NV20, 4MX16 DDR, RGB, EXTERNAL DVI-I, TV-DOWN, TV IF , AGP4X

PCI DEVICE ID 0X0=0X200 FOR NV20.

NVDD SET TO 1.60 FOR -VP CHIP

FBVDD SET TO: 3.47V

FBVDDQ SET TO: 2.59V

HISTORY REVISION:

X00: Based on P50-A06
- See change list in 149- file.
- Set FBVDDQ=2.59V

P50-A07-X01:

- Changed all memory clk/clk# diff pair resistors to 68R 5% (from 47R)

P50-A08:

X04: - Delay PLL_VDD to come up after NVVDD.

X05: - Added 1UF accross R257.

X06: - Removed X04-5 above, added a switcher generated PLL delay option.
- SSENA cap for 2nd SW changed to 1UF.
- A05 Si, NVVDD=1.52V

P50-A09:

X02: - Changed PLL VDD and DAC VDD to be gated by Fet controlled by FBVDD power good signal.

X03: - Added option to pull up power good to 12V

ECO1235: - Changed R841 PU to 10K (from 4.7K)

ECO1373: - Moved 75 ohm termination closer to filter for noise level reduction. Replaced C303,306,309 with 75ohm and no stuffed R208-210.

1. GOLD FINGER
2. HOST
3. DAC/TV/TMDS
4. DECOUPING
5. STRAPS
6. CRT
7. FBA/FBB
8. DECOUPING
9. 2*32 DDR
10. 2*32 DDR
11. 1M FLASH ROM 3.3V
12. TV PH/7108
13. POWER
14. HARDWARE MONITOR

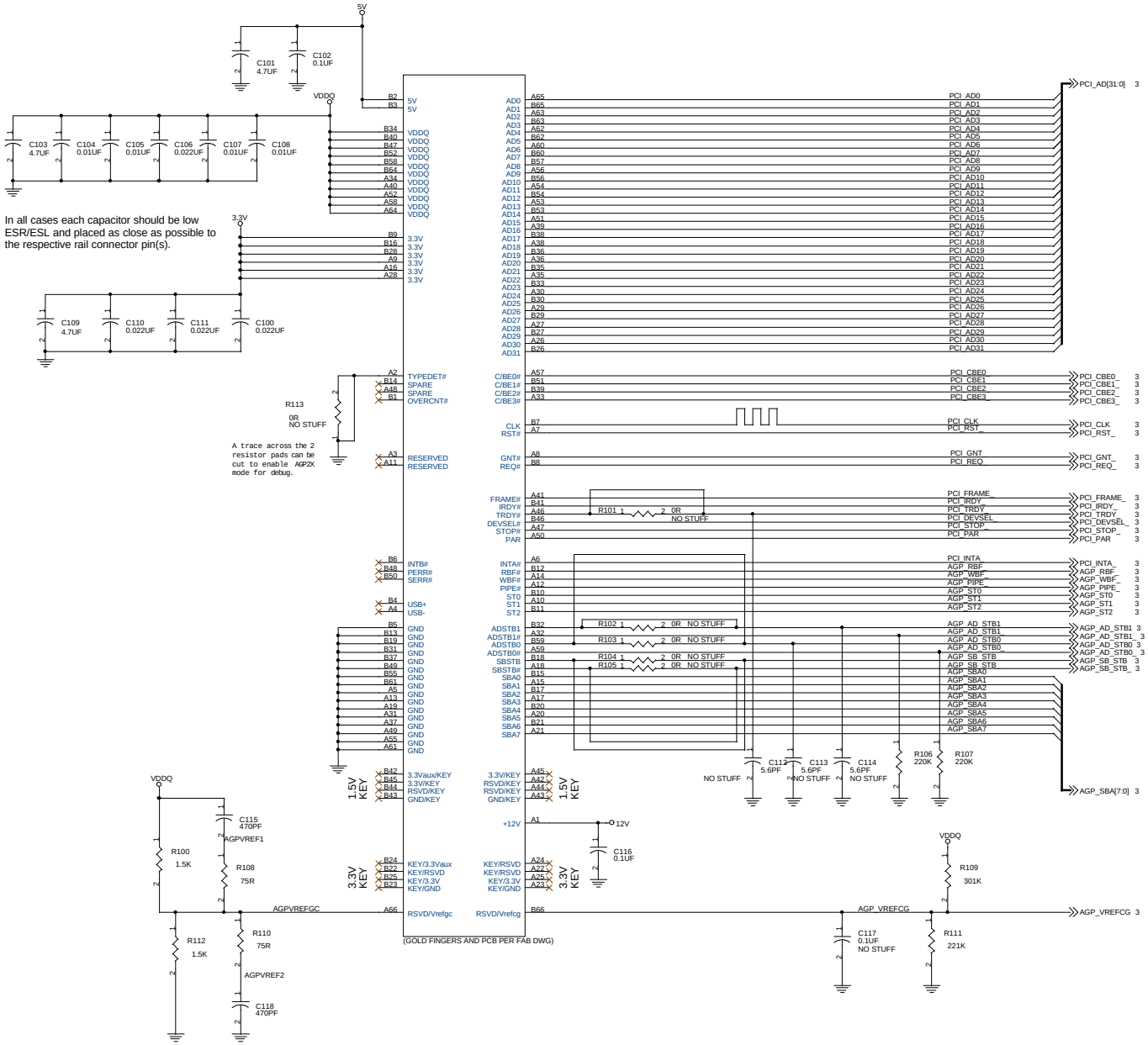
{Item}\t{Quantity}\t{Reference}\t{Source Package} {USR DFINE} {Value}\t{Assembly} {Assembly}{Source Package} {Value}{PN}{AVL1}{AVL2}{AVL3}{AVL4}{AVL5}

Micro-Star International Co., LTD.

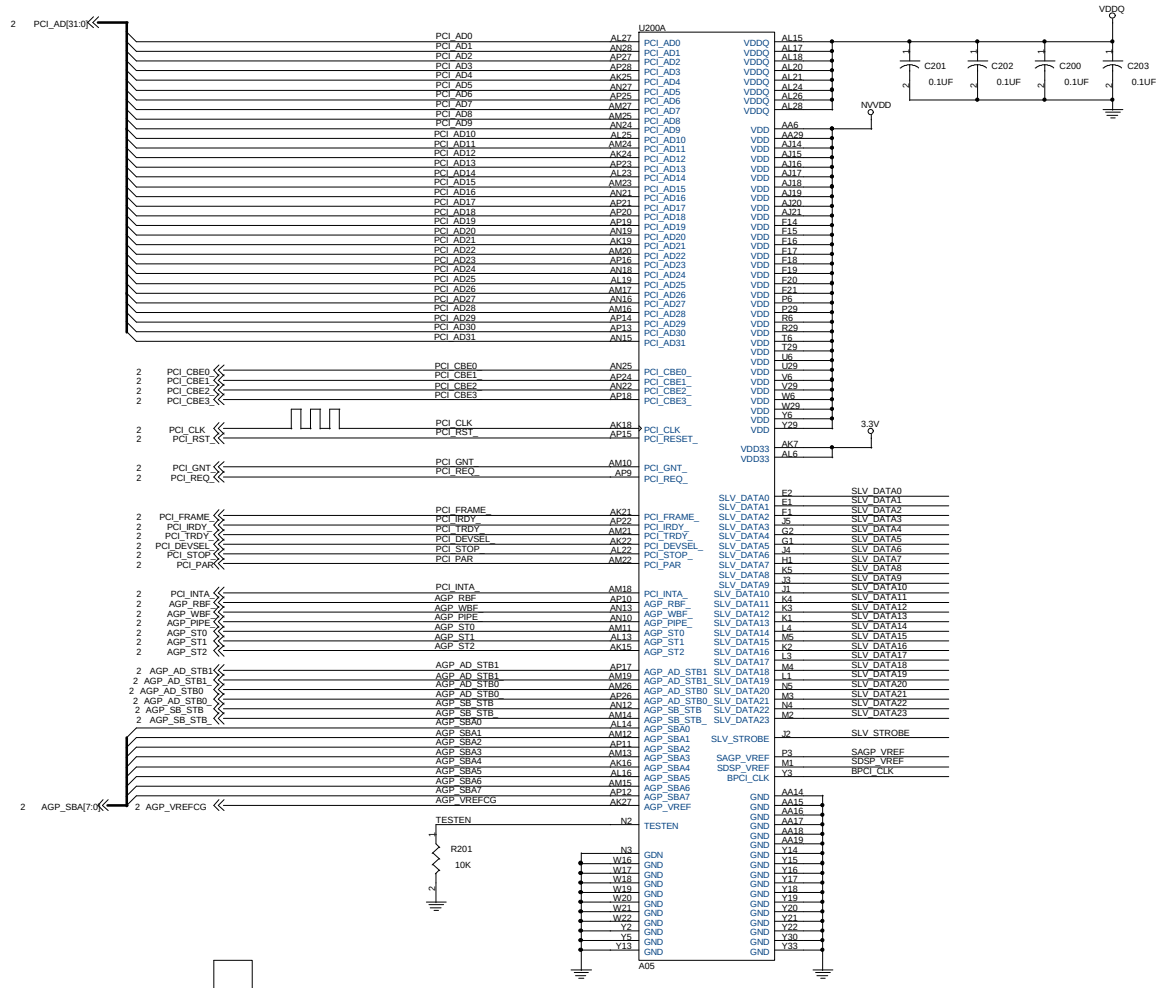
MS-8850 based on P50A09

Size	Document Number	Rev
C	TOP PAGE	1.1A

Date: Tuesday, October 16, 2001 Sheet 1 of 15



Micro-Star International Co., LTD.	
MS-8850 based on P50A09	
Size: C	Document Number: BUS I/O
Rev: 1.1A	
Date: Tuesday, October 16, 2001	Sheet 2 of 15



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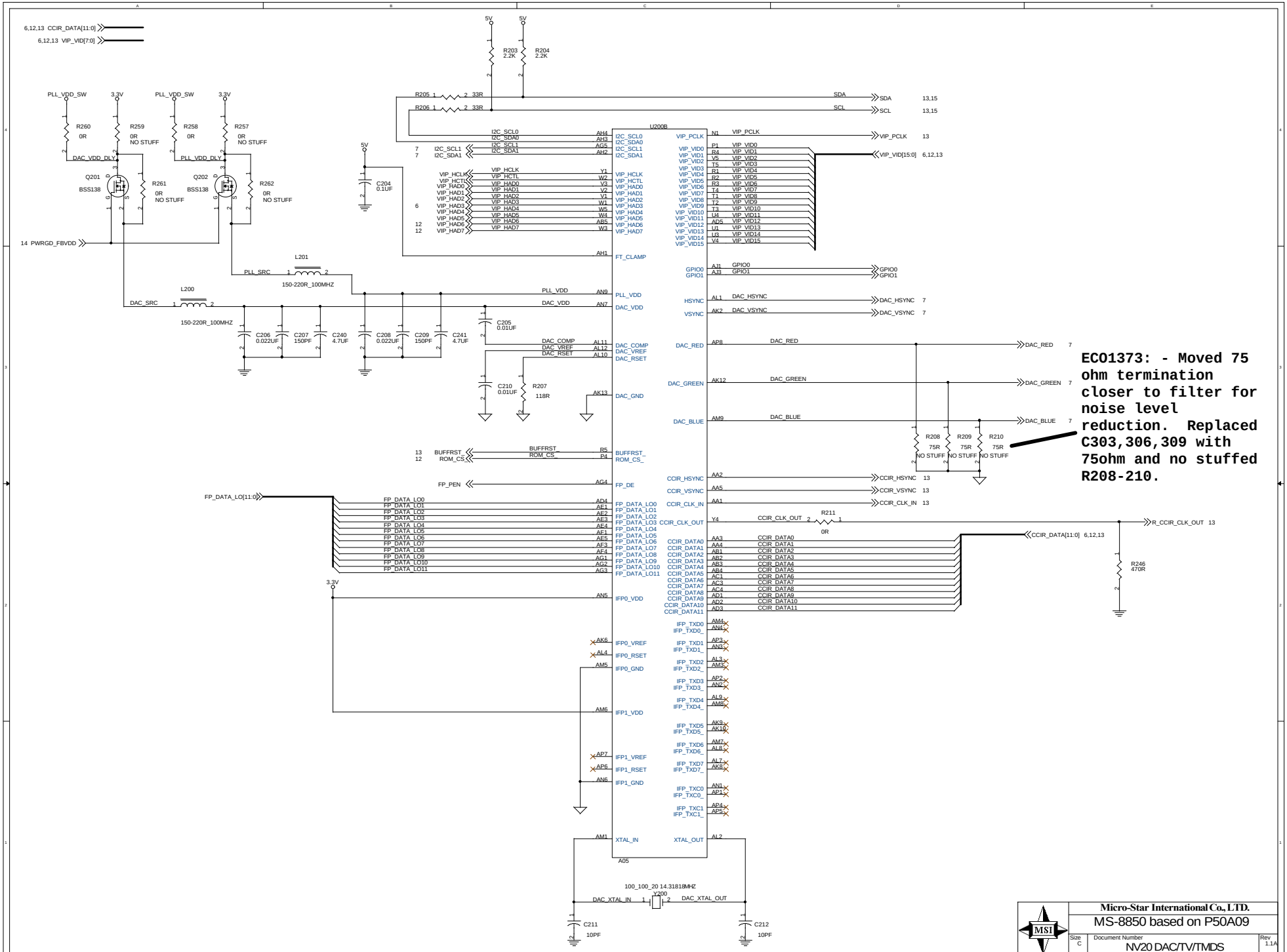
MS-8850 based on P50A09			
Size: C	Document Number: NV20 HOST		Rev: 1.1A
Date: Tuesday, October 16, 2001	Sheet 3 of 15		



ECO1373: - Moved 75 ohm termination closer to filter for noise level reduction. Replaced C303,306,309 with 75ohm and no stuffed R208-210.

Micro-Star International Co., LTD.	
MS-8850 based on P50A09	
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Rev: 1.1A	
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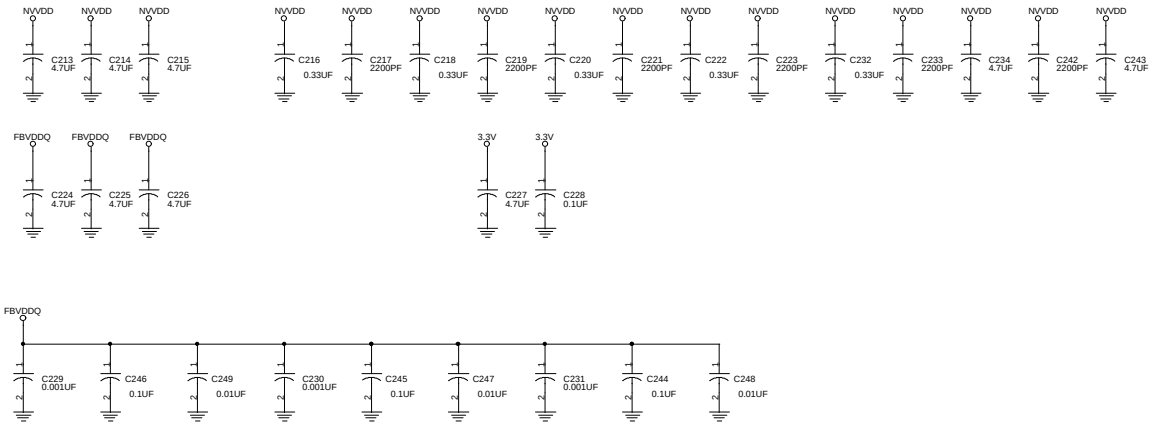
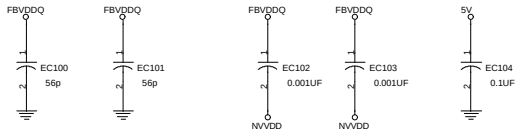
Use thick (non-impedance controlled) traces on XTALIN/OUT



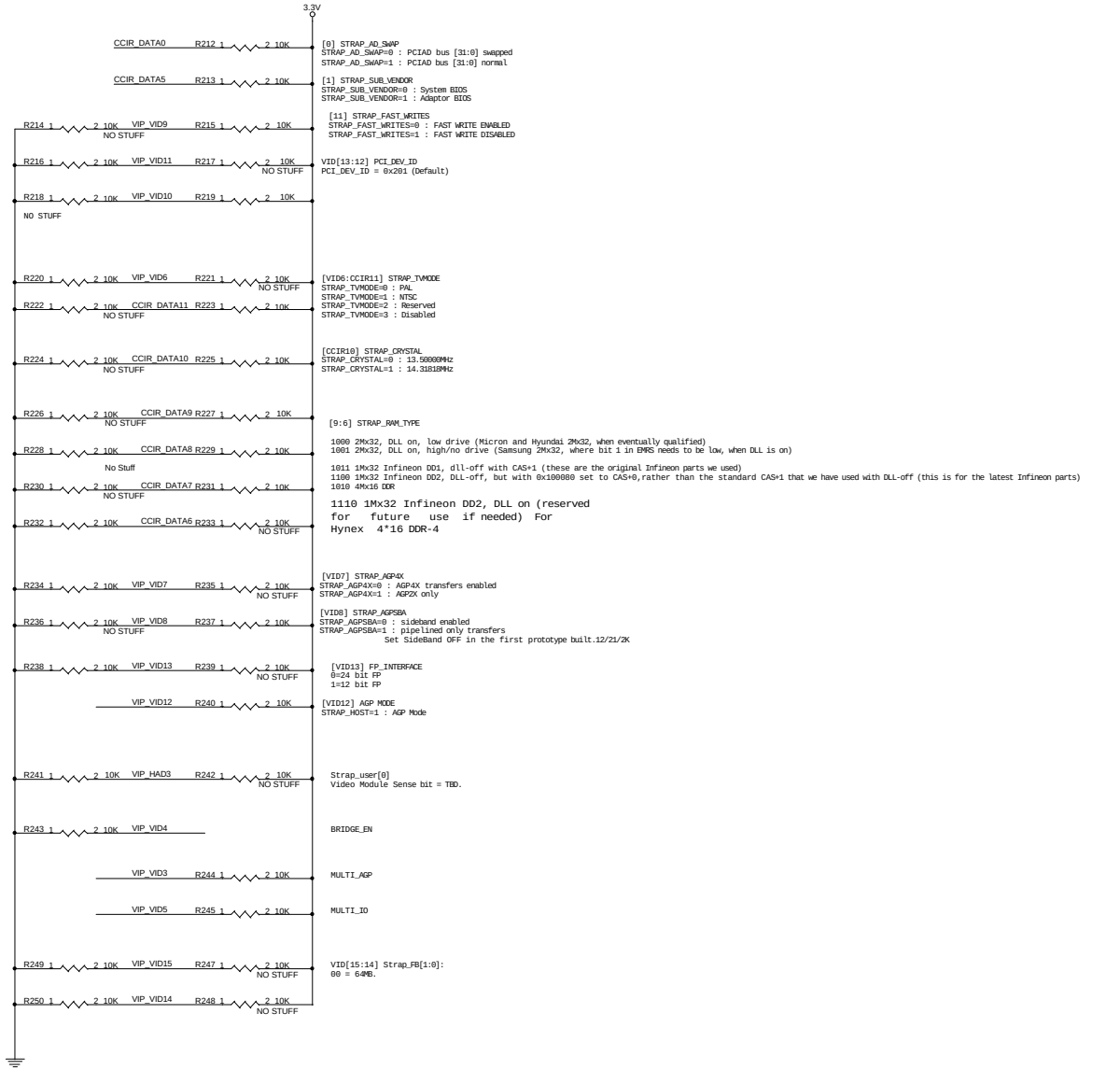
For EMI Solution



Micro-Star International Co., LTD.		
MS-8850 based on P50A09		
Size: C	Document Number: NV20 DECOUPLING	Rev: 1.1A
Date: Tuesday, October 16, 2001	Sheet 5 of 15	

4,12,13 CCIR_DATA[11:0]
4,12,13 VIP_VID[15:0]
4 FP_DATA_LO[11:0]

4 VIP_HAD0
4 VIP_HAD1
4 VIP_HAD2
4 VIP_HAD3
4 VIP_HAD4
4 VIP_HAD5
4,12 VIP_HAD6
4,12 VIP_HAD7



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MS-8850 based on P50A09

Size	Document Number	Rev
C	NV20 HOST STRAPS	1.1A

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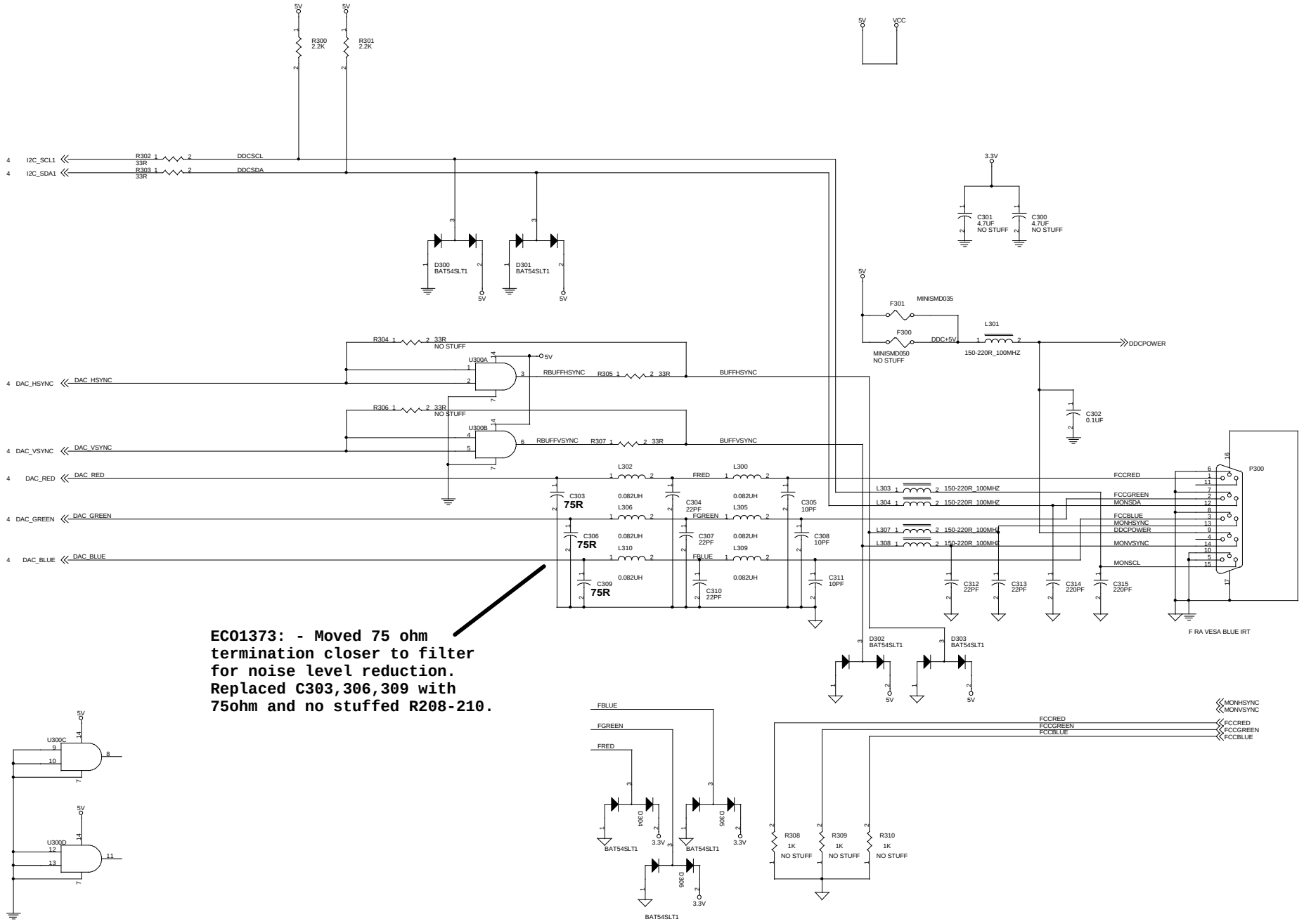
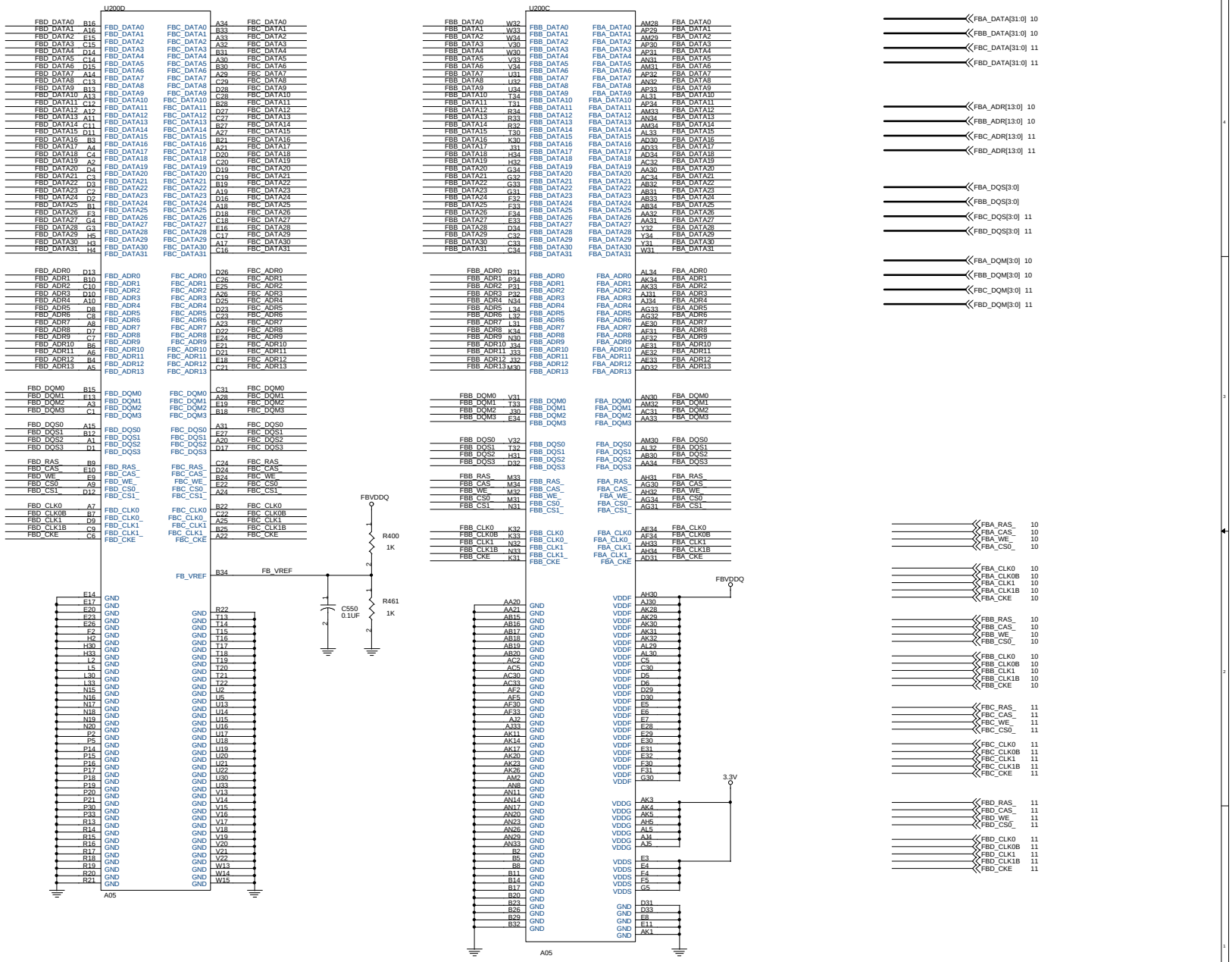
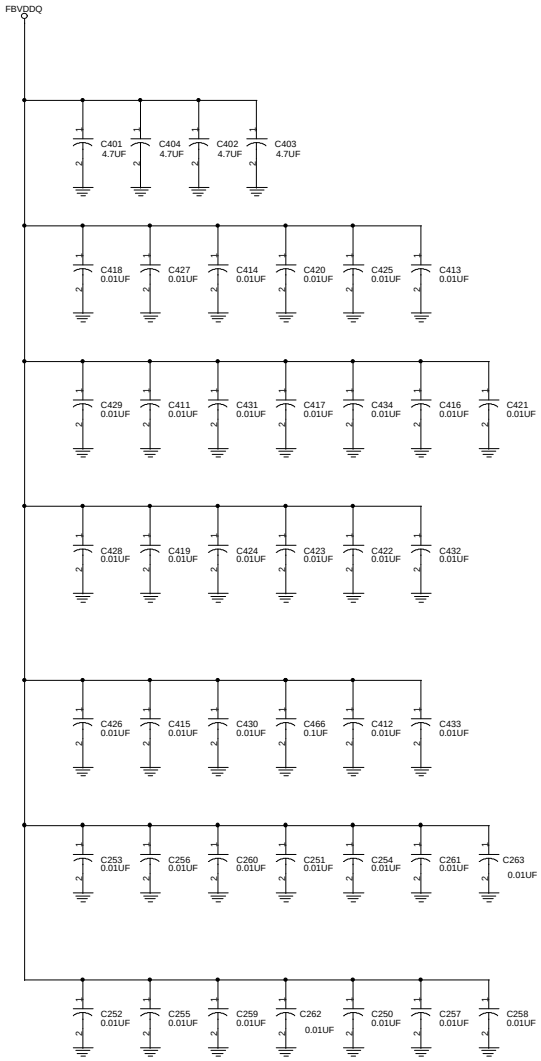


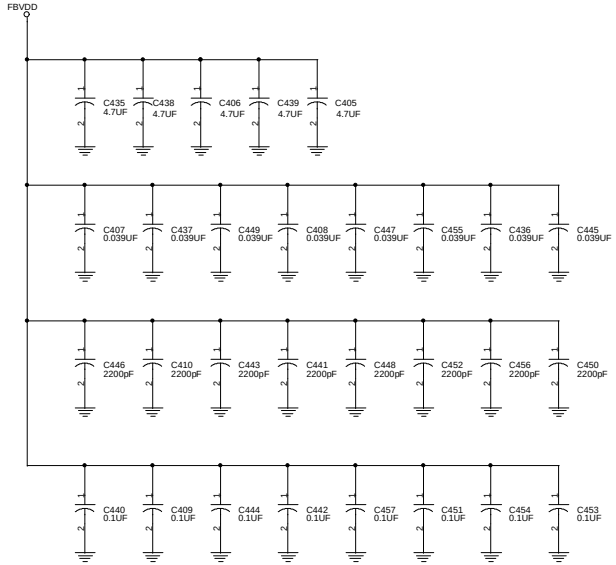
ECO1373: - Moved 75 ohm termination closer to filter for noise level reduction. Replaced C303,306,309 with 75ohm and no stuffed R208-210.

Micro-Star International Co., LTD.	
MS-8850 based on P50A09	
Size: C	Document Number: DAC I/O
Rev: 1.1A	
Date: Tuesday, October 16, 2001	Sheet 7 of 15

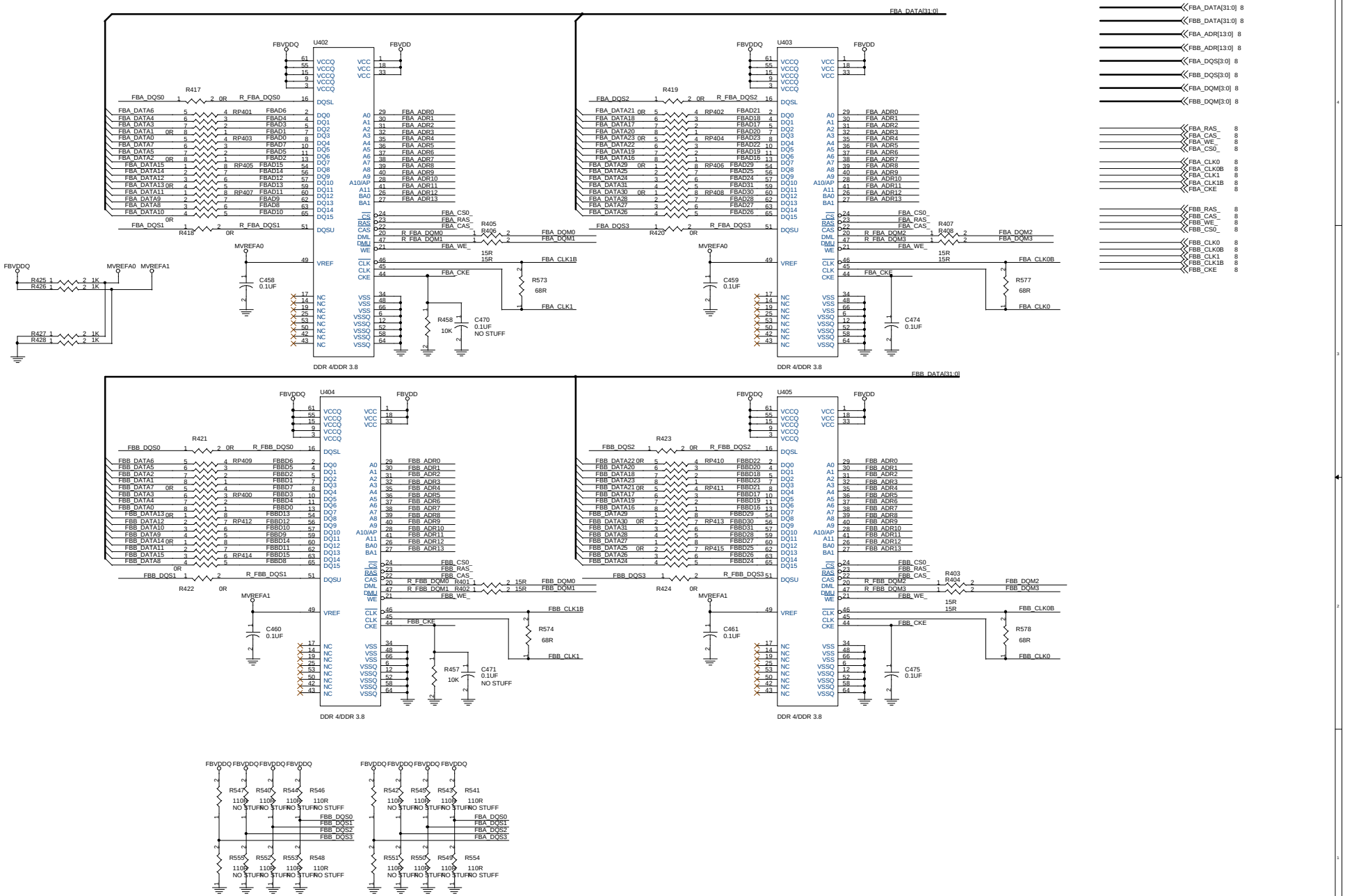


MSI	Micro-Star International Co., LTD.	
	MS-8850 based on P50A09	
Size: C	Document Number: NV20 FBA/B/C/D	Rev: 1.1A
Date: Tuesday, October 16, 2001	Sheet 8 of 15	

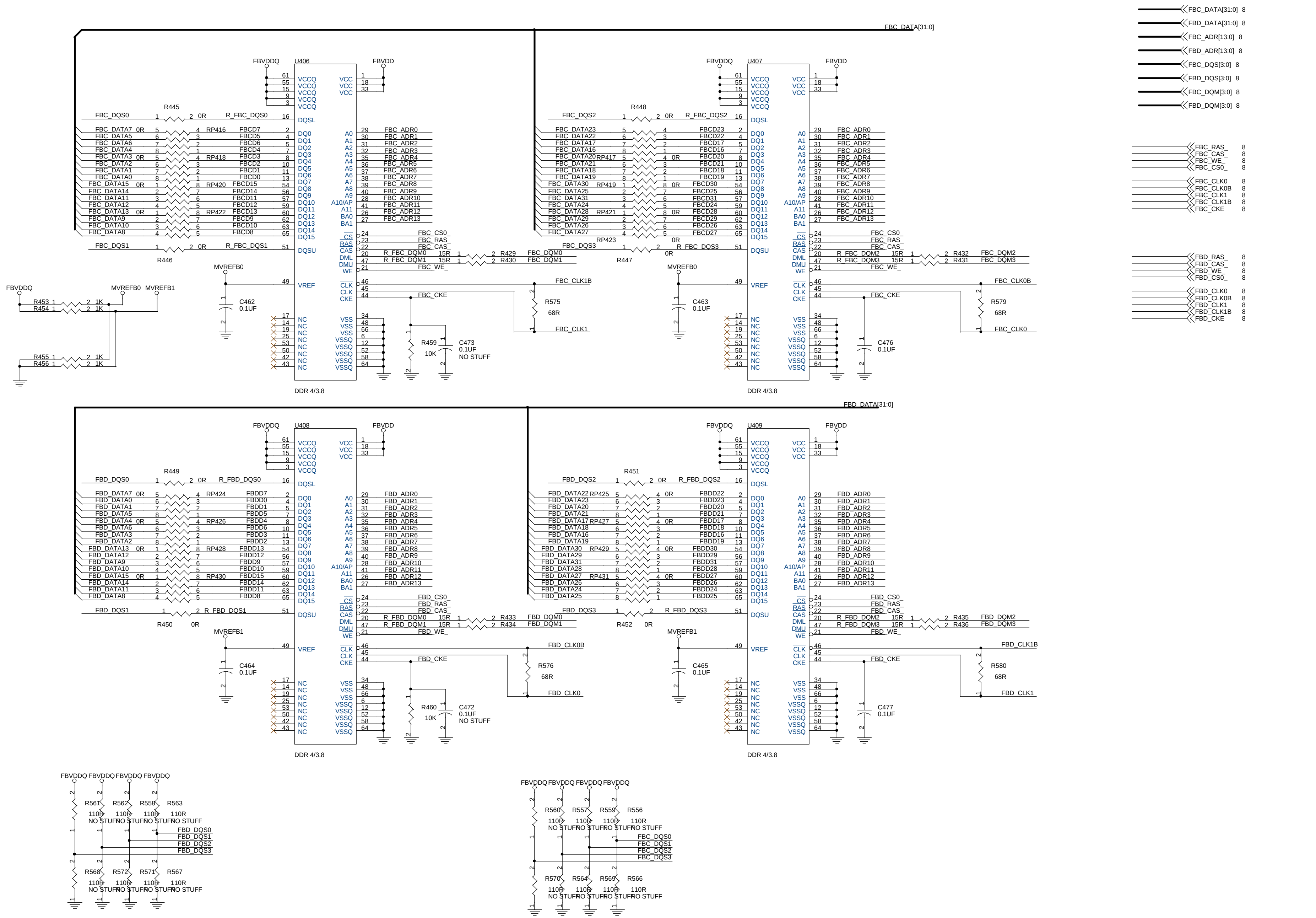




MSI	Micro-Star International Co., LTD.	
	MS-8850 based on P50A09	
Size: C	Document Number: FB DECOUPLING 4MX16 SDRAM	Rev: 1.1A
Date: Tuesday, October 16, 2001	Sheet 9 of 15	



MSI	Micro-Star International Co., LTD.	
	MS-8850 based on P50A09	
Size: C	Document Number: FBA/B DDR 4MX16 SDRAM	Rev: 1.1A
Date: Tuesday, October 16, 2001	Sheet 10 of 15	



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MS-8850 based on P50A09

Size	Document Number	Rev
C	FBC/D DDR 4MX16 SDRAM	1.1A

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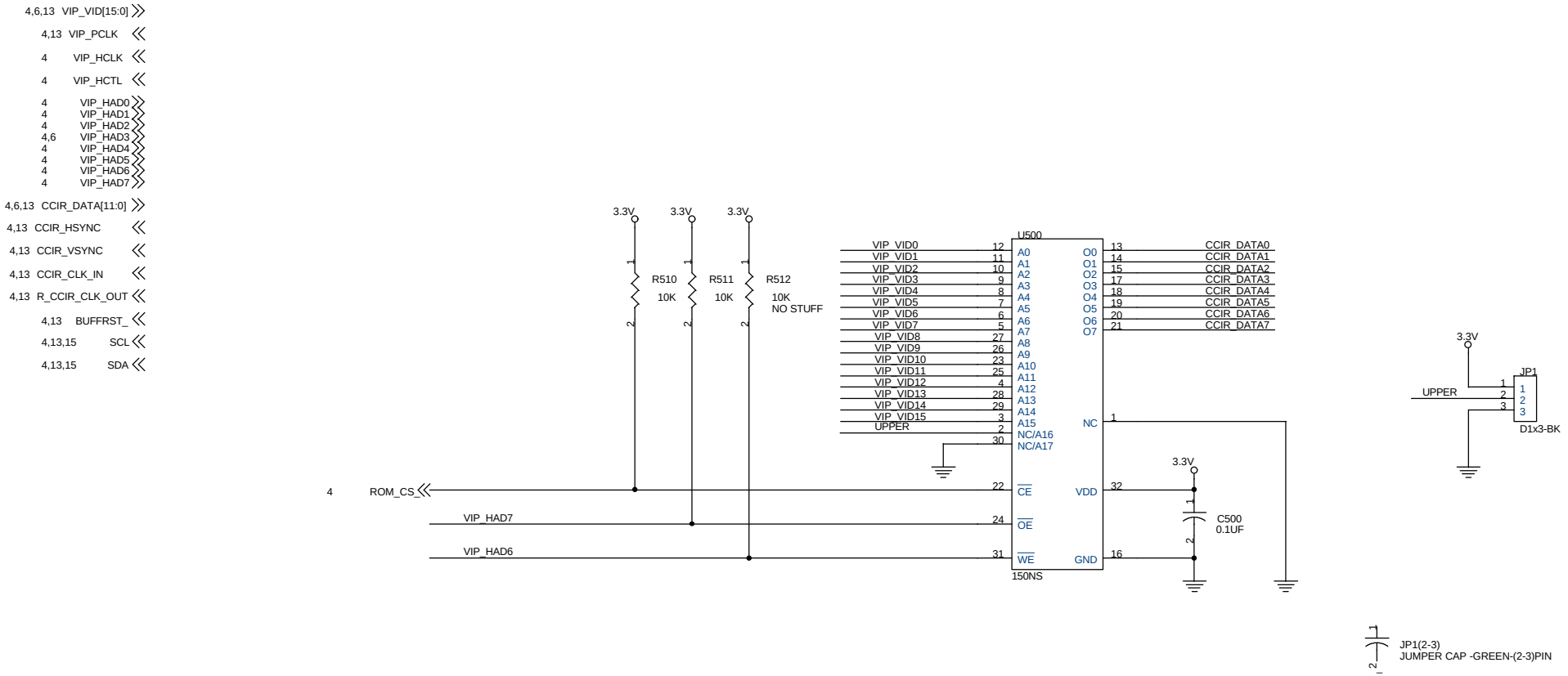

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MS-8850 based on P50A09		
Size: B	Document Number: ROM VIP & VIDEO IF	Rev: 1.1A
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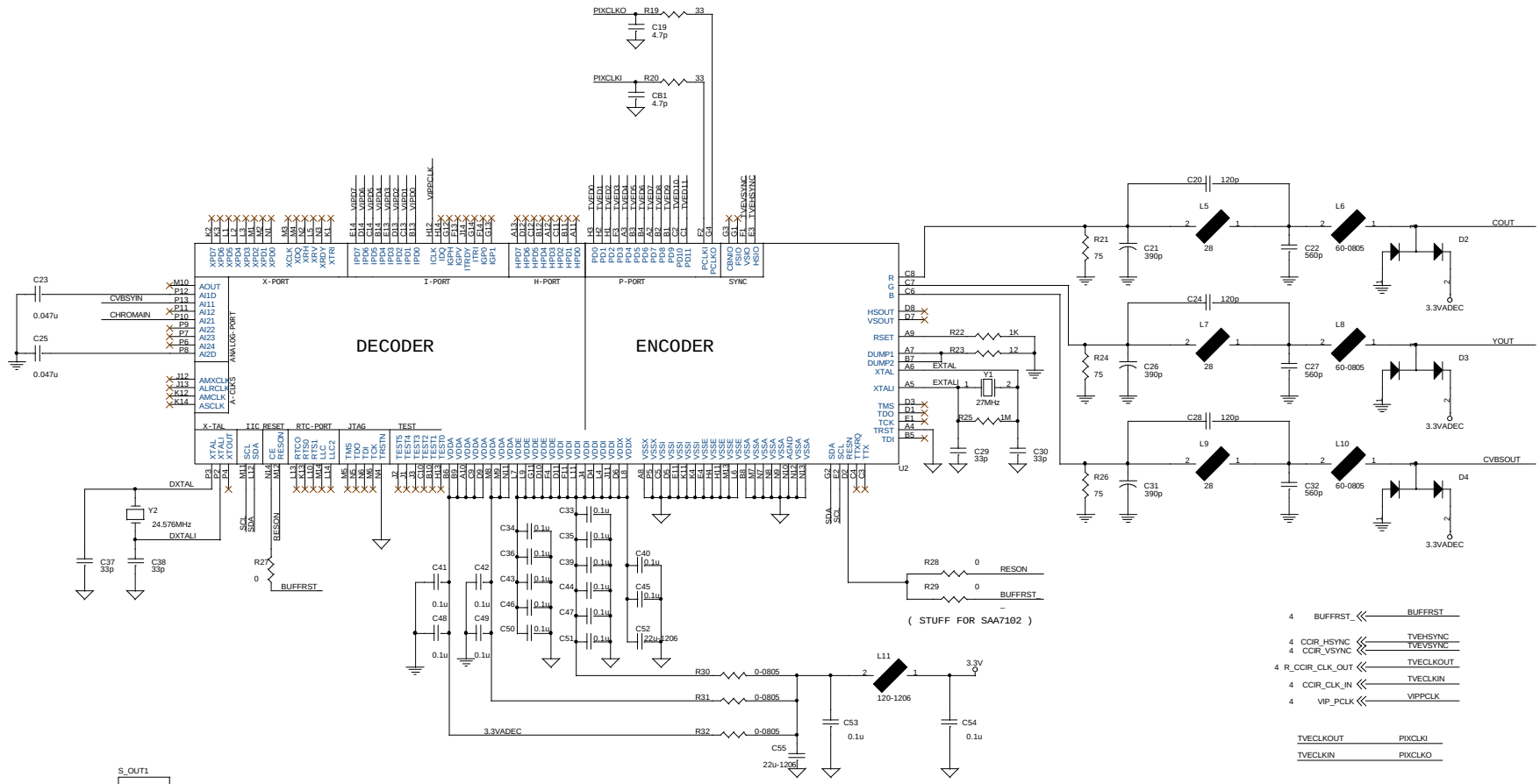
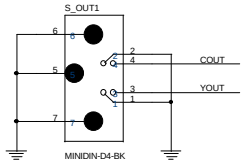
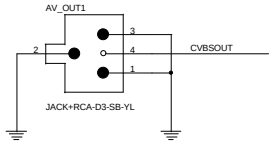
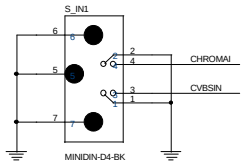
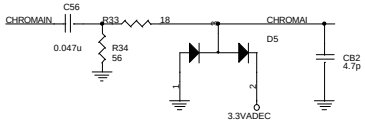


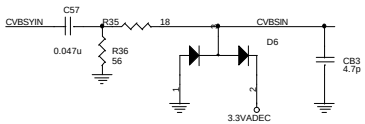
1.EXTAL,EXTALI,DXTAL AND DXTALI
NETS SHOULD BE 10 mils width.











4	BUFFRST_	BUFFRST
4	CCIR_HSYNC	TVEHSYNC
4	CCIR_VSYNC	TVEVSYNC
4	R_CCIR_CLK_OUT	TVECLKOUT
4	CCIR_CLK_IN	TVECLKIN
4	VIP_PCLK	VIPPCLK

TVECLKOUT	PIXCLKI
TVECLKIN	PIXCLKO

4,6,12	VIP_VID7	VIPD7
4,6,12	VIP_VID6	VIPD6
4,6,12	VIP_VID5	VIPD5
4,6,12	VIP_VID4	VIPD4
4,6,12	VIP_VID3	VIPD3
4,12	VIP_VID2	VIPD2
4,12	VIP_VID1	VIPD1
4,12	VIP_VID0	VIPD0

4,6	CCIR_DATA11	TVED11
4,6	CCIR_DATA10	TVED10
4,6	CCIR_DATA9	TVED9
4,6	CCIR_DATA8	TVED8
4,6,12	CCIR_DATA7	TVED7
4,6,12	CCIR_DATA6	TVED6
4,6,12	CCIR_DATA5	TVED5
4,12	CCIR_DATA4	TVED4
4,12	CCIR_DATA3	TVED3
4,12	CCIR_DATA2	TVED2
4,12	CCIR_DATA1	TVED1
4,6,12	CCIR_DATA0	TVED0

4,15	SDA	
4,15	SCL	
4,6,12	VIP_VID[15:0]	
4,6,12	VIP_HAD[7:0]	

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MS-8850 based on P50A09

Size	Document Number	Rev
C	VIDEO CODEC	1.1A

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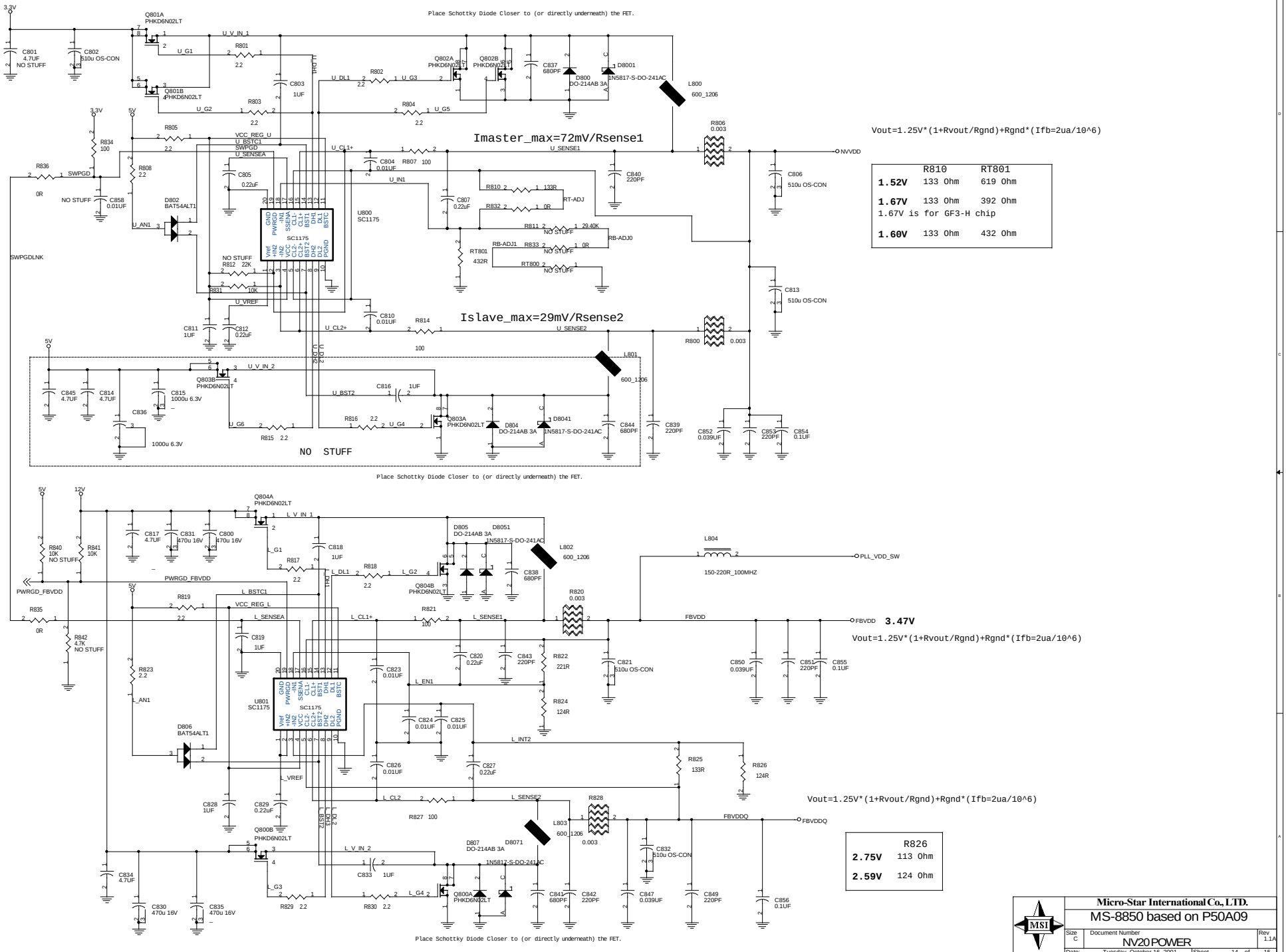
Place Schottky Diode Closer to (or directly underneath) the FET.
Imaster_max=72mV/Rsense1
Vout=1.25V*(1+Rvout/Rgnd)+Rgnd*(Ifb=2ua/10^6)
R810 RT801
1.52V 133 Ohm 619 Ohm
1.67V 133 Ohm 392 Ohm
1.67V is for GF3-H chip
1.60V 133 Ohm 432 Ohm
Islave_max=29mV/Rsense2
NO STUFF
Place Schottky Diode Closer to (or directly underneath) the FET.
3.47V
Vout=1.25V*(1+Rvout/Rgnd)+Rgnd*(Ifb=2ua/10^6)
Vout=1.25V*(1+Rvout/Rgnd)+Rgnd*(Ifb=2ua/10^6)
R826
2.75V 113 Ohm
2.59V 124 Ohm
Place Schottky Diode Closer to (or directly underneath) the FET.
Micro-Star International Co., LTD.
MS-8850 based on P50A09
NV20 POWER
Size C
Rev 1.1A
Date: Tuesday, October 16, 2001
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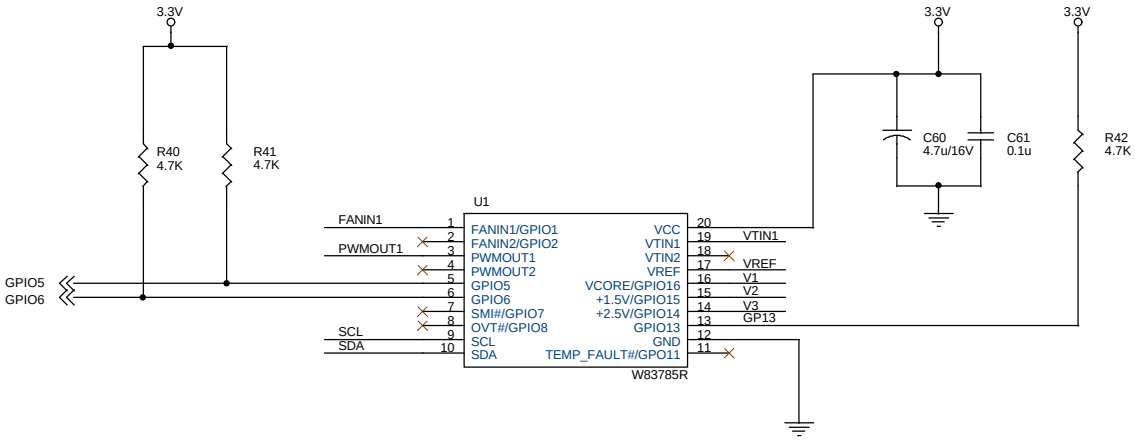
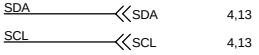
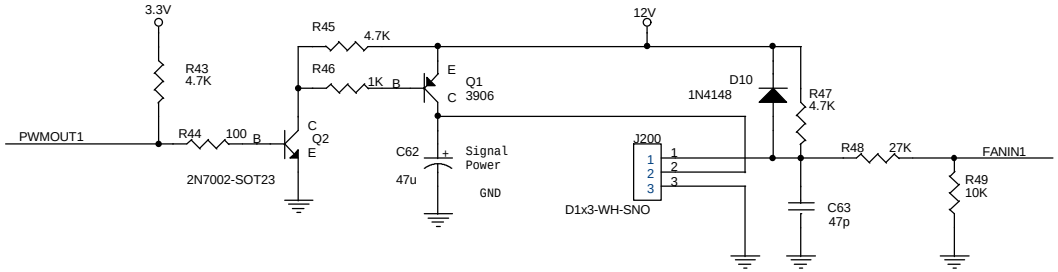
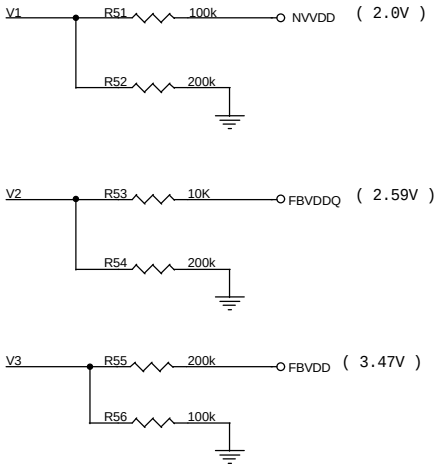




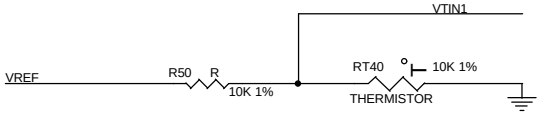


PWM1 Circuit for FAN1 speed Control

FOR 12V FAN



VOLTAGE SENSORING CIRCUIT



TEMPERATURE SENSORING CIRCUIT

Micro-Star International Co., LTD.		
MS-8850 based on P50A09		
Size: B	Document Number: HARDWARE MONITOR	Rev: 1.1A
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P300-1
SCREW

P300-2
SCREW

BRACKET
BRACKET

Title: MS-8838 based on P50A09		
Size: A	Document Number: <Doc>	Rev: 1.1A
Date: Tuesday, October 16, 2001	Sheet 16 of 16	