PG411 A01

GP104 - 8GB GDDR5, 256b, 256Mx32
Tall DVI-D + DP + DP + HDMI + DP

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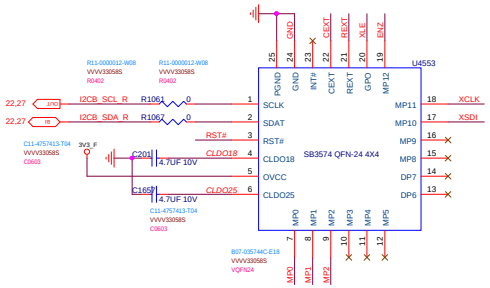

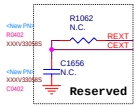

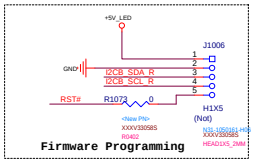

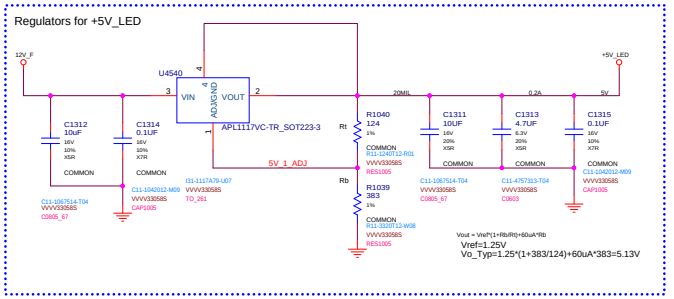

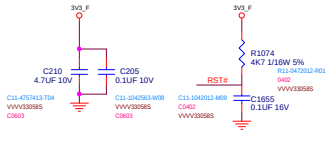

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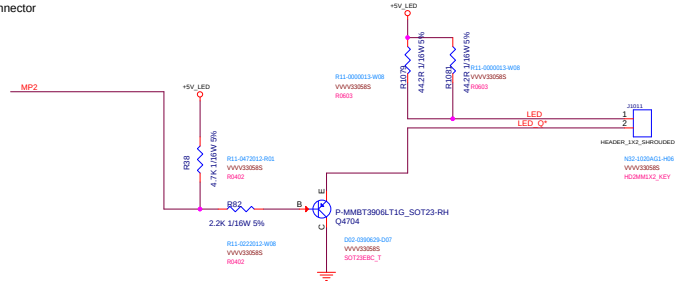

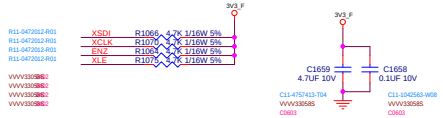

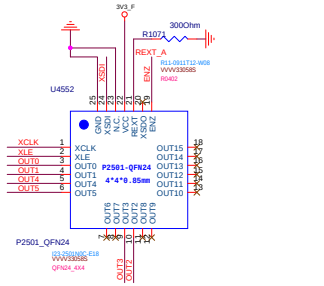

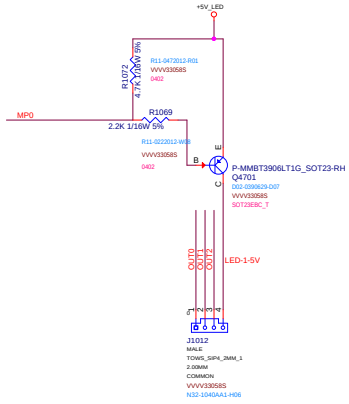

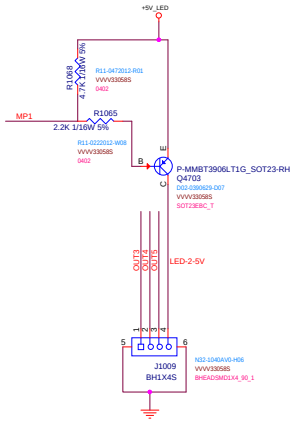

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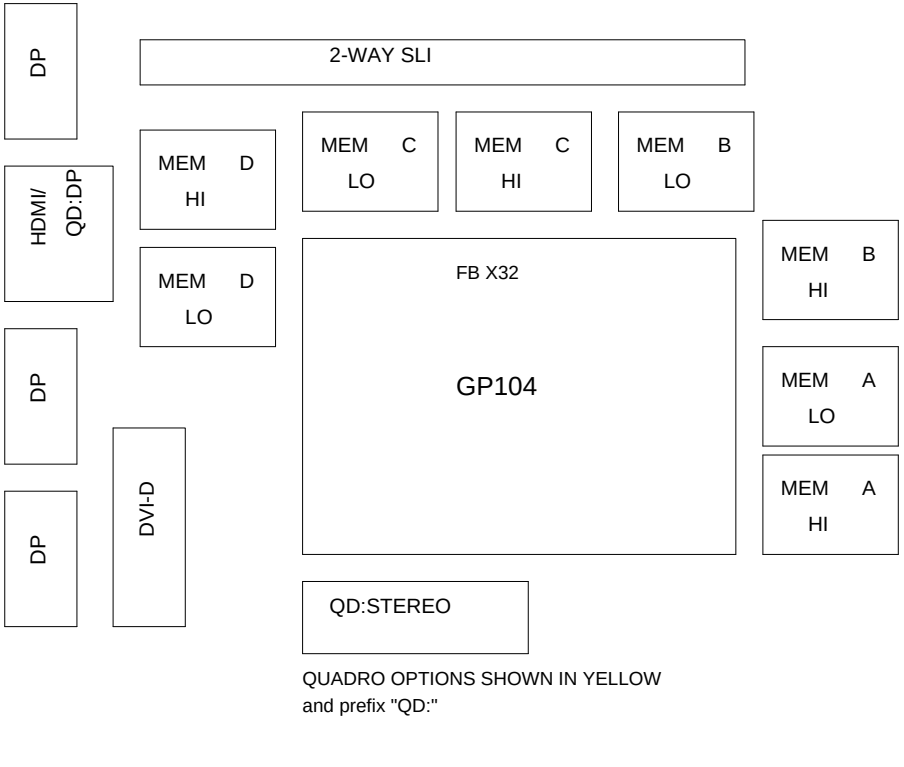
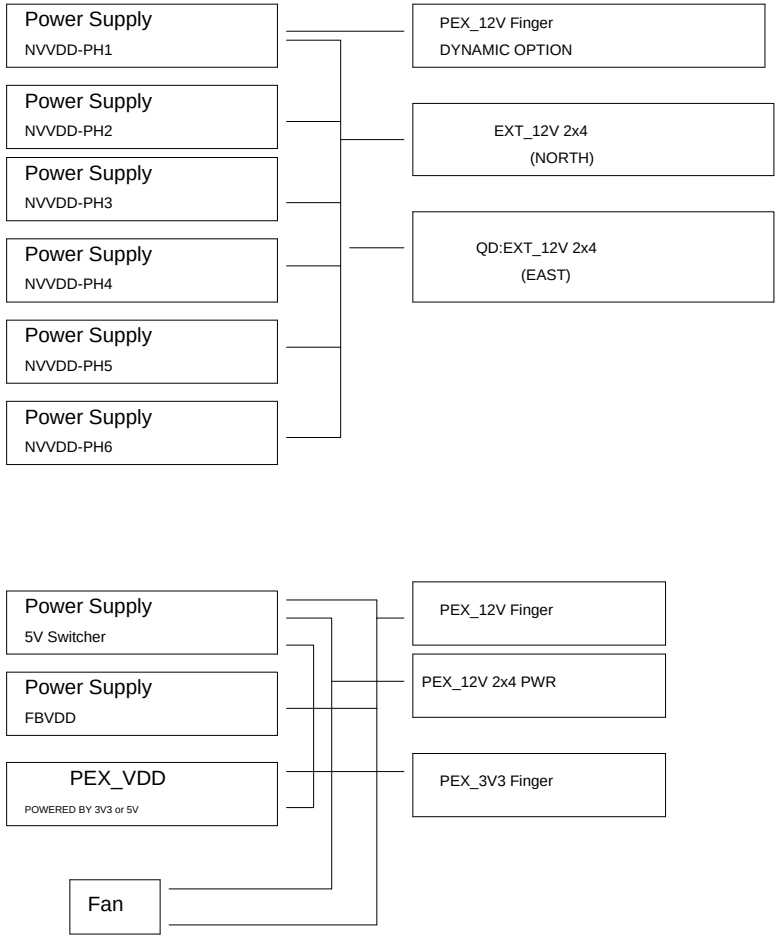


QUADRO OPTIONS SHOWN IN YELLOW
and prefix "QD:"



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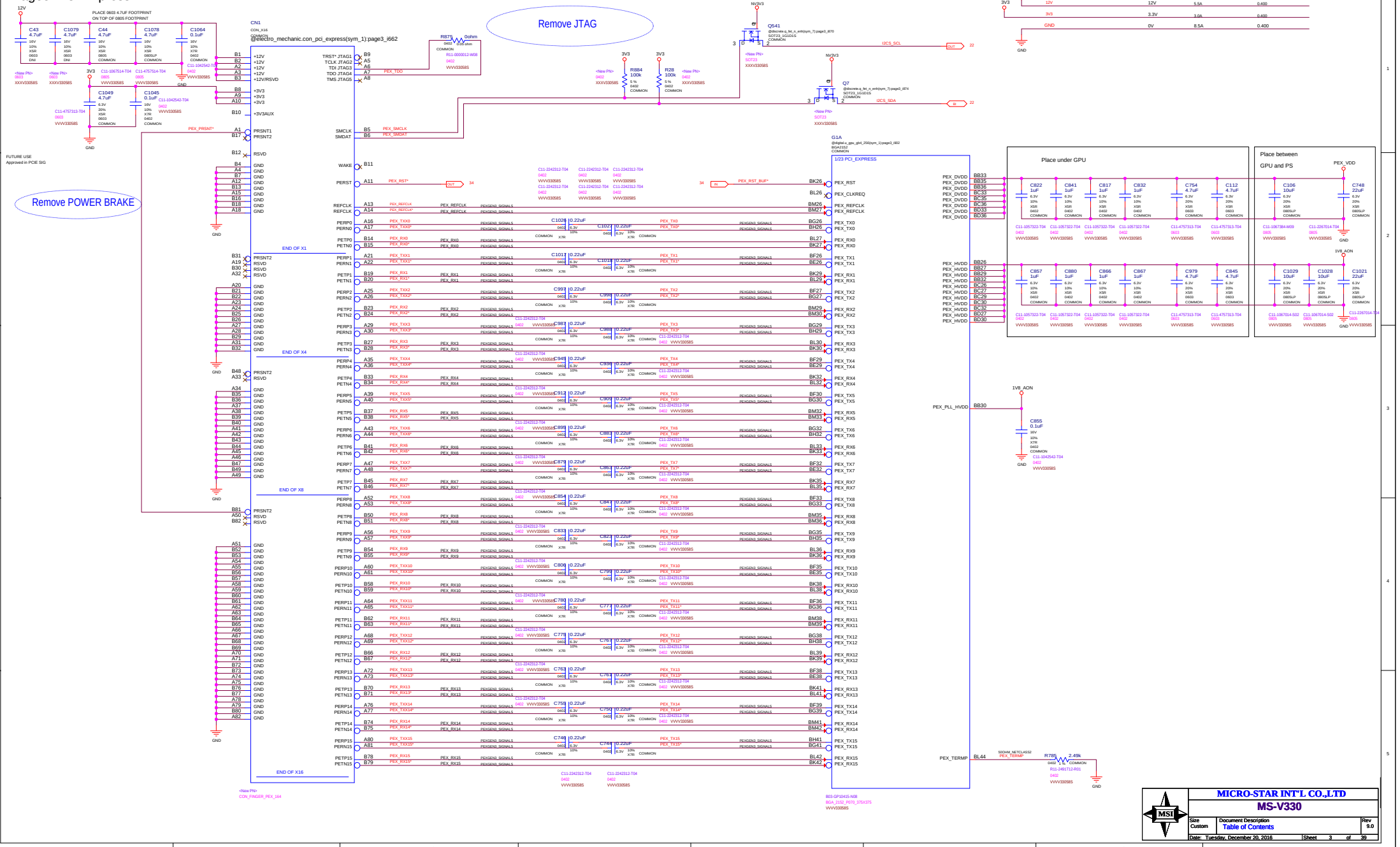
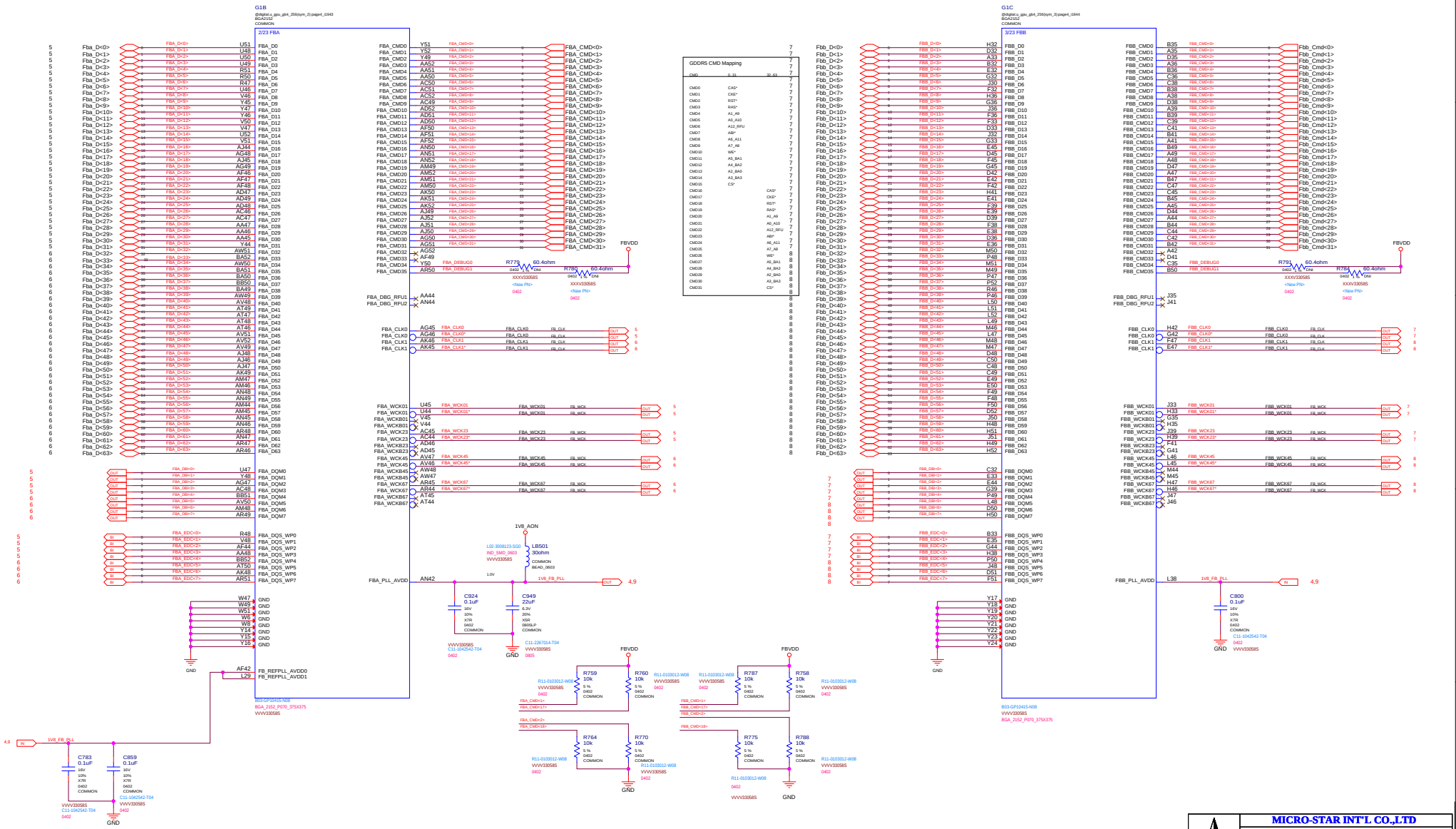
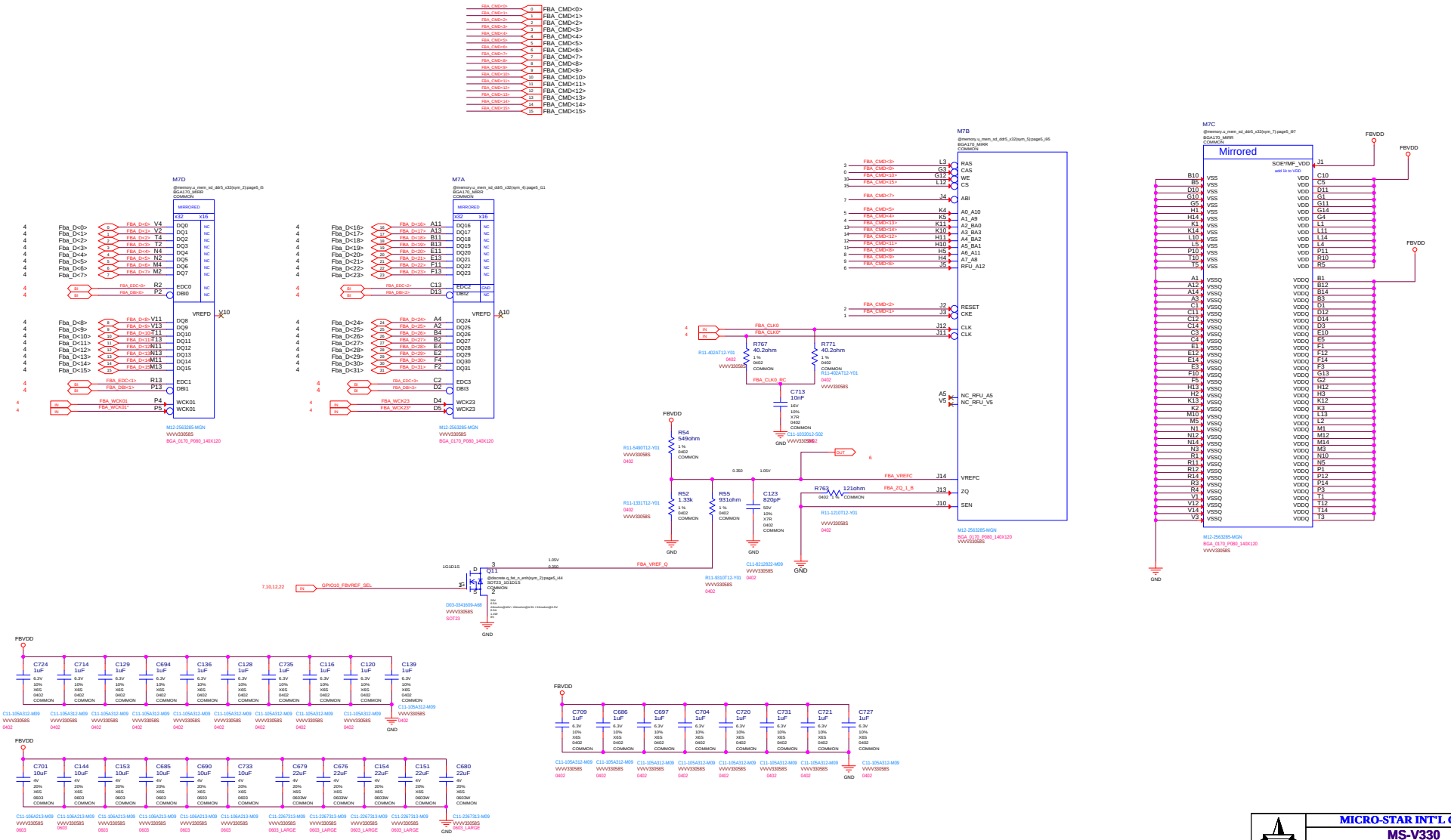
Page3: PCI Express



Page4: MEMORY: GPU Partition A/B



Page5: MEMORY: FBA Partition 31..0



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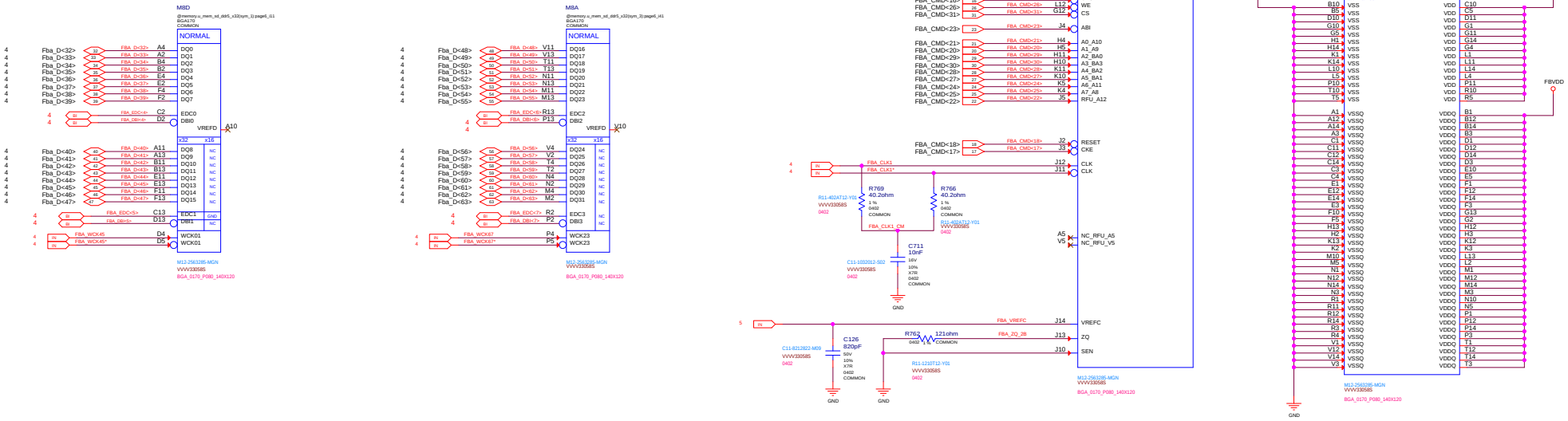
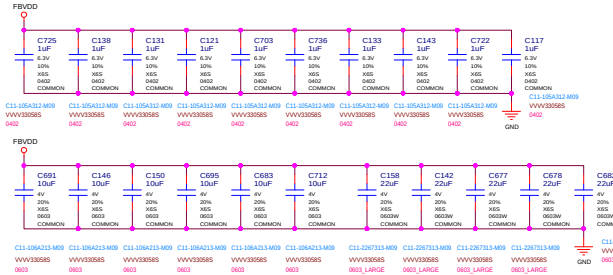
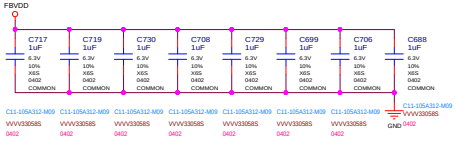
Page6: MEMORY: FBA Partition 63..32







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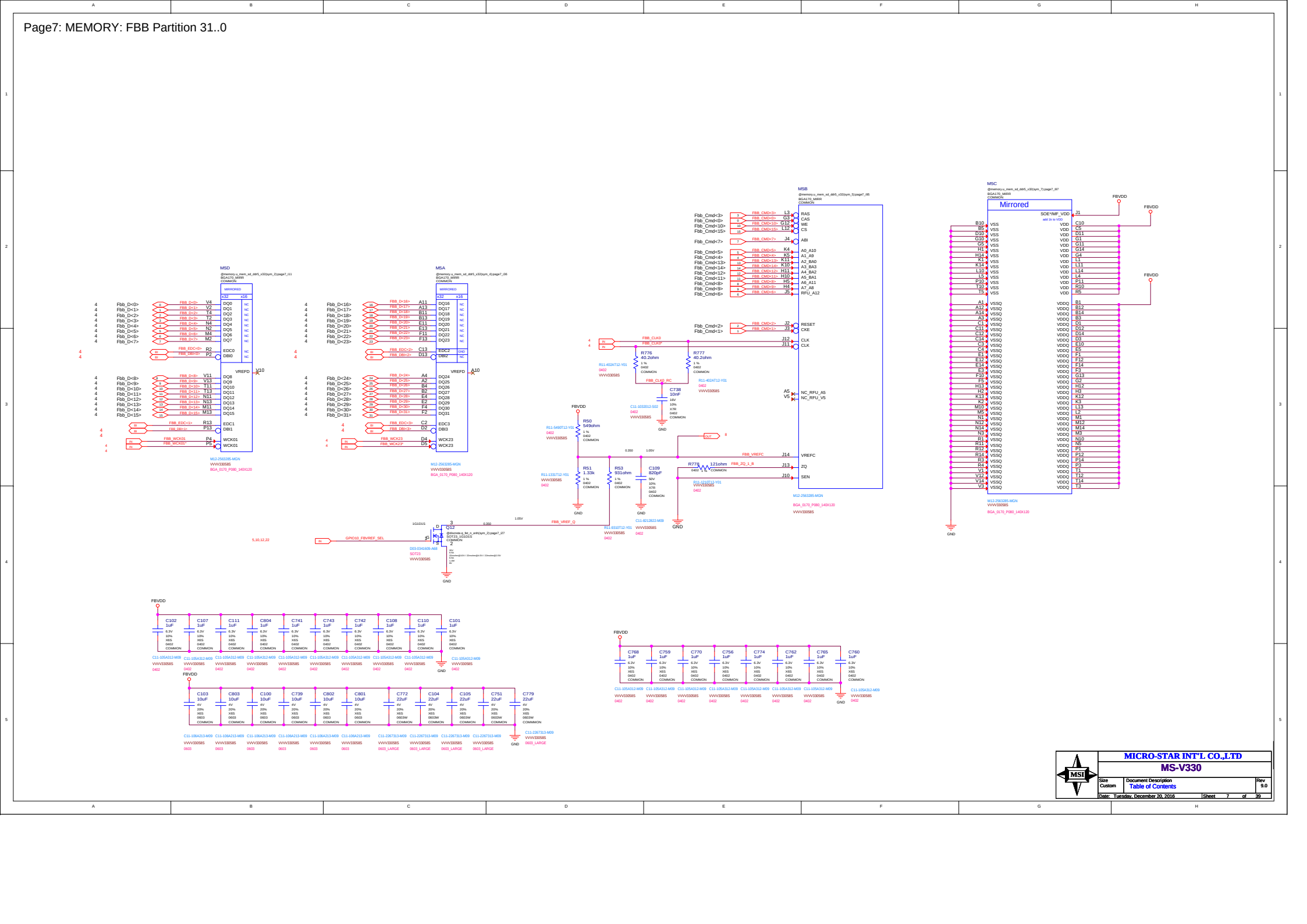
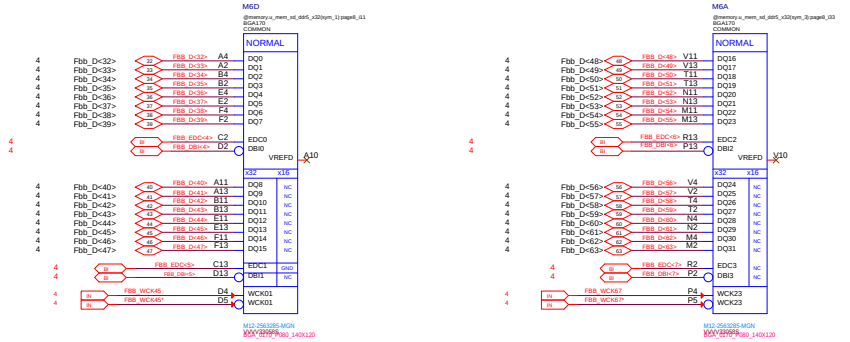
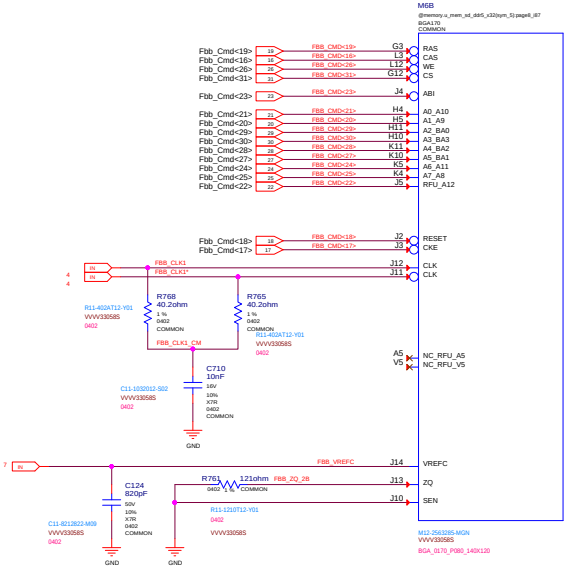
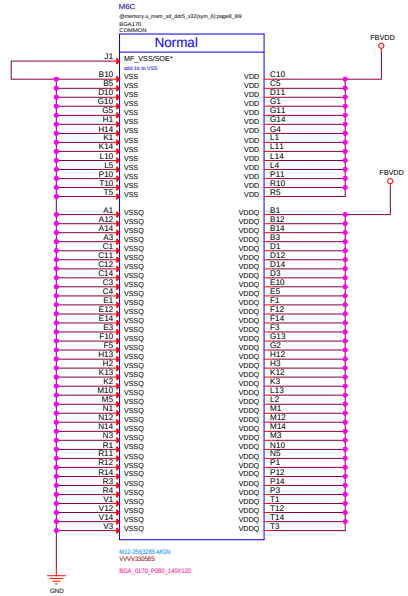
Page7: MEMORY: FBB Partition 31..0

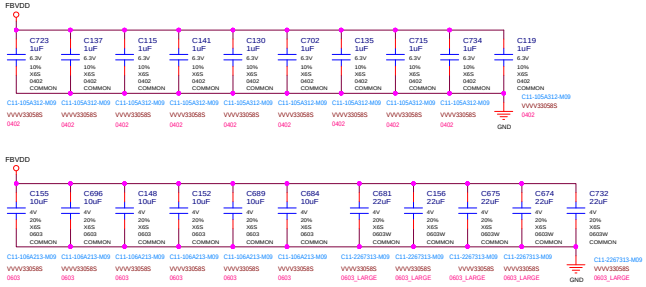


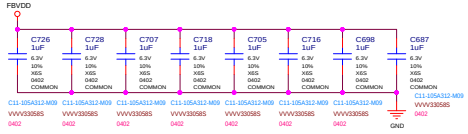
Page8: MEMORY: FBB Partition 63..32











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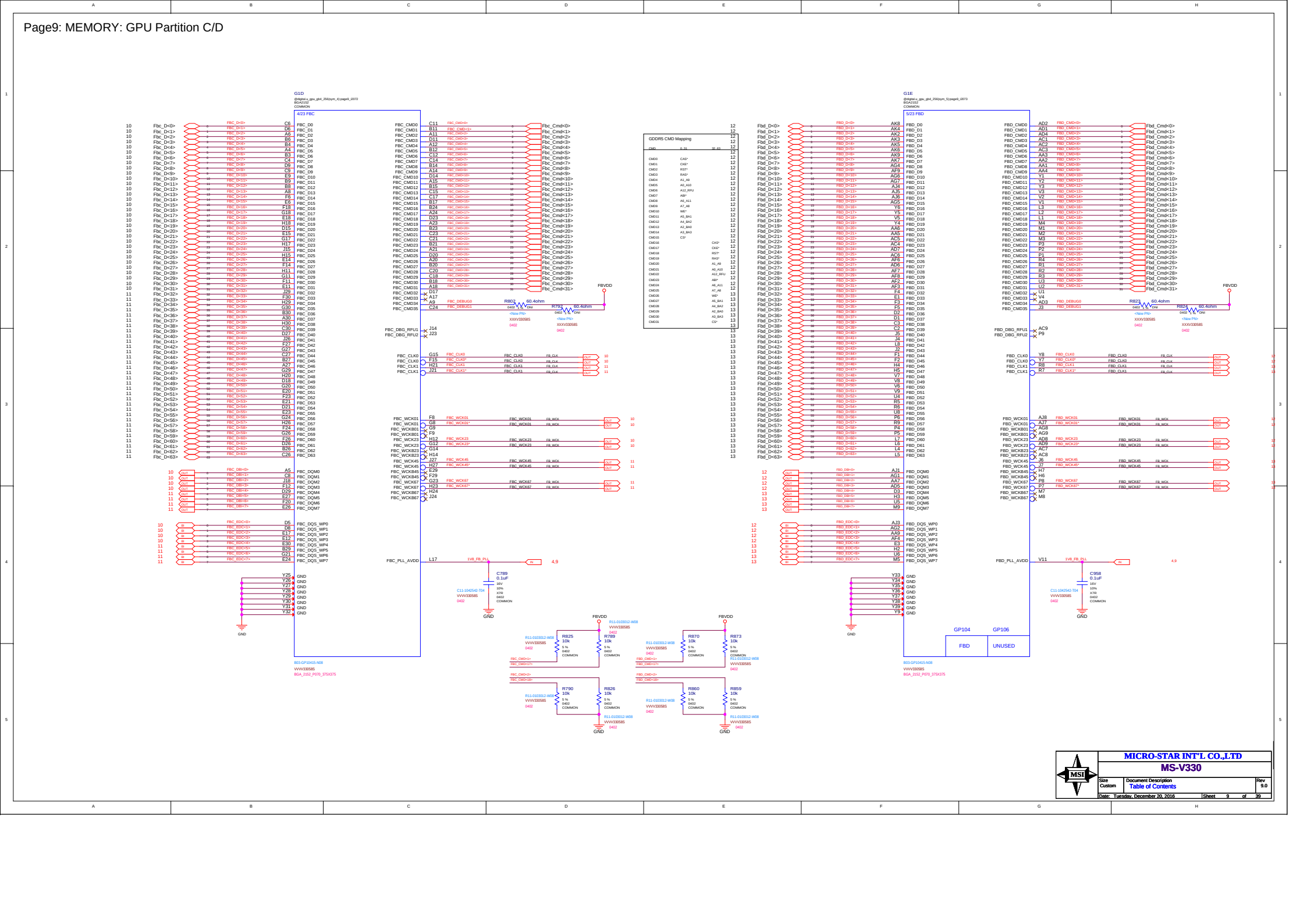
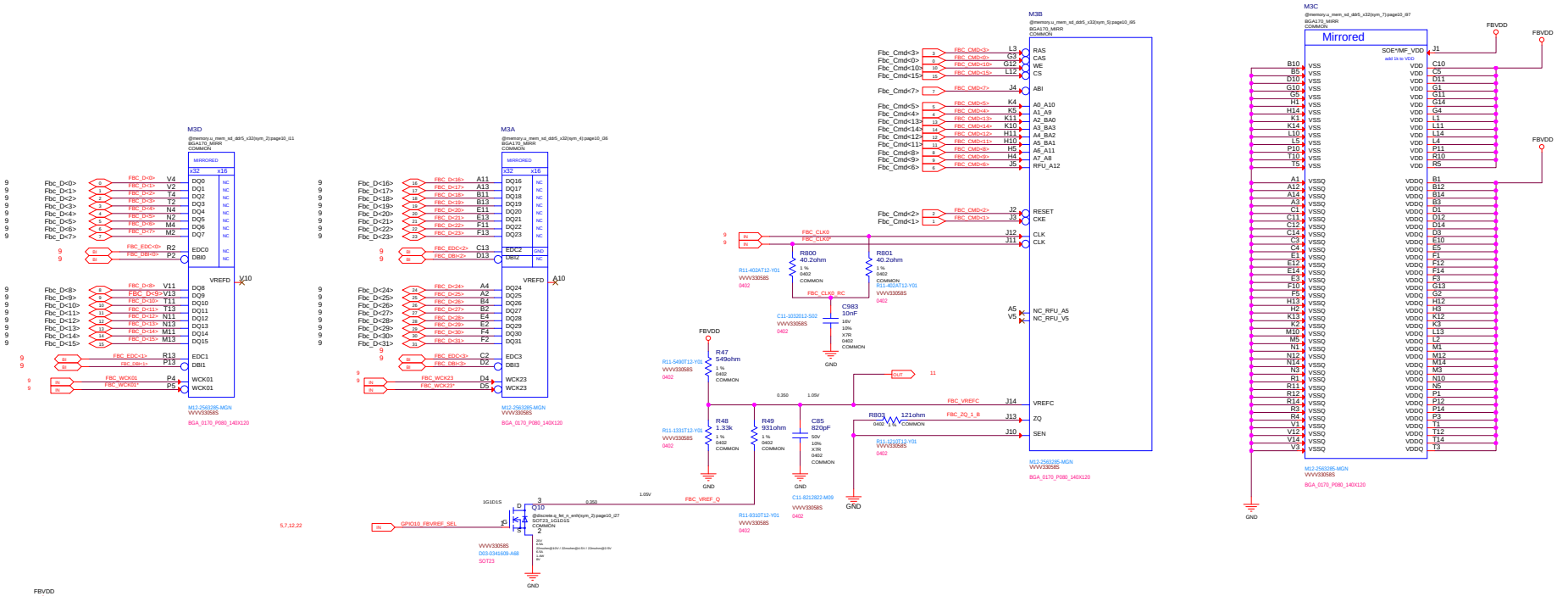
Page9: MEMORY: GPU Partition C/D




M3D
M3A
M3B
M3C
Mirrored
FBVDD
GND
R800
40.2ohm
R801
40.2ohm
R47
549ohm
R48
1.33k
R49
931ohm
R803
121ohm
C983
10nF
C85
820pF
Q10
FBC_VREF_Q
FBC_VREFC
FBC_ZQ_1_B
GPIO10_FBVREF_SEL
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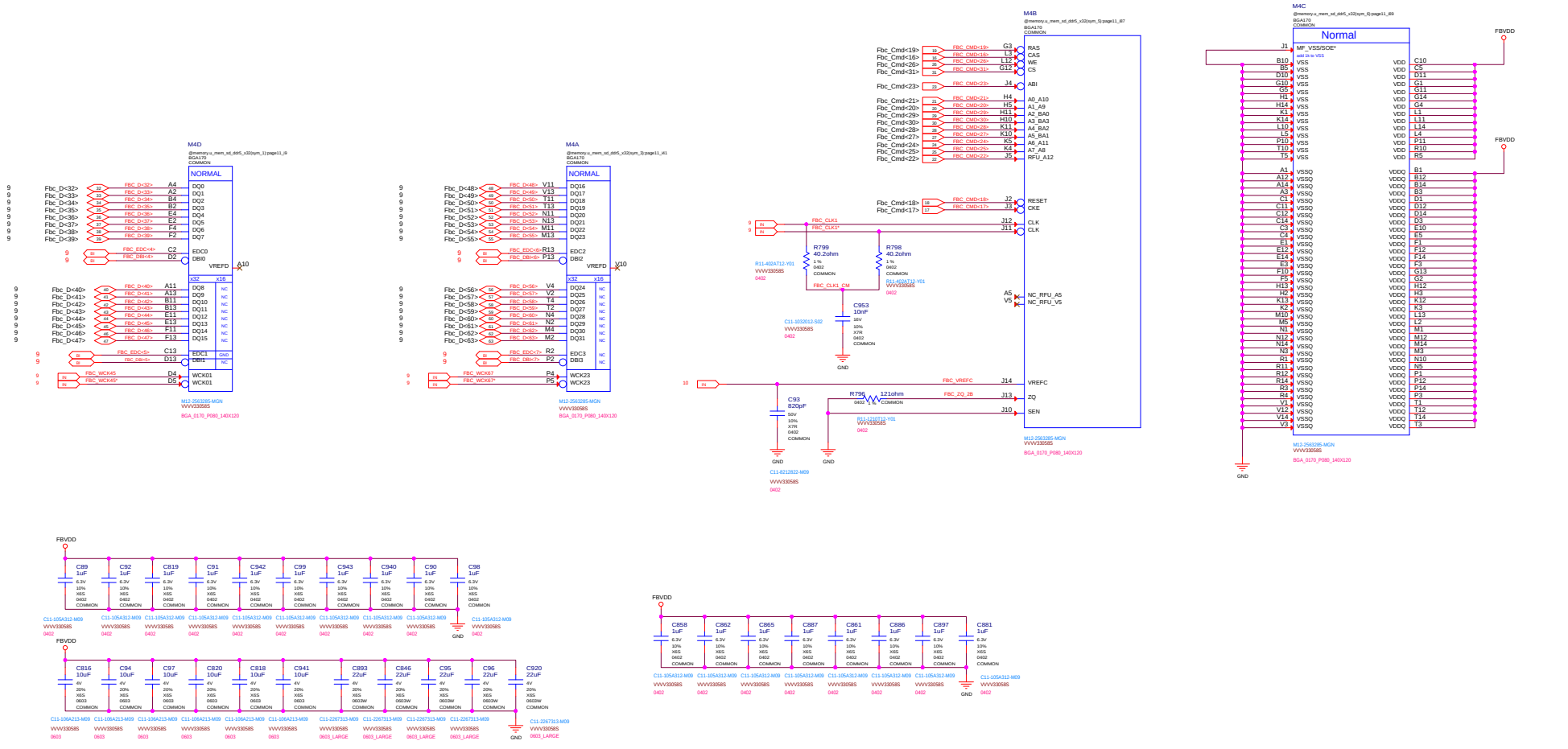
Page11: MEMORY: FBC Partition 63..32



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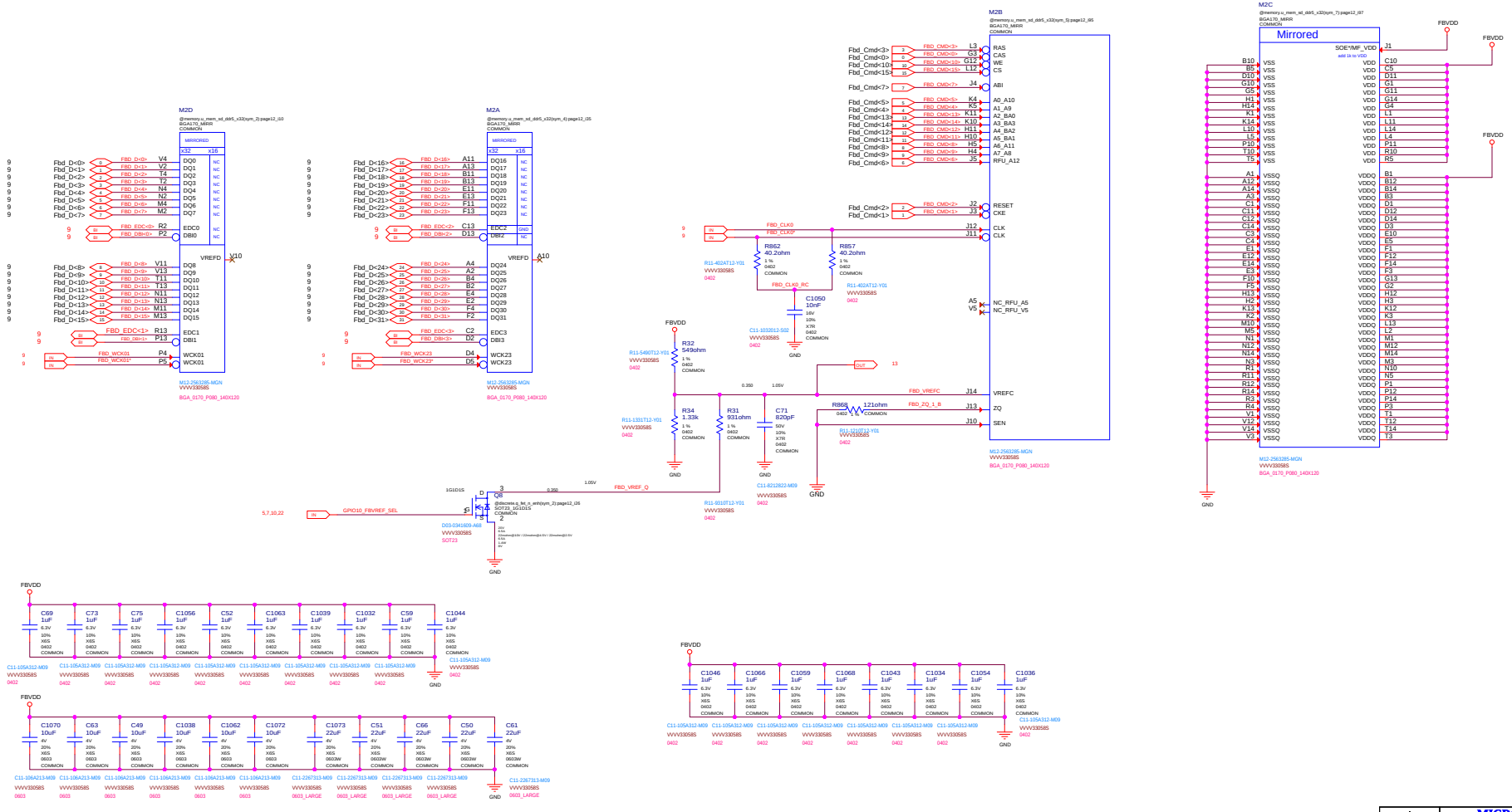
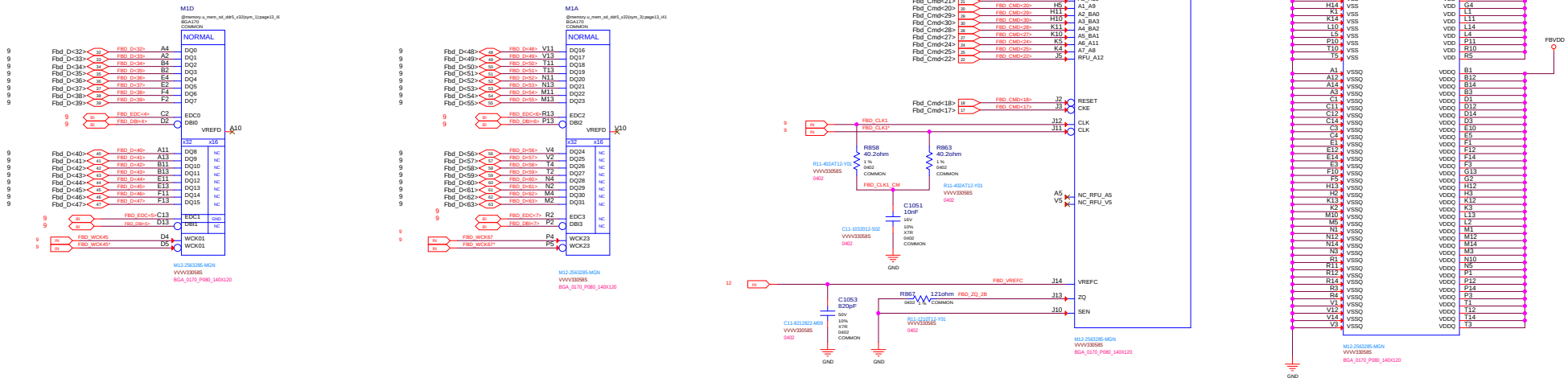
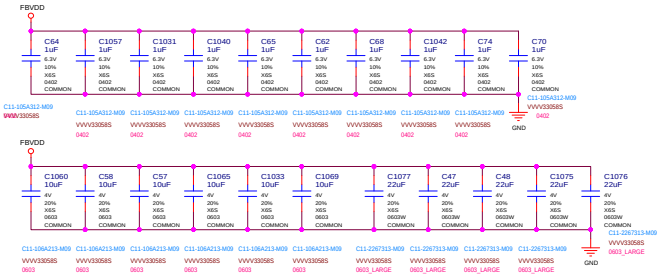
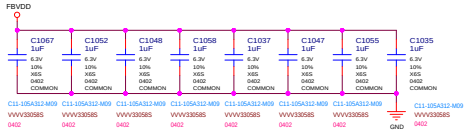
Page12: MEMORY: FBD Partition 31..0



Page13: MEMORY: FBD Partition 63..32







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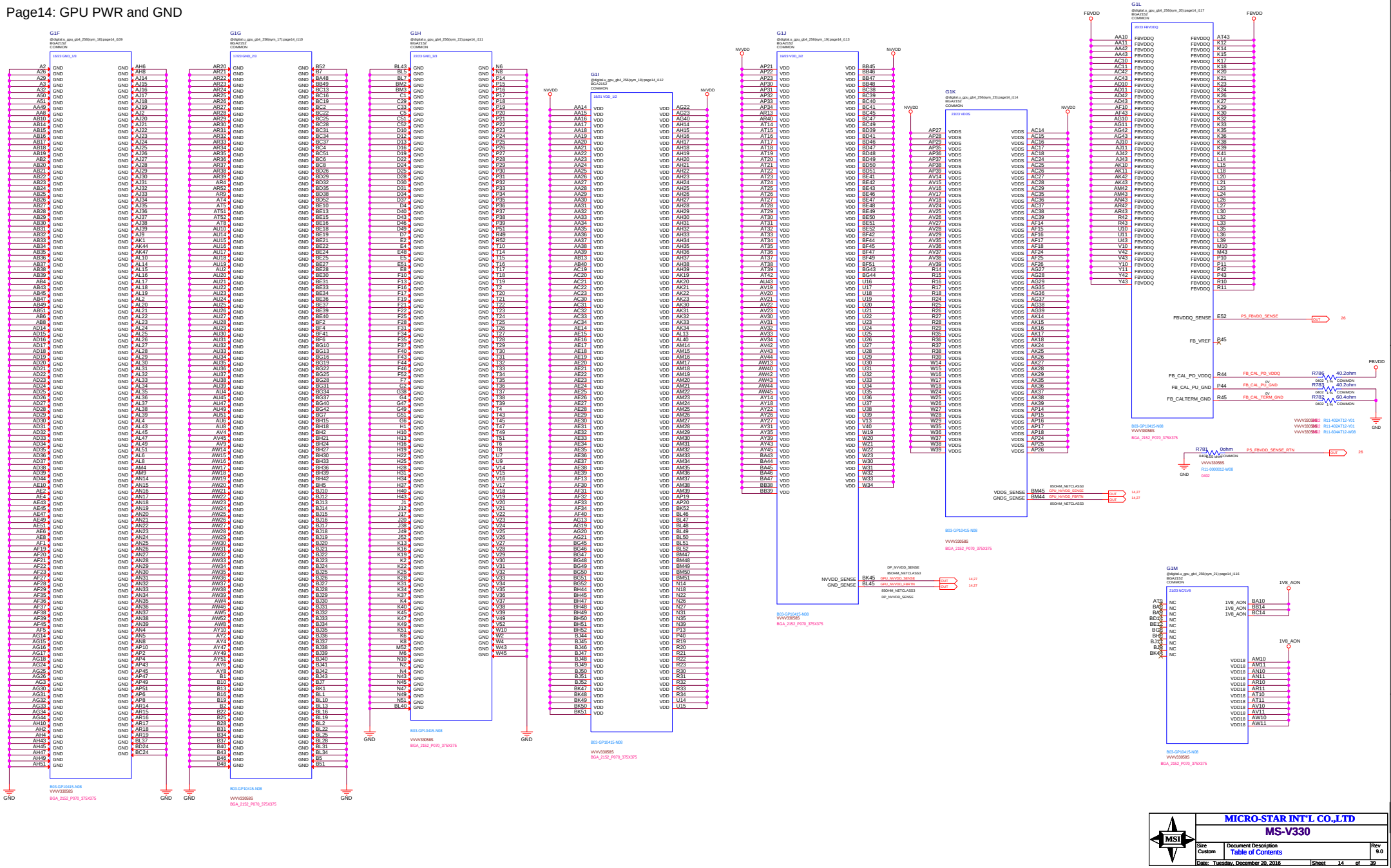
Page14: GPU PWR and GND



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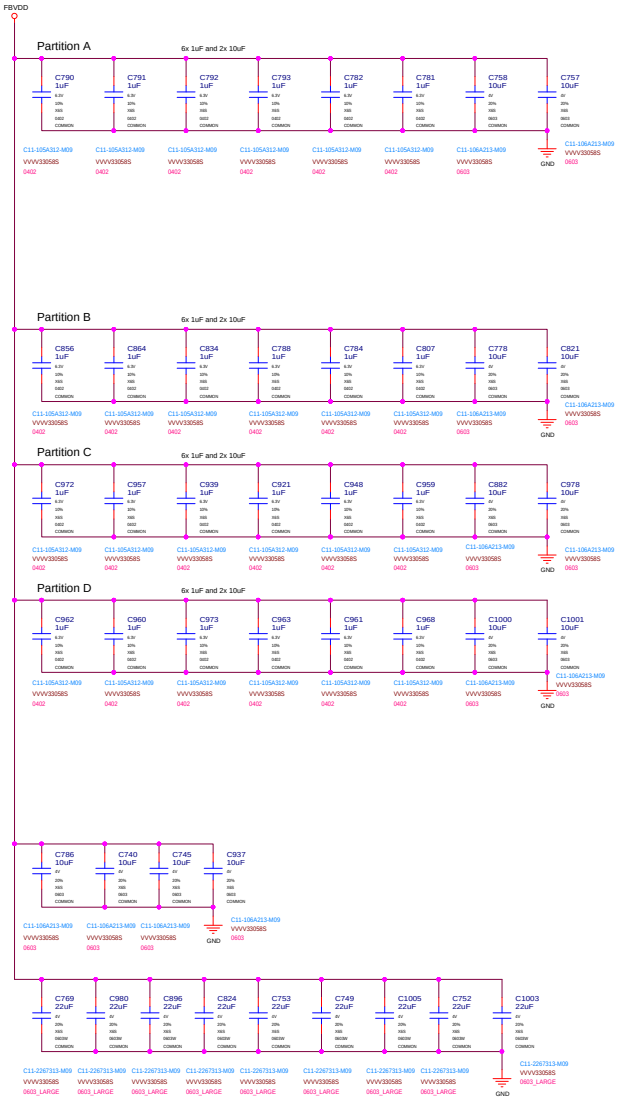
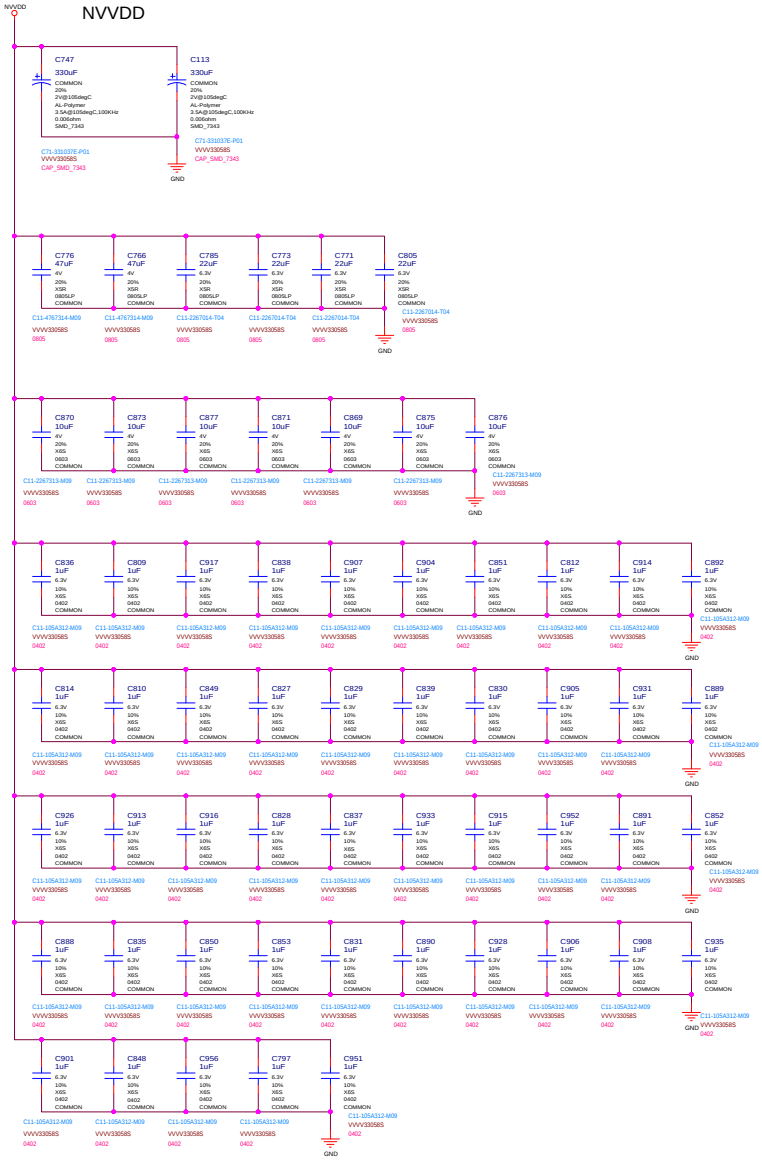
Page15: GPU Decoupling

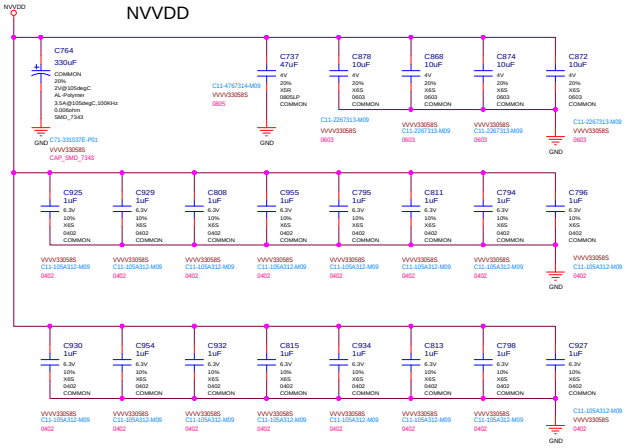
FBVDD

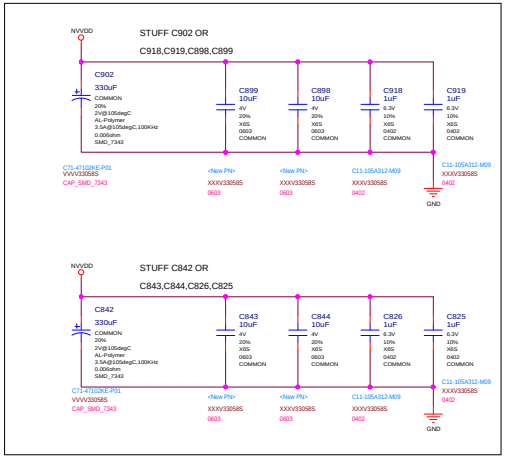


NVVDD



NVVDD





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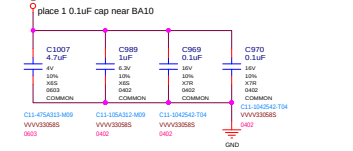
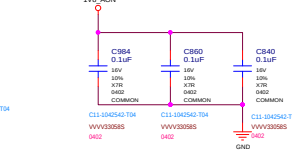


place 1 0.1uf cap for BB14 and BC14 to share

VDD18



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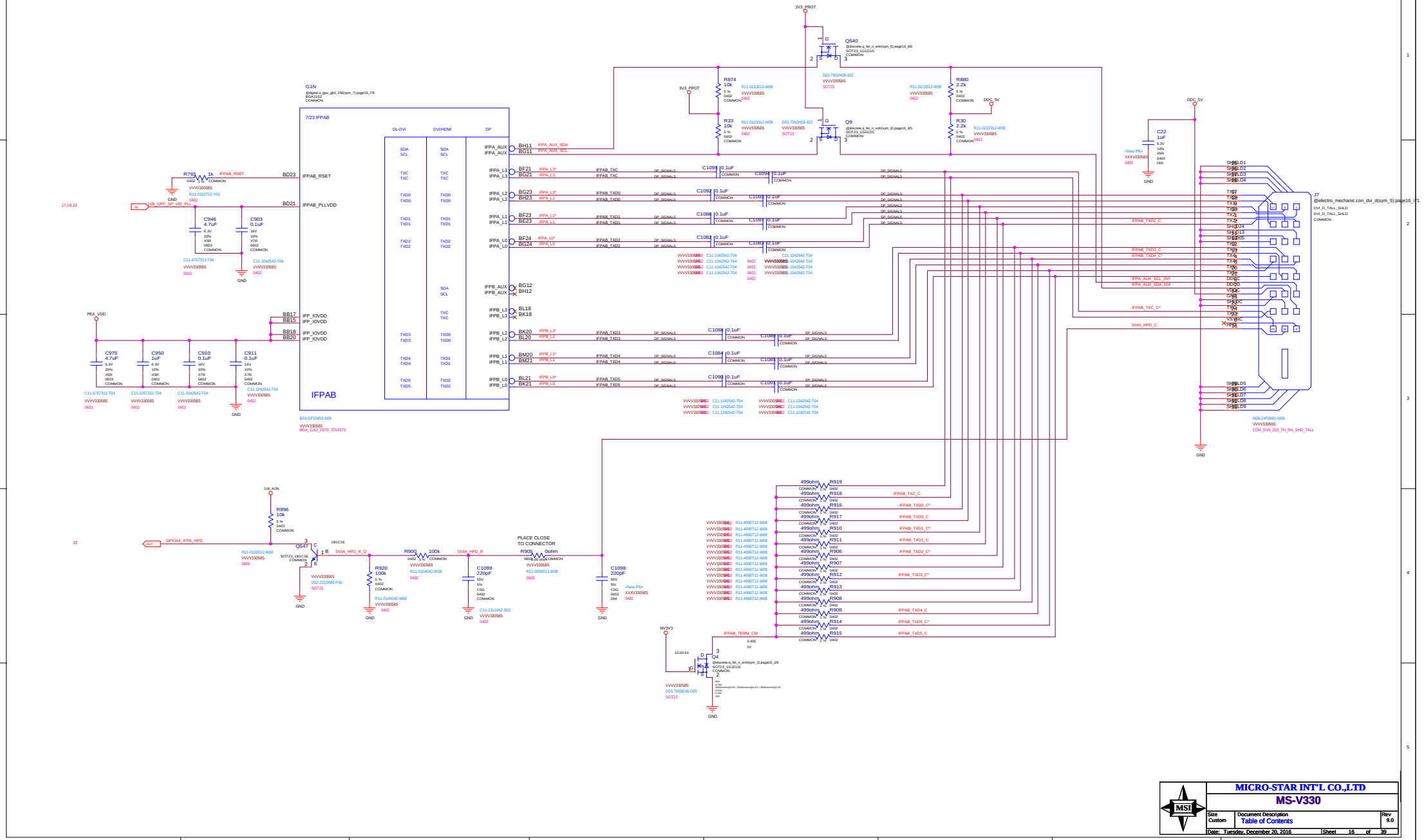
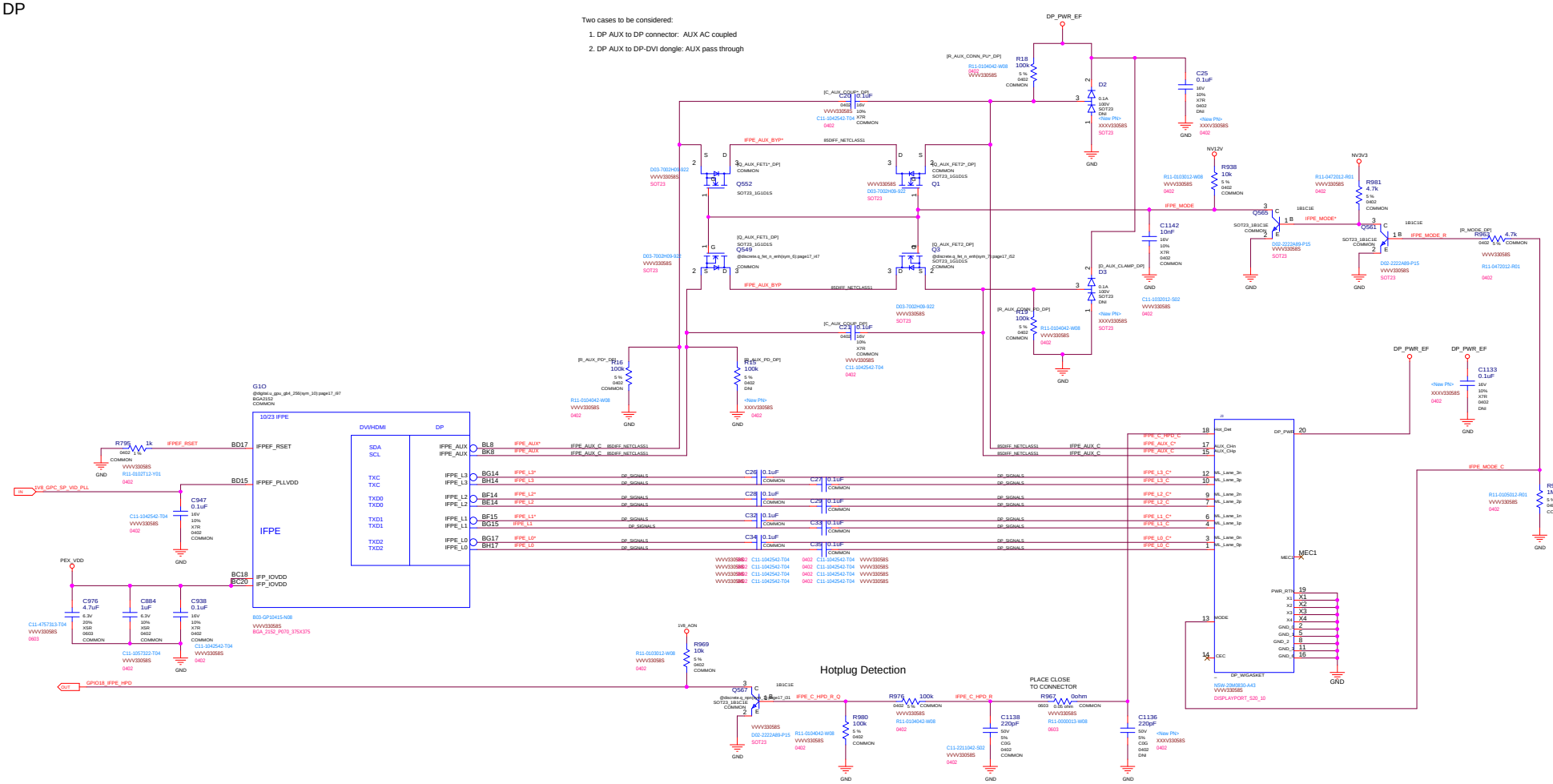
Page16: IFPAB DVI-D-DL

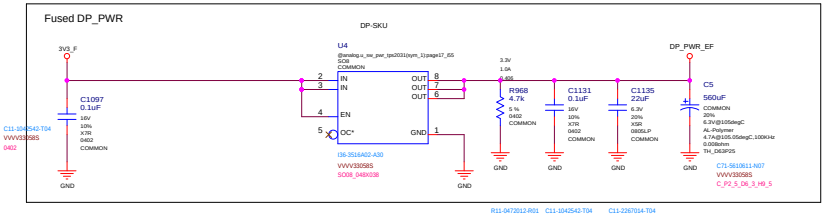


Page17: IFPE DP

Two cases to be considered:

1. DP AUX to DP connector: AUX AC coupled
2. DP AUX to DP-DVI dongle: AUX pass through





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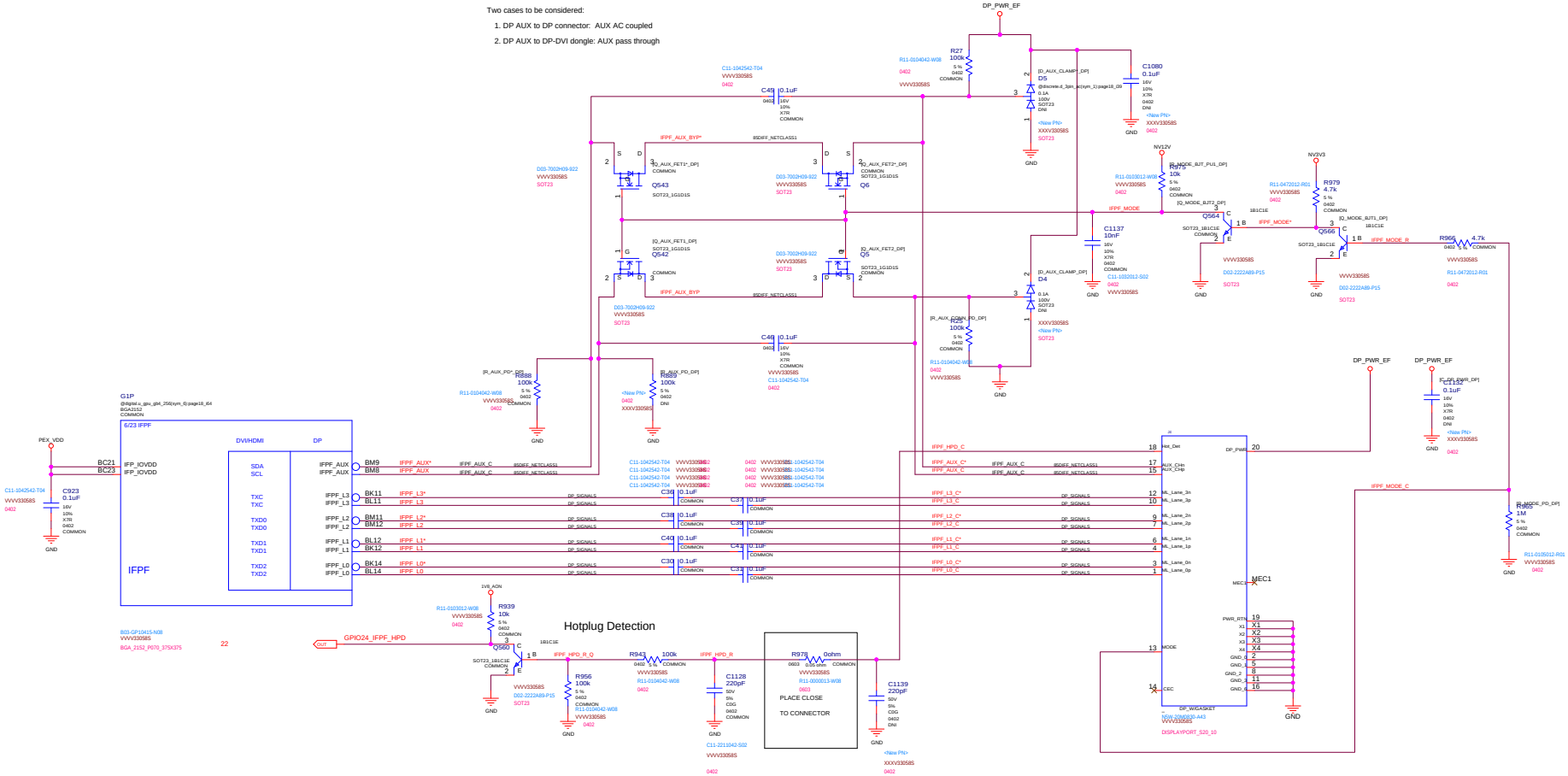
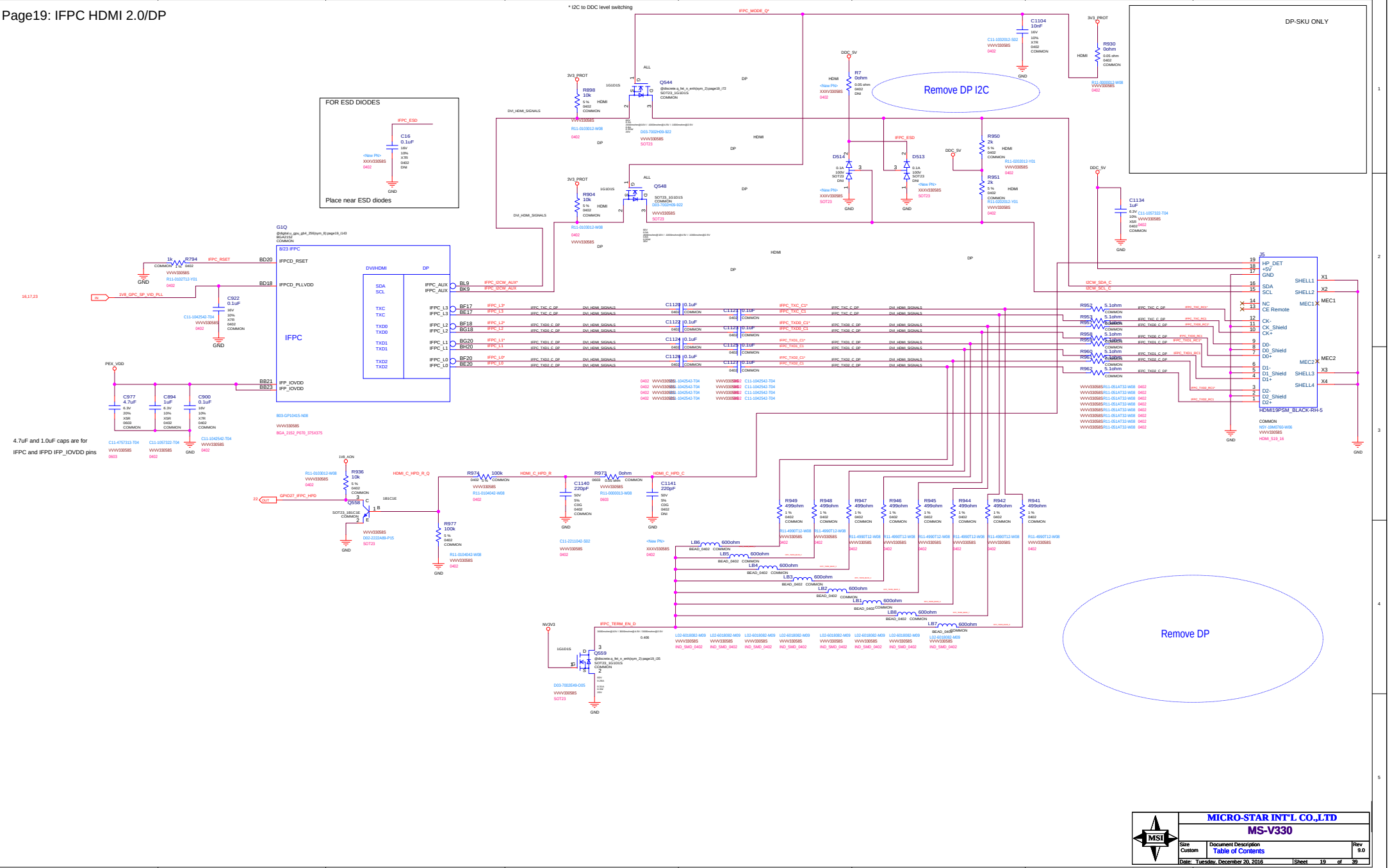
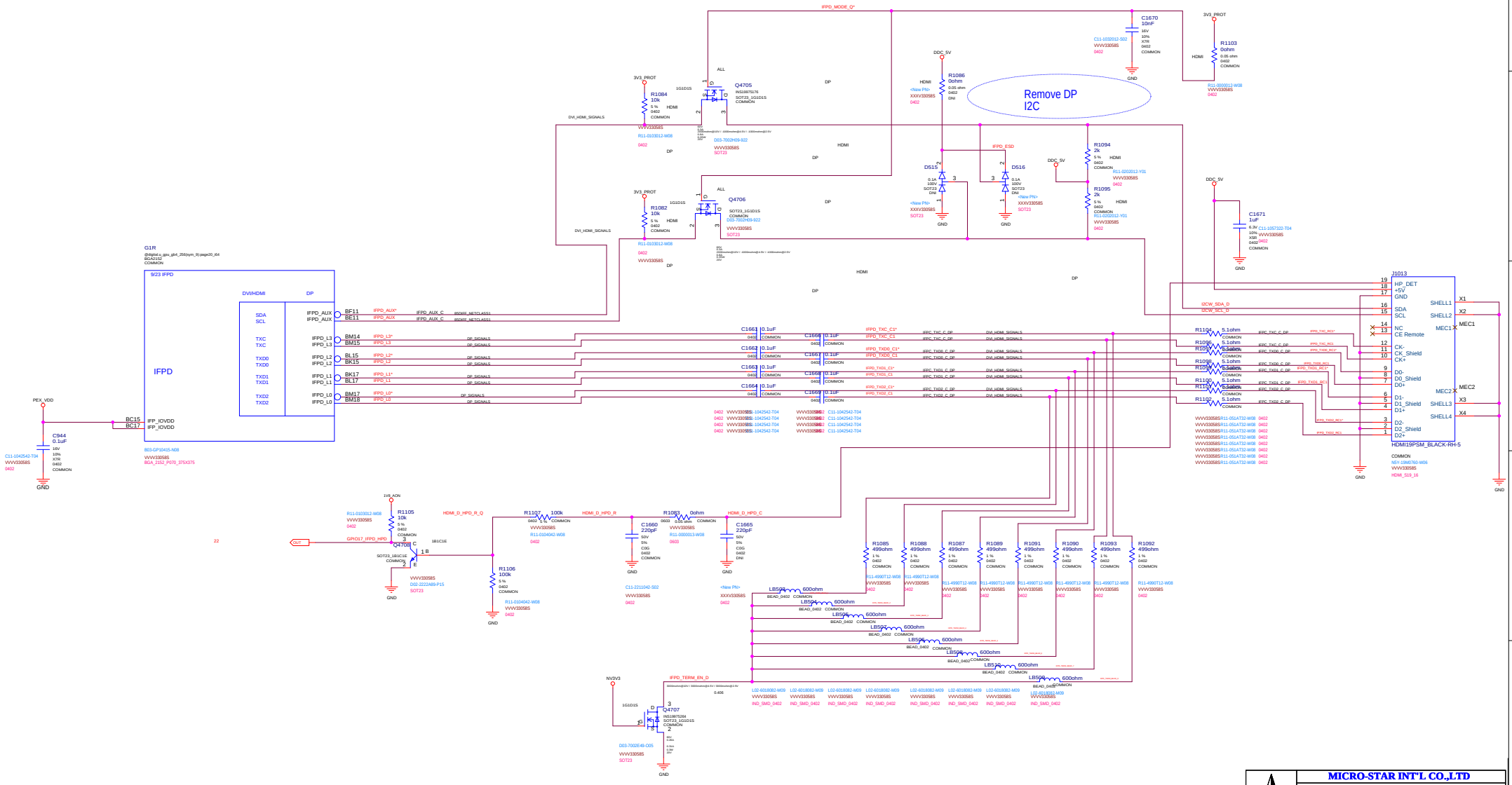
Page18: IFPF DP



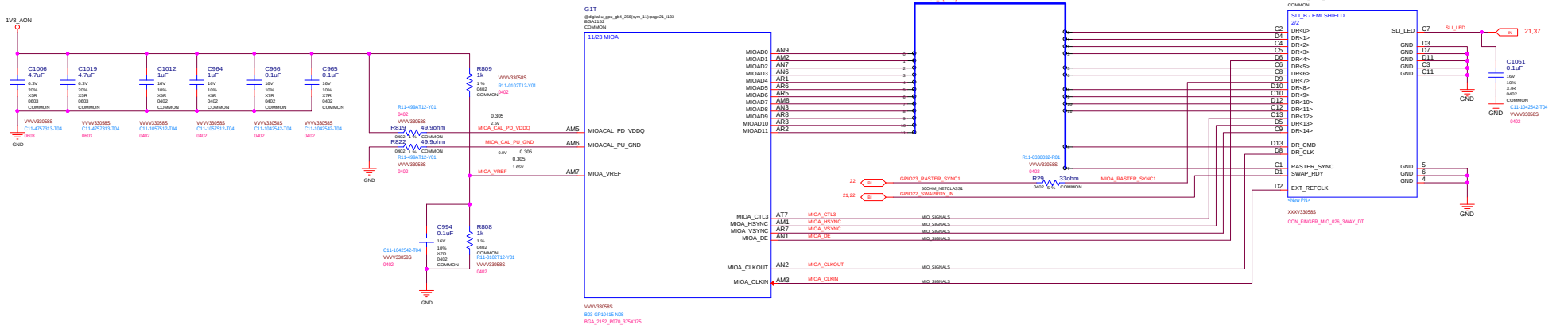
Page19: IFPC HDMI 2.0/DP

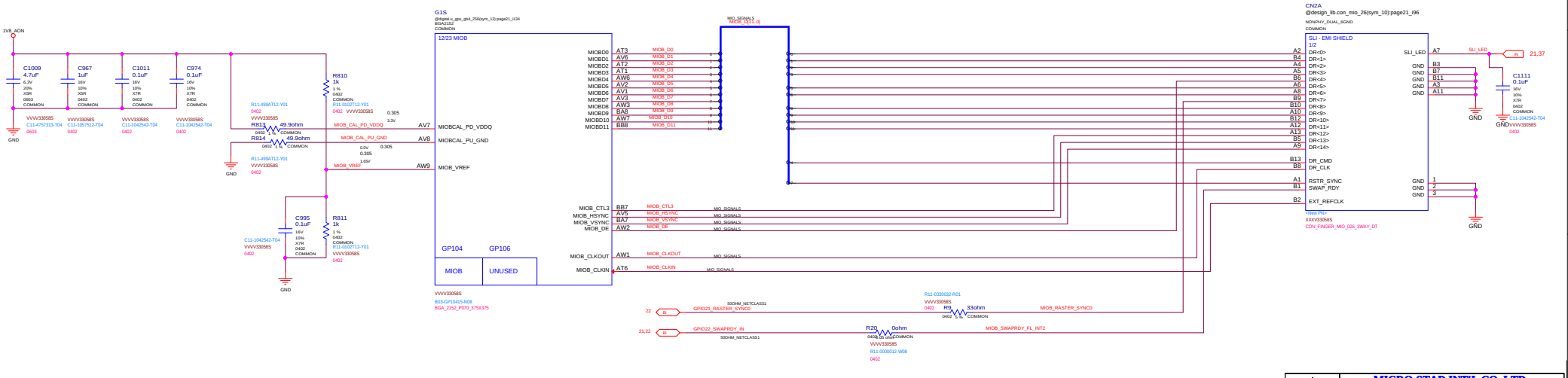


Page20: IFPD DP



Page21: MIOA/B Interface and FRAME LOCK





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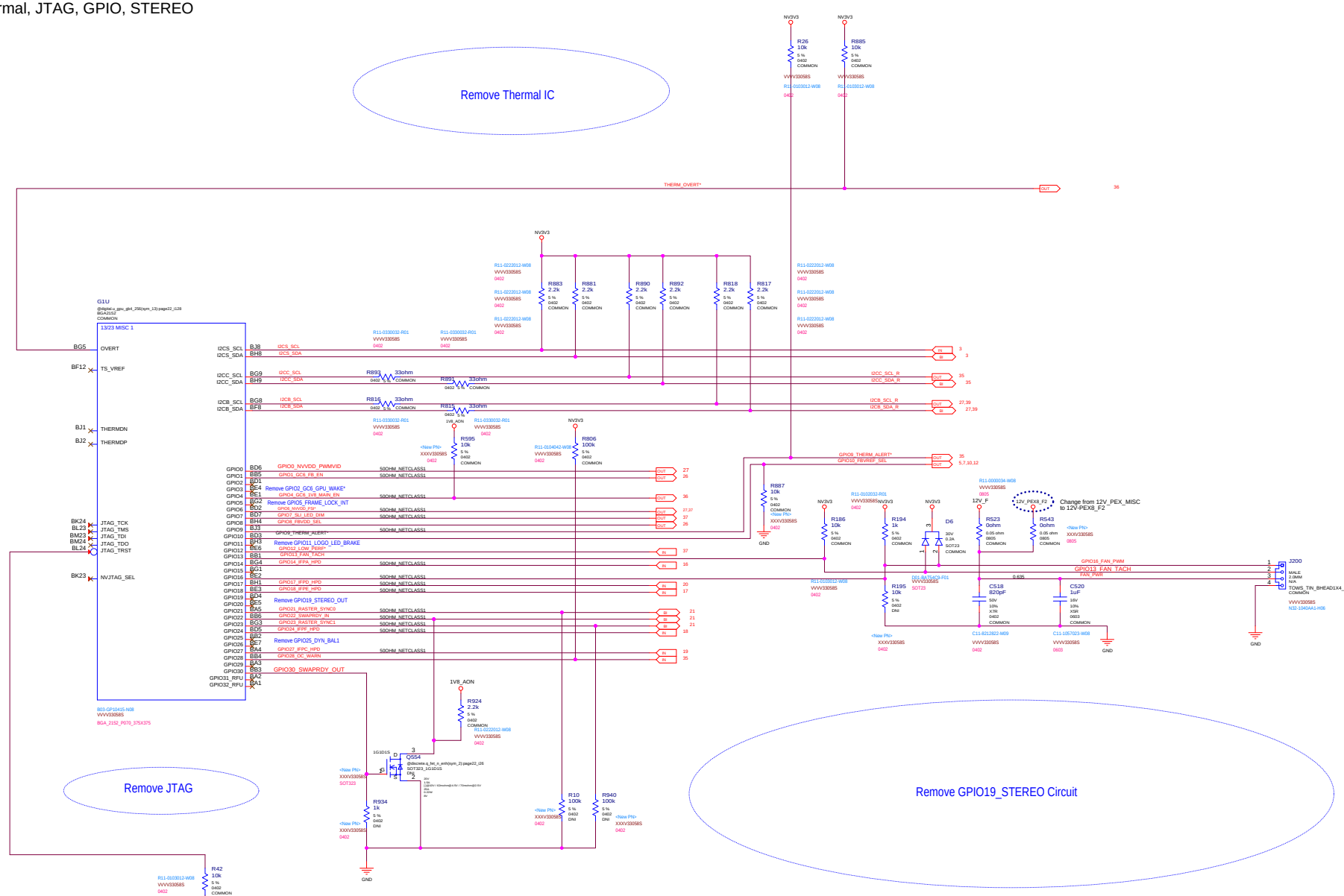
Page22: MISC1: Fan, Thermal, JTAG, GPIO, STEREO



Page23: MISC2: ROM, XTAL, Straps

STRAP2	STRAP1	STRAP0	RAMCFG[4:0]
L	L	L	00000
L	H	L	00010
L	H	H	00011
H	H	L	00110
H	H	H	00111

ROM_SO	ROM_SI	ROM_SCLK	SOR_EXPOSED[3:0]	1:ENABLE 0:DISABLE
L	L	L	1111 DEFAULT	SOR0/1/2/3 ENABLE
L	L	H	1110	
L	H	L	1101	
L	H	H	1100	
H	L	L	1011	
H	L	H	1010	
H	H	L	1001	
H	H	H	1000	
L	L	M	0111	
L	M	L	0110	
L	M	H	0101	
L	H	M	0100	
H	L	M	0011	
H	M	L	0010	
H	M	H	0001	
H	H	M	0000	

STRAP5	STRAP4	STRAP3	SMB_ALT_ADDR	DEVID_SEL	PCIE_CFG	VGA_DEVICE
M	H	H	1	1	1	1
M	H	L	1	1	1	0
M	L	H	1	1	0	1
M	L	L	1	1	0	0
L	H	M	1	0	1	1
L	M	H	1	0	1	0
L	M	L	1	0	0	1
L	L	M	1	0	0	0
H	H	H	0	1	1	1
H	H	L	0	1	1	0
H	L	H	0	1	0	1
H	L	L	0	1	0	0
L	H	H	0	0	1	1
L	H	L	0	0	1	0
L	L	H	0	0	0	1 DEFAULT
L	L	L	0	0	0	0

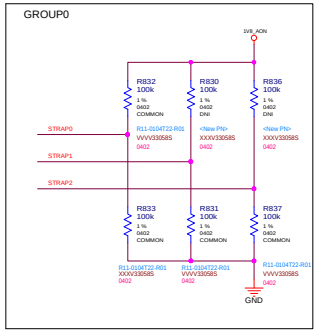
H=High :Tied to 1.8V
M=Middle:Tied to 0.9V
L=Low :Tied to 0V

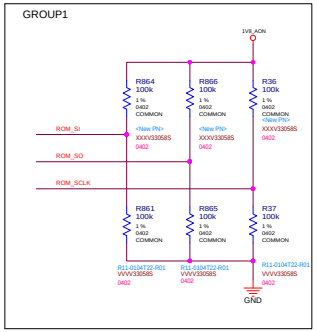
1:SMB_ALT_ADDR ENABLE
0:SMB_ALT_ADDR DISABLE

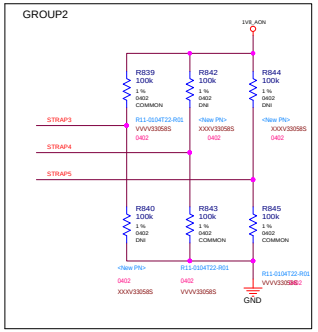
1:DEVID_SEL REBRAND
0:DEVID_SEL ORIGNAL

1:PCIE_CFG LOW POWER
0:PCIE_CFG HIGH POWER

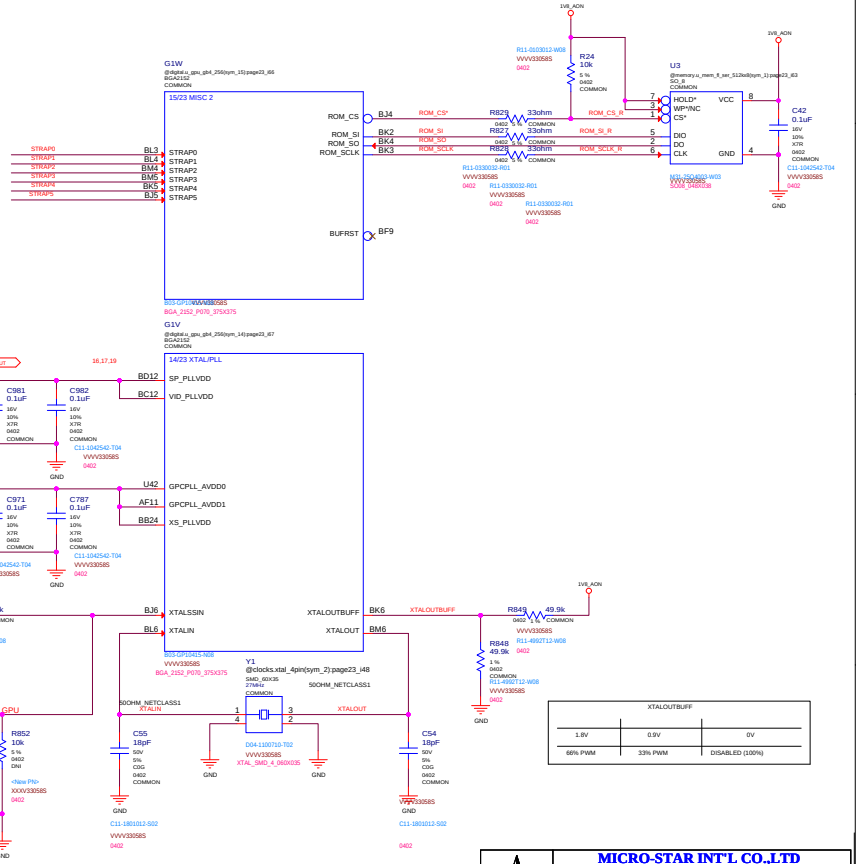
1:VGA_DEVICE ENABLE
0:VGA_DEVICE DISABLE







CFG[3:0]	Config Width	Vendor
0000	256Mx32 256-bit Samsung	
0001	256Mx32 256-bit Micron	
0010	256Mx32 256-bit Hynix	
0011	Reserved	
0100	Reserved	
0101	Reserved	
0110	Reserved	
0111	Reserved	



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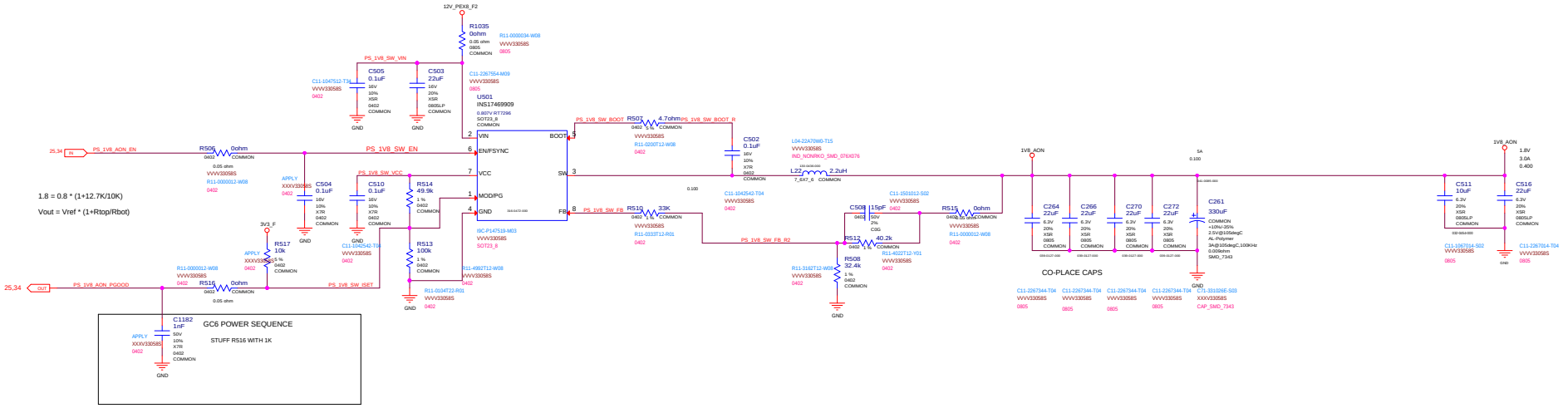
Page24: PS: 1V8, 1V8_AON



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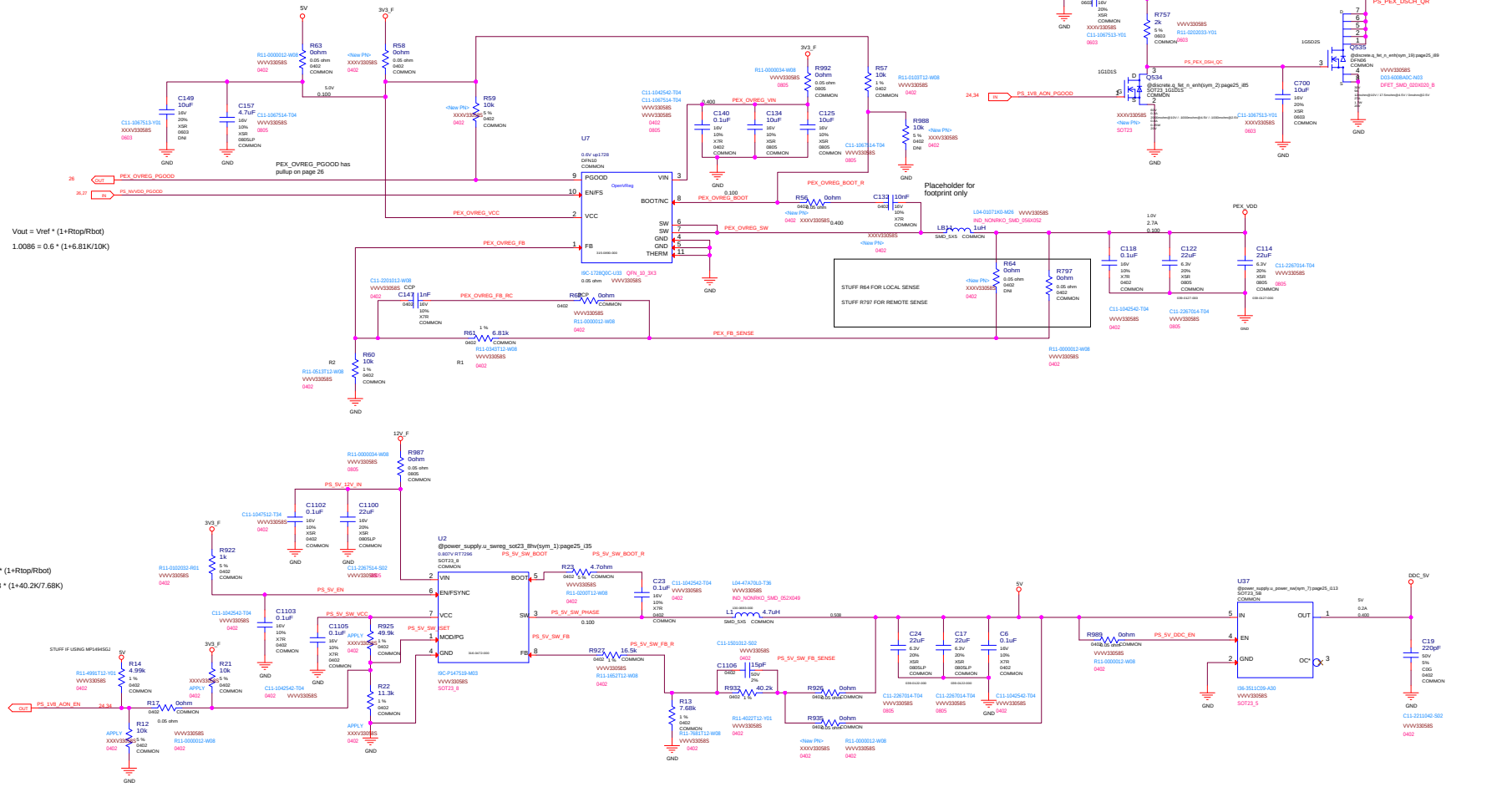
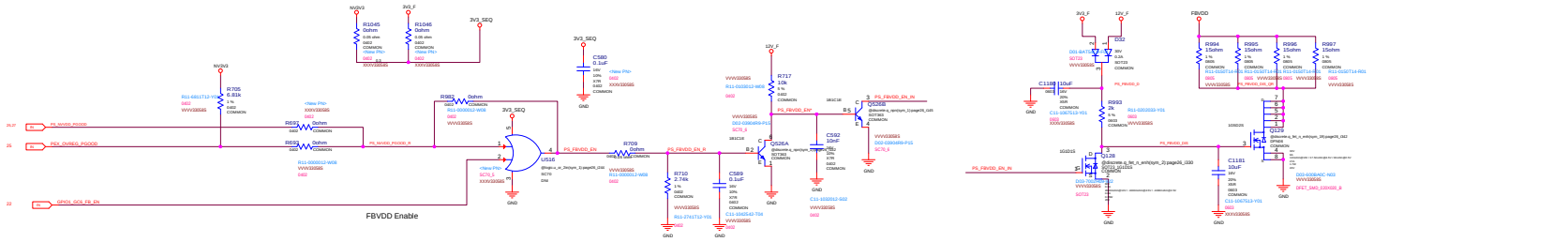
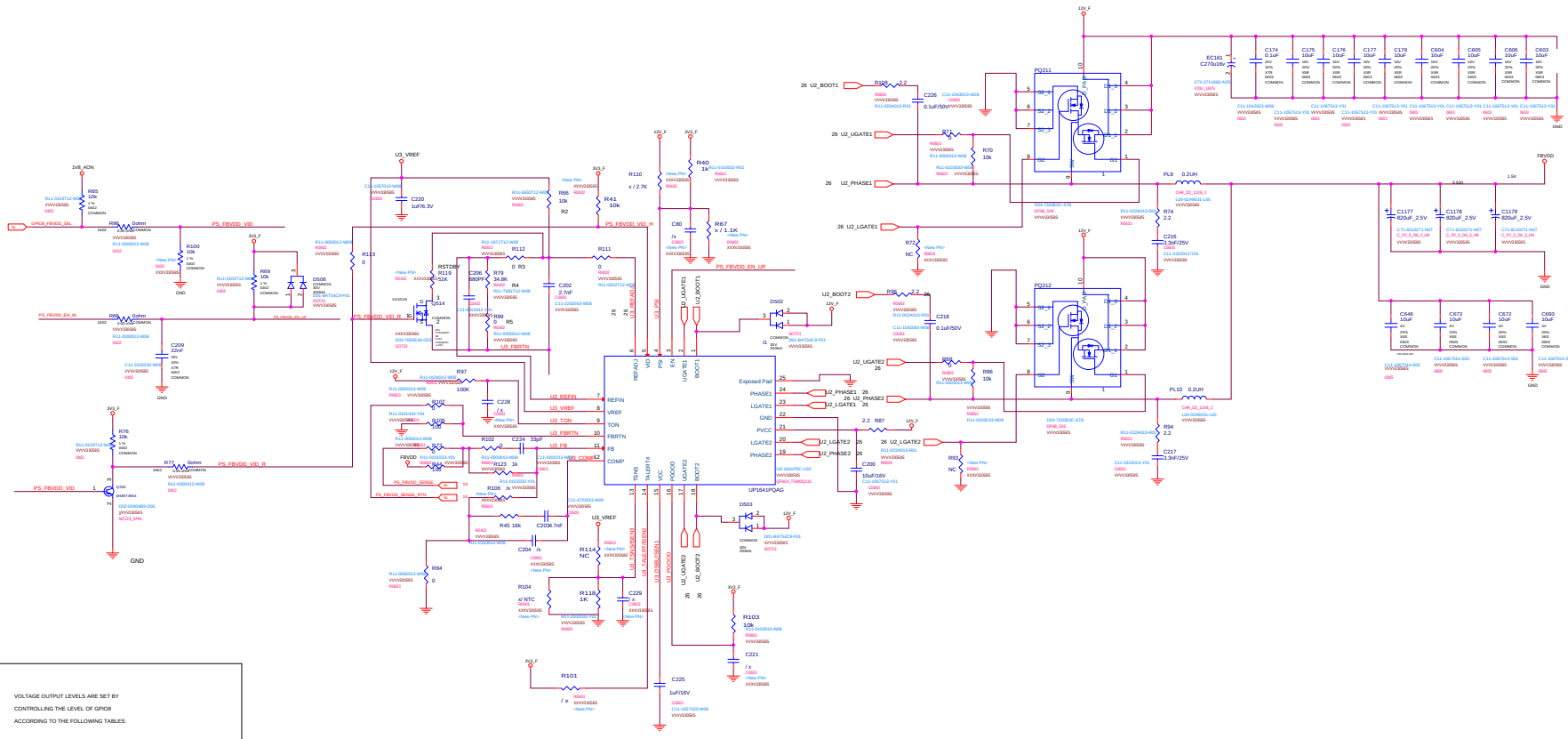
PEX PLL Switcher







VOLTAGE OUTPUT LEVELS ARE SET BY

CONTROLLING THE LEVEL OF GPIO8

ACCORDING TO THE FOLLOWING TABLES:

SAMSUNG K4G1325FC-HC28

GPIO8 LEVEL	FBVDD OUTPUT VOLTAGE
0	1.35V
1	1.55V

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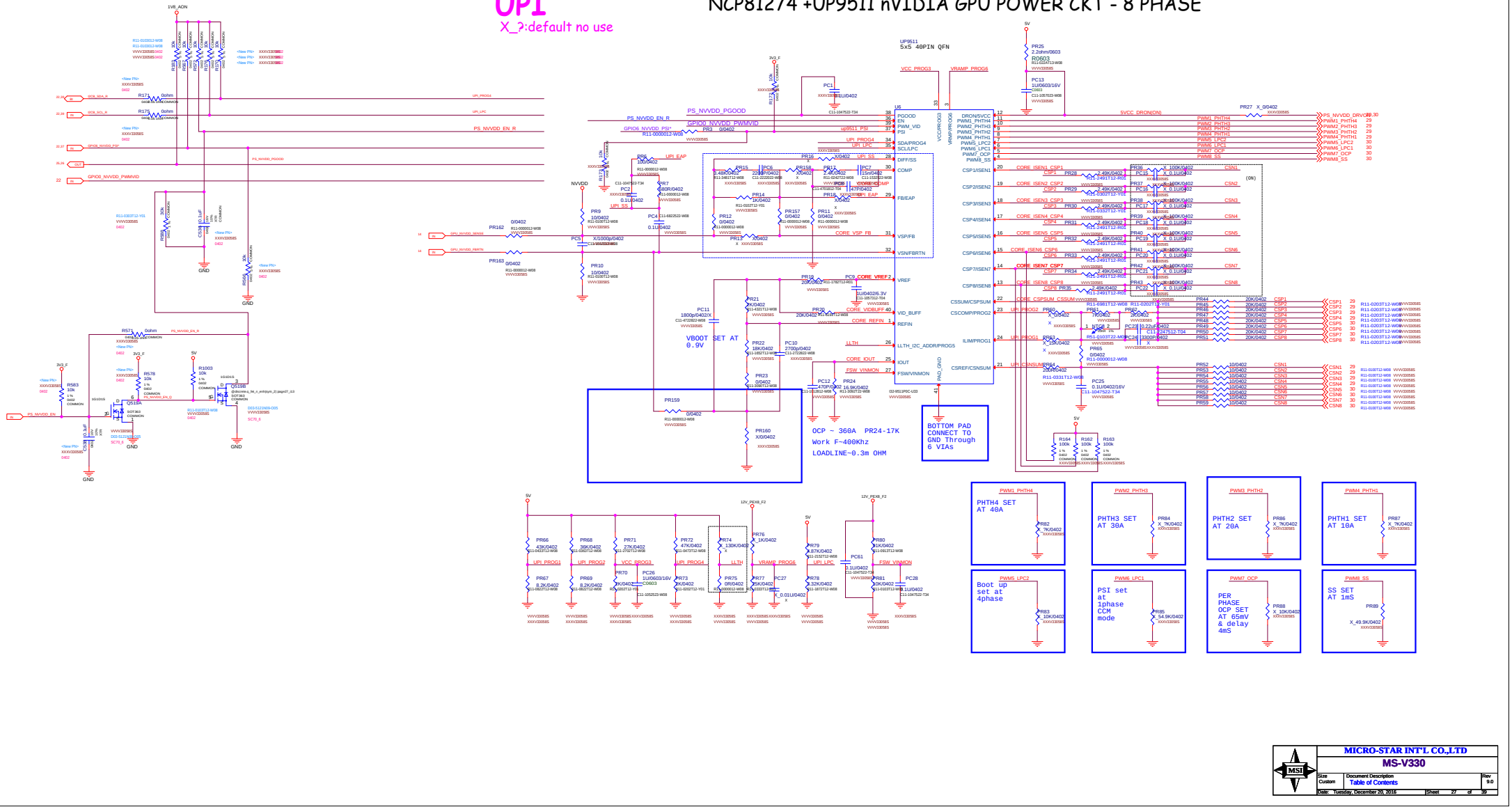
UPI

X_?:default no use

NCP81274 +UP9511 nVIDIA GPU POWER CKT - 8 PHASE



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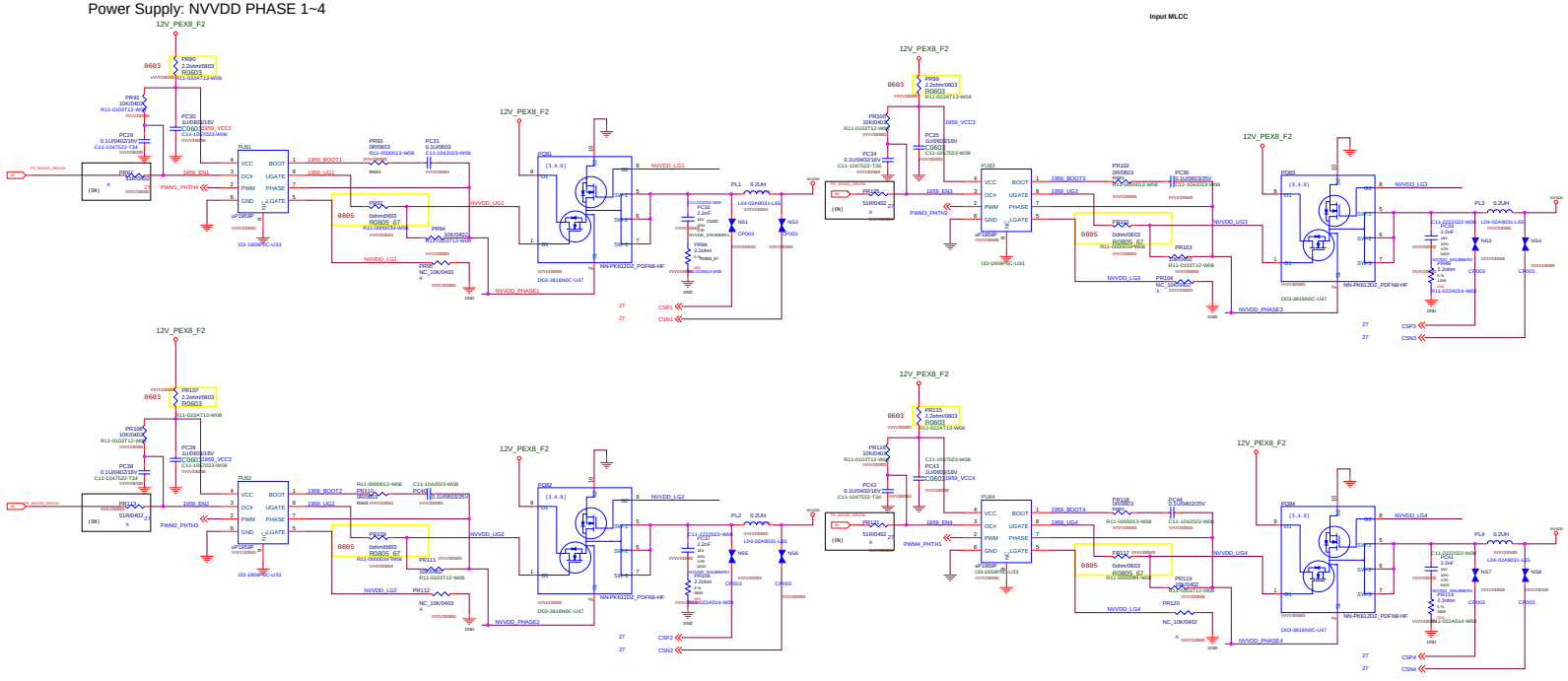
Power Supply: NVVDD PHASE 1~4



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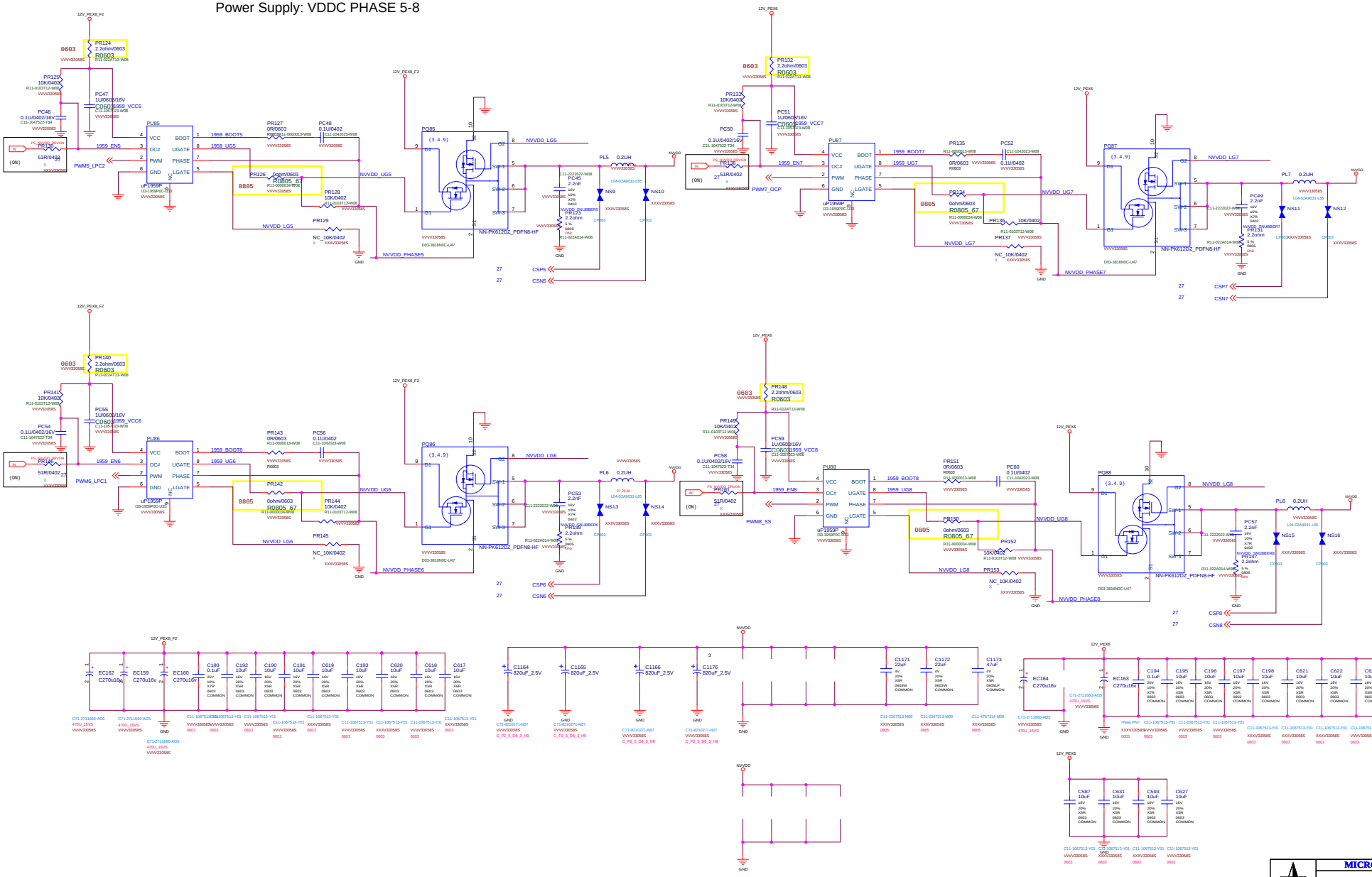
Page30: PS: NVVDD Phase 5 ~8

Power Supply: VDDC PHASE 5-8



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Page32: PS: Dynamic Power Balance Phases

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Page33: PS: Dynamic Power Balance Logic

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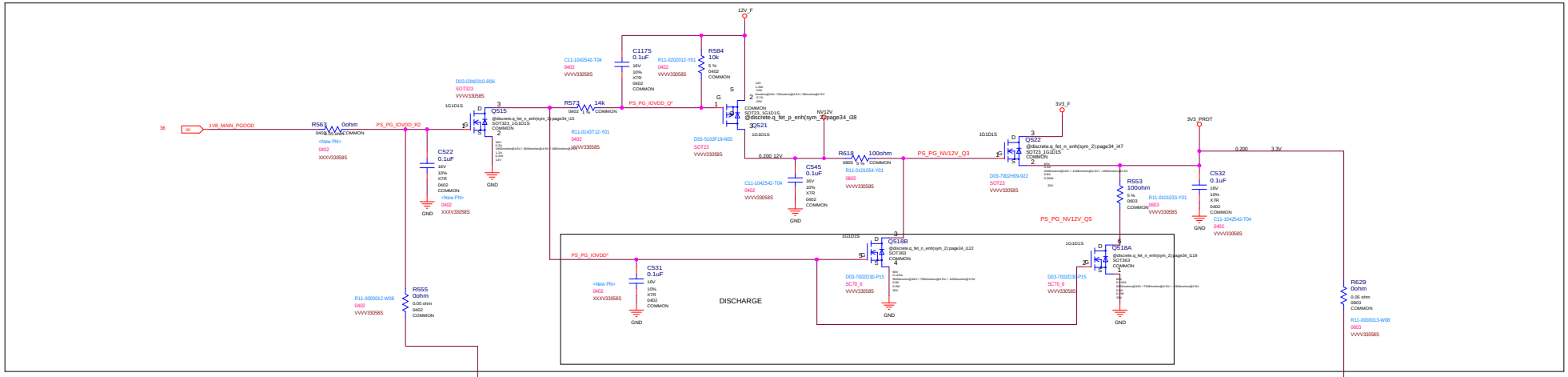
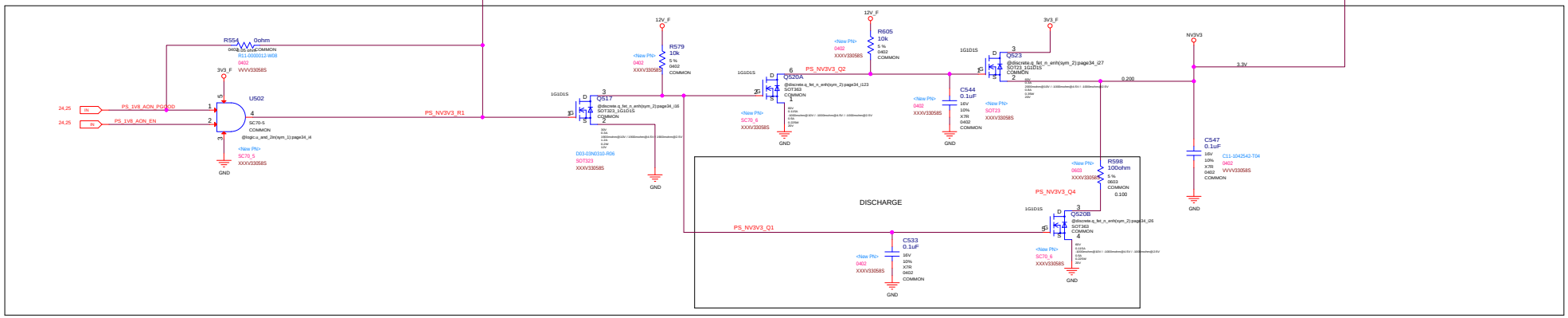
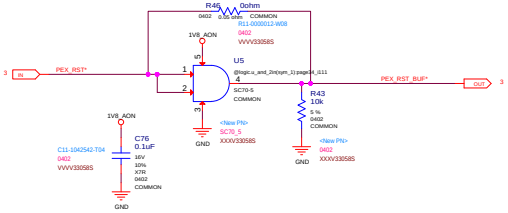
Page34:PS: NV3V3, NV12V







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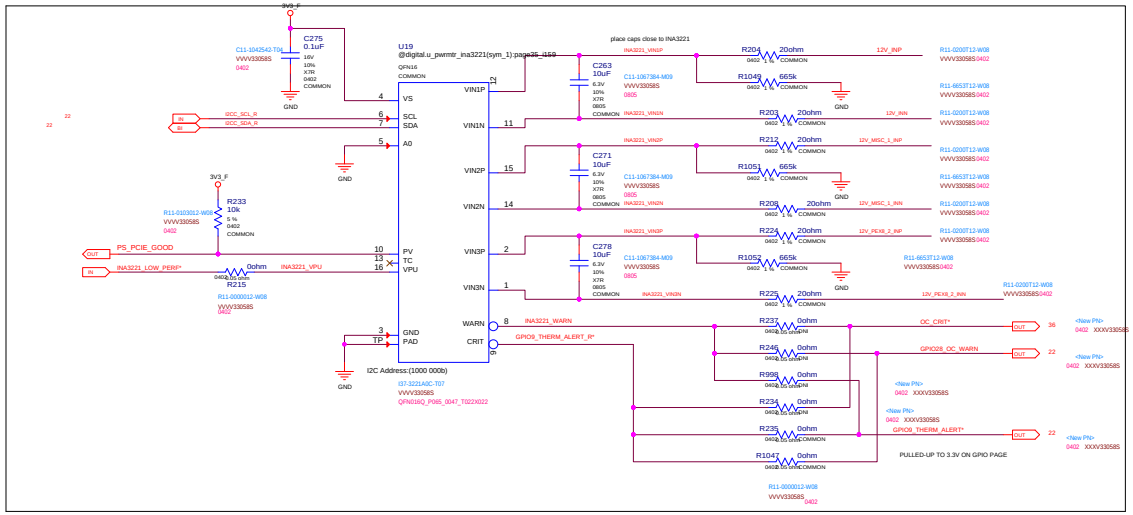
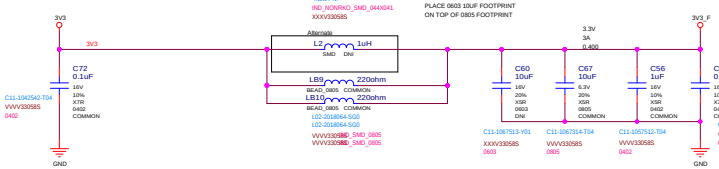
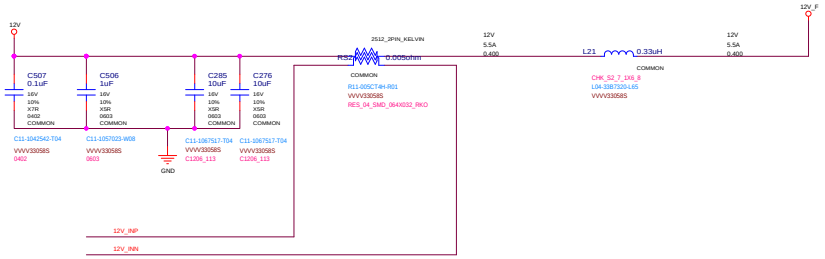
Page35: PS: Inputs, Filtering, and Monitoring



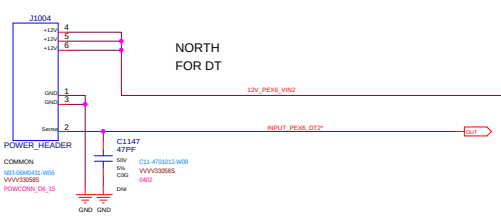
PEX 3V3 INPUT - 10W



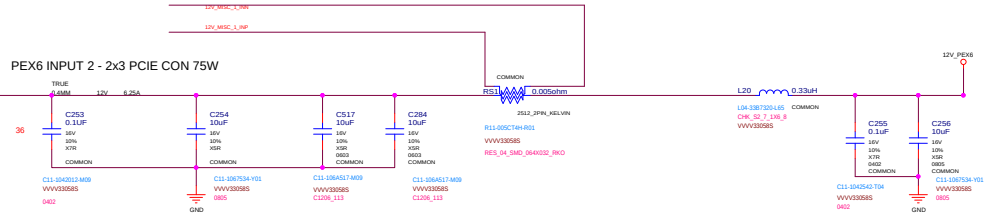
PEX_12V INPUT - 66W



NORTH FOR DT

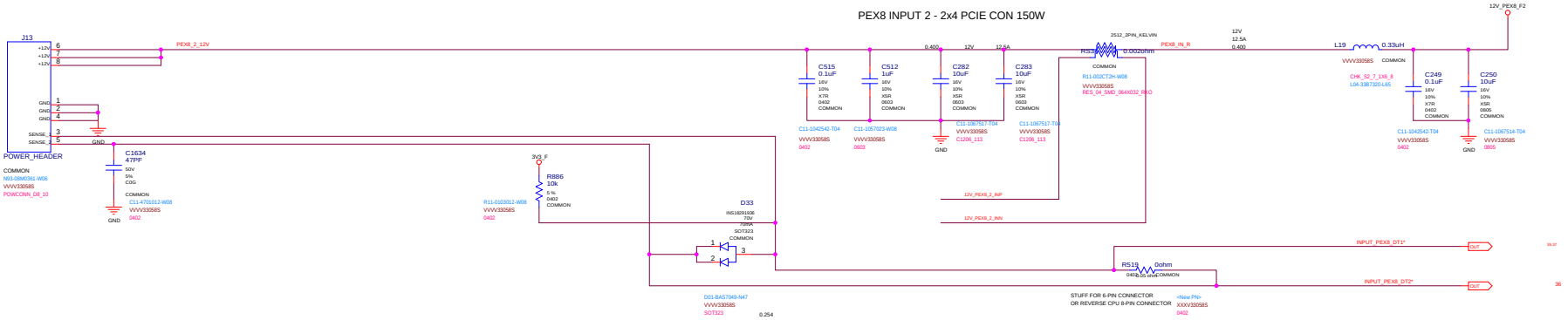


PEX6 INPUT 2 - 2x3 PCIE CON 75W



PLACE ON NORTH SIDE

PEX8 INPUT 2 - 2x4 PCIE CON 150W



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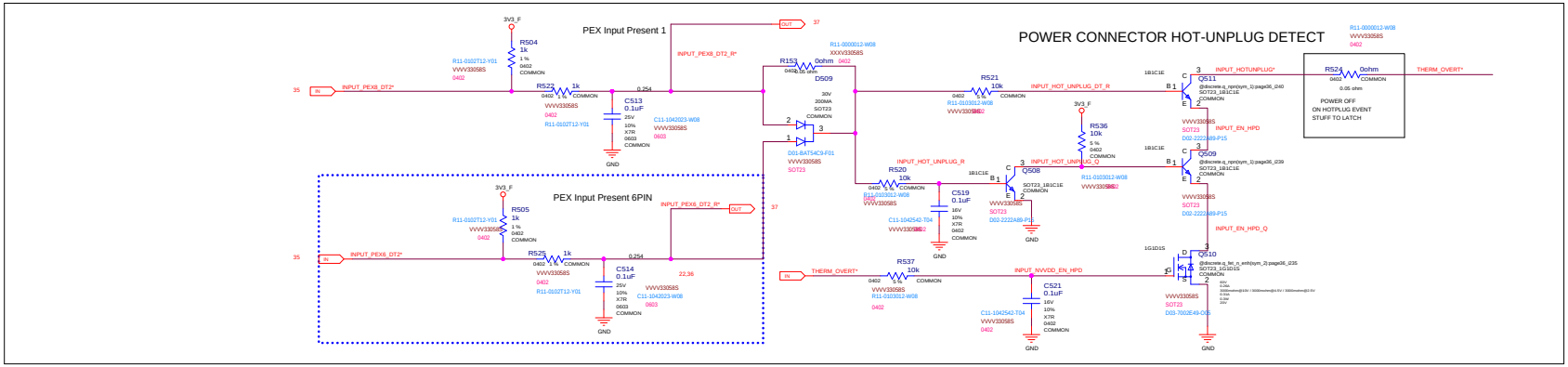
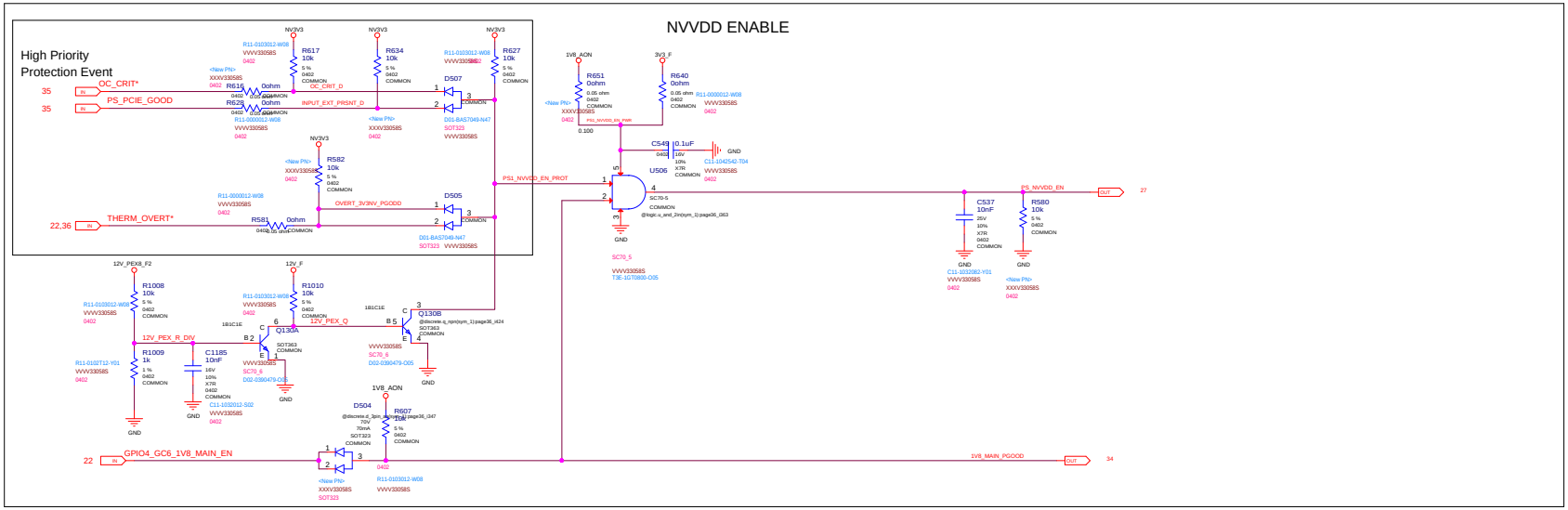
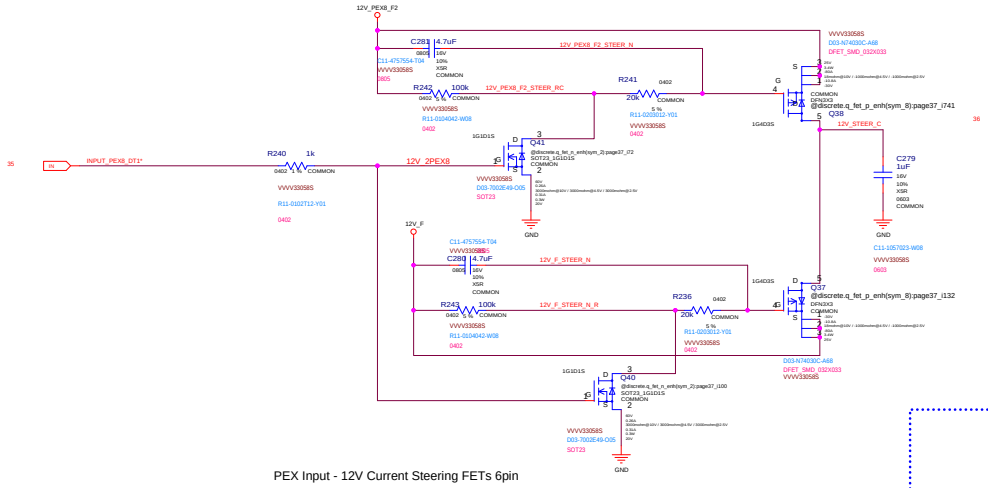
Page36: PS: Shutdown and Sequencing





Page37: PS: 12V Current Steering, PSI Control, and LED

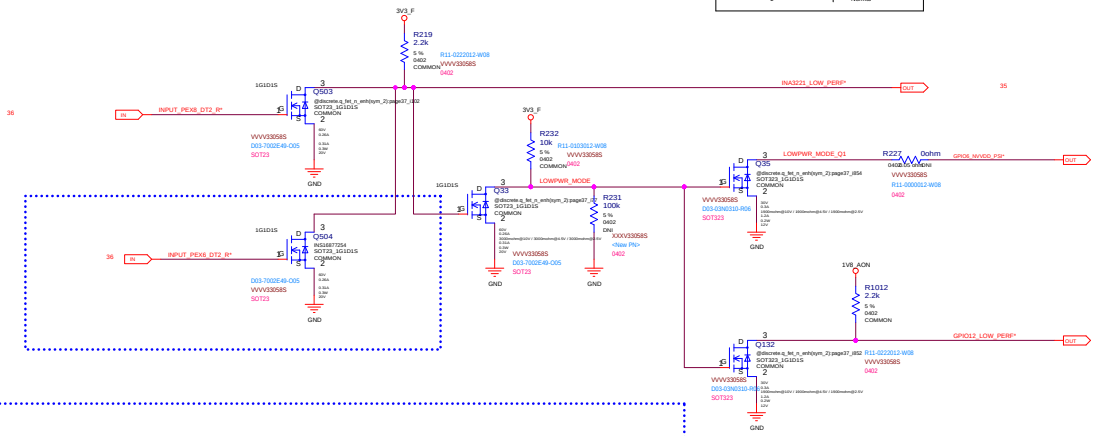
PEX Input - 12V Current Steering FETs 8pin



PEX Input - 12V Current Steering FETs 6pin

PEX Input - Power Level/PSI* Control

GPIO12_LOW_PERF*	GPU SPEED
0	Slow
1	Normal

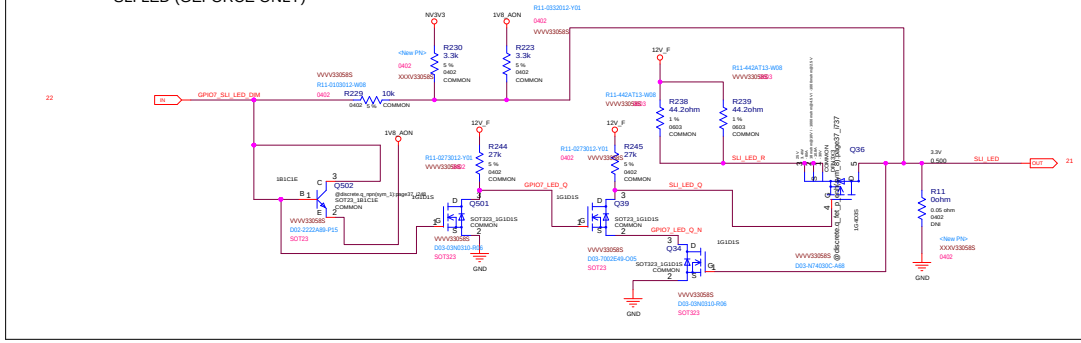


Remove POWER BRAKE

POWER BRAKE

GeForce Logo LED

SLI LED (GEFORCE ONLY)



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Page38: Mechanical: Bracket/Thermal Solution

Brackets:

BKT
@mechanic:bracket(sym_4)page38_i27
ATX_2X_2P
COMMON
MECH_MOUNTING_ALL
GND

FAN
SPECIAL MECHANIC
No connected mounting pins
MECH_PEX_BREAKOFF_RETENTION_B
DNI
VVVV330585
E32-0405261-A87

PCI_E_SLOT
SPECIAL MECHANIC
No connected mounting pins
MECH_PEX_BREAKOFF_RETENTION_B
DNI
VVVV330585
E24-V320010-P09

MEMHS
SPECIAL MECHANIC
No connected mounting pins
MECH_PEX_BREAKOFF_RETENTION_B
DNI
VVVV330585
E31-0503990-A87

MOSHS
SPECIAL MECHANIC
No connected mounting pins
MECH_PEX_BREAKOFF_RETENTION_B
DNI
VVVV330585
E31-0503980-A87

BOTHS
SPECIAL MECHANIC
No connected mounting pins
MECH_PEX_BREAKOFF_RETENTION_B
DNI
VVVV330585
E31-0408160-A87

J11
impedence

J14
impedence

J17
X_PIN1*2

J16
X_PIN1*2

PCB
PCB
109-GN582-00A
COMMON
VVVV330585
PD0-0V33690-E48

HDMI_FEE
HDMI
$$$$$$$
HDMI_FEE
COMMON
VVVV330585
Y01-RHDM003-000

Mechanical Holes Symbol

MEC1 H_R220D125
MEC5 H_R220D125
MEC7 H_R220D125
MEC8 H_R220D125
MEC9 H_R220D125
MEC10 H_R220D125
MEC11 H_R220D125
MEC12 H_R220D125
MEC13 H_R220D125
MEC14 H_R220D125
MEC15 H_R220D125
GND

GPU Stiffner

MEC20 H_R220D125
MEC21 H_R220D125
MEC22 H_R220D125
MEC23 H_R220D125
GND

BKTSCREW
MEC_SCREW_HEX_JACK
COMMON
VVVV330585
E41-1304099-H75

MEC6
MEC_SCREW_HEX_JACK
COMMON
VVVV330585
E42-5047006-C67

HDMISCREW
MEC_SCREW_HEX_JACK
COMMON
VVVV330585
E41-1303012-H75

MEC19
MEC_SCREW_HEX_JACK
COMMON
VVVV330585
E42-5047006-C67

FM1 FM2 FM3 FM4
FM5 FM6 FM7 FM8
OPT
F_PAD_X

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