MS-7398

Version 0A

CPU:

- Intel Prescott (L2=2MB) - 3.4G & Above
- Intel Cendar Mill (65nm) - 3.73G & Above
- Intel Smithfield (90nm Dual core)
- Intel Conroe (65W Dual core)

System Chipset:

- Intel Lakeport - MCH (North Bridge)
- Intel ICH7R (South Bridge)

On Board Chipset:

- BIOS -- FWH EEPROM
- HD -- ALC888
- LPC Super I/O -- F71882FG
- LAN-- REALTEK RTL8111B/C Co-lay RTL8101E
- CLOCK -- ICS954519

Main Memory:

- DDR II *4 (Max 2GB)

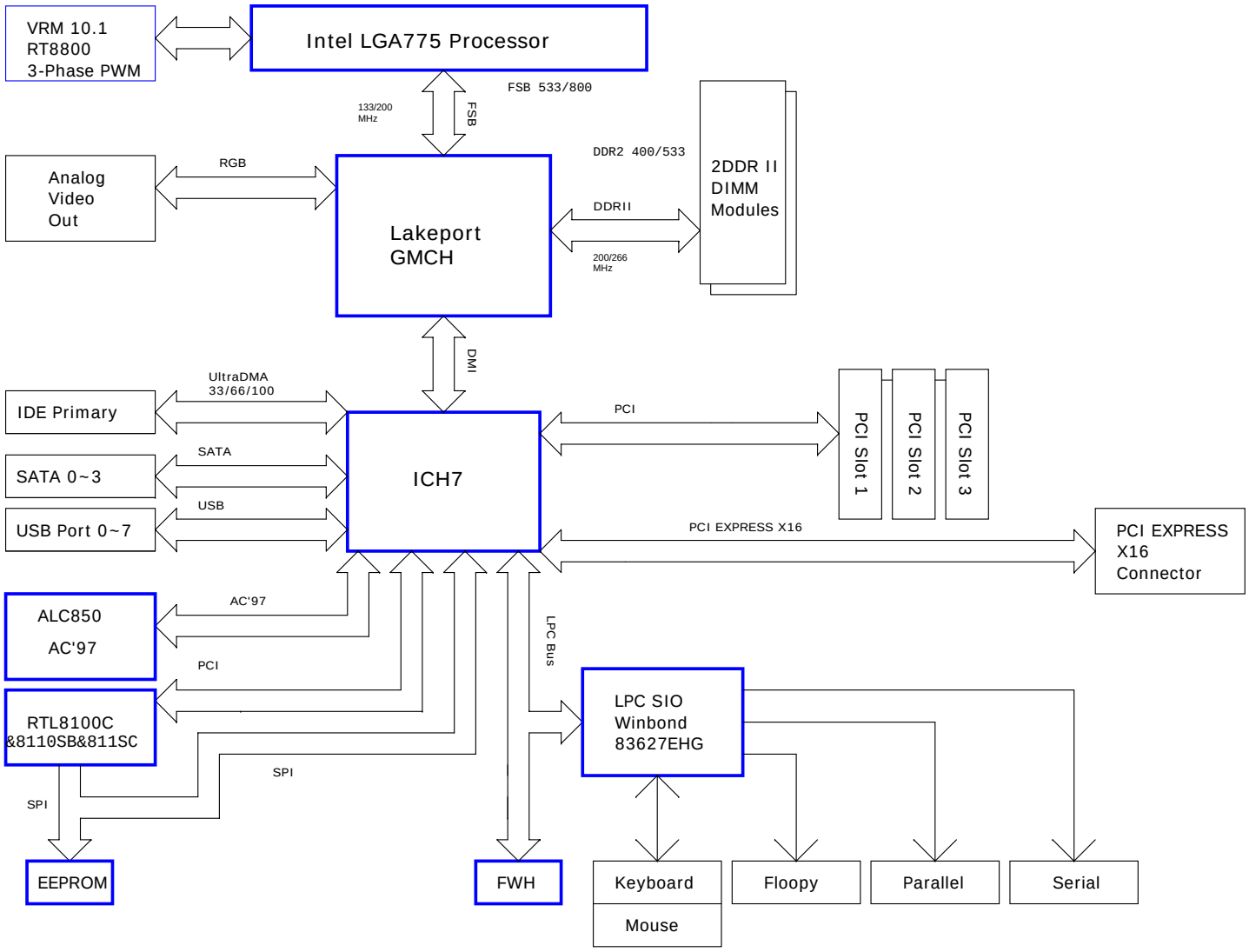
Expansion Slots:

- PCI2.3 SLOT * 3
- PCI EXPRESS X16 SLOT

RICH PWM:

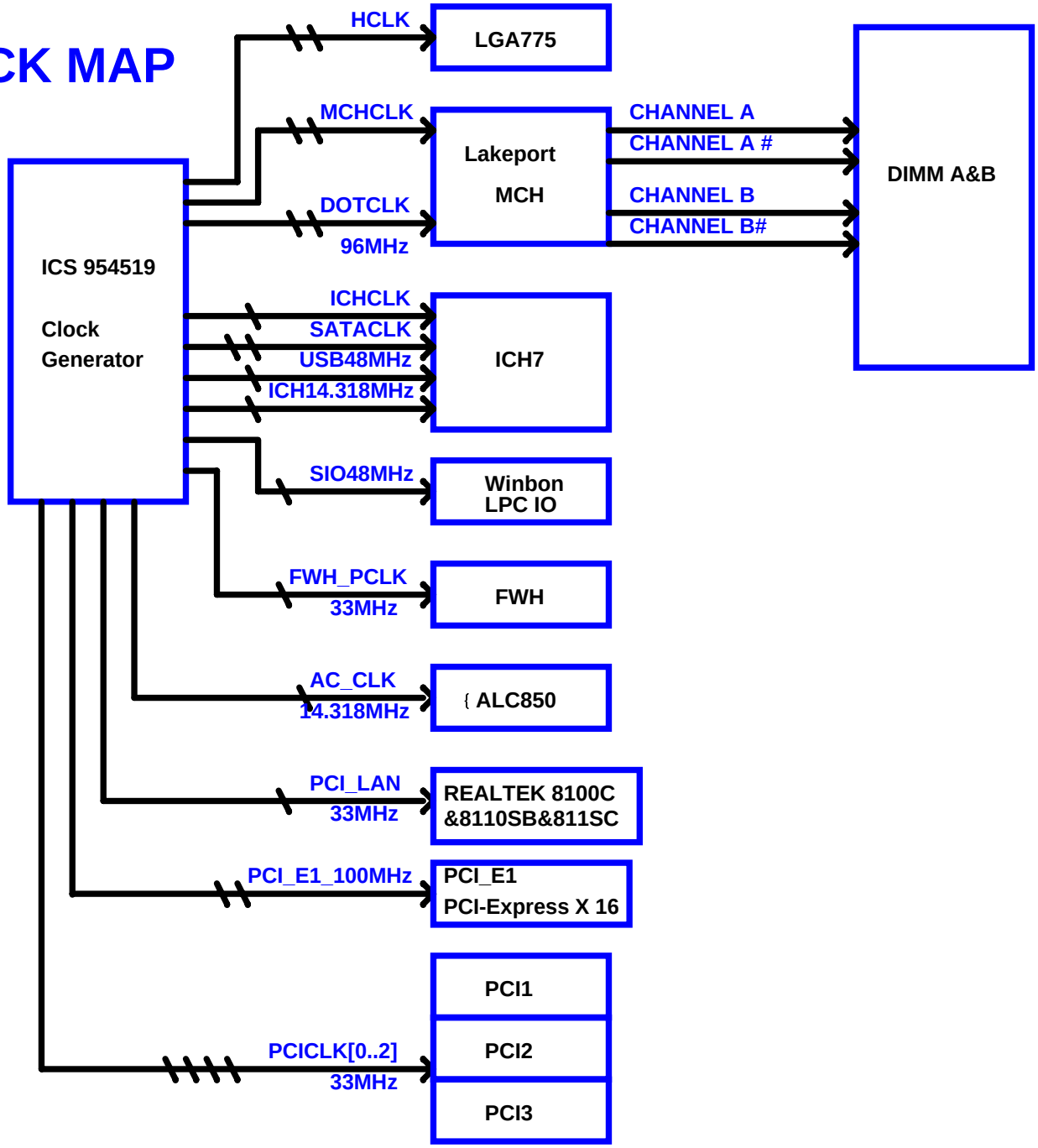
- Controller: 3 PHASES

Block Diagram



MSI	MICRO-STAR INT'L CO.,LTD	
	MS-7398	
Size: Custom	Document Description: BLOCK DIAGRAM	Rev: 0A
Date: Monday, July 09, 2007	Sheet 2 of 32	

CLOCK MAP



MICRO-STAR INT'L CO.,LTD		
MS-7398		
Size: Custom	Document Description: CLOCK MAP	Rev: 0A
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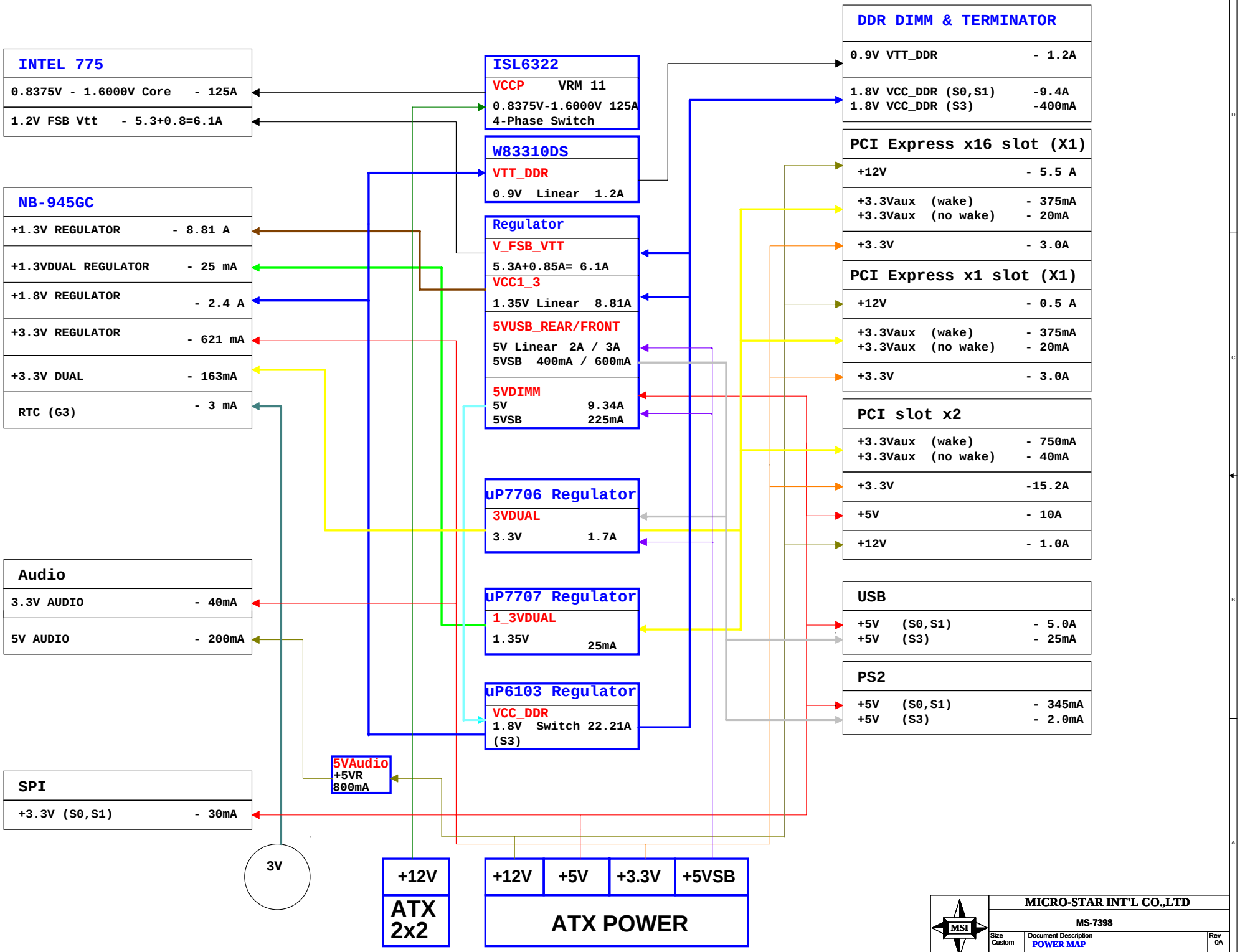

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Size: Custom | Document Description: POWER MAP | Rev: 0A

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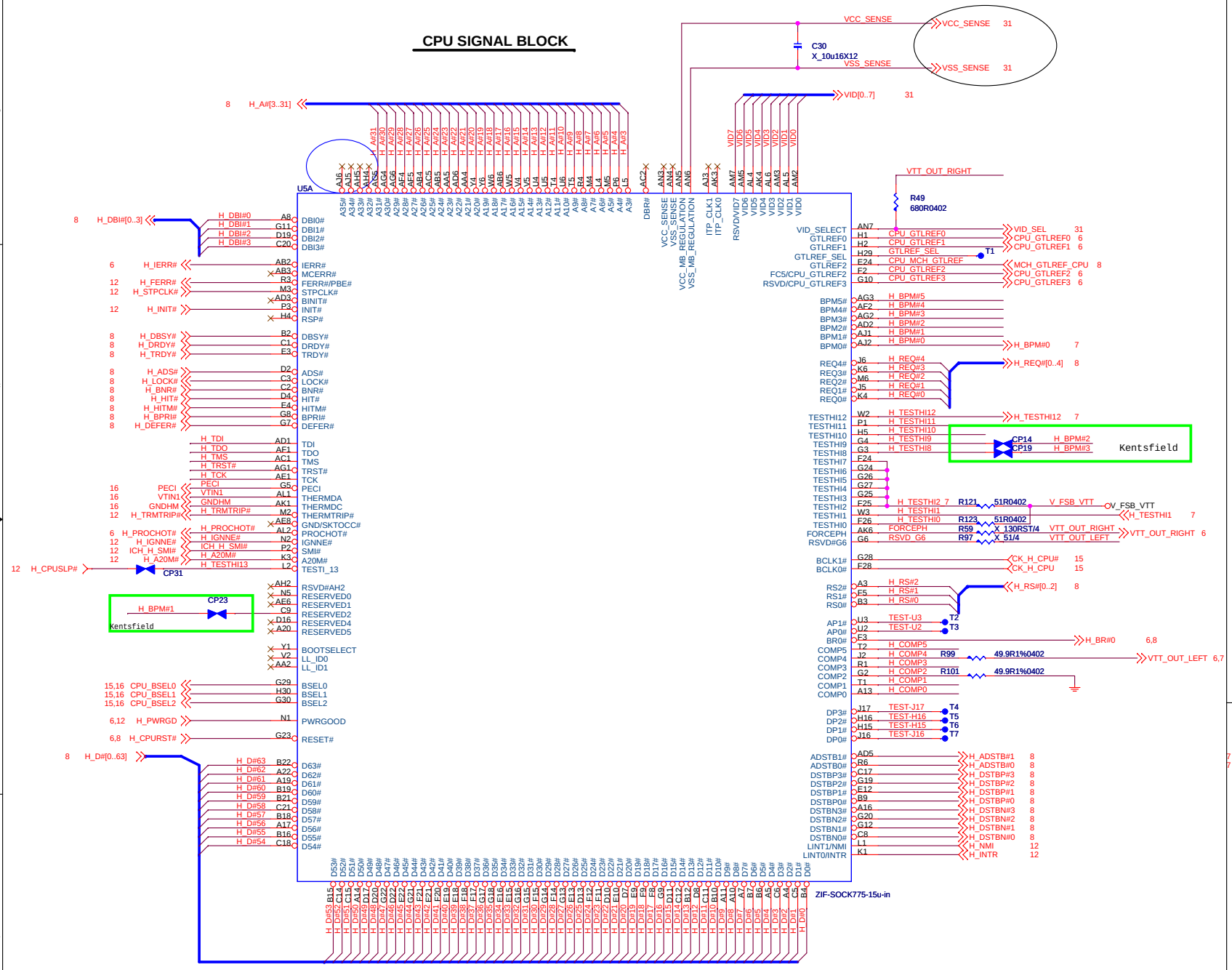
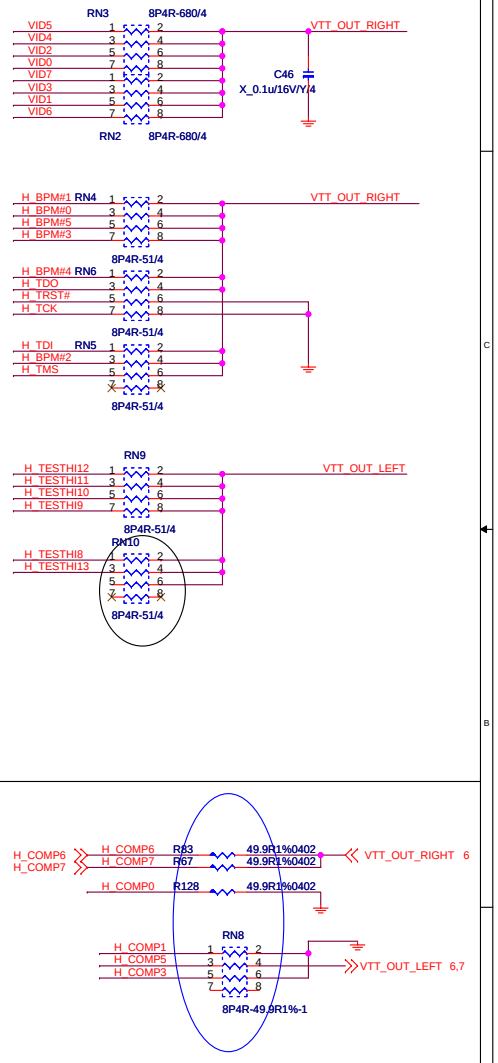
CPU SIGNAL BLOCK



PULL HIGHT PULL DOWN



MICRO-STAR INT'L CO.,LTD	
MS-7398	
Size: Custom	Document Description: LGA775 - Signal
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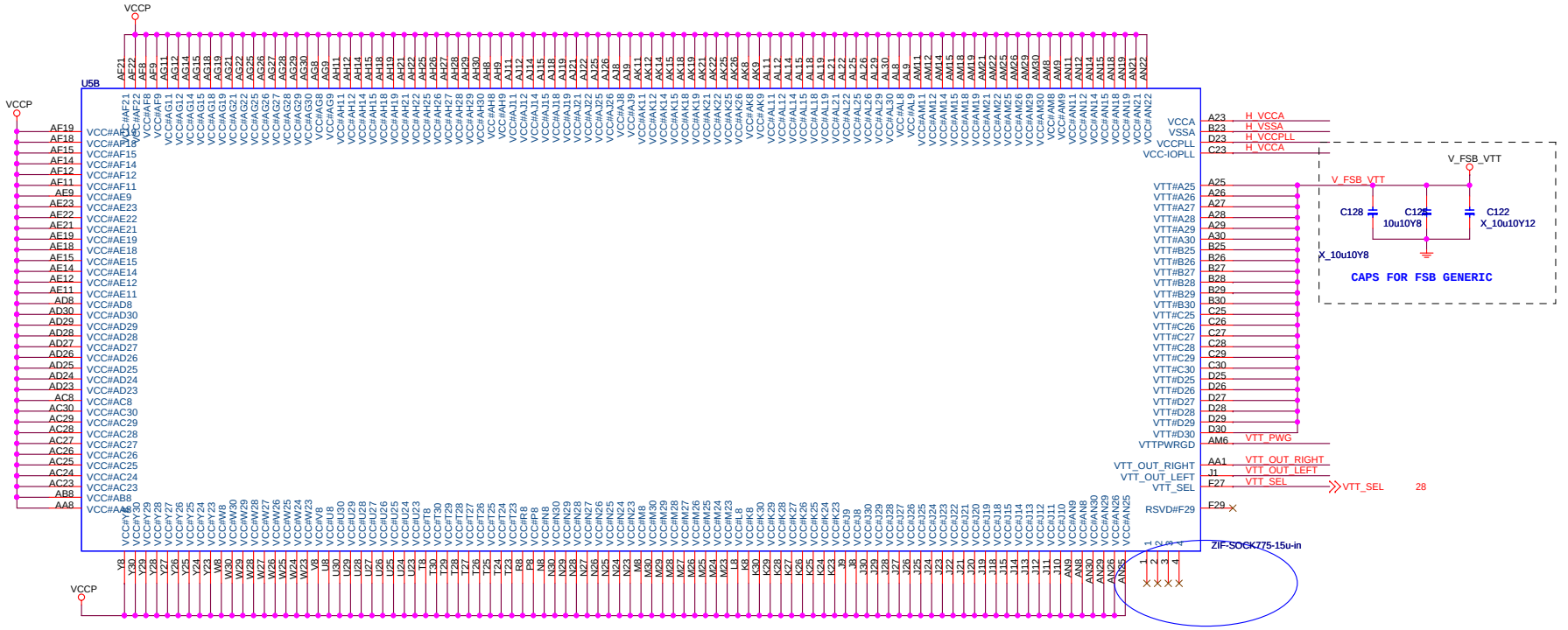
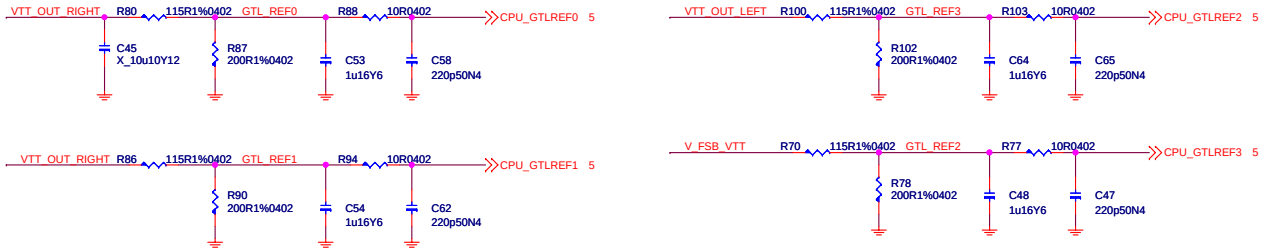
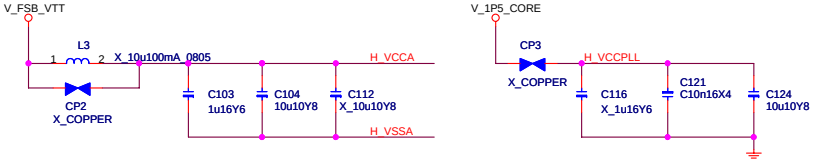


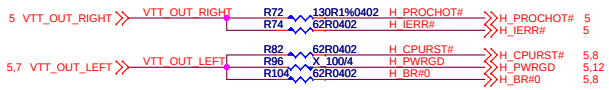
*GTLREF VOLTAGE SHOULD BE
0.67 * VTT = 0.8V (At VTT=1.2V)



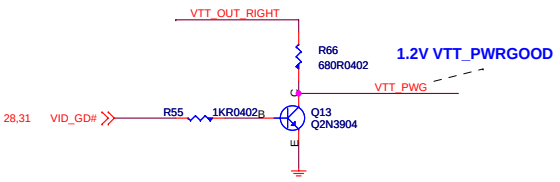
*PLACE COMPONENTS AS CLOSE AS POSSIBLE TO PROCESSOR SOCKET
*TRACE WIDTH TO CAPS MUST BE NO SMALLER THAN 12MILS



PLACE AT CPU END OF ROUTE



VTT_PWRGOOD



VTT_PWG SPEC :
High > 0.9V
Low < 0.3V
Trise < 150ns

MICRO-STAR INT'L CO.,LTD		
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Size: Custom	Document Description: LGA775 - Power	Rev: 0A
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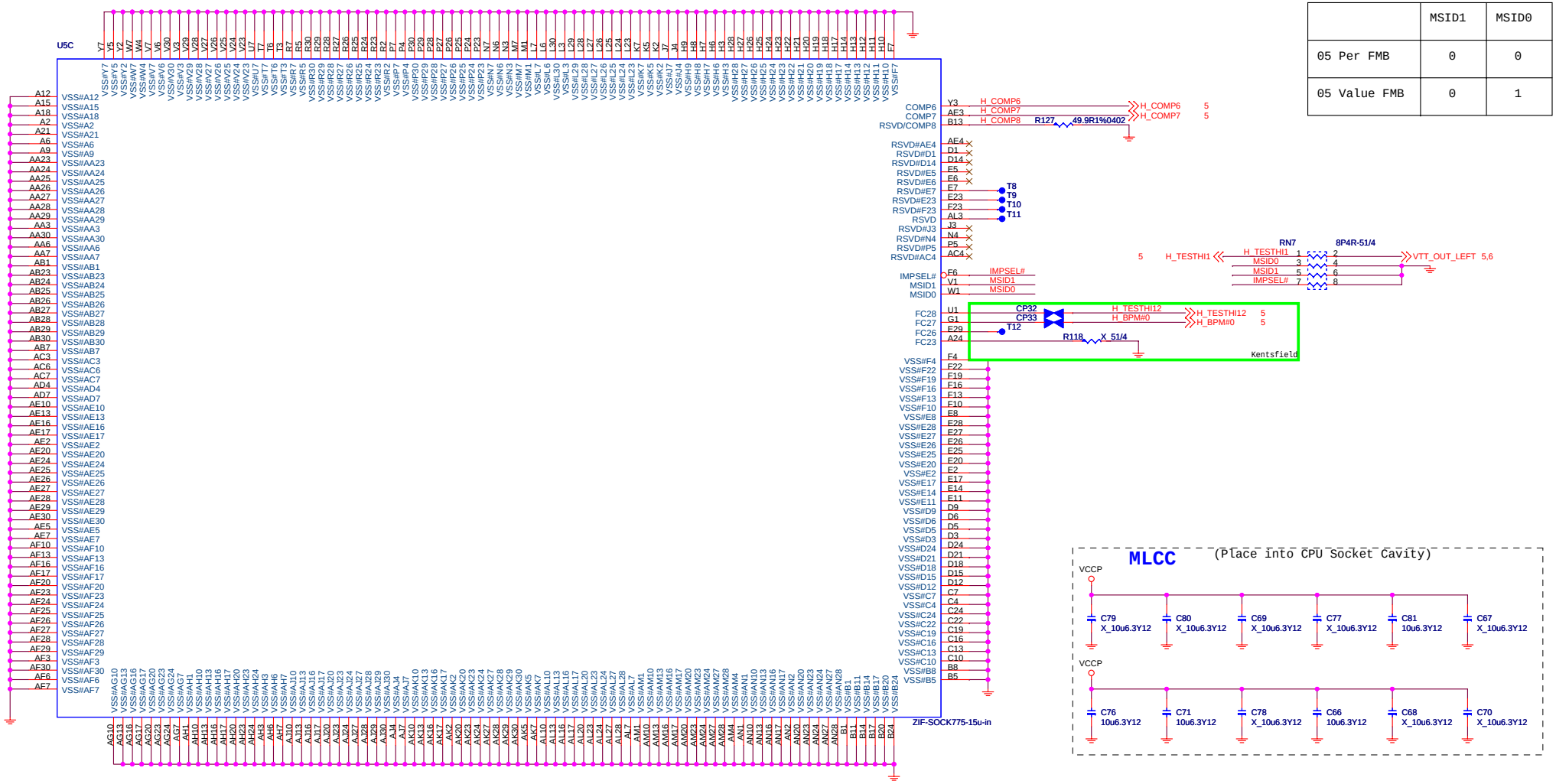

	MSID1	MSID0
05 Per FMB	0	0
05 Value FMB	0	1

MICRO-STAR INT'L CO.,LTD

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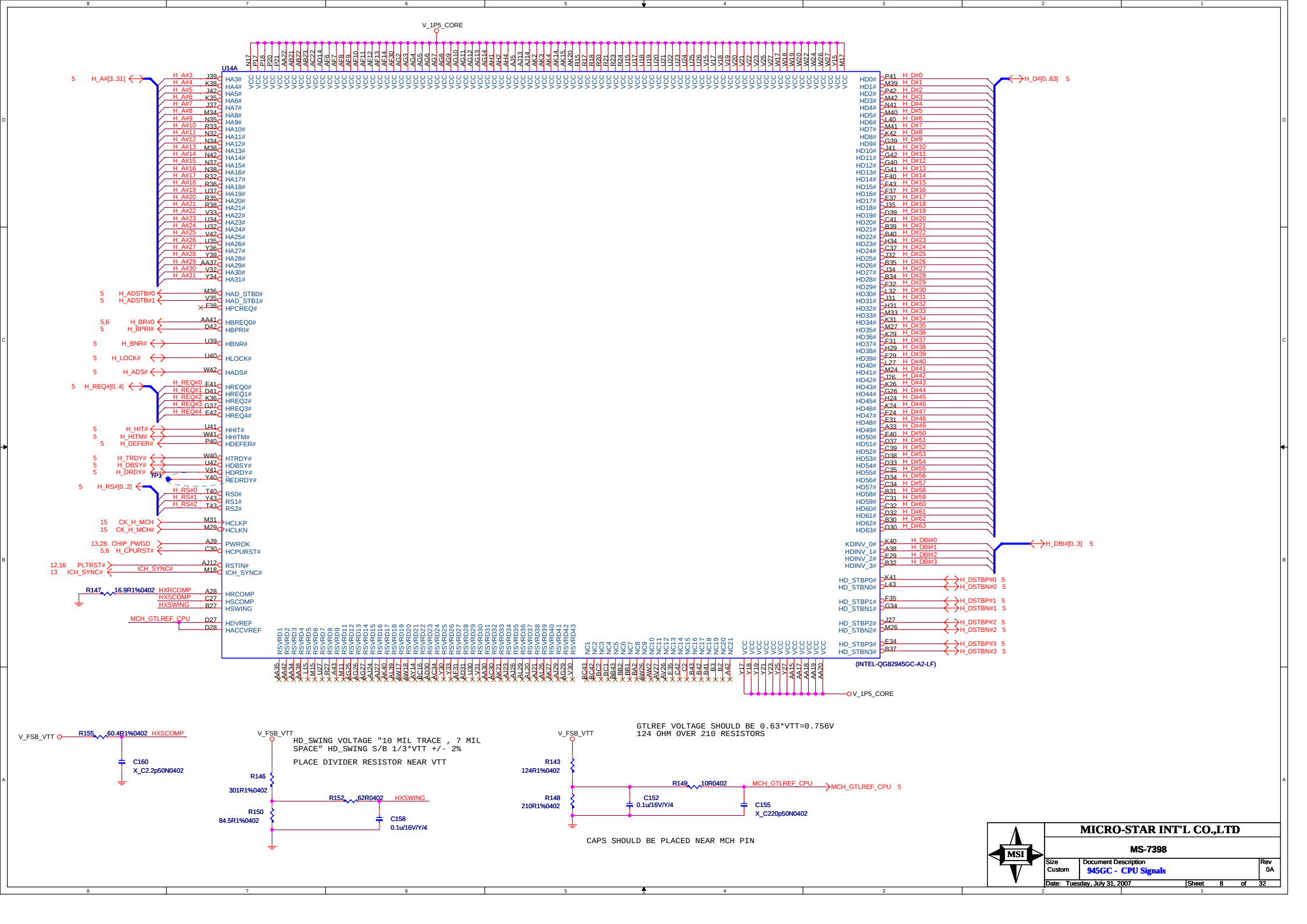
V_1P5_CORE
U14A
H_A#[3..31]
H_ADSTB#0
H_ADSTB#1
H_BR#0
H_BPRI#
H_BNR#
H_LOCK#
H_ADS#
H_REQ#[0..4]
H_HIT#
H_HITM#
H_DEFER#
H_TRDY#
H_DBSY#
H_DRDY#
TP1
H_RS#[0..2]
CK_H_MCH
CK_H_MCH#
CHIP_PWGD
H_CPURST#
PLTRST#
ICH_SYNC#
R147 16.9R1%0402
HXRCOMP
HXSCOMP
HXSWING
MCH_GTLREF_CPU
H_D#[0..63]
H_DBI#[0..3]
H_DSTBP#0
H_DSTBN#0
H_DSTBP#1
H_DSTBN#1
H_DSTBP#2
H_DSTBN#2
H_DSTBP#3
H_DSTBN#3
(INTEL-QG82945GC-A2-LF)
V_1P5_CORE
V_FSB_VTT
R155 60.4R1%0402 HXSCOMP
C160
X_C2.2p50N0402
HD_SWING VOLTAGE "10 MIL TRACE , 7 MIL SPACE" HD_SWING S/B 1/3*VTT +/- 2%
PLACE DIVIDER RESISTOR NEAR VTT
R146
301R1%0402
R150
84.5R1%0402
R152 62R0402 HXSWING
C158
0.1u/16V/Y/4
GTLREF VOLTAGE SHOULD BE 0.63*VTT=0.756V
124 OHM OVER 210 RESISTORS
R143
124R1%0402
R148
210R1%0402
R149 10R0402 MCH_GTLREF_CPU
C152
0.1u/16V/Y/4
C155
X_C220p50N0402
CAPS SHOULD BE PLACED NEAR MCH PIN
MICRO-STAR INT'L CO.,LTD
MS-7398
Size Custom
Document Description
945GC - CPU Signals
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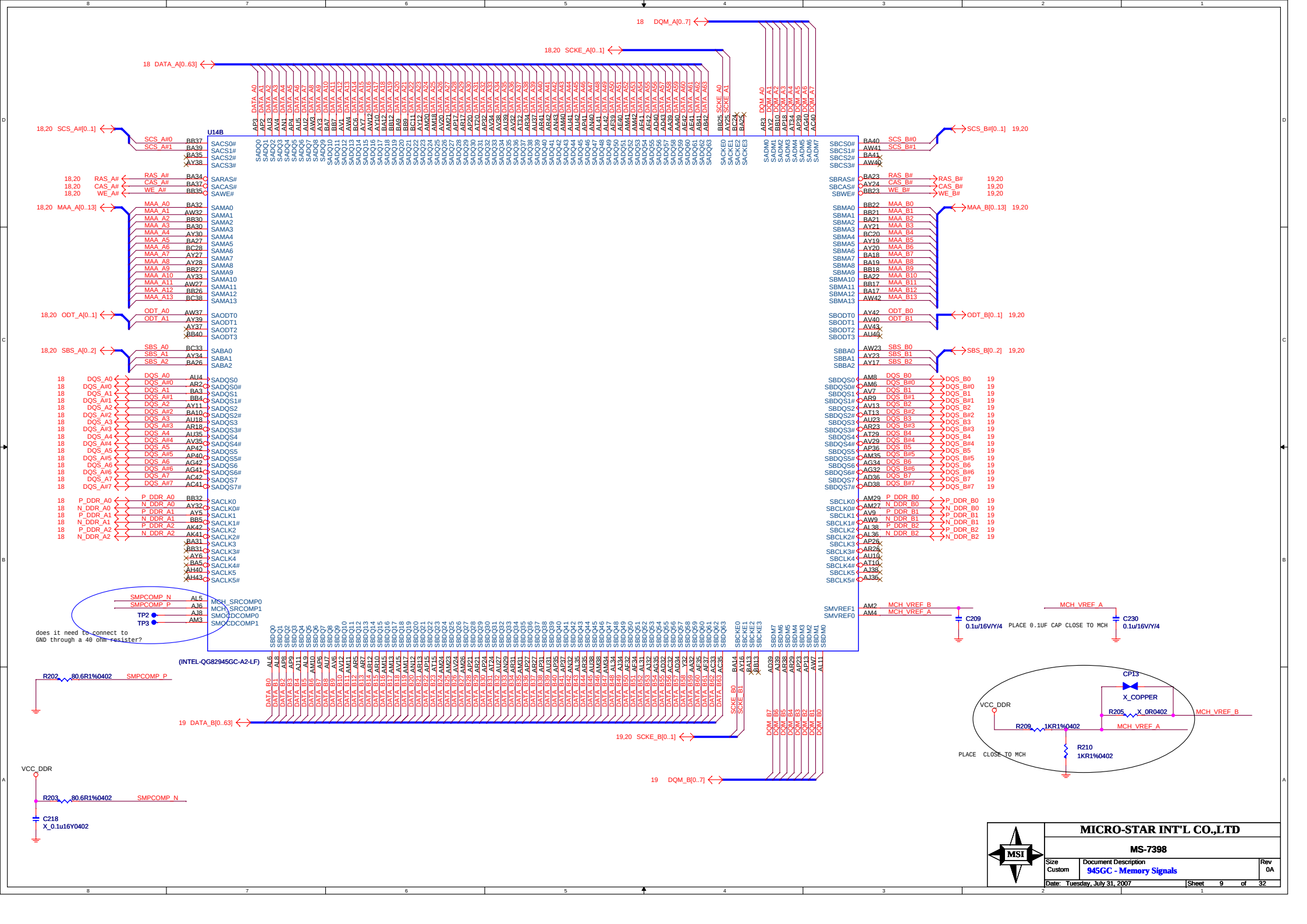
U14B
(INTEL-QG82945GC-A2-LF)
does it need to connect to
GND through a 40 ohm resister?
R202 80.6R1%0402
R203 80.6R1%0402
C218
X_0.1u16Y0402
C209
0.1u/16V/Y/4
C230
0.1u/16V/Y/4
PLACE 0.1UF CAP CLOSE TO MCH
CP13
X_COPPER
R205 X_0R0402
R209 1KR1%0402
R210
1KR1%0402
PLACE CLOSE TO MCH
MICRO-STAR INT'L CO.,LTD
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945GC - Memory Signals
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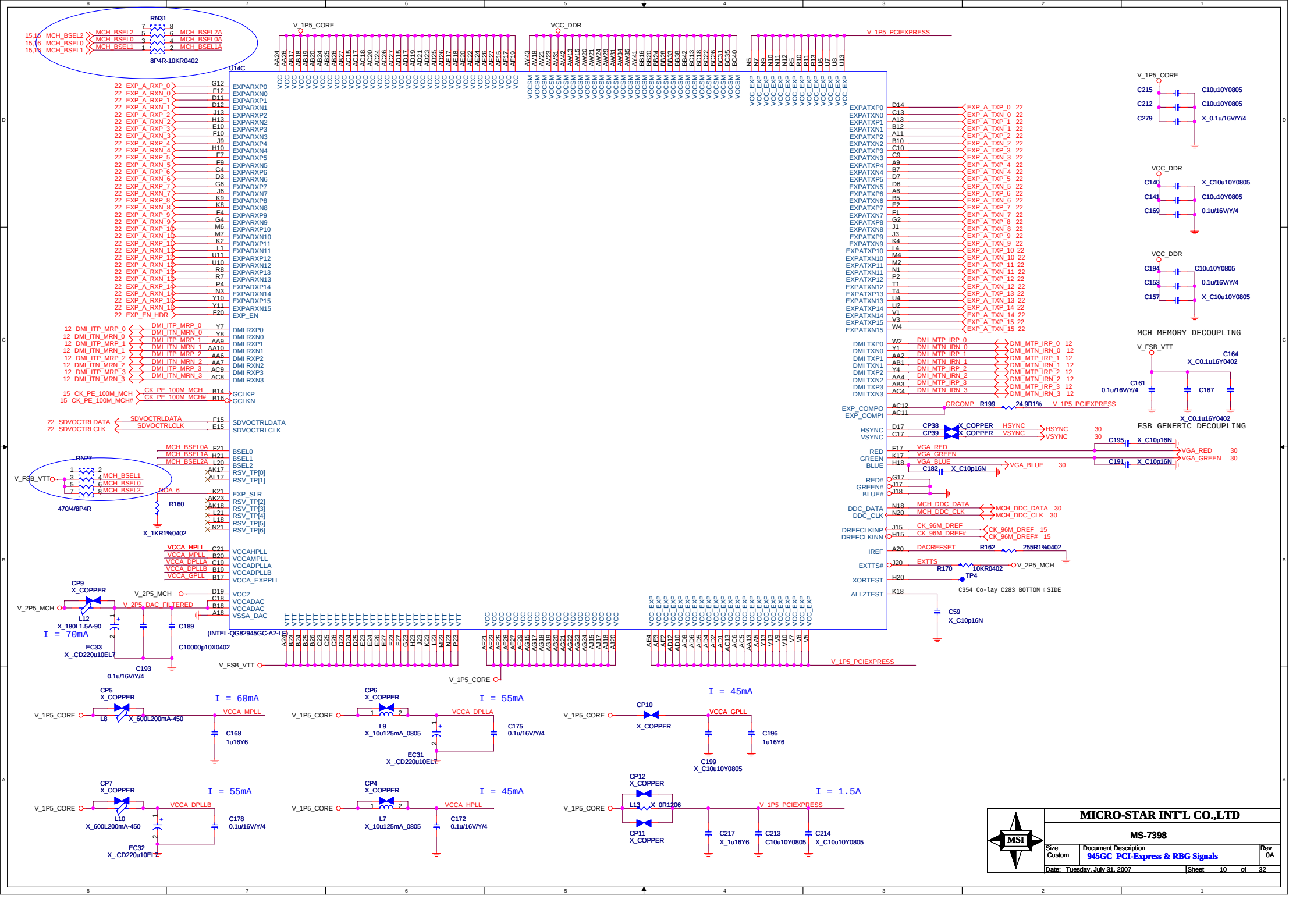
RN31
8P4R-10KR0402
U14C
(INTEL-QG82945GC-A2-LD)
RN27
470/4/8P4R
R160
X_1KR1%0402
CP9
X_COPPER
L12
X_180L1.5A-90
EC33
X_CD220u10EL7
C189
C10000p10X0402
C193
0.1u/16V/Y/4
I = 70mA
CP5
X_COPPER
L8
X_600L200mA-450
C168
1u16Y6
I = 60mA
CP6
X_COPPER
L9
X_10u125mA_0805
EC31
X_CD220u10EL7
C175
0.1u/16V/Y/4
I = 55mA
CP10
X_COPPER
C199
X_C10u10Y0805
C196
1u16Y6
I = 45mA
CP7
X_COPPER
L10
X_600L200mA-450
EC32
X_CD220u10EL7
C178
0.1u/16V/Y/4
I = 55mA
CP4
X_COPPER
L7
X_10u125mA_0805
C172
0.1u/16V/Y/4
I = 45mA
CP12
X_COPPER
L13
X_0R1206
CP11
X_COPPER
C217
X_1u16Y6
C213
C10u10Y0805
C214
X_C10u10Y0805
I = 1.5A
C59
X_C10p16N
C182
X_C10p16N
C195
X_C10p16N
C191
X_C10p16N
R199
24.9R1%
R162
255R1%0402
R170
10KR0402
TP4
C354 Co-lay C283 BOTTOM SIDE
C215
C212
C279
X_0.1u/16V/Y/4
C140
C141
C169
0.1u/16V/Y/4
C194
C153
C157
C10u10Y0805
C164
X_C0.1u16Y0402
C161
0.1u/16V/Y/4
C167
MCH MEMORY DECOUPLING
FSB GENERIC DECOUPLING
MICRO-STAR INT'L CO.,LTD
MS-7398
Size Custom
Document Description 945GC PCI-Express & RBG Signals
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Size: Custom	Document Description: Intel .945GC - GND	Rev: 0A
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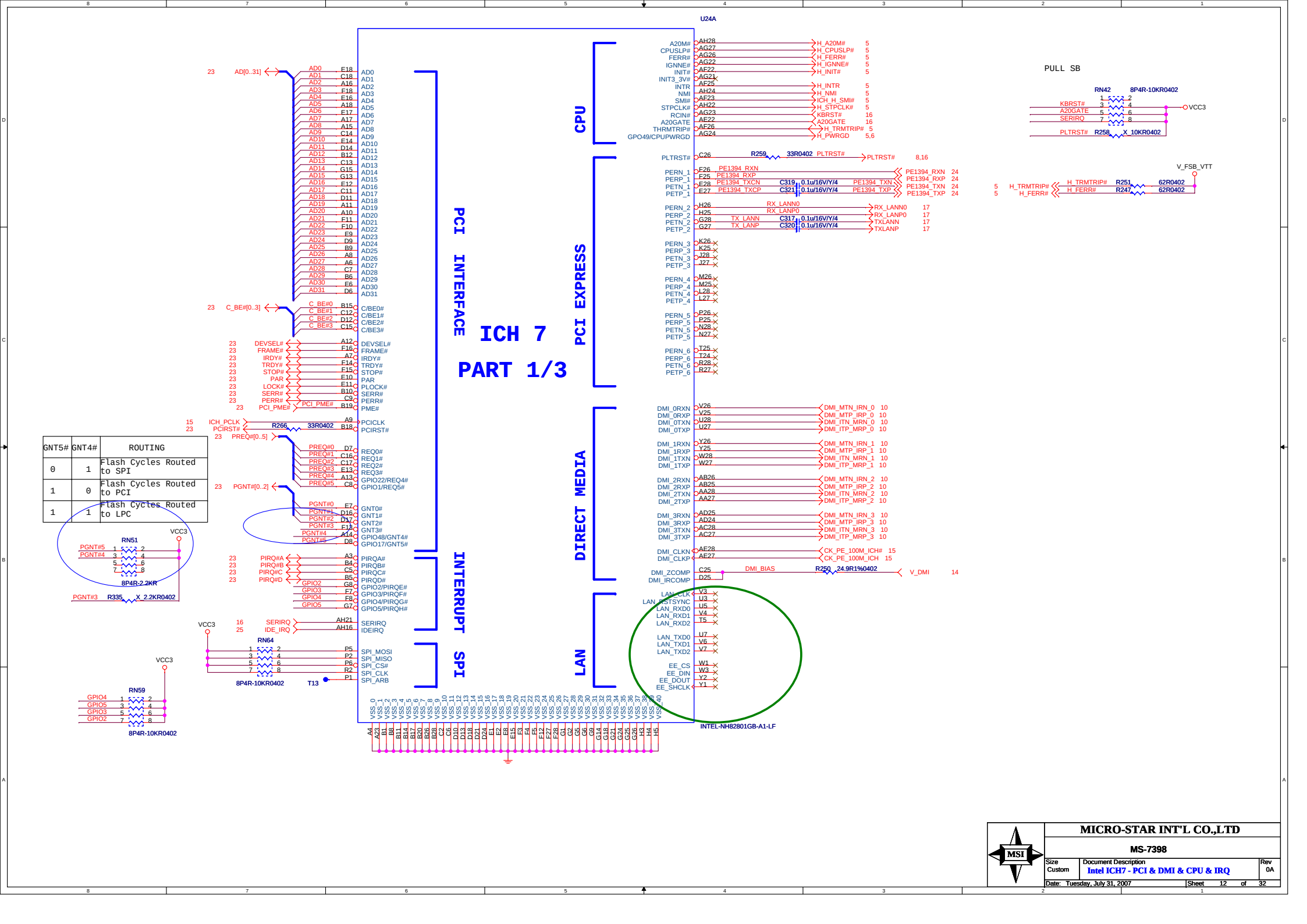
U24A
ICH 7
PART 1/3
PCI INTERFACE
PCI EXPRESS
DIRECT MEDIA
INTERRUPT
SPI
LAN
CPU
INTEL-NH82801GB-A1-LF
PULL SB
RN42 8P4R-10KR0402
KBRST#
A20GATE
SERIRQ
PLTRST#
R258 X_10KR0402
VCC3
V_FSB_VTT
H_TRMTRIP# R251 62R0402
H_FERR# R247 62R0402
PLTRST# R259 33R0402
RX_LANN0
RX_LANP0
TX_LANN C317 0.1u/16V/Y/4
TX_LANP C320 0.1u/16V/Y/4
DMI_BIAS R250 24.9R1%0402 V_DMI
AD[0..31]
C_BE#[0..3]
DEVSEL# FRAME# IRDY# TRDY# STOP# PAR LOCK# SERR# PERR# PME#
ICH_PCLK PCIRST# R266 33R0402
PREQ#[0..5]
PGNT#[0..2]
PIRQ#A PIRQ#B PIRQ#C PIRQ#D
SERIRQ IDE_IRQ
SPI_MOSI SPI_MISO SPI_CS# SPI_CLK SPI_ARB
RN64 8P4R-10KR0402
RN51 8P4R-2.2KR
PGNT#3 R335 X_2.2KR0402
RN59 8P4R-10KR0402
GPIO2 GPIO3 GPIO4 GPIO5
T13
GNT5# GNT4# ROUTING
0 1 Flash Cycles Routed to SPI
1 0 Flash Cycles Routed to PCI
1 1 Flash Cycles Routed to LPC
MICRO-STAR INT'L CO.,LTD
MS-7398
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Document Description
Intel ICH7 - PCI & DMI & CPU & IRQ
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ICH 7
PART 2/3

LPC
AC-LINK
USB
SM BUS
POWER MGNT
MISC
P-ATA
S-ATA
GPIO
RTC

U24B
INTEL-NH82801GB-A1-LF

Following are the GPIOs that need to be terminated properly if not used:
GPIO[39:36,23:21,19,7:0]: default as inputs and should be pulled up to Vcc3_3 if unused.
GPIO[31:29,15:8]: default as inputs and should be pulled up to VccSus3_3 if unused.

3VSB default GPI Hight.

* Put a GND Plane under X'TAL
* Please put this block close ICH7

RTC BLOCK

CLR_CMOS	
1 - 2	Normal *
2 - 3	Clear CMOS

S-BAT54C_SOT23
S-BAT54C_SOT23
BAT2P_BLACK-RH-1
32.768MHZ12.5p_D

MICRO-STAR INT'L CO.,LTD	
MS-7398	
Size: Custom	Document Description: Intel ICH7 - LPC & ATA & USB & GPIO
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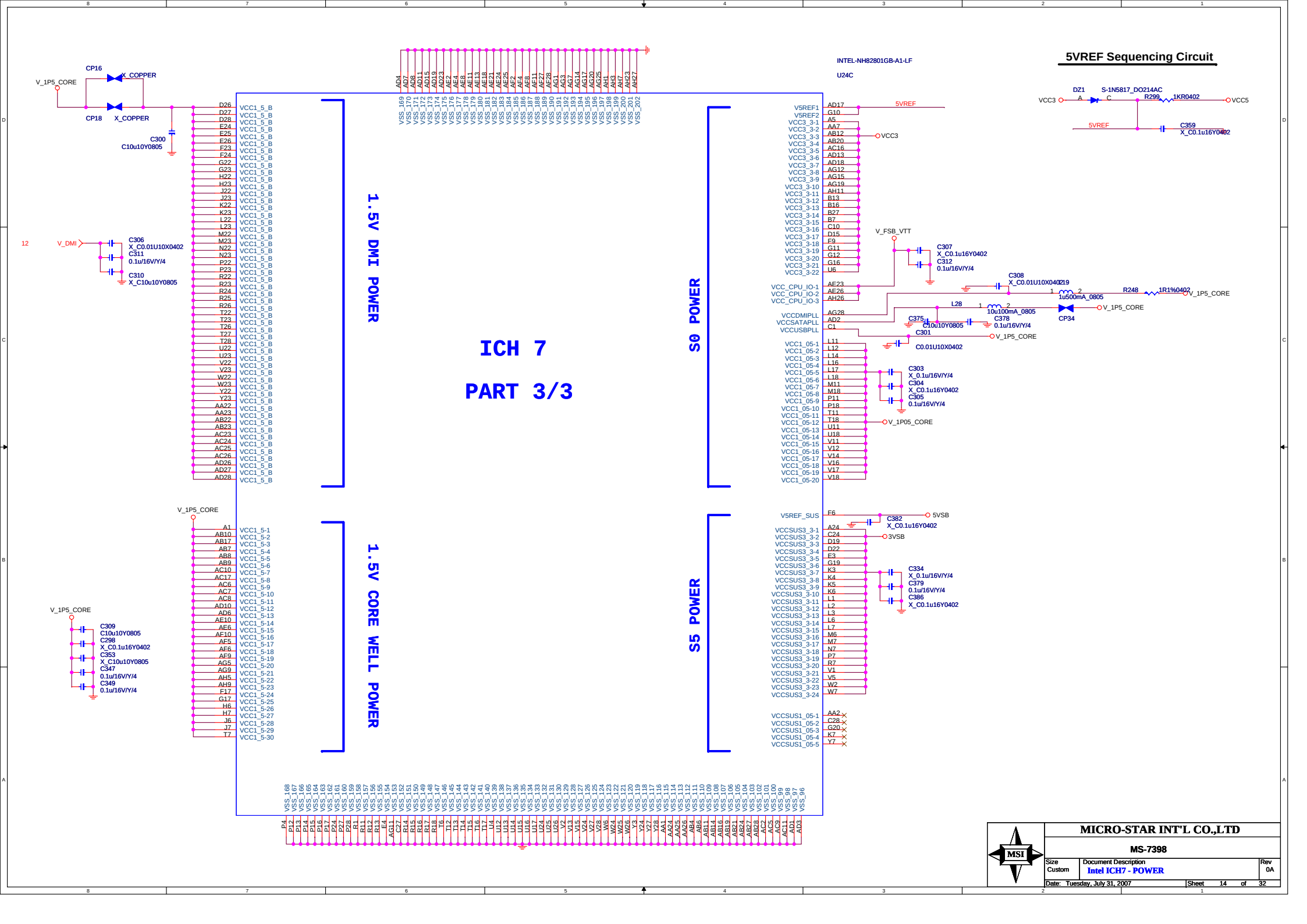

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MS-7398	
Size: Custom	Document Description: Intel ICH7 - POWER
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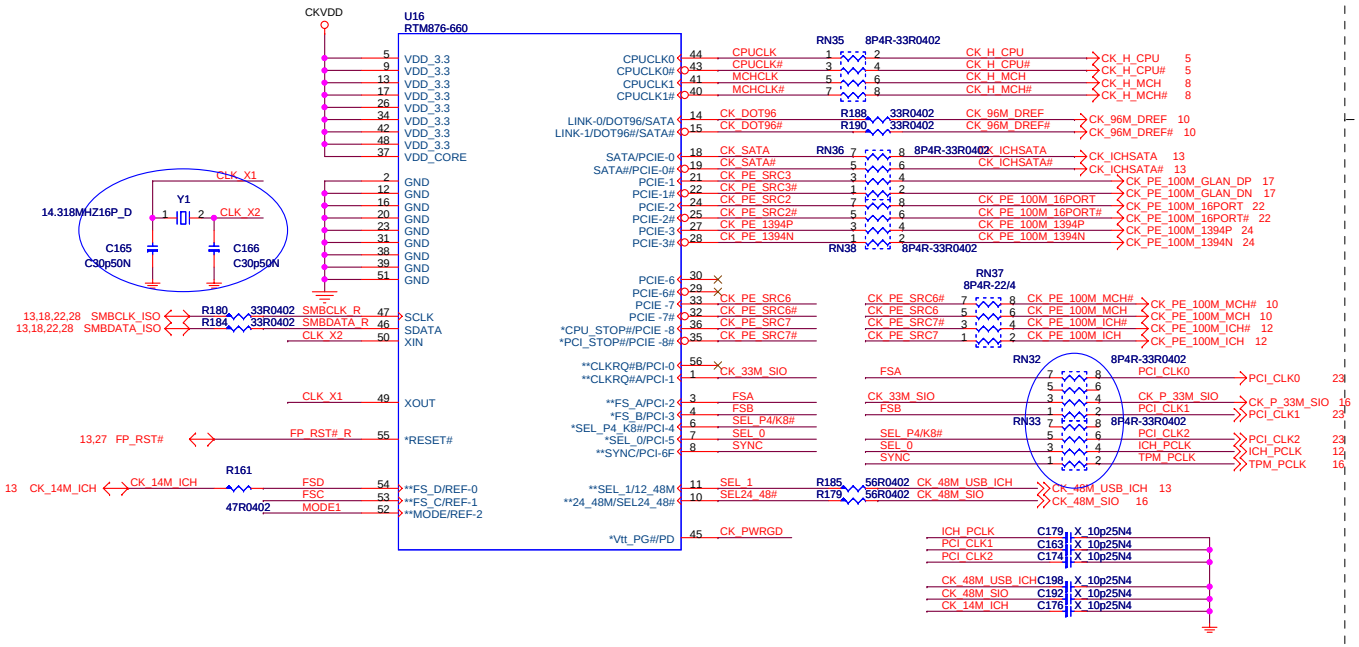
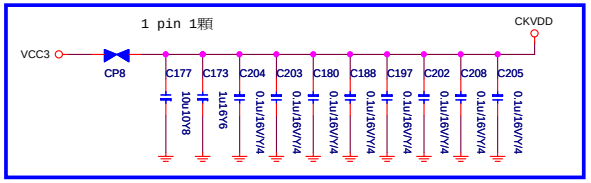
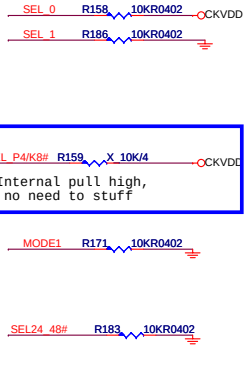
Clock Generator - RTM876-660





STRAPPING RESISTOR



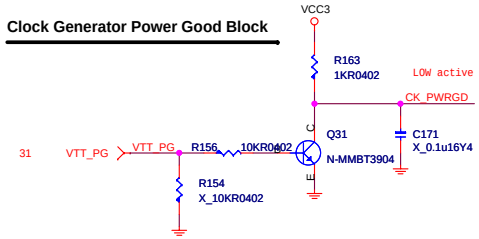
SEL_1	SEL_0	Chipset Support
0	0	SIS
1	0	VIA
0	1	Intel with graphic
1	1	Intel without graphic

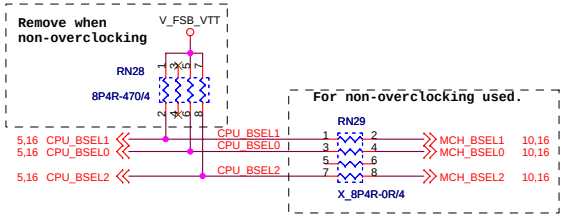
SEL_P4/K8#	PIN#40,41,43,44
0	K8 3.3V swing
1	P4 0.8V swing

MODE	PIN#35/36
0	PCIE-8 T/C
1	PCI STOP#/CPU_STOP#

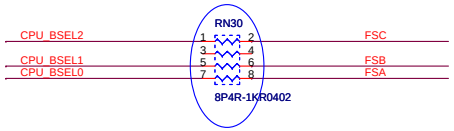
SEL24_48#	Pin#10
0	48Mhz
1	24Mhz

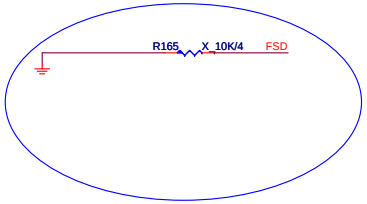
Clock Generator Power Good Block





BSEL			TABLE
2	1	0	FSB FREQUENCY
0	0	0	266 MHz (1066)
1	0	0	333 MHZ (1333)
0	1	0	200 MHZ (800)
1	1	0	400 MHZ (1600)





MICRO-STAR INT'L CO.,LTD

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Size	Document Description	Rev
Custom	CLK-RTM 876-660	0A

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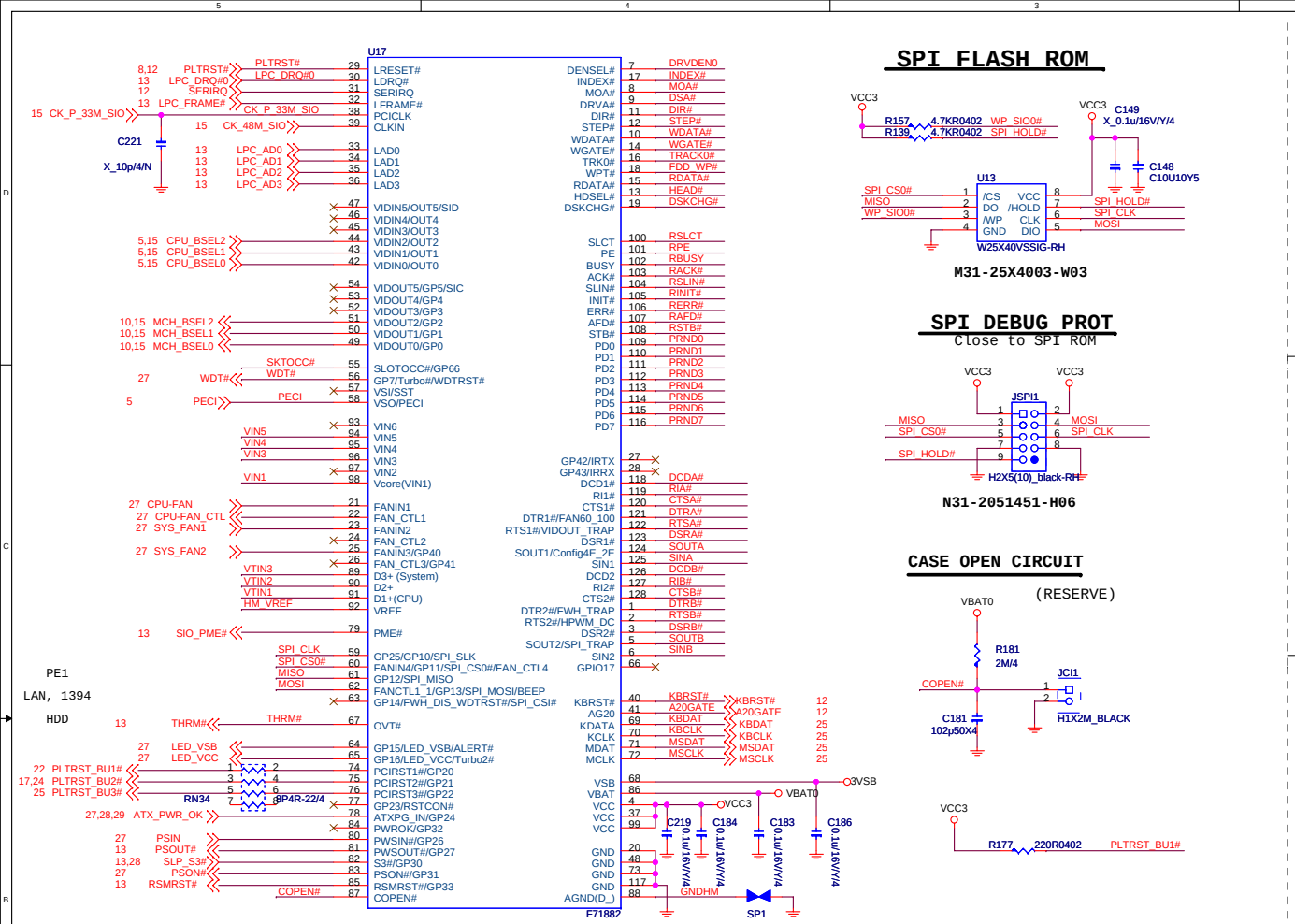


SPI FLASH ROM

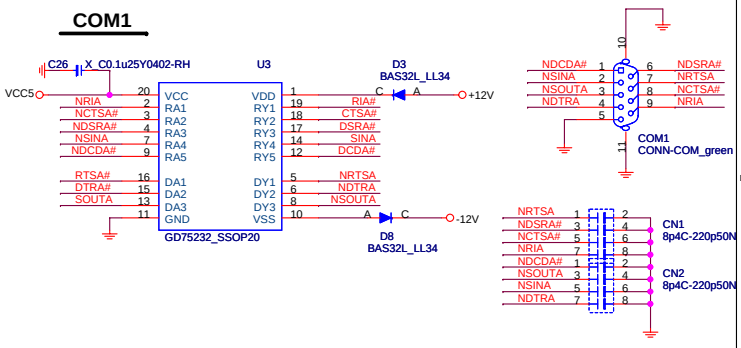
SPI DEBUG PROT

Close to SPI ROM

CASE OPEN CIRCUIT

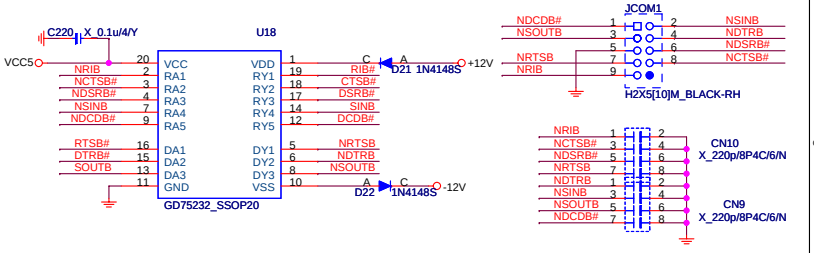
(RESERVE)

COM1

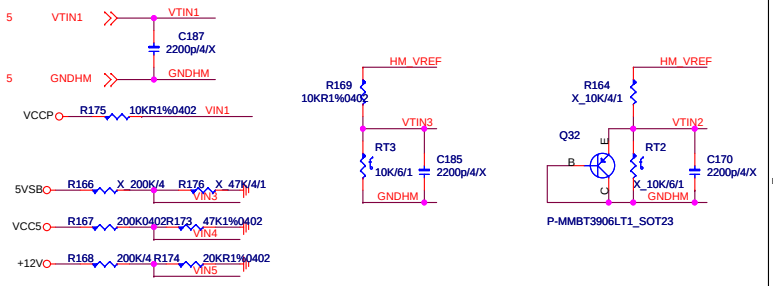


SERIAL PORT 1

(RESERVE)



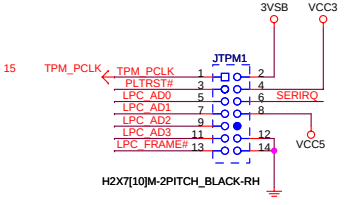
Thermal Resistor



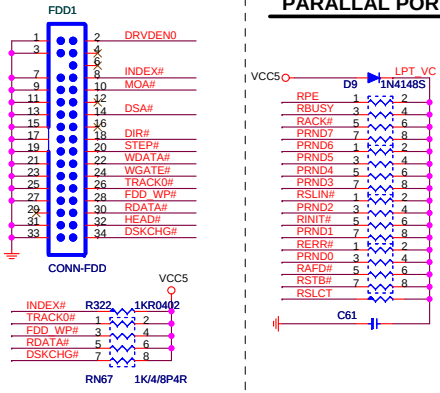
STRAPPING RESISTOR

	Don't STUFF	STUFF
RTSB#	PWM FAN	LINEAR FAN
RTSA#	PIN49-54=VID_OUT PIN42-47=VIDIN	PIN49-54=GPIO PIN42-47=VIDIN/OUT
SOUTA	4E	2E
DTRB#, SOUTB	SPI_DISABLE	SPI_ENABLE
DTRA#	FAN START DUTY 60%	FAN START DUTY 100%

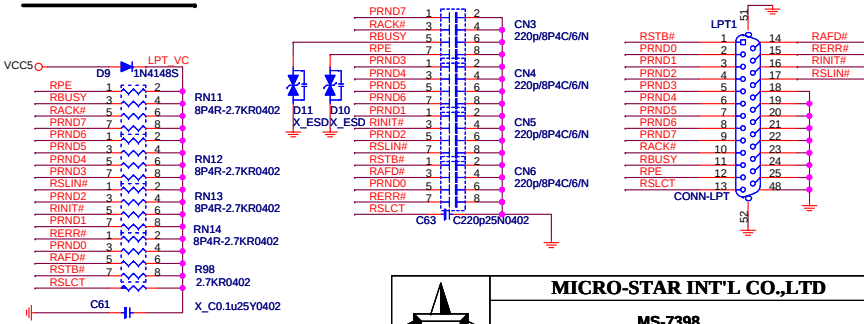
JLPC port for TPM



FLOPPY CONNECTOR



PARALLAL PORT



MICRO-STAR INT'L CO.,LTD	
MS-7398	
Size: Custom	Document Description: SIO-Fintek F17882F & IO-Port
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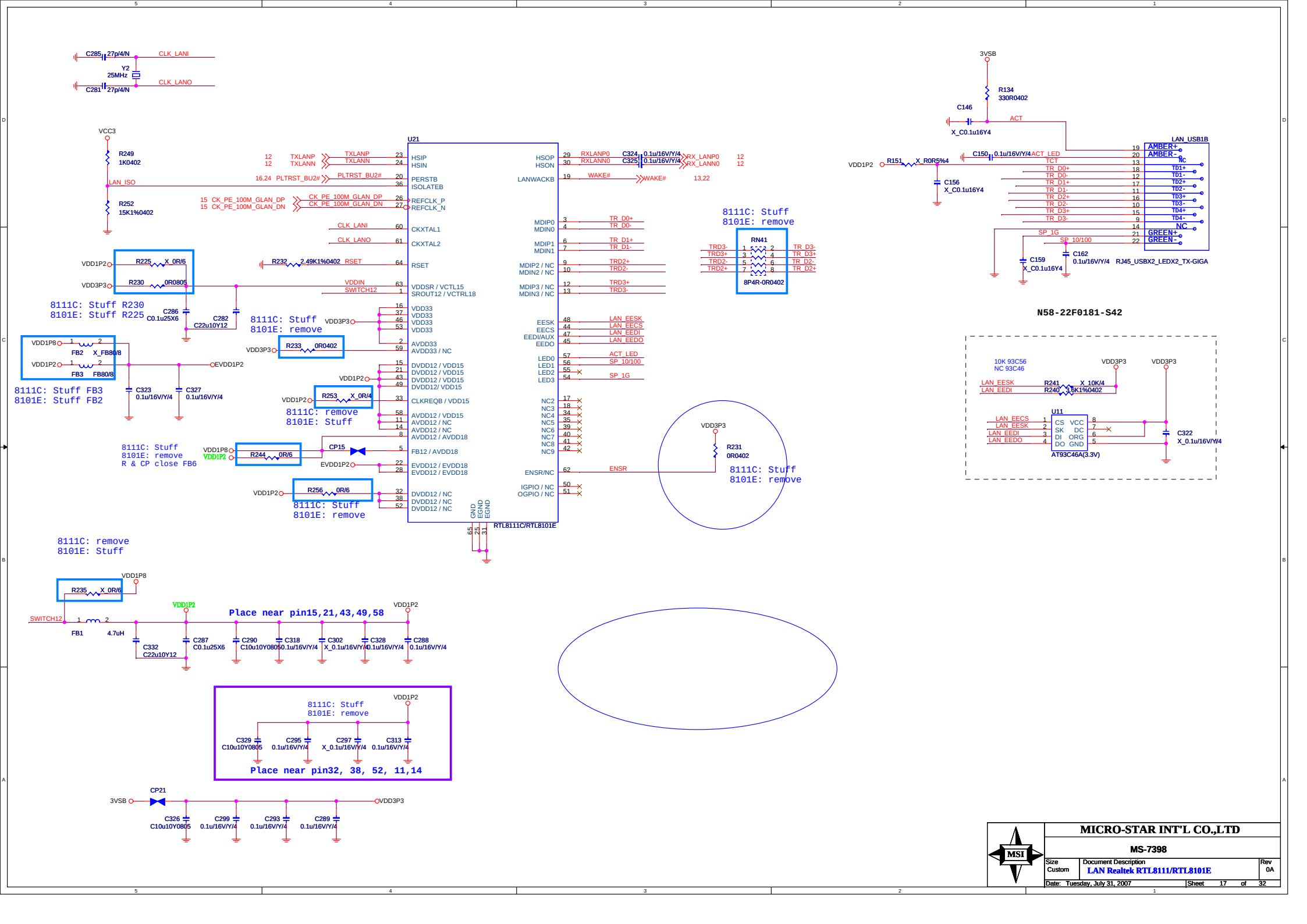
C285 27p/4N
CLK_LANI
Y2
25MHz
C281 27p/4N
CLK_LANO
VCC3
R249 1K0402
LAN_ISO
R252 15K1%0402
U21
HSIP
HSIN
PERSTB
ISOLATEB
REFCLK_P
REFCLK_N
CKXTAL1
CKXTAL2
RSET
VDDSR / VCTL15
SROUT12 / VCTRL18
AVDD33
AVDD33 / NC
DVDD12 / VDD15
CLKREQB / VDD15
AVDD12 / VDD15
AVDD12 / NC
AVDD12 / AVDD18
FB12 / AVDD18
EVDD12 / EVDD18
DVDD12 / NC
HSOP
HSON
LANWACKB
MDIP0 / MDIN0
MDIP1 / MDIN1
MDIP2 / NC / MDIN2 / NC
MDIP3 / NC / MDIN3 / NC
EESK
EECS
EEDI/AUX
EEDO
LED0
LED1
LED2
LED3
ENSR/NC
IGPIO / NC
OGPIO / NC
GND
ESND
RTL8111C/RTL8101E
R225 X_0R/6
R230 0R0805
R232 2.49K1%0402 RSET
VDDIN
SWITCH12
C286 C0.1u25X6
C282 C22u10Y12
8111C: Stuff R230
8101E: Stuff R225
8111C: Stuff
8101E: remove
R233 0R0402
FB2 X_FB80/8
FB3 FB80/8
C323 0.1u/16V/Y/4
C327 0.1u/16V/Y/4
8111C: Stuff FB3
8101E: Stuff FB2
R253 X_0R/4
8111C: remove
8101E: Stuff
8111C: Stuff
8101E: remove
R & CP close FB6
R244 0R/6
CP15
R256 0R/6
8111C: Stuff
8101E: remove
RXLANP0
RXLANN0
C324 0.1u/16V/Y/4
C325 0.1u/16V/Y/4
RX_LANP0
RX_LANN0
WAKE#
TR_D0+
TR_D0-
TR_D1+
TR_D1-
TRD2+
TRD2-
TRD3+
TRD3-
LAN_EESK
LAN_EECS
LAN_EEDI
LAN_EEDO
ACT_LED
SP_10/100
SP_1G
ENSR
8111C: Stuff
8101E: remove
RN41
8P4R-0R0402
R231 0R0402
8111C: Stuff
8101E: remove
3VSB
R134 330R0402
C146
X_C0.1u16Y4
ACT
R151 X_R0R5%4
C150 0.1u/16V/Y/4
C156 X_C0.1u16Y4
ACT_LED
TCT
TR_D0+
TR_D0-
TR_D1+
TR_D1-
TR_D2+
TR_D2-
TR_D3+
TR_D3-
SP_1G
SP_10/100
C159 X_C0.1u16Y4
C162 0.1u/16V/Y/4
RJ45_USBX2_LEDX2_TX-GIGA
LAN_USB1B
AMBER+
AMBER-
NC
TD1+
TD1-
TD2+
TD2-
TD3+
TD3-
TD4+
TD4-
GREEN+
GREEN-
N58-22F0181-S42
10K 93C56
NC 93C46
LAN_EESK
LAN_EEDI
R241 X_10K/4
R240 5K1%0402
U11
LAN_EECS
LAN_EESK
LAN_EEDI
LAN_EEDO
CS VCC
SK DC
DI ORG
DO GND
AT93C46A(3.3V)
C322 X_0.1u/16V/Y/4
8111C: remove
8101E: Stuff
R235 X_0R/6
SWITCH12
FB1 4.7uH
C332 C22u10Y12
C287 C0.1u25X6
C290 C10u10Y0805
C318 0.1u/16V/Y/4
C302 X_0.1u/16V/Y/4
C328 0.1u/16V/Y/4
C288 0.1u/16V/Y/4
Place near pin15,21,43,49,58
8111C: Stuff
8101E: remove
C329 C10u10Y0805
C295 0.1u/16V/Y/4
C297 X_0.1u/16V/Y/4
C313 0.1u/16V/Y/4
Place near pin32, 38, 52, 11,14
CP21
C326 C10u10Y0805
C299 0.1u/16V/Y/4
C293 0.1u/16V/Y/4
C289 0.1u/16V/Y/4
MICRO-STAR INT'L CO.,LTD
MS-7398
Size
Custom
Document Description
LAN Realtek RTL8111/RTL8101E
Rev
0A
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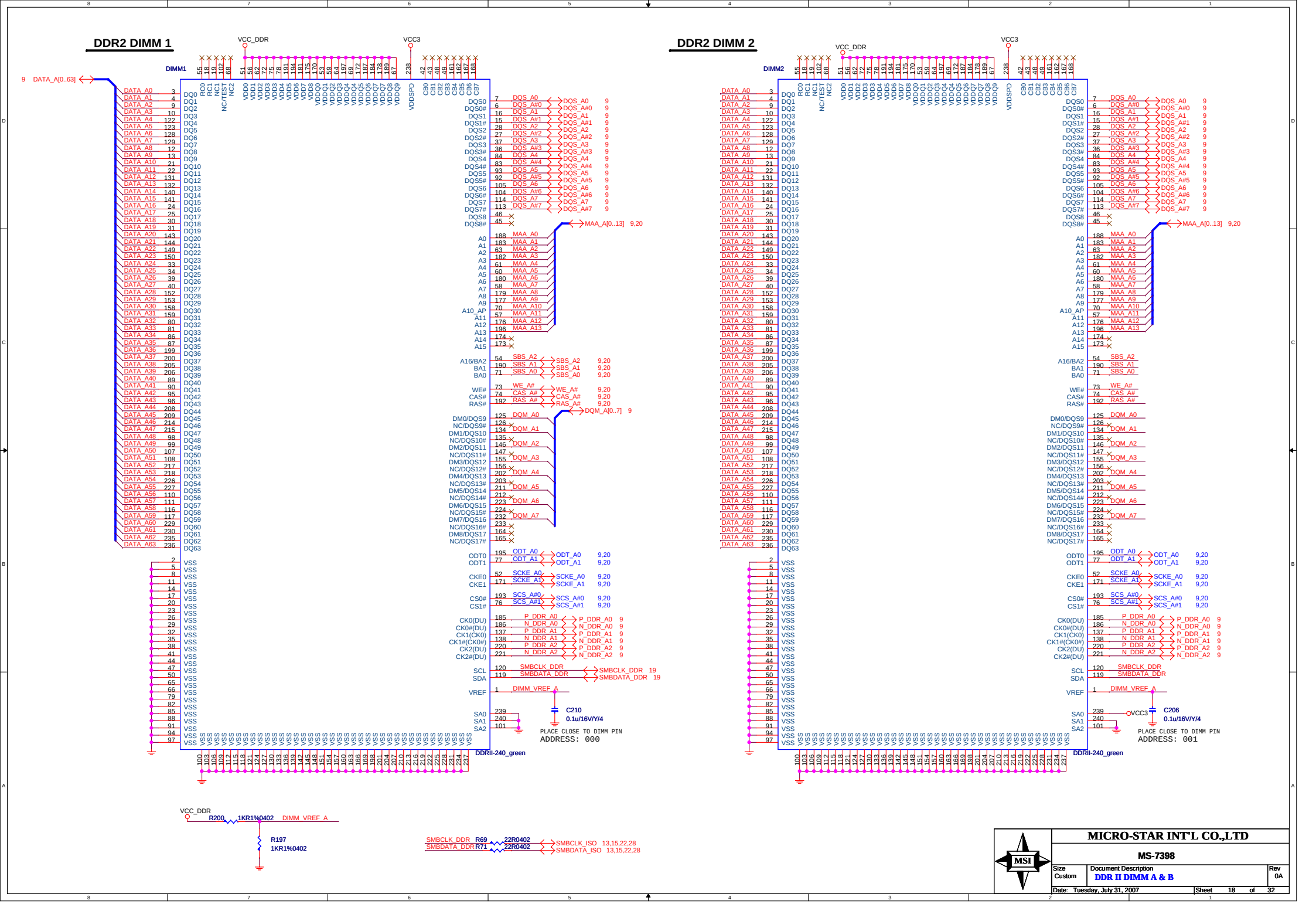
DDR2 DIMM 1
DDR2 DIMM 2
VCC_DDR
VCC3
DIMM1
DIMM2
DDRII-240_green
PLACE CLOSE TO DIMM PIN
ADDRESS: 000
ADDRESS: 001
C210
0.1u/16V/Y/4
C206
R200 1KR1%0402 DIMM_VREF_A
R197 1KR1%0402
SMBCLK_DDR R69 22R0402
SMBDATA_DDR R71 22R0402
MICRO-STAR INT'L CO.,LTD
MS-7398
DDR II DIMM A & B
Size Custom
Rev 0A
Date: Tuesday, July 31, 2007
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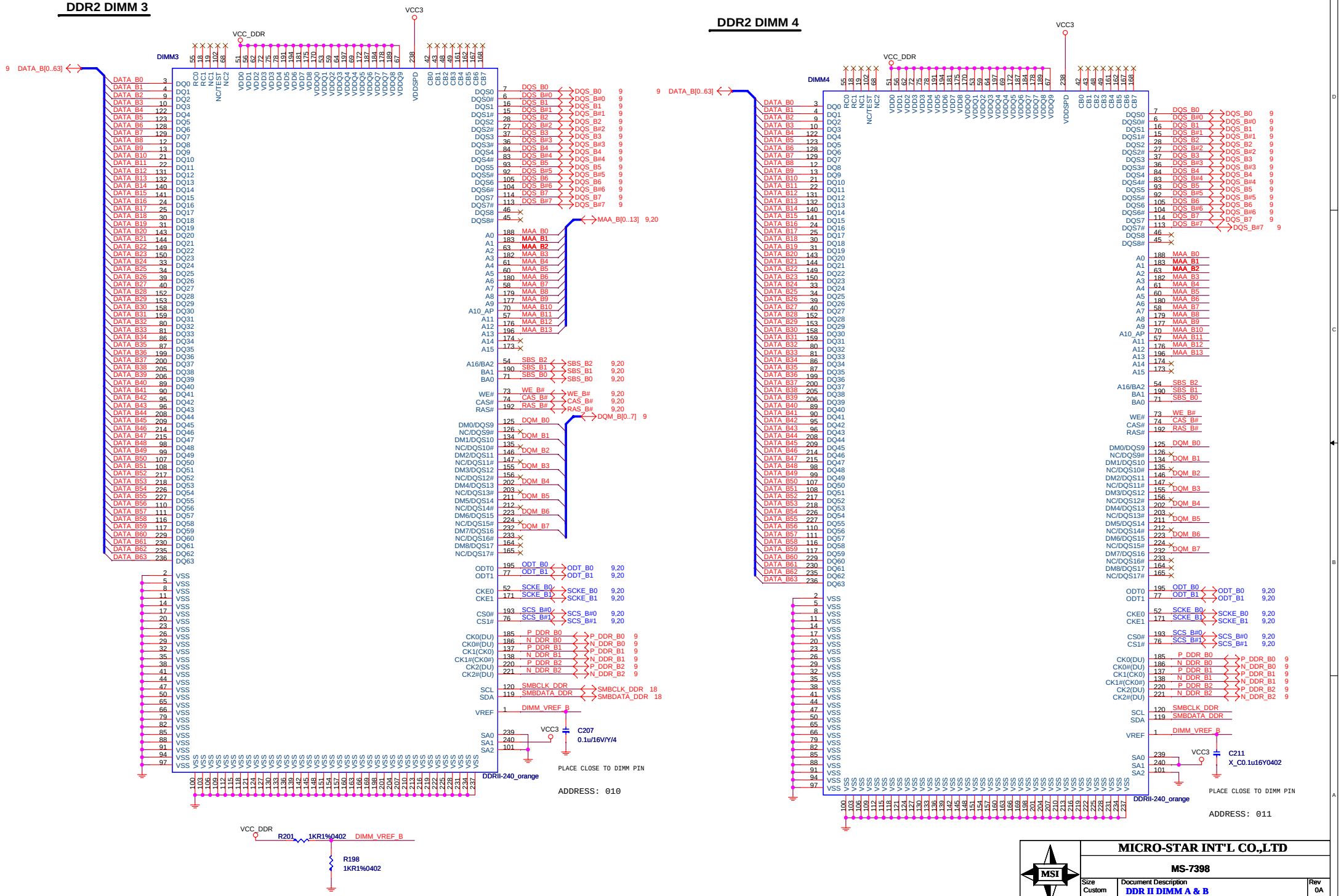
DDR2 DIMM 3
DDR2 DIMM 4
DIMM3
DIMM4
VCC3
VCC_DDR
DDRII-240_orange
PLACE CLOSE TO DIMM PIN
ADDRESS: 010
ADDRESS: 011
C207
0.1u/16V/Y/4
C211
X_C0.1u16Y0402
R201
1KR1%0402
R198
1KR1%0402
DIMM_VREF_B
MICRO-STAR INT'L CO.,LTD
MS-7398
DDR II DIMM A & B
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Custom
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CHANNEL A V_SM_VTT DECOULPING CAPS

VTT_DDR

C86
C10u10Y0805

VTT_DDR

C85
0.1u/16V/Y/4

C136
0.1u/16V/Y/4

C127
0.1u/16V/Y/4

C90
0.1u/16V/Y/4

VTT_DDR

C92
X_C0.1u16Y0402

C84
0.1u/16V/Y/4

CHANNEL B V_SM_VTT DECOULPING CAPS

VTT_DDR

C82
C10u10Y0805

VTT_DDR

C101
0.1u/16V/Y/4

C95
0.1u/16V/Y/4

C127
0.1u/16V/Y/4

VTT_DDR

C123
0.1u/16V/Y/4

C117
X_0.1u/16V/Y/4

VCC_DDR

C83
C1u6.3X50402-1

C100
C1u6.3X50402-1

C102
C1u6.3X50402-1

C96
C1u6.3X50402-1

VCC_DDR

C133
C1u6.3X50402-1

C89
C1u6.3X50402-1

C113
C1u6.3X50402-1

C139
C1u6.3X50402-1

C130
C1u6.3X50402-1

VTT_DDR

RN21 8P4R-33R0402
MAA_A4
MAA_A3
MAA_A2
MAA_A1

RN23 8P4R-33R0402
MAA_A9
MAA_A5
MAA_A8
MAA_A6

RN25 8P4R-33R0402
SBS_A2
MAA_A12
MAA_A11
MAA_A7

RN17 8P4R-33R0402
9,18 CAS_A#
9,18 WE_A#
9,18 RAS_A#
CAS_A#
WE_A#
RAS_A#
MAA_A13

RN19 8P4R-33R0402
MAA_A0
MAA_A10
SBS_A0
SBS_A1

R122 43R0402
SCKE_A0
R124 43R0402
SCKE_A1

RN15 8P4R-43R0402
SCS_A#0
SCS_A#1
ODT_A0
ODT_A1

change RN

9,18 MAA_A[0..13]
9,18 SBS_A[0..2]
9,18 SCS_A#[0..1]
9,18 SCKE_A[0..1]
9,18 ODT_A[0..1]

VTT_DDR

RN22 8P4R-33R0402
MAA_B4
MAA_B3
MAA_B2
MAA_B1

RN26 8P4R-33R0402
SBS_B2
MAA_B12
MAA_B11
MAA_B7

RN24 8P4R-33R0402
MAA_B9
MAA_B5
MAA_B8
MAA_B6

RN18 8P4R-33R0402
MAA_B13
CAS_B#
WE_B#
RAS_B#

RN20 8P4R-33R0402
MAA_B0
SBS_B1
SBS_B0
MAA_B10

RN16 8P4R-43R0402
ODT_B0
SCS_B#0
SCS_B#1
ODT_B1

R125 43R0402
SCKE_B0
R126 43R0402
SCKE_B1

9,19 CAS_B#
9,19 WE_B#
9,19 RAS_B#

change RN

9,19 MAA_B[0..13]
9,19 SBS_B[0..2]
9,19 SCS_B#[0..1]
9,19 SCKE_B[0..1]
9,19 ODT_B[0..1]

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Custom	DDR II VTT DECOUPLING	0A

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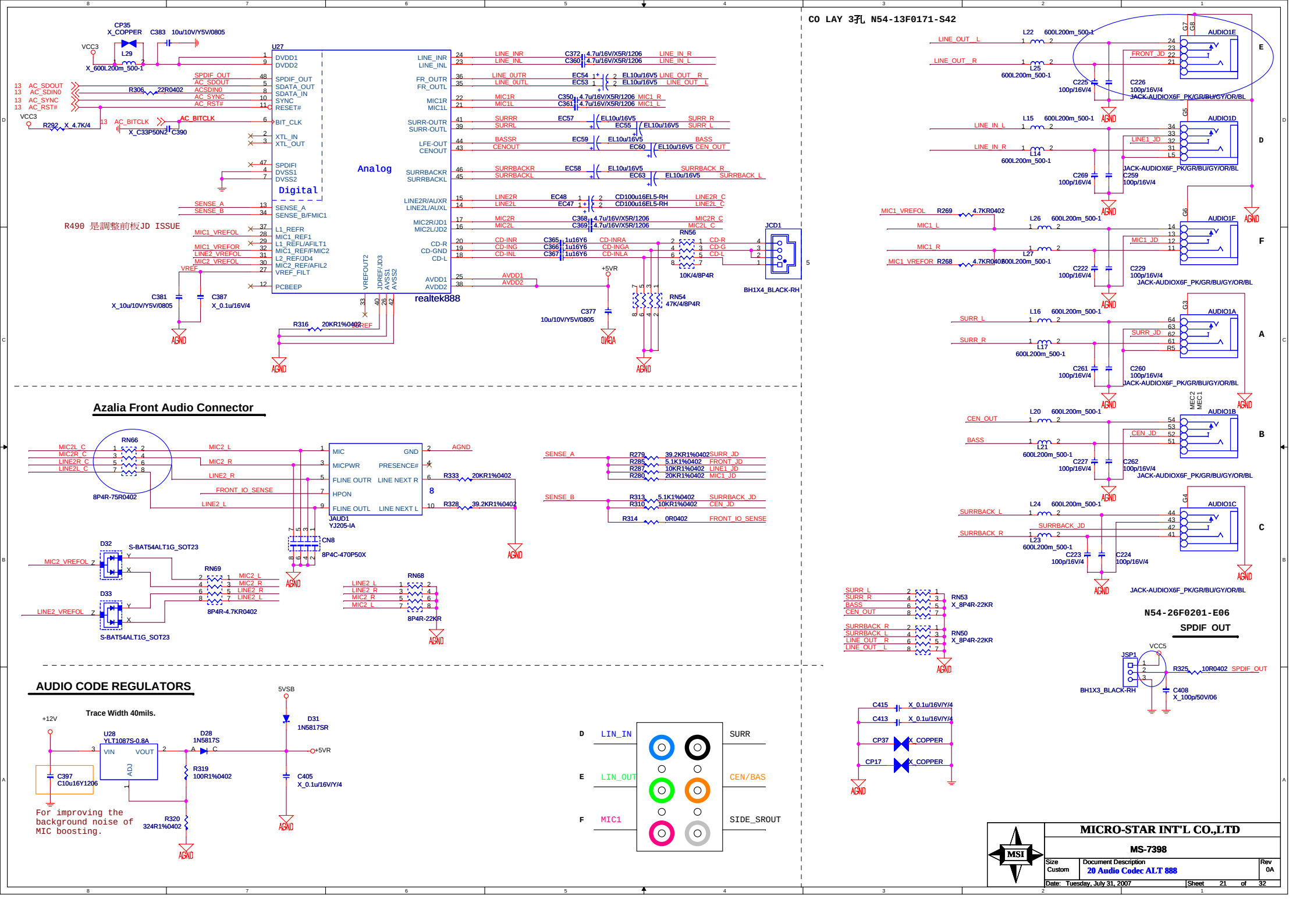
CO LAY 3孔 N54-13F0171-S42
CP35
X_COPPER
C383 10u/10V/Y5V/0805
VCC3
L29
X_600L200m_500-1
U27
DVDD1
DVDD2
SPDIF_OUT
AC_SDOUT
SDATA_OUT
SDATA_IN
SYNC
RESET#
BIT_CLK
XTL_IN
XTL_OUT
SPDIFI
DVSS1
DVSS2
SENSE_A
SENSE_B
SENSE_B/FMIC1
L1_REFR
MIC1_REF1
L1_REFL/AFILT1
MIC1_REF/FMIC2
L2_REF/JD4
MIC2_REF/AFIL2
VREF_FILT
PCBEEP
Analog
Digital
realtek888
LINE_INR
LINE_INL
FR_OUTR
FR_OUTL
MIC1R
MIC1L
SURR-OUTR
SURR-OUTL
LFE-OUT
CENOUT
SURRBACKR
SURRBACKL
LINE2R/AUXR
LINE2L/AUXL
MIC2R/JD1
MIC2L/JD2
CD-R
CD-GND
CD-L
AVDD1
AVDD2
VREFOUT2
JDREF/JD3
AVSS1
AVSS2
R490 是調整前板JD ISSUE
R316 20KR1%0402
VREF
C381 X_10u/10V/Y5V/0805
C387 X_0.1u/16V/4
C377 10u/10V/Y5V/0805
+5VR
RN54 47K/4/8P4R
RN56 10K/4/8P4R
JCD1
BH1X4_BLACK-RH
AGND
Azalia Front Audio Connector
RN66
8P4R-75R0402
MIC2_L
MIC2_R
LINE2_R
FRONT_IO_SENSE
LINE2_L
JAUD1
YJ205-IA
MIC
MICPWR
FLINE OUTR
HPON
FLINE OUTL
GND
PRESENCE#
LINE NEXT R
LINE NEXT L
R333 20KR1%0402
R328 39.2KR1%0402
CN8
8P4C-470P50X
D32
S-BAT54ALT1G_SOT23
D33
RN69
8P4R-4.7KR0402
RN68
8P4R-22KR
SENSE_A
R279 39.2KR1%0402 SURR_JD
R285 5.1K1%0402 FRONT_JD
R287 10KR1%0402 LINE1_JD
R280 20KR1%0402 MIC1_JD
SENSE_B
R313 5.1K1%0402 SURRBACK_JD
R310 10KR1%0402 CEN_JD
R314 0R0402 FRONT_IO_SENSE
AUDIO CODE REGULATORS
Trace Width 40mils.
+12V
U28
YLT1087S-0.8A
VIN
VOUT
ADJ
D28
1N5817S
5VSB
D31
1N5817SR
+5VR
C397
C10u16Y1206
R319
100R1%0402
R320
324R1%0402
C405
X_0.1u/16V/Y4
For improving the
background noise of
MIC boosting.
D LIN_IN
E LIN_OUT
F MIC1
SURR
CEN/BAS
SIDE_SROUT
L22 600L200m_500-1
LINE_OUT_L
LINE_OUT_R
L25
600L200m_500-1
C225 100p/16V/4
C226 100p/16V/4
JACK-AUDIOX6F_PK/GR/BU/GY/OR/BL
AUDIO1E
FRONT_JD
L15 600L200m_500-1
LINE_IN_L
LINE_IN_R
L14
600L200m_500-1
C269 100p/16V/4
C259 100p/16V/4
AUDIO1D
LINE1_JD
MIC1_VREFOL R269 4.7KR0402
L26 600L200m_500-1
MIC1_L
MIC1_R
MIC1_VREFOR R268 4.7KR0402
L27
600L200m_500-1
C222 100p/16V/4
C229 100p/16V/4
AUDIO1F
MIC1_JD
L16 600L200m_500-1
SURR_L
SURR_R
L17
600L200m_500-1
C261 100p/16V/4
C260 100p/16V/4
AUDIO1A
SURR_JD
L20 600L200m_500-1
CEN_OUT
BASS
L21
600L200m_500-1
C227 100p/16V/4
C262 100p/16V/4
AUDIO1B
CEN_JD
L24 600L200m_500-1
SURRBACK_L
SURRBACK_R
L23
600L200m_500-1
C223 100p/16V/4
C224 100p/16V/4
AUDIO1C
SURRBACK_JD
RN53
X_8P4R-22KR
RN50
X_8P4R-22KR
C415 X_0.1u/16V/Y4
C413 X_0.1u/16V/Y4
CP37 X_COPPER
CP17 X_COPPER
N54-26F0201-E06
SPDIF OUT
JSP1
VCC5
R325 10R0402 SPDIF_OUT
C408 X_100p/50V/06
BH1X3_BLACK-RH
MICRO-STAR INT'L CO.,LTD
MS-7398
Size Custom
Document Description
20 Audio Codec ALT 888
Rev 0A
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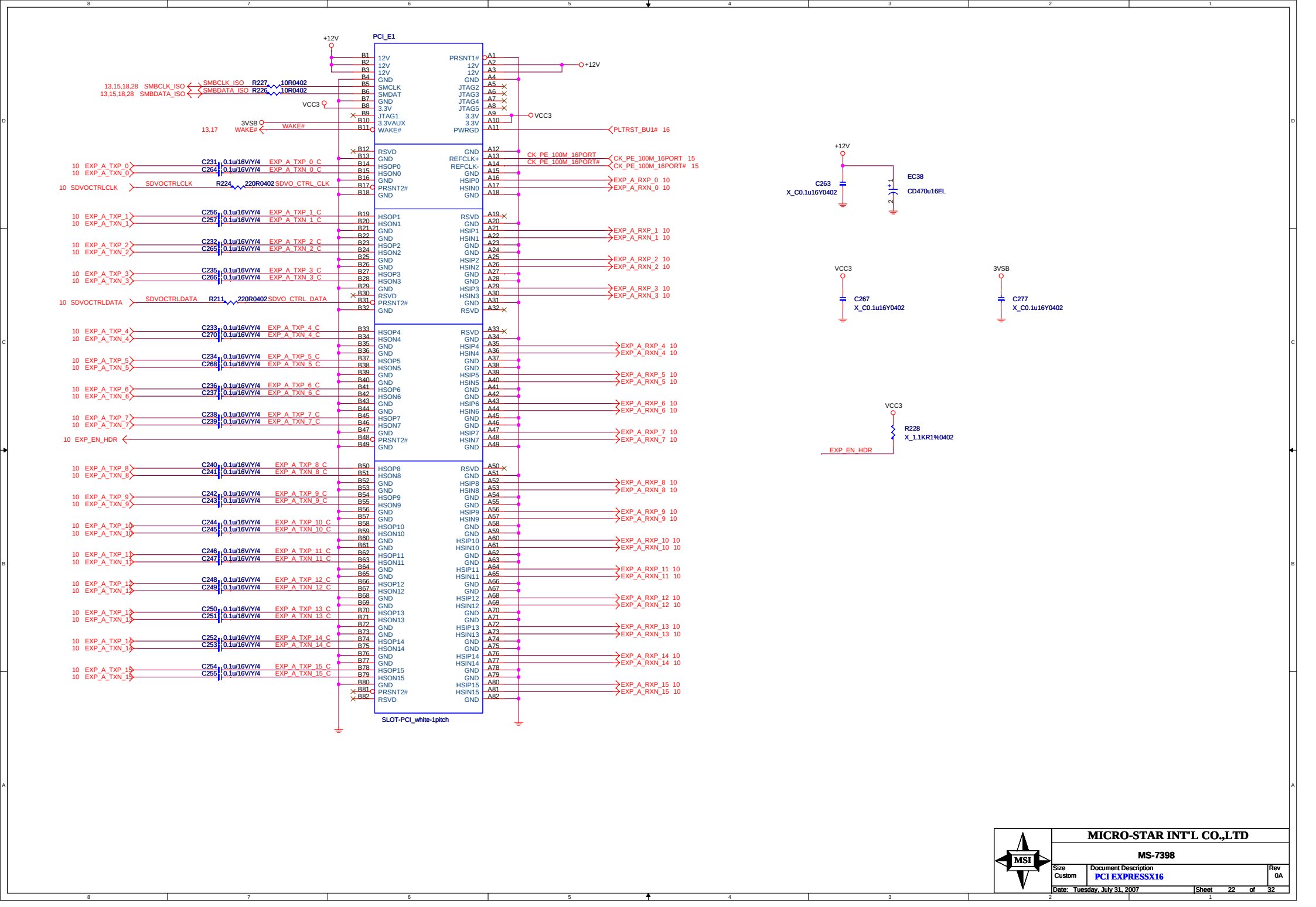

MICRO-STAR INT'L CO.,LTD	
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Size: Custom	Document Description: PCI EXPRESSX16
Rev: 0A	
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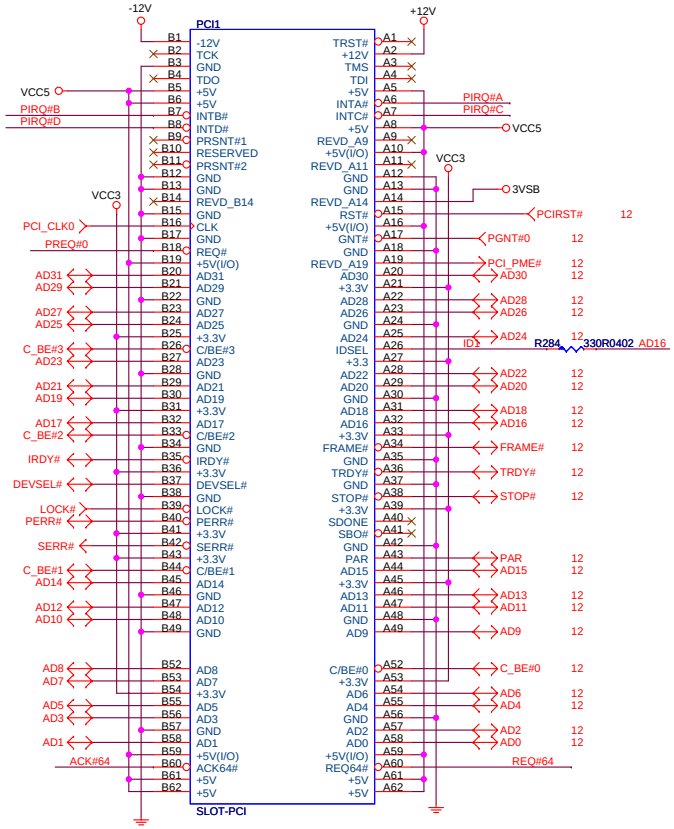
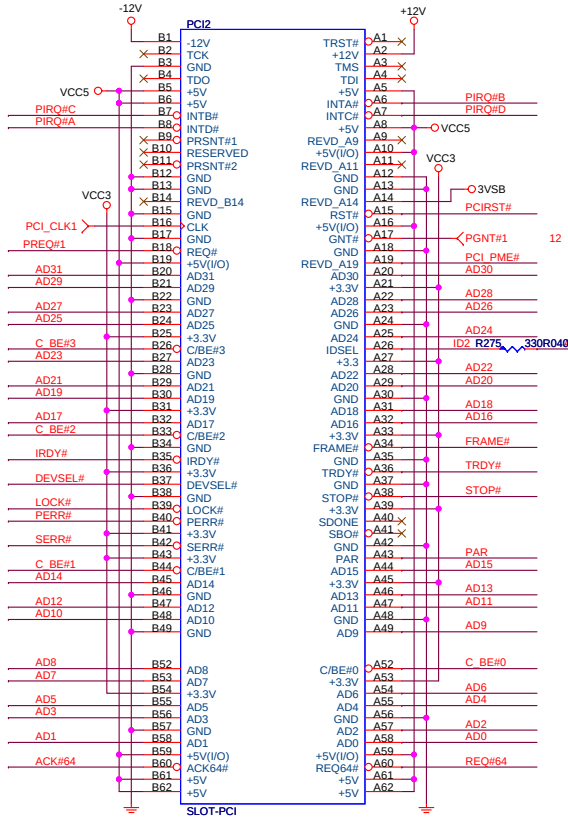
PCI SLOT 1 (PCI VER: 2.2 COMPLY)



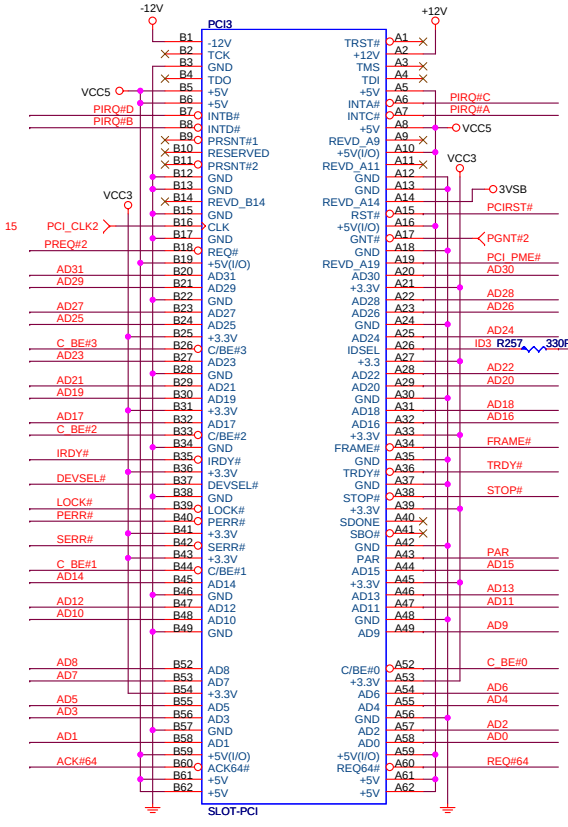
IDSEL = AD16
MASTER = PREQ#0
PIRQ#A

PCI SLOT 2 (PCI VER: 2.2 COMPLY)



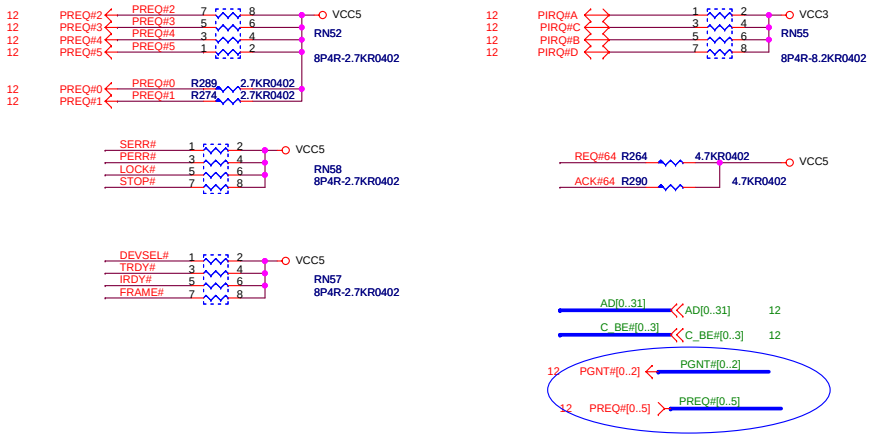
IDSEL = AD17
MASTER = PREQ#1
PIRQ#B

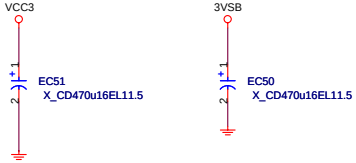
PCI SLOT 2 (PCI VER: 2.2 COMPLY)



IDSEL = AD18
MASTER = PREQ#2
PIRQ#C

PCI PULL-UP / DOWN RESISTORS





MICRO-STAR INT'L CO.,LTD		
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Size: Custom	Document Description: PCI Slot 1 &2&3	Rev: 0A
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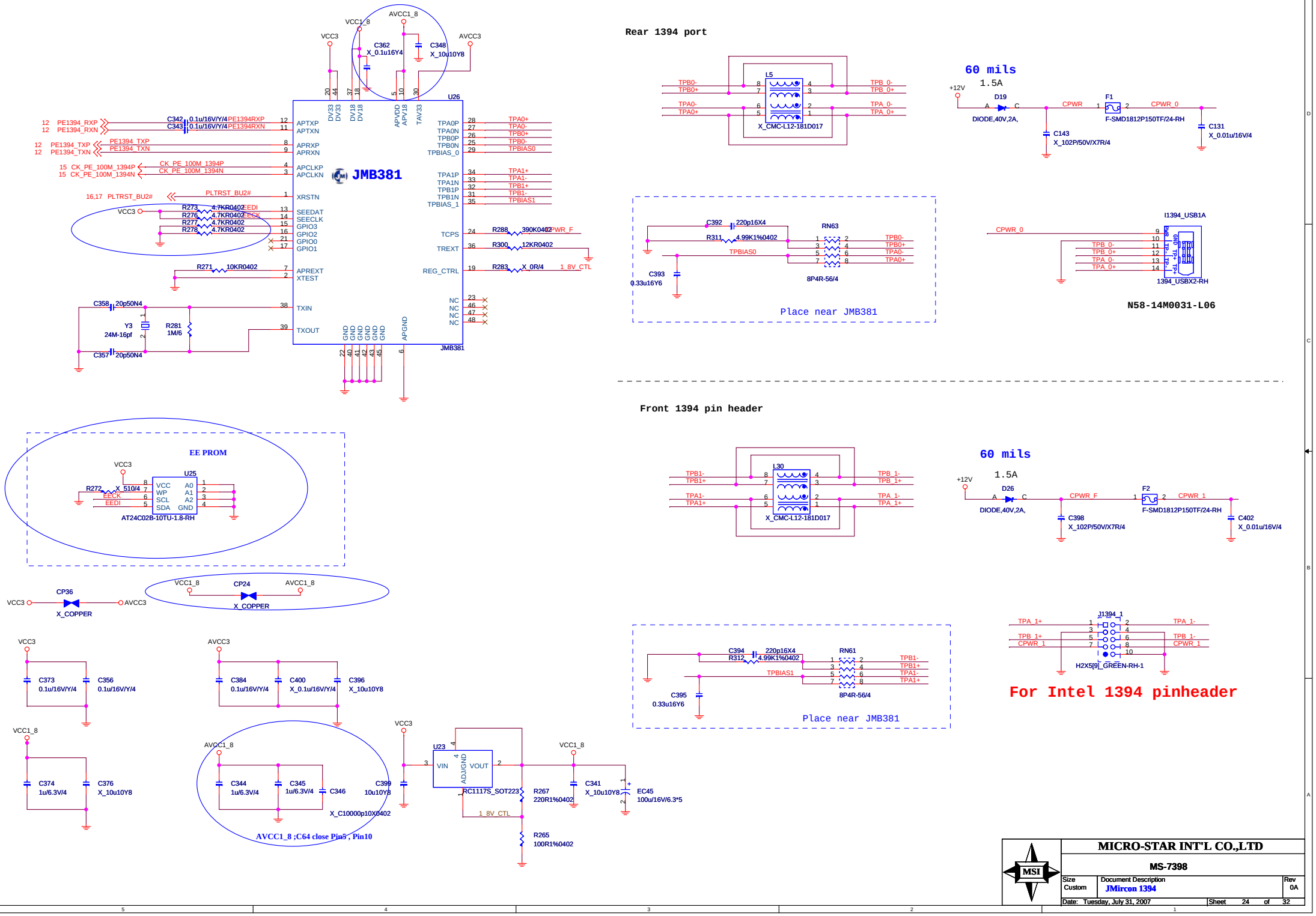
Rear 1394 port
JMB381
U26
L5
X_CMC-L12-181D017
60 mils
1.5A
D19
DIODE,40V,2A,
F1
F-SMD1812P150TF/24-RH
C143
X_102P/50V/X7R/4
C131
X_0.01u/16V/4
C392
220p16X4
R311
4.99K1%0402
RN63
TPBIAS0
C393
0.33u16Y6
8P4R-56/4
Place near JMB381
1394_USBX2-RH
N58-14M0031-L06
EE PROM
U25
AT24C02B-10TU-1.8-RH
Front 1394 pin header
L30
D26
DIODE,40V,2A,
F2
F-SMD1812P150TF/24-RH
C398
X_102P/50V/X7R/4
C402
X_0.01u/16V/4
C394
R312
RN61
C395
0.33u16Y6
J1394_1
H2X5[9]_GREEN-RH-1
For Intel 1394 pinheader
C362
X_0.1u16Y4
C348
X_10u10Y8
Y3
24M-16pf
C358
20p50N4
C357
20p50N4
R281
1M/6
R271
10KR0402
R288
390K0402
R300
12KR0402
R283
X_0R/4
CP36
X_COPPER
CP24
X_COPPER
C373
0.1u/16V/Y/4
C356
0.1u/16V/Y/4
C374
1u/6.3V/4
C376
X_10u10Y8
C384
0.1u/16V/Y/4
C400
X_0.1u/16V/Y/4
C396
X_10u10Y8
C344
1u/6.3V/4
C345
1u/6.3V/4
C346
X_C10000p10X0402
C399
10u10Y8
AVCC1_8 ;C64 close Pin5 , Pin10
U23
RC1117S_SOT223
R267
220R1%0402
R265
100R1%0402
C341
X_10u10Y8
EC45
100u/16V/6.3*5
MICRO-STAR INT'L CO.,LTD
MS-7398
Size
Custom
Document Description
JMircon 1394
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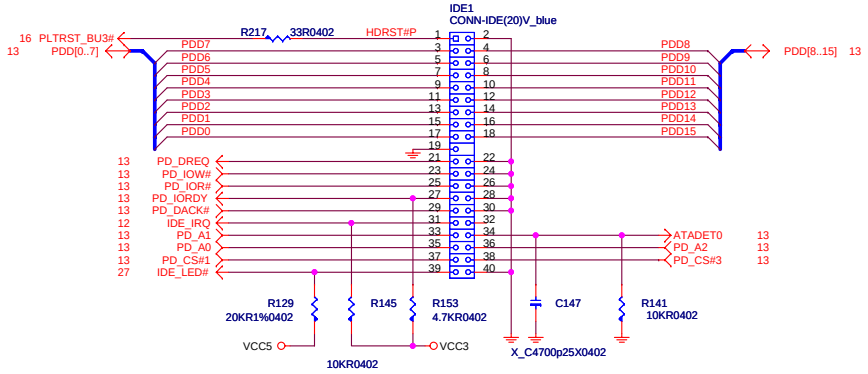
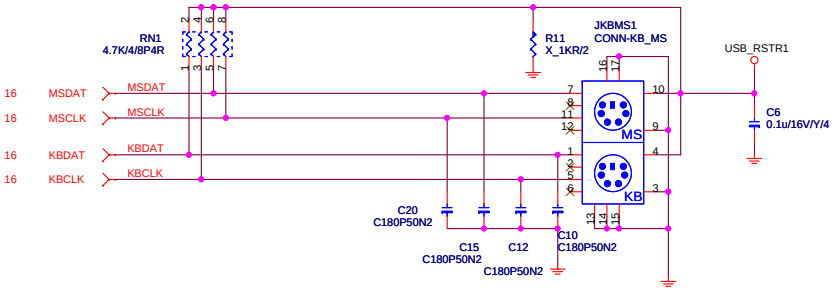
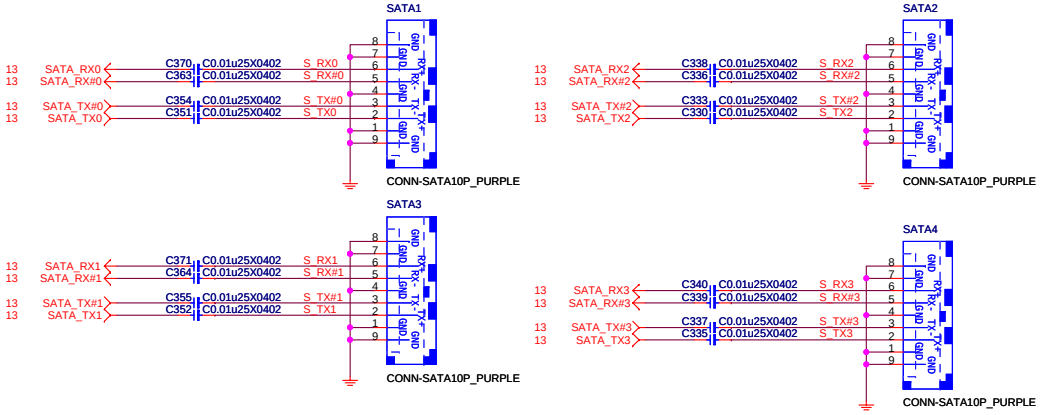
ATA 33/66/100 IDE Connectors



PS2 KEYBOARD & MOUSE CONNECTOR



SERIAL ATA CONNECTOR BLOCK



MICRO-STAR INT'L CO.,LTD

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Custom	IDE & SATA Connectors	0A

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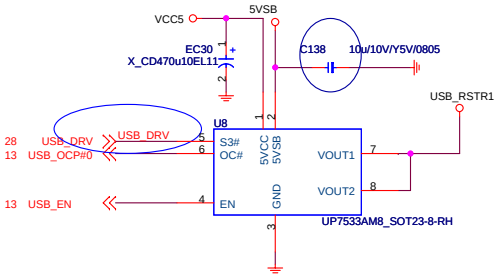
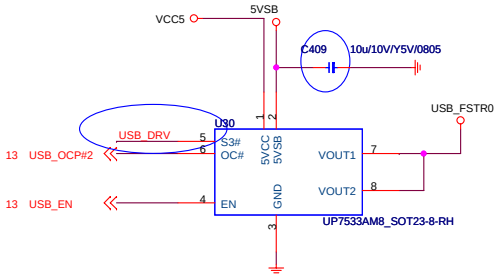
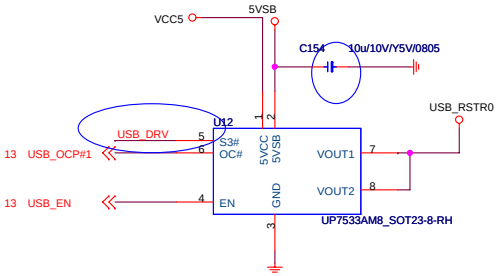
POWER CIRCUIT FOR USB PORT 0,1



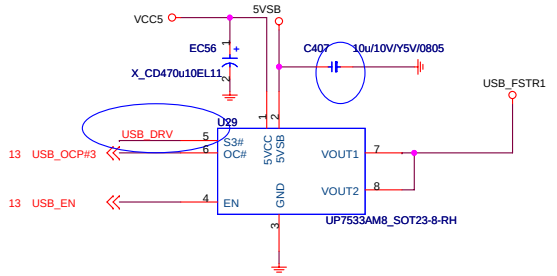
POWER CIRCUIT FOR USB PORT 4,5



POWER CIRCUIT FOR USB PORT 2,3

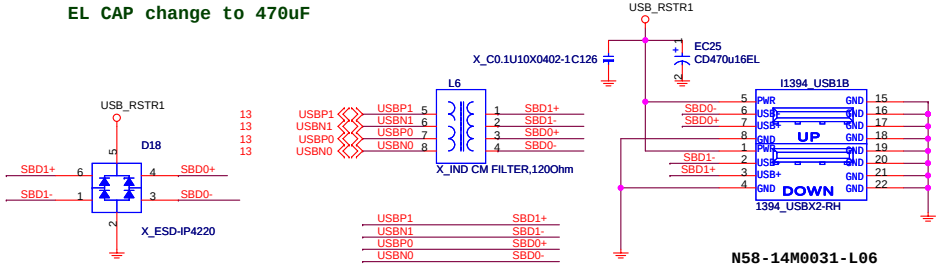


POWER CIRCUIT FOR USB PORT 6,7



REAR PANEL USB CONNECTOR FOR USB PORT 0,1

EL CAP change to 470uF

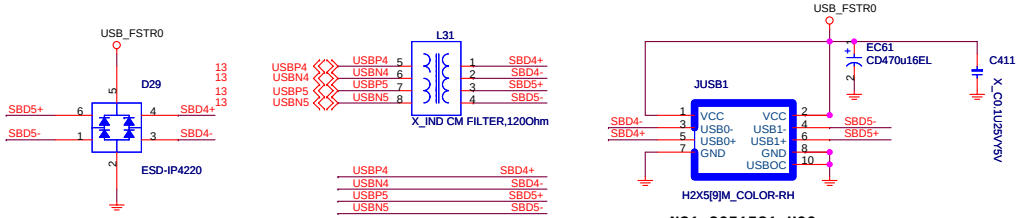


N58-14M0031-L06

22 / 7.5 / 7.5 / 7.5 / 22 / 7.5 / 7.5 / 7.5 / 22

FRONT PANEL USB CONNECTOR FOR USB PORT 4,5

EL CAP change to 470uF



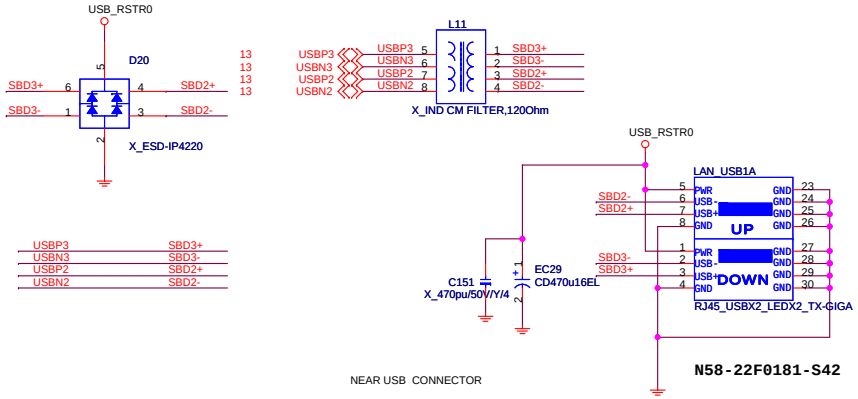
N31-2051581-H06

22 / 7.5 / 7.5 / 7.5 / 22 / 7.5 / 7.5 / 7.5 / 22

EL CAP change to 470uF

REAR PANEL USB CONNECTOR FOR USB PORT 2,3

Stuff for channel and gateway

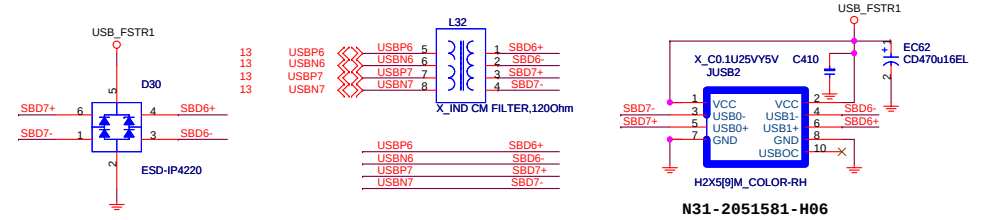


N58-22F0181-S42

22 / 7.5 / 7.5 / 7.5 / 22 / 7.5 / 7.5 / 7.5 / 22

FRONT PANEL USB CONNECTOR FOR USB PORT 6,7

EL CAP change to 470uF



N31-2051581-H06

22 / 7.5 / 7.5 / 7.5 / 22 / 7.5 / 7.5 / 7.5 / 22

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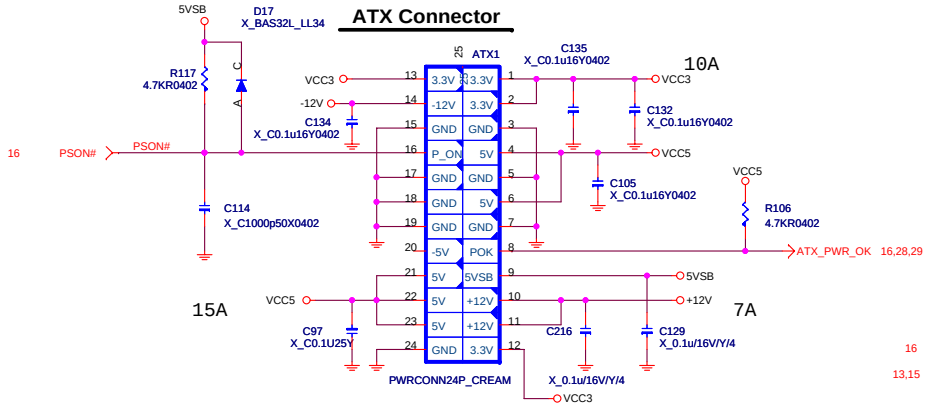
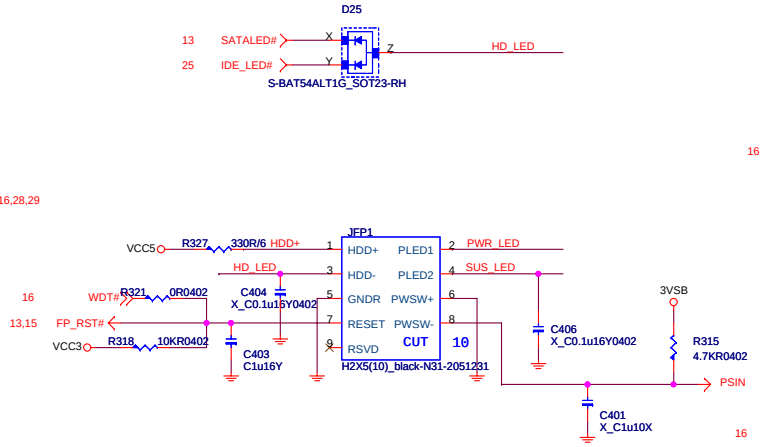
ATX Connector

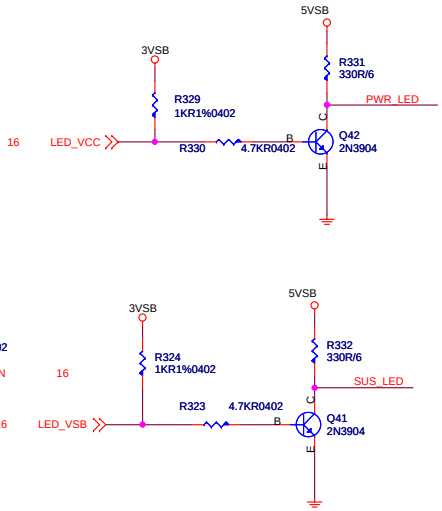


INTEL/PB Front Panel Connector

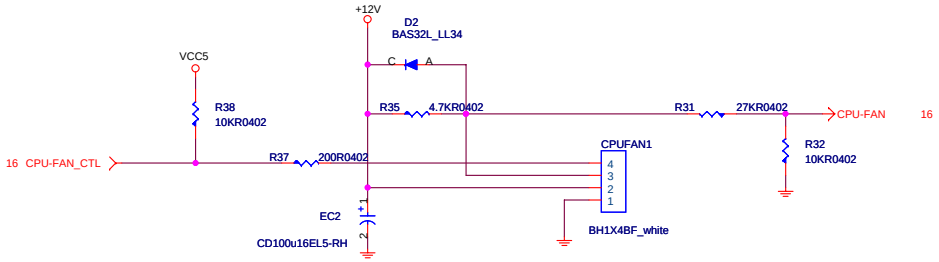


N31-2051451-H06

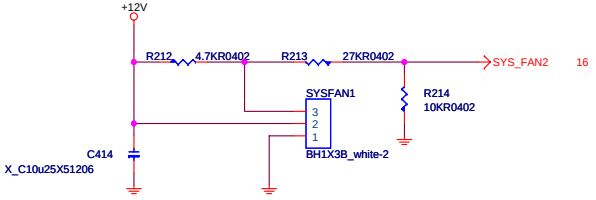
LED (for Fintek 71882)



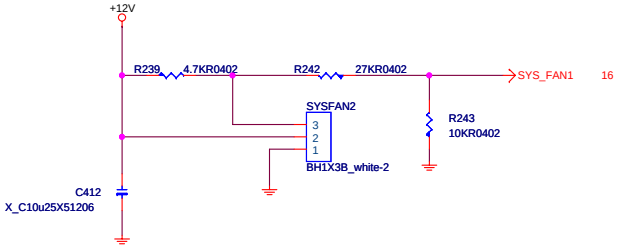
CPU FAN



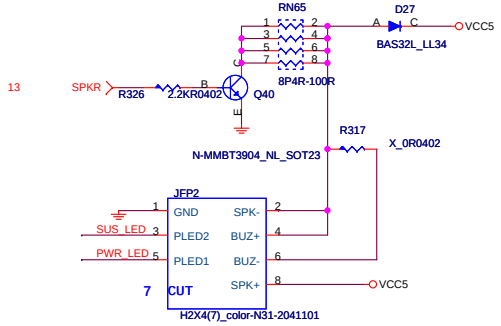
PWR FAN



SYSTEM FAN



MSI Front Panel Connector



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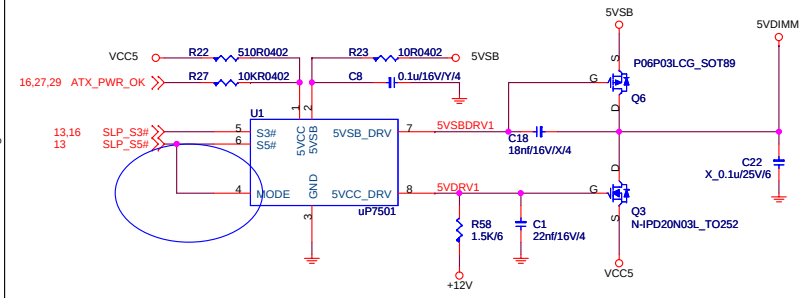
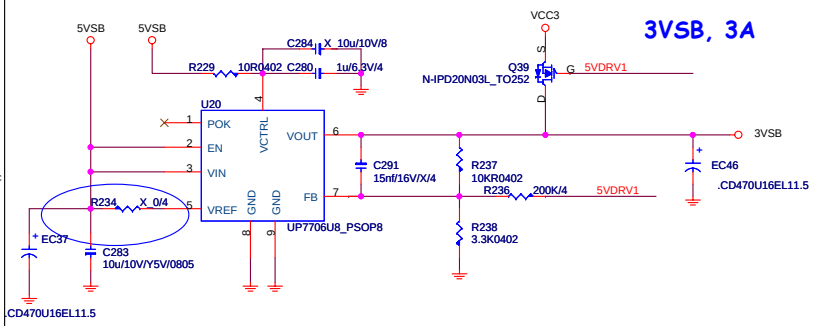
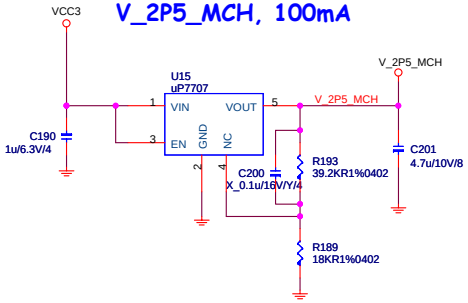
5VDIMM FOR DDR



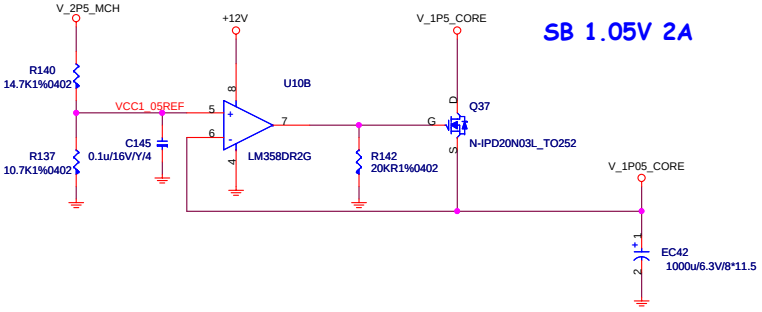
3VSB, 3A



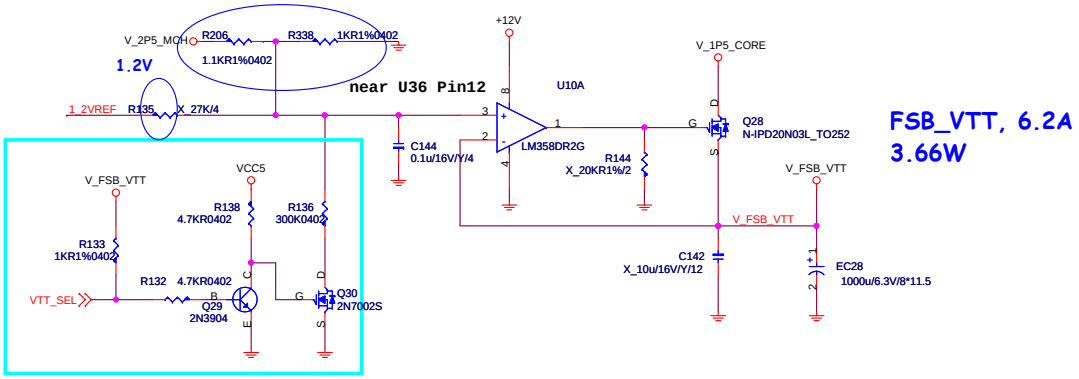
V_2P5_MCH, 100mA



SB 1.05V 2A

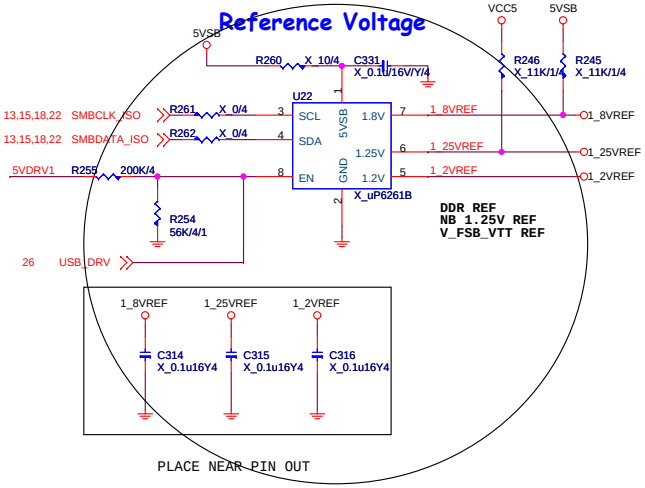


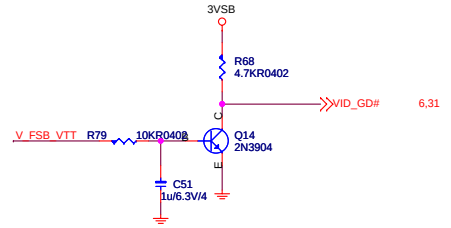
FSB_VTT, 6.2A 3.66W

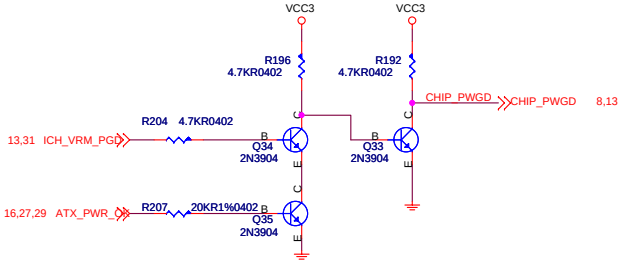


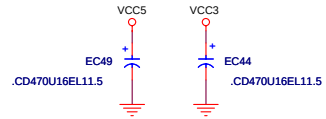
VTT_SEL = L	V_FSB_VTT=1.1V	For future KENTSFIELD processor. (FSB1333, Quad-Core)
VTT_SEL = H	V_FSB_VTT=1.2V	For normal processors.

Reference Voltage









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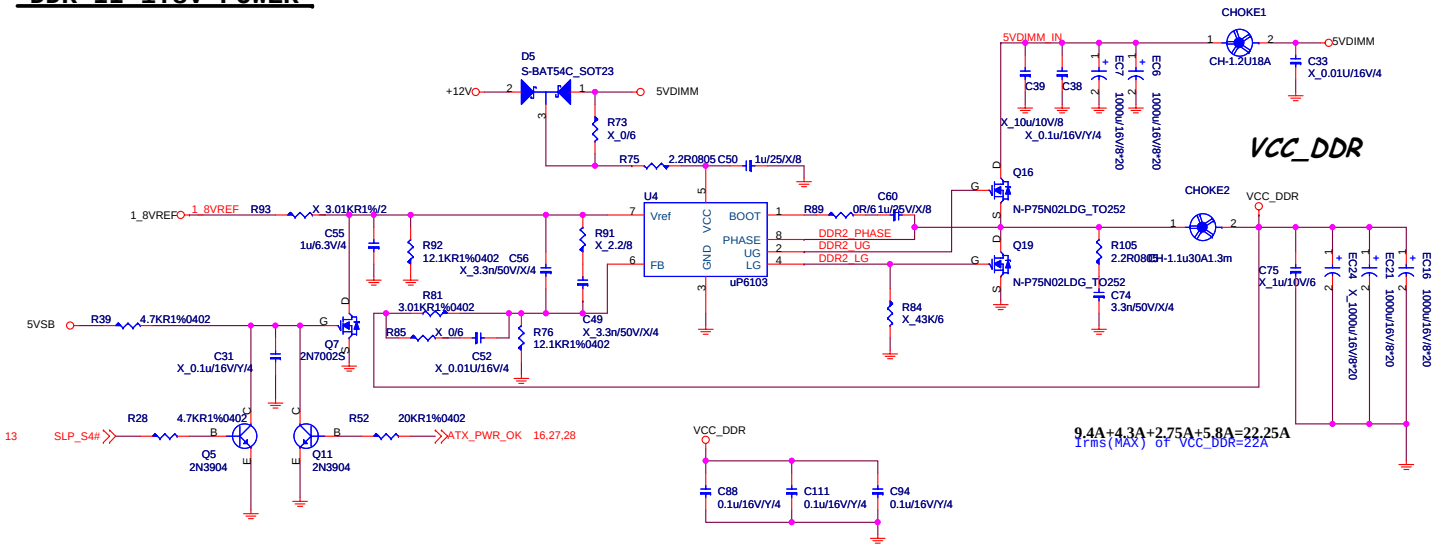
DDR II 1.8V POWER

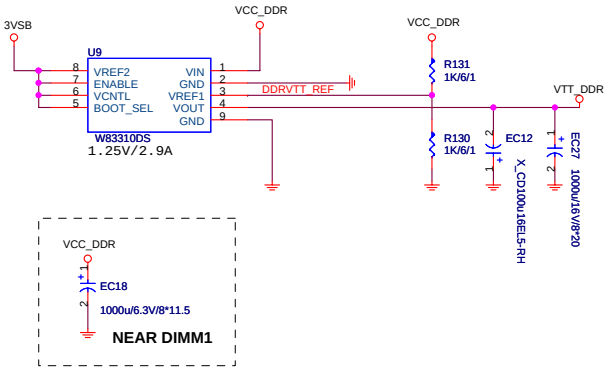
Iripple=22.21*0.6*0.8/1=10.66A
2.35*3*1.7=11.985A>10.08A



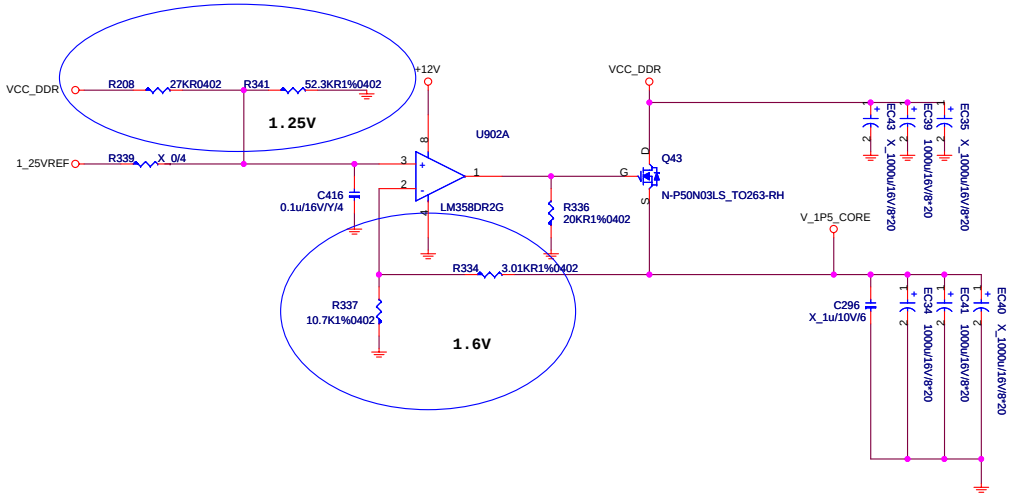
9.4A+4.3A+2.75A+5.8A=22.25A
Irms(MAX) of VCC_DDR=22A

To CPU Copper trace width > 250mils , Fill island behind DIMM > 400mils .

DDR VTT Power



NB 1.5V POWER



Iripple=16.3*0.49*0.878/1=7A
1.14*3*1.7=5.814A>5.59A

NB_V1.5

Irms(MAX) of V_1P5_CORE

13.8A+6.2A=20A

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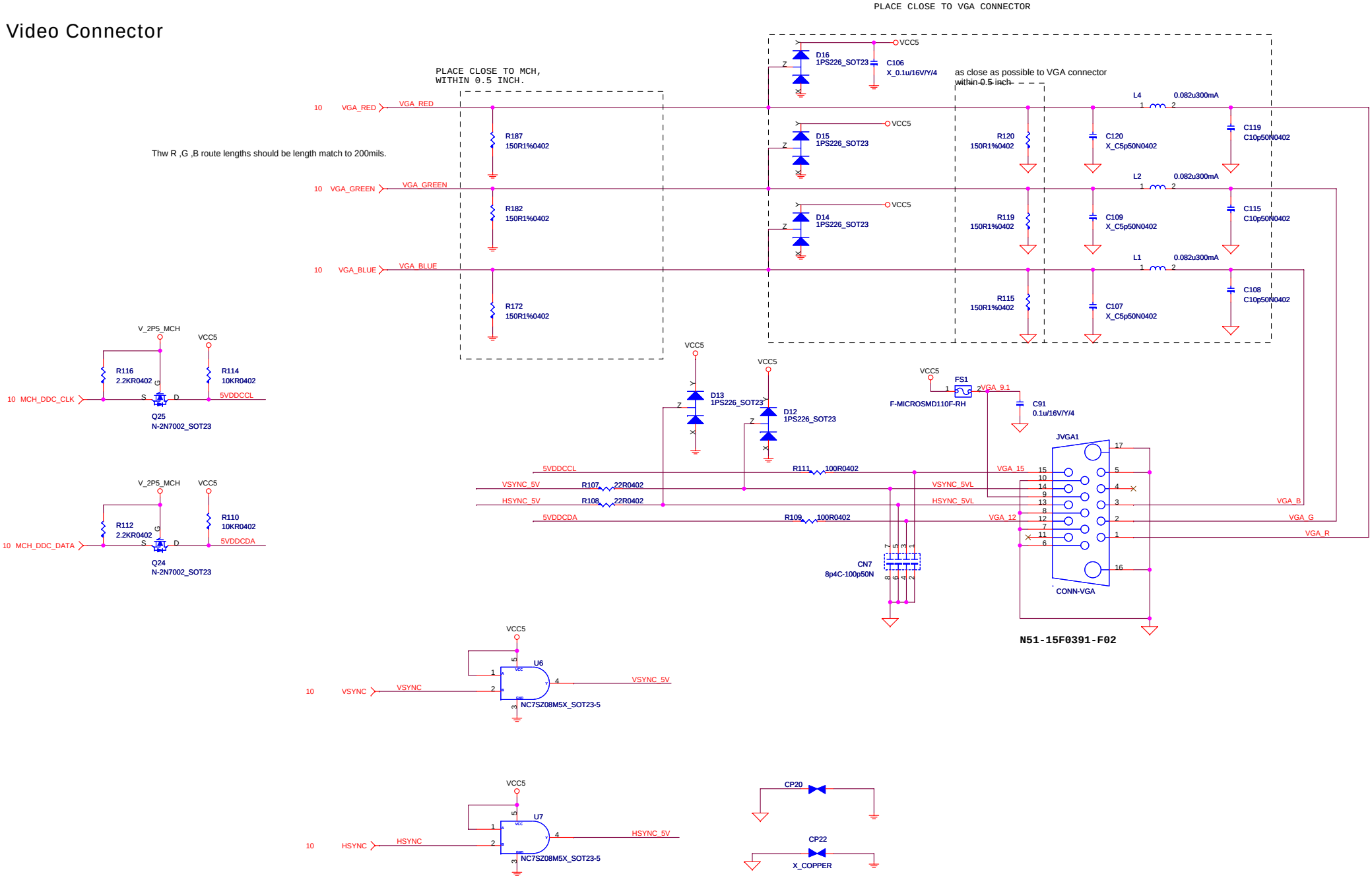
Video Connector



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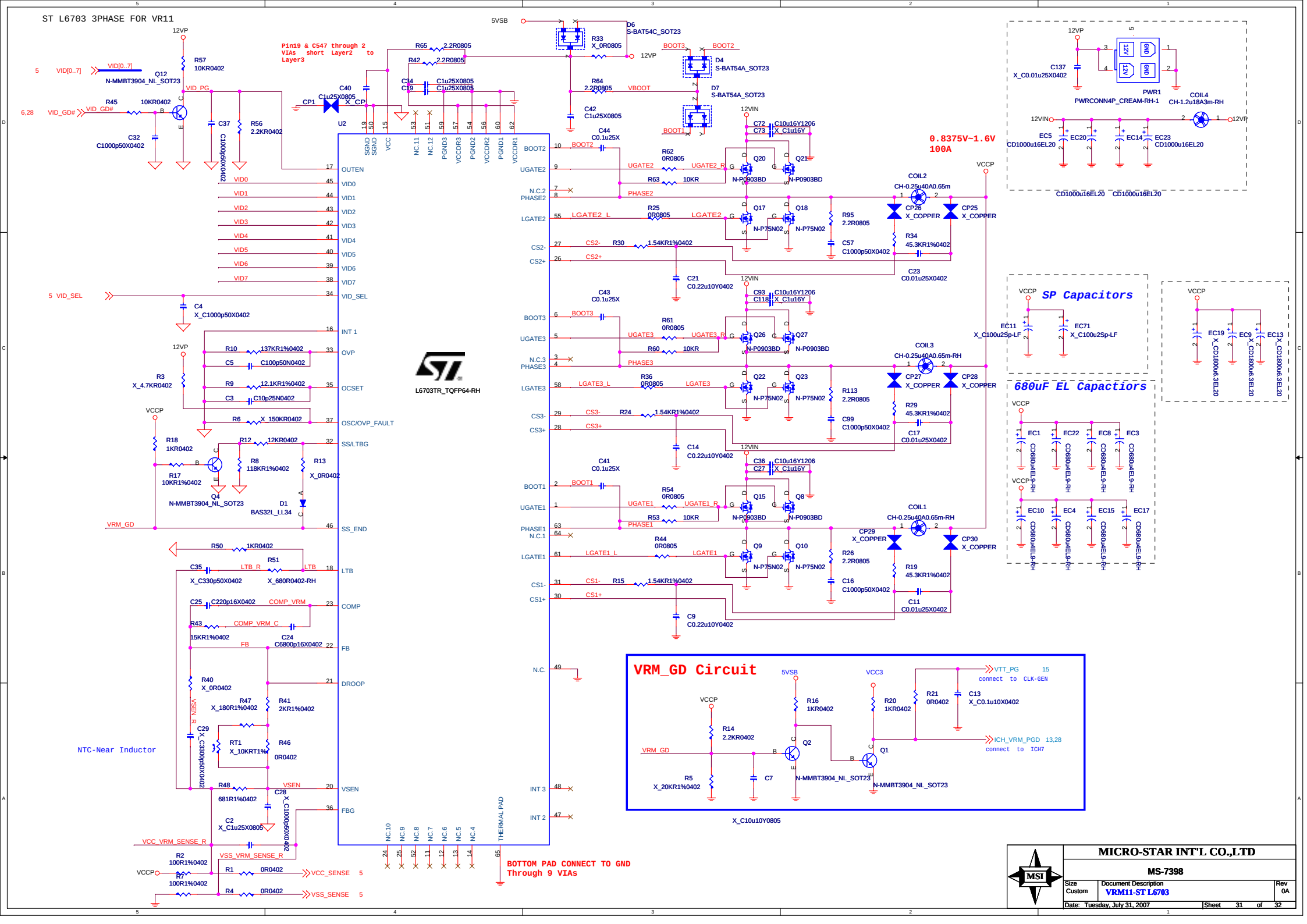
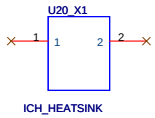
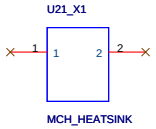
ST L6703 3PHASE FOR VR11



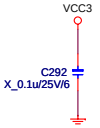
ICH7 HEATSINK



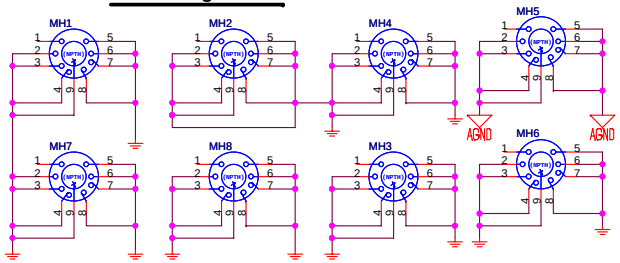
MCH HEATSINK



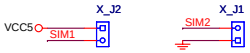
EMI



Mounting Holes

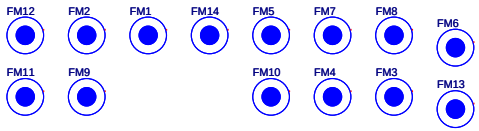


Simulation



Opt-part
Opt-part
U901 AUDIO 3 JACK-AUDIOX3F_PK/GR/BU-RH-2

Optics Orientation Holes



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