

Micro-Star International Co., LTD.

MS-8820

Size A	Document Number NV15 DECOULPING	Rev 1.0
Date: Tuesday, May 15, 2001		Sheet 1 of 1

NV15, 1/2MX32 DDR, RGB, TV_OUT, VIDEO_IN, AGP4X.

PCI DEVICE ID 0X0=0X150.

Design Notes:

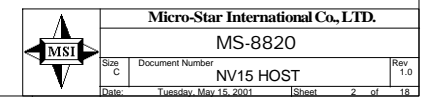
B00:FIXED TMDS CLKs CONNECTIONS.
B00:ADDED 4MX32 SUPPORT.
B00:Corrected memory configuration resistors.
B00:Changed C809 to 4.7UF.
B00:Changed R811 from 100R to 105R
B00:C128 changed to no stuff
B00:Removed 4mx32 function (R876, R877= NO STUFF)

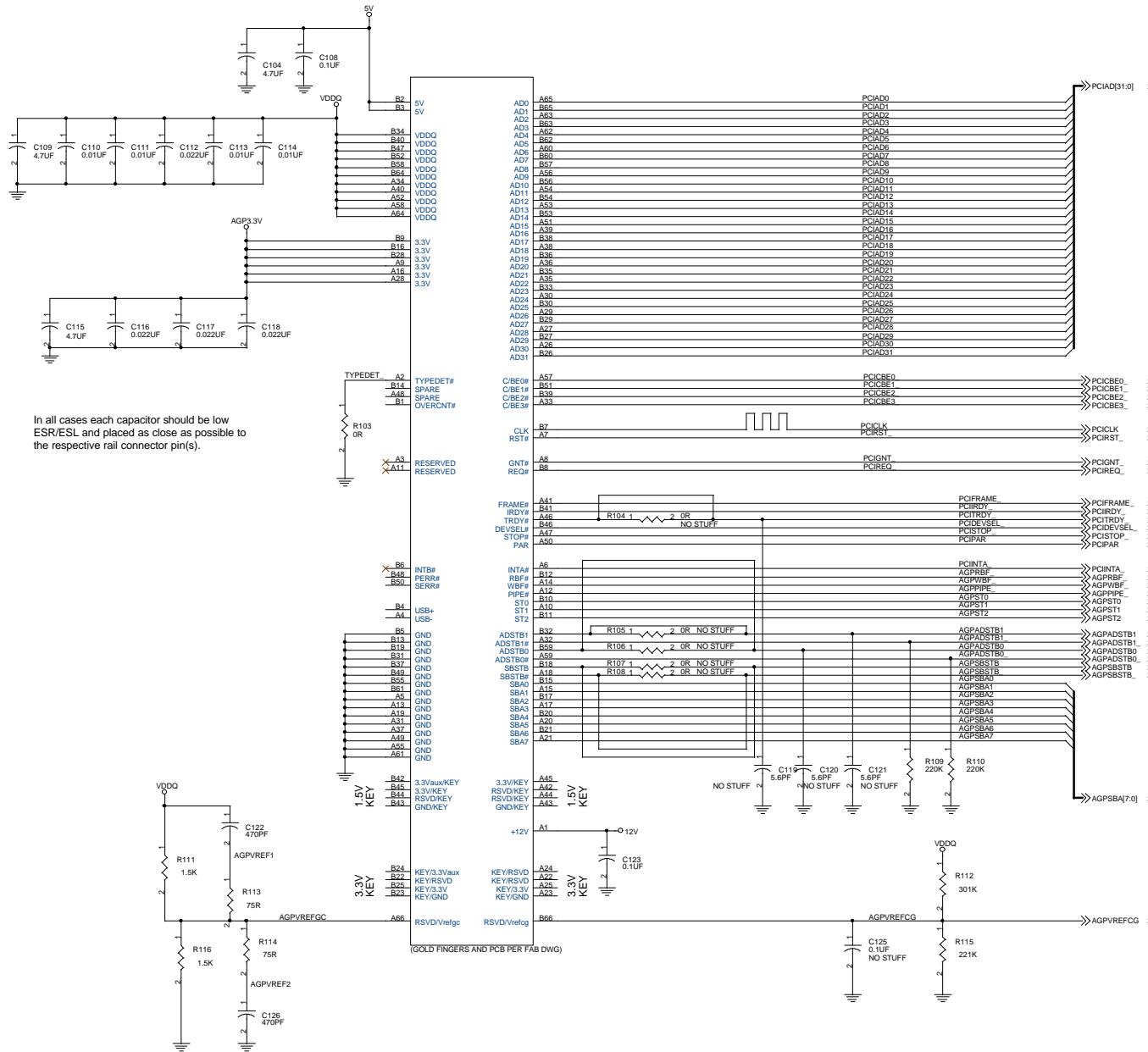


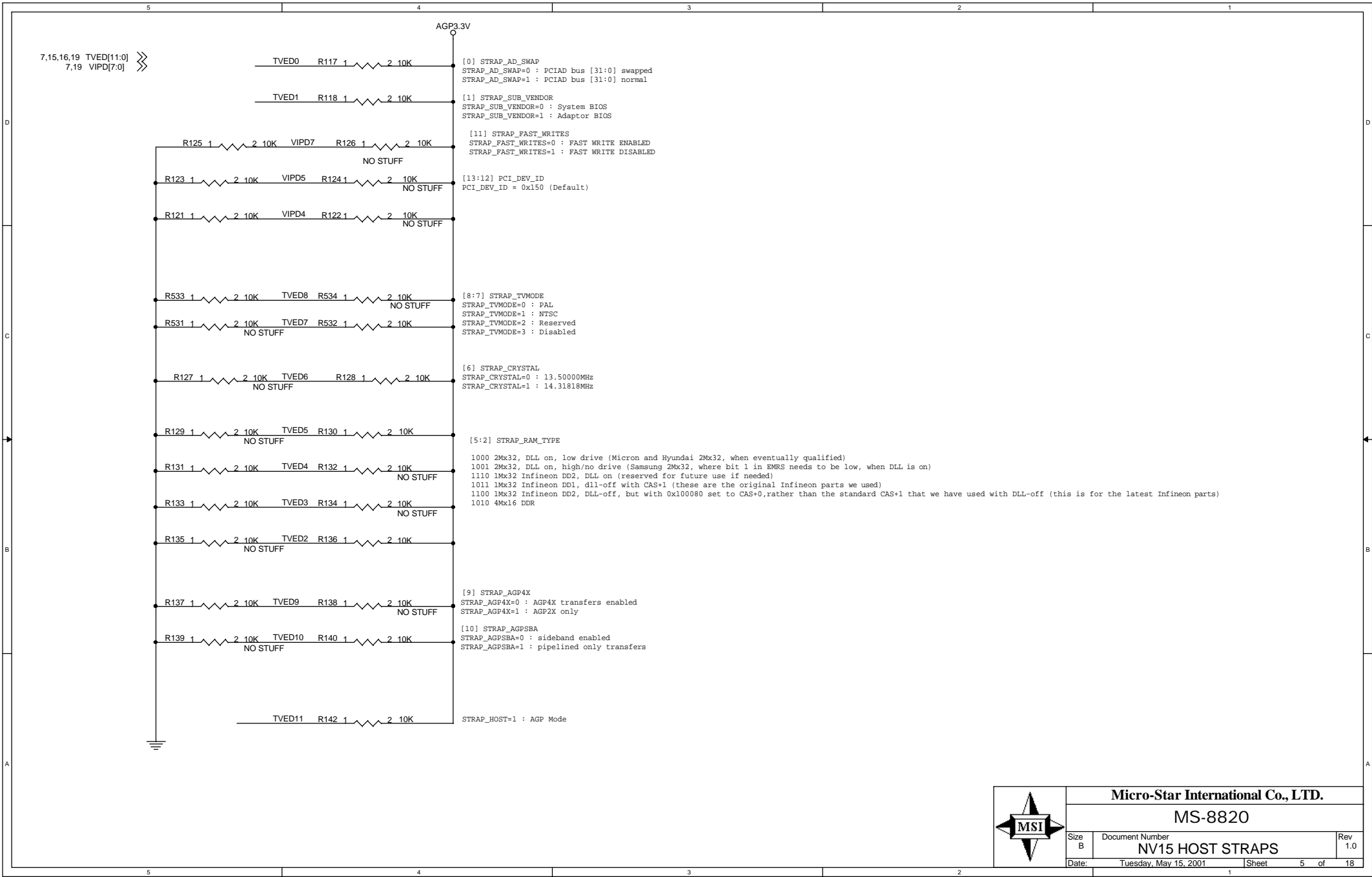
Micro-Star International Co., LTD.

MS-8820

Size B	Document Number Based on P-22-B00	Rev 1.0
Date:	Tuesday, May 15, 2001	Sheet 1 of 18



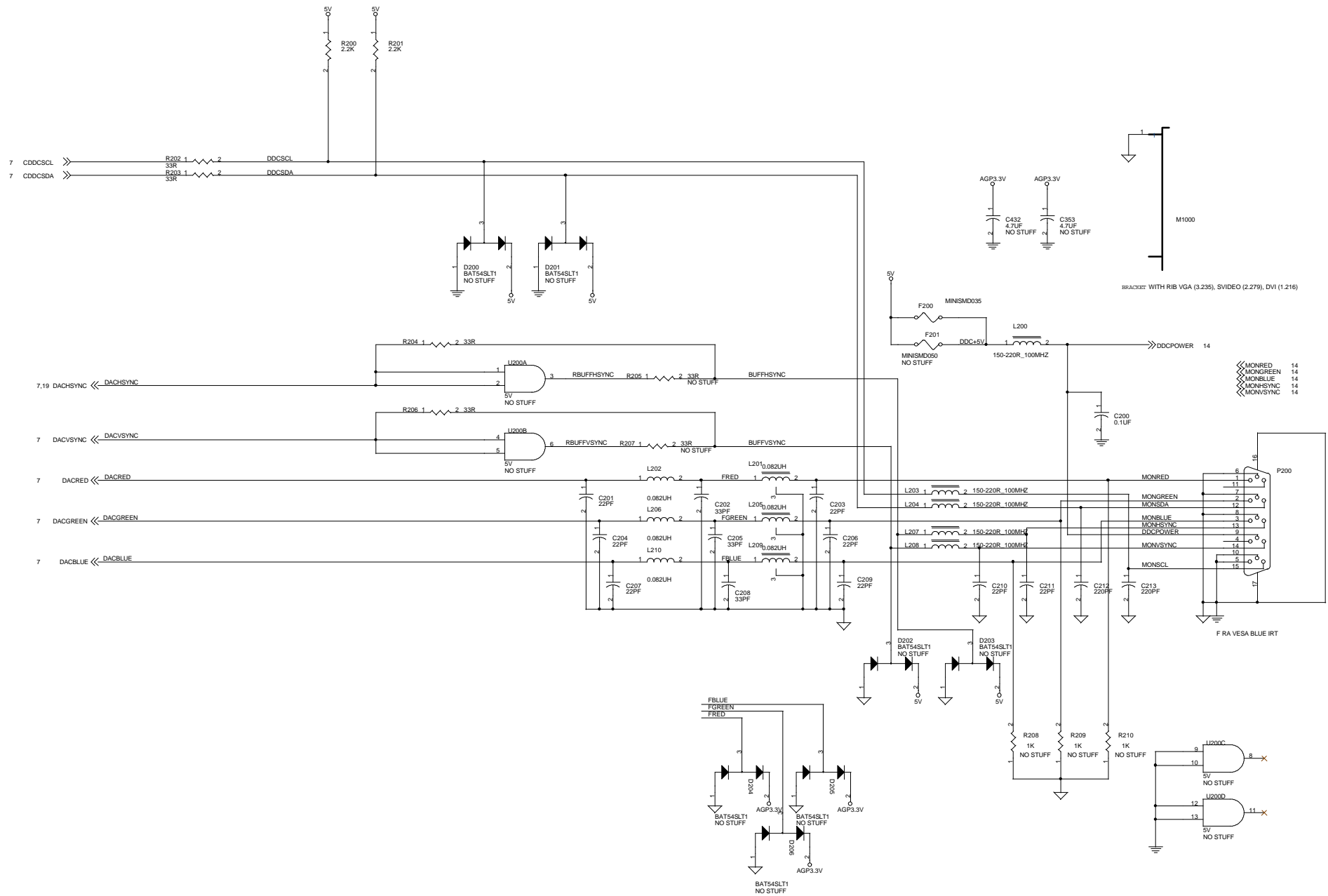


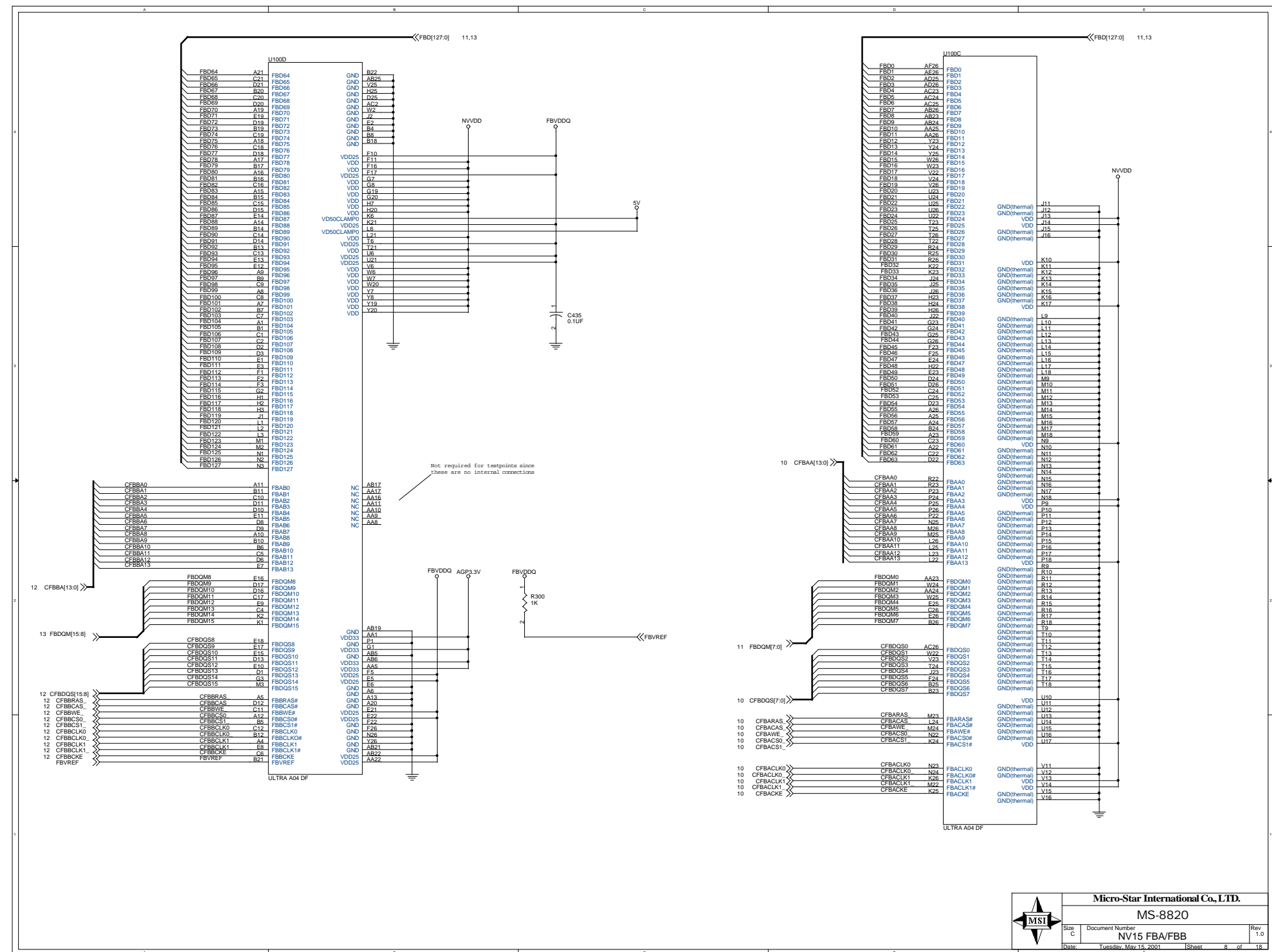


Micro-Star International Co., LTD.

MS-8820

Size B	Document Number NV15 HOST STRAPS	Rev 1.0
Date:	Tuesday, May 15, 2001	Sheet 5 of 18





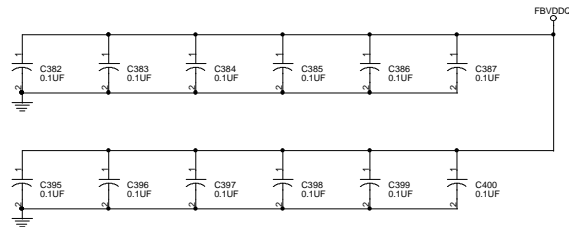
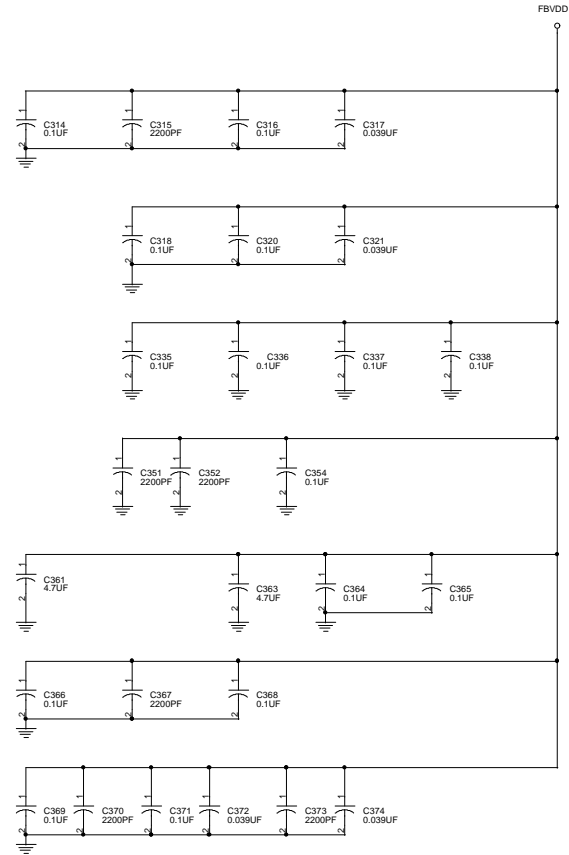
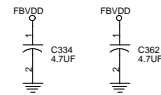
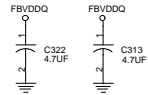
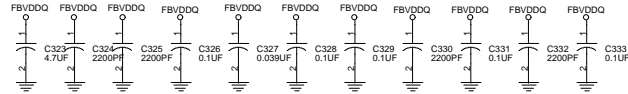
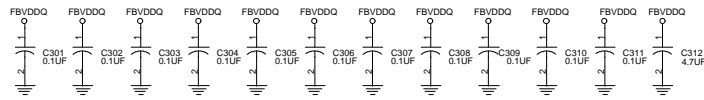
Micro-Star International Co., LTD.

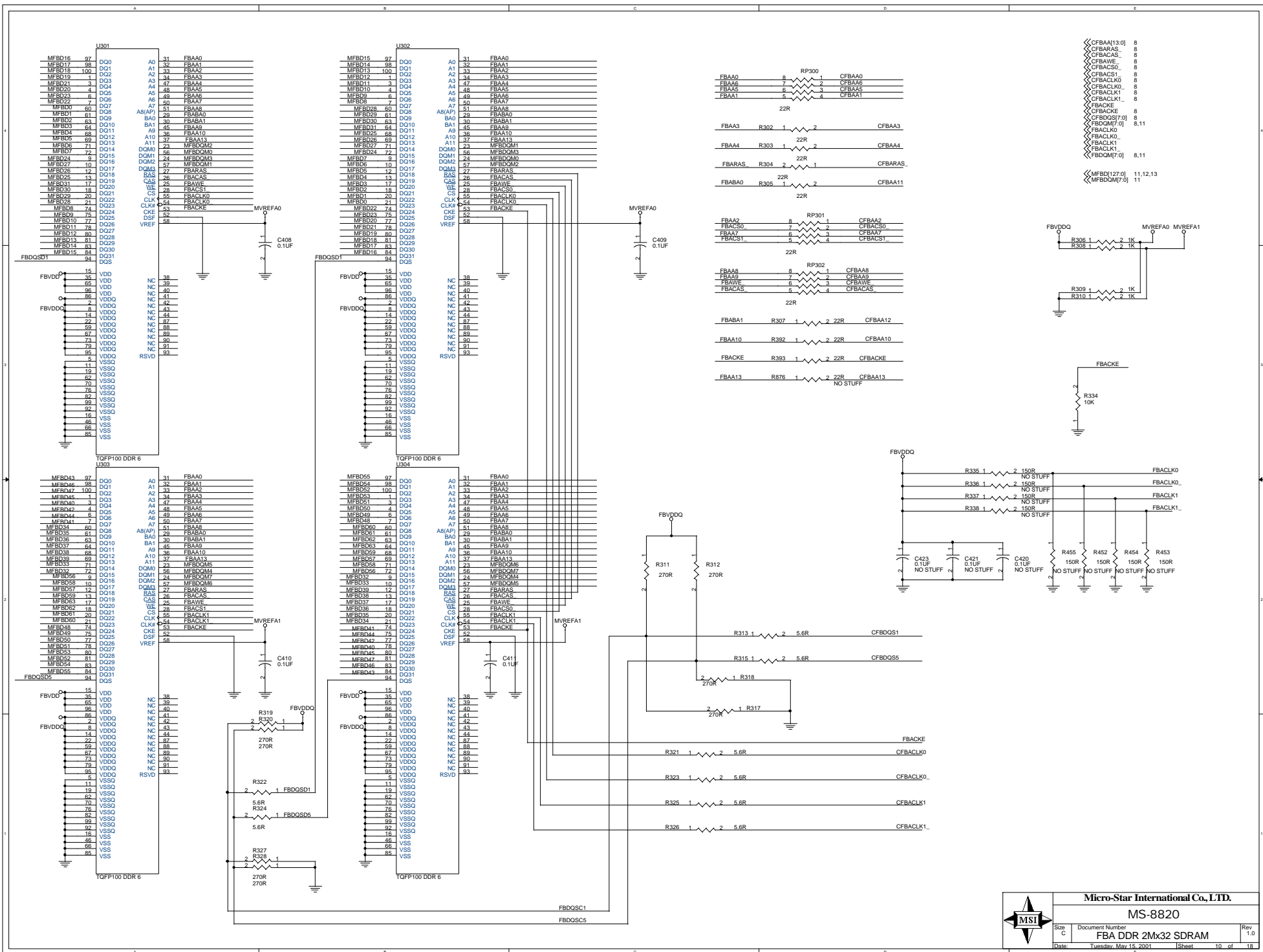
MS-8820

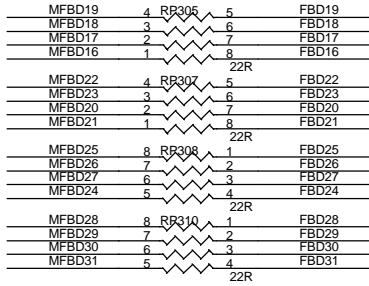
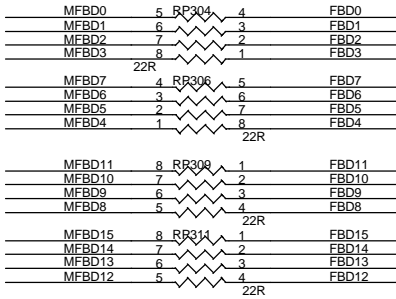
Size C	Document Number NV15 FBA/FBB
-----------	---------------------------------

Rev	1.0
-----	-----

Date:	Tuesday, May 15, 2001	Sheet	8	of	18
-------	-----------------------	-------	---	----	----

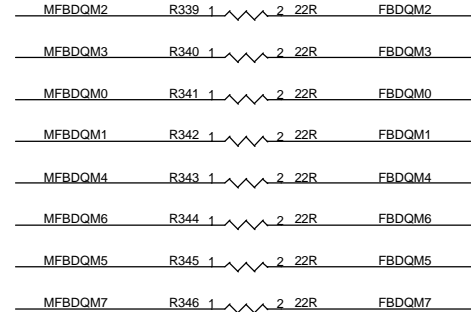
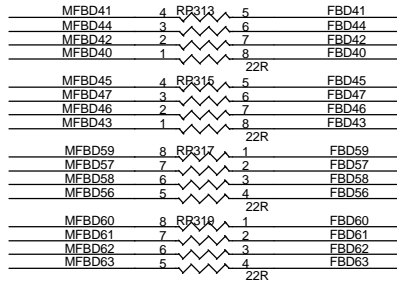
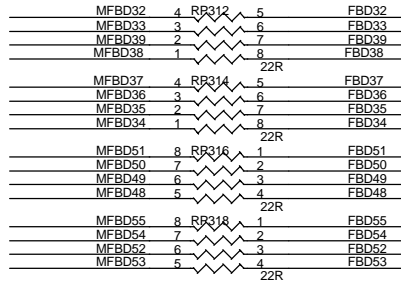






MFBD[127:0] 10,12,13
MFBDQM[7:0] 10

FBD[127:0] 8,13
FBDQM[7:0] 8



Micro-Star International Co., LTD.

MS-8820

Size B	Document Number FBA DDR 2Mx32 SDRAM TERM	Rev 1.0
Date:	Tuesday, May 15, 2001	Sheet 11 of 18

MFB067	22R	RP325	5	FBD067
MFB068			6	FBD068
MFB065			2	FBD065
MFB064			1	FBD064
MFB075	22R	RP327	4	FBD075
MFB072			6	FBD072
MFB073			7	FBD073
MFB074			8	FBD074
MFB066	22R	RP329	8	FBD066
MFB070			2	FBD070
MFB071			3	FBD071
MFB069			4	FBD069
MFB077	22R	RP331	1	FBD077
MFB078			7	FBD078
MFB079			6	FBD079
MFB076			5	FBD076

MFB095	22R	4	RP324	5	FBD95
MFB091		3	~~~~~	6	FBD91
MFB092		2	~~~~~	7	FBD92
MFB094		1	~~~~~	8	FBD94
MFB084	22R	5	RP326	4	FBD84
MFB083		6	~~~~~	3	FBD83
MFB085		7	~~~~~	2	FBD85
MFB086		8	~~~~~	1	FBD86
MFB081	22R	8	RP328	1	FBD81
MFB082		7	~~~~~	2	FBD82
MFB080		6	~~~~~	3	FBD80
MFB087		5	~~~~~	4	FBD87
MFB088	22R	1	RP330	8	FBD88
MFB090		2	~~~~~	7	FBD90
MFB089		3	~~~~~	6	FBD89
MFB093		4	~~~~~	5	FBD93

<<MFB0[127:0] 10,11,12
 <<MFB0QM[15:8] 12

<<FBD[127:0] 8,11
 <<FBDQM[15:8] 8

MFB097	22R	5	RP332	4	FBD97
MFB096		6	3	FBD96	
MFB098		7	2	FBD98	
MFB100		8	1	FBD100	
MFB108	22R	5	RP334	4	FBD108
MFB110		6	3	FBD110	
MFB109		7	2	FBD109	
MFB111		8	1	FBD111	
MFB103	22R	8	RP336	1	FBD103
MFB101		7	2	FBD101	
MFB102		6	3	FBD102	
MFB099		5	4	FBD99	
MFB104	22R	1	RP338	8	FBD104
MFB105		2	7	FBD105	
MFB107		3	6	FBD107	
MFB106		4	5	FBD106	

MFBD115	22R	4	RP333	5	FBD115
MFBD114		3	7	6	FBD114
MFBD113		2	7	7	FBD113
MFBD112		1	7	8	FBD112
MFBD119	22R	4	RP335	5	FBD119
MFBD118		3	7	6	FBD118
MFBD117		2	7	7	FBD117
MFBD116		1	7	8	FBD116
MFBD123	22R	8	RP337	1	FBD123
MFBD122		7	7	2	FBD122
MFBD121		6	7	3	FBD121
MFBD120		5	7	4	FBD120
MFBD126	22R	8	RP339	1	FBD126
MFBD125		7	7	2	FBD125
MFBD127		6	7	3	FBD127
MFBD124		5	7	4	FBD124

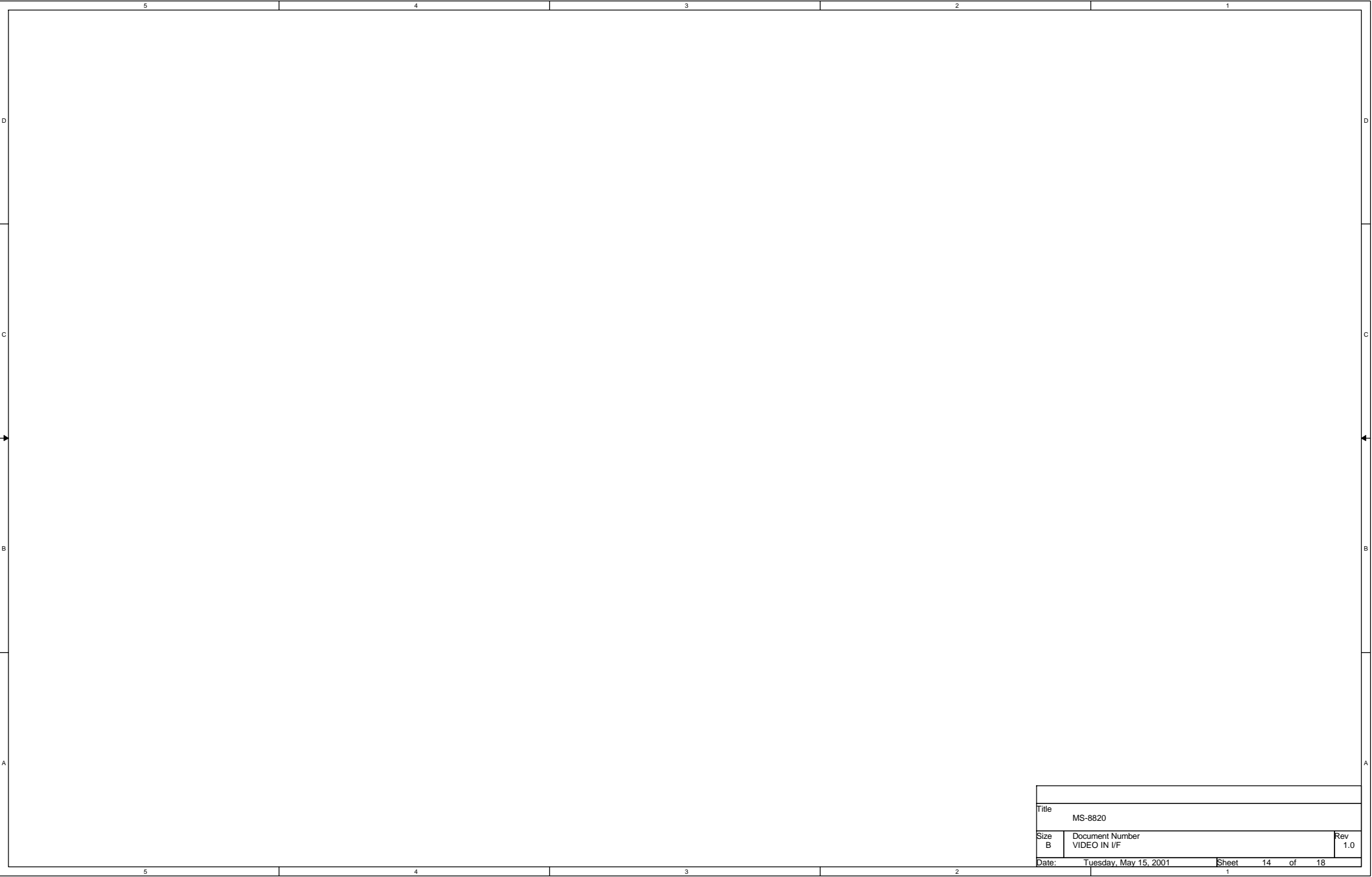
MFB0QM11	R384	1	2	22R	FBDQM11
MFB0QM10	R385	1	2	22R	FBDQM10
MFB0QM9	R386	1	2	22R	FBDQM9
MFB0QM8	R387	1	2	22R	FBDQM8
MFB0QM14	R388	1	2	22R	FBDQM14
MFB0QM15	R389	1	2	22R	FBDQM15
MFB0QM12	R390	1	2	22R	FBDQM12
MFB0QM13	R391	1	2	22R	FBDQM13

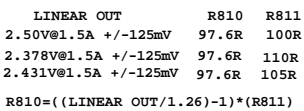


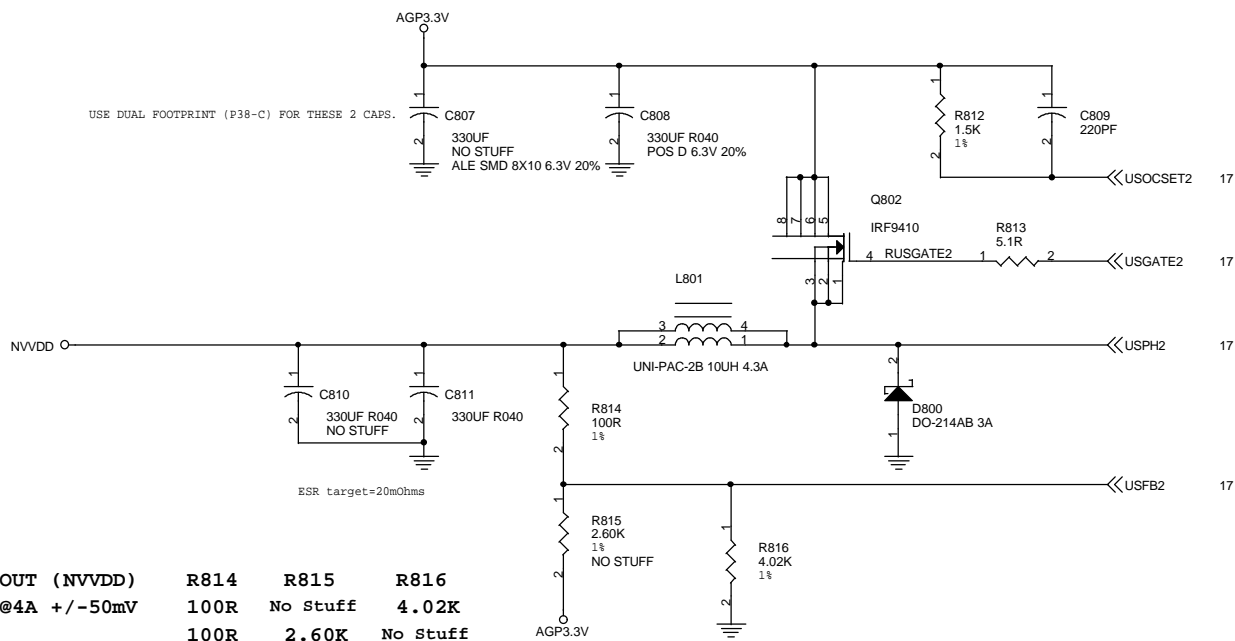
Micro-Star International Co., LTD.

MS-8820

Size B	Document Number FBB DDR 2Mx32 SDRAM TERM	Rev 1.0
Date:	Tuesday, May 15, 2001	Sheet 13 of 18







SWR2 OUT (NVVDD) R814 R815 R816
 DEFAULT--> 2.05V@4A +/-50mV 100R No Stuff 4.02K
 1.95V 100R 2.60K No Stuff

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

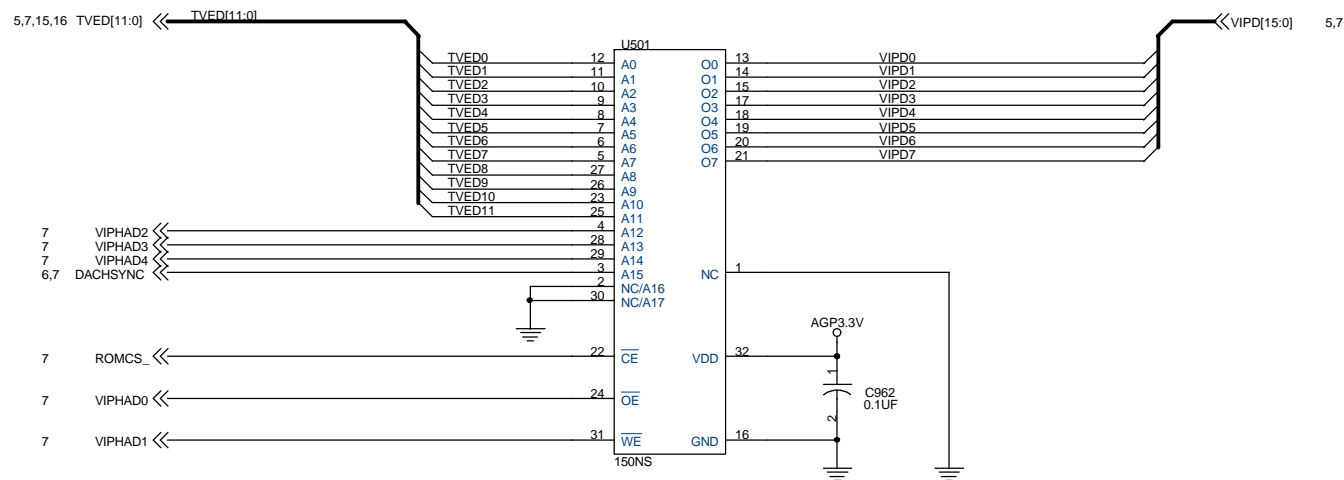
$$R815=130/(2-1.95v)$$



Micro-Star International Co., LTD.

MS-8820

Size B	Document Number NV15 DDR POWER ADDER	Rev 1.0
Date:	Tuesday, May 15, 2001	Sheet 17 of 18



Micro-Star International Co., LTD.

MS-8820

Size B	Document Number FLASH ROM	Rev 1.0
Date:	Tuesday, May 15, 2001	Sheet 18 of 18