PCB100

PCB

P200-1

SCREW

P200-2

SCREW

K100

FAN

BRACKET

BRACKET

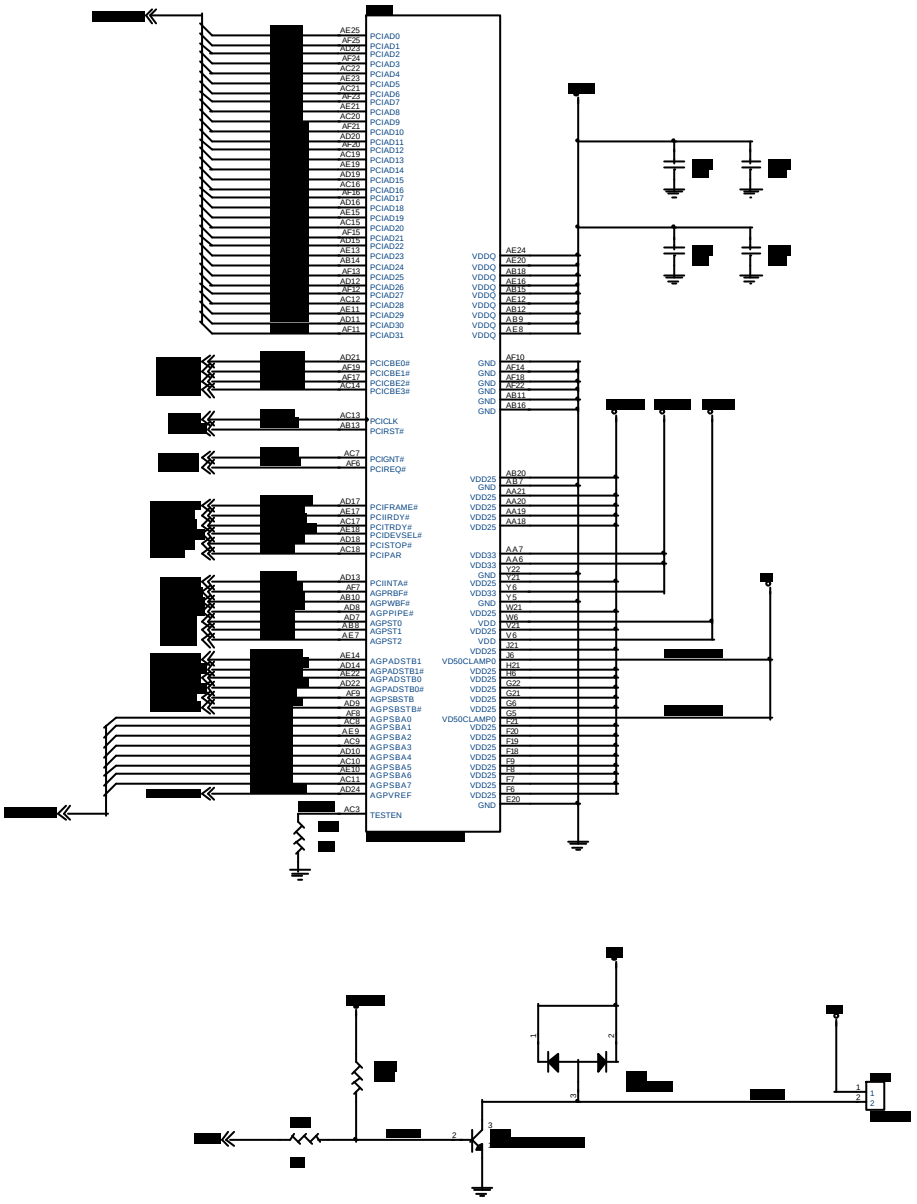
Title: <Title>		
Size: B	Document Number: <Doc>	Rev: 0A
Date: Saturday, August 11, 2001	Sheet 0 of 1	

NV15, 4MX16 TERMINATED DDR, RGB, INTERNAL DVI-I, TV I/F, AGP4X.

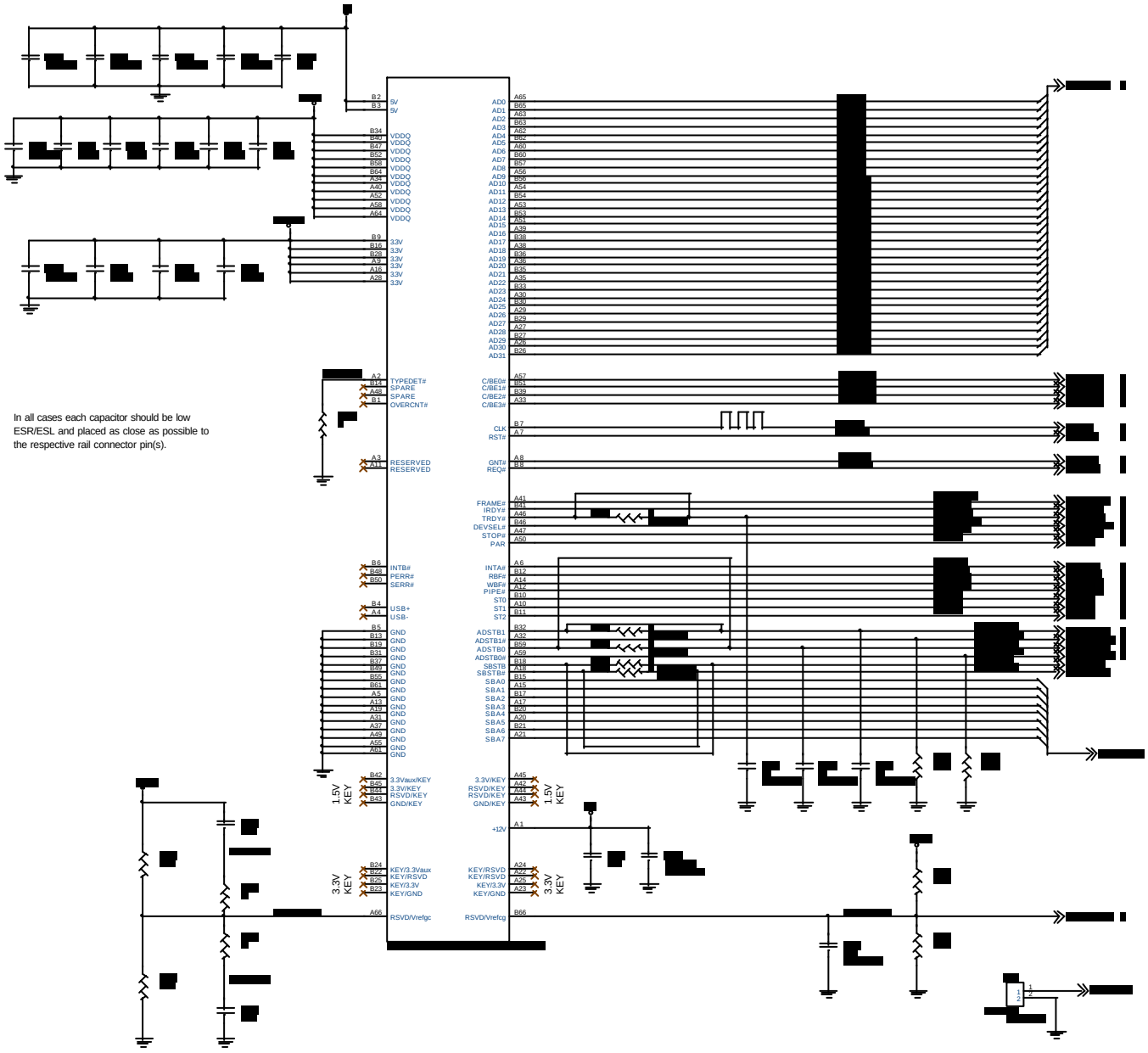
PCI DEVICE ID 0X0=0X150 FOR NV15.

GPU : GeForce2 PRO
STRAPS : AGP4X, SIDEBAND DIS, FAST WRITE ENA, ADP BIOS, NORMAL PCIAD, 14.318MHz
STRAP_RAM_TYPE [5 : 2]=1010 4MX16 DDR SDRAM
ALL "NO STUFF" COMPONENTS HIGHLITED
SWITCHER1(VTT) SET TO 1.25V
SWITCHER2(NVVDD) SET TO 2.05V
LINEAR(FBVDDQ) SET TO 2.5V

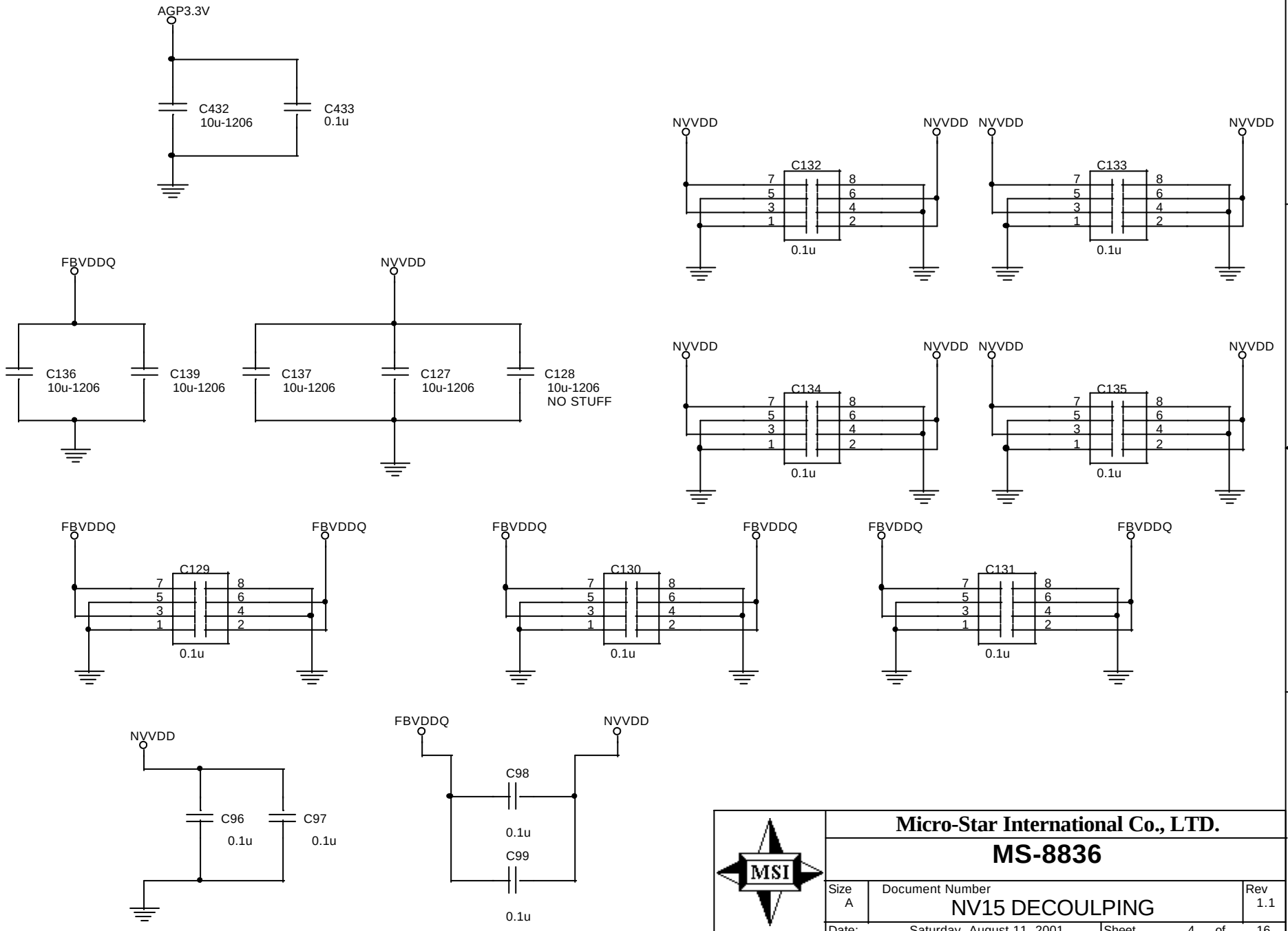
	Micro-Star International Co., LTD.	
	MS-8836	
Size B	Document Number: History based on P30-B02	Rev 1.1
Date: Saturday, August 11, 2001	Sheet 1 of 16	



Micro-Star International Co.LTD	
MS-8836	
NV15 HOST	



Micro-Star International Co.LTD	
MS-8836	
AGP I/O	



Micro-Star International Co., LTD.		
MS-8836		
Size A	Document Number NV15 DECOULPING	Rev 1.1
Date: Saturday, August 11, 2001	Sheet 4 of 16	

[0] STRAP_ADSWAP
STRAP_ADSWAP = 0 : PCIAD bus [31 : 0] swaped
STRAP_ADSWAP = 1 : PCIAD bus [31 : 0] normal

[1] STRAP_SUB_VENDOR
STRAP_SUB_VENDOR = 0 : System BIOS
STRAP_SUB_VENDOR = 1 : Adaptor BIOS

[11] STRAP_FAST_WRITES
STRAP_FAST_WRITES = 0 : FAST WRITE ENABLLED
STRAP_FAST_WRITES = 1 : FAST WRITE DISABLLED

[13:12] PCI_DEV_ID
PCI_DEV_ID (0x0) = 0x150

[6] STRAP_CRYSTAL
STRAP_CRYSTAL = 0 : 13.50000MHz
STRAP_CRYSTAL = 1 : 14.31818MHz

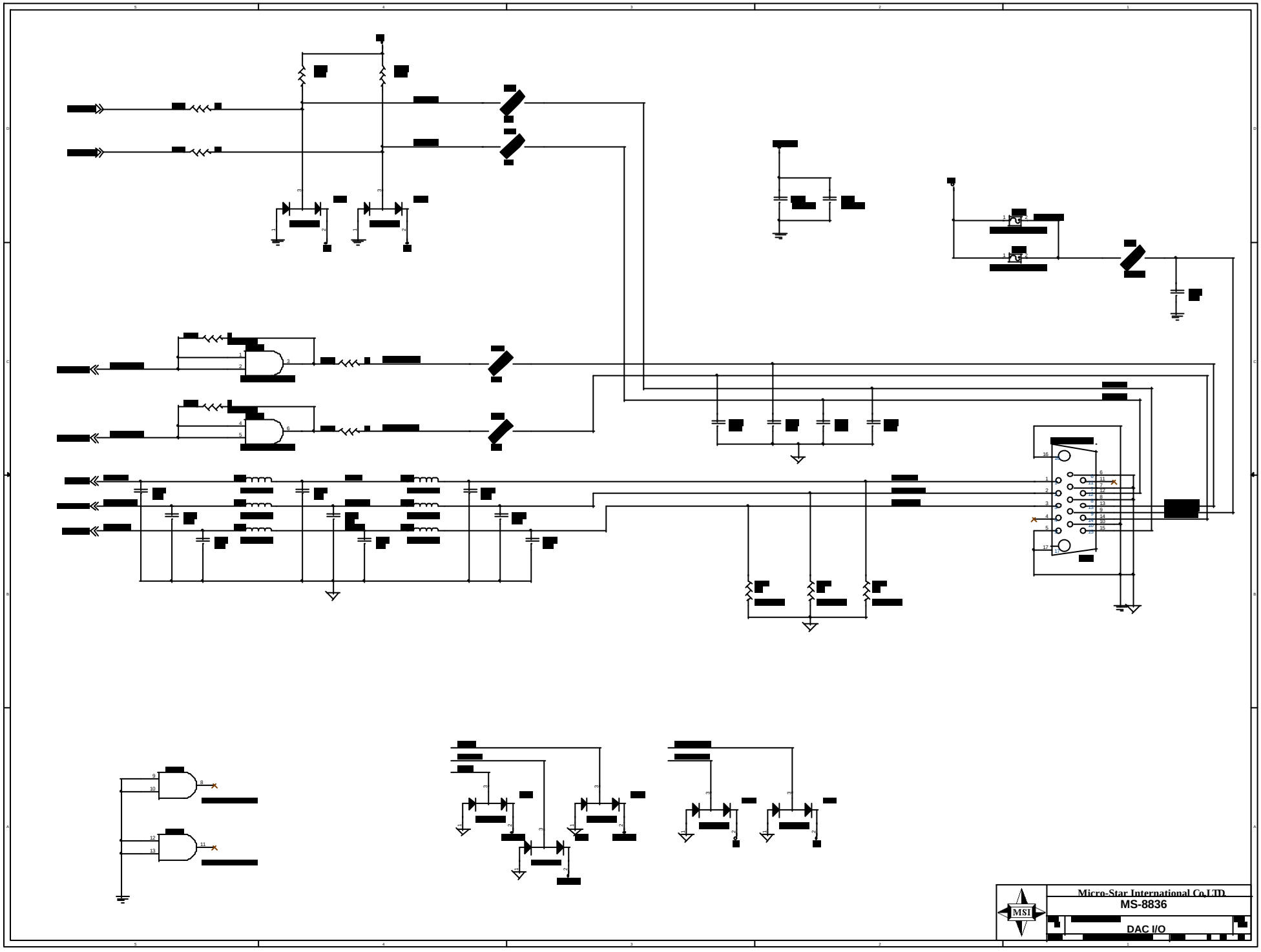
[5:2] STRAP_RAM_TYPE
1010 = 4Mx16 DDR SDRAM

[9] STRAP_AG4X
STRAP_AG4X = 0 : AGP4X transfers enabled
STRAP_AG4X = 1 : AGP2X only

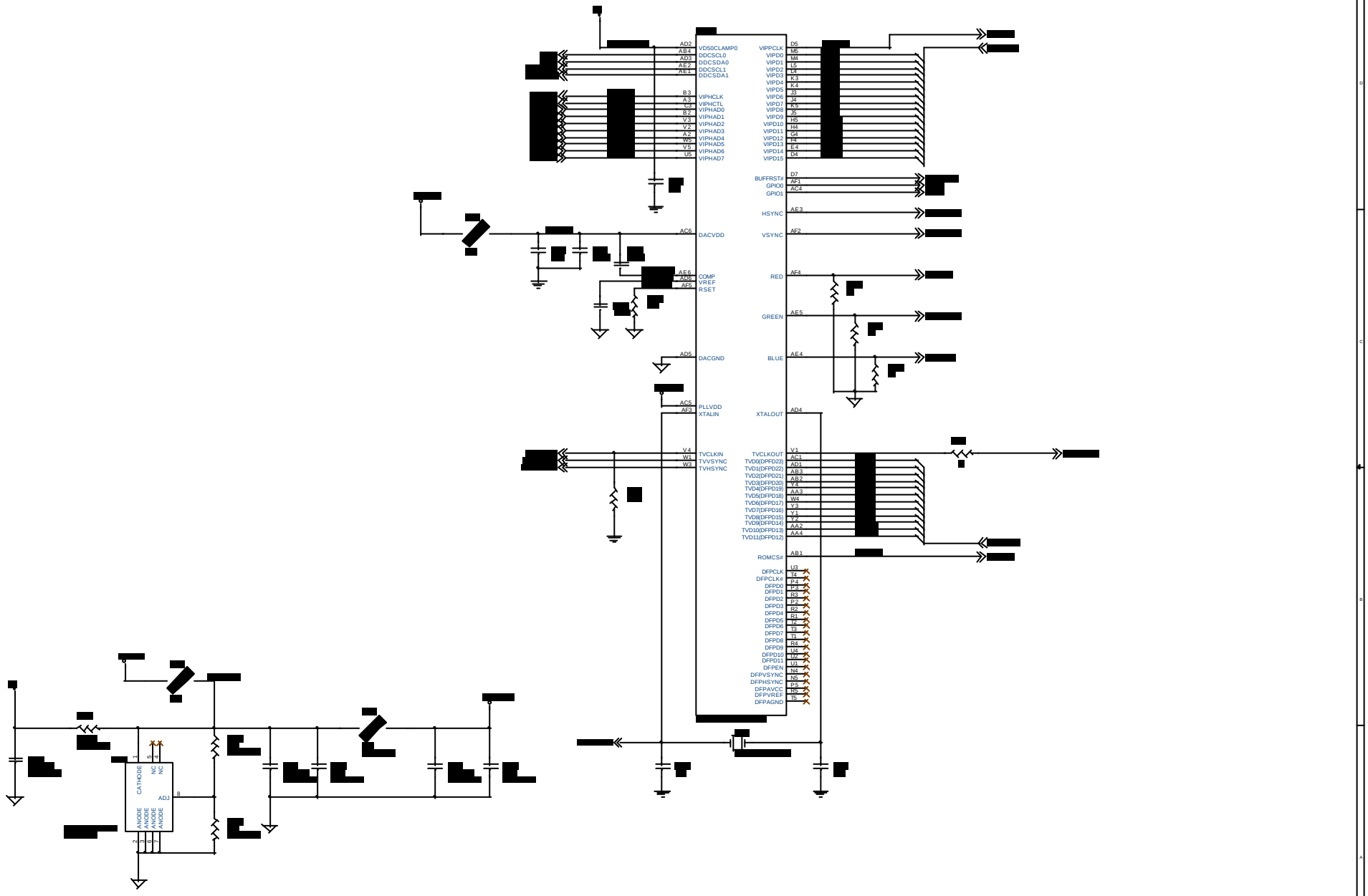
[10] STRAP_AGPSBA
STRAP_AGPSBA = 0 : sideband enabled
STRAP_AGPSBA = 1 : pipelined only transfers

STRAP_HOST = 1 : AGP Mode

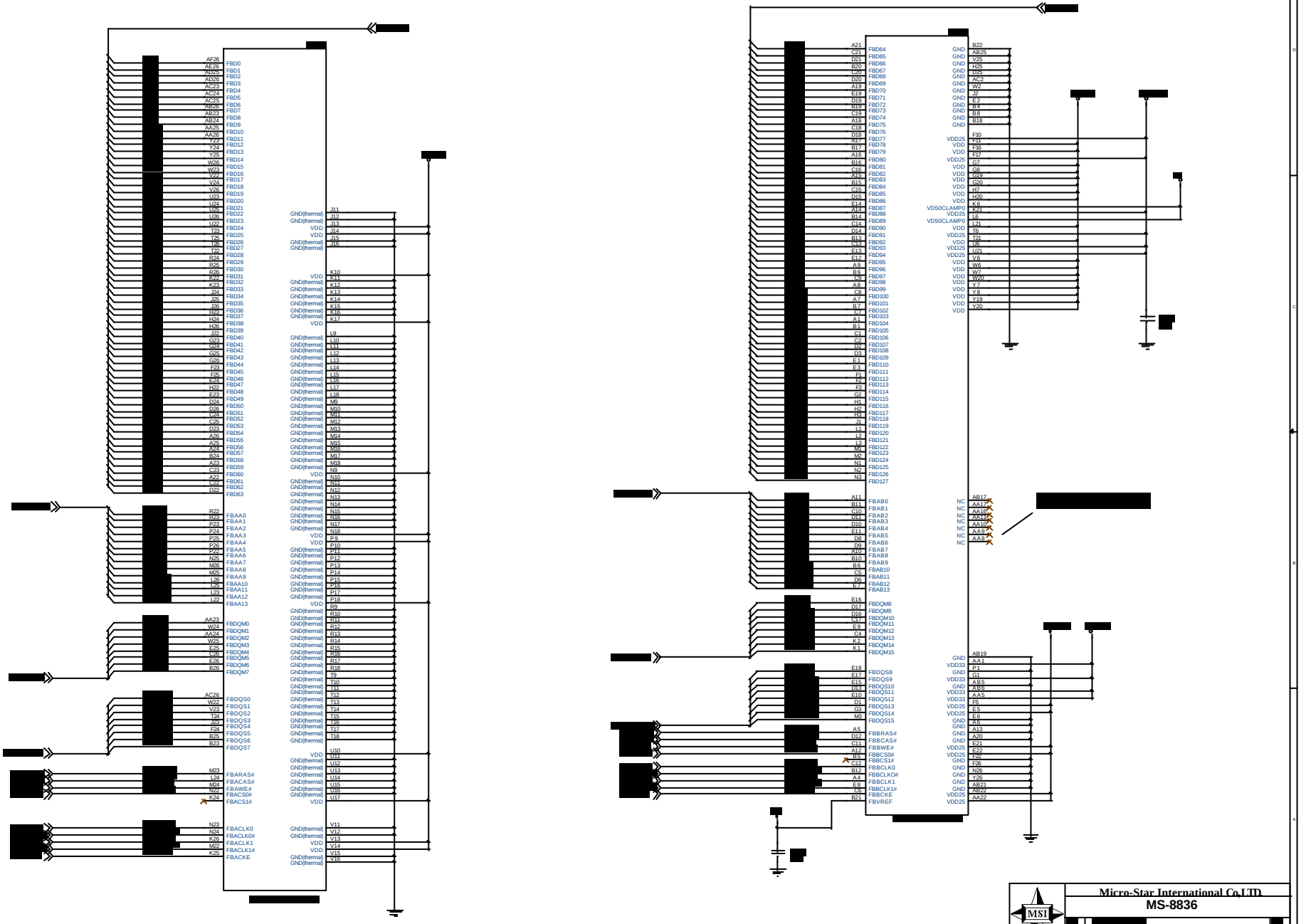
Micro-Star International Co., LTD.		
MS-8836		
Size: B	Document Number: NV15 HOST STRAPS	Rev: 1.1
Date: Saturday, August 11, 2001	Sheet 5 of 16	

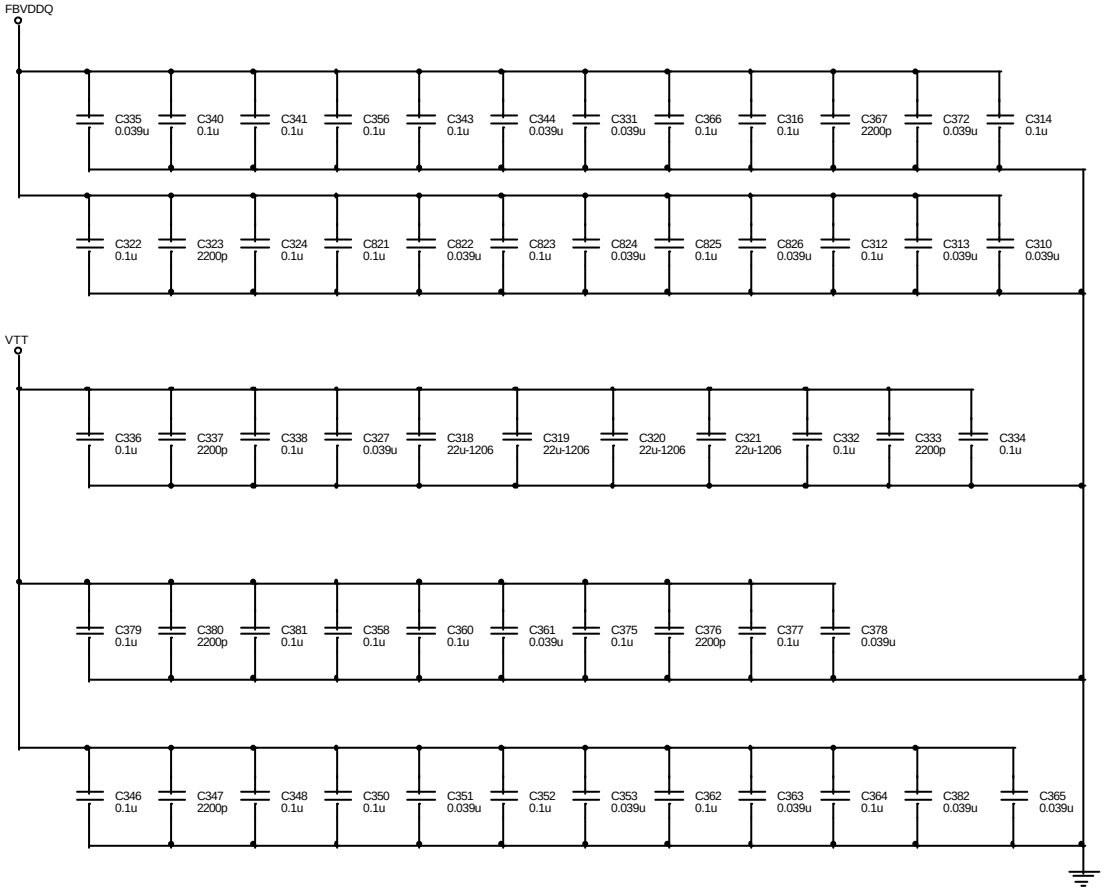


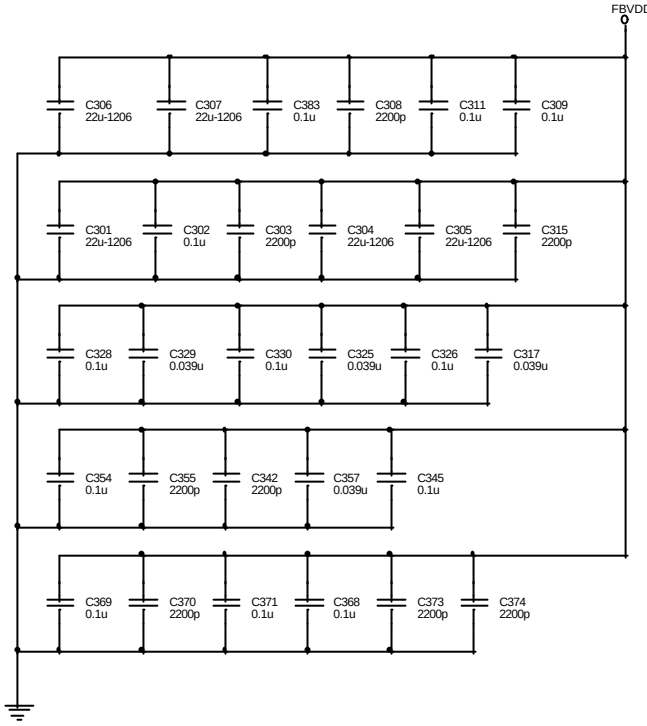
Micro-Star International Co.LTD
MS-8836
DAC I/O



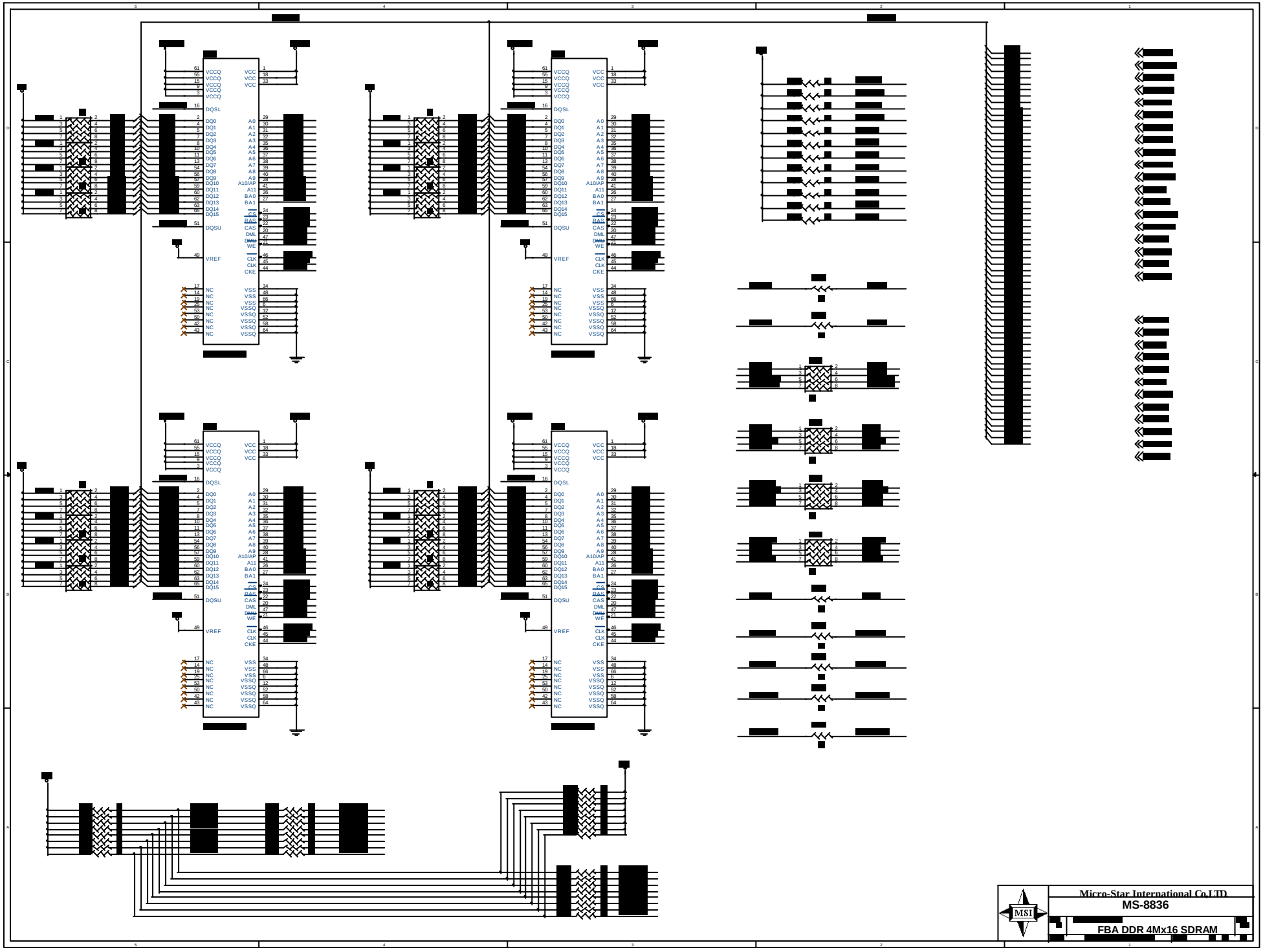
Micro-Star International Co.LTD	
MS-8836	
NV15 DAC/TV	

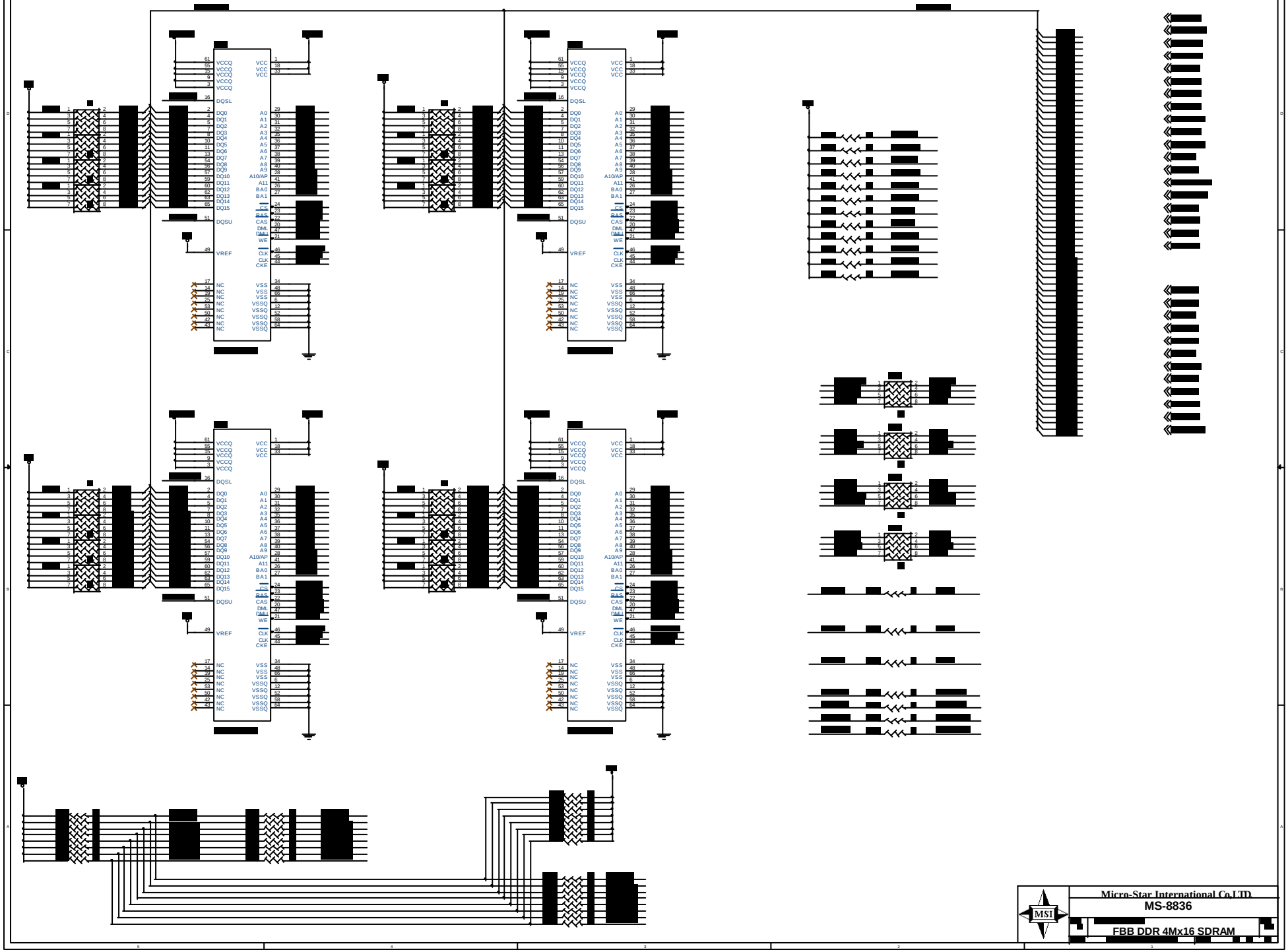

AF26 FBD0
AE26 FBD1
AD26 FBD2
AD26 FBD3
AC23 FBD4
AC24 FBD5
AC25 FBD6
AB26 FBD7
AB23 FBD8
AB24 FBD9
AA25 FBD10
AA26 FBD11
Y23 FBD12
Y24 FBD13
Y25 FBD14
W26 FBD15
W23 FBD16
V22 FBD17
V24 FBD18
V26 FBD19
U23 FBD20
U24 FBD21
U25 FBD22
U26 FBD23
U22 FBD24
T23 FBD25
T25 FBD26
T26 FBD27
T22 FBD28
R24 FBD29
R25 FBD30
R26 FBD31
R22 FBD32
K23 FBD33
J24 FBD34
J25 FBD35
J26 FBD36
H24 FBD37
H24 FBD38
H26 FBD39
J22 FBD40
G23 FBD41
G24 FBD42
G25 FBD43
G26 FBD44
F23 FBD45
F26 FBD46
E24 FBD47
H22 FBD48
E23 FBD49
D24 FBD50
D26 FBD51
C24 FBD52
C25 FBD53
D23 FBD54
A26 FBD55
A25 FBD56
A24 FBD57
B24 FBD58
A23 FBD59
C23 FBD60
A22 FBD61
C22 FBD62
D22 FBD63
GND(thermal) J11
GND(thermal) J12
J13
VDD J14
VDD J15
GND(thermal) J16
GND(thermal)
VDD K10
K11
GND(thermal) K12
GND(thermal) K13
GND(thermal) K14
GND(thermal) K15
GND(thermal) K16
GND(thermal) K17
VDD
L9
GND(thermal) L10
GND(thermal) L11
GND(thermal) L12
GND(thermal) L13
GND(thermal) L14
GND(thermal) L15
GND(thermal) L16
GND(thermal) L17
GND(thermal) L18
GND(thermal) M9
GND(thermal) M10
GND(thermal) M11
GND(thermal) M12
GND(thermal) M13
GND(thermal) M14
GND(thermal) M15
GND(thermal) M16
GND(thermal) M17
GND(thermal) M18
GND(thermal) N9
VDD N10
GND(thermal) N11
GND(thermal) N12
GND(thermal) N13
GND(thermal) N14
GND(thermal) N15
GND(thermal) N16
GND(thermal) N17
GND(thermal) N18
VDD P9
VDD P10
GND(thermal) P11
GND(thermal) P12
GND(thermal) P13
GND(thermal) P14
GND(thermal) P15
GND(thermal) P16
GND(thermal) P17
P18
VDD R9
GND(thermal) R10
GND(thermal) R11
GND(thermal) R12
GND(thermal) R13
GND(thermal) R14
GND(thermal) R15
GND(thermal) R16
GND(thermal) R17
GND(thermal) R18
GND(thermal) T9
GND(thermal) T10
GND(thermal) T11
GND(thermal) T12
GND(thermal) T13
GND(thermal) T14
GND(thermal) T15
GND(thermal) T16
GND(thermal) T17
GND(thermal) T18
VDD U10
U11
GND(thermal) U12
GND(thermal) U13
GND(thermal) U14
GND(thermal) U15
GND(thermal) U16
VDD U17
GND(thermal) V11
GND(thermal) V12
V13
VDD V14
VDD V15
GND(thermal) V16
GND(thermal)
R22 FBAA0
R23 FBAA1
P23 FBAA2
P24 FBAA3
P25 FBAA4
P26 FBAA5
P22 FBAA6
N25 FBAA7
M26 FBAA8
M25 FBAA9
L26 FBAA10
L25 FBAA11
L23 FBAA12
L22 FBAA13
AA23 FBDQM0
W24 FBDQM1
AA24 FBDQM2
W25 FBDQM3
E25 FBDQM4
C26 FBDQM5
E26 FBDQM6
B26 FBDQM7
AC26 FBDQS0
W22 FBDQS1
V23 FBDQS2
T24 FBDQS3
K24 FBDQS4
F24 FBDQS5
B25 FBDQS6
B23 FBDQS7
M23 FBARAS#
L24 FBACAS#
M24 FBAWE#
N22 FBACS0#
K24 FBACS1#
N23 FBACLK0
N24 FBACLK0#
K26 FBACLK1
M22 FBACLK1#
K25 FBACKE
A21 FBD64
C21 FBD65
D21 FBD66
B20 FBD67
C20 FBD68
D20 FBD69
A19 FBD70
E19 FBD71
D19 FBD72
B19 FBD73
C19 FBD74
A18 FBD75
C18 FBD76
D18 FBD77
A17 FBD78
B17 FBD79
A16 FBD80
B16 FBD81
C16 FBD82
A15 FBD83
B15 FBD84
C15 FBD85
D15 FBD86
E14 FBD87
A14 FBD88
B14 FBD89
C14 FBD90
D14 FBD91
B13 FBD92
C13 FBD93
E13 FBD94
E12 FBD95
A9 FBD96
B9 FBD97
C9 FBD98
A9 FBD99
C8 FBD100
A7 FBD101
B7 FBD102
C7 FBD103
A1 FBD104
B1 FBD105
C1 FBD106
C2 FBD107
D2 FBD108
D3 FBD109
E1 FBD110
E3 FBD111
F1 FBD112
F2 FBD113
F3 FBD114
G2 FBD115
H1 FBD116
H2 FBD117
H3 FBD118
J1 FBD119
L1 FBD120
L2 FBD121
L3 FBD122
M1 FBD123
M2 FBD124
N1 FBD125
N2 FBD126
N3 FBD127
B22
AB25
V25
H25
D25
AC2
W2
J2
E2
B4
B3
B18
F30
F31
F28
F27
G7
G8
G19
G20
H7
H20
K6
K21
L6
L21
T6
T21
U6
U21
V6
W6
W7
W20
Y7
Y8
Y19
Y20
A11 FBAB0
B11 FBAB1
C10 FBAB2
D11 FBAB3
D10 FBAB4
E11 FBAB5
D8 FBAB6
D9 FBAB7
A10 FBAB8
B10 FBAB9
B6 FBAB10
C5 FBAB11
D6 FBAB12
E7 FBAB13
NC AB17
NC AA17
NC AA16
NC AA15
NC AA10
NC AA9
NC AA8
E16 FBDQM8
D17 FBDQM9
D16 FBDQM10
C17 FBDQM11
E9 FBDQM12
C4 FBDQM13
K2 FBDQM14
K1 FBDQM15
E18 FBDQS8
E17 FBDQS9
E15 FBDQS10
D13 FBDQS11
E10 FBDQS12
D1 FBDQS13
G3 FBDQS14
M3 FBDQS15
A5 FBBRAS#
D12 FBBCAS#
C11 FBBWE#
A12 FBBCS0#
B5 FBBCS1#
C12 FBBCLK0
B12 FBBCLK0#
A4 FBBCLK1
E8 FBBCLK1#
C6 FBBCKE
B21 FBVREF
GND AB19
VDD33 AA1
GND P1
VDD33 G1
VDD33 AB5
GND AB8
VDD33 AA5
VDD33 F5
VDD25 E5
VDD25 E6
GND A6
GND A13
GND A20
GND E21
VDD25 E22
VDD25 F22
GND F26
GND N26
GND Y26
GND AB21
GND AB22
VDD25 AA22
VDD25
Micro-Star International Co.LTD
MS-8836
NV15 FBA/FBB

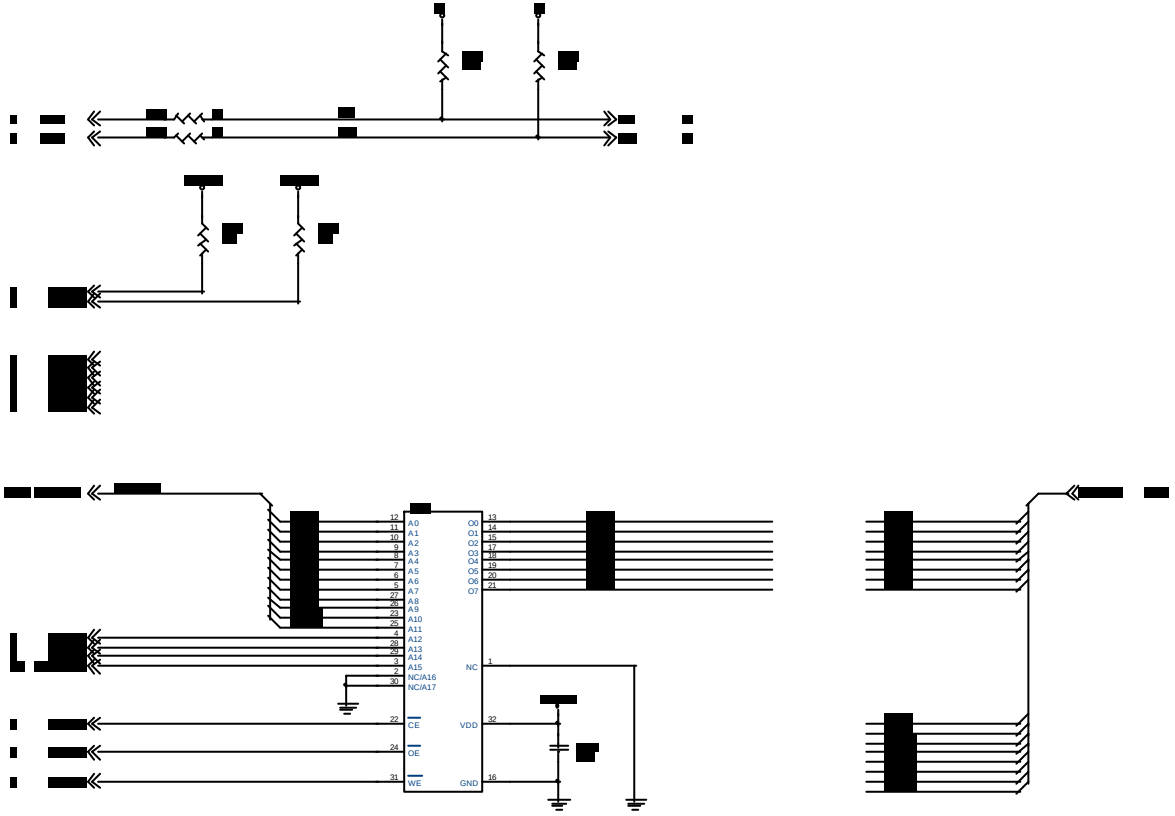




MSI	Micro-Star International Co., LTD.	
	MS-8836	
Size: B	Document Number: FB DECOULPING	Rev: 1.1
Date: Saturday, August 11, 2001	Sheet 9 of 16	


Micro-Star International Co.LTD
MS-8836
FBA DDR 4Mx16 SDRAM


Micro-Star International Co.LTD
MS-8836
FBB DDR 4Mx16 SDRAM

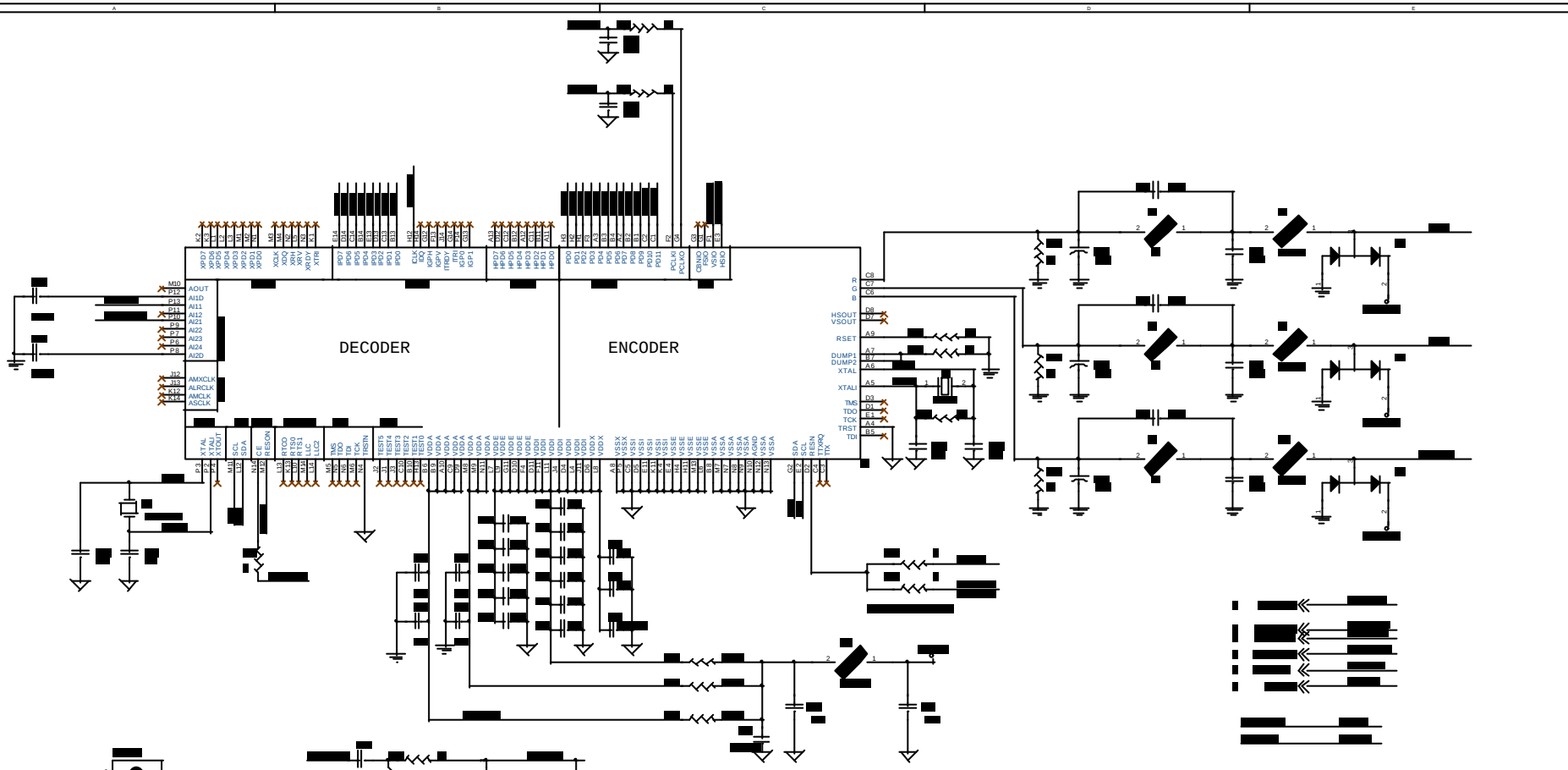


ROM

Micro-Star International Co,LTD.

MS-8836

History based on P30-B02



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

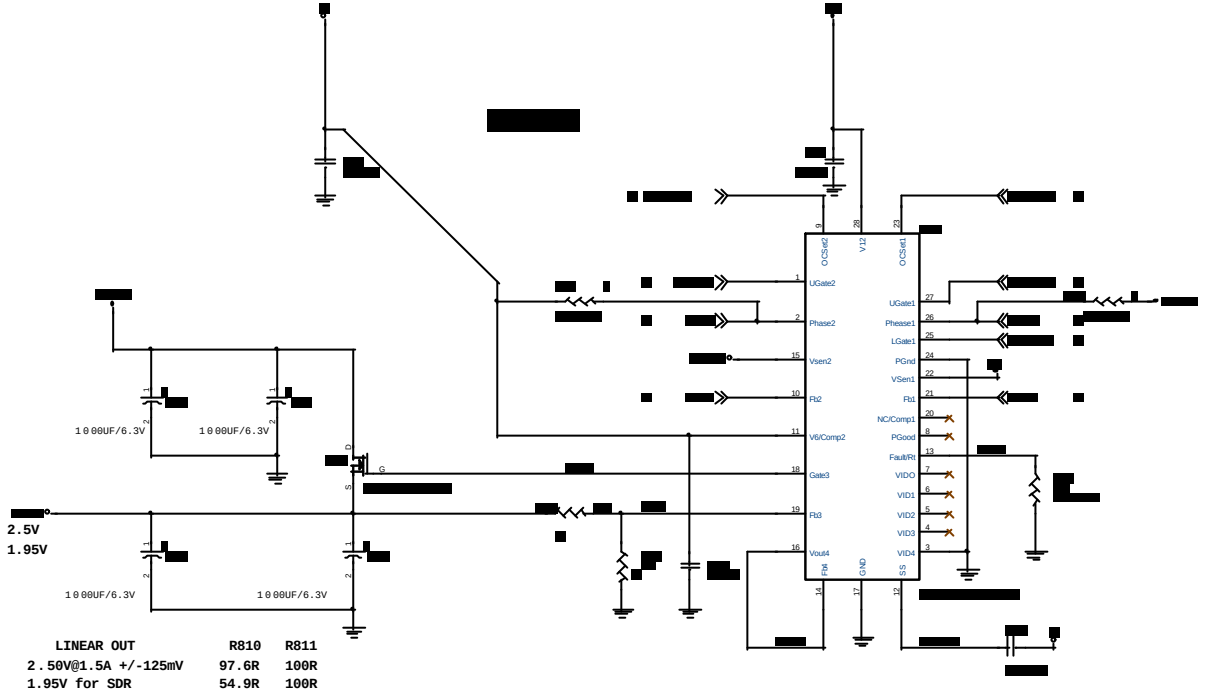
PHILIPS 7108 EN/DECORDER

Micro-Star International Co,LTD.	
MS-8836	
Philips 7108 En/Decorder	

AGP3.3

SWITCHER2=2.05V

LINEAR=2.5V



LINEAR OUT	R810	R811
2.50V@1.5A +/-125mV	97.6R	100R
1.95V for SDR	54.9R	100R

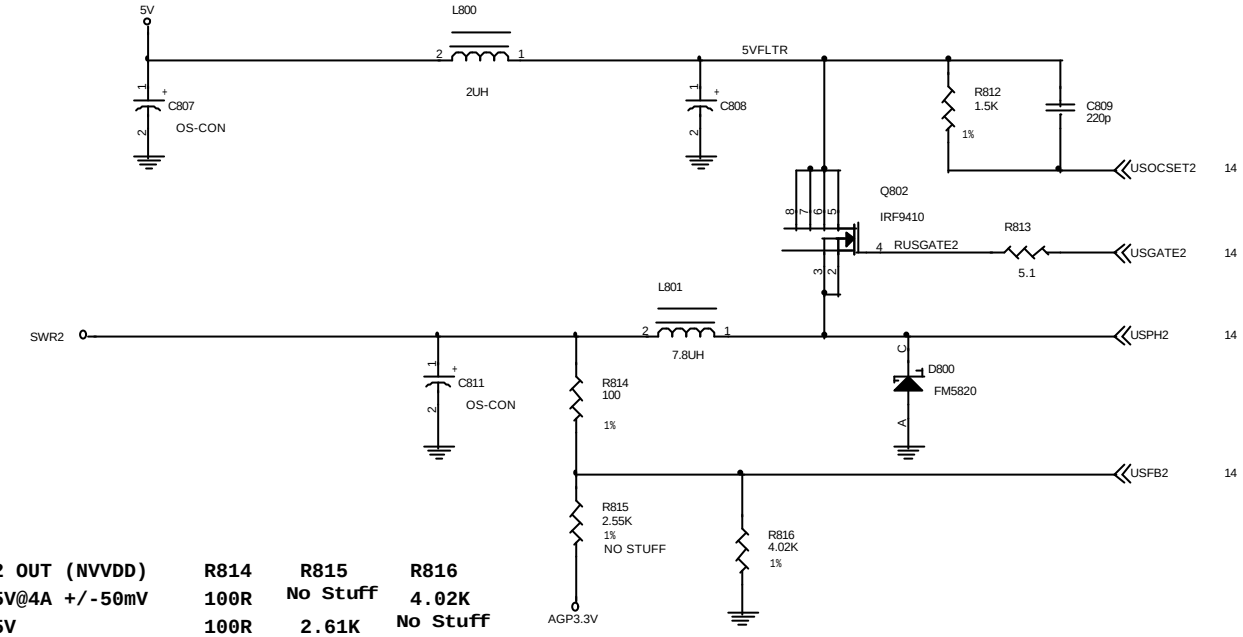
R810=((LINEAR OUT/1.26)-1)*100(R811)

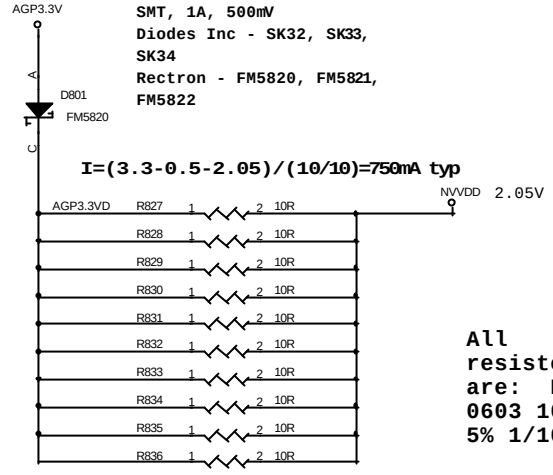
NV15 BASE POWER SOLUTION

Micro-Star International Co,LTD.

MS-8836

NV15 Base Power Soultion





DIODE SCHOTTKY RECTIFIER
SMT, 1A, 500mV
Diodes Inc - SK32, SK33, SK34
Rectron - FM5820, FM5821, FM5822

I=(3.3-0.5-2.05)/(10/10)=750mA typ

All resistors are: RES 0603 10R 5% 1/10W

SWR2 OUT (NVVDD)	R814	R815	R816
2.05V@4A +/-50mV	100R	No Stuff	4.02K
1.95V	100R	2.61K	No Stuff

R816=100/((2.05V/2)-1)

R815=130/(2-1.95v)

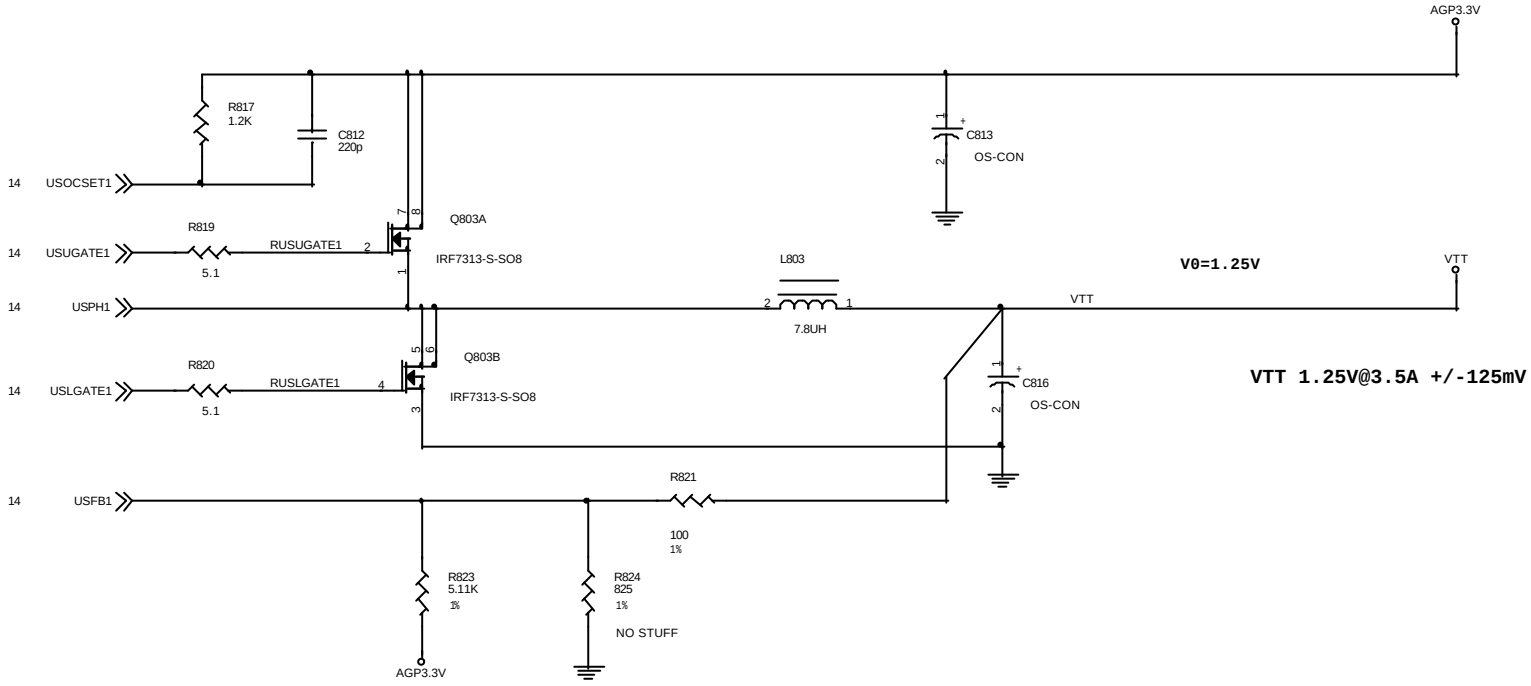
Our measurements show that we are consuming slightly more power on the AGP 3.3V supply than the AGP spec allows. The attached circuit is needed to supply some power to the NVVDD circuit from 3.3V and thus reduce the power need on 5V to be below AGP limit. Please implemement this circuit on 8836.

NV15 DDR POWER ADDER

Micro-Star International Co., LTD.

MS-8836

Size	Document Number	Rev
B	NV15 DDR Power Adder	1.1
Date: Saturday, August 11, 2001	Sheet 15 of 16	



NV15 VTT POWER ADDER

Micro-Star International Co., LTD.		
MS-8836		
Size: B	Document Number: NV15 VTT Power	Rev: 1.1
Date: Saturday, August 11, 2001	Sheet 16 of 16	