

C116-B, NV18B/NV31/NV34, 8MX16DDR, 64MB, VIDEO OUT, VGA

Page Overview

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- 3 NV18B FRAME BUFFER Interface
- 4 MEMORY 64MB, 8Mx 16DDR Bits 0.31
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- 8 PRIMARY DISPLAY Filter and Connector
- 9 NV18 TMDS Power, VIDEO OUT CONNECTOR
- 10 POWER SUPPLY & A3V3 & FBVDDQ & NVVDD & FBVDD
- 11 MECHANICS

HISTORY:

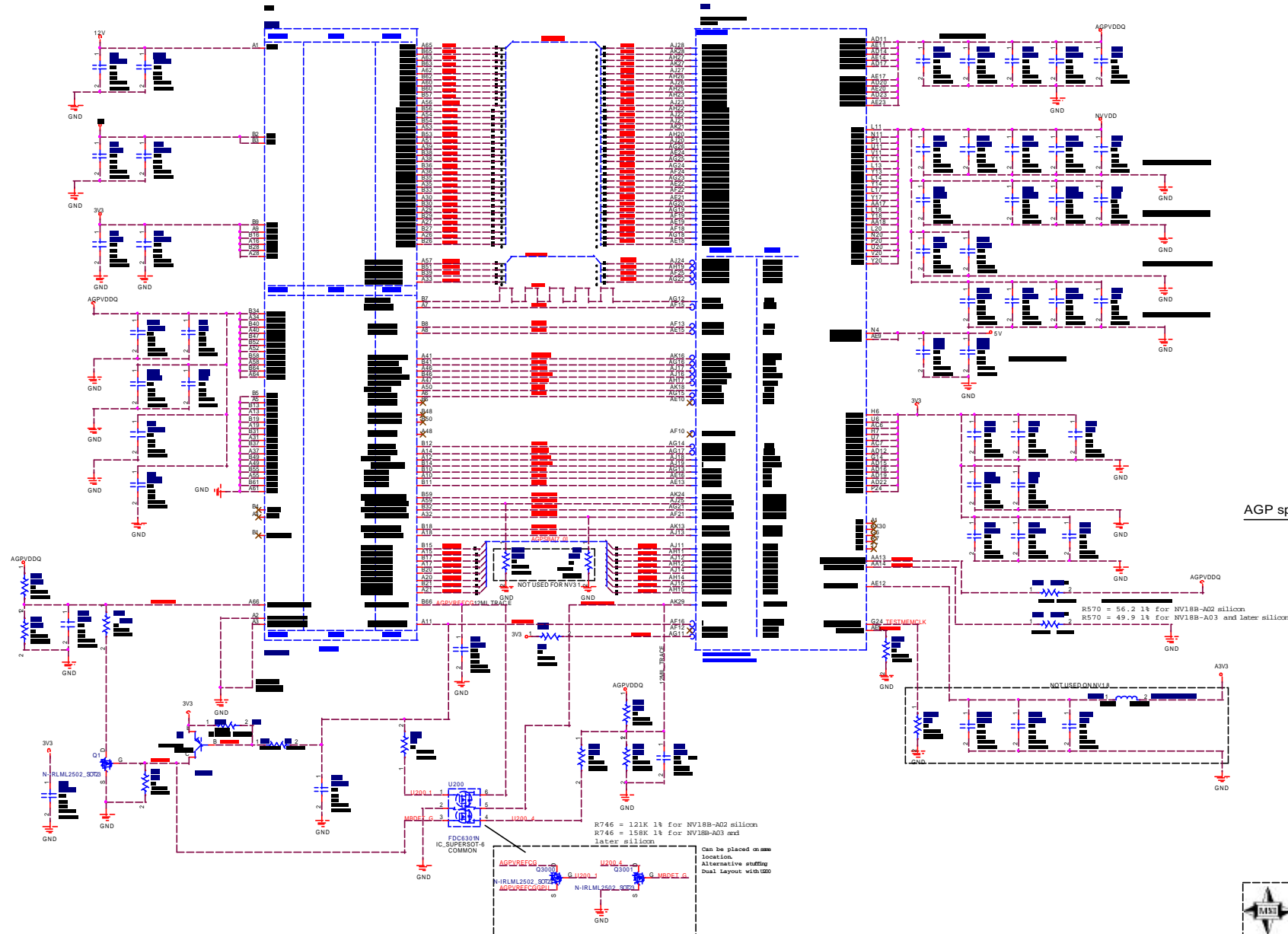
0B

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

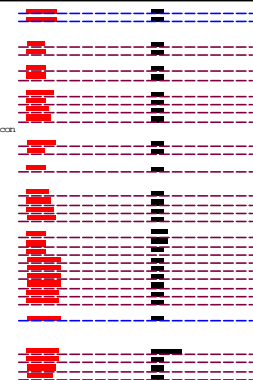
8998-0A base on 8936 modify description.

- 1.Add page 9,Switch DACB and TV-out connector function.
- 2.Add page 10,DACB interface.
- 3.Add page 11,DVI interface.
- 4.Add TMDS power in page 12.
- 5.Page 8,D-Sub change to 2x7 pin handler.

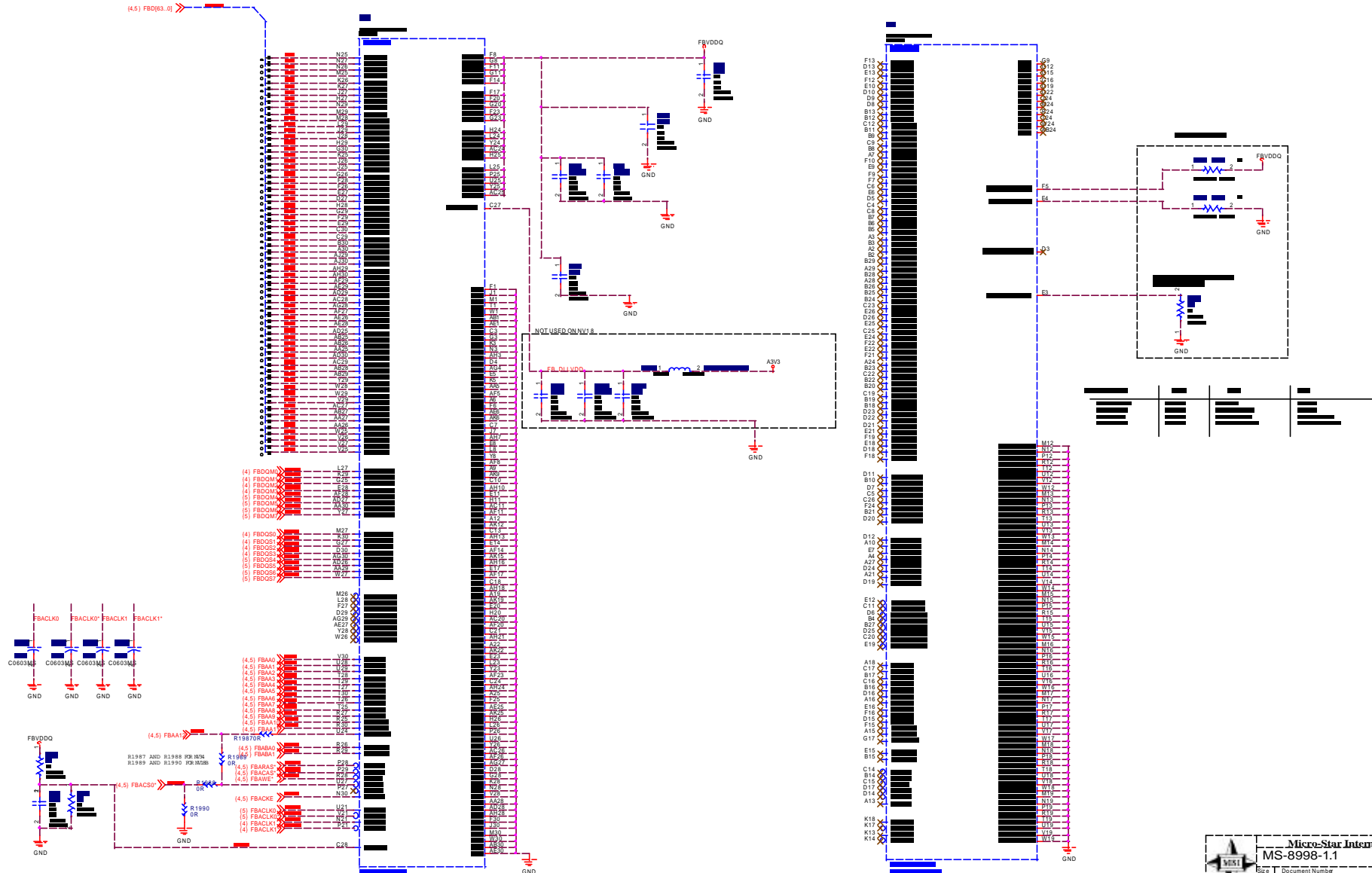
## NV18 AGP SECTION AND AGP CONNECTOR

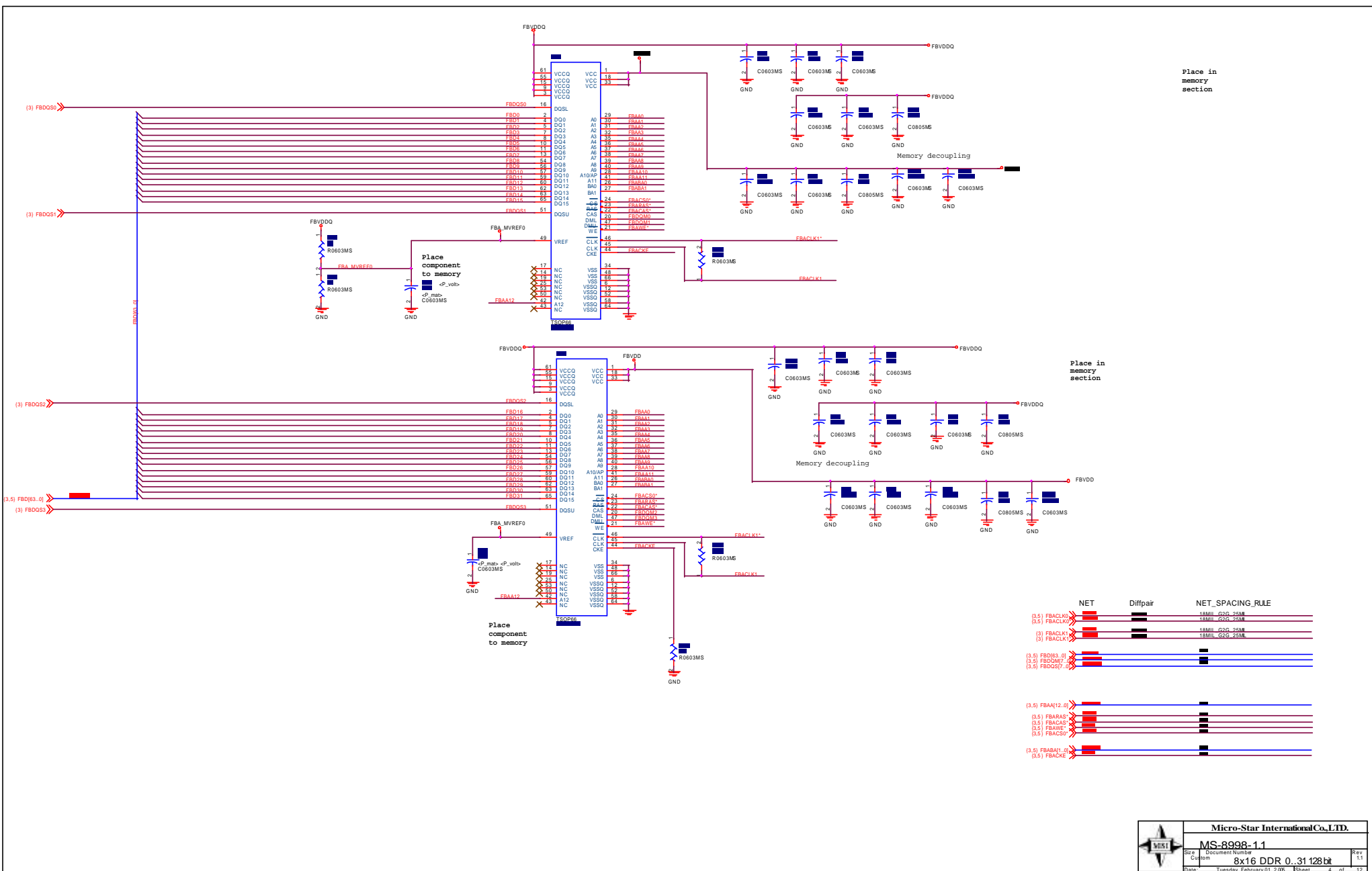


## AGP spacing rules



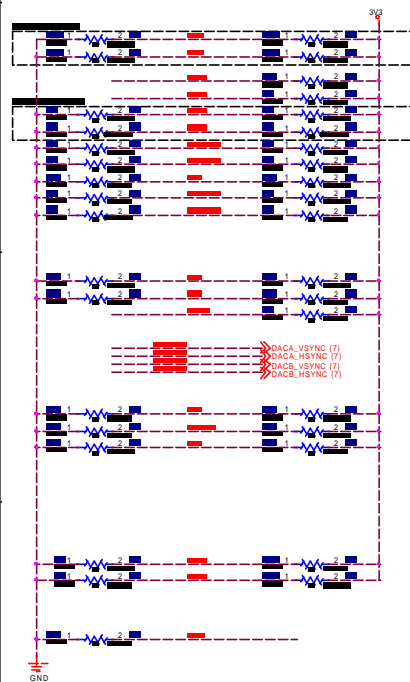
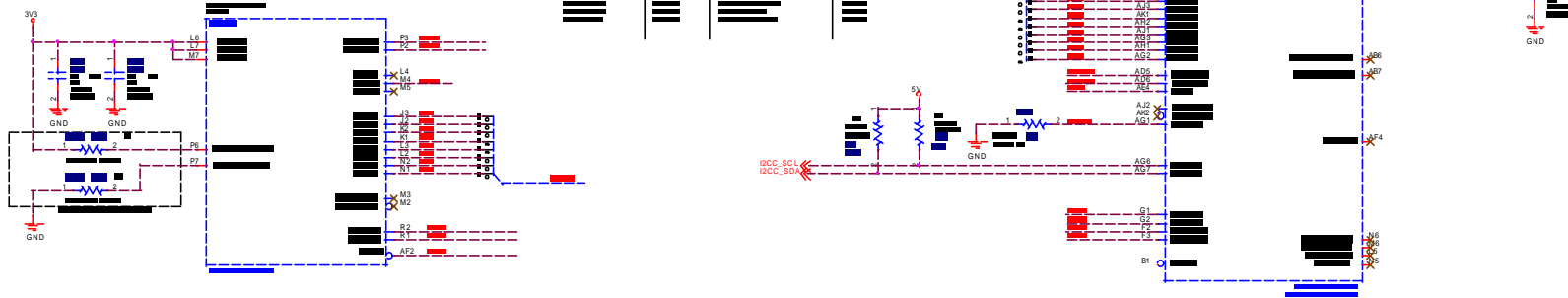
## NV18 FRAMEBUFFER INTERFACE AND DECOUPLING



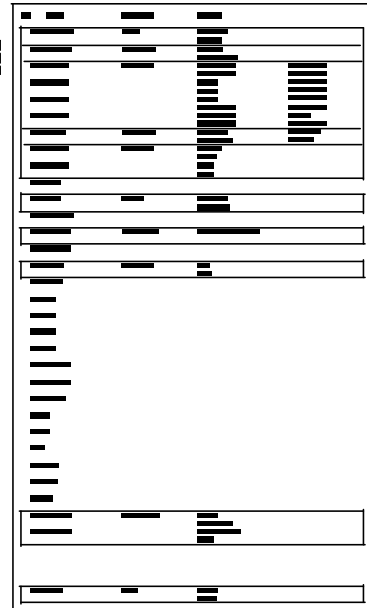




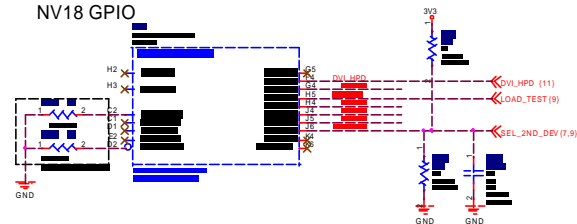
# NV18 STRAPPING, BIOS, FAN CONNECTOR



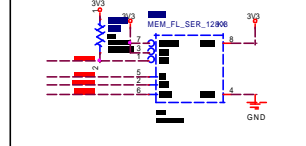
## STRAPPING OPTIONS



## NV18 GPIO



## EEPROM



U1000 AND U1001 IS DUALAY.

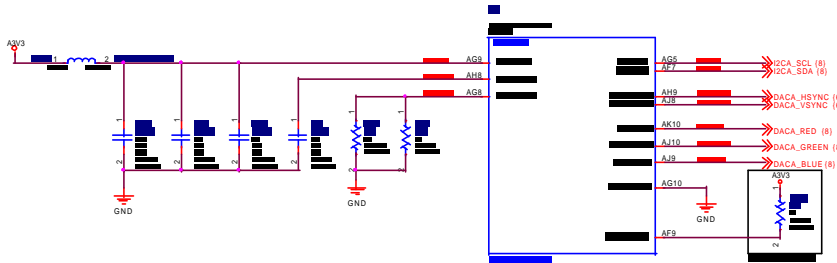
PLEASE DUALAY THE PULL-UP  
RESISTOR AND PULL-DOWN RESISTOR.

VOLTAGE

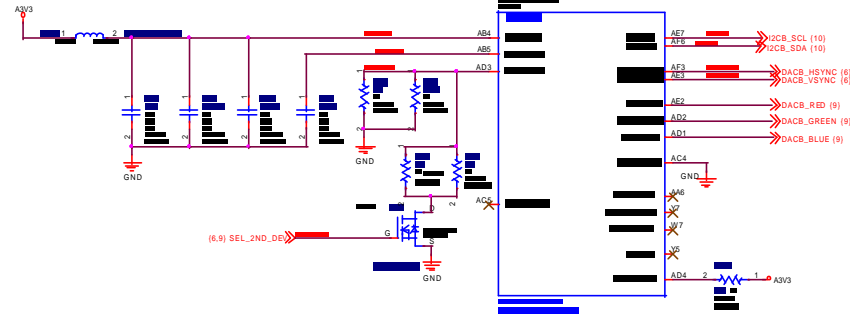
NET Diffpair NET\_SPACING\_RULE

NV18 DAC\_A, DAC\_B, PLL, SYNC AMPL

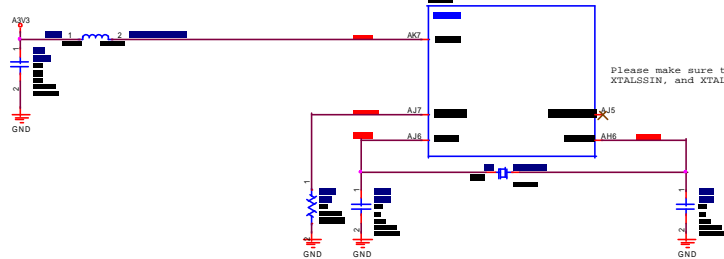
NV18 DAC\_A



NV18 DAC\_B with RSet select

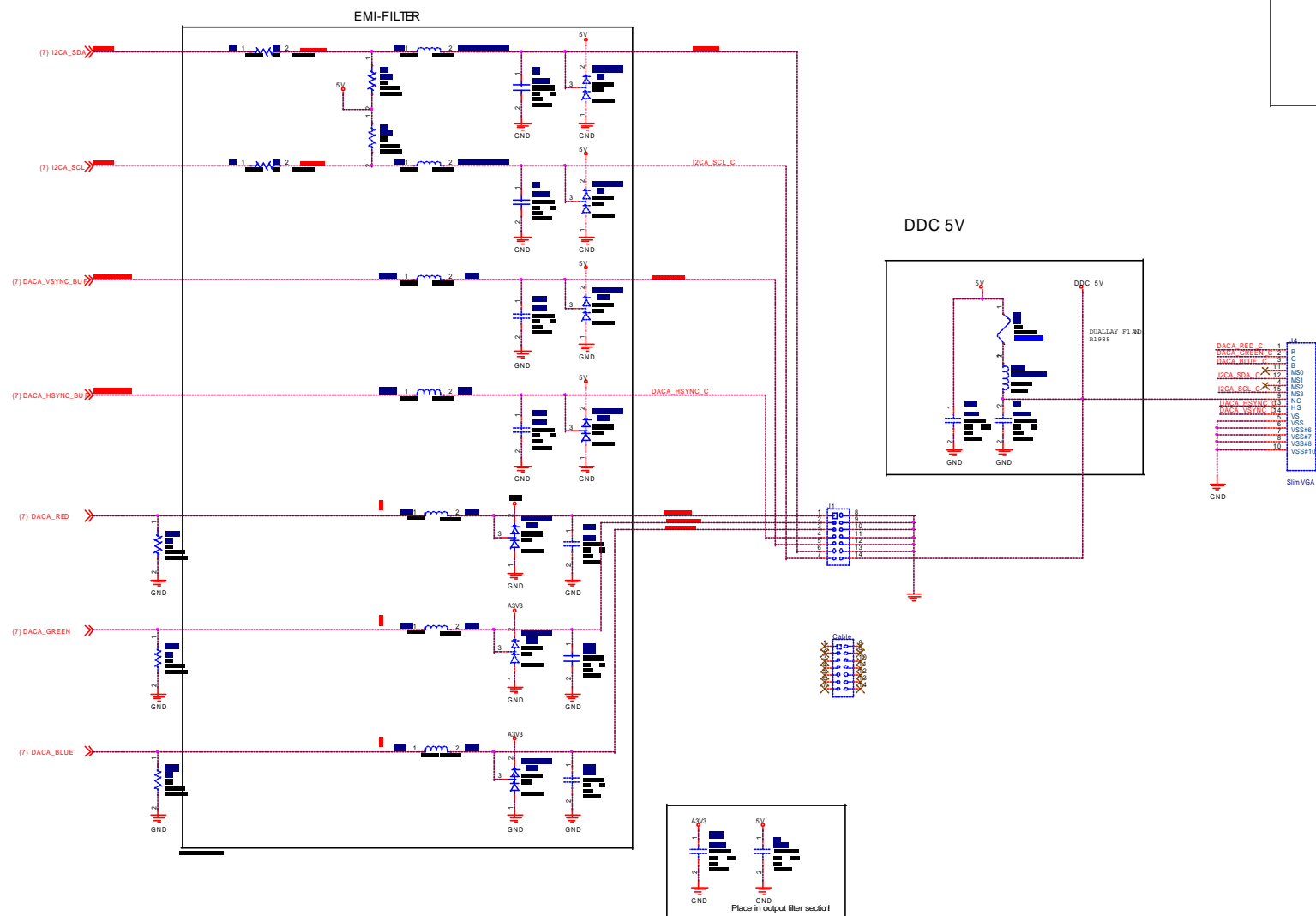


NV18 PLL



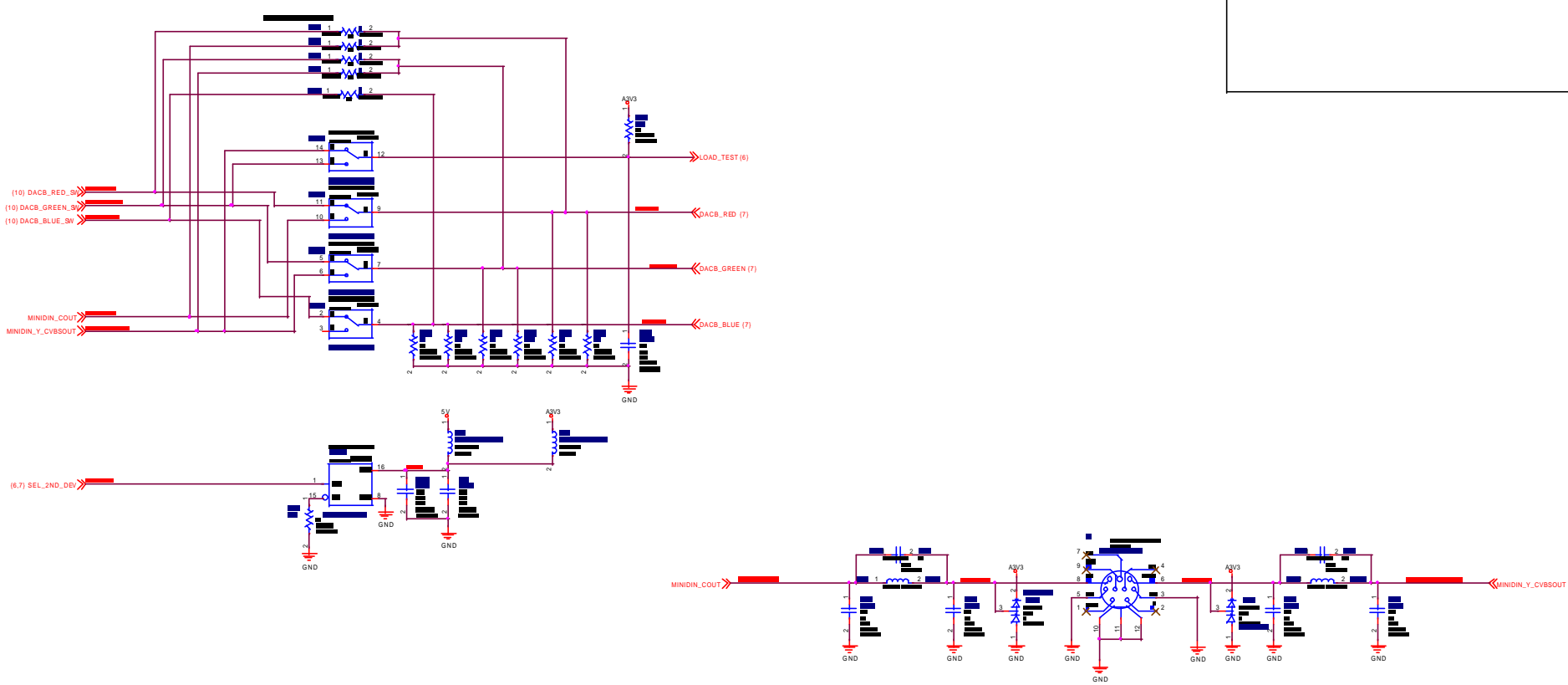
# DACA output

| NET         | IMPEDANCE   | NET_SPACING_RULE |
|-------------|-------------|------------------|
| 37.5 OHM    | 37.5 OHM    |                  |
| 37.5 OHM    | 37.5 OHM    |                  |
| 10MIL TRACE | 10MIL TRACE |                  |
| 10MIL TRACE | 10MIL TRACE |                  |
| 10MIL TRACE | 10MIL TRACE |                  |



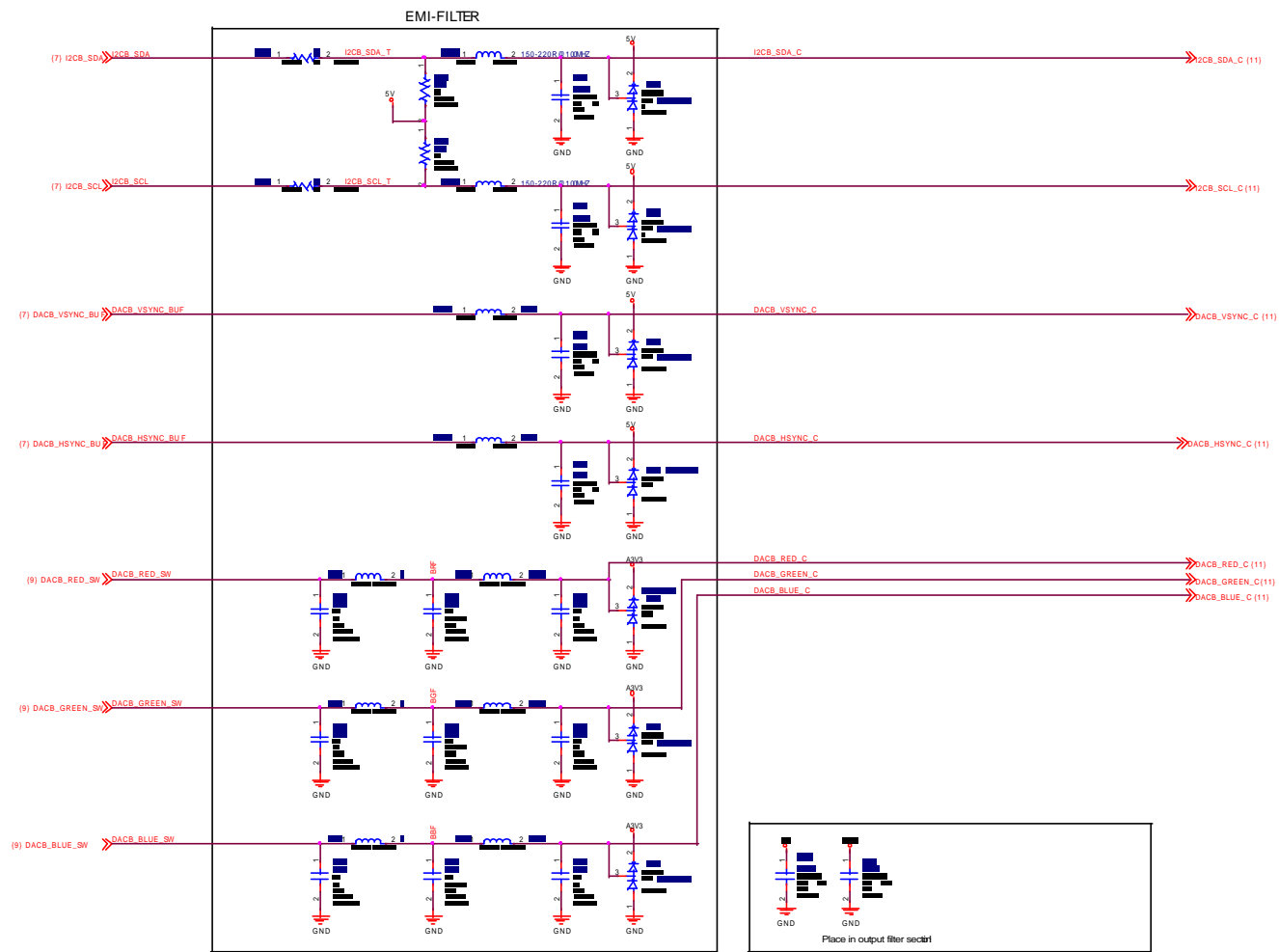


DACB SWITCH BETWEEN VGA OUT AND TV OUT

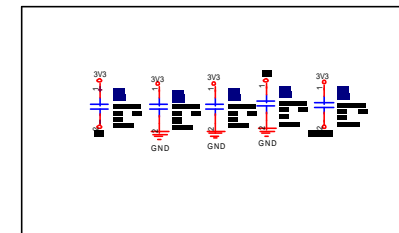


| NET                | IMPEDANCE | NET_SPACING_RULE |
|--------------------|-----------|------------------|
| (10) DACB_RED_SV   | 37.5 OHM  |                  |
| (10) DACB_GREEN_SV | 37.5 OHM  |                  |
| (10) DACB_BLUE_SV  | 37.5 OHM  |                  |
| MINIDIN_COUT       | 37.5 OHM  |                  |
| MINIDIN_Y_CVBSOUT  | 37.5 OHM  |                  |
| MINIDIN_PBOUT      | 37.5 OHM  |                  |

DACB output

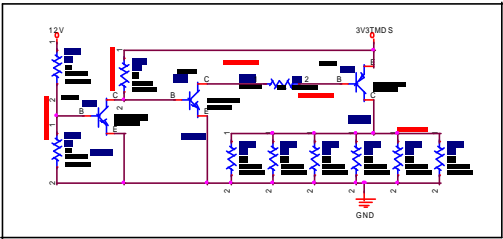


| NET | IMPEDANCE | NET_SPACING_RULE |
|-----|-----------|------------------|
| 1   | 37.5 OHM  | 10MIL            |
| 2   | 37.5 OHM  | 10MIL            |
| 3   | 37.5 OHM  | 10MIL            |
| 4   | 10MIL     | 10MIL            |
| 5   | 10MIL     | 10MIL            |
| 6   | 10MIL     | 10MIL            |

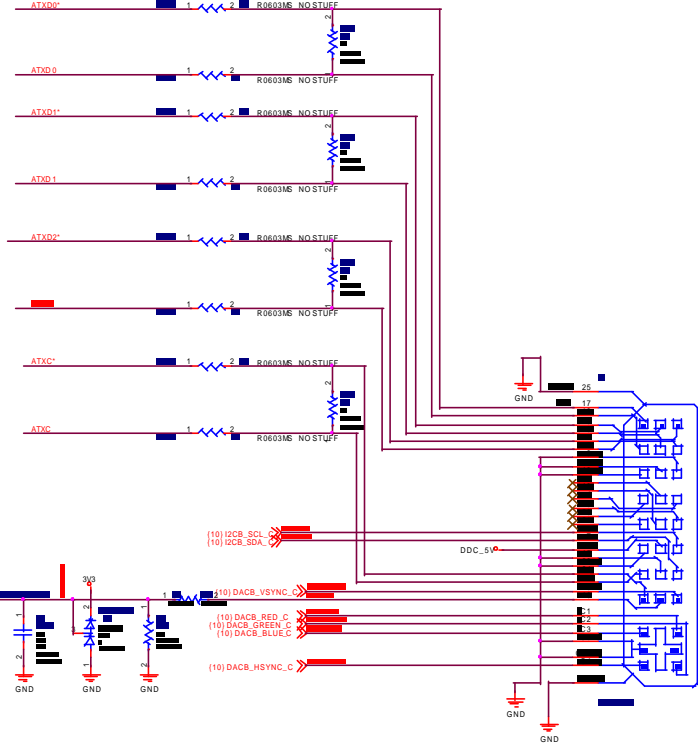
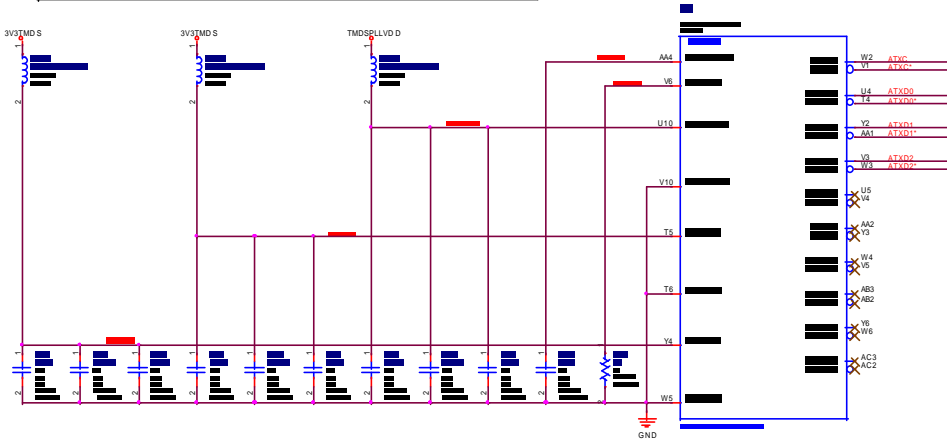


INTERNAL TMDS POWER AND DECOUPLING

TMDS backdrive prevention

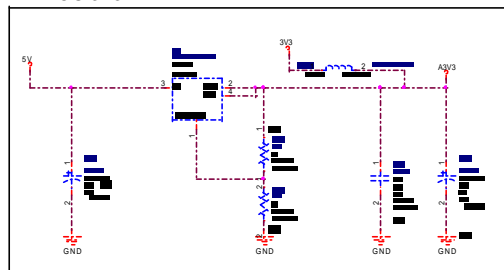


| NET      | NET_PHYSICAL_TYPE | VOLTAGE |
|----------|-------------------|---------|
| ATX0P    |                   |         |
| ATX0N    |                   |         |
| ATX0P1   |                   |         |
| ATX0N1   |                   |         |
| ATX0P2   |                   |         |
| ATX0N2   |                   |         |
| ATX0P3   |                   |         |
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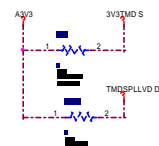


# POWER SUPPLY

## ANALOG 3V3

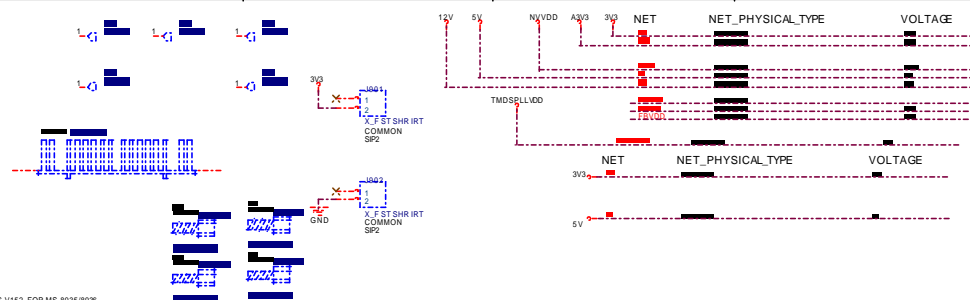


## TMDS 3V3 Supply TMDS PLL Supply



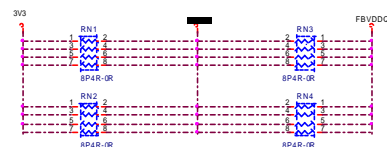
# MECHANICS

E22-8998010C22  
Mech. VGA Card, Bracket, SPCC2.V.D-S.V152, FOR MS-8935/8936  
Bracket Same as MS-8847

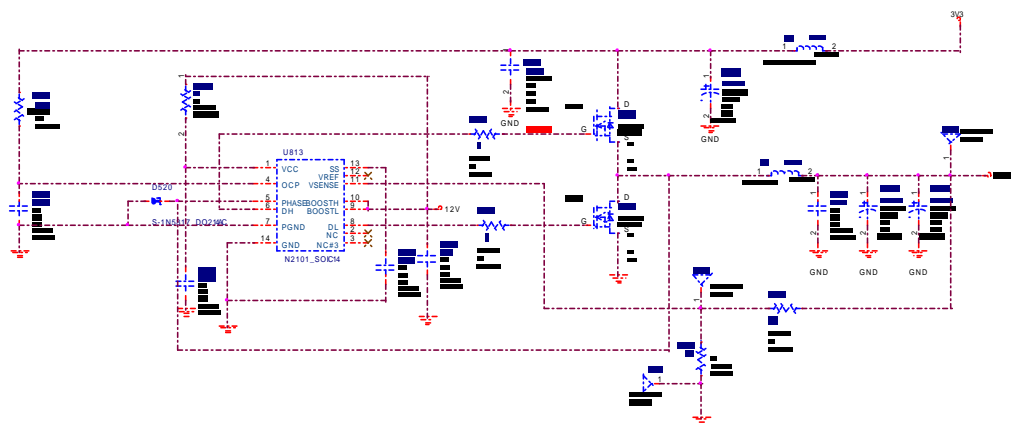


For SAMSUNG DDR FBVDD=FBVDDQ=2.6  
HYNIX DDR FBVDD=3V3=3.3V

## FBVDD 3.3V



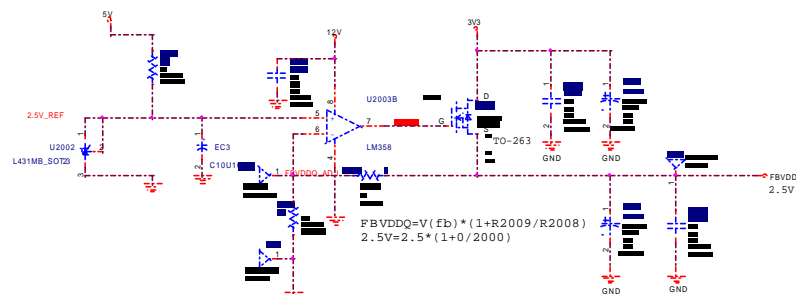
## NVVDD



$$NVVDD = V_{ref} * (1 + R_{top} / R_{bot})$$

$$1.4 = 1.265 * (1 + 215 / 2000)$$

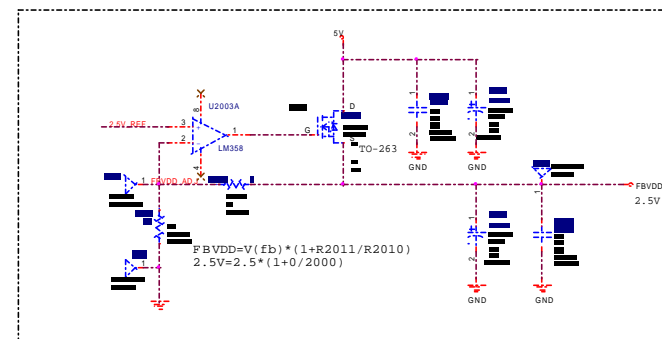
## FBVDDQ



$$FBVDDQ = V(fb) * (1 + R_{2009} / R_{2008})$$

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

## FBVDD



$$FBVDD = V(fb) * (1 + R_{2011} / R_{2010})$$

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

NO STUFF