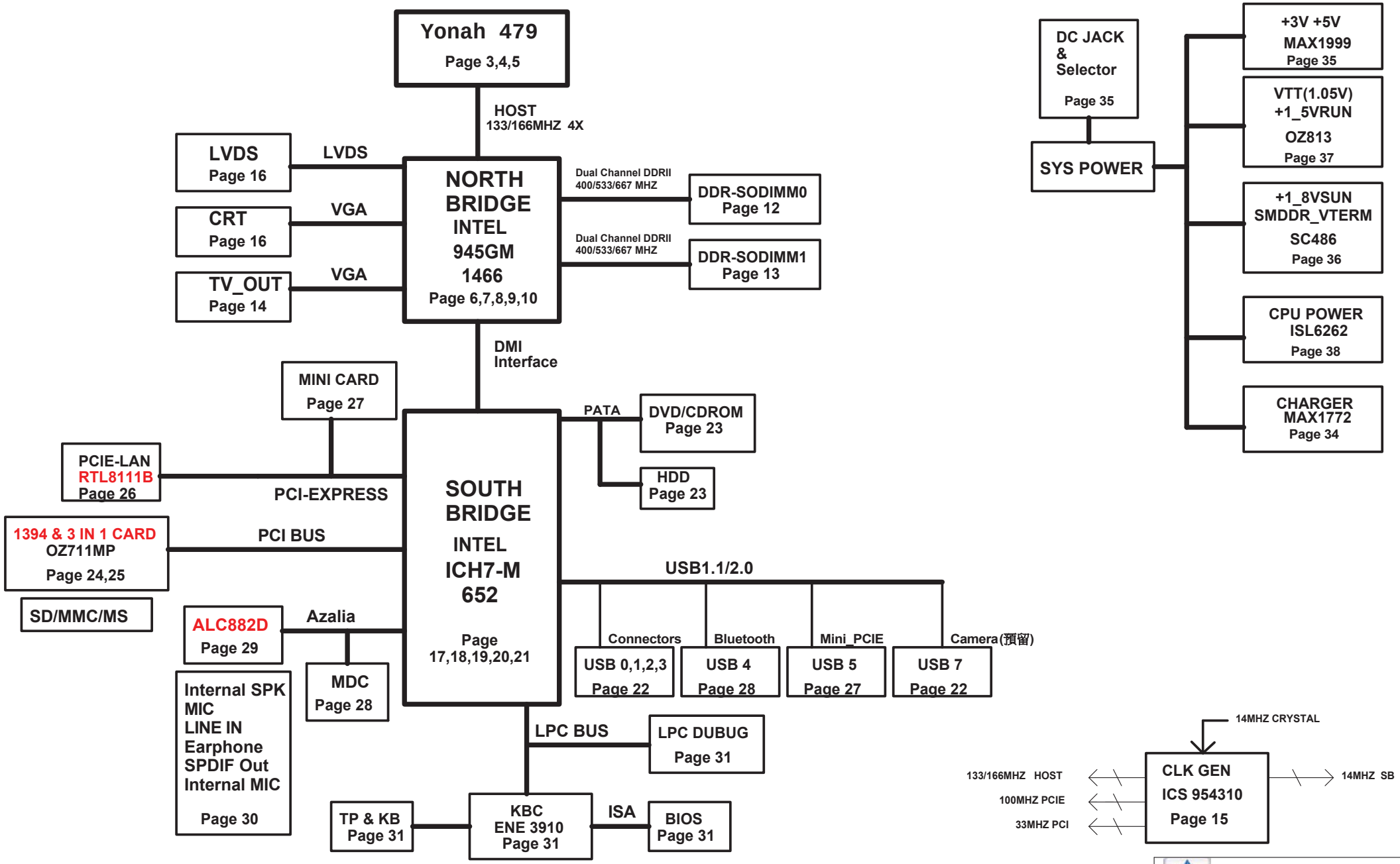
MS1034 VER:0.A



MICRO-STAR INT'L CO.,LTD.

Title: BLOCK DIAGRAM

Size: Custom | Document Number: MS-1034 | Rev: 0.A

Date: Thursday, September 22, 2005 | Sheet 1 of 44

Voltage Rails

Voltage	Description	Control Signal
PWR_SRC	AC ADAPTER OR BATTERY IN	
VHCORE	Core Voltage for Processor	VR_ON
VTT	1.05 rail for Processor & 945GM I/O	RUN_ON
+1_5VRUN	1.5V switched power rail(off in S3-S5)	RUN_ON
+3VRUN	3.3V switched power rail(off in S3-S5)	RUND
+5VRUN	5.0V switched power rail(off in S3-S5)	RUND
SMDDR_VTERM	0.9V DDRII Termination voltage (off in S4-S5)	DIMM_ON
+1_8VSUS	1.8V power rail DDRII (off in S4-S5)	DIMM_ON
+2_5VRUN	2.5V power rail for 945GM LVDS	+3VRUN
+3VSUS	3.3V power rail (off in S4-S5)	SUS_ON
+5VSUS	5.0V power rail (off in S4-S5)	SUS_ON
+3VALW	3.3V always on power rail	PWR_SRC
+5VALW	5.0V always on power rail	PWR_SRC

Voltage	Description	Control Signal
+V5_AUDIO	5.0V Power rail Audio codec(off in S3-S5)	+5VSUS

GND	DIGTIAL GROUD	
AGND	AUDIO GND	
	POWER Analogy GND	

PCI RESOURCE

DEVICE	IDSEL#	REQ/GNT#	PCI_INT#	CLOCK
SOUTHBRIDGE	AD31(INT)	NA	NA	PCLK_CARD
CARDREADER	AD20	0	A	

POWER STATES

STATE \ SIGNAL	SLP_S3#	SLP_S4#	SLP_S5#	+V*ALWAYS	+V*SUS	+V*RUN	Clocks
Full ON	HIGH	HIGH	HIGH	ON	ON	ON	ON
S1M(Power On Suspend)	HIGH	HIGH	HIGH	ON	ON	ON	LOW
S3(Suspend to RAM)	LOW	HIGH	HIGH	ON	ON	OFF	OFF
S4(Suspend to Disk)	LOW	LOW	HIGH	ON	OFF	OFF	OFF
S5 / Soft OFF	LOW	LOW	LOW	ON	OFF	OFF	OFF

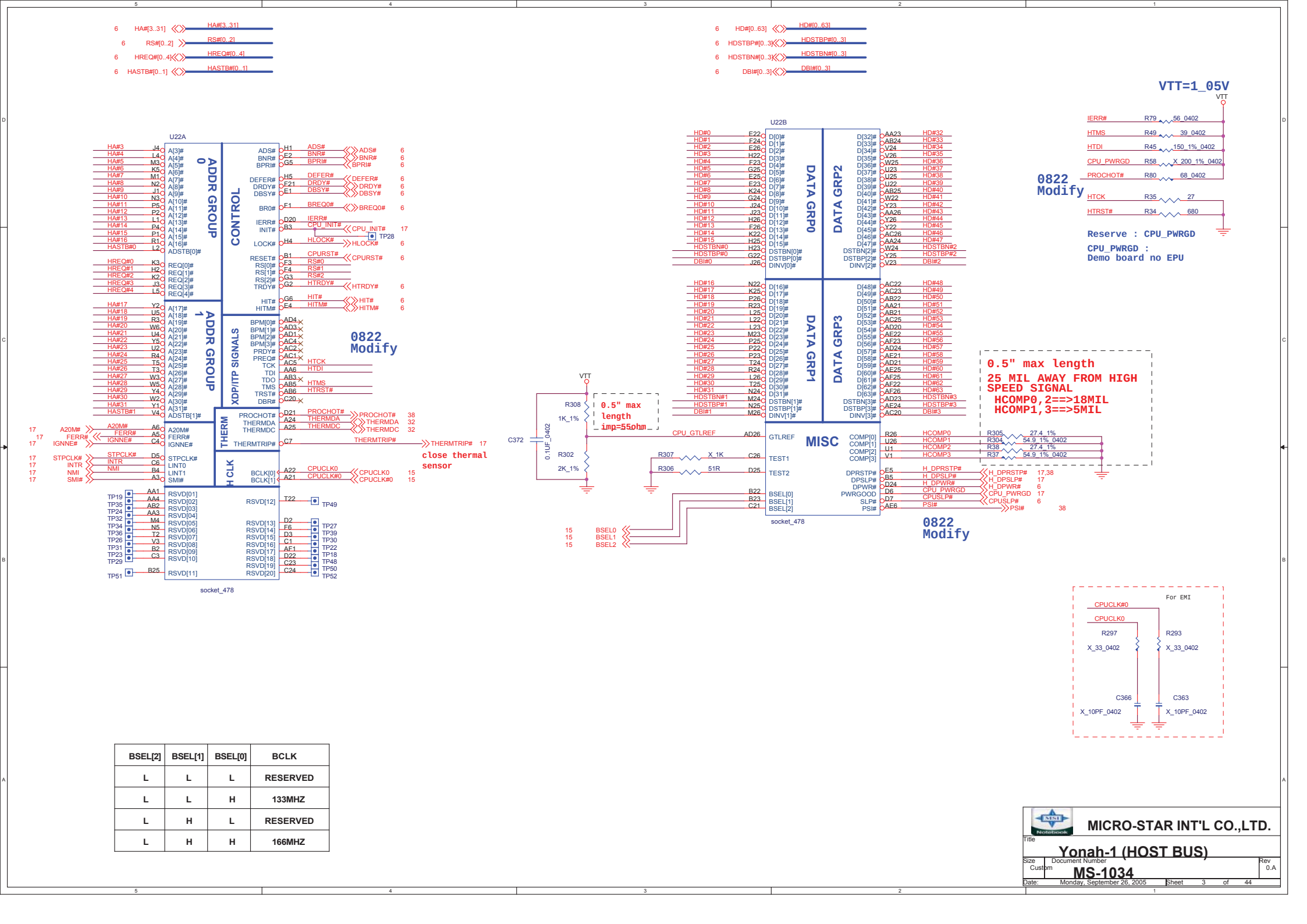
*Note : WHEN AC MODE , System turn on then +V*SUS will always keep high*

MICRO-STAR INT'L CO.,LTD.

Title: PLATFORM

Size: Custom | Document Number: MS-1034 | Rev: 0.A

Date: Thursday, September 22, 2005 | Sheet 2 of 44



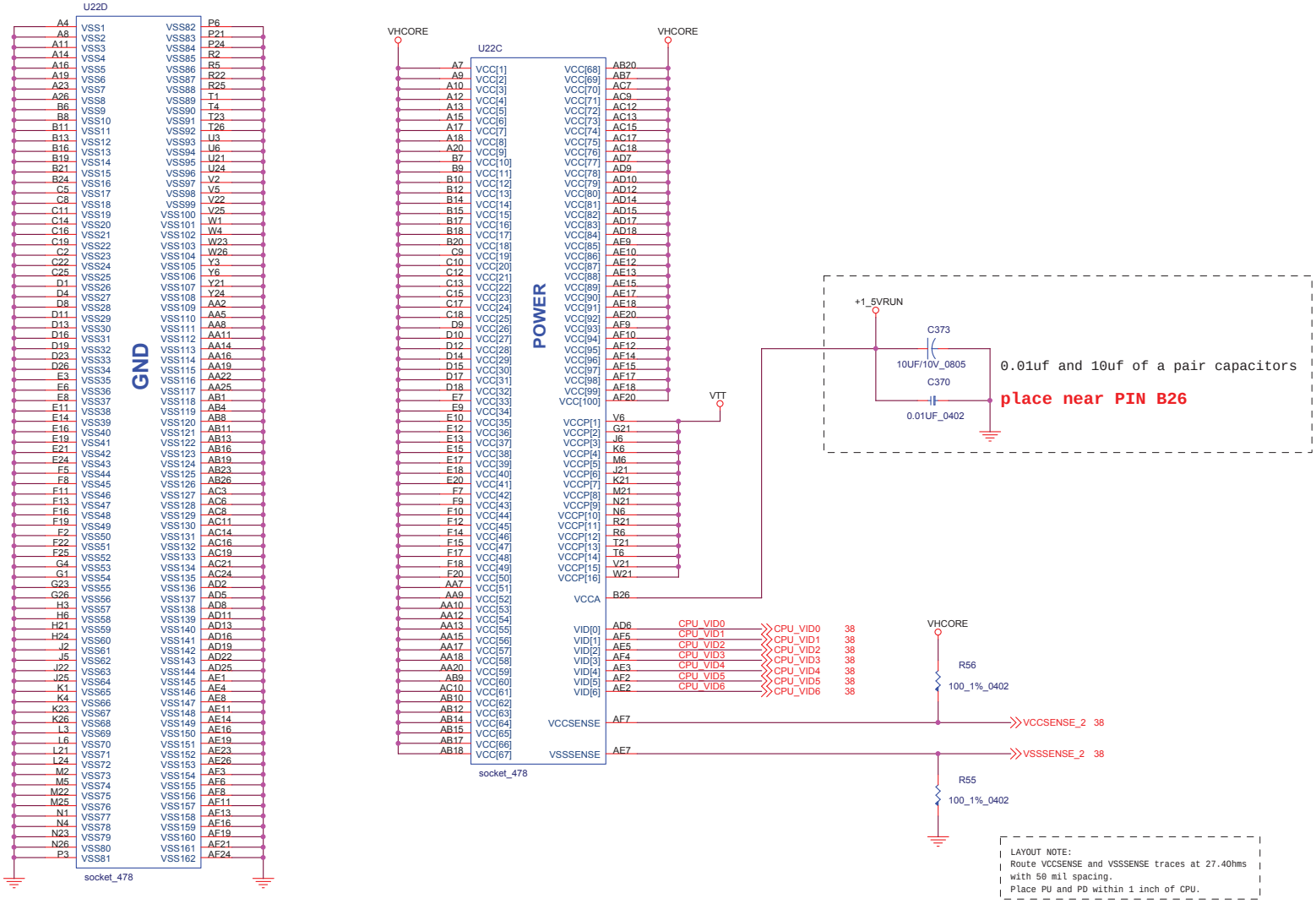
BSEL[2]	BSEL[1]	BSEL[0]	BCLK
L	L	L	RESERVED
L	L	H	133MHZ
L	H	L	RESERVED
L	H	H	166MHZ

MICRO-STAR INT'L CO.,LTD.

Title: Yonah-1 (HOST BUS)

Size: Custom | Document Number: MS-1034 | Rev: 0.A

Date: Monday, September 26, 2005 | Sheet 3 of 44

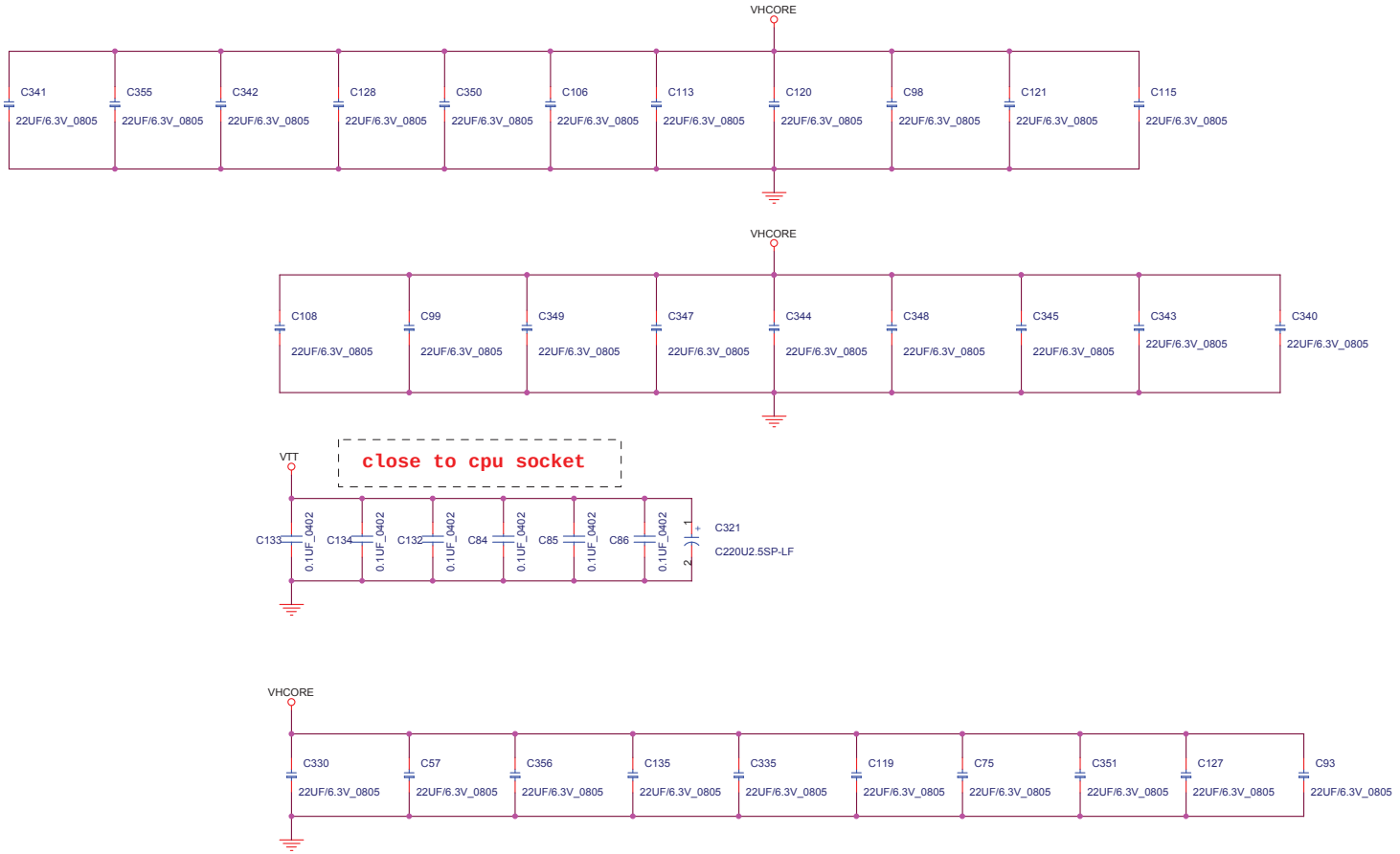


MICRO-STAR INT'L CO.,LTD.

Title: Yonah-2 (Power / GND)

Size: Custom | Document Number: MS-1034 | Rev: 0.A

Date: Thursday, September 22, 2005 | Sheet 4 of 44

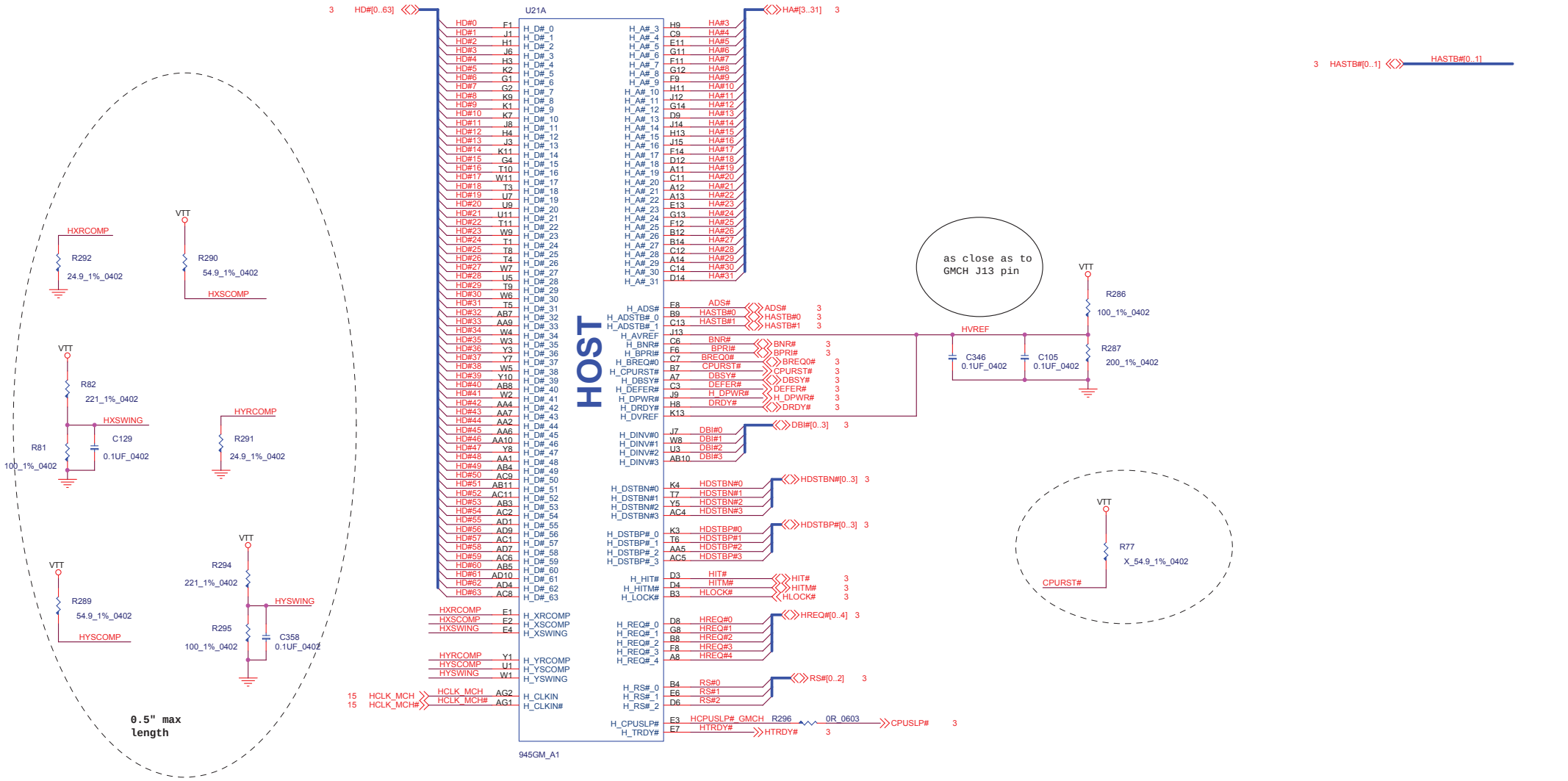


MICRO-STAR INT'L CO.,LTD.

Title: Yonah-3

Size: Custom | Document Number: MS-1034 | Rev: 0.A

Date: Thursday, September 22, 2005 | Sheet 5 of 44



MICRO-STAR INT'L CO.,LTD.		
Title: Calistoga-1 (HOST)		
Size: Custom	Document Number: MS-1019	Rev: 0.A
Date: Thursday, September 22, 2005	Sheet 6 of 44	

CFG[3:17] Internal Pull up

CFG[18:19] Internal Pull down

U21B

RSVD

CFG

PM

MISC

CLK

DMI

NC

DDR MUXING

945GM_A1

U21C

LVDS

TV

VGA

PCI-EXPRESS GRAPHICS / SDVO

945GM_A1

Place 150 ohm termination resistors close to GMCH

Place 150 ohm termination resistors close to GMCH

as close as 915GM(ALVISO)

Please within 500mils of ICH

NB strapping

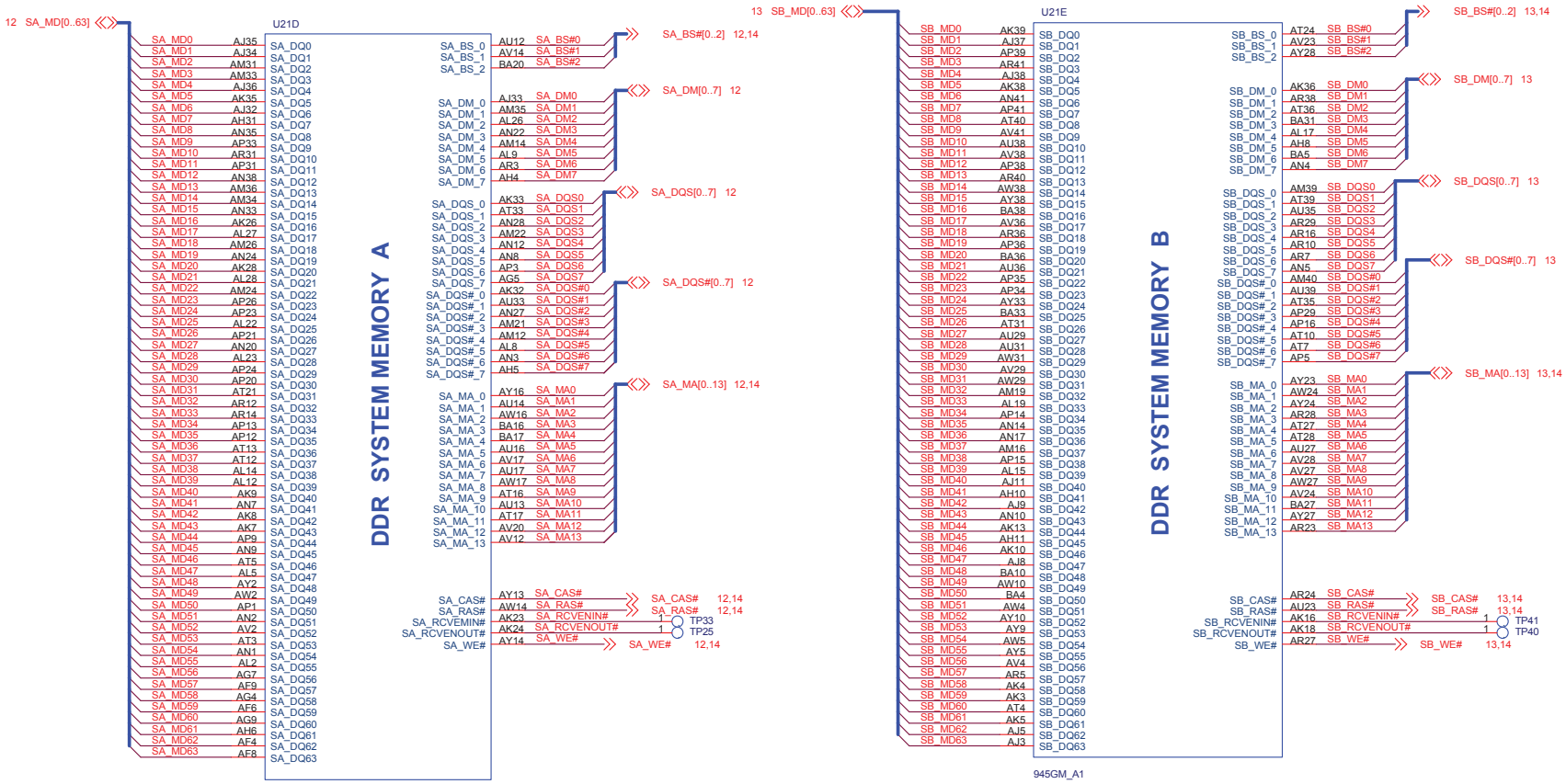
CFG2~0	CFG4~3	CFG5	CFG6	CFG7	CFG8,10,11 14,15,17	CFG9	CFG16	CFG18	CFG19
001=FSB533 011=FSB667	RES	0=DMI x 2 1=DMI x 4 (default)	0=Moby Dick 1=Calistoga	0=Res 1=Mobile CPU	RES	0=reverse 1=normal PCI-E Graphic lane	0=disable 1=enable FSB dynamic ODT	0=1.05V 1=1.5V (default)	0=normal 1=reverse DMI lane reverse
	IPU	IPU	IPU	IPU	IPU	IPU	IPU	IPD	IPD

MICRO-STAR INT'L CO.,LTD.

Title: Calistoga-2 (DMI/VGA)

Size: Custom | Document Number: MS-1034 | Rev: 0.A

Date: Thursday, September 22, 2005 | Sheet 7 of 44

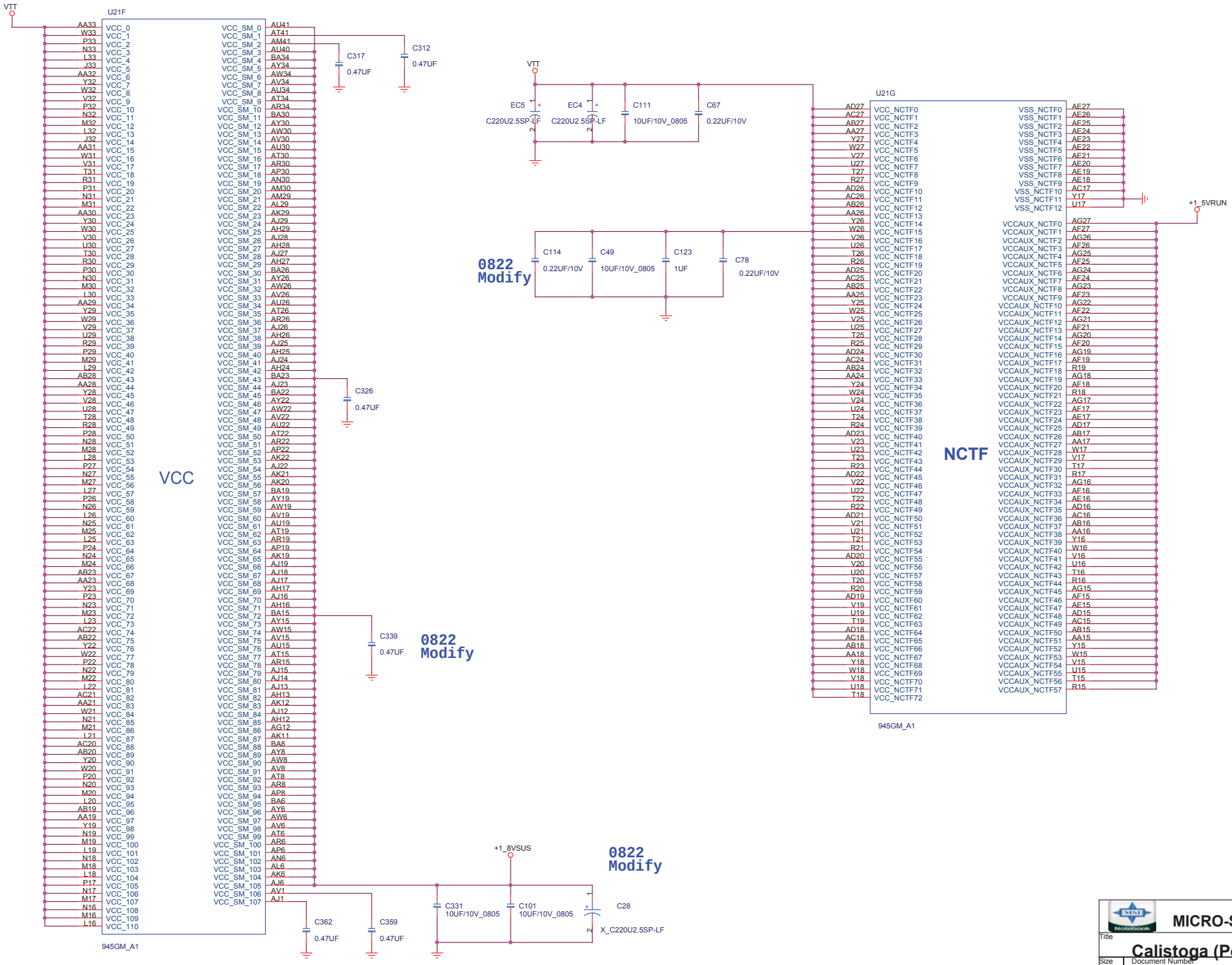


MICRO-STAR INT'L CO.,LTD.

Title: Calistoga-3 (DDR)

Size: Custom | Document Number: MS-1034 | Rev: 0.A

Date: Thursday, September 22, 2005 | Sheet 8 of 44

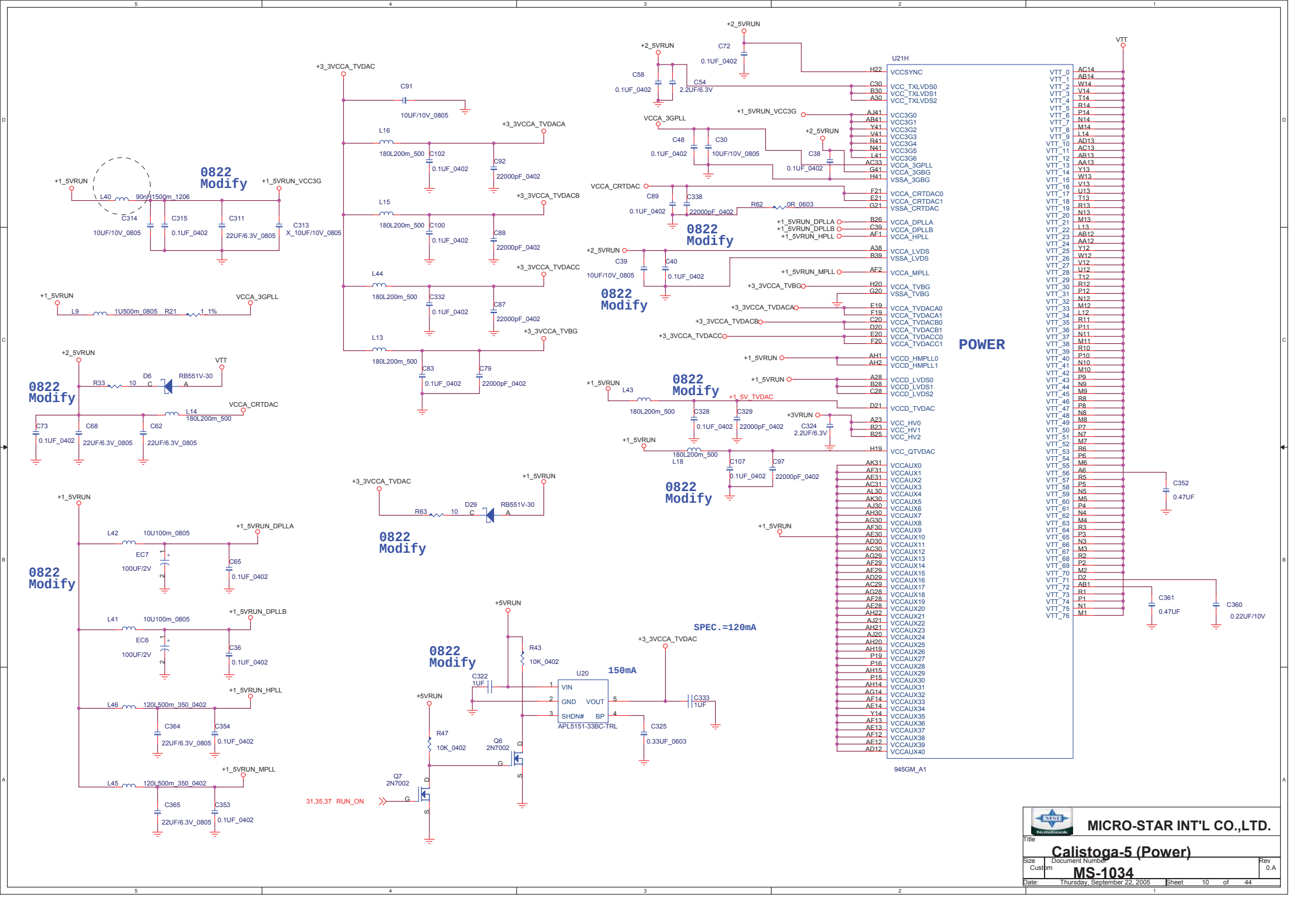


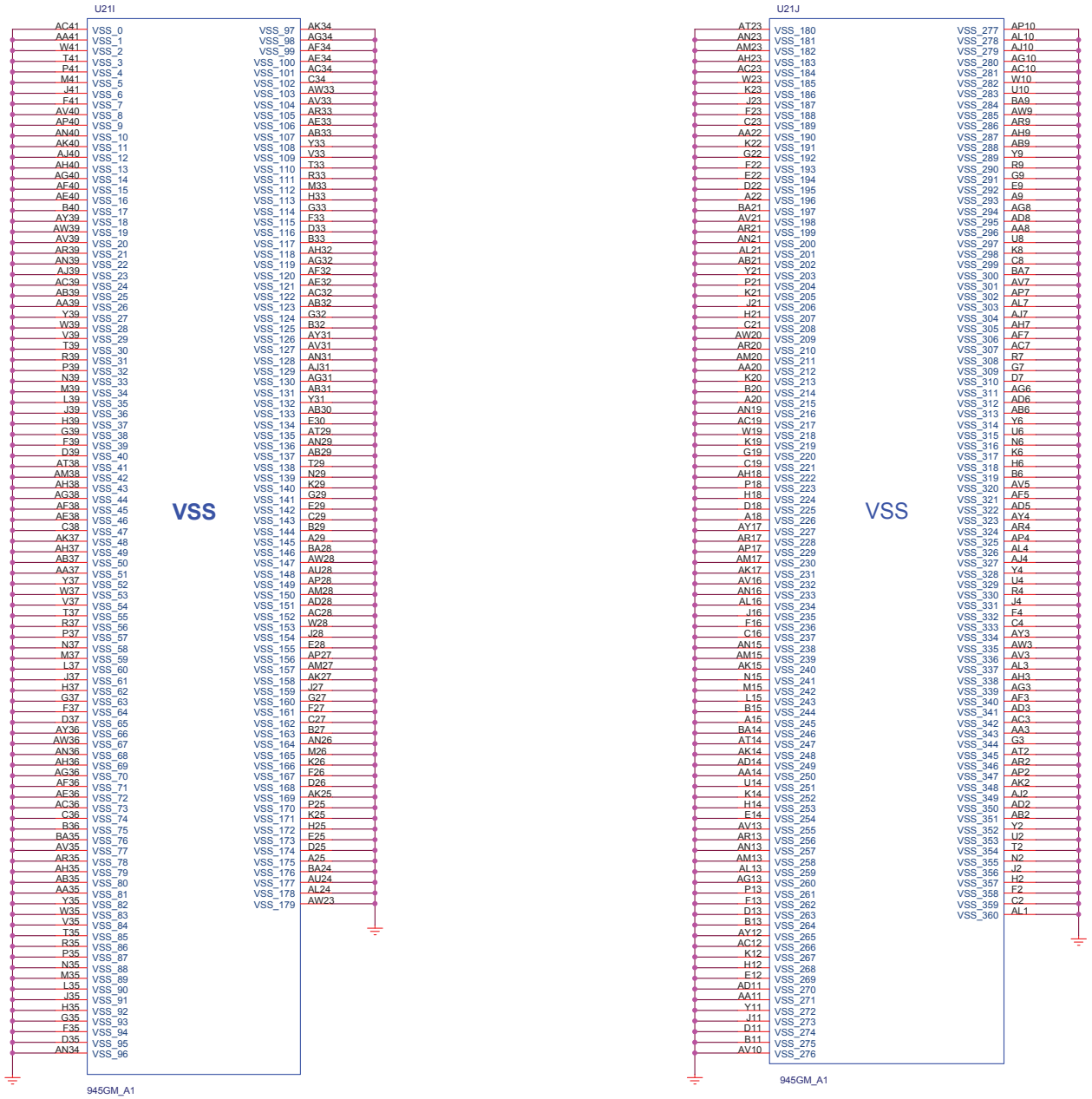
MICRO-STAR INT'L CO.,LTD.

Title: Calistoga (Power-1)

Size: Custom | Document Number: MS-1034 | Rev: 0.A

Date: Thursday, September 22, 2005 | Sheet 9 of 44


POWER
U21H
945GM_A1
0822 Modify
SPEC.=120mA
150mA
APL5151-33BC-TRL
MICRO-STAR INT'L CO.,LTD.
Calistoga-5 (Power)
MS-1034
Thursday, September 22, 2005
Sheet 10 of 44

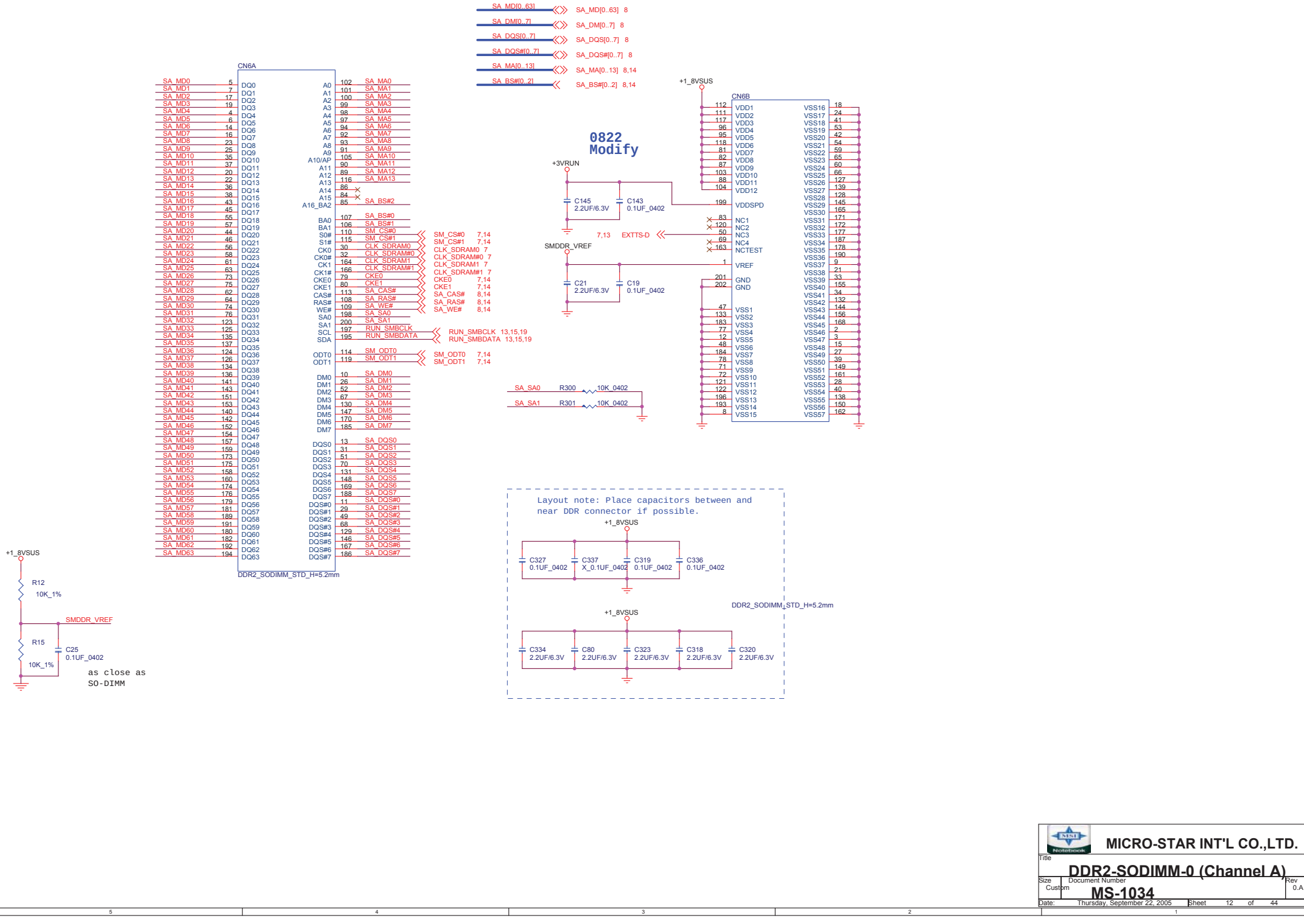


MICRO-STAR INT'L CO.,LTD.

Title: Calistoga-6 (GND)

Size: Custom | Document Number: MS-1034 | Rev: 0.A

Date: Thursday, September 22, 2005 | Sheet 11 of 44



MICRO-STAR INT'L CO.,LTD.

Title: DDR2-SODIMM-0 (Channel A)

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Date: Thursday, September 22, 2005 | Sheet 12 of 44

need update footprint

SB_MD[0..63] SB_MD[0..63] 8
SB_DM[0..7] SB_DM[0..7] 8
SB_DQS[0..7] SB_DQS[0..7] 8
SB_DQS#[0..7] SB_DQS#[0..7] 8
SB_MA[0..13] SB_MA[0..13] 8,14
SB_BS#[0..2] SB_BS#[0..2] 8,14

CN7A

SB_MD0	5	DQ0	A0	102	SB_MA0
SB_MD1	7	DQ1	A1	101	SB_MA1
SB_MD2	17	DQ2	A2	100	SB_MA2
SB_MD3	19	DQ3	A3	99	SB_MA3
SB_MD4	4	DQ4	A4	98	SB_MA4
SB_MD5	6	DQ5	A5	97	SB_MA5
SB_MD6	14	DQ6	A6	94	SB_MA6
SB_MD7	16	DQ7	A7	92	SB_MA7
SB_MD8	23	DQ8	A8	93	SB_MA8
SB_MD9	25	DQ9	A9	91	SB_MA9
SB_MD10	35	DQ10	A10/AP	105	SB_MA10
SB_MD11	37	DQ11	A11	90	SB_MA11
SB_MD12	20	DQ12	A12	89	SB_MA12
SB_MD13	22	DQ13	A13	116	SB_MA13
SB_MD14	36	DQ14	A14	86	
SB_MD15	38	DQ15	A15	84	
SB_MD16	43	DQ16	A16_BA2	85	SB_BS#2
SB_MD17	45	DQ17			
SB_MD18	55	DQ18	BA0	107	SB_BS#0
SB_MD19	57	DQ19	BA1	106	SB_BS#1
SB_MD20	44	DQ20	S0#	110	SM_CS#2
SB_MD21	46	DQ21	S1#	115	SM_CS#3
SB_MD22	56	DQ22	CK0	30	CLK_SDRAM3
SB_MD23	58	DQ23	CK0#	32	CLK_SDRAM#3
SB_MD24	61	DQ24	CK1	164	CLK_SDRAM2
SB_MD25	63	DQ25	CK1#	166	CLK_SDRAM#2
SB_MD26	73	DQ26	CKE0	79	CKE2
SB_MD27	75	DQ27	CKE1	80	CKE3
SB_MD28	62	DQ28	CAS#	113	SB_CAS#
SB_MD29	64	DQ29	RAS#	108	SB_RAS#
SB_MD30	74	DQ30	WE#	109	SB_WE#
SB_MD31	76	DQ31	SA0	198	SB_SA0
SB_MD32	123	DQ32	SA1	200	SB_SA1
SB_MD33	125	DQ33	SCL	197	RUN_SMBCLK
SB_MD34	135	DQ34	SDA	195	RUN_SMBDATA
SB_MD35	137	DQ35			
SB_MD36	124	DQ36	ODT0	114	SM_ODT2
SB_MD37	126	DQ37	ODT1	119	SM_ODT3
SB_MD38	134	DQ38			
SB_MD39	136	DQ39	DM0	10	SB_DM0
SB_MD40	141	DQ40	DM1	26	SB_DM1
SB_MD41	143	DQ41	DM2	52	SB_DM2
SB_MD42	151	DQ42	DM3	67	SB_DM3
SB_MD43	153	DQ43	DM4	130	SB_DM4
SB_MD44	140	DQ44	DM5	147	SB_DM5
SB_MD45	142	DQ45	DM6	170	SB_DM6
SB_MD46	152	DQ46	DM7	185	SB_DM7
SB_MD47	154	DQ47			
SB_MD48	157	DQ48	DQS0	13	SB_DQS0
SB_MD49	159	DQ49	DQS1	31	SB_DQS1
SB_MD50	173	DQ50	DQS2	51	SB_DQS2
SB_MD51	175	DQ51	DQS3	70	SB_DQS3
SB_MD52	158	DQ52	DQS4	131	SB_DQS4
SB_MD53	160	DQ53	DQS5	148	SB_DQS5
SB_MD54	174	DQ54	DQS6	169	SB_DQS6
SB_MD55	176	DQ55	DQS7	188	SB_DQS7
SB_MD56	179	DQ56	DQS#0	11	SB_DQS#0
SB_MD57	181	DQ57	DQS#1	29	SB_DQS#1
SB_MD58	189	DQ58	DQS#2	49	SB_DQS#2
SB_MD59	191	DQ59	DQS#3	68	SB_DQS#3
SB_MD60	180	DQ60	DQS#4	129	SB_DQS#4
SB_MD61	182	DQ61	DQS#5	146	SB_DQS#5
SB_MD62	192	DQ62	DQS#6	167	SB_DQS#6
SB_MD63	194	DQ63	DQS#7	186	SB_DQS#7

DDR2_SODIMM_RVS_H=9.2mm

SM_CS#2 7,14
SM_CS#3 7,14
CLK_SDRAM3 7
CLK_SDRAM#3 7
CLK_SDRAM2 7
CLK_SDRAM#2 7
CKE2 7,14
CKE3 7,14
SB_CAS# 8,14
SB_RAS# 8,14
SB_WE# 8,14
RUN_SMBCLK 12,15,19
RUN_SMBDATA 12,15,19
SM_ODT2 7,14
SM_ODT3 7,14

0822 Modify

+3VRUN
C137 2.2UF/6.3V
C140 0.1UF_0402
7,12 EXTTS-D
SMDDR_VREF
C27 2.2UF/6.3V
C23 0.1UF_0402
+3VRUN
SB_SA1 R299 10K_0402
SB_SA0 R298 10K_0402

+1_8VSUS
CN7B

112	VDD1	VSS16	18
111	VDD2	VSS17	24
117	VDD3	VSS18	41
96	VDD4	VSS19	53
95	VDD5	VSS20	42
118	VDD6	VSS21	54
81	VDD7	VSS22	59
82	VDD8	VSS23	65
87	VDD9	VSS24	60
103	VDD10	VSS25	66
88	VDD11	VSS26	127
104	VDD12	VSS27	139
		VSS28	128
199	VDDSPD	VSS29	145
		VSS30	165
83	NC1	VSS31	171
120	NC2	VSS32	172
50	NC3	VSS33	177
69	NC4	VSS34	187
163	NCTEST	VSS35	178
		VSS36	190
1	VREF	VSS37	9
		VSS38	21
201	GND0	VSS39	33
202	GND1	VSS40	155
		VSS41	34
		VSS42	132
47	VSS1	VSS43	144
133	VSS2	VSS44	156
183	VSS3	VSS45	168
77	VSS4	VSS46	2
12	VSS5	VSS47	3
48	VSS6	VSS48	15
184	VSS7	VSS49	27
78	VSS8	VSS50	39
71	VSS9	VSS51	149
72	VSS10	VSS52	161
121	VSS11	VSS53	28
122	VSS12	VSS54	40
196	VSS13	VSS55	138
193	VSS14	VSS56	150
8	VSS15	VSS57	162

Layout note: Place capacitors between and near DDR connector if possible.

+1_8VSUS
C69 0.1UF_0402
C61 0.1UF_0402
C71 0.1UF_0402
C81 0.1UF_0402

DDR2_SODIMM_RVS_H=9.2mm

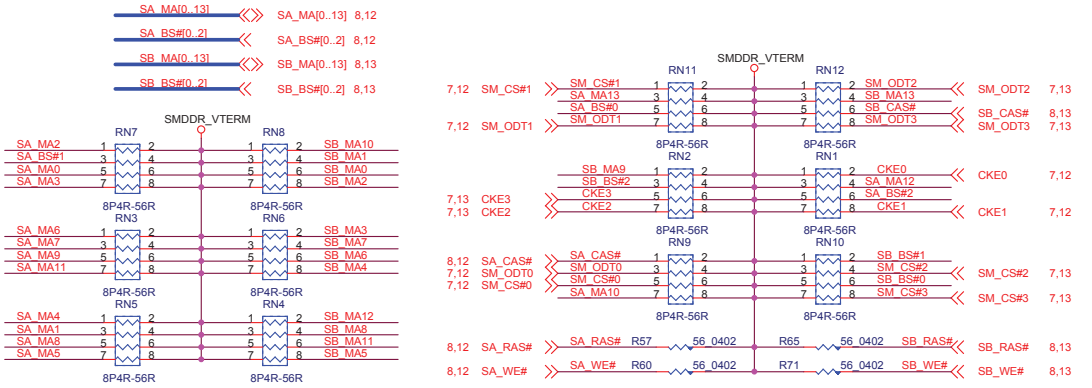
+1_8VSUS
C94 2.2UF/6.3V
C56 2.2UF/6.3V
C76 2.2UF/6.3V
C59 2.2UF/6.3V
C95 2.2UF/6.3V

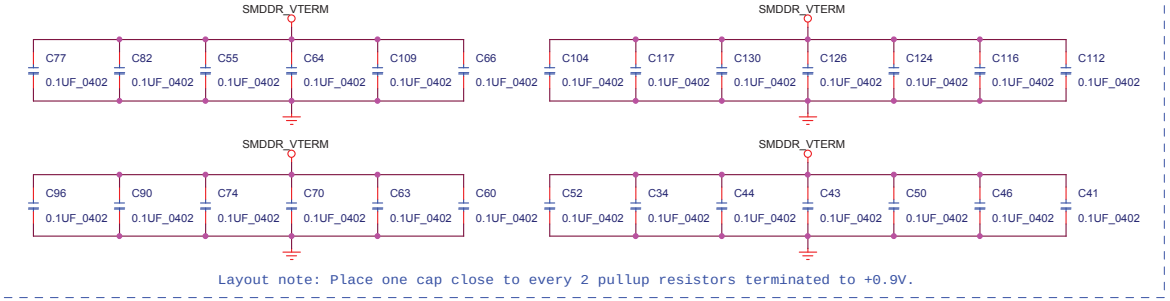
MICRO-STAR INT'L CO.,LTD.

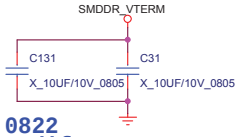
Title: DDR2-SODIMM-1 (Channel B)

Size: Custom | Document Number: MS-1034 | Rev: 0.A

Date: Thursday, September 22, 2005 | Sheet 13 of 44

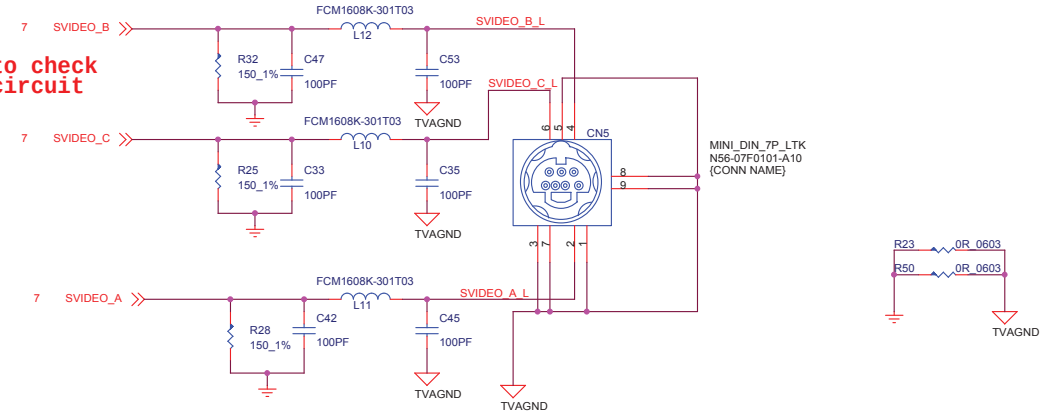




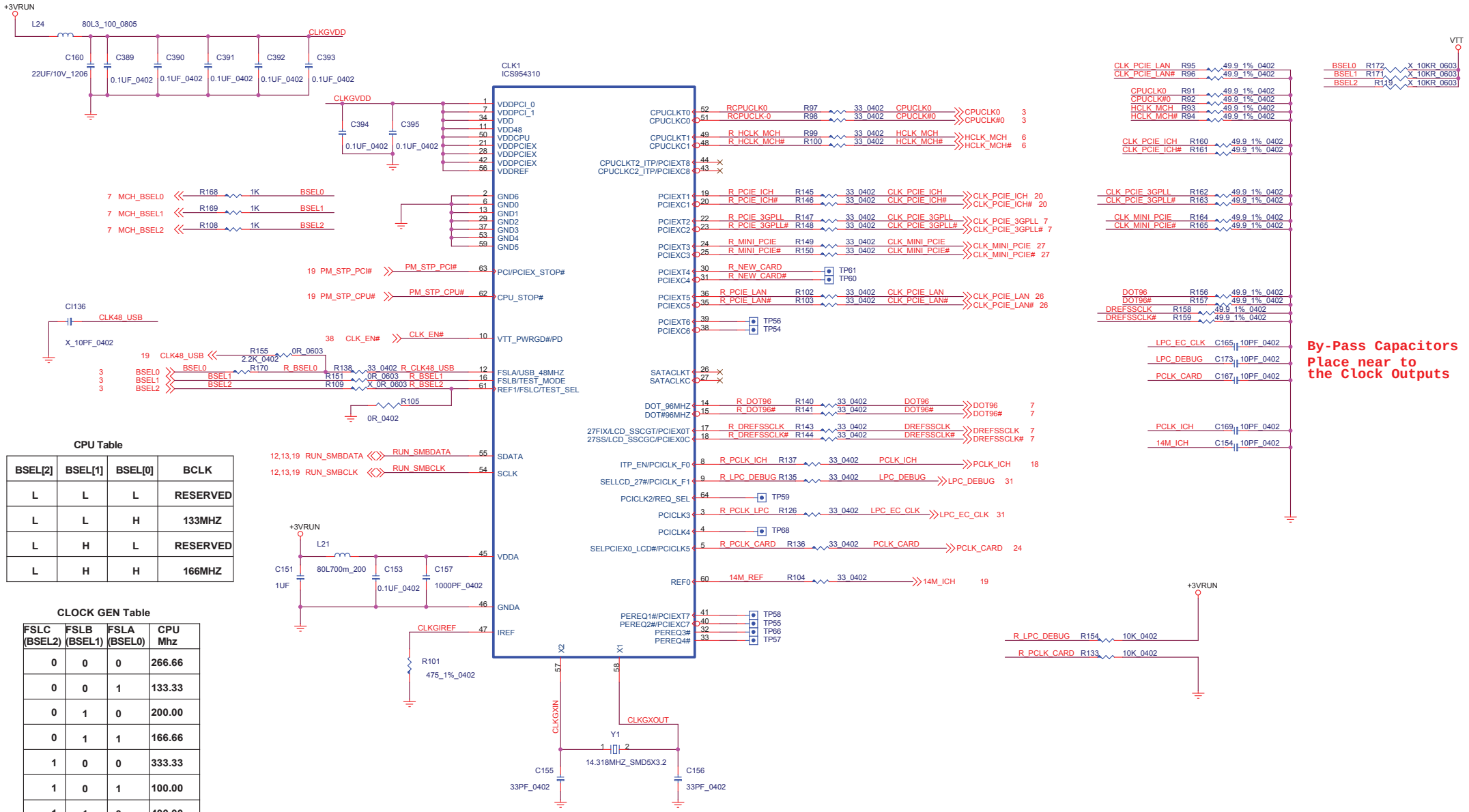


0822 Modify

Need to check this circuit



MICRO-STAR INT'L CO.,LTD.		
Title: DDR2 Terminator / S-VEDI		
Size: Custom	Document Number: MS-1034	Rev: 0.A
Date: Thursday, September 22, 2005	Sheet 14 of 44	



CPU Table

BSEL[2]	BSEL[1]	BSEL[0]	BCLK
L	L	L	RESERVED
L	L	H	133MHZ
L	H	L	RESERVED
L	H	H	166MHZ

CLOCK GEN Table

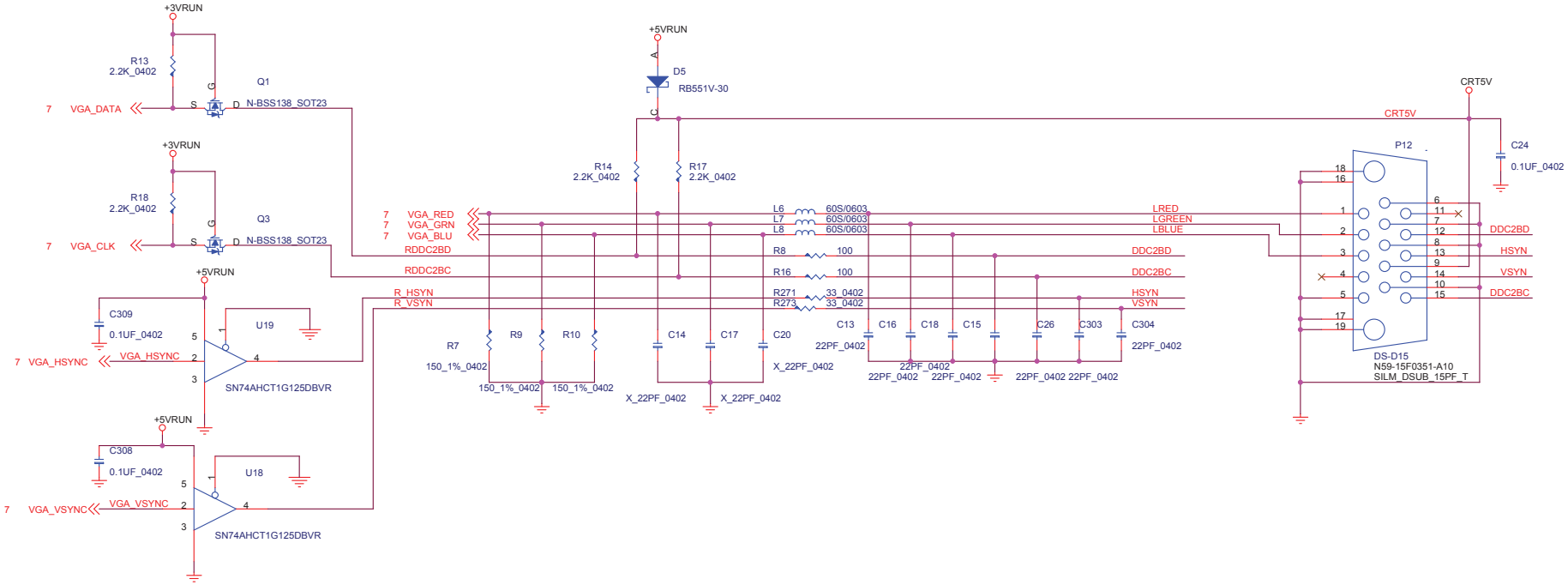
FSLC (BSEL2)	FSLB (BSEL1)	FSLA (BSEL0)	CPU Mhz
0	0	0	266.66
0	0	1	133.33
0	1	0	200.00
0	1	1	166.66
1	0	0	333.33
1	0	1	100.00
1	1	0	400.00
1	1	1	200.00

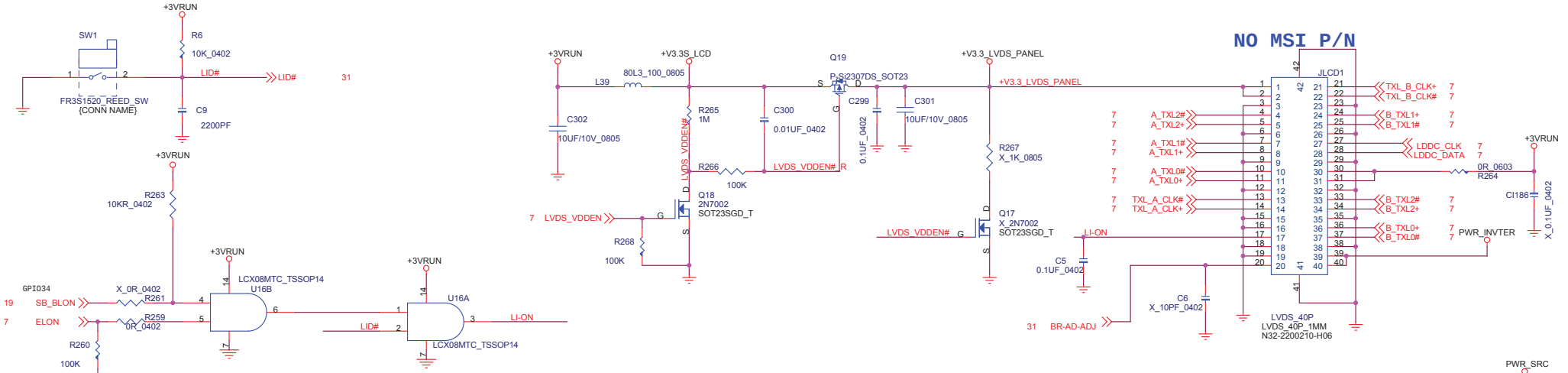
MICRO-STAR INT'L CO.,LTD.

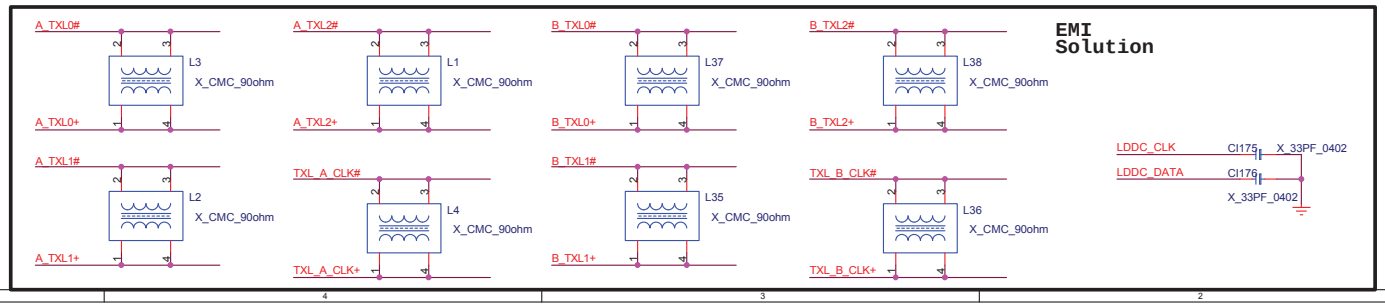
Title: CLOCK Generator (ICS954301)

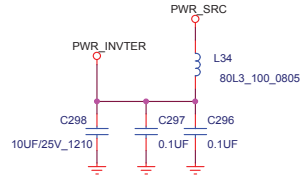
Size: Custom | Document Number: MS-1034 | Rev: 0.A

Date: Thursday, September 22, 2005 | Sheet 15 of 44







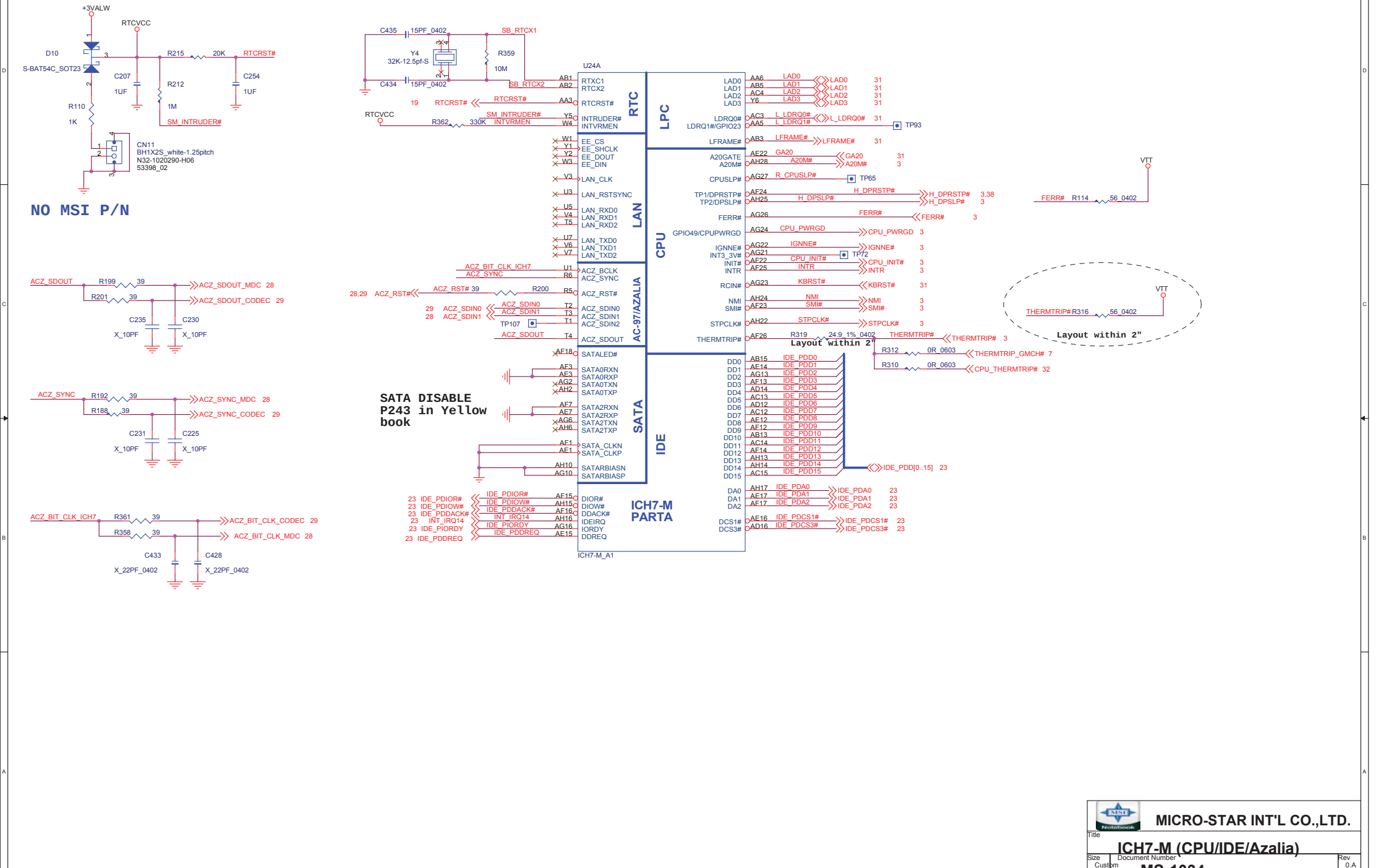


MICRO-STAR INT'L CO.,LTD.

Title: CRT & LVDS & TVOUT CONN

Size: Custom | Document Number: MS-1034 | Rev: 0.A

Date: Thursday, September 22, 2005 | Sheet 16 of 44

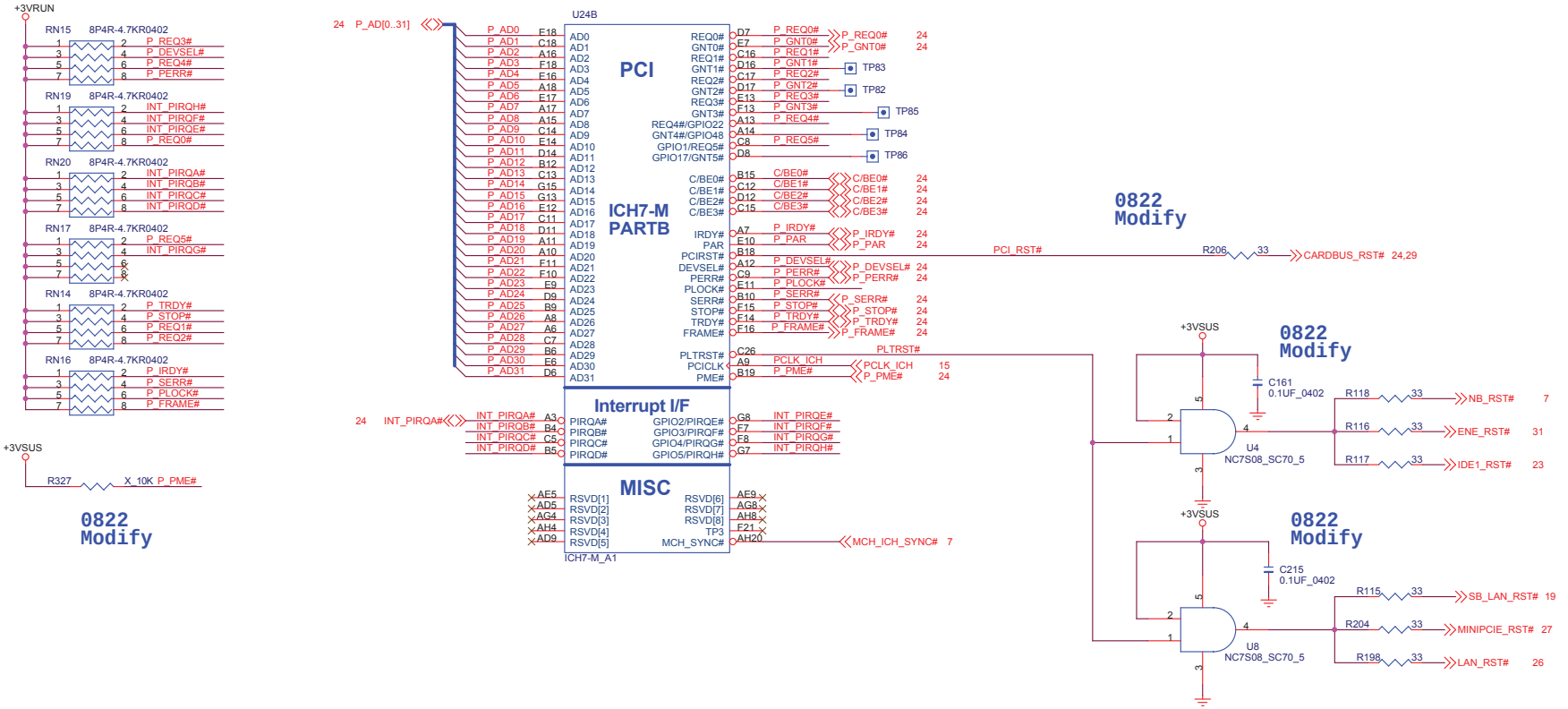


MICRO-STAR INT'L CO.,LTD.

Title: ICH7-M (CPU/IDE/Azalia)

Size: Custom | Document Number: MS-1034 | Rev: 0.A

Date: Thursday, September 22, 2005 | Sheet 17 of 44



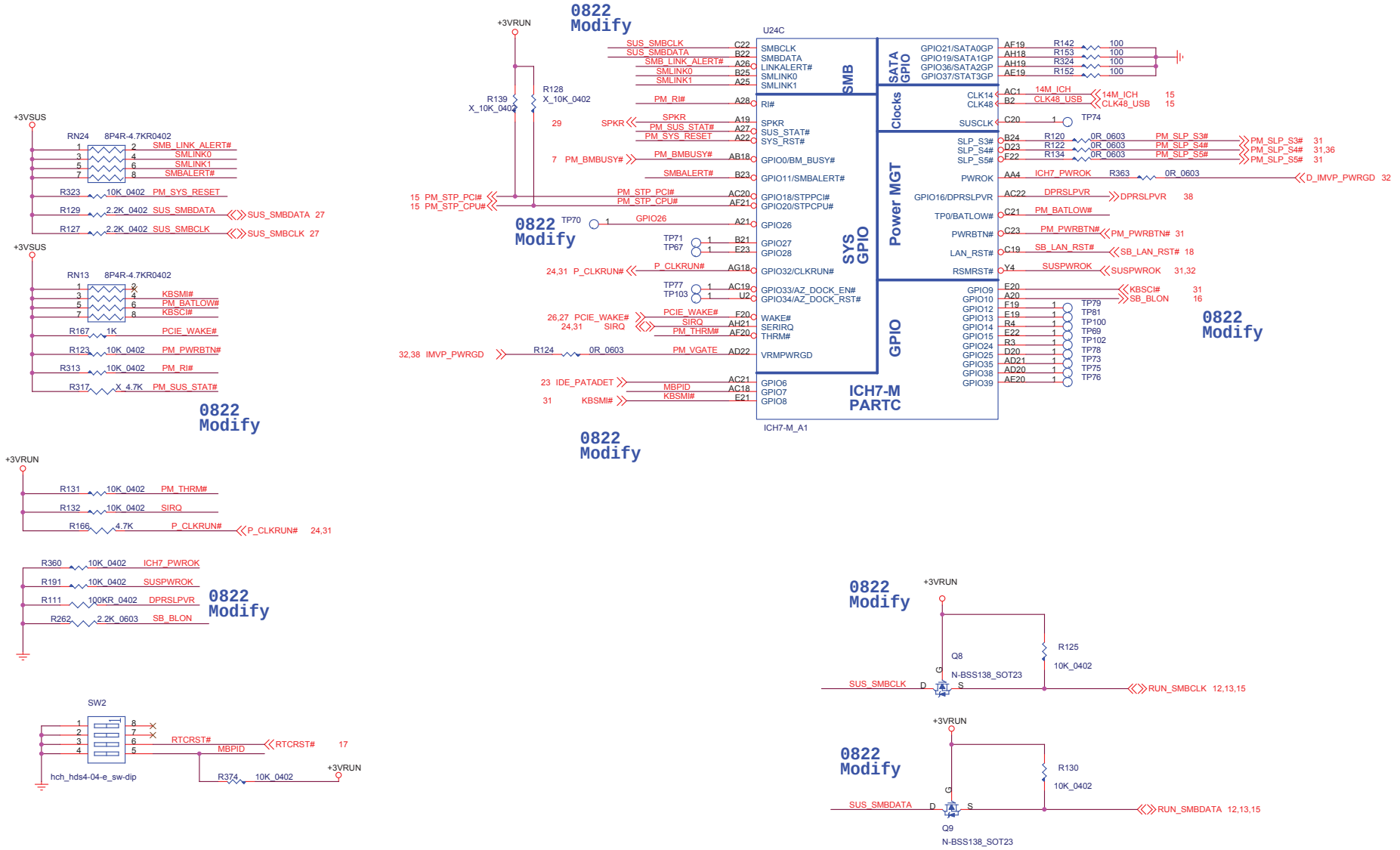
	GNT4	GNT5
LPC(D)	H	H
PCI	L	H
SPI	H	L

MICRO-STAR INT'L CO.,LTD.

Title: ICH7-M (PCI BUS)

Size: Custom | Document Number: MS-1034 | Rev: 0.A

Date: Thursday, September 22, 2005 | Sheet 18 of 44

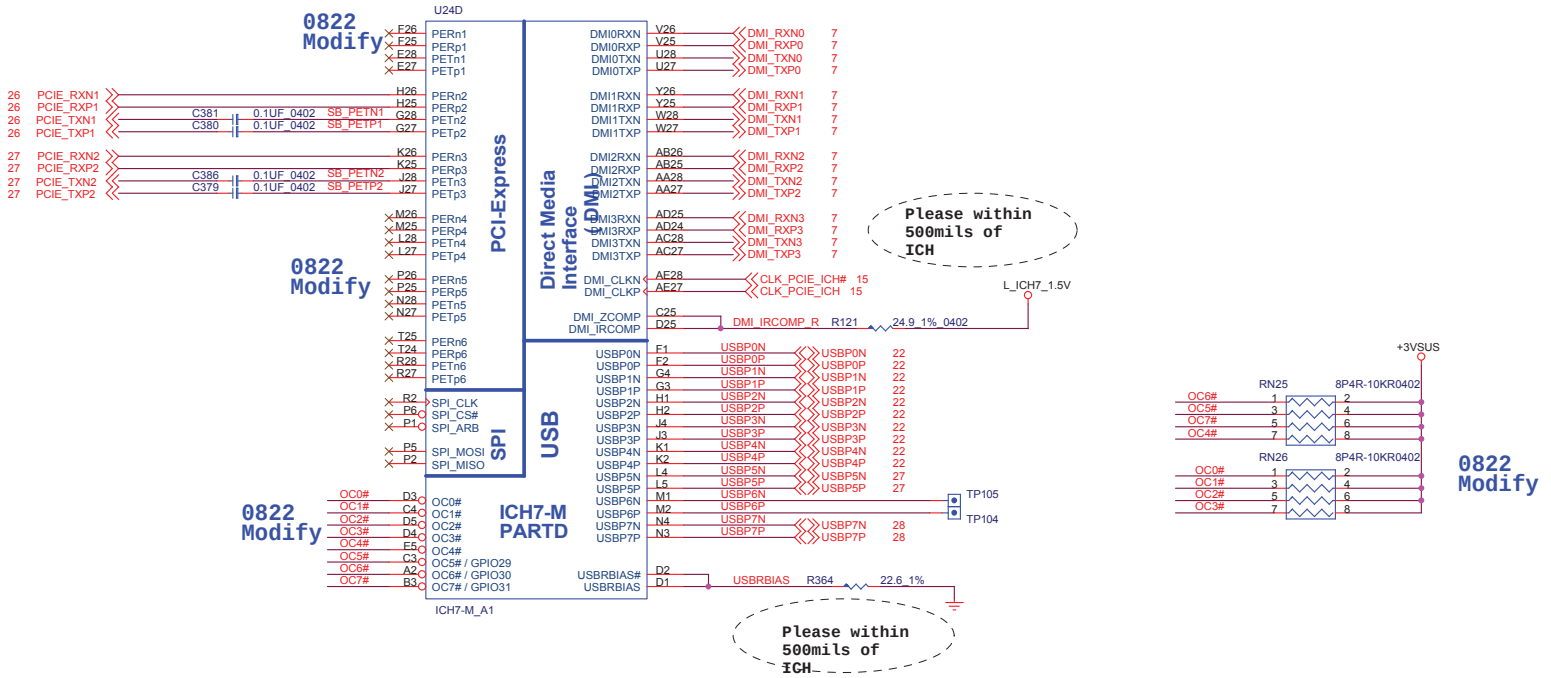


MICRO-STAR INT'L CO.,LTD.

Title: ICH7-M (SM BUS/GPIO)

Size: Custom | Document Number: MS-1034 | Rev: 0.A

Date: Thursday, September 22, 2005 | Sheet 19 of 44

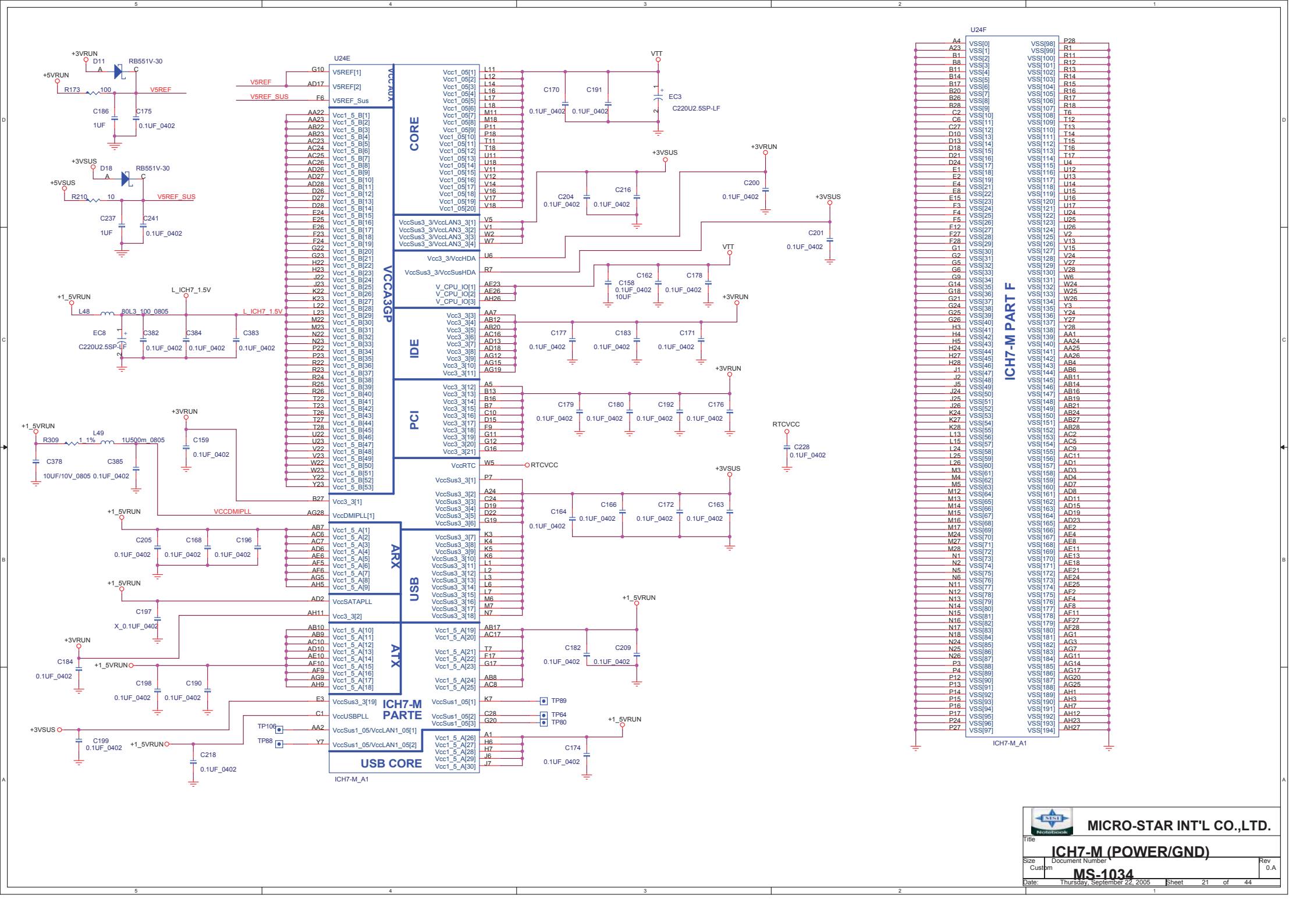


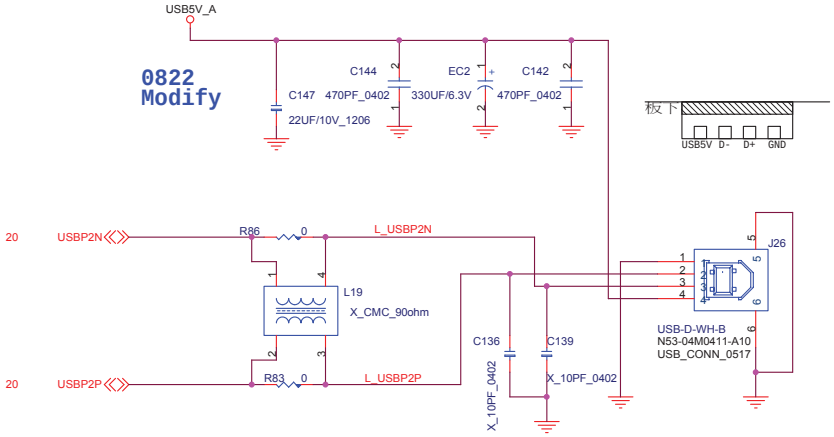
MICRO-STAR INT'L CO.,LTD.

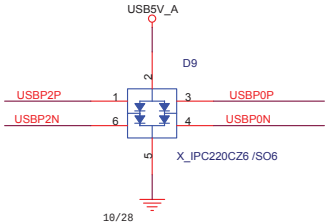
Title: ICH7-M (USB/PCIE/DMI)

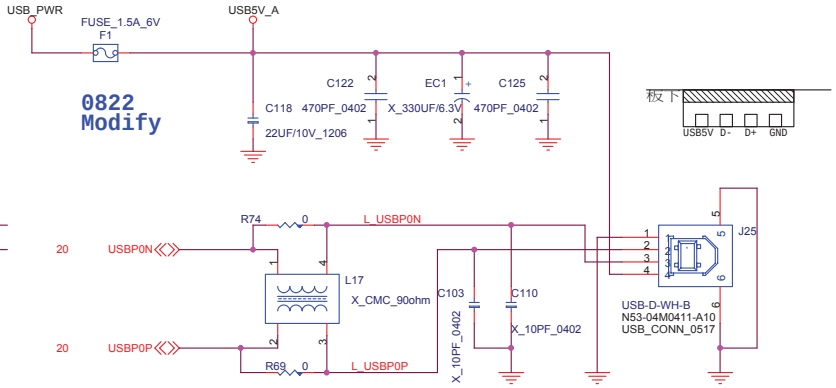
Size: Custom | Document Number: MS-1034 | Rev: 0.A

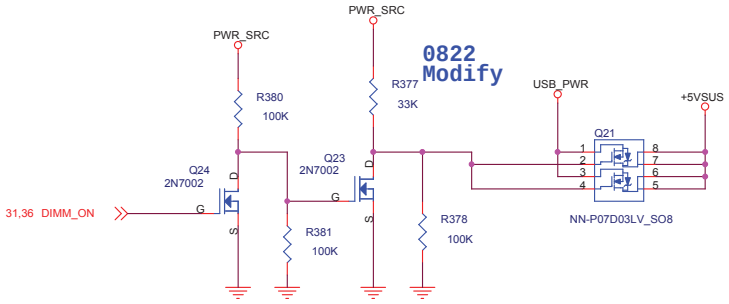
Date: Thursday, September 22, 2005 | Sheet 20 of 44

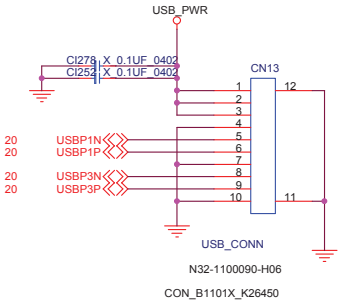

U24E
U24F
ICH7-M PART F
ICH7-M_A1
CORE
VCCA3GP
IDE
PCI
ARX
USB
ATX
USB CORE
ICH7-M PARTE
+3VRUN
+5VRUN
+3VSUS
+5VSUS
+1_5VRUN
VTT
RTCVCC
V5REF
V5REF_SUS
L_ICH7_1.5V
VCCDMIPLL
RB551V-30
MICRO-STAR INT'L CO.,LTD.
ICH7-M (POWER/GND)
MS-1034
Custom
Thursday, September 22, 2005
Sheet 21 of 44
0.A

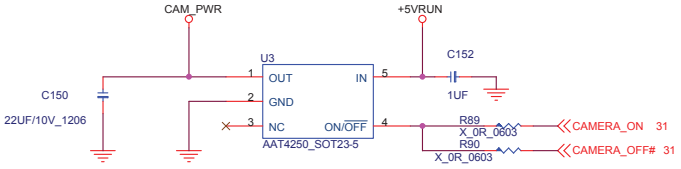


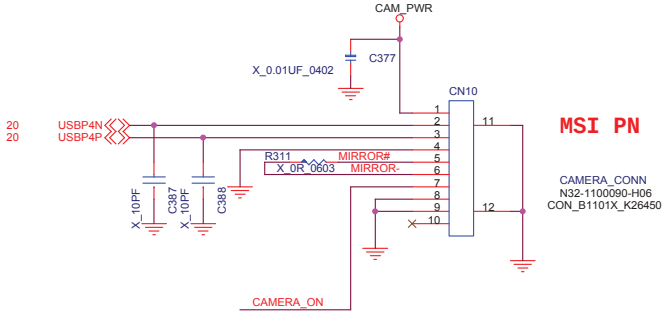










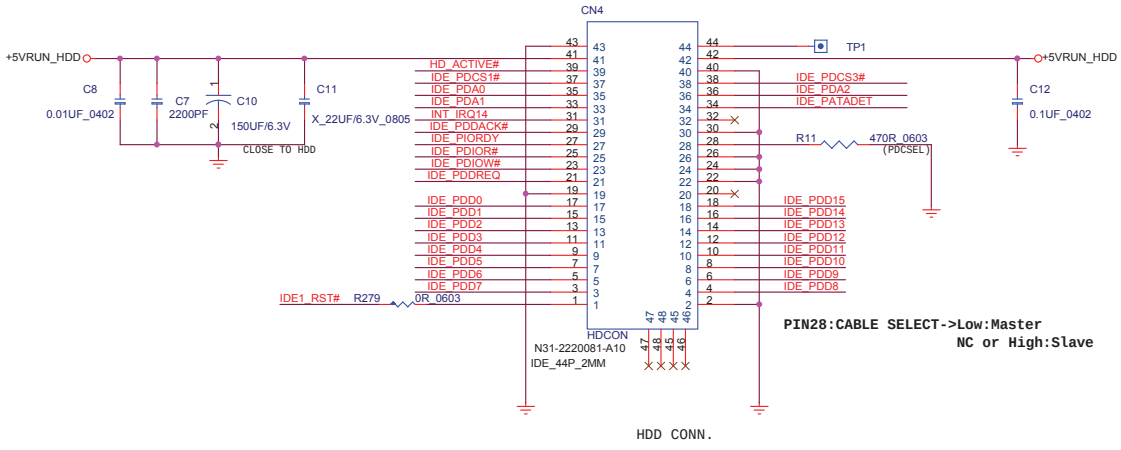


MICRO-STAR INT'L CO.,LTD.

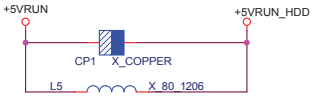
Title
USB2.0 CON X3 & Camera & LED & SW

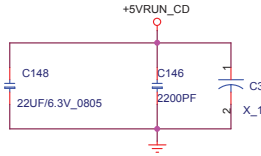
Size	Document Number	Rev
Custom	MS-1034	0.A

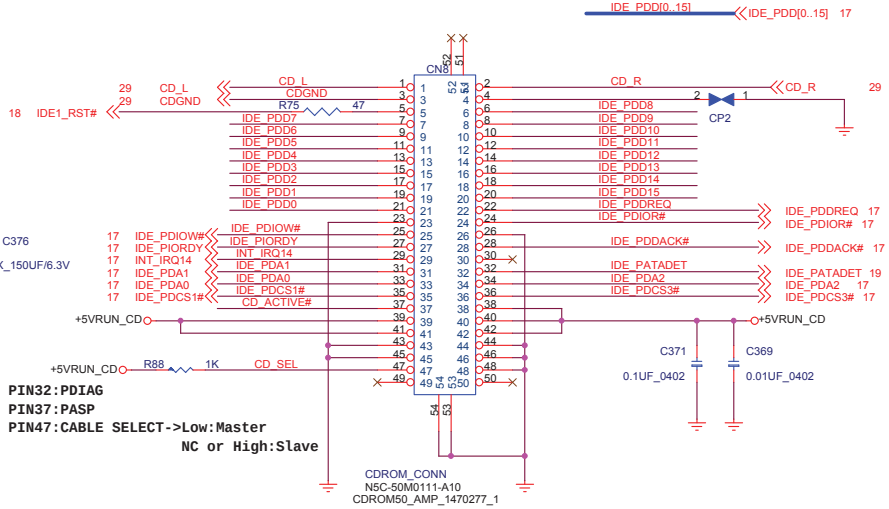
Date: Thursday, September 22, 2005 Sheet 22 of 44

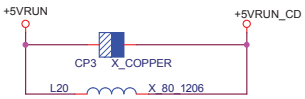


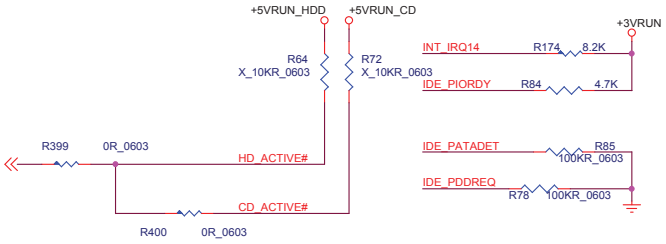
HDD CONN.



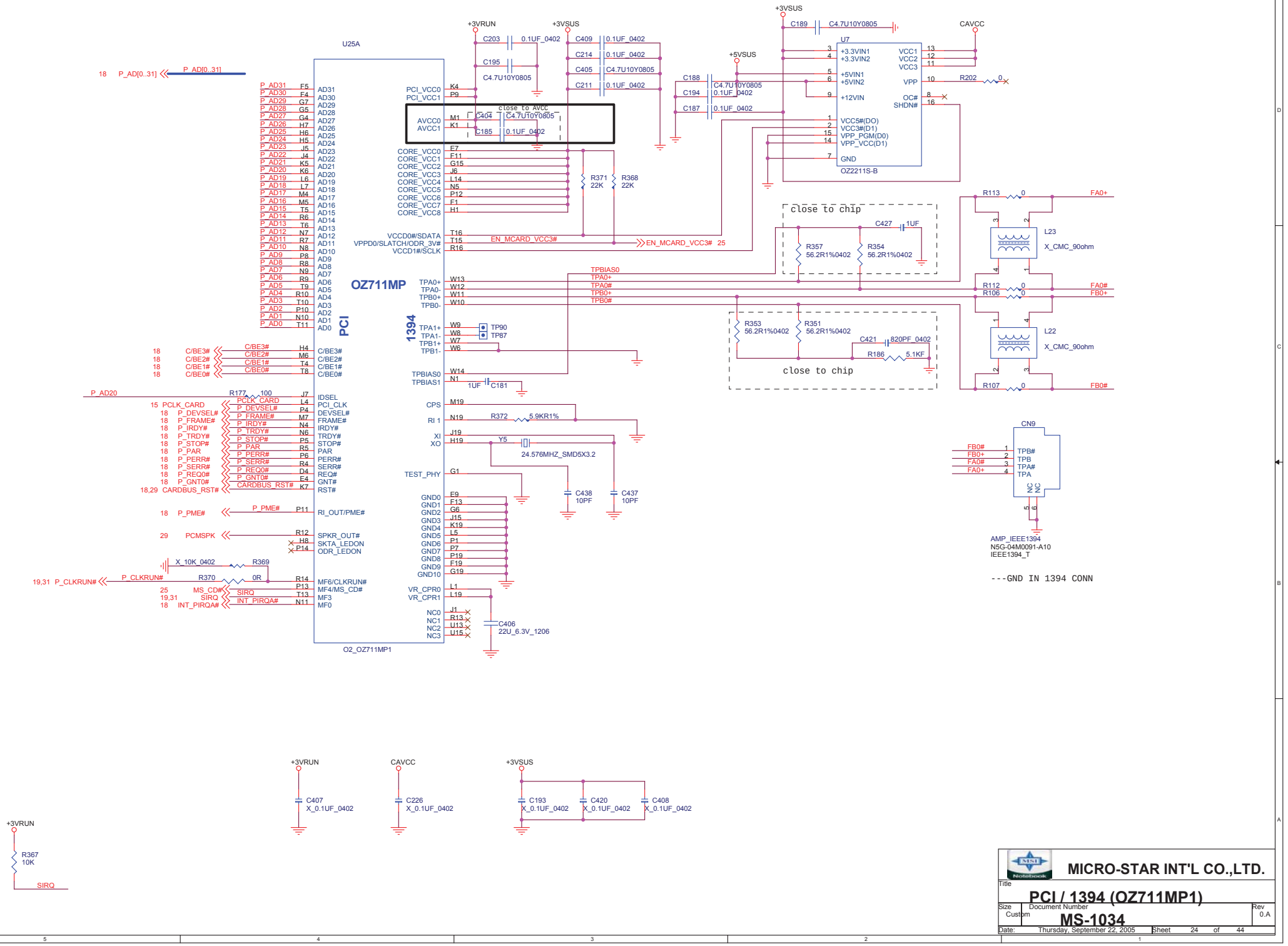








MICRO-STAR INT'L CO.,LTD.		
Title: HDD & CDROM CONN		
Size: Custom	Document Number: MS-1034	Rev: 0.A
Date: Thursday, September 22, 2005	Sheet 23 of 44	


U25A
OZ711MP
PCI
1394
O2_OZ711MP1
+3VRUN
+3VSUS
CAVCC
close to AVCC
close to chip
close to chip
U7
OZ2211S-B
CN9
AMP_IEEE1394
N5G-04M0091-A10
IEEE1394_T
---GND IN 1394 CONN
L23
X_CMC_90ohm
L22
X_CMC_90ohm
EN_MCARD_VCC3#
EN_MCARD_VCC3# 25
P_AD[0..31]
24.576MHZ_SMD5X3.2
MICRO-STAR INT'L CO.,LTD.
PCI / 1394 (OZ711MP1)
MS-1034
Thursday, September 22, 2005
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PCMCIA SLOT

CN15 TAISOL_146-2221210-01_PCMCIA_SMT

GND	P01	GND		GND	P35	GND	
CAD0	P02	CAD0(D3)		CCD1#(CD1#)	P36	CCD1#	
CAD1	P03	CAD1(D4)		CAD2(D11)	P37	CAD2	
CAD3	P04	CAD3(D5)		CAD4(D12)	P38	CAD4	
CAD5	P05	CAD5(D6)		CAD6(D13)	P39	CAD6	
CAD7	P06	CAD7(D7)		RFU(R2_D14)	P40	R2_D14	
CC/BE#0	P07	CC/BE0#(CE1#)		CAD8(D15)	P41	CAD8	
CAD9	P08	CAD9(A10)		CAD10(CE2#)	P42	CAD10	
CAD11	P09	CAD11(OE#)		CVS1	P43	CVS1	
CAD12	P10	CAD12(A11)		CAD13(IORD#)	P44	CAD13	
CAD14	P11	CAD14(A9)		CAD15(IOWR#)	P45	CAD15	
CC/BE#1	P12	CC/BE1#(A8)		CAD16(A17)	P46	CAD16	
CPAR	P13	CPAR(A13)		RFU(R2_A18)	P47	R2_A18	
CPERR#	P14	CPERR#(A14)		CBLOCK#(A19)	P48	CBLOCK#	
CGNT#	P15	CGNT#(WE#)		CSTOP#(A20)	P49	CSTOP#	
CINT#	P16	CINT#(IRQ#)		CDEVSEL#(A21)	P50	CDEVSEL#	
CAVCC	P17	VCC		VCC	P51	CAVCC	
CAVCC	P18	VPP		VPP	P52	CAVCC	
CCLK	P19	CCLK(A16)		CTRDY#(A22)	P53	CTRDY#	
CIRDY#	P20	CIRDY#(A15)		CFRAME#(A23)	P54	CFRAME#	
CC/BE#2	P21	CC/BE2#(A12)		CAD17(A24)	P55	CAD17	
CAD18	P22	CAD18(A7)		CAD19(A25)	P56	CAD19	
CAD20	P23	CAD20(A6)		CVS2	P57	CVS2	
CAD21	P24	CAD21(A5)		CRESET#(RESET)	P58	CRST#	
CAD22	P25	CAD22(A4)		CSERR#(WAIT#)	P59	CSERR#	
CAD23	P26	CAD23(A3)		CREQ#(INPACK#)	P60	CREQ#	
CAD24	P27	CAD24(A2)		CC/BE3#(REG#)	P61	CC/BE#3	
CAD25	P28	CAD25(A1)		CAUDIO(BVD2/SPKR#)	P62	CAUDIO#	
CAD26	P29	CAD26(A0)		CSTSCHG(BVD1/RI#)	P63	CSTSCHNG	
CAD27	P30	CAD27(D0)		CAD28(D8)	P64	CAD28	
CAD29	P31	CAD29(D1)		CAD30(D9)	P65	CAD30	
R2_D2	P32	RFU(R2_D2)		CAD31(D10)	P66	CAD31	
CCLKRUN#	P33	CCLKRUN#(IO16#)		CCD2#(CD2#)	P67	CCD2#	
GND	P34	GND		GND	P68	GND	

GND 69, GND 70, MEC1 NC, MEC2 NC, MEC3 NC, MEC4 NC

Top View

Footprint:
pcmcia_68p_1016的Pin69
70無PAD
pcmcia_68p_1010的有PAD

U25B

OZ711MP

CARDBUS/FLASH MEMORY CARD

CAD31	E5	D10/CAD31	XD_CD#/SC_CD#	U5	
CAD30	F6	D9/CAD30	SD_CD#	T7	SD_CD#
CAD29	E6	D1/CAD29	XD_RE#/ODR_3V#	U11	
CAD28	D6	D8/CAD28	XD_WE#/SC_3V#	U7	
CAD27	F7	D0/CAD27	XD_WPO/SC_5V#	U9	
CAD26	D9	A0/CAD26	MF2/ODR_WP	N12	SD_WP/XD_WP1
CAD25	G10	A1/CAD25	MF5/ODR_CMD_BS/XD_ALE	T14	SD_CMD/MS_BS/XD_ALE
CAD24	F10	A2/CAD24	VPPD1/ODR_CLK	R15	SD/MS_CLK/XD_CLE
CAD23	D11	A3/CAD23	XD_R/B#/SC_CLK	C5	
CAD22	G11	A4/CAD22	MF1/ODR_DATA0	T12	SD/MS/XD_DATA0
CAD21	D12	A5/CAD21	ODR_DATA1	R11	SD/MS/XD_DATA1
CAD20	F12	A6/CAD20	ODR_DATA2	N14	SD/MS/XD_DATA2
CAD19	D13	A25/CAD19	ODR_DATA3	K16	SD/MS/XD_DATA3
CAD18	F13	A7/CAD18	XD_D4/SC_C4	C7	
CAD17	G13	A24/CAD17	XD_D5/SC_IO	C15	
CAD16	H15	A17/CAD16	XD_D6/SC_RST	C9	
CAD15	J13	IOWR#/CAD15	XD_D7/SC_C8	C13	
CAD14	H16	A9/CAD14	SC_VCC/XD_VCC	C11	+3VSUS
CAD13	J16	IORD#/CAD13			
CAD12	J14	A11/CAD12			
CAD11	K13	OE#/CAD11			
CAD10	K14	CE2#/CAD10			
CAD9	K15	A10/CAD9			
CAD8	L15	D15/CAD8			
CAD7	L13	D7/CAD7			
CAD6	M14	D13/CAD6			
CAD5	M15	D6/CAD5			
CAD4	N16	D12/CAD4			
CAD3	M13	D5/CAD3			
CAD2	N13	D11/CAD2			
CAD1	N15	D4/CAD1			
CAD0	P16	D3/CAD0			
CCLK	R356 33	E15	A16/CCLK		
CFRAME#	E14	A23/CFRAME#			
CIRDY#	D15	A15/CIRDY#			
CTRDY#	D16	A22/CTRDY#			
CDEVSEL#	E16	A21/CDEVSEL#			
CSTOP#	F15	A20/CSTOP#			
CPAR	G16	A13/CPAR			
CPERR#	F16	A14/CPERR#			
CSERR#	D8	WAIT#/CSERR#			
CREQ#	E11	INPACK#/CREQ#			
CGNT#	F14	WE#/CGNT#			
CINT#	G9	RDY/IREQ#/CINT#			
CBLOCK#	G14	A19/CBLOCK#			
CCLKRUN#	G8	WP/IOIS16/CCLKRUN#			
CRST#	E12	RESET/CRST#			
R2_D2	D5	D2/RFU			
R2_D14	M16	D14/RFU			
R2_A18	H13	A18/RFU			
CVS1	F9	VS1/CVS1			
CVS2	G12	VS2/CVS2			
CCD1#	P15	CD1#/CCD1#			
CCD2#	D7	CD2#/CCD2#			
CAUDIO#	E8	BVD2/SPKR#/CAUDIO			
CSTSCHNG	F8	BVD1/RI#/CSTSCHG			
CC/BE#3	E10	REG#/CCBE3#			
CC/BE#2	D14	A12/CCBE2#			
CC/BE#1	H14	A8/CCBE1#			
CC/BE#0	L16	CE1#/CCBE0#			
CAVCC	D10	SOCKET_ VCC			

O2_OZ711MP1

+3VSUS

24 EN_MCARD_VCC3# → EN_MCARD_VCC3# → Q10 MOSFET P DGS

MCARD_VCC3

+3VSUS → R339 22K

C419 1UF

+3VSUS → R343 22K

J28

SD_CD#				CD_SW	1	MS_VSS	2
SD/MS/XD_DATA1	R346	33	C_DATA1	SD_DAT1	3	MS_BS	4
SD/MS/XD_DATA0	R340	33	C_DATA0	SD_DAT0	5	MS_DAT1	6
SD/MS_CLK/XD_CLE	R336	33	C_CLK/CLE	SD_VSS	7	MS_SDIO/DAT0	8
				SD_CLK	9	MS_DAT2	10
				SD_VDD	11	MS_INS	12
				SD_VSS	13	MS_DAT3	14
SD_CMD/MS_BS/XD_ALE	R344	33	C_ALE/CMD/MS	SD_CMD	15	MS_SCLK	16
SD/MS/XD_DATA3	R342	33	C_DATA3	SD_CD/SD_DAT3	17	MS_VCC	18
SD/MS/XD_DATA2	R341	33	C_DATA2	SD_DAT2	19	MS_VSS	20
SD_WP/XD_WP1				SD_WP	26		
				GND	25	GND	21
				NP1	27	GND	22
				NP2	28	GND	23
						GND	24

cardreader
N58-20F0300-N40
MMC_MS_26P

R345 0R_0603 C_DATA1
C_DATA0
C_DATA2
MS_CD# → MS_CD# 24
C_DATA3
C_CLK/CLE
MCARD_VCC3

C418 1UF

CCLK R356 33

C410 0.1UF_0402

CAVCC

C219 C4.7U10Y0805 | C224 0.1UF_0402 | C422 0.1UF_0402

CN15-A

PCMCIA COVER
E23-1016020-T01

EMI Solution Near J2

C_CLK/CLE	CI256	X_33PF_0402
SD_CD#	CI257	X_33PF_0402
C_ALE/CMD/MS	CI255	X_33PF_0402
SD_WP/XD_WP1	CI279	X_33PF_0402

CN15-B M2X12

CN15-C M2X12

MICRO-STAR INT'L CO.,LTD.

Title: CARDBUS/FLASH CARD

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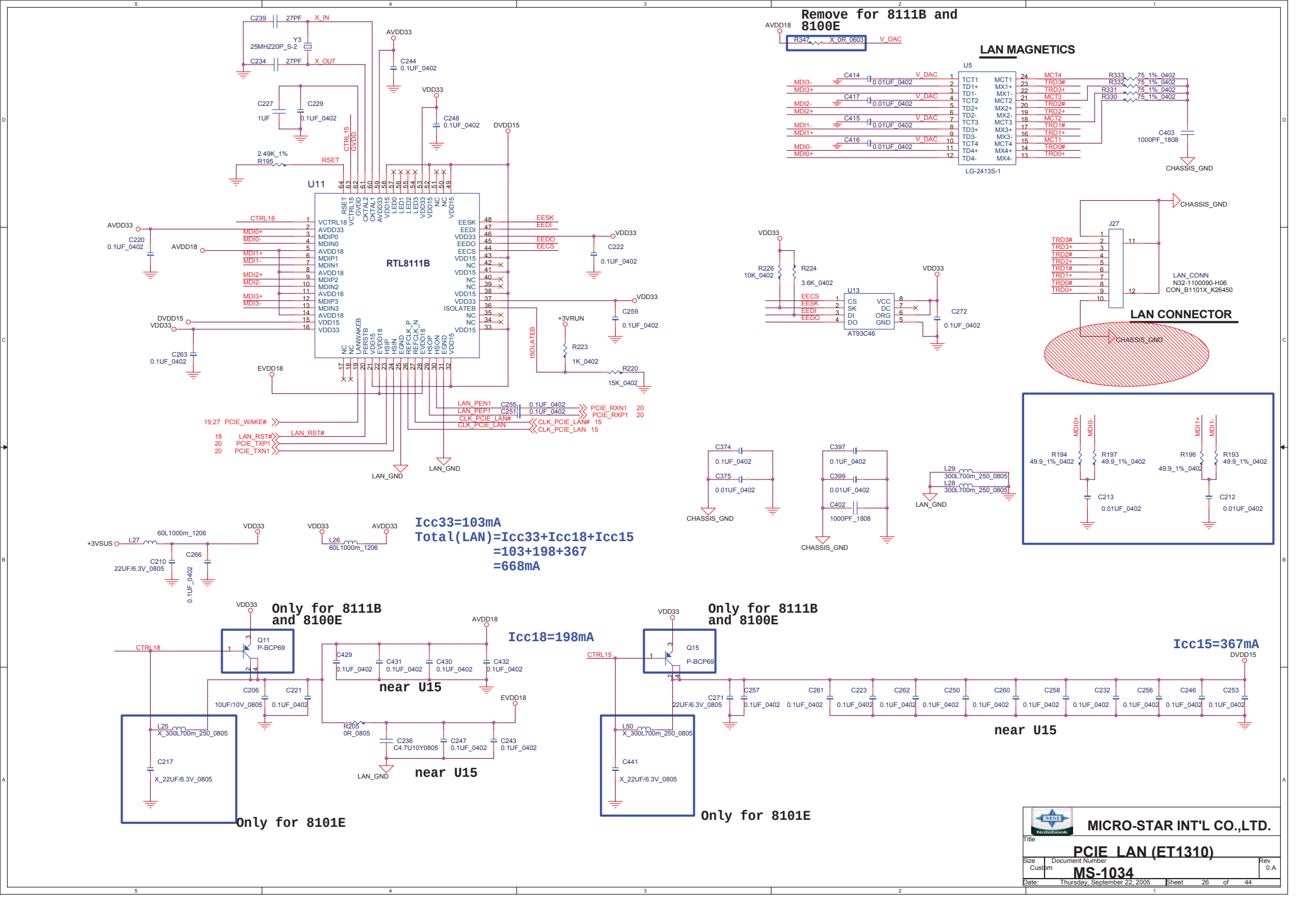
Remove for 8111B and 8100E
LAN MAGNETICS
LAN CONNECTOR
RTL8111B
U11
U5
LG-2413S-1
U13
AT93C46
J27
LAN_CONN
N32-1100090-H06
CON_B1101X_K26450
Icc33=103mA
Total(LAN)=Icc33+Icc18+Icc15
=103+198+367
=668mA
Icc18=198mA
Icc15=367mA
Only for 8111B and 8100E
Only for 8101E
near U15
MICRO-STAR INT'L CO.,LTD.
PCIE LAN (ET1310)
MS-1034
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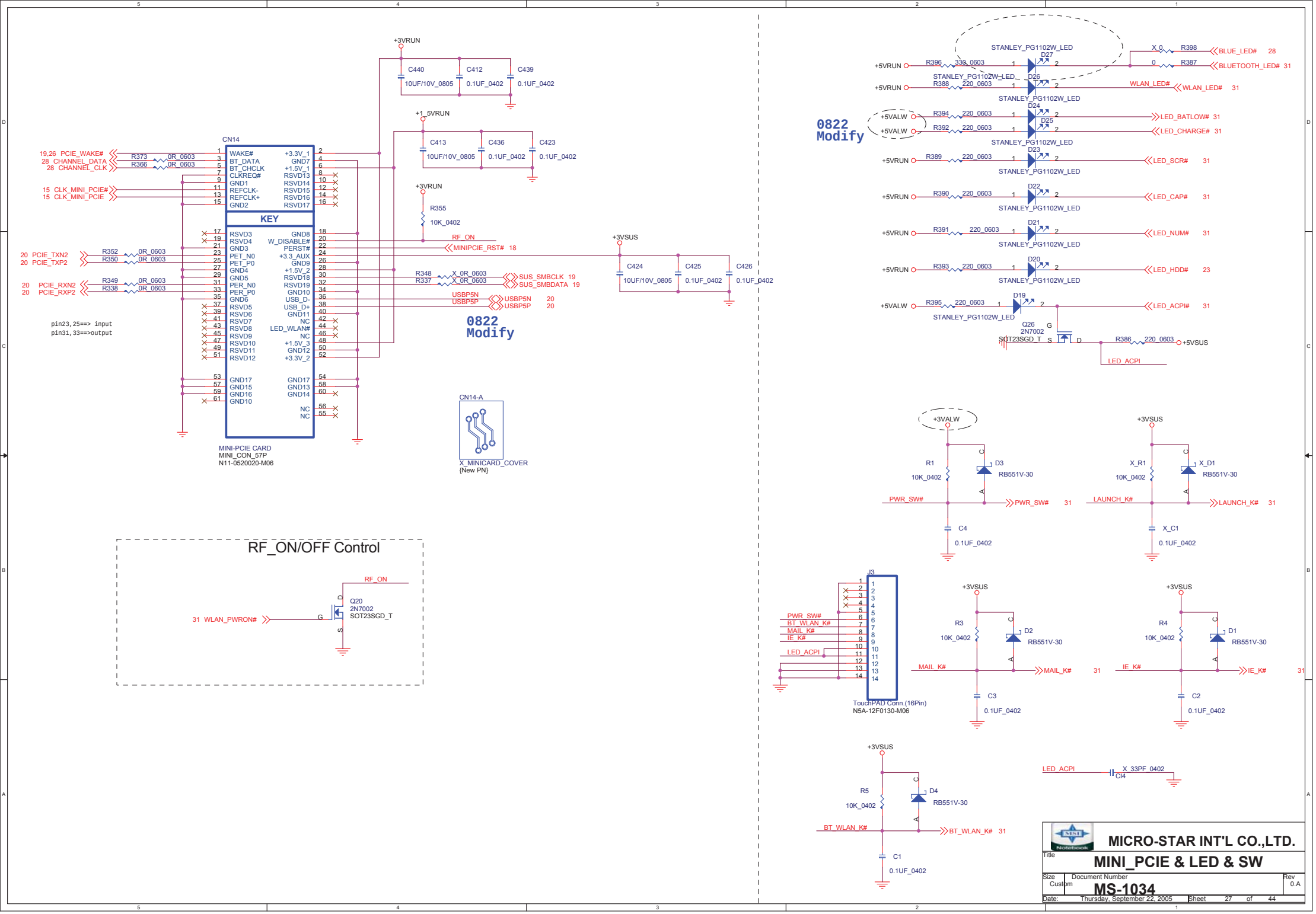
+3VRUN
C440
10UF/10V_0805
C412
0.1UF_0402
C439
0.1UF_0402
+1_5VRUN
C413
10UF/10V_0805
C436
0.1UF_0402
C423
0.1UF_0402
CN14
19,26 PCIE_WAKE#
28 CHANNEL_DATA
28 CHANNEL_CLK
R373 0R_0603
R366 0R_0603
15 CLK_MINI_PCIE#
15 CLK_MINI_PCIE
WAKE#
BT_DATA
BT_CHCLK
CLKREQ#
GND1
REFCLK-
REFCLK+
GND2
+3.3V_1
GND7
+1.5V_1
RSVD13
RSVD14
RSVD15
RSVD16
RSVD17
KEY
RSVD3
RSVD4
GND3
PET_N0
PET_P0
GND4
GND5
PER_N0
PER_P0
GND6
RSVD5
RSVD6
RSVD7
RSVD8
RSVD9
RSVD10
RSVD11
RSVD12
GND8
W_DISABLE#
PERST#
+3.3_AUX
GND9
+1.5V_2
RSVD18
RSVD19
GND10
USB_D-
USB_D+
GND11
NC
LED_WLAN#
NC
+1.5V_3
GND12
+3.3V_2
GND17
GND15
GND16
GND10
GND17
GND13
GND14
NC
NC
20 PCIE_TXN2
20 PCIE_TXP2
R352 0R_0603
R350 0R_0603
20 PCIE_RXN2
20 PCIE_RXP2
R349 0R_0603
R338 0R_0603
pin23,25==> input
pin31,33==>output
MINI-PCIE CARD
MINI_CON_57P
N11-0520020-M06
+3VRUN
R355
10K_0402
RF_ON
MINIPCIE_RST# 18
R348 X_0R_0603
R337 X_0R_0603
SUS_SMBCLK 19
SUS_SMBDATA 19
USBP5N
USBP5P
USBP5N 20
USBP5P 20
0822
Modify
+3VSUS
C424
10UF/10V_0805
C425
0.1UF_0402
C426
0.1UF_0402
CN14-A
X_MINICARD_COVER
{New PN}
RF_ON/OFF Control
RF_ON
31 WLAN_PWRON#
Q20
2N7002
SOT23SGD_T
STANLEY_PG1102W_LED
D27
D26
D24
D25
D23
D22
D21
D20
D19
+5VRUN
+5VALW
R396 330_0603
R388 220_0603
R394 220_0603
R392 220_0603
R389 220_0603
R390 220_0603
R391 220_0603
R393 220_0603
R395 220_0603
X_0
R398
R387
BLUE_LED# 28
BLUETOOTH_LED# 31
WLAN_LED#
WLAN_LED# 31
LED_BATLOW# 31
LED_CHARGE# 31
LED_SCR# 31
LED_CAP# 31
LED_NUM# 31
LED_HDD# 23
LED_ACPI# 31
0822
Modify
Q26
2N7002
SOT23SGD_T
R386 220_0603
+5VSUS
LED_ACPI
+3VALW
R1
10K_0402
D3
RB551V-30
PWR_SW#
PWR_SW# 31
C4
0.1UF_0402
+3VSUS
X_R1
10K_0402
X_D1
RB551V-30
LAUNCH_K#
LAUNCH_K# 31
X_C1
0.1UF_0402
J3
PWR_SW#
BT_WLAN_K#
MAIL_K#
IE_K#
LED_ACPI
TouchPAD Conn.(16Pin)
N5A-12F0130-M06
R3
10K_0402
D2
RB551V-30
MAIL_K#
MAIL_K# 31
C3
0.1UF_0402
R4
10K_0402
D1
RB551V-30
IE_K#
IE_K# 31
C2
0.1UF_0402
R5
10K_0402
D4
RB551V-30
BT_WLAN_K#
BT_WLAN_K# 31
C1
0.1UF_0402
LED_ACPI
X_33PF_0402
C14
MICRO-STAR INT'L CO.,LTD.
Title
MINI_PCIE & LED & SW
Size
Custom
Document Number
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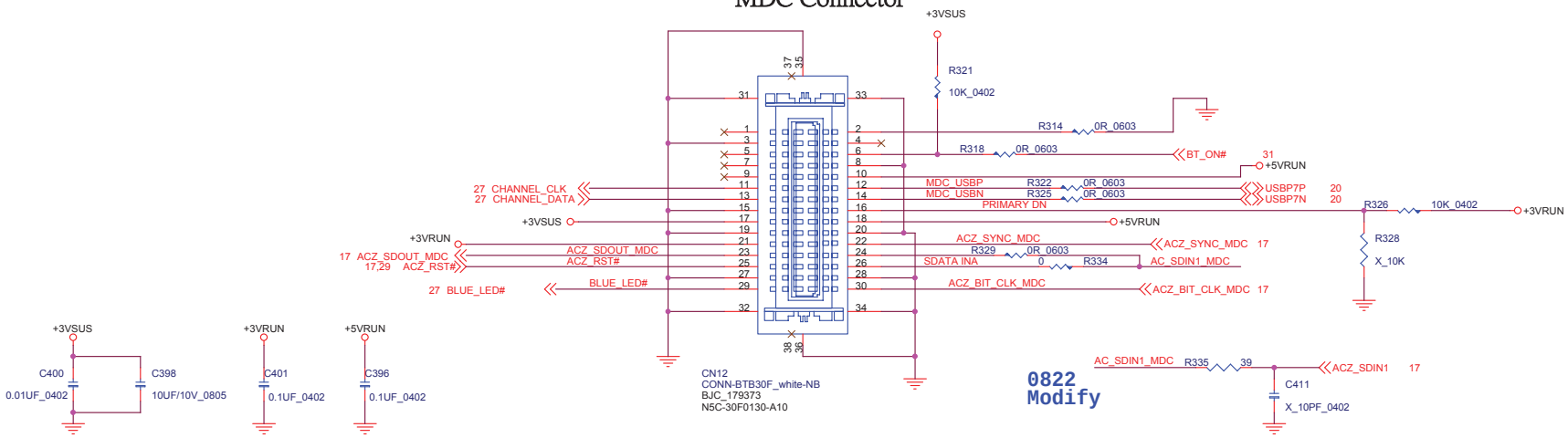
MDC Connector



MICRO-STAR INT'L CO.,LTD.

Title: NEW CARD & MDC CONN

Size: Custom | Document Number: MS-1034 | Rev: 0.A

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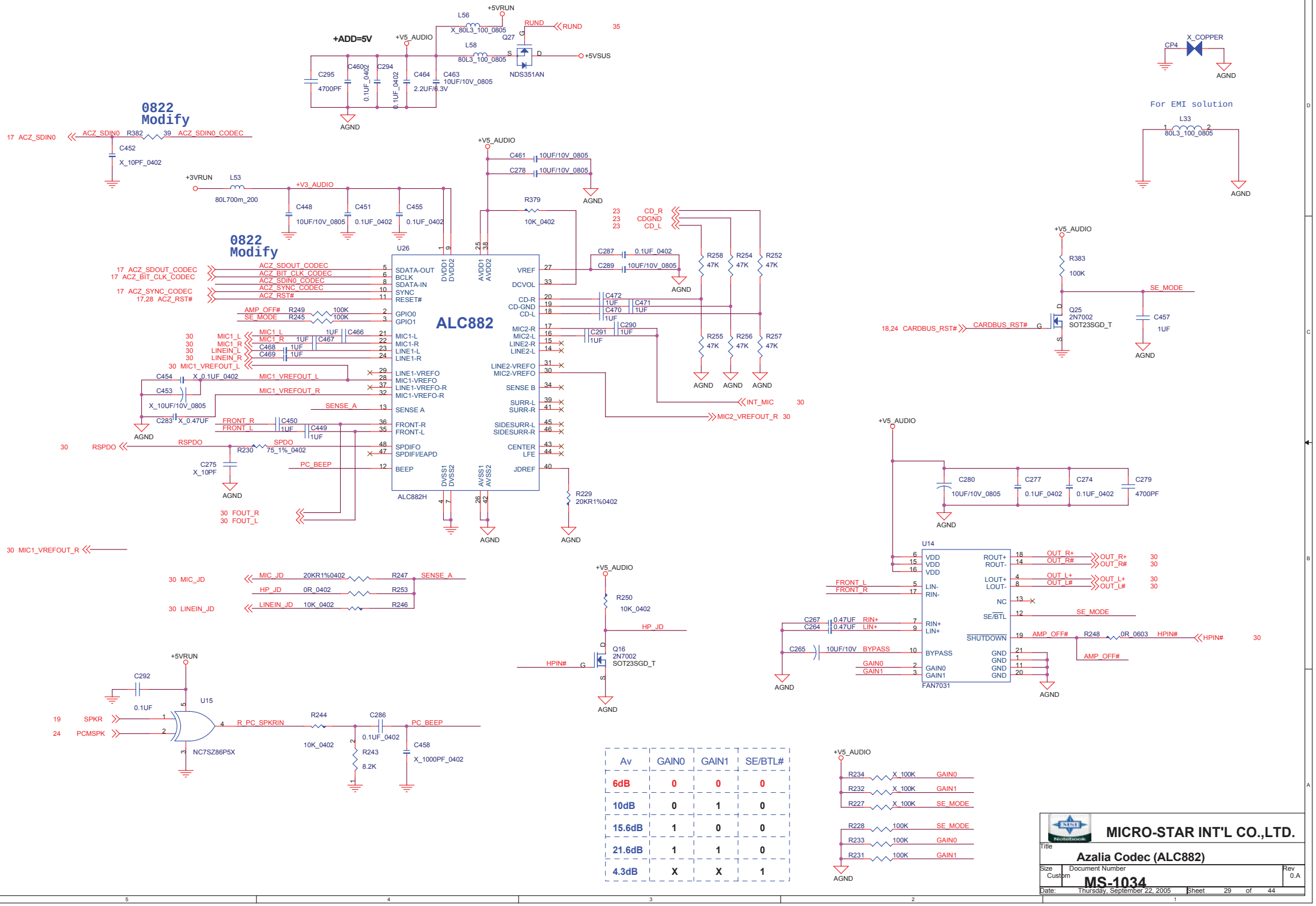
0822 Modify
0822 Modify
ALC882
ALC882H
U26
U14
U15
U16
FAN7031
NC7SZ86P5X
+5VRUN
+V5_AUDIO
+3VRUN
+V3_AUDIO
+ADD=5V
AGND
For EMI solution
X_COPPER
CP4
L56
L58
L53
L33
Q27
NDS351AN
Q25
Q16
2N7002
SOT23SGD_T
RUND
+5VSUS
ACZ_SDIN0
ACZ_SDOUT_CODEC
ACZ_BIT_CLK_CODEC
ACZ_SYNC_CODEC
ACZ_RST#
CD_R
CDGND
CD_L
INT_MIC
MIC2_VREFOUT_R
MIC1_VREFOUT_L
MIC1_VREFOUT_R
RSPDO
SPDO
PC_BEEP
FOUT_R
FOUT_L
MIC_JD
HP_JD
LINEIN_JD
HPIN#
CARDBUS_RST#
SE_MODE
AMP_OFF#
OUT_R+
OUT_R#
OUT_L+
OUT_L#
R_PC_SPKRIN
SPKR
PCMSPK
GAIN0
GAIN1
BYPASS
Av
GAIN0
GAIN1
SE/BTL#
6dB
10dB
15.6dB
21.6dB
4.3dB
MICRO-STAR INT'L CO.,LTD.
Azalia Codec (ALC882)
MS-1034
Size
Custom
Document Number
Rev
0.A
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29
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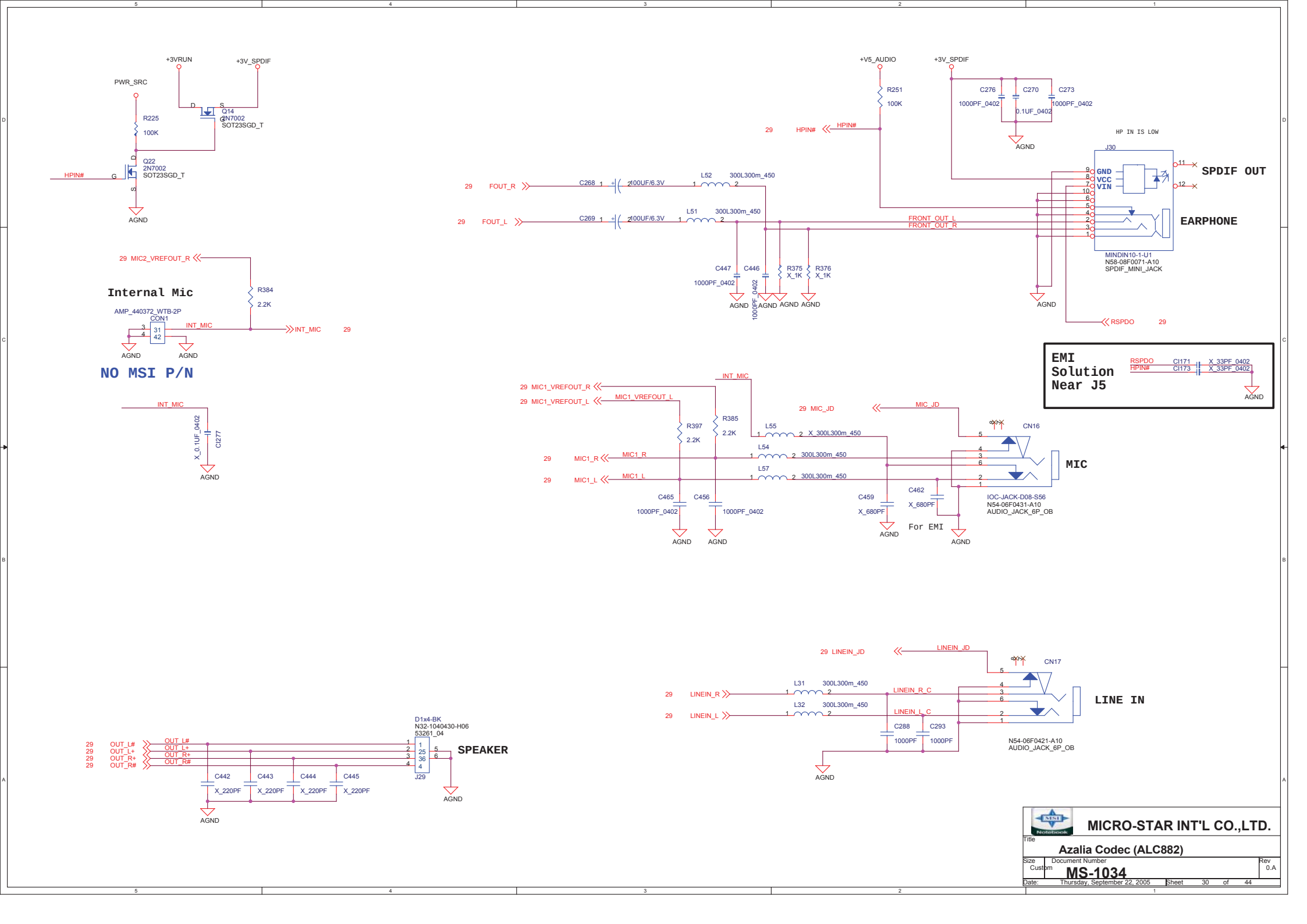
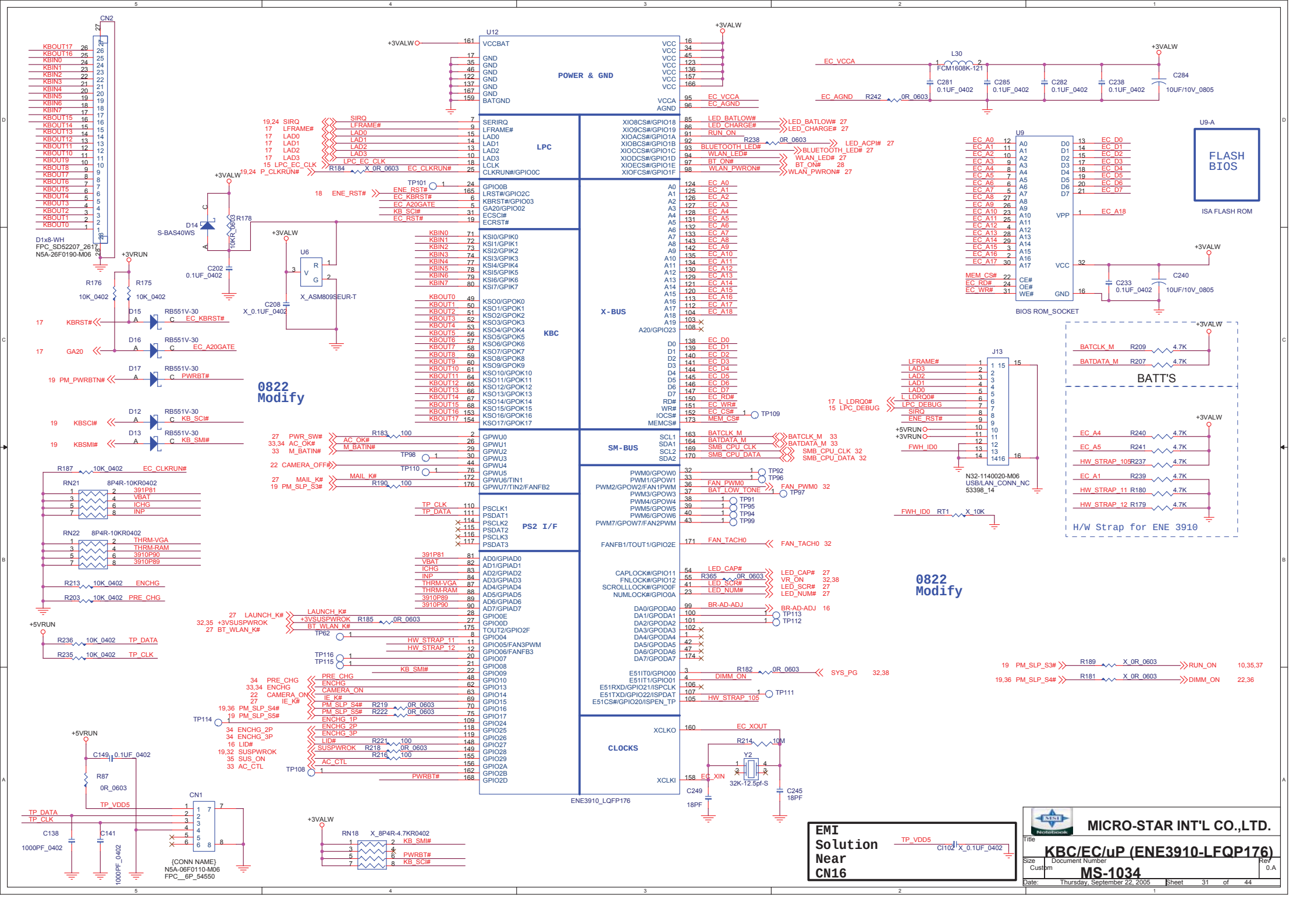
44



MICRO-STAR INT'L CO.,LTD.			
Title: Azalia Codec (ALC882)			
Size: Custom	Document Number: MS-1034		Rev: 0.A
Date: Thursday, September 22, 2005	Sheet 30 of 44		


U12
POWER & GND
LPC
KBC
X-BUS
SM-BUS
PS2 I/F
CLOCKS
ENE3910_LQFP176
CN2
D1x8-WH
FPC_SD52207_2617
N5A-26F0190-M06
0822
Modify
0822
Modify
U9
BIOS ROM_SOCKET
U9-A
FLASH
BIOS
ISA FLASH ROM
J13
N32-1140020-M06
USB/LAN_CONN_NC
53398_14
BATT'S
H/W Strap for ENE 3910
CN1
{CONN NAME}
N5A-06F0110-M06
FPC__6P_54550
EMI
Solution
Near
CN16
MICRO-STAR INT'L CO.,LTD.
KBC/EC/uP (ENE3910-LFQP176)
MS-1034
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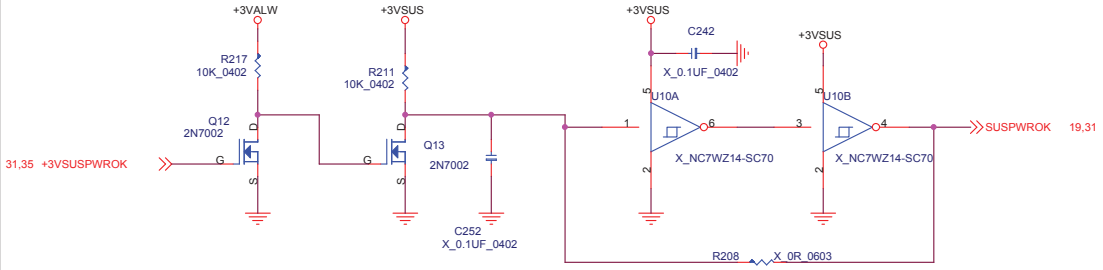
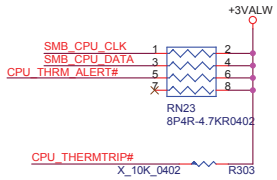
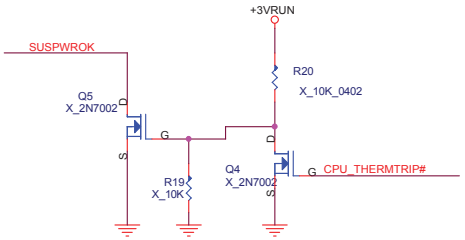
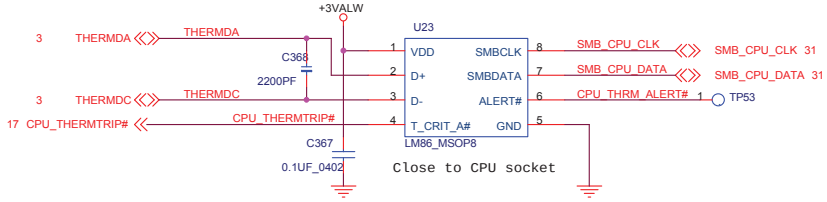


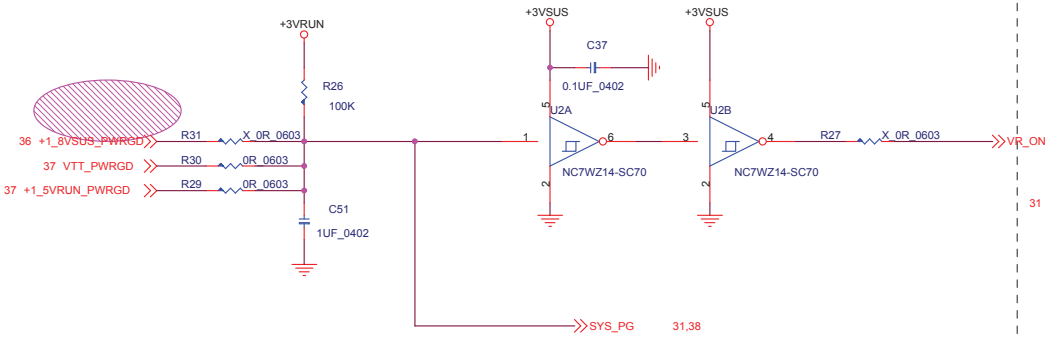


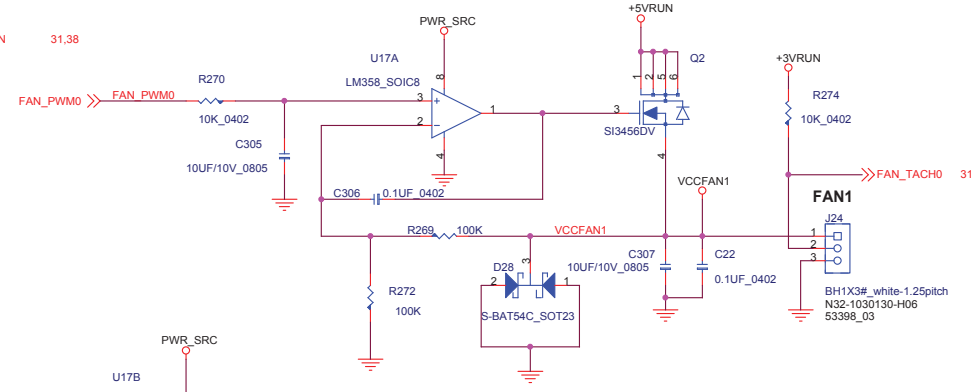
Pull 10K to +3VSUS Page 37



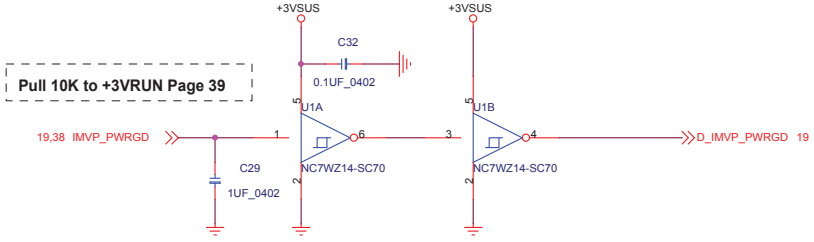
Cap close to thermal sensor

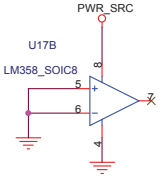




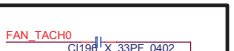


Pull 10K to +3VRUN Page 39





EMI Solution Near J8



MICRO-STAR INT'L CO.,LTD.

Title: POWER GOOD & FAN

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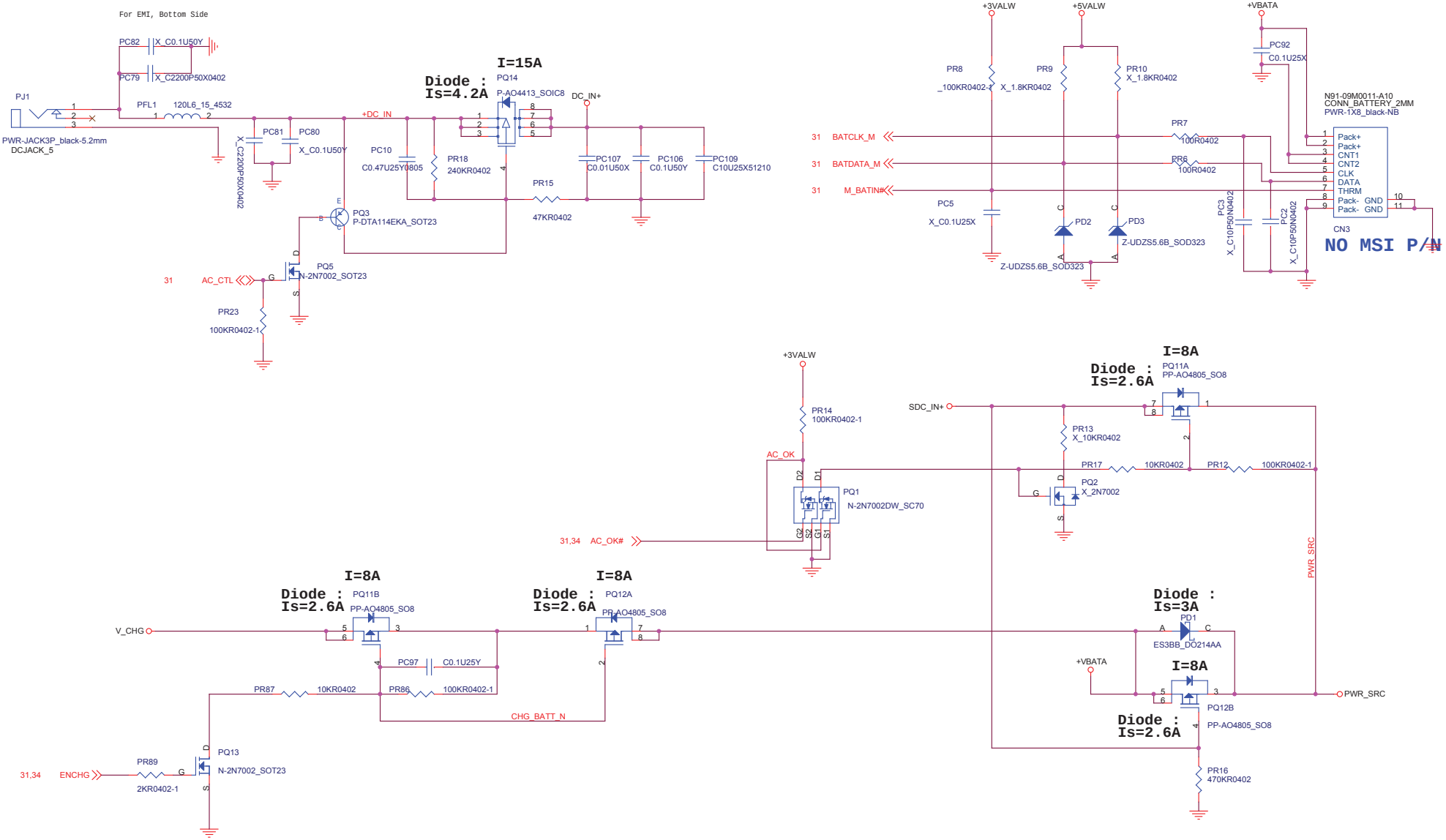

MICRO-STAR INT'L CO.,LTD.

Title: Battery Select

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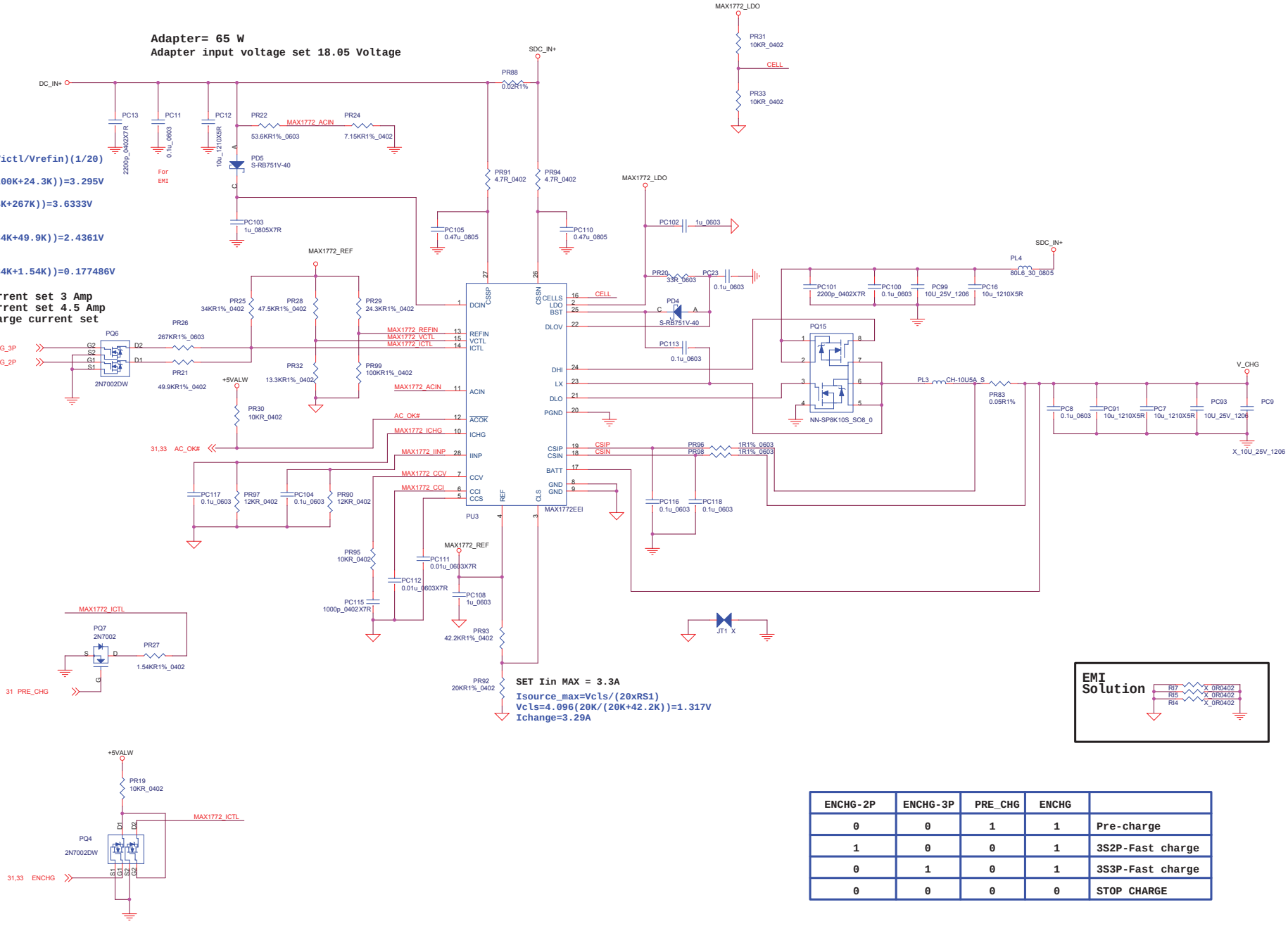
Adapter= 65 W
Adapter input voltage set 18.05 Voltage

Ichange=(Vref/RS2)(Victl/Vrefin)(1/20)
Vref=4.096V
Vrefin=4.096(100K/(100K+24.3K))=3.295V
3S3P :
Victl=4.096(267K/(34K+267K))=3.6333V
Ichange=4.5A
3S2P :
Victl=4.096(49.9K/(34K+49.9K))=2.4361V
Ichange=3A
Pre-charge :
Victl=4.096(1.54K/(34K+1.54K))=0.177486V
Ichange=220mA

3S2P: Charge current set 3 Amp
3S3P: Charge current set 4.5 Amp
Pre-charger: Charge current set 200mA



SET Iin MAX = 3.3A
Isource_max=Vcls/(20xRS1)
Vcls=4.096(20K/(20K+42.2K))=1.317V
Ichange=3.29A

EMI Solution

ENCHG-2P	ENCHG-3P	PRE_CHG	ENCHG	
0	0	1	1	Pre-charge
1	0	0	1	3S2P-Fast charge
0	1	0	1	3S3P-Fast charge
0	0	0	0	STOP CHARGE

MICRO-STAR INT'L CO.,LTD.

Title: Battery Charger

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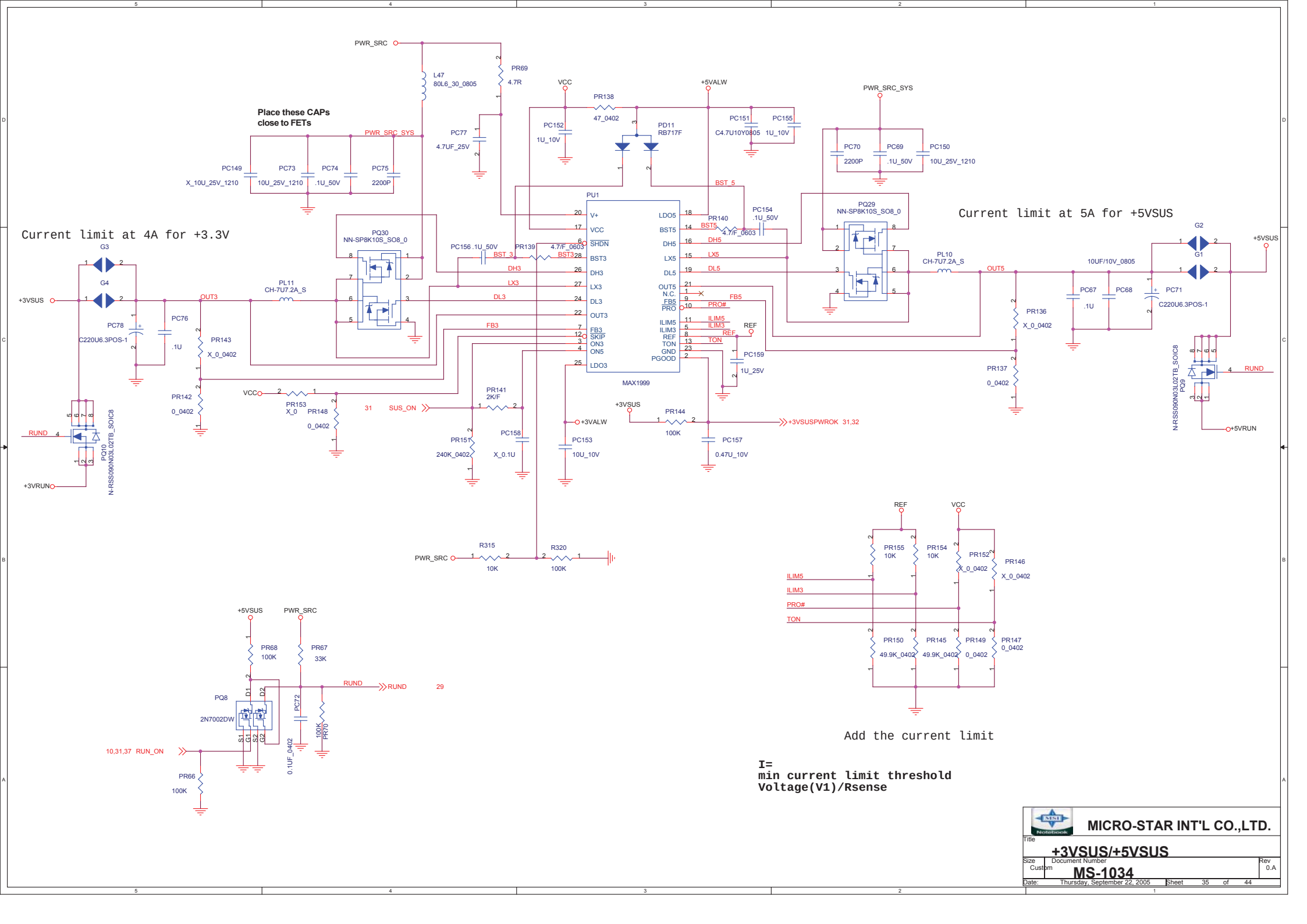
Place these CAPs close to FETs
Current limit at 4A for +3.3V
Current limit at 5A for +5VSUS
Add the current limit
I=
min current limit threshold
Voltage(V1)/Rsense
MAX1999
PU1
PWR_SRC
PWR_SRC_SYS
+5VALW
VCC
+3VSUS
+5VSUS
+3VRUN
+5VRUN
RUND
OUT3
OUT5
BST_3
BST_5
DH3
DH5
LX3
LX5
DL3
DL5
FB3
FB5
PRO#
REF
TON
ILIM5
ILIM3
SUS_ON
+3VALWPWROK
RUN_ON
PL11 CH-7U7.2A_S
PL10 CH-7U7.2A_S
PQ30 NN-SP8K10S_SO8_0
PQ29 NN-SP8K10S_SO8_0
PQ10 N-RSS090N03L02TB_SOIC8
PQ9 N-RSS090N03L02TB_SOIC8
PQ8 2N7002DW
L47 80L6_30_0805
PR69 4.7R
PR138 47_0402
PD11 RB717F
PC77 4.7UF_25V
PC149 X_10U_25V_1210
PC73 10U_25V_1210
PC74 .1U_50V
PC75 2200P
PC151 C4.7U10Y0805
PC155 1U_10V
PC152 1U_10V
PC70 2200P
PC69 .1U_50V
PC150 10U_25V_1210
PC154 .1U_50V
PR140 4.7/F_0603
PR139 4.7/F_0603
PC156 .1U_50V
PC78 C220U6.3POS-1
PC76 .1U
PR143 X_0_0402
PR142 0_0402
PR153 X_0
PR148 0_0402
PR141 2K/F
PR151 240K_0402
PC158 X_0.1U
PC153 10U_10V
PR144 100K
PC157 0.47U_10V
PC159 1U_25V
PR136 X_0_0402
PR137 0_0402
PC67 .1U
PC68
PC71 C220U6.3POS-1
10UF/10V_0805
R315 10K
R320 100K
PR68 100K
PR67 33K
PC72 0.1UF_0402
PR70 100K
PR66 100K
PR155 10K
PR154 10K
PR152 X_0_0402
PR146 X_0_0402
PR150 49.9K_0402
PR145 49.9K_0402
PR149 0_0402
PR147 0_0402
MICRO-STAR INT'L CO.,LTD.
+3VSUS/+5VSUS
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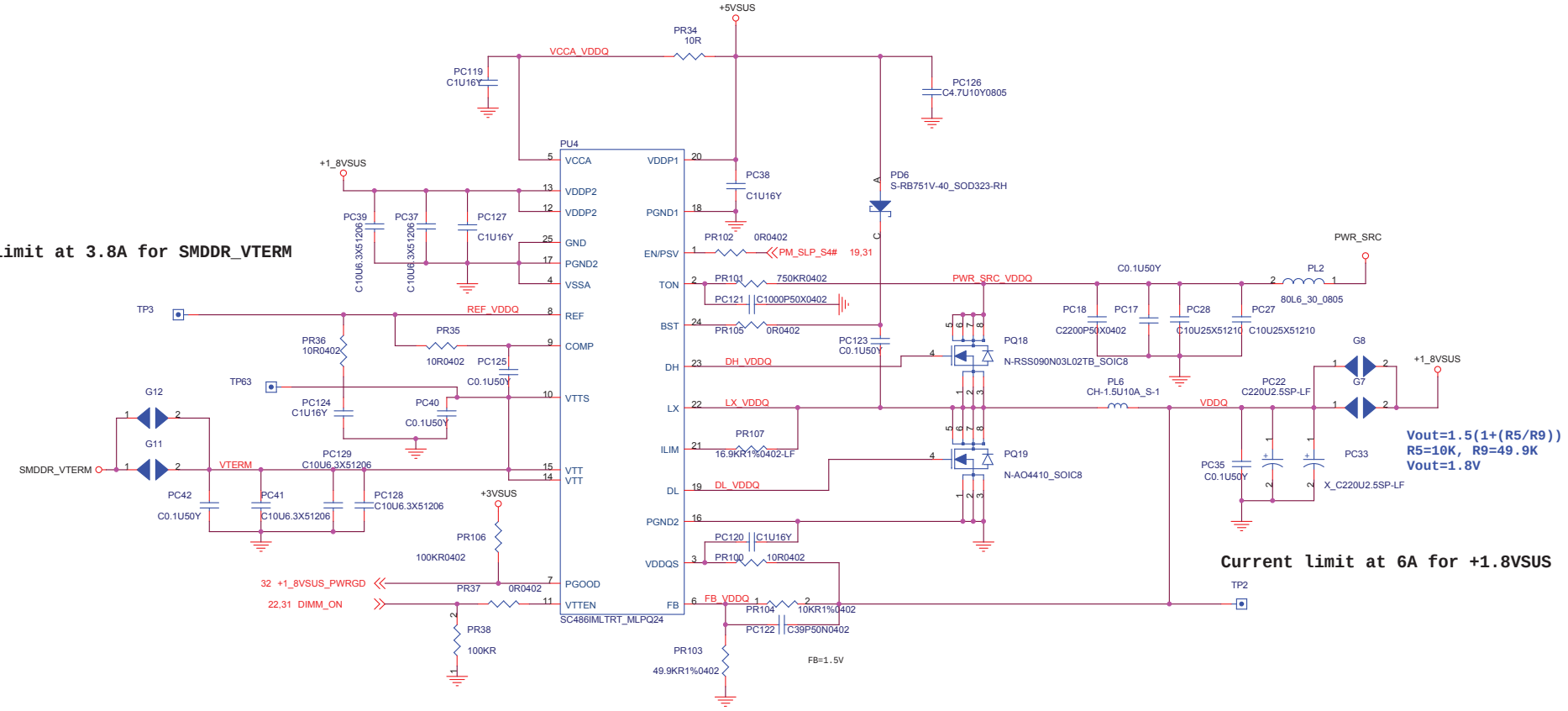

MICRO-STAR INT'L CO.,LTD.

Title: DDR2 RAM POWER, +2.5V

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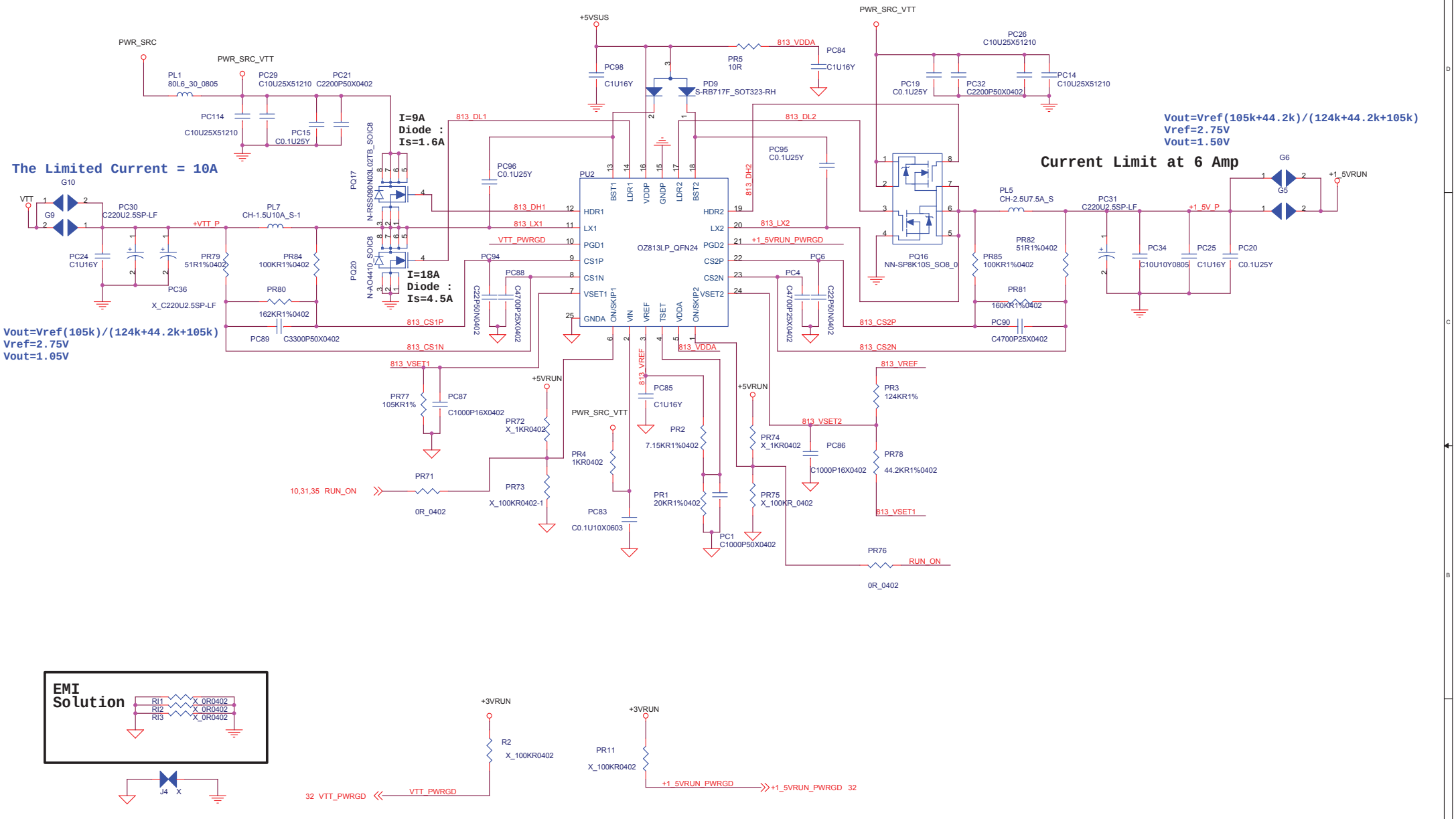

MICRO-STAR INT'L CO.,LTD.

Title: +1_5VRUN , VTT POWER

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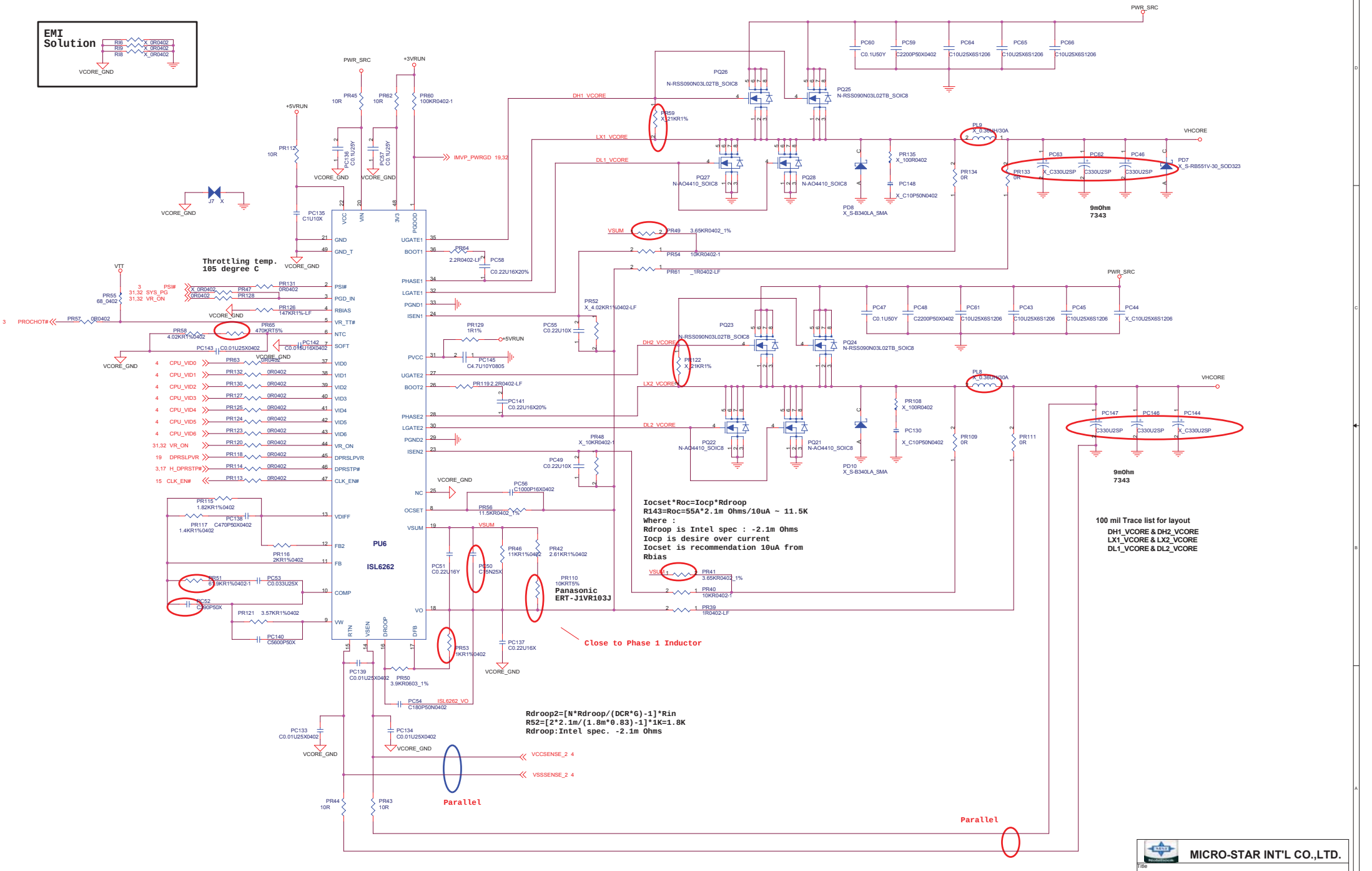
EMI Solution
RI6 X_0R0402
RI9 X_0R0402
RI8 X_0R0402
VCORE_GND
PWR_SRC
+3VRUN
+5VRUN
PU6
ISL6262
Throttling temp.
105 degree C
Iocset*Roc=Iocp*Rdroop
R143=Roc=55A*2.1m Ohms/10uA ~ 11.5K
Where :
Rdroop is Intel spec : -2.1m Ohms
Iocp is desire over current
Iocset is recommendation 10uA from Rbias
Panasonic ERT-J1VR103J
Close to Phase 1 Inductor
Rdroop2=[N*Rdroop/(DCR*G)-1]*Rin
R52=[2*2.1m/(1.8m*0.83)-1]*1K=1.8K
Rdroop:Intel spec. -2.1m Ohms
Parallel
Parallel
9mOhm
7343
9mOhm
7343
100 mil Trace list for layout
DH1_VCORE & DH2_VCORE
LX1_VCORE & LX2_VCORE
DL1_VCORE & DL2_VCORE
VHCORE
MICRO-STAR INT'L CO.,LTD.
CPU POWER
MS-1034
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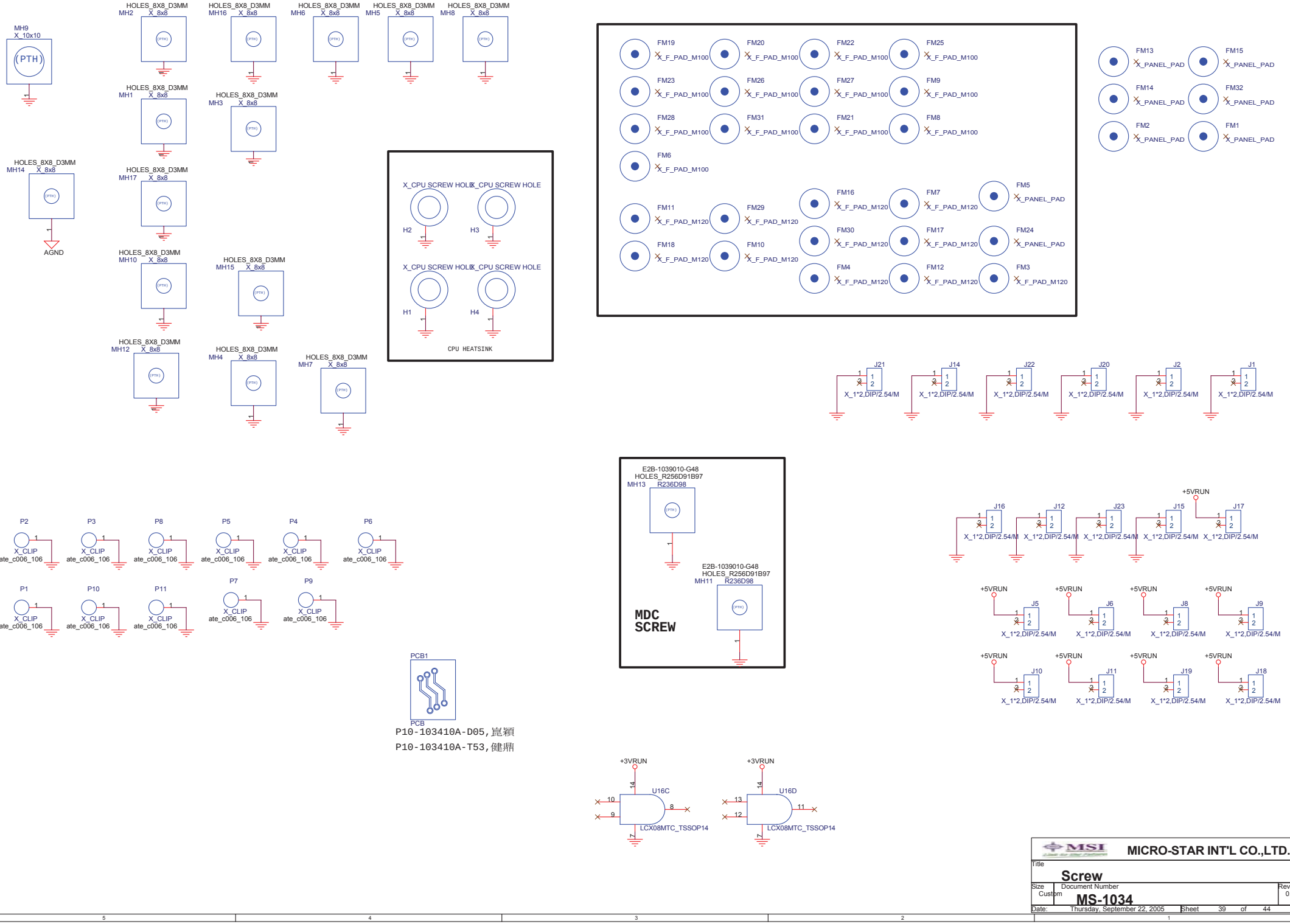
MH9
X_10x10
(PTH)
HOLES_8X8_D3MM
MH2 X_8x8
MH16 X_8x8
MH6 X_8x8
MH5 X_8x8
MH8 X_8x8
MH1 X_8x8
MH3 X_8x8
MH14 X_8x8
MH17 X_8x8
AGND
MH10 X_8x8
MH15 X_8x8
MH12 X_8x8
MH4 X_8x8
MH7 X_8x8
X_CPU SCREW HOLE
H2
H3
H1
H4
CPU HEATSINK
FM19 FM20 FM22 FM25
FM23 FM26 FM27 FM9
FM28 FM31 FM21 FM8
FM6
X_F_PAD_M100
FM11 FM29 FM16 FM7 FM5
FM18 FM10 FM30 FM17 FM24
FM4 FM12 FM3
X_F_PAD_M120
X_PANEL_PAD
FM13 FM15
FM14 FM32
FM2 FM1
J21 J14 J22 J20 J2 J1
X_1*2,DIP/2.54/M
E2B-1039010-G48
HOLES_R256D91B97
MH13 R236D98
MH11 R236D98
MDC
SCREW
J16 J12 J23 J15 J17
+5VRUN
J5 J6 J8 J9
J10 J11 J19 J18
P2 P3 P8 P5 P4 P6
P1 P10 P11 P7 P9
X_CLIP
ate_c006_106
PCB1
PCB
P10-103410A-D05,崑穎
P10-103410A-T53,健鼎
+3VRUN
U16C
U16D
LCX08MTC_TSSOP14
MICRO-STAR INT'L CO.,LTD.
Title
Screw
Size
Custom
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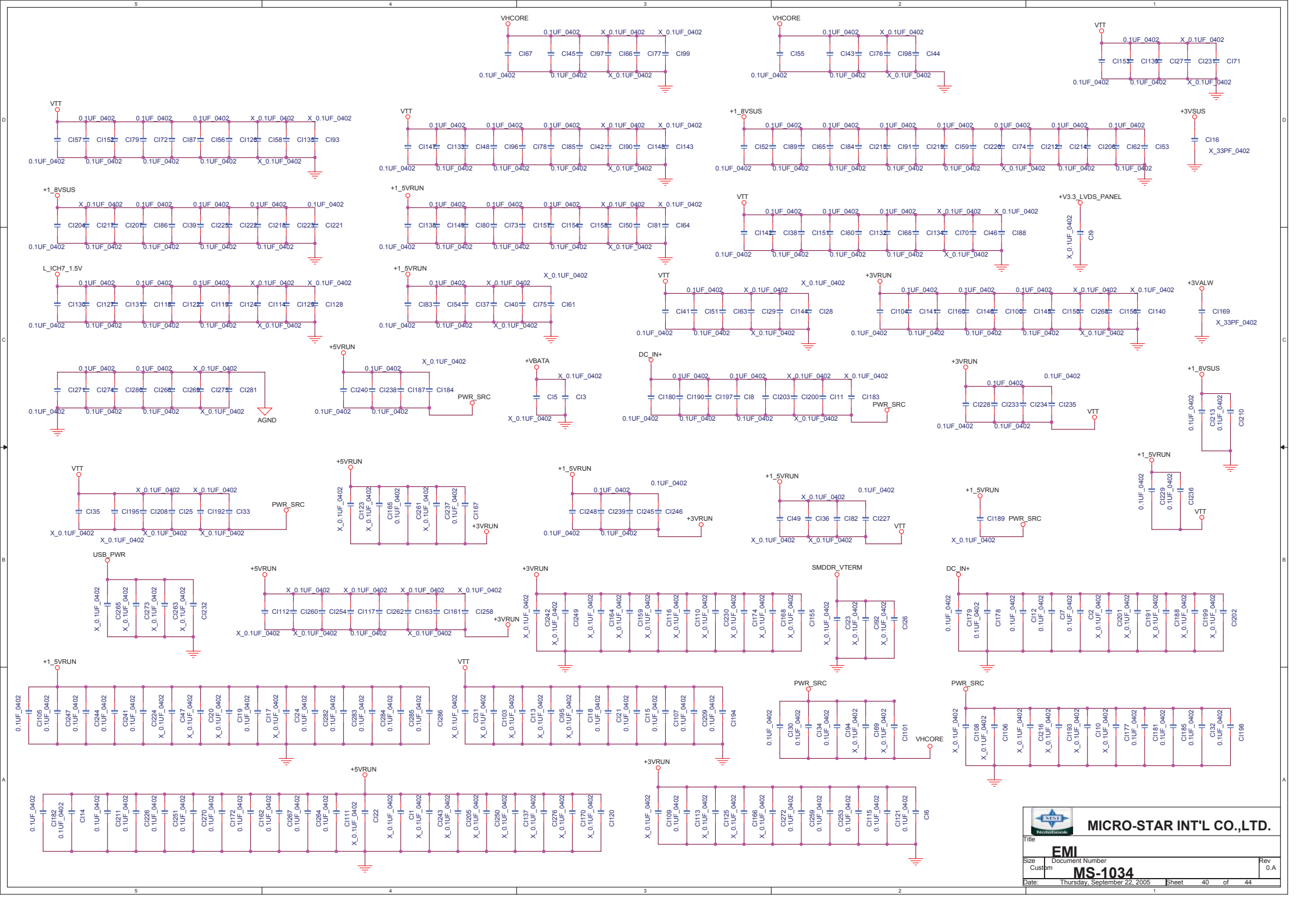
VHCORE
VTT
+1_8VSUS
+3VSUS
+1_5VRUN
+V3.3_LVDS_PANEL
L_ICH7_1.5V
+3VRUN
+3VALW
+5VRUN
+VBATA
DC_IN+
AGND
PWR_SRC
USB_PWR
SMDDR_VTERM
MICRO-STAR INT'L CO.,LTD.
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EMI
Size
Custom
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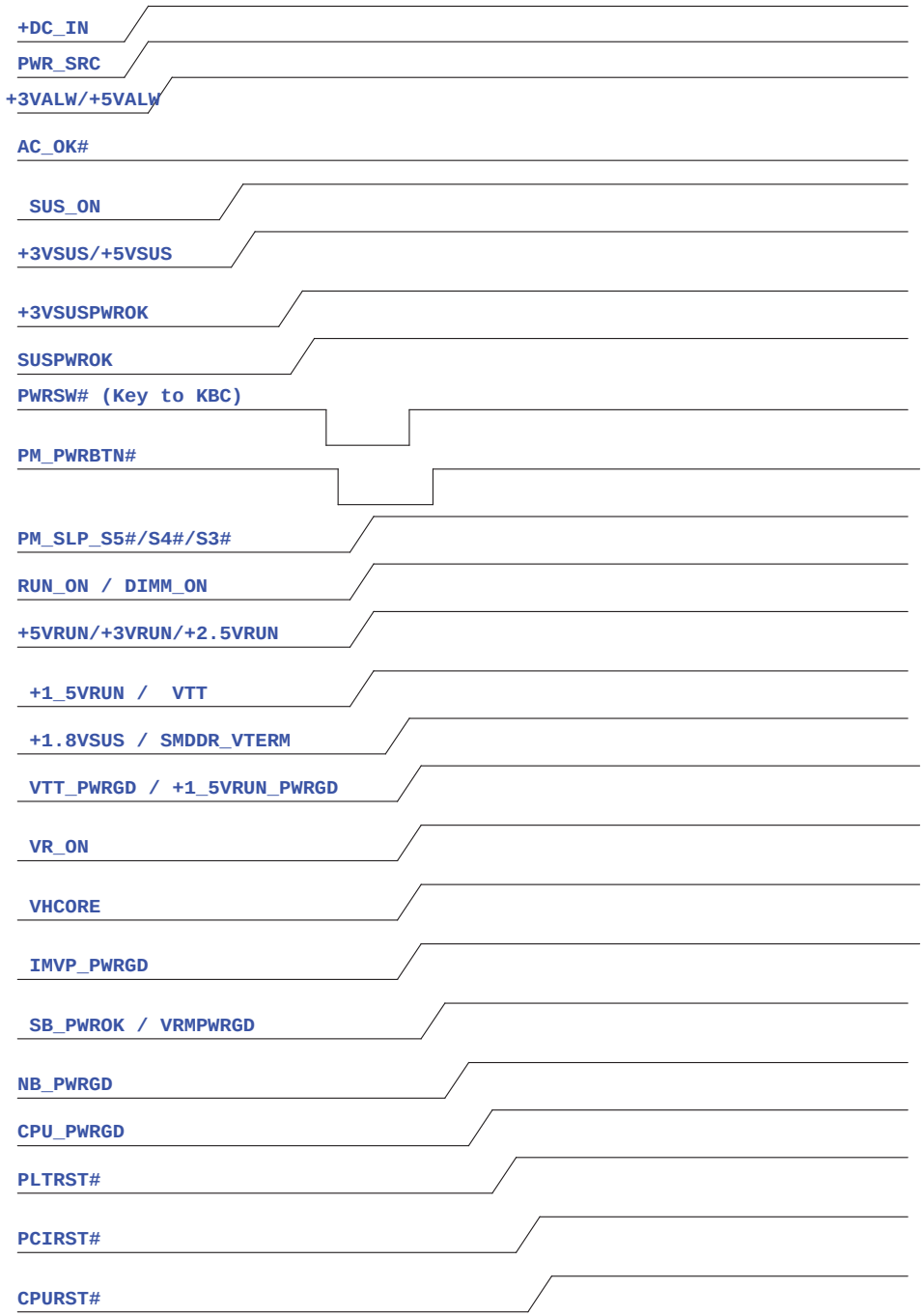
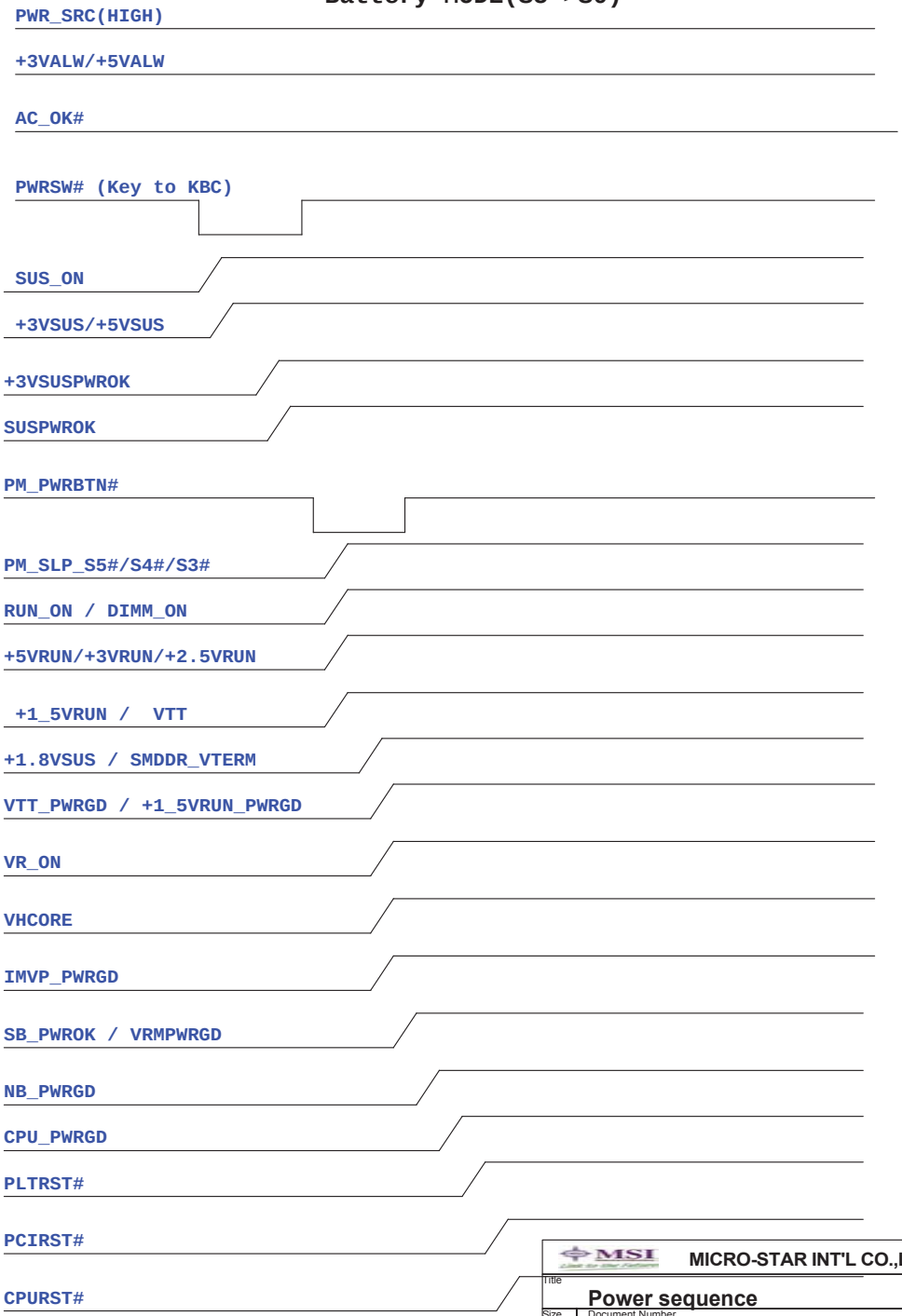
AC MODE(S5->S0)



Battery MODE(S5->S0)



MICRO-STAR INT'L CO.,LTD.

Title: Power sequence

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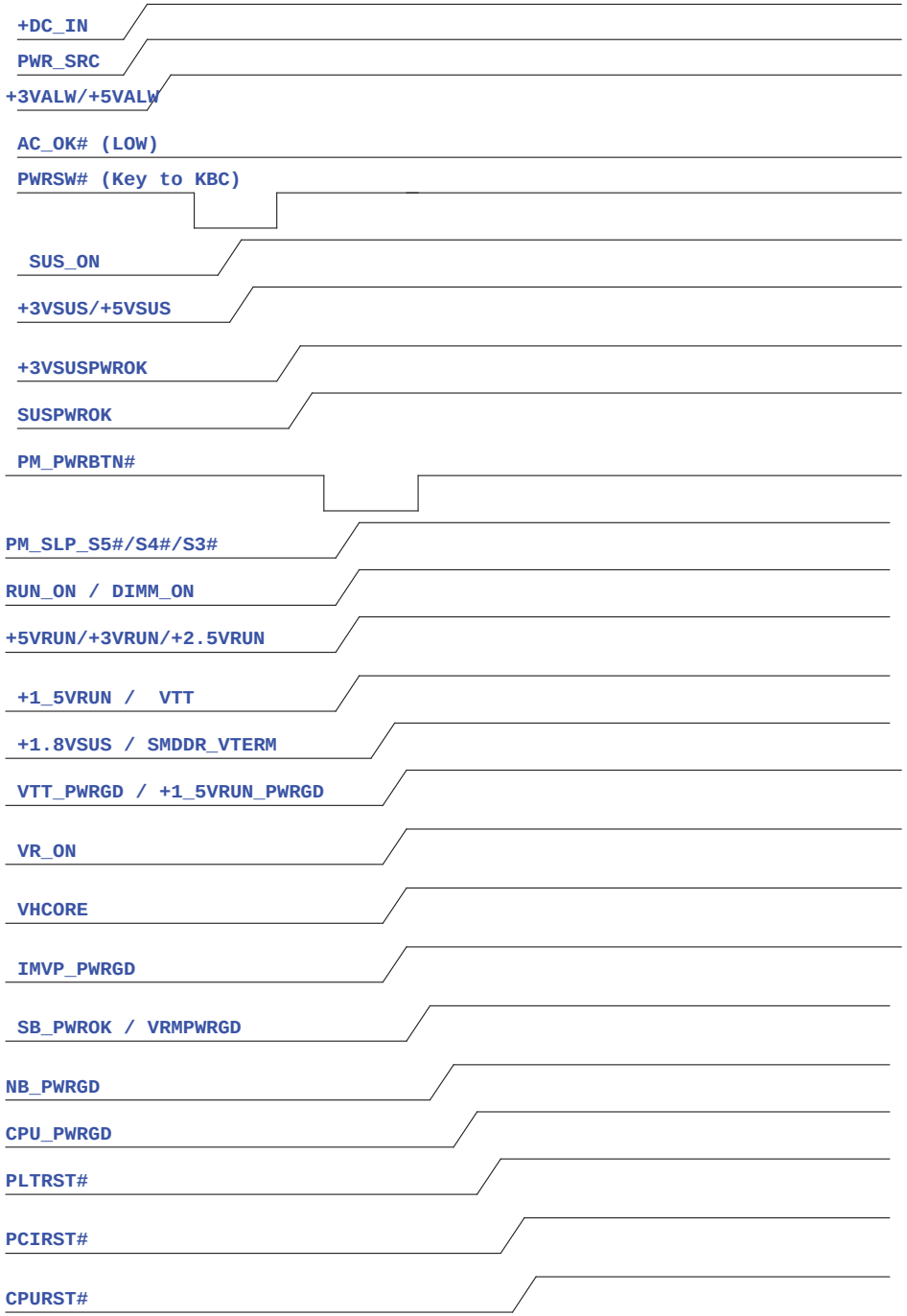
POWER UP (G3->S0)



MICRO-STAR INT'L CO.,LTD.

Title: Power sequence

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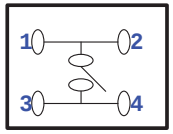
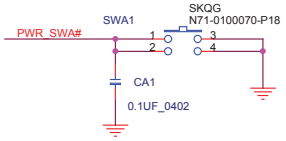
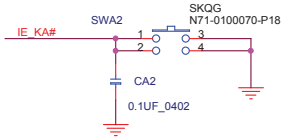
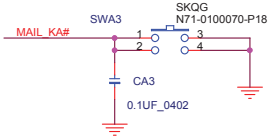
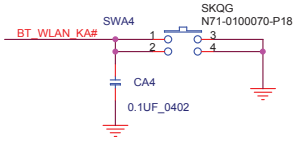
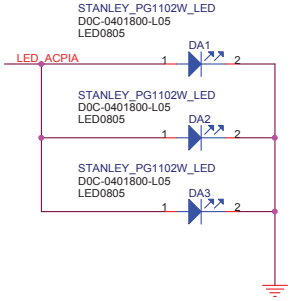


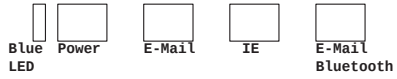


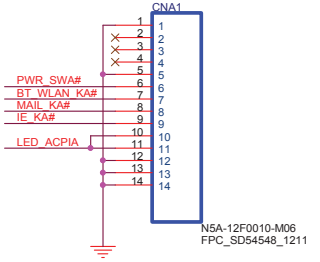




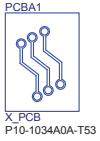


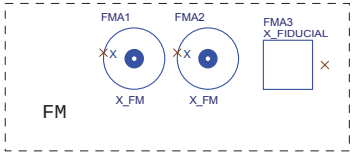


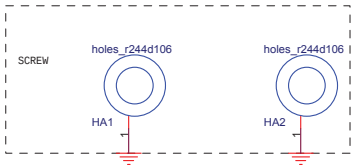


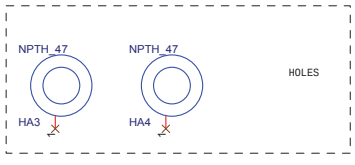


need apply!









Title	Launch Board for MS1034		
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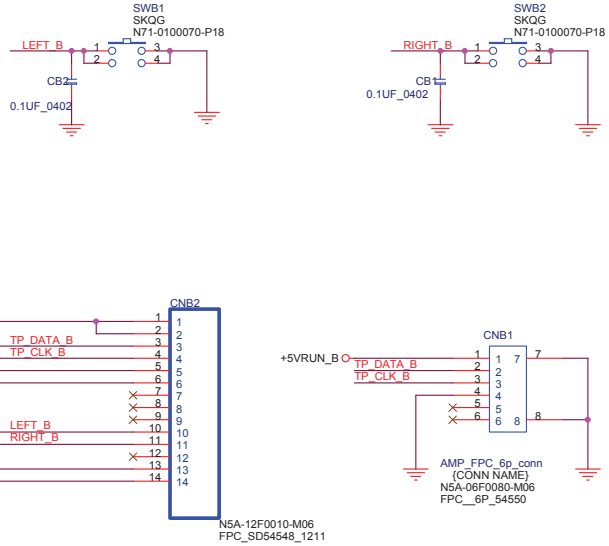

Title	TP Board	
Size: Custom	Document Number: MS-1034B	Rev: 110
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