MS-V013 VER 10

NV-AGP NV44A 128MB, BGA 8MX16 DDR,VGA,DVI-I,TV-OUT(HT-10)

P362: NV44A, TSOP MEMORY x16

Page1: P362 Overview
Page2: AGP Interface
Page3: Frame Buffer Interface
Page4: Memory 1st bank 0..31
Page5: Memory 1st bank 32..63
Page6: DAC-A, DB15 Connector
Page7: DAC-B, MUX, DB15
Page8: TMDS Interface
Page9: MIOA, MIOB Interface, LPC-ROM
Page10: STRAPS, Mechanical Parts
Page11: XTAL, GPIO, BIOS, Fan Control, JTAG Headers
Page12: VIDEO CAPTURE: SAA7115
Page13: PowerSupplyI: NVVDD, FBVDDQ
Page14: PowerSupplyII: 5V, DDC5V, F3V3, TMDS_PLLVDD
Page15: VIDEO CONNECTORS: MiniDIN, 2x6 HDR

SKU	VARIANT	NVPN	ASSEMBLY
B	BASE	600-I3ppp-xxxx-vvv	BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL
1	0000	600-10362-0000-000	NV44A, 350/250, 128MB/64-bit, 16Mx16, VGA+DVI-I+HDTV-out
2	0001	600-10362-0001-000	<UNDEFINED>
3	0002	600-10362-0002-000	<UNDEFINED>
4	0003	600-10362-0003-000	NV44A, 350/250, 128MB/64-bit, 16Mx16, VGA+DVI-I+HDTV-out, VIDEO IN
5	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>
6	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>
7	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>
8	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>
9	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>
10	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>
11	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>
12	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>
13	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>
14	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>
15	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>

REV HISTORY

A01

- 1/31/2005:

1.PAGE12:VIDEO CAPTURE: Removed SAA7115 Function
Removed:
U2
C15,16,18,19,20,21,22,686,687,688,689,690,691,692,693,694,695,696,697,698,
699,700,701,702,703,704,705,708,709,710,711,712,713,714,715,716,717,718
R15,R16,R17,R20,R21,R653
LB9,LB10,LB511

2.Removed Page4: Memory 1st bank 0..31:
Removed:
C107

3.Removed Page11: XTAL,GPIO,BIOS,Fan Control:
Removed:
J7

4.Changed Page6: DAC-A, DB15 Connector: DACA Sling-type CRT
Removed:
J4
Add:
J3001,J503

5.Changed Page7: DAC-B, MUX, DB15:DACB DVI-I
Removed:
J1

6.Added Page8: TMDS Interface: EMI suggestion
Added:
R838~R845,R861~R864,L810~L813

7.Removed Page15: VIDEO CONNECTORS: MiniDIN, 2x6 HDR: TV-IN(Pin1,2) Circuit
Removed:
LB3,LB4
C7,C8
R7,R8,R9,R10

8.Changed Footprint Page10: STRAPS, Mechanical Parts
R640,641/ 595,601 / 596,602 / 643,644 / 651,652 / 647,648
/ 649,650 / 645,646 / 598,604 / 597,603 / 631,632 / 606,608

9.Changed Page14: PowerSupplyII: 5V, DDC5V, A3V3, F3V3, TMDS_PLLVDD :
PWM Circuit R,L,C,Mos Cost Down
Removed:
R525
L6,L7,L8
Q3,Q4,Q6
Add:
R999,R1000,R1001,R1002
C200,C201,C202,C203,C204,C205,C206,C207
C1501,C1502
Q10,Q11,Q12
L805,L602

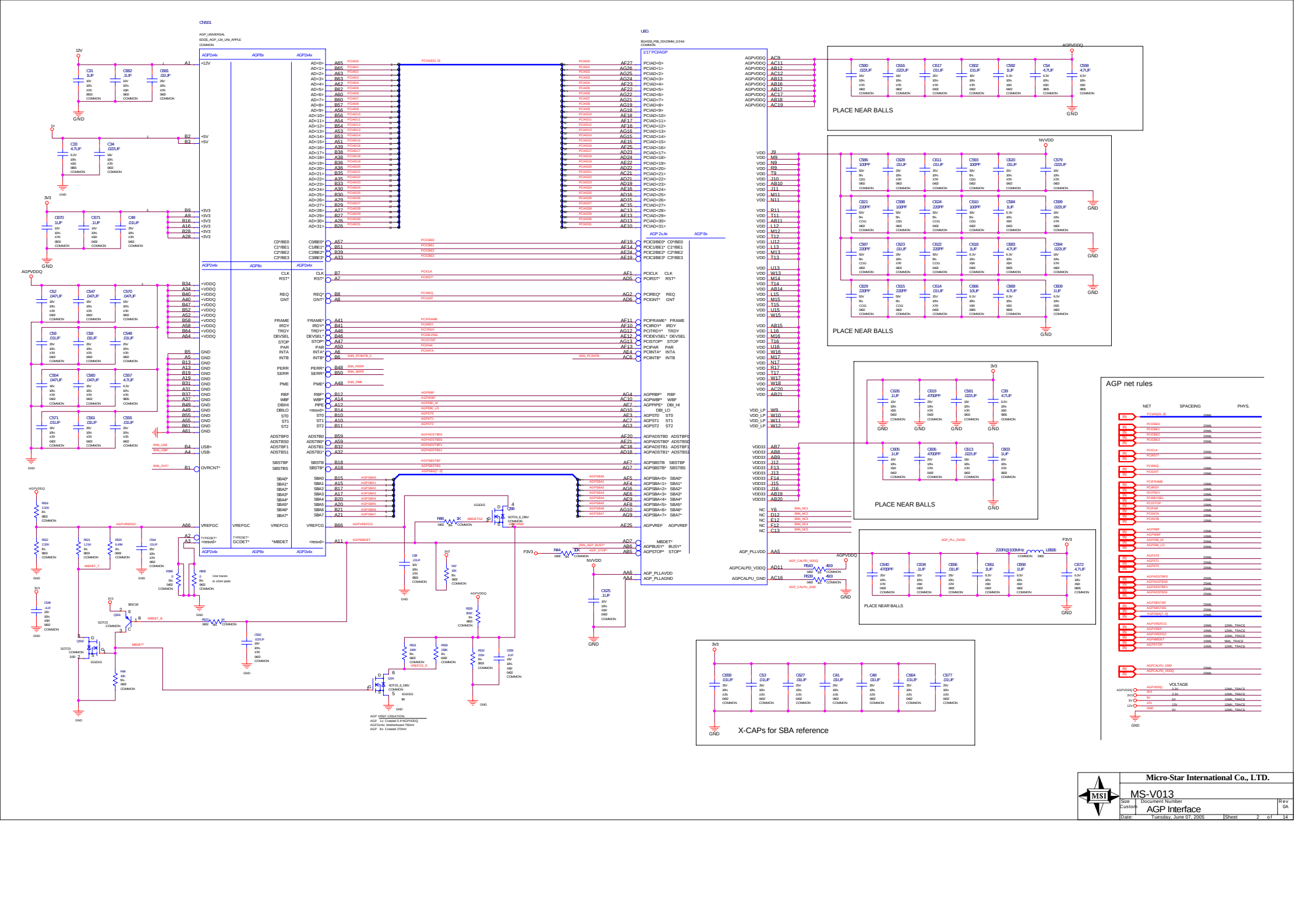
- 6/7/2005:

Turn 10 PCB

1.Cost Down AVL(-):
L810,L811,L812,L813
J3000
C516,C522,C551,C552,R509,R524
D10

2.Cost Down AVL(+):
J6,
R23,R838,R839,R840,R841,R842,R843,R844,R845

3.Cost Down change:
L602,


CN501
AGP_UNIVERSAL
EDGE_AGP_1X_1X_APPLE
COMMON
U6G
BGA533_FSB_23X23MM_G3-64
COMMON
1/17 PCI/AGP
AGP 2x,4x
AGP 8x
PLACE NEAR BALLS
NVVDD
AGPVDDQ
3V3
F3V3
X-CAPs for SBA reference
AGP net rules
NET
SPACEING
PHYS.
VOLTAGE
AGP_VREF CREATION:
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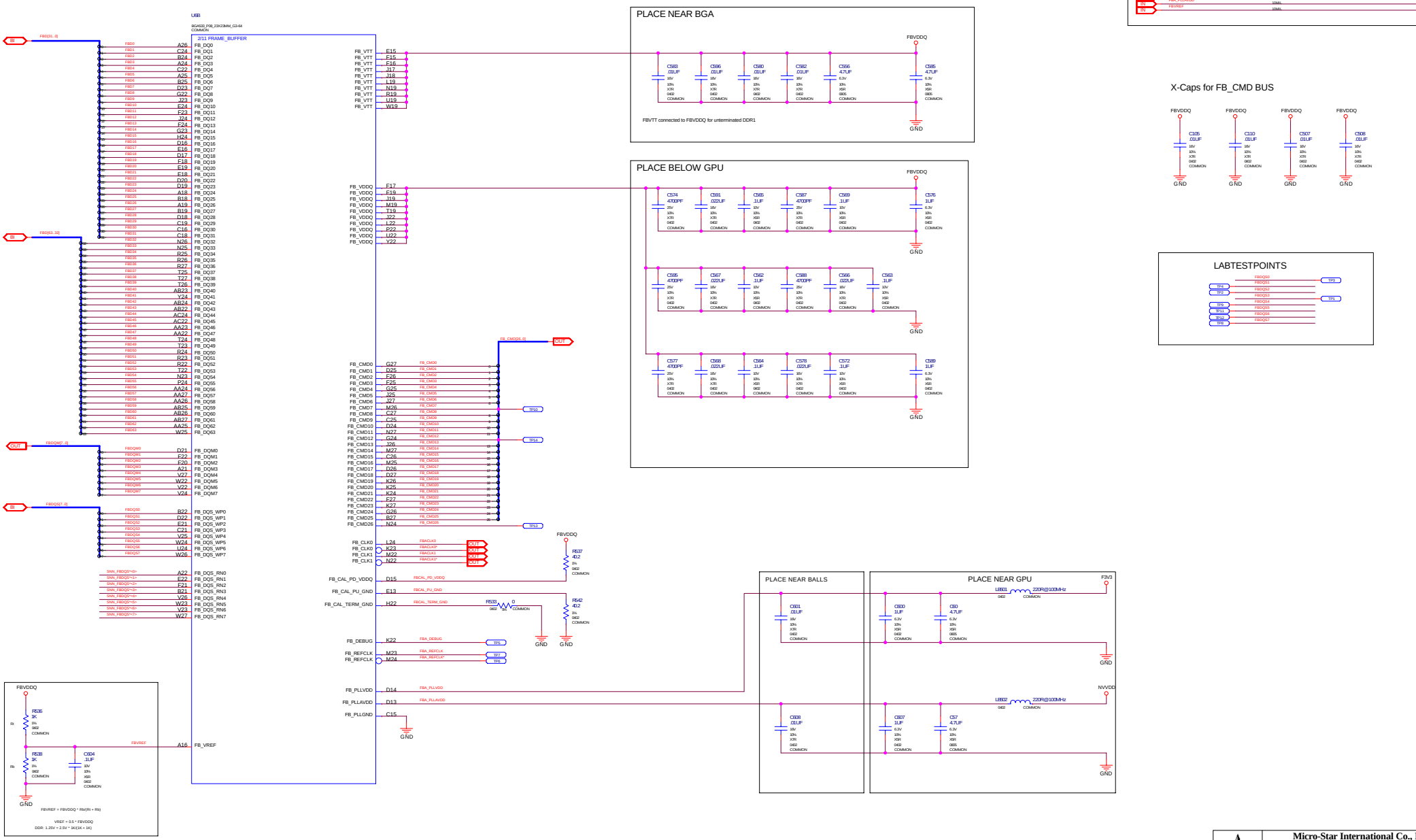
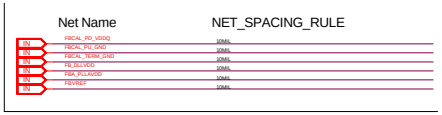
GPU: FB-Interface



Net Name / NET_SPACING_RULE



X-Caps for FB_CMD BUS

LABTESTPOINTS

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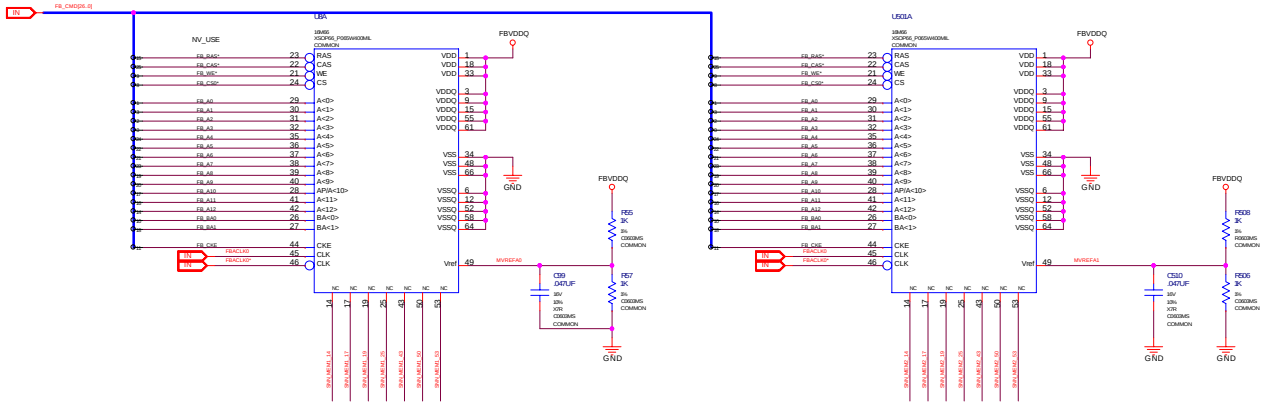
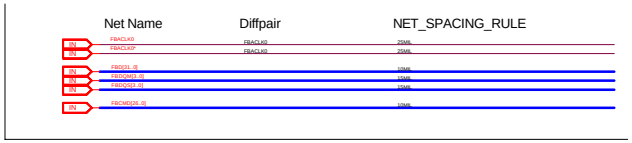
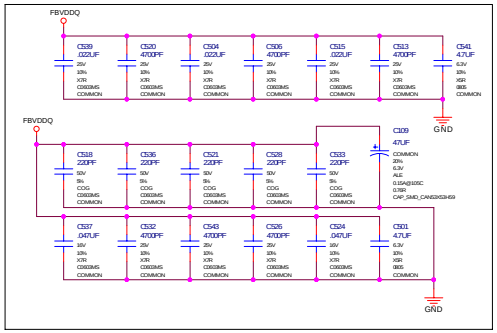
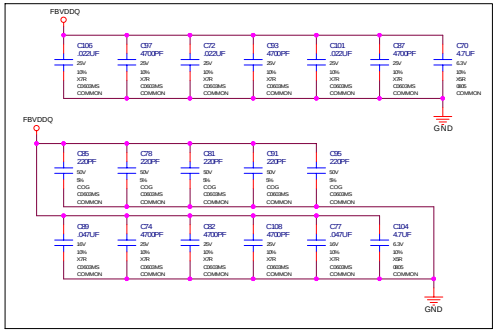
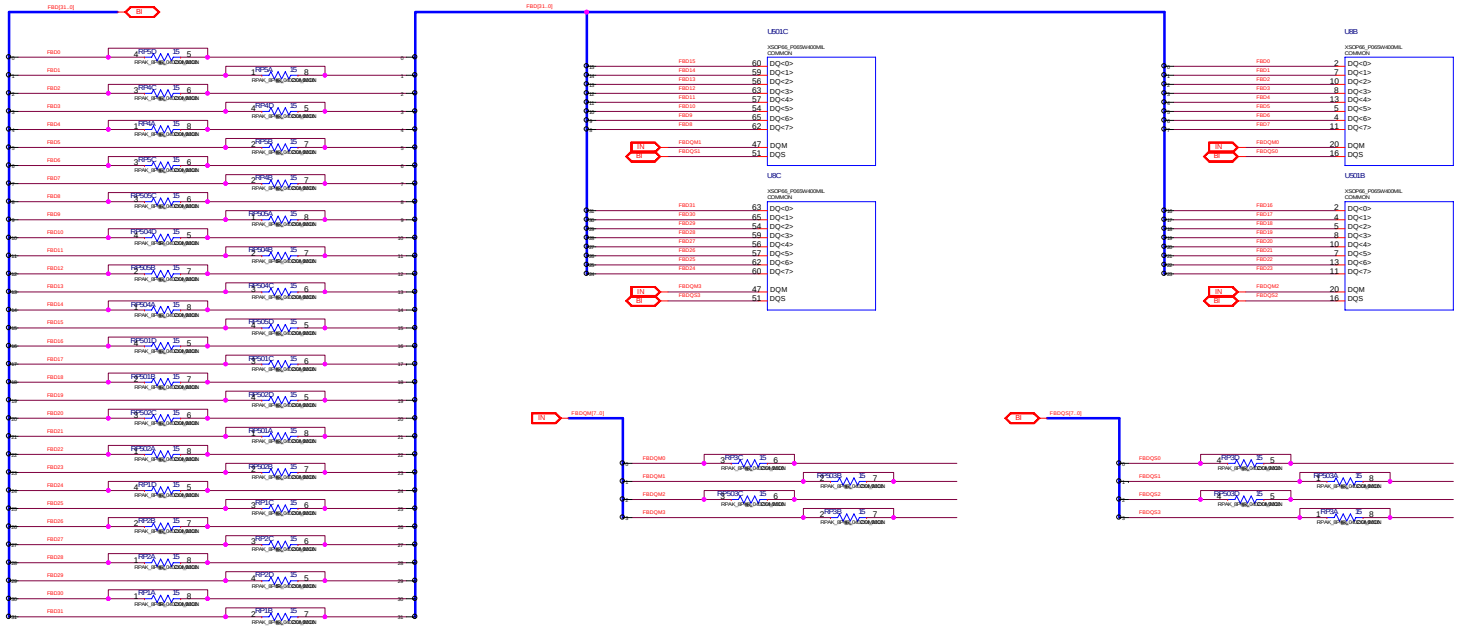
Memory Bit 0..31

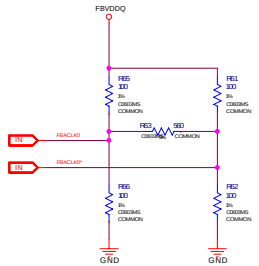












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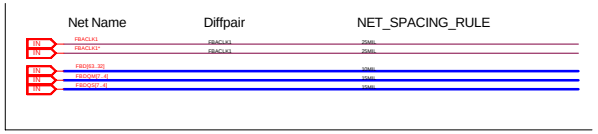
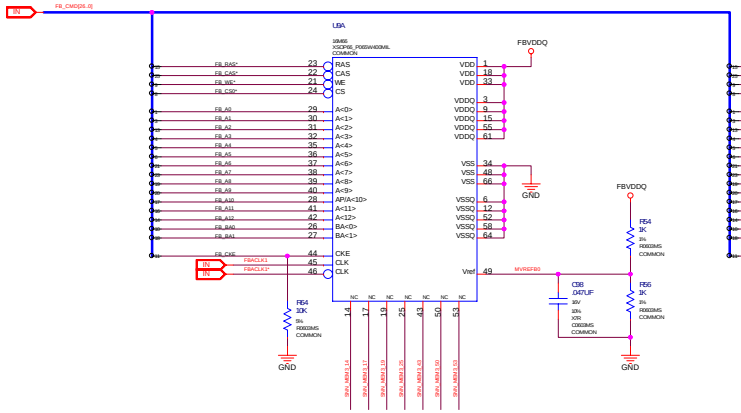
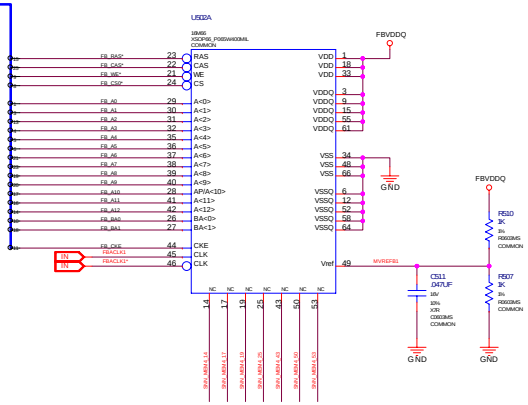
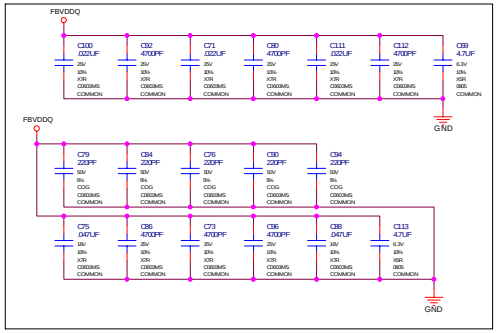
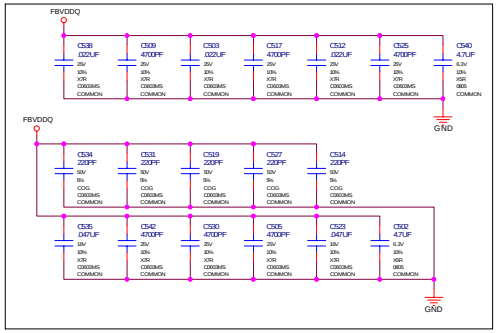
Memory Bit 32..63

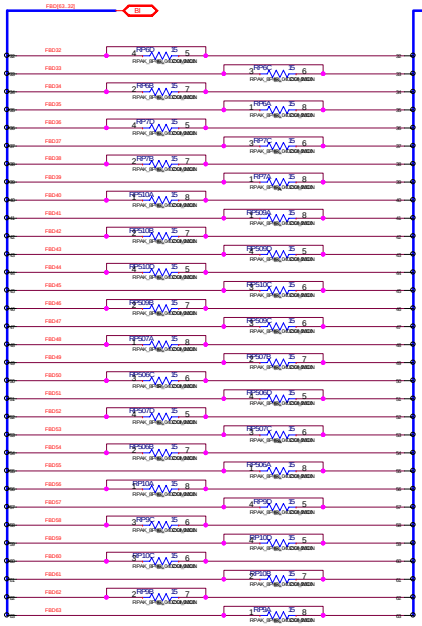


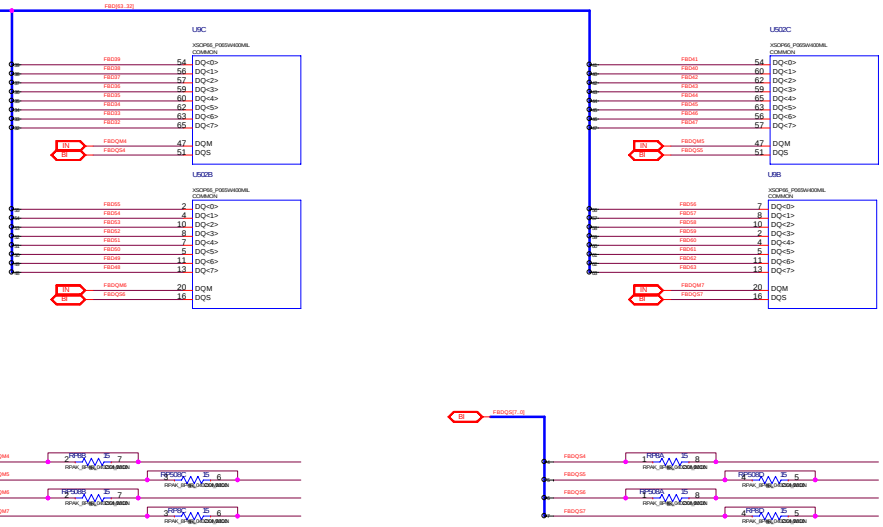


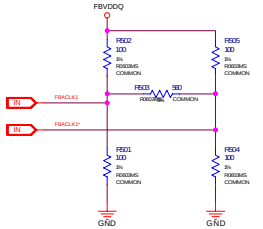












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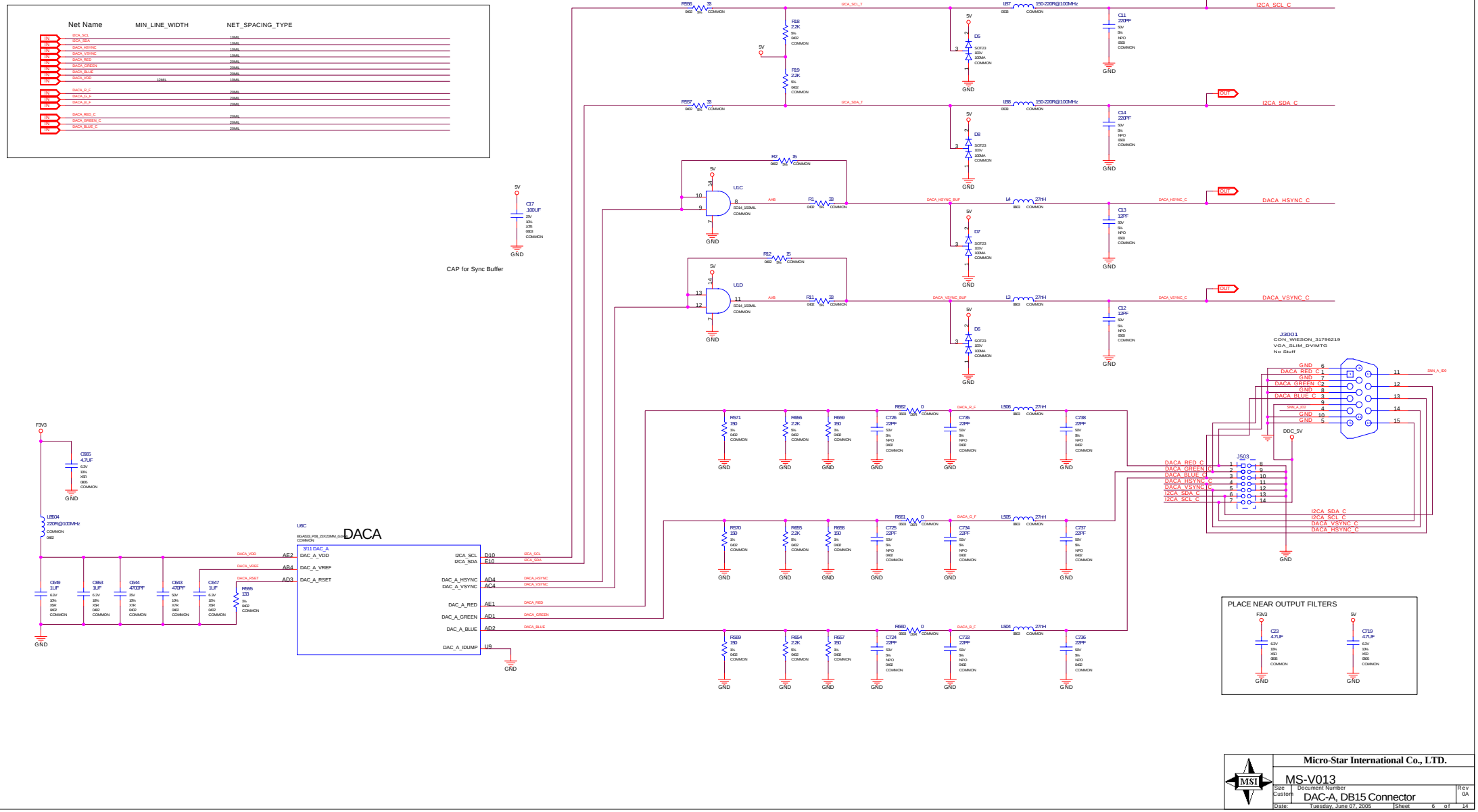
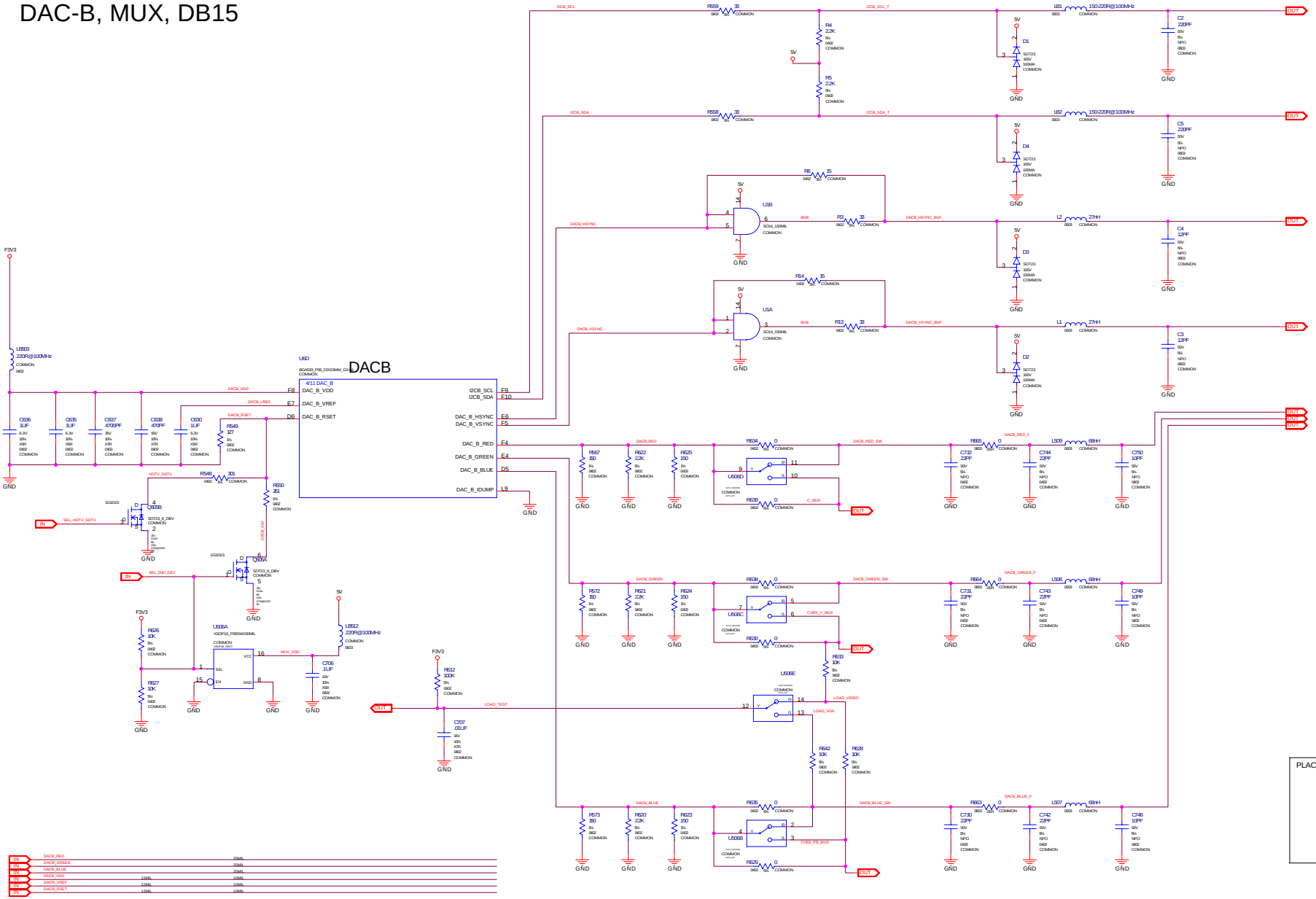
DAC-A, DB15 Connector



DAC-B, MUX, DB15



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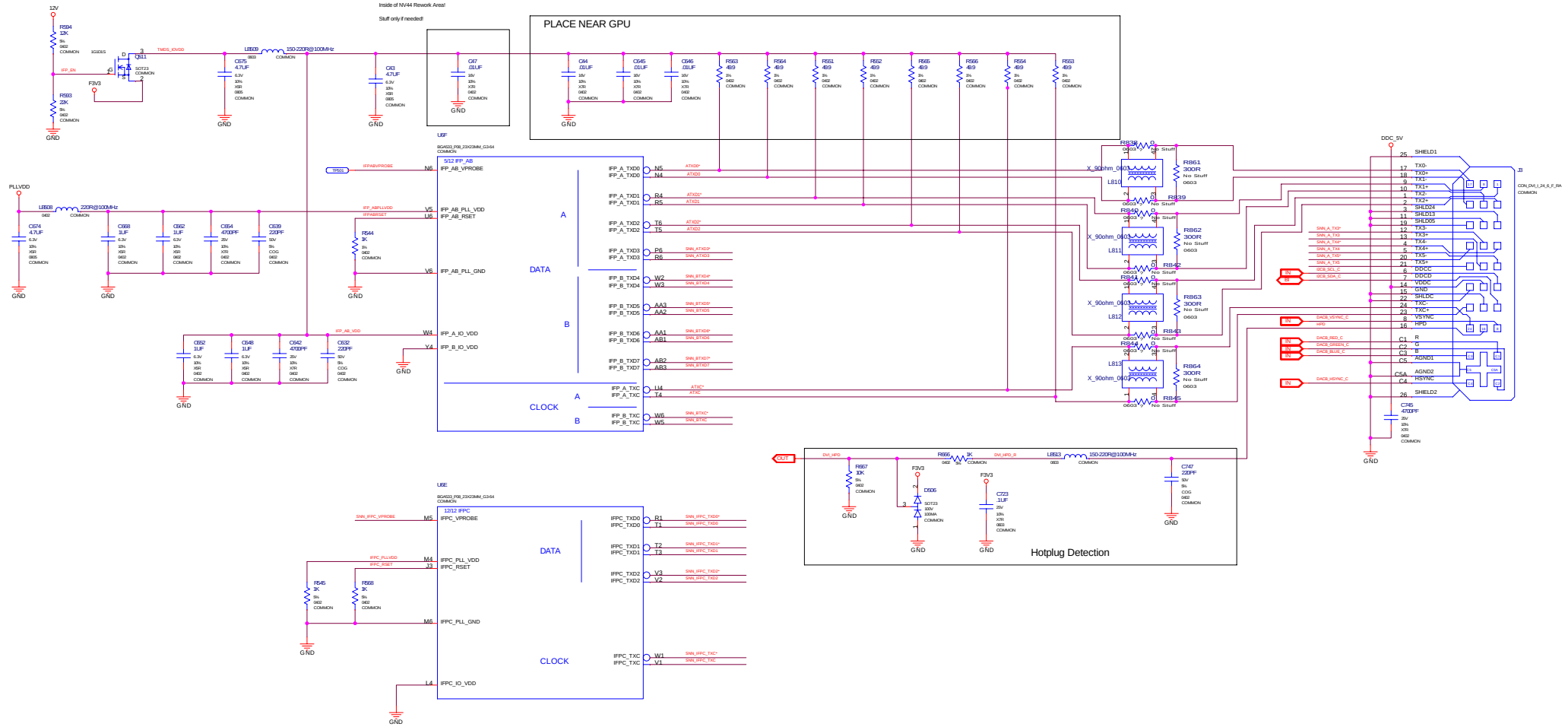
Internal TMDS, DVI-Connector

Net Name	Diffpair	NET_SPACING_RULE	Voltage
IFP_ABPLLVDD			3.3V
IFP_AB_VDD			3.3V
ATIXC	ATIXC	20MIL_G2G_30MIL	
ATIXC*	ATIXC*	20MIL_G2G_30MIL	
ATIXD0	ATIXD0	20MIL_G2G_30MIL	
ATIXD0*	ATIXD0*	20MIL_G2G_30MIL	
ATIXD1	ATIXD1	20MIL_G2G_30MIL	
ATIXD1*	ATIXD1*	20MIL_G2G_30MIL	
ATIXD2	ATIXD2	20MIL_G2G_30MIL	
ATIXD2*	ATIXD2*	20MIL_G2G_30MIL	



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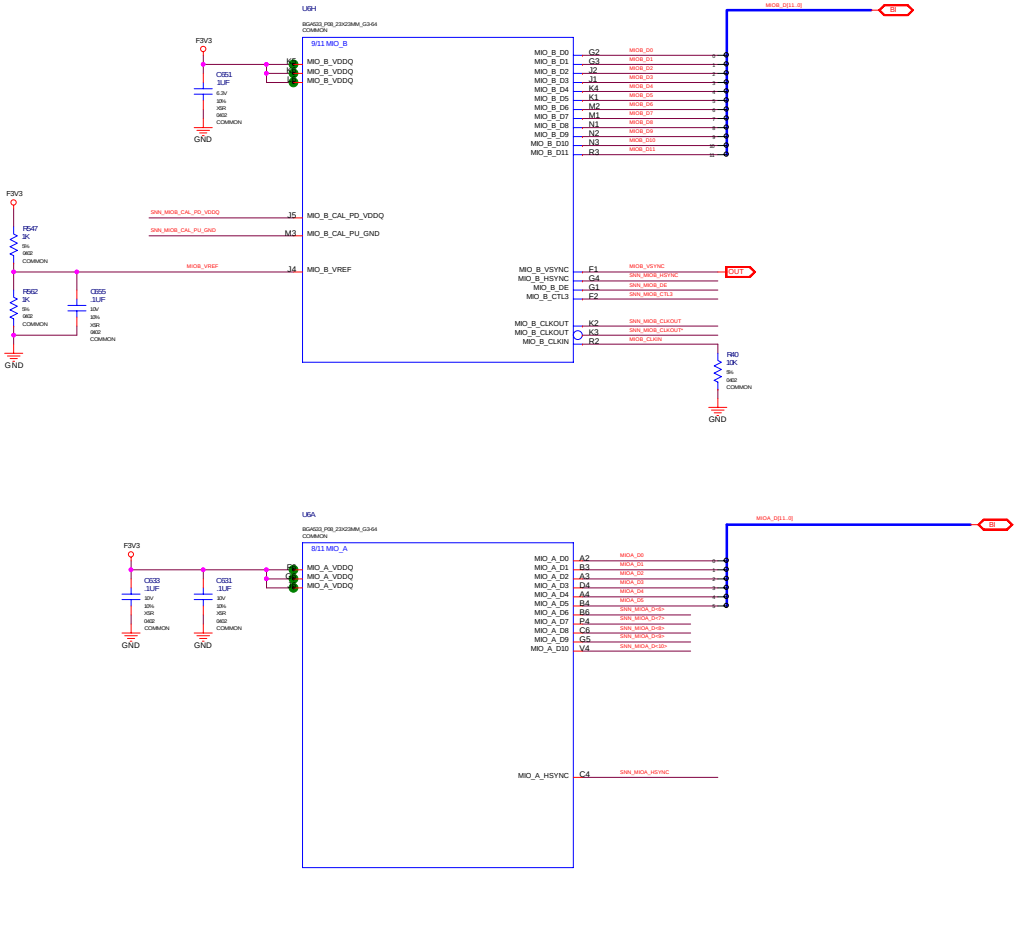
MIOA, MIOB Interface, LPC-ROM



MSI	Micro-Star International Co., LTD.		
	MS-V013		
Size: Custom	Document Number: MIOA, MIOB Interface,LPC-ROM		Rev: 0A
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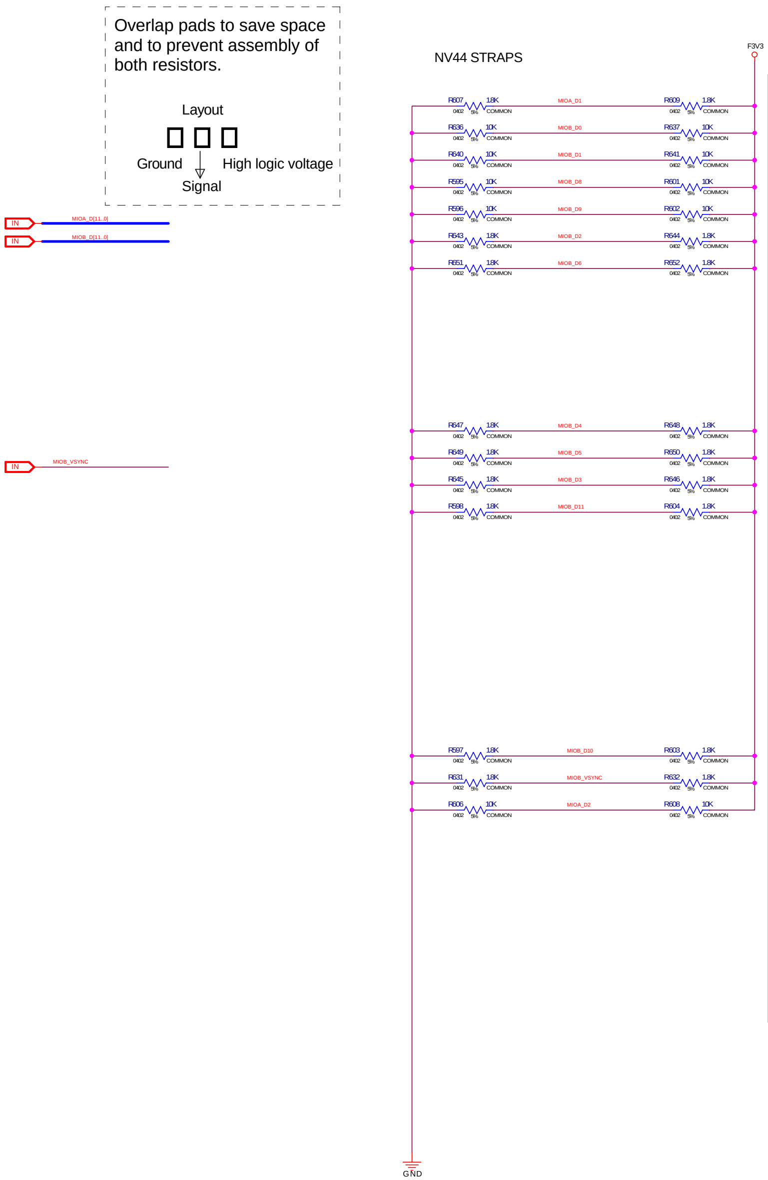
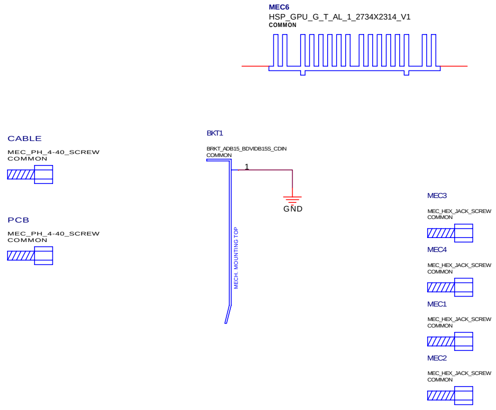
STRAPS, Mechanical Parts

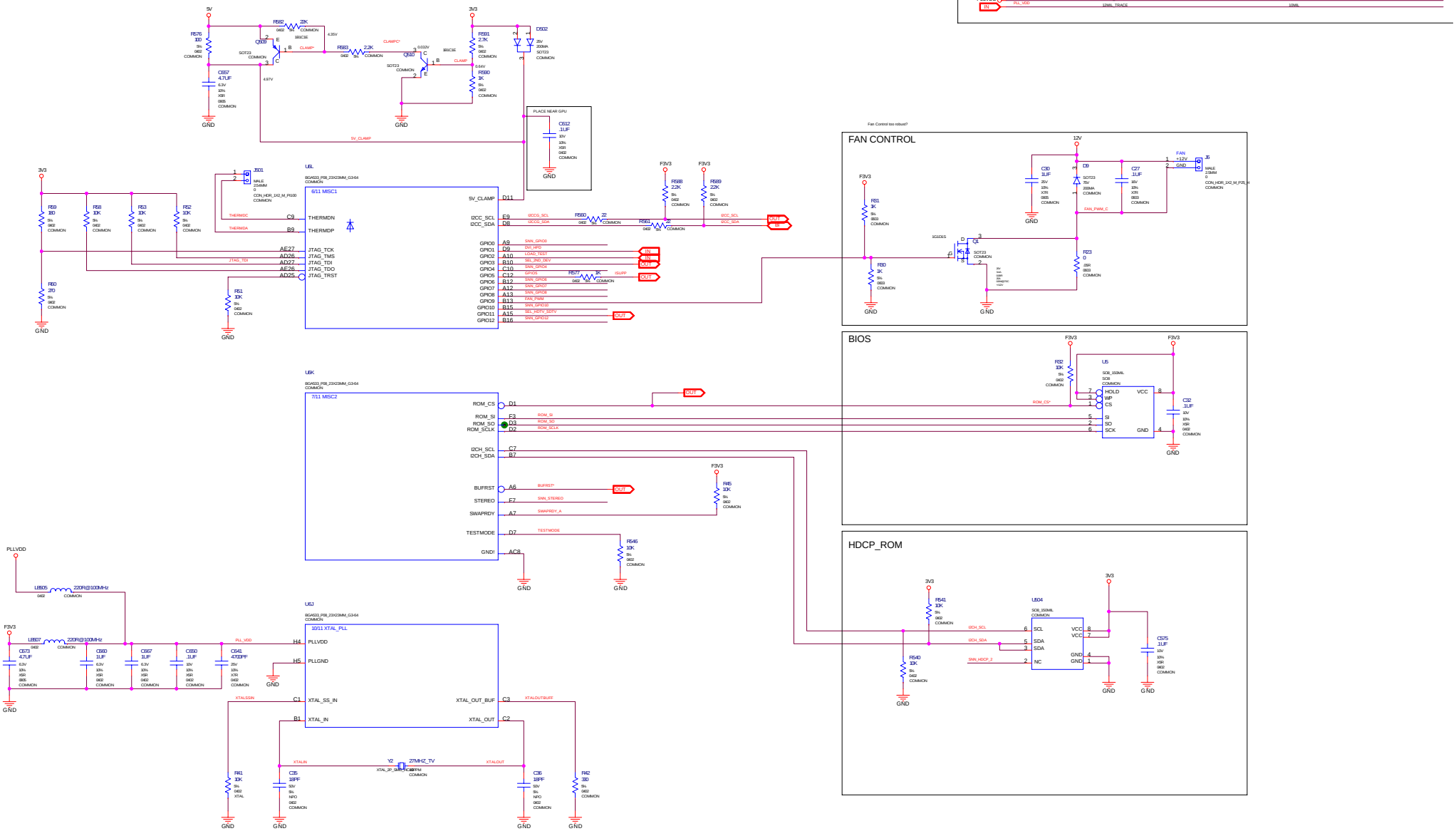


Bit	Signal	Values
00:	PCI_AD_SWAP	0 REVERSED 1 NORMAL
01:	SUB_VENDOR	0 NO_BIOS 1 READ FROM BIOS
02:	RAM_CFG_0	See http://syseng/Perforce/Projects/... .../MemQual/Strap_Tables/ for details!
03:	RAM_CFG_1	
04:	RAM_CFG_2	
05:	RAM_CFG_3	
06:	CRYSTAL_0	00 13.500 MHz 01 14.31818 MHz 10 27.000 MHz
22:	CRYSTAL_1	11 UNKNOWN
07:	TV_MODE_0	00 SECAM 01 NTSC 10 PAL
08:	TV_MODE_1	11 CRT
09:	AGP_30_8x	0 AGP8x ENABLED 1 AGP8x DISABLED
10:	AGP_SBA	0 SBA ENABLED 0 SBA DISABLED
11:	AGP_FASTWR	0 FW ENABLED 0 FW DISABLED
12:	PCI_DEVID_0	0000 default by silicon straps
13:	PCI_DEVID_1	
20:	PCI_DEVID_2	
21:	PCI_DEVID_3	
14:	BUS_TYPE	0 PCI 1 AGP
15:	FP_IFACE	0 24Bit 1 12Bit (DEFAULT)
23:	FB_0	00 64M 01 128M 10 256M (DEFAULT)
24:	FB_1	11 512M
25:	BR	0 BRIDGE DISABLED 1 BRIDGE ENABLED
26:	BR_128M	BR BITS IGNORED IF BRIDGE IS DISABLED
27:	BR_AGP	
28:	BR_IO	
29:	ROM_TYPE_0	00 PARALLEL 01 SERIAL_AT25F 10 SERIAL_SST45VF
30:	ROM_TYPE_1	11 LPC
16:	USER_0	0000 (DEFAULT)
17:	USER_1	
18:	USER_2	
19:	USER_3	
	PEX_PLL_EN_TERM100	
	3GIO_PADCFG_LUT_ADDR[0]	
	3GIO_PADCFG_LUT_ADDR[1]	



XTAL, GPIO, BIOS, Fan Control, JTAG Headers

Net Name	NET_PHYSICAL_TYPE	NET_SPACING_RULE
XTALIN	5MIL_TRACE	20MIL
XTALOUT	5MIL_TRACE	20MIL
PLLVDD	12MIL_TRACE	10MIL
PLL_VDD	12MIL_TRACE	10MIL



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Custom	XTAL,GPIO,BIOS,Fan Control	0A
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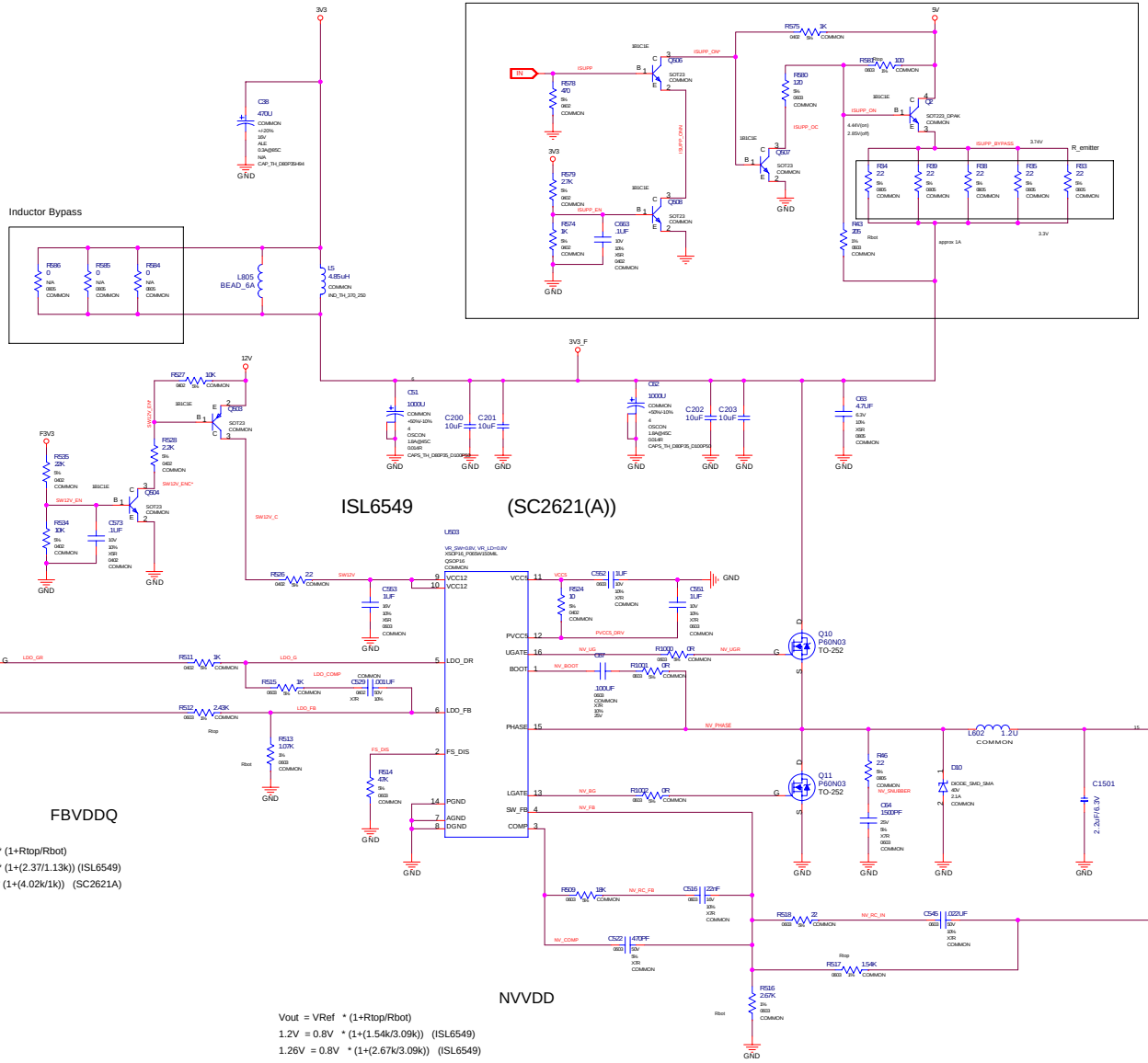
PowerSupplyI:
NVVDD, FBVDDQ

I_bypass = (1.7V * Rbot/(Rtop+Rbot)-0.7V)/ R_emitter

1A = (1.7V * 205/(100+205)-0.7V)/ 0.44 ohm

Stuff bypass if NVVDD current exceeds 10A!



FBVDDQ

Vout = VRef * (1+Rtop/Rbot)

2.5V = 0.8V * (1+(2.37/1.13k)) (ISL6549)

2.5V = 0.5V * (1+(4.02k/1k)) (SC2621A)

NVVDD

Vout = VRef * (1+Rtop/Rbot)

1.2V = 0.8V * (1+(1.54k/3.09k)) (ISL6549)

1.26V = 0.8V * (1+(2.67k/3.09k)) (ISL6549)

1.2V = 0.5V * (1+(1.43k/1.02k)) (SC2621A)

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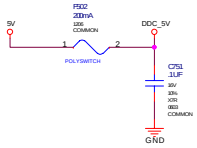
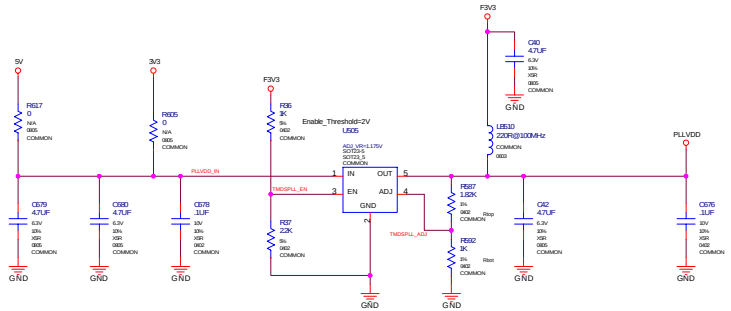
PowerSupplyII: DDC5V, F3V3, TMDS_PLLVDD

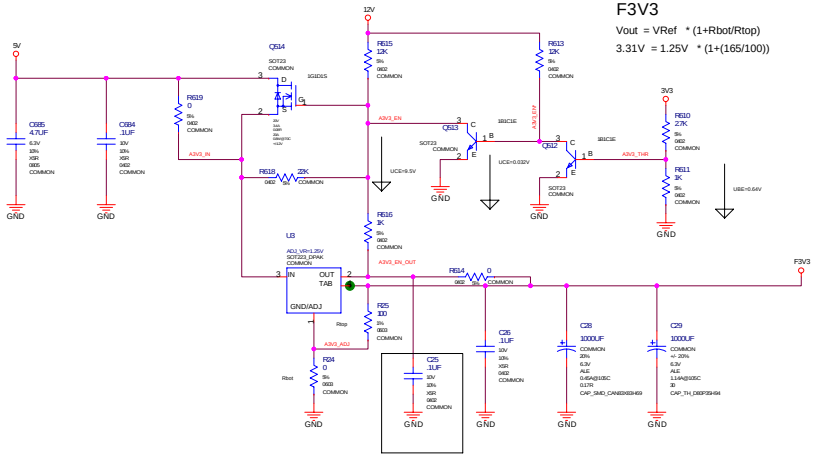




TMDS_PLLVDD

Vout = VRef * (1+Rtop/Rbot)

3.31V = 1.175V * (1+(1.82k/1k))



F3V3

Vout = VRef * (1+Rbot/Rtop)

3.31V = 1.25V * (1+(165/100))

Ramp Up CAP for AQT1541

Net Name	NET_PHYSICAL_TYPE	Voltage
5V	12MIL	5V
DDC_5V	12MIL	5V
F3V3	12MIL	3.3V
PLLVDD	12MIL	3.3V
12V_IN	12MIL	12V

Micro-Star International Co., LTD.		
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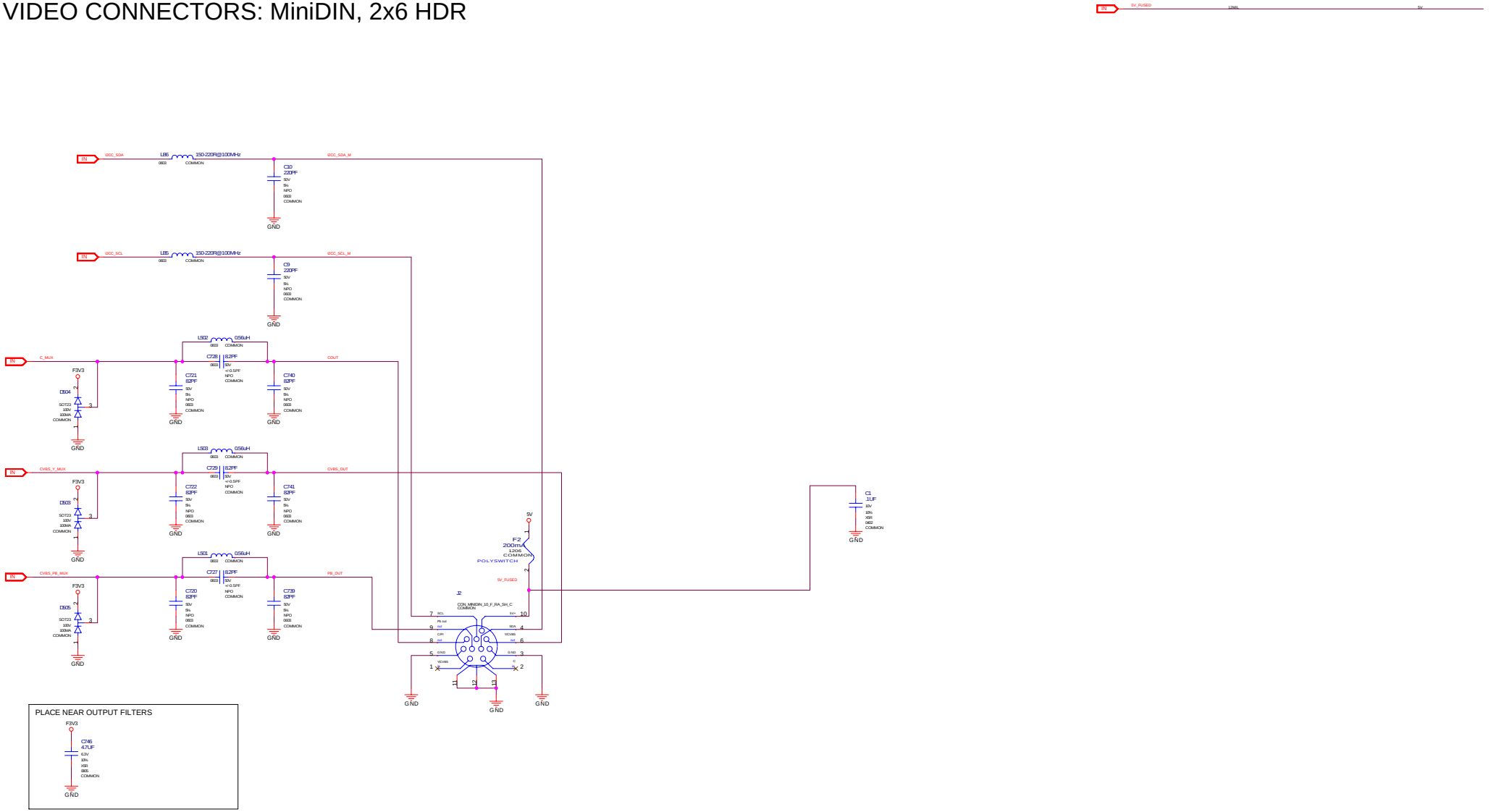
VIDEO CONNECTORS: MiniDIN, 2x6 HDR



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Size: Custom	Document Number: VEDIO CONNECTORS: MiniDIN		Rev: 0A
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