Project Name :GM5ZGxW

Platform : AMD CEZANNE H+GN20

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61. GPU GN20 STRAP
62. POWER GN20-E5 NVVDD PWMIC
63. POWER GN20-E5 NVVDD PWR1/3
64. POWER GN20-E5 NVVDD PWR2/3
65. POWER GN20-E5 NVVDD PWR3/3
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72. HISTORY

M/B Schematic Version Change List

Release Date	Version	PCB P/N	PCB Description	PCBA P/N	Note

Daughter Board Schematic Version Change List

Release Date	Version	PCB P/N	PCB Description	PCBA P/N	Note

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Title: INDEX

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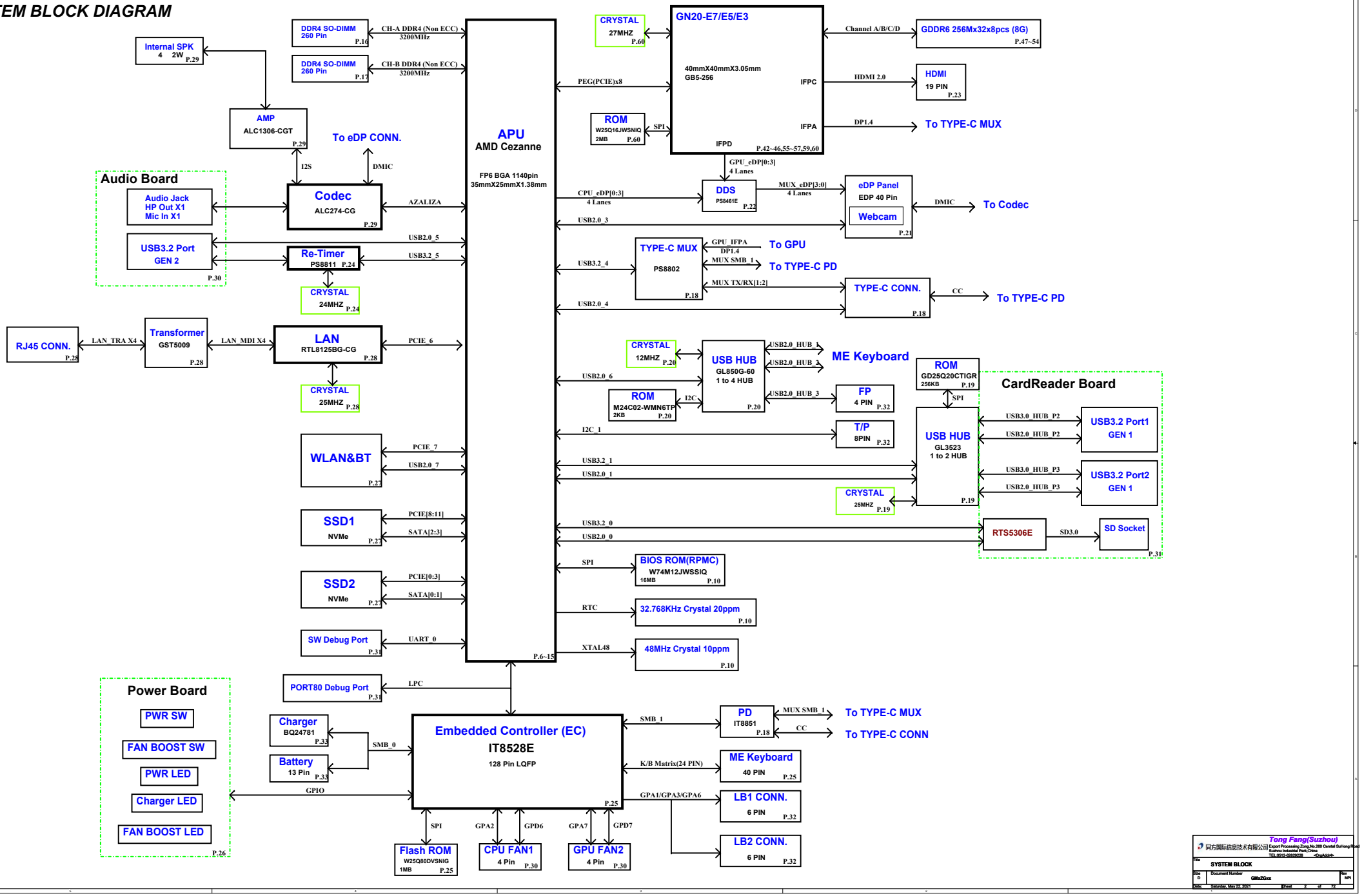
SYSTEM BLOCK DIAGRAM



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Title	SYSTEM BLOCK	
Size: D	Document Number: GMx2Gxx	Rev: MP1
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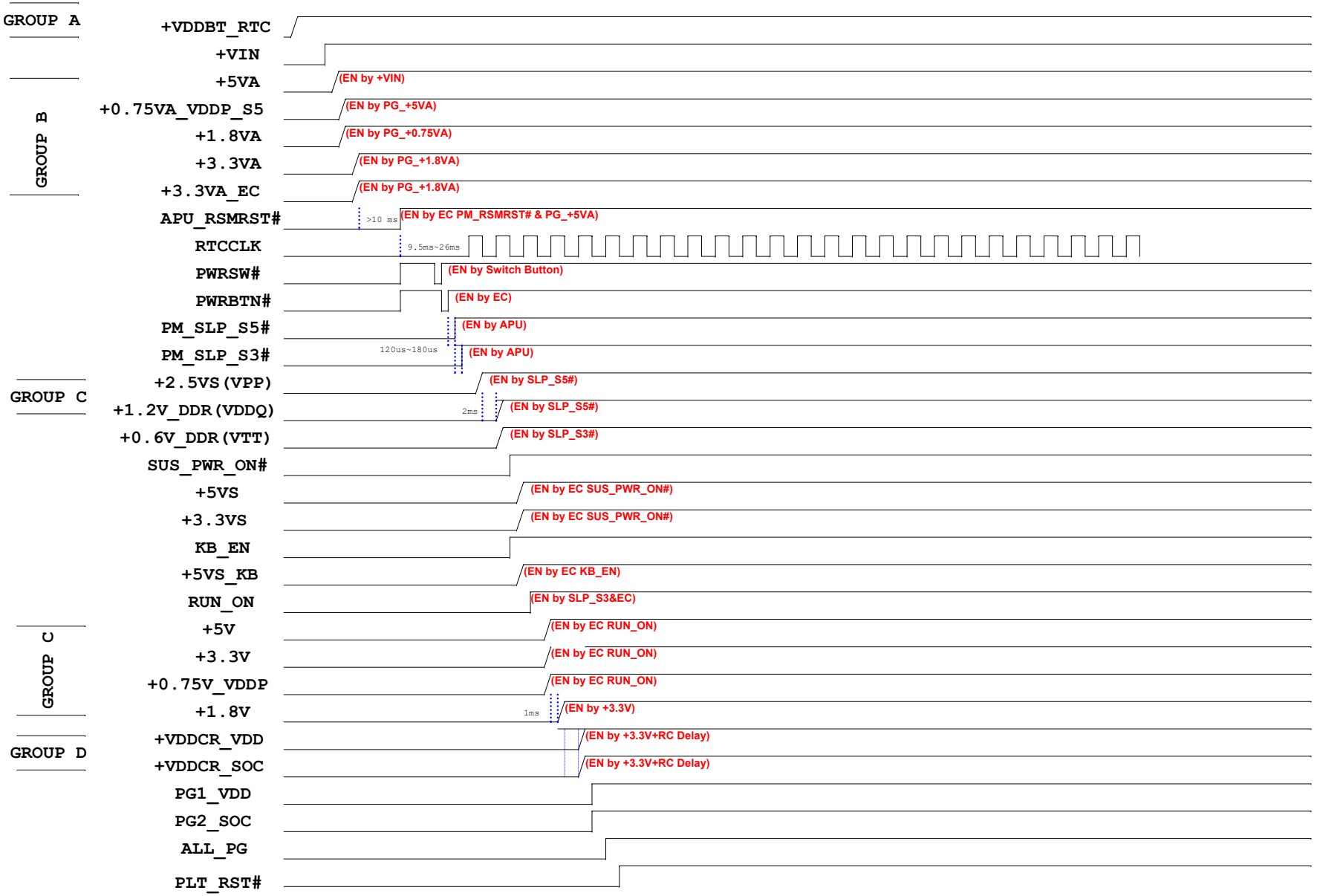

POWER ON SEQUENCE

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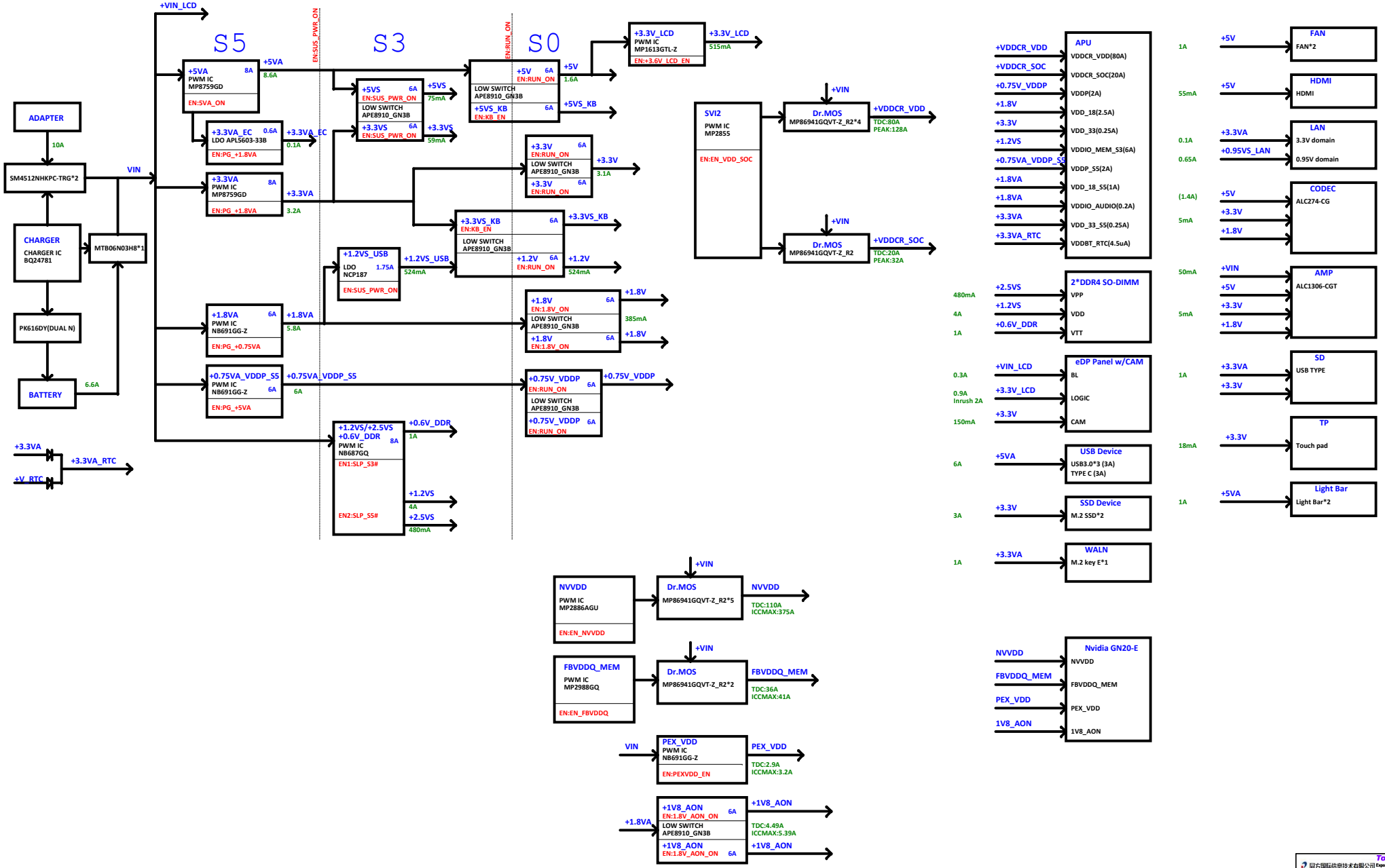
Title: APU SEQUENCE

Size: Custom | Document Number: GMbZGxx | Rev: NPI

Date: Saturday, May 22, 2021 | Sheet 3 of 72



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Title	POWER MAP	
Size: D	Document Number: GMx2Gxx	Rev: MP1
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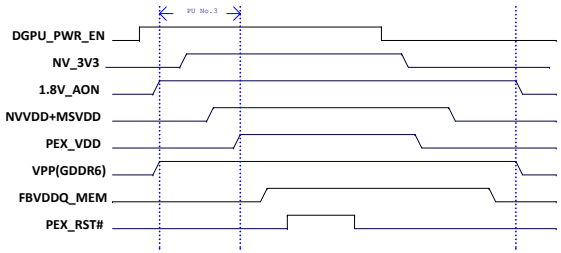
DGPU POWER SEQUENCE



POWER UP sequence is required
1.Power Up: 1.8V_AON & VPP->NV_3V3->(NVVDD+MSVDD)->PEXDVDD->FBVDD(Q_MEM).
2.The ramp time for any rail must be more than 40us and is recommended to be less than 2ms.
3.It is recommended that the delay from 1V8 on to PEXVDD/GPU_PGOOD assertion not exceed 20ms.
4.The ramp-up overshoot should not exceed the silicon reliability limit voltage.
5.Power up NVVDD must be 90% before PEXVDD can start ramp-up.
6.Power up 1V8 must be 90% before NV_3V3 ramp up.
7.All 3.3V device that connect to the GPU must be powered after 1V8; GPU cannot have any 3.3V leakage paths before GPU 1V8 power rail is present.

POWER DOWN sequence is required
1.For GDDR6, VPP must be equal to or higher than FBVDD/Q at all times; use gate logic and discharge circuit as need.
2.All 3.3V device that connect to the GPU must be ramped down before 1V8; GPU cannot have any 3.3V leakage paths afetr 1V8 power-down.
3.Power down of PEXVDD must be less than 10% before NVVDD can start ramp-down.
4.Power down of NV_3V3 must be less than 10% before 1V8 can start ramp-down.

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Title	GPIO & SMBUS Block	
Size: Custom	Document Number: GMx2Gxx	Rev: NPI
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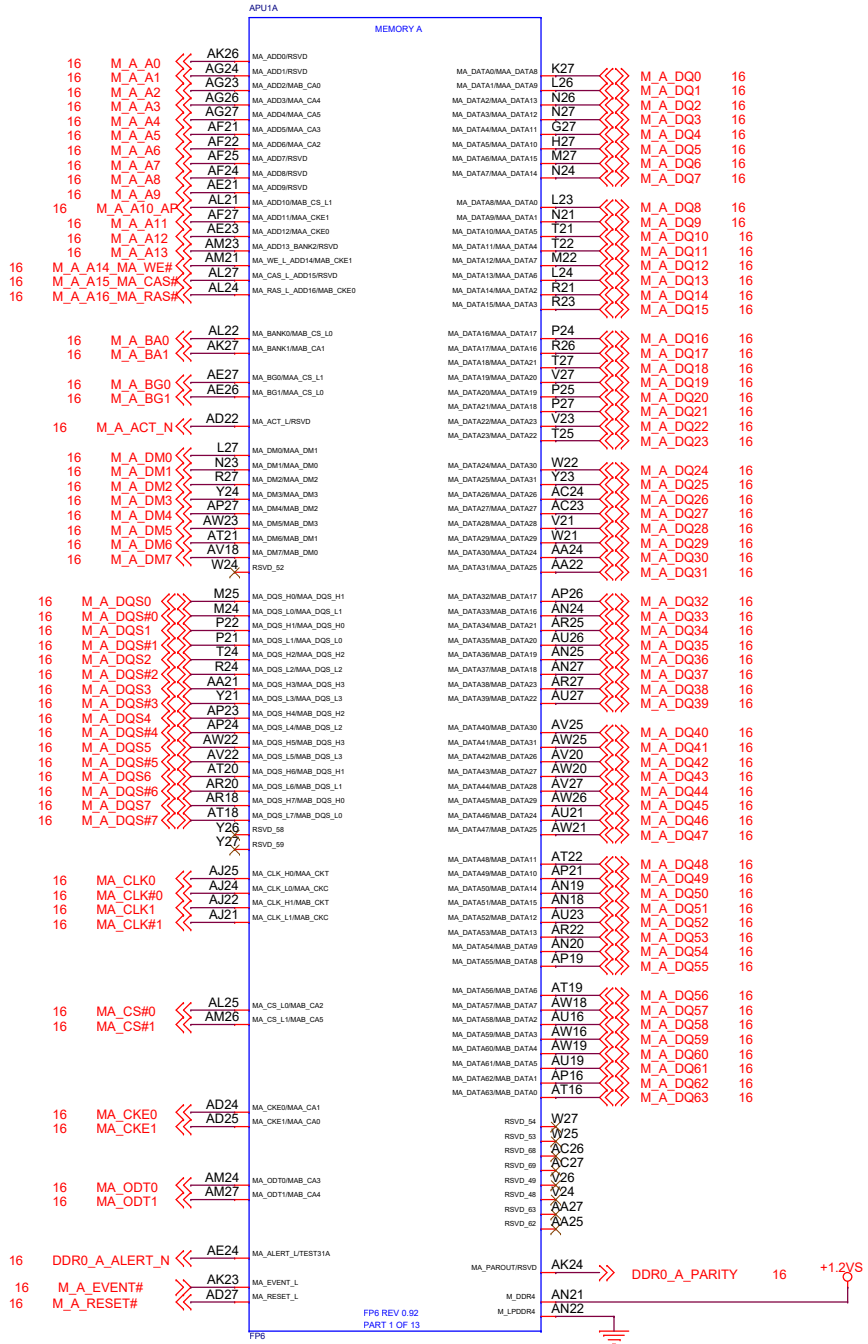

M_DDR4	Enable DDR4
0	Disable DDR4
1	Enable DDR4

M_LPDDR4	Enable DDR4
0	Disable LPDDR4x
1	Enable LPDDR4x

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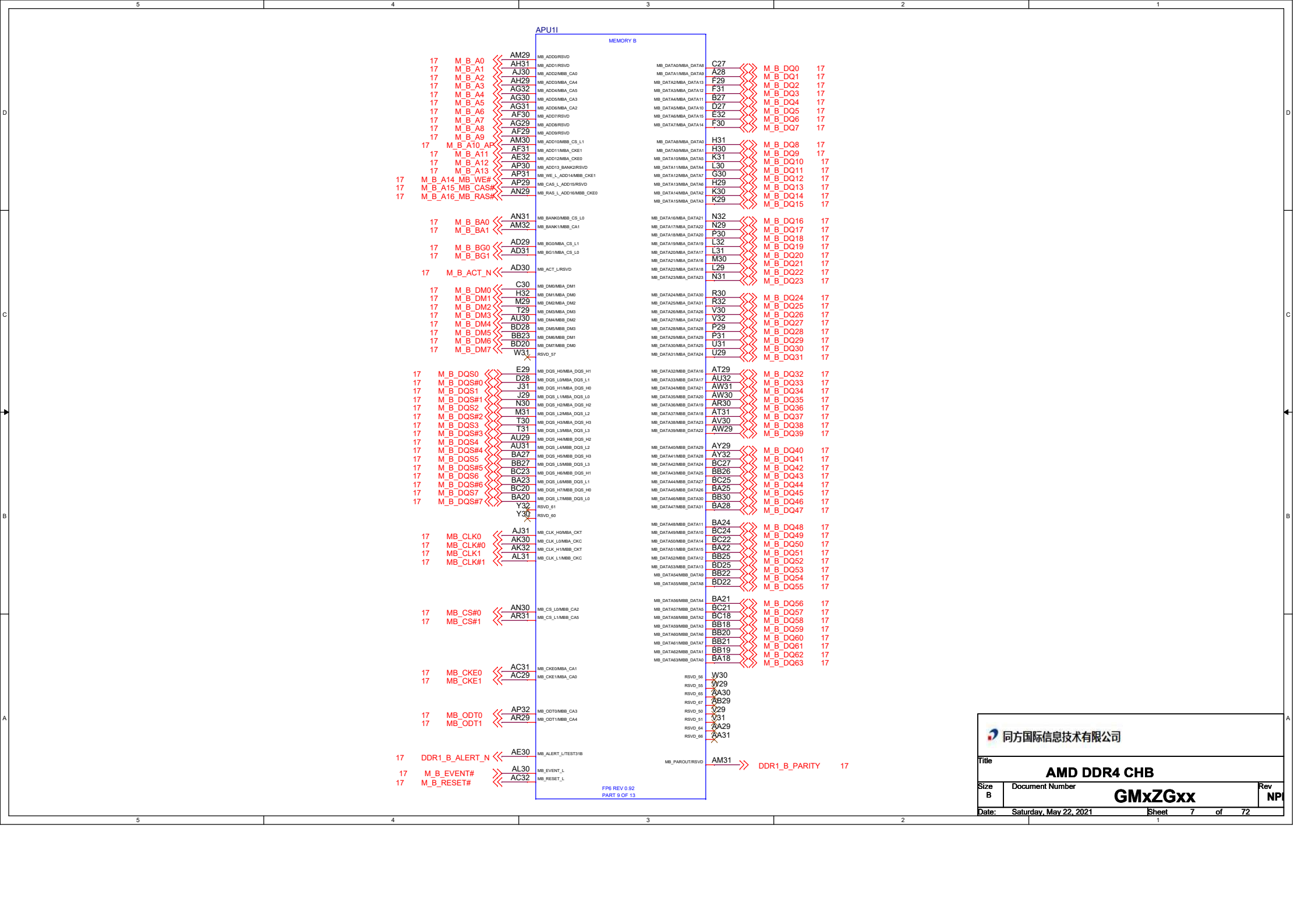
Title: **AMD DDR4 CHA**

Size: B | Document Number: **GMxZGxx** | Rev: NPI

Date: Saturday, May 22, 2021 | Sheet 6 of 72



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Title	AMD DDR4 CHB	
Size B	Document Number GMxZGxx	Rev NPI
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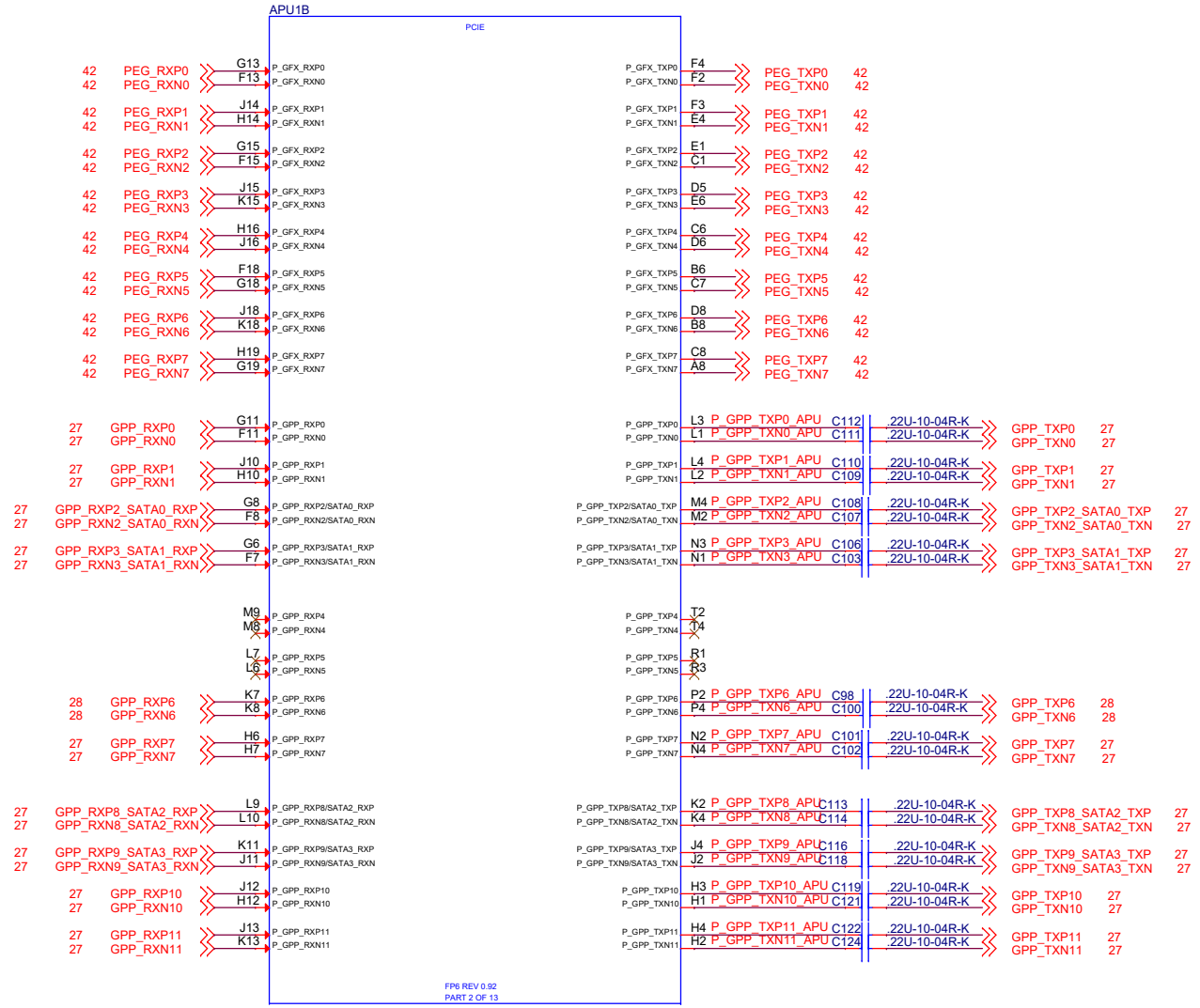

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Title: AMD GFX/PCIE

Size	Document Number	Rev
B	GMxZGxx	NPI

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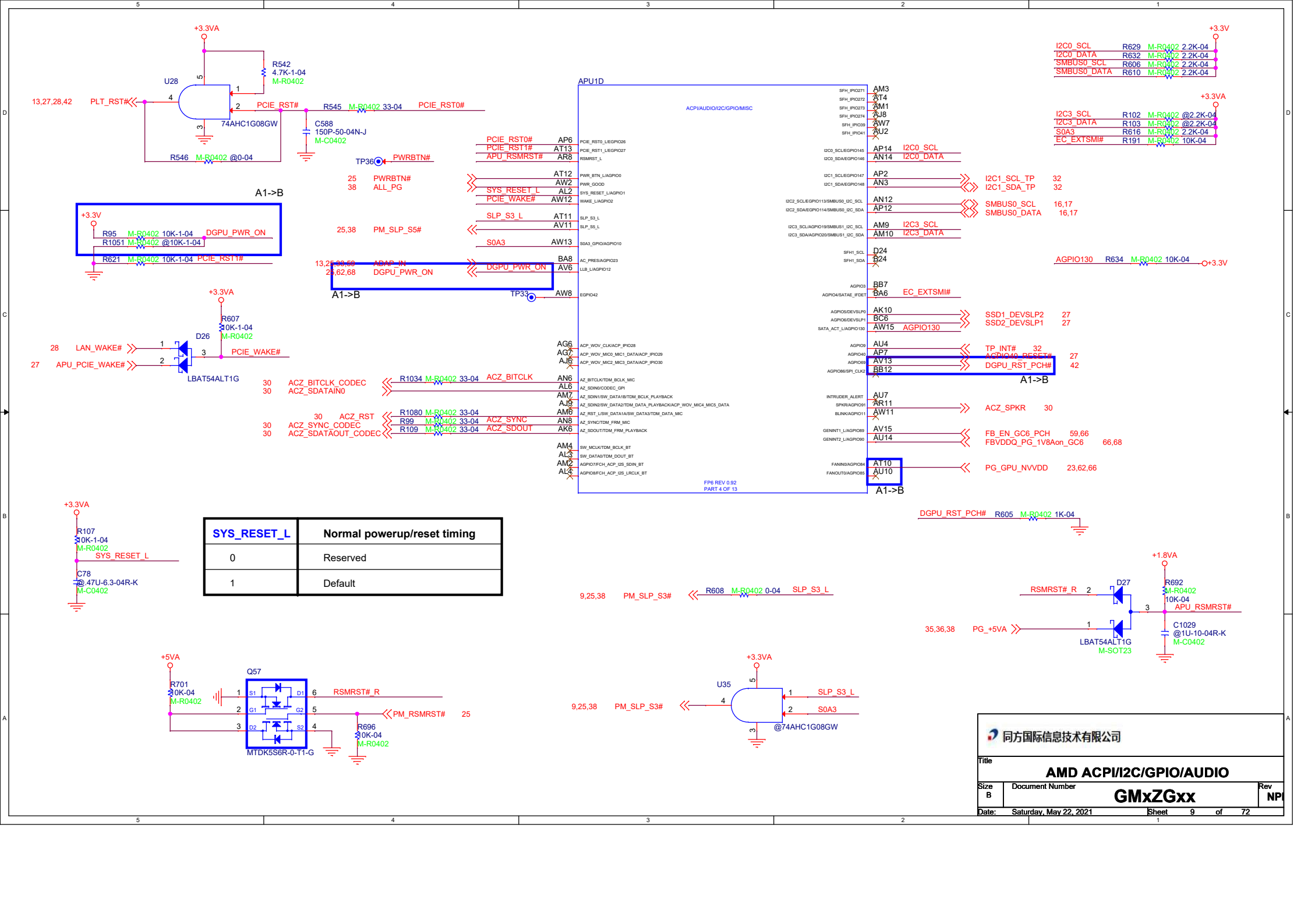
+3.3VA
U28
R542
4.7K-1-04
M-R0402
13,27,28,42
PLT_RST#
PCIE_RST#
R545 M-R0402 33-04
PCIE_RST0#
74AHC1G08GW
C588
150P-50-04N-J
M-C0402
R546 M-R0402 @0-04
A1->B
+3.3V
R95 M-R0402 10K-1-04
DGPU_PWR_ON
R1051 M-R0402 @10K-1-04
R621 M-R0402 10K-1-04
PCIE_RST1#
TP36
PWRBTN#
25 PWRBTN#
38 ALL_PG
25,38 PM_SLP_S5#
13,25,38,68 ADAPT_IN
25,62,68 DGPU_PWR_ON
A1->B
TP33
APU1D
ACPI/AUDIO/I2C/GPIO/MISC
PCIE_RST0#
PCIE_RST1#
APU_RSMRST#
SYS_RESET_L
PCIE_WAKE#
SLP_S3_L
S0A3
AP6
AT13
AR8
AT12
AW2
AL2
AW12
AT11
AV11
AW13
BA8
AV6
AW8
+3.3VA
R607
10K-1-04
M-R0402
D26
28 LAN_WAKE#
27 APU_PCIE_WAKE#
PCIE_WAKE#
LBAT54ALT1G
30 ACZ_BITCLK_CODEC
30 ACZ_SDATAIN0
R1034 M-R0402 33-04
ACZ_BITCLK
30 ACZ_RST
30 ACZ_SYNC_CODEC
30 ACZ_SDATAOUT_CODEC
R1080 M-R0402 33-04
R99 M-R0402 33-04
R109 M-R0402 33-04
ACZ_SYNC
ACZ_SDOUT
AG6
AG7
AJ6
AN6
AL6
AM7
AJ7
AM6
AN8
AK6
AM4
AL3
AM2
AL4
FP6 REV 0.92
PART 4 OF 13
AM3
AT4
AM1
AJ8
AW7
AU2
AP14
AN14
I2C0_SCL
I2C0_DATA
AP2
AN3
I2C1_SCL_TP 32
I2C1_SDA_TP 32
AN12
AP12
SMBUS0_SCL 16,17
SMBUS0_DATA 16,17
AM9
AM10
I2C3_SCL
I2C3_DATA
D24
B24
BB7
BA6
EC_EXTSMI#
AK10
BC6
AW15
AGPIO130
SSD1_DEVSLP2 27
SSD2_DEVSLP1 27
AU4
AP7
AV13
BB12
TP_INT# 32
ACPIO40_RESET# 27
DGPU_RST_PCH# 42
A1->B
AU7
AR11
AW11
ACZ_SPKR 30
AV15
AU14
FB_EN_GC6_PCH 59,66
FBVDDQ_PG_1V8Aon_GC6 66,68
AT10
AU10
PG_GPU_NVVDD 23,62,66
A1->B
+3.3V
I2C0_SCL R629 M-R0402 2.2K-04
I2C0_DATA R632 M-R0402 2.2K-04
SMBUS0_SCL R606 M-R0402 2.2K-04
SMBUS0_DATA R610 M-R0402 2.2K-04
+3.3VA
I2C3_SCL R102 M-R0402 @2.2K-04
I2C3_DATA R103 M-R0402 @2.2K-04
S0A3 R616 M-R0402 2.2K-04
EC_EXTSMI# R191 M-R0402 10K-04
AGPIO130 R634 M-R0402 10K-04 +3.3V
DGPU_RST_PCH# R605 M-R0402 1K-04
+3.3VA
R107
10K-1-04
M-R0402
SYS_RESET_L
C78
@.47U-6.3-04R-K
M-C0402
SYS_RESET_L | Normal powerup/reset timing
0 | Reserved
1 | Default
9,25,38 PM_SLP_S3#
R608 M-R0402 0-04
SLP_S3_L
+1.8VA
RSMRST#_R
D27
R692
M-R0402
10K-04
APU_RSMRST#
35,36,38 PG_+5VA
C1029
@1U-10-04R-K
M-C0402
LBAT54ALT1G
M-SOT23
+5VA
R701
10K-04
M-R0402
Q57
RSMRST#_R
PM_RSMRST# 25
R696
10K-04
M-R0402
MTDK5S6R-0-T1-G
+3.3VA
U35
9,25,38 PM_SLP_S3#
SLP_S3_L
S0A3
@74AHC1G08GW
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AMD ACPI/I2C/GPIO/AUDIO
Size B
Document Number
GMxZGxx
Rev NPI
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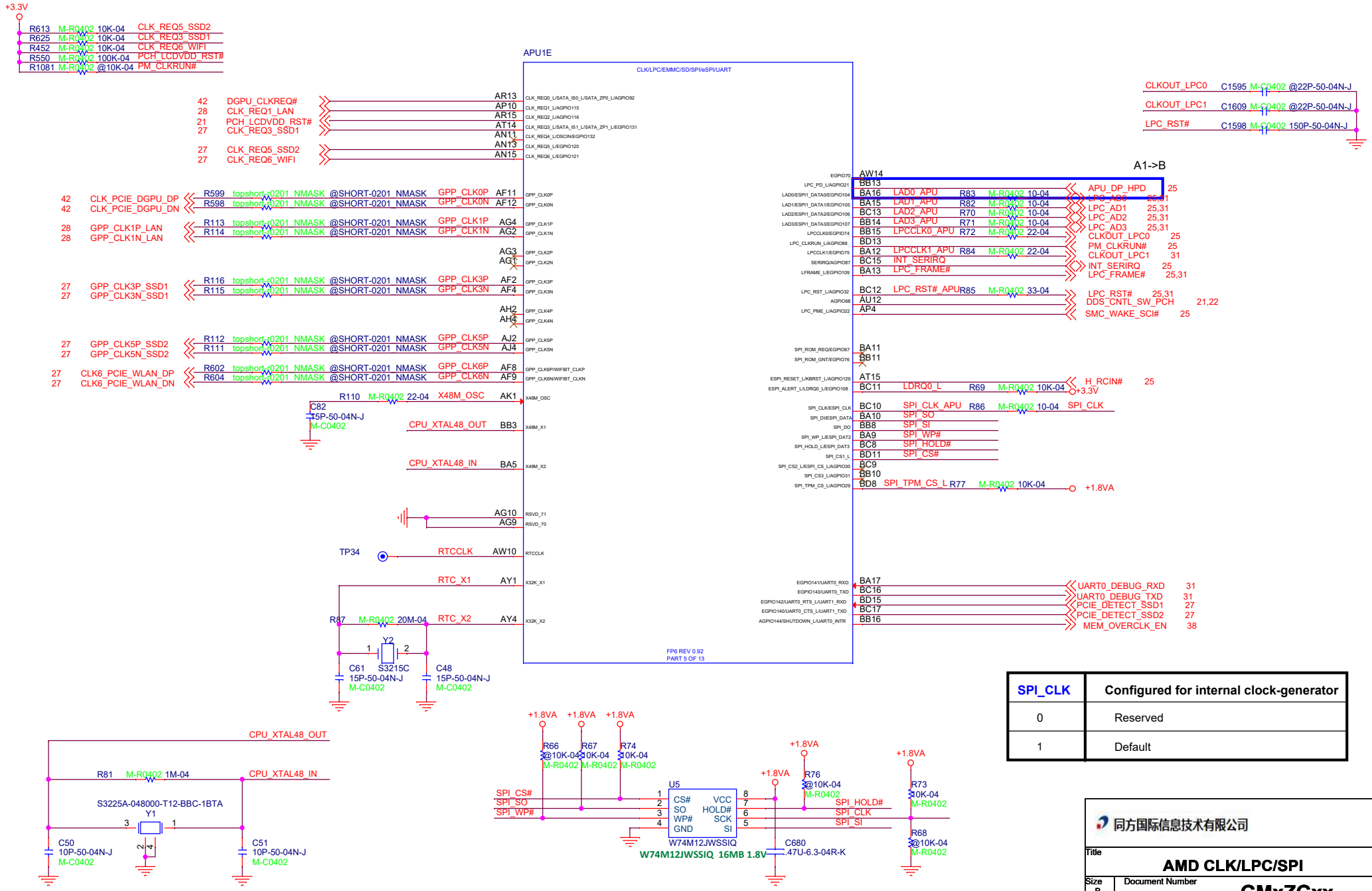

SPI_CLK	Configured for internal clock-generator
0	Reserved
1	Default

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Title: AMD CLK/LPC/SPI

Size	Document Number	Rev
B	GMxZGxx	NPI

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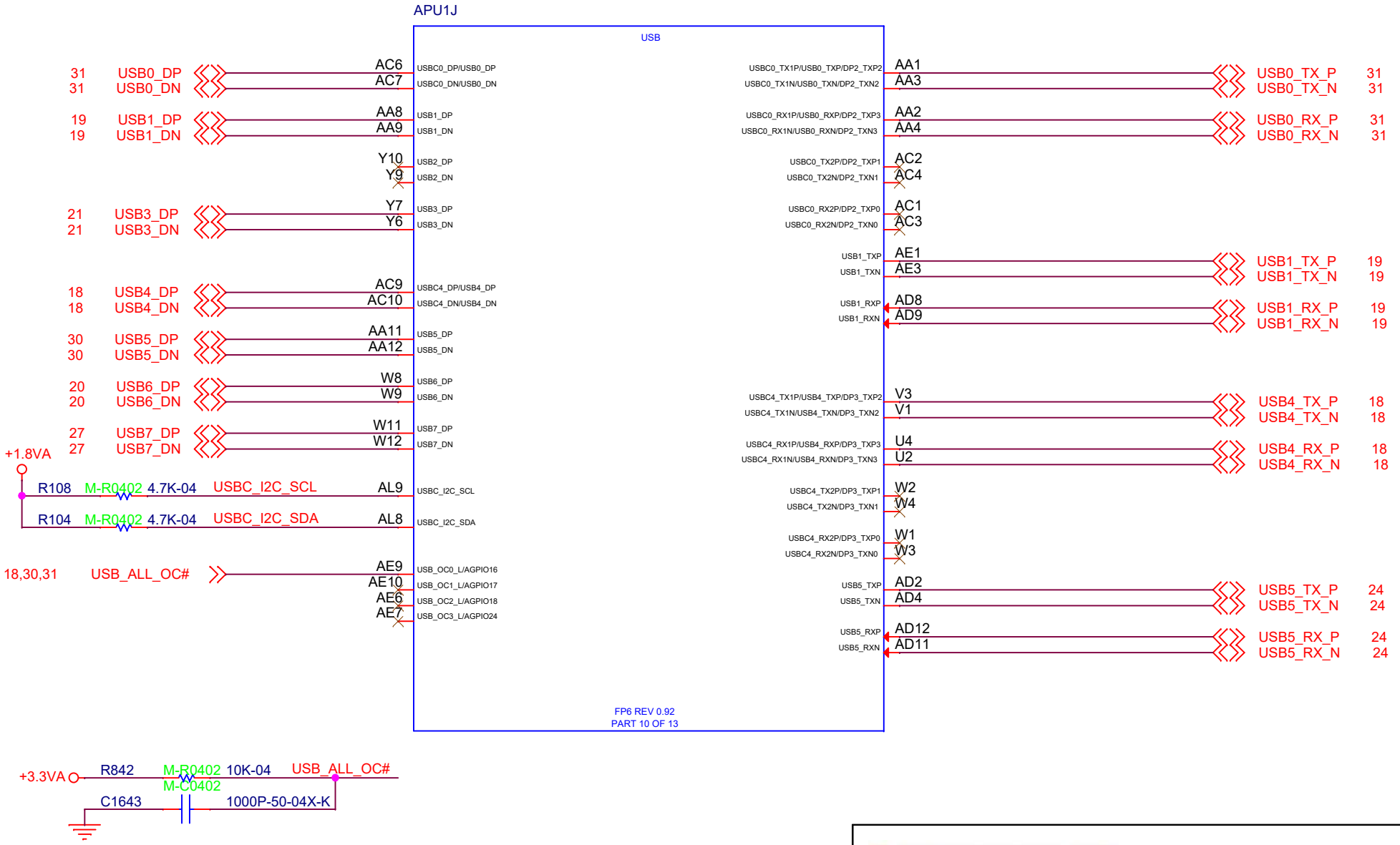

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Title: **AMD USB**

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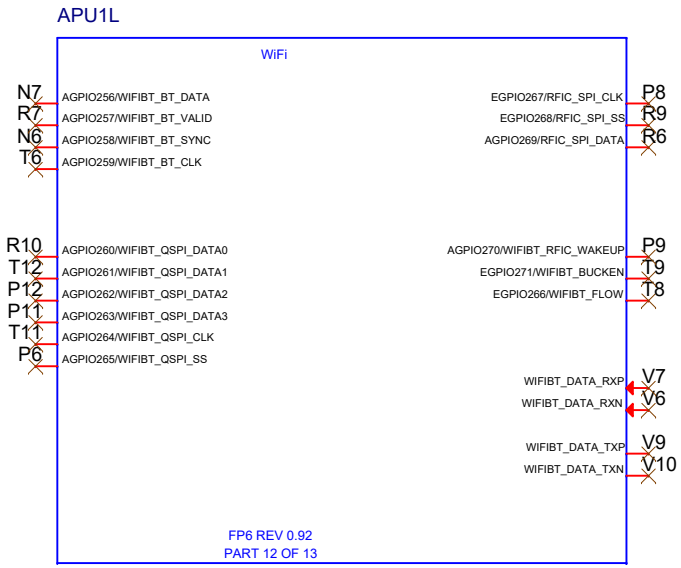

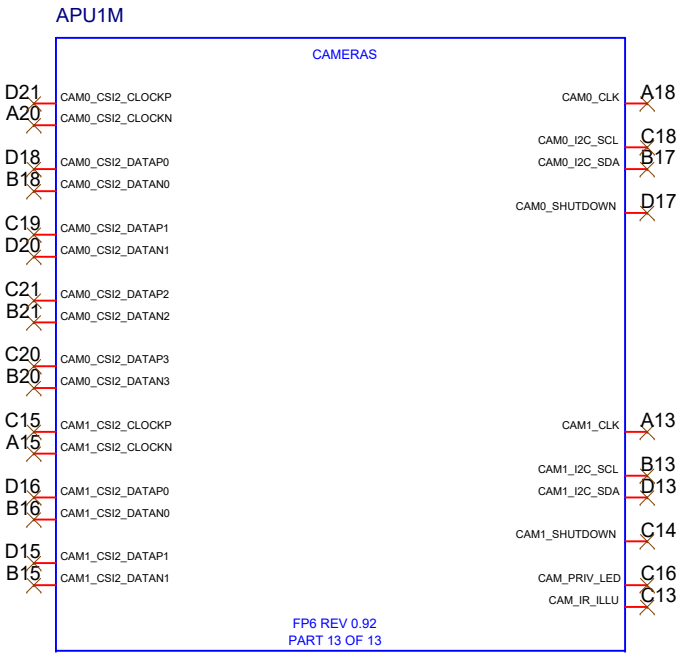

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Title

AMD WIFI/CAMERA

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A	GMxZGxx	NPI

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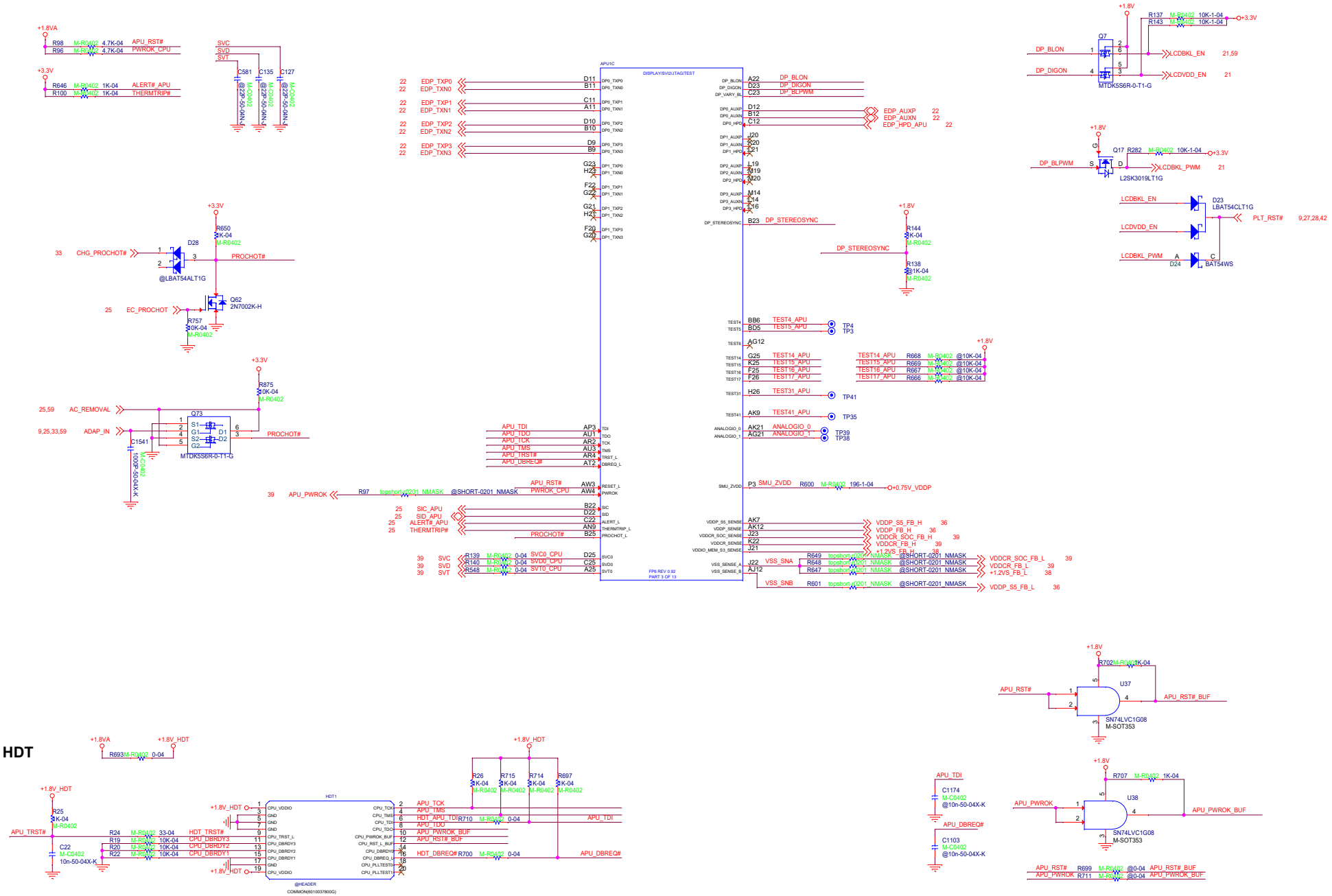

Title	AMD DP/SVI2/JTAG
Size	C
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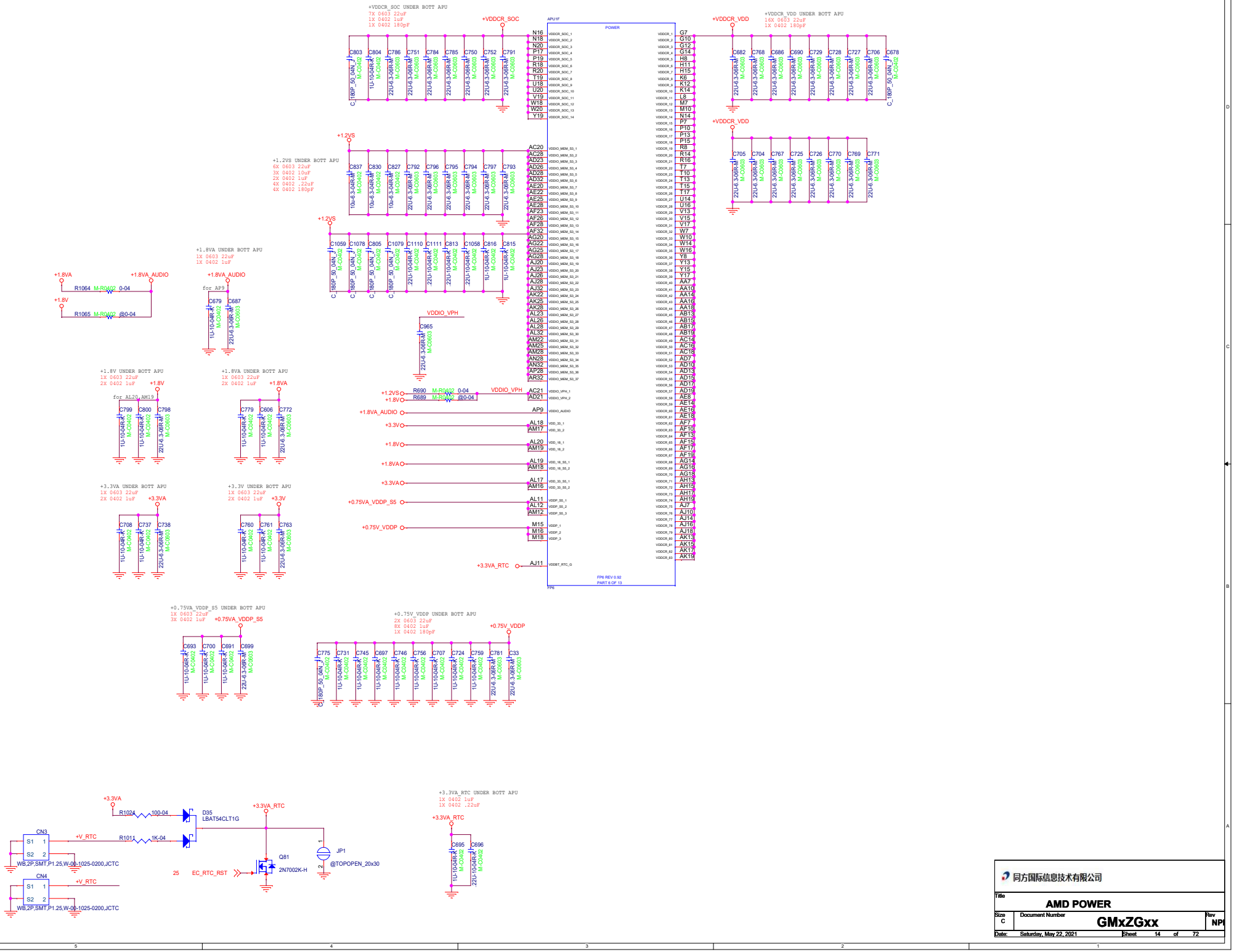

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Title	AMD POWER	
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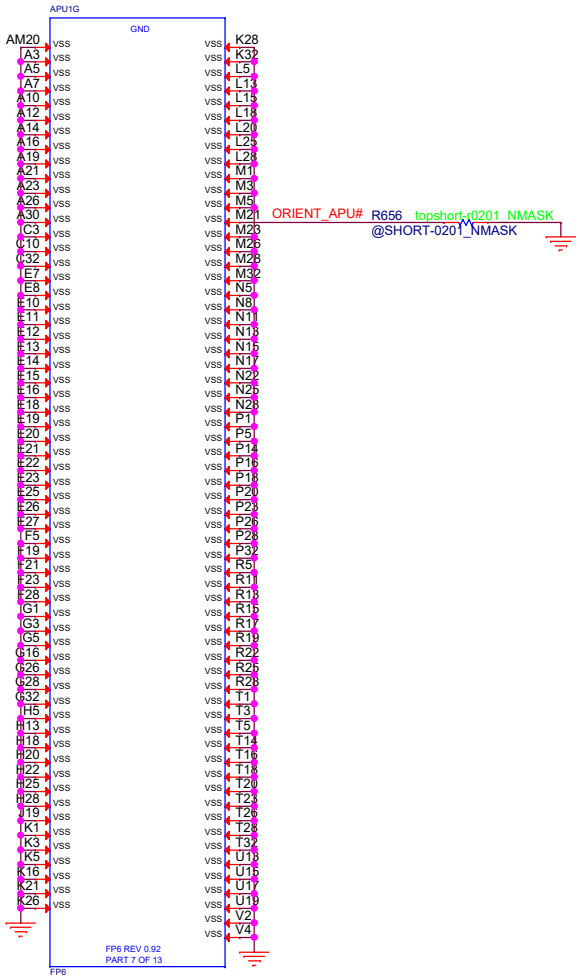

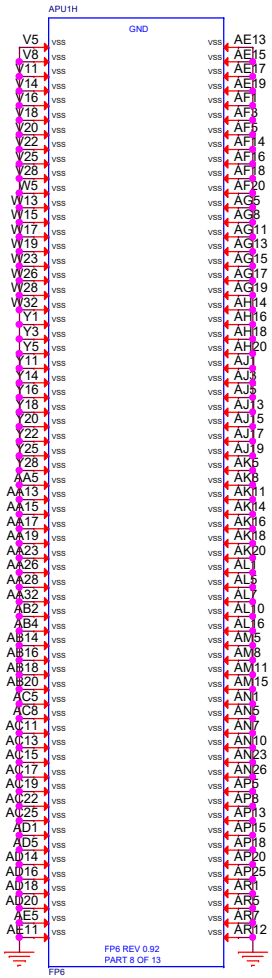

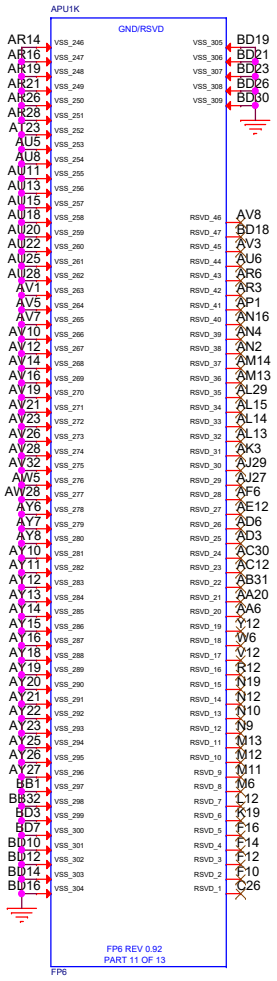

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Title: AMD GND

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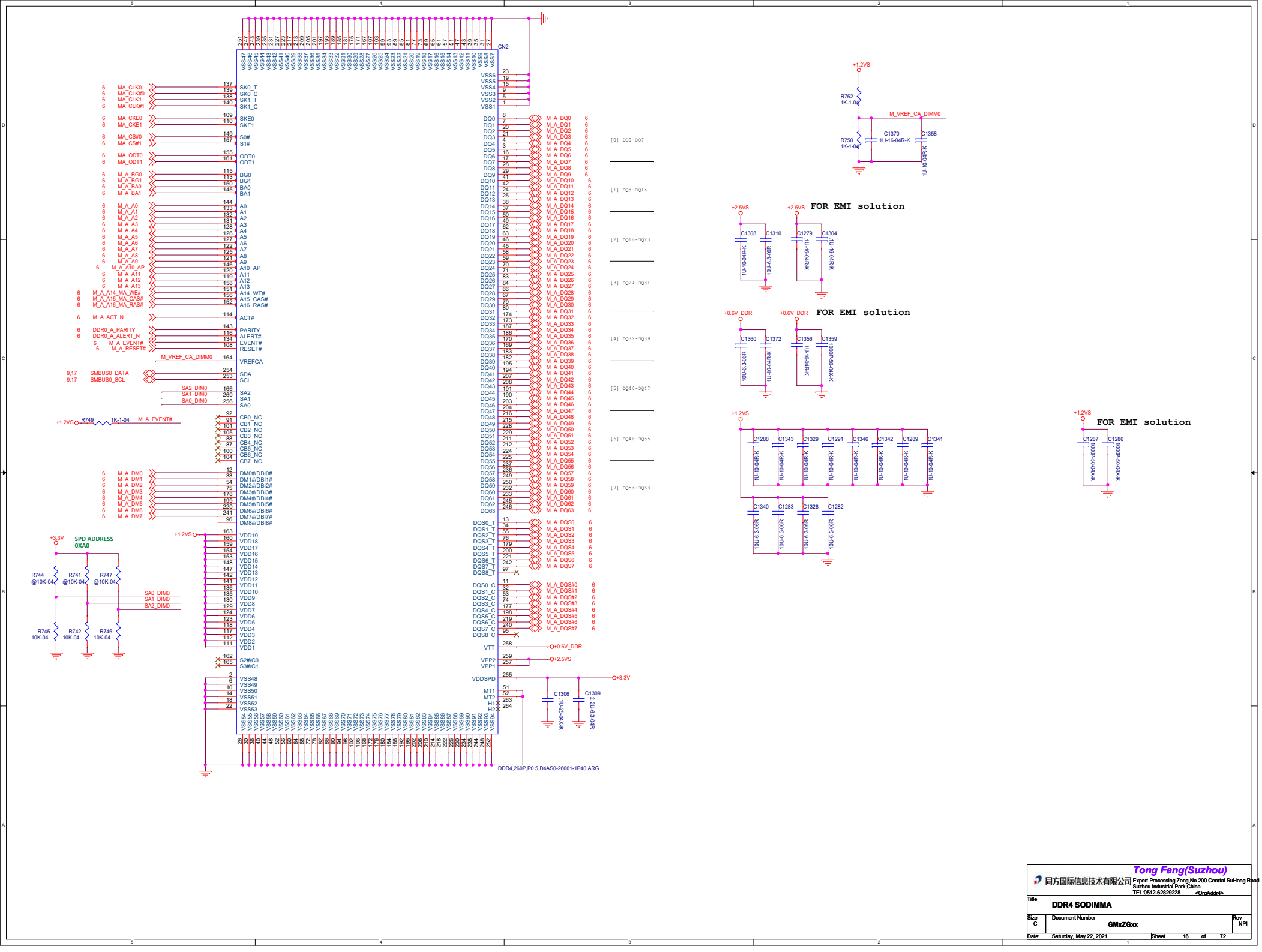

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Title	DDR4 SODIMMA		
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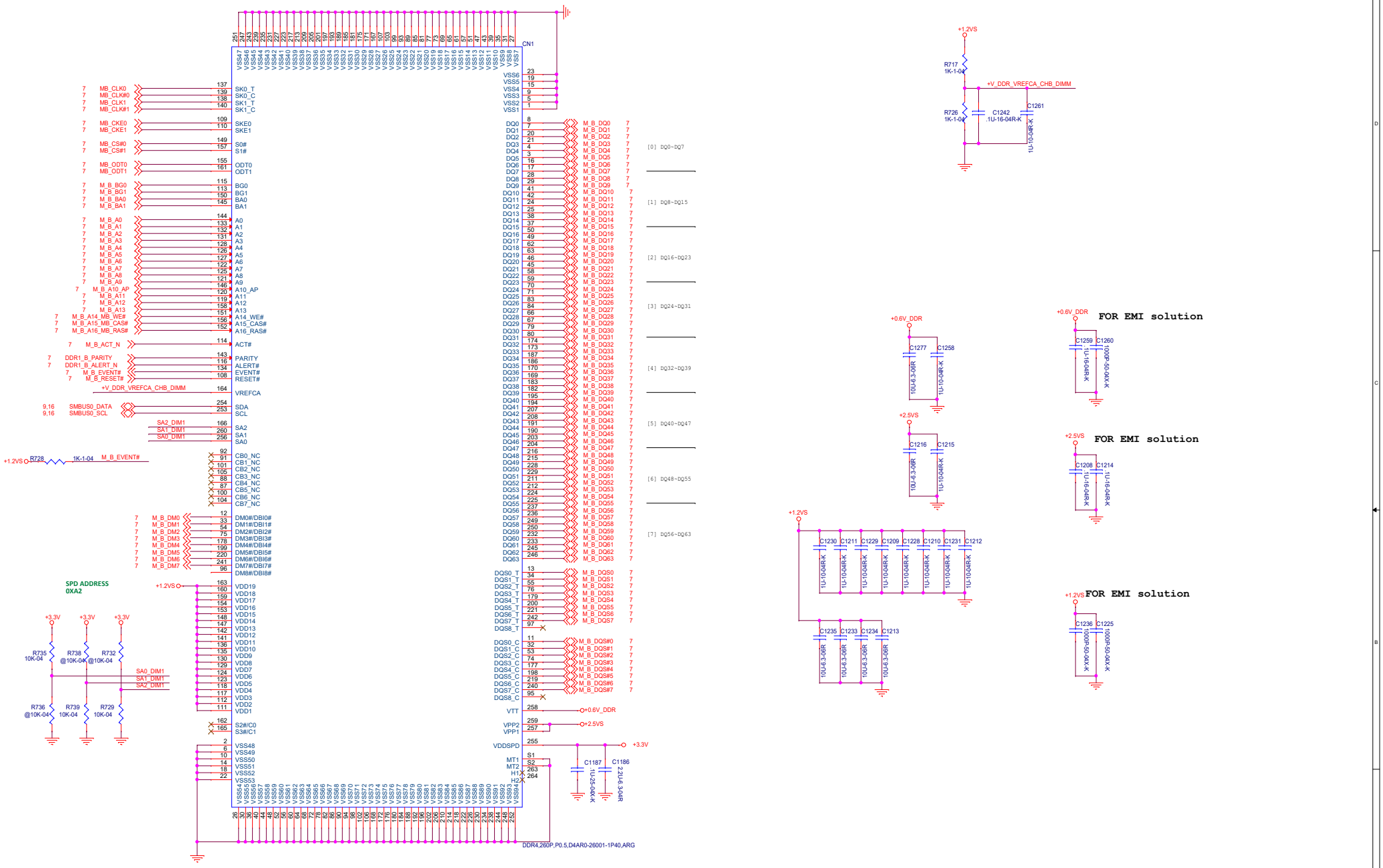

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Title	DDR4 SODIMMB	
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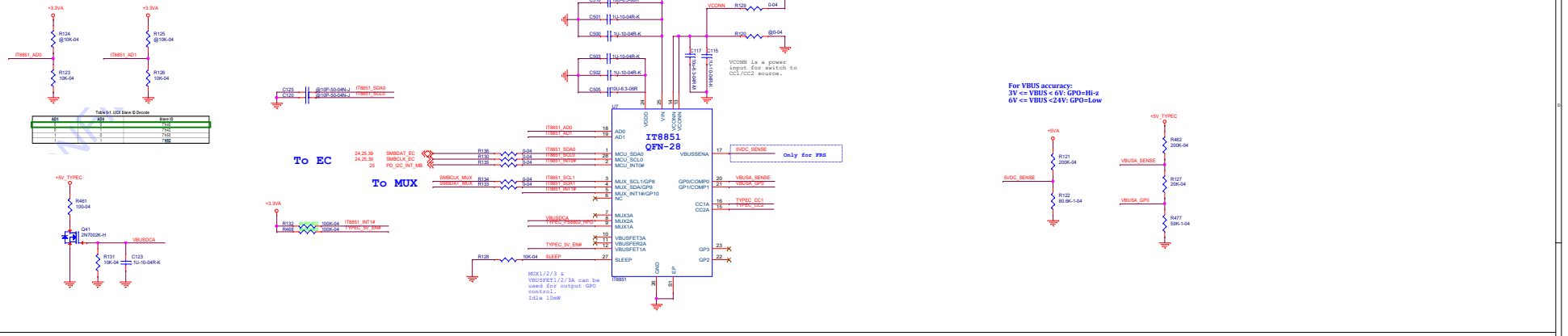
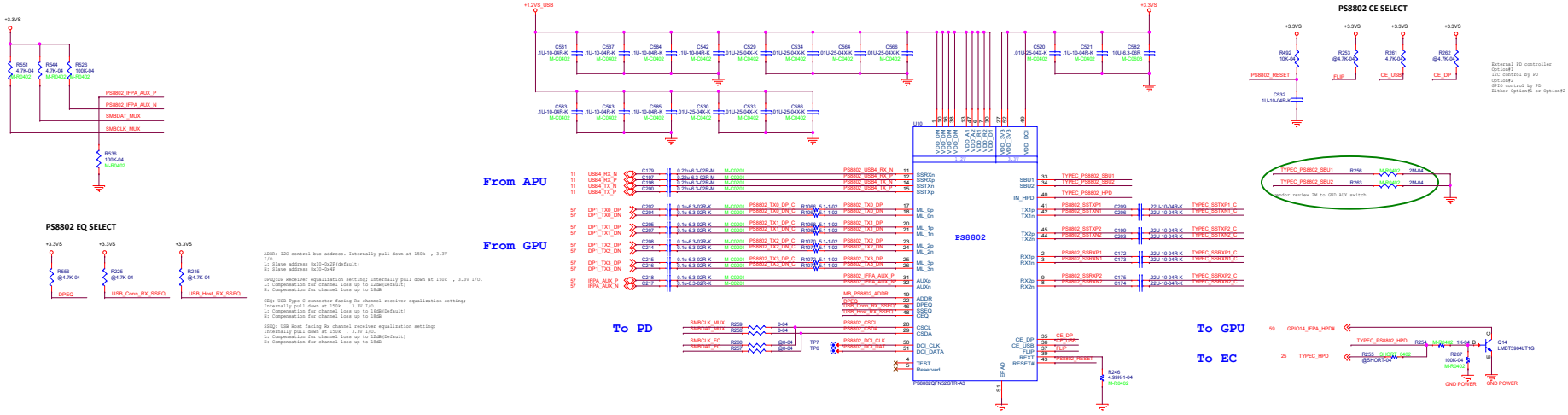
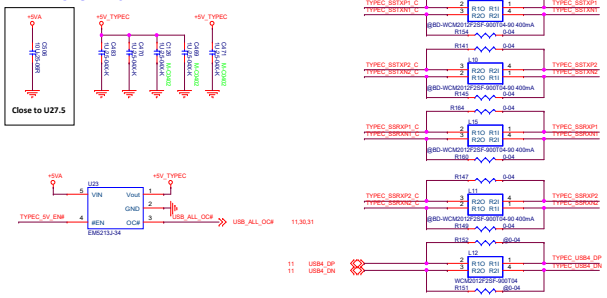
MB Type C PD IT8851



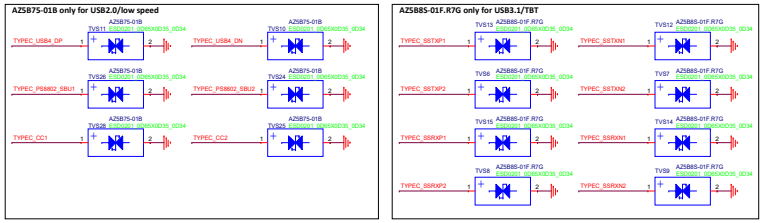
MB TYPE C CONN / MUX PS8802 6IN 4OUT



MB TYPE C 5V POWER



MB TYPE C USB3.2 ESD



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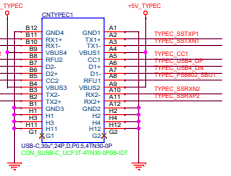

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Title	RESERVE		
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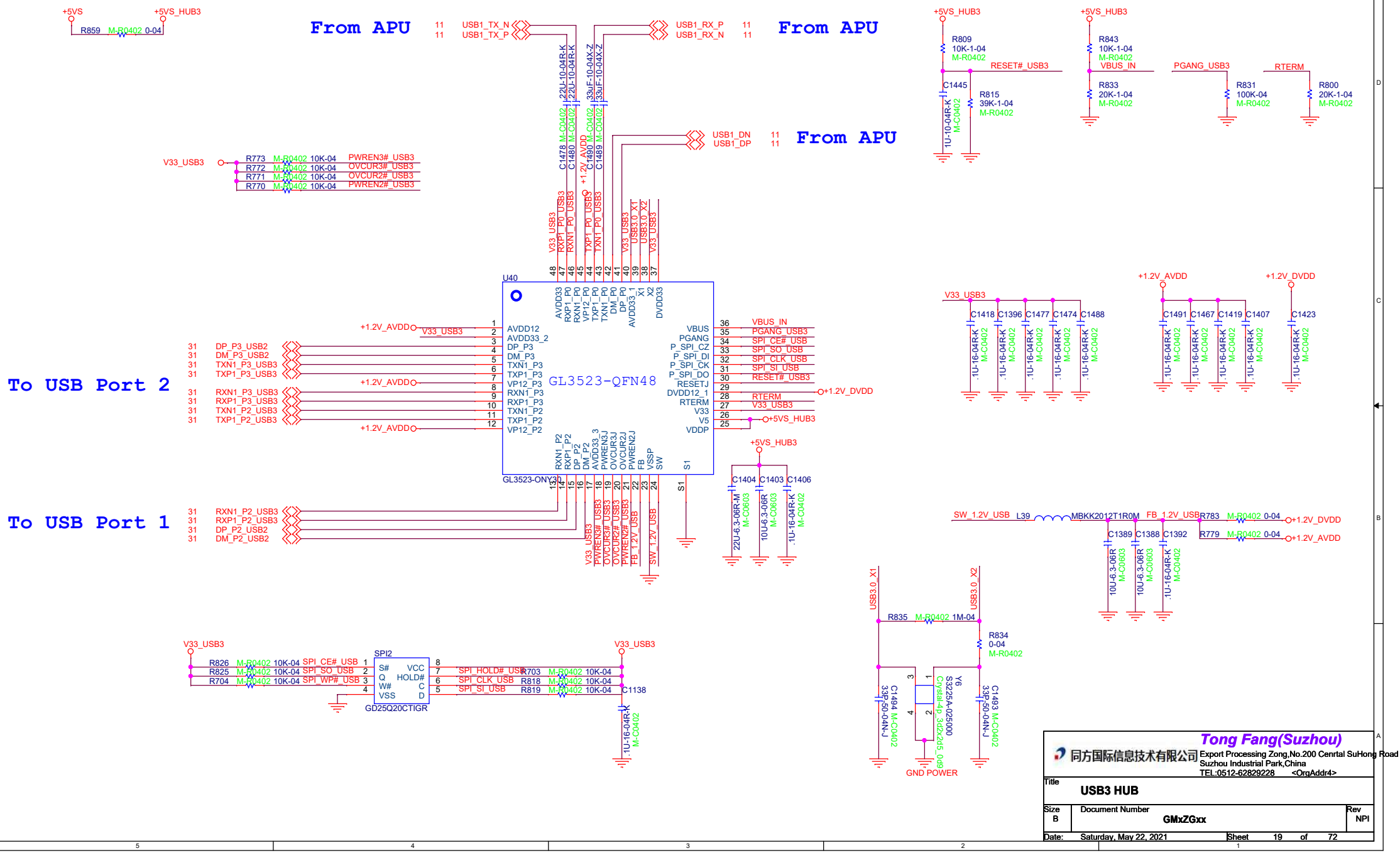
From APU
From APU
From APU
To USB Port 2
To USB Port 1
U40
GL3523-QFN48
GL3523-ONY30
SPI2
GD25Q20CTIGR
Tong Fang(Suzhou)
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Export Processing Zong,No.200 Cenrtal SuHong Road
Suzhou Industrial Park,China
TEL:0512-62829228
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Title
USB3 HUB
Size
B
Document Number
GMxZGxx
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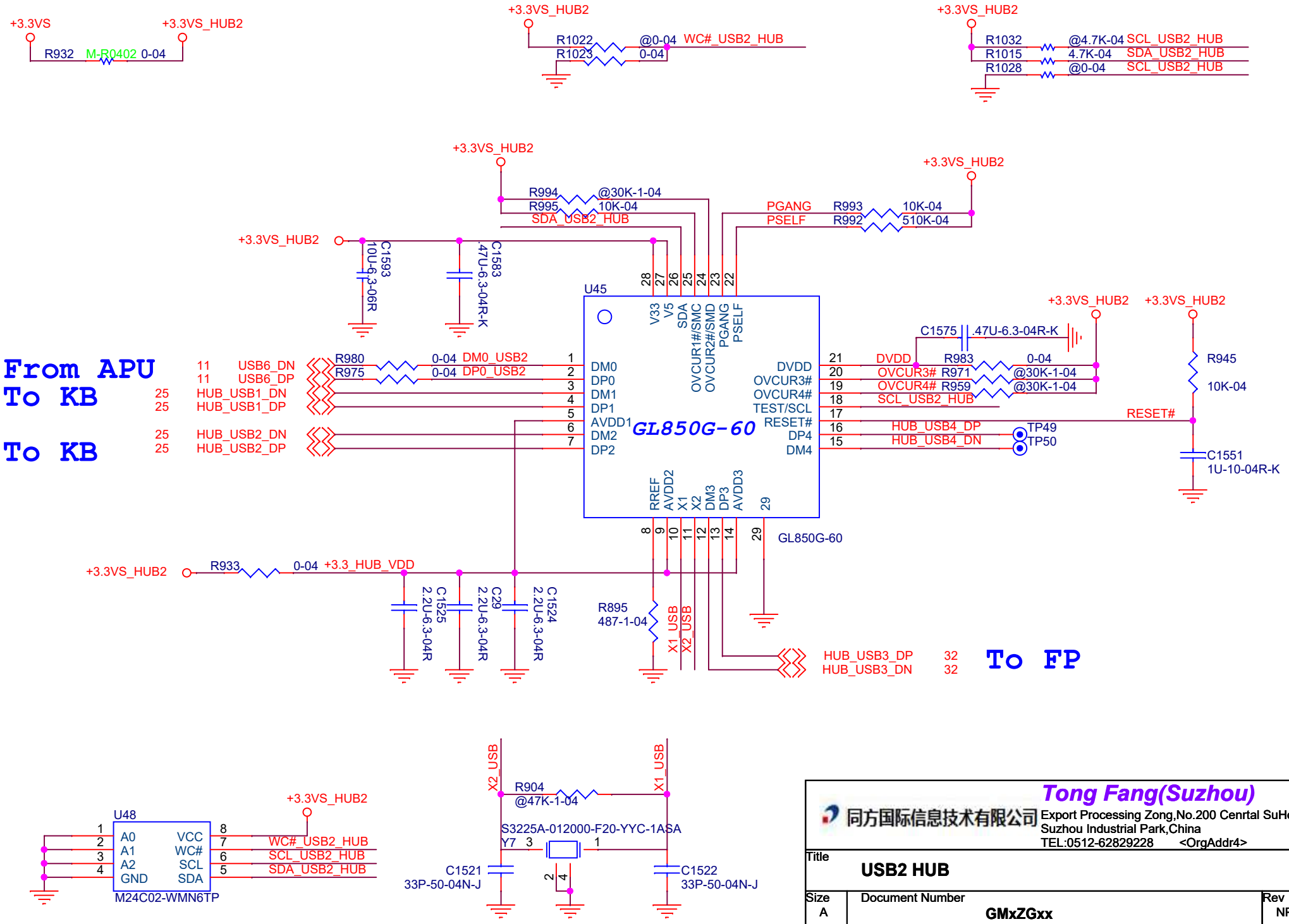

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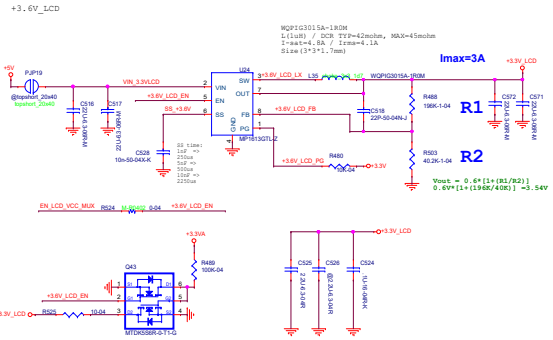
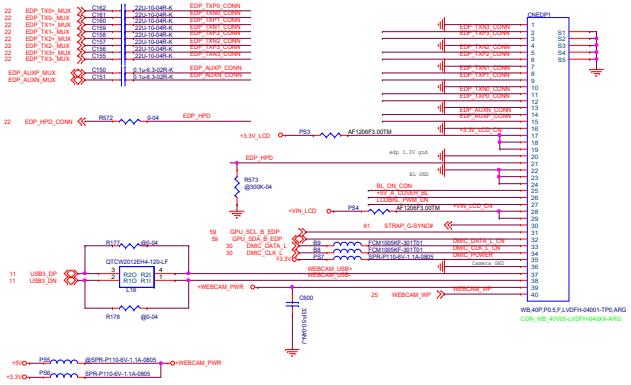
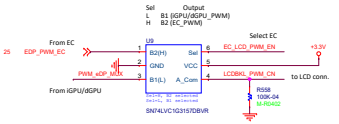
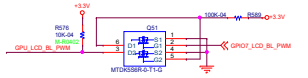
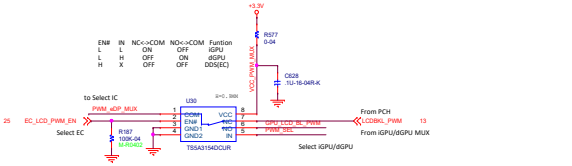
Title	USB2 HUB	
Size A	Document Number GMxZGxx	Rev NPI
Date: Saturday, May 22, 2021	Sheet 20 of 72	

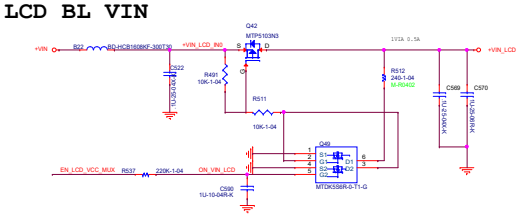


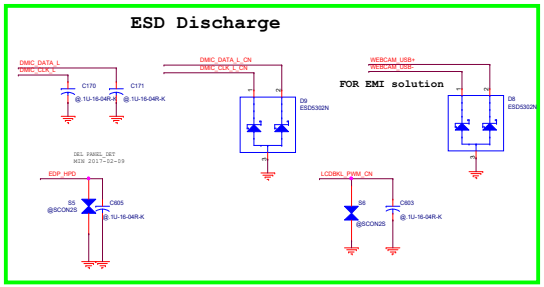


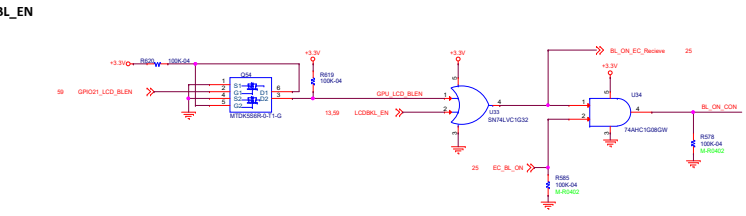


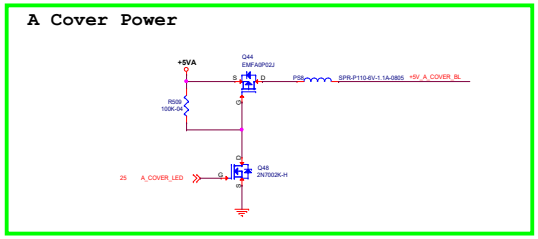






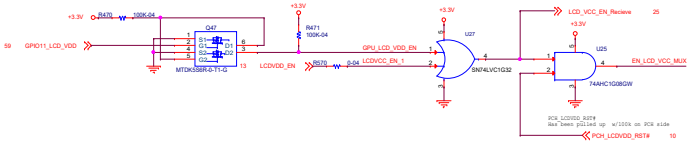






BL_EN

LCDVCC_EN



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Title	EDP	
Size: D	Document Number: GWx2Gxx	Rev: NPI
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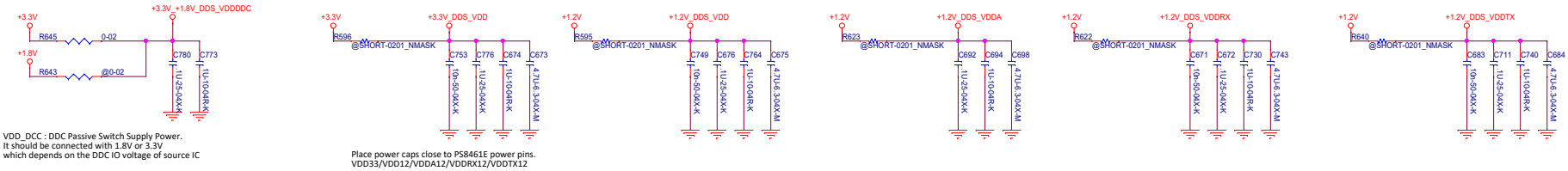
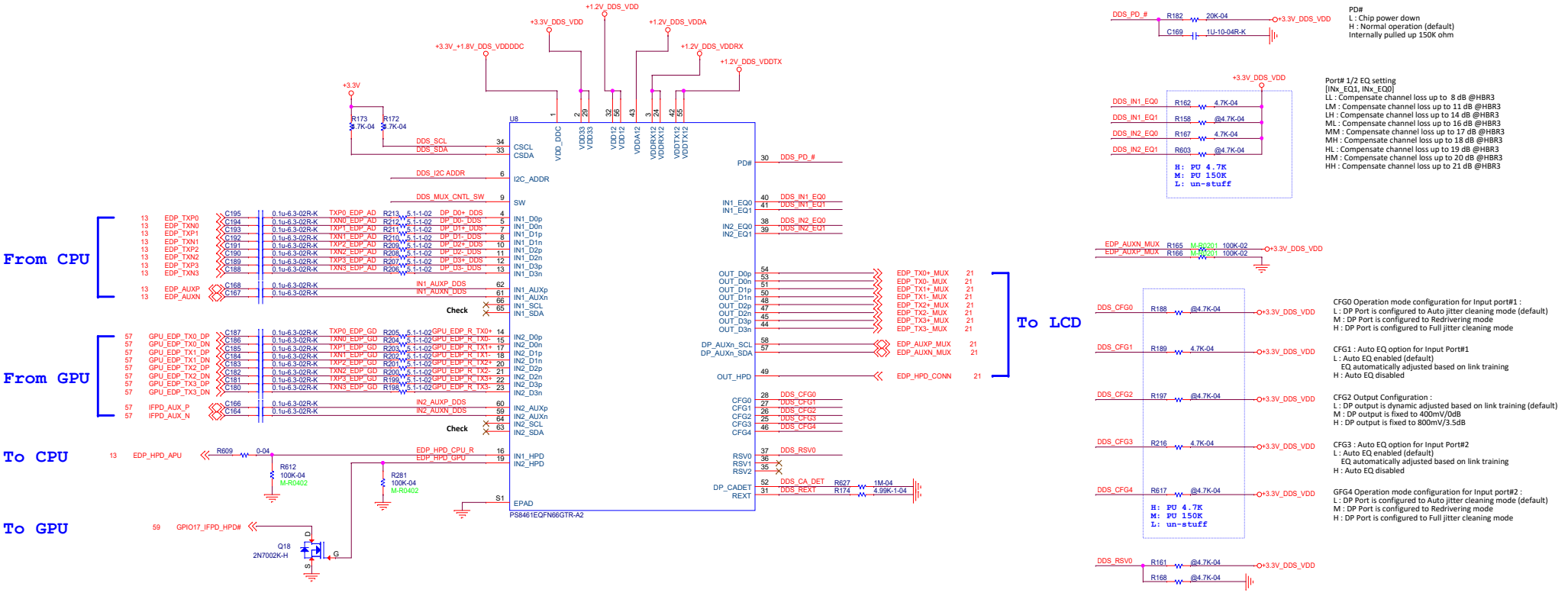
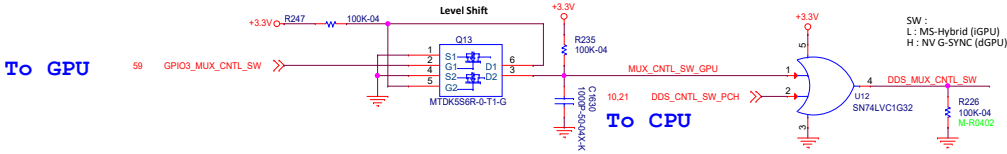
DDS for Mux eDP







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Title	POWER N18E TGP SENSE	
Size C	Document Number GMxZGxx	Rev NPI
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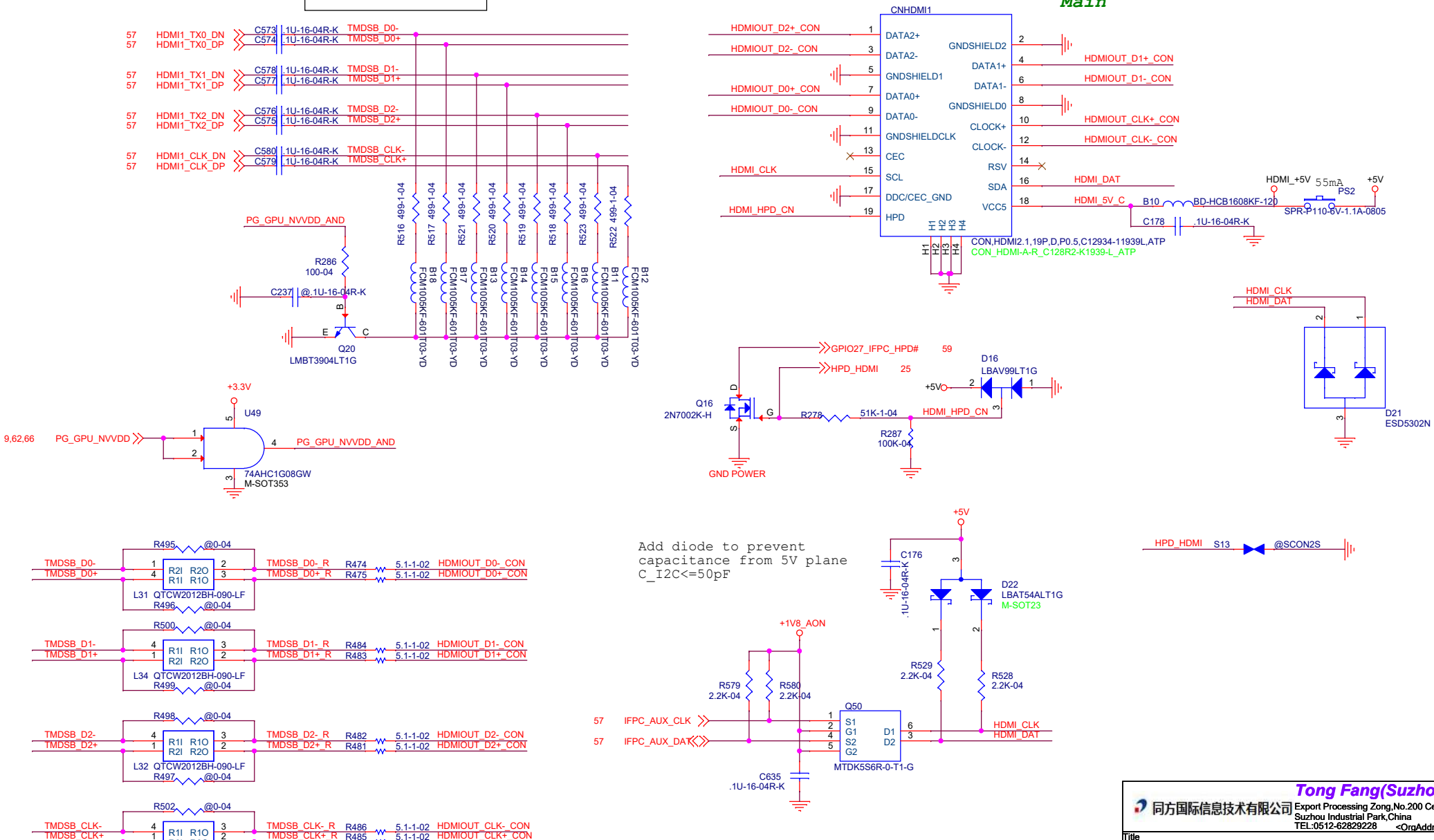
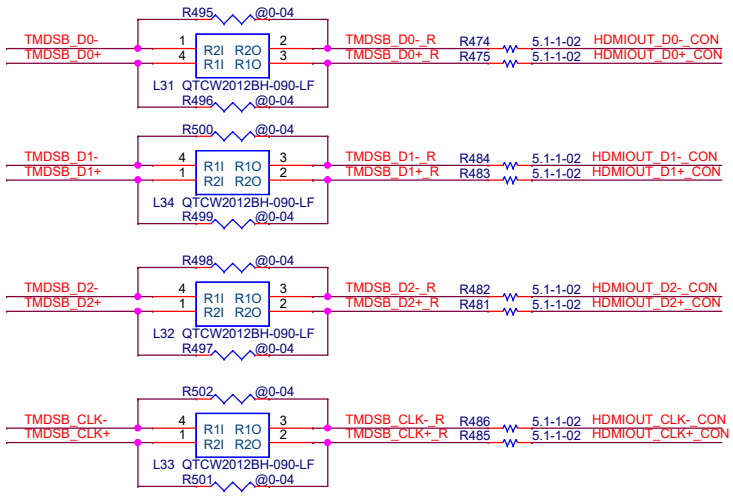
HDMI CONN

HDMI 2.0 Max =18Gbps, 4K resolution at 60HZ

HDMI R2.0 670MHz NV Supported
HDMI R1.4 340MHz Intel Supported

Main





Add diode to prevent capacitance from 5V plane
C_I2C<=50pF

HPD_HDMI S13 @SCON2S

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Title	HDMI	
Size B	Document Number GMxZGxx	Rev NPI
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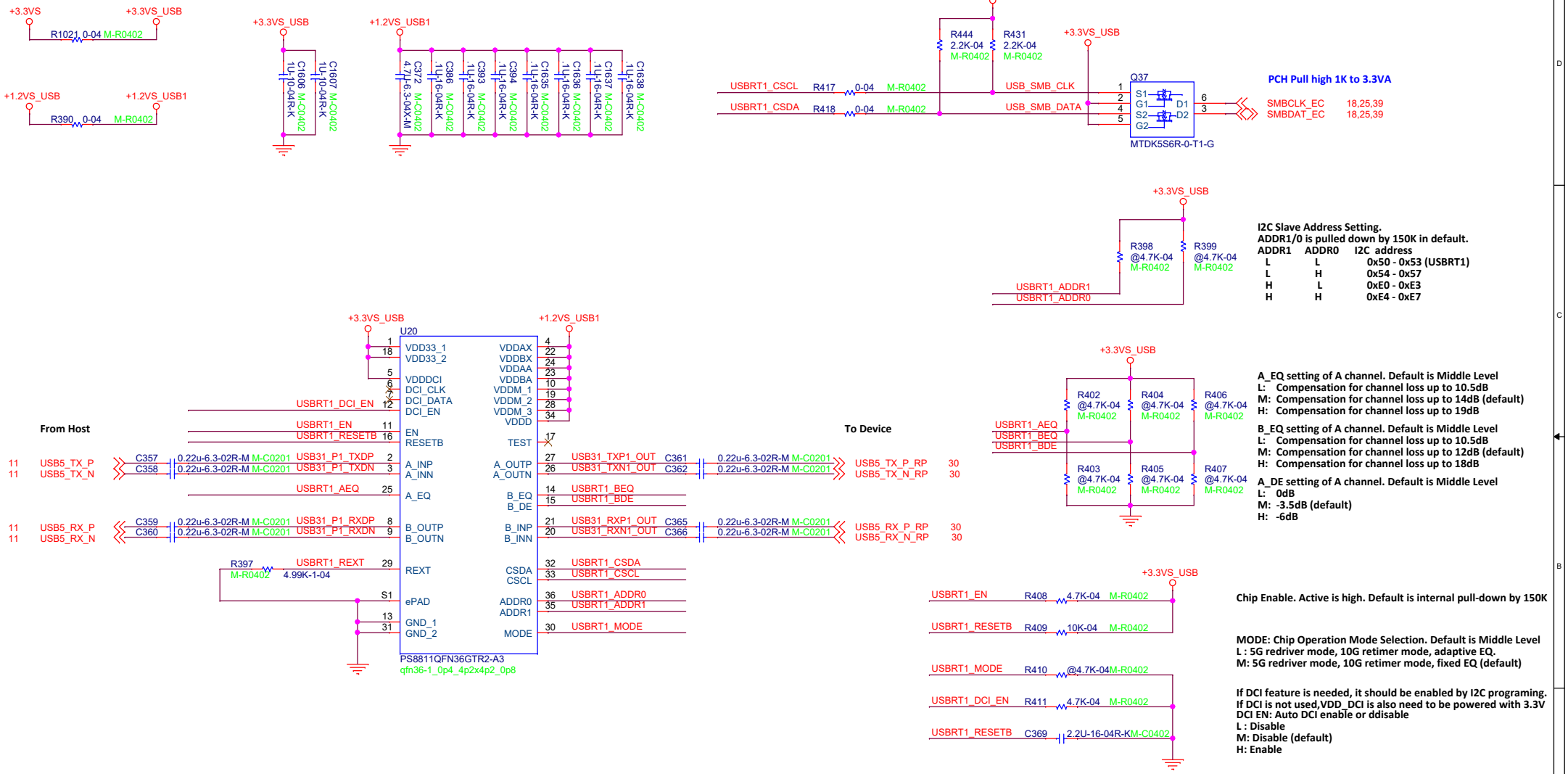
USB3.2 GEN2 RETIMER



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Title	Mini DP	
Size B	Document Number GMxZGxx	Rev NPI
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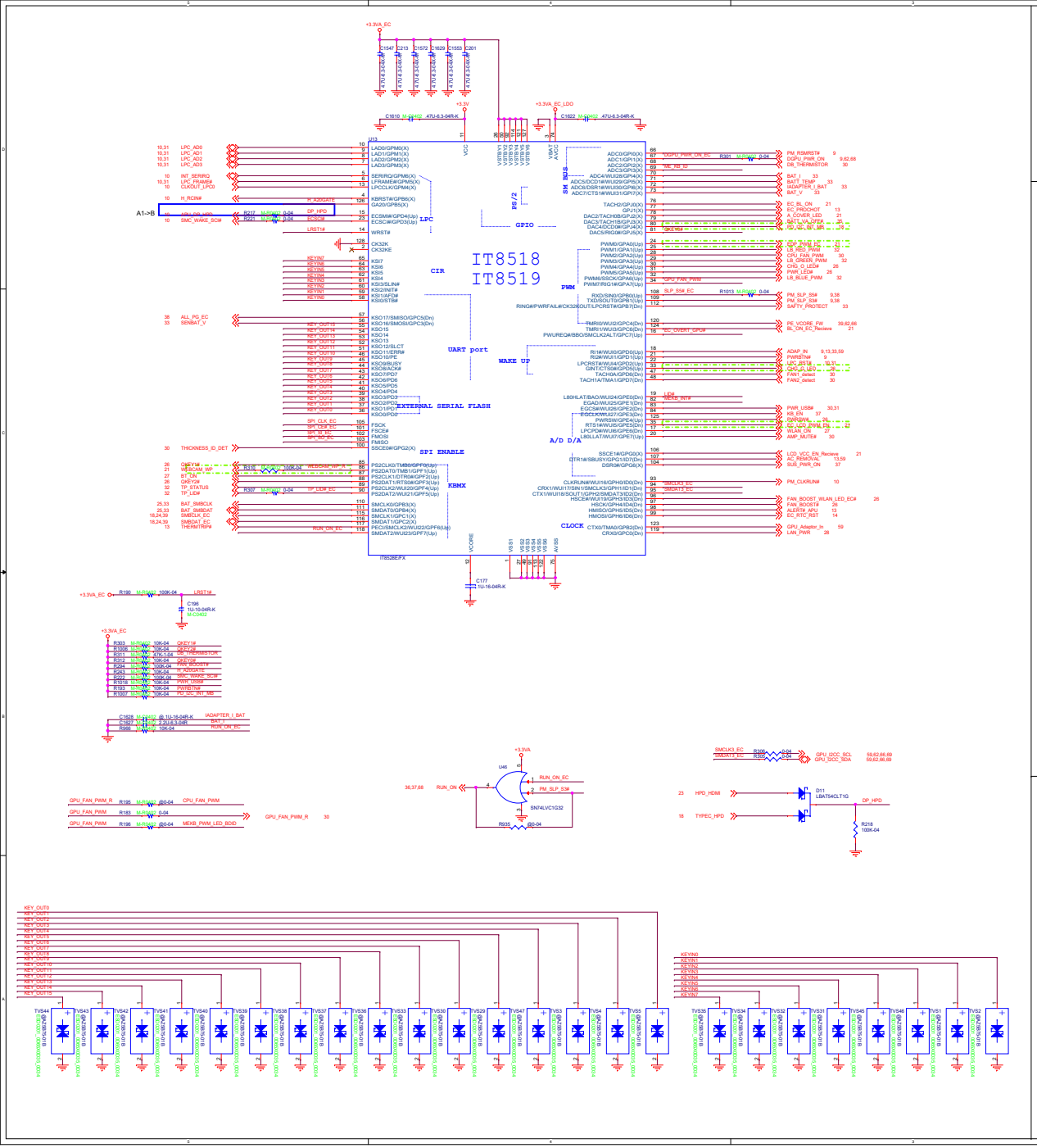
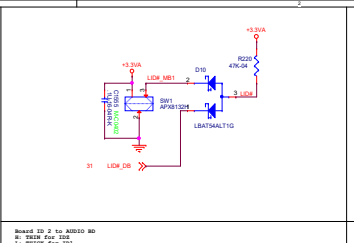
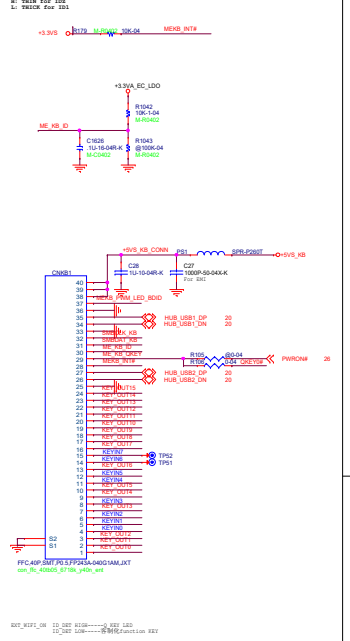
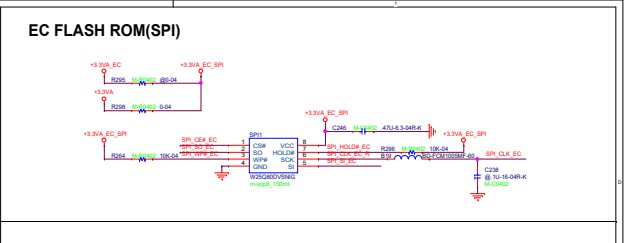
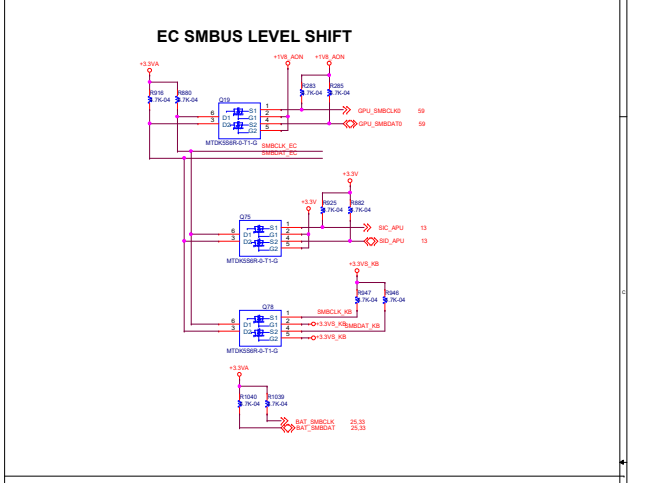


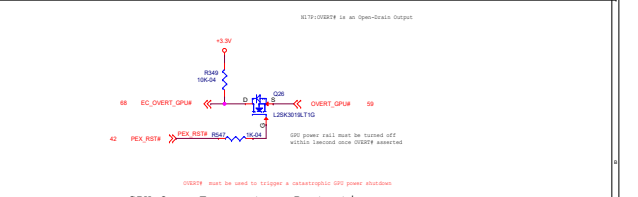


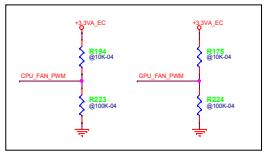
Board ID 2 to ADDIO BD
H: THICK for IDS
L: THICK for IDS

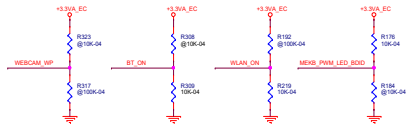












DGPU version

Level \ NET	CPU_FAN_PWM GPA2	GPU_FAN_PWM GPA7
GN20-E7	LOW	LOW
GN20-E5	LOW	HIGH
GN20-E3	HIGH	LOW
GN20-E5 MAX-Q	HIGH	HIGH

AMD version

Level \ NET	WLAN_ON GPE6
Renoir	HIGH
Cezanne	LOW

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Title	EC IT8528E/BIOS/KB CONN		
Size: D	Document Number: GMx7Gxx		Rev: NPI
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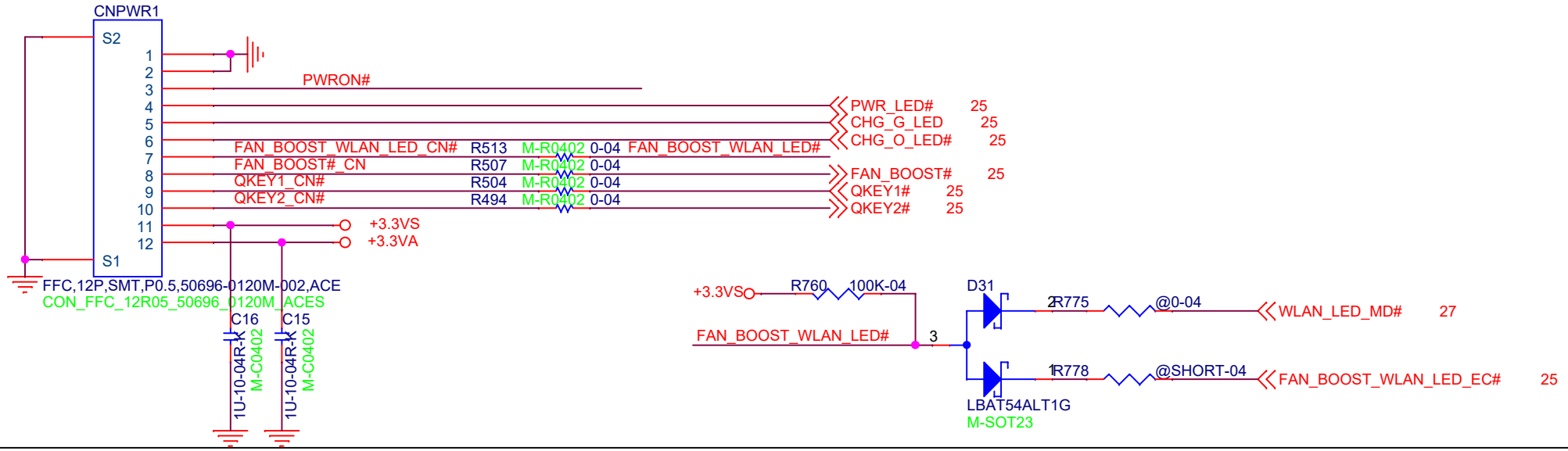
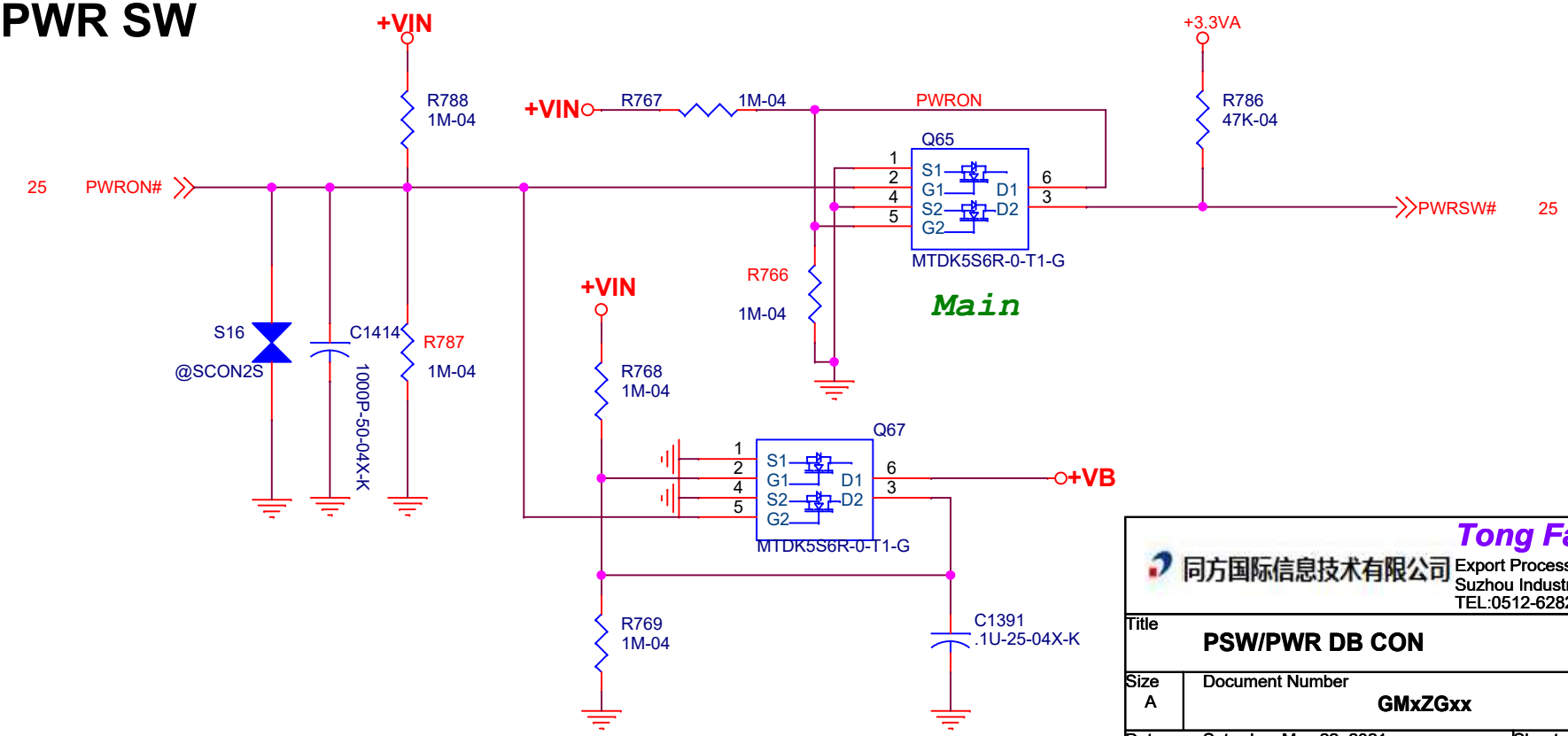
POWER DB CONN.



PWR SW



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Title	PSW/PWR DB CON	
Size A	Document Number GMxZGxx	Rev NPI
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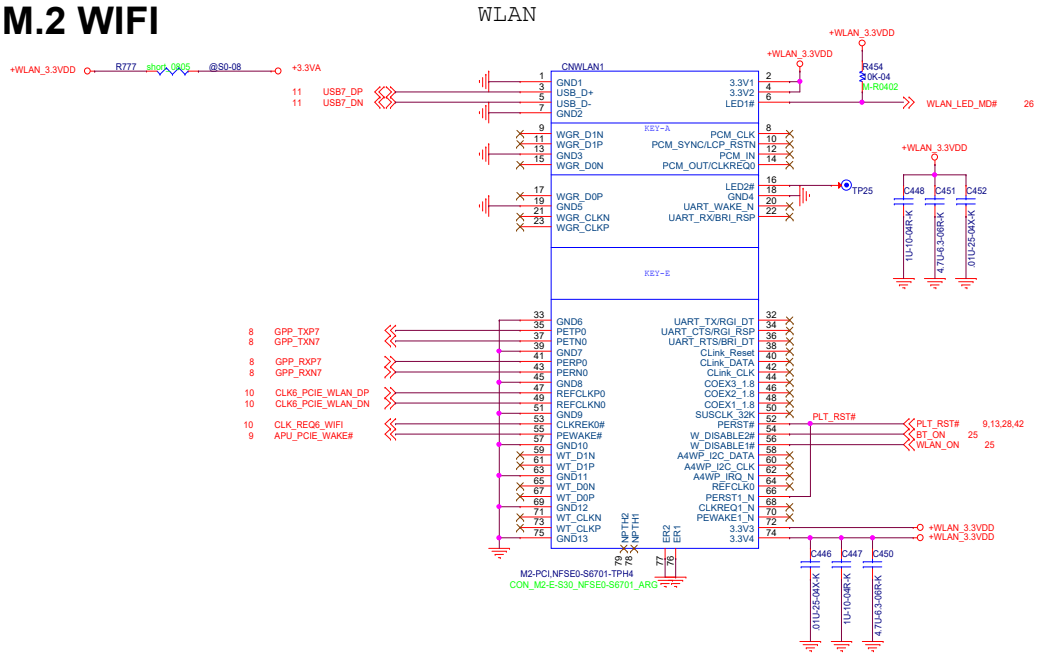
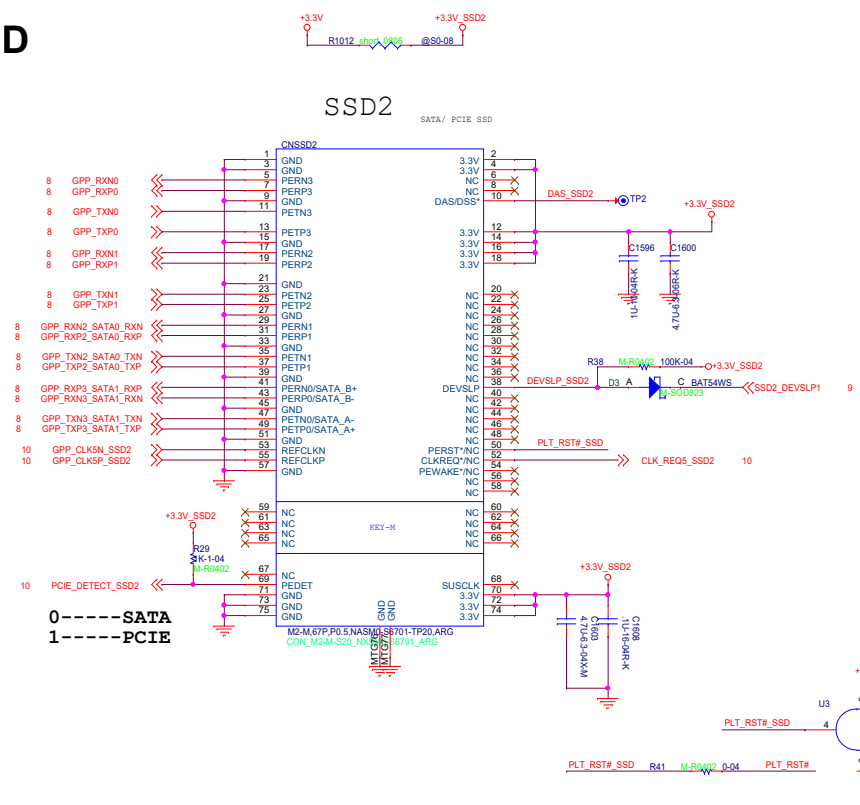
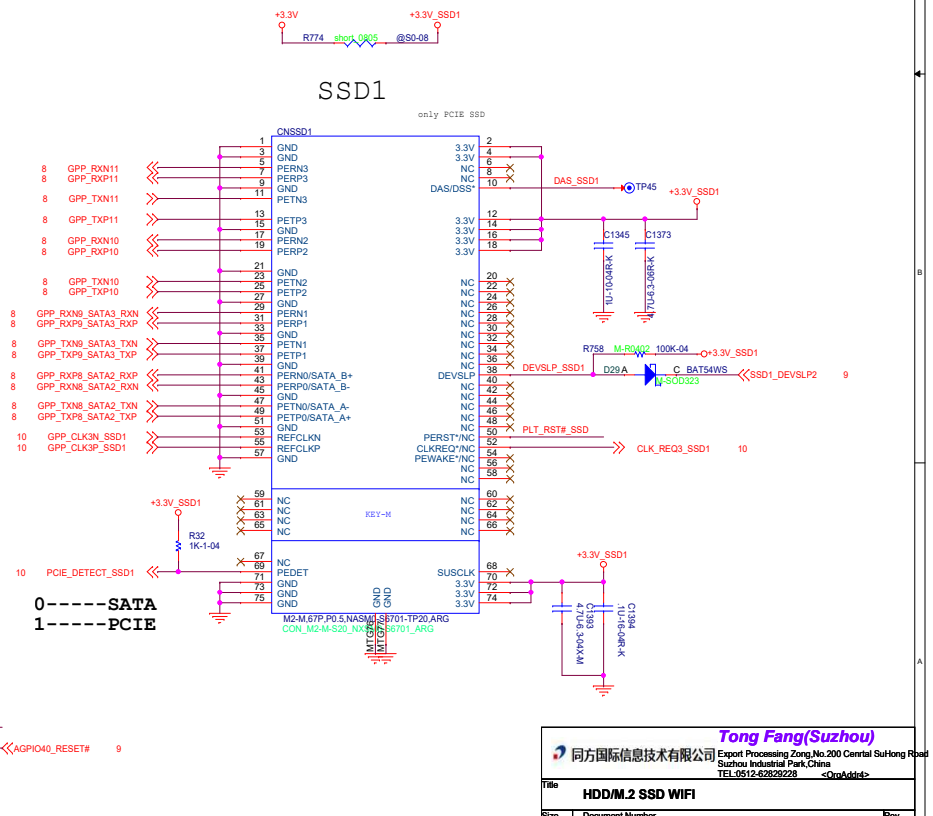
Remove SATA-HDD

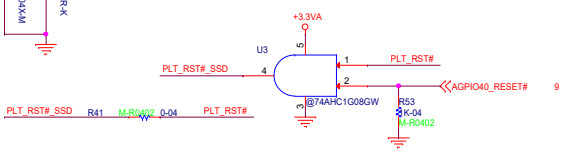
M.2 WIFI



M.2 SSD







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Title	HDD/M.2 SSD WIFI	
Size C	Document Number GMxZGxx	Rev NPI
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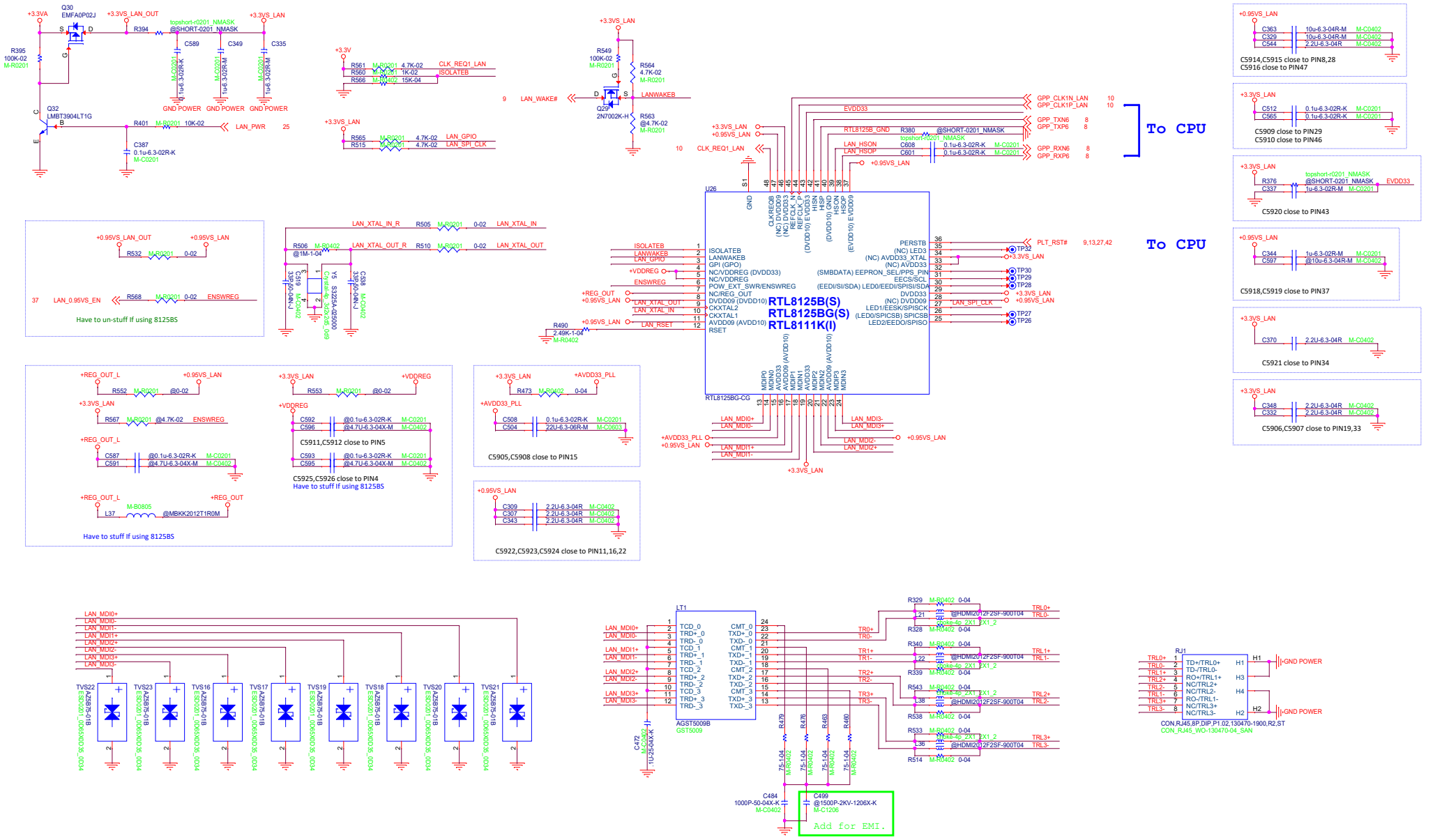

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Title	LAN RTL8111	
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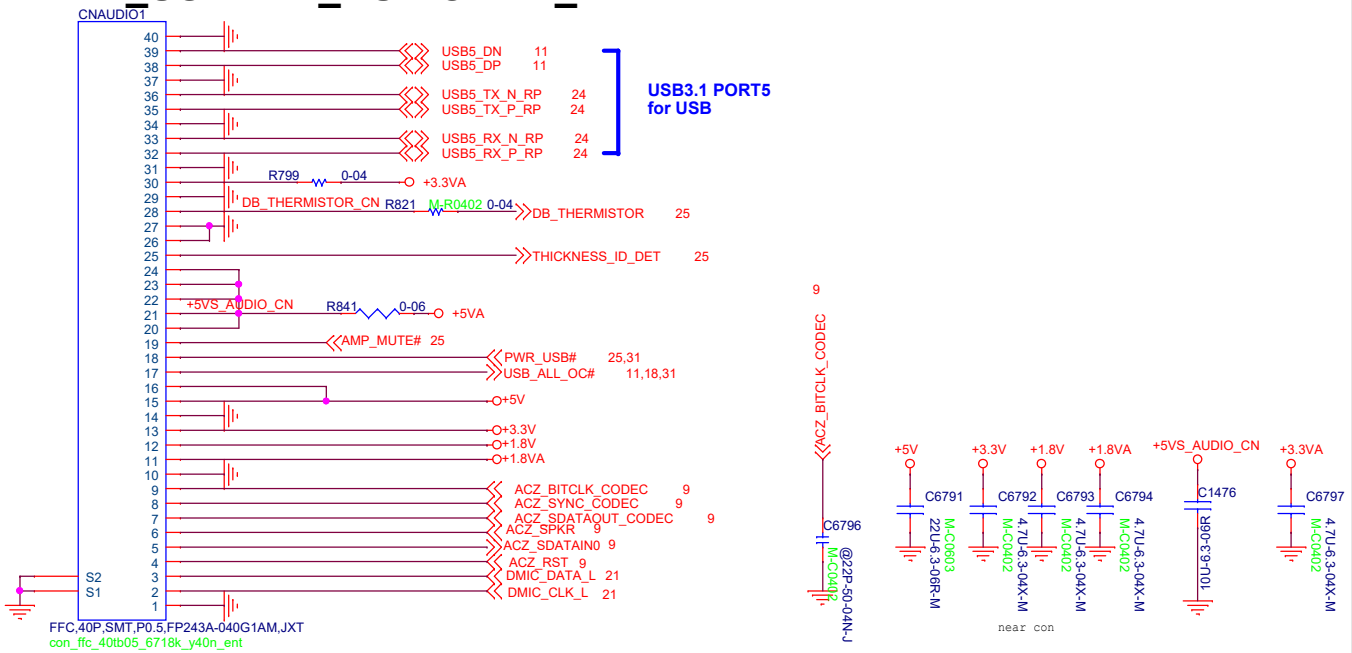
Title

CODEC ALC274 AMP ALC1306-CGT

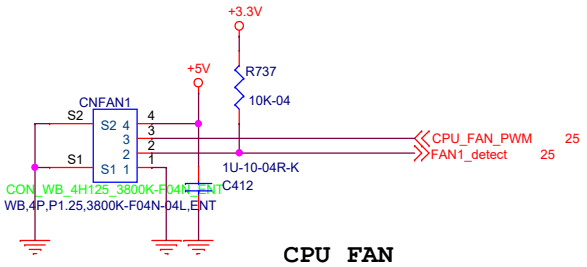
Size: D | Document Number: GMx-ZGxx | Rev: NPI

Date: Saturday, May 22, 2021 | Sheet 29 of 72

EXT_USB/EXT_AUDIO/EXT_MIC

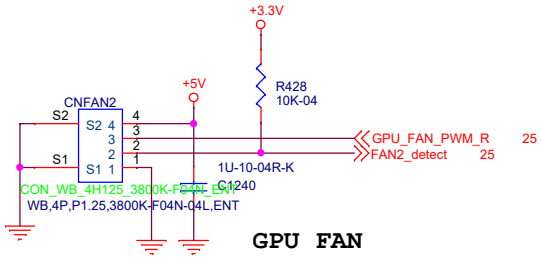


FAN CONTROLLER 1



CPU FAN

FAN CONTROLLER 2



GPU FAN

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Title	EXT_AUDIO/EXT_USB/FAN	
Size B	Document Number GMxZGxx	Rev NPI
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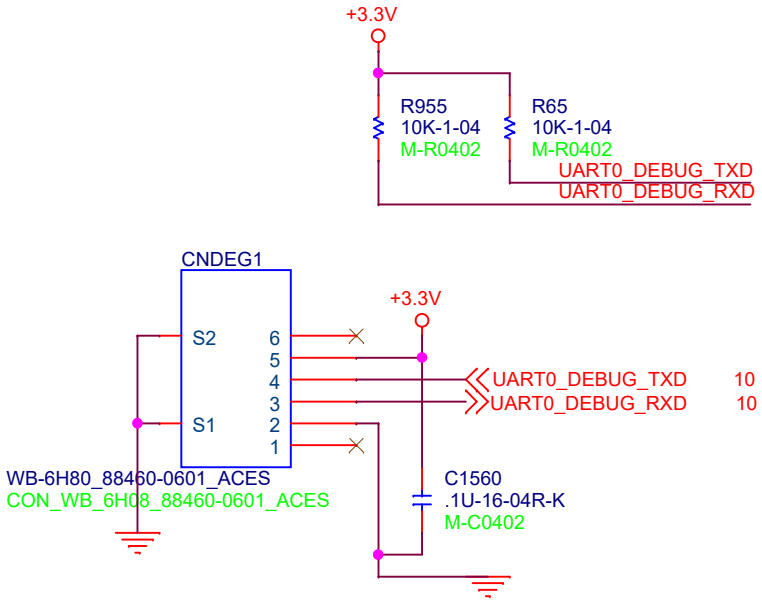
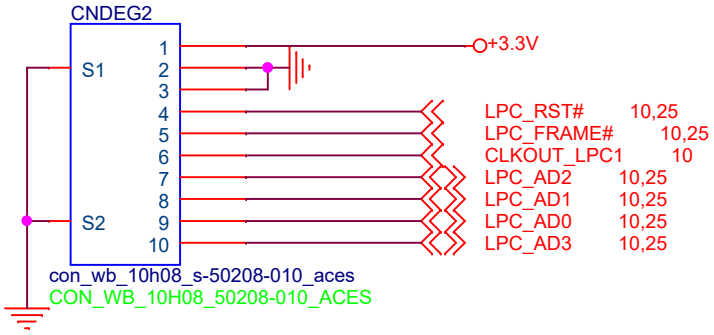
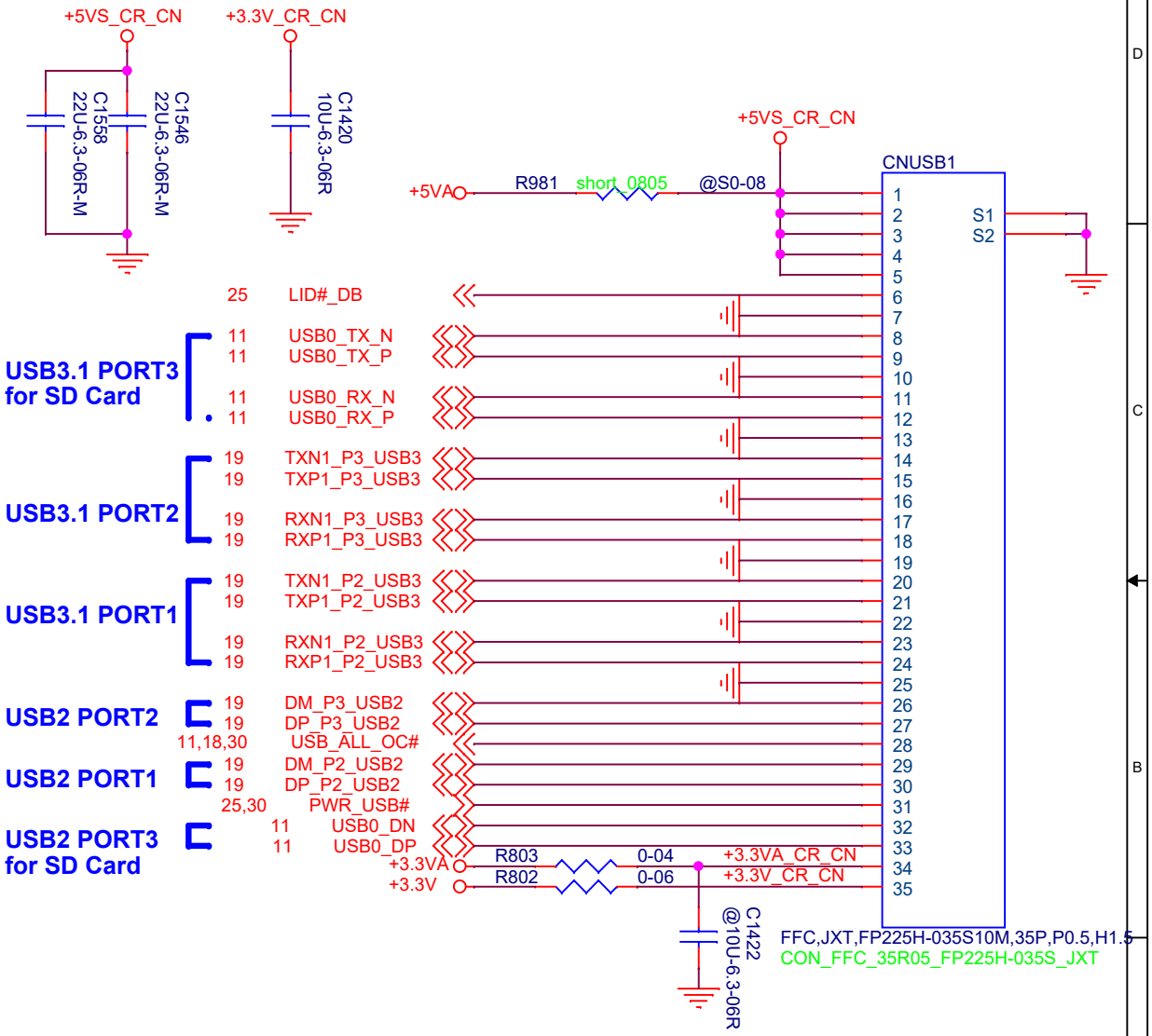
UART debug port



LPC debug port



USB3.0 DB CONN.



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Title	EXT USB3.0/Debug port	
Size A	Document Number GMxZGxx	Rev NPI
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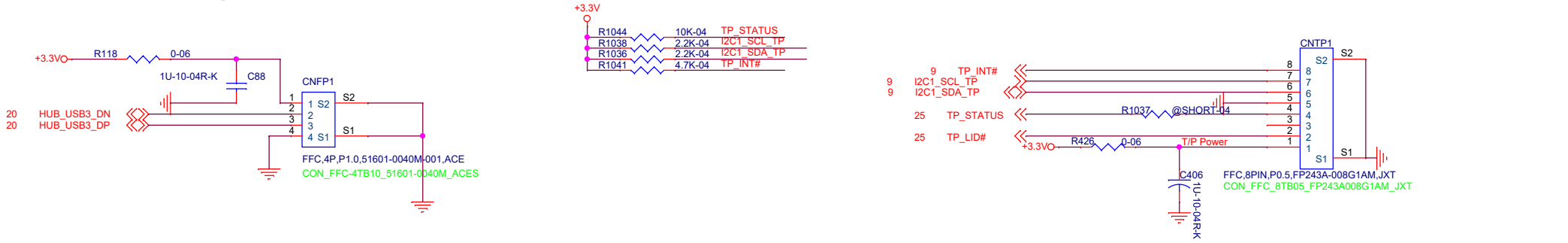
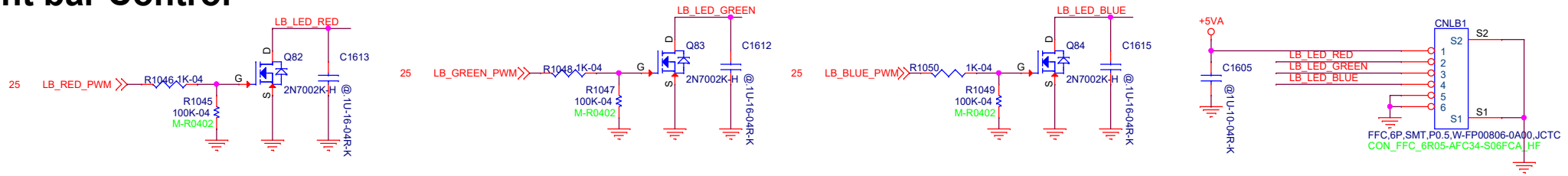
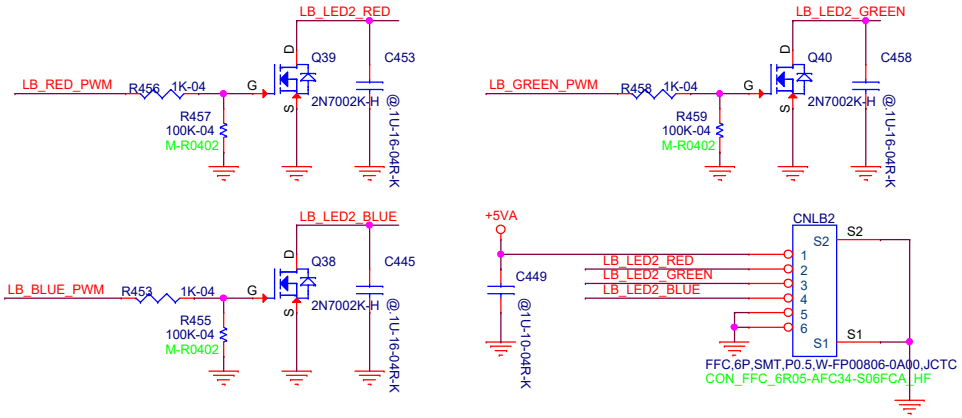
Touch Pad&Finger Print



Light bar Control



Keyboard backlight contorl



EC PWM Control pin / LED color @ Light board	LB_RED_PWM PWM1@EC	LB_GREEN_PWM PWM3@EC	LB_BLUE_PWM PWN6@EC
IDZ / IDS LB color	RED	Green	Blue
IDP / IDY LB color This condition is used for IDP light board P.S. Because LED pin define is uncorrect @ IDP LB	Blue	Green	RED

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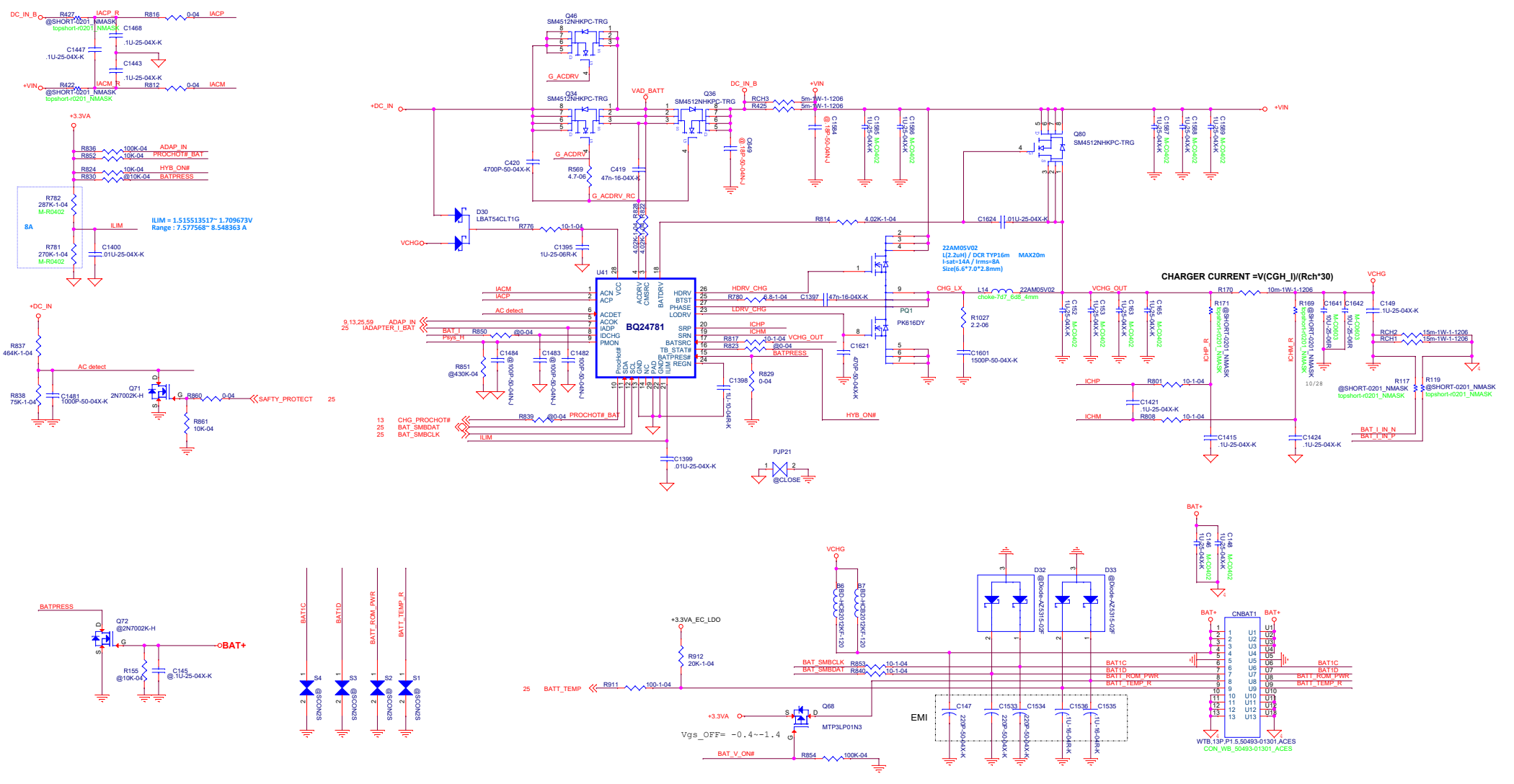
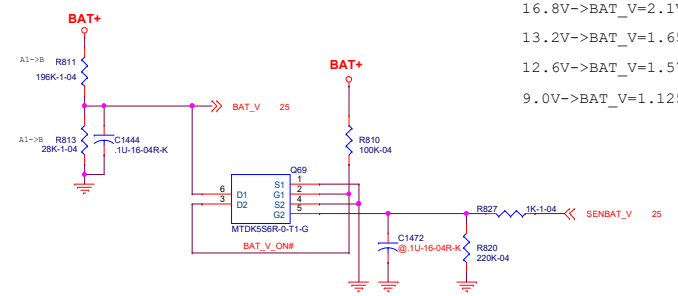
Title	TP/USB/TYPEC	
Size B	Document Number GMxZGxx	Rev NPI
Date: Saturday, May 22, 2021	Sheet 32 of 72	



Battery Voltage Detect



17.6V->BAT_V=2.2V

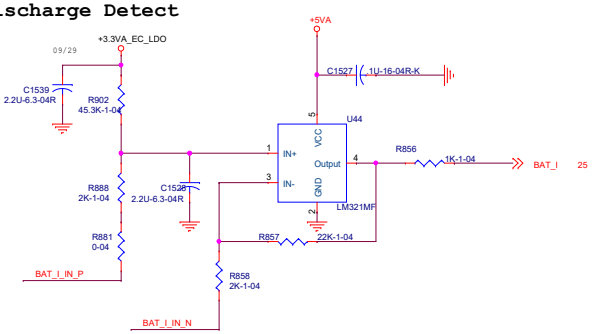
16.8V->BAT_V=2.1V

13.2V->BAT_V=1.65V

12.6V->BAT_V=1.575V

9.0V->BAT_V=1.125V

Charge / Discharge Detect



RCH1 //RCH2 =7.5mohm

BAT_I	ICHG (0.0862V/1A)
2.3640V	8A
2.1916V	6A
2.0192V	4A
1.8468V	1A
1.7606V	1A
1.6744V	0A
1.5882V	-1A
1.5020V	-2A
1.3296V	-4A
1.1572V	-6A
0.9848V	-8A
0.8124V	-10A
0.6400V	-12A
0.4676V	-14A
0.2952V	-16A

RCH1 //RCH2 =15mohm

BAT_I	ICHG (0.1724V/1A)
2.7088V	6A
2.3640V	4A
2.0192V	2A
1.8468V	1A
1.6744V	0A
1.5020V	-1A
1.3296V	-2A
0.9848V	-4A
0.6400V	-6A
0.2952V	-8A
0.1228V	-9A

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Title: BATT IN/CHARGER(BQ24781)

Size: Custom | Document Number: GMxZGxx | Rev: NPI

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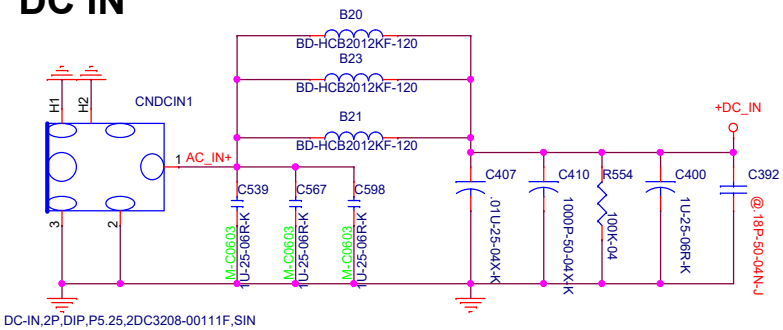
DC IN

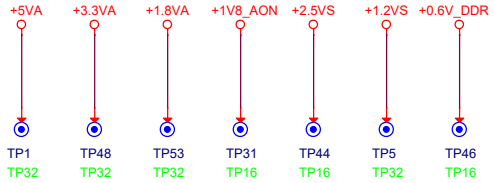


EMB20NP3V
ID=-13A TC=100 deg
Ipulse=-72A
Avalanche=-10A
9watt 1ms
15Watt 0.1ms

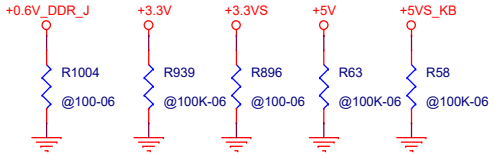
DC-IN,2P,DIP,P5.25,2DC3208-00111F,SIN
CON_DCIN_WO_2DC3003-016211F_SIN

B-18 Changed PCB footprint for hole size and update symbol

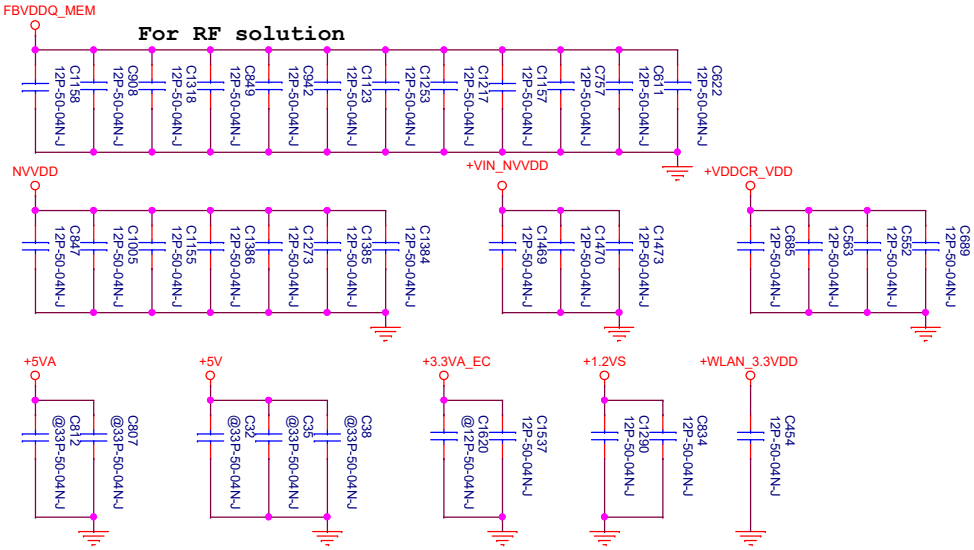
N-9 Add test point



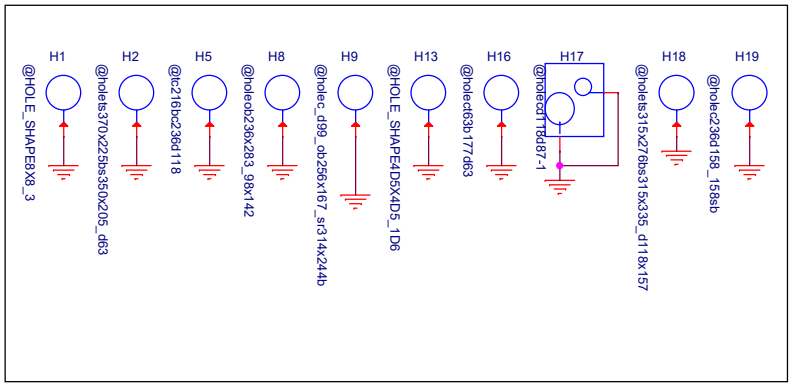
Discharge Resistor



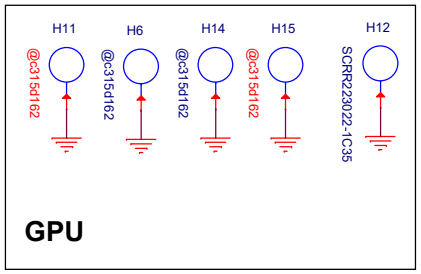
HIGH-SPEED CAP

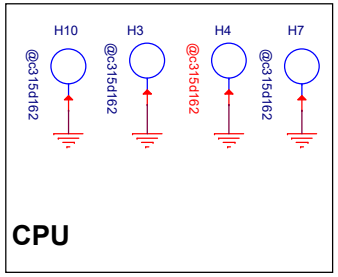


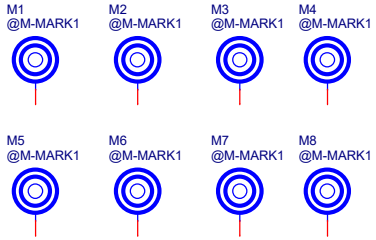
PCB HOLE



THERMAL HOLE







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Title	DC IN/TPM/D-Resis/HOLE	
Size B	Document Number GMxZGxx	Rev NPI
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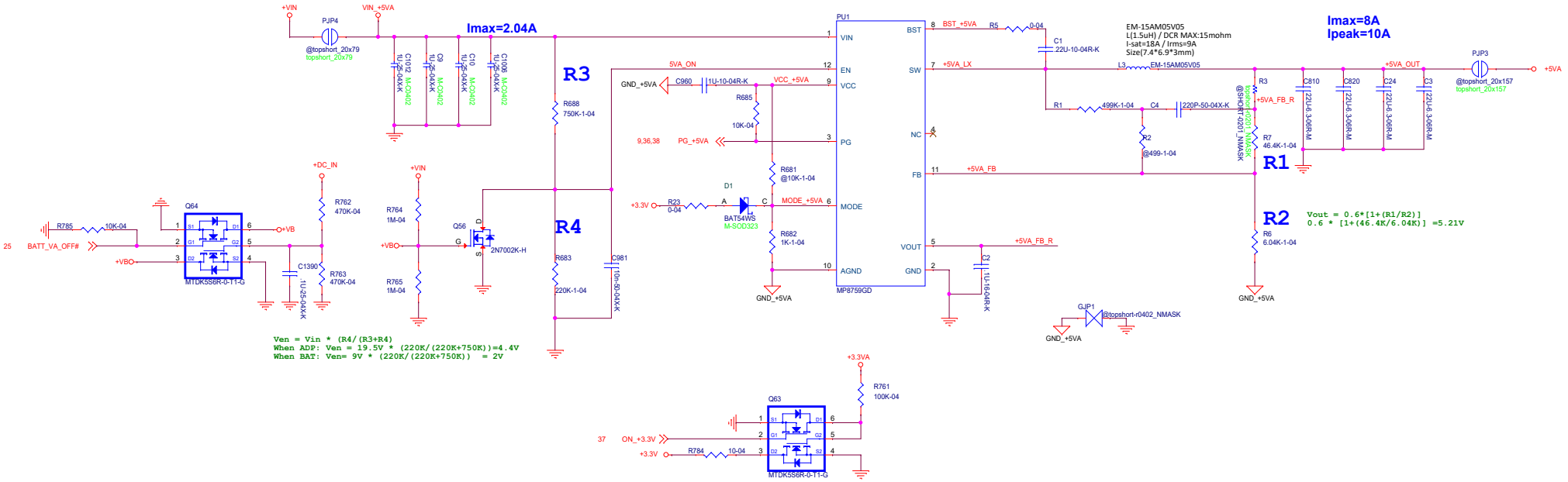
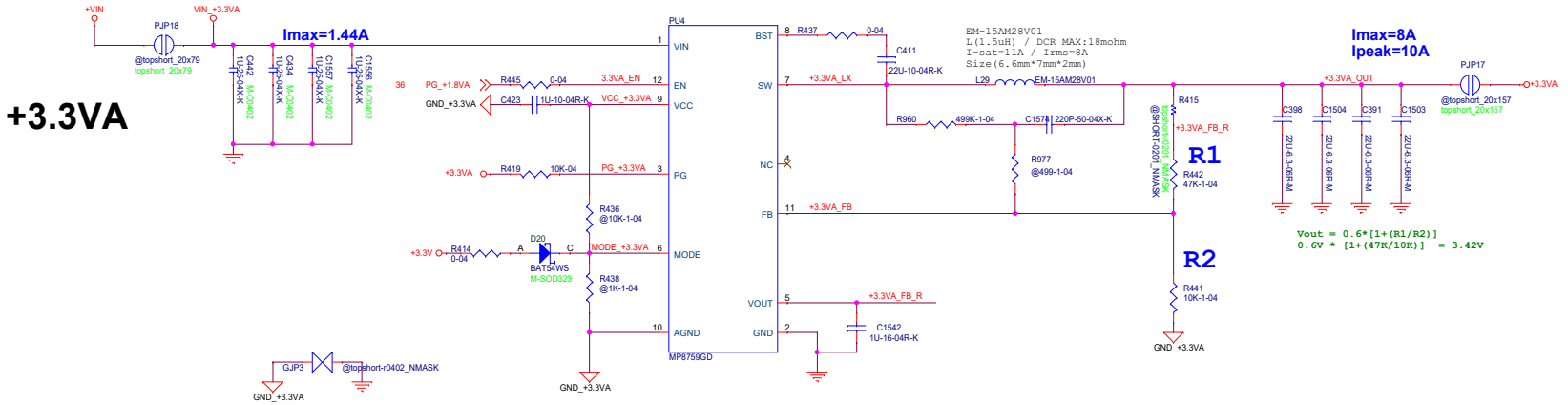
5VA Converter



3.3VA Converter



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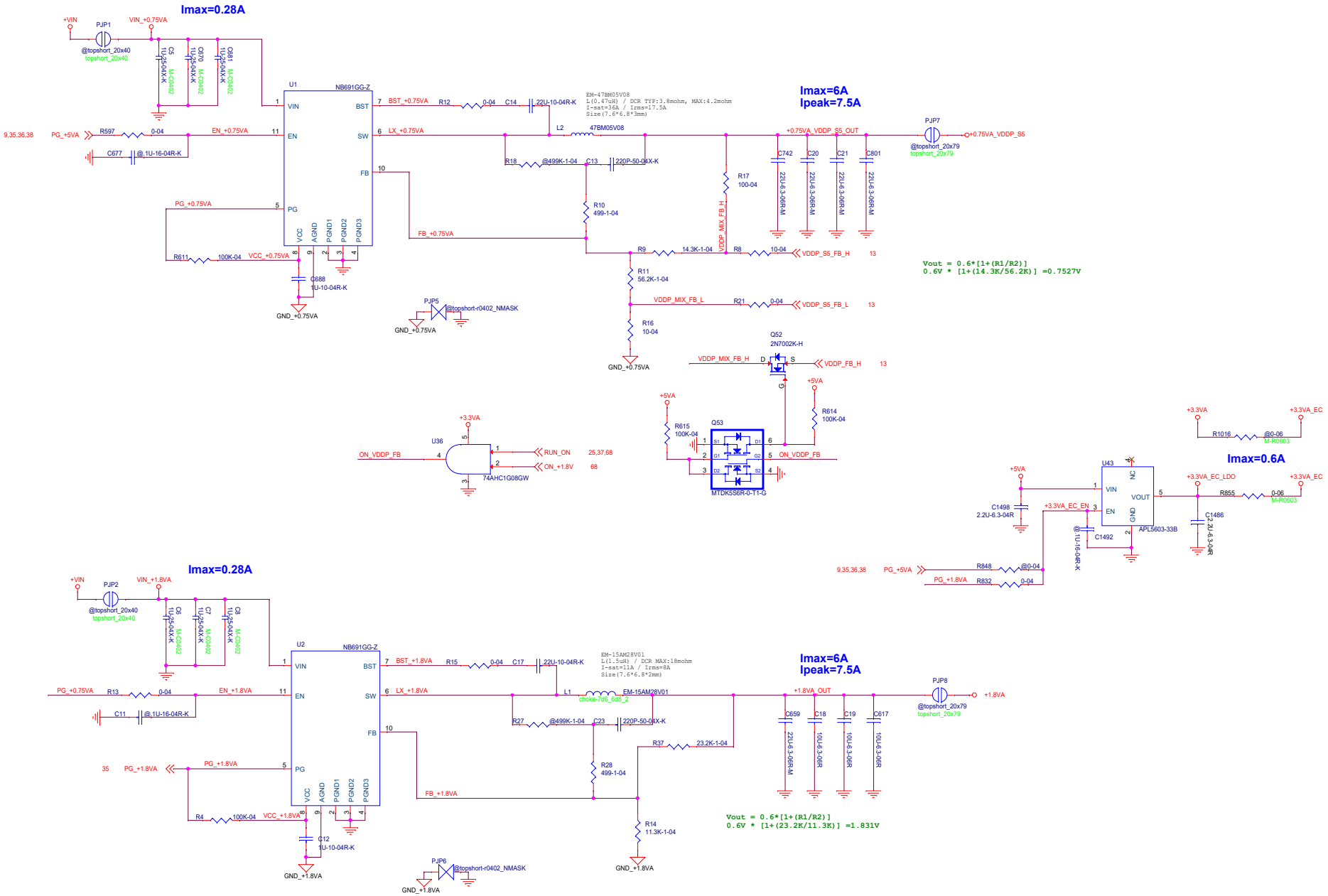
Title: +5VA/+3.3VA			
Size: C	Document Number: GMxZGxx		Rev: NPI
Date: Saturday, May 22, 2021	Sheet 35 of 72		



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Title	VDDP_S5/+1.8VA	
Size C	Document Number GMxZGxx	Rev NPI
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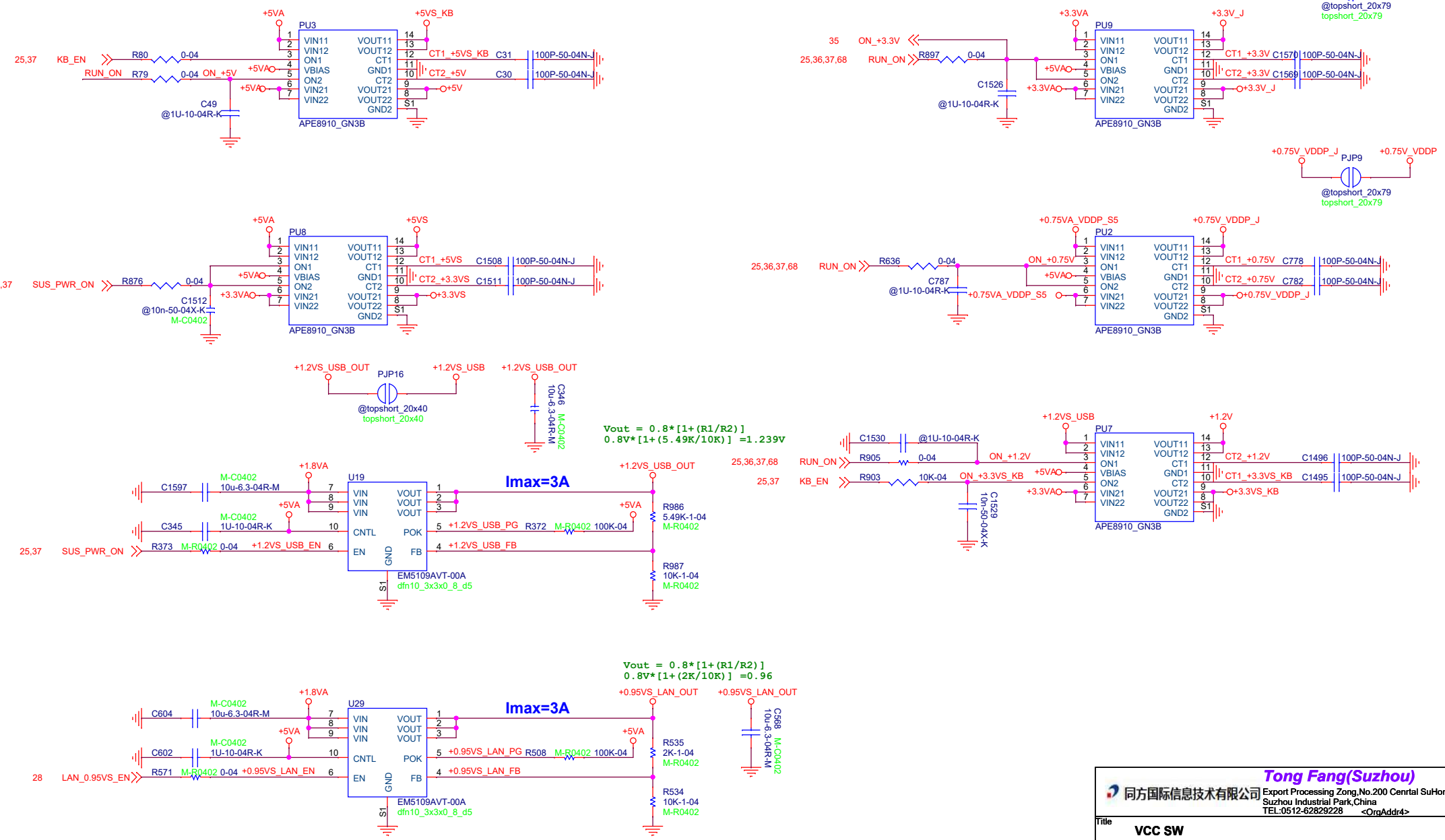
PU3
APE8910_GN3B
+5VA
+5VS_KB
KB_EN
RUN_ON
R80
R79
0-04
ON_+5V
C49
@1U-10-04R-K
CT1_+5VS_KB
CT2_+5V
C31
C30
100P-50-04N-J
PJP22
+3.3V_J
+3.3V
@topshort_20x79
topshort_20x79
PU9
+3.3VA
ON_+3.3V
R897
C1526
CT1_+3.3V
CT2_+3.3V
C1570
C1569
PJP9
+0.75V_VDDP_J
+0.75V_VDDP
PU8
+5VS
SUS_PWR_ON
R876
C1512
@10n-50-04X-K
M-C0402
CT1_+5VS
CT2_+3.3VS
C1508
C1511
PU2
+0.75VA_VDDP_S5
ON_+0.75V
R636
C787
CT1_+0.75V
CT2_+0.75V
C778
C782
PJP16
+1.2VS_USB_OUT
+1.2VS_USB
@topshort_20x40
topshort_20x40
C346
10u-6.3-04R-M
Vout = 0.8*[1+(R1/R2)]
0.8V*[1+(5.49K/10K)] =1.239V
U19
+1.8VA
Imax=3A
C1597
C345
R373
0-04
+1.2VS_USB_EN
+1.2VS_USB_PG
+1.2VS_USB_FB
R372
100K-04
R986
5.49K-1-04
R987
10K-1-04
EM5109AVT-00A
dfn10_3x3x0_8_d5
PU7
+1.2VS_USB
+1.2V
C1530
R905
R903
10K-04
ON_+1.2V
ON_+3.3VS_KB
C1529
10n-50-04X-K
CT2_+1.2V
CT1_+3.3VS_KB
C1496
C1495
Vout = 0.8*[1+(R1/R2)]
0.8V*[1+(2K/10K)] =0.96
U29
+0.95VS_LAN_OUT
C604
C602
R571
LAN_0.95VS_EN
+0.95VS_LAN_EN
+0.95VS_LAN_PG
+0.95VS_LAN_FB
R508
R535
2K-1-04
R534
C568
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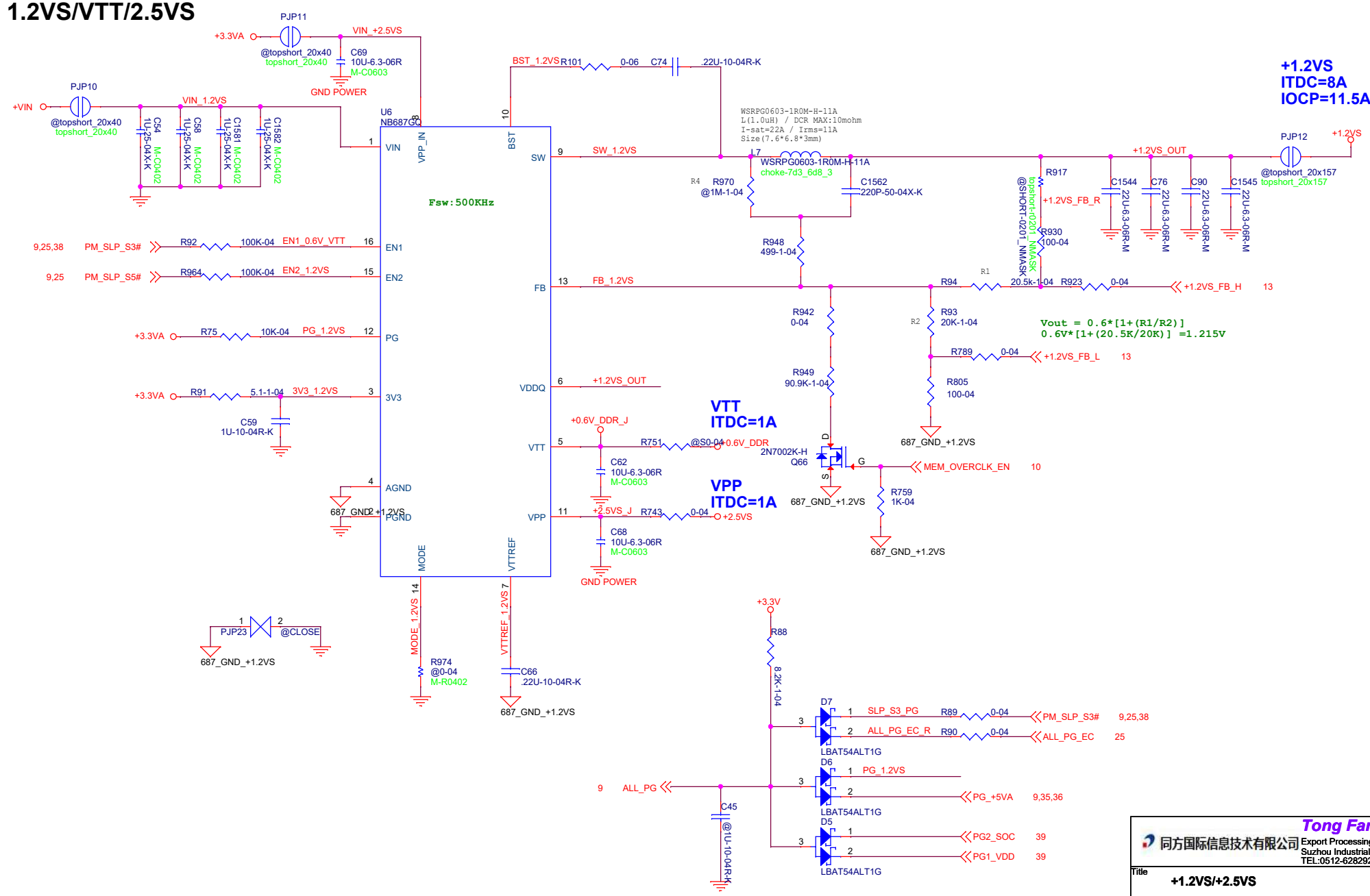
1.2VS/VTT/2.5VS



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Title	+1.2VS/+2.5VS	
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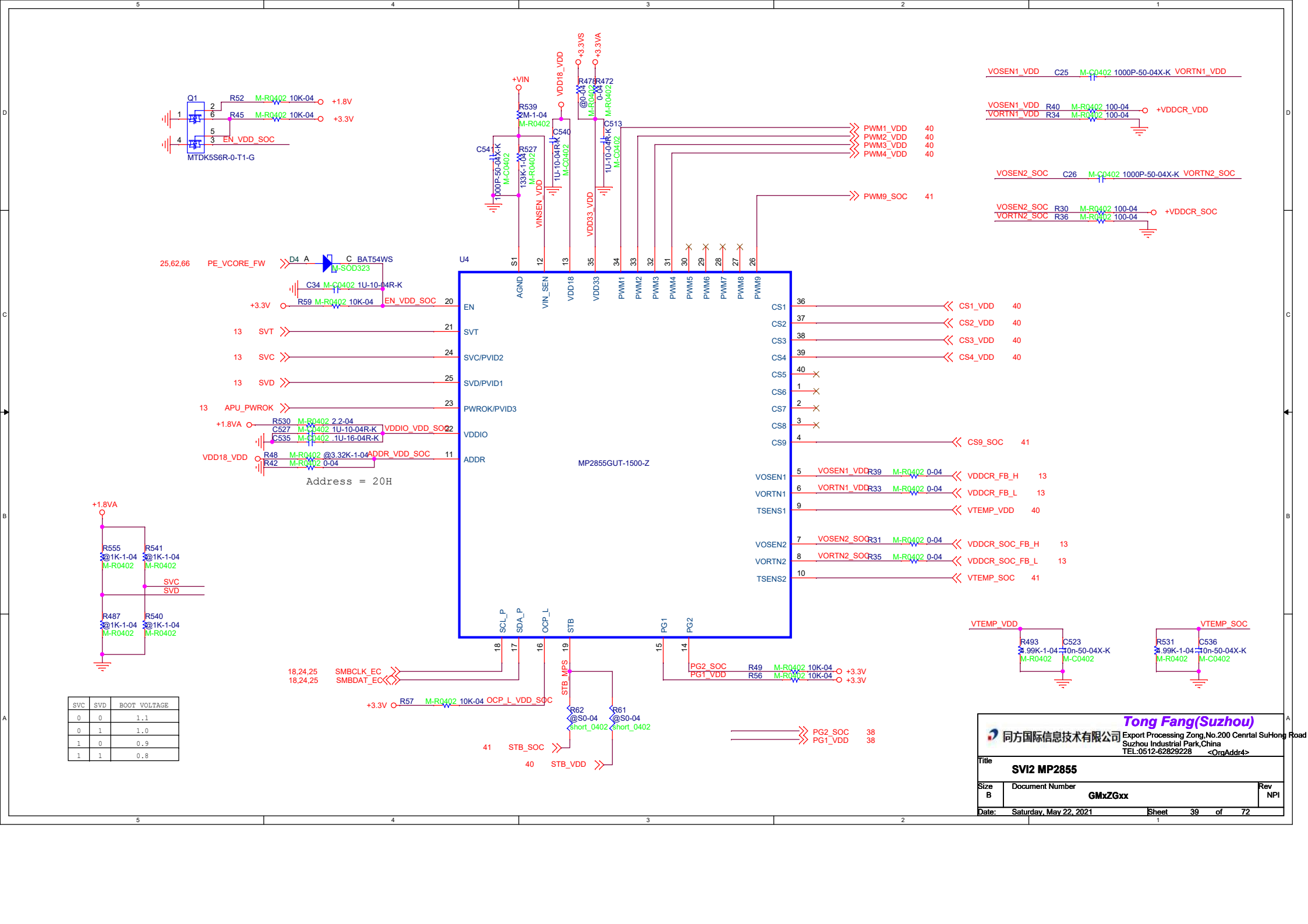

SVC	SVD	BOOT VOLTAGE
0	0	1.1
0	1	1.0
1	0	0.9
1	1	0.8

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Title: SVI2 MP2855

Size: B | Document Number: GMxZGxx | Rev: NPI

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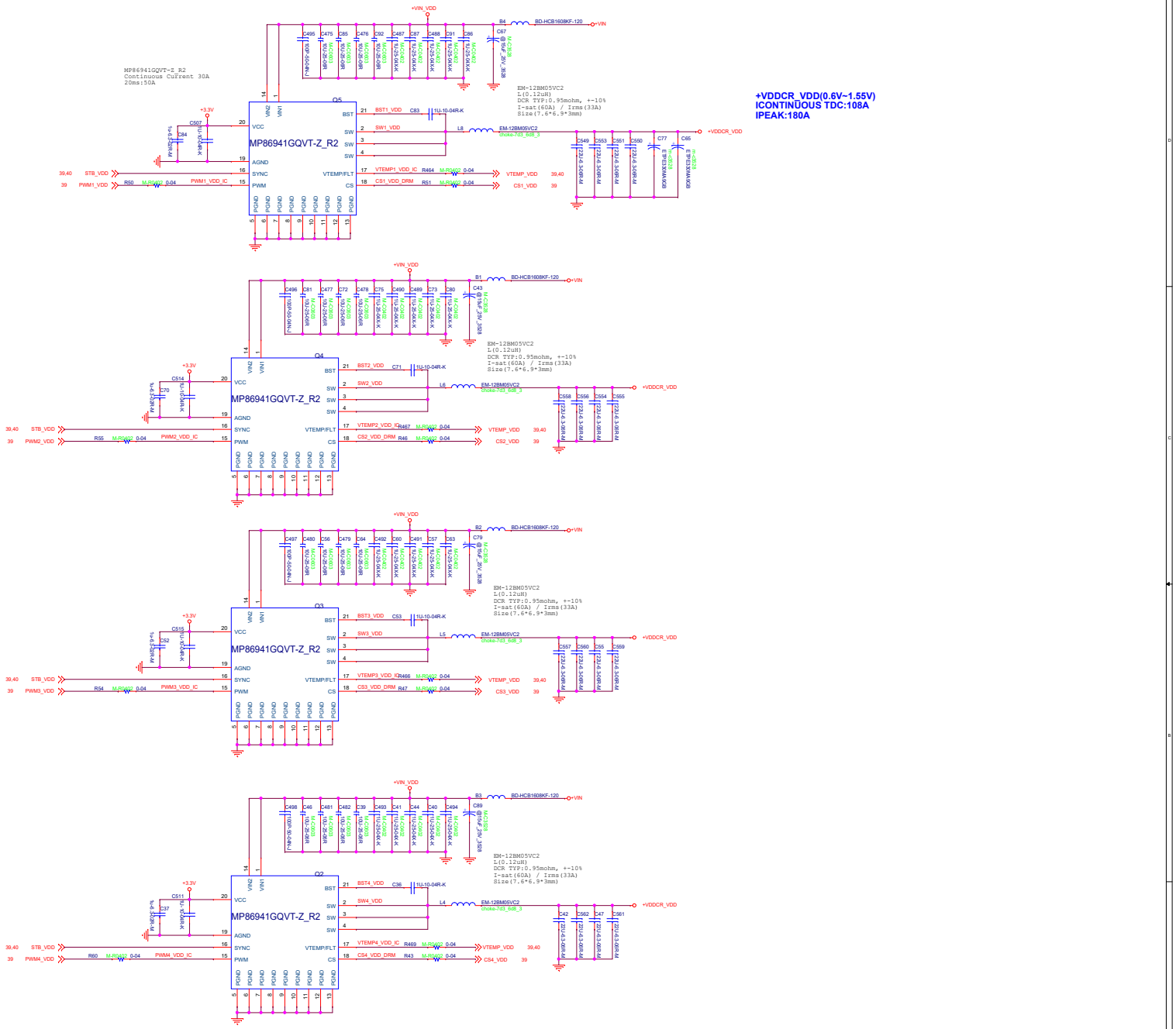

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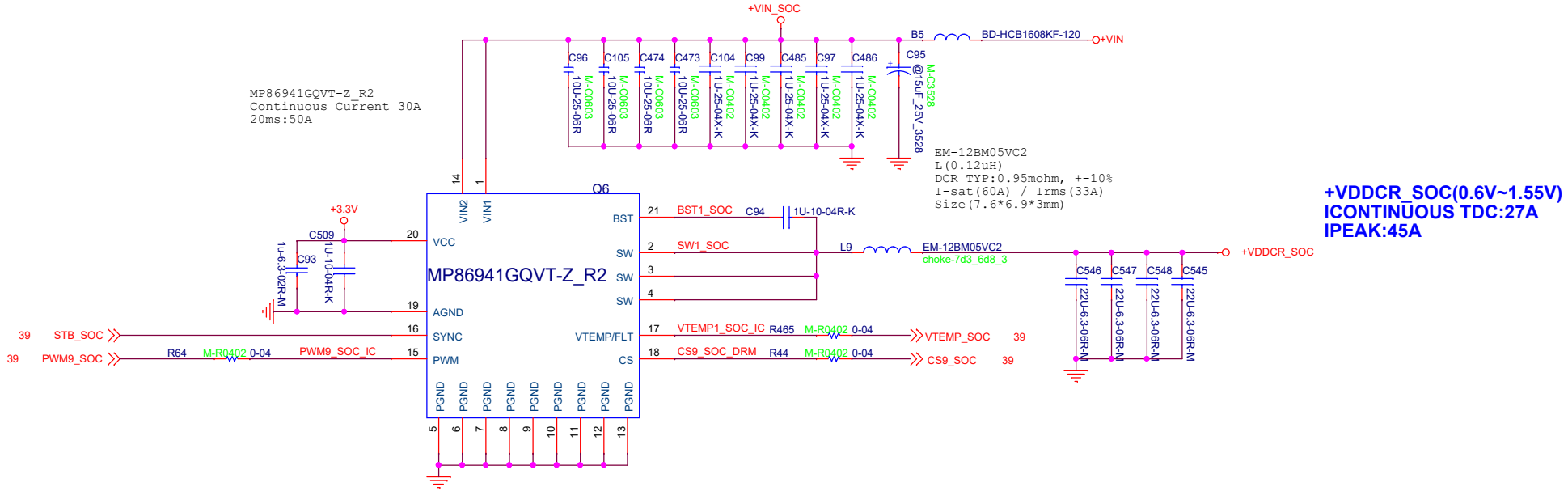
Title	+VDDCR_VDD		
Size: Custom	Document Number: GMxZGxx		Rev: NPI
Date: Saturday, May 22, 2021	Sheet 40 of 72		



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Title: +VDDCR_SOC		
Size: B	Document Number: GMxZGxx	Rev: NPI
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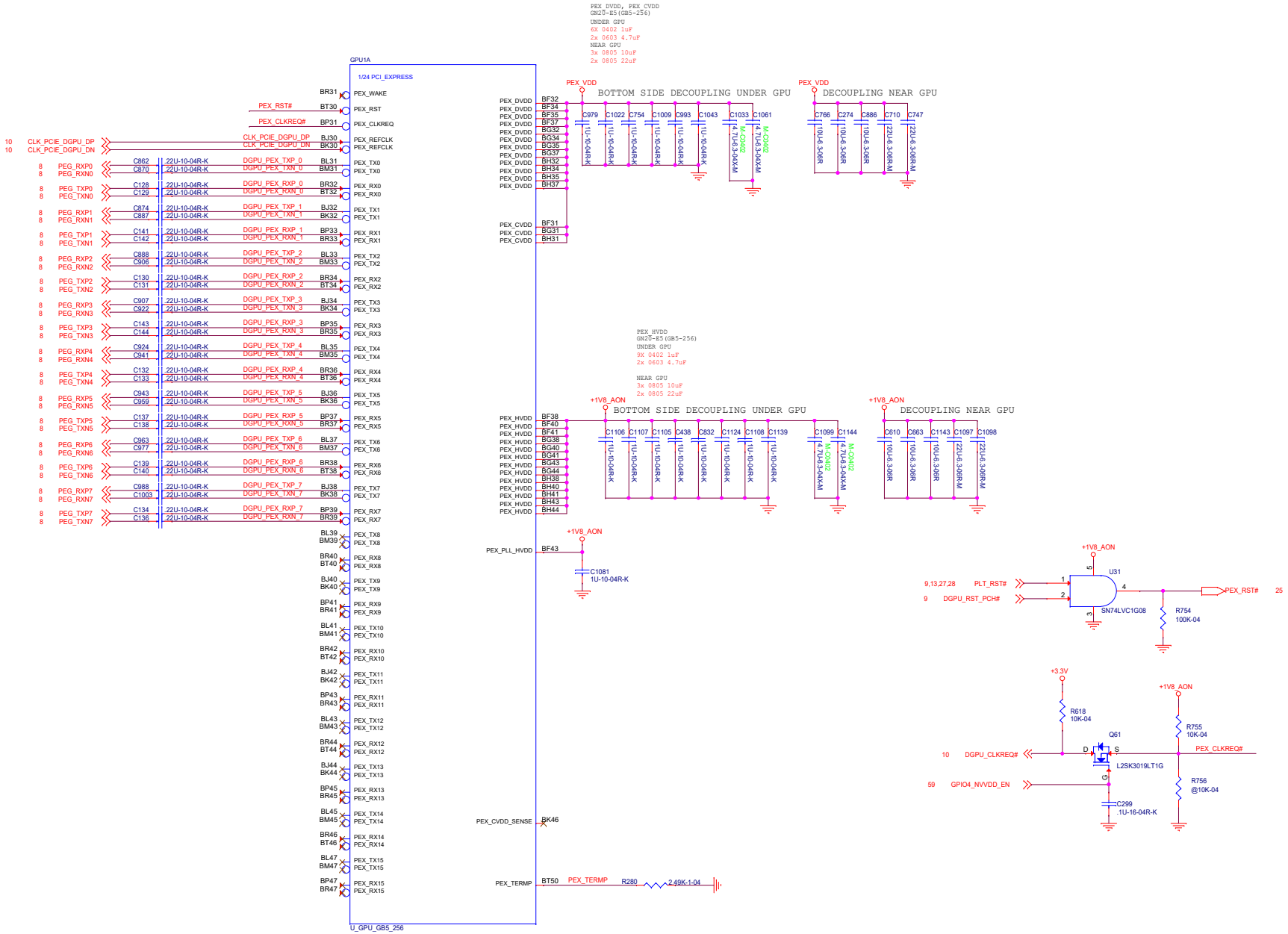

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Title	GPU N18E GFX-PCIE	
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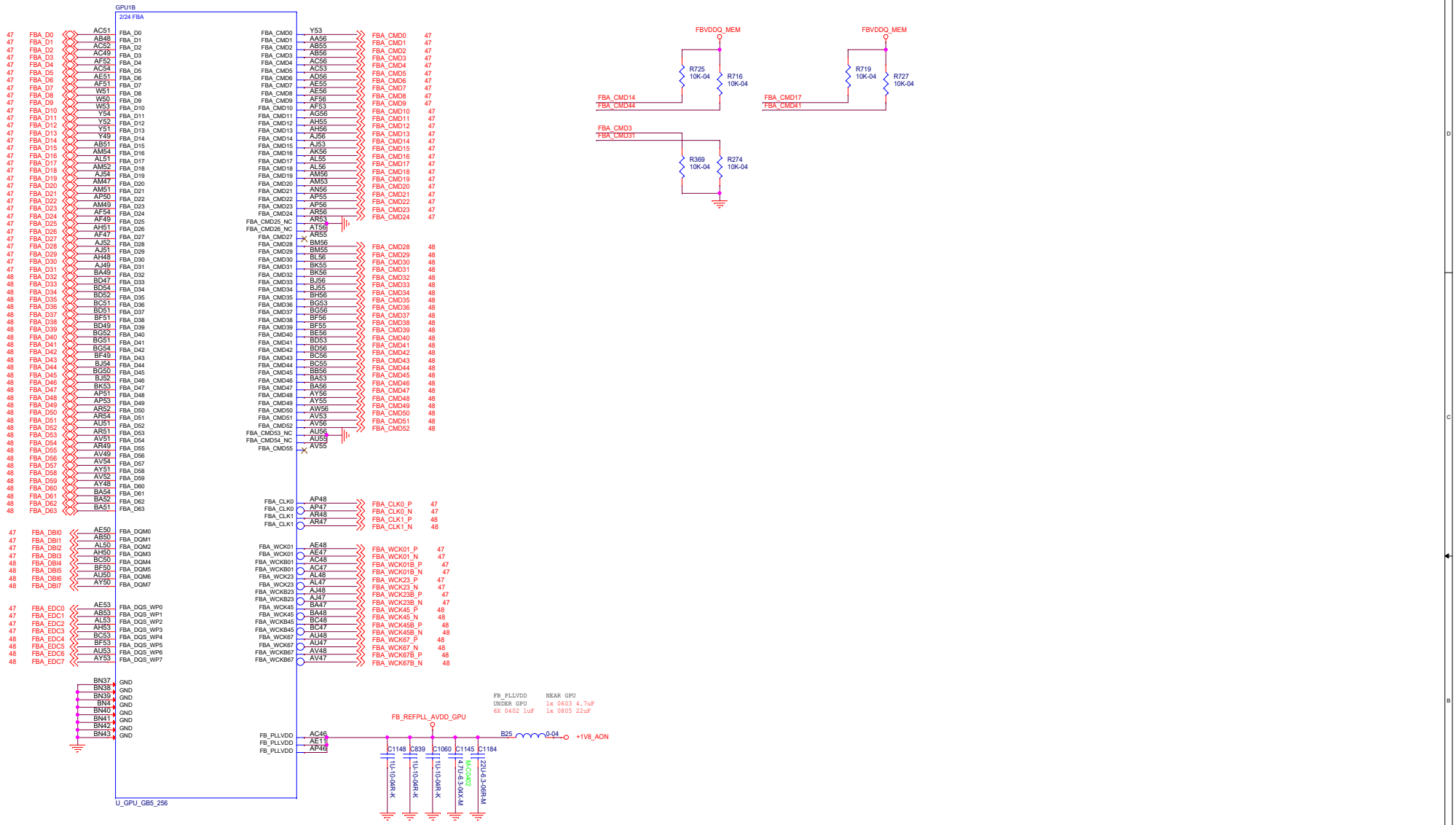

同方国际信息技术有限公司

Title	GPU N18E FrameBuffer A	
Size C	Document Number GMxZGxx	Rev NPI
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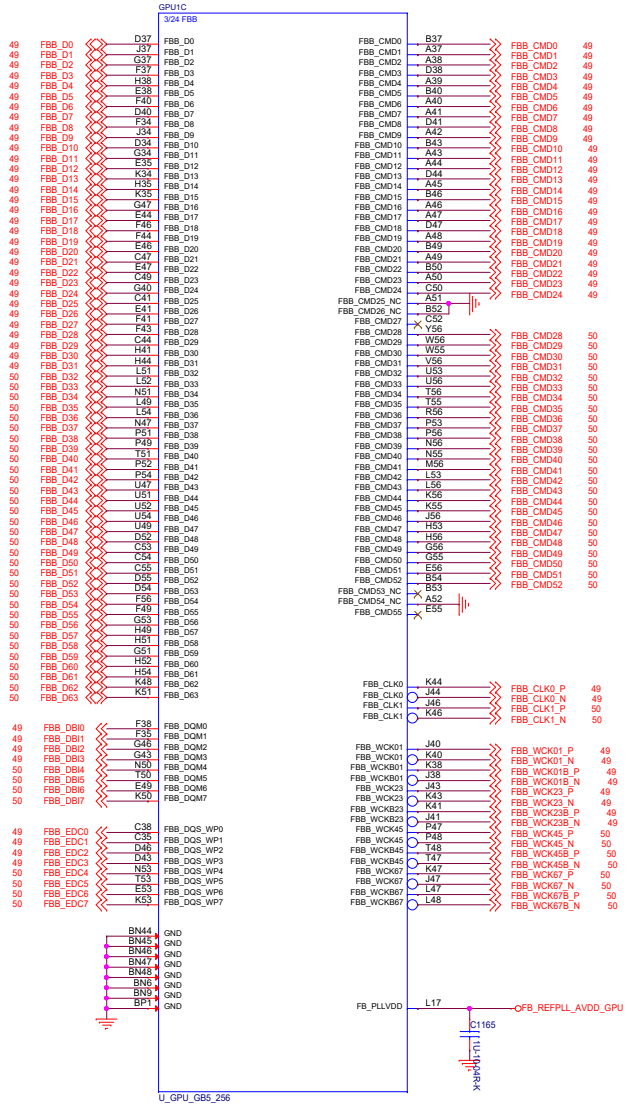

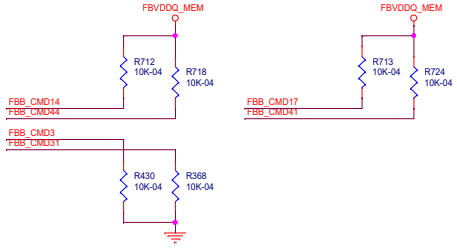

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Title: GPU N18E Frame Buffer B

Size: C | Document Number: GMxZGxx | Rev: NPI

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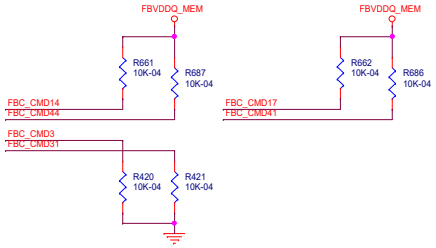
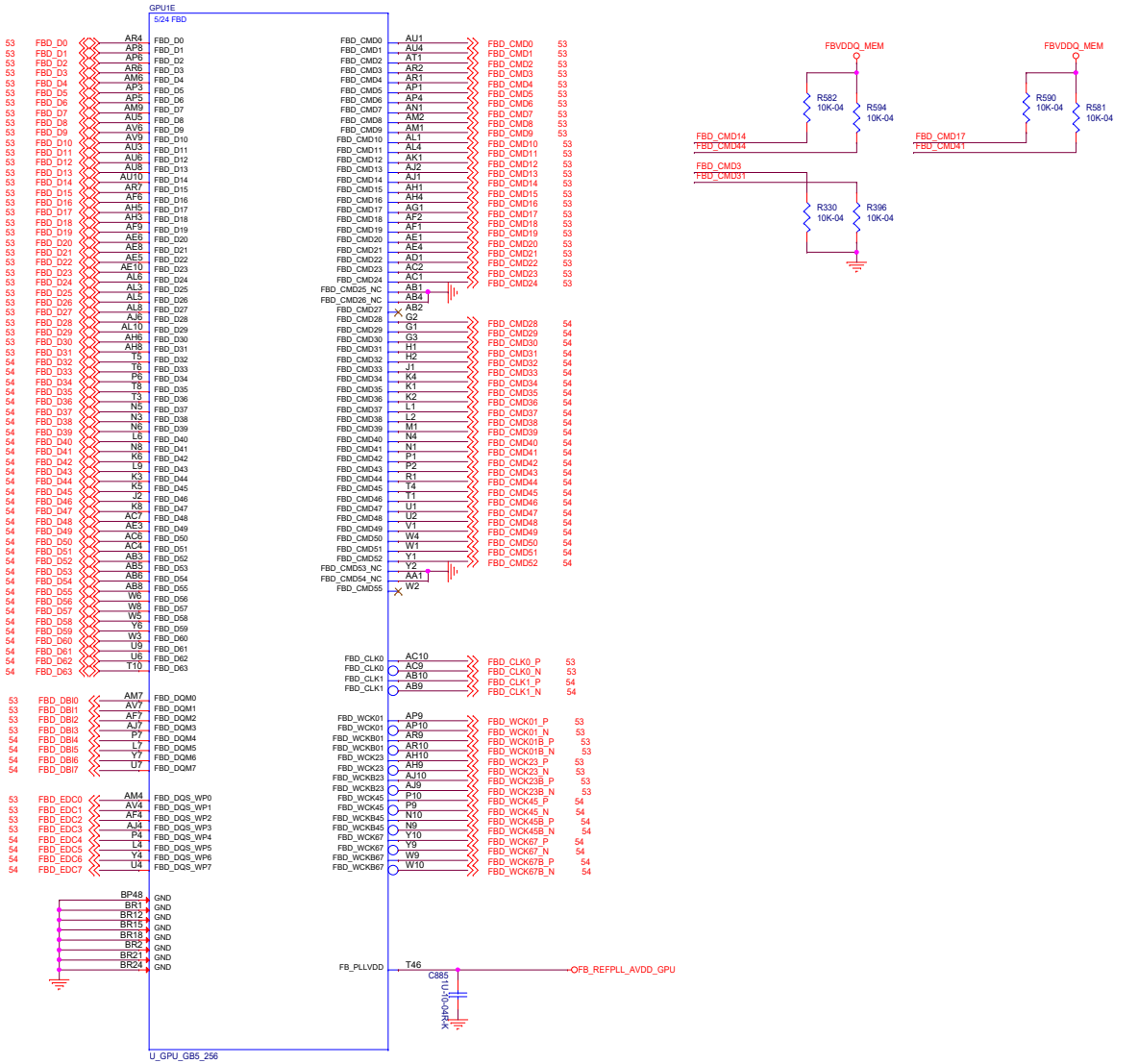


同方国际信息技术有限公司

Title	GPU N18E Frame Buffer C	
Size C	Document Number GMxZGxx	Rev NPI
Date: Saturday, May 22, 2021	Sheet 45 of 72	



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Title: GPU N18E Frame Buffer D

Size: C | Document Number: GMxZGxx | Rev: NPI

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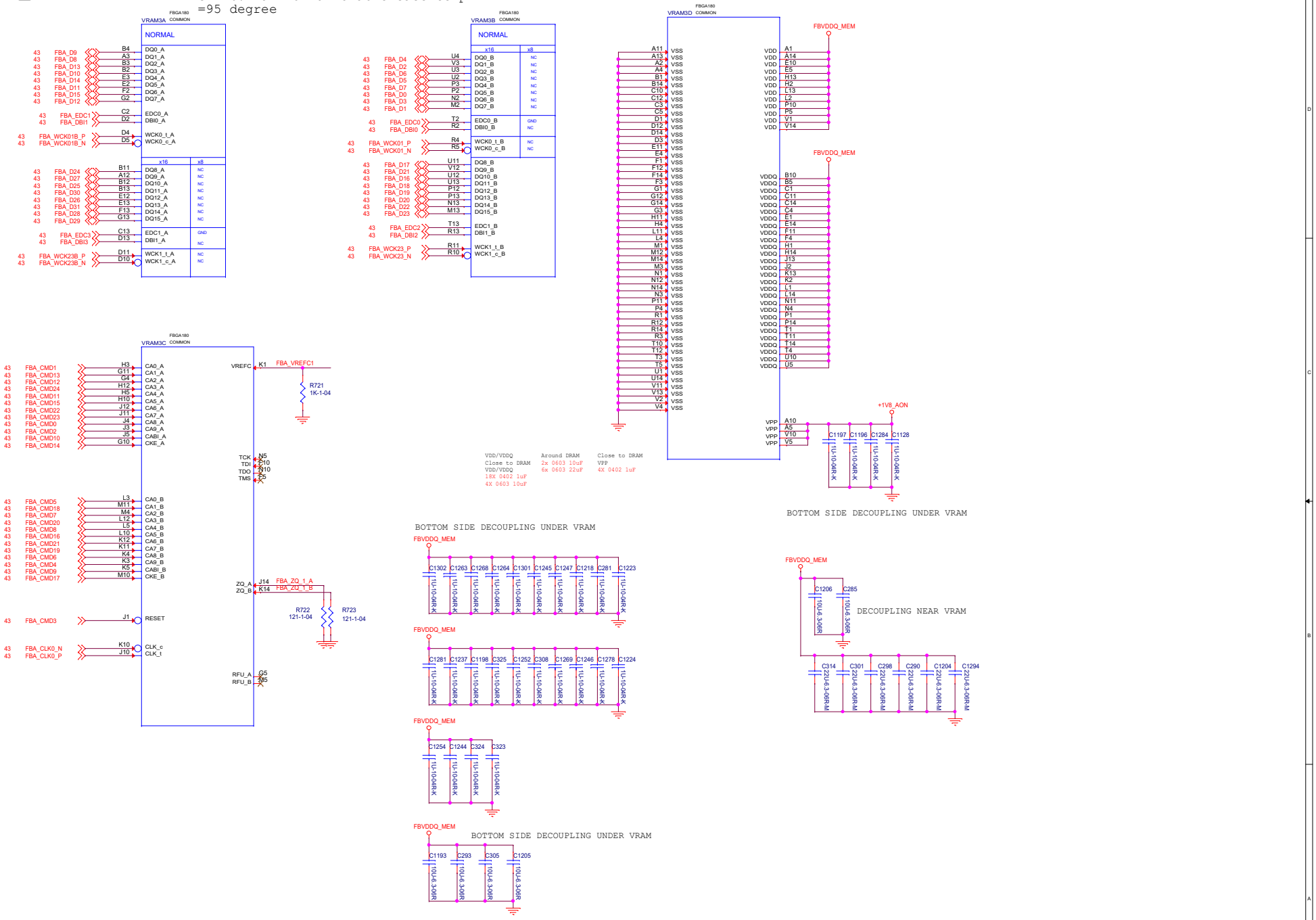
MEM_FBA[31_0]

GDDR6: Maximum allowable case temp
=95 degree



同方国际信息技术有限公司

Title	VRAM Frame Buffer A0	
Size C	Document Number GMxZGxx	Rev NPI
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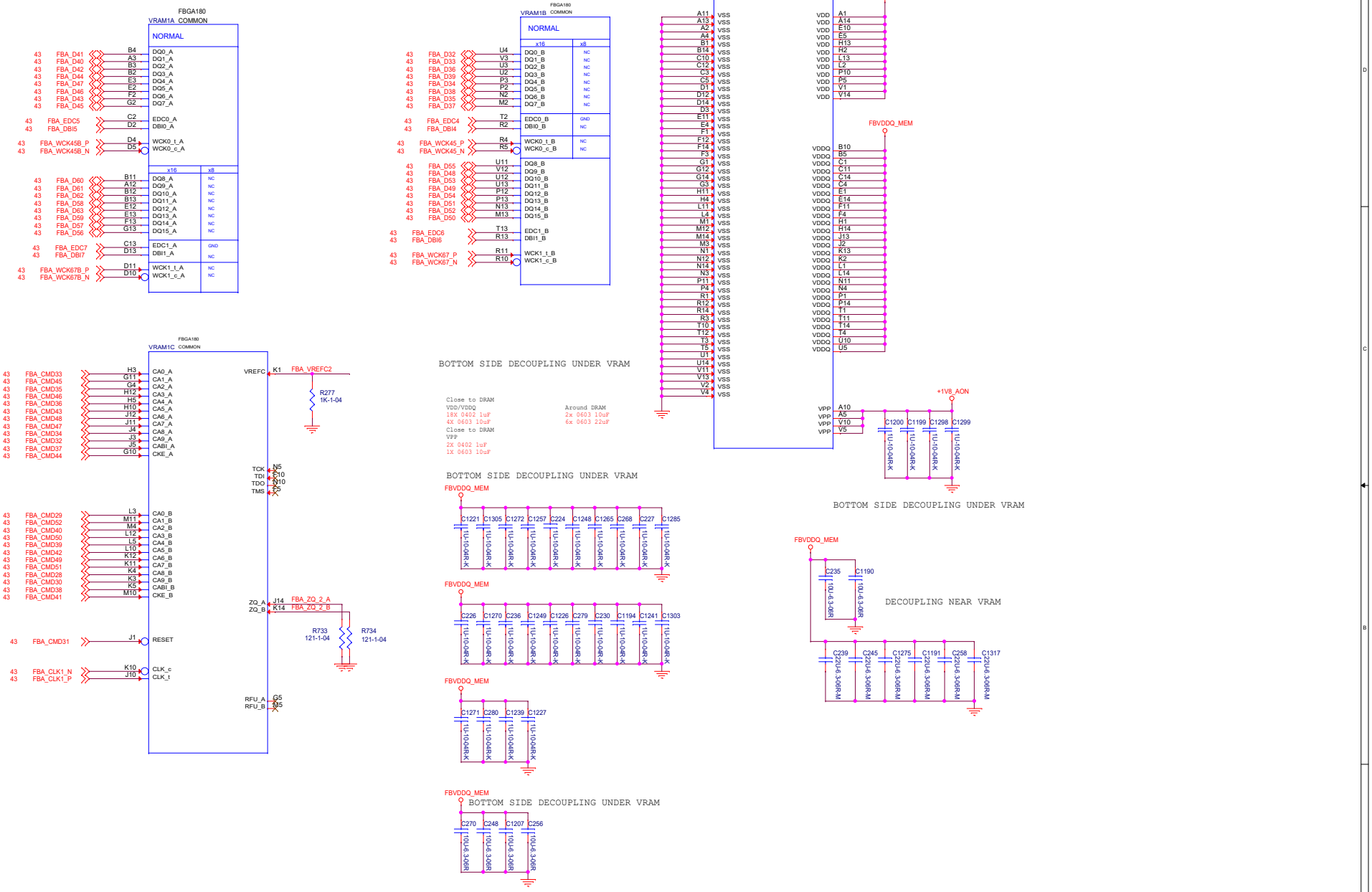
MEM_FBA[63_32]

Maximum VRAM case Temp is 85 celcisus degree



同方国际信息技术有限公司

Title	VRAM_Frame Buffer A1	
Size C	Document Number GMxZGxx	Rev NPI
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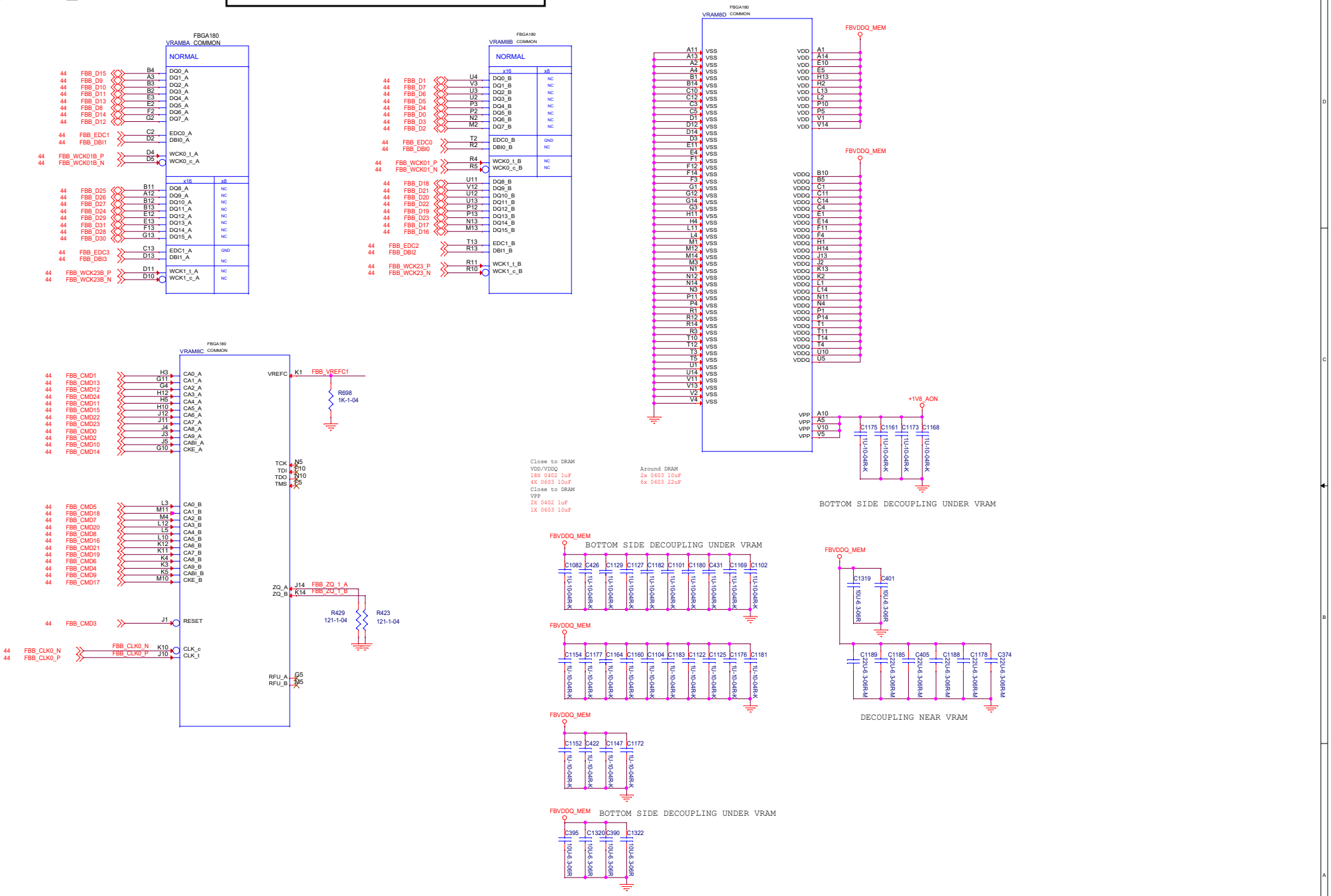
MEM_FBB[31_0]

Maximum VRAM case Temp is 85 celcisus degree



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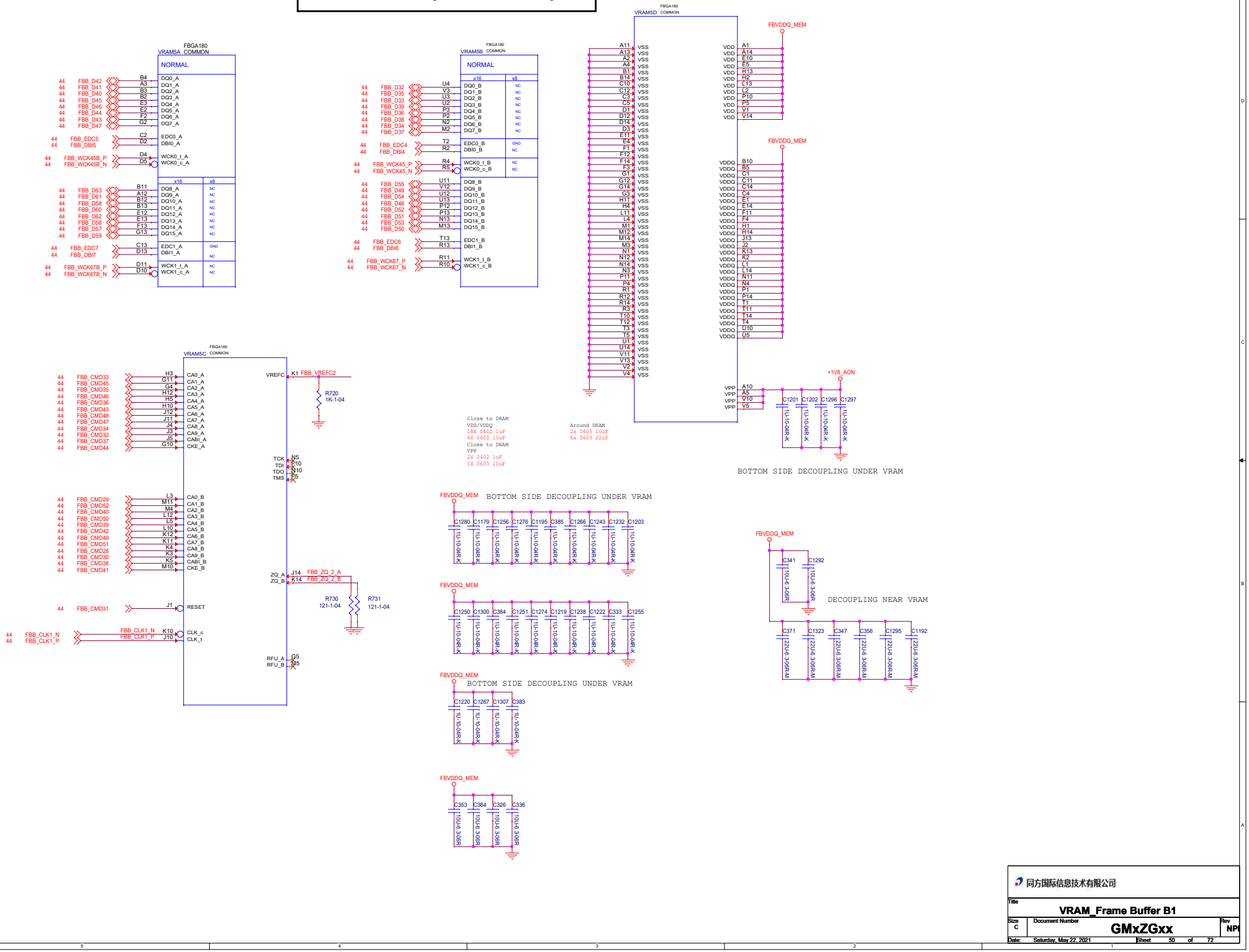
Title	VRAM_Frame Buffer B0		
Size C	Document Number GMxZGxx		Rev NPI
Date: Saturday, May 22, 2021	Sheet 49 of 72		

MEM_FBB[63_32]

Maximum VRAM case Temp is 85 celcisus degree



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Title	VRAM_Frame Buffer B1	
Size C	Document Number GMxZGxx	Rev NPI
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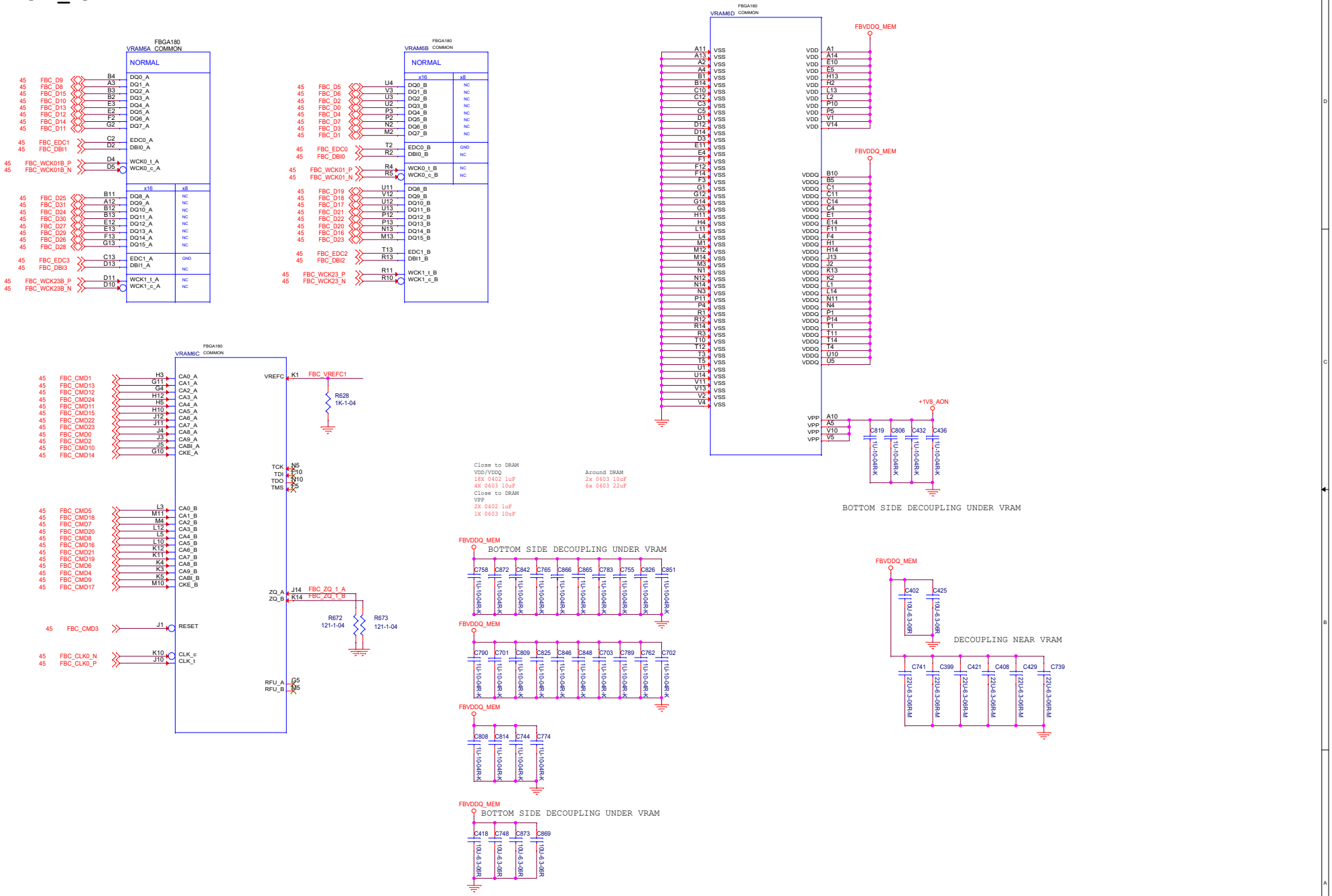
MEM_FBC[31_0]



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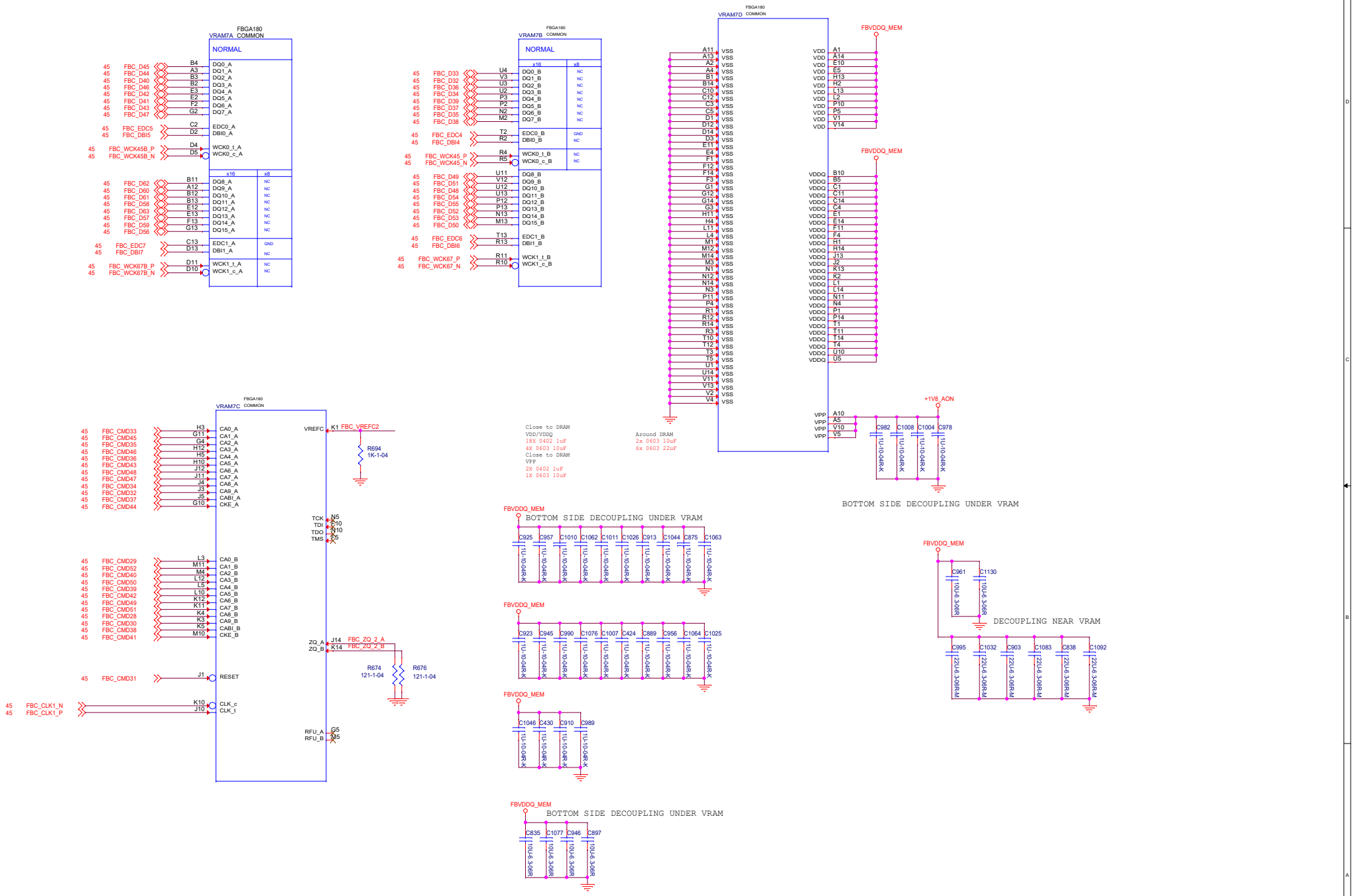
Title	VRAM Frame Buffer C0	
Size C	Document Number GMxZGxx	Rev NPI
Date: Saturday, May 22, 2021	Sheet 51 of 72	

MEM_FBC[63_32]



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Title	VRAM Frame Buffer C1	
Size C	Document Number GMxZGxx	Rev NPI
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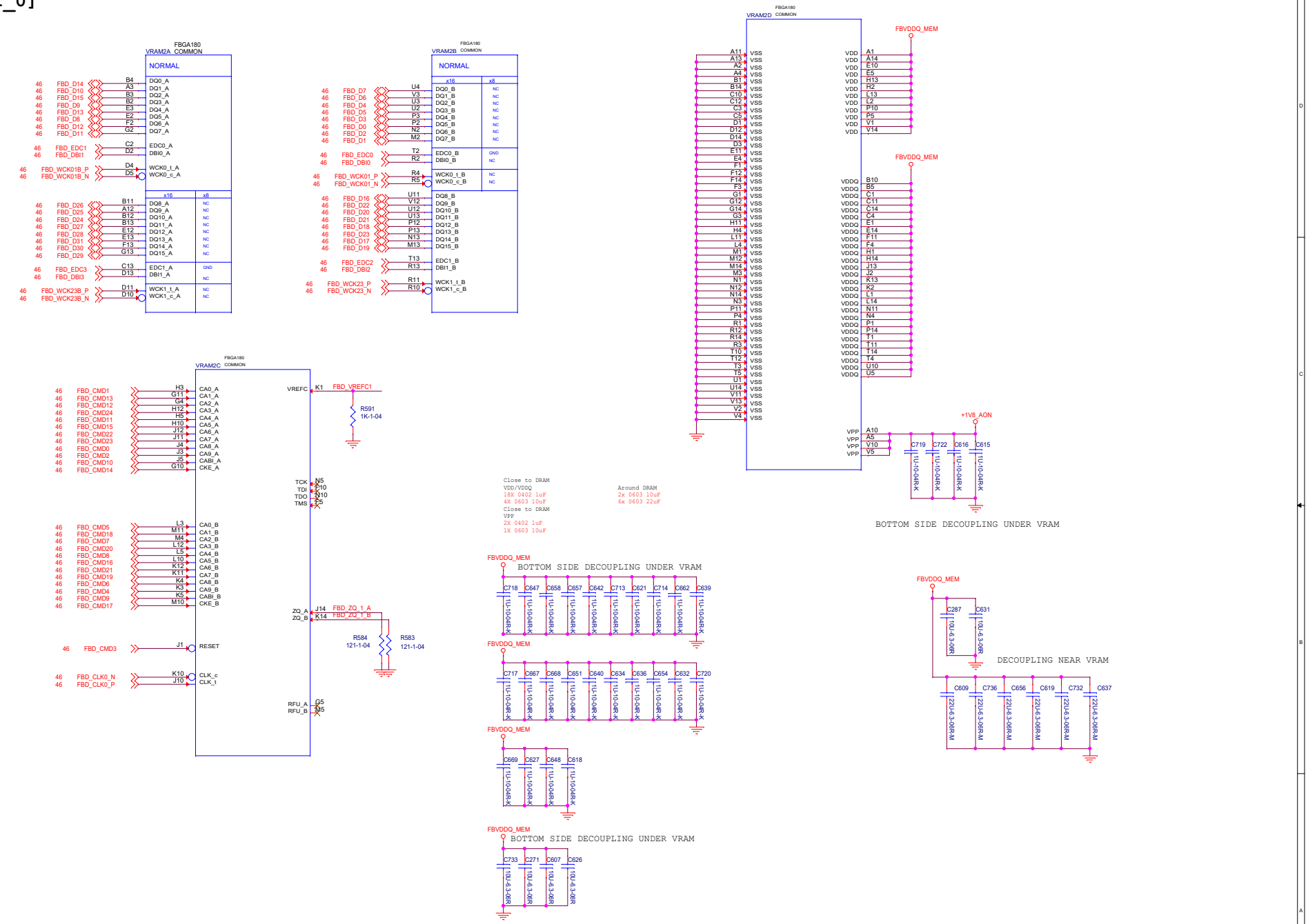
MEM_FBD[31_0]



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Title	VRAM Frame Buffer D0	
Size C	Document Number GMxZGxx	Rev NPI
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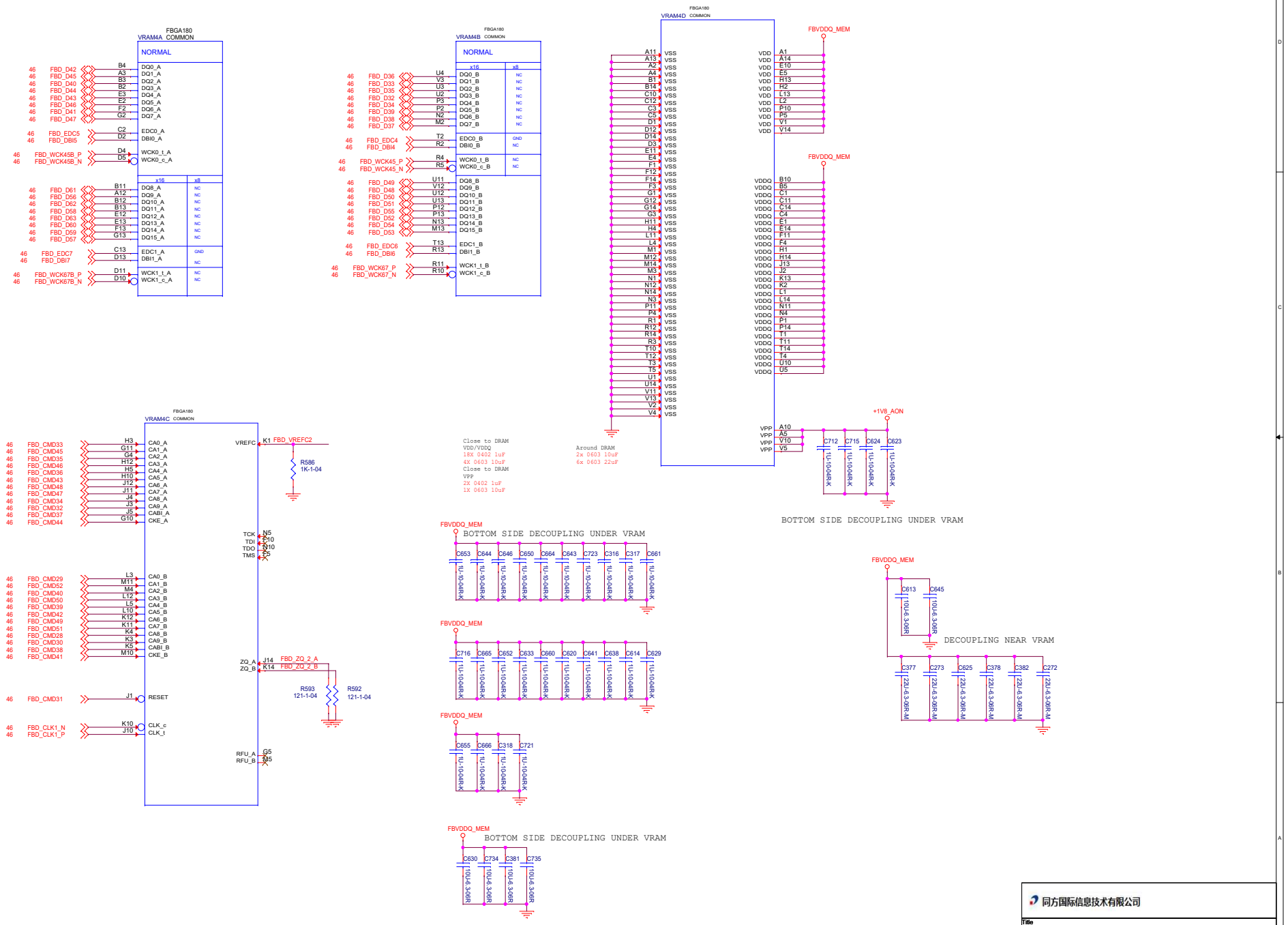
MEM_FBD[63_32]



同方国际信息技术有限公司

Title	VRAM Frame Buffer D1	
Size C	Document Number GMxZGxx	Rev NPI
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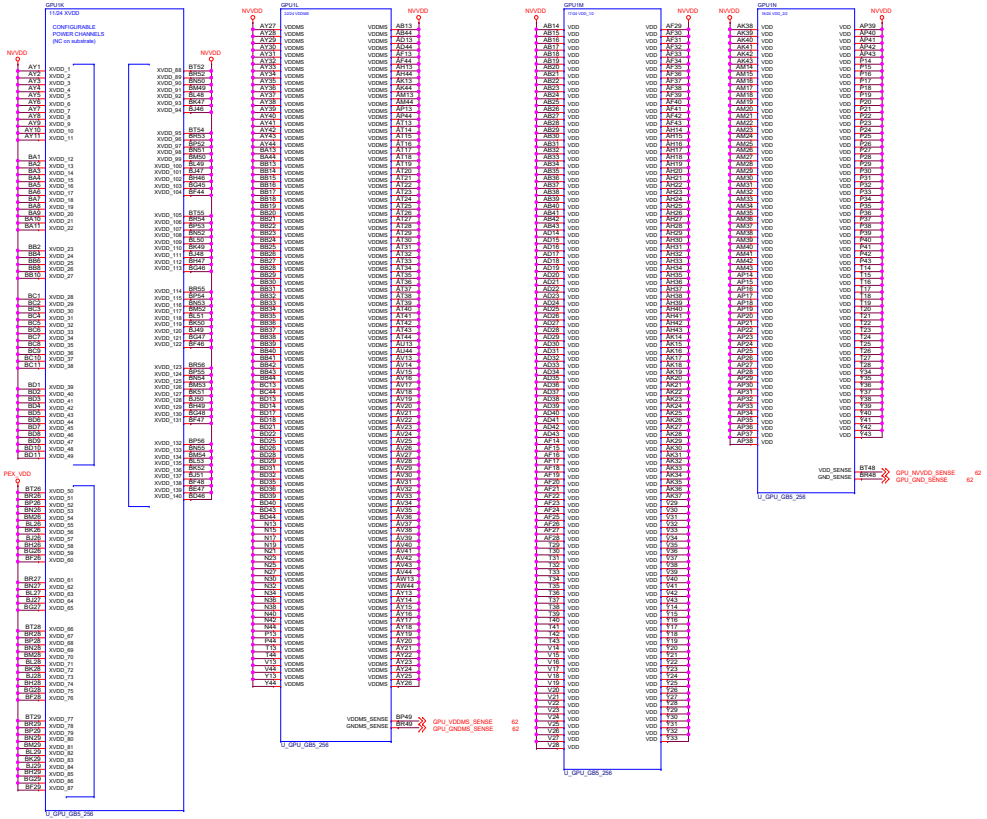

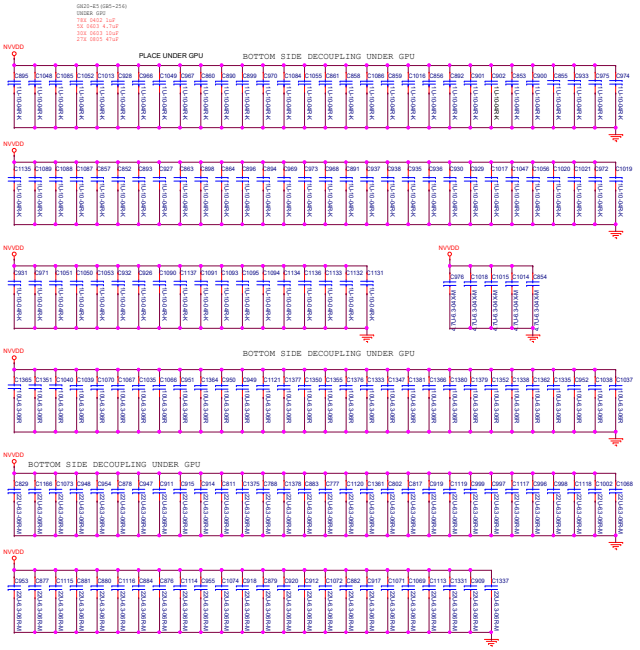

Title	GPU N18E PWR NVVDD
Size	D
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Title	GPU N18E FBVDDQ/1V8_AON/GND		
Size: D	Document Number: GMxZGxx		Rev: NPI
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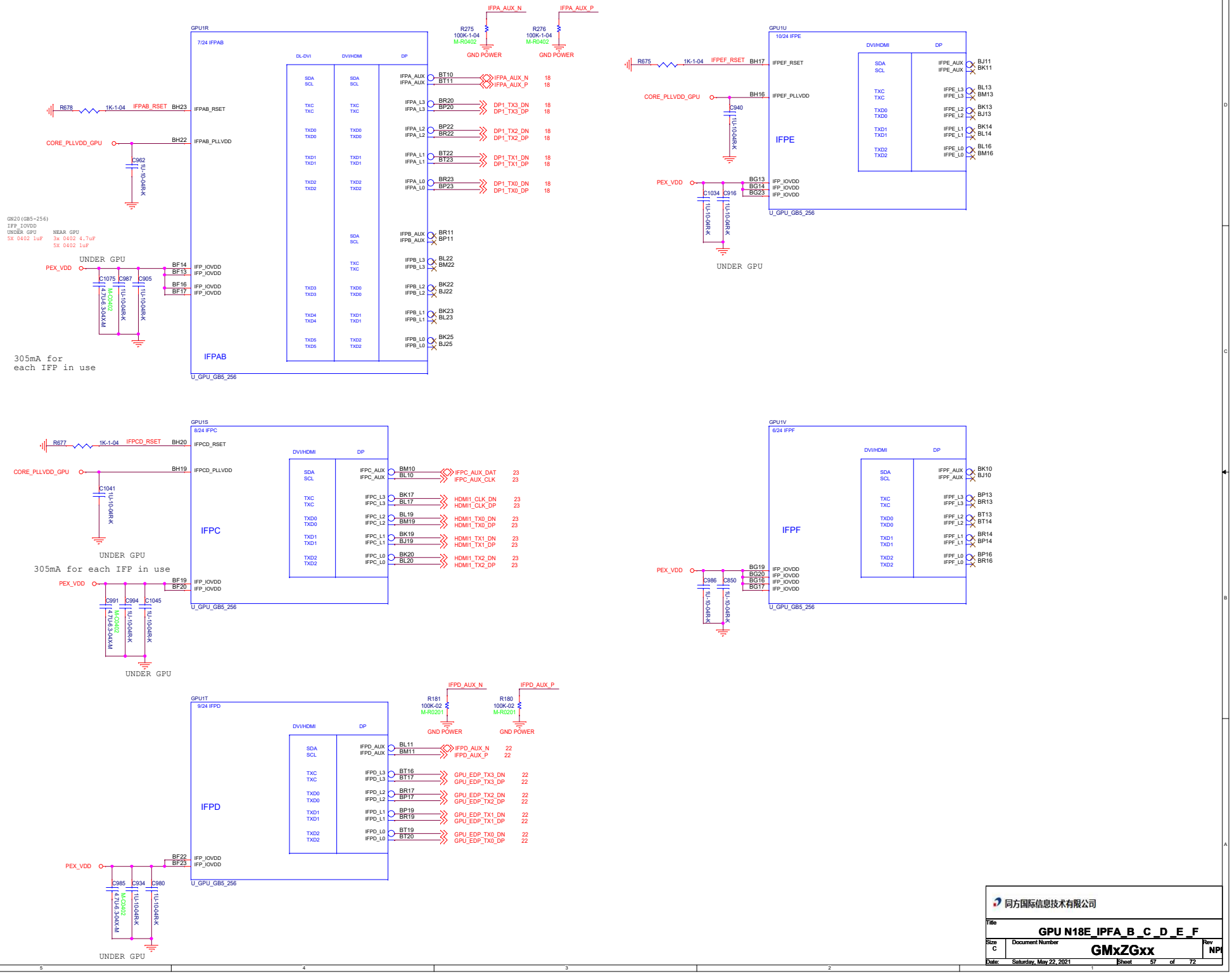

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Title	GPU N18E_IPFA_B_C_D_E_F	
Size C	Document Number GMxZGxx	Rev NPI
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Title

GPU N18E NVLINK

Size	Document Number	Rev
A	GMxZGxx	NPI

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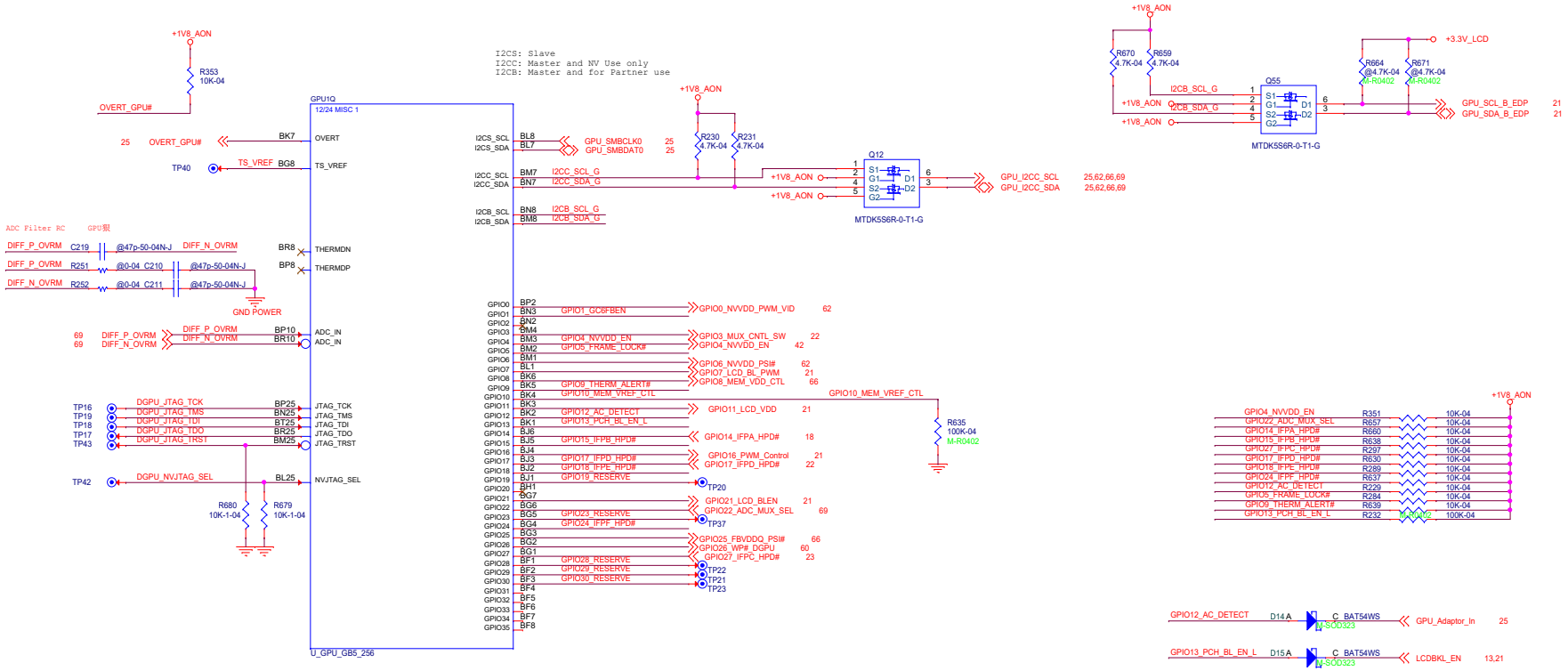

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Title	GPU N18E GPIO/Thermal/I2C	
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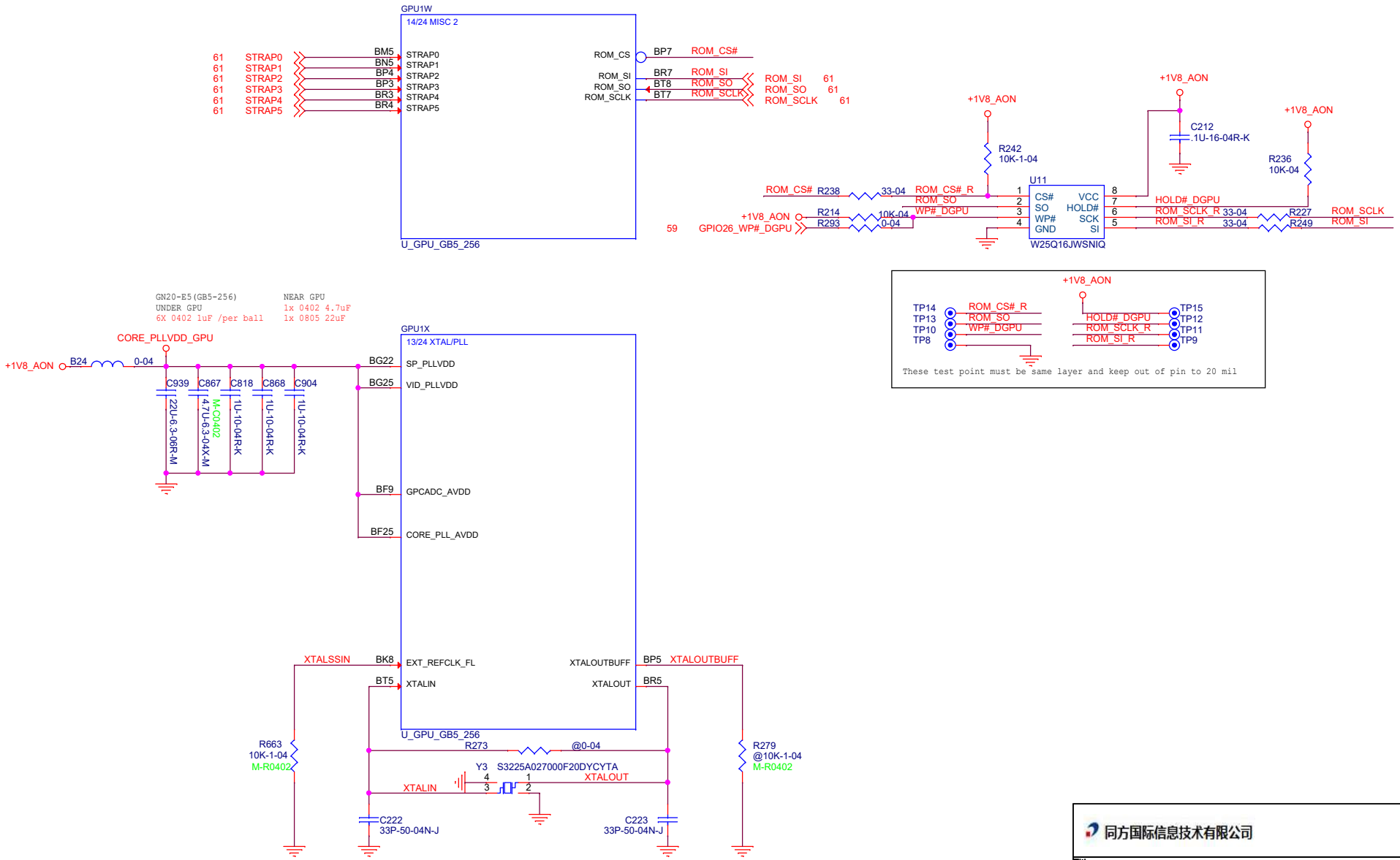

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Title	GPU N18E BIOS/XTAL	
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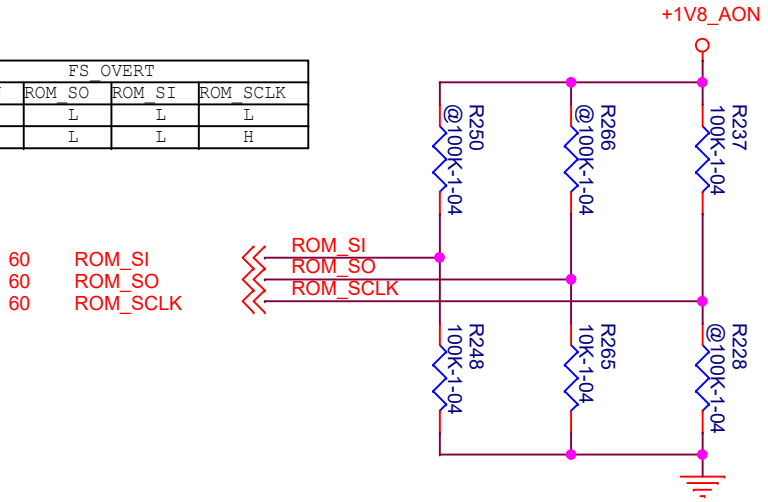
	Voltage(V)		
LEVEL	Min	Normal	Max
H	1.5	1.8	1.854
M	0.5	0.9	1.3
L	0	0	0.3
Invalid	1.3V<pin voltage<1.5V		
	0.3V<pin voltage<0.5V		

FS_OVERT			
FUNCTION	ROM_SO	ROM_SI	ROM_SCLK
disable	L	L	L
enable	L	L	H



GN20-E5 GDDR6						
Density	Vendor	Part Number	Strap	Strap 2	Strap 1	Strap 0
8Gb	Samsung	K4Z80325BC-HC14 C-die	0X0	L	L	L
8Gb	Micron	MT61K256M32JE-14:A A-die	0X1	L	L	H
8Gb	Hynix	H56C8H24AIR-S2C A-die	0X2	L	H	L
16Gb	Samsung	K4ZAF325BM-HC14 M-die	0X9	L	M	L

Strap5,4,3 LLH			
SMB_ALT_ADDR	DEVID_SEL	PCIE_CFG	VGA_DEVICE
0	0	0	1

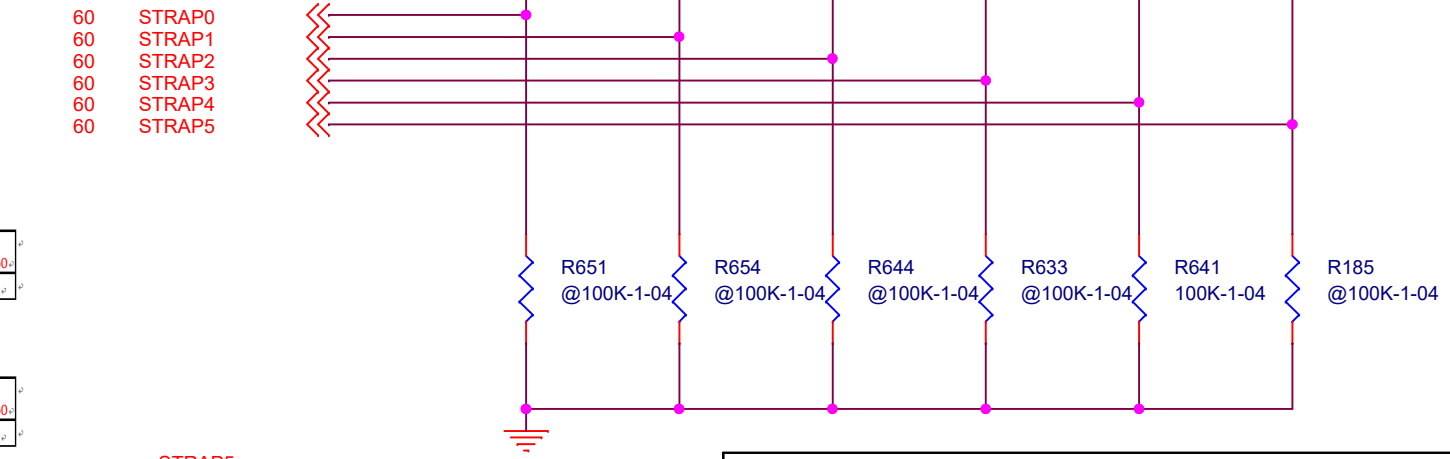
Strap5,4,3 HLH			
SMB_ALT_ADDR	DEVID_SEL	PCIE_CFG	VGA_DEVICE
0	1	0	1

1:SMB_ALT_ADDR dual GPU alternate
0:SMB_ALT_ADDR single GPU

1:DEVID_SEL REBRAND
0:DEVID_SEL ORIGNAL

1:PCIE_CFG reduced signal amplitude
0:PCIE_CFG normal signal swing

1:VGA_DEVICE class code 300
0:VGA_DEVICE class code 302

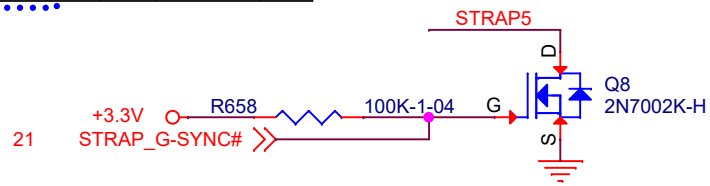


(N20) Straps setting => Follow below settings for G-Sync

ROM_SO (10K)	ROM_SI	ROM_SCLK	Strap5	Strap4	Strap3	Strap2	Strap1	Strap0
L	L	H	H	L	H	RVL	RVL	RVL

(N20) Straps setting => Follow below settings for Non G-Sync

ROM_SO (10K)	ROM_SI	ROM_SCLK	Strap5	Strap4	Strap3	Strap2	Strap1	Strap0
L	L	H	L	L	H	RVL	RVL	RVL



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Title
GPU N18E STRAP

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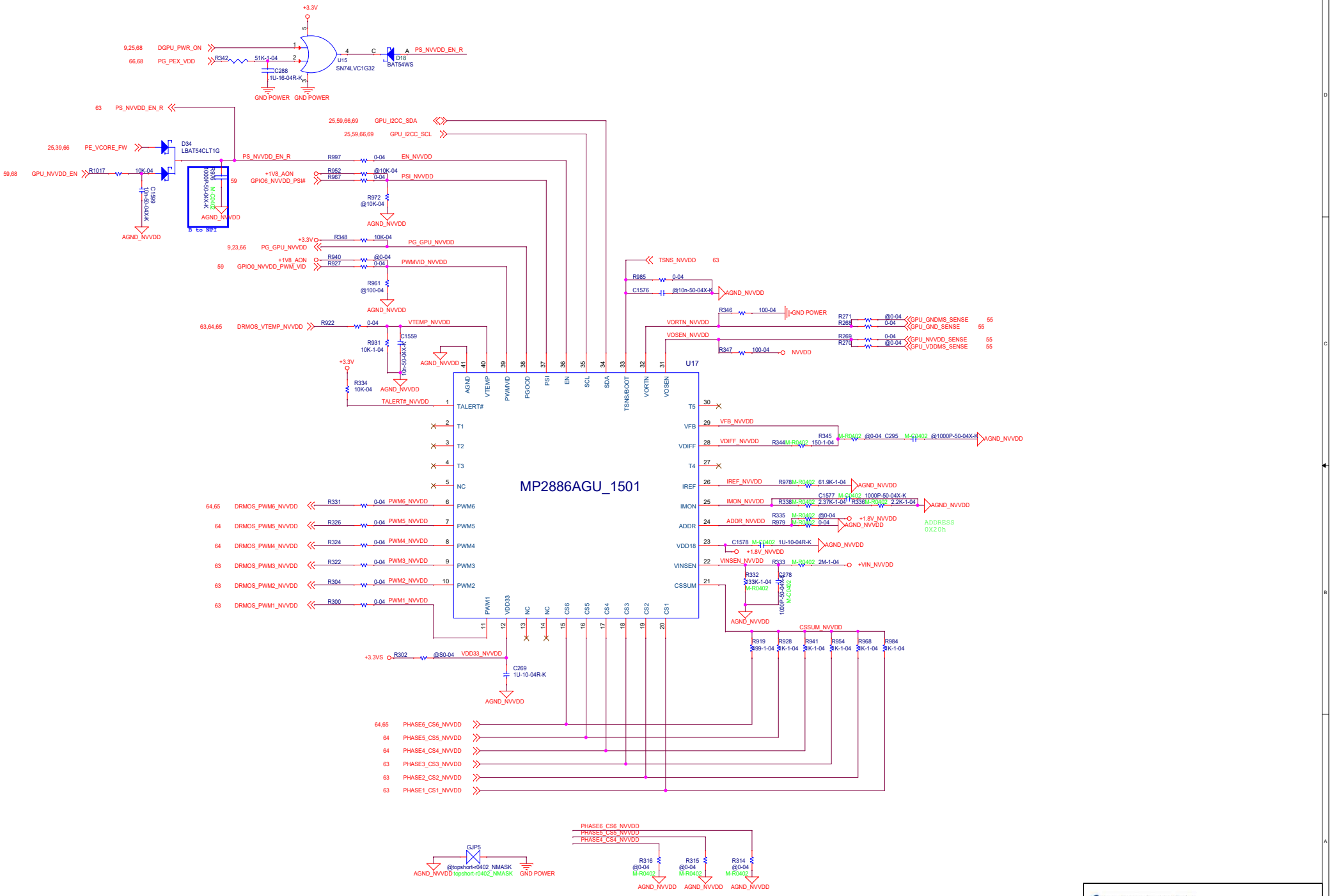

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Title	POWER N18E NVVDD CONTROLLER	
Size C	Document Number GMxZGxx	Rev NPI
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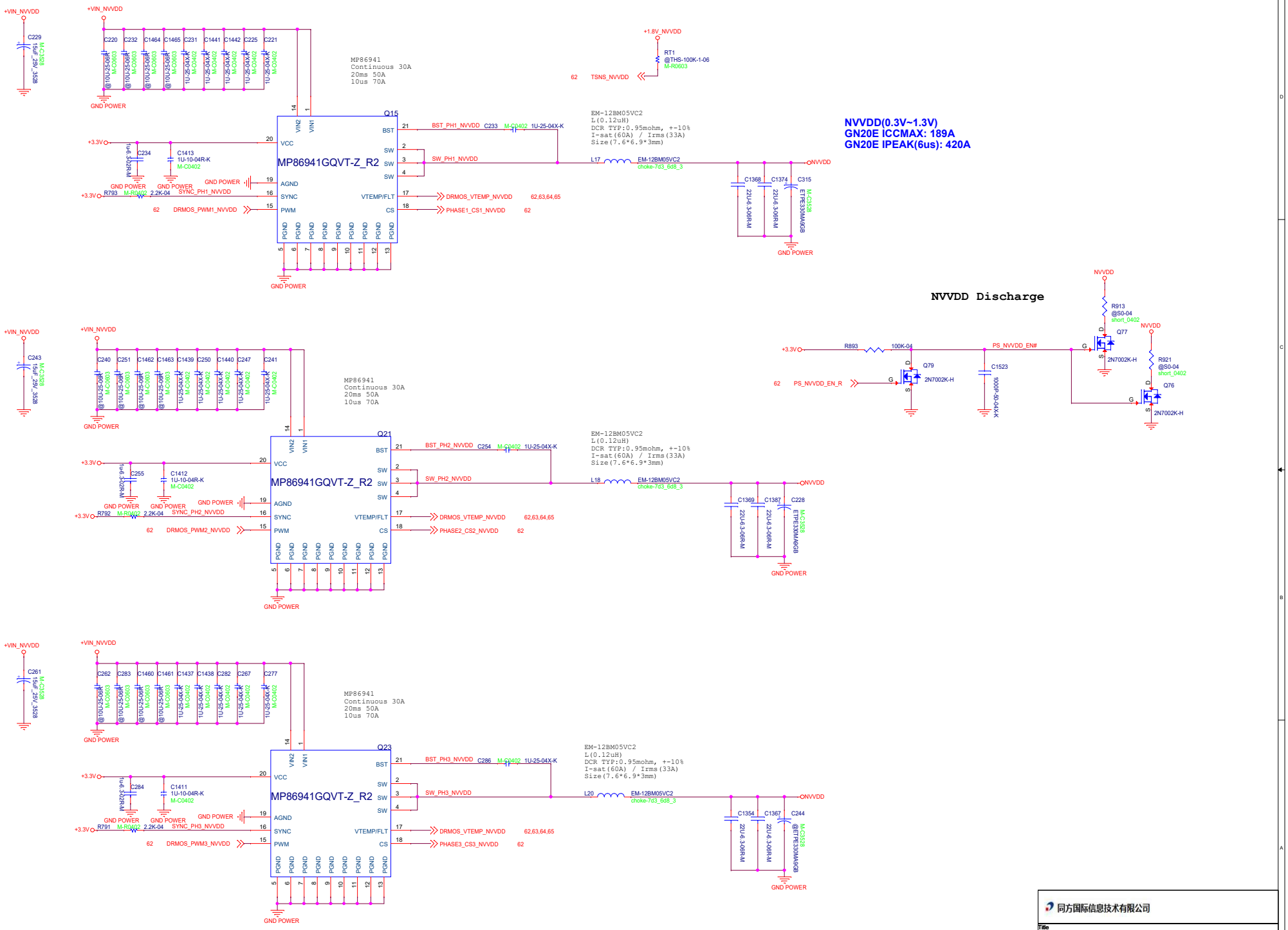
MP86941
Continuous 30A
20ms 50A
10us 70A
MP86941GQVT-Z_R2
Q15
EM-12BM05VC2
L(0.12uH)
DCR TYP:0.95mohm, +-10%
I-sat(60A) / Irms(33A)
Size(7.6*6.9*3mm)
NVVDD(0.3V~1.3V)
GN20E ICCMAX: 189A
GN20E IPEAK(6us): 420A
NVVDD Discharge
Q21
Q23
+VIN_NVVDD
+3.3V
+1.8V_NVVDD
GND POWER
NVVDD
TSNS_NVVDD
DRMOS_PWM1_NVVDD
DRMOS_PWM2_NVVDD
DRMOS_PWM3_NVVDD
DRMOS_VTEMP_NVVDD
PHASE1_CS1_NVVDD
PHASE2_CS2_NVVDD
PHASE3_CS3_NVVDD
PS_NVVDD_EN#
PS_NVVDD_EN_R
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POWER N18E NVVDD 3PHASE_1/2
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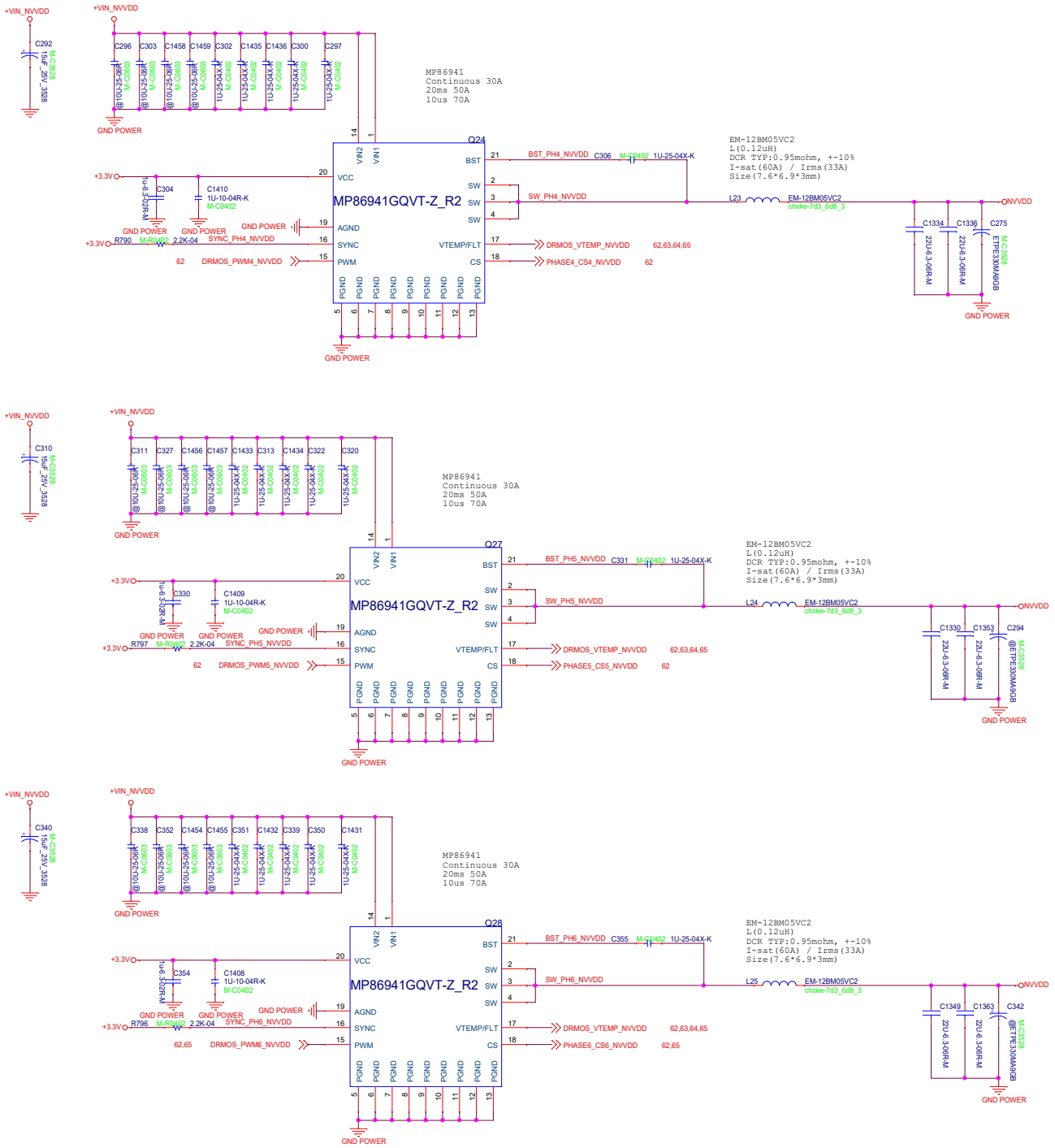

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Title: POWER N18E NVVDD 3PHASE_2/2

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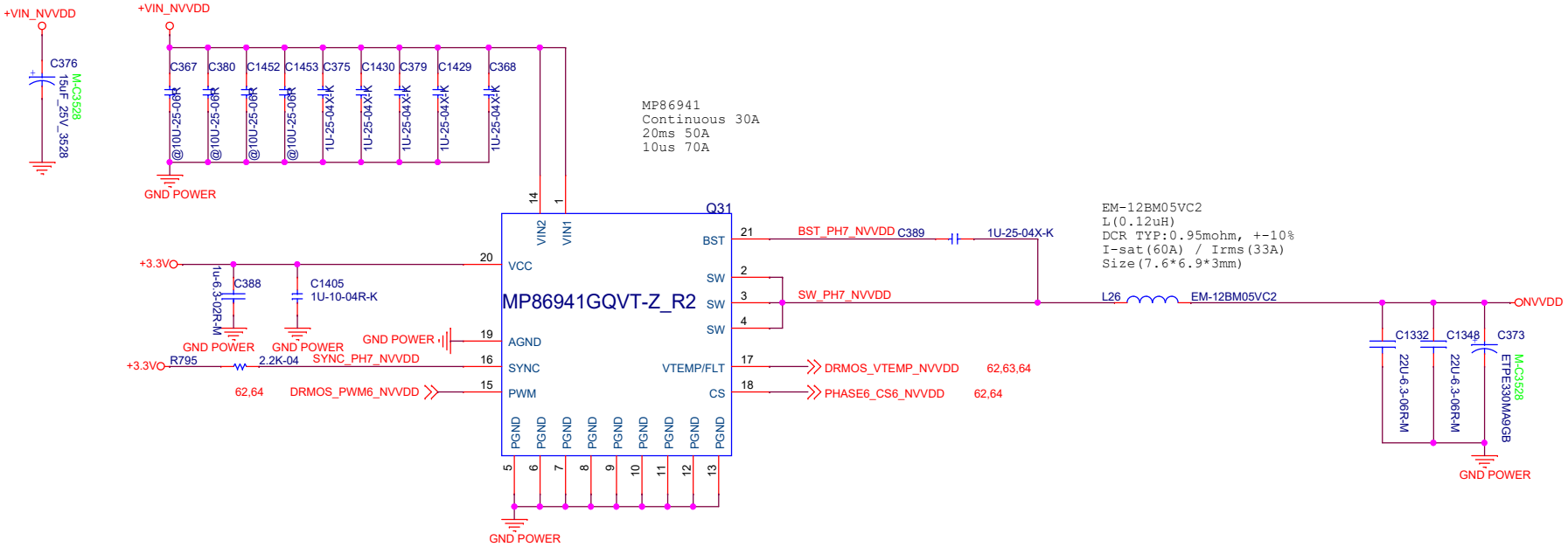

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Title	GPU POWER SEQUENCE	
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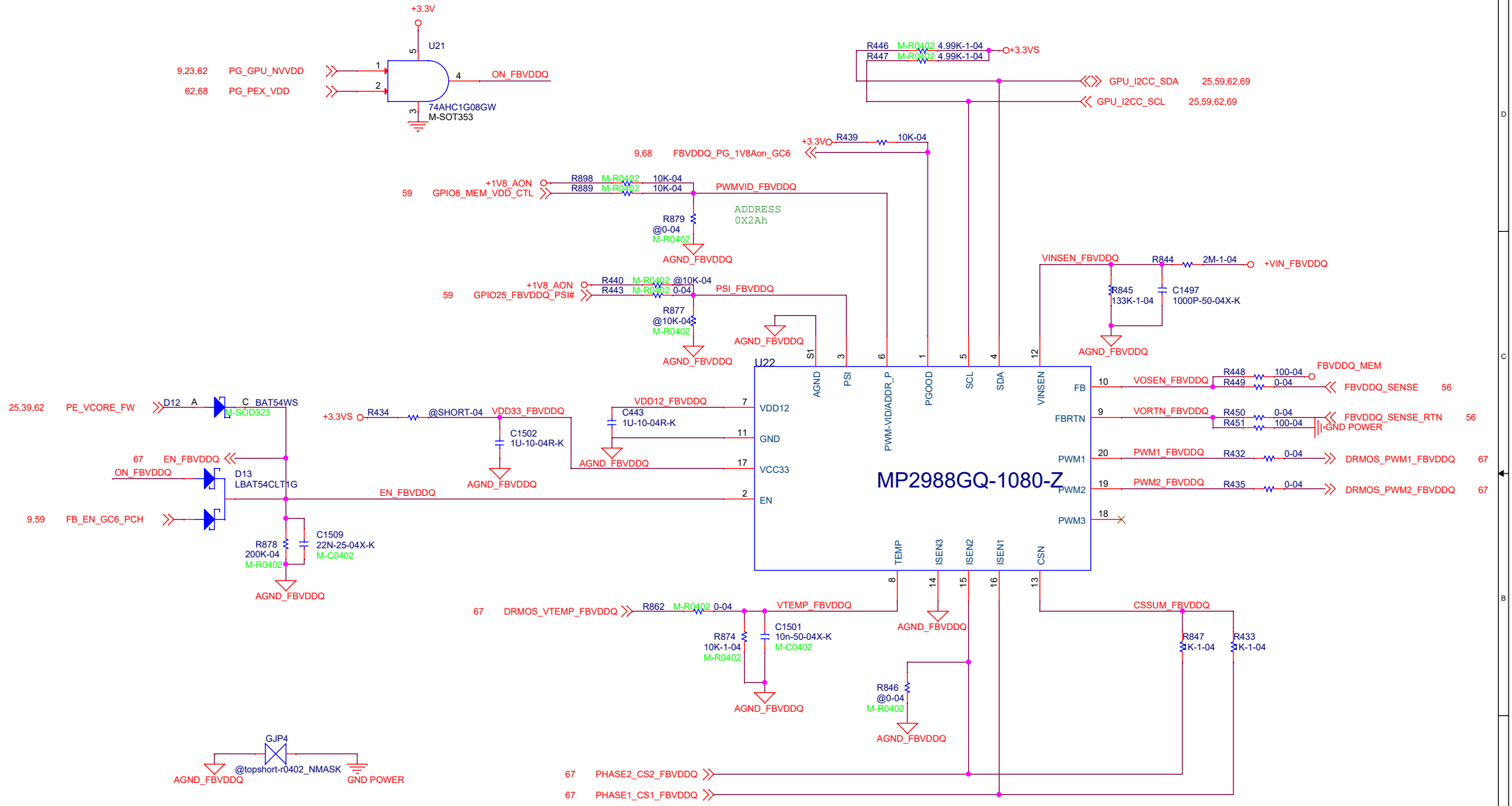

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Title	POWER N18E FBVDDQ CONTROLLER		
Size B	Document Number GMxZGxx		Rev NPI
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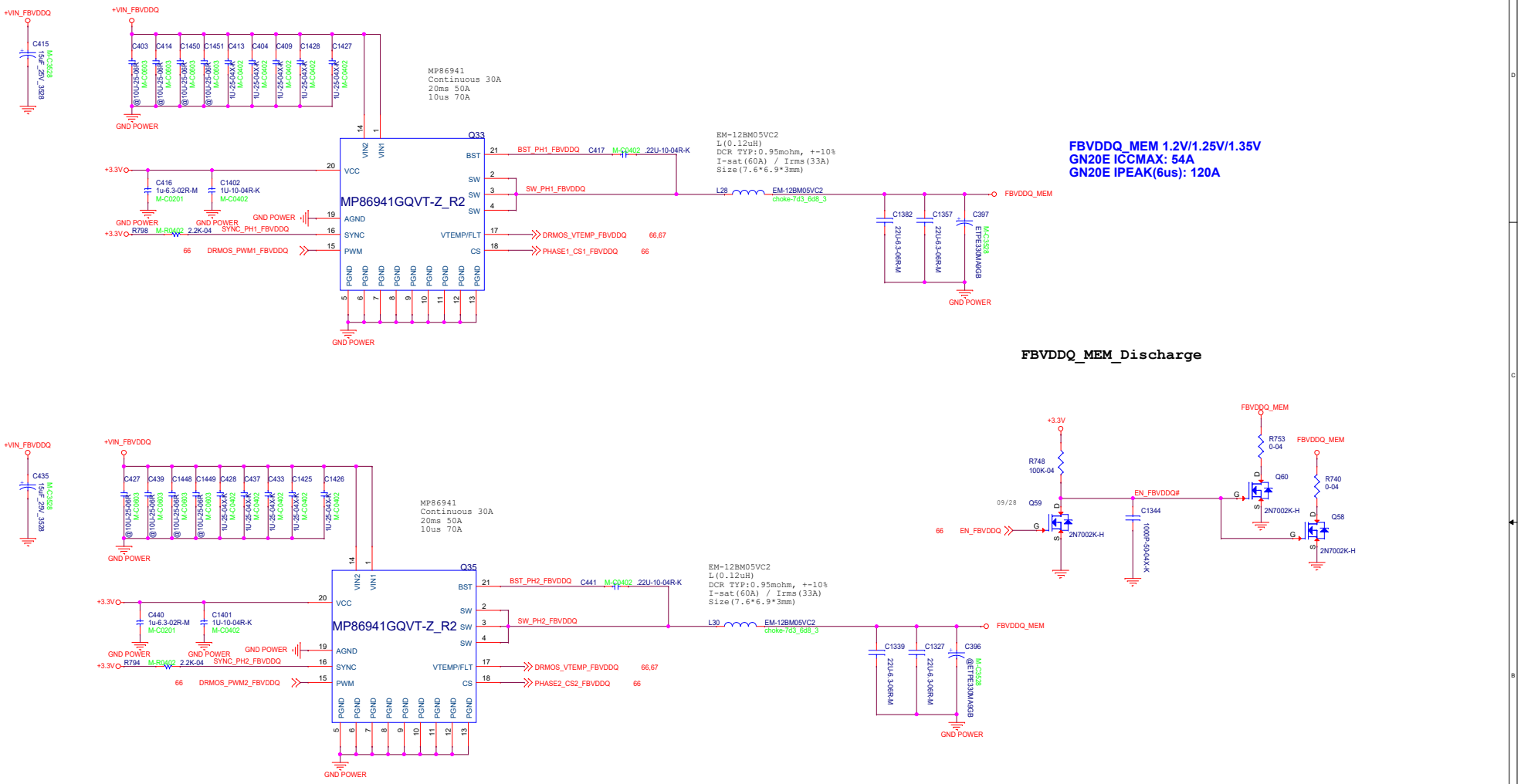

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Title	POWER N18E FBVDDQ 2PHASE	
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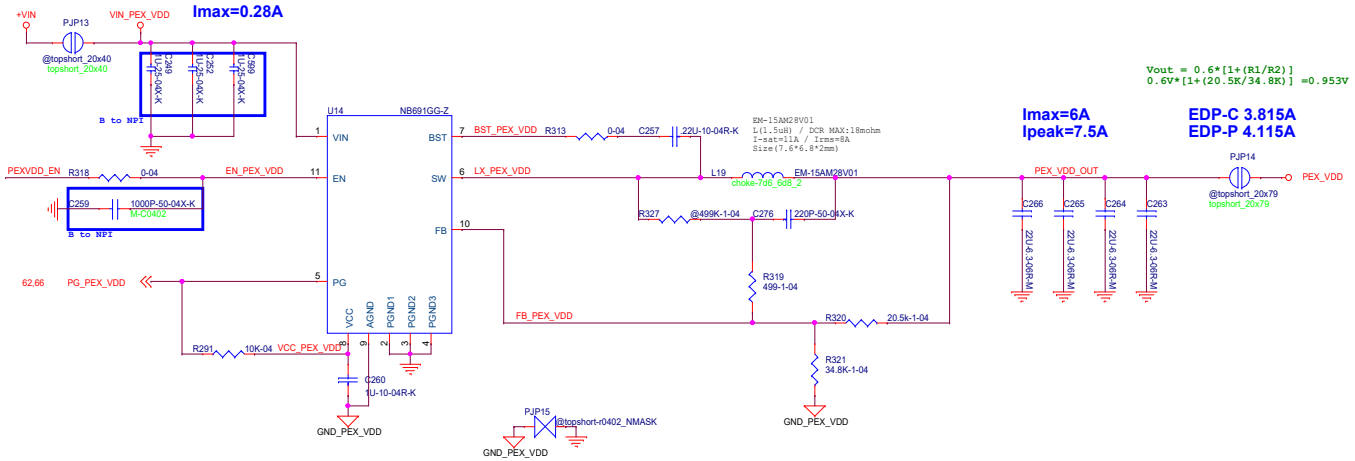
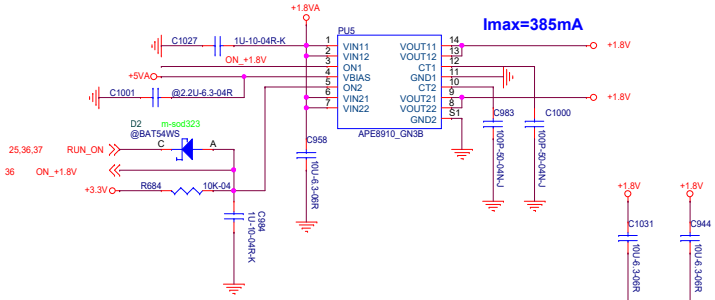
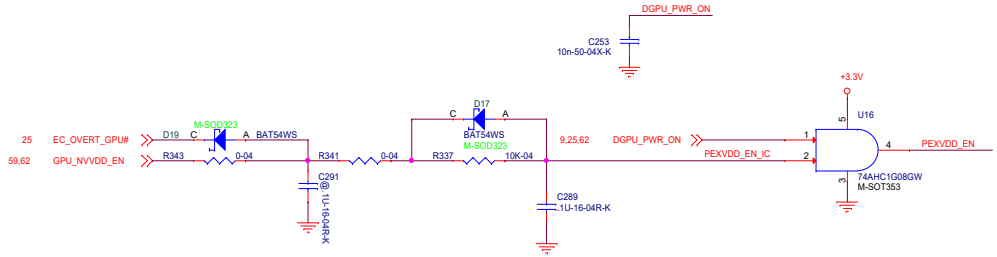
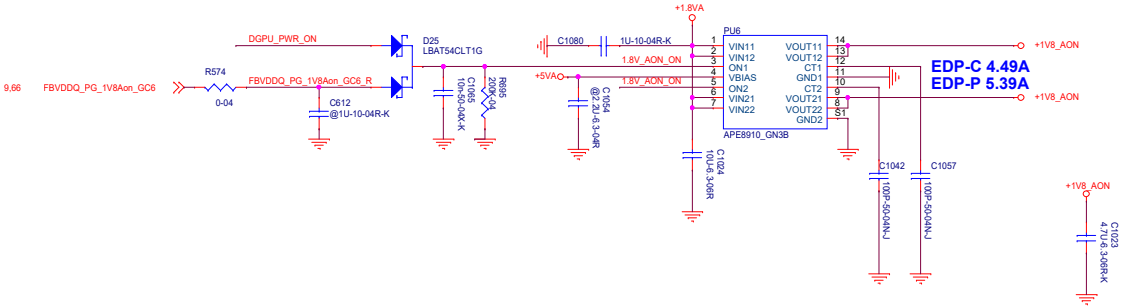
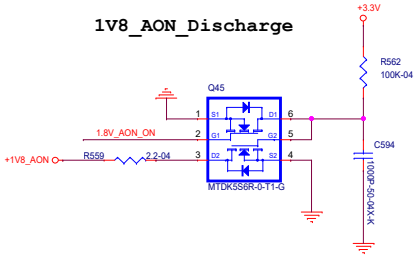
PEX_VDD SW











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Title	POWER N18E PEX_VDD/1V8_AON	
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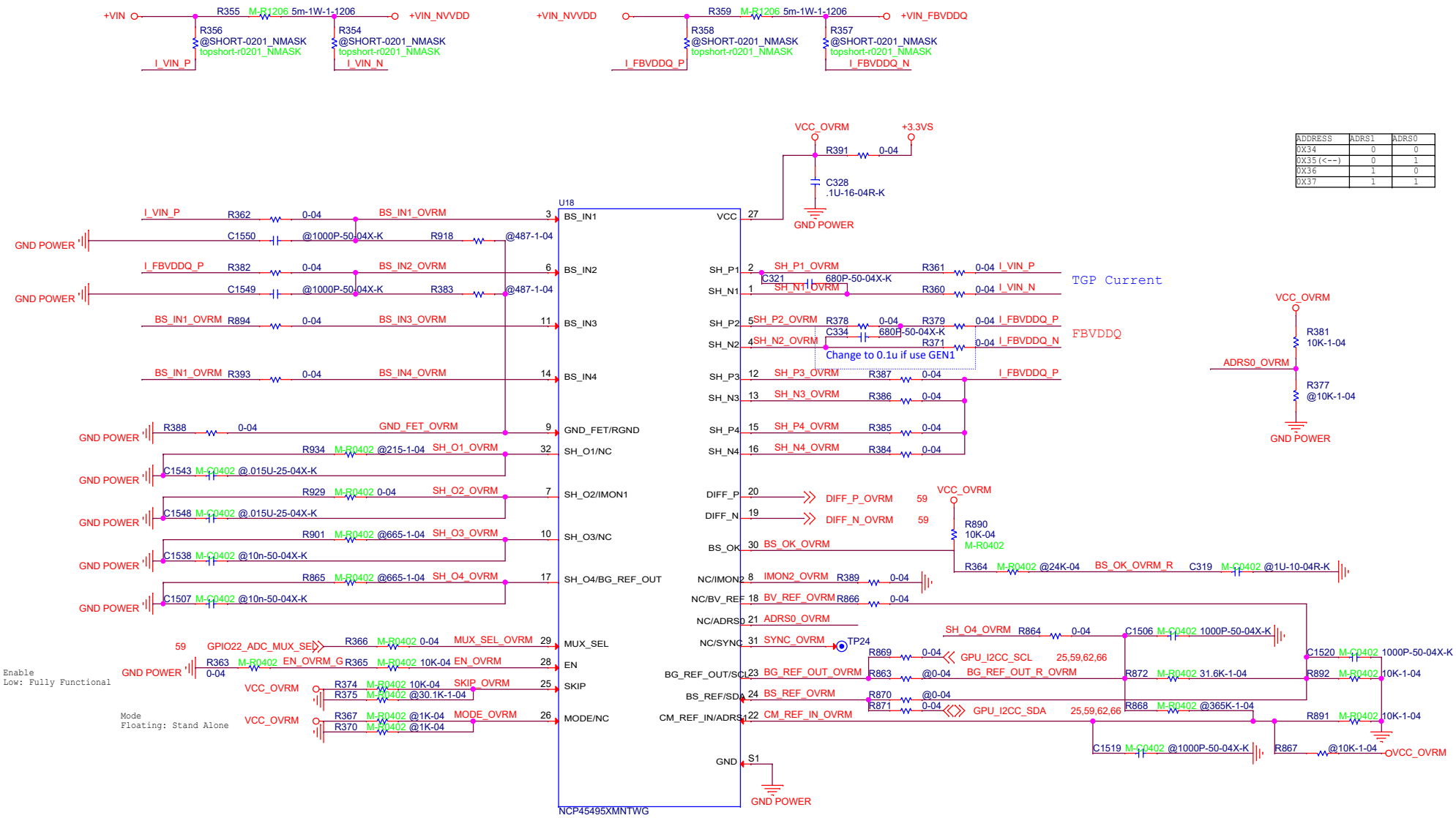

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Title	POWER N18E OVR-M	
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B to NPI change list

2020/10/23
1.P.34 Change TP1,TP5,TP48,TP53 footprint from TP16 to TP32 for SMT test.

2020/10/28
1.P.63,64,65,67 Swap input POS CAP allocation.
2.P.18 Add R1066~R1073 for Type-C convert HDMI.

2020/10/30
1.P.24 Change USB RE-TIMER from ASM1562 to PS8811.

2020/11/10
1.P.29 Change ALC1306_PVDD cap from 15uF_25V_352 (C444) to 10U-25-06R (C1639,C1640) for material shortage.
2.P.33 Change VCHG cap from 15uF_25V_352 (C154) to 10U-25-06R (C1641,C1642) for material shortage.

2020/11/11
1.P.29 Change AB8(short pad) to R1074(0-0201) for +3.3V power source option.
2.P.29 Add R1075 for +3.3V power source option.
3.P.29 Change AB7(short pad) to R1076(0-0201) for +1.8V power source option.
4.P.29 Add R1077 for +1.8V power source option.
5.P.29 Change AB6(short pad) to R1078(0-0201) for +1.8V power source option.
6.P.29 Add R1079 for +1.8V power source option.

2020/11/12
1.P.29 Change R1058,R1059,R1060,R1075,R1077,R1079 to stuff for change power source from always power.
2.P.29 Change R1061,R1062,R1063,R1074,R1076,R1078 to unstuff for change power source from always power.
3.P.30 Unstuff R1054,CNAUDIO2 for cancel 4SPK function.
4.P.40 Unstuff C67,C43,C79,C89 for material shortage.
5.P.41 Unstuff C95 for material shortage.
6.P.63 Unstuff C261,C376,C229 for material shortage.
7.P.64 Unstuff C243,C292,C310 for material shortage.
8.P.65 Unstuff C340 for material shortage.
9.P.63 Stuff C1465,C232,C1464,C220,C251,C1463,C240,C1462,C262,C1461,C1460,C283 for material shortage.
10.P.64 Stuff C1459,C1458,C296,C303,C327,C1457,C311,C1456,C1455,C352,C1454,C338 for material shortage.
11.P.65 Stuff C1452,C1453,C380,C367 for material shortage.
12.P.67 UnStuff C435,C415 for material shortage.
13.P.67 Stuff C1451,C414,C403,C1450,C439,C1449,C1448,C427 for material shortage.

2020/11/13
1.P.30 Add 100K PD (R1080) for leakage of EAPD_AMP_MUTE#.

2020/11/16
1.P.10 Reserve 10K PU (R1081) for PM_CLKRUN# cause it's open drain pin.

2020/11/18
1.P.11 Add C1643 (1000p) for USB_ALL_OC# to improve ripple.
2.P.23 Delete S7~S12,S14,S15 for HDMI2.1.
3.P.68 Combine PU5 +1.8V and +1.8VS power rail.
4.P.68 Delete PJP20,R691,C1030.
5.P.68 Change C1031 power from +1.8VS to +1.8V.

2020/11/20
1.P.18 Change U23 from EM5213J-30 to G517G2TO1U cause main source test fail.
2.P.34 Change CNDCIN1 from DCIN,3P,DIP,H7.6,2DC3003-016211F,SGT to DC-IN,2P,DIP,P5.25,2DC3208-00111F,SIN for maximum current to 12A.

2020/11/24
1.P.69 Stuff R864 for NVIDIA feedback.

2020/11/26
1.P.35 Unstuff R438 for USM of +3.3VA.
2.P.18 U23 change from G517G2TO1U to EM5213J-34 for sourcer.
3.P.40.41.63.64.65.67 L4,L5,L6,L8,L9,L17,L18,L20,L23,L24,L25,L26,L28,L30 change from EM-12BM05V03 to EM-12BM05VC2 for EMI test fail.

2020/12/2
1.P.33 Change Q80 from MTB06N03H8 to SM4512NHKPC-TRG to improve DC voltage drop.

2020/12/11
1.P.57 Change R677 from 1K ohm to 931 ohm to arrange HDMI driving ability.

2020/12/17
1.P.33 Change C146,C148,C152,C153,C163,C165,C1585,C1586,C1587,C1588,C1589 from 0.1u to 1u for improve peak's capability.
2.P.36 Change C5,C670,C681,C6,C7,C8 from 0.1u to 1u for improve peak's capability.
3.P.38 Change C54,C58,C1581,C1582 from 0.1u to 1u for improve peak's capability.

2020/12/30
1.P.23 Change L31,L32,L33,L34 from QTCW2012EH4-120-LF to QTCW2012BH-090-LF for HDMI 2.1
2.P.57 Change R677 from 931-1-04 to 1K-1-04 for HDMI 2.1

2020/01/20
1.P.29 Change R1009,R1014 from 75-1-04 to 150-1-04 for safety requirement.
2.P.62 Change R976 from 200K-04 to 1000P-50-04X-K for GC6 issue and GPU sequence.
3.P.68 Change C259 from @.1U-16-04R-K to 1000P-50-04X-K for GC6 issue and GPU sequence.
4.P.68 Change C249,C252,C599 from .1U-25-04X-K to 1U-25-04X-K for optimize.

2020/02/05
1.P.25 Change U46 from AND (74AHC1G08GW) to OR (SN74LVC1G32) to solve modern standby blue screen.
2.P.29 Change R1009,R1014 from 150 ohm to 240 ohm to solve acoustic pre test fail.

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GPU POWER SEQUENCE

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