P501-A01 DESIGN -- G73, 256 MB DDR2, VGA, DVI-I, HDTV

V079-0A

BASE ON V067-20 modify

PAGE SUMMARY:

REV HISTORY

Base on P501_A01 modify

1.PAGE:09 Removed D-sub connecter

2.PAGE:10 :Removed D-sub connecter

3.PAGE:11/12 :EMI common choke change to 0ohm R (0402)

4.PAGE:14 :Change TVout connecter to 2x3 pin header

5.PAGE:19 L8 change to footprint CHK_D2_P8_5

SKU	VARIANT	NVPN	ASSEMBLY
8	0000	600-10501-0000-100	G73 400/350MHz 256MB 128bit DDR2 16MX16 DVI-I+VGA+HDTVOUT
1	0001	600-10501-0001-100	G73-V 375/350MHZ 256MB 128bit DDR2 16MX16 DVI-I+VGA+HDTVOUT
2	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>
3	<UNDEFINED>	<UNDEFINED>	<UNDEFINED>
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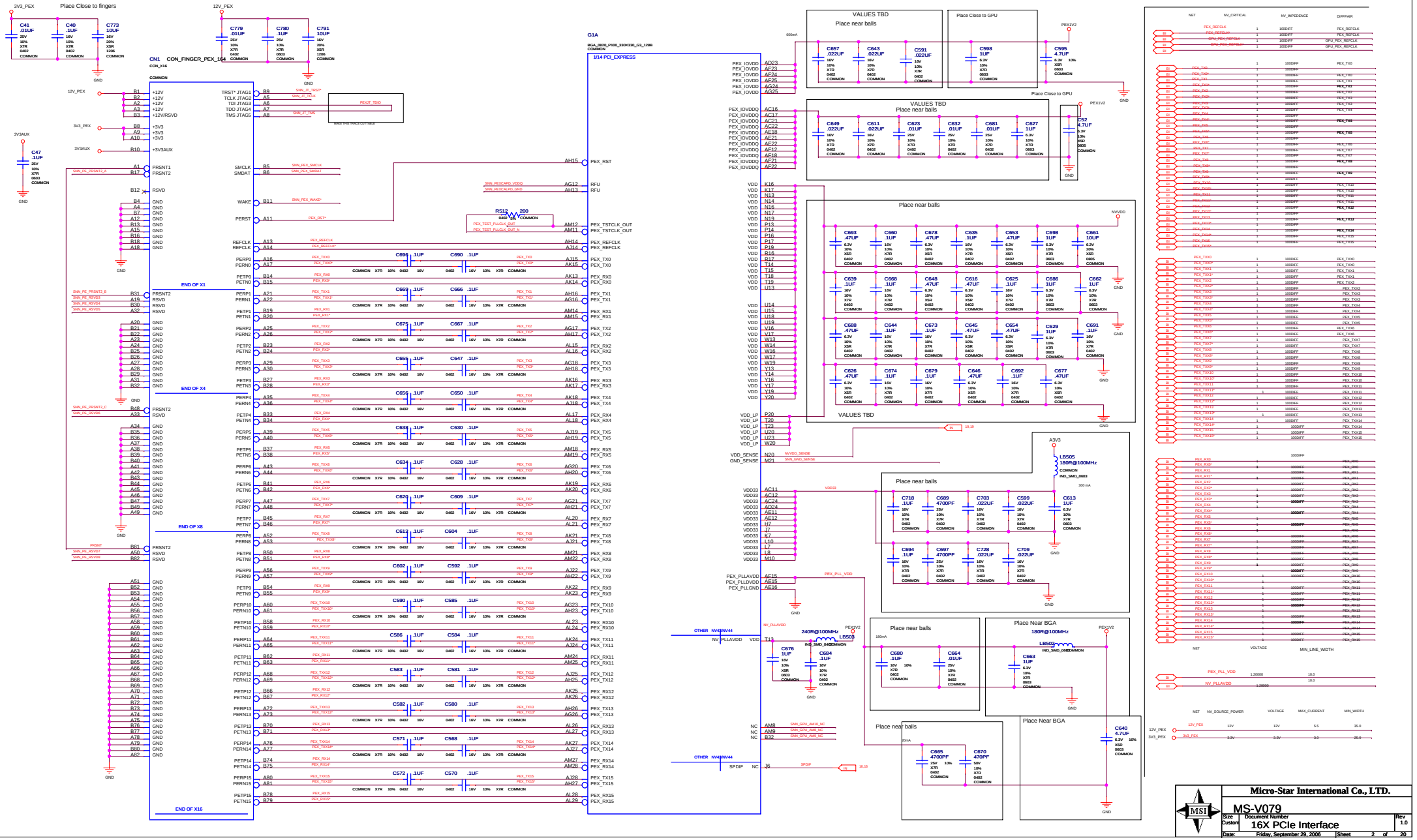
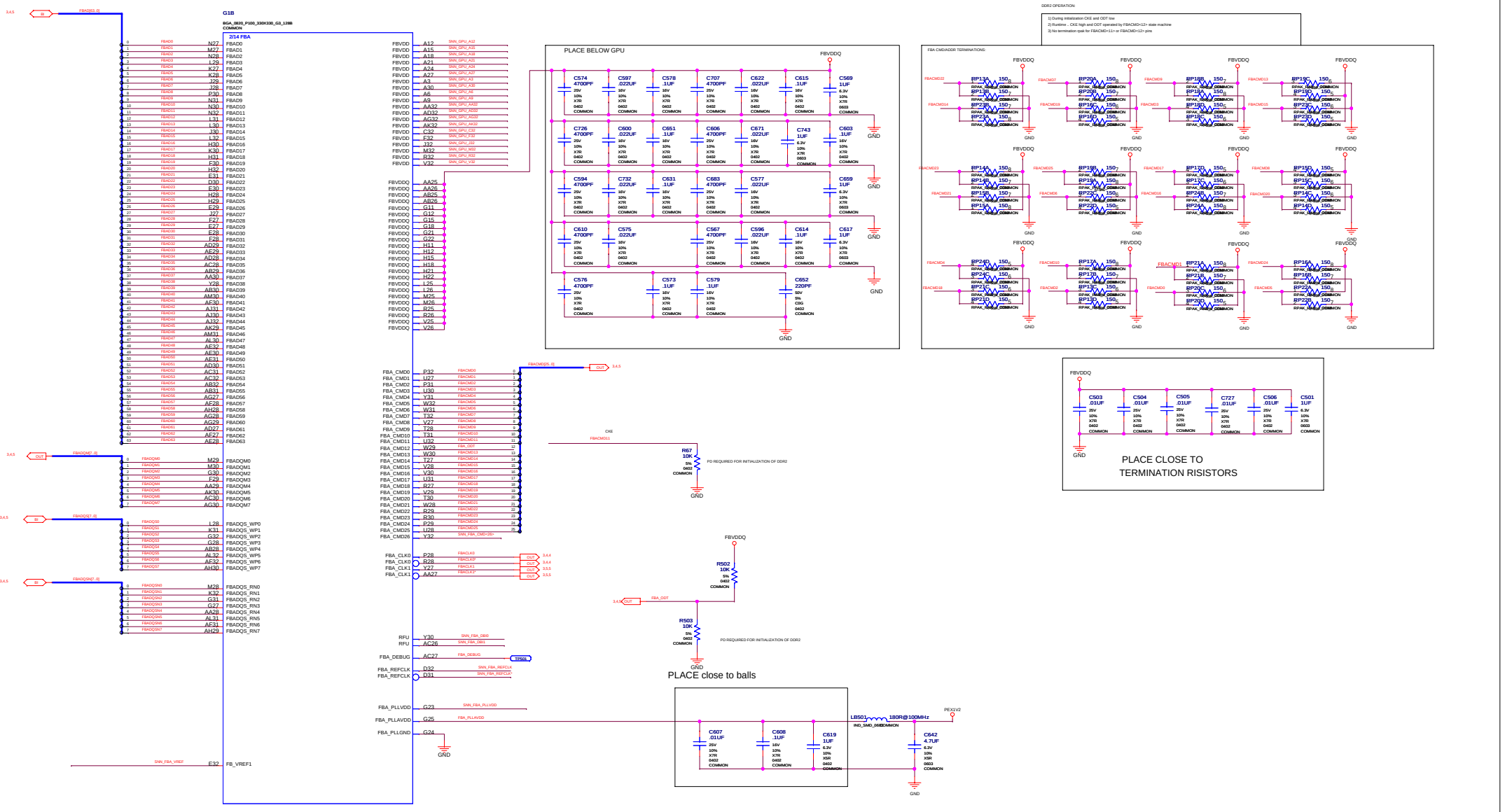
16X PCIe Interface



GPU: FB-Interface A



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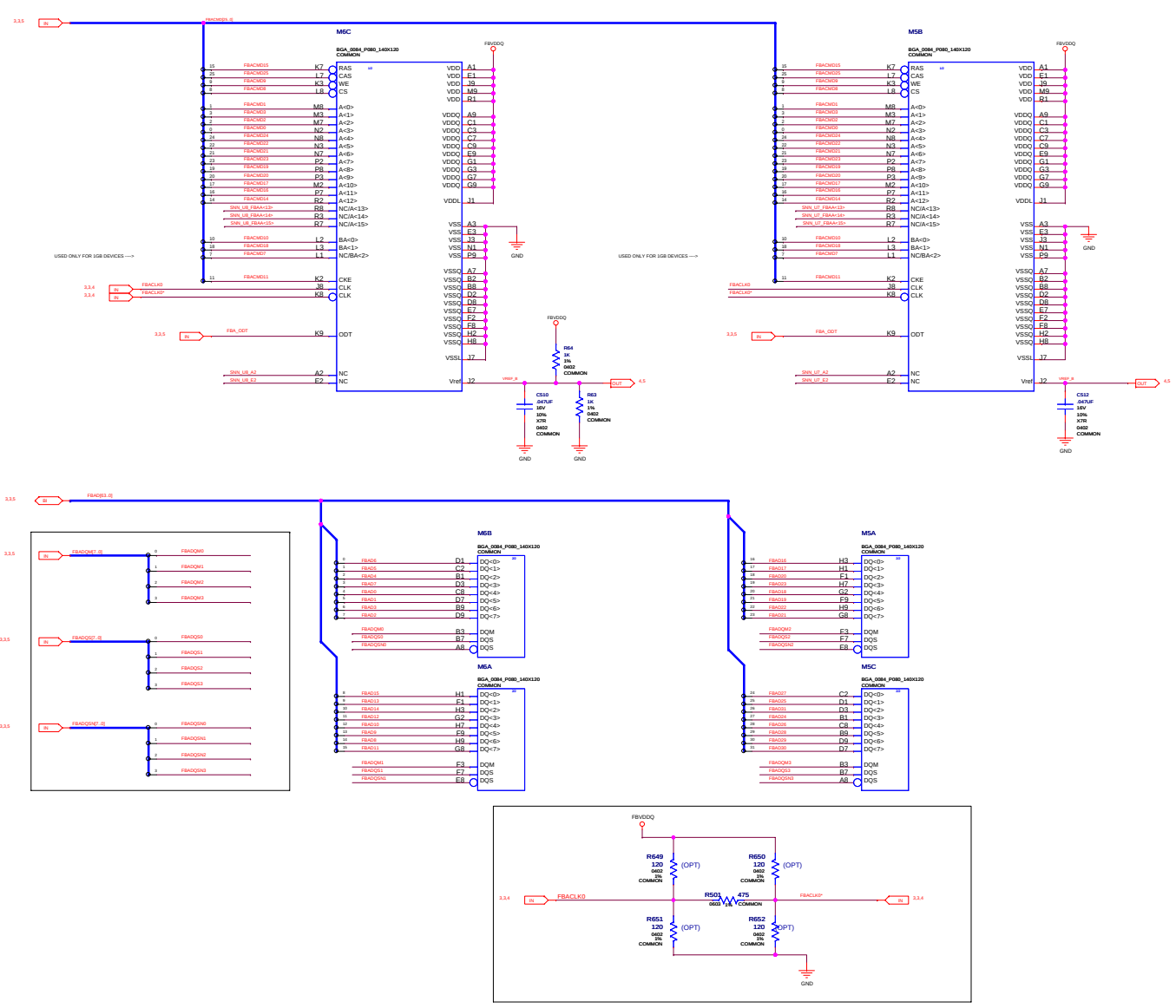
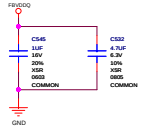
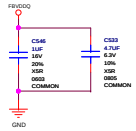
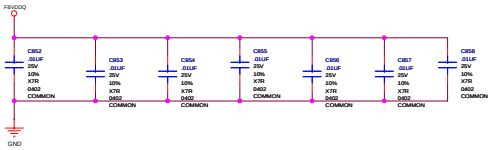
FBA MEMORY 1st bank 0..31

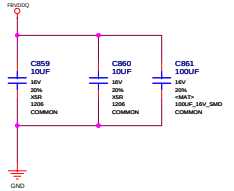
PLACE ALL DISCRETE COMPONENTS AS NEAR AS POSSIBLE TO MEMORY











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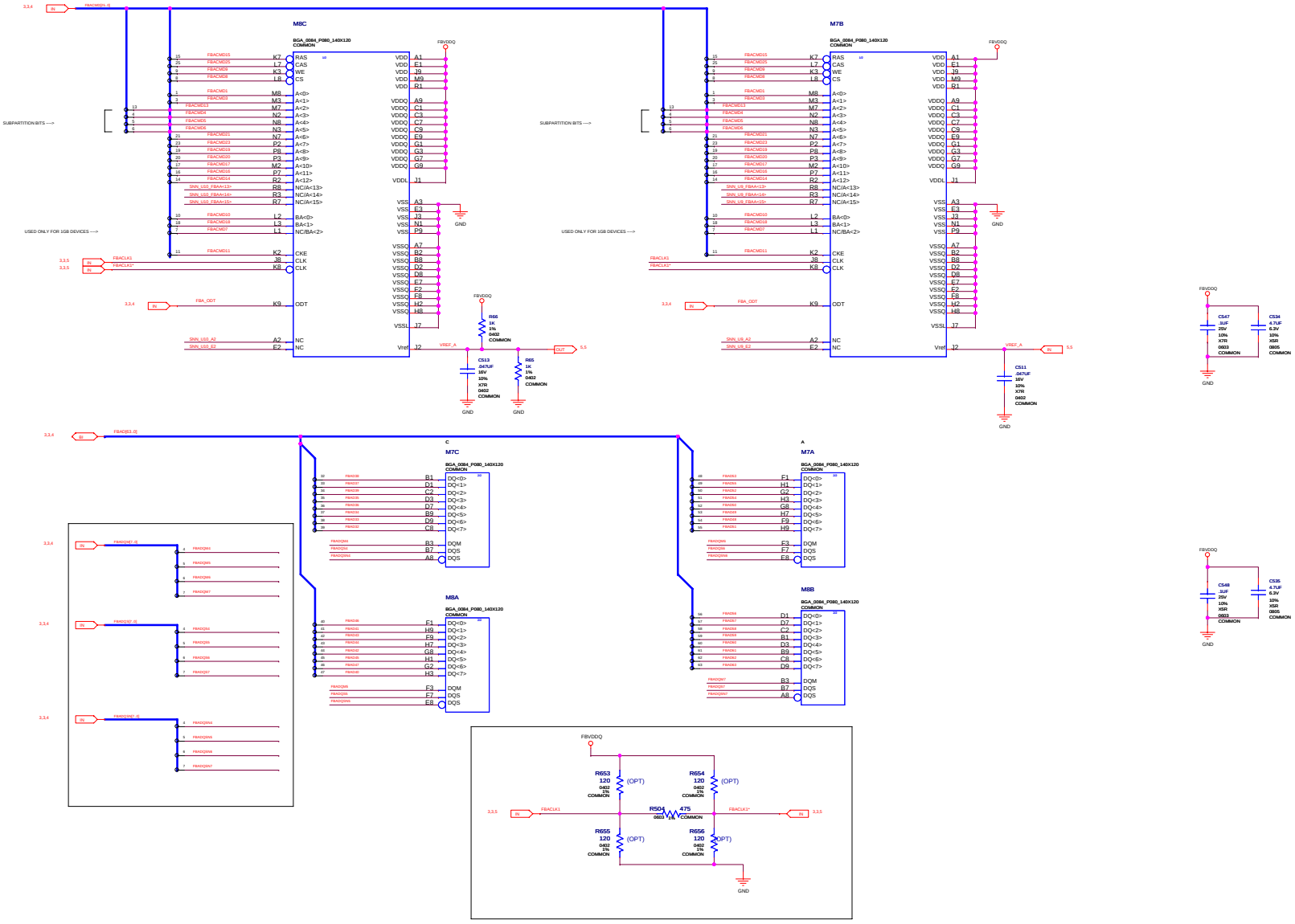
FBA MEMORY 1st bank 32..63

PLACE ALL DISCRETE COMPONENTS AS NEAR AS POSSIBLE TO MEMORY



MSI	Micro-Star International Co., LTD.		
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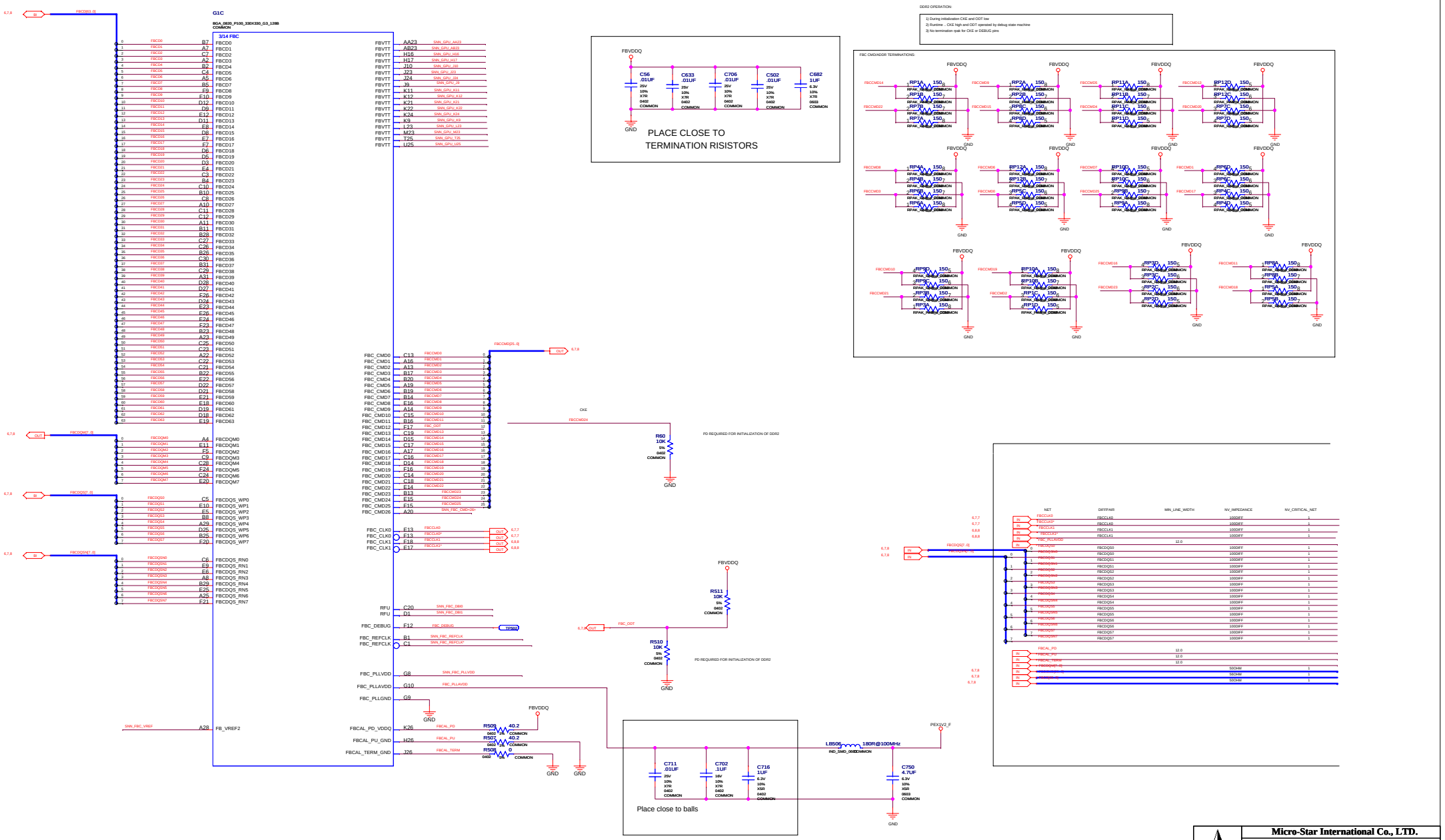
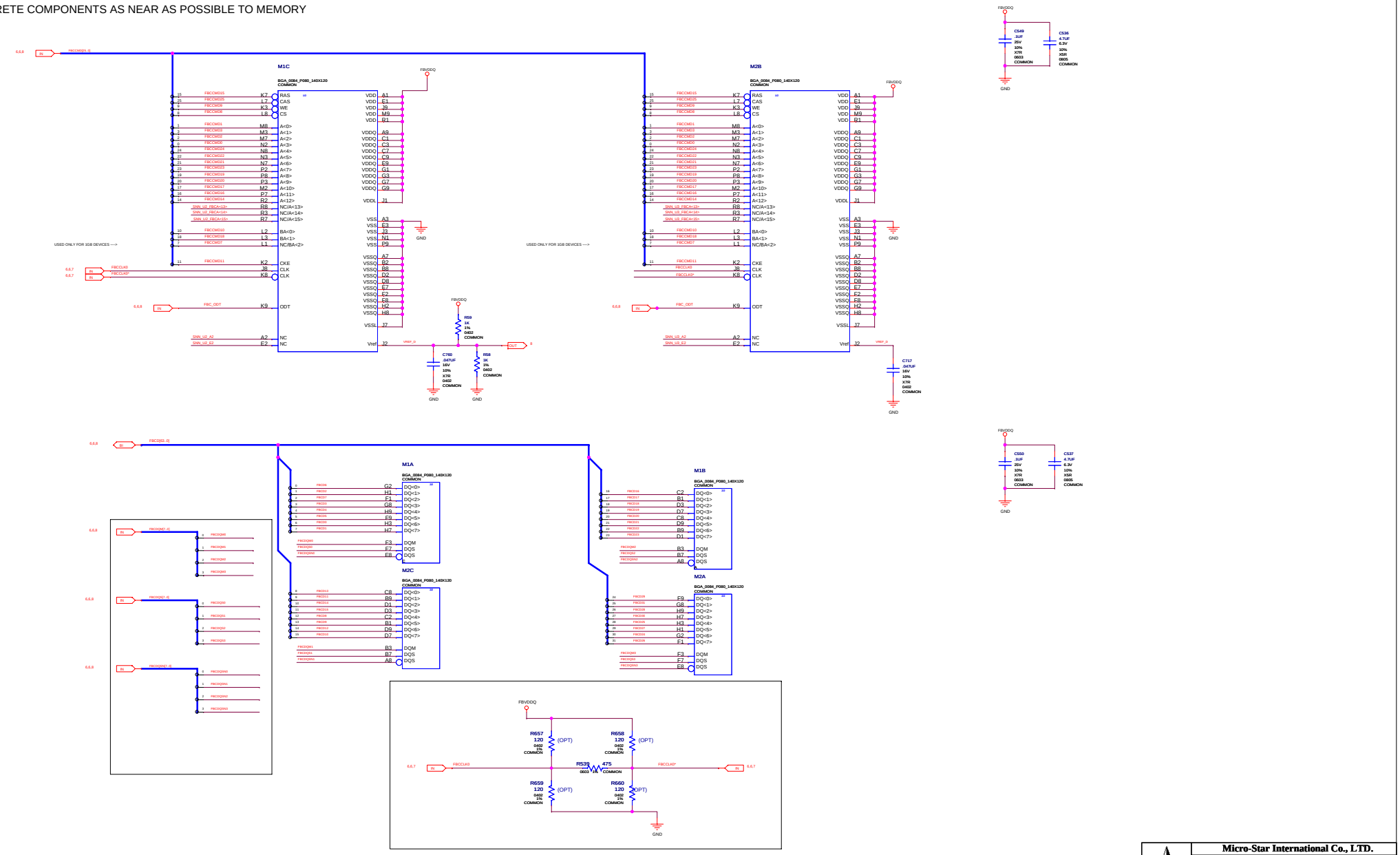
GPU: FB-Interface C



FBC MEMORY 2nd bank 0..31

PLACE ALL DISCRETE COMPONENTS AS NEAR AS POSSIBLE TO MEMORY



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MS-V079			
Size: Custom	Document Number: FBC MEMORY 2nd bank 0..31		Rev: 1.0
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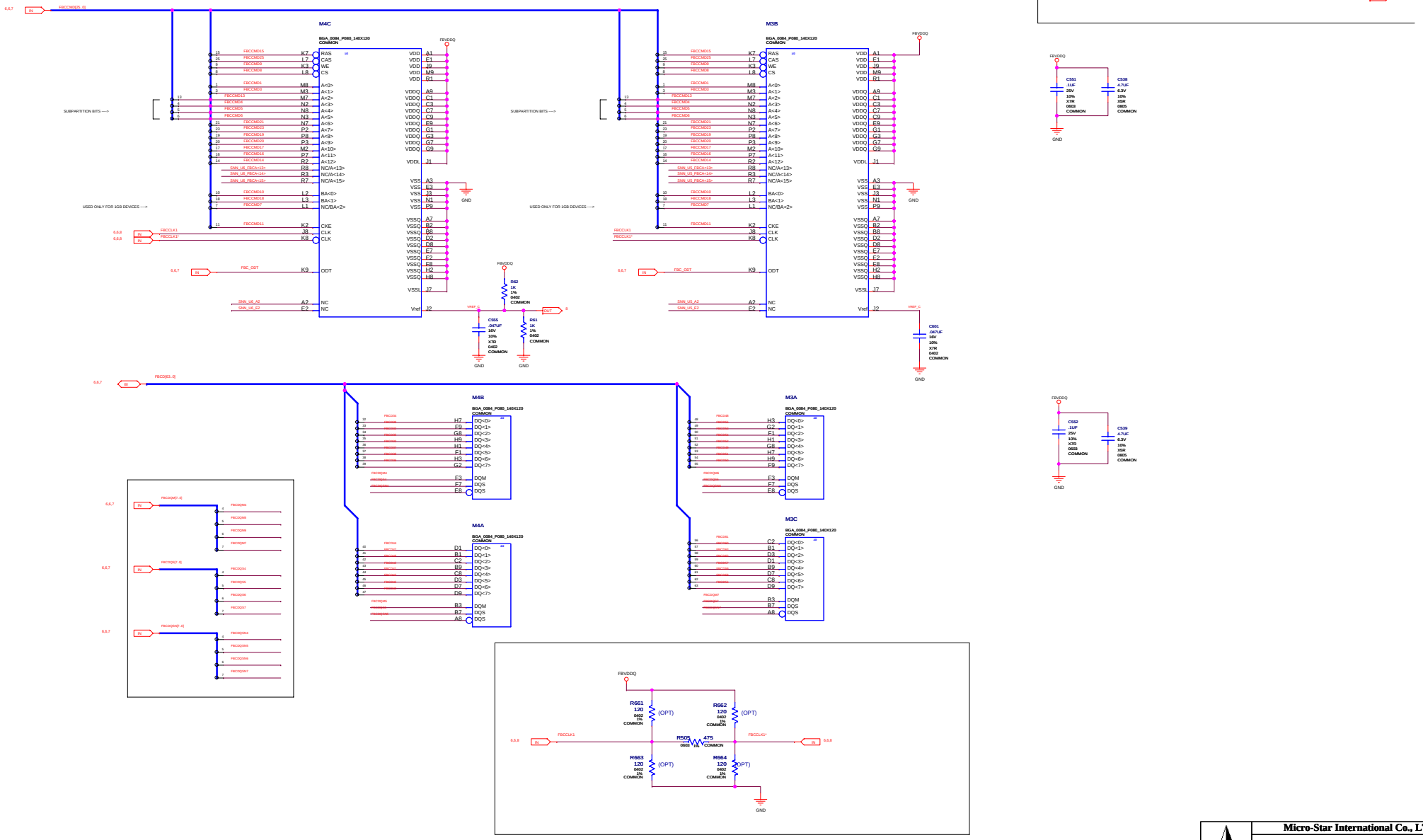
FBC MEMORY 2nd bank 32..63

PLACE ALL DISCRETE COMPONENTS AS NEAR AS POSSIBLE TO MEMORY



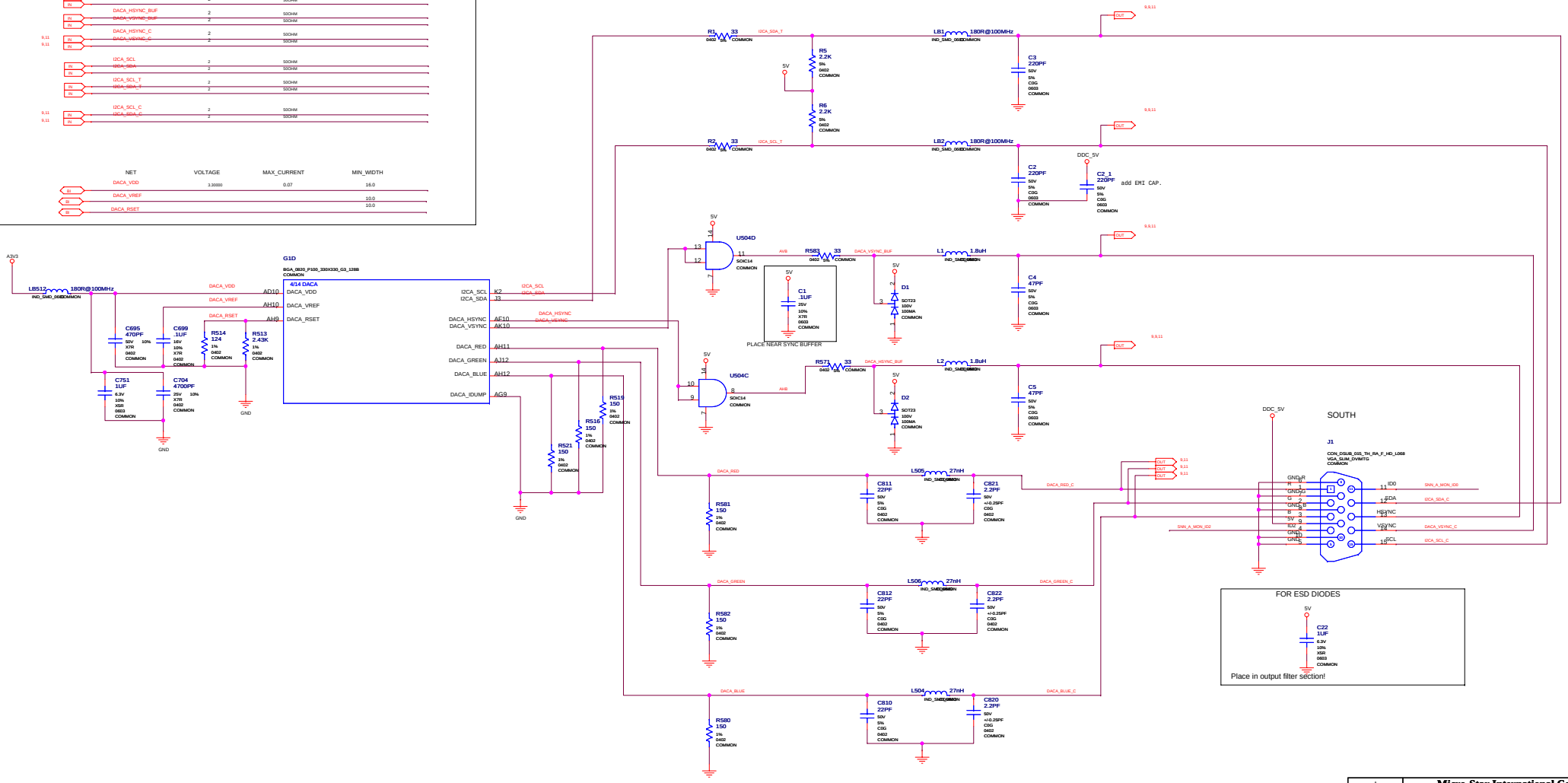
Primary Display (DACA), Slim DB15

DACA NET RULES

NET	NV_CRITICAL	NV_IMPEDANCE	DIFFPAIR
DACA_RED	1	56OHM	
DACA_GREEN	1	56OHM	
DACA_BLUE	1	56OHM	
DACA_RED_C	1	56OHM	
DACA_GREEN_C	1	56OHM	
DACA_BLUE_C	1	56OHM	
DACA_HSYNC	2	50OHM	
DACA_VSYNC	2	50OHM	
AVB	2	50OHM	
AHB	2	50OHM	
DACA_HSYNC_BUF	2	50OHM	
DACA_VSYNC_BUF	2	50OHM	
DACA_HSYNC_C	2	50OHM	
DACA_VSYNC_C	2	50OHM	
I2CA_SCL	2	50OHM	
I2CA_SDA	2	50OHM	
I2CA_SCL_T	2	50OHM	
I2CA_SDA_T	2	50OHM	
I2CA_SCL_C	2	50OHM	
I2CA_SDA_C	2	50OHM	

NET	VOLTAGE	MAX_CURRENT	MIN_WIDTH
DACA_VDD	3.30000	0.07	16.0
DACA_VREF			10.0
DACA_RSET			10.0

DACA RGB-FILTER



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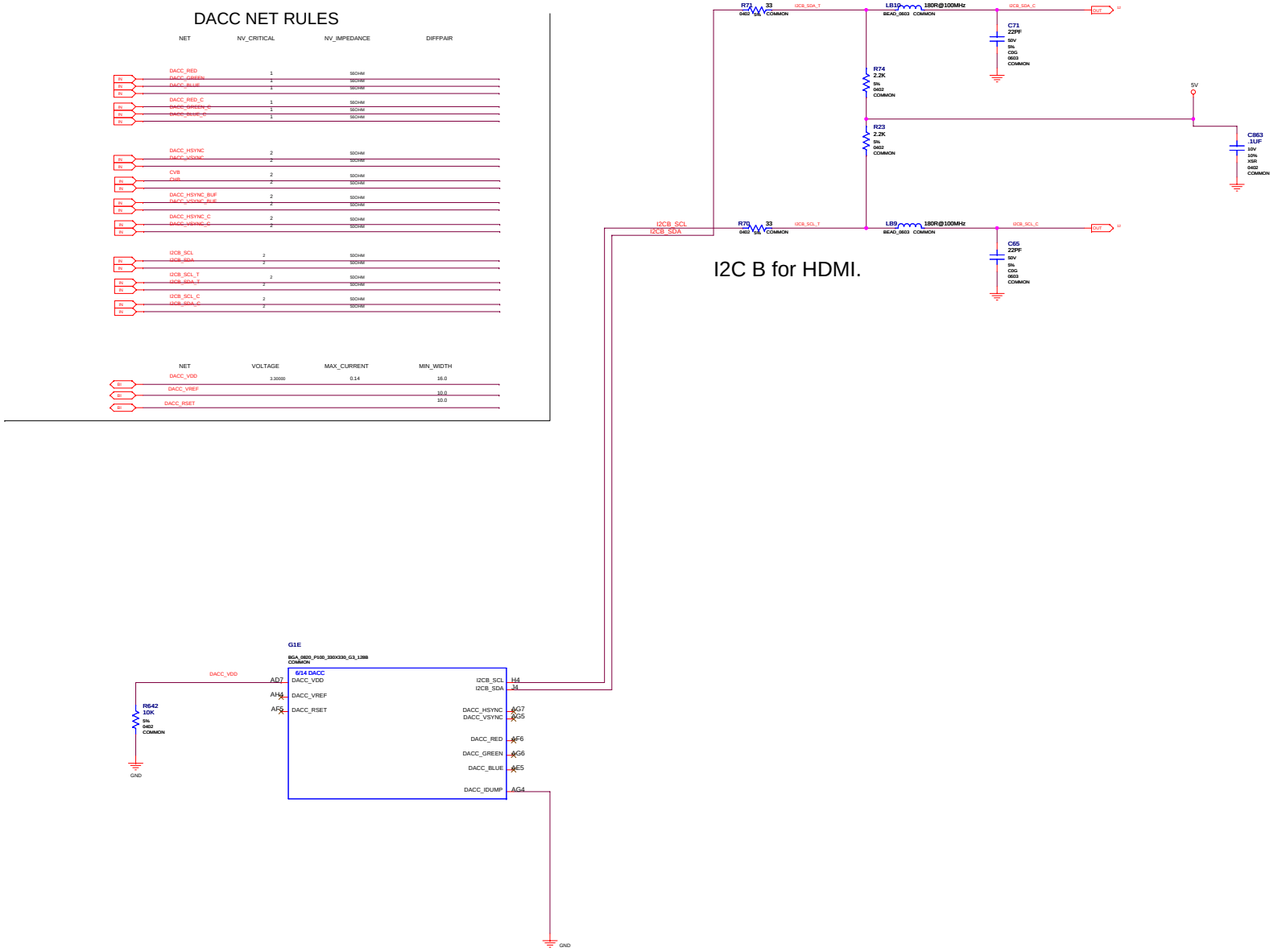
Secondary Display (DACC), DB15



I2C B for HDMI.

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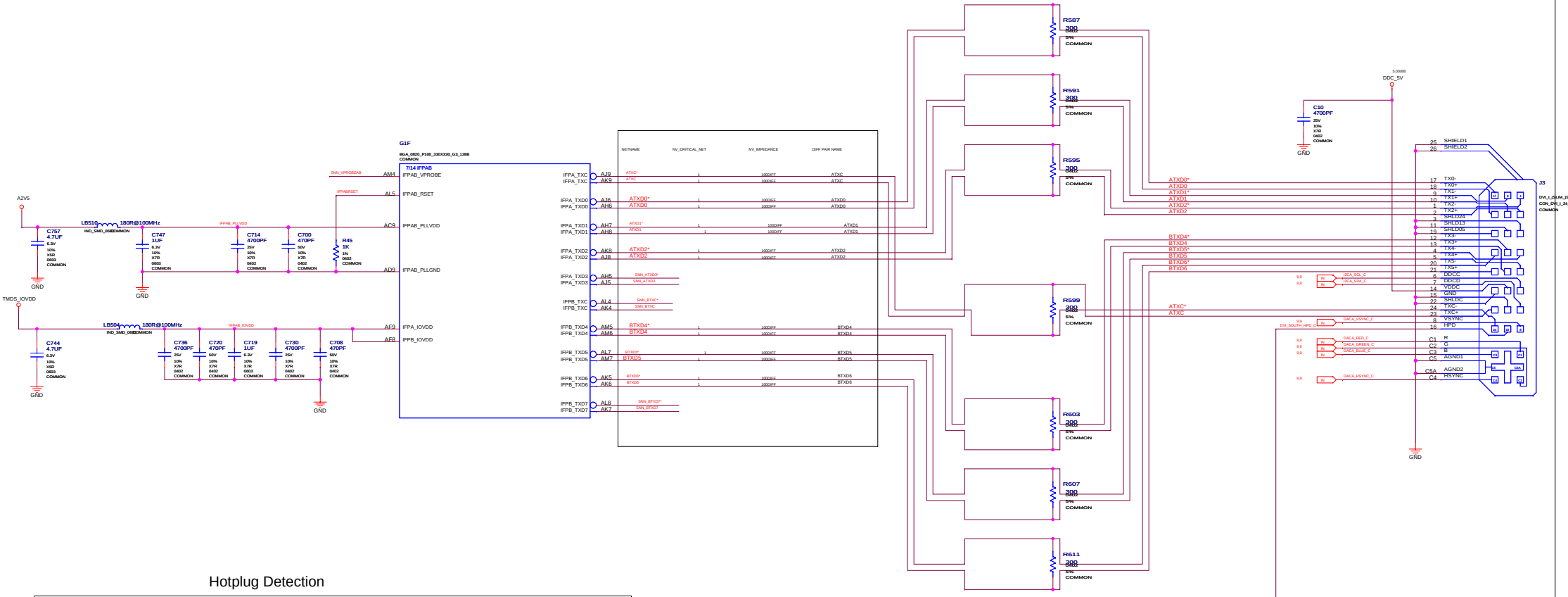
INTERNAL TMDS .. LINK A & B

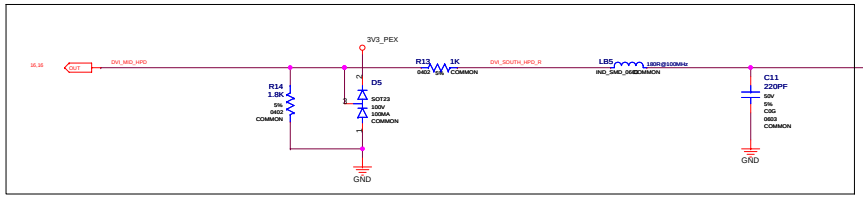
IFPAB NET RULES

NET	NV_CRITICAL	NV_IMPEDANCE	DIFFPAIR

NET	VOLTAGE	MAX_CURRENT	MIN_WIDTH
IFPAB_PLLVDD	3.30000	0.04	16.0
IFPAB_IOVDD	3.30000	0.24	16.0
IFPABRSET			12.0
DVI_SOUTH_HPD_C	1	50OHM	
DVI_SOUTH_HPD_R	1	50OHM	



Hotplug Detection



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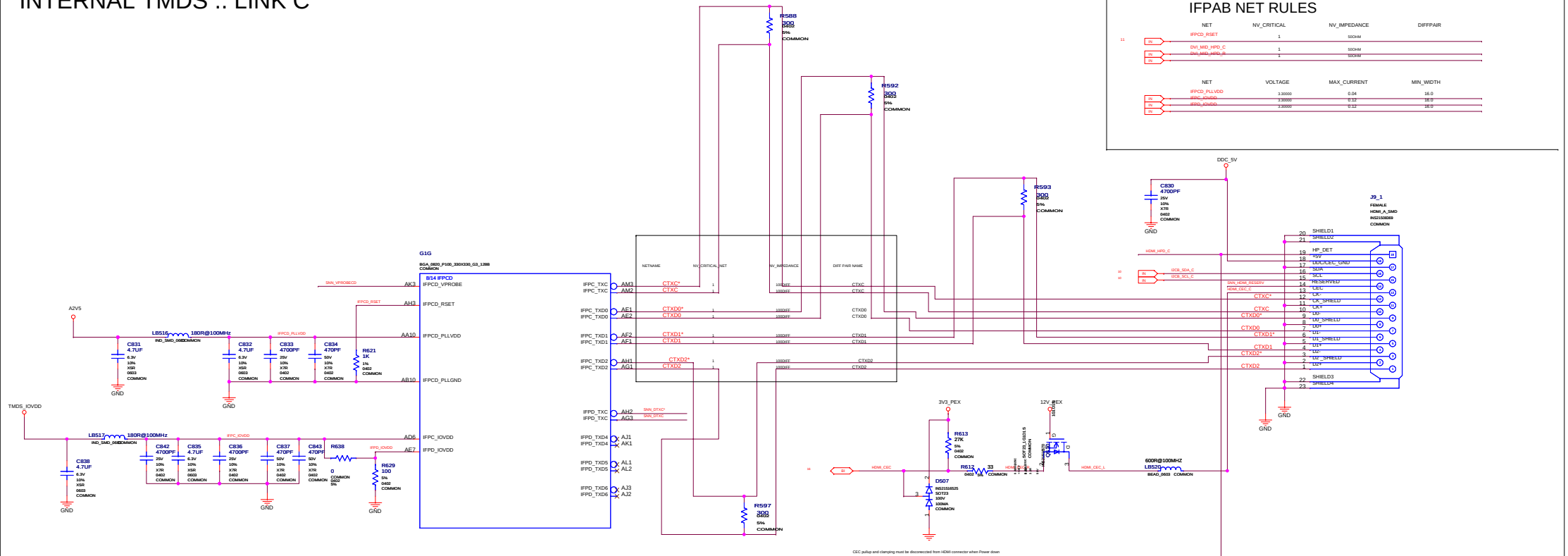
INTERNAL TMDS .. LINK C



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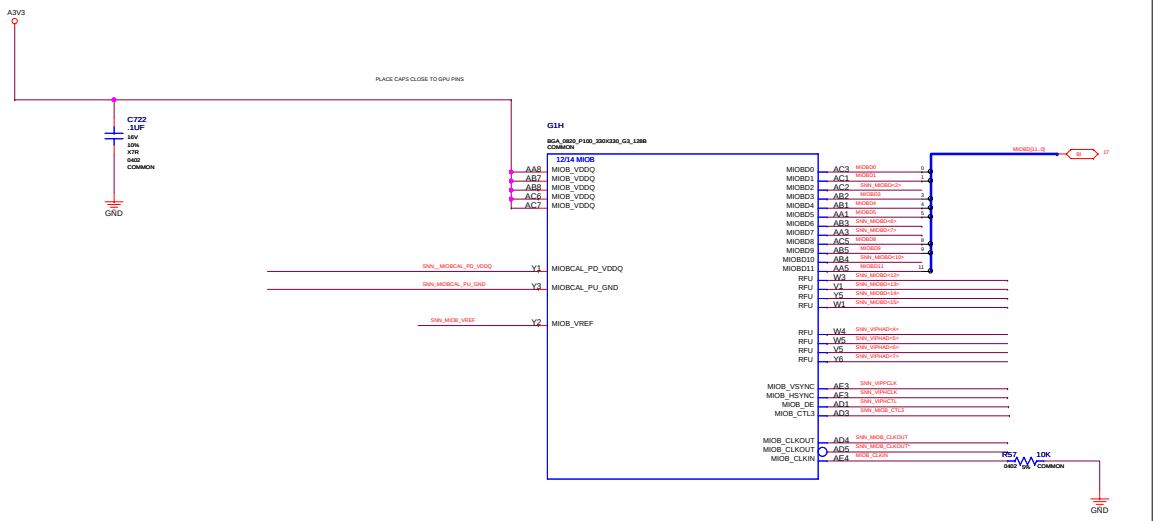
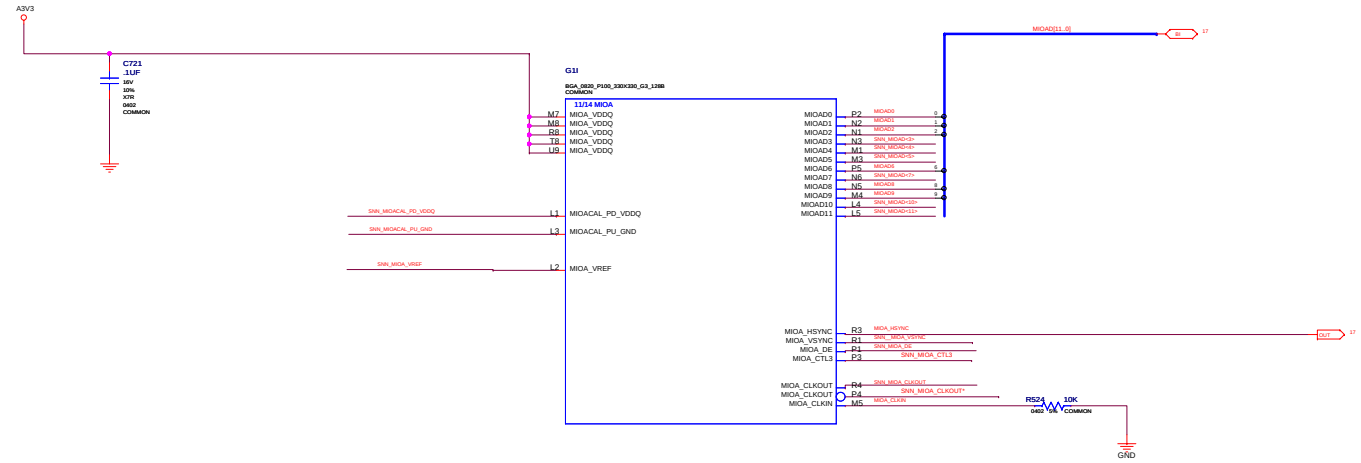
G3 VIP/MIOB/MIOA

G3 VIP/MIOB



G3 MIOA



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MS-V079		
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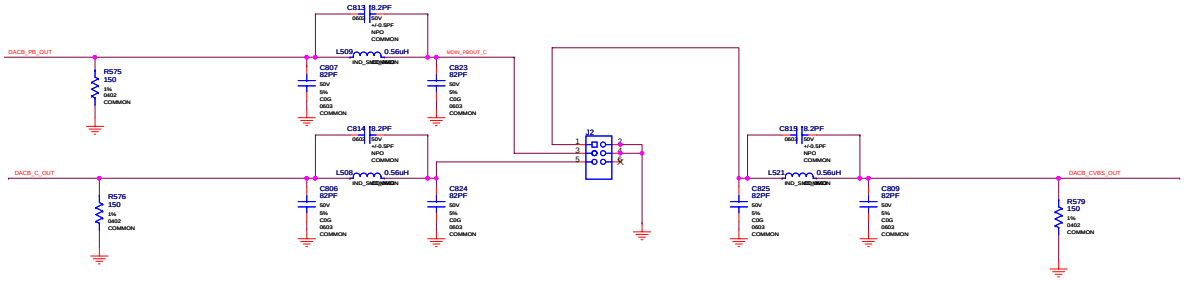
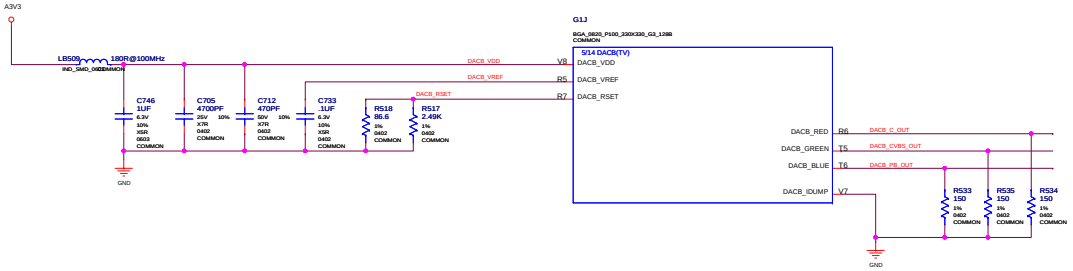
DACB .. MiniDIN VIDEO OUT CONNECTOR

DACB NET RULES

NET	NV_CRITICAL	NV_IMPEDANCE	DIFFPAIR
DACB_C_OUT	1	50OHM	
MDIN_COUT_C	1	50OHM	
DACB_CVBS_OUT	1	50OHM	
MDIN_YOUT_C	1	50OHM	
DACB_PB_OUT	1	50OHM	
MDIN_PBOUT_C	1	50OHM	
MDIN_SCL_C	2	50OHM	
MDIN_SDA_C	2	50OHM	

NET	VOLTAGE	MAX_CURRENT	MIN_WIDTH
DACB_VDD	3.30000	0.07	16.0
DACB_VREF			16.0
DACB_RSET			16.0





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MS-V079		
Size: Custom	Document Number: DACB .. MiniDIN VIDEO OUT	Rev: 1.0
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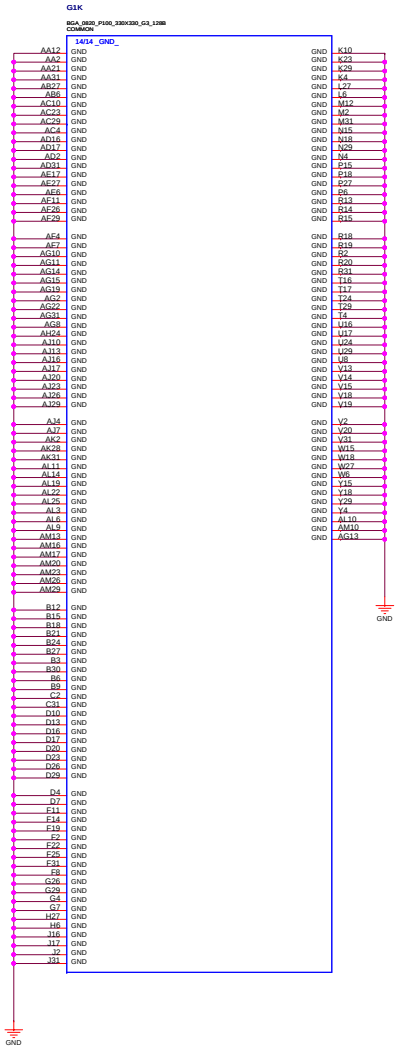
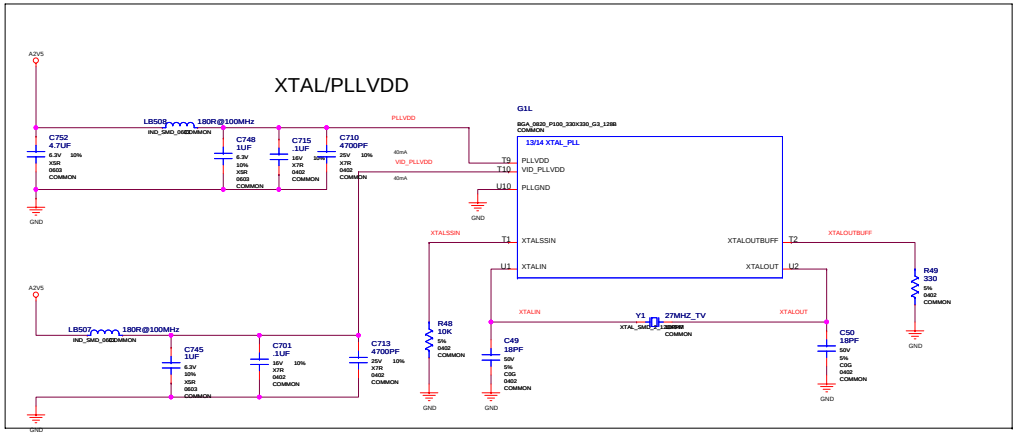
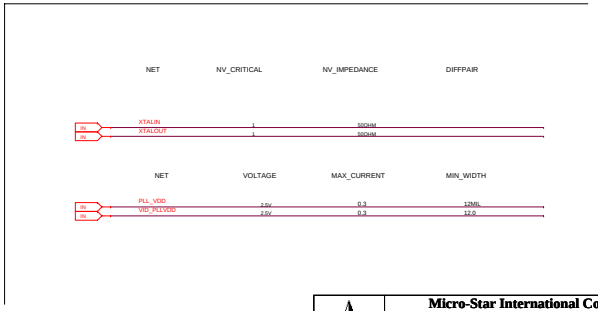
GND/XTAL/PLLVDD







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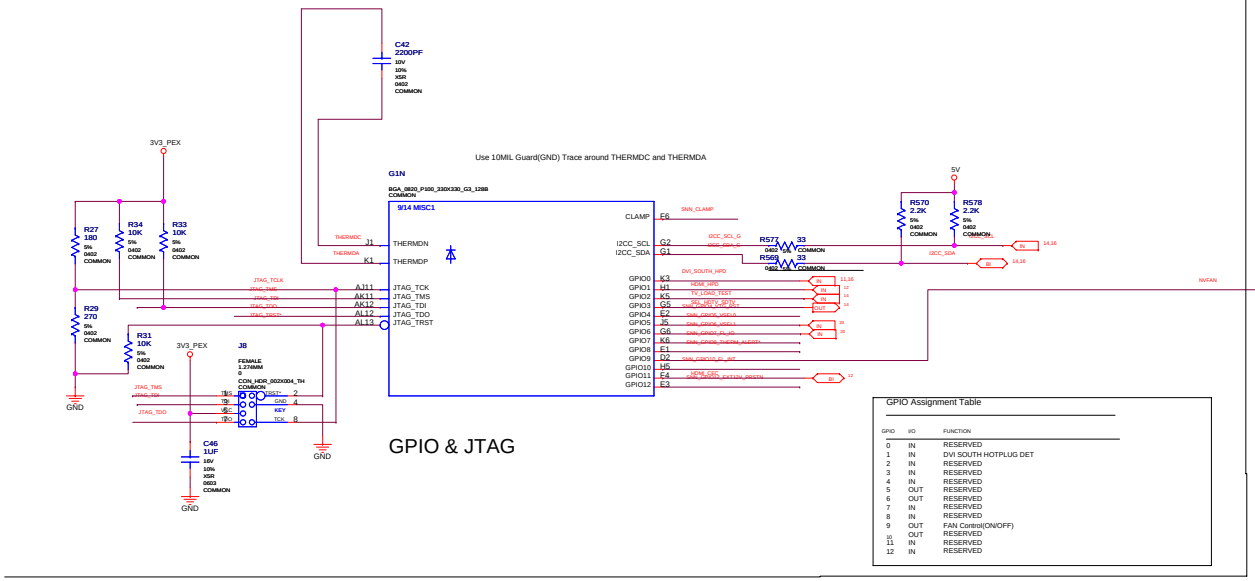
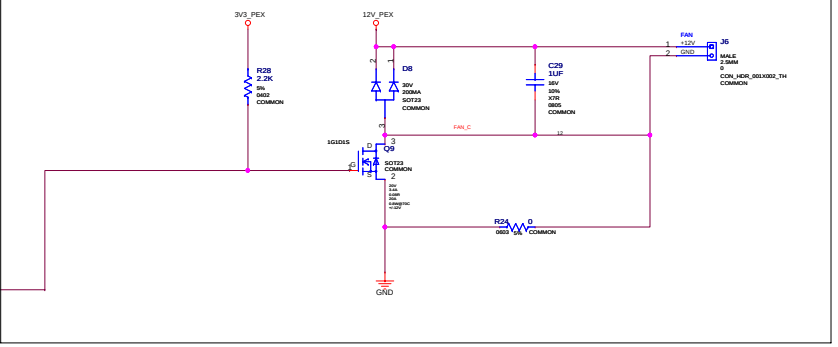
GPIO / JTAG / HDCP / BIOS / SPDIF

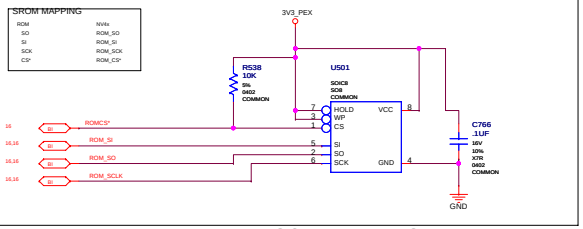


GPIO & JTAG

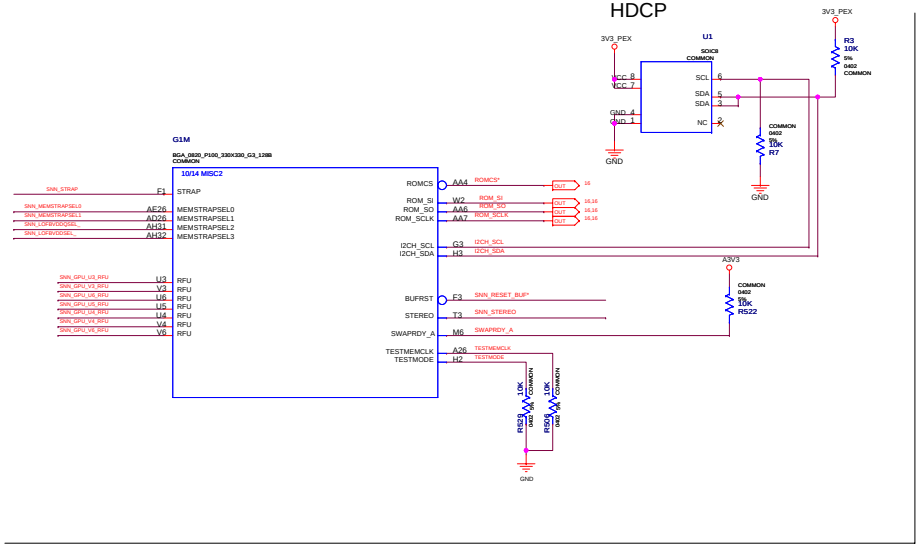
GPIO ON/OFF FAN Control



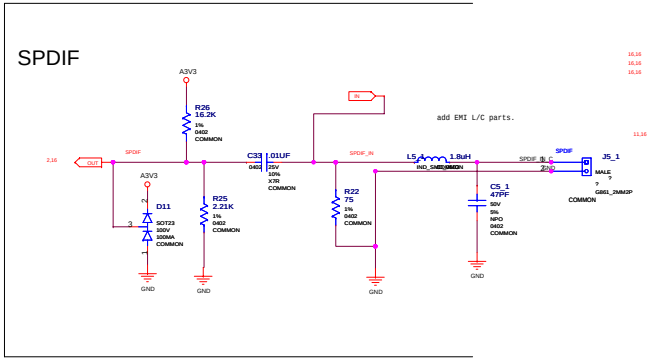
BIOS (serial)



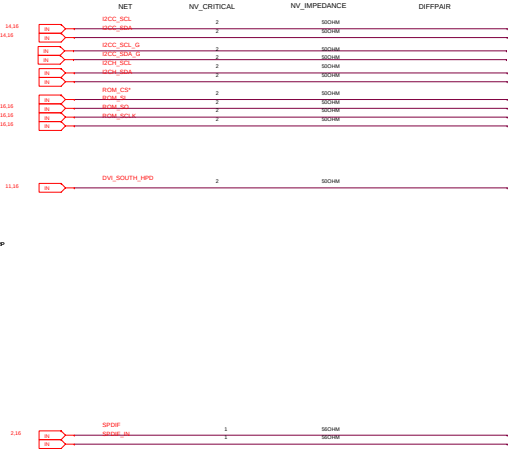
HDCP



SPDIF



MISC NET RULES



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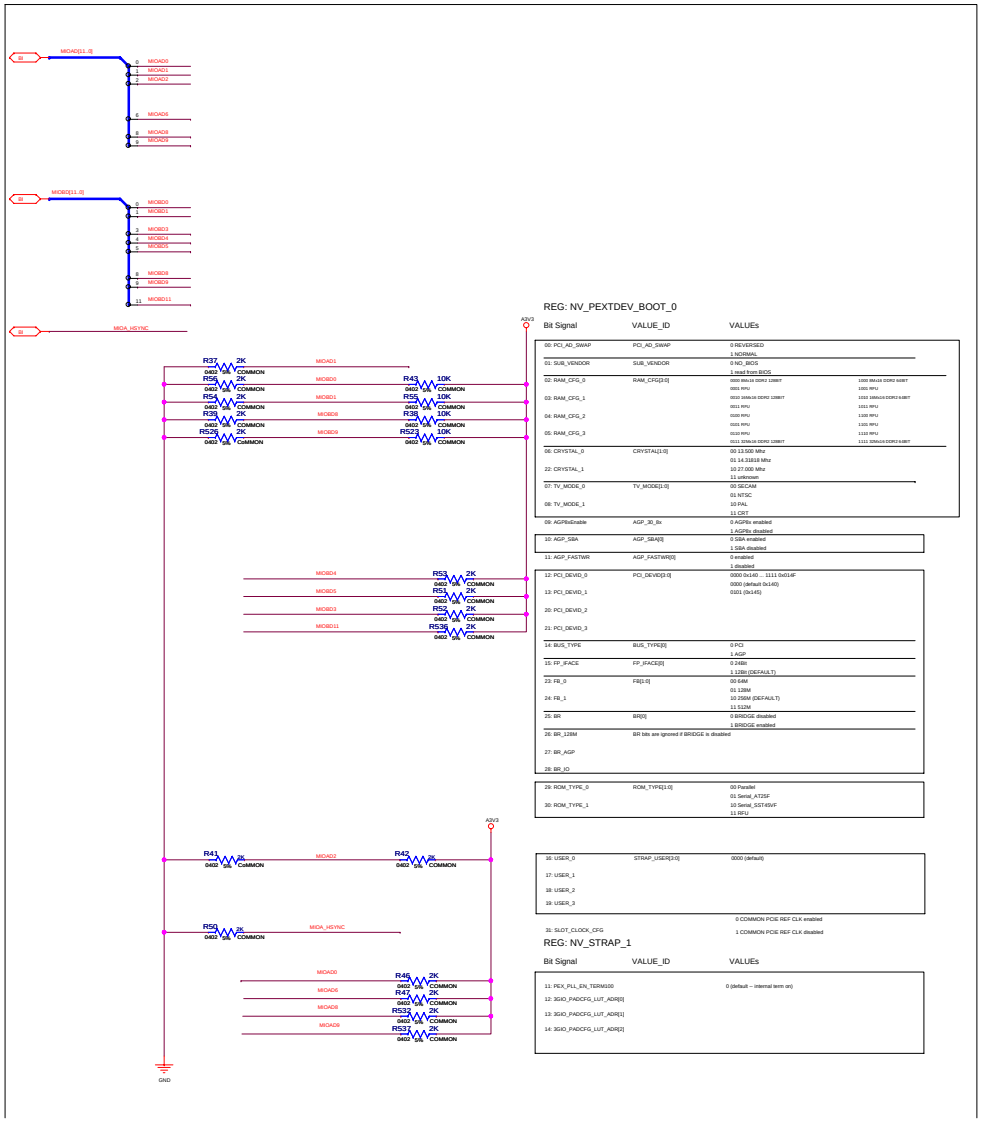
STRAPS, Mechanical Parts

Straps

Assembly: BIOS



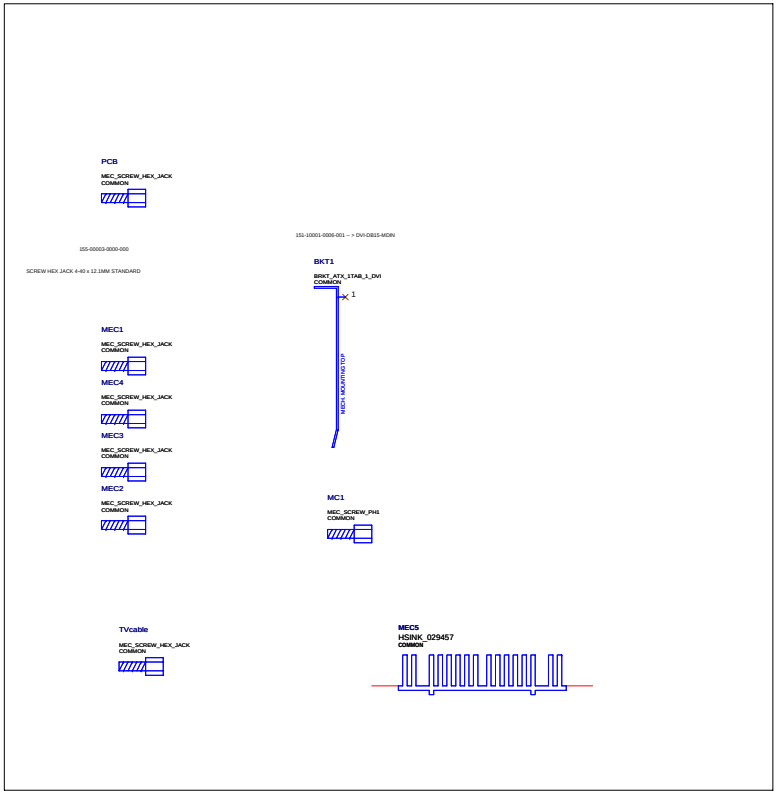
REG: NV_PEXTDEV_BOOT_0

Bit	Signal	VALUE_ID	VALUEs
00: PCI_AD_SWAP		PCI_AD_SWAP	0 REVERSED 1 NORMAL
01: SUB_VENDOR		SUB_VENDOR	0 NO_BIOS 1 read from BIOS
02: RAM_CFG_0		RAM_CFG[3:0]	0000 8Mx16 DDR2 128MT 0001 RFU 0010 16Mx16 DDR2 128MT 0011 RFU 0100 RFU 0101 RFU 0110 RFU 0111 32Mx16 DDR2 128MT 1000 8Mx16 DDR2 64BT 1001 RFU 1010 16Mx16 DDR2 64BT 1011 RFU 1100 RFU 1101 RFU 1110 RFU 1111 32Mx16 DDR2 64BT
03: RAM_CFG_1			
04: RAM_CFG_2			
05: RAM_CFG_3			
06: CRYSTAL_0		CRYSTAL[1:0]	00 13.500 Mhz 01 14.31818 Mhz 10 27.000 Mhz 11 unknown
22: CRYSTAL_1			
07: TV_MODE_0		TV_MODE[1:0]	00 SECAM 01 NTSC 10 PAL 11 CRT
08: TV_MODE_1			
09: AGPBitEnable		AGP_30_Bx	0 AGPBx enabled 1 AGPBx disabled
10: AGP_SBA		AGP_SBA[0]	0 SBA enabled 1 SBA disabled
11: AGP_FASTWR		AGP_FASTWR[0]	0 enabled 1 disabled
12: PCI_DEVID_0		PCI_DEVID[3:0]	0000 0x140 ... 1111 0x014F 0000 (default 0x140) 0101 (0x145)
13: PCI_DEVID_1			
20: PCI_DEVID_2			
21: PCI_DEVID_3			
14: BUS_TYPE		BUS_TYPE[0]	0 PCI 1 AGP
15: FP_IFACE		FP_IFACE[0]	0 24Bit 1 12Bit (DEFAULT)
23: FB_0		FB[1:0]	00 64M 01 128M 10 256M (DEFAULT) 11 512M
24: FB_1			
25: BR		BR[0]	0 BRIDGE disabled 1 BRIDGE enabled
26: BR_128M		BR bits are ignored if BRIDGE is disabled	
27: BR_AGP			
28: BR_IO			
29: ROM_TYPE_0		ROM_TYPE[1:0]	00 Parallel 01 Serial_AT25F 10 Serial_SST49VF 11 RFU
30: ROM_TYPE_1			
16: USER_0		STRAP_USER[3:0]	0000 (default)
17: USER_1			
18: USER_2			
19: USER_3			
31: SLOT_CLOCK_CFG			0 COMMON PCIE REF CLK enabled 1 COMMON PCIE REF CLK disabled

REG: NV_STRAP_1

Bit	Signal	VALUE_ID	VALUEs
11: PEX_PLL_EN_TERM100			0 (default – internal term on)
12: 3GIO_PADCFG_LUT_ADR[0]			
13: 3GIO_PADCFG_LUT_ADR[1]			
14: 3GIO_PADCFG_LUT_ADR[2]			

Mechanical parts



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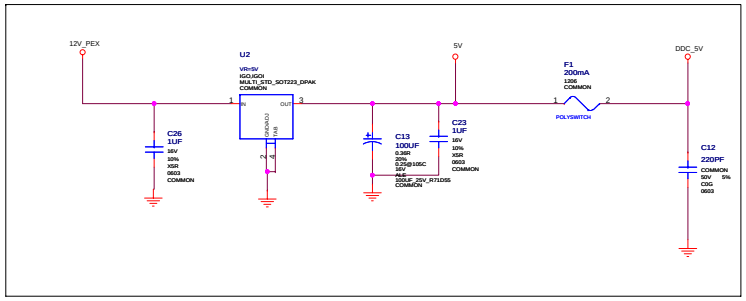
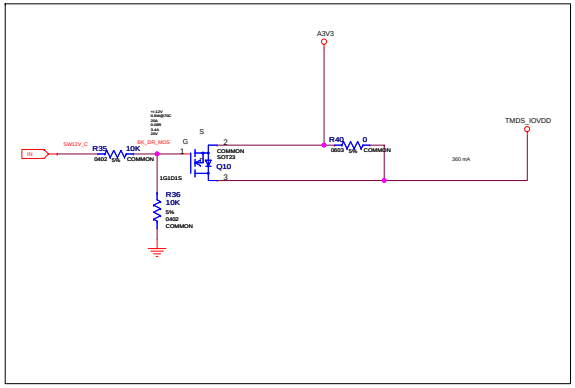
Power Supply:TMDS_IOVDD/A3V3/5V

NETNAME	MAX_CURRENT	MIN_LINE_WIDTH	VOLTAGE
DDC_5V	0.1	12.0	5.00000
A2V5	0.96	25.0	2.50000
TMDS_IOVDD	0.24	20.0	3.30000
A3V3	0.4	20.0	3.30000
GND		35.0	0.000000

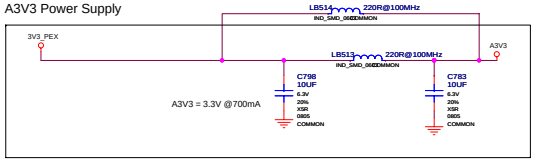
DDC 5V



TMDS IO SUPPLY WITH BACKDRIVE PROTECTION



A3V3 Power Supply

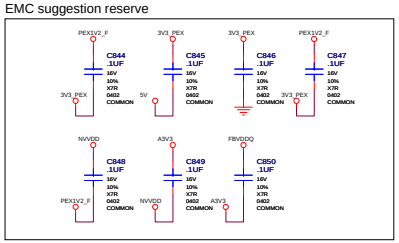


FM1 FM4

FM2 FM5

FM3 FM6

EMC suggestion reserve



Micro-Star International Co., LTD.			
MS-V079			
Size: Custom	Document Number: TMDS_IOVDD/A3V3/5V		Rev: 1.0
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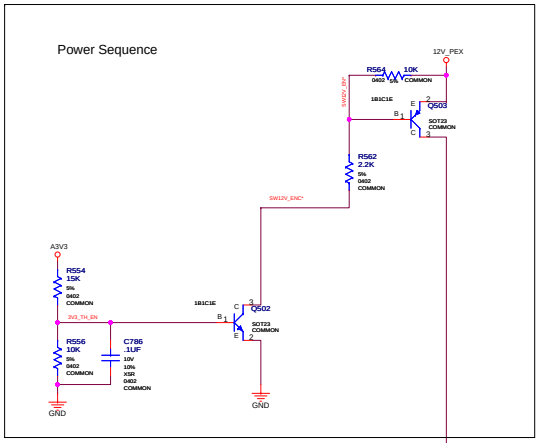
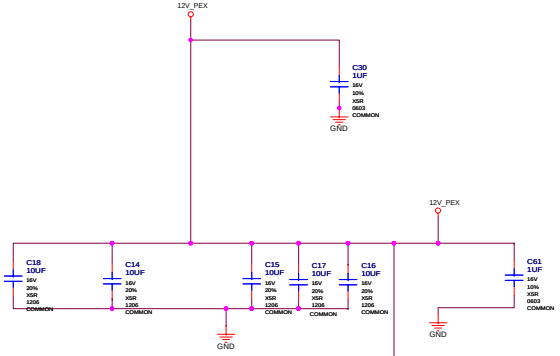
PowerSupplyI: NVVDD, A2V5

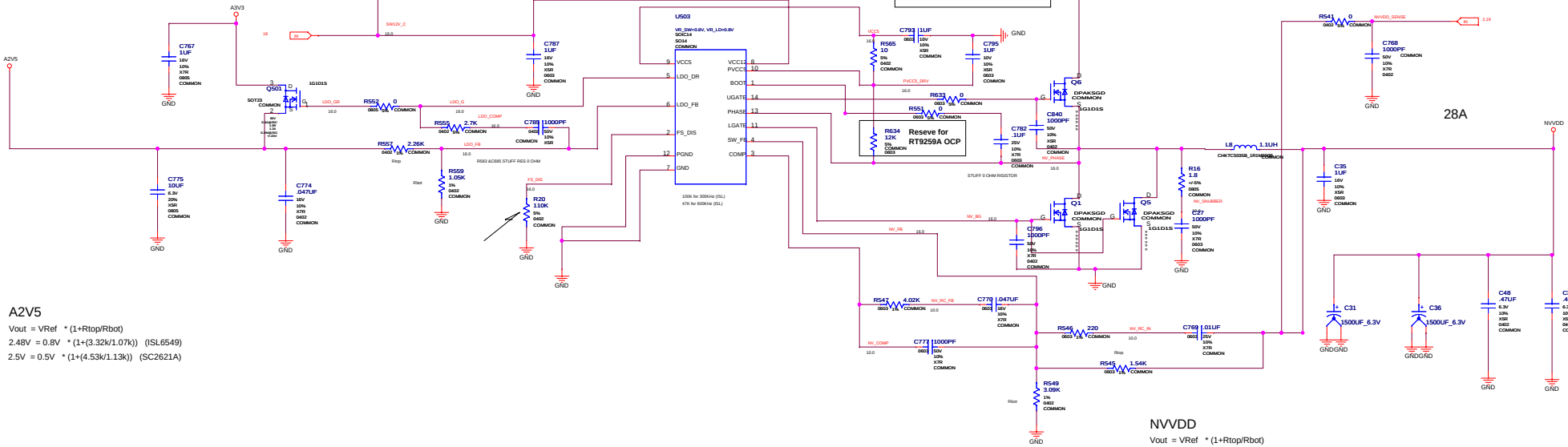
Net Name	LINE_WIDTH	Current	Voltage
12V_F	30MIL	3	12V
NVVDD	30MIL	15	1.2V
PEX1V2	24MIL	1.5	1.20000
NVVDD_SENSE	16MIL	0.5	1.2V
NVVDD_SENSE_M	16MIL	0.5	1.2V





ISL6549(SC2621A)

C795 change to 12K for APW7068 OCP
R565 remove for APW7068



A2V5

Vout = VRef * (1+Rtop/Rbot)

2.48V = 0.8V * (1+(3.32k/1.07k)) (ISL6549)

2.5V = 0.5V * (1+(4.53k/1.13k)) (SC2621A)

NVVDD

Vout = VRef * (1+Rtop/Rbot)

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

1.2V = 0.5V * (1+(14.7k/10.5k)) (SC2621A)

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PowerSupplyIII: FBVDDQ,PEX1V2