

PG600-B02 NIGHTHAWK

GB3B-384, 6GB GDDR5 128Mx32

DP + HDMI/DP + DP + DP + DVI-I

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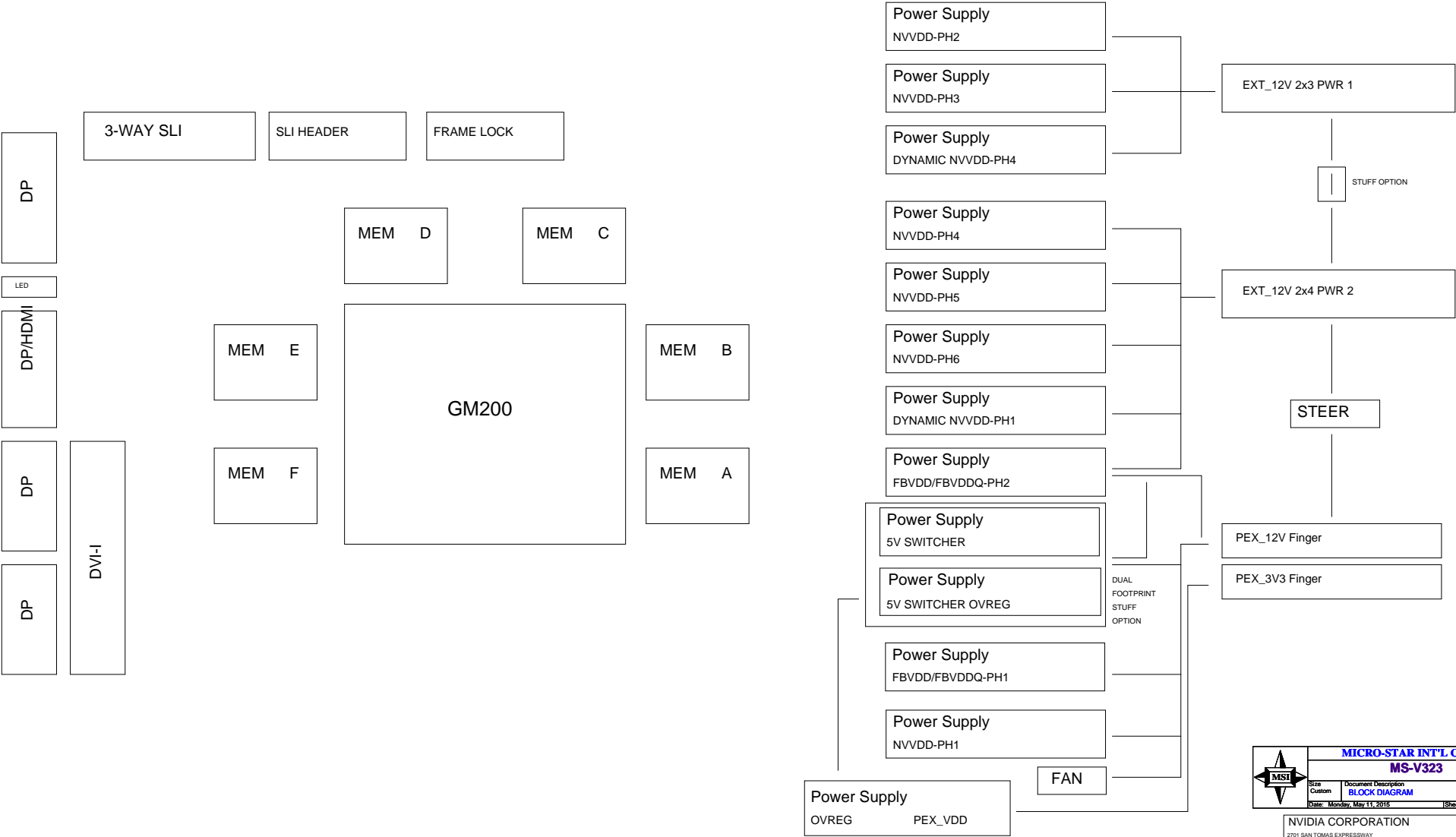
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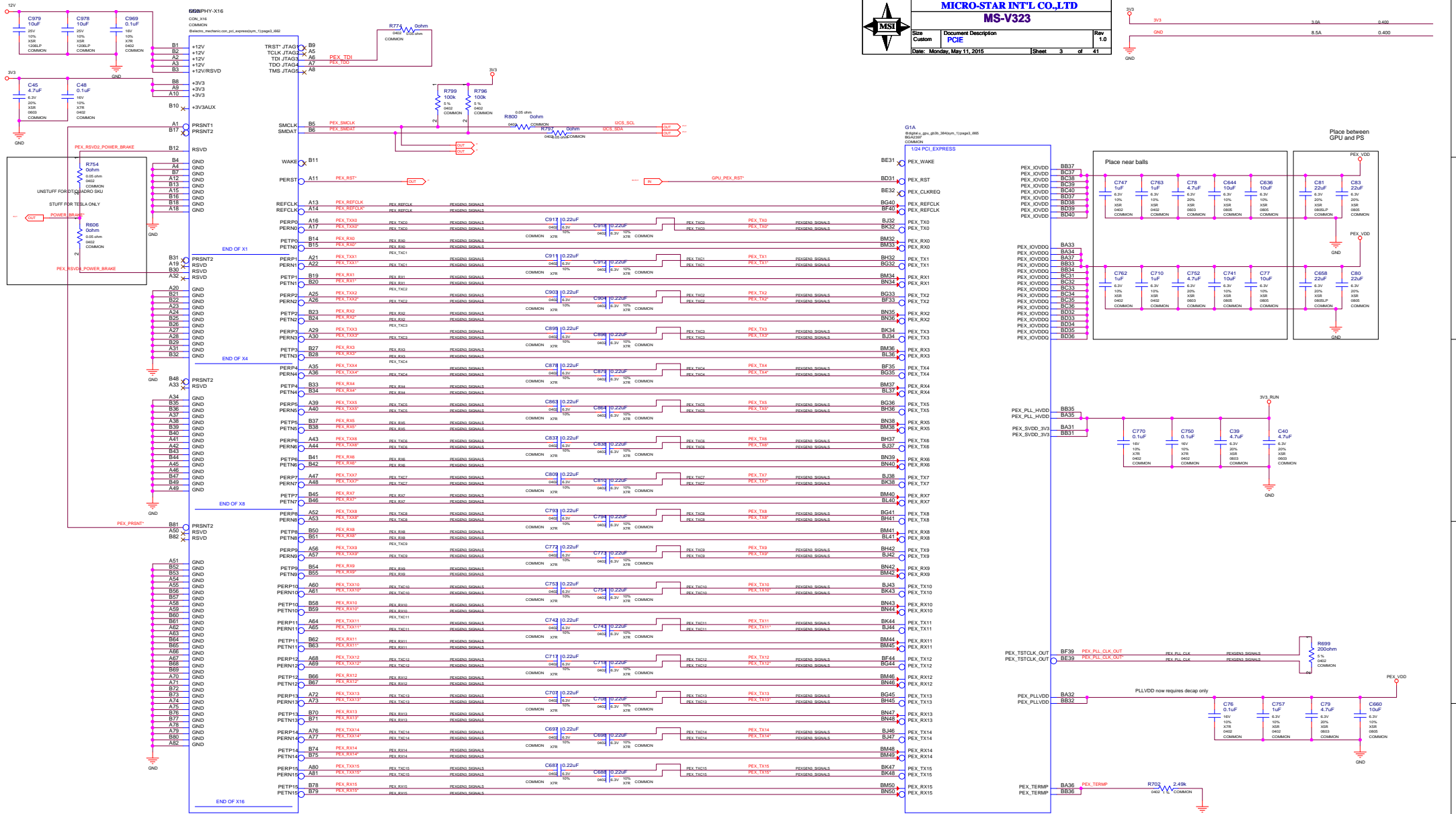
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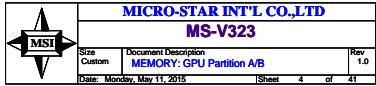
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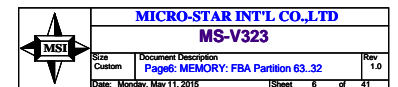
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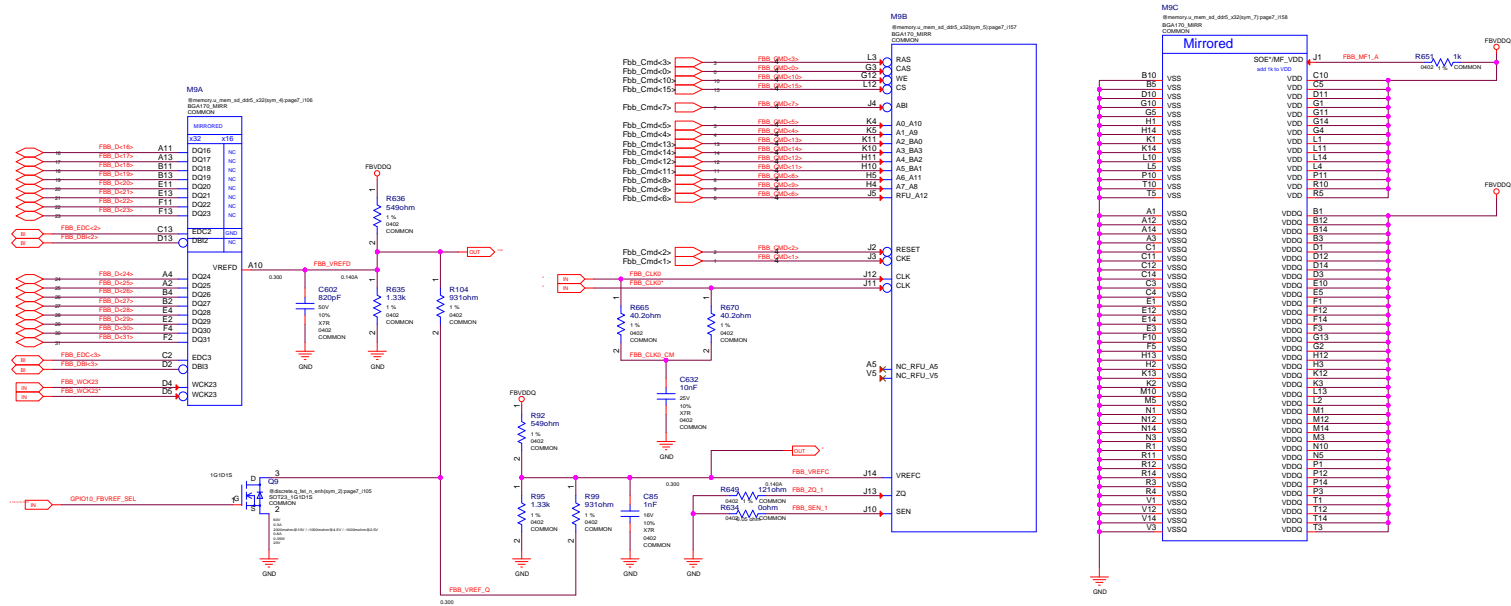





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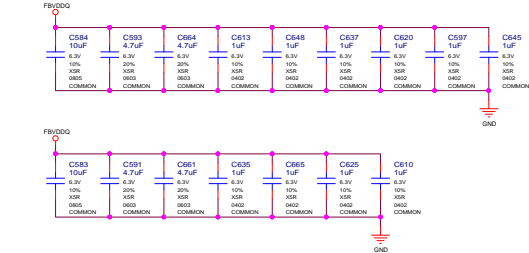
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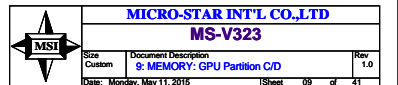
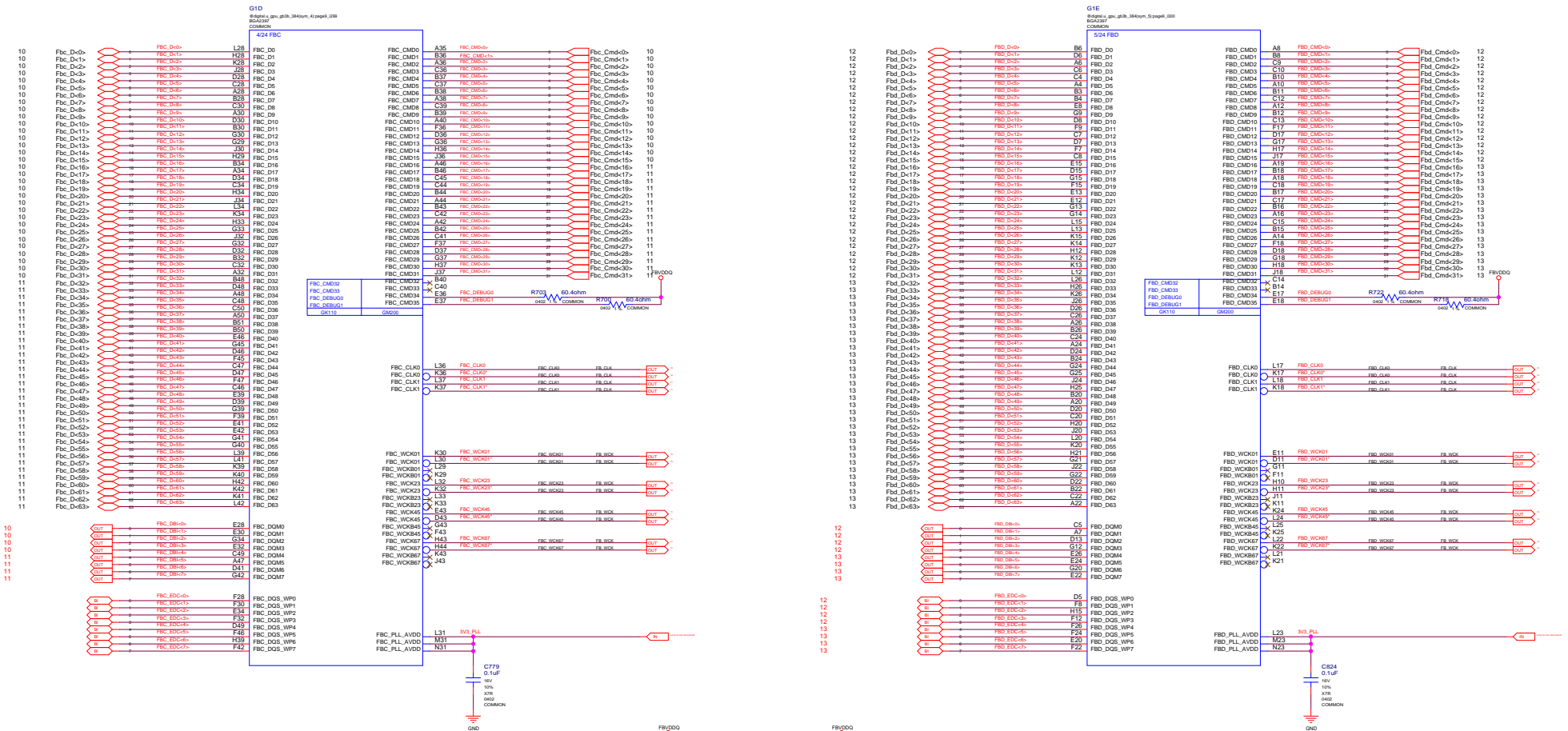
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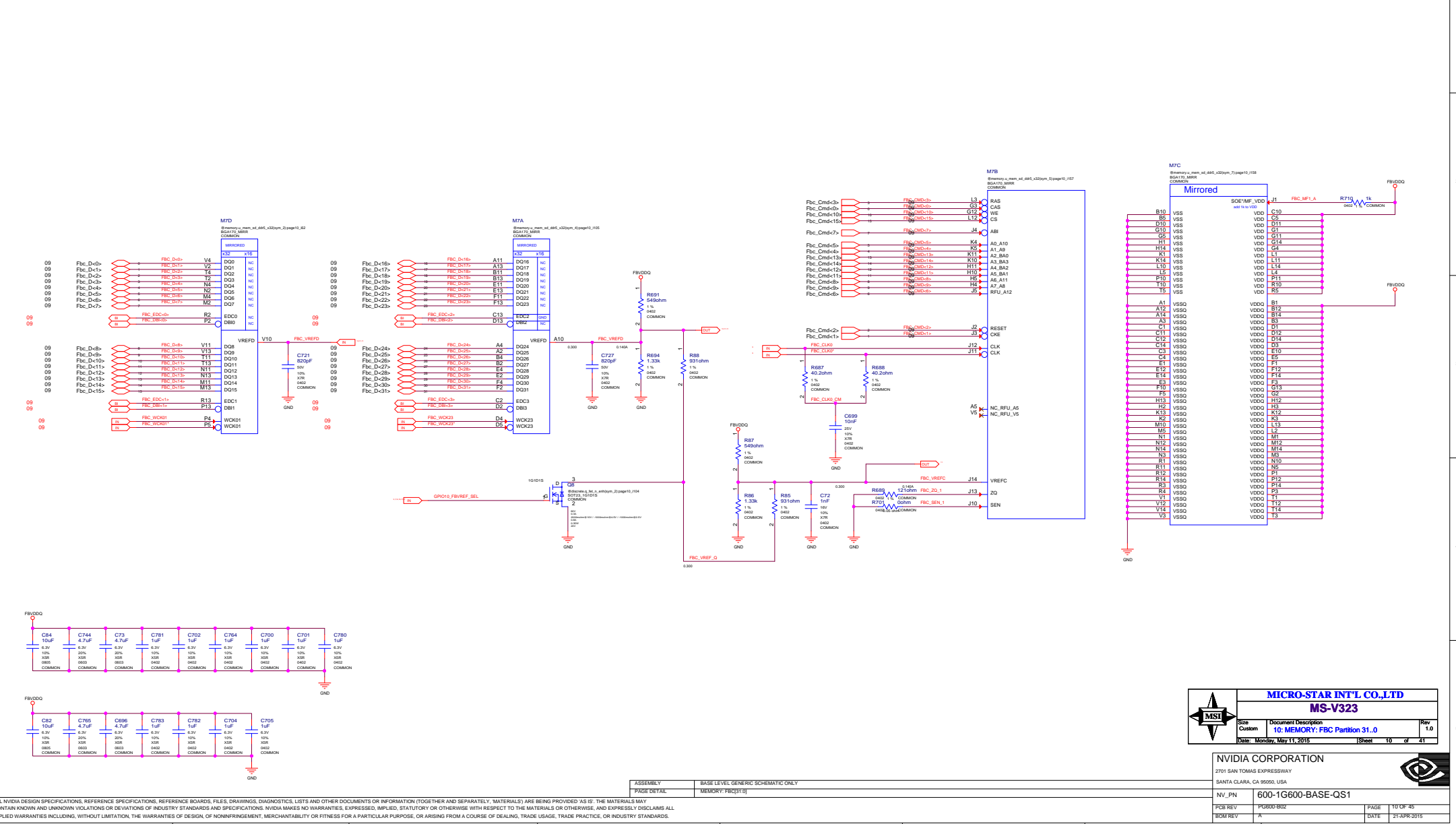


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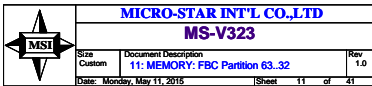
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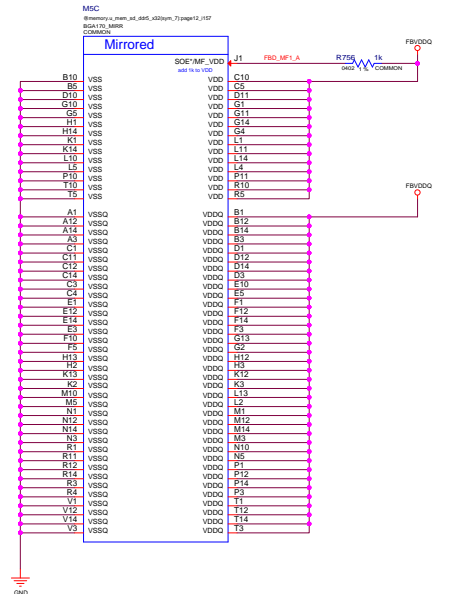
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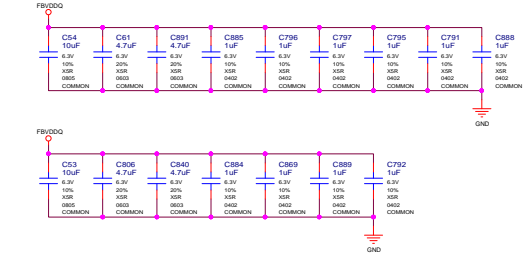
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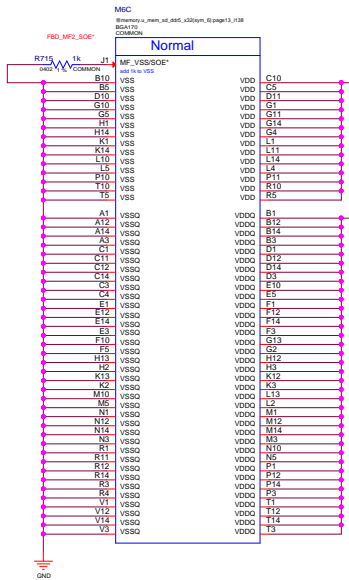
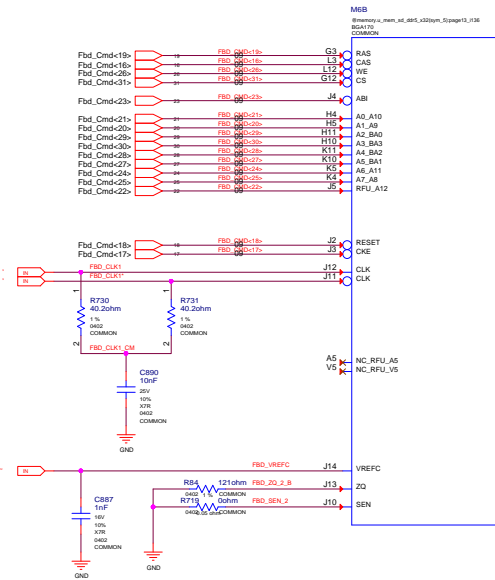
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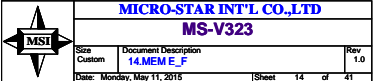





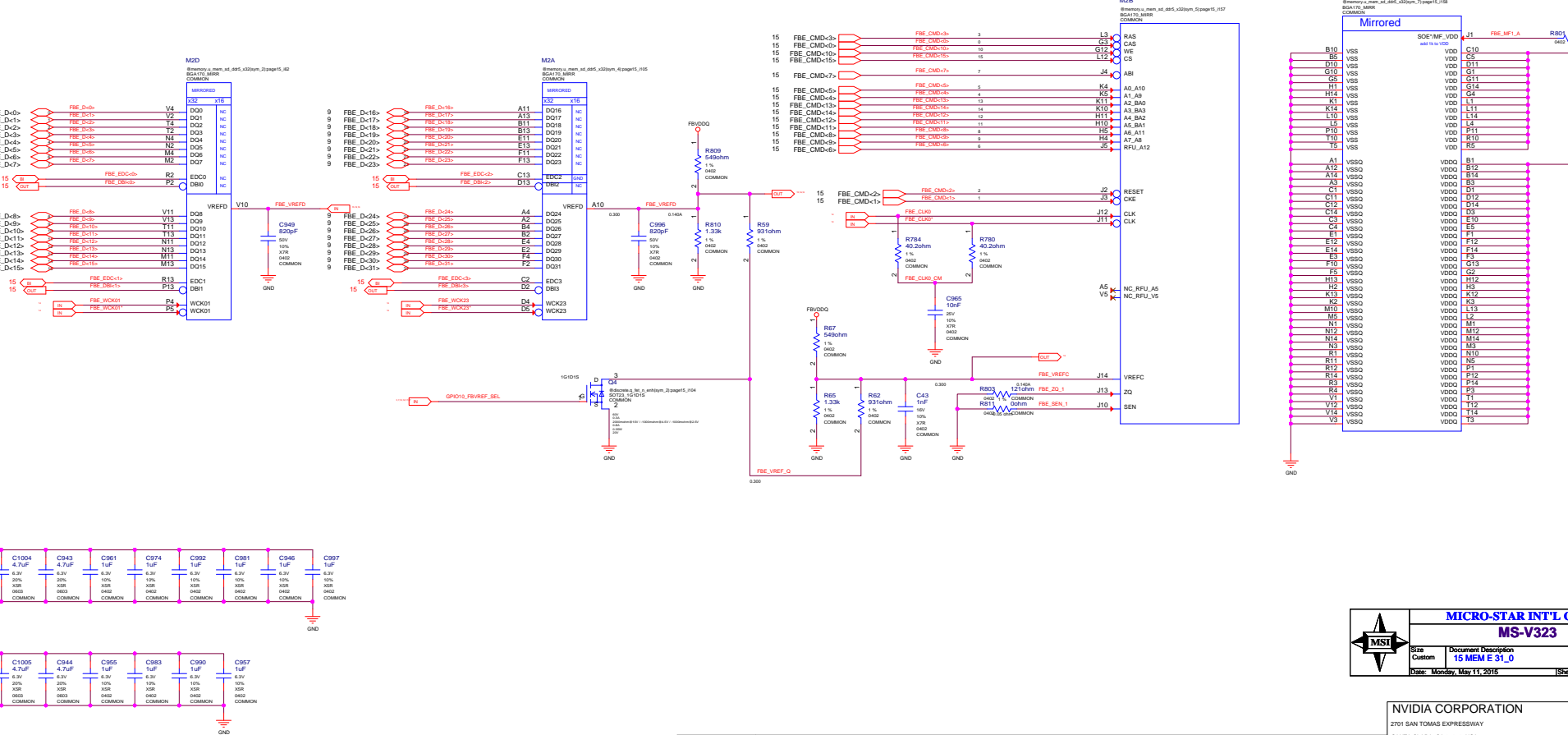
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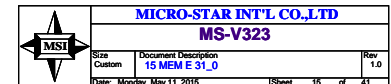


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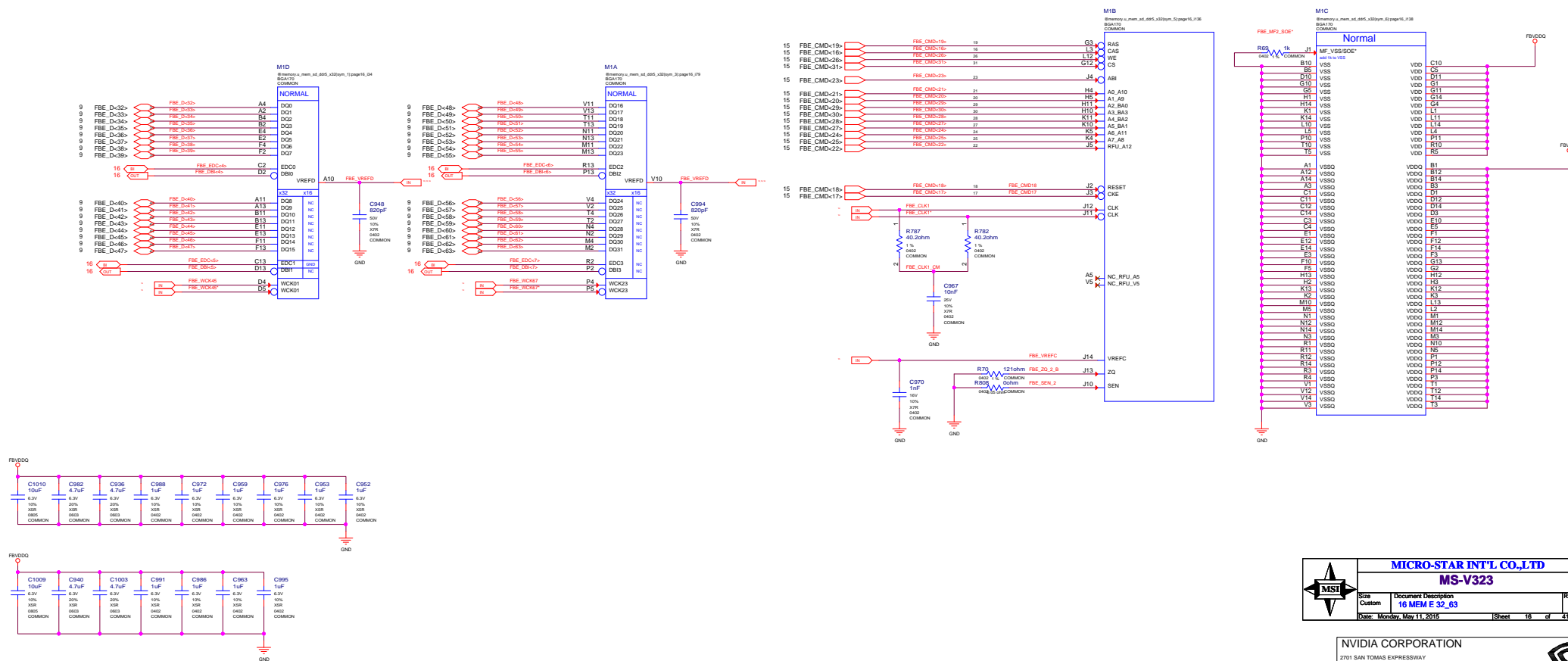
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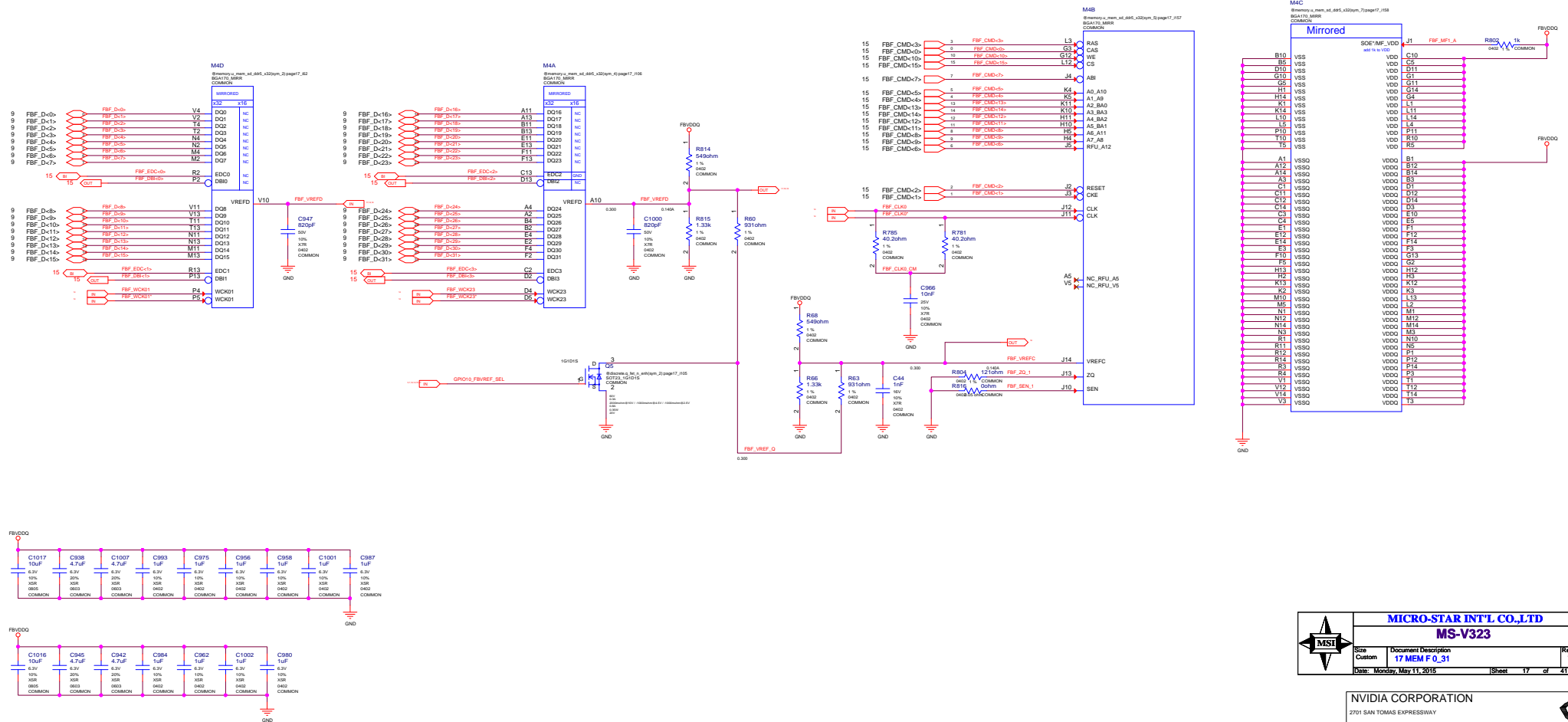
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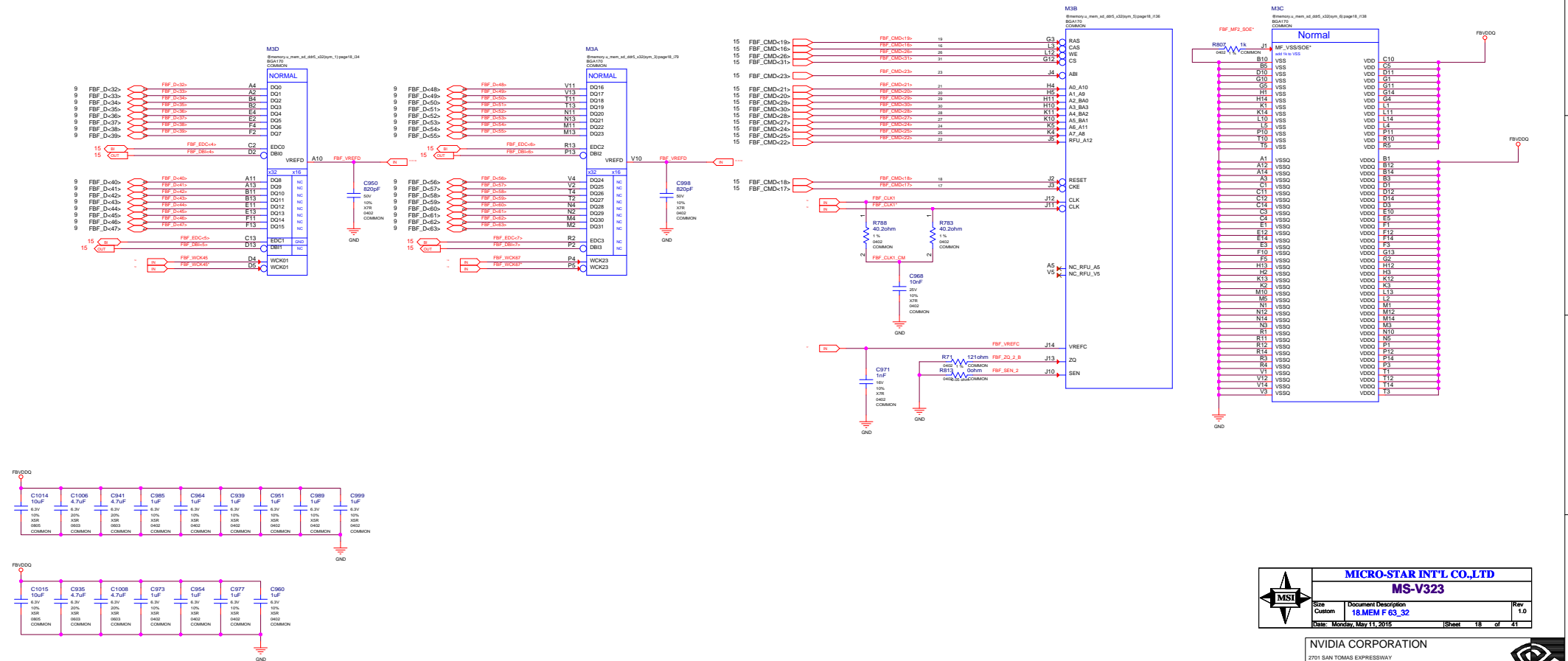
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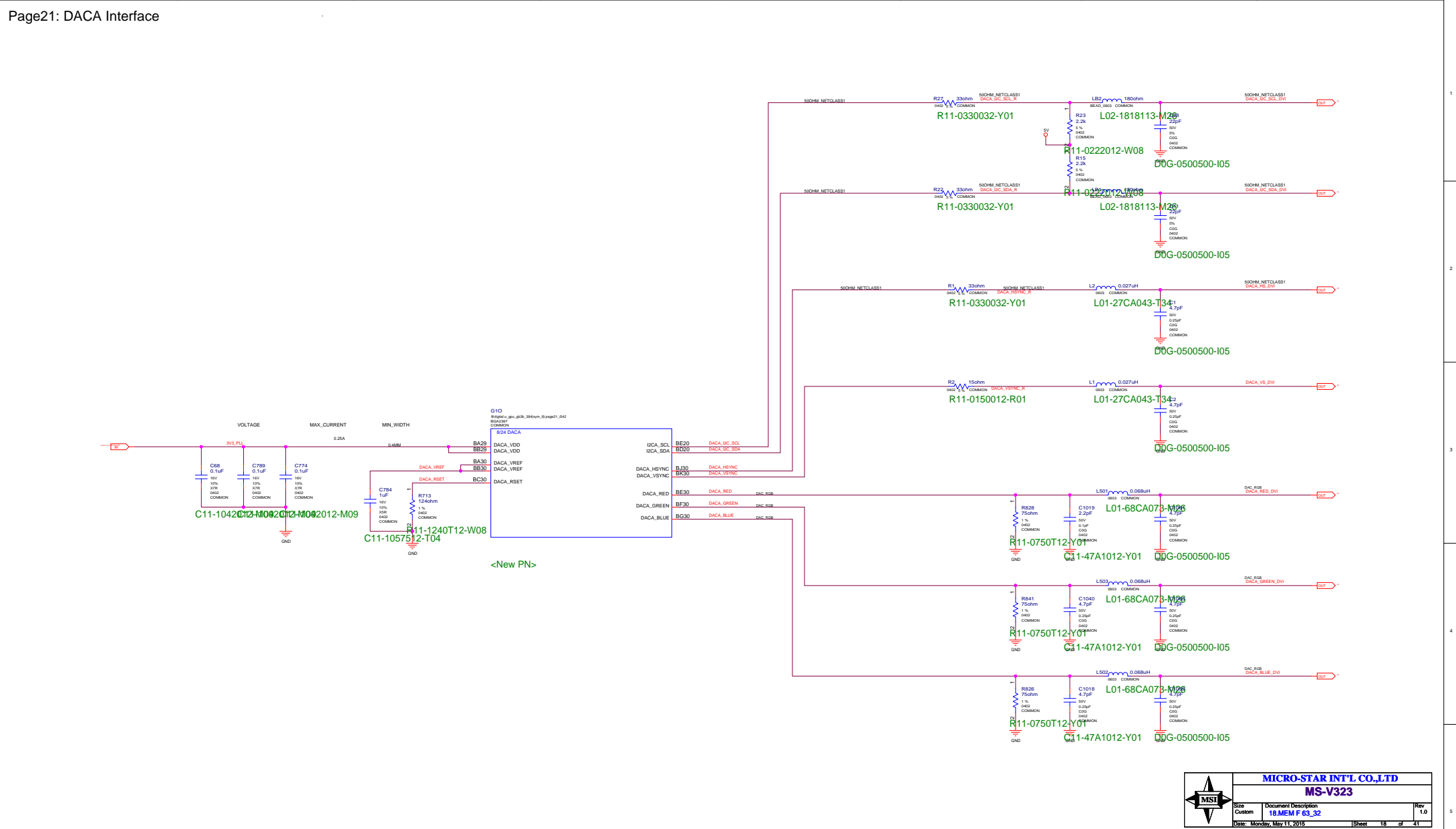
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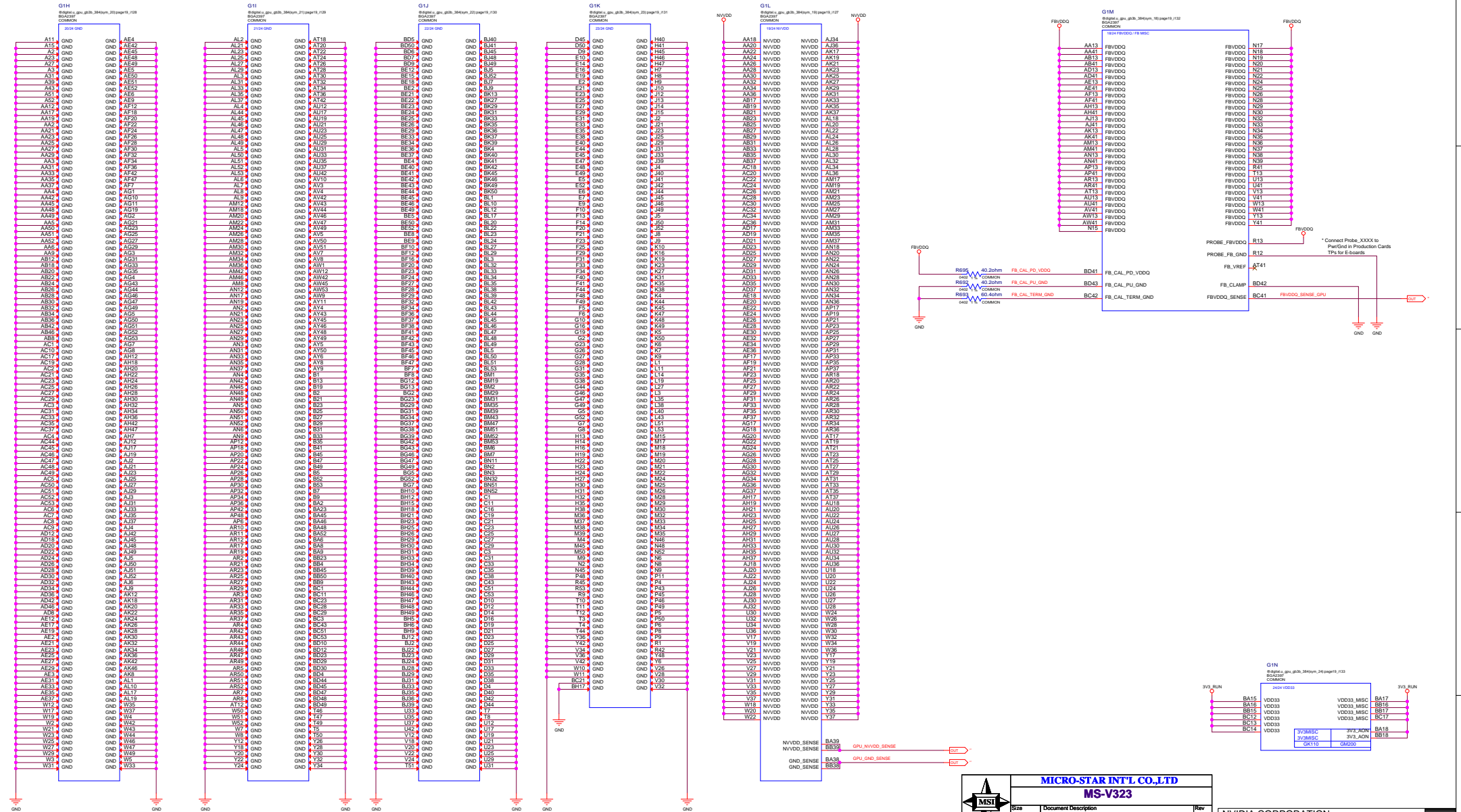


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Page19: GPU PWR and GND



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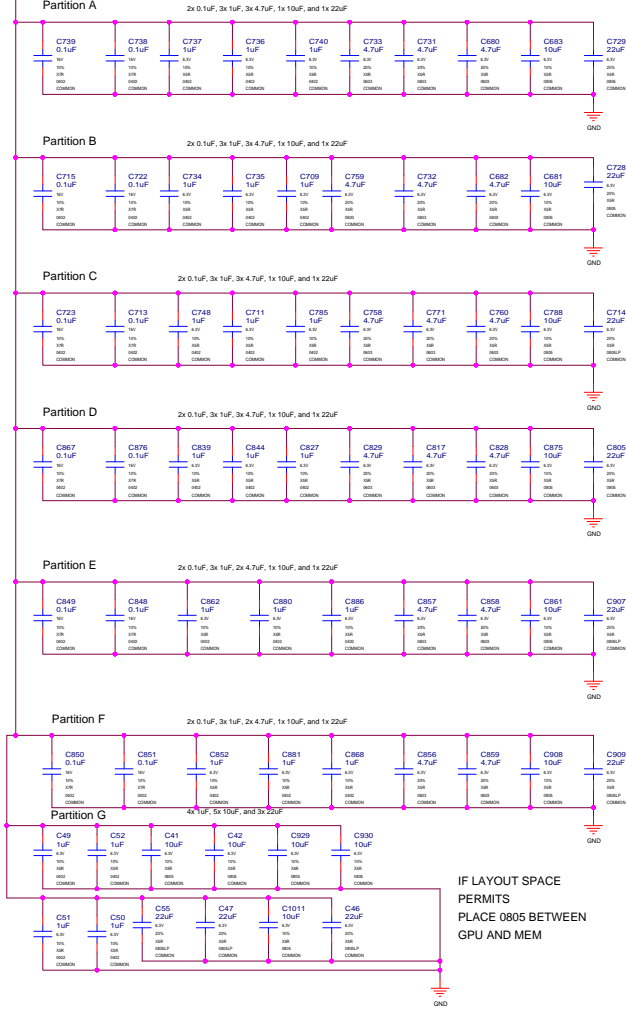
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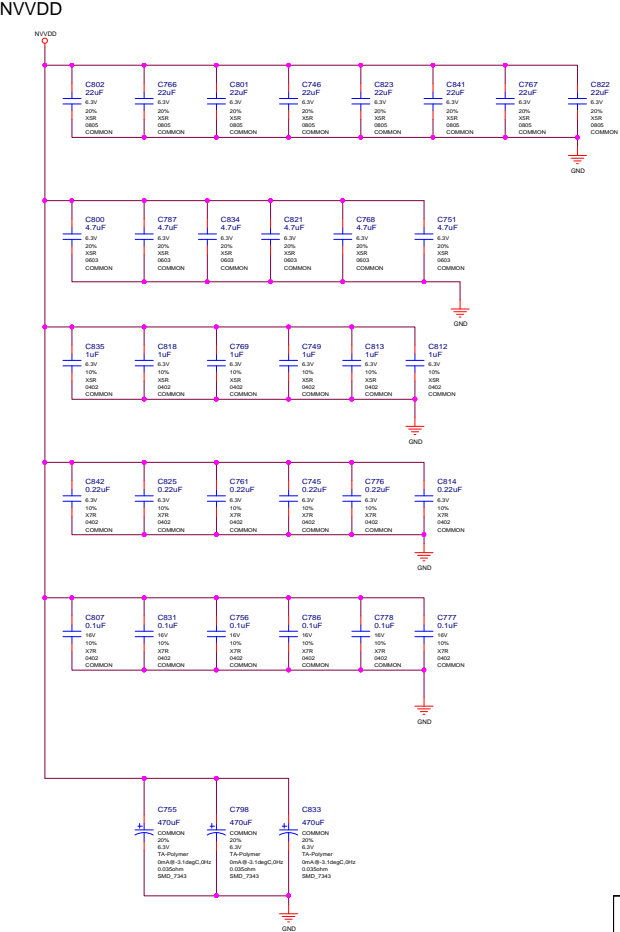
Based on GB3-X GDDR5 FBVDDQ Decap Guideline

FBVDDQ
0.1uF, 1uF, 0402 (Place Under GPU)
4.7uF, 0603 (Place Near GPU)
10uF, 0805 (Place Near GPU)
22uF, 0805 (Place Near GPU)



IF LAYOUT SPACE
PERMITS
PLACE 0805 BETWEEN
GPU AND MEM

NVVDD Decoupling caps. Place under GPU.



8x 22uF, 0805


6x 4.7uF, 0603

6x 1uF, 0402

6x 0.22uF, 0402


6x 0.1uF, 0402

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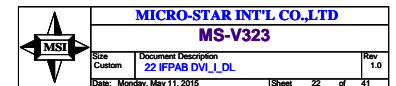
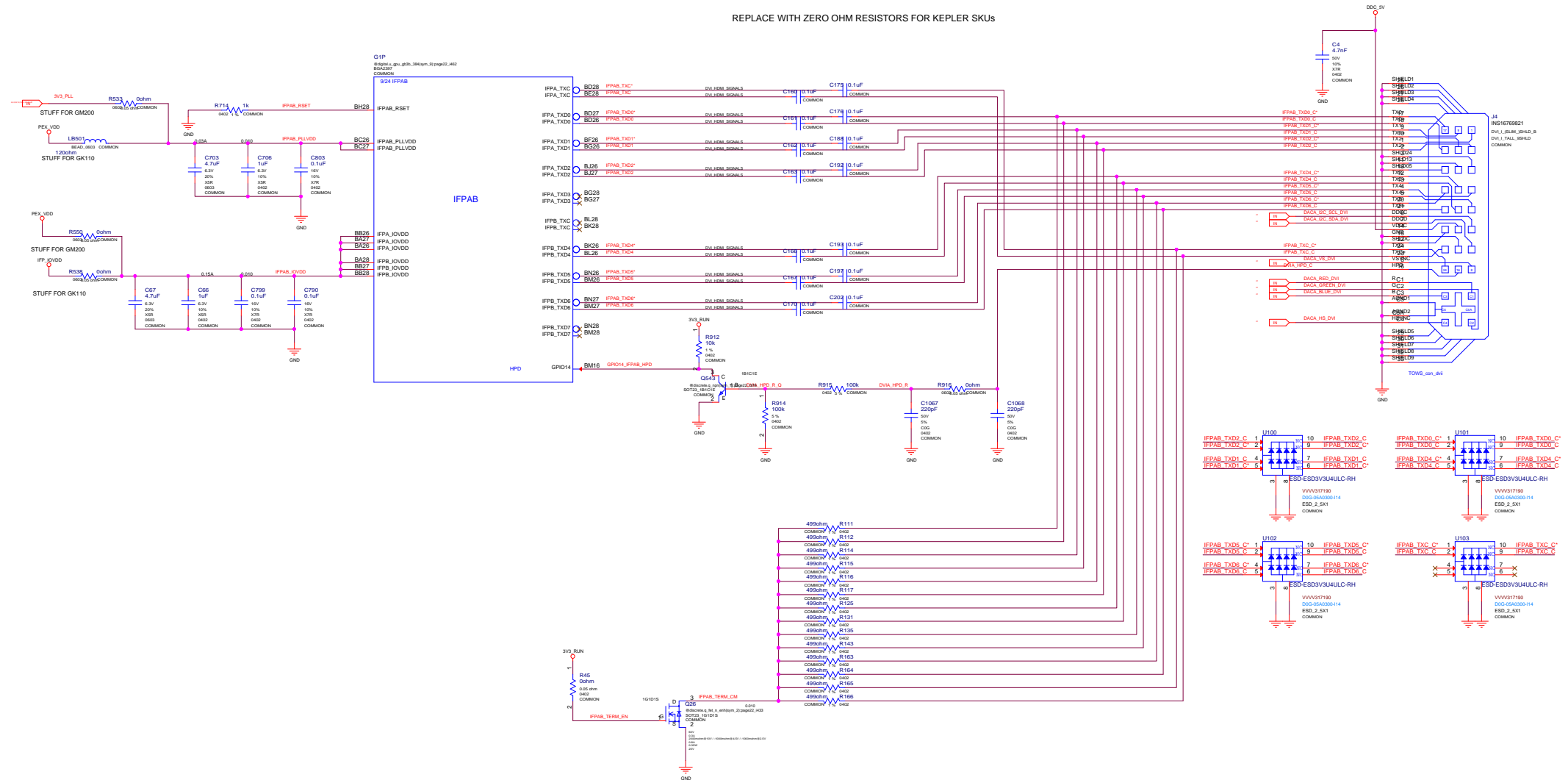
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AC COUPLING NOT NEEDED for KEPLER

REPLACE WITH ZERO OHM RESISTORS FOR KEPLER SKUs



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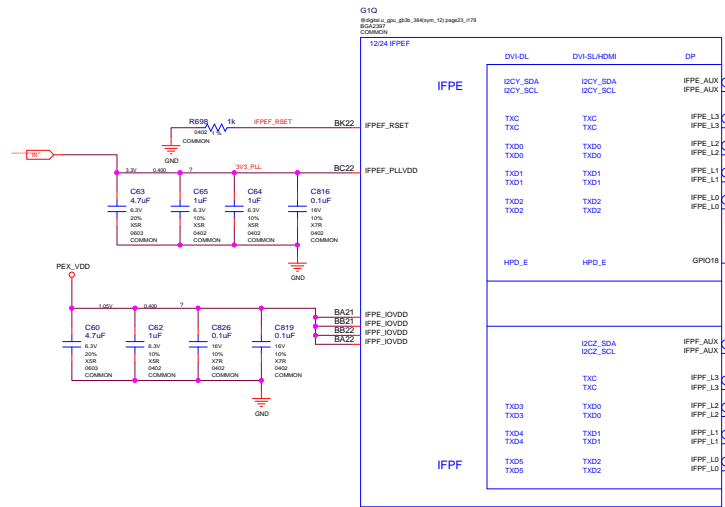
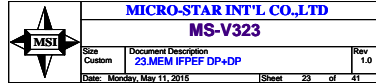
NV_PN	600-1G600-BASE-QS1
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IN_FN	000 PG000 BASE Q01
PCB REV	PG000-B02

PCB REV	PG000-B02
BOM REV	A

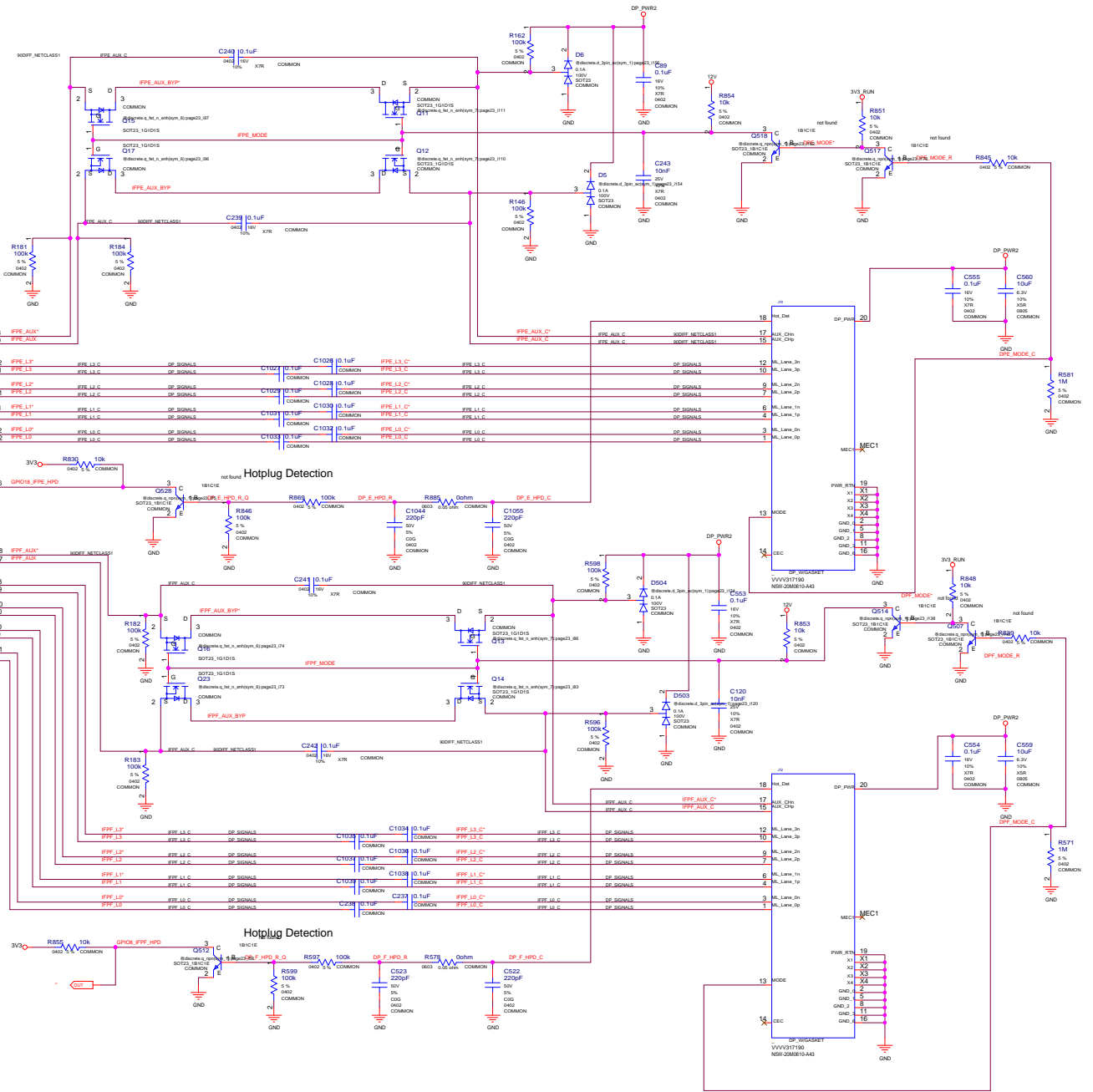
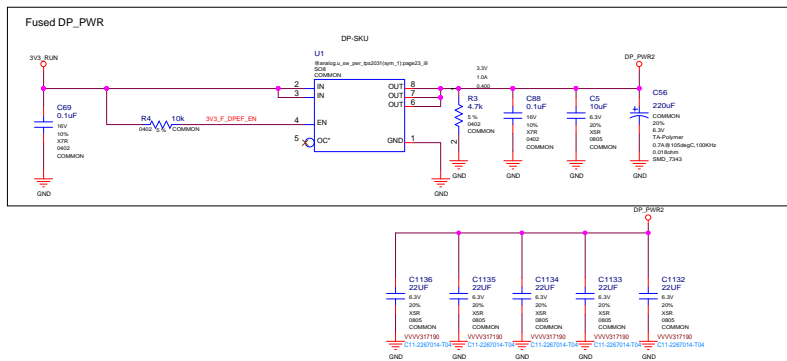
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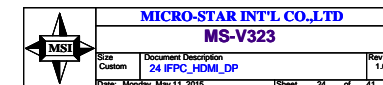
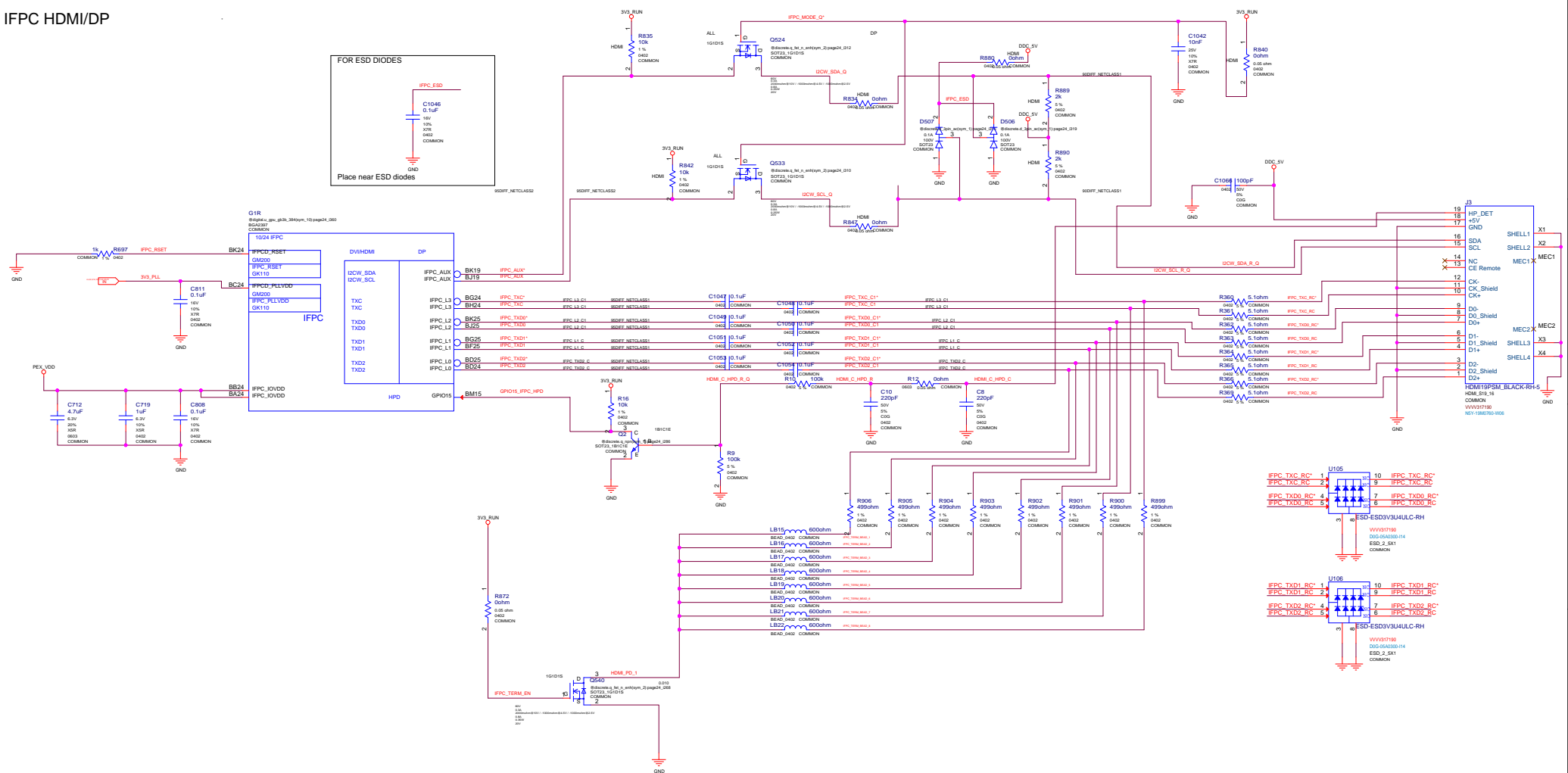
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Two cases to be considered:

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





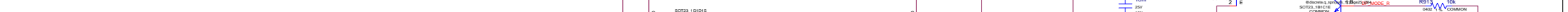
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NV_PN	600-1G600-BASE-QS1		
PCB REV	PG800-B02	PAGE	24 Of 45
BOM REV	A	DATE	21-APR-2015

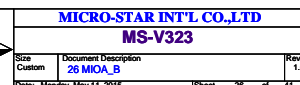
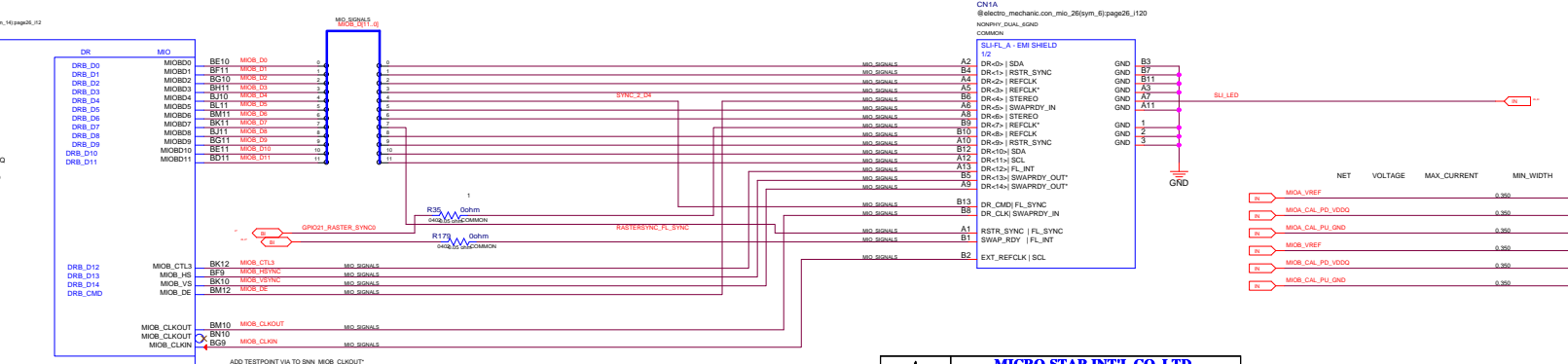
ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY
PAGE DETAIL	IFPC HDMI/DP

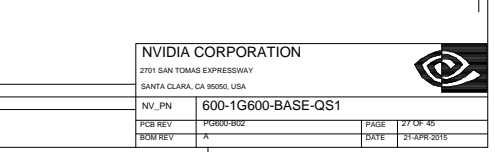
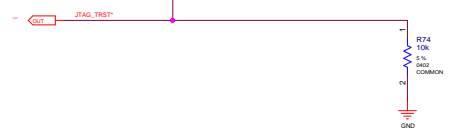
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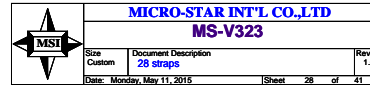
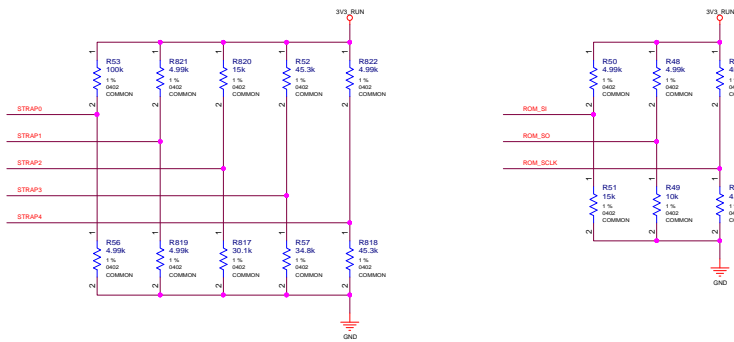


ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY
PAGE DETAIL	MISC1: Fan, Thermal, JTAG, GPIO

Page28: MISC2: ROM, XTAL, Straps

		GK110	GM200
STRAP0	USER_BIT [3:0]*	0000*	GC6_ENABLE(3.3V) PU
STRAP1	3GIO_PADCFG_LUT_ADR*	0000*	N/A
STRAP2	PCI_DEVID [3:0]*	100A*	N/A
STRAP3	SOR_EXPOSED [3:0]*	1111*	N/A
STRAP4	DP_PLL_VDD_33V*	1* FOR 3_3V*	N/A
	PEX_MAX_SPEED*	1* FOR GEN2/3*	N/A
	PEX_SPD_CHANGE_GEN3*	1* ENABLED*	N/A
	RESERVED	0*	N/A
ROM_SI	RAMCFG[0]*	1*	RAMCFG[0]*
	RAMCFG[1]*	0*	RAMCFG[1]*
	RAMCFG[2]*	1*	RAMCFG[2]*
	RAMCFG[3]*	0*	RAMCFG[3]*
ROM_SO	VGA_DEVICE*	1*	VGA_DEVICE* 1* For Enable
	SMB_ALT_ADDR*	0*	SMB_ALT_ADDR 0* For Disable
	FB[0]_APERTURE_SIZE*	1* For 128MB*	PCI_E_CFG 0* For Desktop
	FB[1]_APERTURE_SIZE*	0* For 128MB*	DEVID_SEL 0* For DEVID A
	PEX_PLL_EN_TERM100*	0* DISABLED*	SOR0_EXPOSED
	PCI_DEVID_EXT[5]*	0*	SOR1_EXPOSED
ROM_SCLK	SUB_VENDOR*	1* Dedicated BIOS*	SOR2_EXPOSED
	PCI_DEVID_EXT[4]*	0*	SOR3_EXPOSED

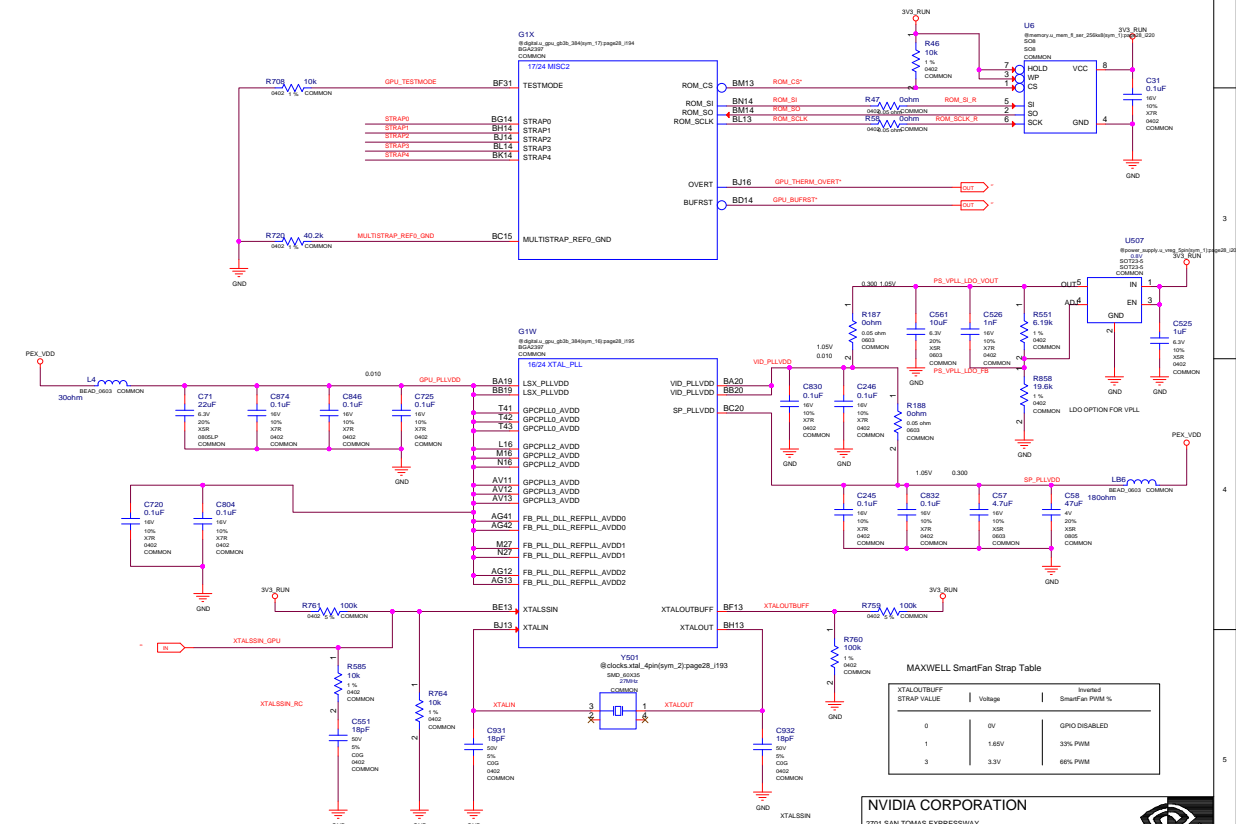
	MULTI_STRAP_REFQ_GND
BINARY PRODUCTION	NC
BINARY BRINGUP	NC
MULTI-LEVEL	40.2% 1% TO GND

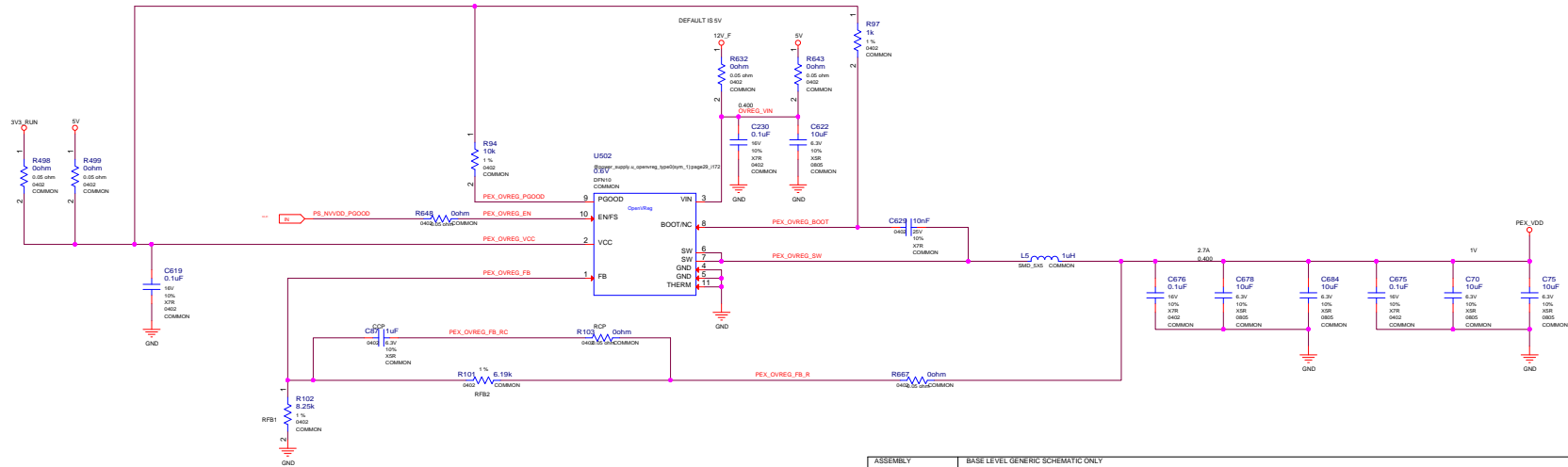
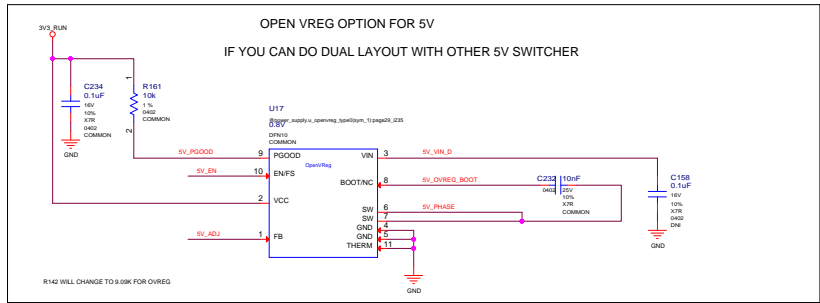
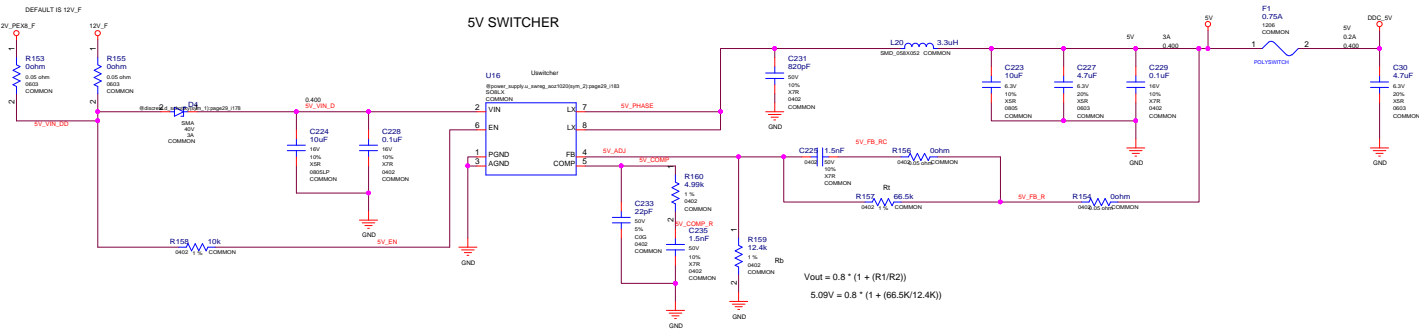


	GND	3V3
5k	0000	1000
10k	0001	1001
15k	0010	1010
20k	0011	1011
25k	0100	1100
30k	0101	1101
35k	0110	1110
45k	0111	1111

x32 DENSITY MODE STRAPS	
CFG(3:0) Config Width	Vendor
0000	Reserved
0001	128Mx32 384-bit Elpida
0010	128Mx32 384-bit Hynix
0011	128Mx32 384-bit Samsung
0100	64Mx32 384-bit Hynix B
0101	64Mx32 384-bit Elpida
0110	64Mx32 384-bit Hynix
0111	64Mx32 384-bit Samsung
1000	Reserved
1001	128Mx32 320-bit Elpida
1010	128Mx32 320-bit Hynix
1011	128Mx32 320-bit Samsung
1100	64Mx32 320-bit Hynix B
1101	64Mx32 320-bit Elpida
1110	64Mx32 320-bit Hynix
1111	64Mx32 320-bit Samsung

x16 DENSITY MODE STRAPS	
CFG(3:0) Config Width	Vendor
0000	Reserved
0001	256Mx16 384-bit Elpida
0010	256Mx16 384-bit Hynix
0011	256Mx16 384-bit Samsung
0100	128Mx16 384-bit Hynix B
0101	128Mx16 384-bit Elpida
0110	128Mx16 384-bit Hynix
0111	128Mx16 384-bit Samsung
1000	Reserved
1001	256Mx16 320-bit Elpida
1010	256Mx16 320-bit Hynix
1011	256Mx16 320-bit Samsung
1100	128Mx16 320-bit Hynix B
1101	128Mx16 320-bit Elpida
1110	128Mx16 320-bit Hynix
1111	128Mx16 320-bit Samsung





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Size Custom

Document Description 29 5V_PEXVDD

Date Monday, May 11 2015

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Rev 1.0

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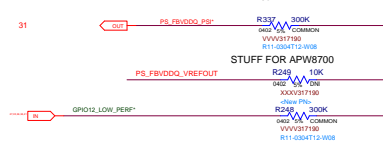
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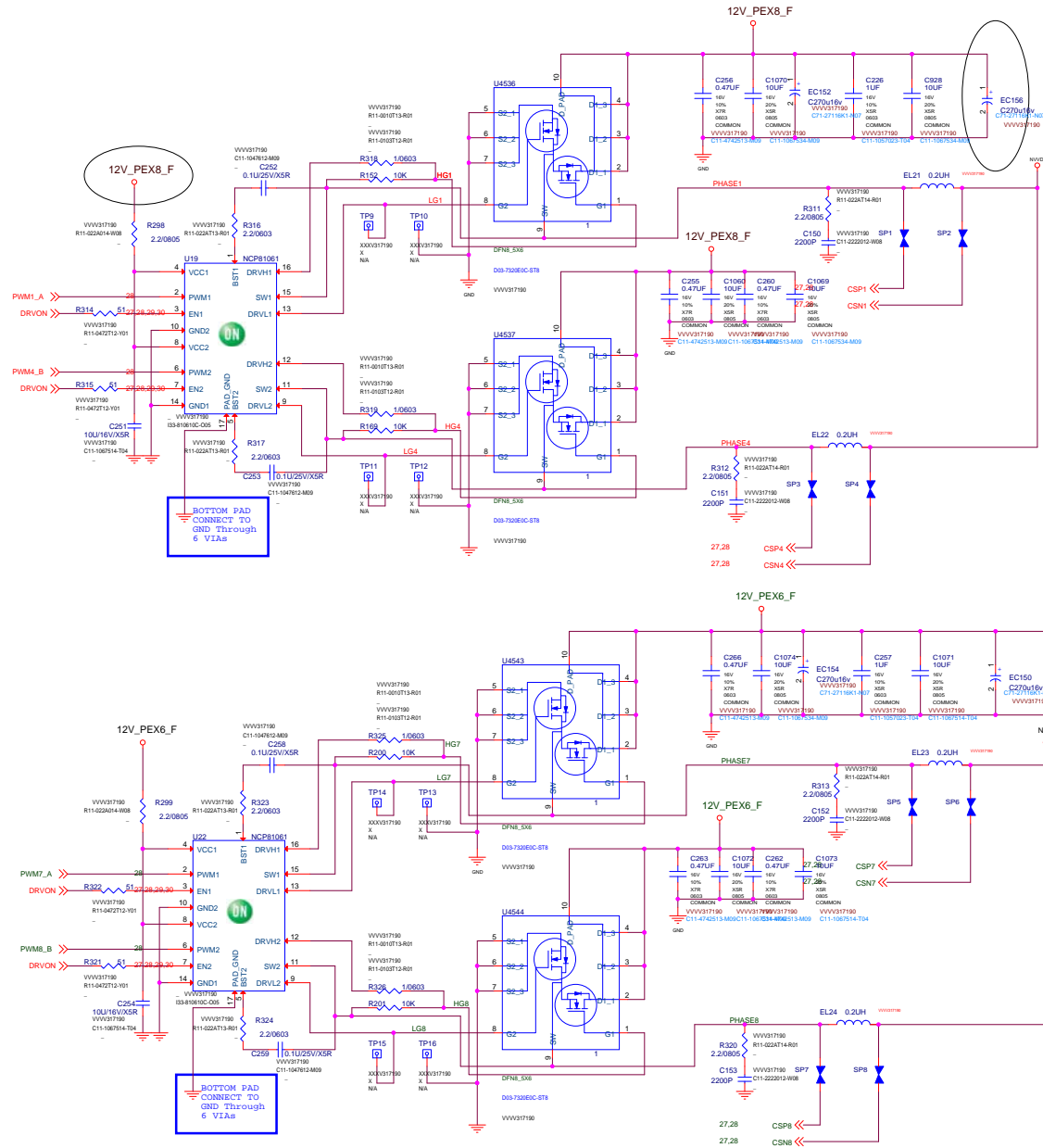
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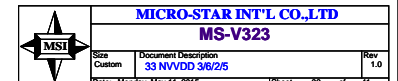
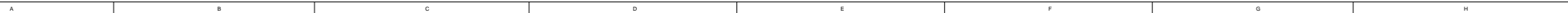


NV_PN	600-1G600-BASE-QS1
PCB REV	PG600-B02
BOM REV	A

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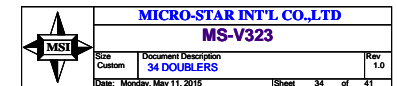
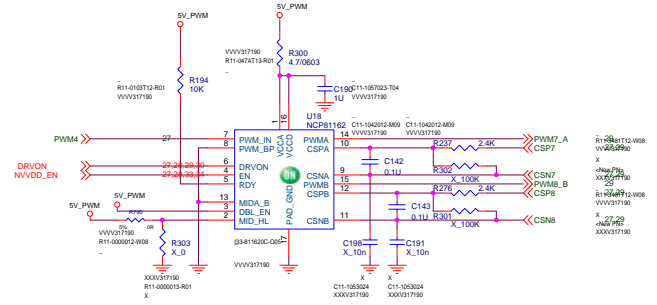
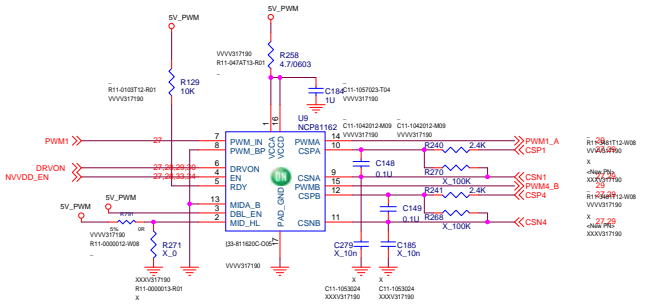
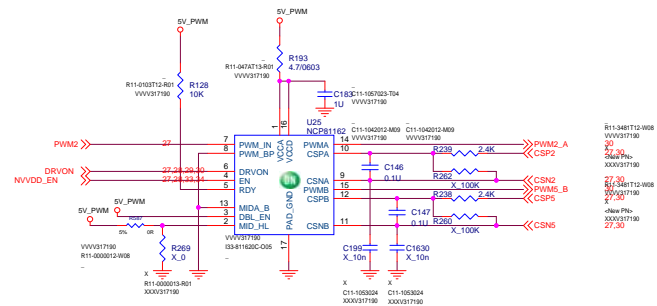
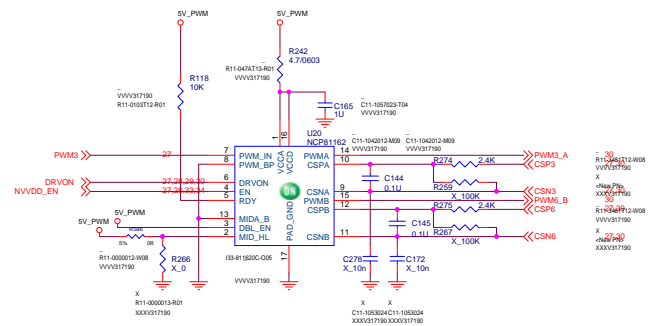


NV_PN	600-1G600-BASE-QS1		
PCB REV	PG600-B02	PAGE	33 OF 45
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[illegible]

ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY
PAGE DETAIL	PS: NVVDD Phase 3,4

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BOM REV A DATE 21-APR-2015ASSEMBLY BASE LEVEL GENERIC SCHEMATIC ONLY
PAGE DETAIL PS: NVVDD Phase D.B.

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VID Table

GPI04 VID_5	GPI03 VID_4	GPI02 VID_3	GPI01 VID_2	GPI00 VID_1	VOUT
0	0	0	0	0	1.2125V
0	0	0	0	1	1.2000V
0	0	0	1	0	1.1875V
0	0	0	1	1	1.1750V
0	0	1	0	0	1.1625V
0	0	1	0	1	1.1500V
0	0	1	1	0	1.1375V
0	0	1	1	1	1.1250V
0	1	0	0	0	1.1125V
0	1	0	0	1	1.1000V
0	1	0	1	0	1.0875V
0	1	0	1	1	1.0750V
0	1	1	0	0	1.0625V
0	1	1	0	1	1.0500V
0	1	1	1	0	1.0375V
0	1	1	1	1	1.0250V
1	0	0	0	0	1.0125V
1	0	0	0	1	1.0000V
1	0	0	1	0	0.9875V
1	0	0	1	1	0.9750V
1	0	1	0	0	0.9625V
1	0	1	0	1	0.9500V
1	0	1	1	0	0.9375V
1	0	1	1	1	0.9250V
1	1	0	0	0	0.9125V
1	1	0	0	1	0.9000V
1	1	1	0	0	0.8875V
1	1	1	0	1	0.8750V
1	1	1	1	0	0.8625V
1	1	1	1	1	0.8500V
1	1	1	1	0	0.8375V
1	1	1	1	1	0.8250V



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ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY
PAGE DETAIL	PS: NVVDD Controller

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PAGE	31 OF 45
DATE	21 APR 2015

Page36: PS: Inputs, Filtering, and Monitoring

REMOVE NO STUFF FOR GEFORCE SKUS ONLY

PEX 3V3 INPUT - 10W

DEFAULT STUFFING IS THE BEAD.
IN CASE INDUCTOR NEEDS TO BE
STUFFED YOU NEED TO MAKE
SURE THAT ITS LOWER HEIGHT THAN 2.7MM

3V3_FILTER CONNECTS TO 3V3_RUN.
VIA CIRCUITRY FOUND ON THE MCU PAGE.
USING EITHER THE FET LABELED Qx OR
RESISTORS LABELED Rj and Rk

PEX_12V INPUT - 66W

Alternate

CHK_D2_7X7
L04-05A7327-L05

CHK_D2_7X7
L04-05A7327-L05

L162 CO LAYOUT

L1 STUFFED FOR DESKTOP

L2 STUFFED FOR 24x EAST CONNECTOR STUFFED

PEX8 INPUT 2 - 2x4 PCIE CON 150W

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MS-V323			
Size	Document	Rev	
Custom	36 INPUT.FILTERING	1.0	
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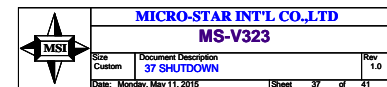
NV_PN 600-1G600-BASE-QS1

PCB REV	PCB007810Z	PAGE	36 OF 40
ICOM REV	A	DATE	21-APR-2015

ASSEMBLY	
PAGE DETAIL	PS: Inputs, Filtering, and Monitoring

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IFP_IOVDD (backdrive prevention)

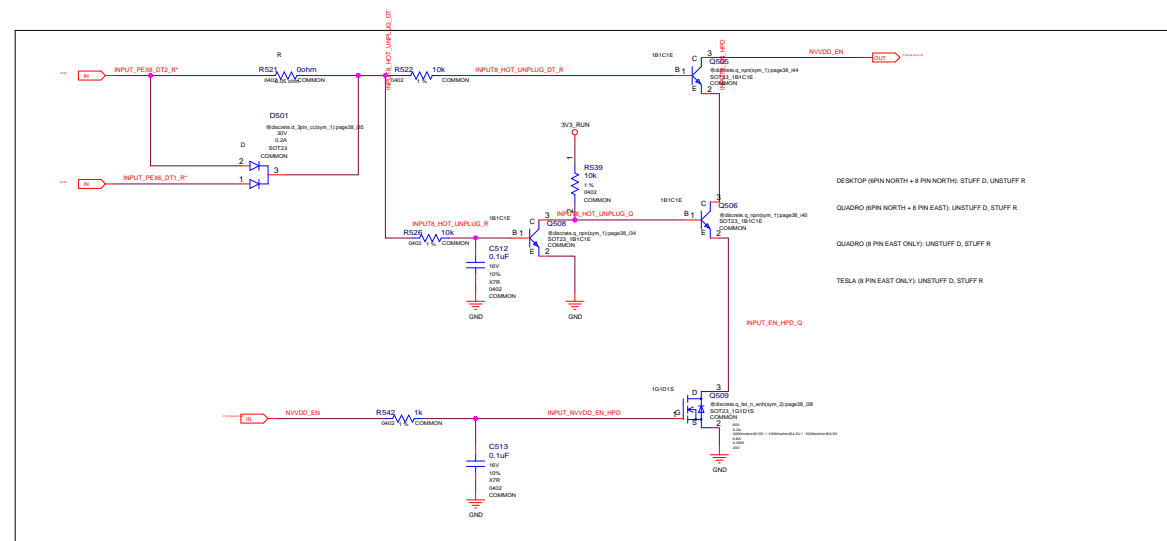


NV_PN	600-1G600-BASE-QS1		
PCB REV	PG600-B02	PAGE	37 OF 45
BOM REV	A	DATE	21-APR-2015

NO STUFF C3

PEX 6 Input Present 1

3V3
R₁
R509 1k 0402 COMMON
1k
R₂
R507 1k 0402 COMMON
C₃
C504 0.1uF 10% 9705 0402 COMMON
GND
INPUT_PEX6_DTI**
INPUT_PEX6_DTI_8*
IN
OUT

[illegible]

GPU SPEED

GPXH2_LOW_PERP*	GPU SPEED
0	Slow
1	Normal

REMOVE_PS_N_VDD_DRVN

STUFF Q508 ONLY



Size Custom	Document Description 38 12 CURRENT STEERING	Rev 1
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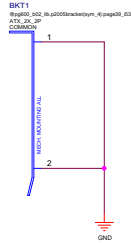
PCB REV	PG600-B02	PAGE	38 Of 45
BOM REV	A	DATE	21-APR-2015

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ASSEMBLY	BASE LEVEL GENERIC SCHEMATIC ONLY
PAGE DETAIL	PS: 12V Current Steering & Hot Unplug Detect

Brackets:

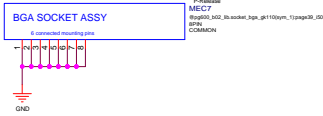
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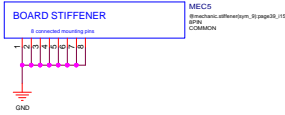
Bracket Screw

MEC1
@mechanical_mounting_1,1 page39_13
DTS
COMMON
New LP screw - 155-0001-000
RDS screw - 155-0000-000

GPU SOCKET



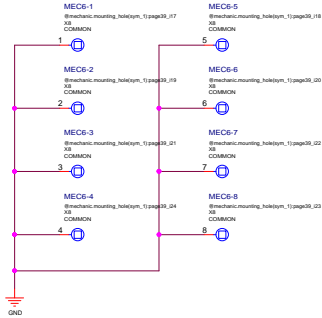
GPU Stiffener (BRING-UP COOLER)



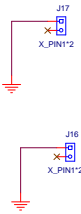
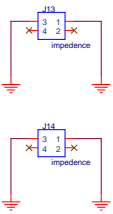
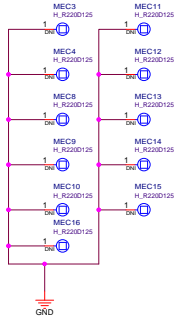
Stiffener



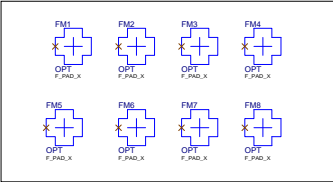
Bring Up Cooler



Mechanical Holes Symbol



HDMI_FEE
HDMI_FEE
COMMON
V1017055
V01-RDM03-000



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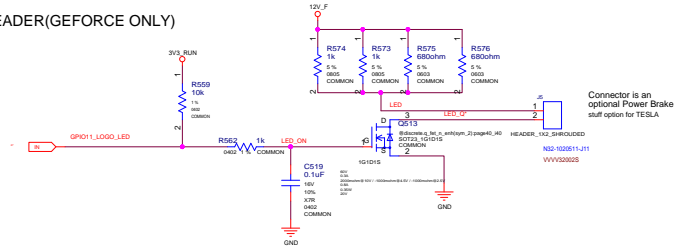


NV_PN 600-1G600-BASE-QS1

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LED HEADER(GEFORCE ONLY)

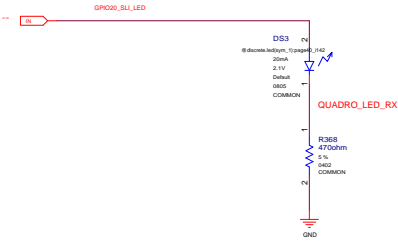


Remove Bypass filter option

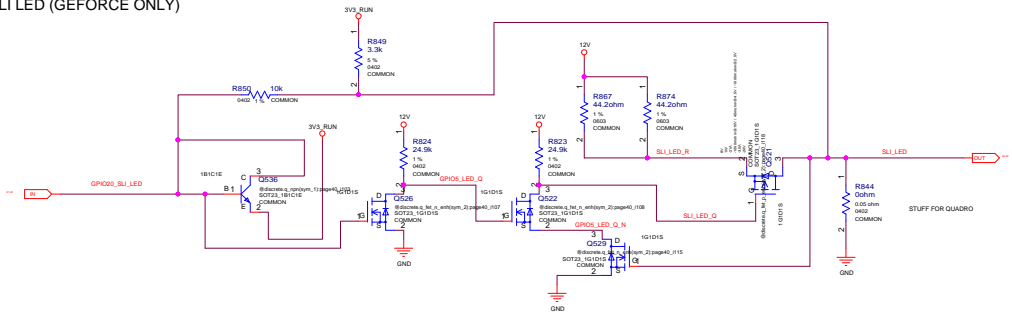
USING GPIO5 TO DIM
GEFORCE AND SLI LED



LED FOR QUADRO
PLACE BETWEEN DP Connectors
CONNECTORS



SLI LED (GEFORCE ONLY)



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Custom			1.0
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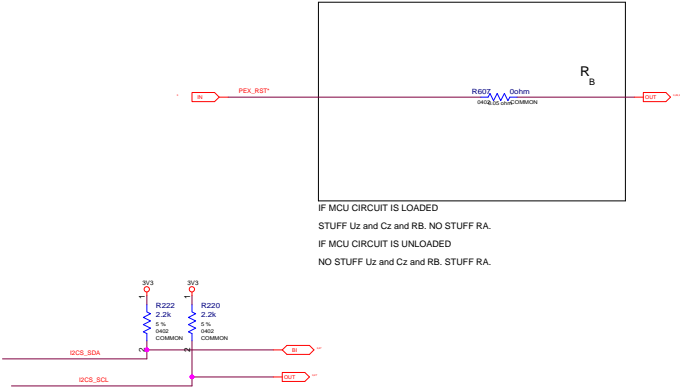
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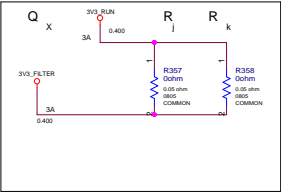
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IF MCU CIRCUIT IS LOADED
STUFF Uz and Cz and RB. NO STUFF RA.
IF MCU CIRCUIT IS UNLOADED
NO STUFF Uz and Cz and RB. STUFF RA.



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