C116, NV18, 8MX16DDR, 128MB, Video IN/OUT, DVI-I, VGA

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Filter and Connector

18 1394 TEXAS TSB41AB2, PowerRails,

I/O, Internal and external connector

19 POWER SUPPLY

NVVDD, MEM_VDD, A3V3, TMDS3V3, TMDSPLL

20 MECHANICS, and FBVDD

A00

HISTORY:

X00: INITIAL VERSION

X01 Remove R117, C87, C131, C143 for CKE

Change C736, C743 to 18pf capacitors.

Remove C1099 - additional Capacitor for AGPVREFcg

Changed AGPVREFcg circuit

C116 Base on P112 to Modify.

1. Change page 4~7 & page 18 Reference.
2. Change J1 foot print from slim type to stand D-SUB.
3. Remove I1394 function.
4. ~~Page 2, change voltage C75.1 & Q2.E from 3V3 to A3V3.~~
5. Page 8, Add Twin Bios for MSI function.
6. Page 16 ,replace INTERNAL VIDEO CAPTURE CONNECTOR.
7. Page 17 ,ADD C874 & C1098 ALE CAP. (DUAL-LAY)
8. Page 18 , Add H/W Monitor founction for MSI .
9. Page 2 change Q508, Q509 footprint from SOT23 to SOT-6 U200 package.

00A change to version 100.

1. DACA and DACB signal swap.

600-10116-000X-A00

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MS-8891 base on C116 Modify

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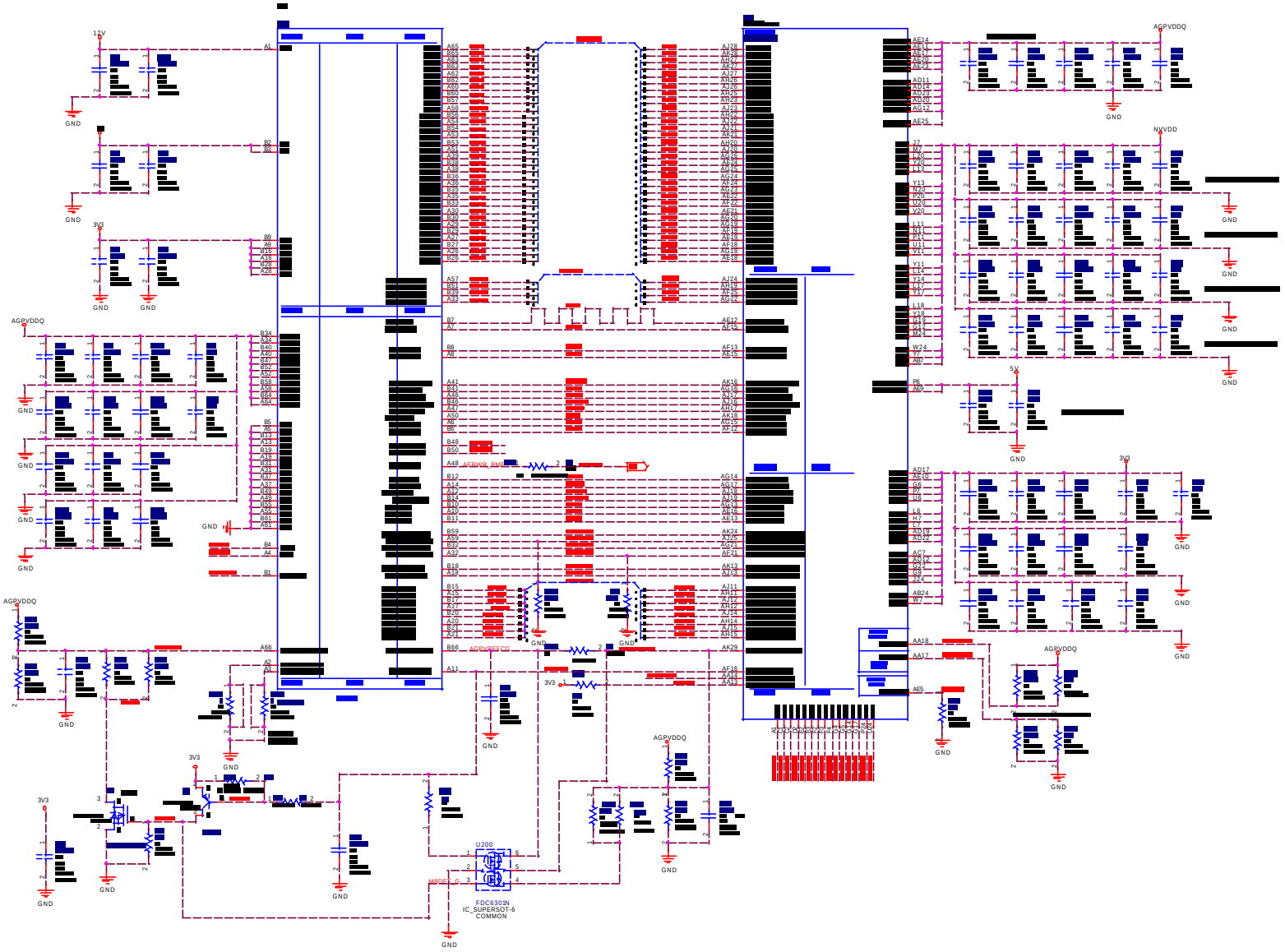
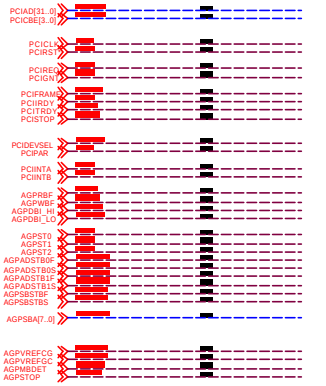
NV18 AGP SECTION AND AGP CONNECTOR



AGP spacing rules



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Size: Custom	Document Number: AGP INTERFACE	Rev: 100
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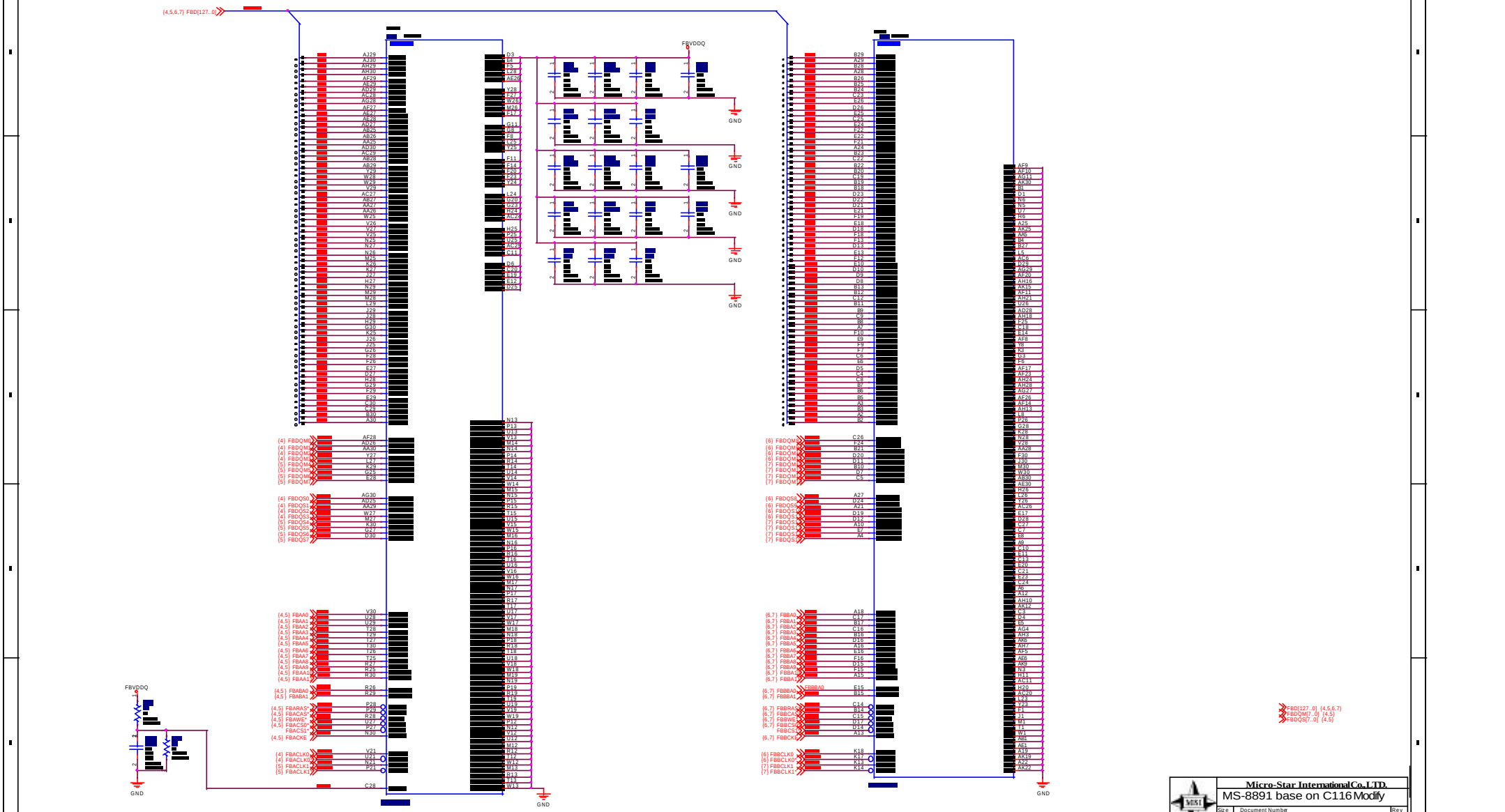
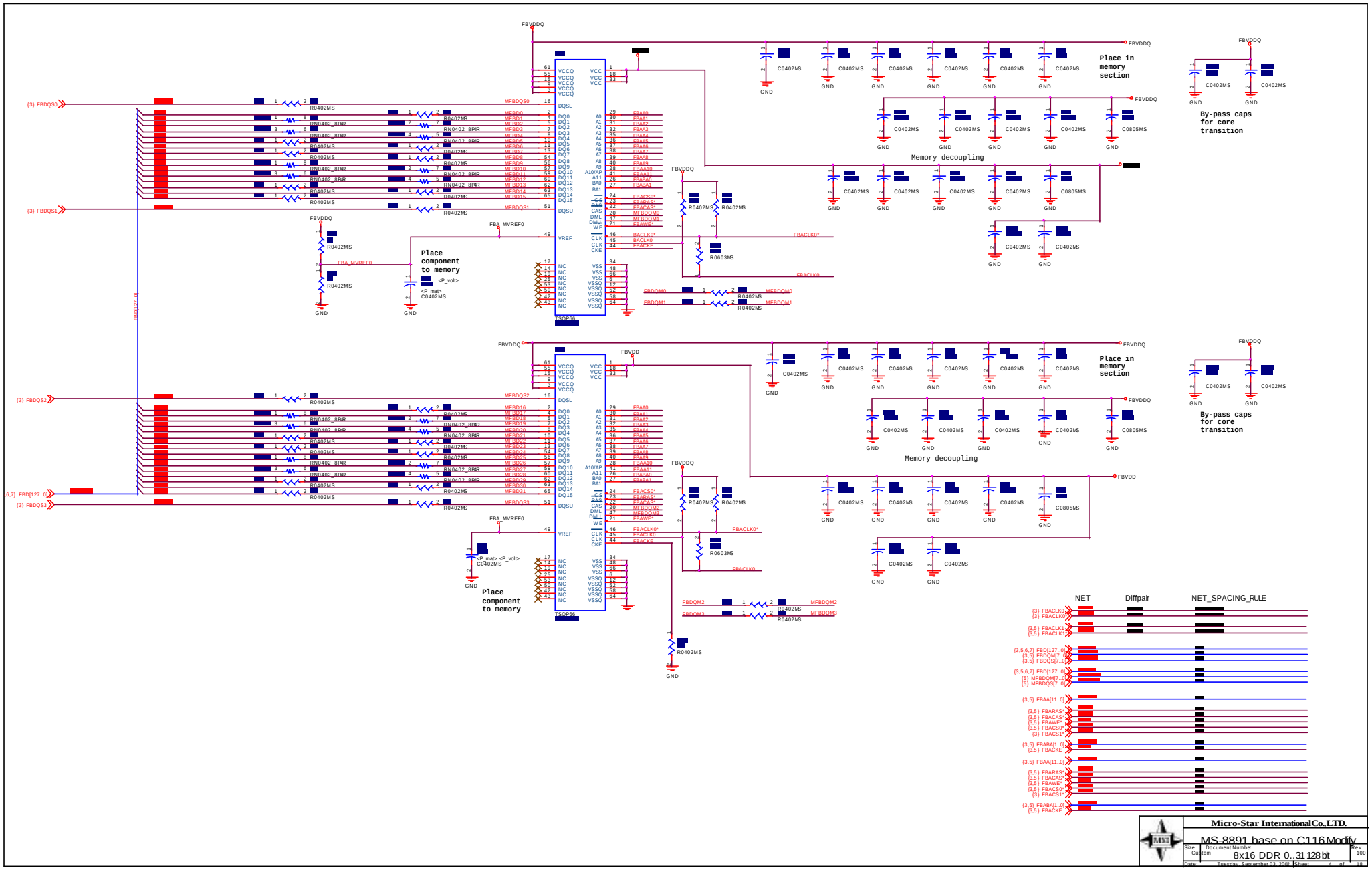
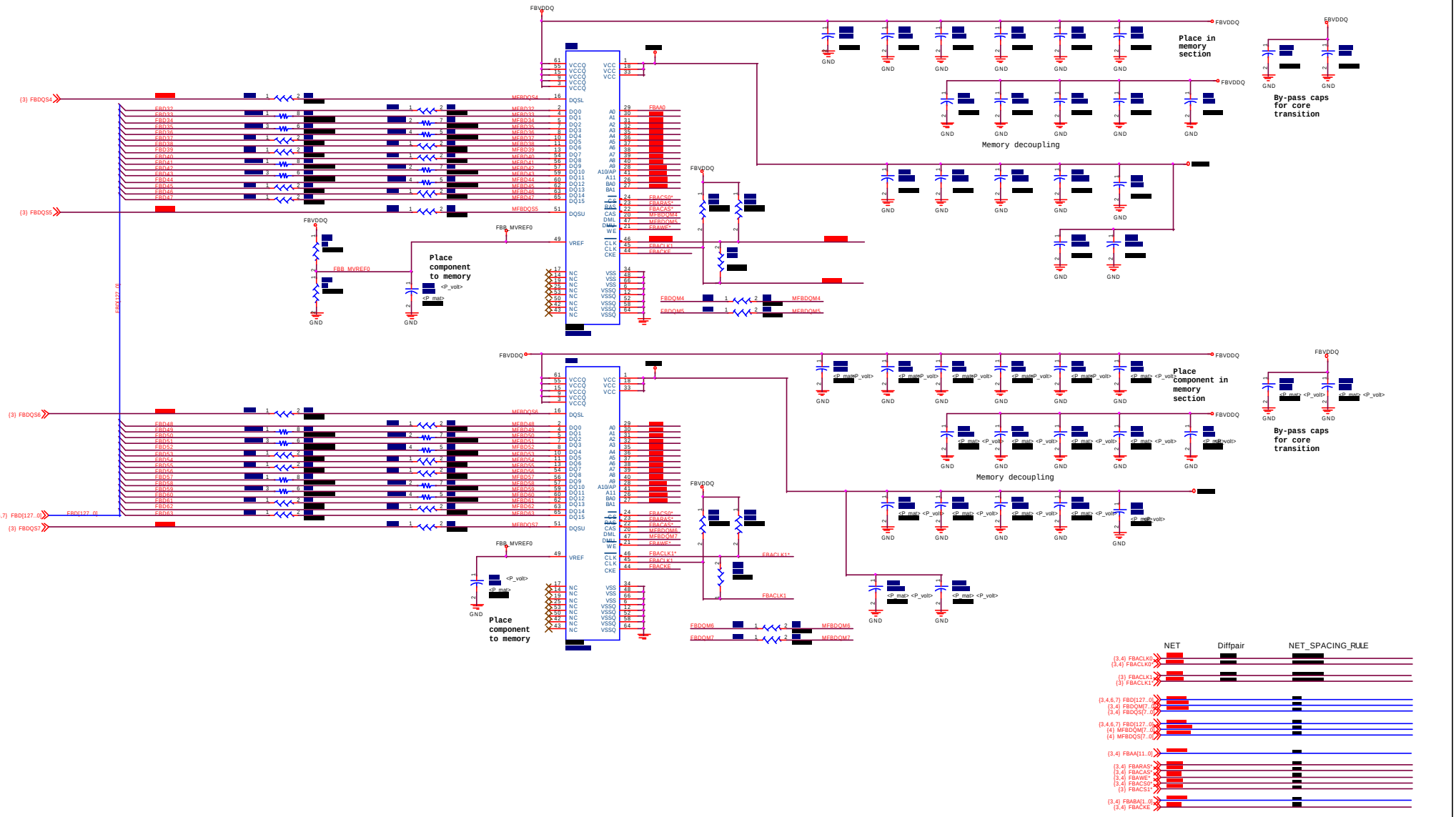
NV18 FRAMEBUFFER INTERFACE AND DECOUPLING




Place component to memory
Memory decoupling
By-pass caps for core transition
Place in memory section
NET
Diffpair
NET_SPACING_RULE
Micro-Star International Co., LTD.
MS-8891 base on C116 Modify
8x16 DDR 0..31 128 bit
Tuesday, September 03, 2009



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MS-8891 base on C116 Modify		
Size: Custom	Document Number: 8x16 DDR 32..63 128 bit	Rev: 100
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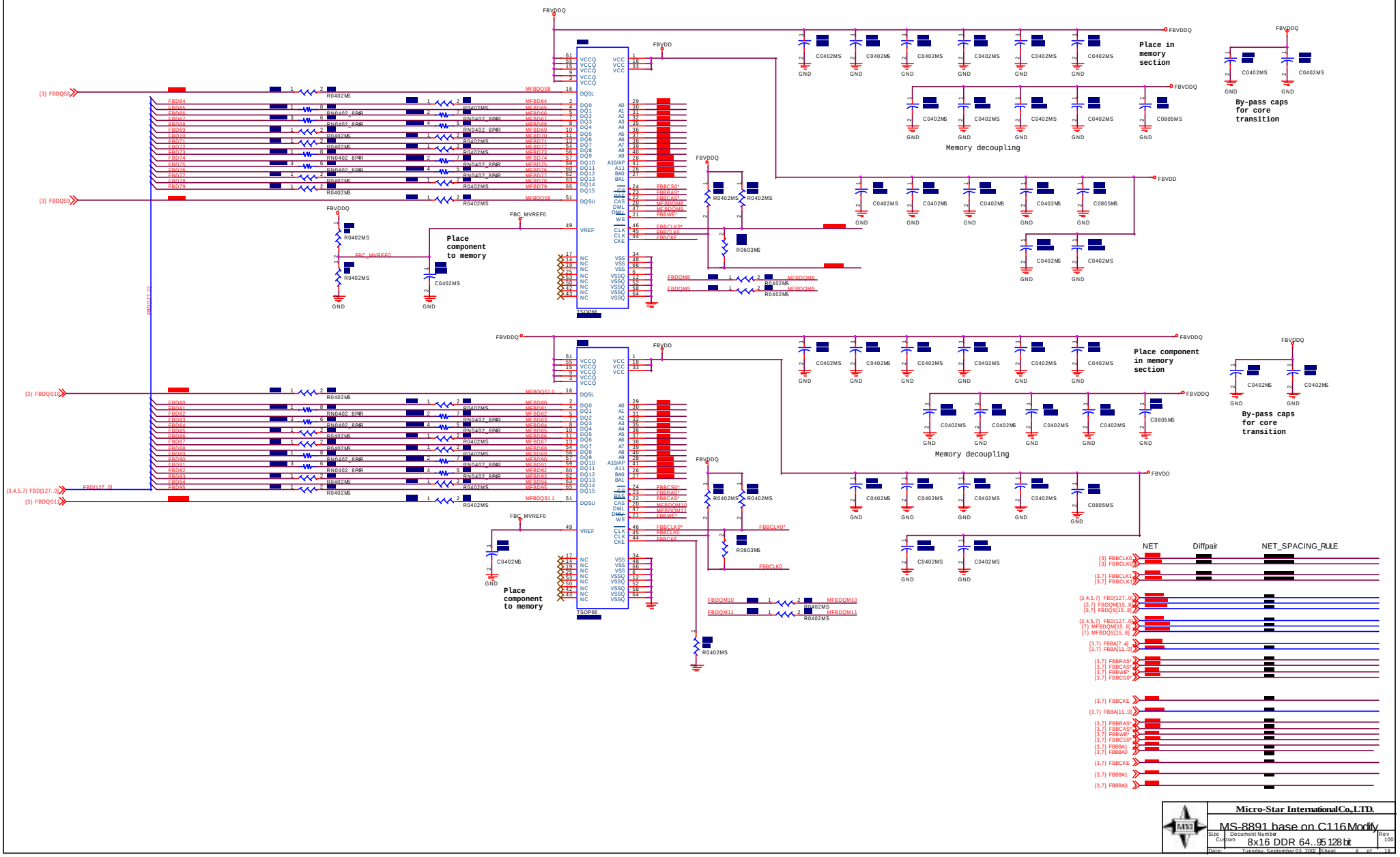
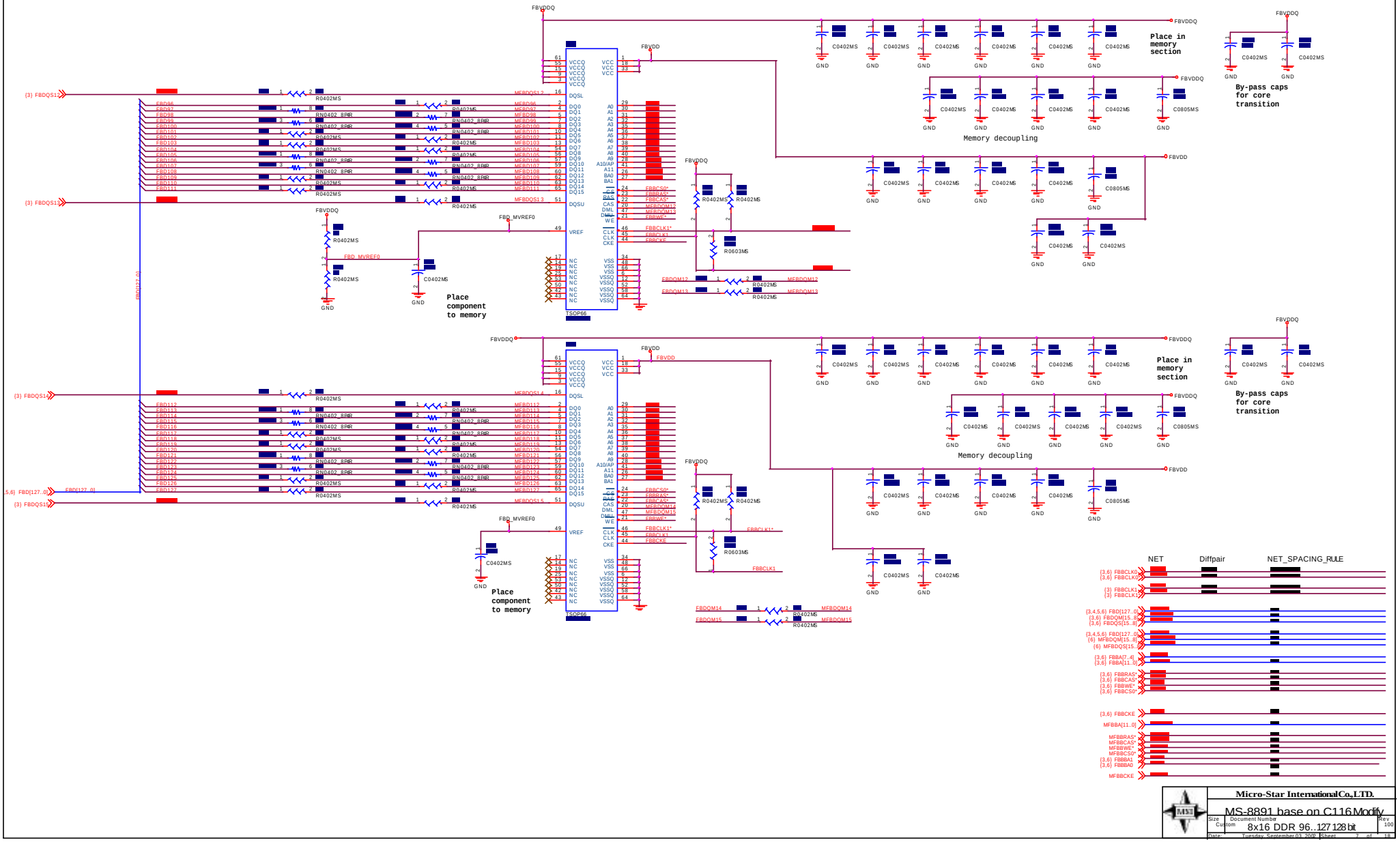

Place component to memory
Memory decoupling
By-pass caps for core transition
Place component in memory section
NET
Diffpair
NET_SPACING_RULE
Micro-Star International Co., LTD.
MS-8891 base on C116 Modify
8x16 DDR 64..95 128 bit


Place component to memory
Memory decoupling
By-pass caps for core transition
Place in memory section
TSOP66
NET
Diffpair
NET_SPACING_RULE
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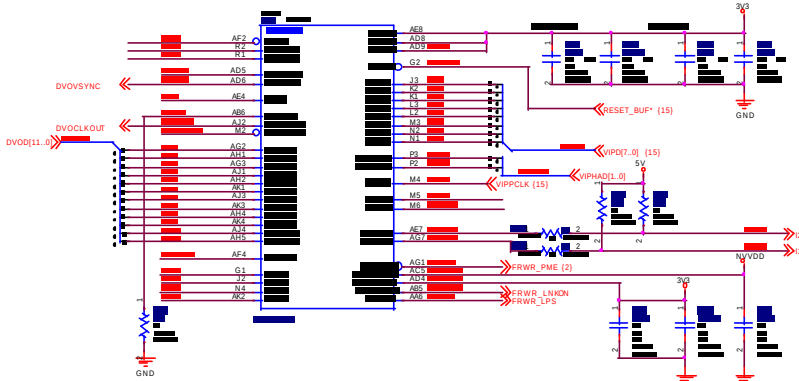
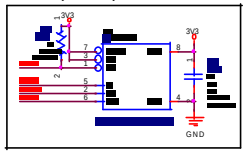
MS-8891 base on C116 Modify
8x16 DDR 96..127 128 bit
Tuesday, September 03, 2009

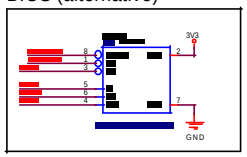
NV18 STRAPPING, I/O INTERFACE, BIOS, FAN CONTROL AND TEMP SENSOR



BIOS (serial)



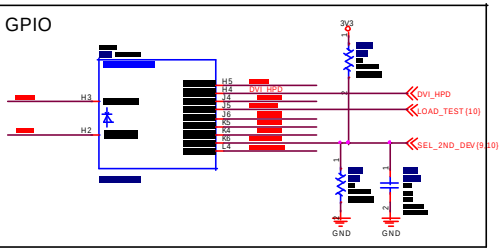
BIOS (alternative)



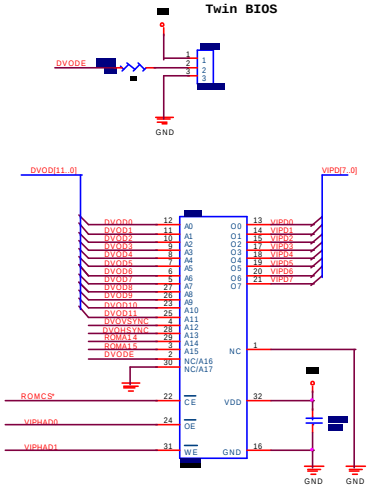
NET	NET_PHYSICAL_TYPE	VOLTAGE
FAN_RETURN		
THERM		
THERM*		

NET	Diffpair	NET_SPACING_RULE
THERM		
THERM*		
DVOD[11..0]		
DVOCLKOUT		
DVODE		
DVOHSYNC		
DVOVSYNC		
(15) VIPD[7..0]		
(15) VIPPCLK		

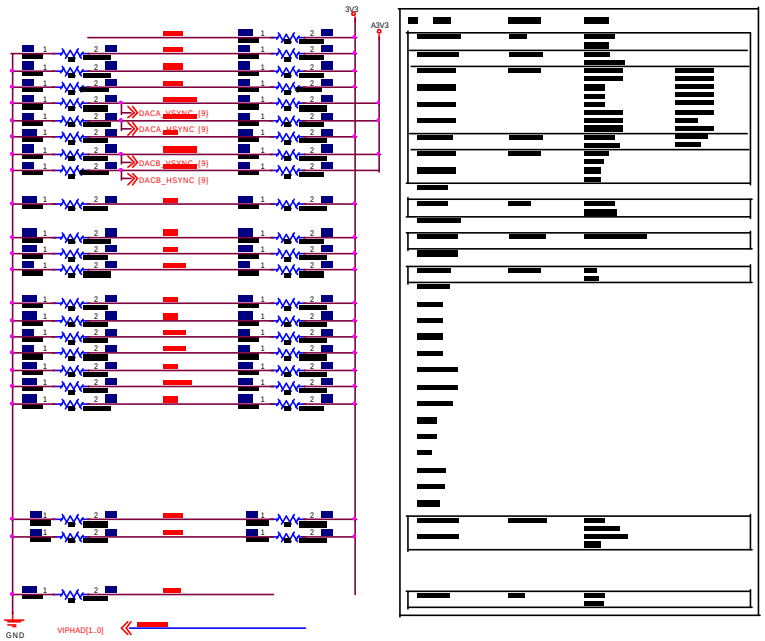
NV18 GPIO



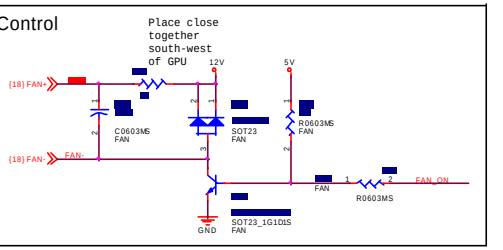
Twin BIOS



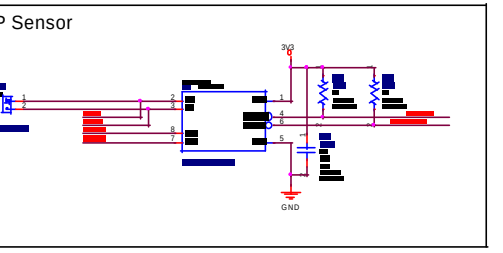
STRAPPING OPTIONS



FAN Control



TEMP Sensor



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MS-8891 base on C116 Modify		
Size: Custom	Document Number: Strapping, I/O interface,BIOS	Rev: 100
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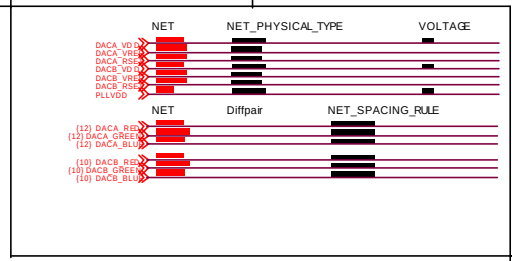
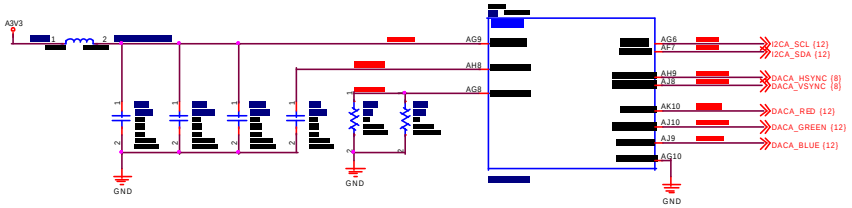
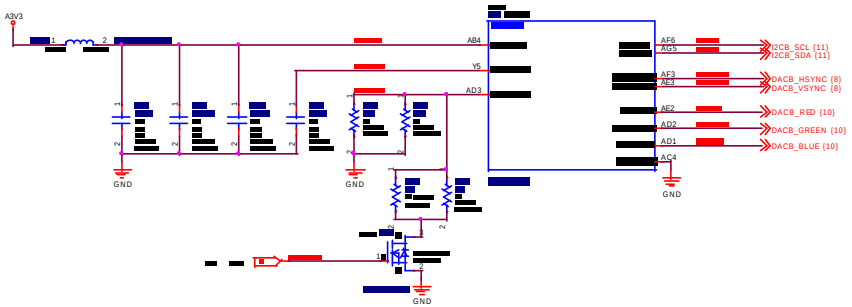
NV18 DAC_A, DAC_B, PLL, SYNC AMPL



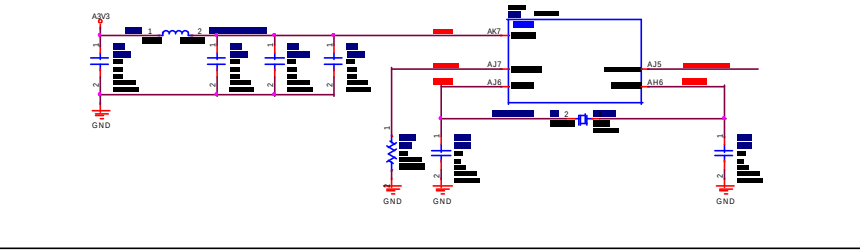
NV18 DAC_A



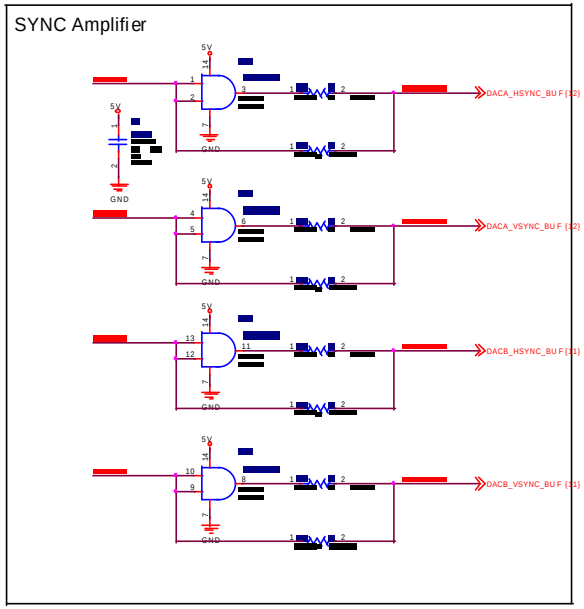
NV18 DAC_B with RSet select



NV18 PLL



SYNC Amplifier



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Size: Custom	Document Number: DAC_A,DAC_B,PLL,SYNC AMPL
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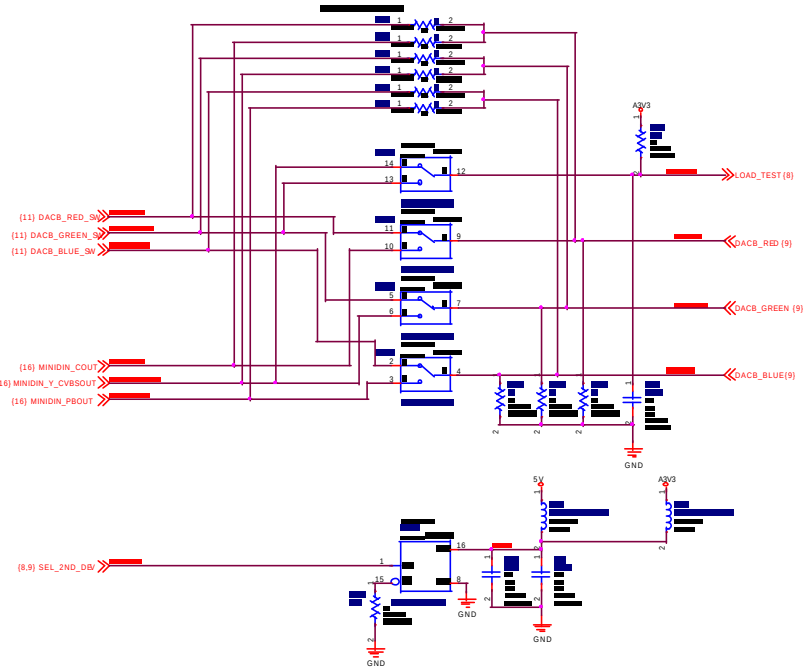
DACB SWITCH BETWEEN VGA OUT AND TV OUT

NET	Diffpair	NET_SPACING_RULE
(11) DACB_RED_SW		
(11) DACB_GREEN_SW		
(11) DACB_BLUE_SW		
(16) MINIDIN_COUT		
(16) MINIDIN_Y_CVBSOUT		
(16) MINIDIN_PBOUT		



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MS-8891 base on C116 Modify

Size	Document Number	Rev
Custom	SWITCH BETWEEN VGA AND TV-OUT	100
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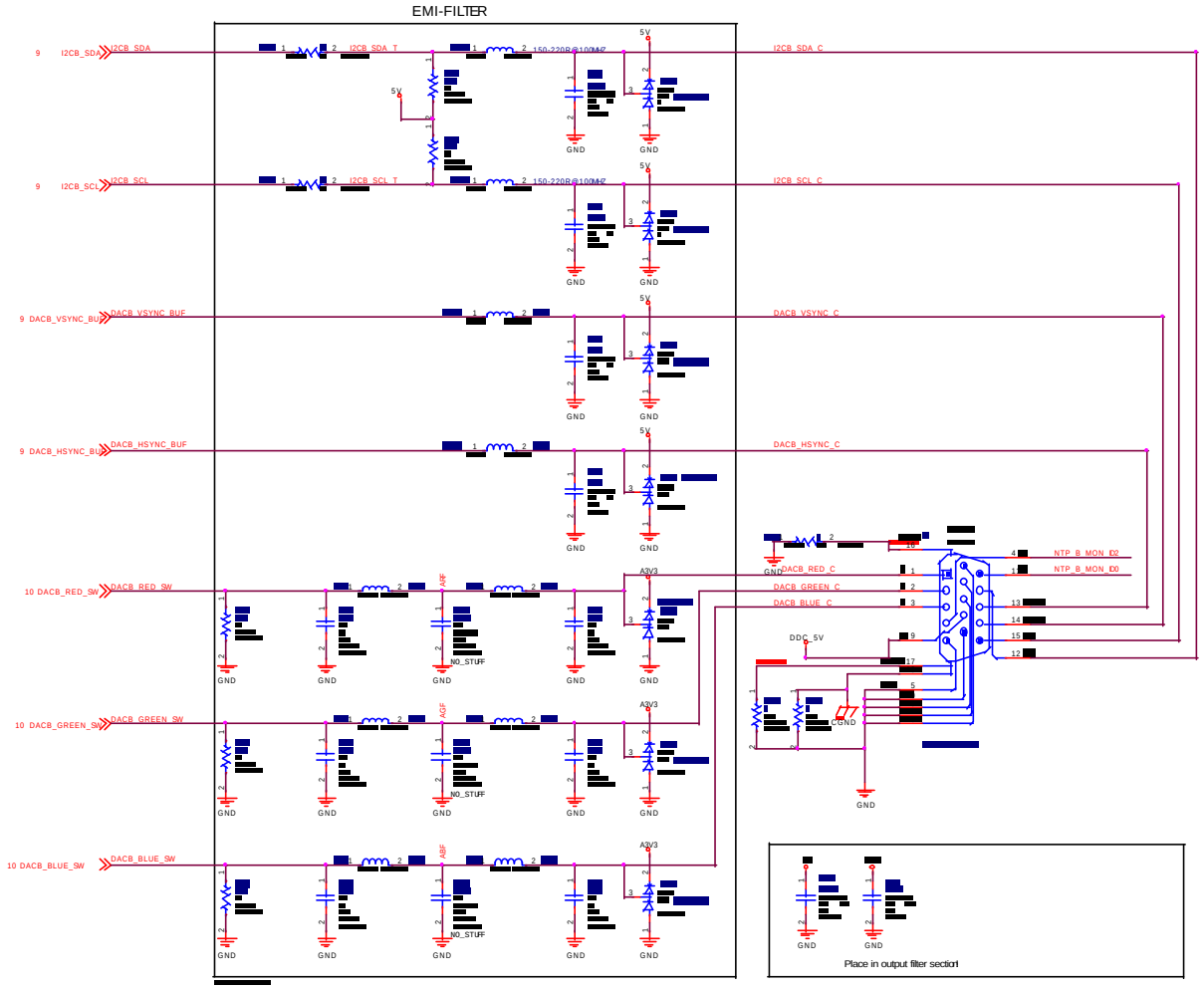
DACA output



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MS-8891 base on C116 Modify		
Size: Custom	Document Number: DAC A CONNECT	Rev: 100
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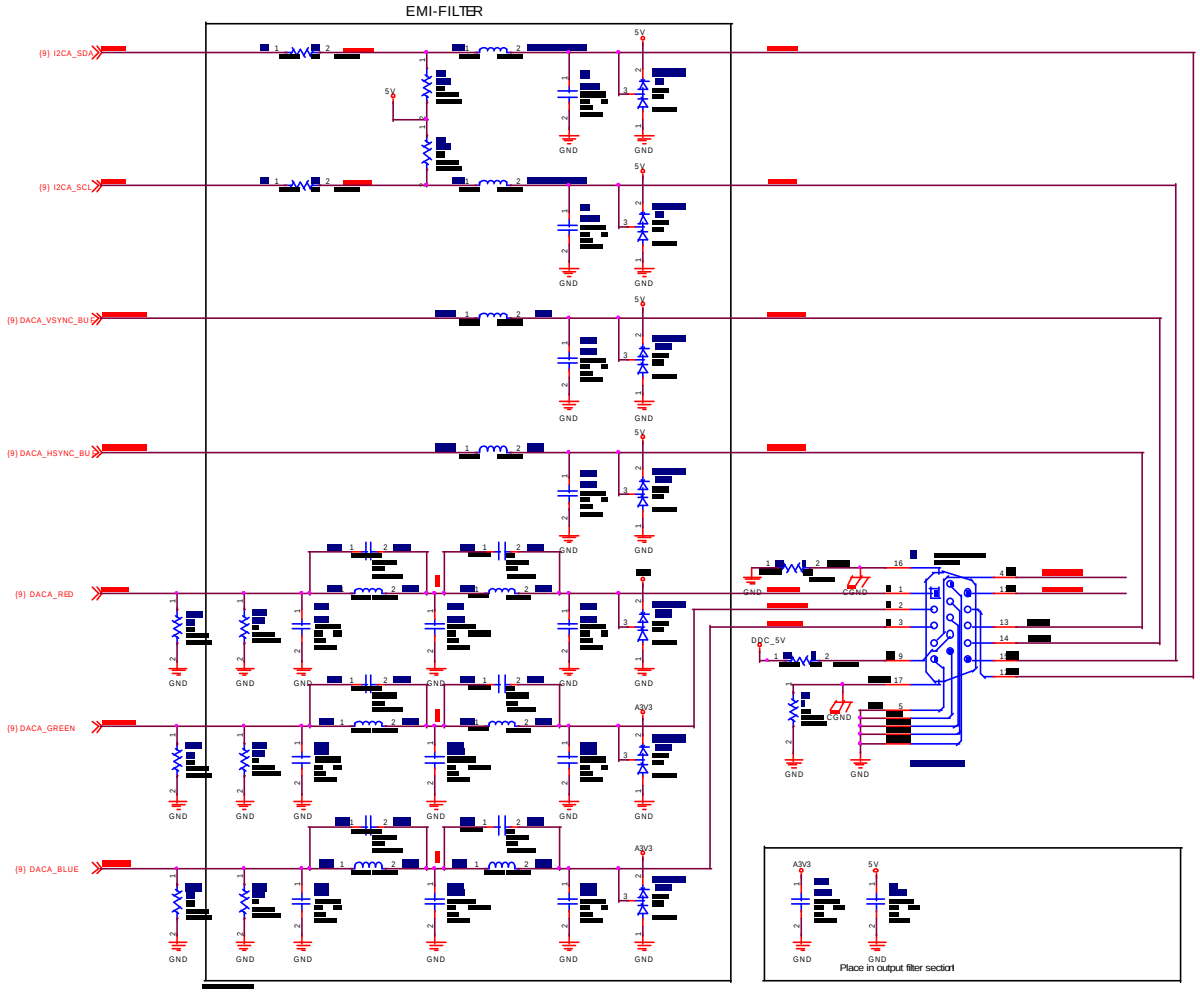
DACB output



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MS-8891 base on C116 Modify

Size	Document Number	Rev
Custom	DAC B CONNECT	100
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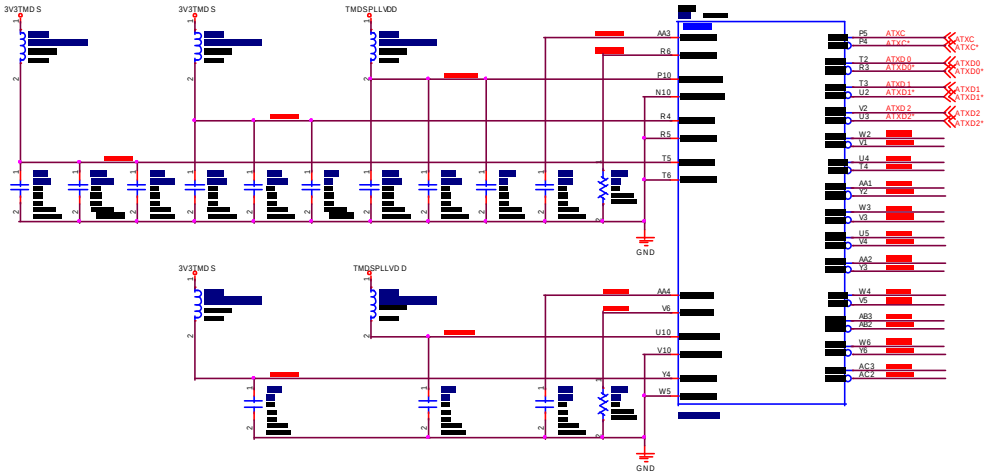
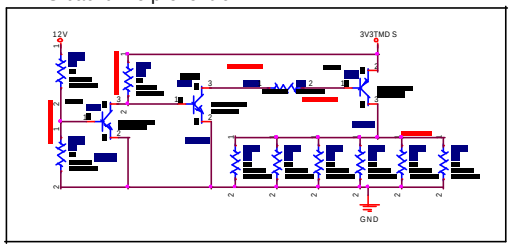
INTERNAL TMDS POWER AND DECOUPLING

NET	NET_PHYSICAL_TYPE	VOLTAGE
IFPABVREF		
IFPABPLLVDD		
IFPAIOVDD		
IFPBIOVDD		
IFPCVREF		
IFPCPLLVDD		
IFPCIOVDD		
FAN_RETURN		
TMDS_BACK		



TMDS backdrive prevention



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MS-8891 base on C116 Modify	
Size: Custom	Document Number: TMDS POWER AND DECOUPLING
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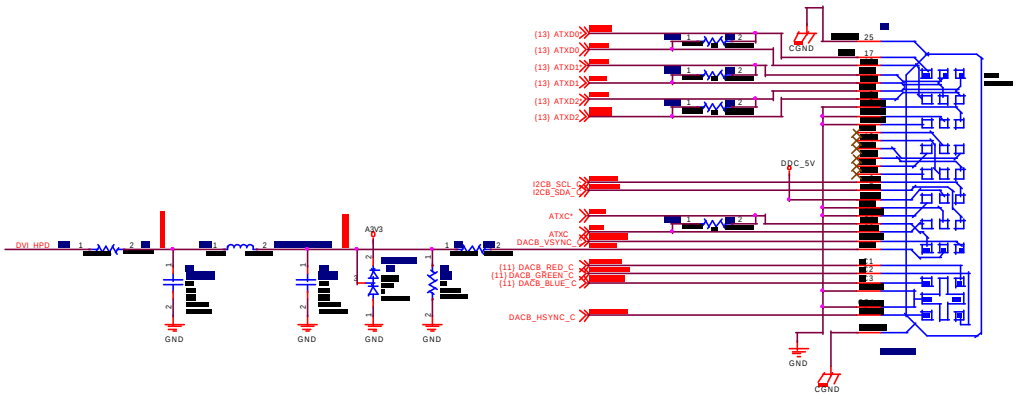
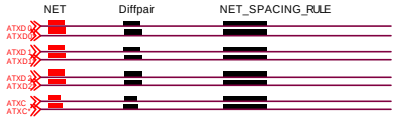
DVI_I OUTPUT





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DVI CONNECT

Size: Custom | Document Number | Rev: 100

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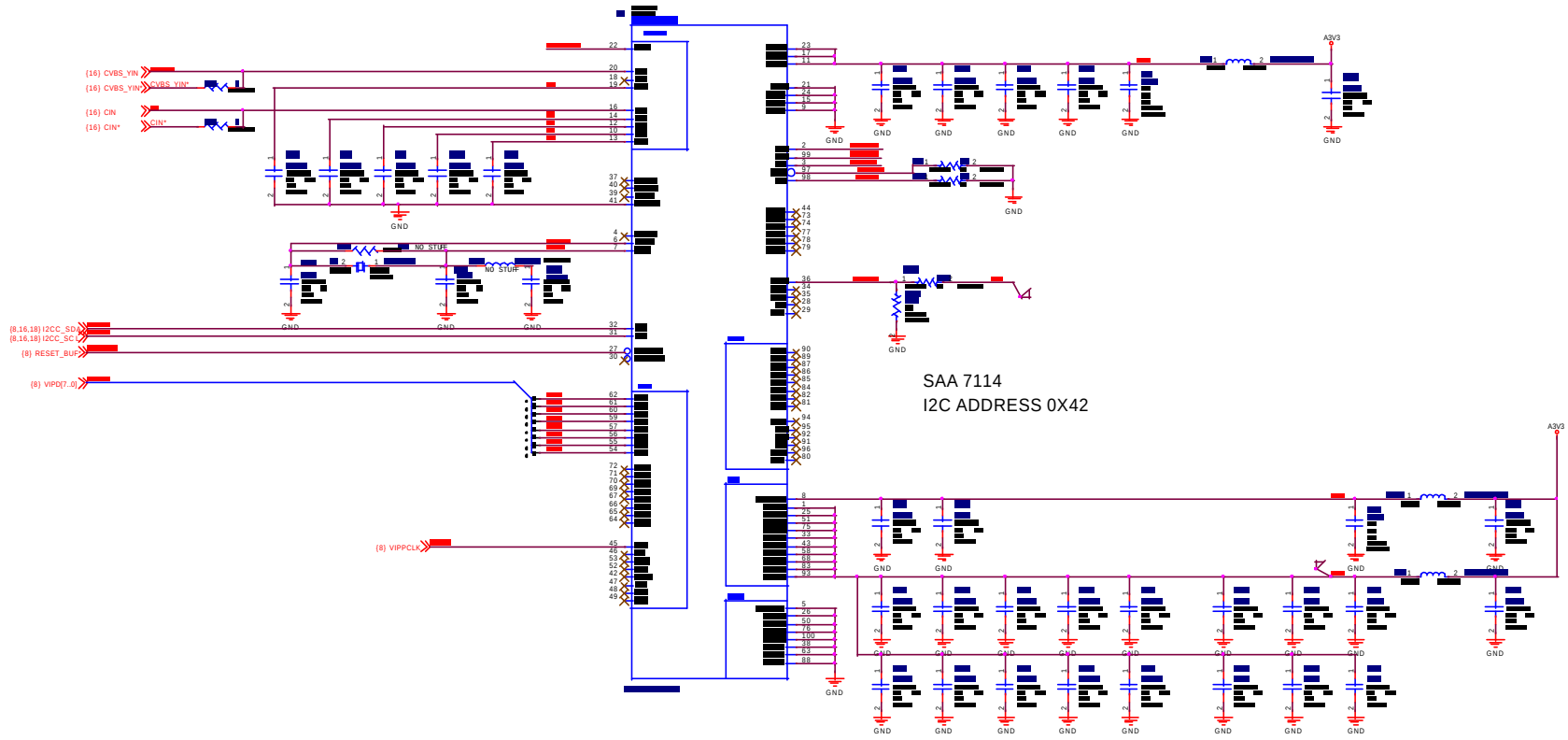
VIDEO CAPTURE



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MS-8891 base on C116 Modify		
Size: Custom	Document Number: VIDEO CAPTURE	Rev: 100
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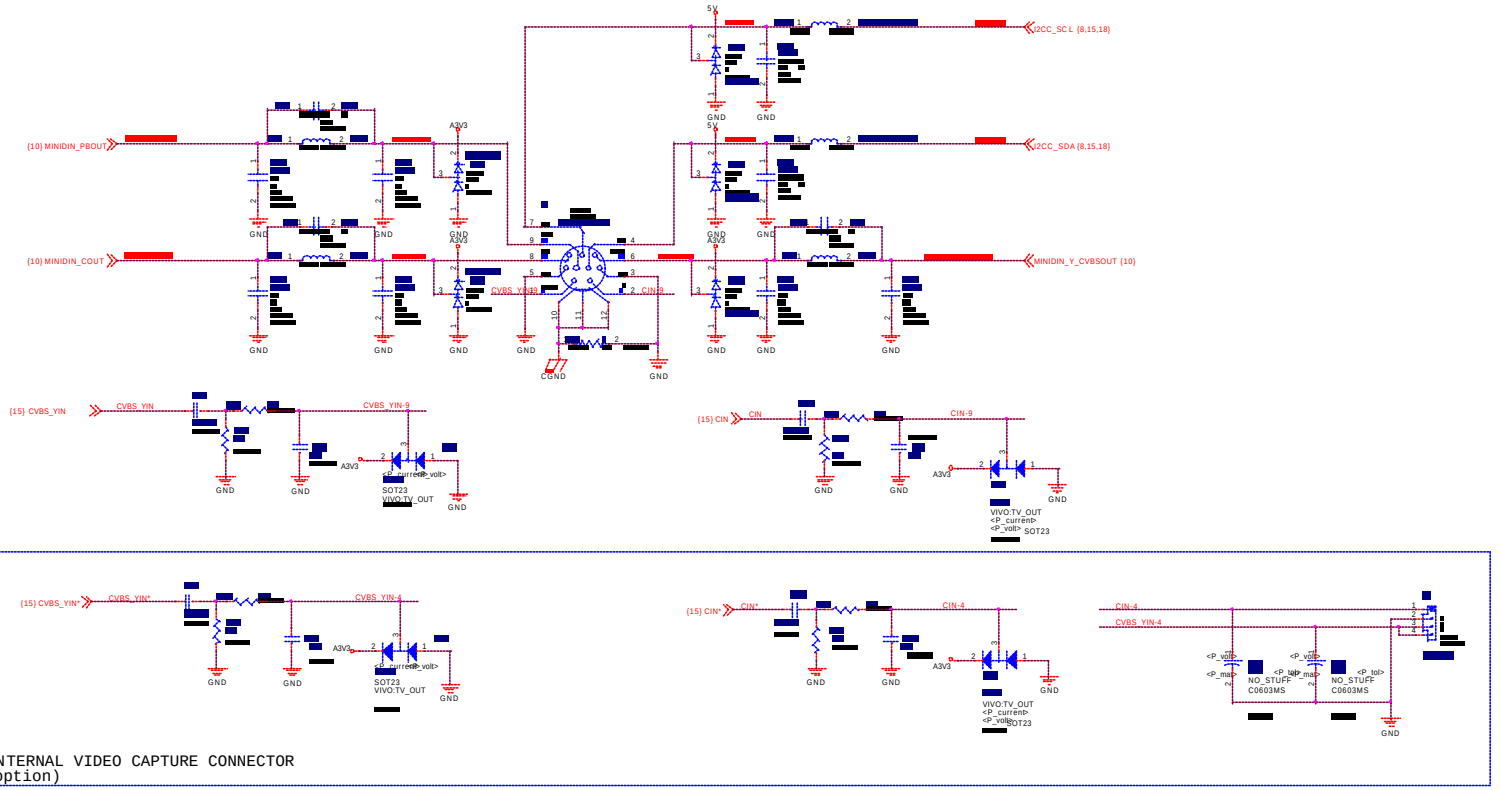
VIDEO IN/OUT CONNECTOR



INTERNAL VIDEO CAPTURE CONNECTOR
(option)

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MS-8891 base on C116 Modify		
Size: Custom	Document Number: VIDEO IN/OUT CONNECT	Rev: 100
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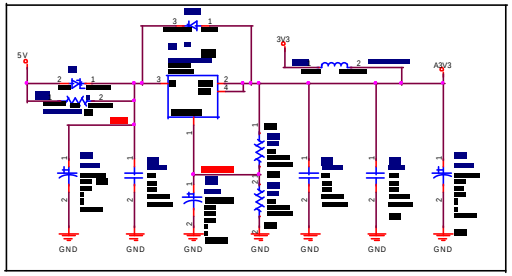
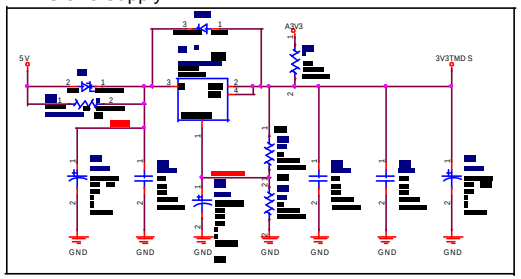
POWER SUPPLY

ANALOG 3V3



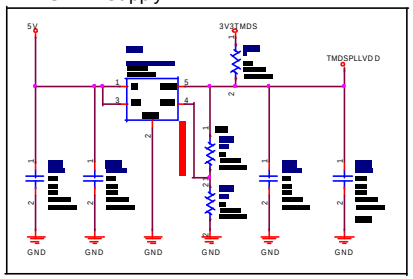
Vout = VRef * (1+Rbot/Rtop)
3.31V = 1.25V * (1+(165/100))

TMDS 3V3 Supply

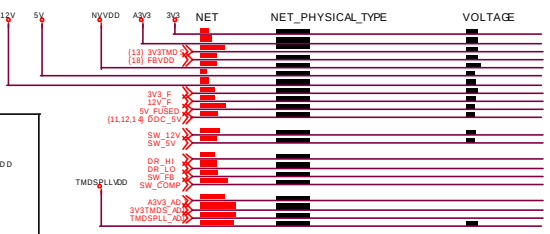


Vout = VRef * (1+Rbot/Rtop)
3.31V = 1.25V * (1+(165/100))

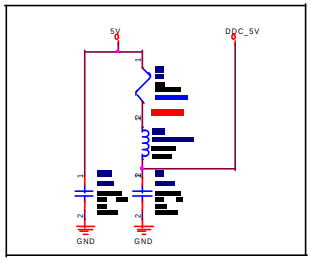
TMDS PLL Supply



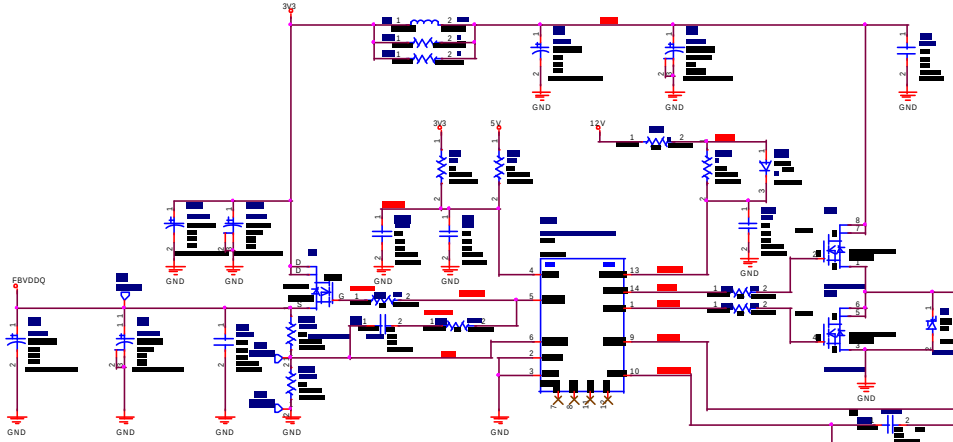
Vout = VRef * (1+Rtop/Rbot)
3.31V = 1.175V * (1+(100/182))



DDC 5V



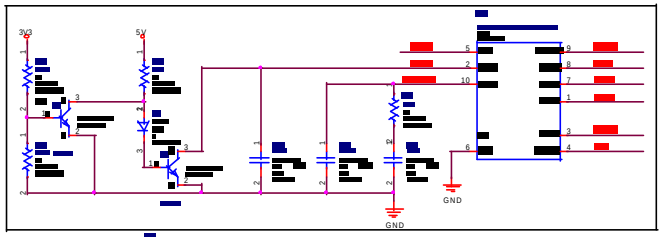
NVDD-SWITCHER / FBVDD-LDO CONTROLER ISL6529

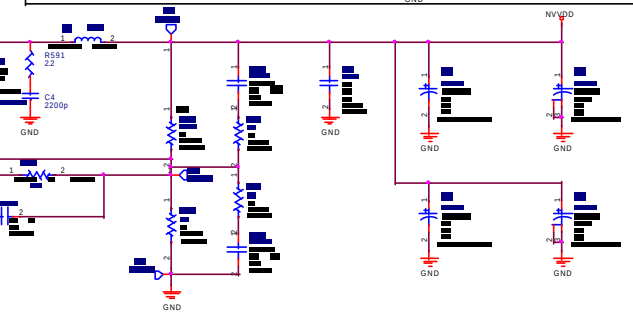


FBVDDQ = VRef * (1+Rtop/Rbot)

ISL6529	2.5V = 0.800V * (1+2.4k/1.13k)
SC2610	2.5V = 1.250V * (1+ 100/ 100)
ISL6529	2.8V = 0.800V * (1+2.67k/1.07k)

ALTERNATIVE TO ISL6529





NVVDD = VRef * (1+Rtop/ Rbot)

ISL6529	1.656V = 0.800V * (1+1070/1000)
SC2610	1.656V = 0.800V * (1+1070/1000)

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MS-8891 base on C116 Modify
Size: Custom | Document Number: POWER SUPPLY | Rev: 100
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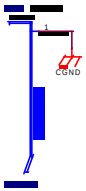
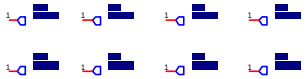
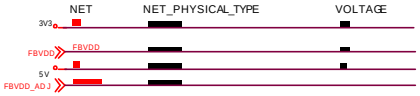
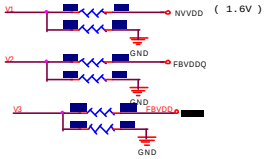
MECHANICS



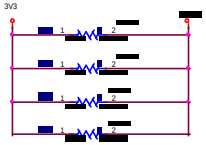


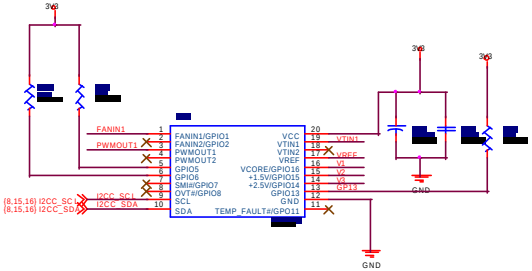


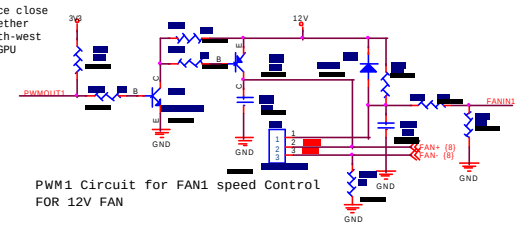
H/W Monitor Funtion



VOLTAGE SENSORING CIRCUIT

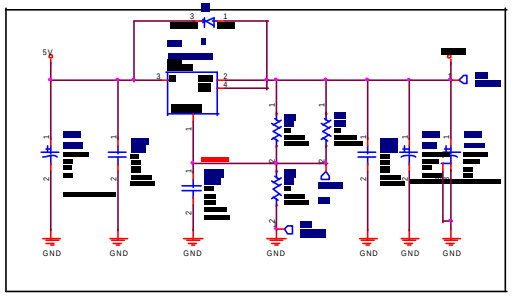






PWM1 Circuit for FAN1 speed Control
FOR 12V FAN

FBVDD Supply



FBVDD = VRef * (1+Rbot/ Rtop)

3.315V = 1.250V * (1+ 165/ 100)

3.300V = 1.250V * (1+ 187/ 115)