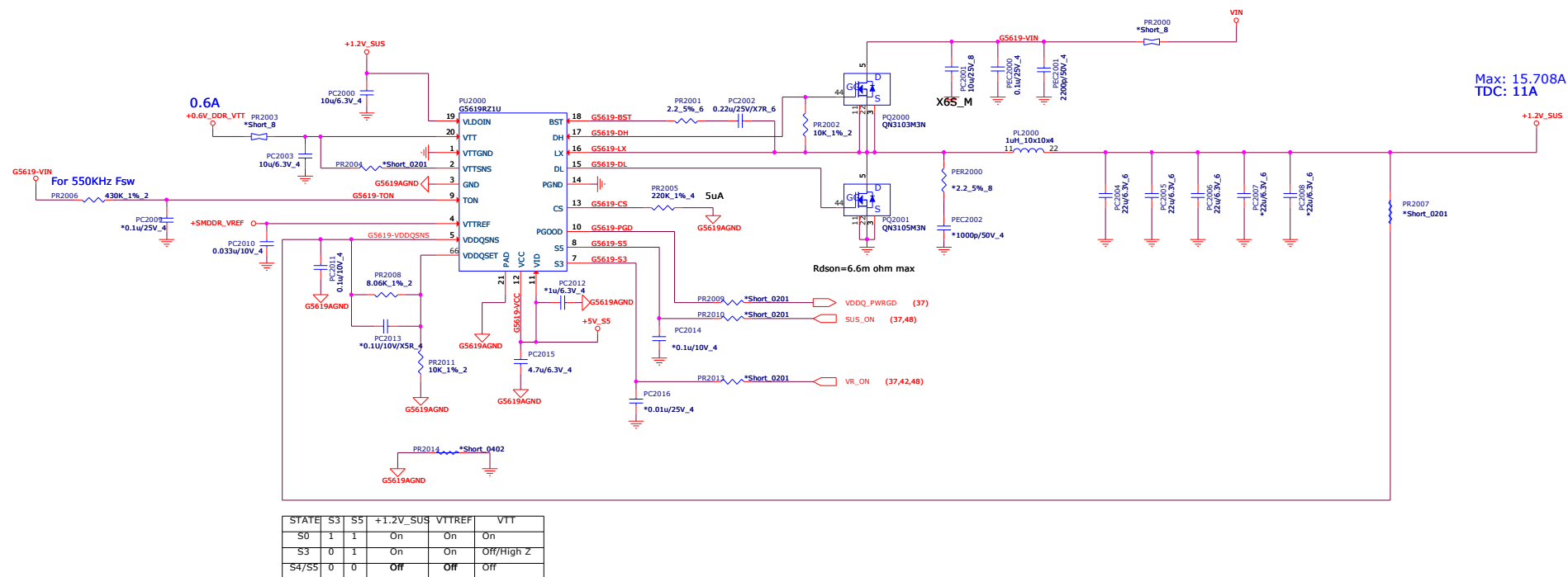


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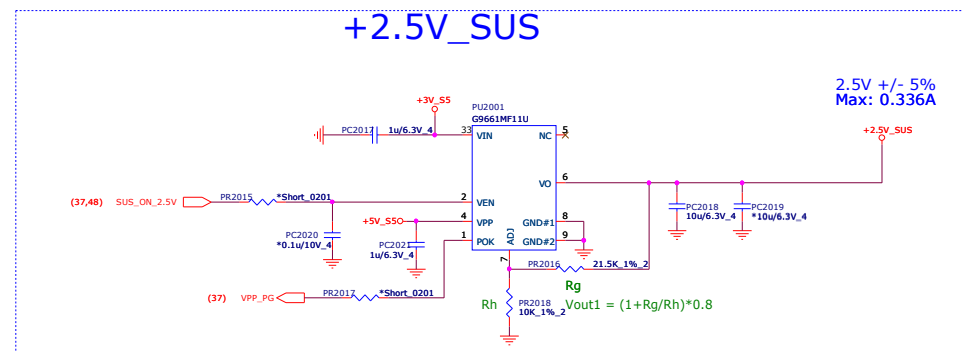
+1.8V_S5


<https://vk.com/servicenotebook>

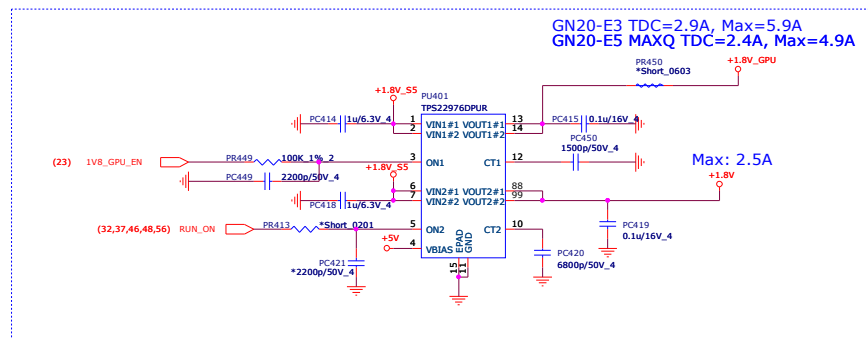
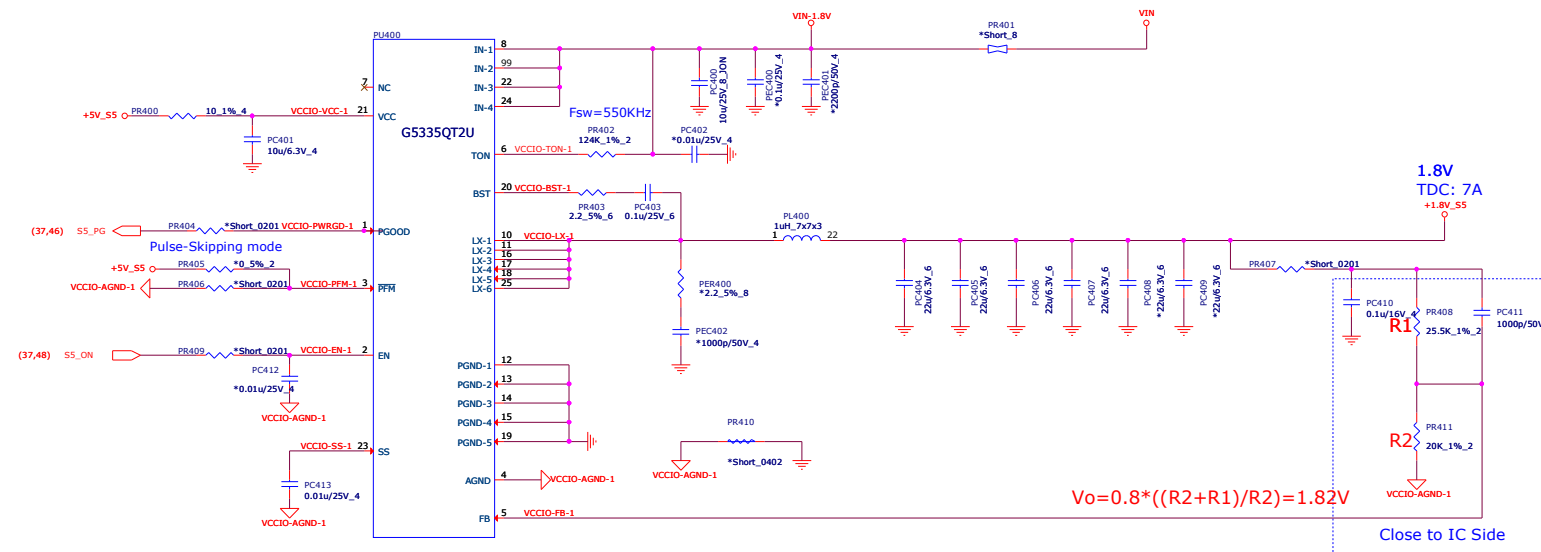
1.2VSUS & VTT_MEM



+2.5V_SUS

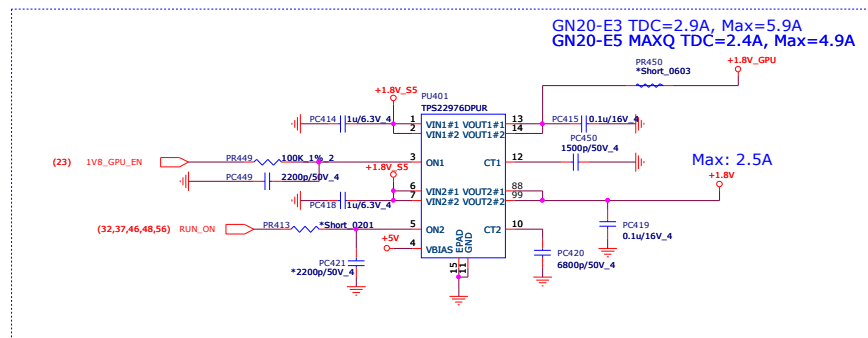
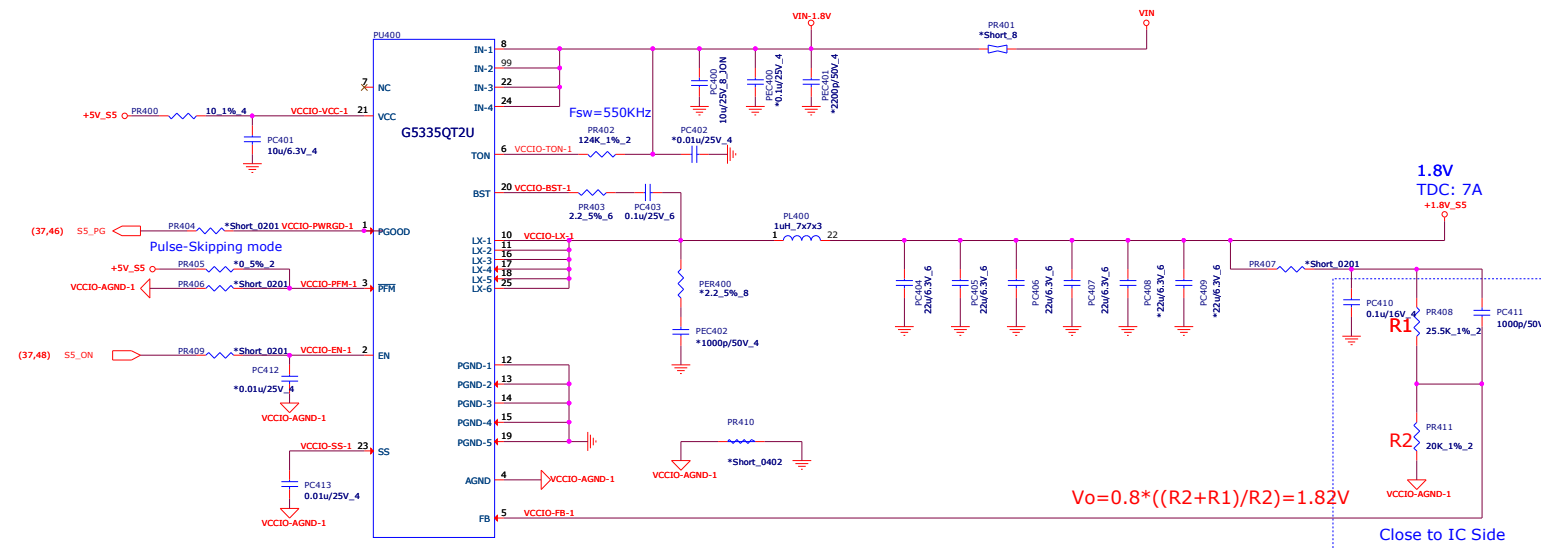

<https://vk.com/servicenotebook>

+1.8V_S5



<https://vk.com/servicenotebook>

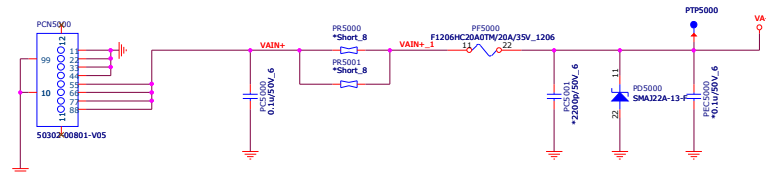
+1.8V_S5



<https://vk.com/servicenotebook>

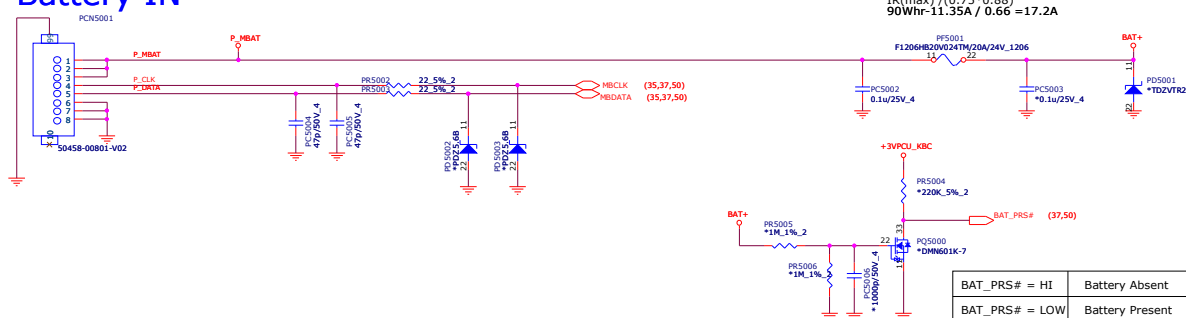
AC IN (On-Board DC-Jack)

Fuse Rating =
 $IR(max) / (0.75 * 0.88)$
 $200W / 20V / 0.66 = 15.15A$



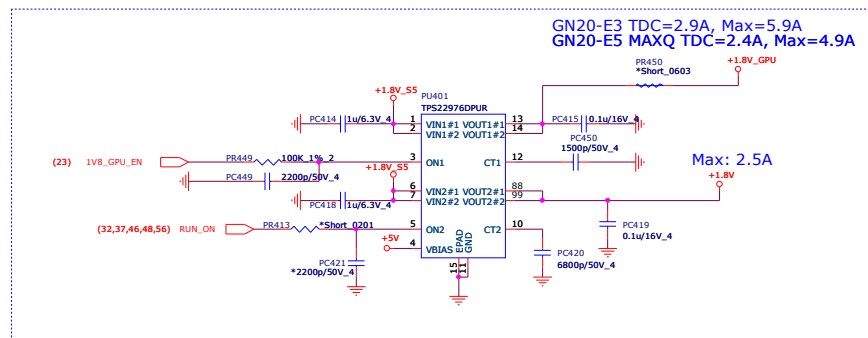
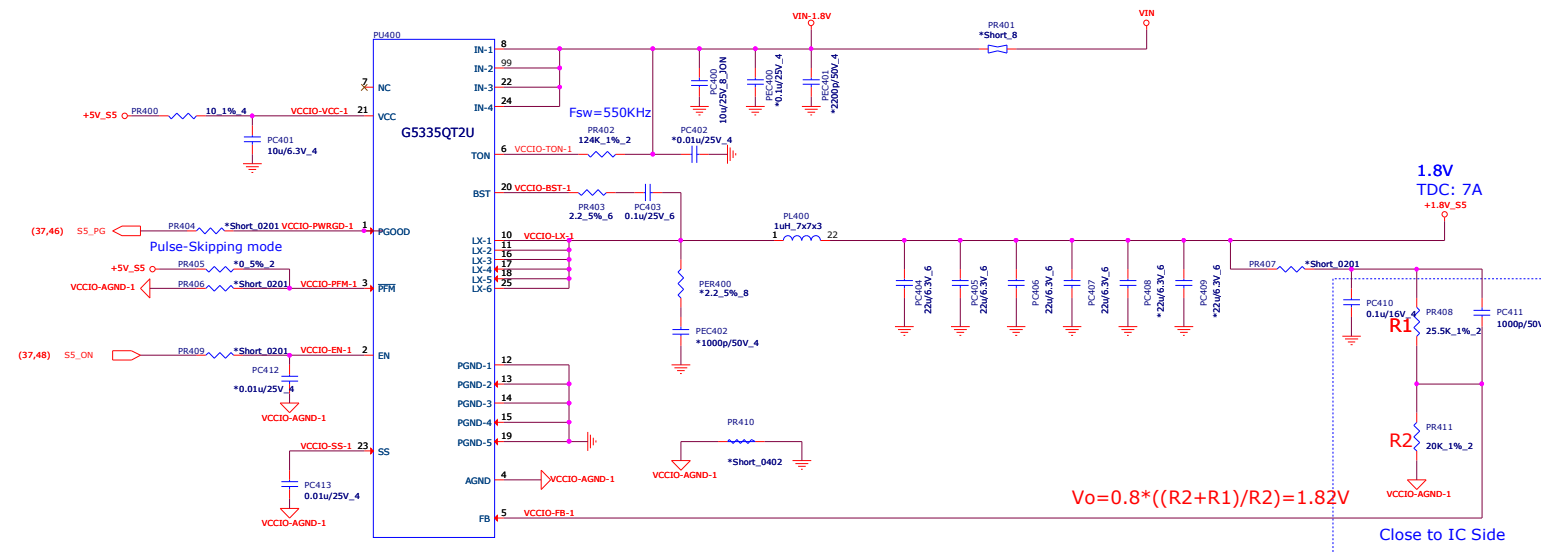
Battery IN

Fuse Rating =
 $IR(max) / (0.75 * 0.88)$
 $90Whr - 11.35A / 0.66 = 17.2A$

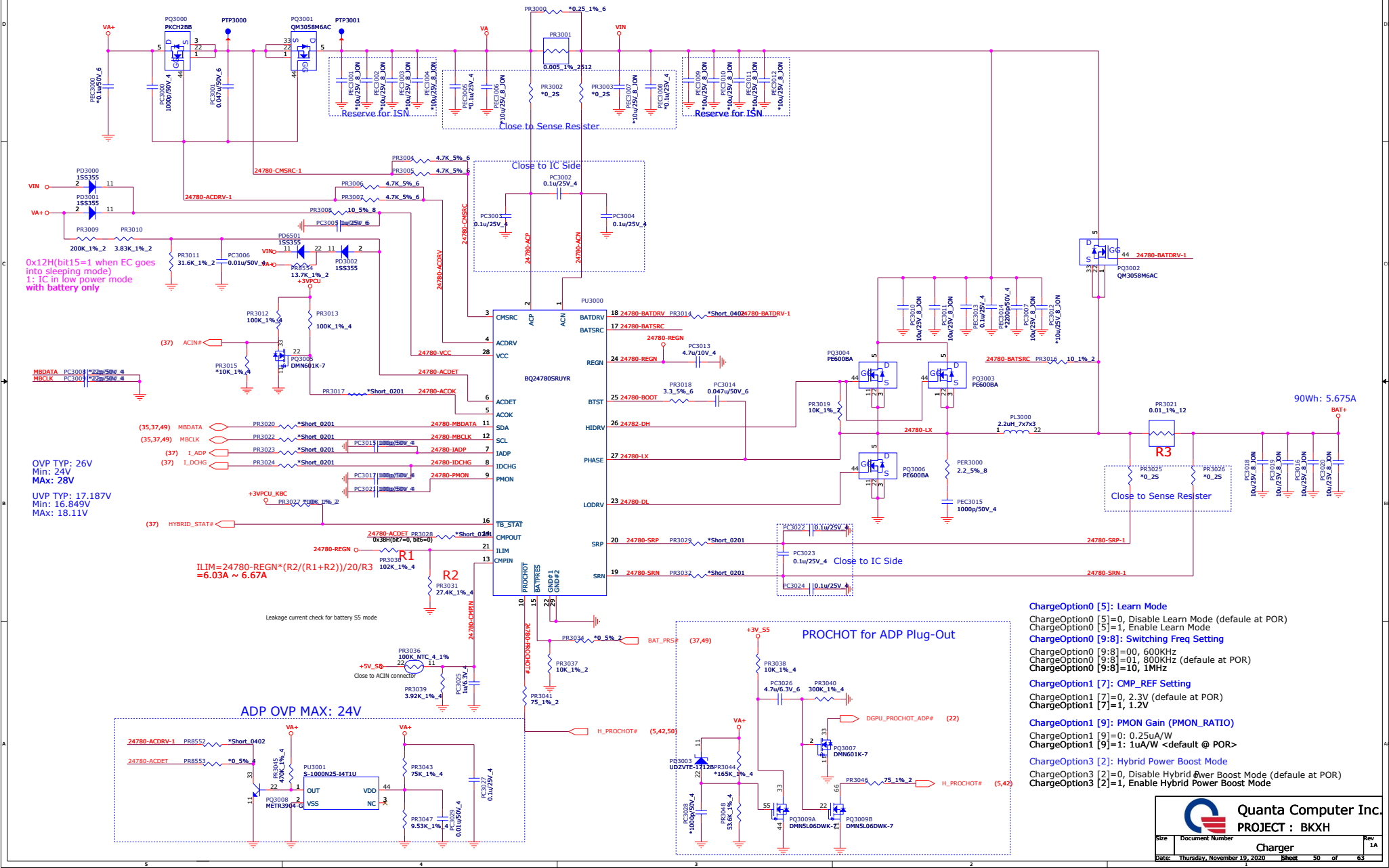


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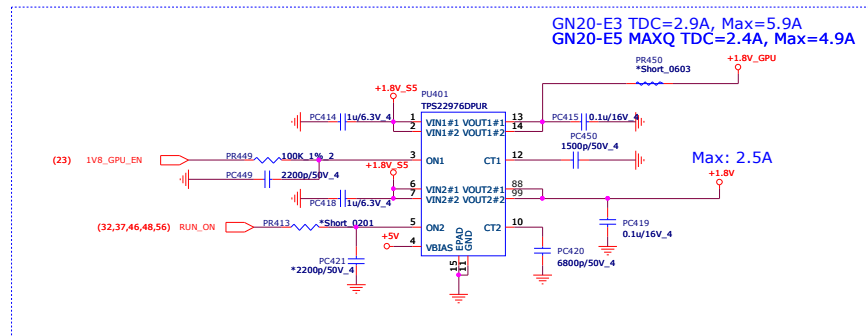
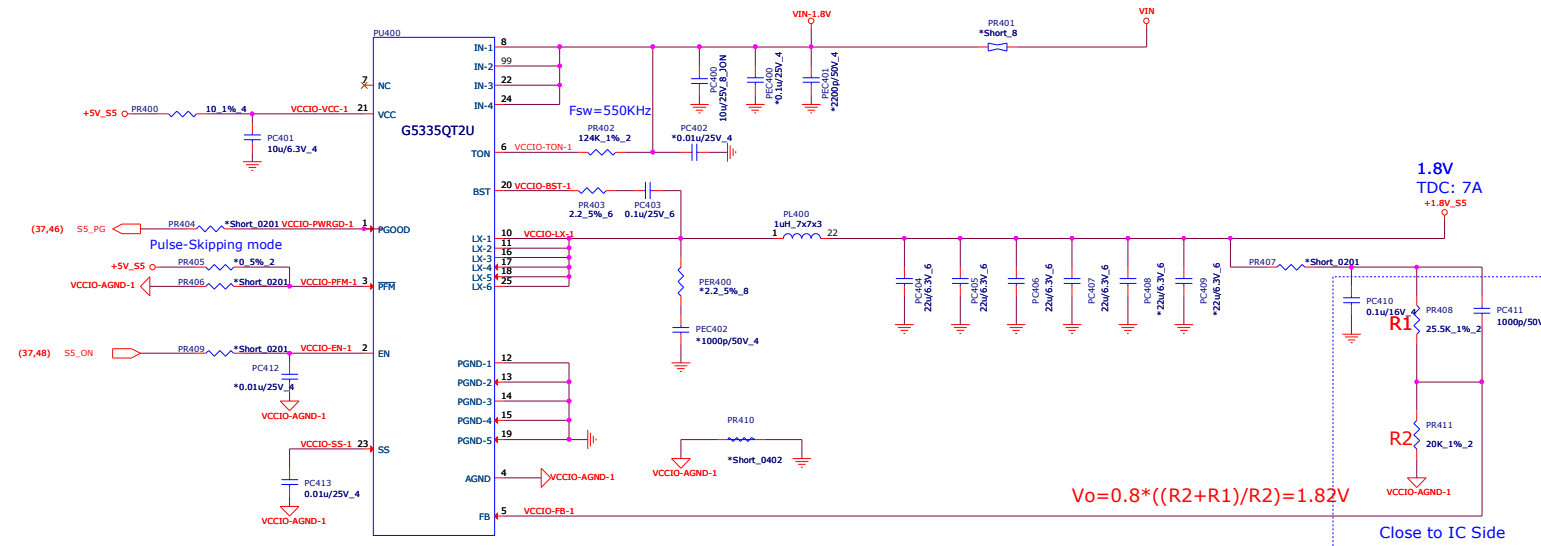
+1.8V_S5



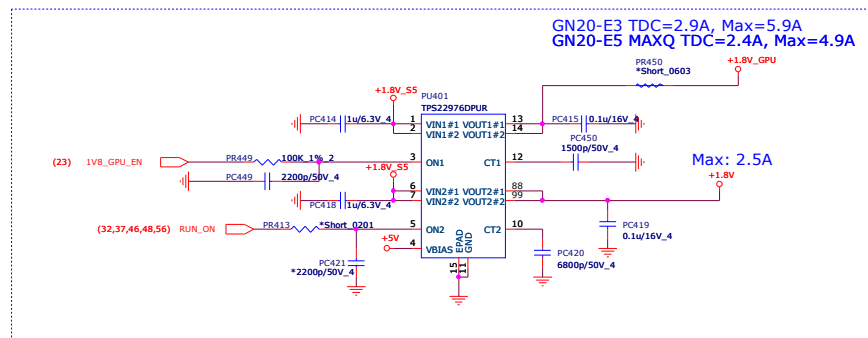
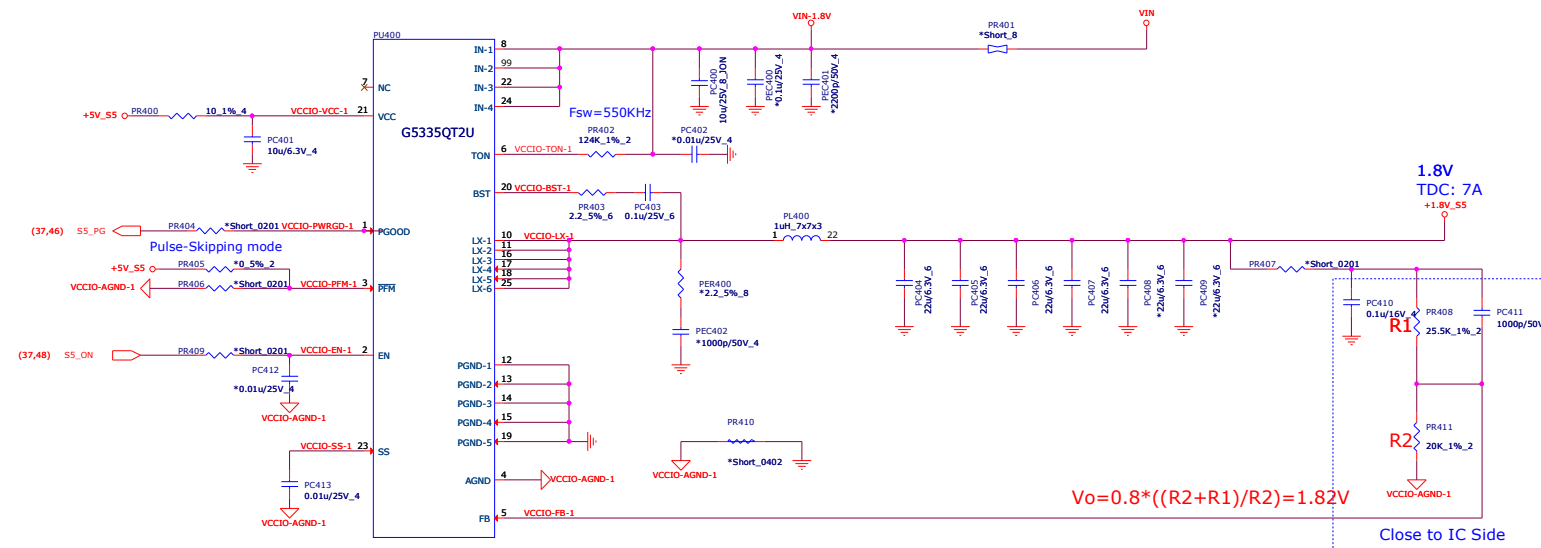
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+1.8V_S5

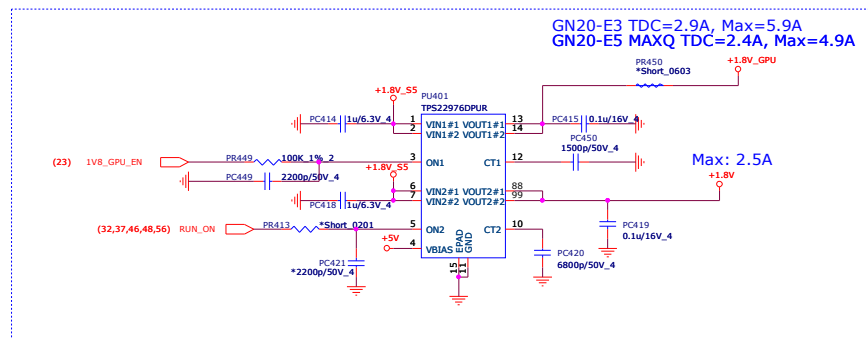
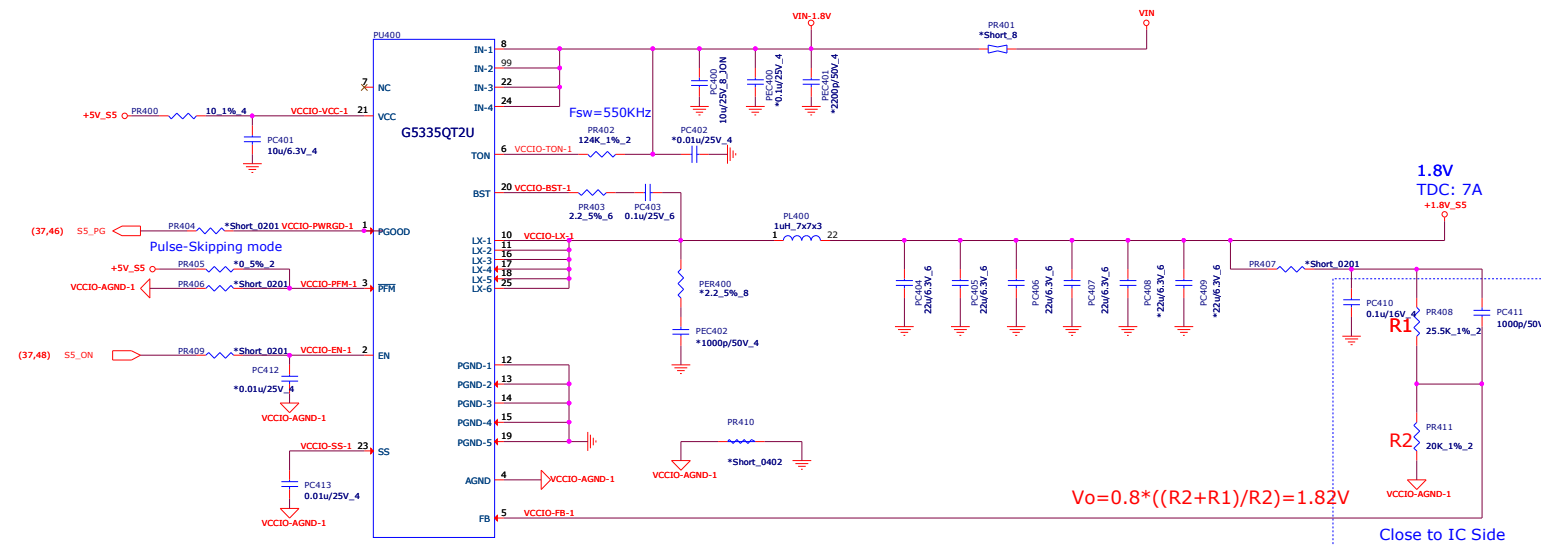

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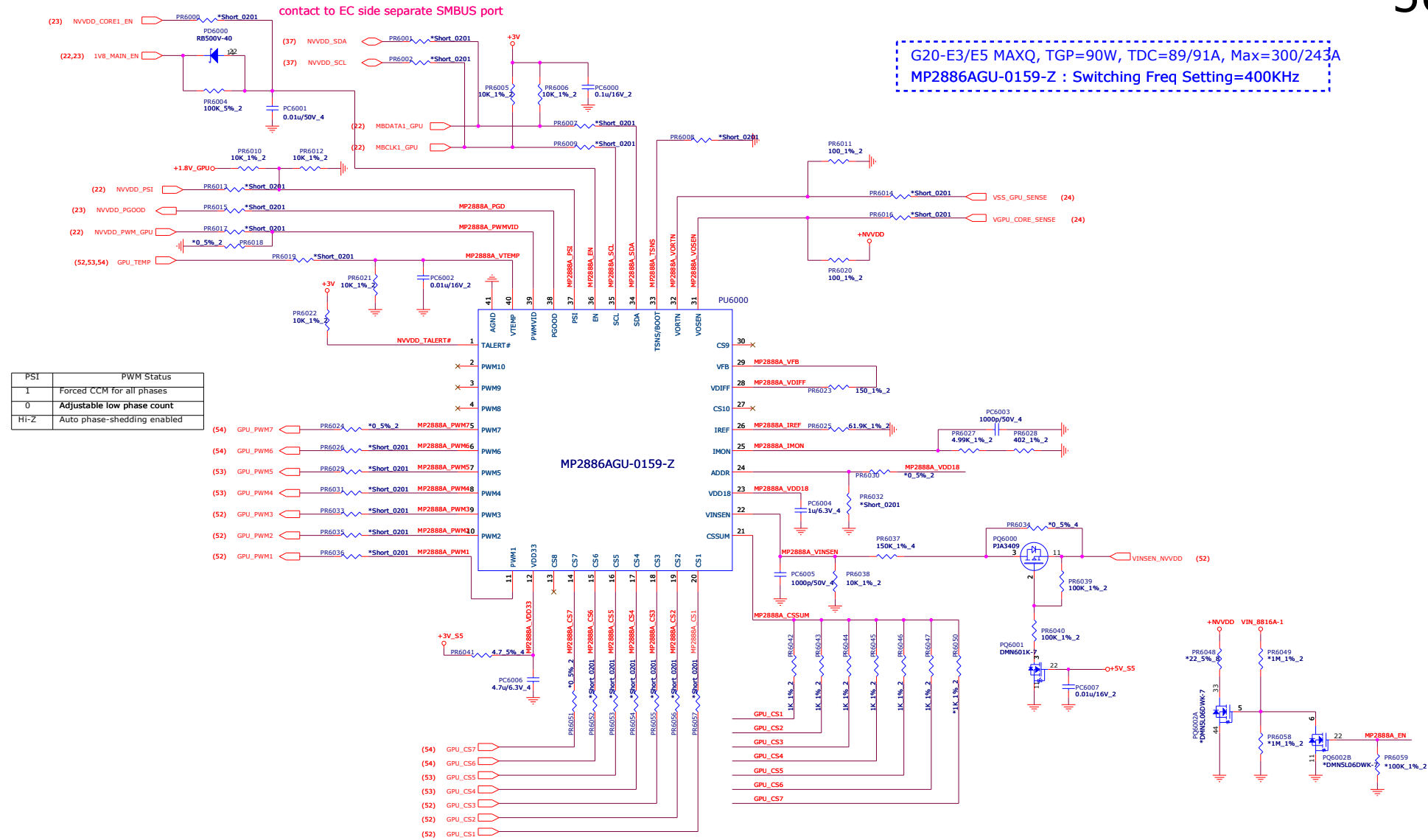
+1.8V_S5



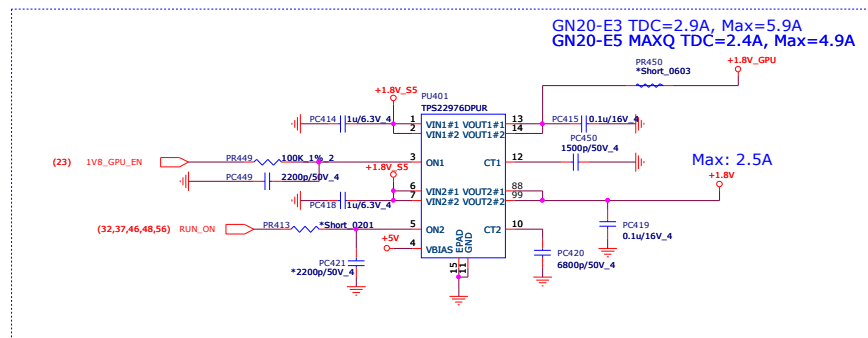
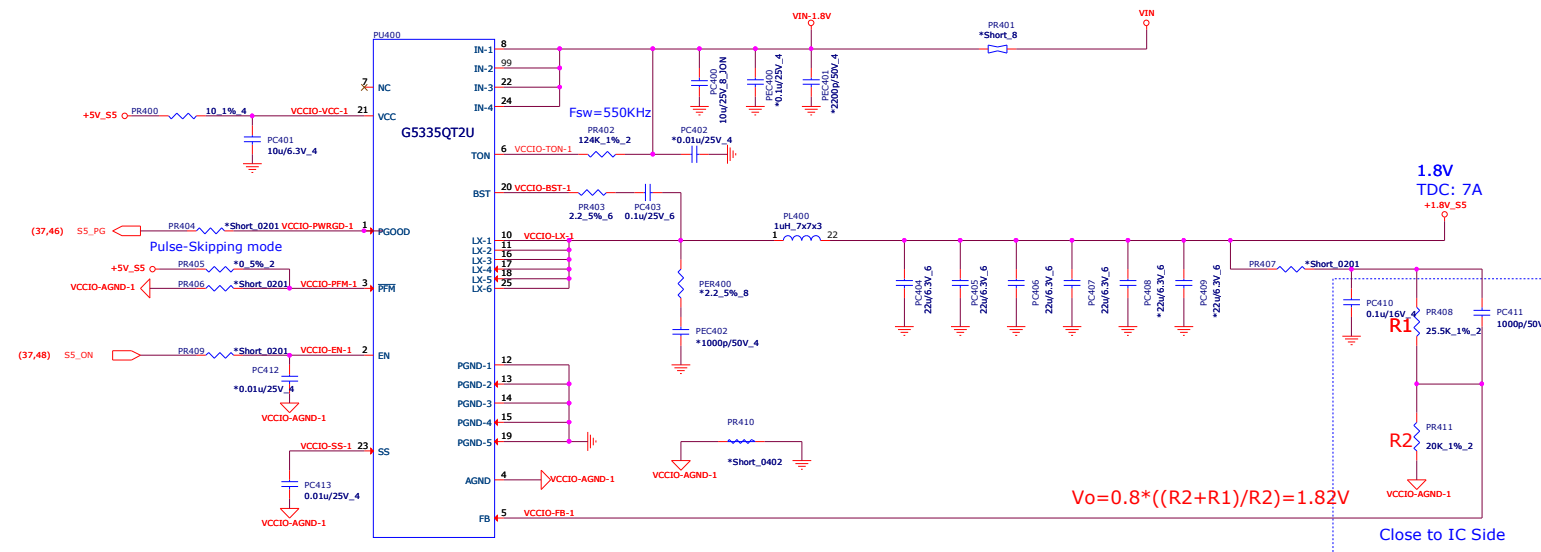
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+1.8V_S5


<https://vk.com/servicenotebook>

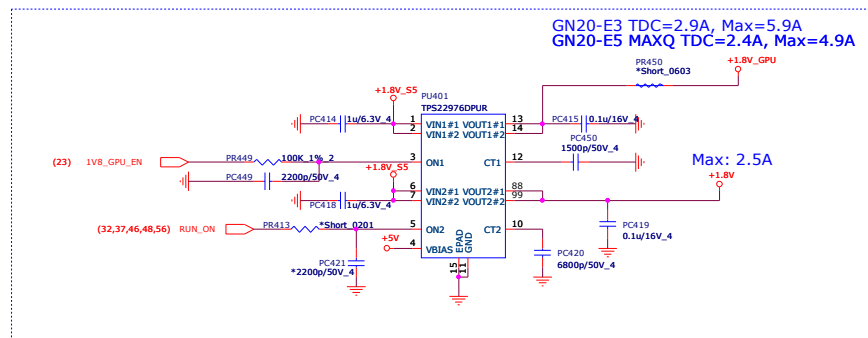
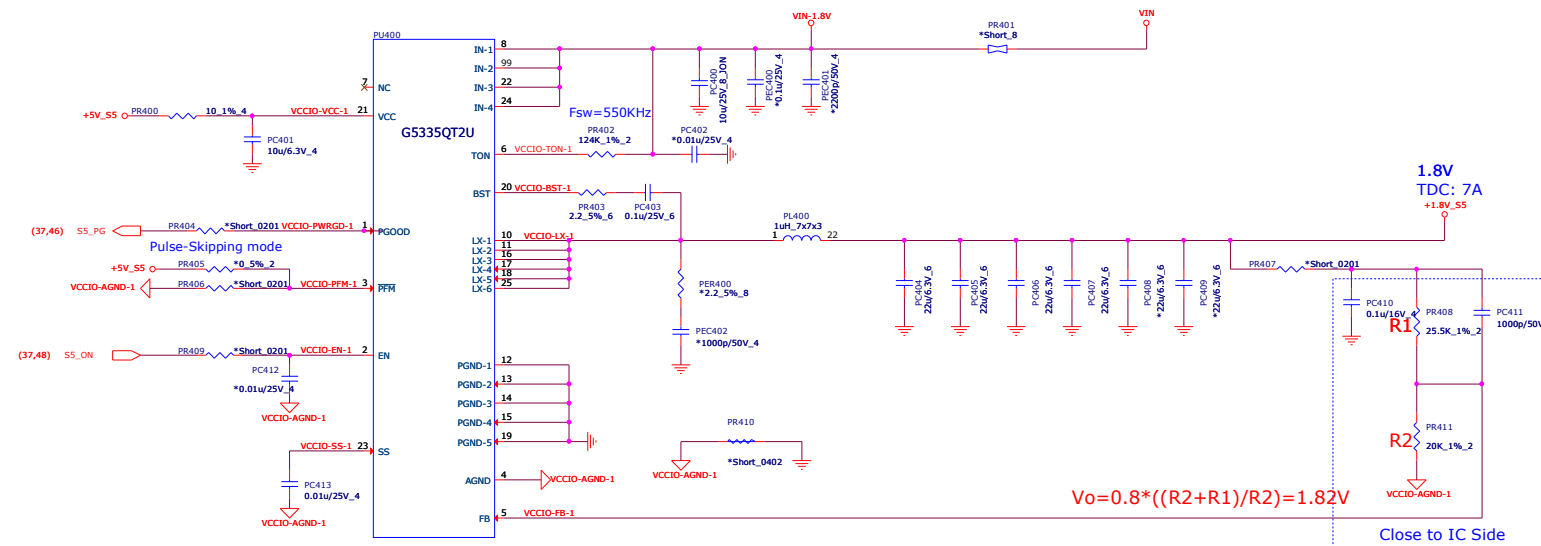


+1.8V_S5

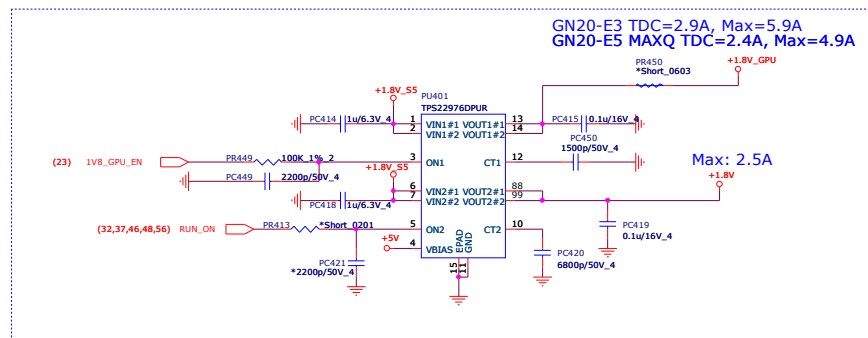
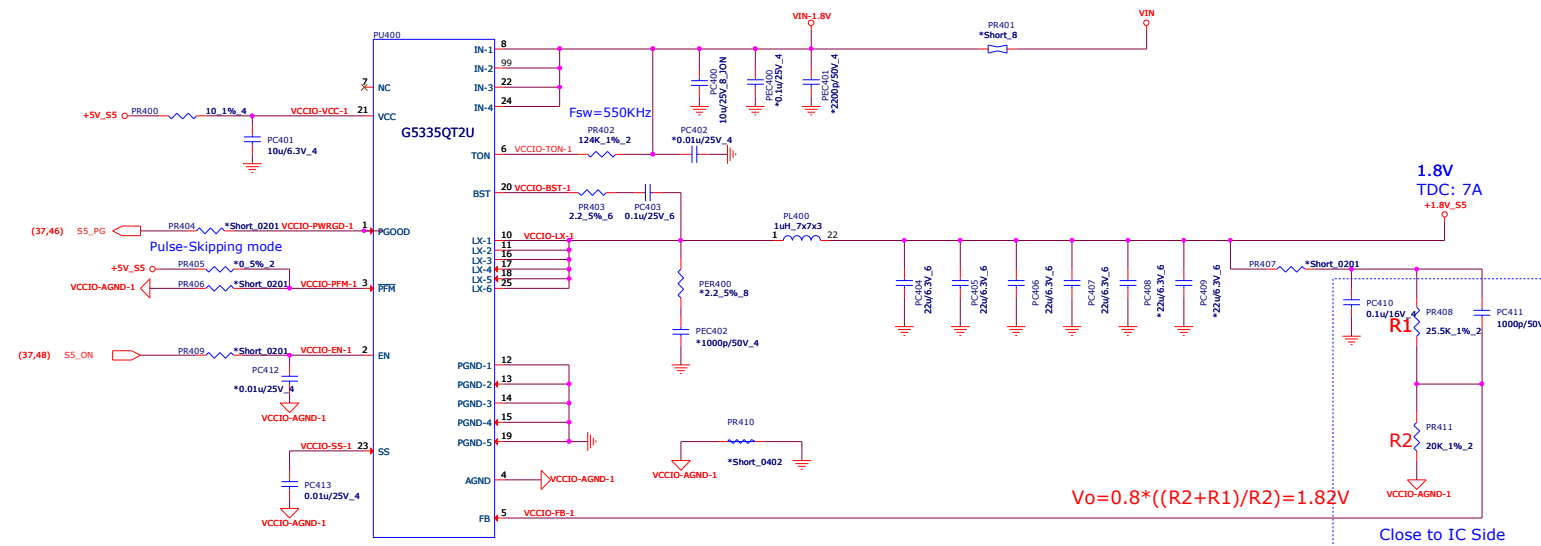


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+1.8V_S5

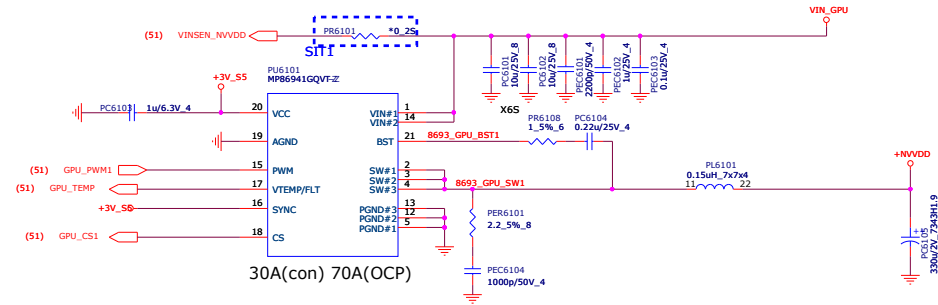

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+1.8V_S5

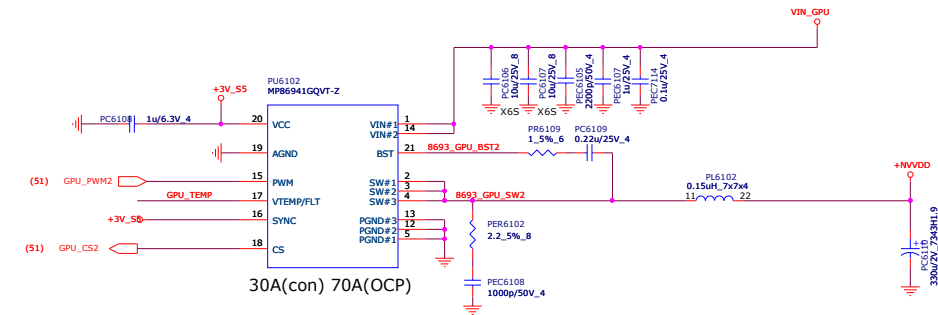


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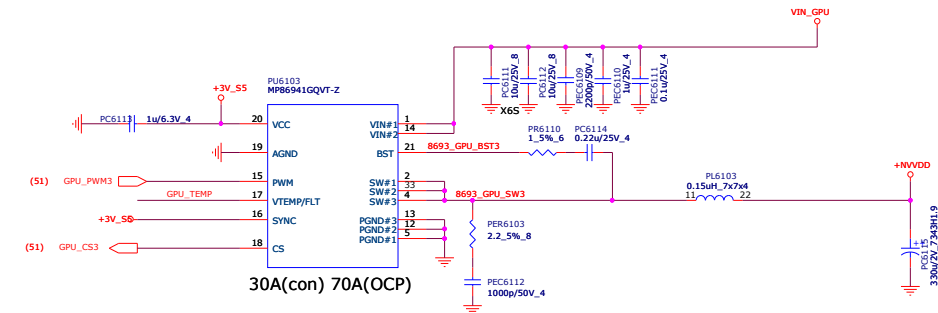
NVVDD Phase-1



NVVDD Phase-2

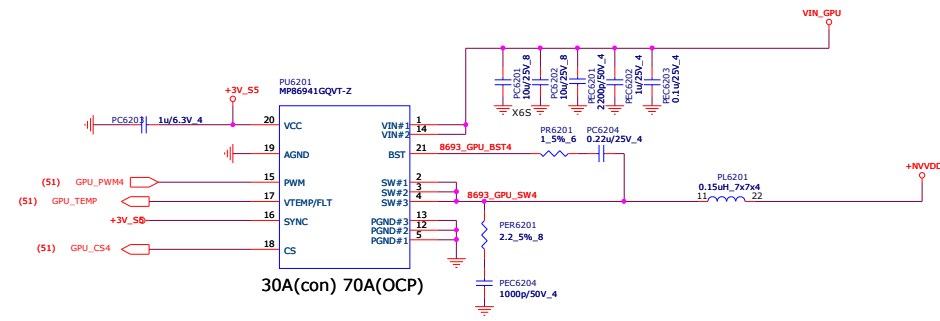


NVVDD Phase-3

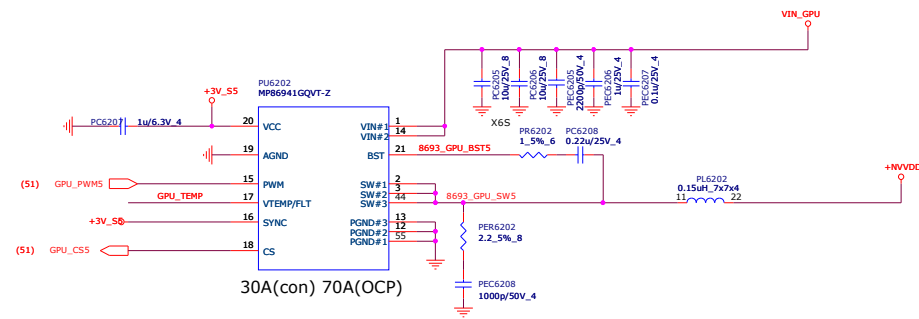


<https://vk.com/servicenotebook>


NVVDD Phase-4

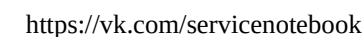


NVVDD Phase-5



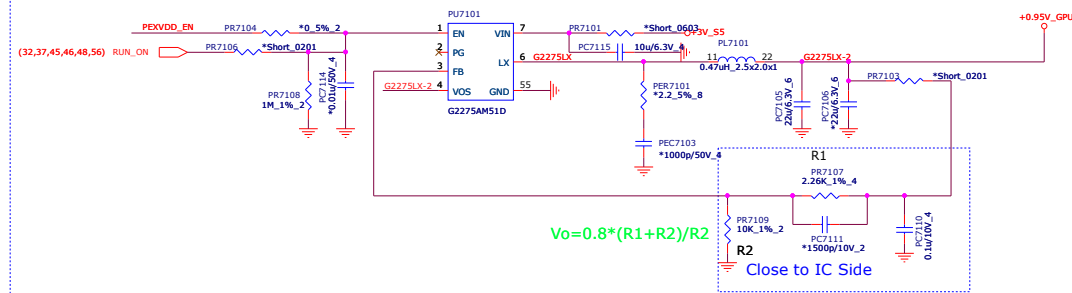
<https://vk.com/servicenotebook>

 <div> <p>Quanta Computer Inc.</p> <p>PROJECT : BKXH</p> </div>		Rev 1A
Size	Document Number	
NVDD Core (3)		
Date:	Thursday, November 19, 2020	Sheet 54 of 63

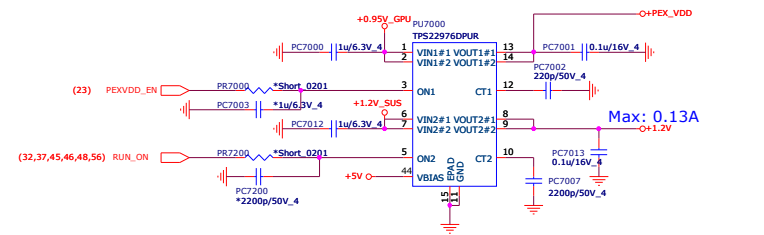
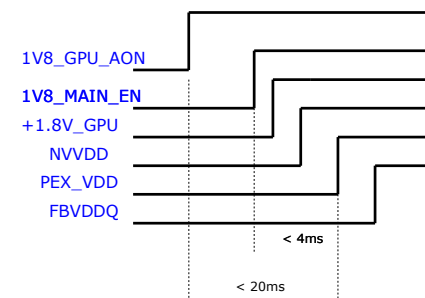
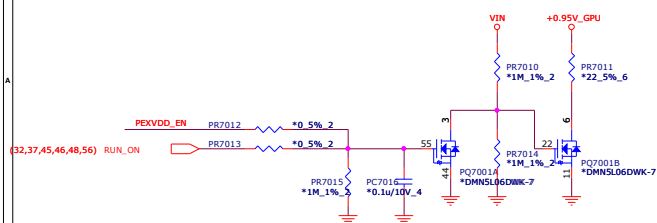


+0.95V_GPU

GN20-E3 TDC=2.1A, Max=4.2A
GN20-E5 MAXQ TDC=2A, Max=4.1A

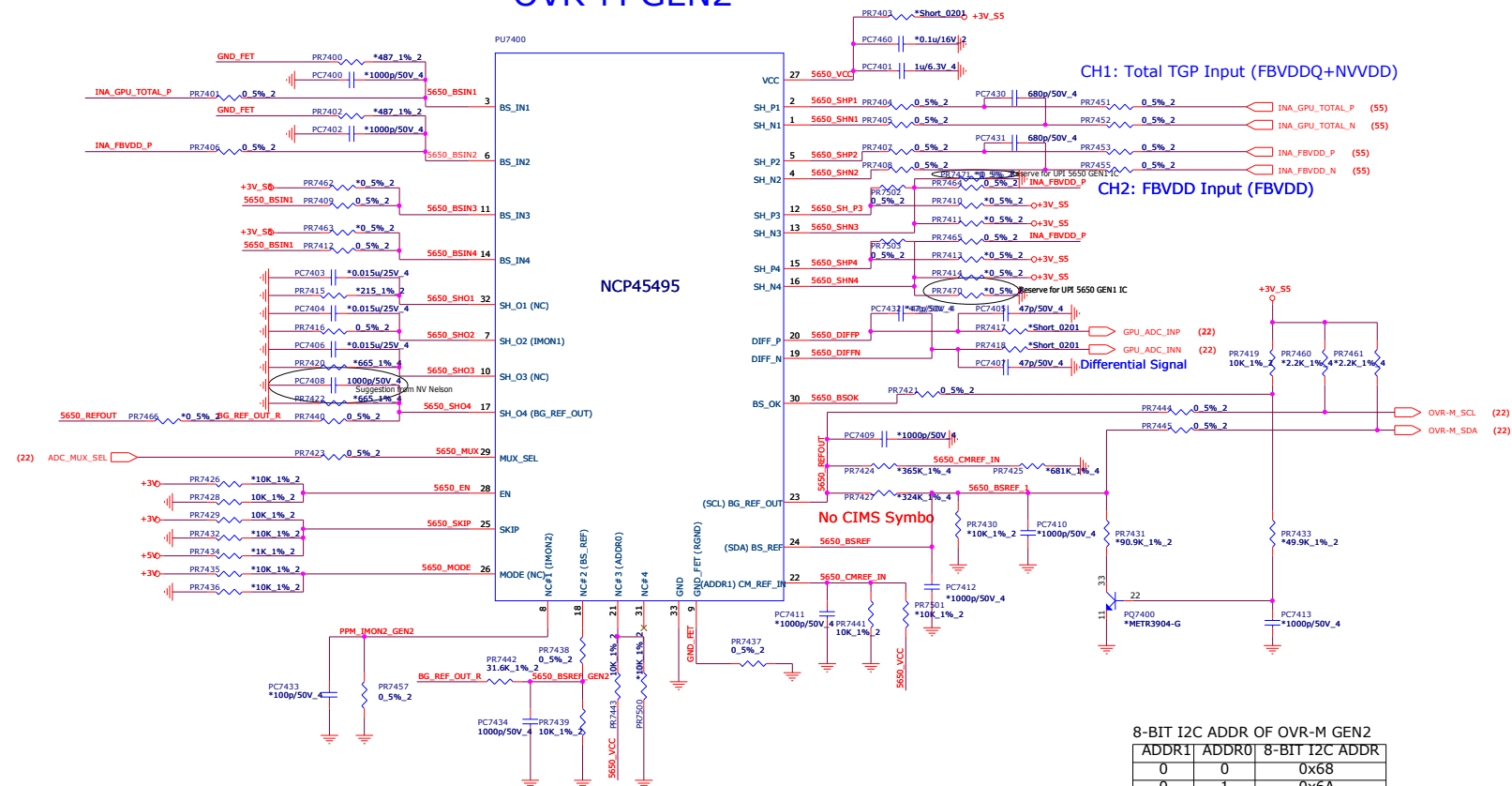
**Load Switch for GPU**

GN20-E3 TDC=2.1A, Max=4.2A
GN20-E5 MAXQ TDC=2A, Max=4.1A

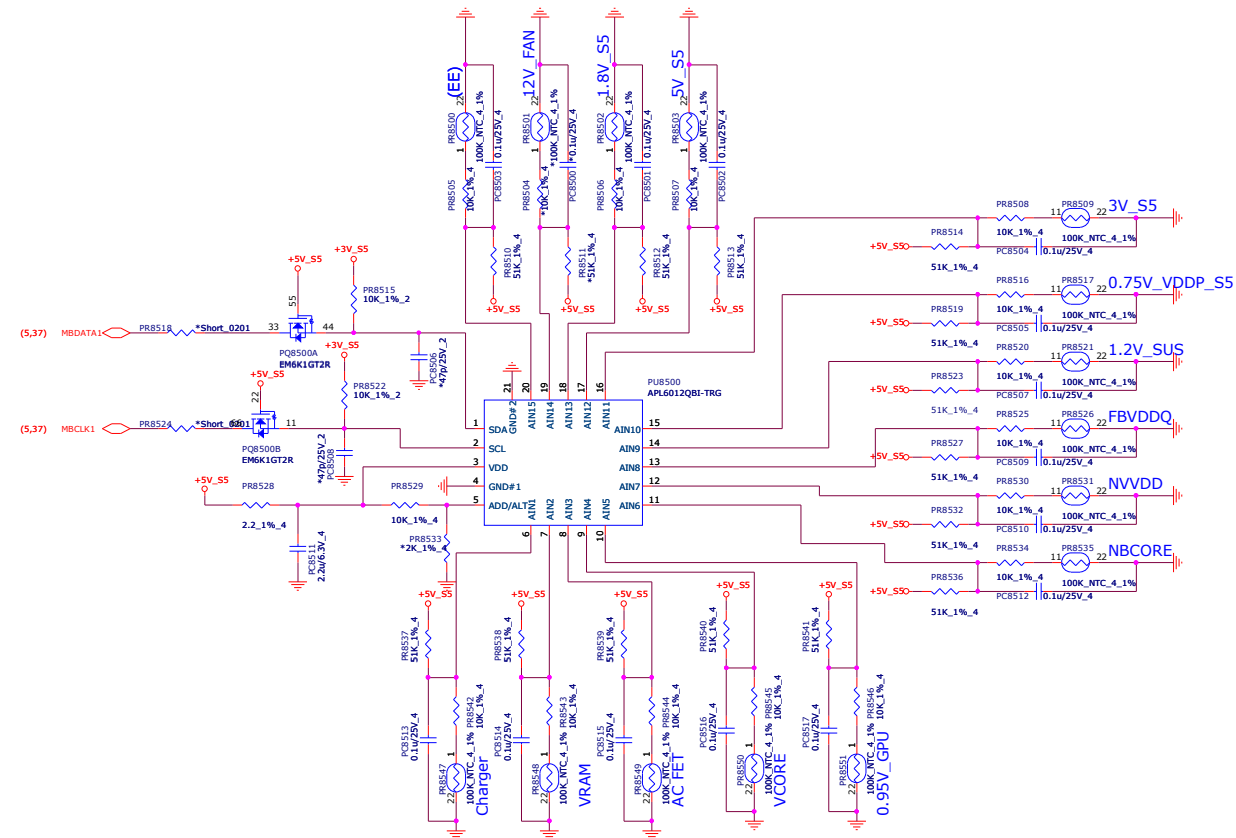
**Discharge**

<https://vk.com/servicenotebook>

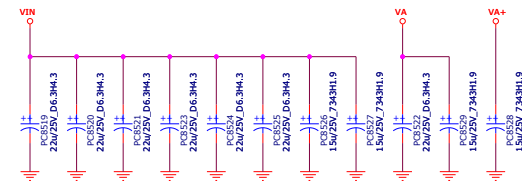
OVR-M GEN2



<https://vk.com/servicenotebook>




For ADP 200W

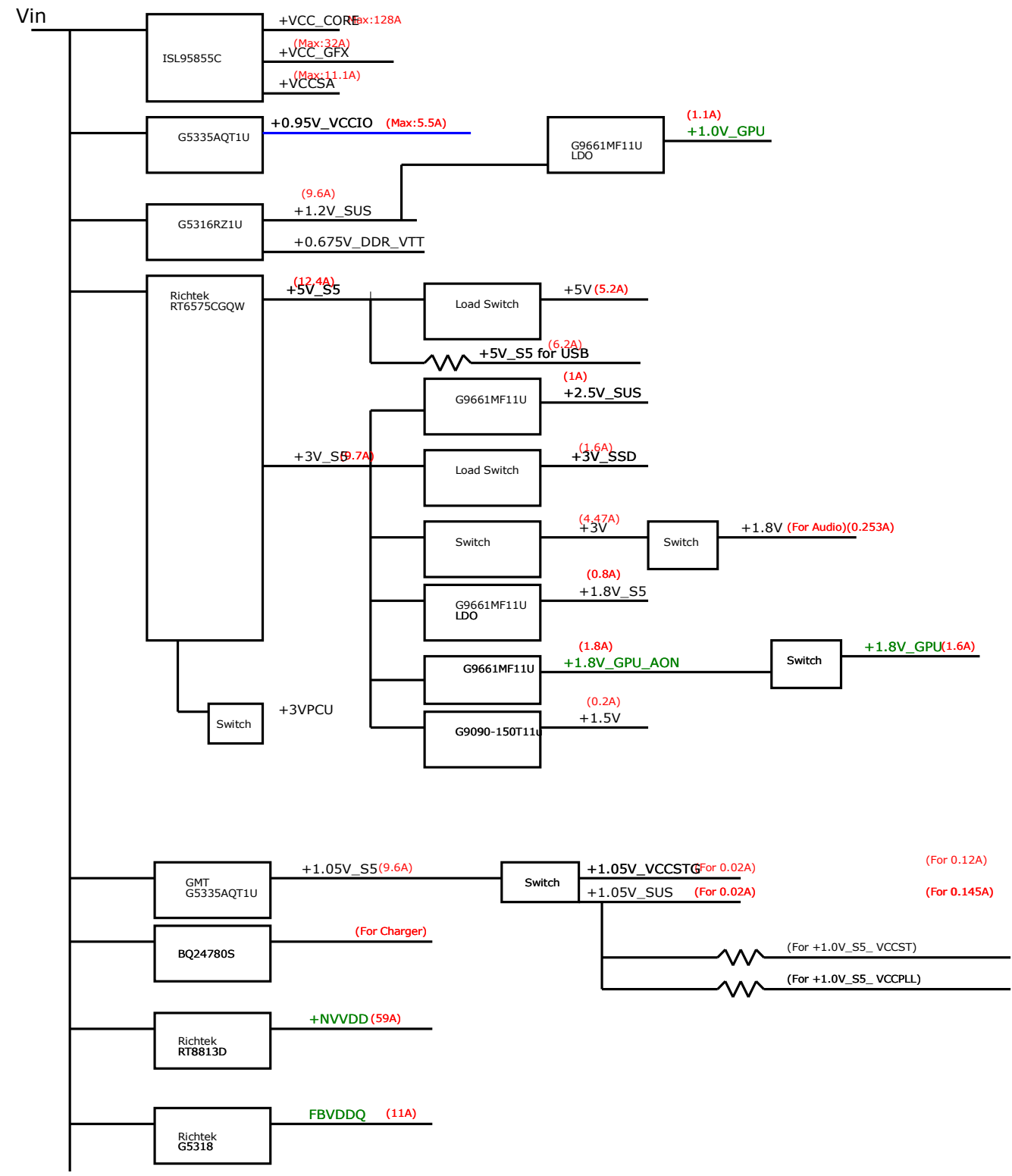


<https://vk.com/servicenotebook>

+12V for FAN Cancel

<https://vk.com/servicenotebook>

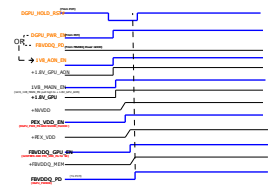
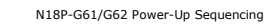
		Quanta Computer Inc.	
		PROJECT : BKXH	
Size	Document Number	Rev	
	12V Fan power	1A	
Date	Thursday, November 15, 2020	Sheet	59 of 63



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Diagram illustrating the structure of a linked list with three cells. Each cell is represented by a vertical red line (boundary) and a horizontal line (content area). The cells are connected by horizontal lines (pointers) from the bottom of one cell to the top of the next.


- Cell 1: Contains the text "55->50". Below this cell, the text "open cell" is written.
- Cell 2: Contains the text "50->53->50".
- Cell 3: Contains the text "50->54/55->50".



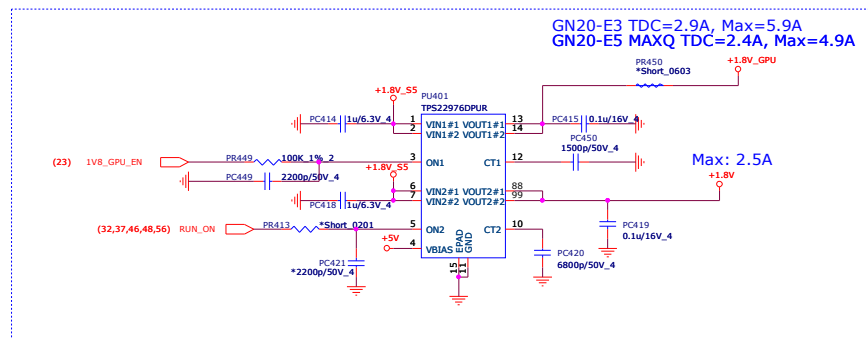
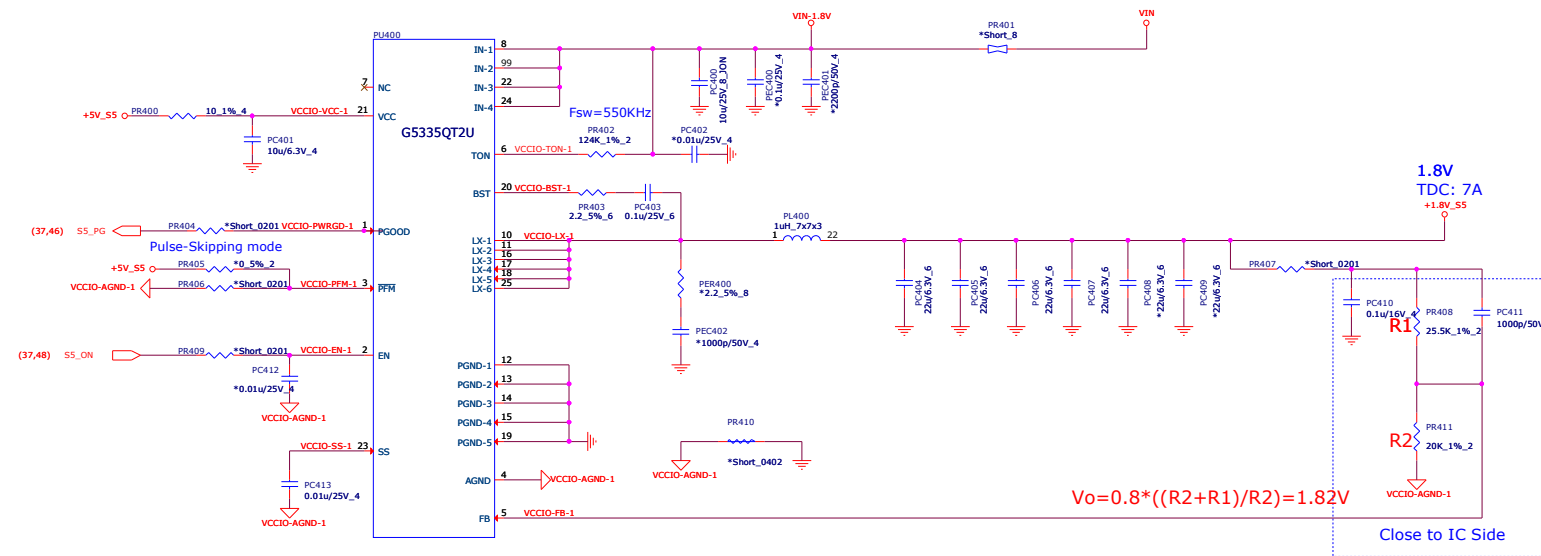
<https://vk.com/servicenotebook>

OS status	S0	S3		(Soft OFF)	(Soft OFF)	(Soft OFF)	(Soft OFF)	
H/W status	S0	S3		S4 (Win10 off) RTC wake Enable WOLAN Enable	S4 (Win10 off) RTC wake Disable WOLAN Disable	S5 (Fast Startup "v")	S5 (Fast Startup "x")	
RUN_ON	H	L		L	L	L	L	
+3V	H	L		L	L	L	L	
+5V	H	L		L	L	L	L	
+0.675V_DDR_VT	H	L		L	L	L	L	
+12V	H	L		L	L	L	L	
+3V_SSD/+3V_PCH_CARD/+1.5V	H	L		L	L	L	L	
+1.05V_VCCSTG	H	L		L	L	L	L	
+VCCSA	H	L		L	L	L	L	
+VCC_GFX	H	L		L	L	L	L	
+VCC_CORE	H	L		L	L	L	L	
+0.95V_VCCIO	H	L		L	L	L	L	
SUS_ON	H	H		L	L	L	L	
+1.05V_VCCPLL/+1.05V_VCCSTH	H	H		L	L	L	L	
+1.05V_SUS	H	H		L	L	L	L	
+1.2V_SUS	H	H		L	L	L	L	
SUS_ON_2.5V	H	H		L	L	L	L	
+2.5V_SUS	H	H		L	L	L	L	
S5_ON	H	H		HH	L	L	L	
+1.8V_S5	H	H		H	L	L	L	
+1.05V_S5	H	HH		H	L	L	L	
S5_ON	H	HH		HH	L	HH	L	
+3V_S5	H	H		H	L	H	L	
+5V_S5	H	H		H	L	H	L	

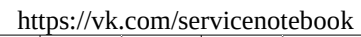
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		Quanta Computer Inc.	
		PROJECT :NJF	
Size	Document Number		Rev
	POWER MAP		1A
Date:	Thursday, November 19, 2020	Sheet	62 of 63

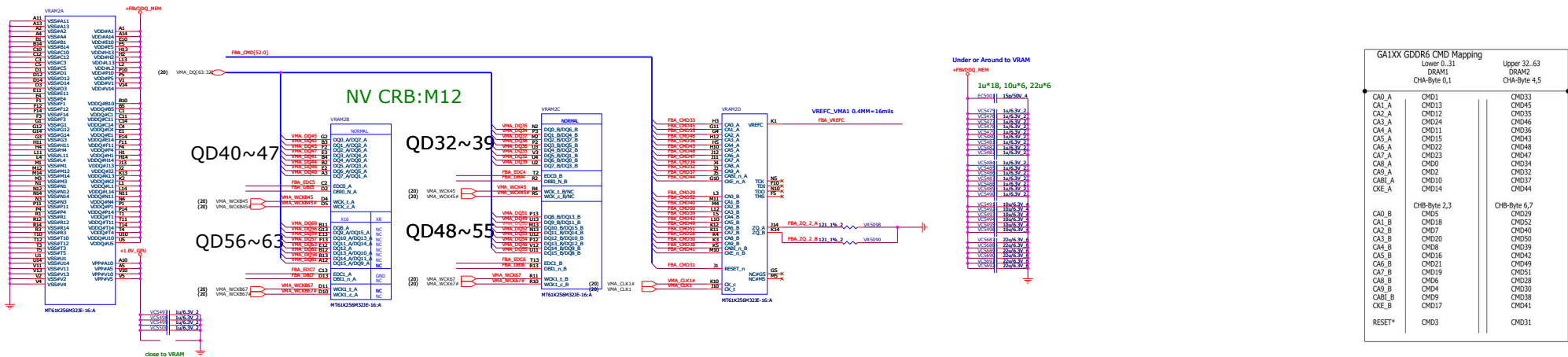
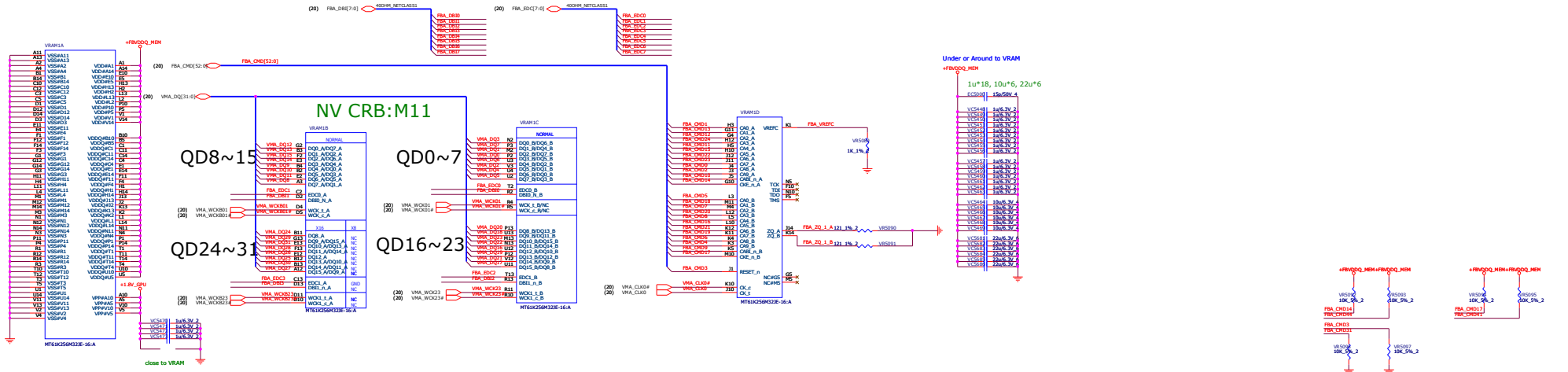
+1.8V_S5



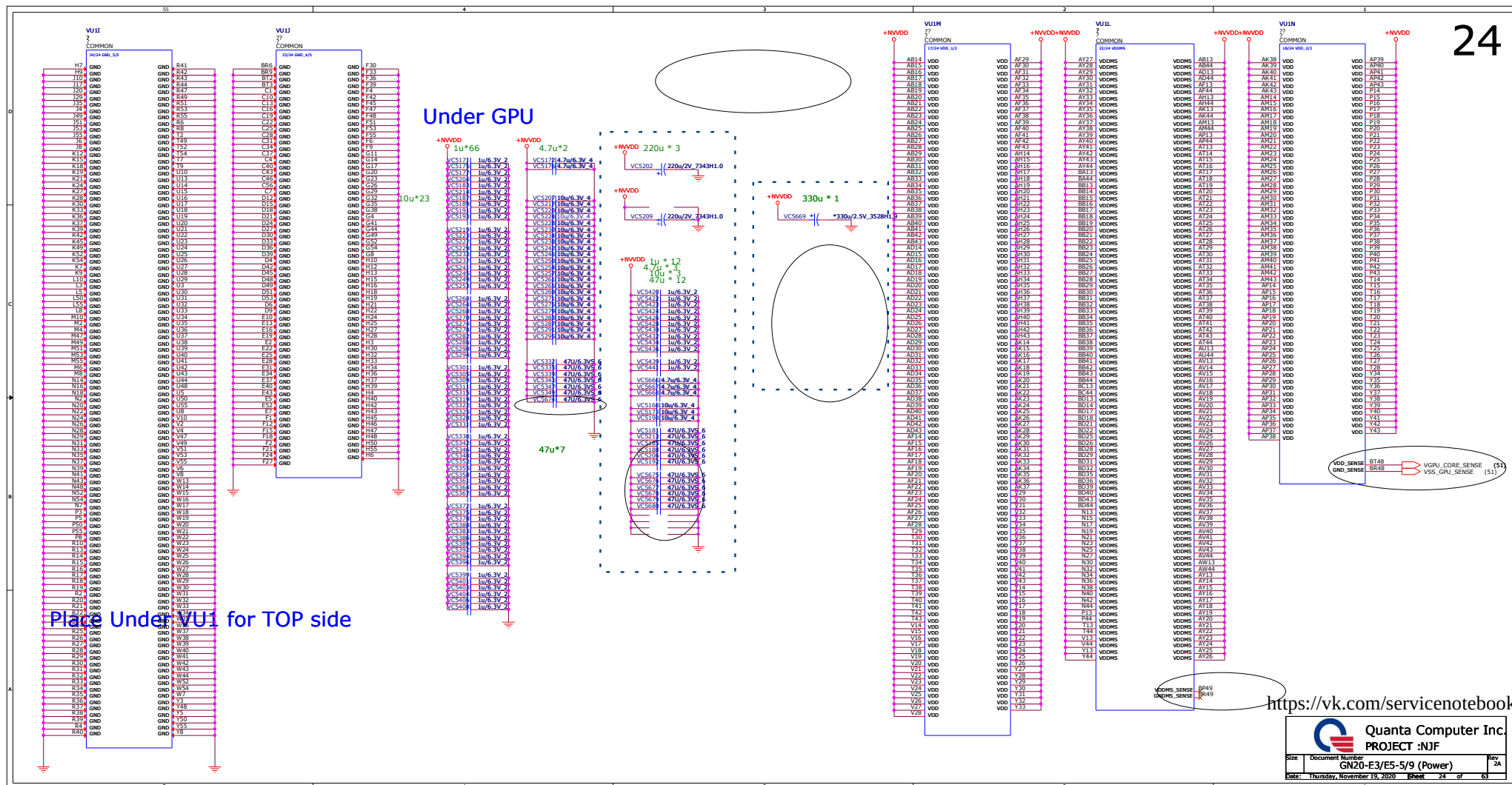
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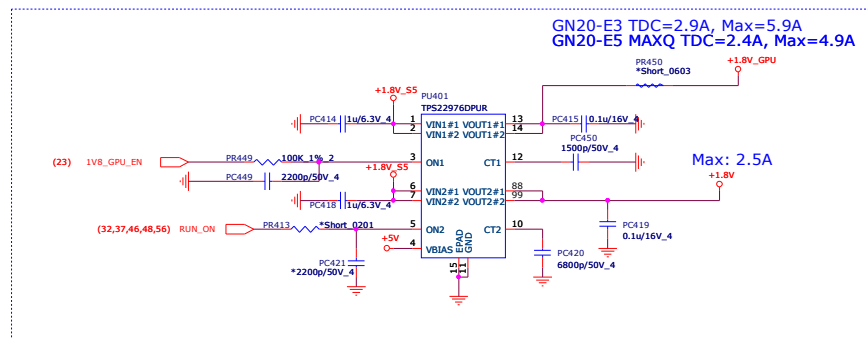
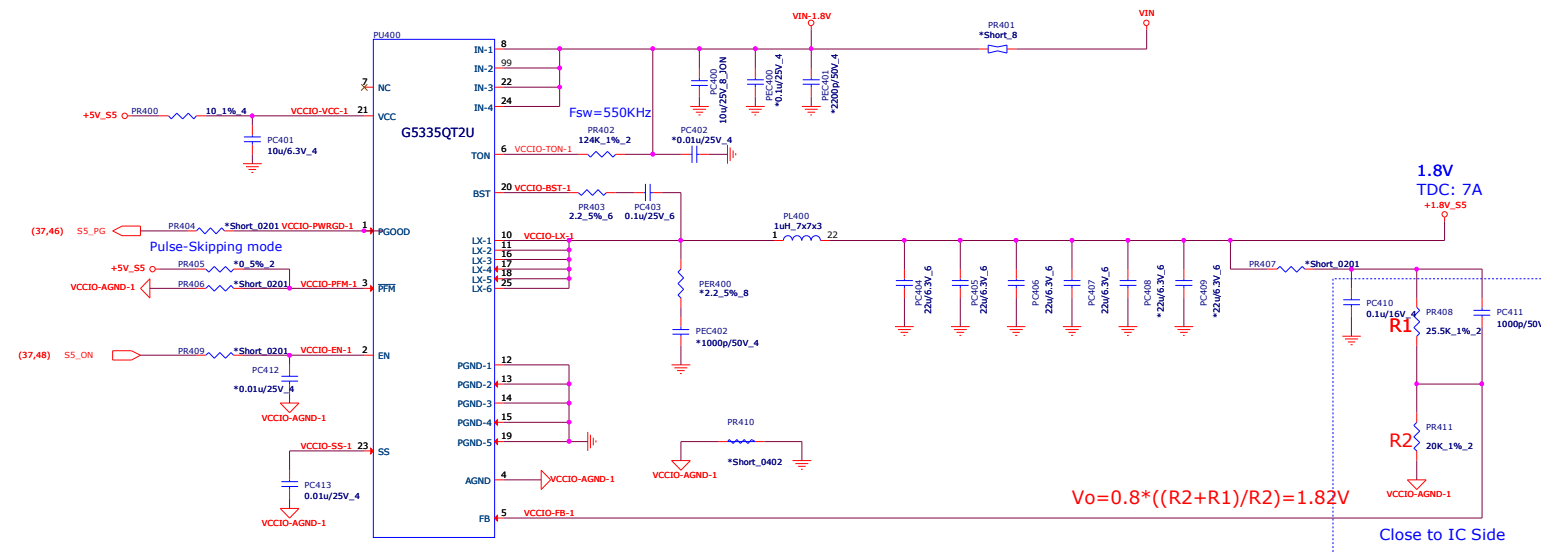




<https://vk.com/servicenotebook>



+1.8V_S5



<https://vk.com/servicenotebook>