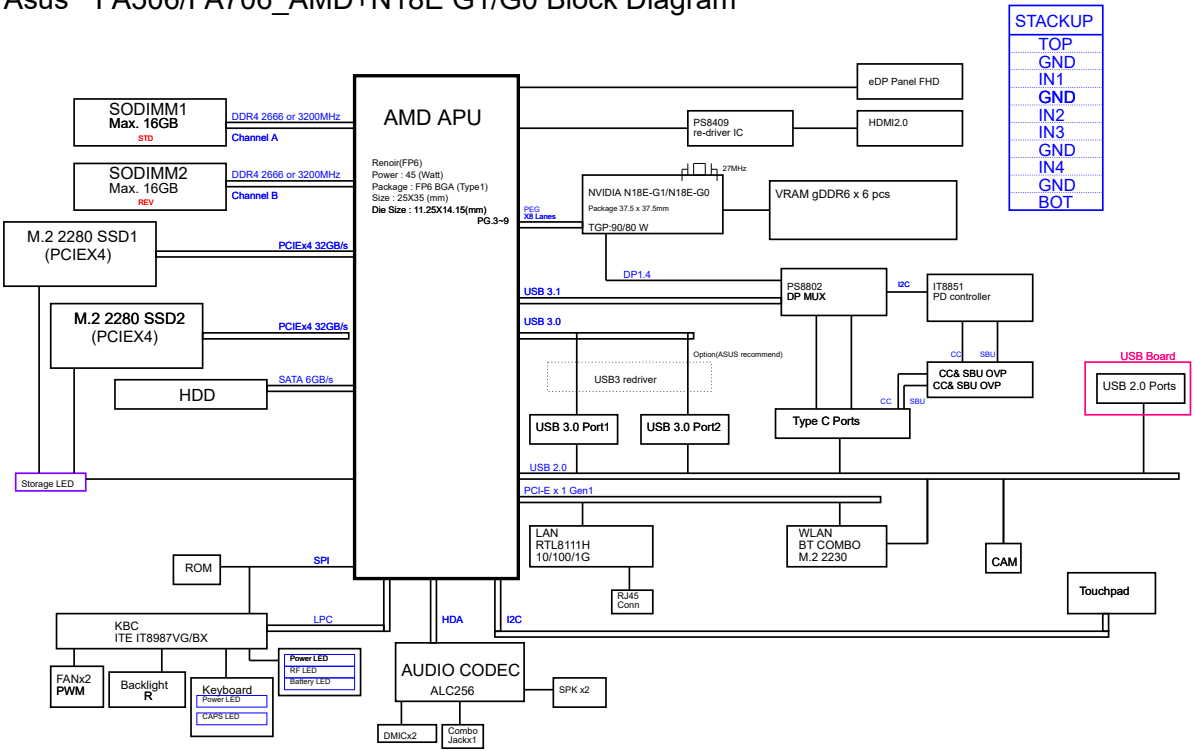
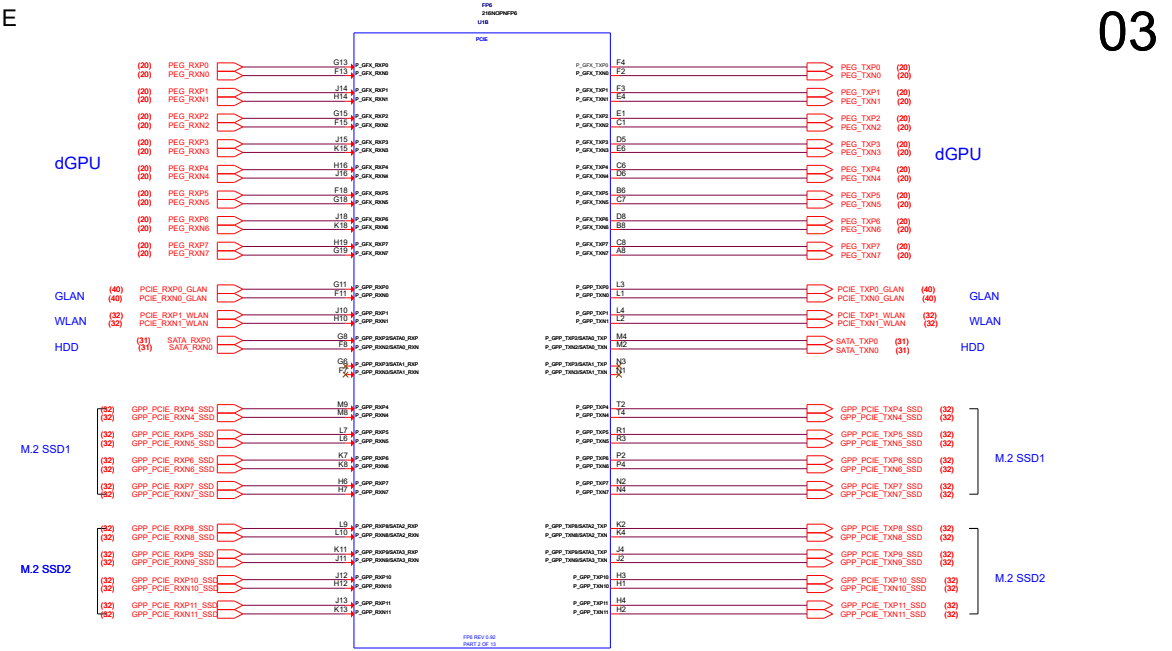
Asus " FA506/FA706_AMD+N18E G1/G0 Block Diagram



Quanta Computer Inc.
PROJECT : FA506/FA706
BLOCK DIAGRAM
Rev 1A
Date: Friday, December 04, 2019
Sheet 1 of 61

APU PCIE

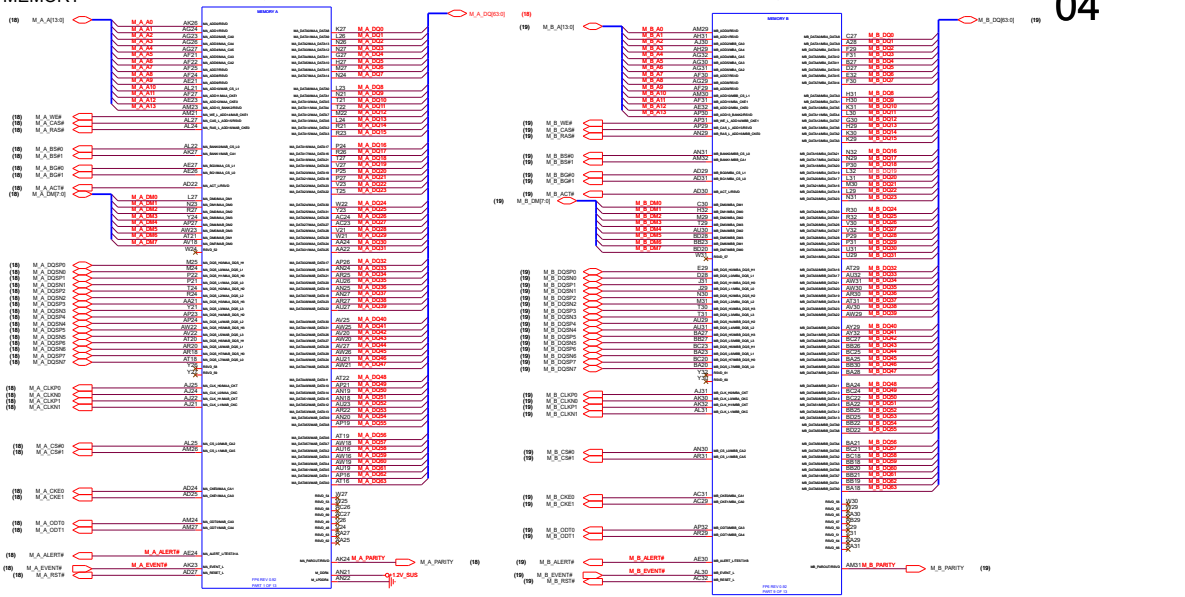
03



Quanta Computer Inc.		
PROJECT : FA506/FA706		
Size	Document Number: RR 1/7(PCIE/SATA)	Rev: 1A
Date: Friday, December 06, 2019	Sheet 3 of 60	

APU MEMORY

04



Quanta Computer Inc.
PROJECT : FA506/FA706

Size	Document Number	Rev
A	RR 2/7(MEM)	3A

Date: Friday, December 06, 2019 Sheet 4 of 45

ESD mount

PR01: C2 mount 33P

eDP Panel

HDMI

eDP

HDMI

PR12: R226,R227 change to 3.3K for HDMI DDC level

DMN5L06DWK-7
Gate Threshold Voltage :
Vgs(th) min 0.49V ~ Max 1.0V

APU THM

HDT+ Connector for Debug only

Can remove on MP

Close to HDT & No remove.

APU Serial VID

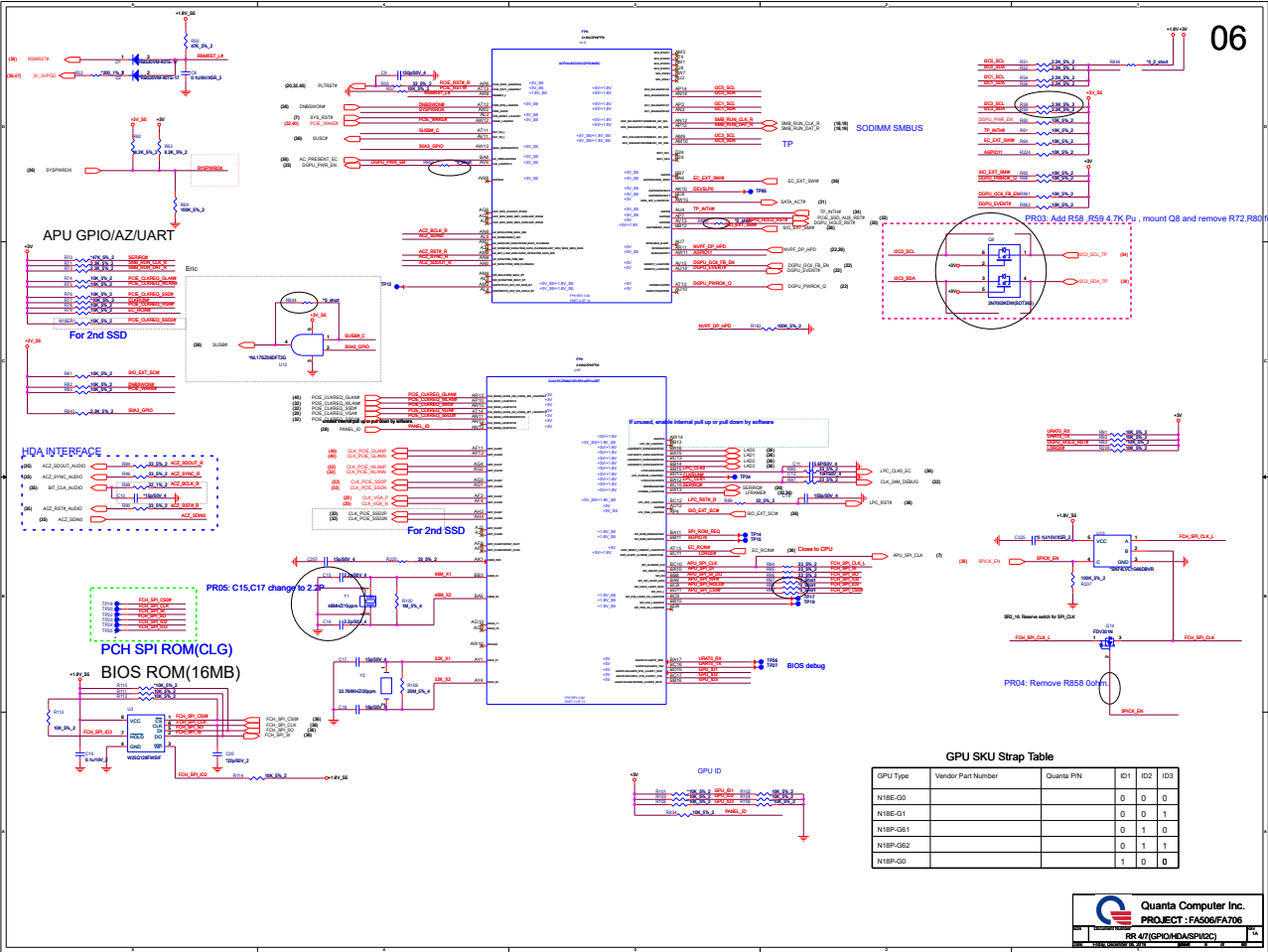
PR02: change to shortpad

Turning meet AMD SVID2 specification

Boot-VID code

SVC	SVD	VOLTAGE
0	0	1.1
0	1	1.0
1	0	0.9
1	1	0.8

Quanta Computer Inc.
PROJECT : FA506/FA706
RR 3/7(DIS/MISC)

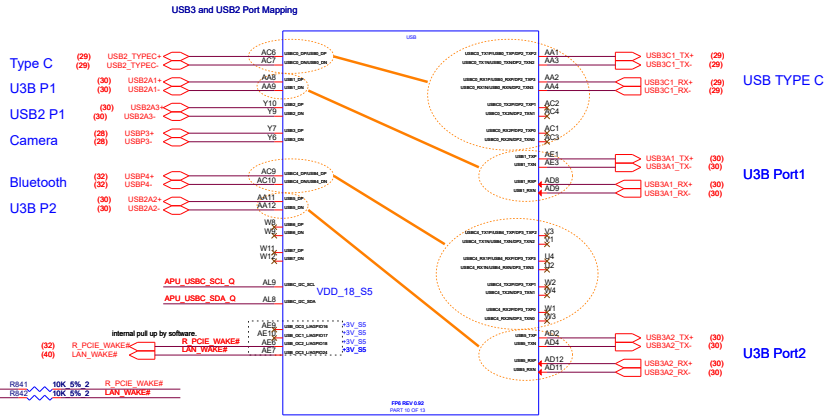


GPU SKU Strap Table

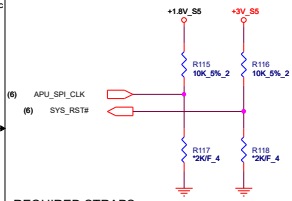
GPU Type	Vendor Part Number	Quanta P/N	ID1	ID2	ID3
N18E-G0			0	0	0
N18E-G1			0	0	1
N18P-G61			0	1	0
N18P-G62			0	1	1
N18P-G0			1	0	0

USB2 Port	Function
USB0	TYPE-C
USB1	**U3B PORT1**
USB2	USB2 P1
USB3	Camera
USB4	Bluetooth
USB5	**U3B PORT2**
USB6	
USB7	

USB3 and USB2 Port Mapping

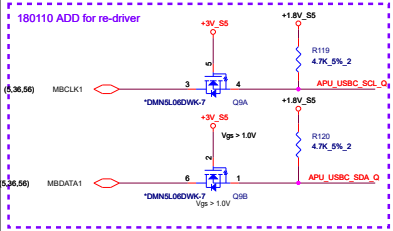


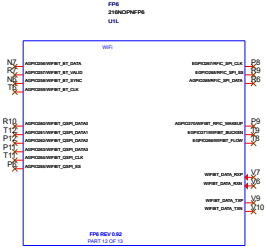
STRAPS PINS



REQUIRED STRAPS

	APU_SPI_CLK	SYS_RST# (Int Pull-Up)
PULL **HIGH**	Use 48Mhz crystal clock and generate both internal **and external clocks** DEFAULT	normal reset mode DEFAULT
PULL LOW	Use 100Mhz PCIE clock as reference clock and generate **internal clocks only**	short reset mode



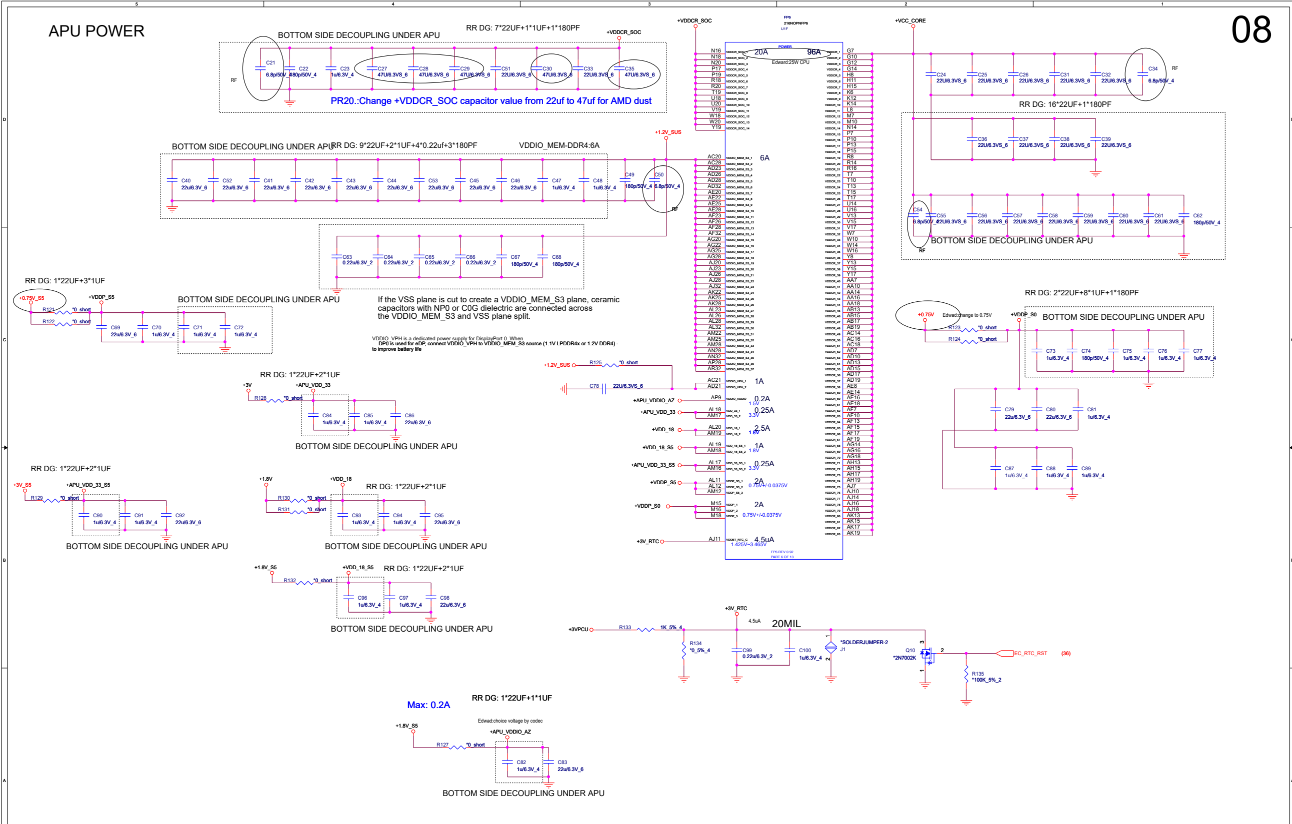


Quanta Computer Inc.
PROJECT : FA506/FA706

Size	Document Number	Rev
	RR 5/7(USB/STRAP)	1A

Date: Friday, December 06, 2019 Sheet 7 of 60

APU POWER


BOTTOM SIDE DECOUPLING UNDER APU
RR DG: 7*22UF+1*1UF+1*180PF
+VDDCR_SOC
PR20.:Change +VDDCR_SOC capacitor value from 22uf to 47uf for AMD dust
RR DG: 9*22UF+2*1UF+4*0.22uf+3*180PF
VDDIO_MEM-DDR4:6A
+1.2V_SUS
+VCC_CORE
RR DG: 16*22UF+1*180PF
Edward:25W CPU
20A
96A
6A
RR DG: 1*22UF+3*1UF
+0.75V_S5
+VDDP_S5
If the VSS plane is cut to create a VDDIO_MEM_S3 plane, ceramic capacitors with NP0 or C0G dielectric are connected across the VDDIO_MEM_S3 and VSS plane split.
VDDIO_VPH is a dedicated power supply for DisplayPort 0. When DP0 is used for eDP, connect VDDIO_VPH to VDDIO_MEM_S3 source (1.1V LPDDR4x or 1.2V DDR4) to improve battery life
RR DG: 2*22UF+8*1UF+1*180PF
+0.75V
Edwad:change to 0.75V
+VDDP_S0
RR DG: 1*22UF+2*1UF
+3V
+APU_VDD_33
+APU_VDDIO_AZ
+VDD_18
+VDD_18_S5
+APU_VDD_33_S5
+VDDP_S5
+VDDP_S0
+3V_RTC
RR DG: 1*22UF+2*1UF
+3V_S5
+APU_VDD_33_S5
+1.8V
+1.8V_S5
20MIL
+3VPCU
*SOLDERJUMPER-2
Q10
*2N7002K
EC_RTC_RST
(36)
Max: 0.2A
RR DG: 1*22UF+1*1UF
Edwad:choice voltage by codec

Quanta Computer Inc.		
PROJECT : FA506/FA706		
Size	Document Number: RR 6/7(POWER)	Rev 1A
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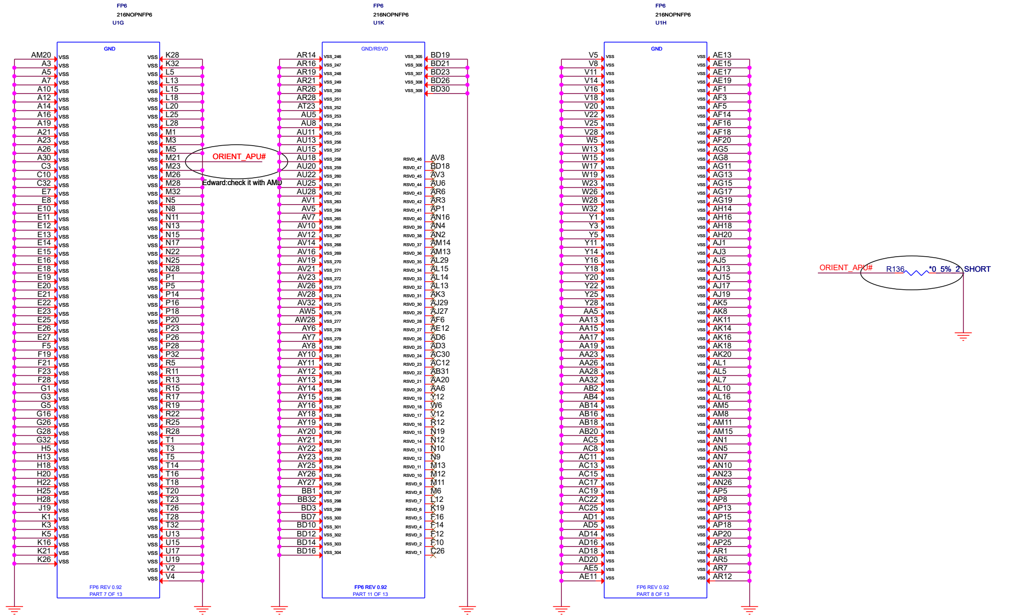
APU GND

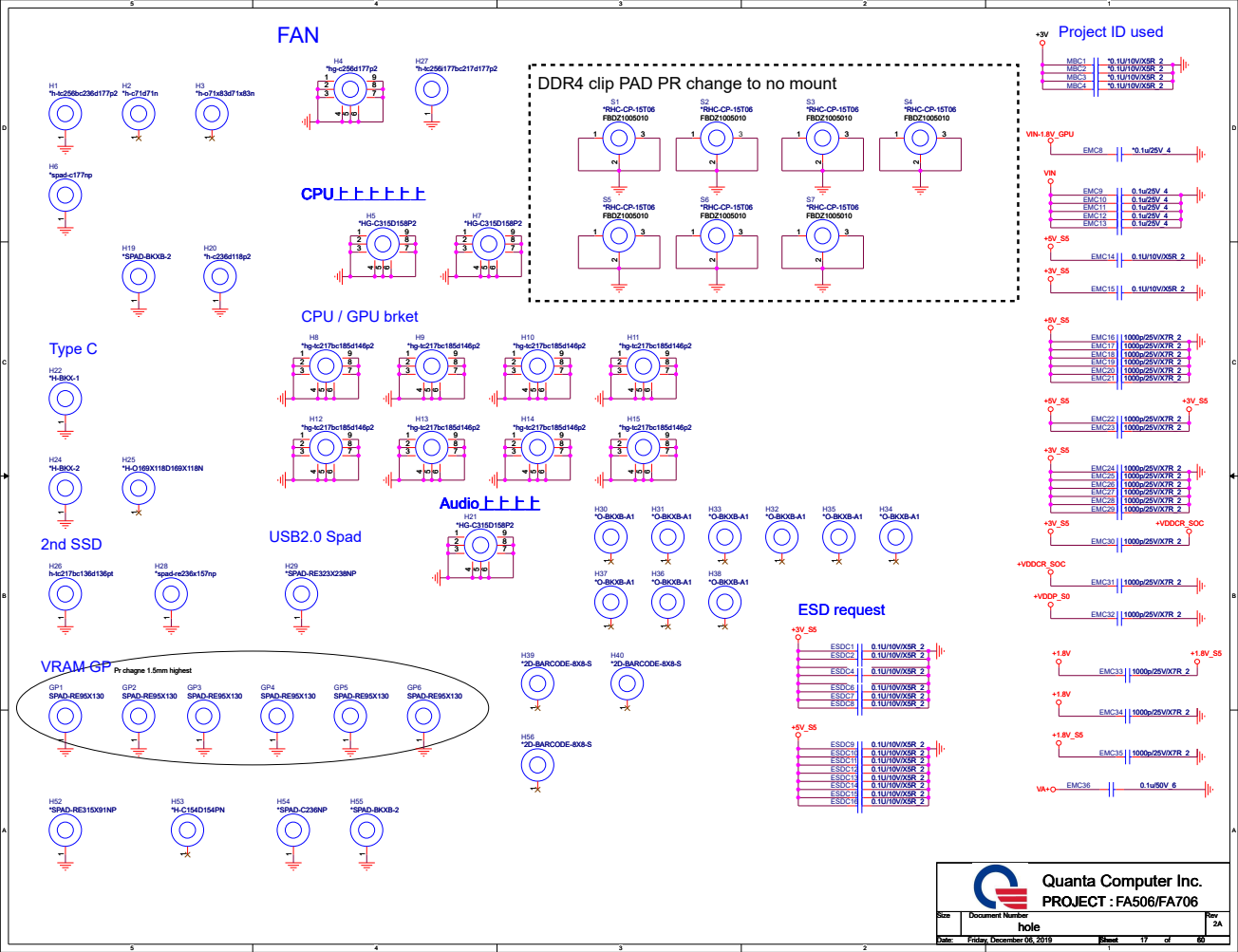


Quanta Computer Inc.

PROJECT : FA506/FA706

Size	Document Number	Rev
	RR 7/7(GND/RSVD)	1A

Date: Friday, December 06, 2019 Sheet 9 of 60


FAN
H4
*hg-c256d177p2
H27
*h-c256i177bc217d177p2
H1
*h-tc256bc236d177p2
H2
*h-c71d71n
H3
*h-o71x83d71x83n
H6
*spad-c177np
CPU
H5
*HG-C315D158P2
H7
*HG-C315D158P2
H19
*SPAD-BKXB-2
H20
*h-c236d118p2
DDR4 clip PAD PR change to no mount
S1
*RHC-CP-15T06
FBDZ1005010
S2
*RHC-CP-15T06
FBDZ1005010
S3
*RHC-CP-15T06
FBDZ1005010
S4
*RHC-CP-15T06
FBDZ1005010
S5
*RHC-CP-15T06
FBDZ1005010
S6
*RHC-CP-15T06
FBDZ1005010
S7
*RHC-CP-15T06
FBDZ1005010
CPU / GPU brket
H8
*hg-tc217bc185d146p2
H9
*hg-tc217bc185d146p2
H10
*hg-tc217bc185d146p2
H11
*hg-tc217bc185d146p2
H12
*hg-tc217bc185d146p2
H13
*hg-tc217bc185d146p2
H14
*hg-tc217bc185d146p2
H15
*hg-tc217bc185d146p2
Type C
H22
*H-BKX-1
H24
*H-BKX-2
H25
*H-O169X118D169X118N
Audio
H21
*HG-C315D158P2
H30
*O-BKXB-A1
H31
*O-BKXB-A1
H33
*O-BKXB-A1
H32
*O-BKXB-A1
H35
*O-BKXB-A1
H34
*O-BKXB-A1
H37
*O-BKXB-A1
H36
*O-BKXB-A1
H38
*O-BKXB-A1
2nd SSD
H26
h-tc217bc136d136pt
H28
*spad-re236x157np
USB2.0 Spad
H29
*SPAD-RE323X238NP
VRAM GP
Pr chagne 1.5mm highest
GP1
SPAD-RE95X130
GP2
SPAD-RE95X130
GP3
SPAD-RE95X130
GP4
SPAD-RE95X130
GP5
SPAD-RE95X130
GP6
SPAD-RE95X130
H39
*2D-BARCODE-8X8-S
H40
*2D-BARCODE-8X8-S
H56
*2D-BARCODE-8X8-S
ESD request
H52
*SPAD-RE315X91NP
H53
*H-C154D154PN
H54
*SPAD-C236NP
H55
*SPAD-BKXB-2
Project ID used
+3V
MBC1 *0.1U/10V/X5R 2
MBC2 *0.1U/10V/X5R 2
MBC3 *0.1U/10V/X5R 2
MBC4 *0.1U/10V/X5R 2
VIN-1.8V_GPU
EMC8 *0.1u/25V 4
VIN
EMC9 0.1u/25V 4
EMC10 0.1u/25V 4
EMC11 0.1u/25V 4
EMC12 0.1u/25V 4
EMC13 0.1u/25V 4
+5V_S5
EMC14 0.1U/10V/X5R 2
+3V_S5
EMC15 0.1U/10V/X5R 2
+5V_S5
EMC16 1000p/25V/X7R 2
EMC17 1000p/25V/X7R 2
EMC18 1000p/25V/X7R 2
EMC19 1000p/25V/X7R 2
EMC20 1000p/25V/X7R 2
EMC21 1000p/25V/X7R 2
+5V_S5
+3V_S5
EMC22 1000p/25V/X7R 2
EMC23 1000p/25V/X7R 2
+3V_S5
EMC24 1000p/25V/X7R 2
EMC25 1000p/25V/X7R 2
EMC26 1000p/25V/X7R 2
EMC27 1000p/25V/X7R 2
EMC28 1000p/25V/X7R 2
EMC29 1000p/25V/X7R 2
+3V_S5
+VDDCR_SOC
EMC30 1000p/25V/X7R 2
+VDDCR_SOC
EMC31 1000p/25V/X7R 2
+VDDP_S0
EMC32 1000p/25V/X7R 2
+3V_S5
ESDC1 0.1U/10V/X5R 2
ESDC2 0.1U/10V/X5R 2
ESDC4 0.1U/10V/X5R 2
ESDC6 0.1U/10V/X5R 2
ESDC7 0.1U/10V/X5R 2
ESDC8 0.1U/10V/X5R 2
+5V_S5
ESDC9 0.1U/10V/X5R 2
ESDC10 0.1U/10V/X5R 2
ESDC11 0.1U/10V/X5R 2
ESDC12 0.1U/10V/X5R 2
ESDC13 0.1U/10V/X5R 2
ESDC14 0.1U/10V/X5R 2
ESDC15 0.1U/10V/X5R 2
ESDC16 0.1U/10V/X5R 2
+1.8V
+1.8V_S5
EMC33 1000p/25V/X7R 2
+1.8V
EMC34 1000p/25V/X7R 2
+1.8V_S5
EMC35 1000p/25V/X7R 2
VA+
EMC36 0.1u/50V 6
Quanta Computer Inc.
PROJECT : FA506/FA706
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Rev
2A
Date: Friday, December 06, 2019
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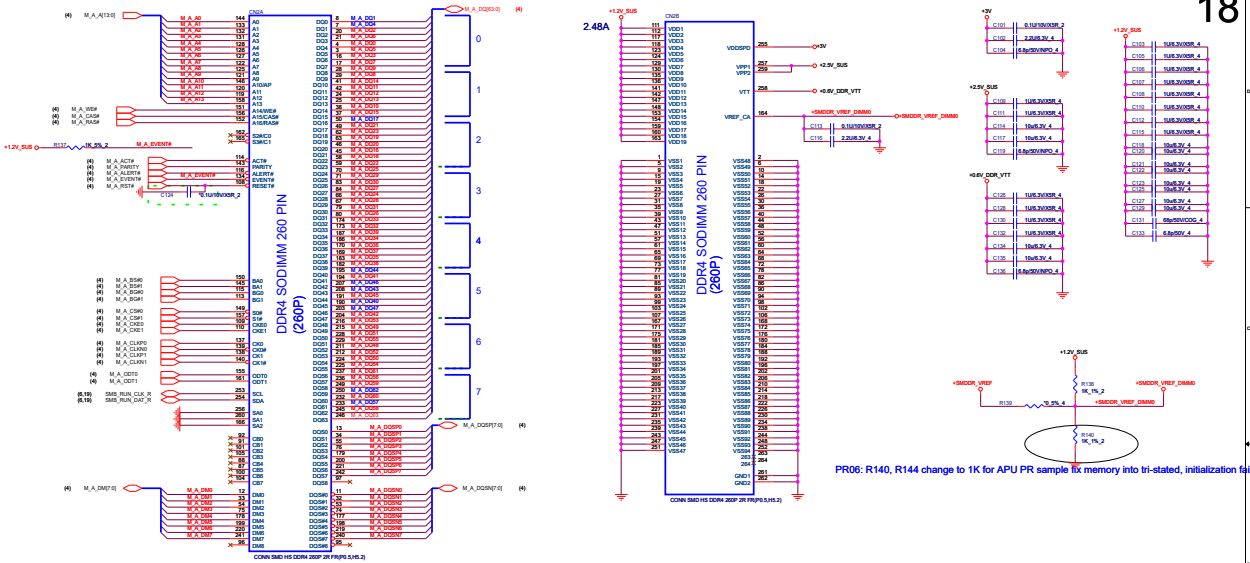
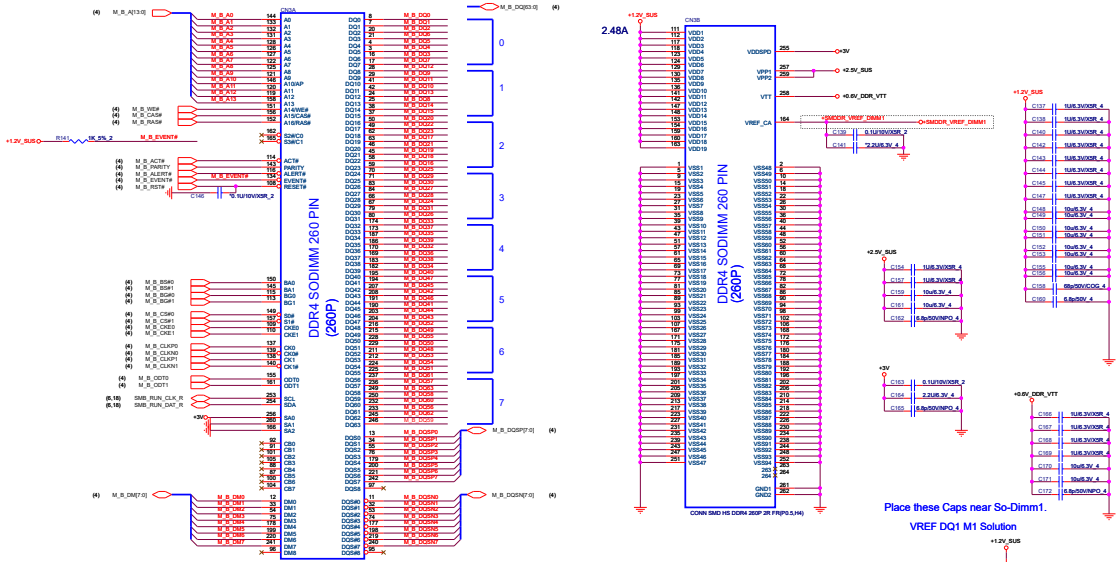
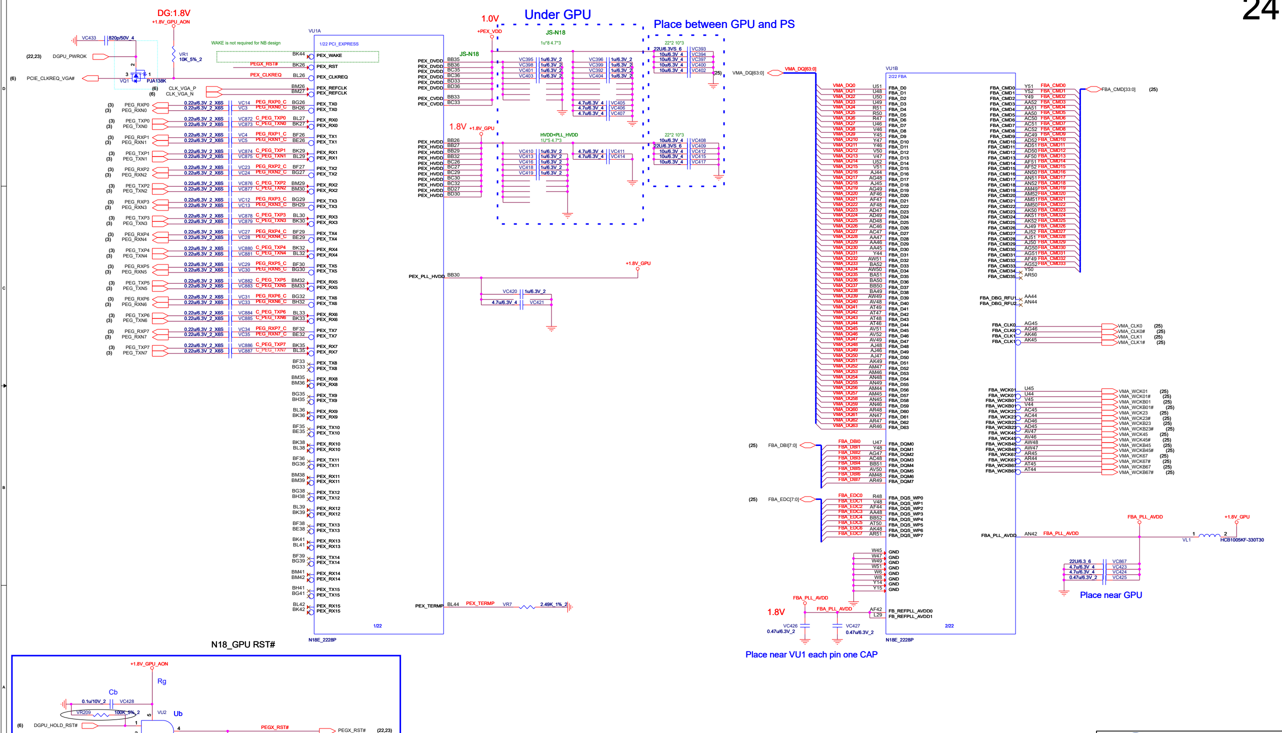


Quanta Computer Inc.	
PROJECT : FA506/FA706	
Size	Document Number: DDR4-CHA — Rev: 2A
Date: Friday, December 28, 2018	Sheet 18 of 60



Quanta Computer Inc. PROJECT : FA506/FA706			
Size	Document Number		Rev
	DDR4 -CHB		2A
Date: Friday, December 06, 2019	Sheet 19 of 60		



Quanta Computer Inc.

PROJECT : FA506/FA706

Size | Document Number: N18E-GX-1/9 (PCIE) | Rev: 2A

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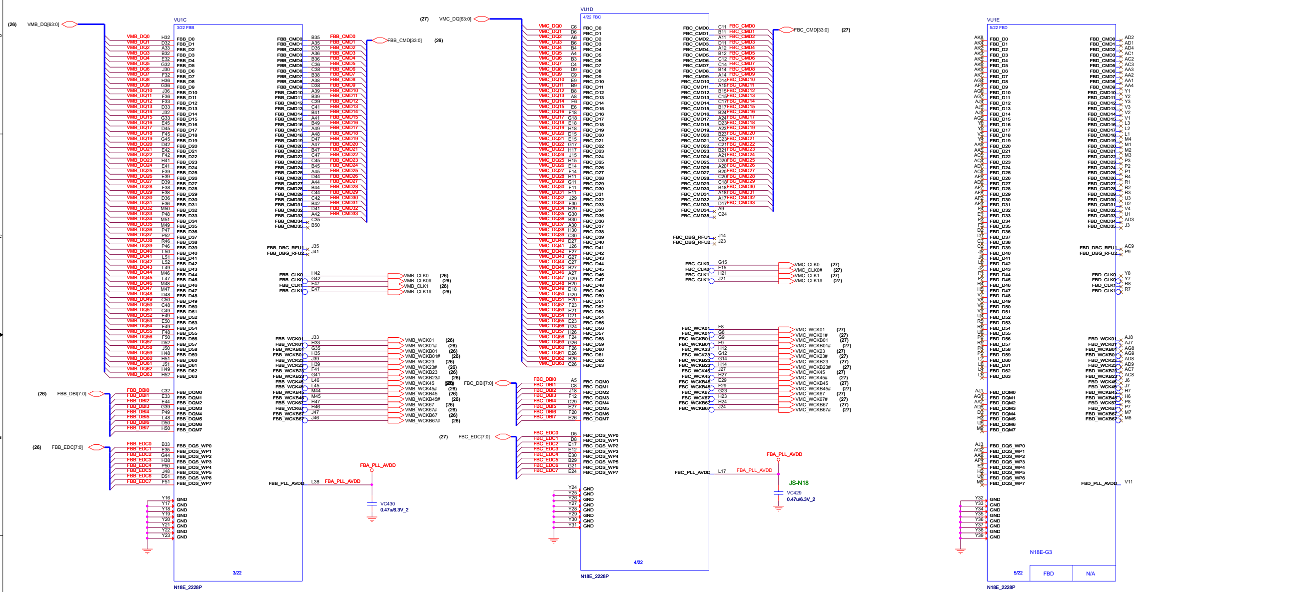
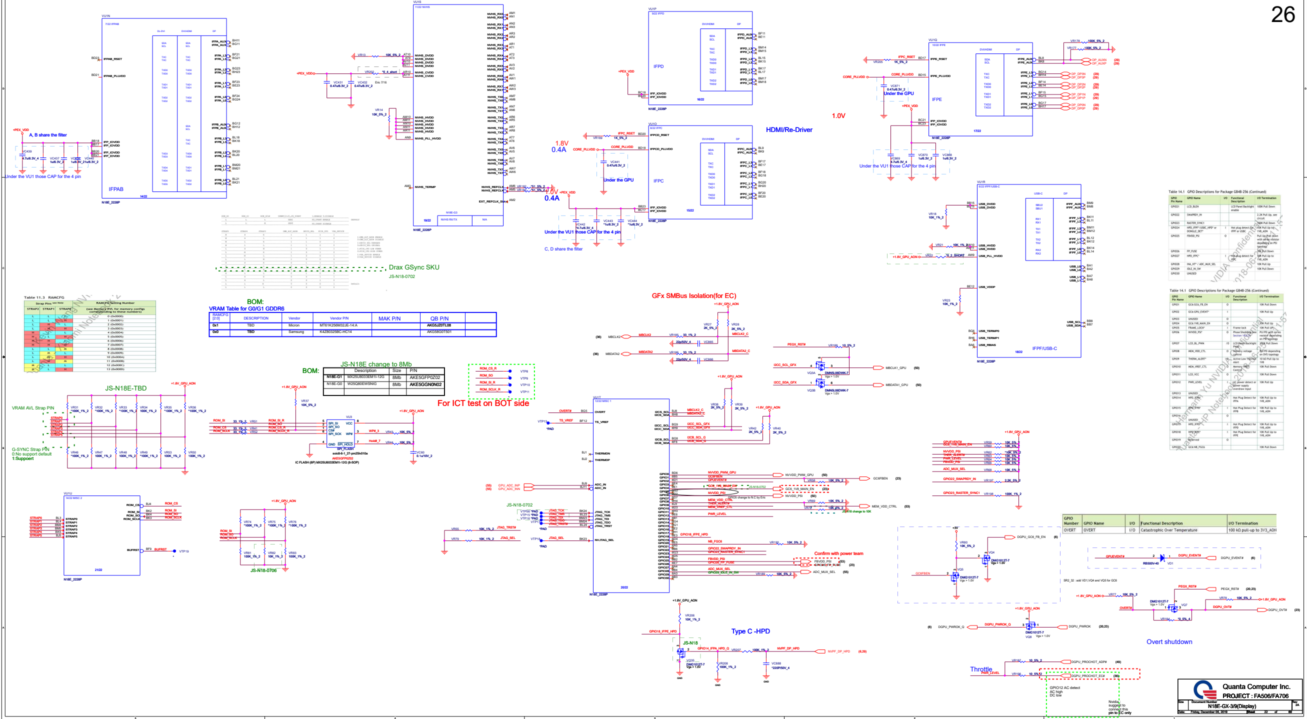


Quanta Computer Inc.

PROJECT : FA506/FA706

Size	Document Number	Rev
	N18E-GX-2/9 (Memory)	2A
Date: Friday, December 06, 2019	Sheet 21 of 60	



BOM:

VRAM Table for G0/G1 GDDR6

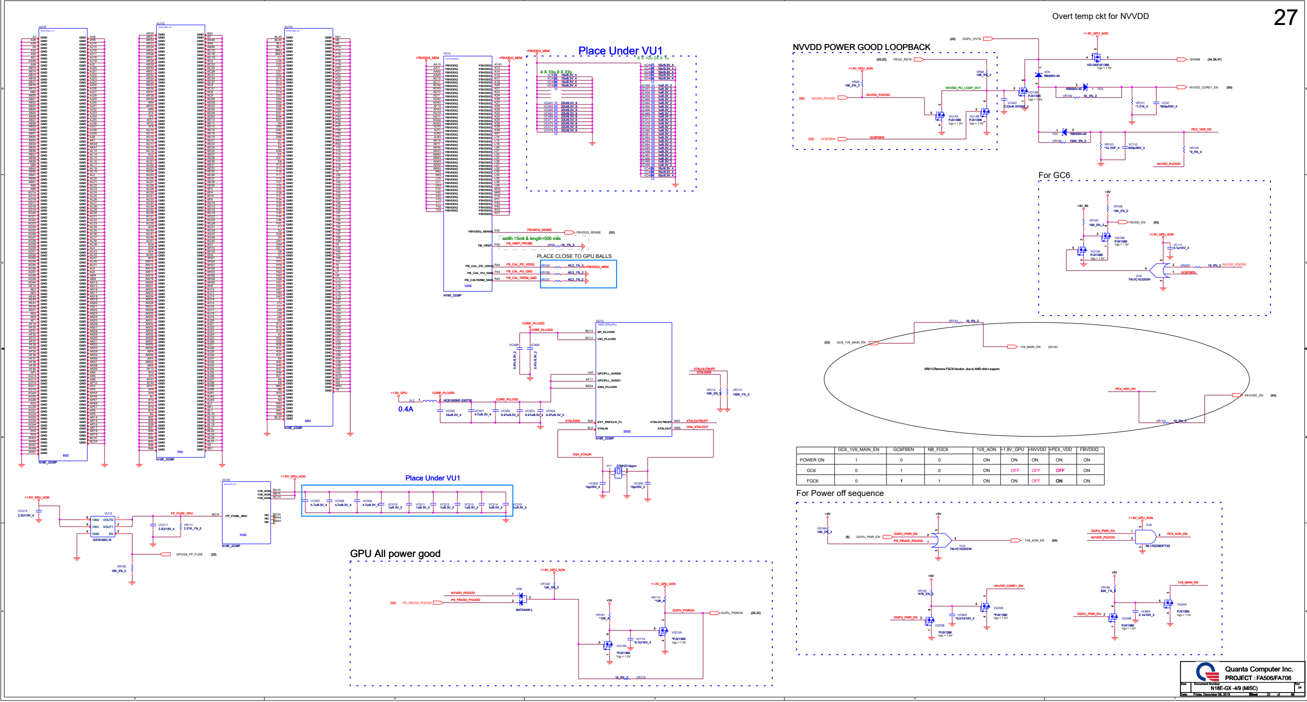
RAMCFG [2:0]	DESCRIPTION	Vendor	Vendor P/N	MAK P/N	QB P/N	
0x1	TBD	Micron	MT61K256M32JE-14:A		AKG5JZ0TL08	
0x0	TBD	Samsung	K4Z80325BC-HC14		AKG58G0T501	

JS-N18E change to 8Mb

BOM:

	Description	Size	P/N
N18E-G1	MX25U8033EM1I-12G	8Mb	AKE5GFP0Z02
N18E-G0	W25Q80EWSNIG	8Mb	AKE5GGN0N02

GPIO Number	GPIO Name	I/O	Functional Description	I/O Termination
OVERT	OVERT	I/O	Catastrophic Over Temperature	100 kΩ pull-up to 3V3_AON



	GC6_1V8_MAIN_EN	GC6FBEN	NB_FGC6	1V8_AON	+1.8V_GPU	+NVVDD	+PEX_VDD	FBVDDQ
POWER ON	1	0	0	ON	ON	ON	ON	ON
GC6	0	1	0	ON	OFF	OFF	OFF	ON
FGC6	0	1	1	ON	ON	OFF	ON	ON

Quanta Computer Inc.
PROJECT : FA506/FA706

Size	Document Number	Rev
	N18E-GX -4/9 (MISC)	2A

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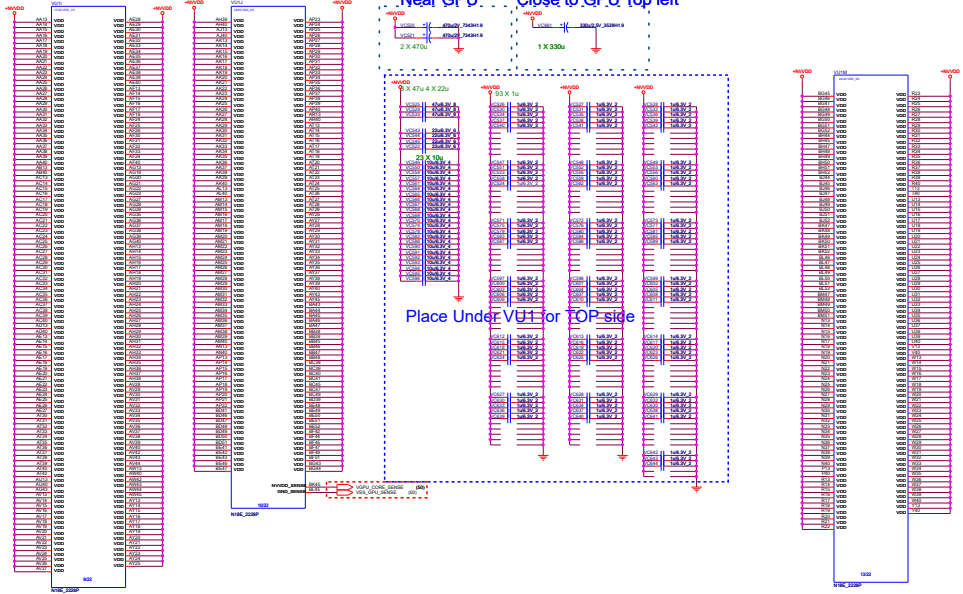
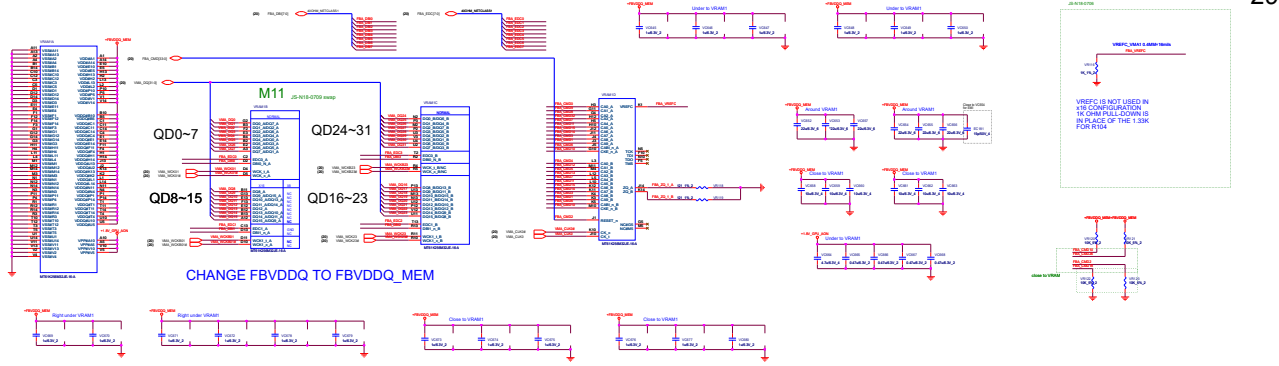
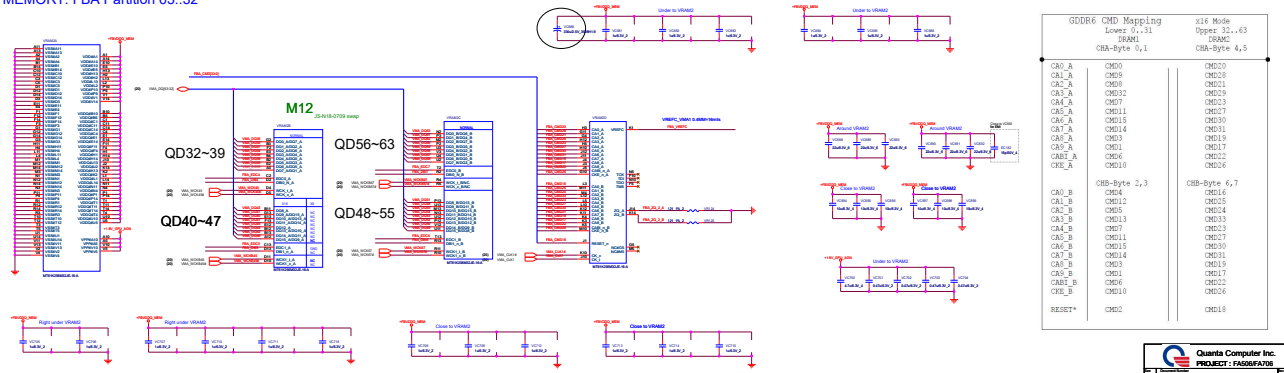

Near GPU
Close to GPU Top left
2 X 470u
1 X 330u
5 X 47u 4 X 22u
93 X 1u
23 X 10u
Place Under VU1 for TOP side

MEMORY: FBA Partition 31..0

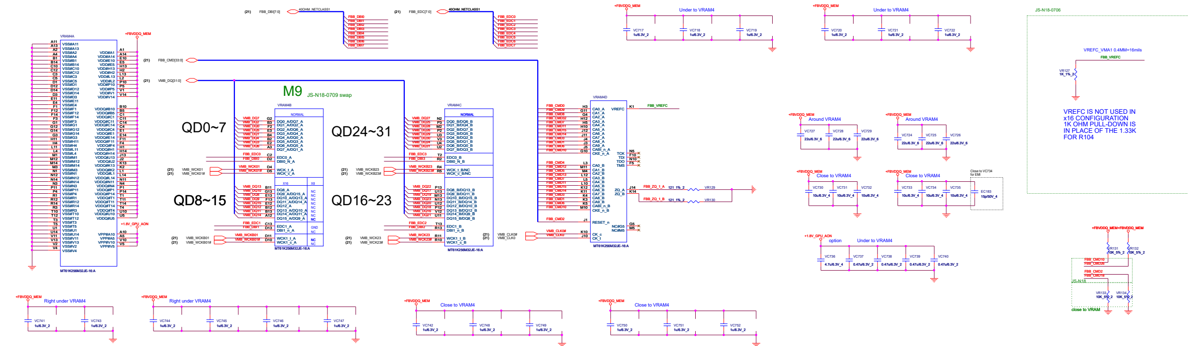


MEMORY: FBA Partition 63..32

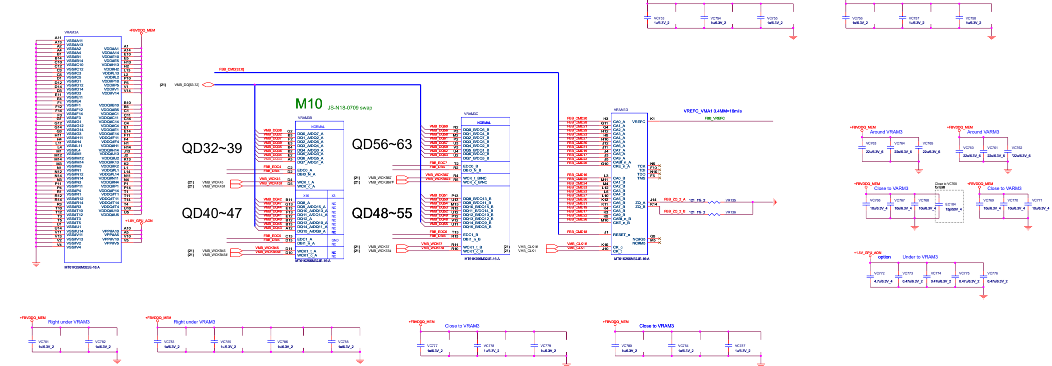


GDDR6 CMD Mapping		x16 Mode
	Lower 0..31	Upper 32..63
	DRAM1	DRAM2
	CHA-Byte 0,1	CHA-Byte 4,5
CA0_A	CMD0	CMD20
CA1_A	CMD9	CMD28
CA2_A	CMD8	CMD21
CA3_A	CMD32	CMD29
CA4_A	CMD7	CMD23
CA5_A	CMD11	CMD27
CA6_A	CMD15	CMD30
CA7_A	CMD14	CMD31
CA8_A	CMD3	CMD19
CA9_A	CMD1	CMD17
CABI_A	CMD6	CMD22
CKE_A	CMD10	CMD26
	CHB-Byte 2,3	CHB-Byte 6,7
CA0_B	CMD4	CMD16
CA1_B	CMD12	CMD25
CA2_B	CMD5	CMD24
CA3_B	CMD13	CMD33
CA4_B	CMD7	CMD23
CA5_B	CMD11	CMD27
CA6_B	CMD15	CMD30
CA7_B	CMD14	CMD31
CA8_B	CMD3	CMD19
CA9_B	CMD1	CMD17
CABI_B	CMD6	CMD22
CKE_B	CMD10	CMD26
RESET*	CMD2	CMD18

MEMORY: FBB Partition 31..0

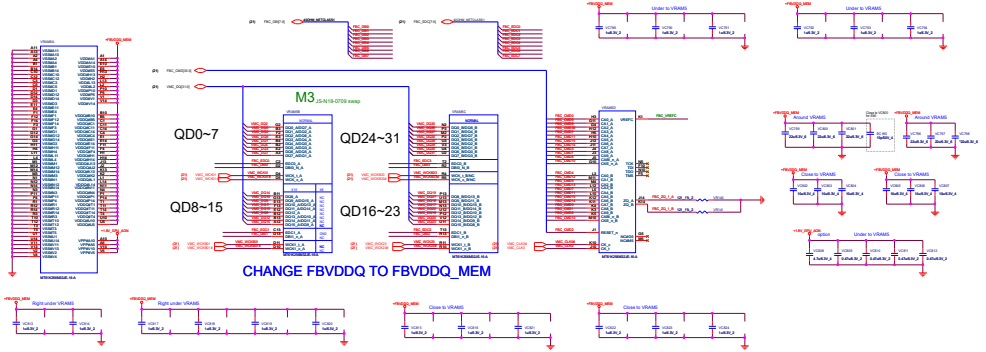


MEMORY: FBB Partition 63..32

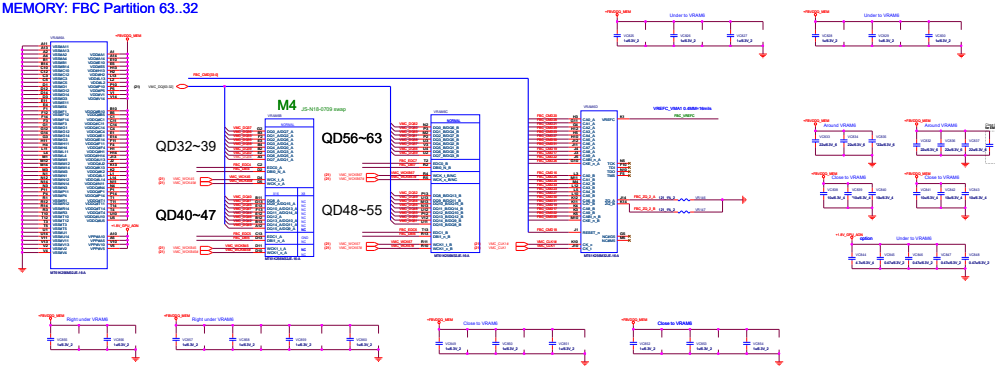


GDDR6 CMD Mapping	Lower 0..31 DRAM1 CHA-Byte 0,1	x16 Mode Upper 32..63 DRAM2 CHA-Byte 4,5
CA0_A	CMD0	CMD20
CA1_A	CMD9	CMD28
CA2_A	CMD8	CMD21
CA3_A	CMD32	CMD29
CA4_A	CMD7	CMD23
CA5_A	CMD11	CMD27
CA6_A	CMD15	CMD30
CA7_A	CMD14	CMD31
CA8_A	CMD3	CMD19
CA9_A	CMD1	CMD17
CABI_A	CMD6	CMD22
CKE_A	CMD10	CMD26
	CHB-Byte 2,3	CHB-Byte 6,7
CA0_B	CMD4	CMD16
CA1_B	CMD12	CMD25
CA2_B	CMD5	CMD24
CA3_B	CMD13	CMD33
CA4_B	CMD7	CMD23
CA5_B	CMD11	CMD27
CA6_B	CMD15	CMD30
CA7_B	CMD14	CMD31
CA8_B	CMD3	CMD19
CA9_B	CMD1	CMD17
CABI_B	CMD6	CMD22
CKE_B	CMD10	CMD26
RESET*	CMD2	CMD18

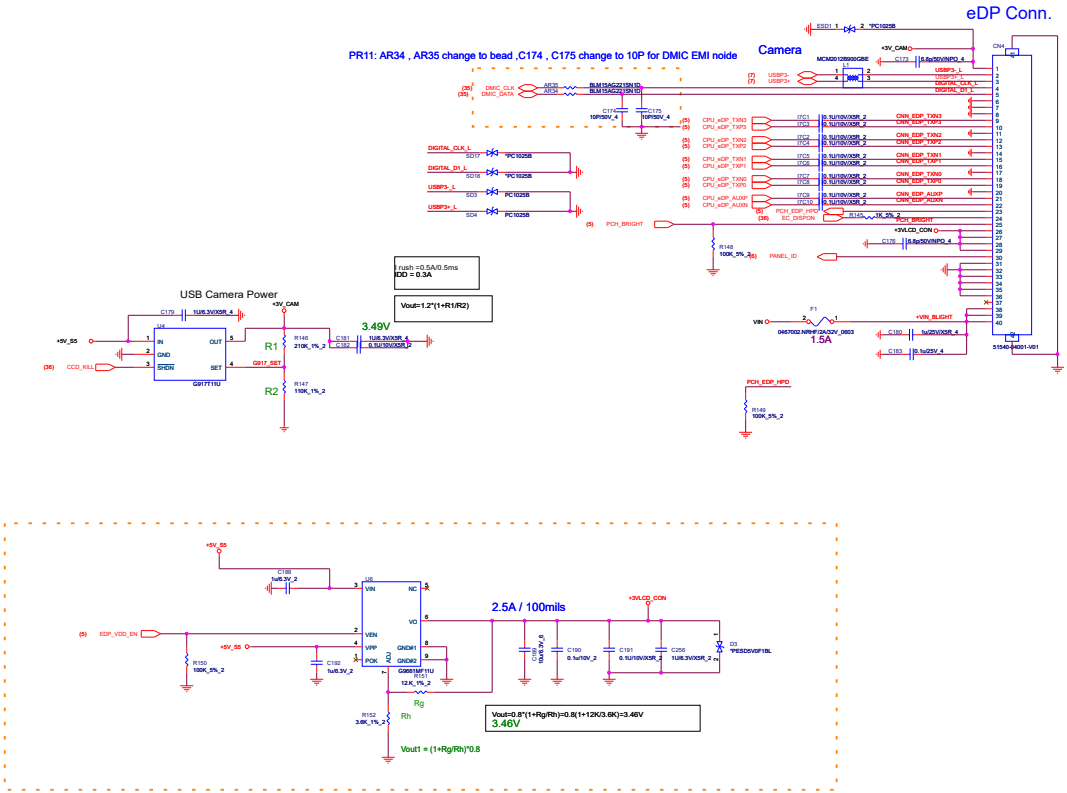
MEMORY: FBC Partition 31..0

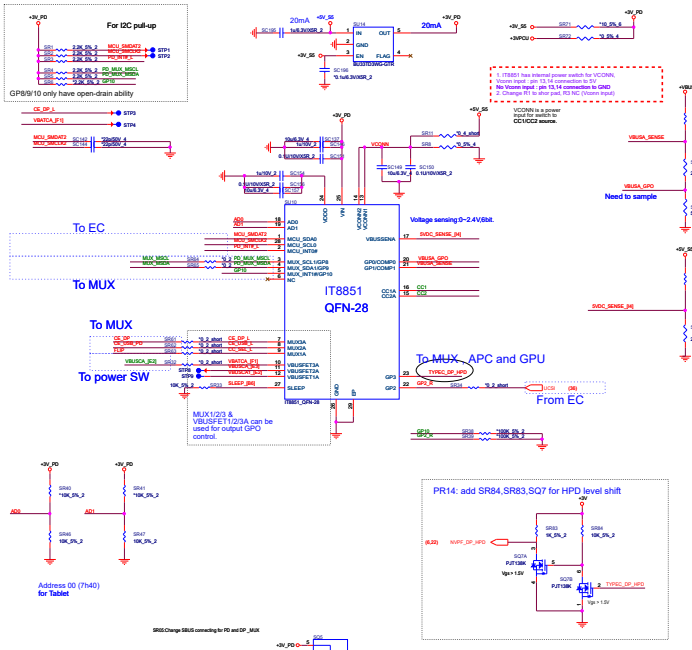


MEMORY: FBC Partition 63..32



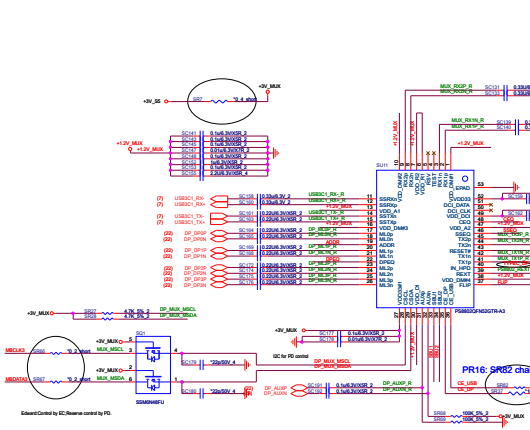
GDDR6 CMD Mapping		x16 Mode
	Lower 0..31	Upper 32..63
	DRAM1	DRAMC
	CHA-Byte 0,1	CHA-Byte 4,5
CA0_A	CMD0	CMD20
CA1_A	CMD9	CMD28
CA2_A	CMD8	CMD21
CA3_A	CMD32	CMD29
CA4_A	CMD7	CMD23
CA5_A	CMD11	CMD27
CA6_A	CMD15	CMD30
CA7_A	CMD14	CMD31
CA8_A	CMD3	CMD19
CA9_A	CMD1	CMD17
CABI_A	CMD6	CMD22
CKE_A	CMD10	CMD26
	CHB-Byte 2,3	CHB-Byte 6,7
CA0_B	CMD4	CMD16
CA1_B	CMD12	CMD25
CA2_B	CMD5	CMD24
CA3_B	CMD13	CMD33
CA4_B	CMD7	CMD23
CA5_B	CMD11	CMD27
CA6_B	CMD15	CMD30
CA7_B	CMD14	CMD31
CA8_B	CMD3	CMD19
CA9_B	CMD1	CMD17
CABI_B	CMD6	CMD22
CKE_B	CMD10	CMD26
RESET*	CMD2	CMD18

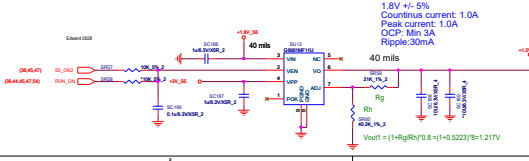

eDP Conn.
PR11: AR34 , AR35 change to bead ,C174 , C175 change to 10P for DMIC EMI noide
Camera
USB Camera Power
3.49V
Inrush =0.5A/0.5ms
IDD = 0.3A
Vout=1.2*(1+R1/R2)
R1
R2
1.5A
2.5A / 100mils
Vout=0.8*(1+Rg/Rh)=0.8(1+12K/3.6K)=3.46V
3.46V
Vout1 = (1+Rg/Rh)*0.8
Rg
Rh

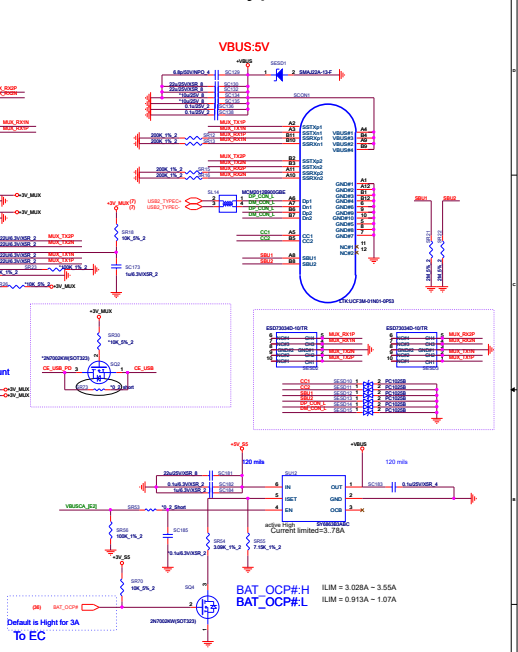


AD1	AD0	Slave ID
0	0	7'h60
0	1	7'h62
1	0	7'h61
1	1	7'h63

Table 6-1. I2C® Slave ID Decode







CE_DP	CE_USB	FLIP	
L	H	L	SSRX/TX to TX1/RX1
L	H	H	SSRX/TX to TX2/RX2
H	L	L	ML0 to RX2, ML1 to TX2, ML2 to TX1, ML3 to RX1
H	L	H	ML3 to RX2, ML2 to TX2, ML1 to TX1, ML0 to RX1
H	H	L	SSRX to RX1, SSTX to TX1, ML0 to RX2, ML1 to TX2
H	H	H	SSRX to RX2, SSTX to TX2, ML0 to RX1, ML1 to TX1

Quanta Computer Inc.
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Type C & PD& DP MUX
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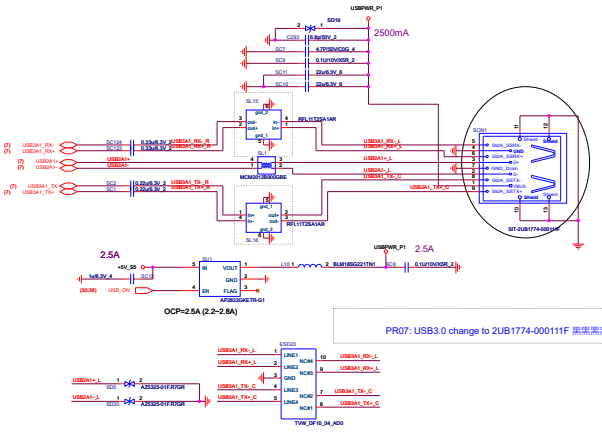
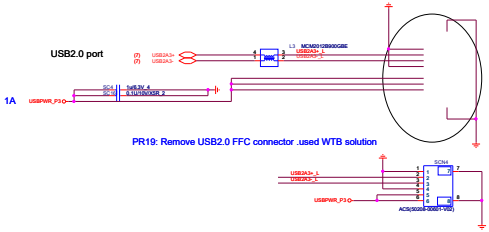
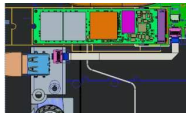
USB 3.0 PORT1

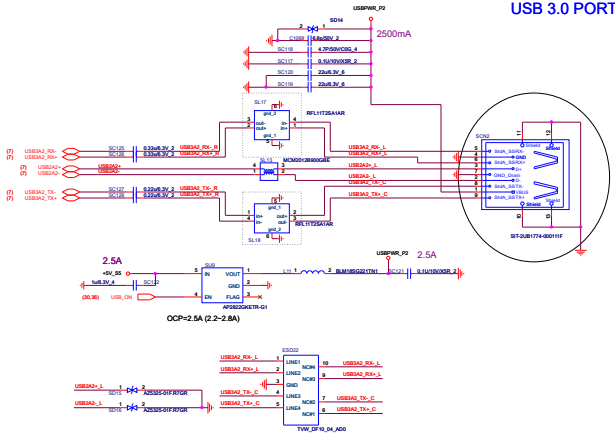


USB 2.0 PORT1





USB 3.0 PORT2



Quanta Computer Inc.	
PROJECT : FA506/FA706	
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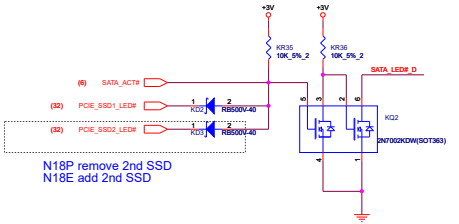
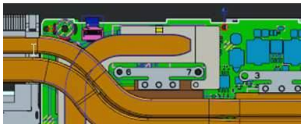
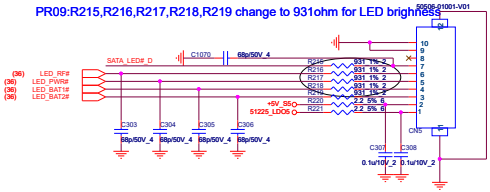




PR09:R215,R216,R217,R218,R219 change to 931ohm for LED brightness



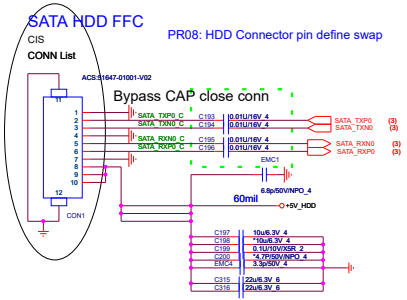
SATA HDD FFC

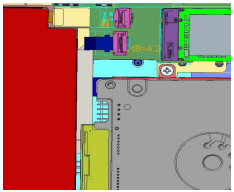
CIS

CONN List

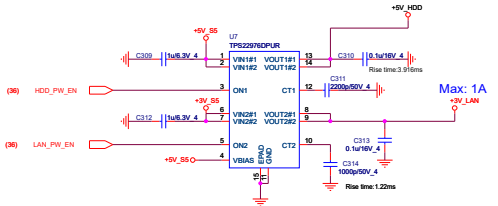
ACS-01647-01001-V02

PR08: HDD Connector pin define swap





Max: 1.5A



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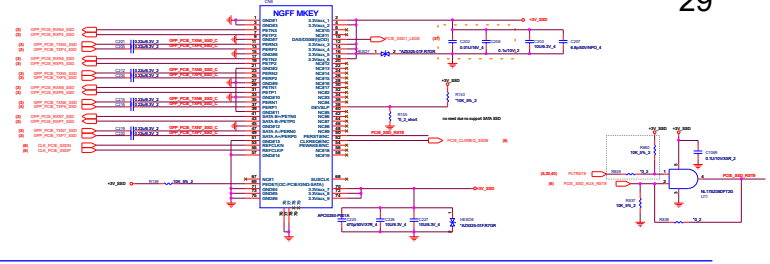
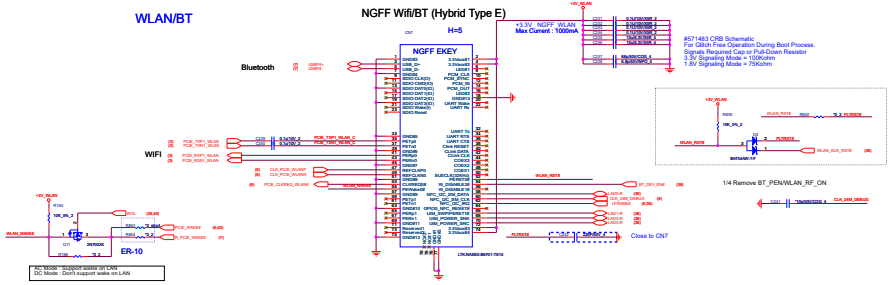
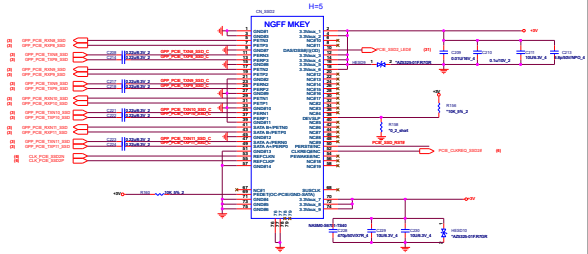
SSD



WLAN/BT

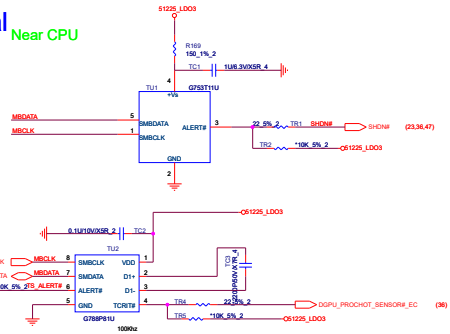




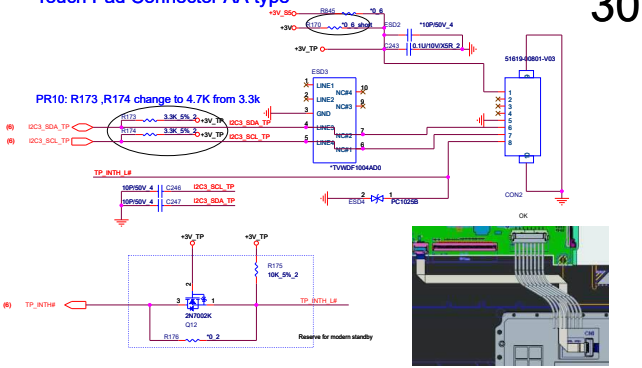
Quanta Computer Inc.
PROJECT : FA506/FA706
SSD/WLAN

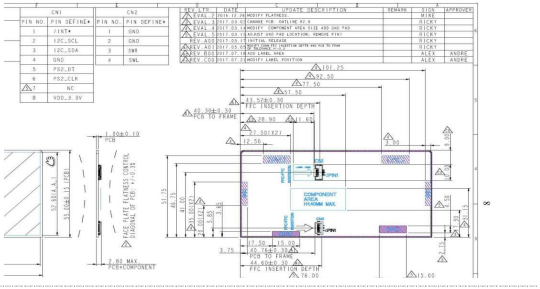
Thermal

Near CPU



Touch Pad Connector AA type





Quanta Computer Inc.

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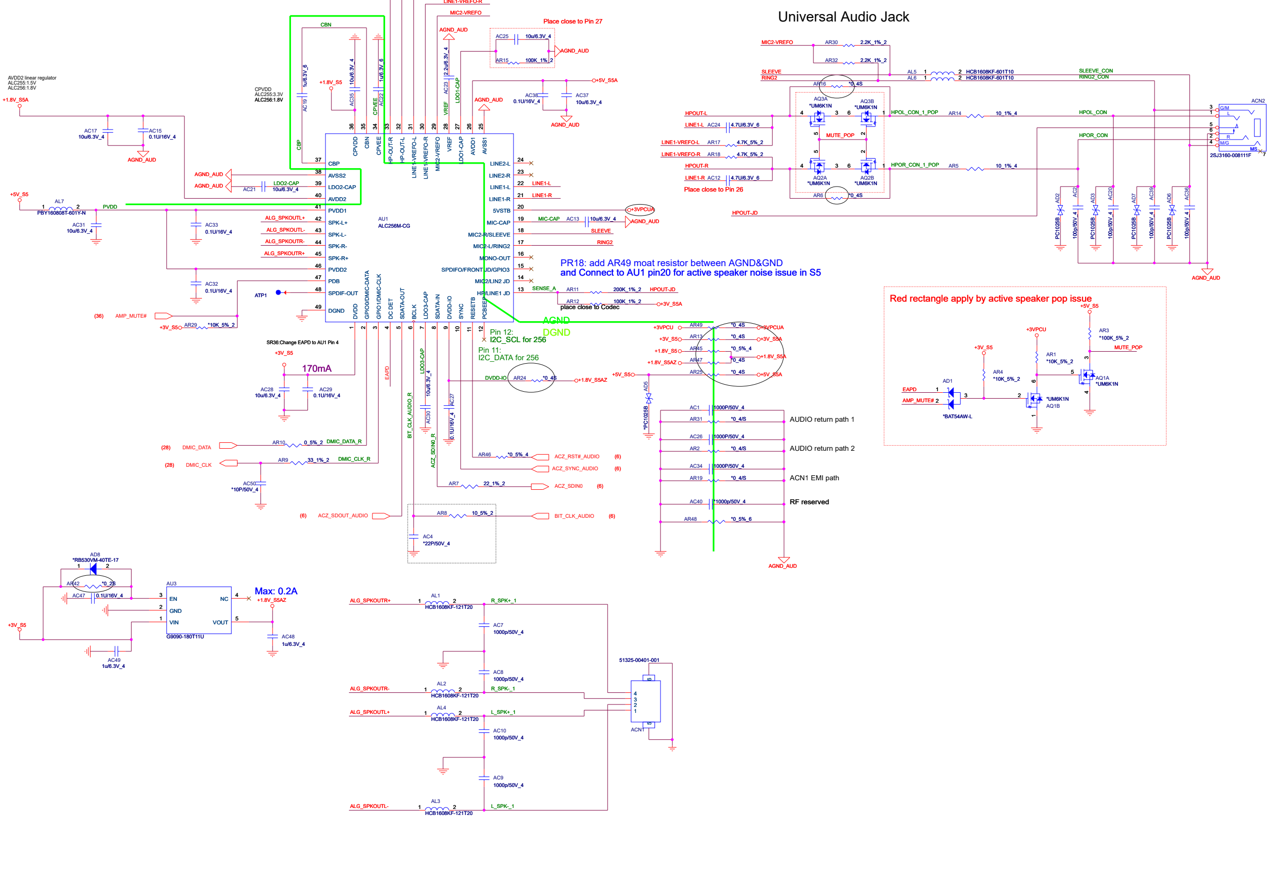
Audio Code (ALC256M)

Universal Audio Jack



Quanta Computer Inc.

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	Audio(ALC256M)	1A
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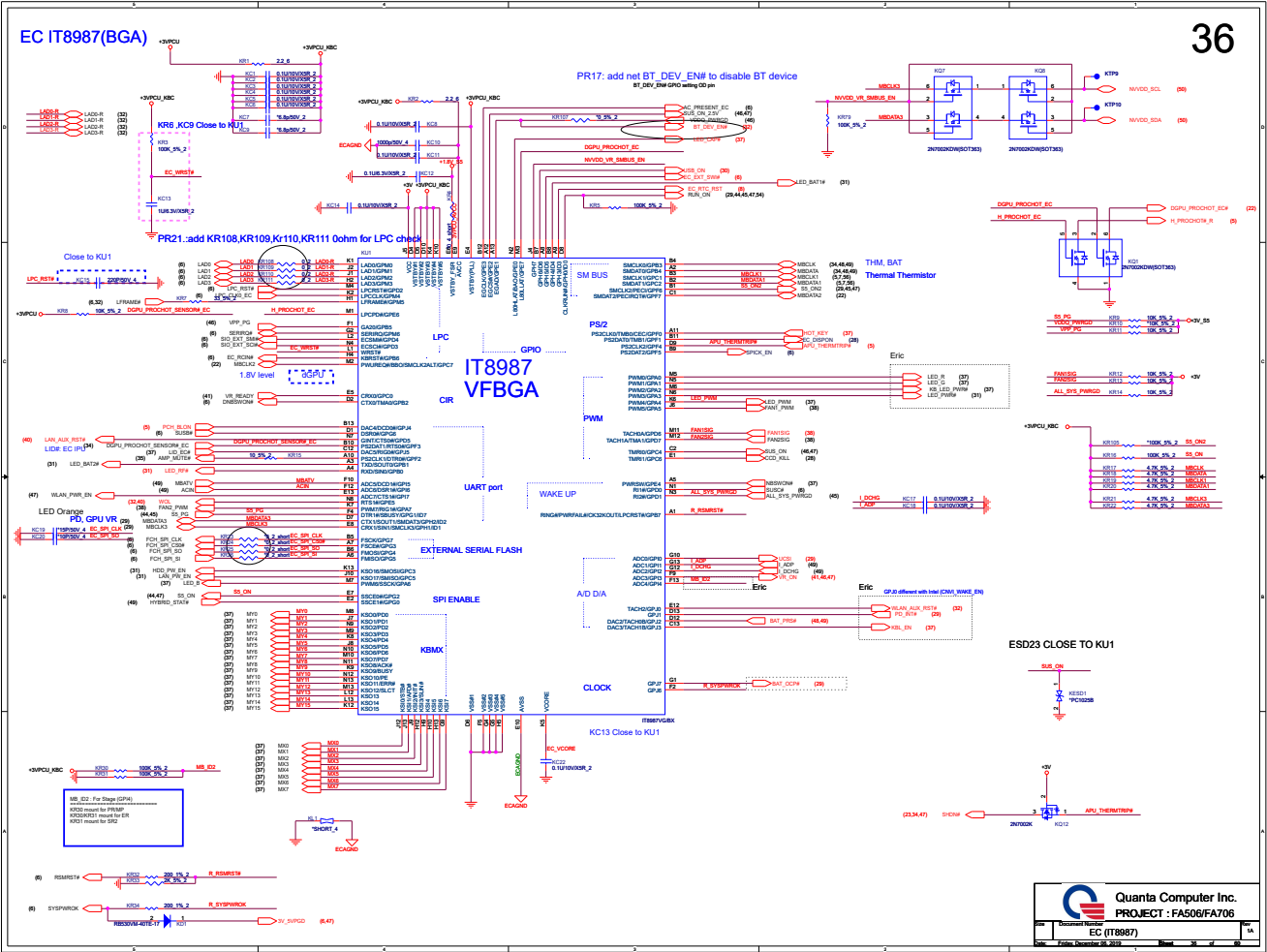
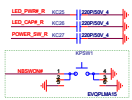
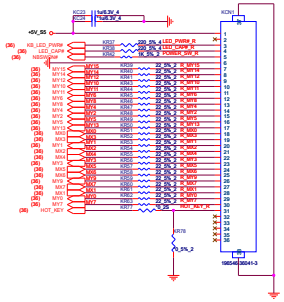
EC IT8987(BGA)



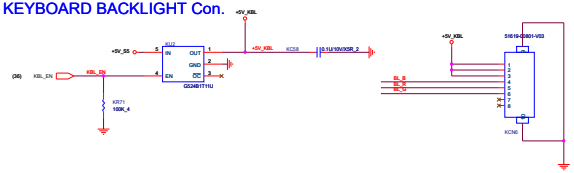
KEYBOARD Con.



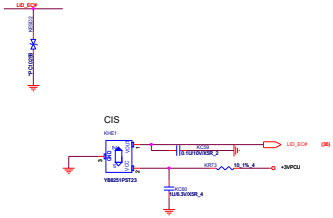
Reserve PSW1 for SR/ER debug

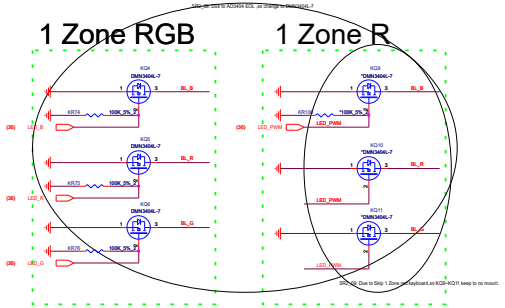


KEYBOARD BACKLIGHT Con.



ESD23 CLOSE TO KHE1





BOM NOTE: Due to Skip 1 Zone RGB keyboard,so KQ9~KQ11 keep to no mount.

Quanta Computer Inc.
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D8/KB/LID
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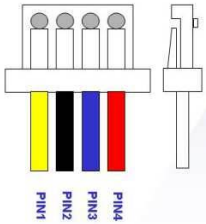
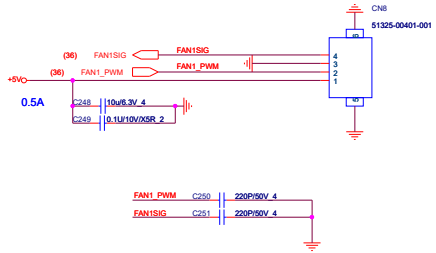
4Pins Fan Connector Pins Definition

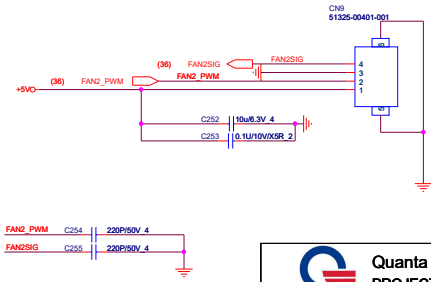


Pin No.	Function
Pin 1	TACHO
Pin 2	GNA
Pin 3	PWM
Pin 4	+5V

FAN1 for GPU(New)



FAN2 for CPU



Quanta Computer Inc.
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Size	Document Number	Rev
	FAN	1A

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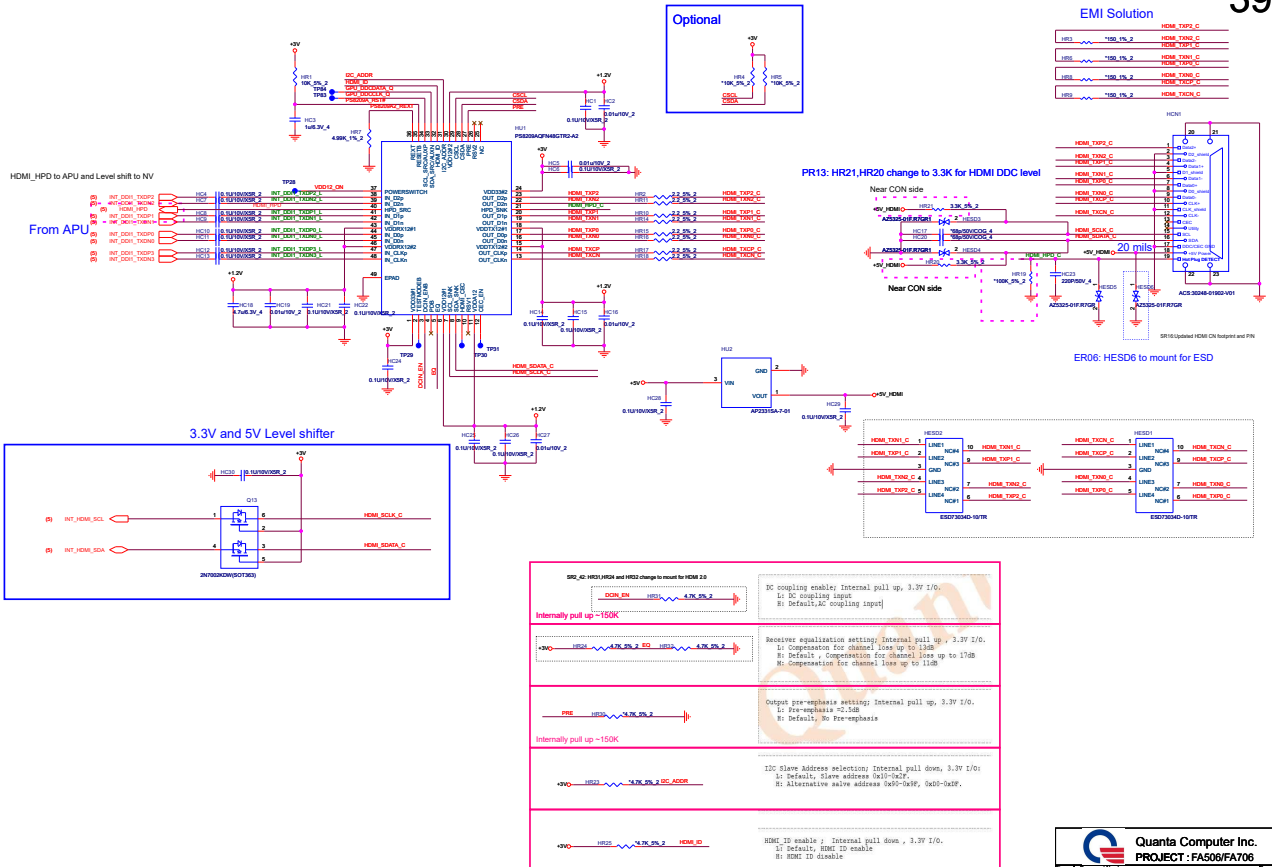

Quanta Computer Inc.			
PROJECT : FA506/FA706			
Size	Document Number		Rev
	HDMI 2.0 Redriver		1A
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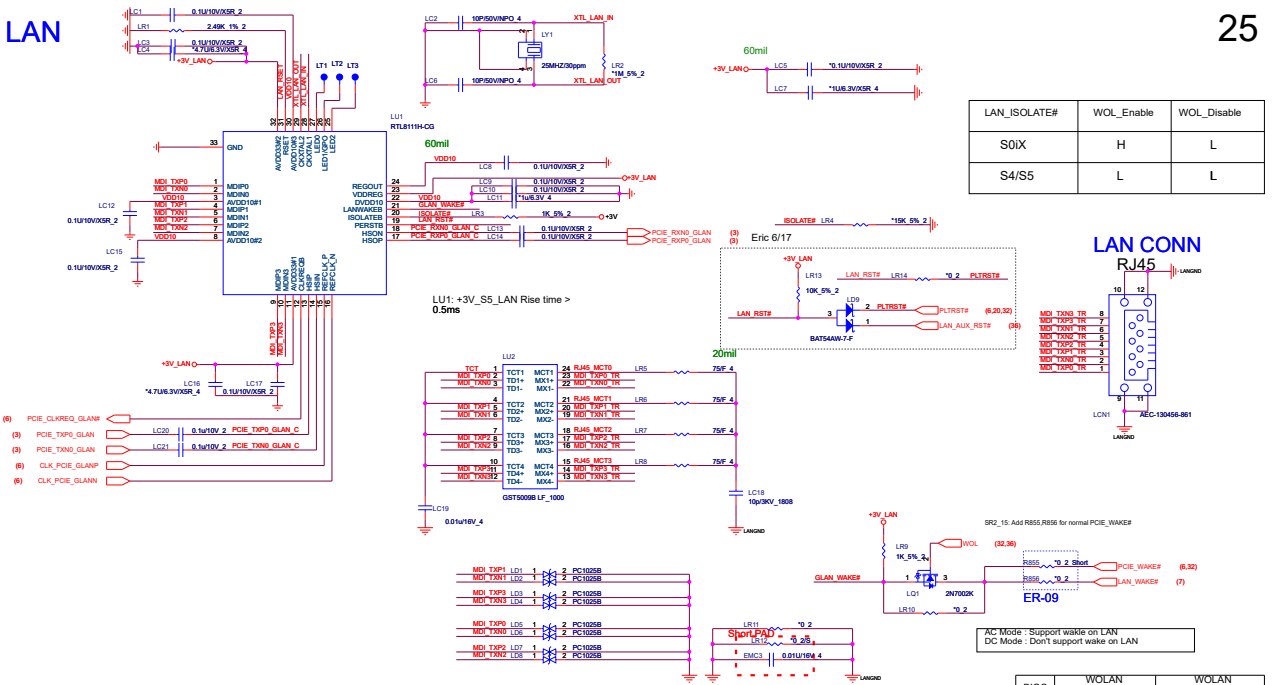
LAN



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

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.
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	LAN RTL8111H	1A
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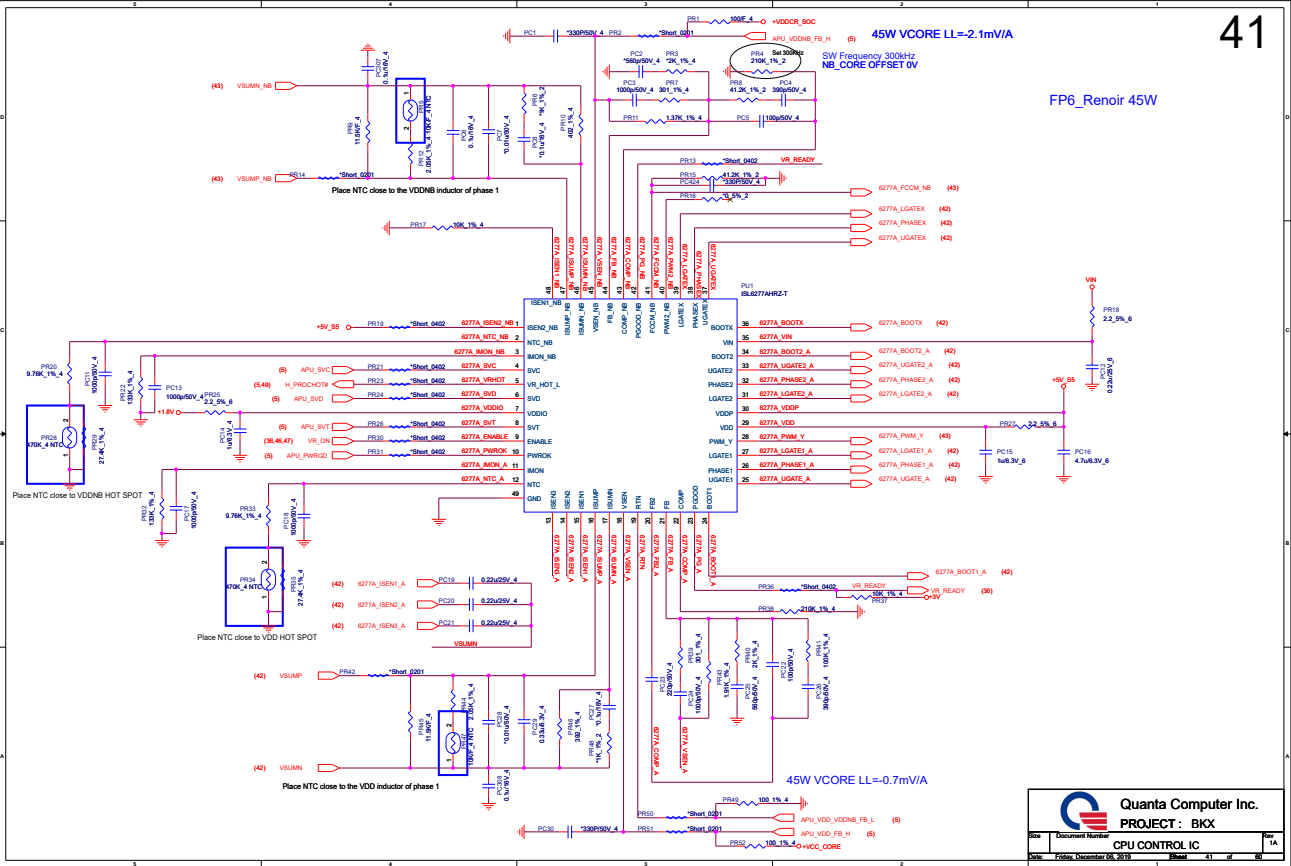

Quanta Computer Inc.
PROJECT : BKX
Size: Document Number: CPU CONTROL IC
Rev: 1A
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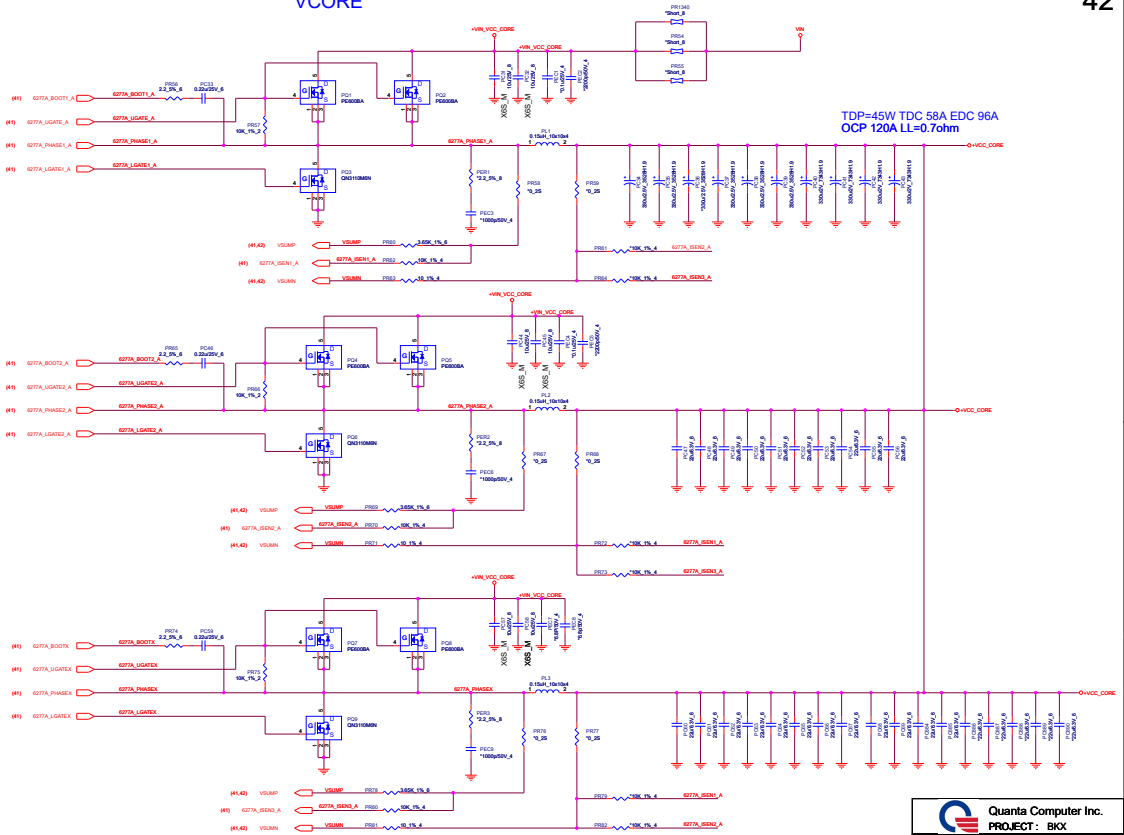
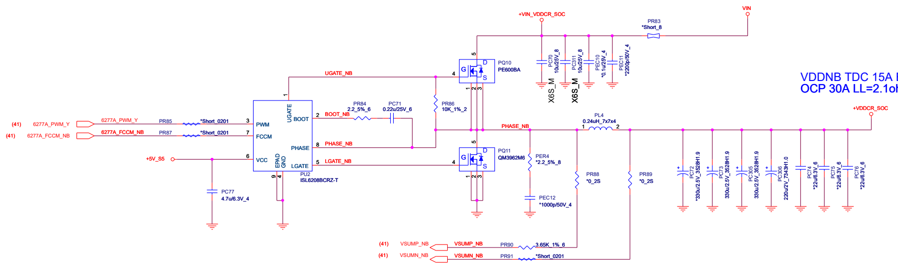
VCORE


TDP=45W TDC 58A EDC 96A
OCP 120A LL=0.7ohm
+VIN_VCC_CORE
VIN
+VCC_CORE
6277A_BOOT1_A
6277A_UGATE_A
6277A_PHASE1_A
6277A_LGATE1_A
6277A_BOOT2_A
6277A_UGATE2_A
6277A_PHASE2_A
6277A_LGATE2_A
6277A_BOOTX
6277A_UGATEX
6277A_PHASEX
6277A_LGATEX
6277A_ISEN1_A
6277A_ISEN2_A
6277A_ISEN3_A
VSUMP
VSUMN
PD1 PSS008A
PD2 PSS008A
PD3 QN3110M8N
PD4 PSS008A
PD5 PSS008A
PD6 QN3110M8N
PD7 PSS008A
PD8 PSS008A
PD9 QN3110M8N
PL1 0.15uH_10x10x4
PL2 0.15uH_10x10x4
PL3 0.15uH_10x10x4

+NB_CORE



+VIN_VDDCR_SOC
VIN
PR83
*Short_8
PQ10
PE600BA
PC70
10u/25V_8
PC311
10u/25V_8
PEC10
*0.1u/25V_4
PEC11
*2200p/50V_4
X6S_M
X6S_M
UGATE_NB
PR84
2.2_5%_6
PC71
0.22u/25V_6
PR86
10K_1%_2
BOOT_NB
PHASE_NB
PL4
0.24uH_7x7x4
+VDDCR_SOC
(41) 6277A_PWM_Y
(41) 6277A_FCCM_NB
PR85 *Short_0201
PR87 *Short_0201
PWM
FCCM
VCC
UGATE
BOOT
PHASE
LGATE
EPAD
GND
PU2
ISL6208BCRZ-T
+5V_S5
PC77
4.7u/6.3V_4
LGATE_NB
PQ11
QM3962M6
PER4
*2.2_5%_8
PEC12
*1000p/50V_4
PR88
*0_2S
PR89
*0_2S
PC72 *330u/2.5V_3528H1.9
PC73 330u/2.5V_3528H1.9
PC305 330u/2.5V_3528H1.9
PC306 220u/2V_7343H1.0
PC74 *22u/6.3V_6
PC75 *22u/6.3V_6
PC76 *22u/6.3V_6
(41) VSUMP_NB
VSUMP_NB
PR90 3.65K_1%_6
(41) VSUMN_NB
VSUMN_NB
PR91 *Short_0201

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

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PROJECT : BKX		
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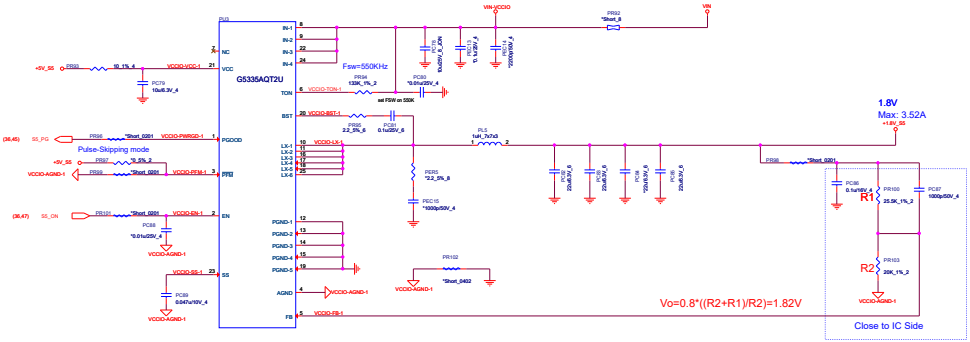
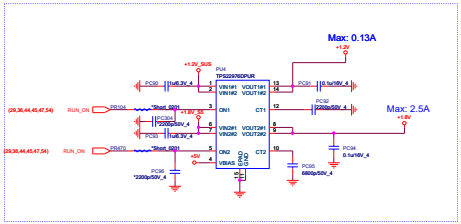
+1.8V_S5





Quanta Computer Inc.			
PROJECT : BKX			
Size	Document Number		Rev
	VCCIO		3A
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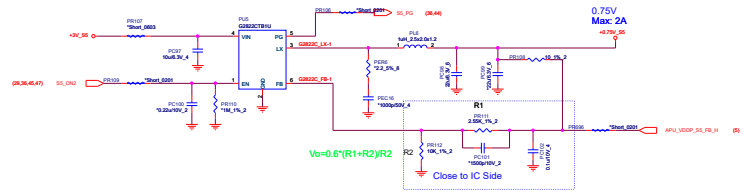
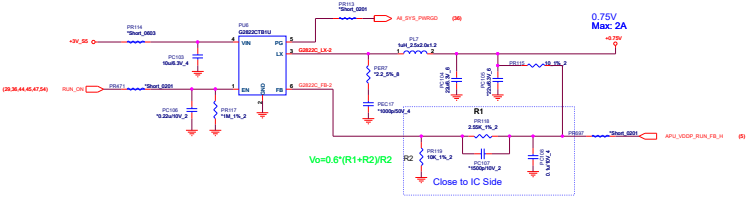
+0.75V_S5



+0.75V



Quanta Computer Inc.			
PROJECT : BKX			
Size	Document Number		Rev
	+1.0V_GPU_AON / 1.0V_GPU		1A
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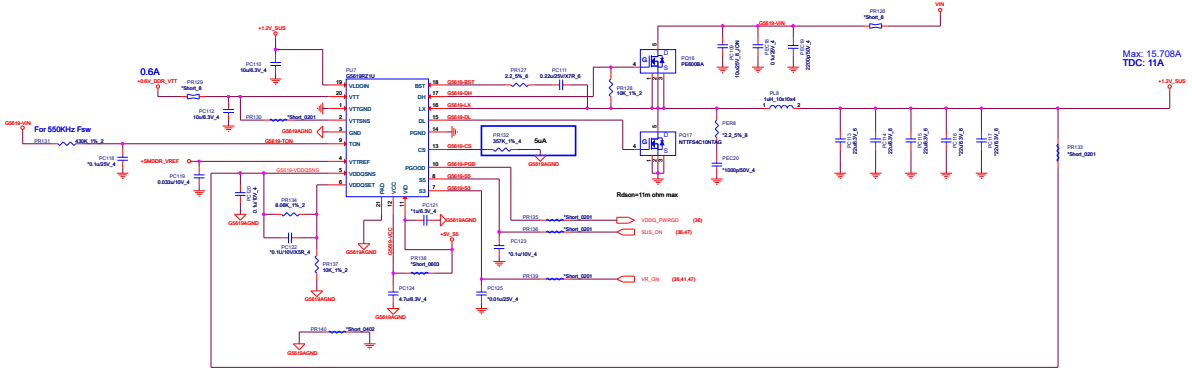
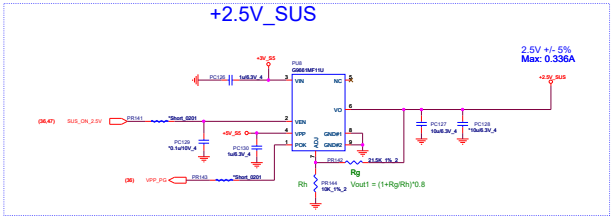
1.2VSUS & VTT_MEM



STATE	S3	S5	+1.2V_SUS	VTTREF	VTT
S0	1	1	On	On	On
S3	0	1	On	On	Off/High Z
S4/S5	0	0	Off	Off	Off

+2.5V_SUS



Quanta Computer Inc.				
PROJECT : BKX				
Size	Document Number			Rev
	1.2VSUS/VTT			3A
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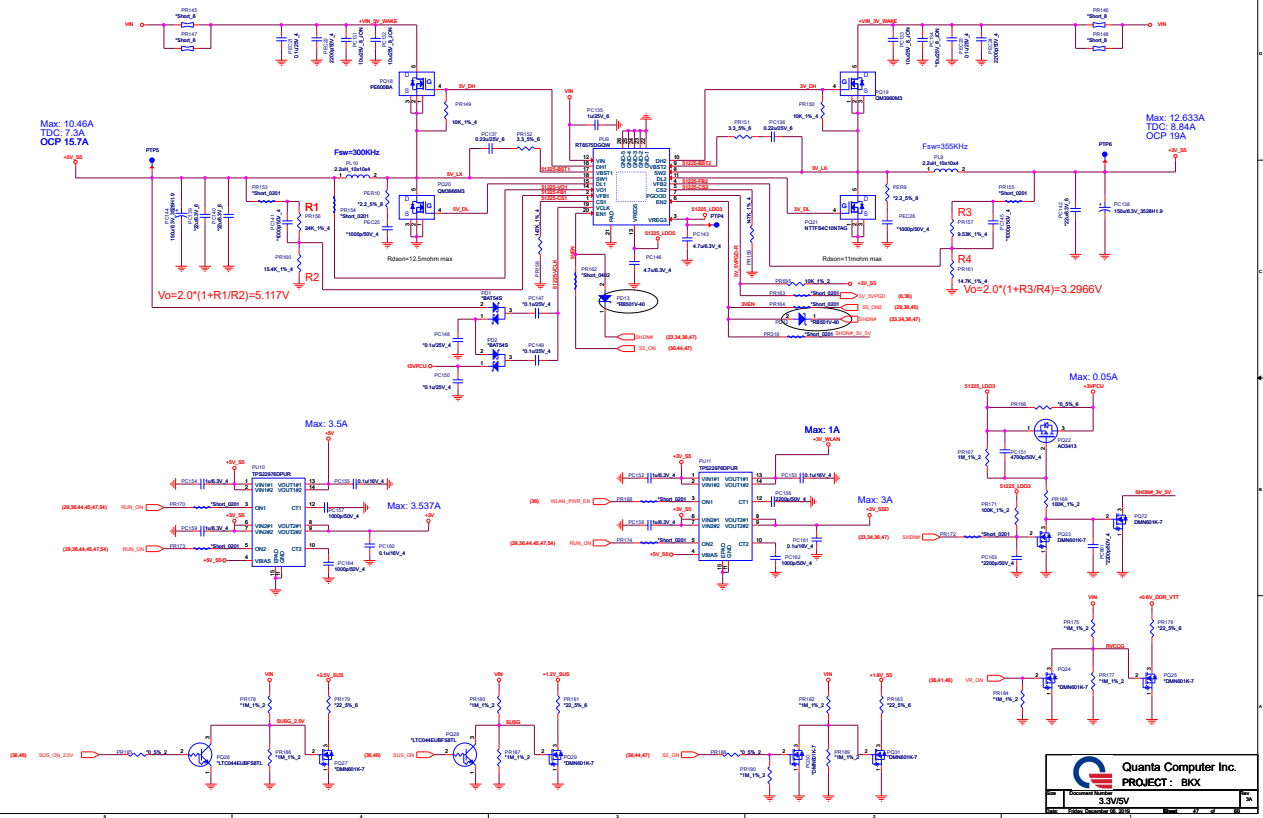
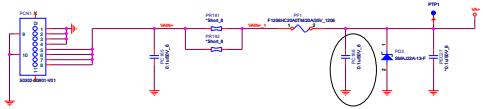
3.3V & 5V


Max: 10.46A
TDC: 7.3A
OCP 15.7A
Fsw=300KHz
Vo=2.0*(1+R1/R2)=5.117V
Rdson=12.5mohm max
Max: 12.633A
TDC: 8.84A
OCP 19A
Fsw=355KHz
Vo=2.0*(1+R3/R4)=3.2966V
Rdson=11mohm max
Max: 3.5A
Max: 3.537A
Max: 1A
Max: 3A
Max: 0.05A
Quanta Computer Inc.
PROJECT : BKX
3.3V/5V

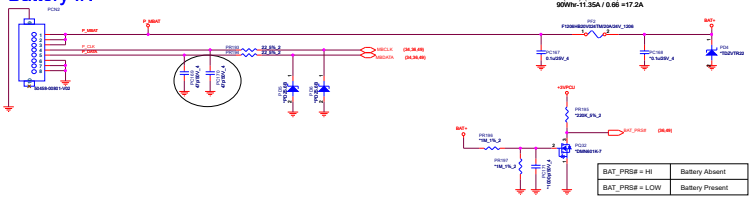
AC IN (On-Board DC-Jack)

Fuse Rating =
IR(max) /(0.75*0.88)
230W/19.5V / 0.66 =17.87A



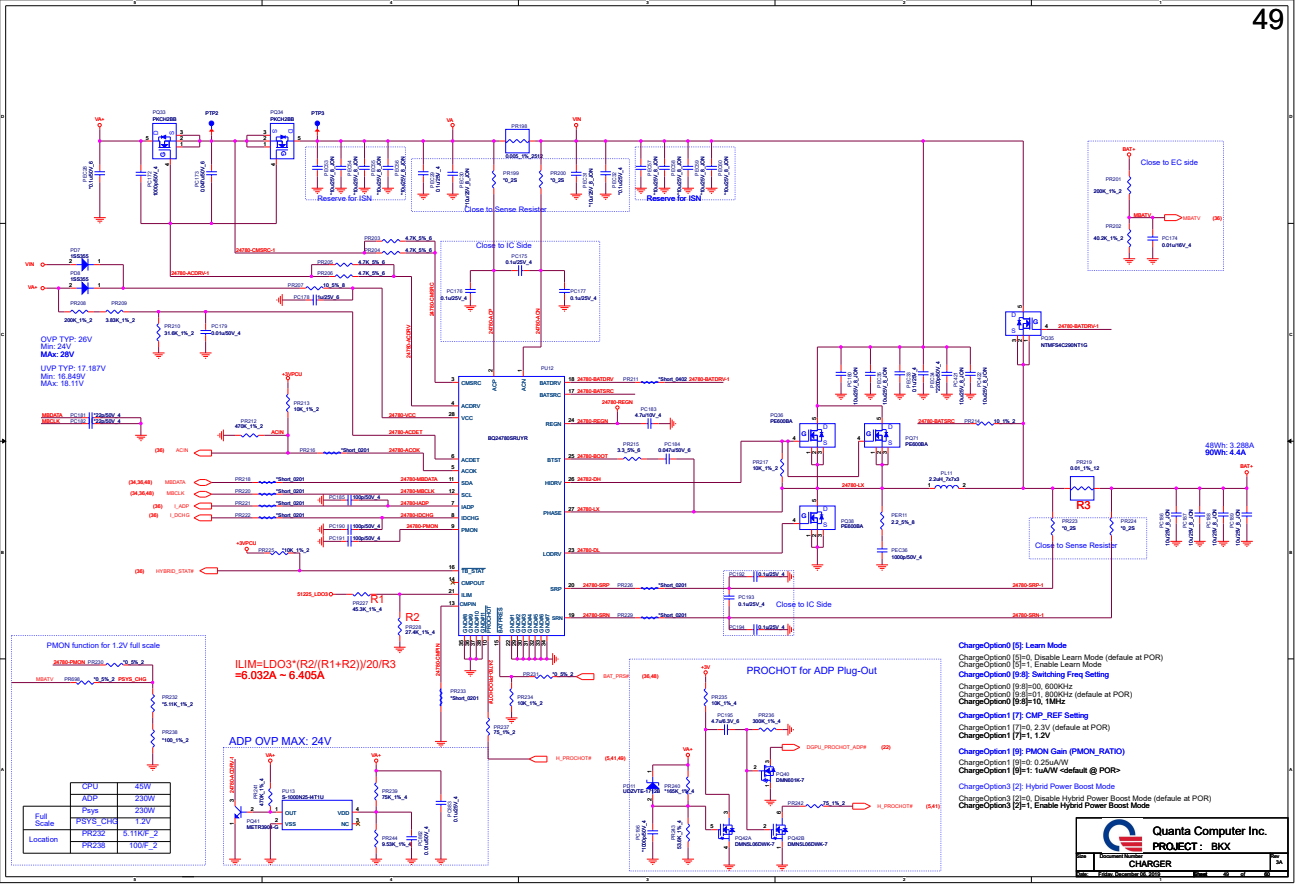
Battery IN

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



BAT_PRS# = HI	Battery Absent
BAT_PRS# = LOW	Battery Present

Quanta Computer Inc.		
PROJECT : BKX		
Document Number	AD IN/BAT IN	Rev 3A
Date: Friday, December 06, 2013	Sheet 48 of 58	


Close to EC side
Close to Sense Resister
Close to IC Side
Reserve for ISN
Reserve for ISN
Close to Sense Resister
Close to IC Side
OVP TYP: 26V
Min: 24V
MAx: 28V
UVP TYP: 17.187V
Min: 16.849V
MAx: 18.11V
48Wh: 3.288A
90Wh: 4.4A
ILIM=LDO3*(R2/(R1+R2))/20/R3
=6.032A ~ 6.405A
ADP OVP MAX: 24V
PMON function for 1.2V full scale
PROCHOT for ADP Plug-Out
ChargeOption0 [5]: Learn Mode
ChargeOption0 [5]=0, Disable Learn Mode (defeault at POR)
ChargeOption0 [5]=1, Enable Learn Mode
ChargeOption0 [9:8]: Switching Freq Setting
ChargeOption0 [9:8]=00, 600KHz
ChargeOption0 [9:8]=01, 800KHz (defeault at POR)
ChargeOption0 [9:8]=10, 1MHz
ChargeOption1 [7]: CMP_REF Setting
ChargeOption1 [7]=0, 2.3V (defeault at POR)
ChargeOption1 [7]=1, 1.2V
ChargeOption1 [9]: PMON Gain (PMON_RATIO)
ChargeOption1 [9]=0: 0.25uA/W
ChargeOption1 [9]=1: 1uA/W <default @ POR>
ChargeOption3 [2]: Hybrid Power Boost Mode
ChargeOption3 [2]=0, Disable Hybrid Power Boost Mode (defeault at POR)
ChargeOption3 [2]=1, Enable Hybrid Power Boost Mode
CPU 45W
ADP 230W
Psys 230W
PSYS_CHG 1.2V
PR232 5.11K/F_2
PR238 100/F_2
Full Scale
Location
Quanta Computer Inc.
PROJECT : BKX
CHARGER
Friday, December 06, 2013

I@: N18E-G0, TGP=80W, TDC=82A, Max=225A
I@MP2886AGU-0135-Z : Switching Freq Setting=300KHz

E@: N18E-G1, TGP=90W, TDC=90A, Max=225A
E@MP2886AGU-0135-Z : Switching Freq Setting=300KHz

SH2

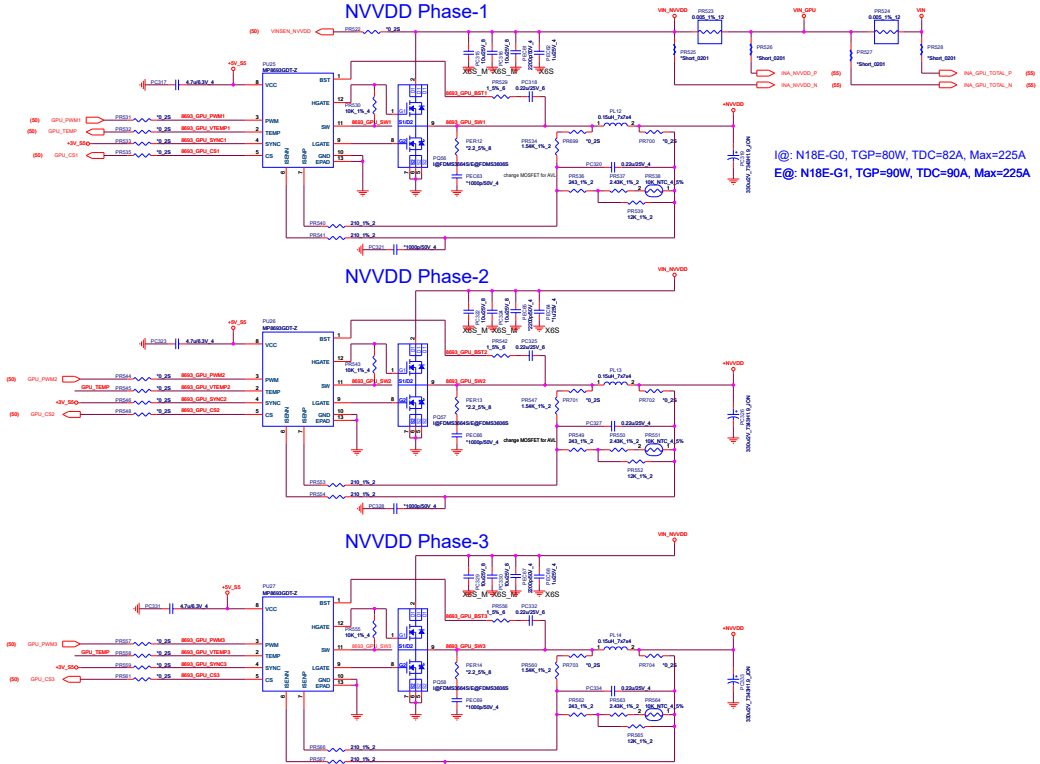
contact to EC side separate SMBUS port

Thermistor NTC close to hotest area

MP2886AGU-0135-Z

PSI	PWM Status
1	Forced CCM for all phases
0	Adjustable low phase count
Hi-Z	Auto phase-shedding enabled

SH1



Quanta Computer Inc.
PROJECT : BKX
dGPU CORE MP2886A)
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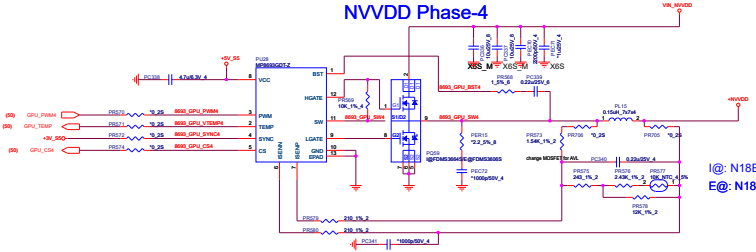
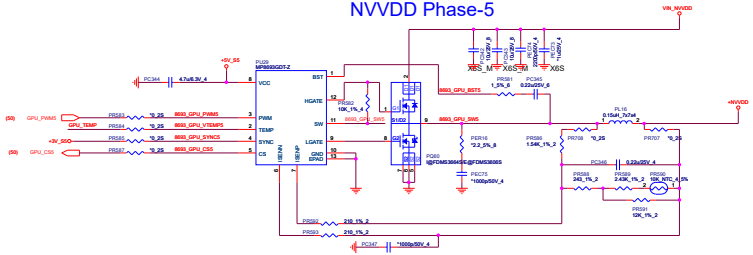
NVVDD Phase-4



I@: N18E-G0, TGP=80W, TDC=82A, Max=225A

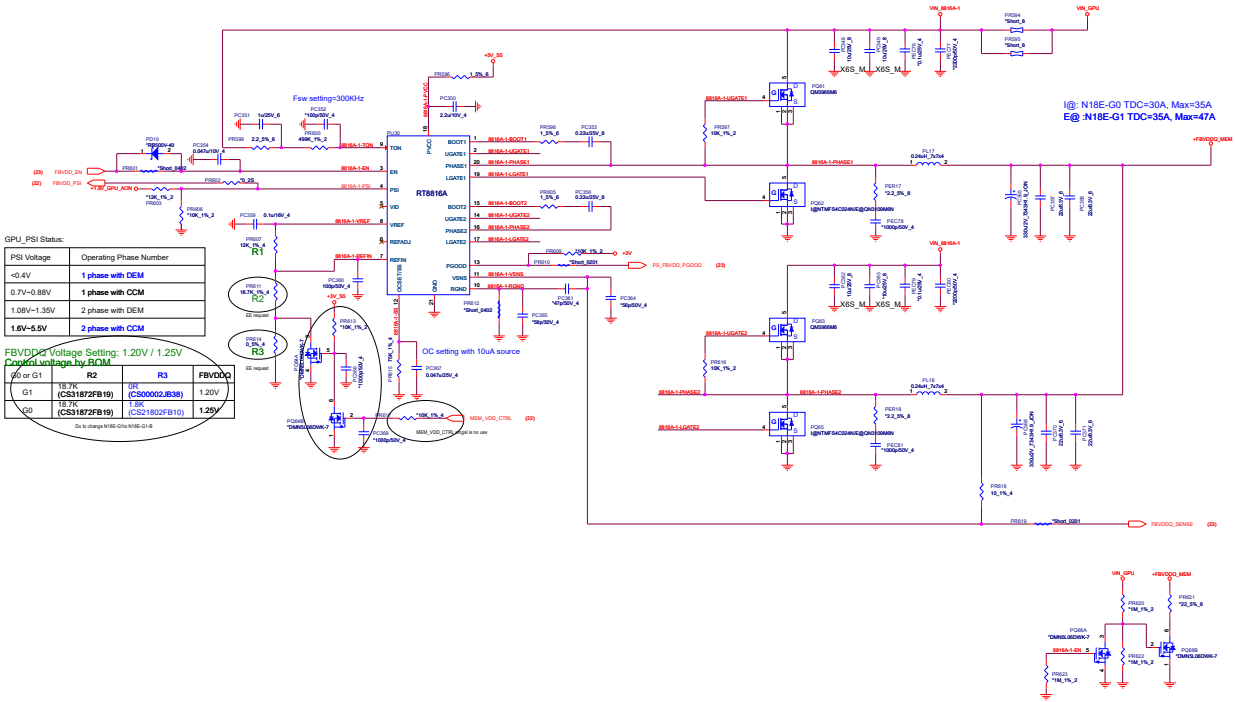
E@: N18E-G1, TGP=90W, TDC=90A, Max=225A

NVVDD Phase-5



Quanta Computer Inc.
PROJECT : BKX
dGPU CORE MP2886A)
Size: Document Number: Rev: 3A
Date: Friday, December 06, 2019 Sheet 30 of 60

+FBVDDQ_MEM

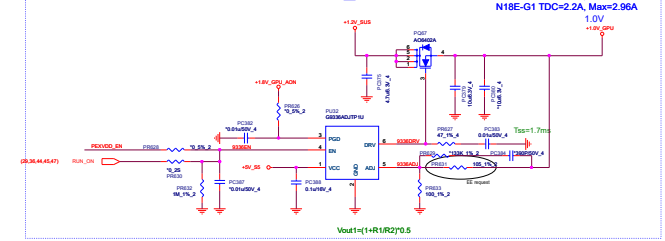


Quanta Computer Inc.
PROJECT : BIXX
Size | Document Number | Rev
+FBVDDQ_MEM (RT8816A) | 2A
Date: Friday, December 24, 2010 | Sheet 53 of 60

+1.0V_GPU

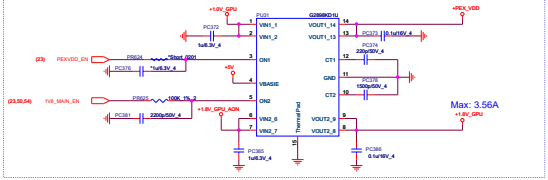
N18E-G0 TDC=1.6A, Max=2.5A
N18E-G1 TDC=2.2A, Max=2.96A

1.0V

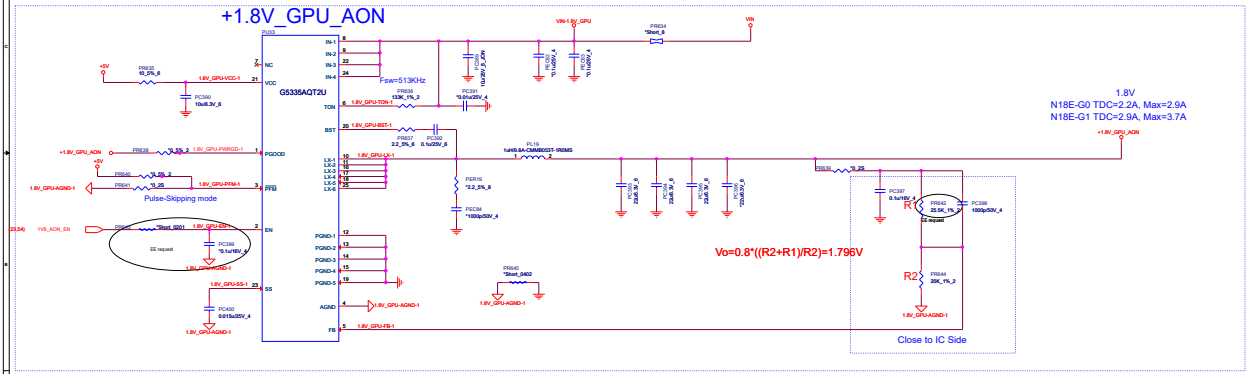


Load Switch for GPU

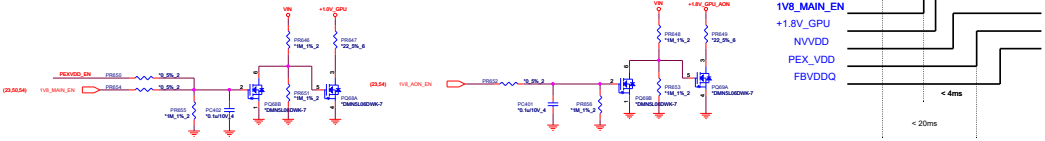
N18E-G0 TDC=1.6A, Max=2.5A
N18E-G1 TDC=2.2A, Max=2.96A



+1.8V_GPU_AON



Discharge



Quanta Computer Inc.
PROJECT : BIX
Size: 3A
Document Number: +1.8V_GPU_AON / 1.0V_GPU
Rev:
Date: Friday, December 04, 2009
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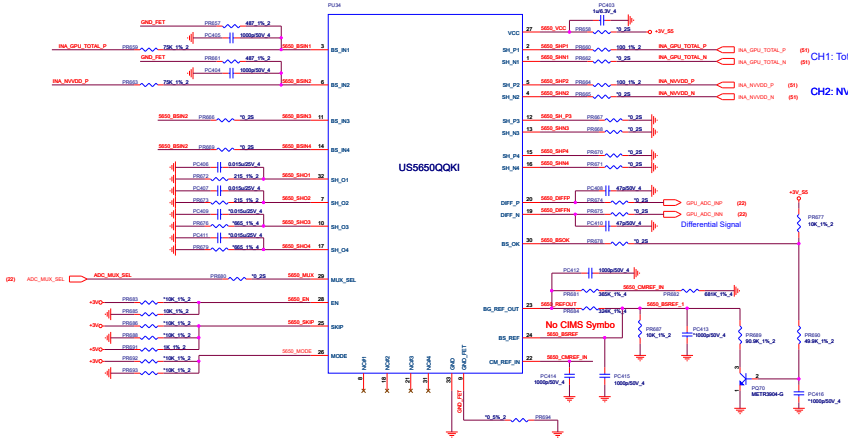
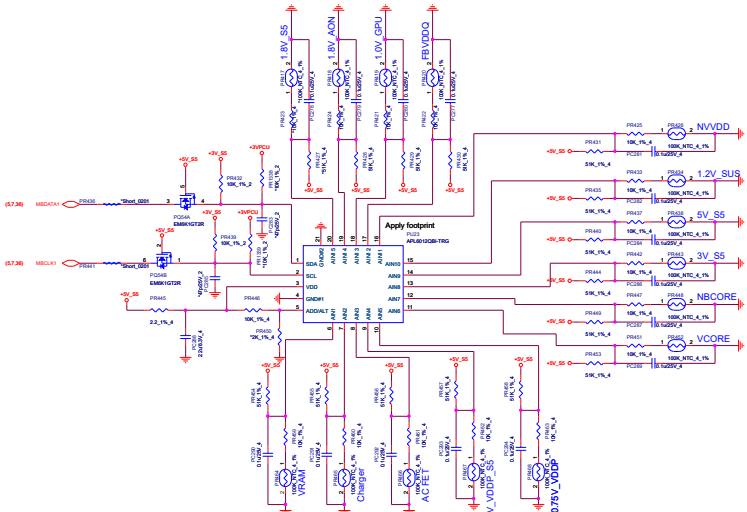
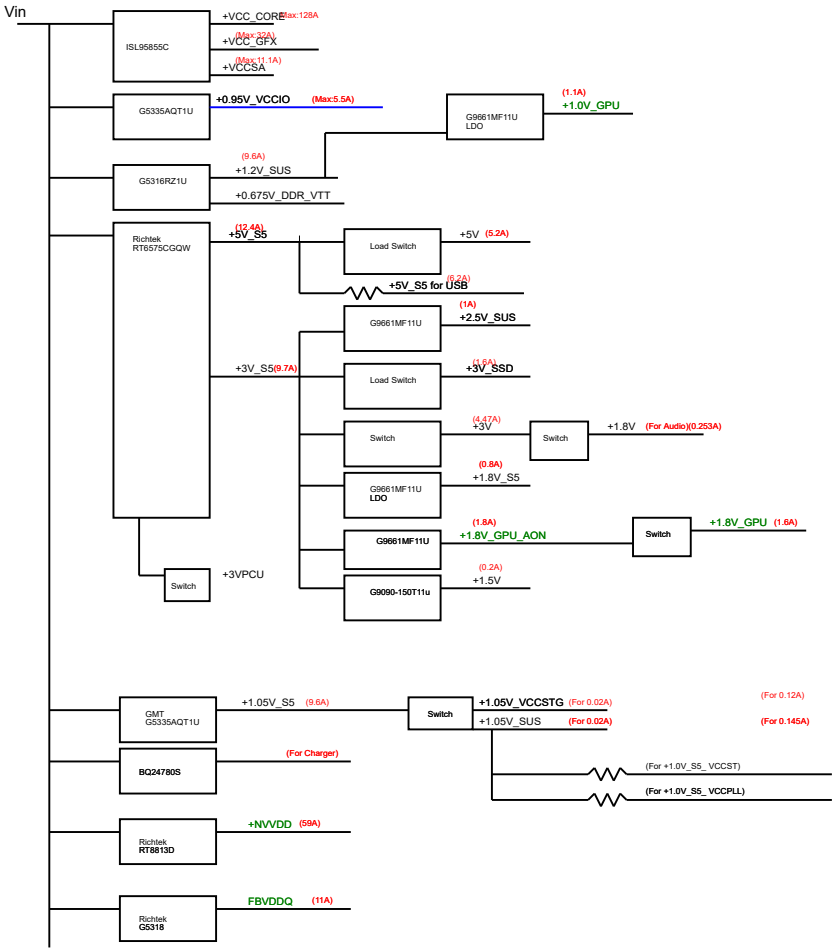
OVR-M



Quanta Computer Inc.			
PROJECT : BKX			
Size	Document Number		Rev
	VCAMON (OVR-M, US5650PQKI)		3A
Date: Friday, December 06, 2013		Sheet 55 of 60	

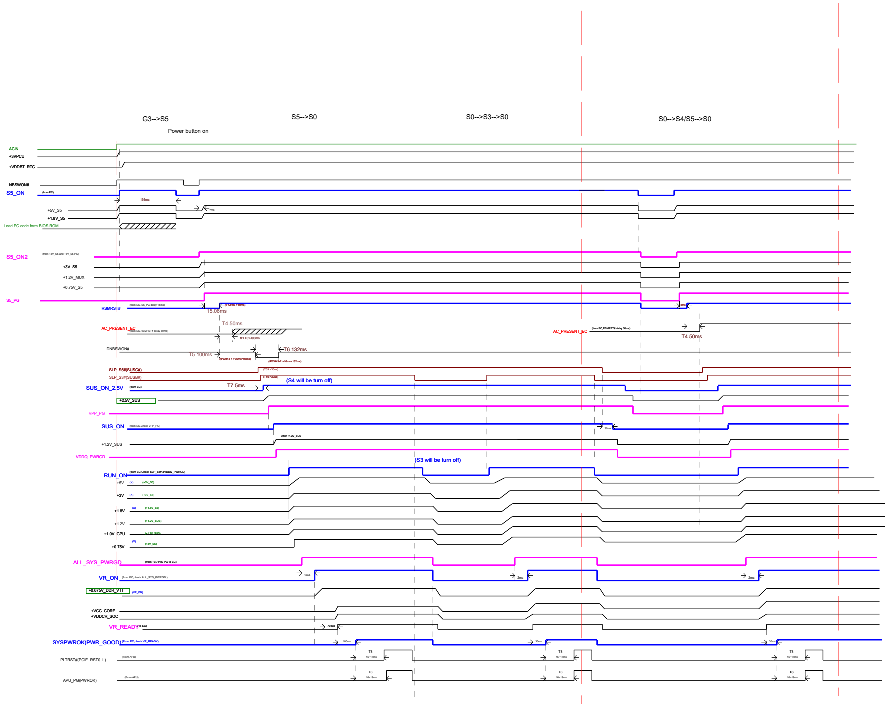


Quanta Computer Inc.			
PROJECT : BKX			
Size	Document Number		Rev
	VGAMON (OVR-M, USG50PQKI)		1A
Date: Friday, December 06, 2019		Sheet 56 of 60	

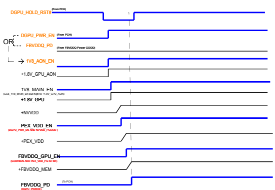


Quanta Computer Inc.
PROJECT : X571GT
Power Diagram

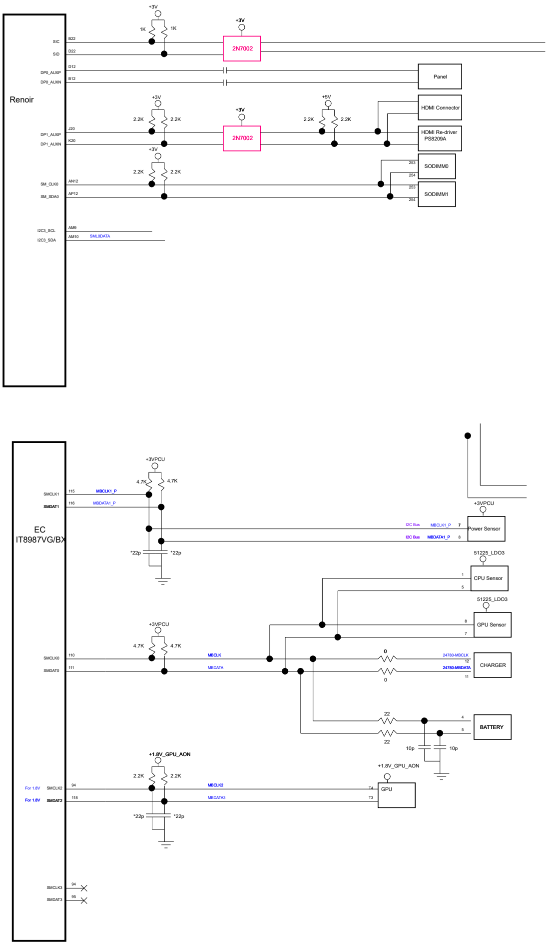
Renoir FP6 Power-Up/OFF Sequencing



N18P-G61/G62 Power-Up Sequencing



N18P-G61/G62 Power-Down Sequencing (GC-OFF)


Renoir
SIC
SID
DP0_AUXP
DP0_AUXN
DP1_AUXP
DP1_AUXN
SM_CLK0
SM_SDA0
I2C3_SCL
I2C3_SDA
B22
D22
D12
B12
J20
K20
AN12
AP12
AM9
AM10
SML0DATA
+3V
1K
1K
2N7002
Panel
HDMI Connector
HDMI Re-driver
PS8209A
+5V
2.2K
SODIMM0
SODIMM1
253
254
EC
IT8987VG/BX
SMCLK1
SMDAT1
115
116
MBCLK1_P
MBDATA1_P
+3VPCU
4.7K
I2C Bus
Power Sensor
7
8
*22p
51225_LDO3
CPU Sensor
GPU Sensor
1
5
SMCLK0
SMDAT0
110
111
MBCLK
MBDATA
0
24780-MBCLK
24780-MBDATA
12
11
CHARGER
22
4
5
BATTERY
10p
+1.8V_GPU_AON
For 1.8V
SMCLK2
SMDAT2
94
118
MBCLK2
MBDATA3
T4
T3
GPU
SMCLK3
SMDAT3
95

Quanta Computer Inc.
PROJECT : FA506/FA706

Size	Document Number	Rev
	SMBUS	1A

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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_VTT	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_VCCST	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		H	L	L	L	
+1.8V_S5	H	H		H	L	L	L	
+1.05V_S5	H	H		H	L	L	L	
S5_ON	H	H		H	L	H	L	
+3V_S5	H	H		H	L	H	L	
+5V_S5	H	H		H	L	H	L	

Quanta Computer Inc.
PROJECT : FA506/FA706

Size	Document Number	Rev
	POWER MAP	1A
Date: Friday, December 06, 2019	Sheet 60 of 60	