C116-B, NV31/NV34, 2M/4M/8M/DDR, 64MB, VIDEO OUT, VGA

Page Overview

HISTORY:

0B

A. Change R534 from 2.43K_1% to 2.55K_1% (R11-2551T13-Y01), R533 change from 1.05K_1% to 1.18K_1% (R11-1181T13-Y01) to get FBVDDQ=2.528V.
B. Add R591 (2.2 ohm_0603_5%) and C409 (2200p_0603) to reduce VRM noise on L1 pin1.
200. SHORT ALL MEMORY DAMPING RESISTOR AND CHANGE COLOR TO RED.
210. ADD FBAA12 TO SUPPORT 16M*16 MEMORY

```
1 change all 0402 footprint to 0603.

2.Page  2
 a.removeC62,C590,C574,C566,C615,C628,C642,C631,C626,C648,C647,C645,C624,R609,R625
 b.add 2 MOSFET for U200 daul-lay
3.Page  3
  remove C603,C609,C618,C611,C612,C610,C604,C592,
R768,R770,R772,R774
4.Page 4,5
 a.removeC1112,C238,C241,C1115,C250,C1113,
    C1114,C228,C230,C1120,C1119,C247,C245,C244,
    C1121,C232,C1122
 b.removeC1100,C247,C277,C1101,C1102,C286,C264,
    C1104,C1106,C280,C281,C299,C1107,C1108,
    C269,C270
 c.remove memory data all damping(15ohm).
 d.Move bypass capacitors(C1161,C1162,C1163,C1164)of memory clock to
   close GPU(PAGE3).

 5.Page  6
   remove U13(BIOS(ALTERNATIVE)),TEMP Sensor
 6.Page  7
   change Y3 package to DIP

 7.Page  8
 remove  R695,R694,R693,R7,R1,C788,C797,C819,
         C806,C787,C796,C805,C818,C786,
         C795,C817,C804,L510,L509,L508

  8. Page  10
     a.remove S_OUT1,AV_OUT1,C789,C809,C790,
              C810,C791,C812,L519,L520,L521
     b.add 9pin-mini-din


  9. Page  11
     a.remove ISL6529
     b.add mosfet and OP(LM358) for NVVDD,FBVDD,FBVDDQ
     c.change C41,C39 to DIP package

  0728

     change data[48:63) sequence
     ddr suport 16*16M

  0728

     SUPORT NV18B
```


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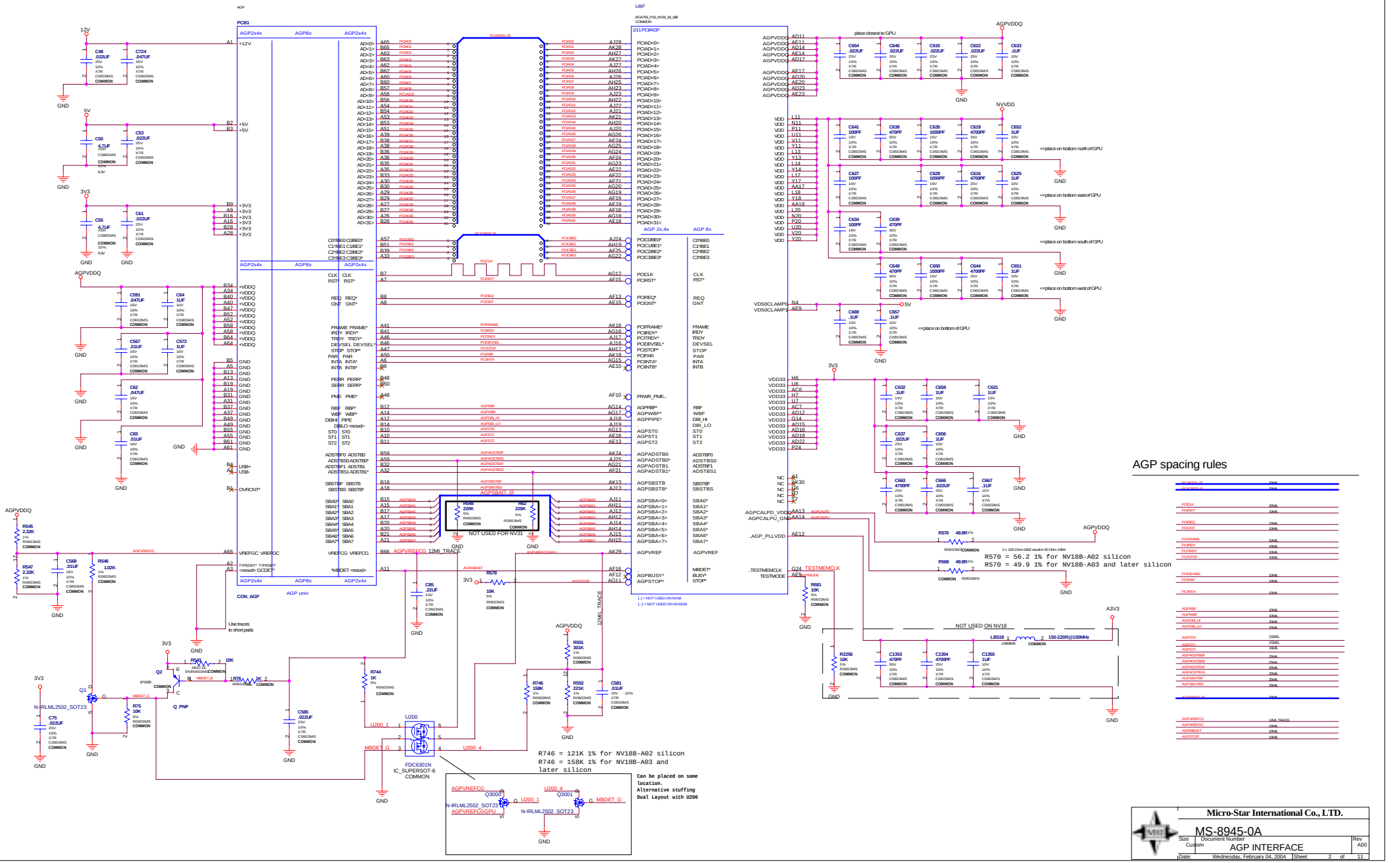
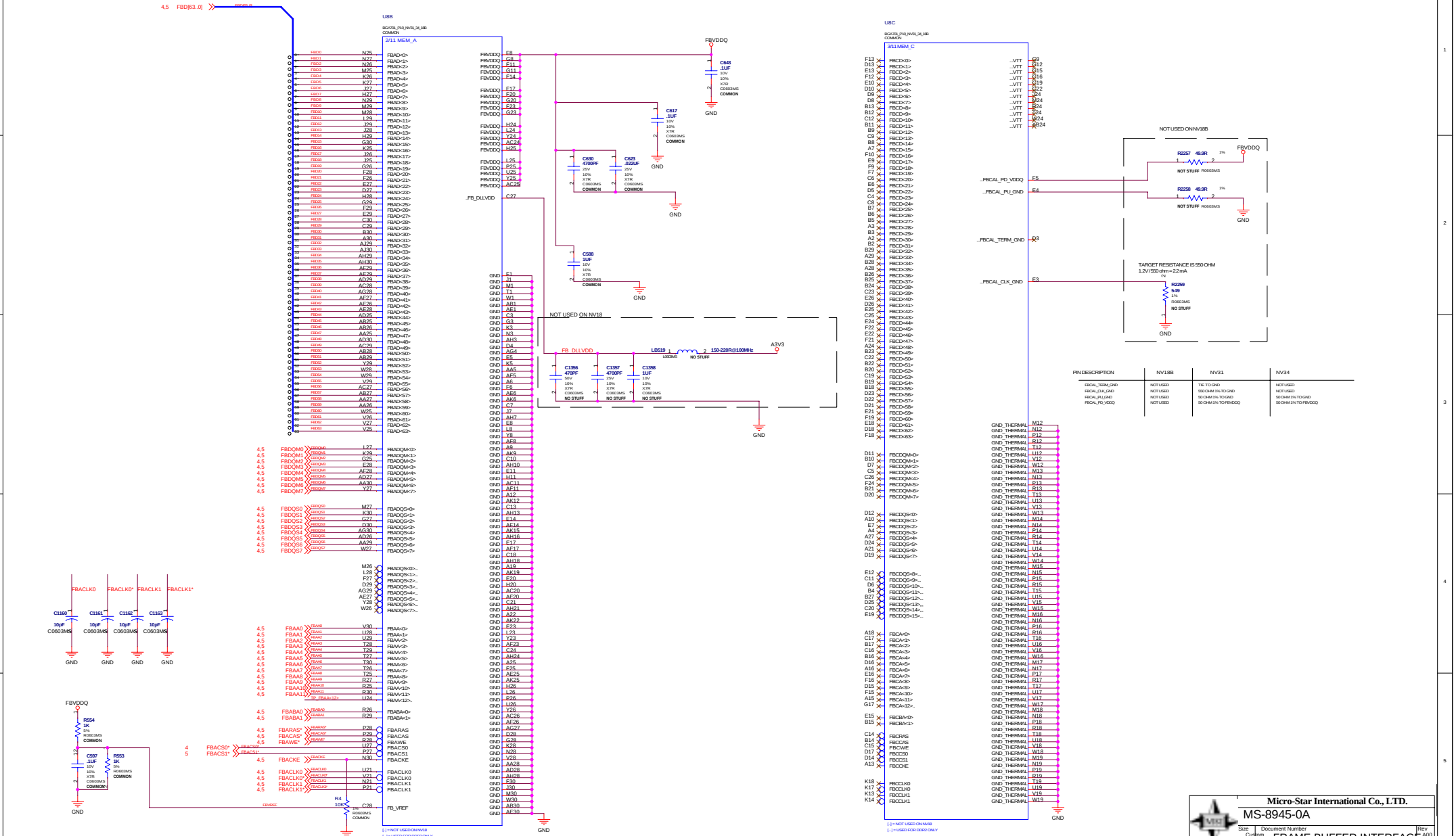
MS-8936-A04
Size: Custom | Document Number: TOP PAGE | Rev: A00
Date: Monday, January 05, 2004 | Sheet 1 of 11

NV18 AGP SECTION AND AGP CONNECTOR



NV18 FRAMEBUFFER INTERFACE AND DECOUPLING



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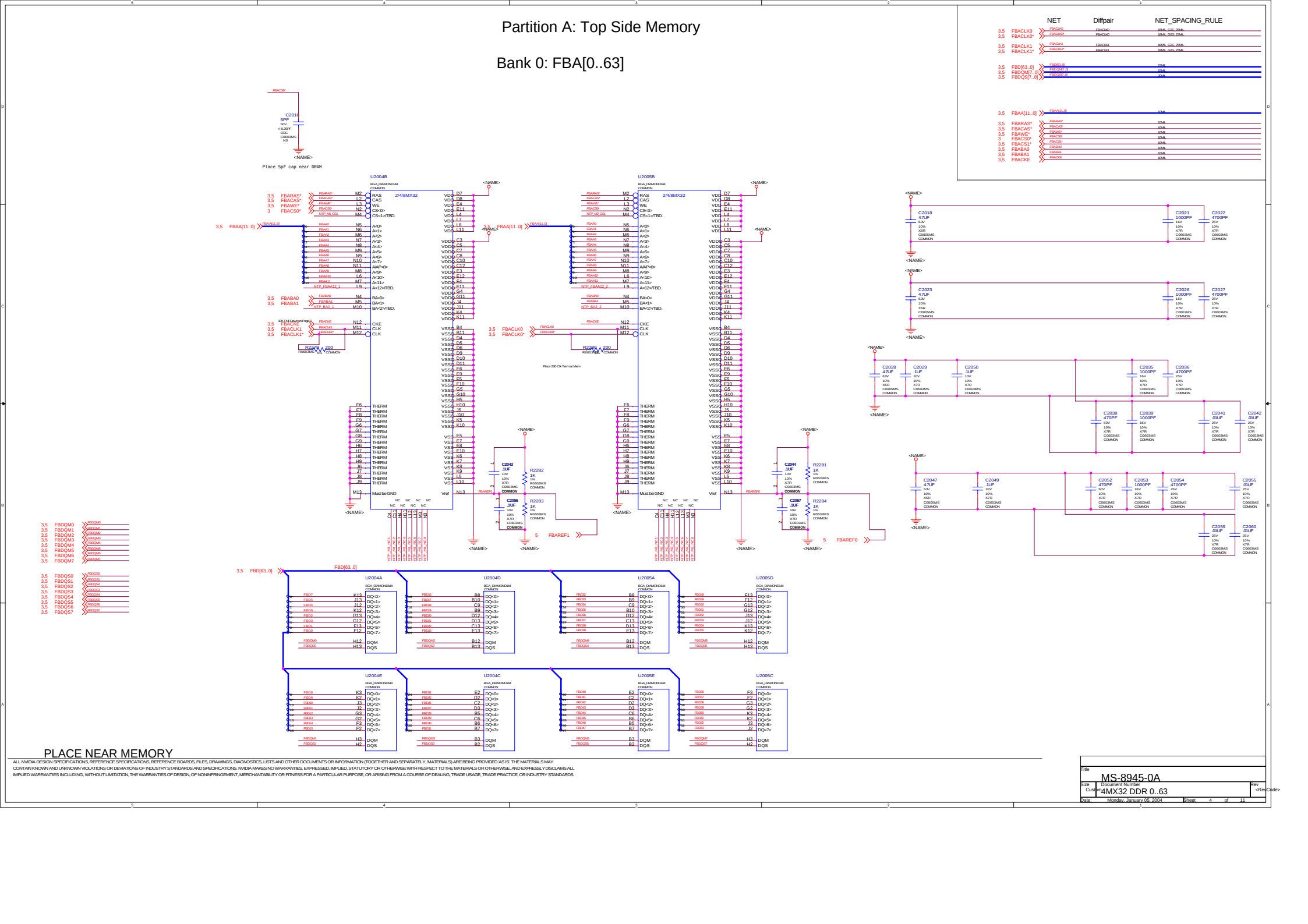
MS-8945-0A			
Size: Custom	Document Number: FRAME BUFFER INTERFACE		Rev: A00
Date: Wednesday, February 04, 2004	Sheet 3 of 11		

Partition A: Top Side Memory

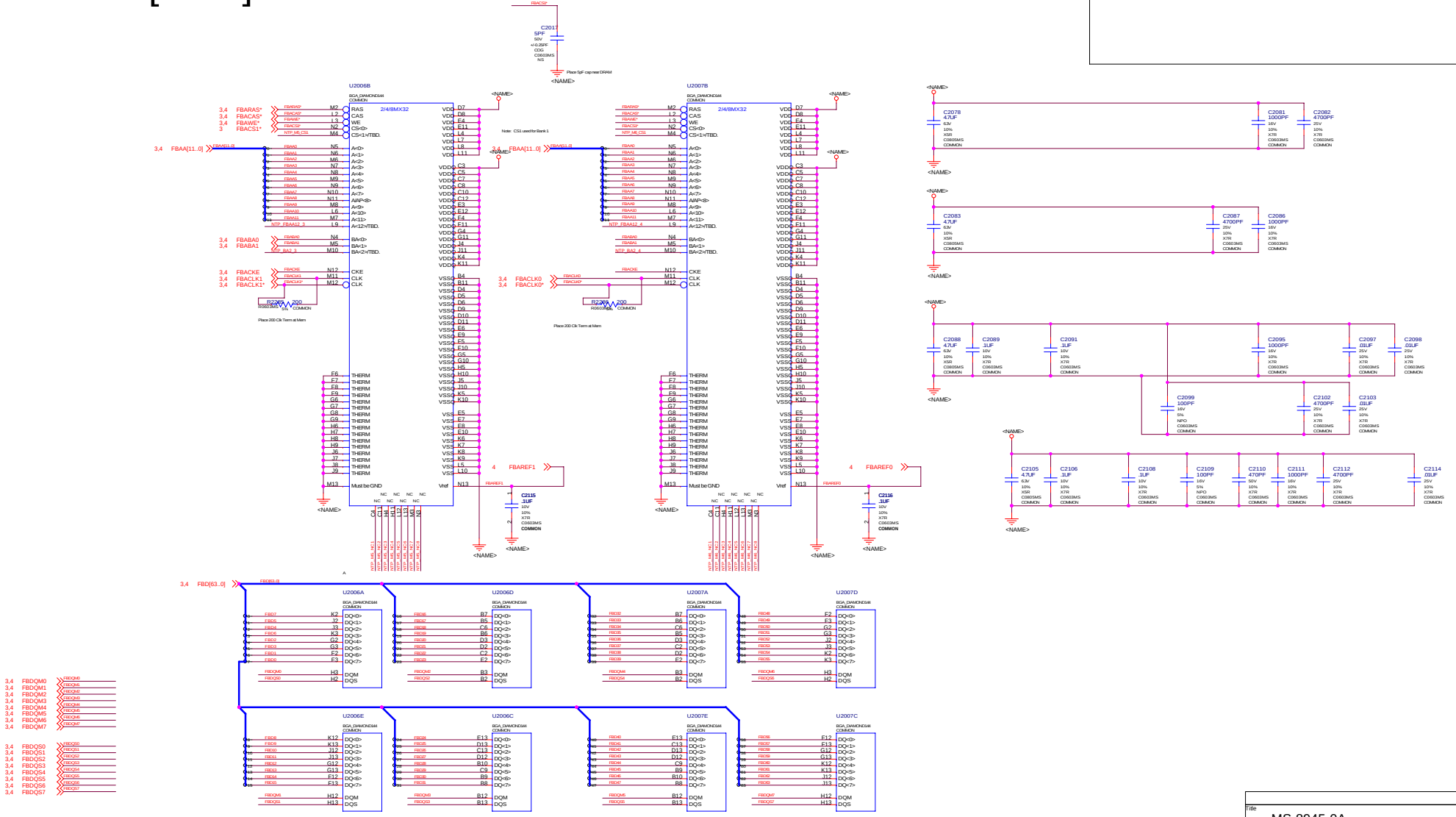
Bank 0: FBA[0..63]



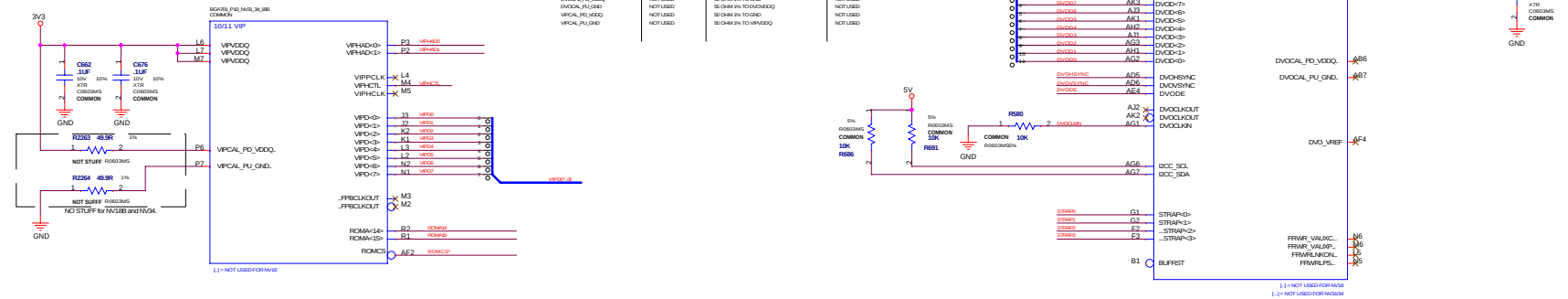
Title	MS-8945-0A
Size: Custom	Document Number: 4MX32 DDR 0..63
Rev	<RevCode>
Date: Monday, January 05, 2004	Sheet 4 of 11

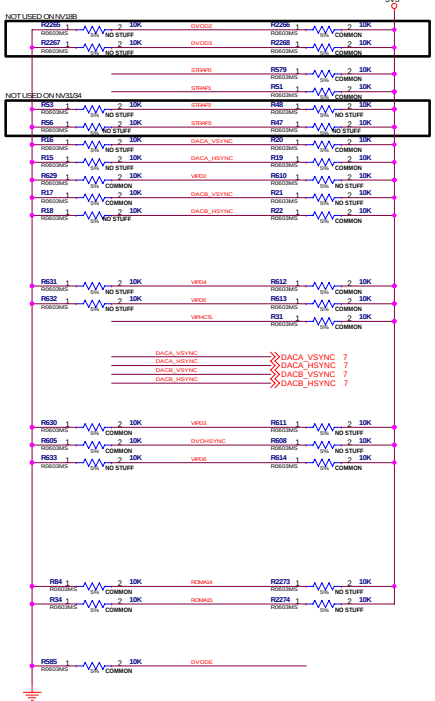
Partition A:Bottom Side Memory

Bank 0: FBA[0..63]



NV18 STRAPPING, BIOS, FAN CONNECTOR



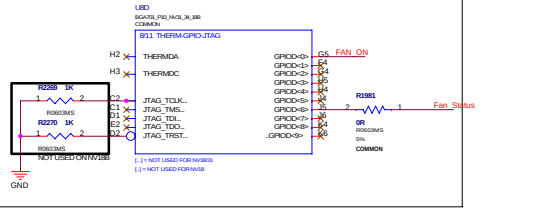


PLEASE DUALLAY THE PULL-UP RESISTER AND PULL-DOWN RESISTER.

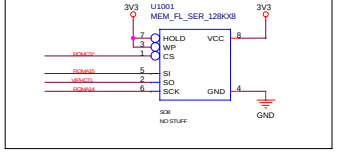
STRAPPING OPTIONS

Bit	Signal	VALUE_ID	VALUEs	
00: PCI_AD_SWAP		PCI_AD	0:REVERSED 1:NORMAL	
01: SUB_VENDOR		SUB_VENDOR	0:NO_BIOS 1:read from BIOS	
02: RAM_CFG_0		RAMCFG[3:0]	0000:2Mx32 SDR 0001:4Mx16 SDR 0010:RFU 0011:RFU 0100:RFU 0101:4Mx32 SDR 0110:8Mx16 SDR 0111:8Mx32 SDR	1000:2Mx32 DDR 1001:2Mx32 DDR 1010:4Mx16 DDR 1011:8Mx16 DDR 1100:2Mx32 DDR 1101:4Mx32 DDR 1110:RFU 1111:4Mx32 DDR
03: RAM_CFG_1				
04: RAM_CFG_2				
05: RAM_CFG_3				
06: CRYSTAL_0		CRYSTAL[3:0]	00: 13.500Mhz 01: 14.318181Mhz	10:27.000Mhz 11:unknown
07: TV_MODE_0		TVMODE[1:0]	00:SECAM 01:NTSC	
08: TV_MODE_1			10:PAL 11:CRT	
09: AGPHiRdx				
10: AGP_SBA		AGP_SBA	0:SBA-enabled 1:SBA-disabled	
11: AGP_FASTWR				
12: PCI_DEVID_0		PCI_DEVID[3:0]	0000:0x018D ... 1111:0x028F	
13: PCI_DEVID_1				
14: BUS_TYPE		BUS_TYPE[0]	0:PCI 1:AGP	
15: FP_IFACE				
16: USER_0				
17: USER_1				
18: USER_2				
19: USER_3				
20: PCI_DEVID_2				
21: PCI_DEVID_3				
22: CRYSTAL_1				
23: FB_0				
24: FB_1				
25: BR				
26: BR_128M				
27: BR_AGP				
28: BR_IO				
29: ROM_TYPE_0		ROM_TYPE[1:0]	00:Parallel 01: Serial_AT25F	
30: ROM_TYPE_1			10:Serial_SST45VF 11:RFU	
01: 1394_EN_0		1394[0]	0:disabled 1:enabled	

NV18 GPIO

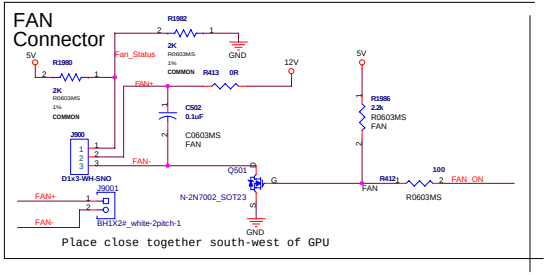


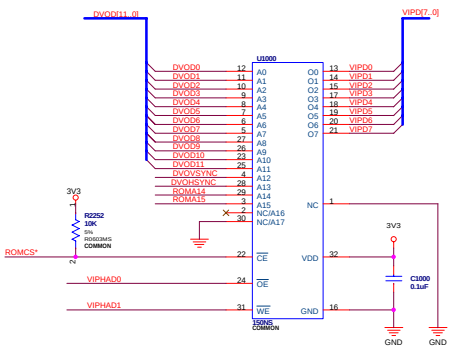
EEPROM



U1000 AND U1001 IS DUALAY.

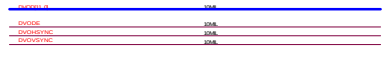
FAN Connector





VOLTAGE

NET Diffpair NET_SPACING_RULE



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MS-8945-0A

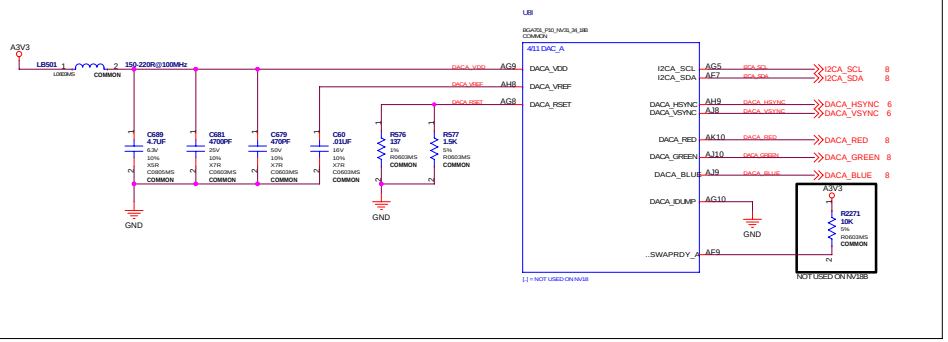
NV34 STRAPPING, BIOS

Size: Custom | Document Number | Rev: A00

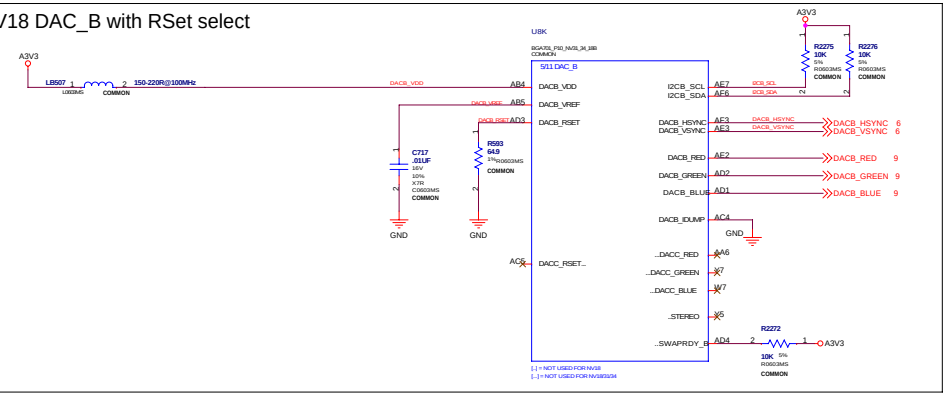
Date: Wednesday, February 04, 2004 | Sheet 6 of 11

NV18 DAC_A, DAC_B, PLL, SYNC AMPL

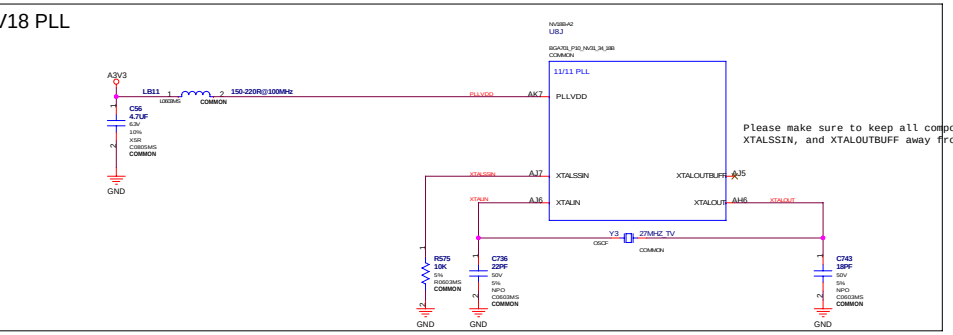
NV18 DAC_A



NV18 DAC_B with RSet select

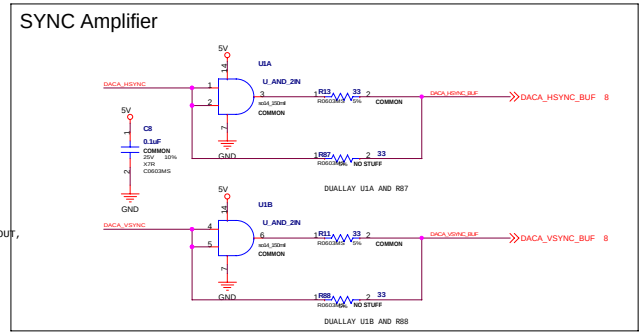


NV18 PLL



Please make sure to keep all components and nets related to pins XTALIN, XTALOUT, XTALSSIN, and XTALOUTBUFF away from everything else (place all on TOP).

SYNC Amplifier



NET	NET_PHYSICAL_TYPE	VOLTAGE
DACA_VDD	10MIL TRACE	3.3V
DACA_VREF	5MIL TRACE	
DACA_RSET	5MIL TRACE	
DACB_VDD	10MIL TRACE	3.3V
DACB_VREF	5MIL TRACE	
DACB_RSET	5MIL TRACE	
PLLVDD	10MIL TRACE	3.3V

NET	IMPEDANCE	NET_SPACING_RULE
8 DACA_RED	DACA_RED 37.5 OHM	20MIL GDG 30MIL
8 DACA_GREEN	DACA_GREEN 37.5 OHM	20MIL GDG 30MIL
8 DACA_BLUE	DACA_BLUE 37.5 OHM	20MIL GDG 30MIL
9 DACB_RED	DACB_RED 37.5 OHM	20MIL GDG 30MIL
9 DACB_GREEN	DACB_GREEN 37.5 OHM	20MIL GDG 30MIL
9 DACB_BLUE	DACB_BLUE 37.5 OHM	20MIL GDG 30MIL

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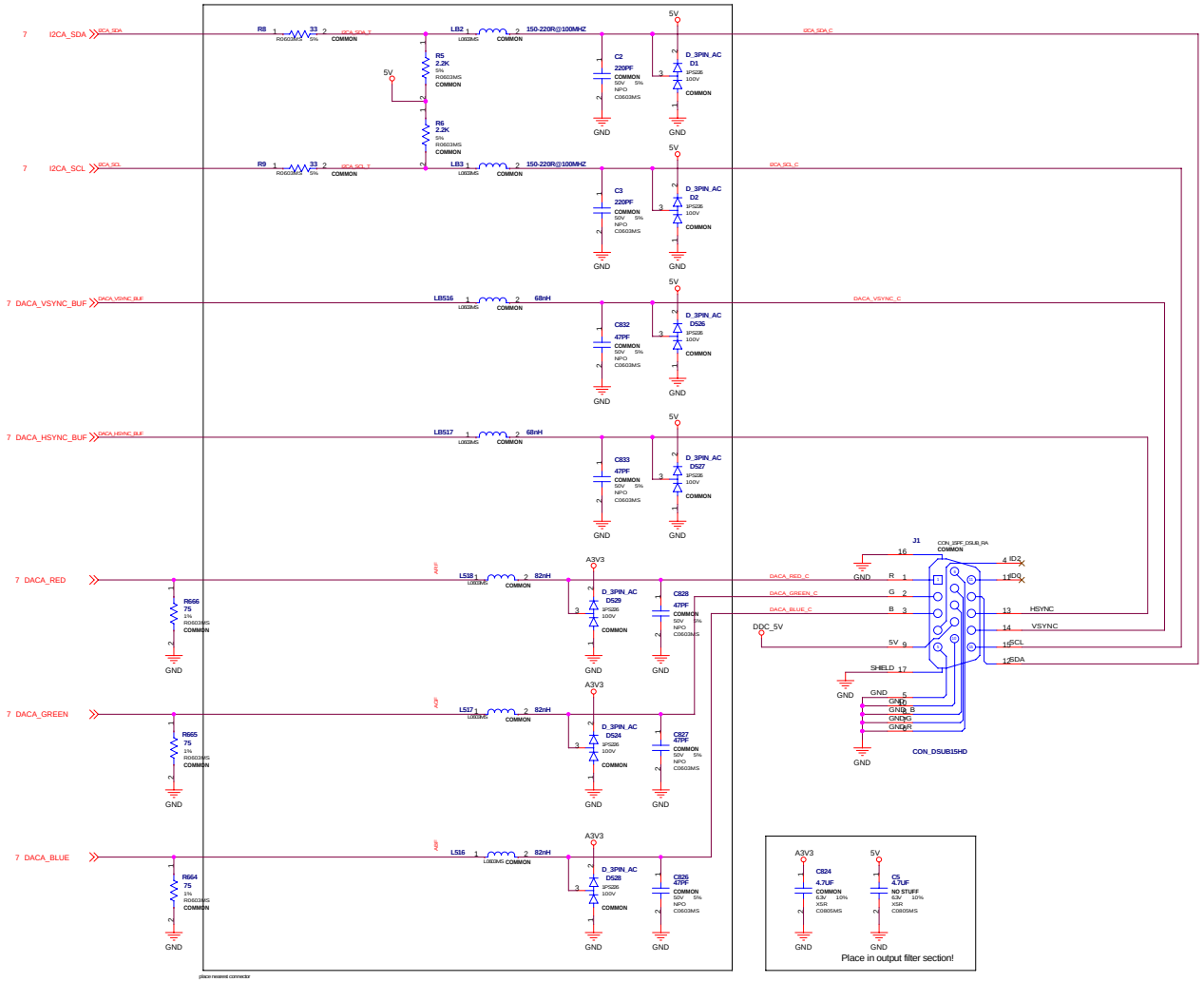
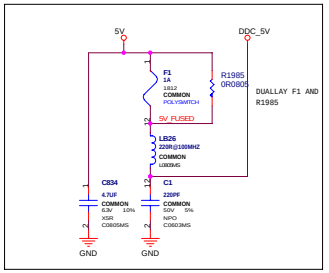
MS-8945-0A
Size: Custom | Document Number: DAC_A,DAC_B,PLL,SYNC AMPL | Rev: 1.00
Date: Wednesday, February 04, 2004 | Sheet 7 of 11

DACB output

EMI-FILTER



DDC 5V



NET	IMPEDANCE	NET_SPACING_RULE
ABF	37.5 OHM	20MIL_GSG_3MIL
AGF	37.5 OHM	20MIL_GSG_3MIL
ABF	37.5 OHM	20MIL_GSG_3MIL
DACA_RED_C	10MIL_TRACE	20MIL_GSG_3MIL
DACA_GREEN_C	10MIL_TRACE	20MIL_GSG_3MIL
DACA_BLUE_C	10MIL_TRACE	20MIL_GSG_3MIL

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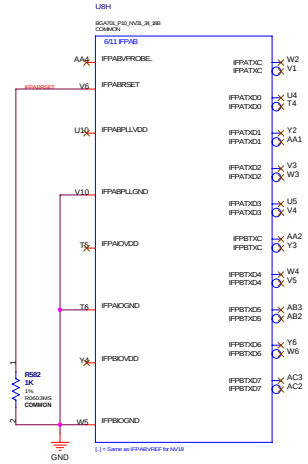
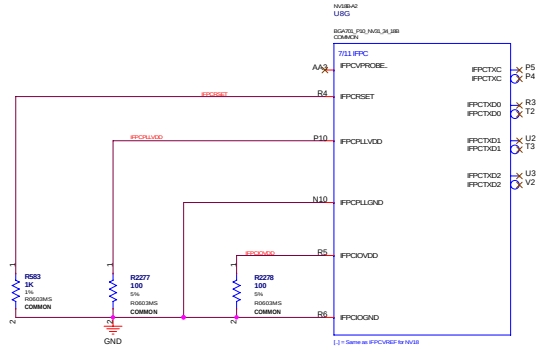
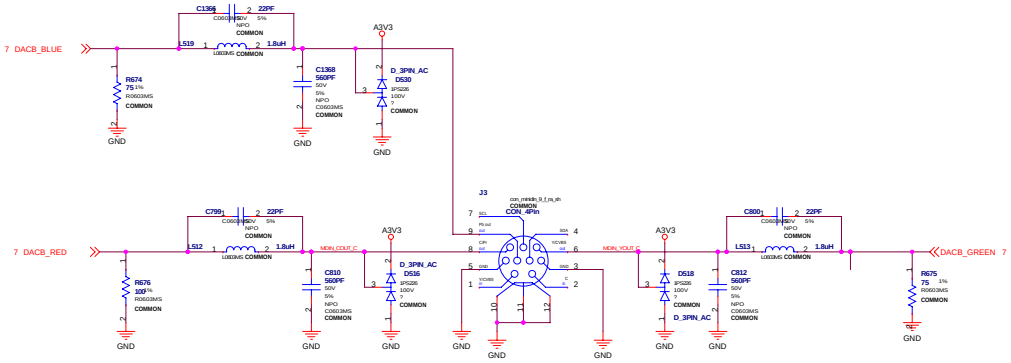
MS-8945-0A			
Size: Custom	Document Number: DAC A CONNECT		Rev: A00
Date: Monday, January 05, 2004	Sheet 8 of 11		

INTERNAL TMDS POWER AND DECOUPLING





VIDEO OUT CONNECTOR



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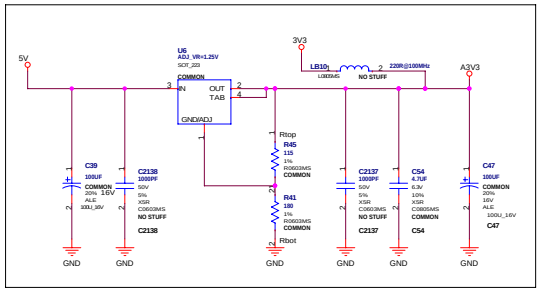
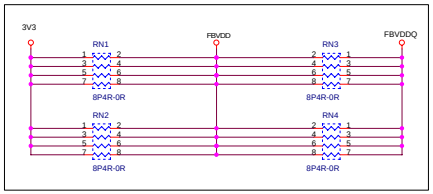
MS-8945-0A			
Size: Custom	Document Number: VIDEO IN/OUT CONNECT		Rev: A00
Date: Monday, January 05, 2004	Sheet 9 of 11		

POWER SUPPLY

ANALOG 3V3

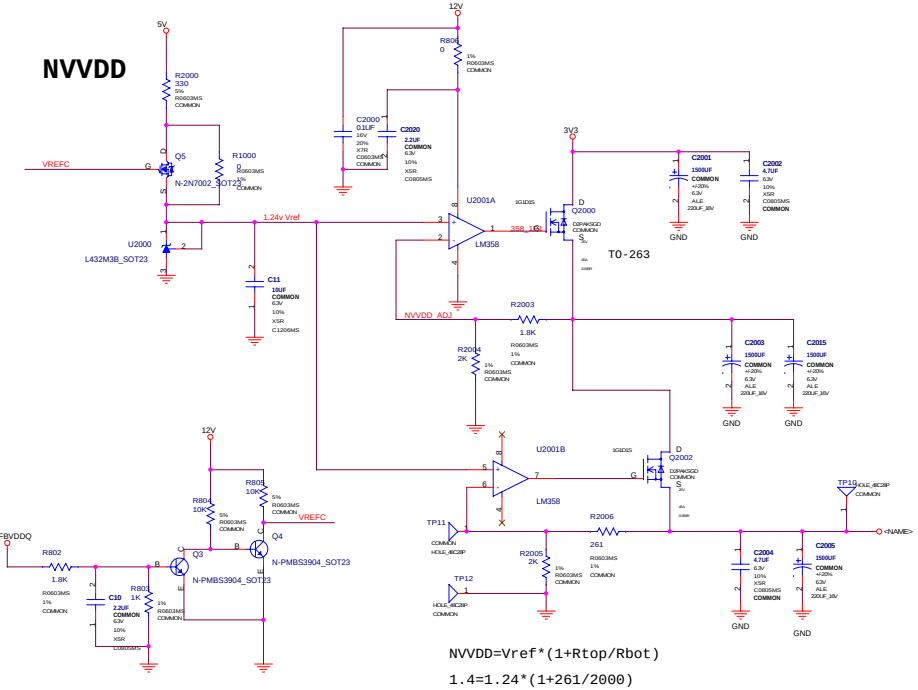


FBVDD 3.3V NO STUFF



For SAMSUNG DDR FBVDD=FBVDDQ=2..8
HYNIX DDR FBVDD=2.5V on 200MHz

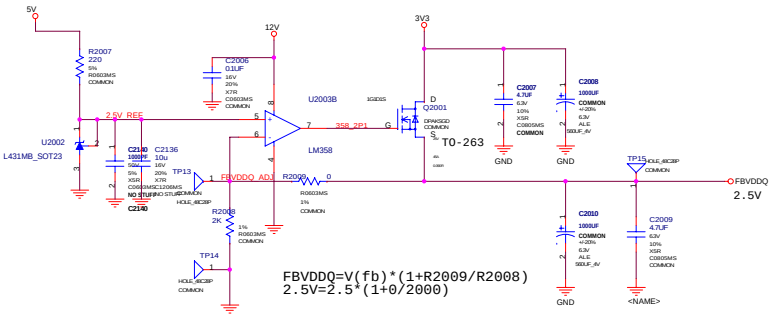
NVVDD



NVVDD=Vref*(1+Rtop/Rbot)

1.4=1.24*(1+261/2000)

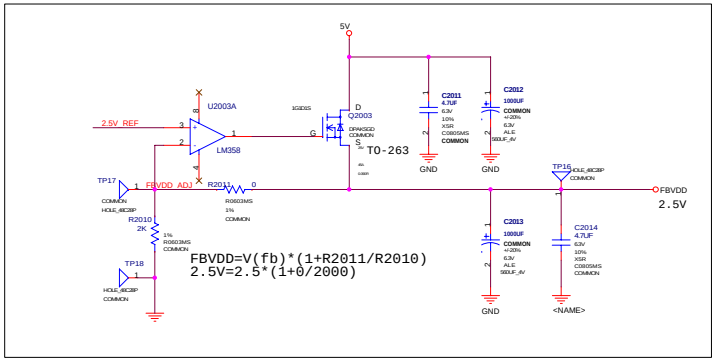
FBVDDQ



FBVDDQ=V(fb)*(1+R2009/R2008)

2.5V=2.5*(1+0/2000)

FBVDD



FBVDD=V(fb)*(1+R2011/R2010)

2.5V=2.5*(1+0/2000)

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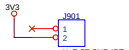
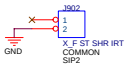
MS-8945-0A

Size: Custom | Document Number: POWER SUPPLY | Rev: A00

Date: Monday, January 05, 2004 | Sheet 10 of 11

MECHANICS

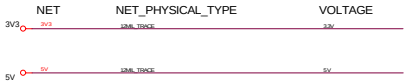




E22-8935010-C22

Mech, VGA Card, Bracket, SPCC/2,V,D-S,V122, FOR MS-8935/8936

Bracket Same as MS-8847



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Size: Custom	Document Number: MS-8936-A04	Rev: A00
Date: Monday, January 05, 2004	Sheet: MECHANICS	11 of 11