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

Page Overview

1 18P112 OVERVIEW

2 NV18 AGP Section and AGP connector

3 NV18 FRAMEBUFFER Interface

4 MEMORY 128MB, 8Mx16DDR Bits 0..31

5 MEMORY 128MB, 8Mx16DDR Bits 32..63

6 MEMORY 128MB, 8Mx16DDR Bits 64..95

7 MEMORY 128MB, 8Mx16DDR Bits 96..127

8 NV18 STRAPPING, I/O Interface

BIOS, FAN CONTROL, THERMAL SENSOR

9 NV18 DACA, DACB output, SYNC amplifier

PLL Section

10 DACB MULTIPLEXER

11 PRIMARY DISPLAY Filter and Connector

12 SECONDARY DISPLAY Filter and Connector

13 NV18 INTERNAL TMDS Power and Output

14 VIDEO CAPTURE Philips 7114 I/O

15 VIDEO IN/OUT, Filter and Connector

16 POWER SUPPLY

NVVDD, MEM_VDD, A3V3, TMDS3V3, TMDSPLL

17 MECHANICS, and FBVDD

HISTORY:

A00

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.

600-10116-000X-A00

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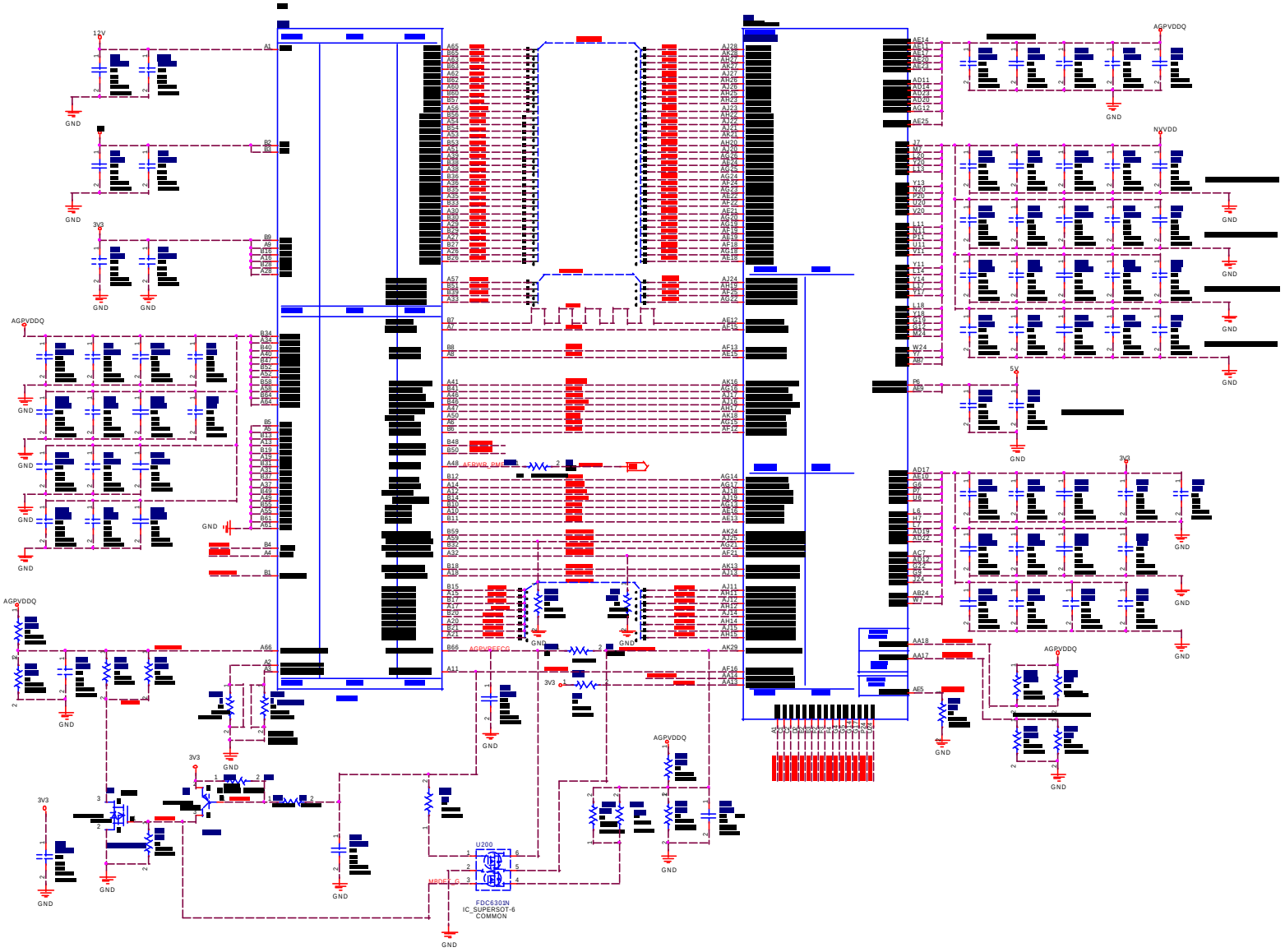
MS-8893 base on C116 Modify

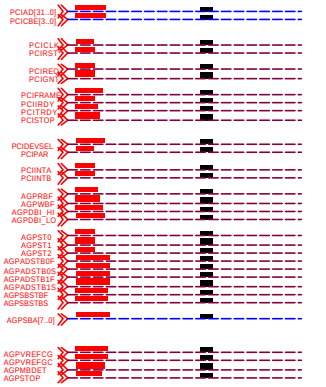
Size: Custom | Document Number: TOP PAGE | Rev: 00A

Date: Monday, September 16, 2002 | Sheet 1 of 17

NV18 AGP SECTION AND AGP CONNECTOR



AGP spacing rules



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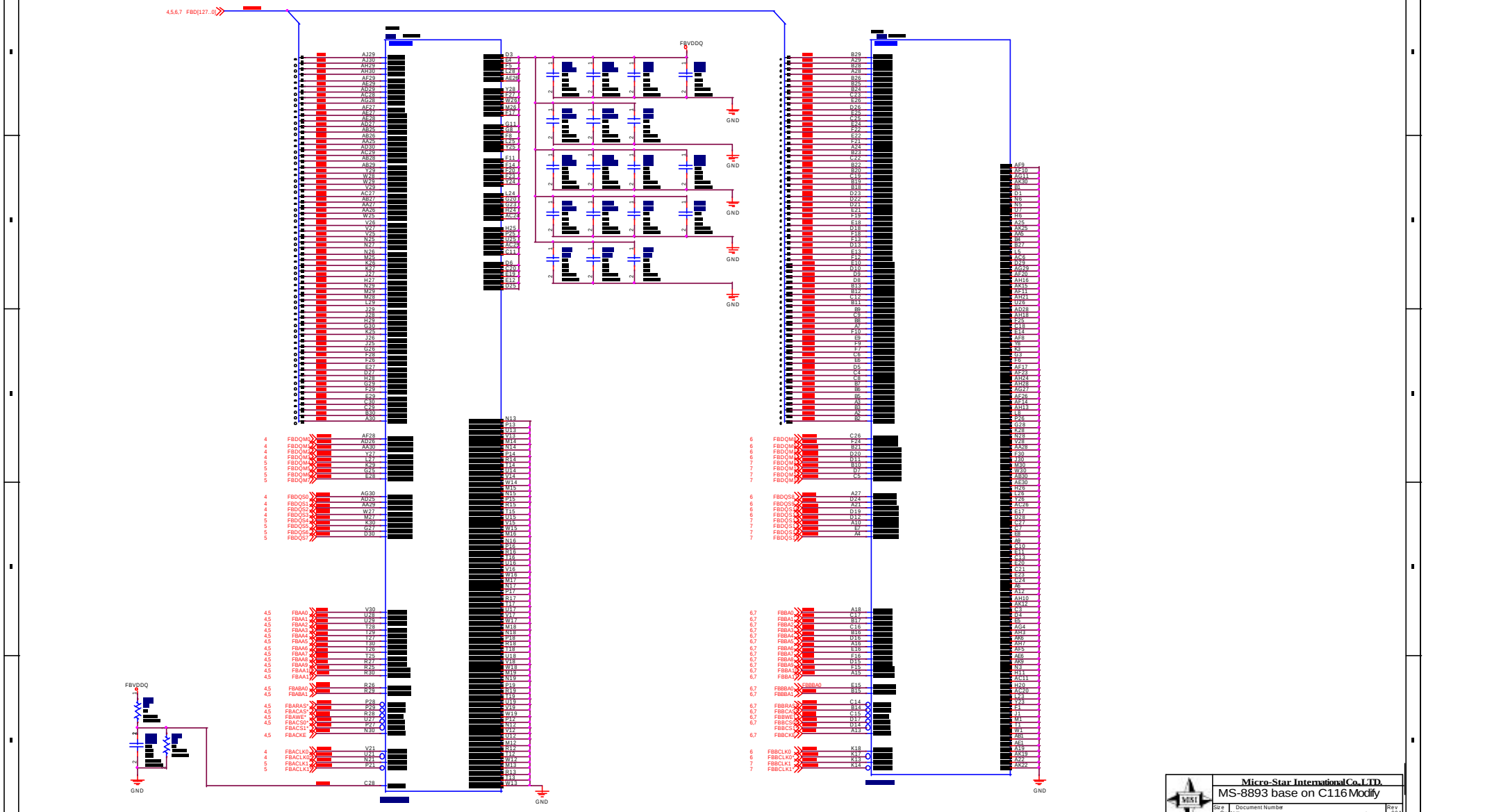
Size: Custom	Document Number: AGP INTERFACE	Rev: 00A
Date: Monday, September 16, 2002	Sheet: 2 of 17	

NV18 FRAMEBUFFER INTERFACE AND DECOUPLING



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MS-8893 base on C116 Modify		
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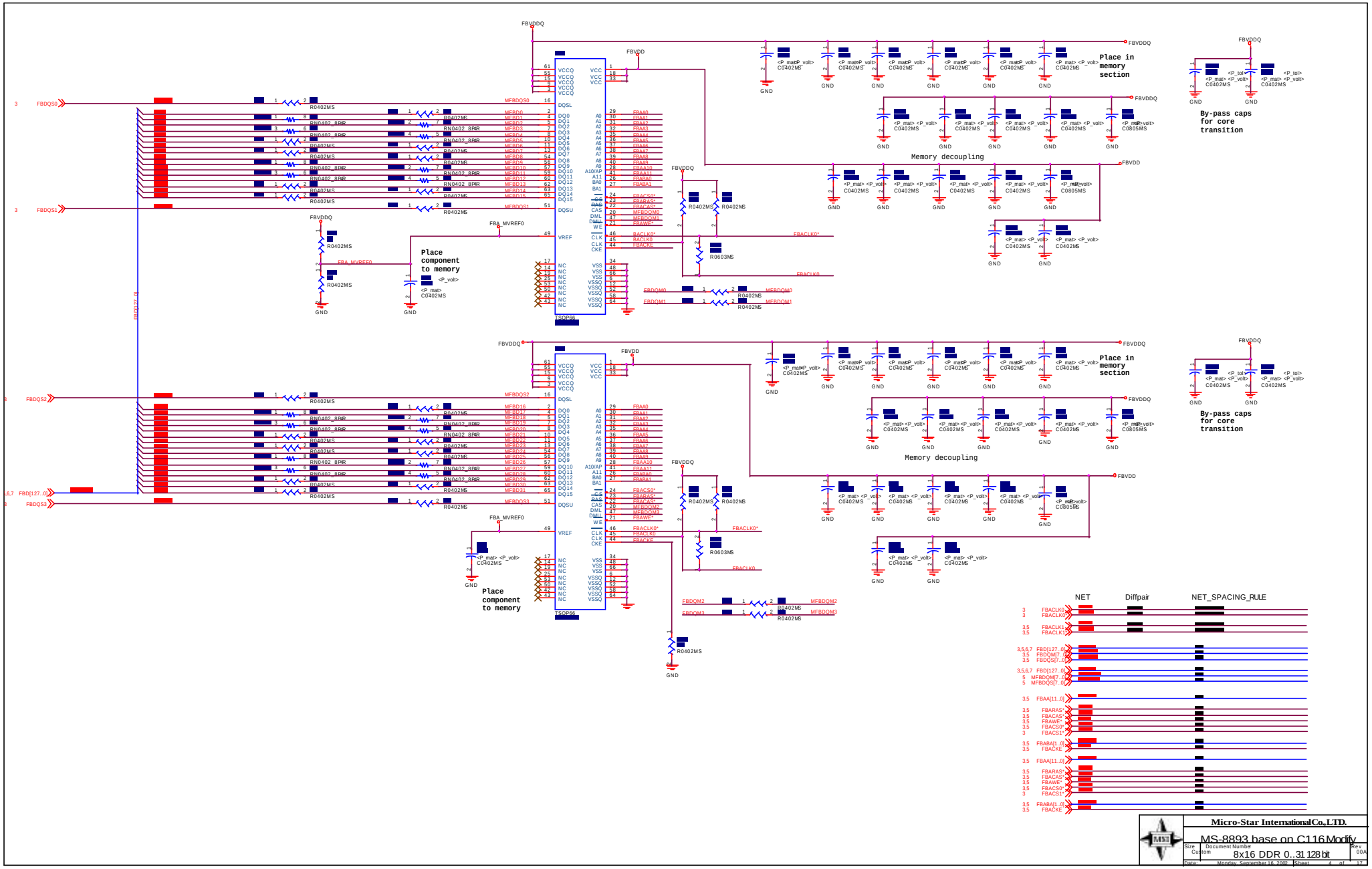
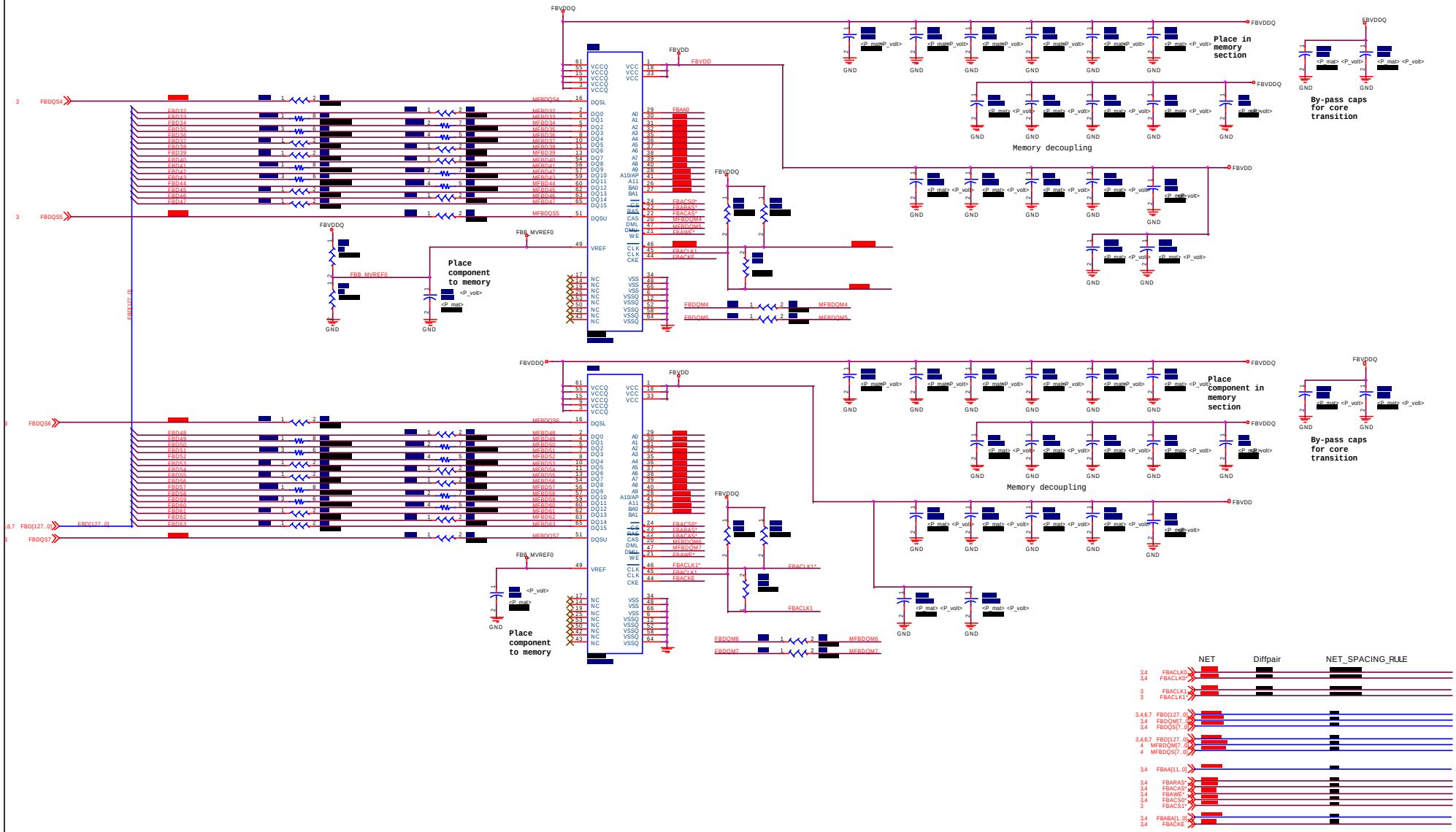
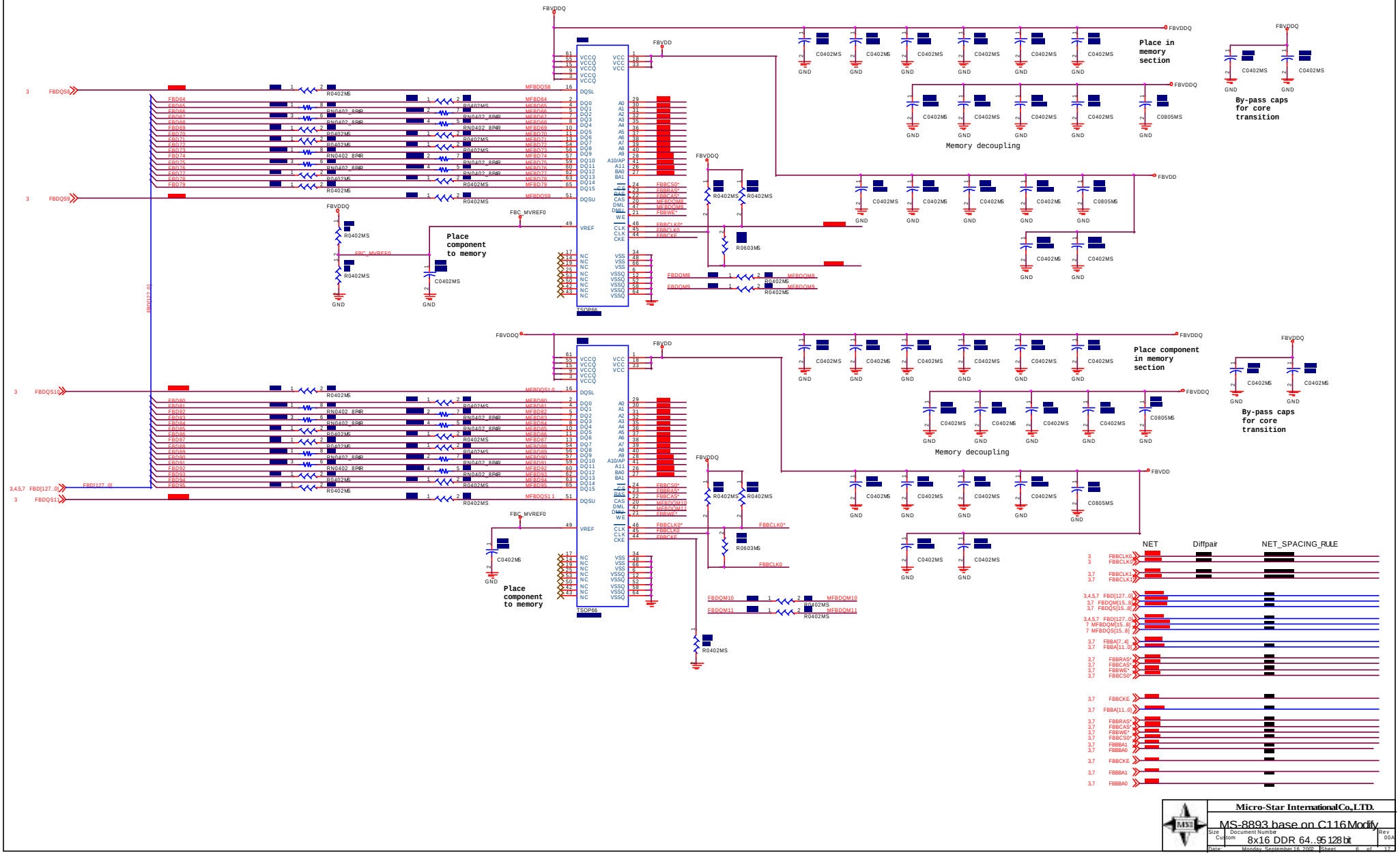
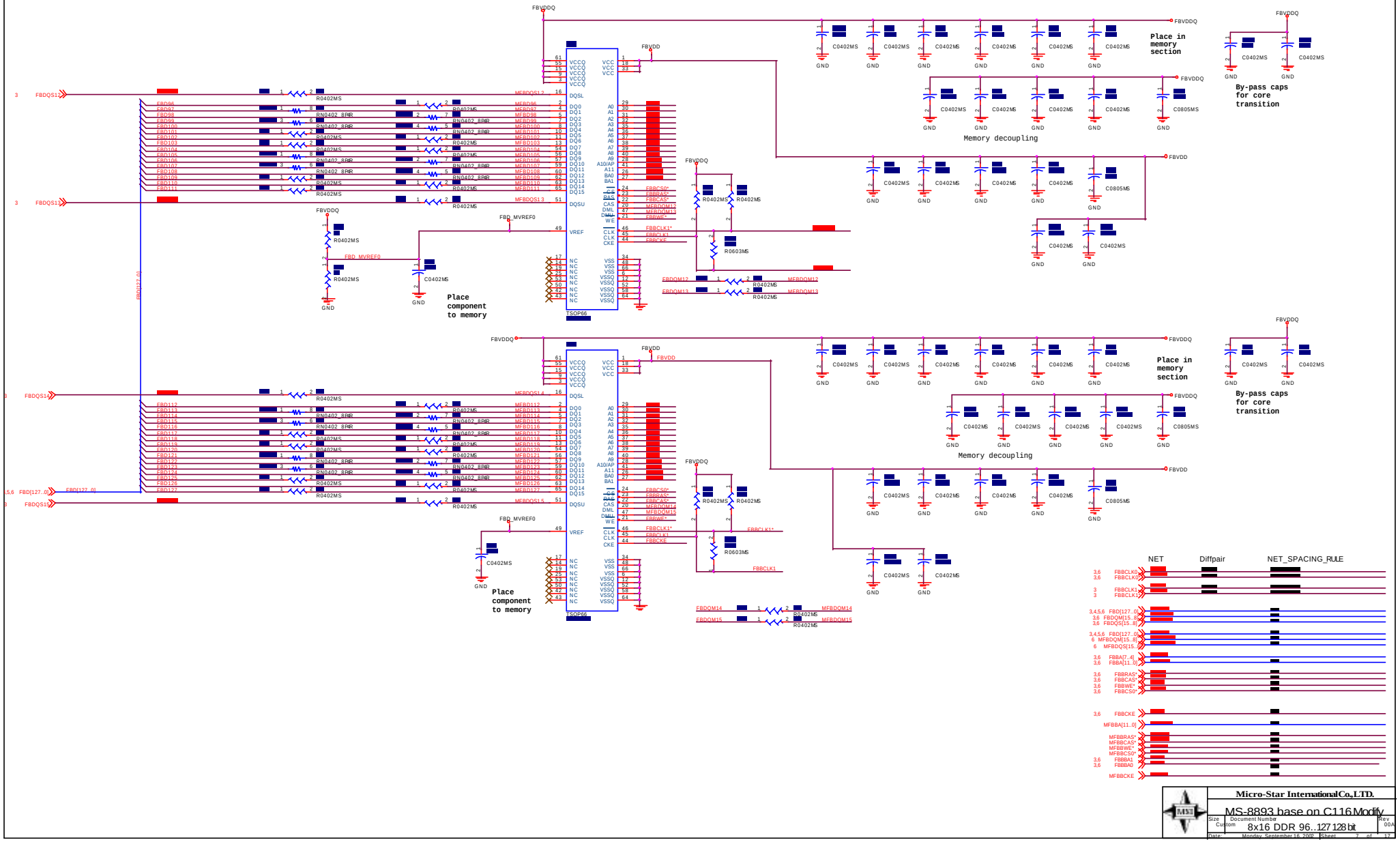
Date: Monday, September 16, 2002	Sheet: 3 of 12	


Place component to memory
Place in memory section
Memory decoupling
By-pass caps for core transition
Place component to memory
Place in memory section
Memory decoupling
By-pass caps for core transition
NET
Diffpair
NET_SPACING_RULE
Micro-Star International Co., LTD.
MS-8893 base on C116 Modify
8x16 DDR 0..31 128 bit
Monday, September 16, 2002


FBVDDQ
FBVDD
Place component to memory
FBB_MVREF0
Place in memory section
Memory decoupling
By-pass caps for core transition
Place component in memory section
NET
Diffpair
NET_SPACING_RULE
Micro-Star International Co., LTD.
MS-8893 base on C116 Modify
8x16 DDR 32..63 128bit
Monday, September 16, 2002


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-8893 base on C116 Modify
8x16 DDR 64..95 128 bit


FBVDDQ
FBVDD
Place in memory section
By-pass caps for core transition
Memory decoupling
Place component to memory
FBD_MVREF0
TSOP66
NET
Diffpair
NET_SPACING_RULE
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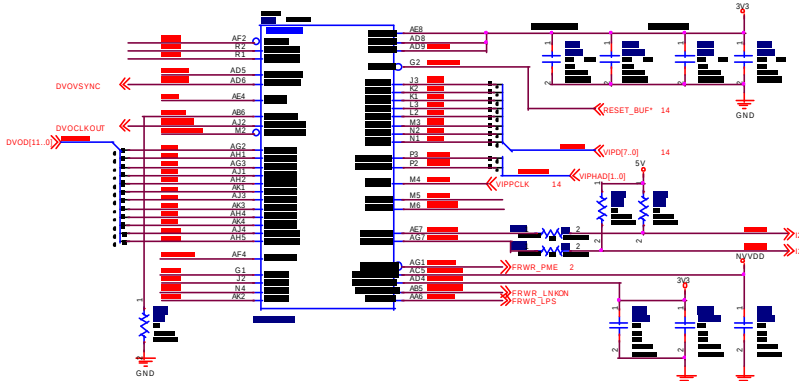
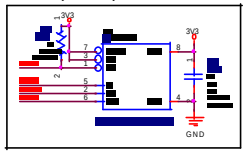
8x16 DDR 96..127 128 bit
Monday, September 16, 2002

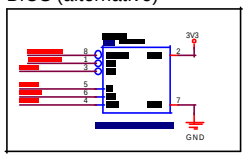
NV18 STRAPPING, I/O INTERFACE, BIOS, FAN CONTROL AND TEMP SENSOR



BIOS (serial)



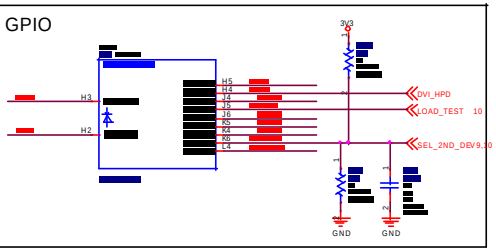
BIOS (alternative)



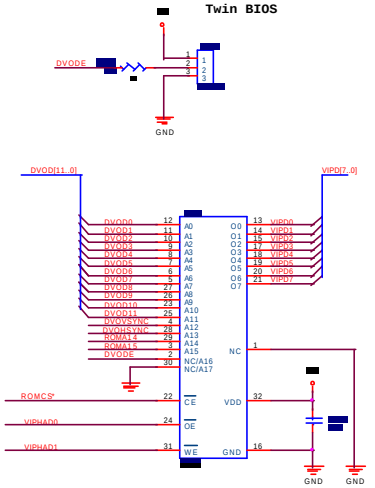
NET	NET_PHYSICAL_TYPE	VOLTAGE
FAN_RETURN		
THERM		
THERM*		

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

NV18 GPIO

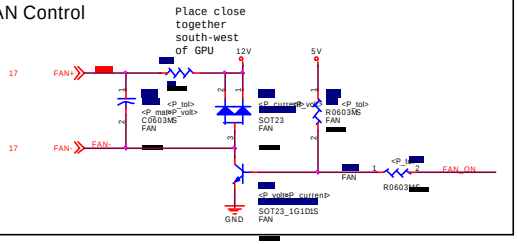


Twin BIOS

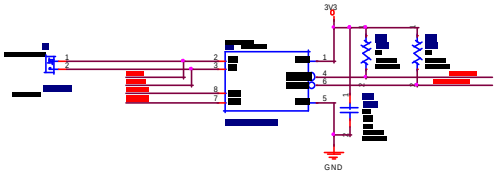


FAN Control

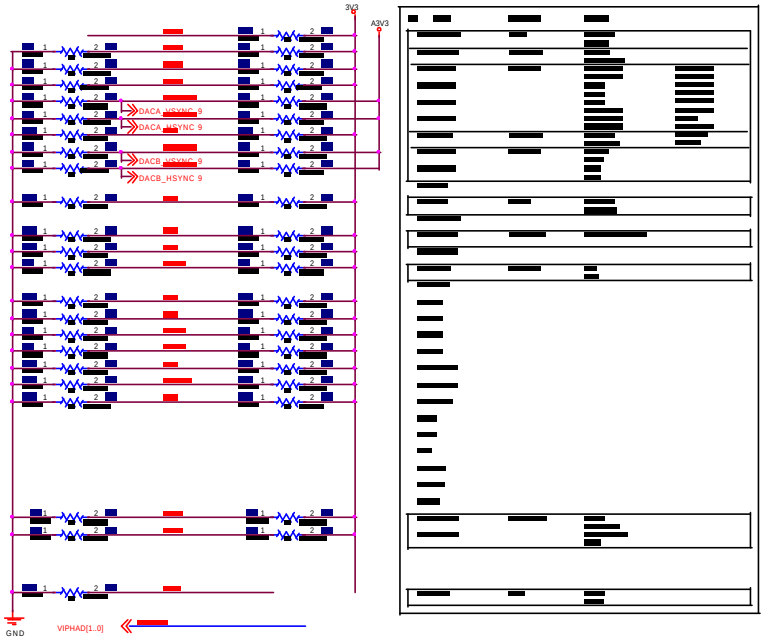
Place close
together
south-west
of GPU



TEMP Sensor



STRAPPING OPTIONS



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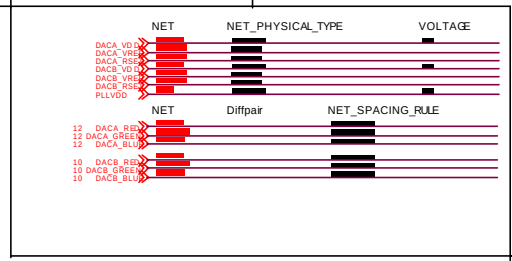
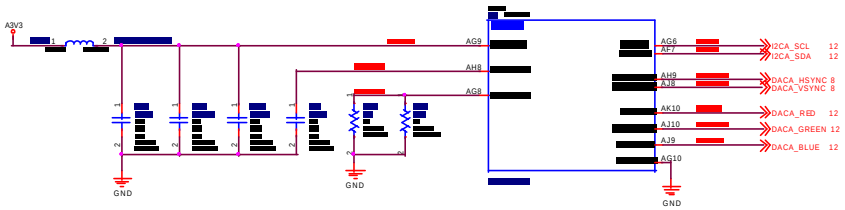
Size: Custom	Document Number: Strapping, I/O interface,BIOS
Date: Monday, September 16, 2002	Sheet 8 of 17

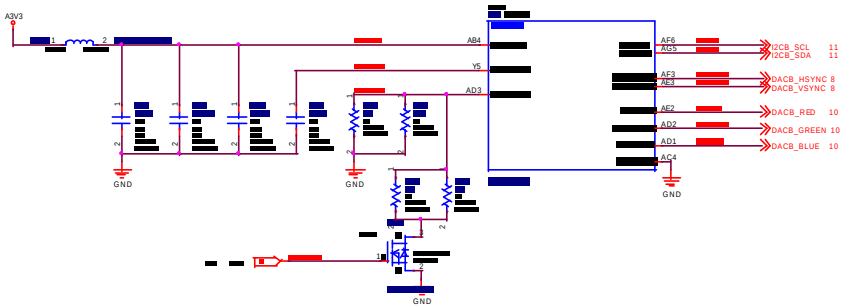
NV18 DAC_A, DAC_B, PLL, SYNC AMPL



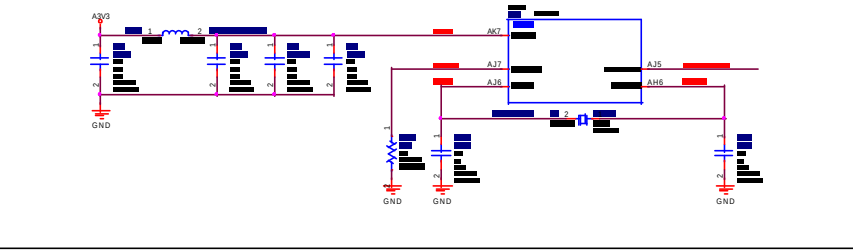
NV18 DAC_A



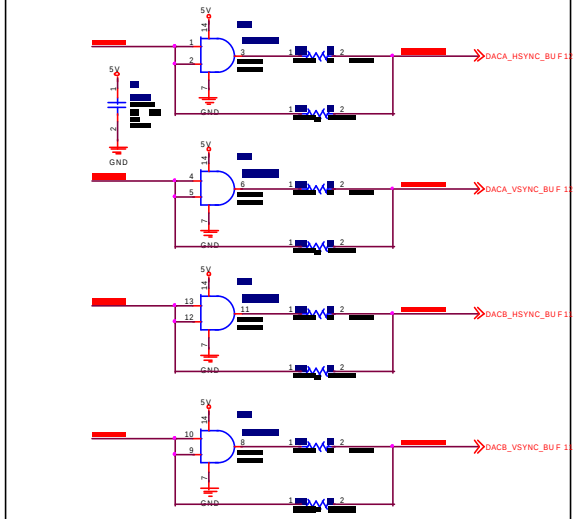
NV18 DAC_B with RSet select



NV18 PLL



SYNC Amplifier



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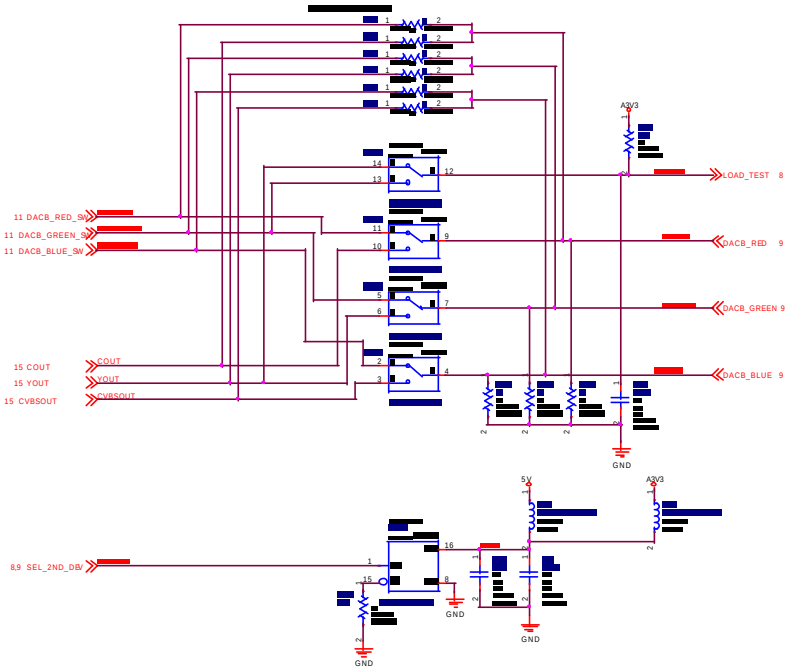
Date: Monday, September 16, 2002 | Sheet 9 of 17

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		
MINIDIN_COUT		
MINIDIN_Y_CVBSOUT		
MINIDIN_PBOUT		



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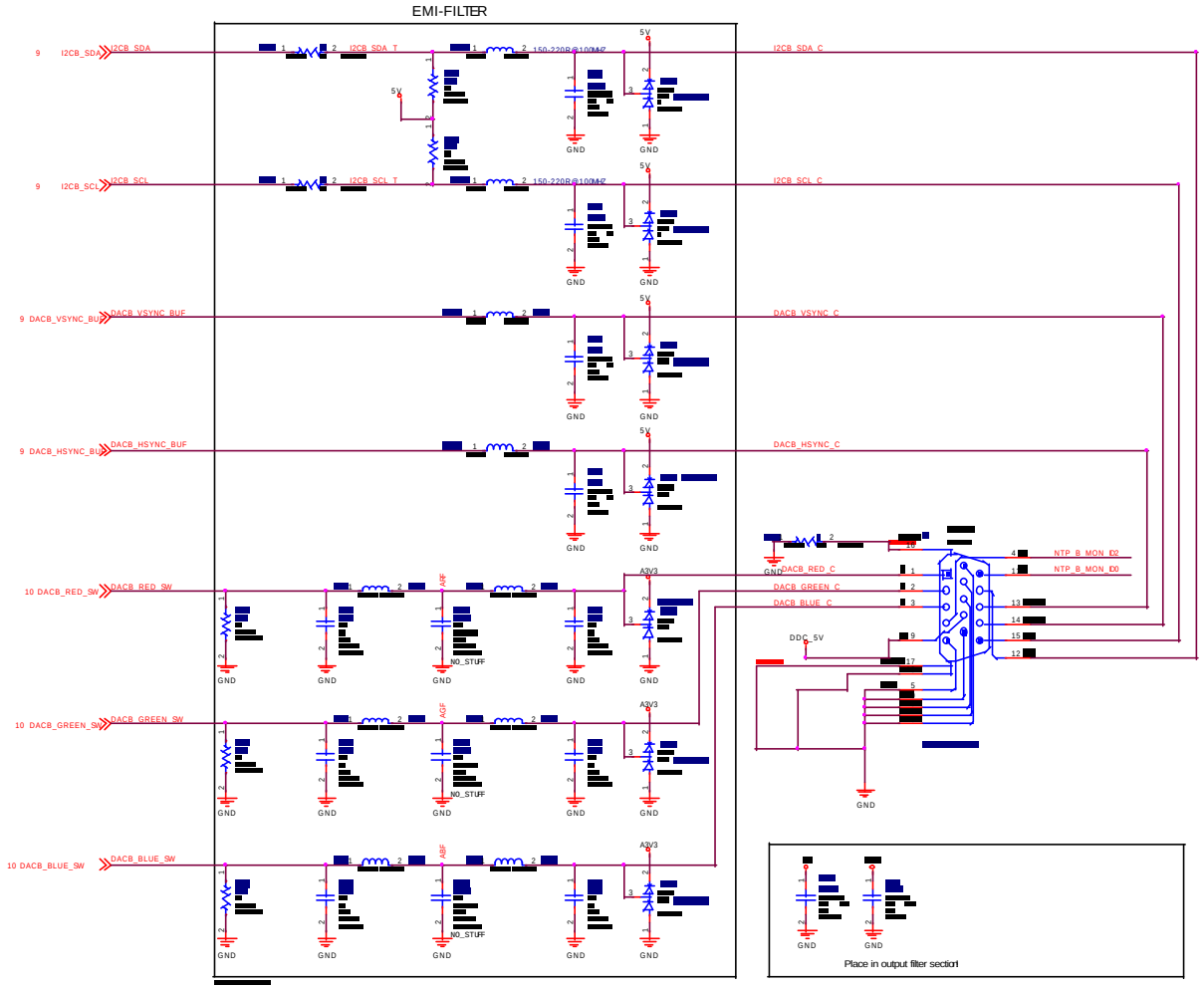
MS-8893 base on C116 Modify	
Size: Custom	Document Number: SWITCH BETWEEN VGA AND TV-OUT
Rev: 00A	
Date: Monday, September 16, 2002	Sheet: 10 of 17

DACA output



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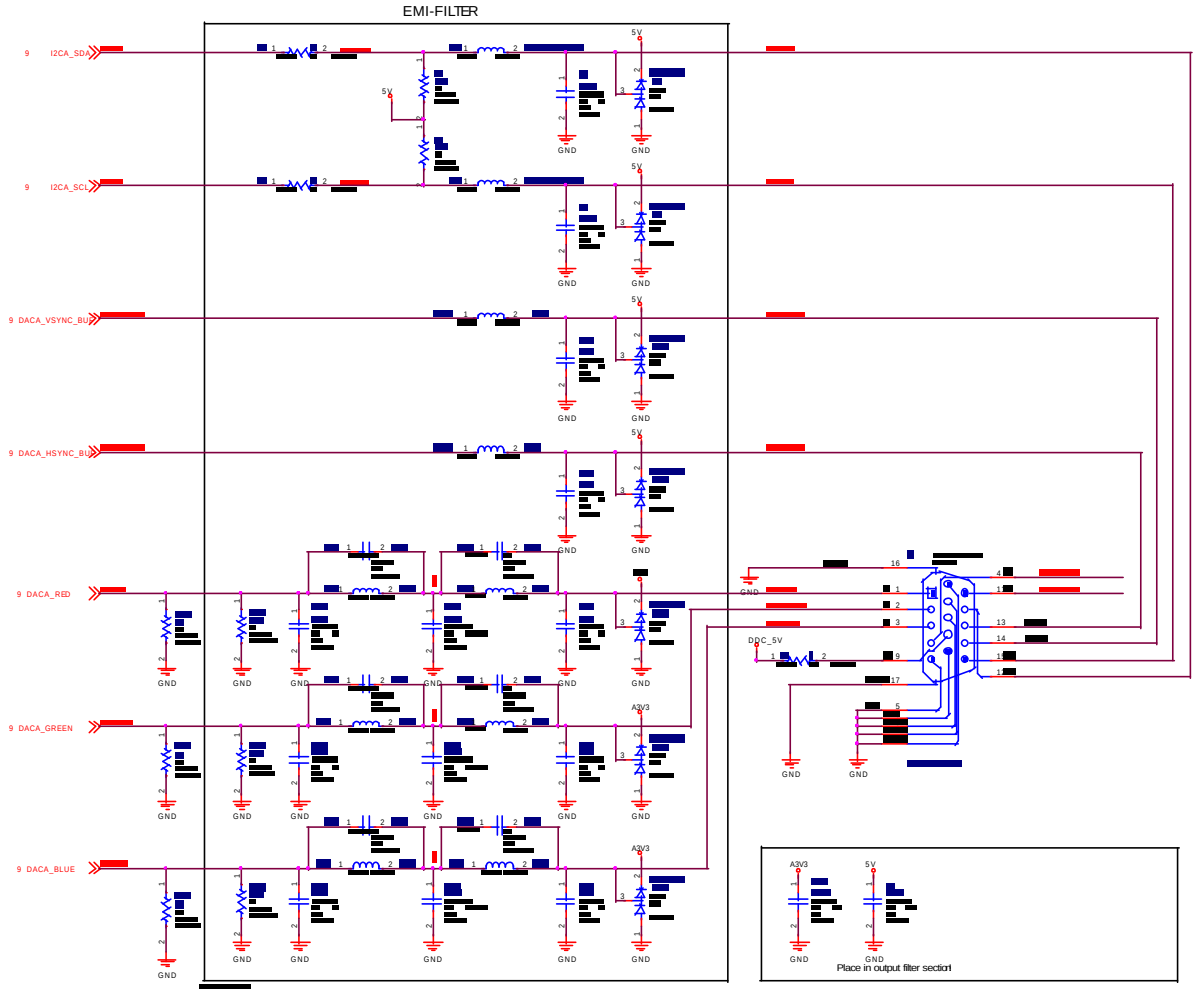
MS-8893 base on C116 Modify		
Size: Custom	Document Number: DAC A CONNECT	Rev: 00A
Date: Monday, September 16, 2002	Sheet: 11 of 17	

DACB output



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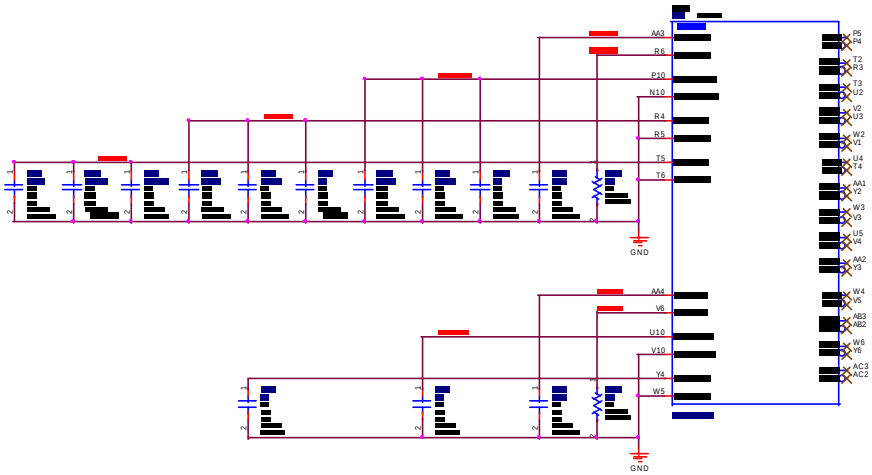
MS-8893 base on C116 Modify

Size	Document Number	Rev
Custom	DAC B CONNECT	00A
Date: Monday, September 16, 2002	Sheet 12 of 17	

INTERNAL TMDS POWER AND DECOUPLING



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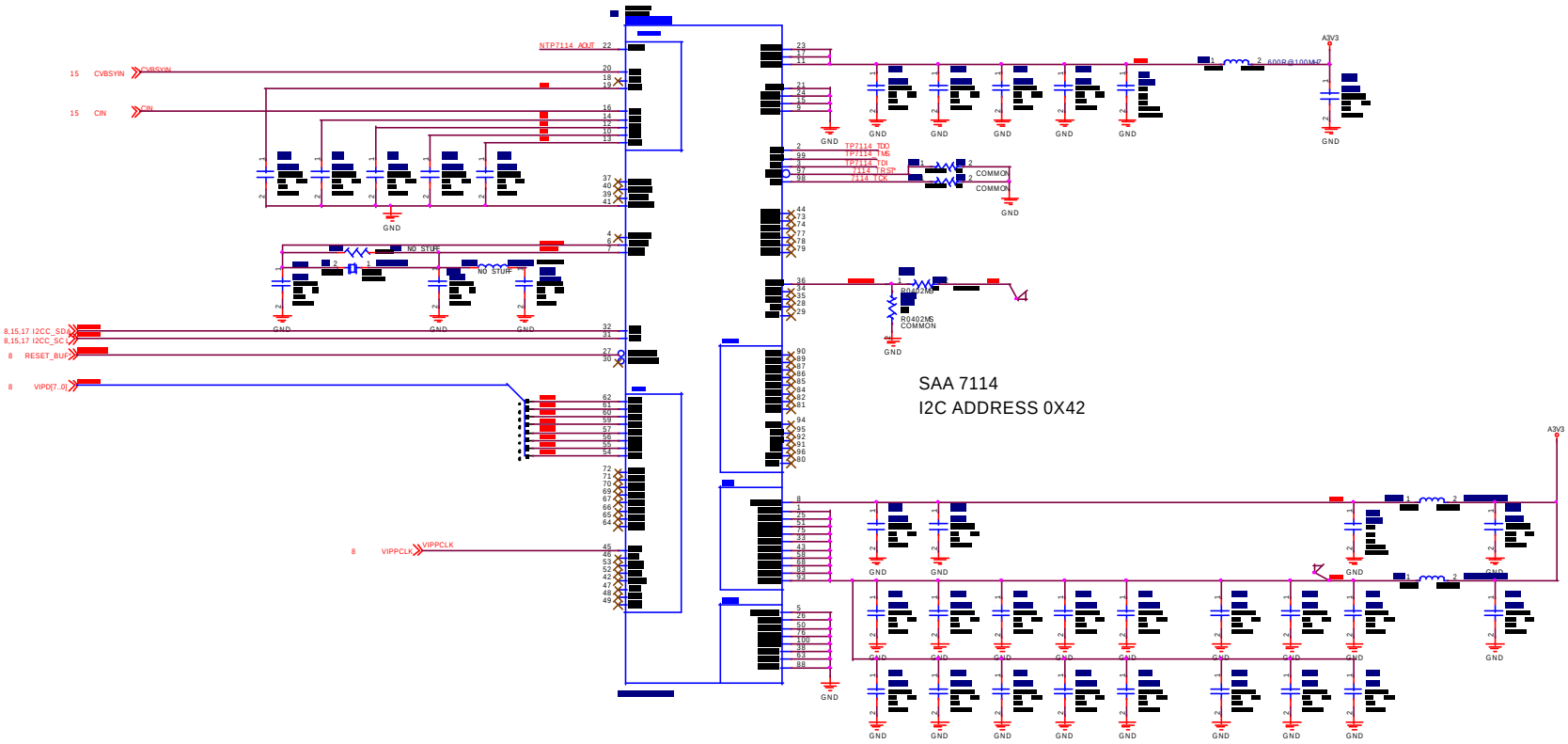
Size: Custom	Document Number: TMDS POWER AND DECOUPLING	Rev: 00A
Date: Monday, September 16, 2002	Sheet: 13 of 17	

VIDEO CAPTURE



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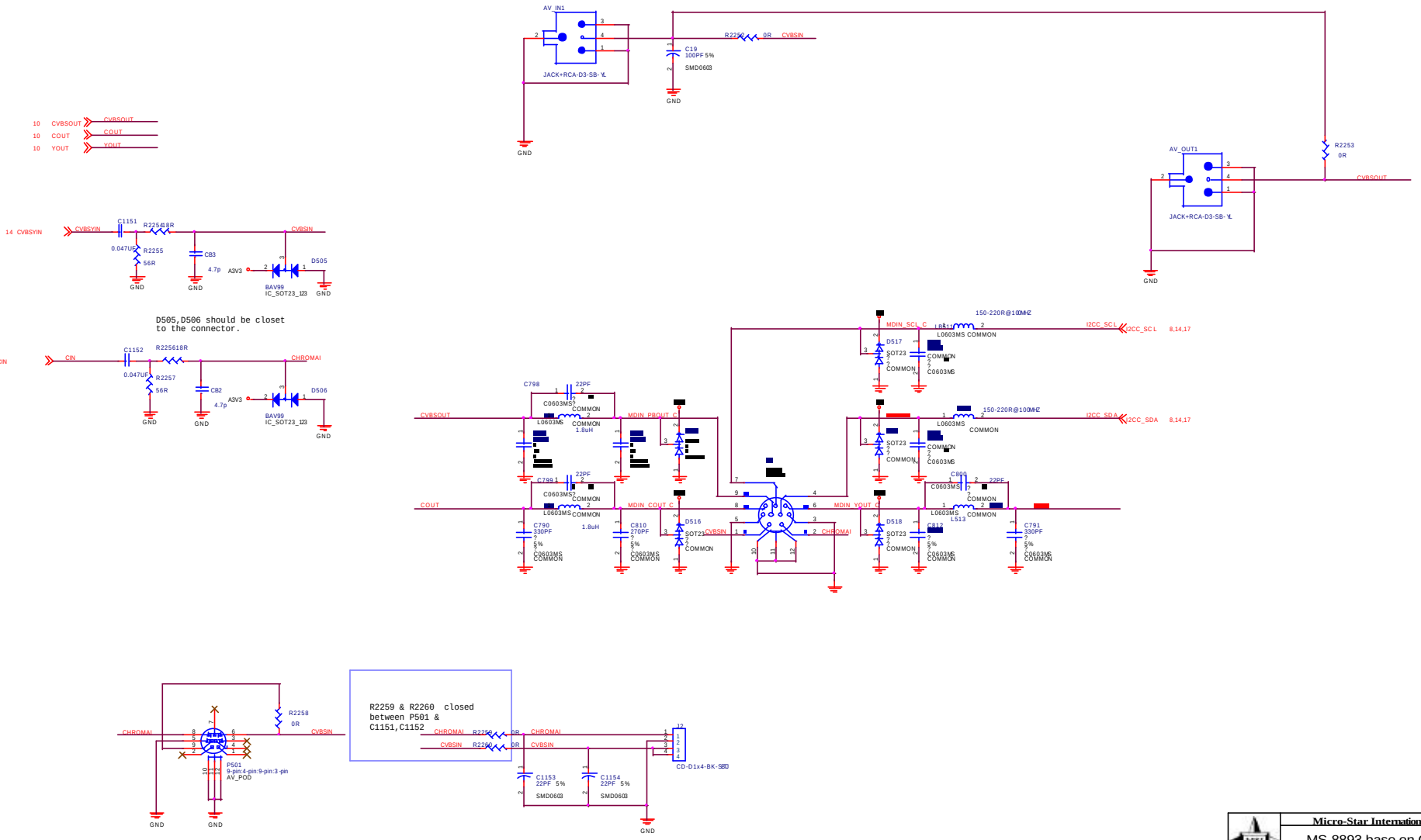
Size: Custom	Document Number: VIDEO CAPTURE	Rev: 00A
Date: Monday, September 16, 2002	Sheet: 14 of 17	

VIDEO IN/OUT CONNECTOR



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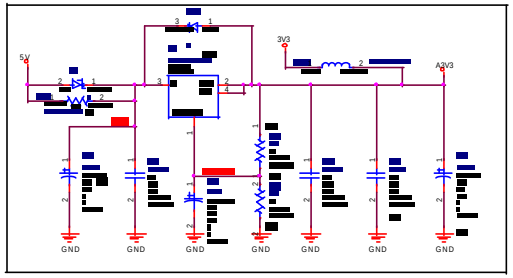
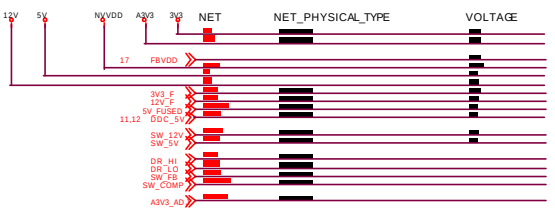
Size: Custom	Document Number: VIDEO IN/OUT CONNECT
Rev: 00A	
Date: Monday, September 16, 2002	Sheet: 15 of 17

POWER SUPPLY

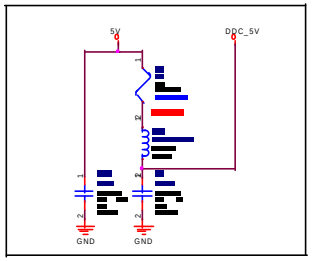
ANALOG 3V3



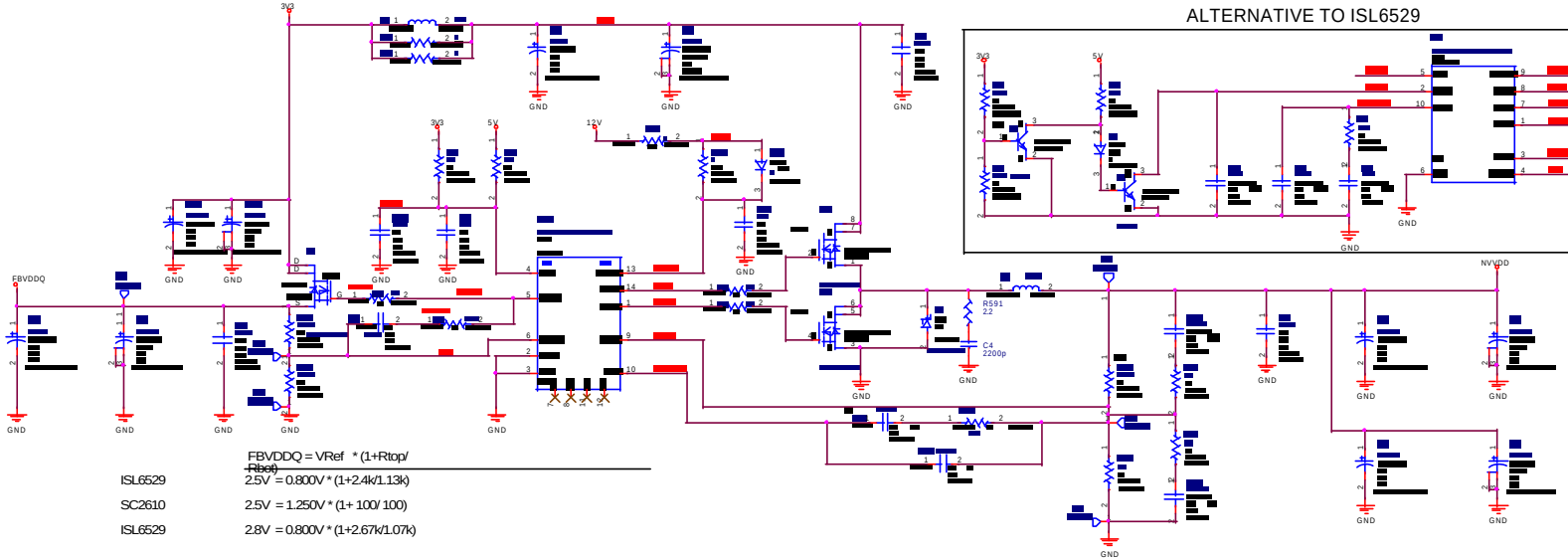
Vout = VRef * (1+Rbot/Rtop)
3.31V = 1.25V * (1+(165/100))



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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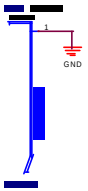
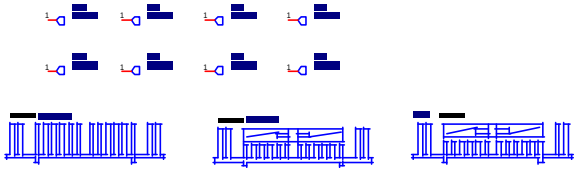
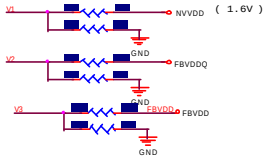
MS-8893 base on C116 Modify
Size: Custom | Document Number: POWER SUPPLY | Rev: 00A
Date: Monday, September 16, 2002 | Sheet 16 of 17

MECHANICS

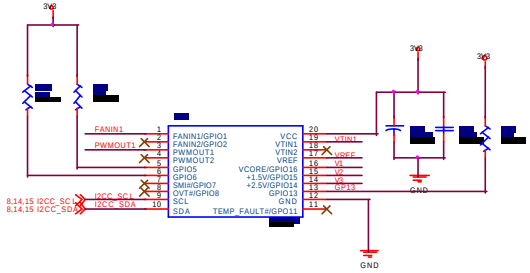


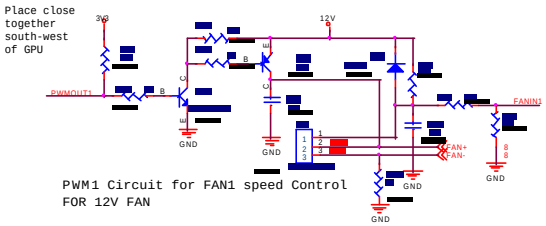


H/W Monitor Funtion

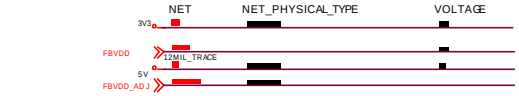


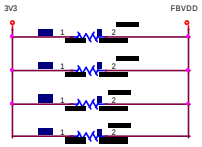
VOLTAGE SENSORING CIRCUIT



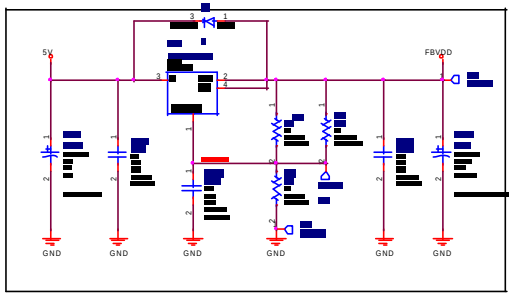


PWM1 Circuit for FAN1 speed Control
FOR 12V FAN





FBVDD Supply



FBVDD = VRef * (1+Rbot/ Rtop)

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

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

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Size: Custom	Document Number: MECHANICS	Rev: 00A
Date: Monday, September 16, 2002	Sheet: 12 of 12	