MS-7529

Version 1.6

CPU:

Intel Conroe (65W Dual core)

System Chipset:

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

On Board Chipset:

BIOS -- SPI 8M
HD -- ALC888S VC2
LPC Super I/O -- F71882FG
LAN-- REALTEK RTL8111DL Co-lay RTL8103EL
CLOCK -- RTM876-665

Main Memory:

DDR II *2 (Max 4GB)

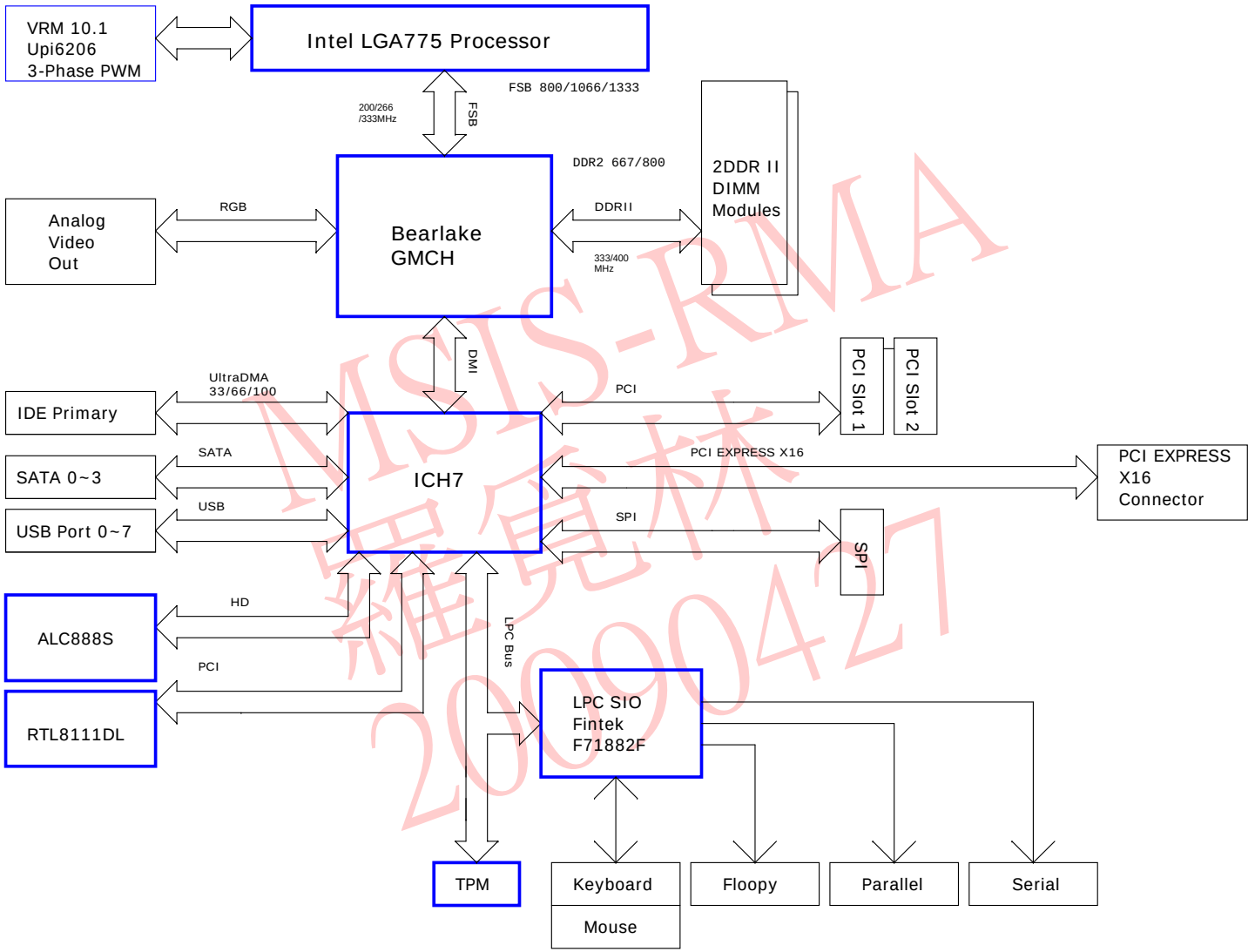
Expansion Slots:

PCI2.3 SLOT * 2
PCI EXPRESS X16 SLOT

ST PWM:

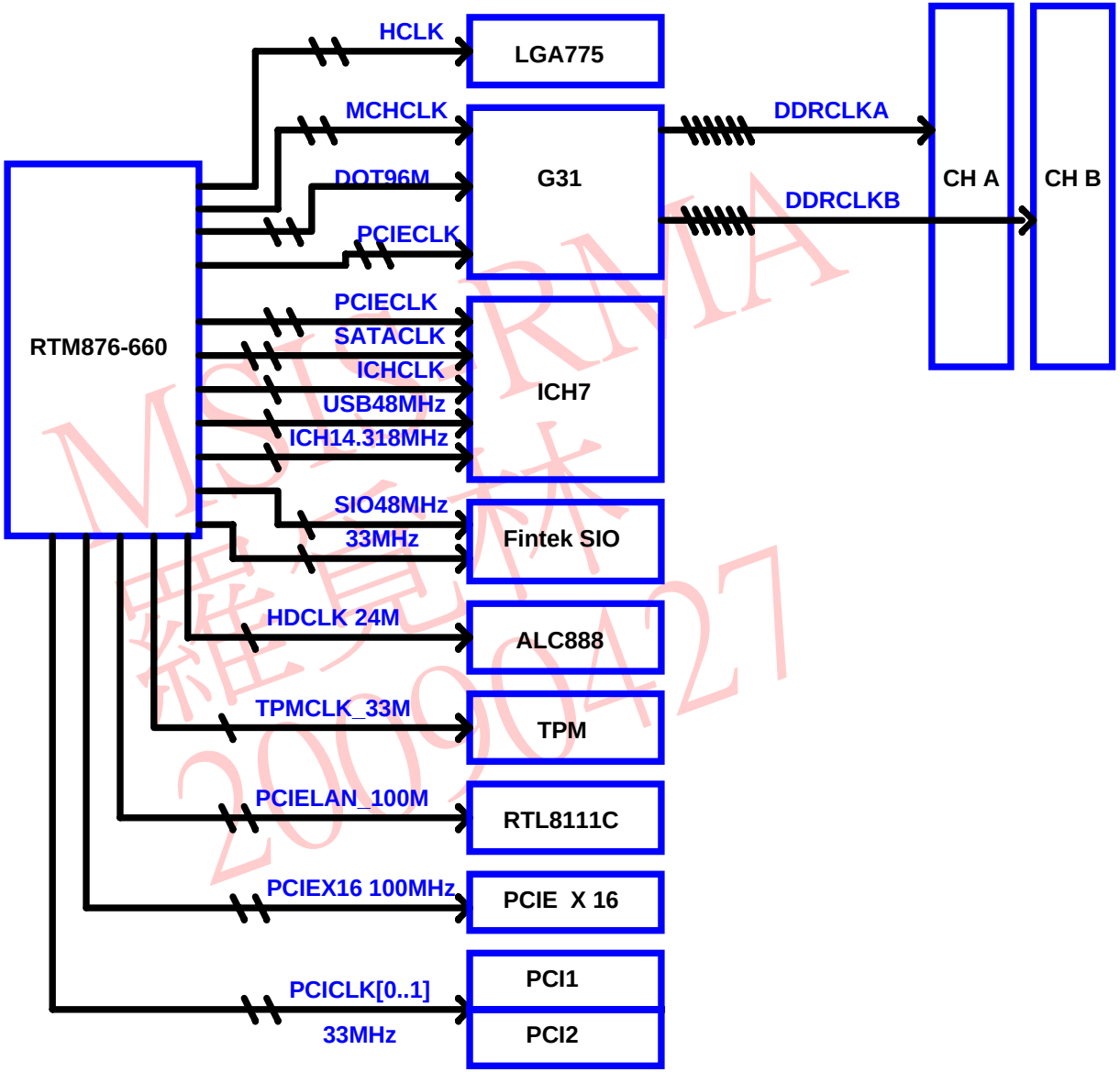
Controller: upi6206 3 PHASES

Block Diagram

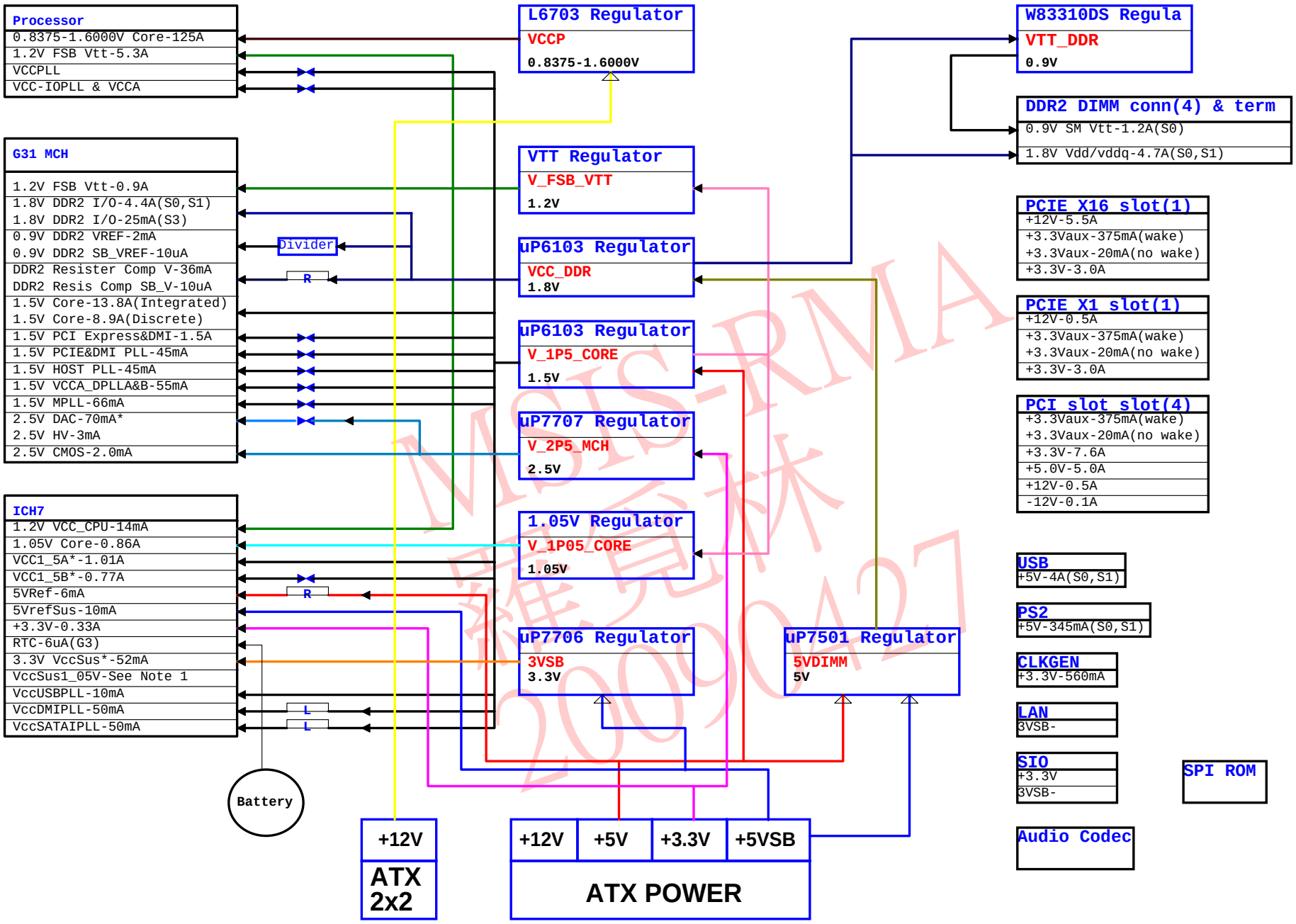


MSI	MICRO-STAR INT'L CO.,LTD	
	MS-7529	
Size: Custom	Document Description: BLOCK DIAGRAM	Rev: 1.6
Date: Tuesday, April 14, 2009	Sheet 2 of 33	

CLOCK MAP



MICRO-STAR INT'L CO.,LTD		
MS-7529		
Size: Custom	Document Description: CLOCK MAP	Rev: 1.6
Date: Tuesday, March 24, 2009	Sheet 3 of 33	



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MS-7529

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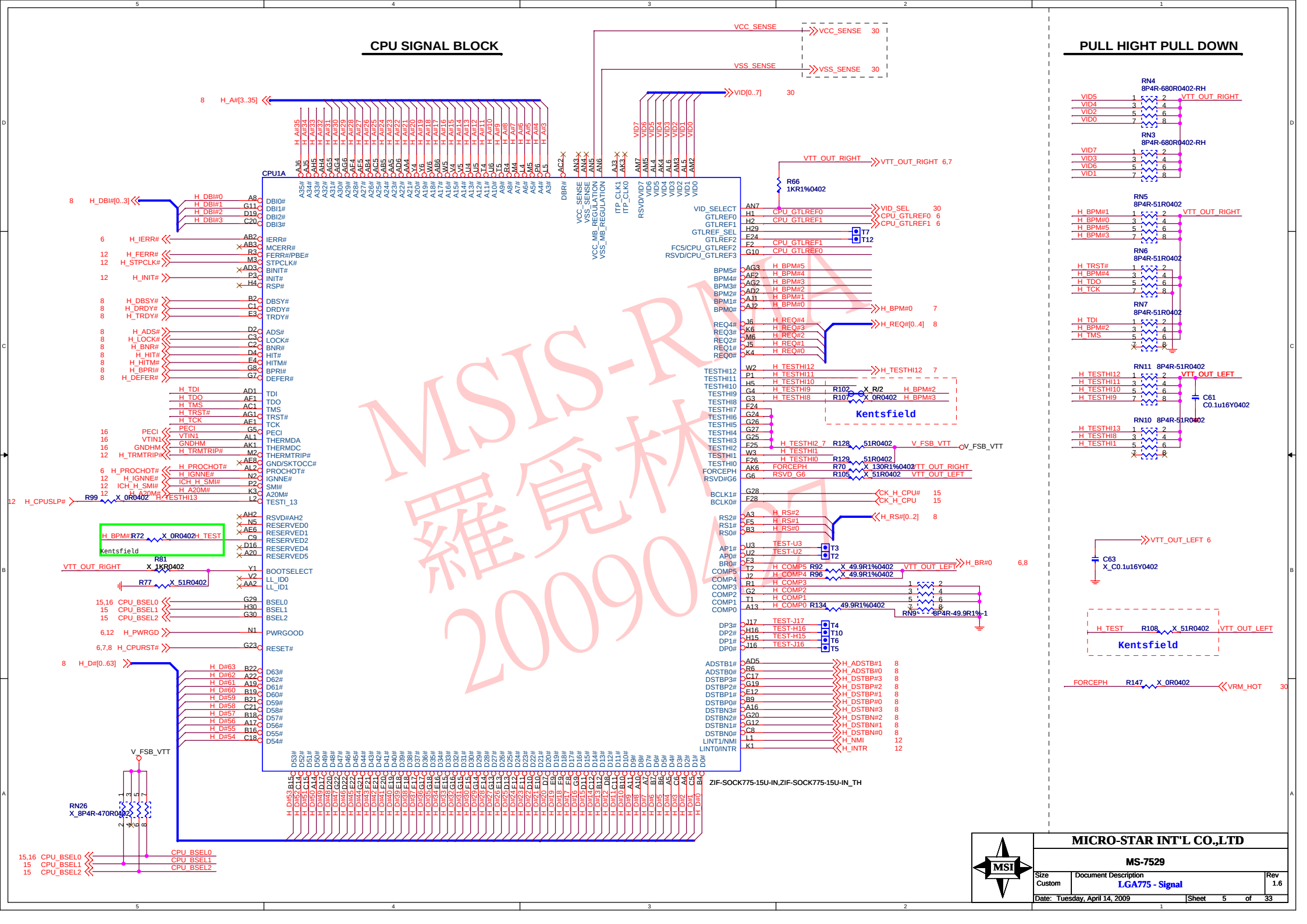
CPU SIGNAL BLOCK

PULL HIGHT PULL DOWN



MICRO-STAR INT'L CO.,LTD		
MS-7529		
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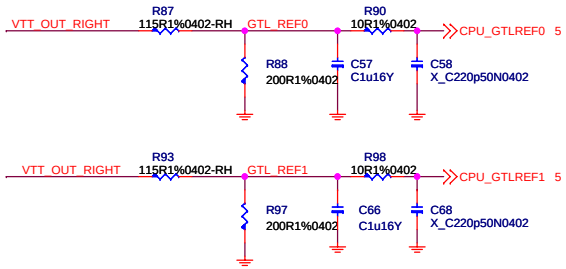
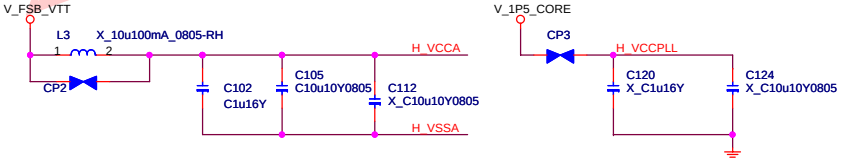
Date: Tuesday, April 14, 2009	Sheet 5 of 33	

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

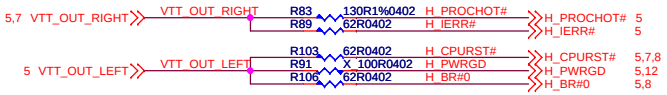


*PLACE COMPONENTS AS CLOSE AS POSSIBLE TO PROCESSOR SOCKET
*TRACE WIDTH TO CAPS MUST BE NO SMALLER THAN 12MILS

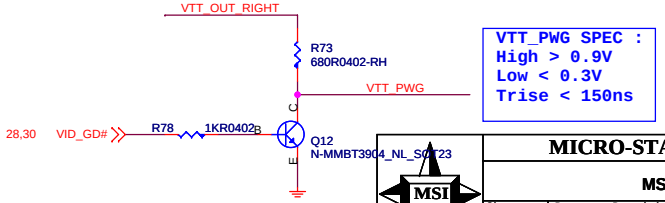


ZIF-SOCK775-15U-IN,ZIF-SOCK775-15U-IN_TH

PLACE AT CPU END OF ROUTE



VTT_PWRGOOD



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

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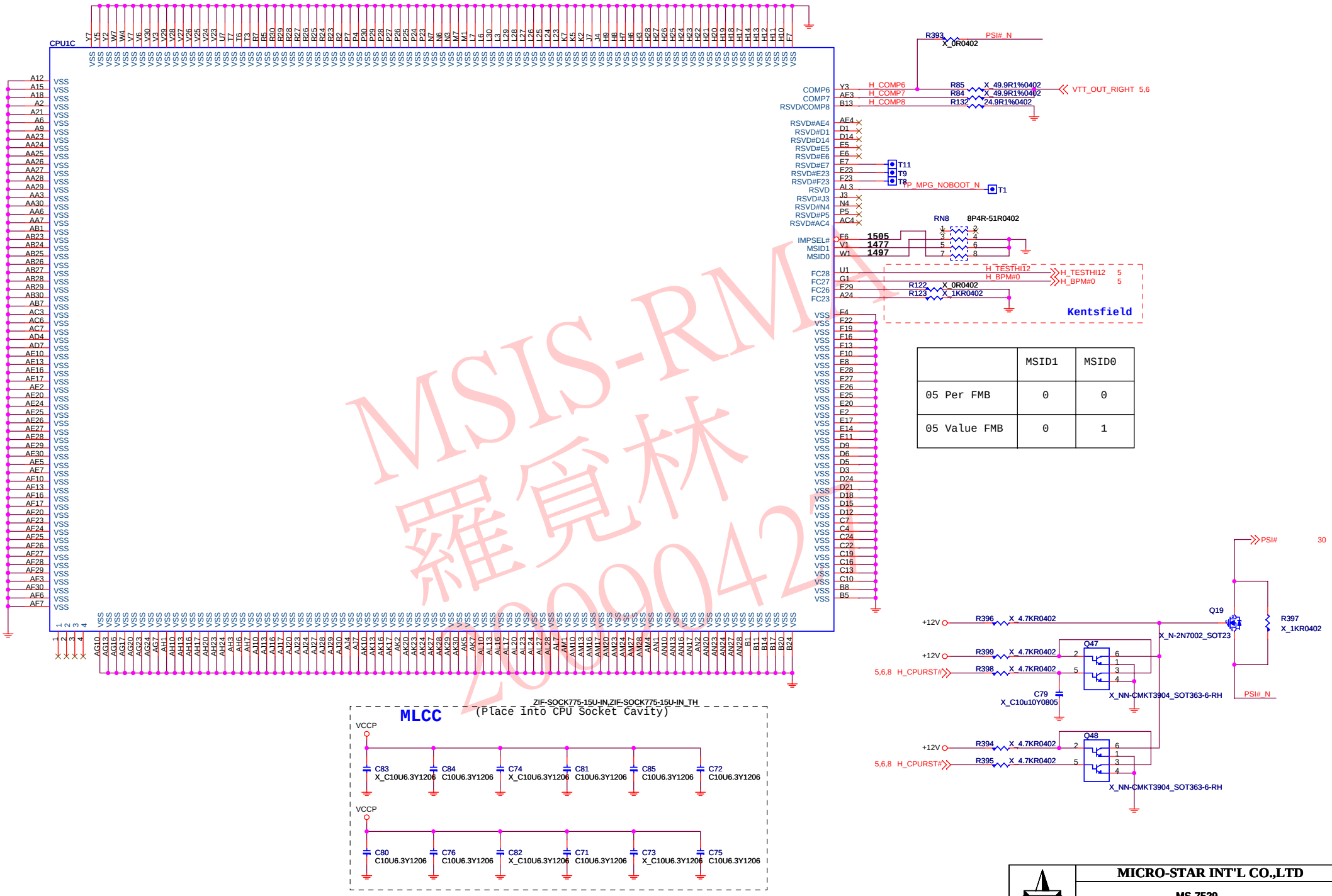

	MSID1	MSID0
05 Per FMB	0	0
05 Value FMB	0	1

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Custom	LGA775 - GND	1.6

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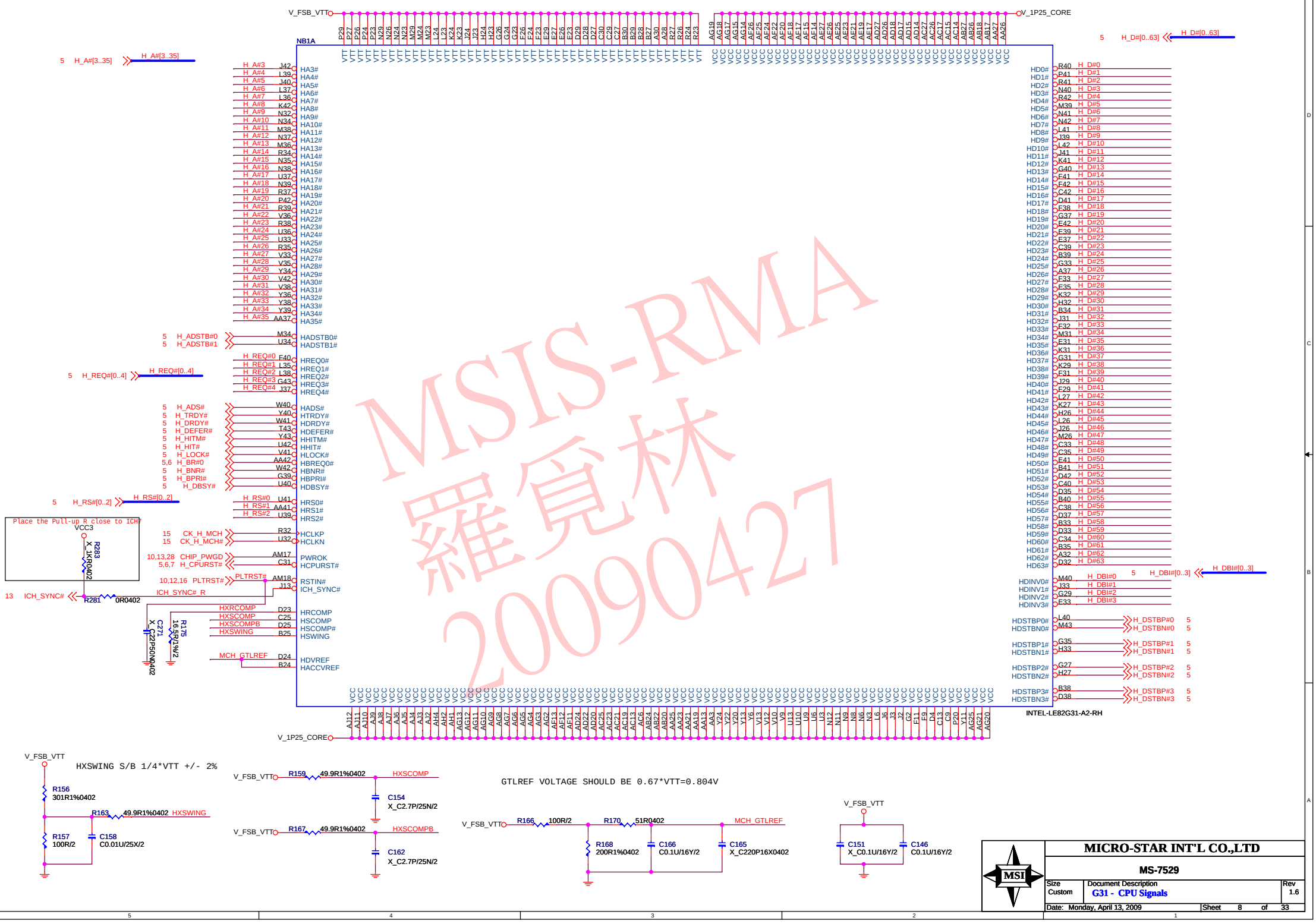
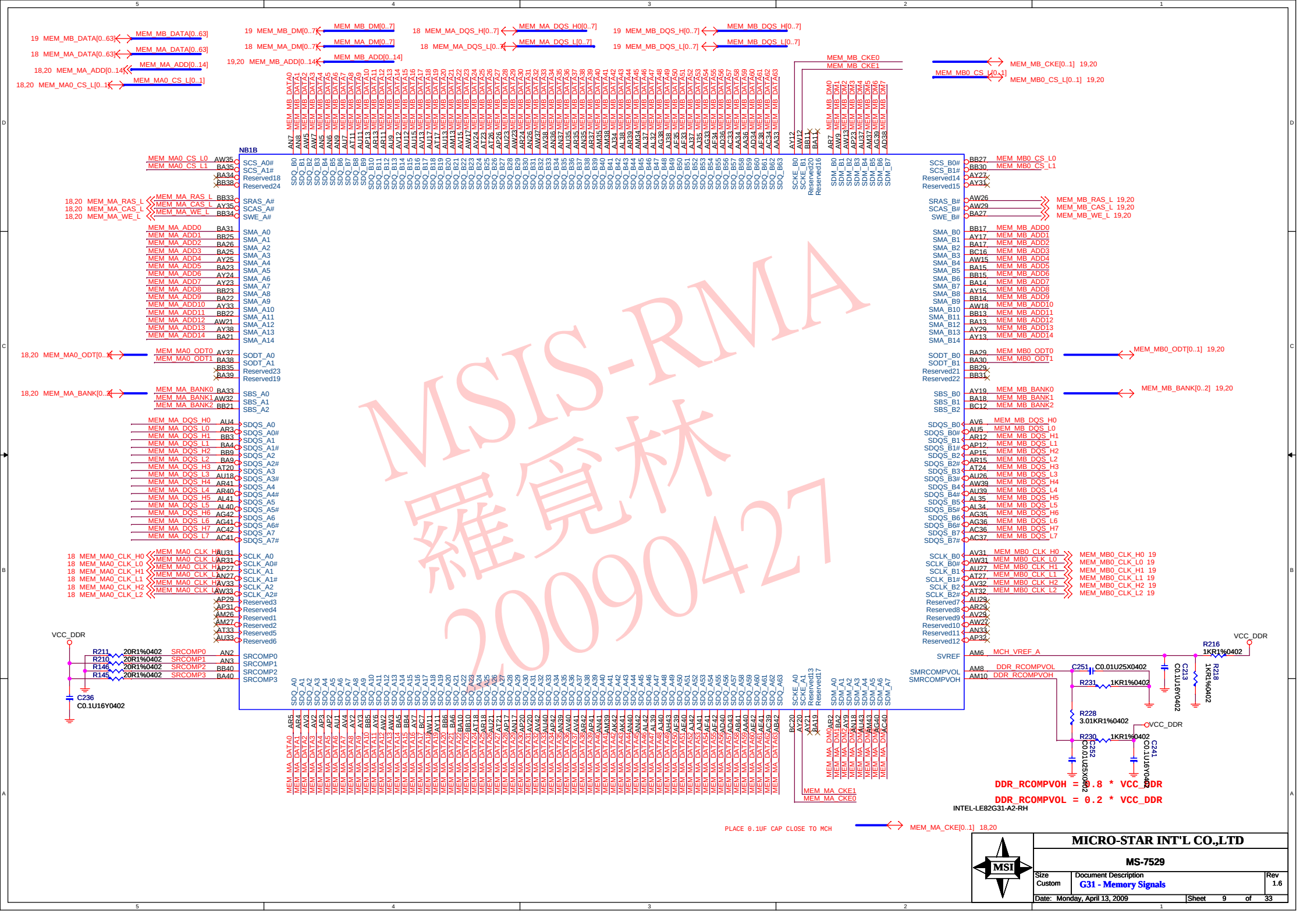


MICRO-STAR INT'L CO.,LTD			
MS-7529			
Size: Custom	Document Description: G31 - CPU Signals		Rev: 1.6
Date: Monday, April 13, 2009		Sheet 8 of 33	



MICRO-STAR INT'L CO.,LTD		
MS-7529		
Size: Custom	Document Description: G31 - Memory Signals	Rev: 1.6
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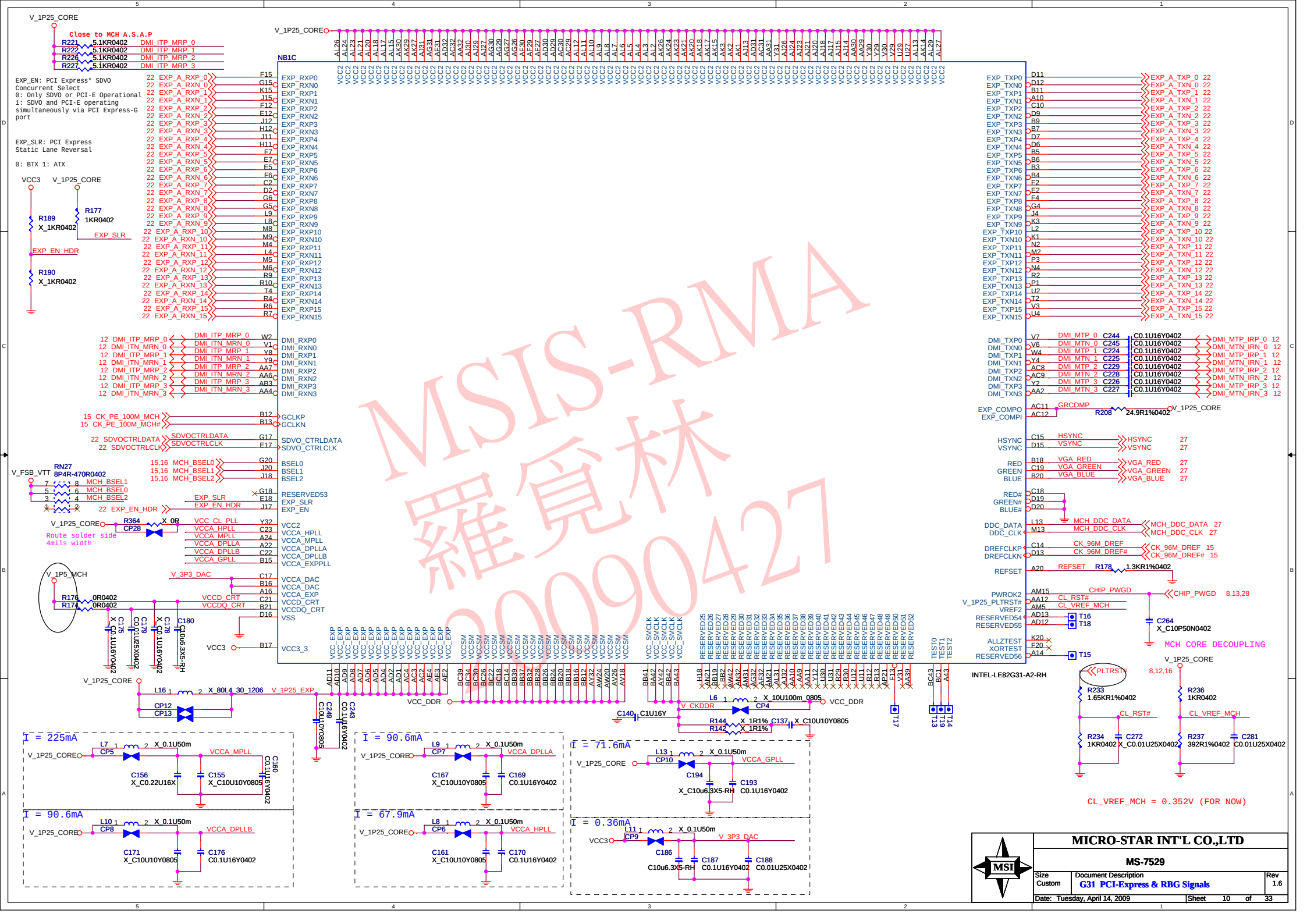

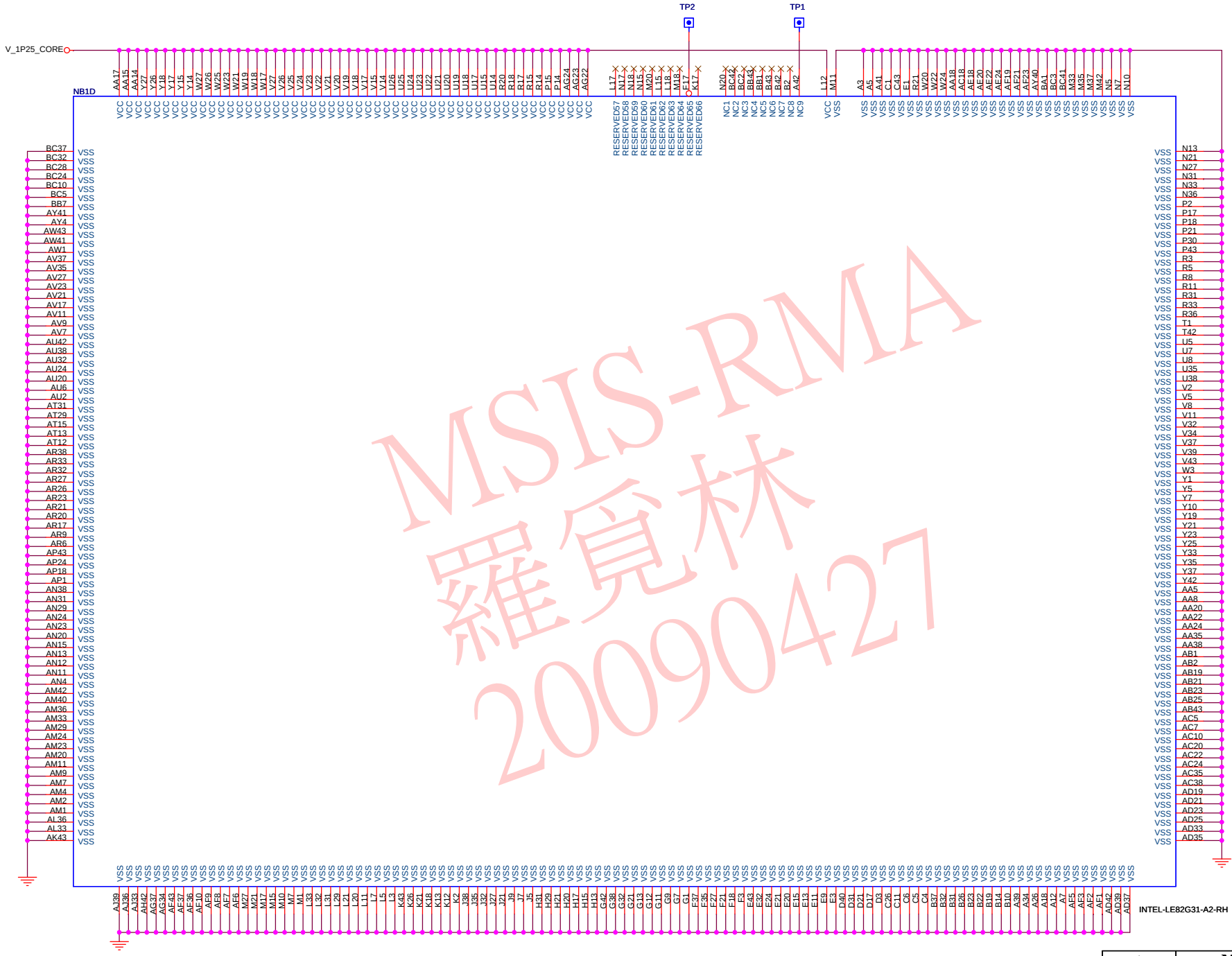

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Size	Document Description	Rev
Custom	Intel .G31 - GND	1.6

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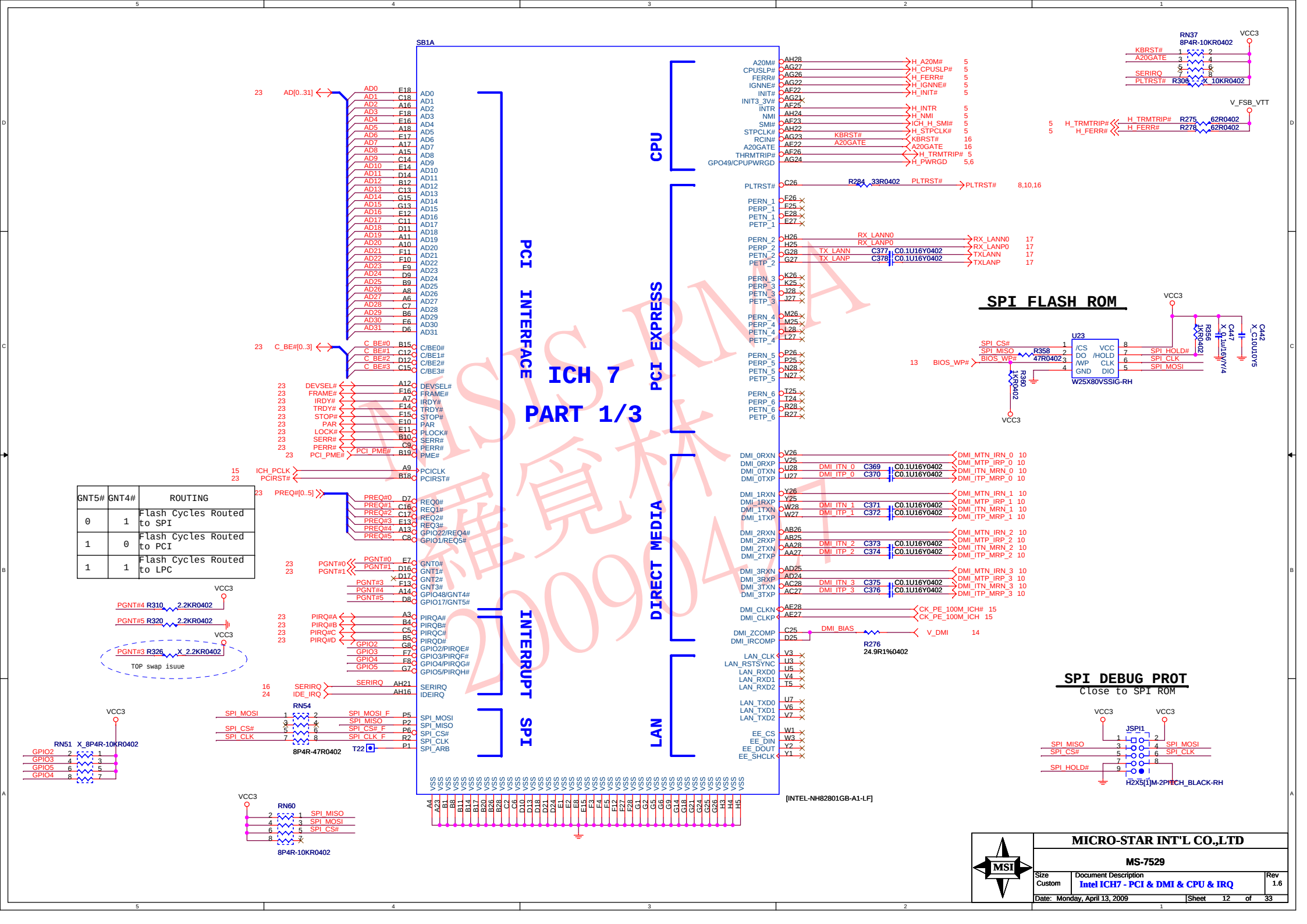
SB1A
ICH 7
PART 1/3
CPU
PCI EXPRESS
DIRECT MEDIA
LAN
PCI INTERFACE
INTERRUPT
SPI
[INTEL-NH82801GB-A1-LF]
SPI FLASH ROM
W25X80VSSIG-RH
SPI DEBUG PROT
Close to SPI ROM
JSPI1
H2X5[1]M-2PITCH_BLACK-RH
RN37 8P4R-10KR0402
RN51 X_8P4R-10KR0402
RN54 8P4R-47R0402
RN60 8P4R-10KR0402
R276 24.9R1%0402
TOP swap isuue
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-7529
Intel ICH7 - PCI & DMI & CPU & IRQ
Rev 1.6
Date: Monday, April 13, 2009
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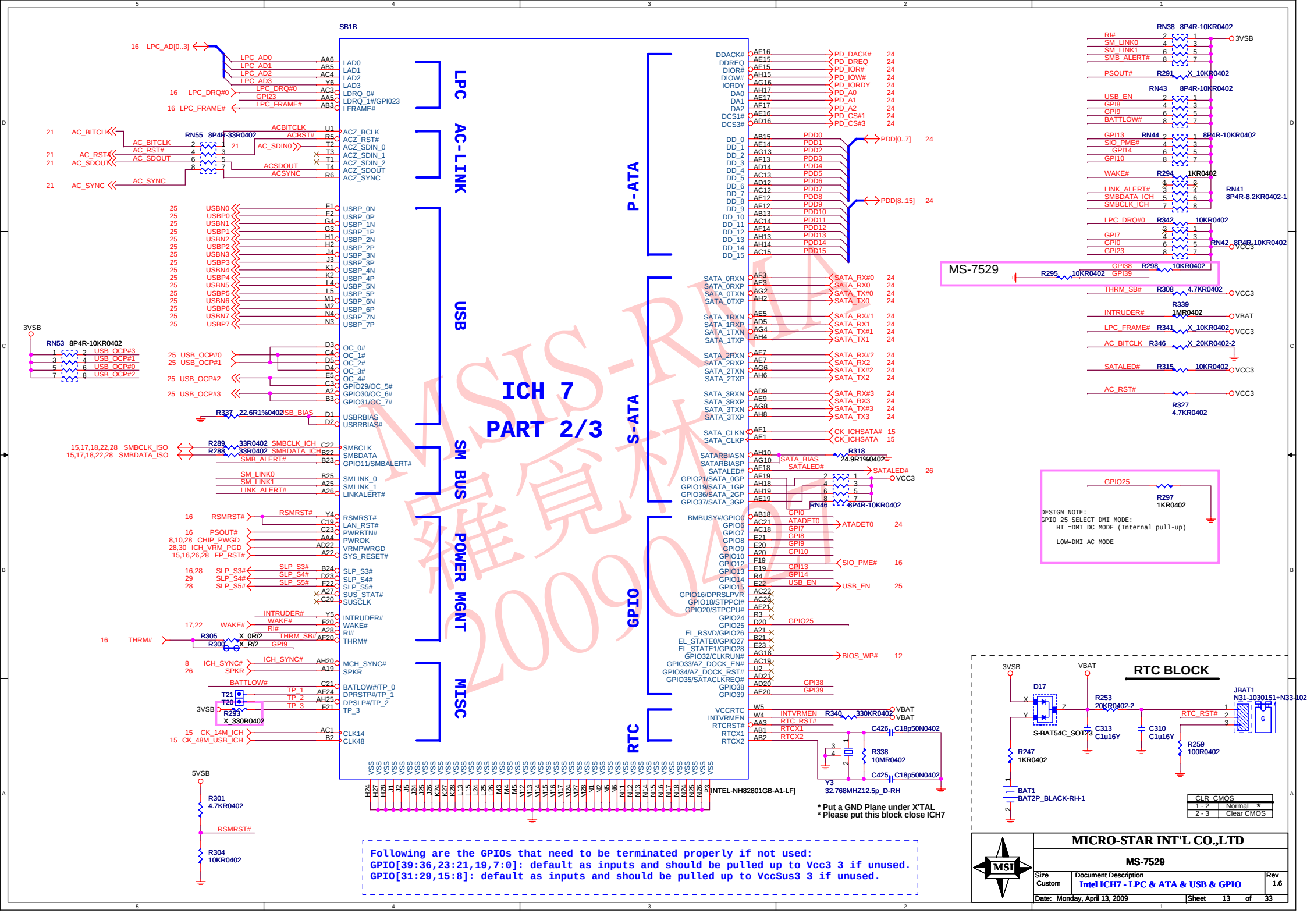
SB1B
LPC
AC-LINK
USB
SM BUS
POWER MGNT
MISC
P-ATA
S-SATA
GPIO
RTC
ICH 7
PART 2/3
LPC_AD[0..3]
LPC_AD0
LPC_AD1
LPC_AD2
LPC_AD3
LPC_DRQ#0
LPC_FRAME#
GPI23
LAD0
LAD1
LAD2
LAD3
LDRQ_0#
LDRQ_1#/GPI023
LFRAME#
AC_BITCLK
AC_RST#
AC_SDOUT
AC_SYNC
RN55 8P4R-33R0402
ACBITCLK
ACRST#
AC_SDIN0
ACSDOUT
ACSYNC
ACZ_BCLK
ACZ_RST#
ACZ_SDIN_0
ACZ_SDIN_1
ACZ_SDIN_2
ACZ_SDOUT
ACZ_SYNC
USBN0
USBP0
USBN1
USBP1
USBN2
USBP2
USBN3
USBP3
USBN4
USBP4
USBN5
USBP5
USBN6
USBP6
USBN7
USBP7
USBP_0N
USBP_0P
USBP_1N
USBP_1P
USBP_2N
USBP_2P
USBP_3N
USBP_3P
USBP_4N
USBP_4P
USBP_5N
USBP_5P
USBP_6N
USBP_6P
USBP_7N
USBP_7P
3VSB
RN53 8P4R-10KR0402
USB_OCP#3
USB_OCP#1
USB_OCP#0
USB_OCP#2
USB_OCP#0
USB_OCP#1
USB_OCP#2
USB_OCP#3
OC_0#
OC_1#
OC_2#
OC_3#
OC_4#
GPIO29/OC_5#
GPIO30/OC_6#
GPIO31/OC_7#
R337 22.6R1%0402
USB_BIAS
USBRBIAS
USBRBIAS#
15,17,18,22,28 SMBCLK_ISO
15,17,18,22,28 SMBDATA_ISO
R289 33R0402 SMBCLK_ICH
R288 33R0402 SMBDATA_ICH
SMB_ALERT#
SMBCLK
SMBDATA
GPIO11/SMBALERT#
SM_LINK0
SM_LINK1
LINK_ALERT#
SMLINK_0
SMLINK_1
LINKALERT#
RSMRST#
PSOUT#
CHIP_PWGD
ICH_VRM_PGD
FP_RST#
RSMRST#
LAN_RST#
PWRBTN#
PWROK
VRMPWRGD
SYS_RESET#
SLP_S3#
SLP_S4#
SLP_S5#
SUS_STAT#
SUSCLK
INTRUDER#
WAKE#
RI#
THRM#
R305 X_0R/2
R306 X_R/2
GPI9
ICH_SYNC#
SPKR
MCH_SYNC#
SPKR
BATTLOW#
TP_1
TP_2
TP_3
T21
T20
R293 X_330R0402
CK_14M_ICH
CK_48M_USB_ICH
CLK14
CLK48
5VSB
R301 4.7KR0402
R304 10KR0402
DDACK#
DDREQ
DIOR#
DIOW#
IORDY
DA0
DA1
DA2
DCS1#
DCS3#
PD_DACK#
PD_DREQ
PD_IOR#
PD_IOW#
PD_IORDY
PD_A0
PD_A1
PD_A2
PD_CS#1
PD_CS#3
DD_0
DD_1
DD_2
DD_3
DD_4
DD_5
DD_6
DD_7
DD_8
DD_9
DD_10
DD_11
DD_12
DD_13
DD_14
DD_15
PDD0
PDD1
PDD2
PDD3
PDD4
PDD5
PDD6
PDD7
PDD8
PDD9
PDD10
PDD11
PDD12
PDD13
PDD14
PDD15
PDD[0..7]
PDD[8..15]
SATA_0RXN
SATA_0RXP
SATA_0TXN
SATA_0TXP
SATA_1RXN
SATA_1RXP
SATA_1TXN
SATA_1TXP
SATA_2RXN
SATA_2RXP
SATA_2TXN
SATA_2TXP
SATA_3RXN
SATA_3RXP
SATA_3TXN
SATA_3TXP
SATA_RX#0
SATA_RX0
SATA_TX#0
SATA_TX0
SATA_RX#1
SATA_RX1
SATA_TX#1
SATA_TX1
SATA_RX#2
SATA_RX2
SATA_TX#2
SATA_TX2
SATA_RX#3
SATA_RX3
SATA_TX#3
SATA_TX3
SATA_CLKN
SATA_CLKP
CK_ICHSATA#
CK_ICHSATA
SATARBIASN
SATARBIASP
SATALED#
SATA_BIAS
R318 24.9R1%0402
RN46 8P4R-10KR0402
GPIO21/SATA_0GP
GPIO19/SATA_1GP
GPIO36/SATA_2GP
GPIO37/SATA_3GP
BMBUSY#/GPIO0
GPIO6
GPIO7
GPIO8
GPIO9
GPIO10
GPIO12
GPIO13
GPIO14
GPIO15
GPIO16/DPRSLPVR
GPIO18/STPPCI#
GPIO20/STPCPU#
GPIO24
GPIO25
EL_RSVD/GPIO26
EL_STATE0/GPIO27
EL_STATE1/GPIO28
GPIO32/CLKRUN#
GPIO33/AZ_DOCK_EN#
GPIO34/AZ_DOCK_RST#
GPIO35/SATACLKREQ#
GPIO38
GPIO39
ATADET0
SIO_PME#
USB_EN
BIOS_WP#
VCCRTC
INTVRMEN
RTCRST#
RTCX1
RTCX2
R340 330KR0402
C426 C18p50N0402
C425 C18p50N0402
R338 10MR0402
Y3 32.768MHZ12.5p_D-RH
VBAT
RTC_RST#
INTEL-NH82801GB-A1-LF]
* Put a GND Plane under X'TAL
* Please put this block close ICH7
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.
RN38 8P4R-10KR0402
RI#
SM_LINK0
SM_LINK1
SMB_ALERT#
PSOUT#
R291 X_10KR0402
RN43 8P4R-10KR0402
USB_EN
GPI8
GPI9
BATTLOW#
RN44 8P4R-10KR0402
GPI13
SIO_PME#
GPI14
GPI10
WAKE#
R294 1KR0402
LINK_ALERT#
SMBDATA_ICH
SMBCLK_ICH
RN41 8P4R-8.2KR0402-1
LPC_DRQ#0
R342 10KR0402
GPI7
GPI0
GPI23
RN42 8P4R-10KR0402
MS-7529
R295 10KR0402
GPI38
GPI39
R298 10KR0402
THRM_SB#
R308 4.7KR0402
R339 1MR0402
INTRUDER#
LPC_FRAME#
R341 X_10KR0402
AC_BITCLK
R346 X_20KR0402-2
SATALED#
R315 10KR0402
AC_RST#
R327 4.7KR0402
VCC3
VBAT
GPIO25
R297 1KR0402
DESIGN NOTE:
GPIO 25 SELECT DMI MODE:
HI =DMI DC MODE (Internal pull-up)
LOW=DMI AC MODE
RTC BLOCK
D17
S-BAT54C_SOT23
R253 20KR0402-2
C313 C1u16Y
C310 C1u16Y
R259 100R0402
R247 1KR0402
BAT1
BAT2P_BLACK-RH-1
JBAT1
N31-1030151+N33-102
RTC_RST#
CLR_CMOS
1 - 2 Normal
2 - 3 Clear CMOS
MICRO-STAR INT'L CO.,LTD
MS-7529
Size Custom
Document Description
Intel ICH7 - LPC & ATA & USB & GPIO
Rev 1.6
Date: Monday, April 13, 2009
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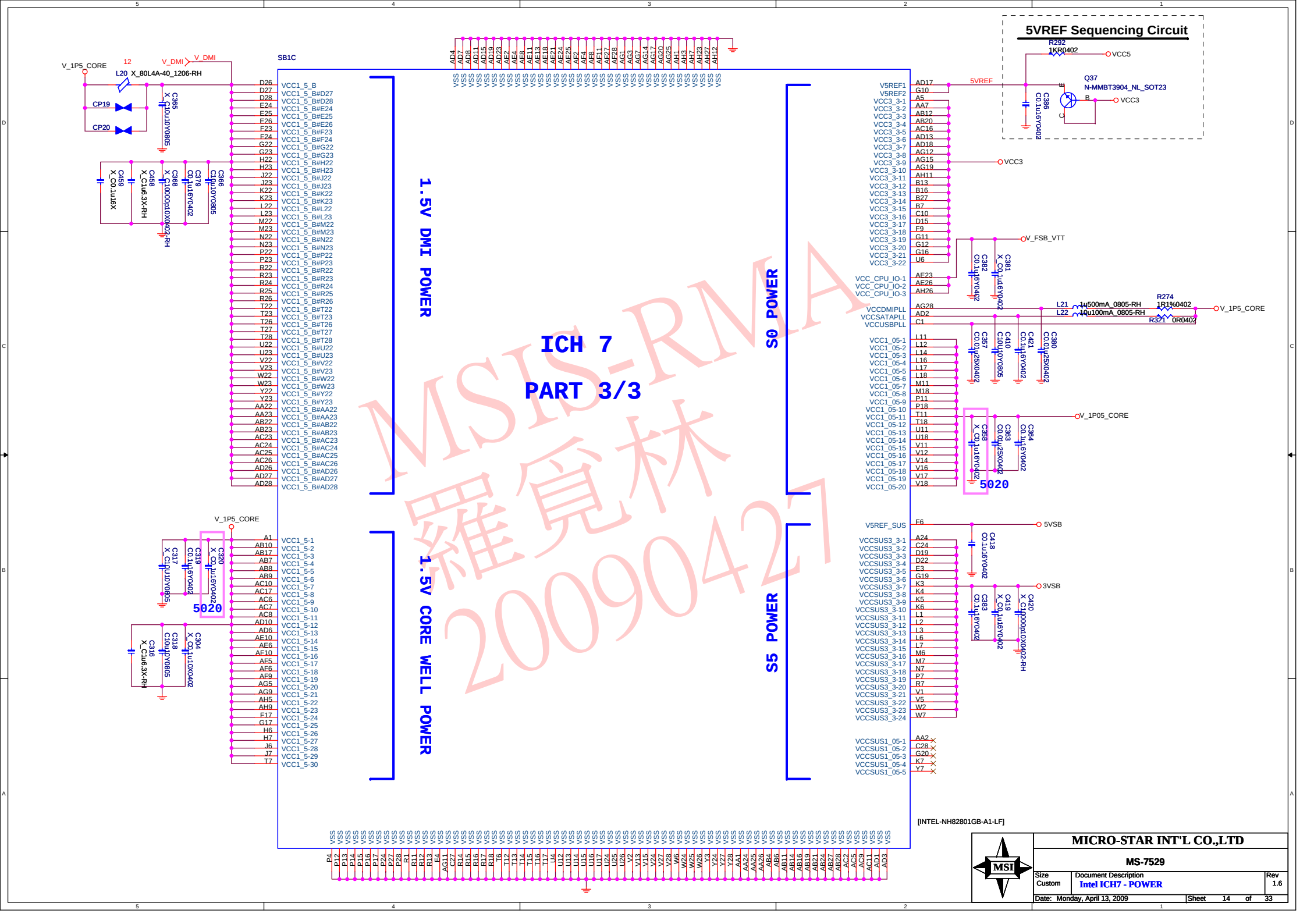
ICH 7
PART 3/3
1.5V DMI POWER
1.5V CORE WELL POWER
S0 POWER
S5 POWER
SB1C
5VREF Sequencing Circuit
[INTEL-NH82801GB-A1-LF]
MICRO-STAR INT'L CO.,LTD
MS-7529
Intel ICH7 - POWER
Rev 1.6
Date: Monday, April 13, 2009
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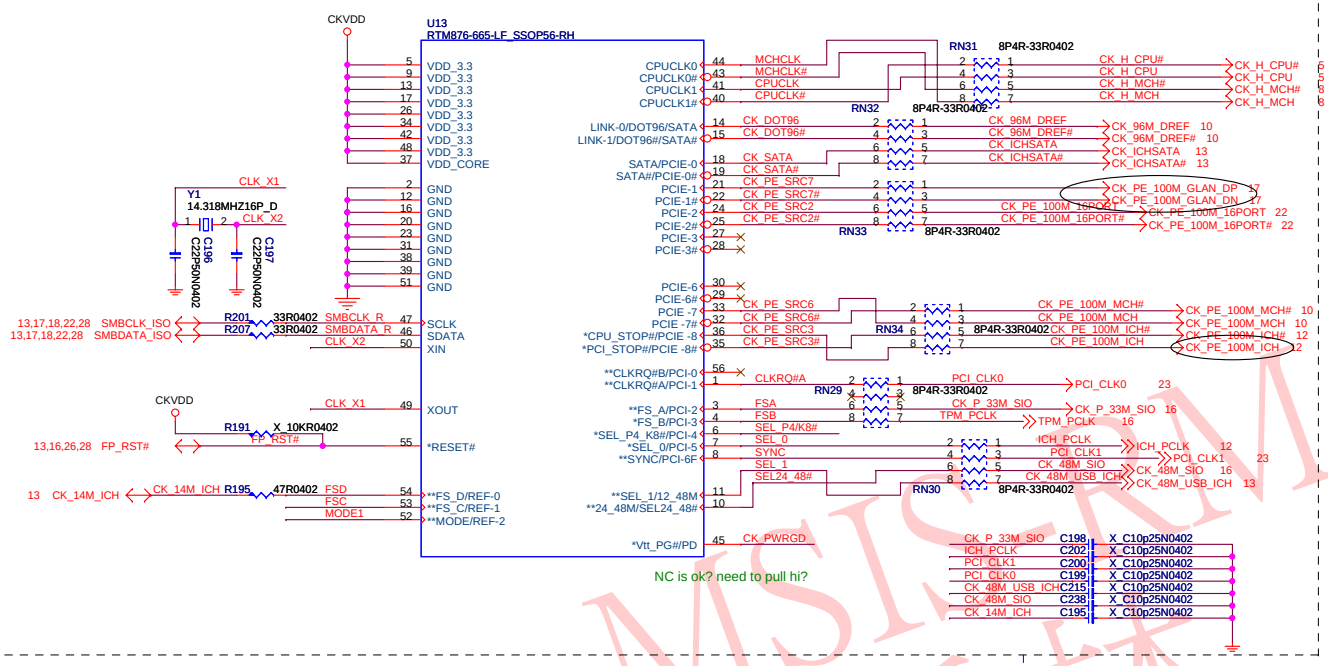
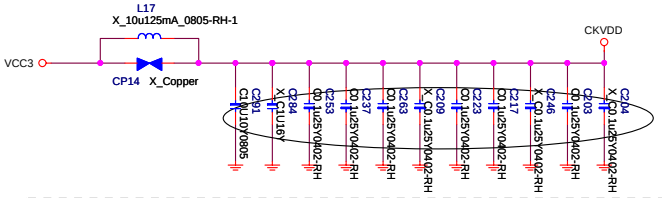
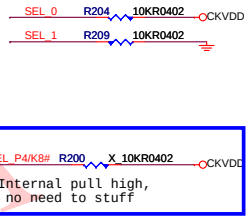
MSIS-RMA
羅覓林
20090427

Clock Generator - RTM876-665





STRAPPING RESISTOR



SEL_1	SEL_0	Chipset Support
0	0	SIS
1	0	VIA
0	1	Intel W/GFX
1	1	Intel

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

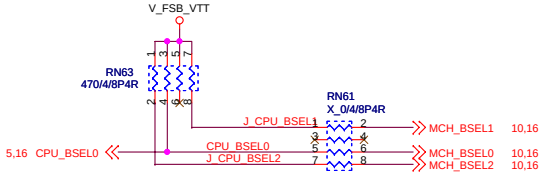
MODE	PIN#35/36
0	PCIE-8 T/C
1	PCI STOP#/CPU_STOP#

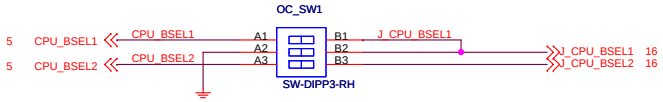
SEL24_48#	Pin#10
0	48Mhz
1	24Mhz

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)

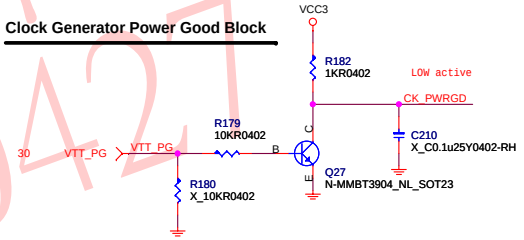
OC_SW1

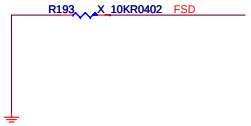
Default	200-->266	200-->333	200-->400
1:ON	1:ON	1:ON	1:OFF/ON
2:OFF	2:ON	2:ON	2:OFF
3:ON	3:ON	3:OFF	3:OFF
		266-->333	266-->400
		1:ON	1:OFF
		2:OFF	2:OFF
		3:OFF	3:OFF
			333-->400
			1:OFF
			2:OFF
			3:OFF



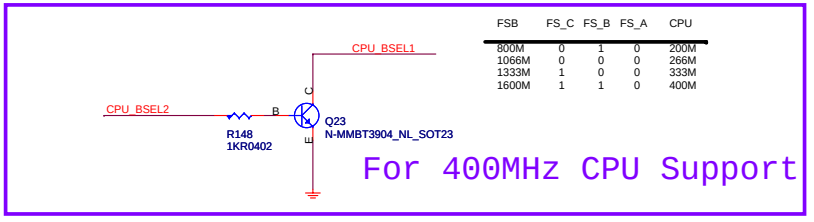


Clock Generator Power Good Block





FS_C	FS_B	FS_A	CPU
0	0	0	266M
0	0	1	133M
0	1	0	200M
0	1	1	166M
1	0	0	333M
1	0	1	100M
1	1	0	400M
1	1	1	200M



FSB	FS_C	FS_B	FS_A	CPU
800M	0	1	0	200M
1066M	0	0	0	266M
1333M	1	0	0	333M
1600M	1	1	0	400M

MICRO-STAR INT'L CO.,LTD

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Size: Custom | Document Description: CLK-RTM 876-665 | Rev: 1.6

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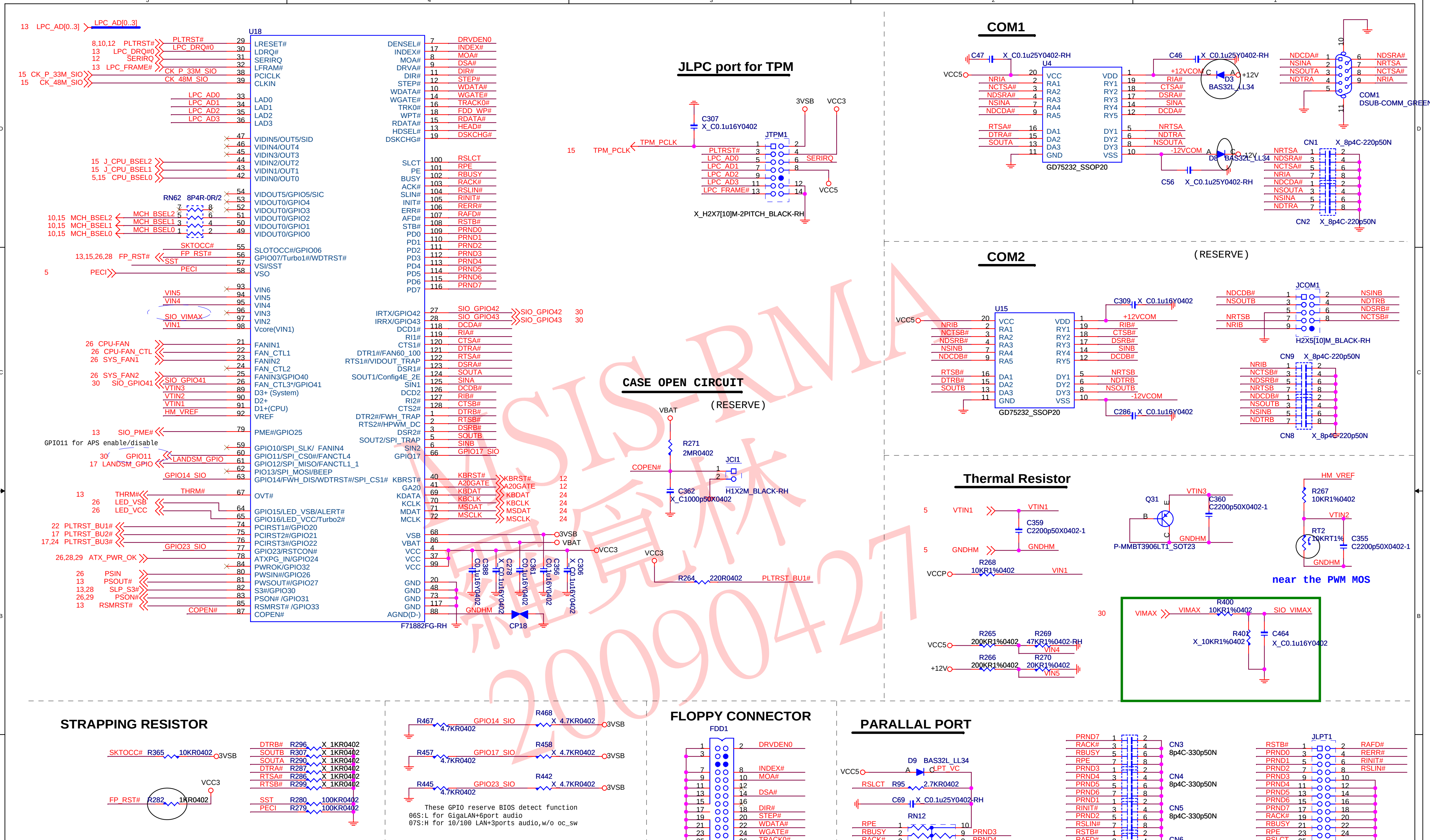

	Don't STUFF	STUFF
RTSB#	PWM FAN	LINEAR FAN
RTSA#	PIN49-54=VID_OUT PIN42-47=VIDIN	PIN49-54=GPIO PIN42-47=VIDIN/OUT
SOUTA	4E	2E
DTRB#, SOUTB	SPI_DISABLE	SPI_ENABLE
DTRA#	FAN START DUTY 60%	FAN START DUTY 100%

These GPIO reserve BIOS detect function
06S:L for GigaLAN+6port audio
07S:H for 10/100 LAN+3ports audio,w/o oc_sw

BOM / GPIO	06S	07S
GPIO14	L	H
GPIO17	L	L
GPIO20	L	L

MICRO-STAR INT'L CO.,LTD

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Size: Custom | Document Description: SIO-Fintek F17882F & IO-Port | Rev 1.6

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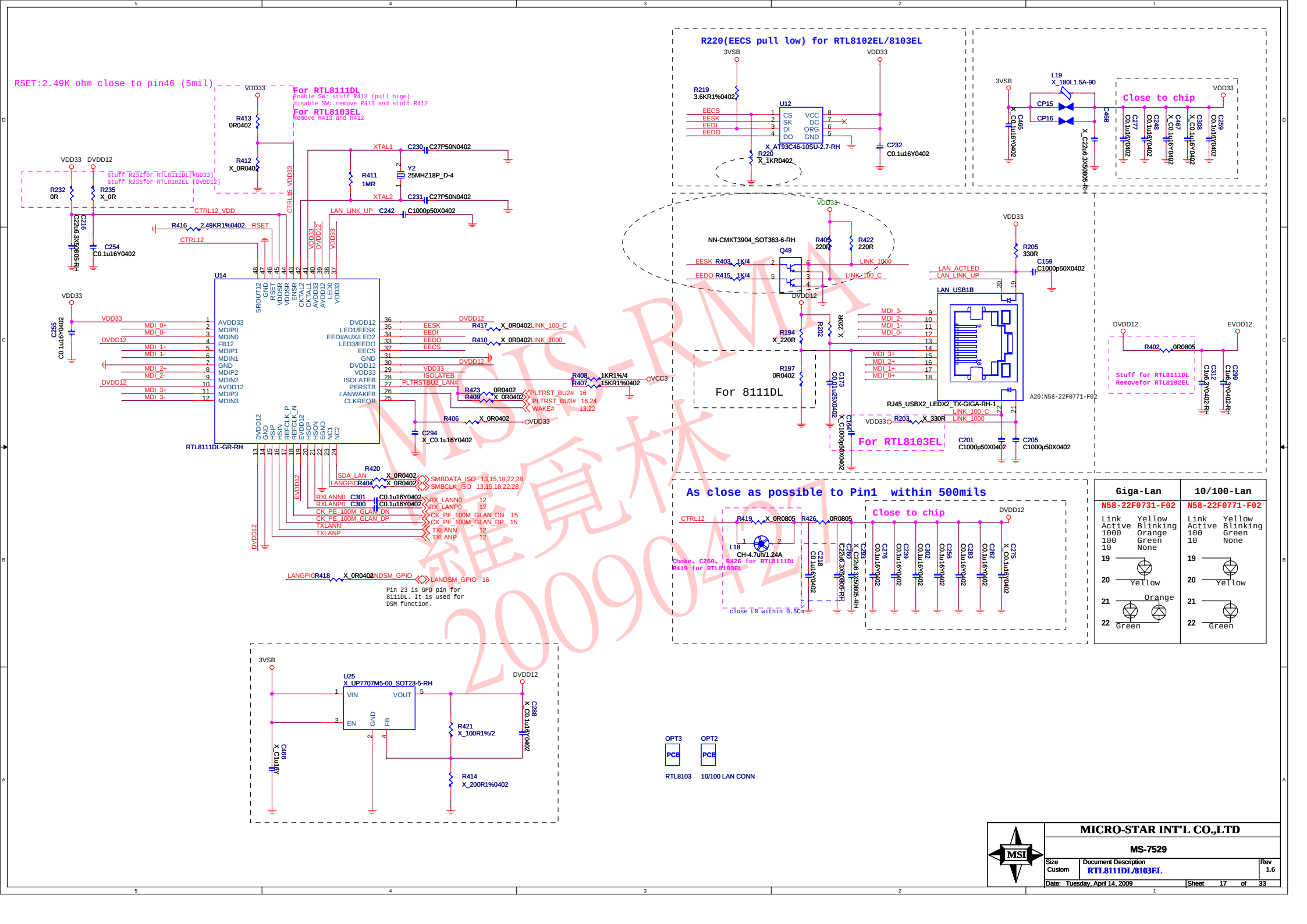
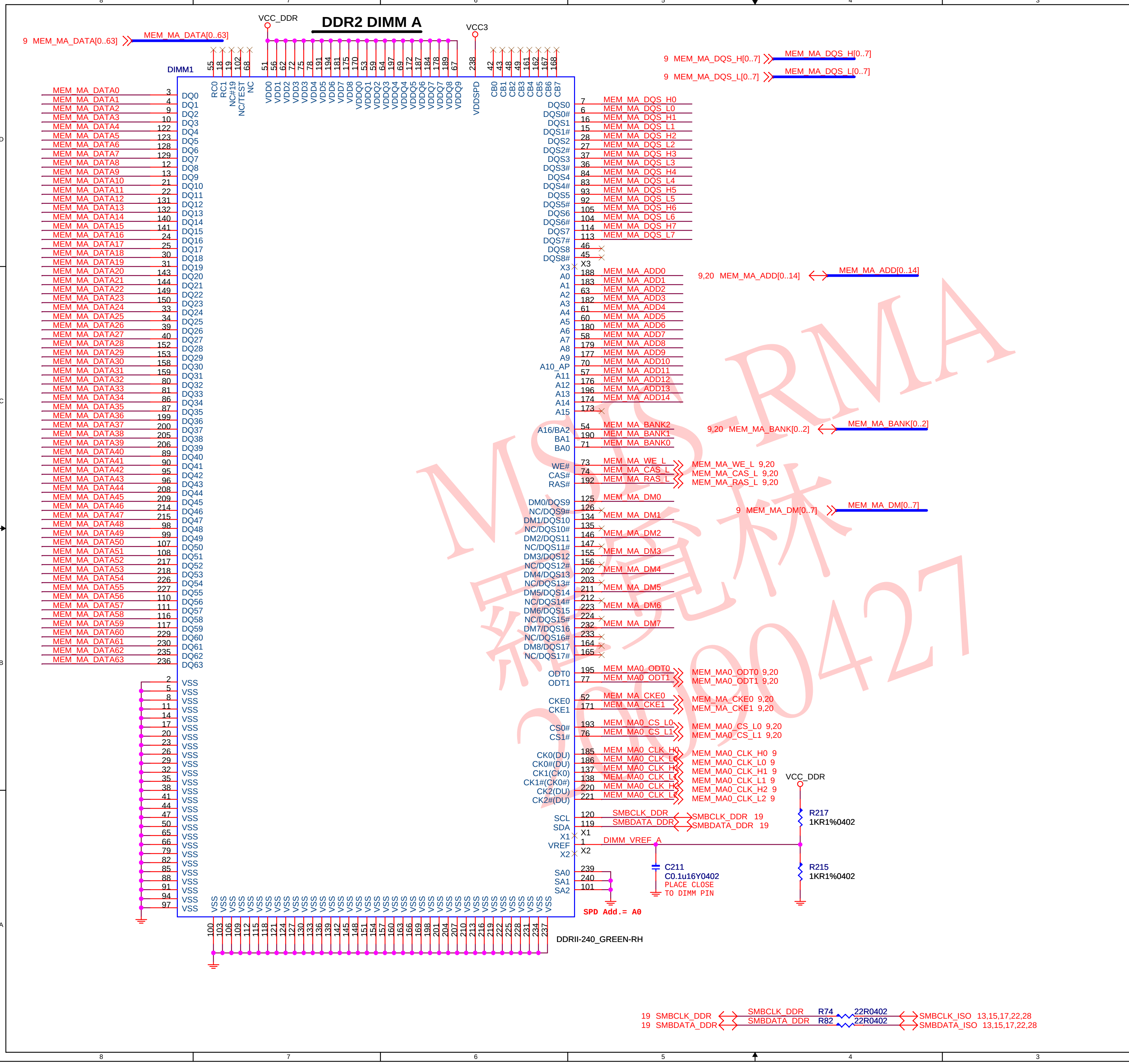

RSET:2.49K ohm close to pin46 (5mil)
For RTL8111DL
Enable SW: stuff R413 (pull hige)
disable SW: remove R413 and stuff R412
For RTL8103EL
Remove R413 and R412
stuff R232for RTL8111DL(VDD33)
stuff R235for RTL8102EL (DVDD12)
RTL8111DL-GR-RH
R220(EECS pull low) for RTL8102EL/8103EL
Close to chip
NN-CMKT3904_SOT363-6-RH
LAN_USB1B
For 8111DL
For RTL8103EL
As close as possible to Pin1 within 500mils
Close to chip
Pin 23 is GPO pin for 8111DL. It is used for DSM function.
Giga-Lan
N58-22F0731-F02
10/100-Lan
N58-22F0771-F02
Link Active 1000 100 10
Yellow Blinking Orange Green None
Stuff for RTL8111DL
Removefor RTL8102EL
RTL8103
10/100 LAN CONN
MICRO-STAR INT'L CO.,LTD
MS-7529
RTL8111DL/8103EL
Tuesday, April 14, 2009



MICRO-STAR INT'L CO.,LTD		
MS-7529		
Size: Custom	Document Description: DDR II DIMM A & B	Rev: 1.1
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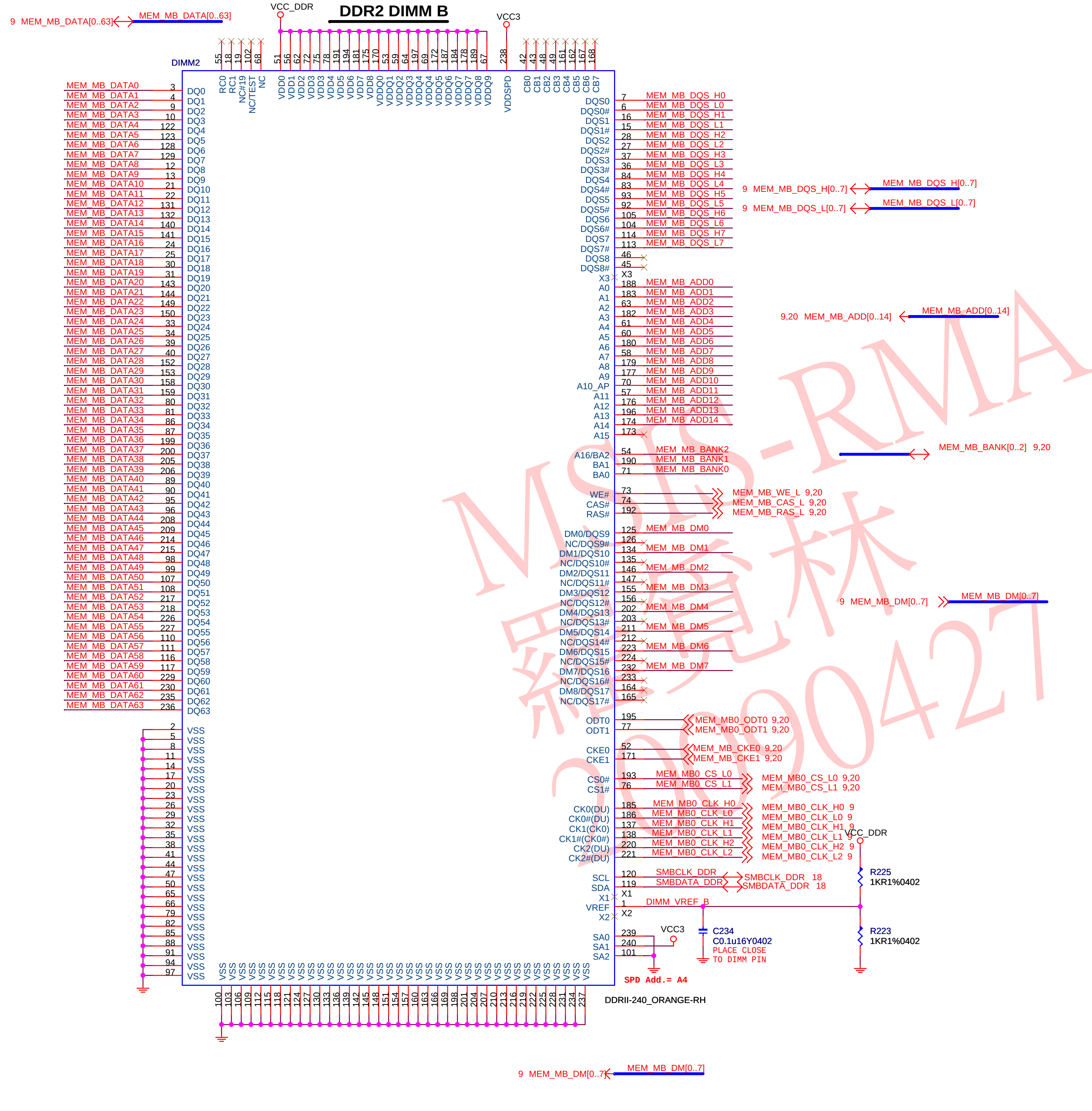

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Size	Document Description	Rev
Custom	DDR II DIMM A & B	1.6

Date: Monday, April 13, 2009 Sheet 19 of 33

CHANNEL A V_SM_VTT DECOULPING CAPS

VTT_DDR

C120 X_C4.7u6.3X5

VTT_DDR

C104 C0.1u16Y0402
C99 X_C0.1u16Y0402
C127 X_C0.1u16Y0402

CHANNEL B V_SM_VTT DECOULPING CAPS

VTT_DDR

C103 X_C4.7u6.3X5
C106 C4.7u6.3X5

VTT_DDR

C117 X_C0.1u16Y0402
C96 X_C0.1u16Y0402
C128 X_C0.1u16Y0402
C101 C0.1u16Y0402

VTT_DDR

MEM_MA_ADD4 MEM_MA_ADD3 MEM_MA_ADD1 MEM_MA_ADD2 → RN20 8P4R-33R0402
MEM_MA_ADD7 MEM_MA_ADD8 MEM_MA_ADD5 MEM_MA_ADD6 → RN22 8P4R-33R0402
MEM_MA_BANK2 MEM_MA_ADD12 MEM_MA_ADD11 MEM_MA_ADD9 → RN24 8P4R-33R0402
9,18 MEM_MA_RAS_L
9,18 MEM_MA_WE_L
9,18 MEM_MA_CAS_L
MEM_MA_RAS_L MEM_MA_WE_L MEM_MA_CAS_L MEM_MA_ADD13 → RN17 8P4R-33R0402
MEM_MA_ADD14 R135 33R0402
MEM_MA_ADD0 MEM_MA_BANK1 MEM_MA_ADD10 MEM_MA_BANK0 → RN19 8P4R-33R0402
MEM_MA0_ODT1 MEM_MA0_ODT0 MEM_MA0_CS_L1 MEM_MA0_CS_L0 → RN15 8P4R-43R0402
MEM_MA_CKE0 R136 43R0402
MEM_MA_CKE1 R138 43R0402

9,18 MEM_MA_ADD[0..14]
9,18 MEM_MA_BANK[0..2]
9,18 MEM_MA0_CS_L[0..1]
9,18 MEM_MA_CKE[0..1]
9,18 MEM_MA0_ODT[0..1]

VTT_DDR

MEM_MB_ADD4 MEM_MB_ADD3 MEM_MB_ADD1 MEM_MB_ADD2 → RN21 8P4R-33R0402
MEM_MB_BANK2 MEM_MB_ADD12 MEM_MB_ADD11 MEM_MB_ADD7 → RN25 8P4R-33R0402
MEM_MB_ADD9 MEM_MB_ADD8 MEM_MB_ADD6 MEM_MB_ADD5 → RN23 8P4R-33R0402
9,19 MEM_MB_RAS_L
9,19 MEM_MB_WE_L
9,19 MEM_MB_CAS_L
MEM_MB_RAS_L MEM_MB_WE_L MEM_MB_CAS_L MEM_MB_ADD13 → RN16 8P4R-33R0402
MEM_MB_ADD14 R137 33R0402
MEM_MB_ADD0 MEM_MB_ADD10 MEM_MB_BANK1 MEM_MB_BANK0 → RN18 8P4R-33R0402
MEM_MB0_ODT1 MEM_MB0_CS_L1 MEM_MB0_ODT0 MEM_MB0_CS_L0 → RN14 8P4R-43R0402
change RN
MEM_MB_CKE0 R141 43R0402
MEM_MB_CKE1 R139 43R0402

9,19 MEM_MB_ADD[0..14]
9,19 MEM_MB_BANK[0..2]
9,19 MEM_MB0_CS_L[0..1]
9,19 MEM_MB_CKE[0..1]
9,19 MEM_MB0_ODT[0..1]

VCC_DDR

C89 C1U10Y0402-RH
C108 C1U10Y0402-RH
C279 C0.1u16Y0402
C86 C0.1u16Y0402
C87 C0.1u16Y0402
C100 C2200p50X0402-1
C98 C0.1u16Y0402

VCC_DDR

C132 C1U10Y0402-RH
C95 X_C1U10Y0402-RH
C147 C2200p50X0402-1
C109 C2200p50X0402-1
C121 X_C500p50X0402
C184 C2200p50X0402-1

EMI

VCC_DDR VTT_DDR

C113 X_C0.1u16Y0402

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3 hole : line1&mic1 line1&mic1
For 3ports+888S-VC2-GR:75 Ohm For 6ports:1K Ohm
For 3ports+889-GR:68 Ohm

ALC888 CODEC

FOR 6 Port

FOR 6 Port

Trace Width 20mils.

Pin4 : stuff for ALC889
Pin4 : remove for ALC888S-VC2

U21 ALC888-GR-A2-RH

C439/480/432/433/436/437 should be 10u X5R for ALC889

CD/IN HEADERS

JCD1 BH1X4_BLACK-RH

ALC888 JACK

FOR 6 Port

PIN	ALC888	ALC888S VC2
2	GPIO0/DMIC_CLK	SPDIF02
3	GPIO1/DMIC_DATA	GPIO0/DMIC_CLK
4	DVSS	GPIO1/DMIC_DATA
33	NC	SENSE C

OPT4 PCB 75R/4

Azalia Front Audio Connector

Place those component close to audio connector.

ALC883 JACK DETECT

FOR 6 Port

SPDIF OUT

AUDIO CODE REGULATORS

Trace Width 30mils.

For EMI

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MS-7529	
Size: Custom	Document Description: 21 HD ALC888S VC2
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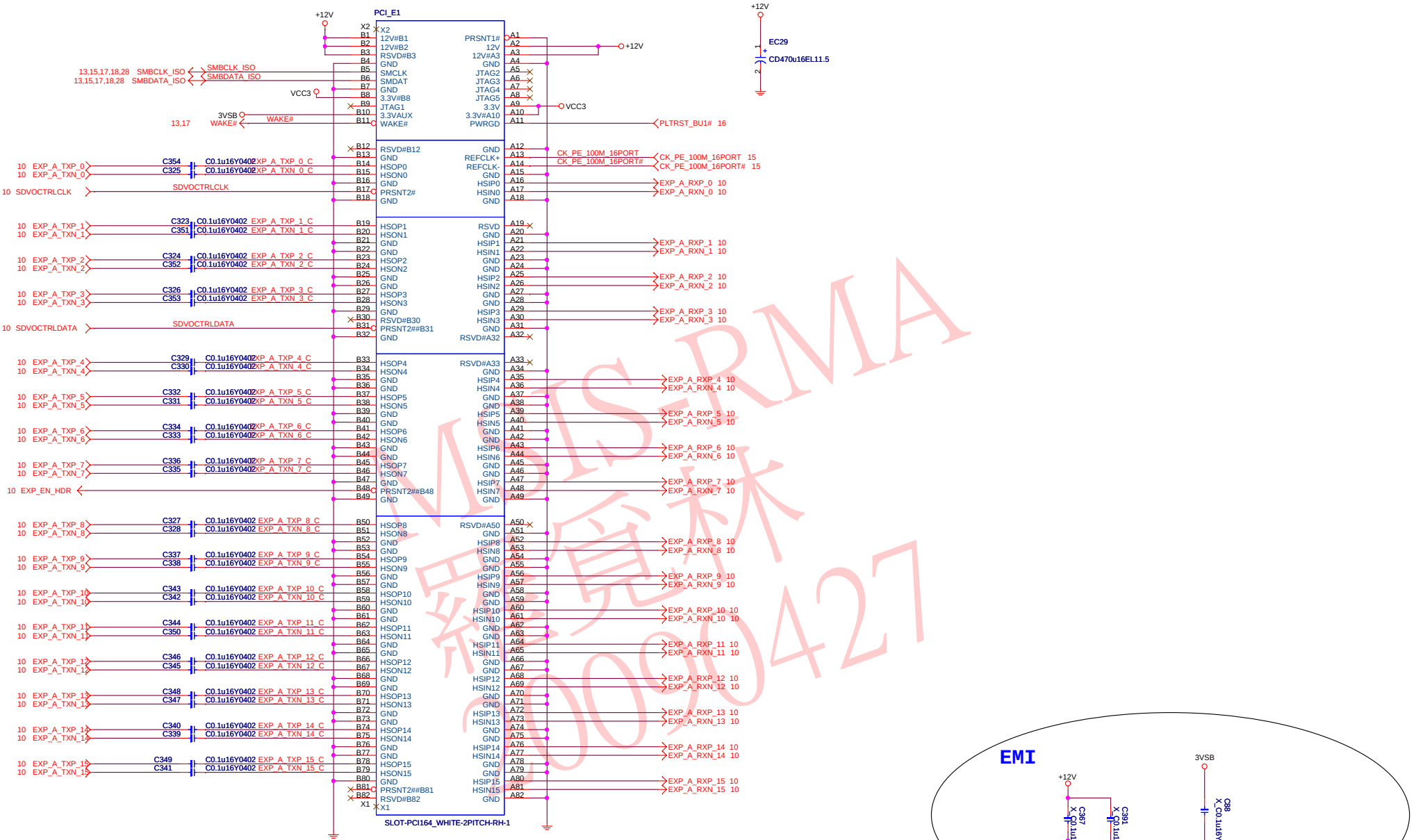
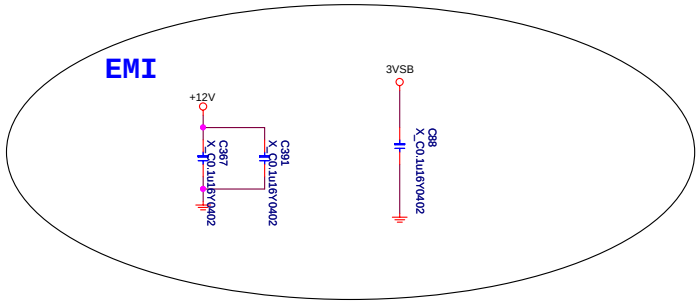
PCIE X16 PORT





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Size: Custom	Document Description: PCI EXPRESSX16&X1		Rev: 1.6
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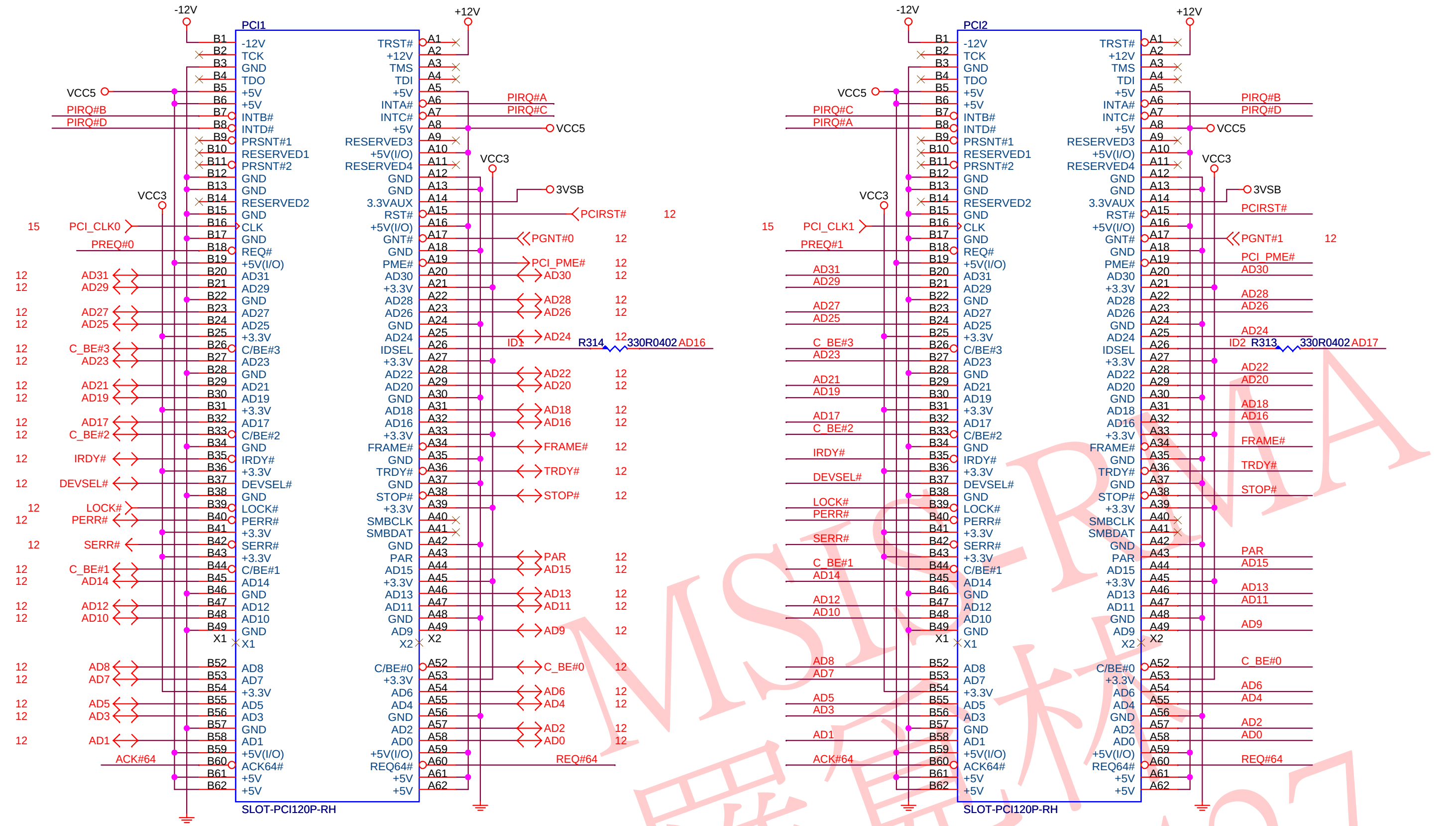
PCI SLOT 1 (PCI VER: 2.2 COMPLY)

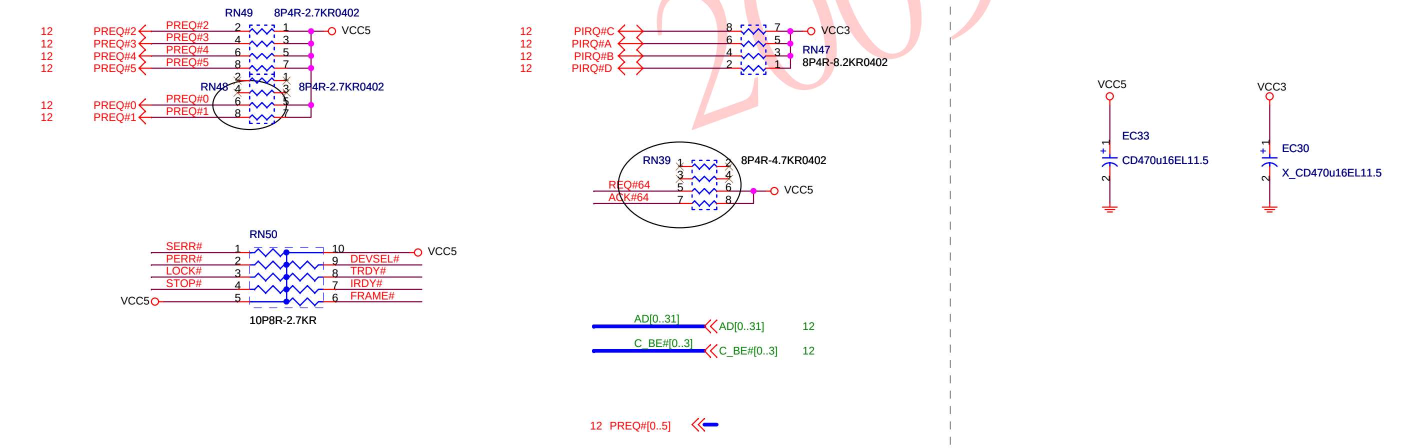
PCI SLOT 2 (PCI VER: 2.2 COMPLY)



IDSEL = AD16
MASTER = PREQ#0
PIRQ#A

IDSEL = AD17
MASTER = PREQ#1
PIRQ#B

PCI PULL-UP / DOWN RESISTORS



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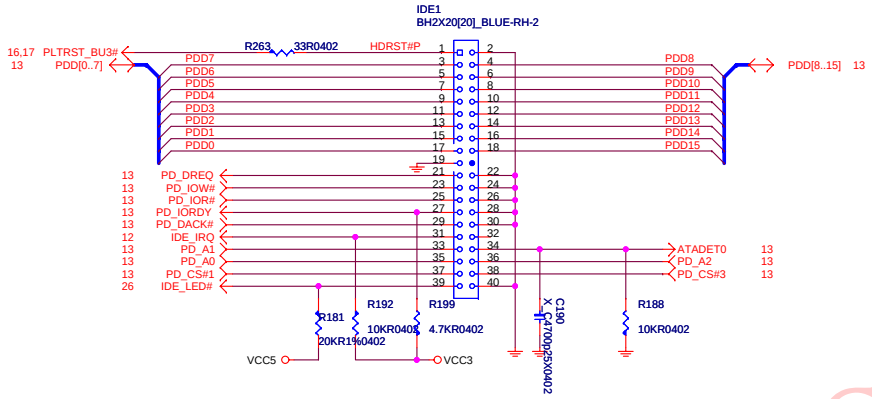
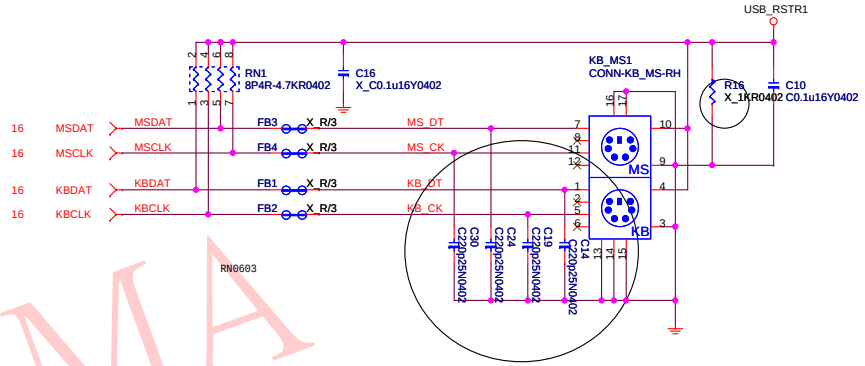
MS-7529		
Size: Custom	Document Description: PCI Slot 1 &2	Rev: 1.6
Date: Monday, April 13, 2009	Sheet 23 of 33	

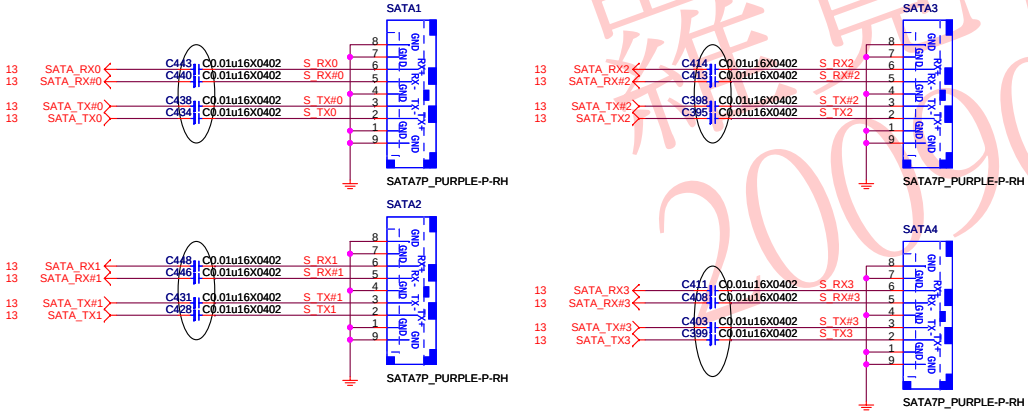
ATA 33/66/100 IDE Connectors



PS2 KEYBOARD & MOUSE CONNECTOR



SERIAL ATA CONNECTOR BLOCK



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Custom	IDE & SATA Connectors	1.6

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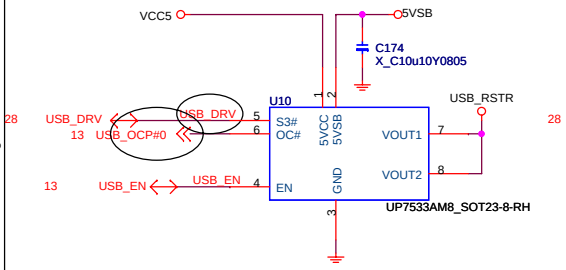
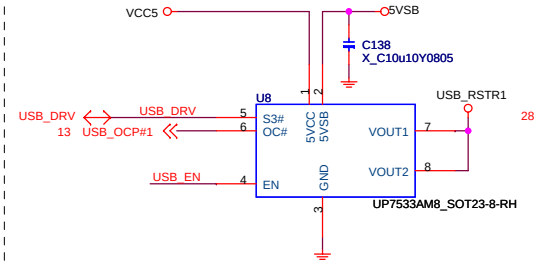
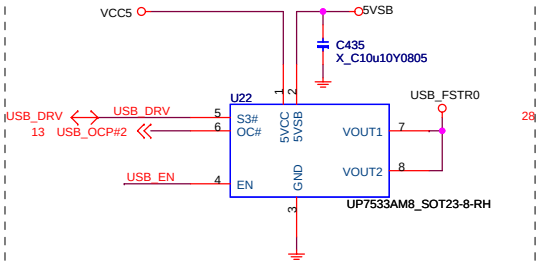
POWER CIRCUIT FOR USB PORT 0,1



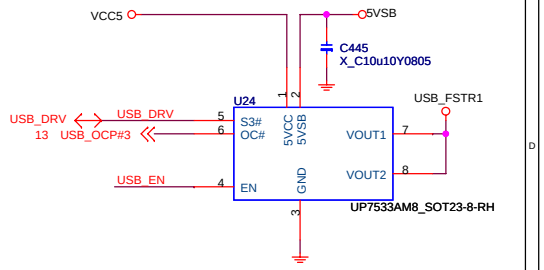
POWER CIRCUIT FOR USB PORT 2,3



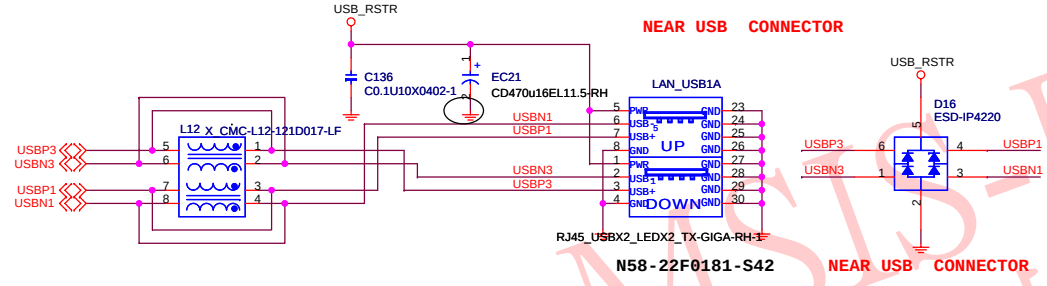
POWER CIRCUIT FOR USB PORT 4,5



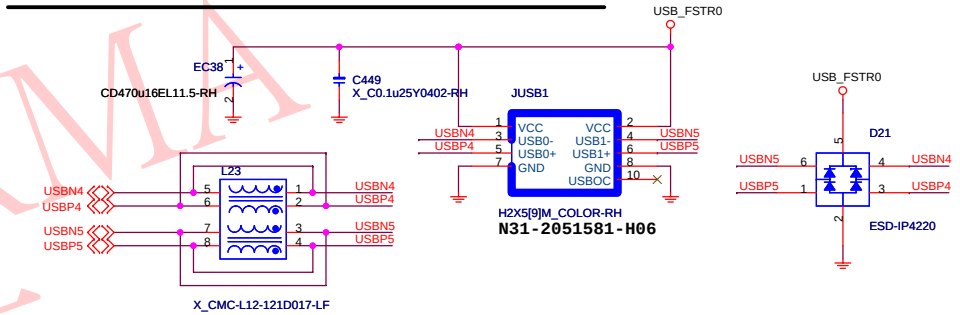
POWER CIRCUIT FOR USB PORT 6,7



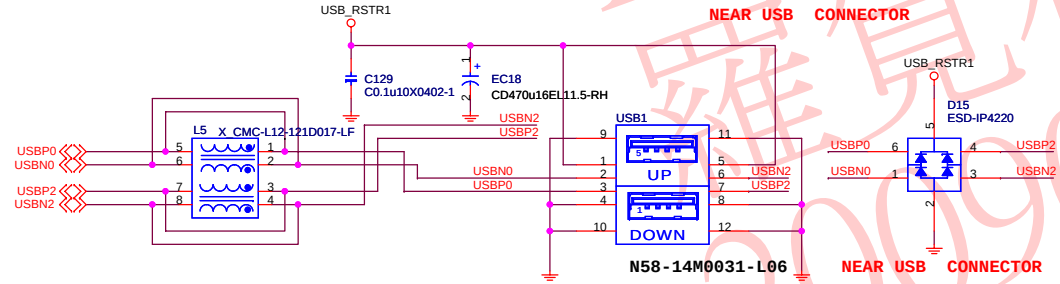
REAR PANEL USB CONNECTOR FOR USB PORT 0,1



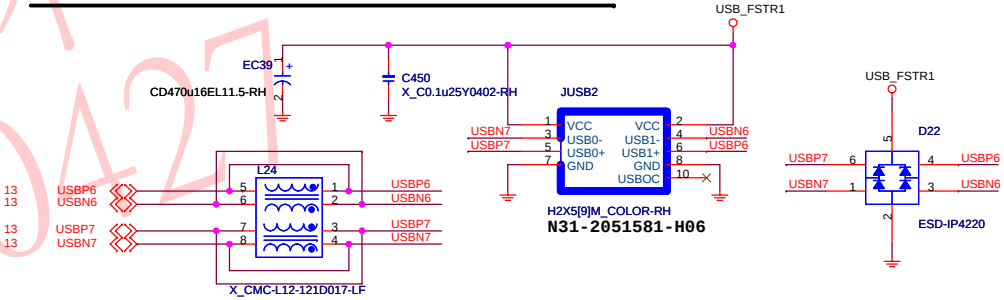
FRONT PANEL USB CONNECTOR FOR USB PORT 4,5



REAR PANEL USB CONNECTOR FOR USB PORT 2,3



FRONT PANEL USB CONNECTOR FOR USB PORT 6,7



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Size: Custom	Document Description: USB CONNECTORS	Rev: 1.6
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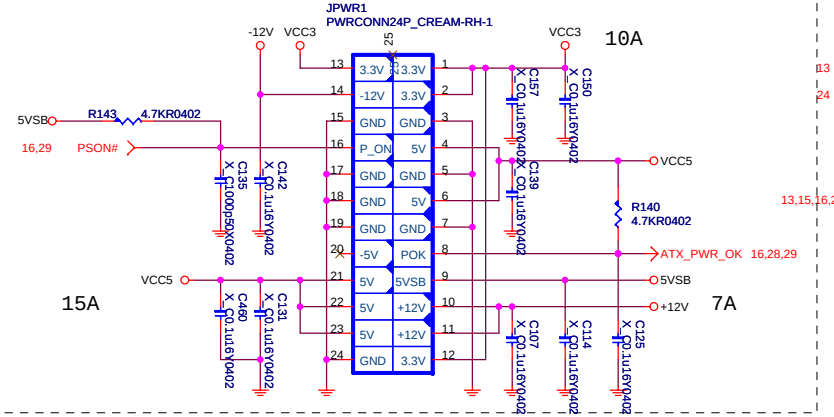
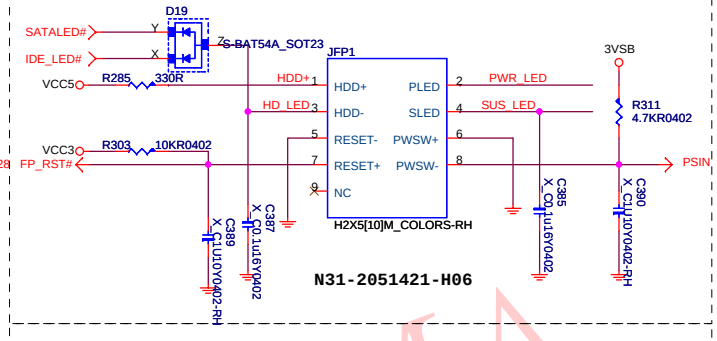
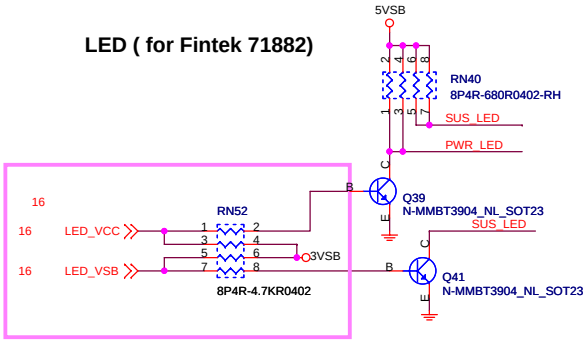
ATX Connector



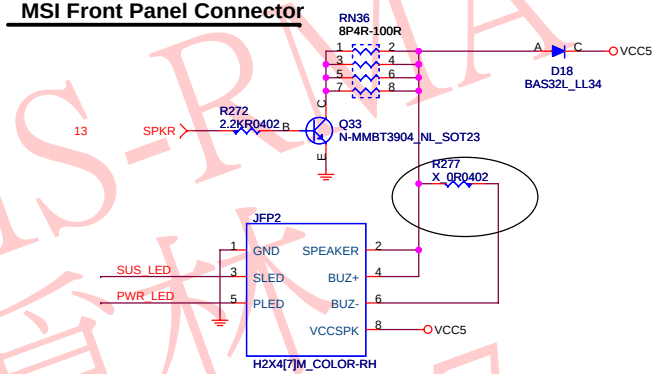
INTEL/PB Front Panel Connector



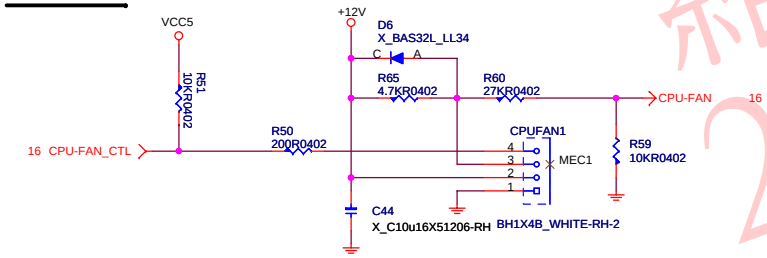
LED (for Fintek 71882)



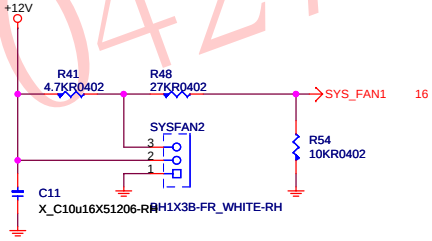
MSI Front Panel Connector



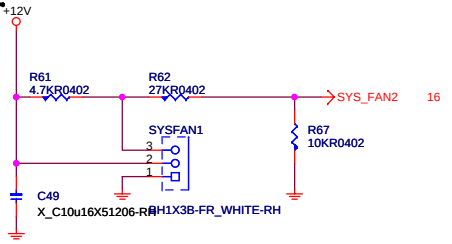
CPU FAN



SYSTEM FAN



PWR FAN



MICRO-STAR INT'L CO.,LTD

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Custom	ATX & Front Panel & FAN	1.6

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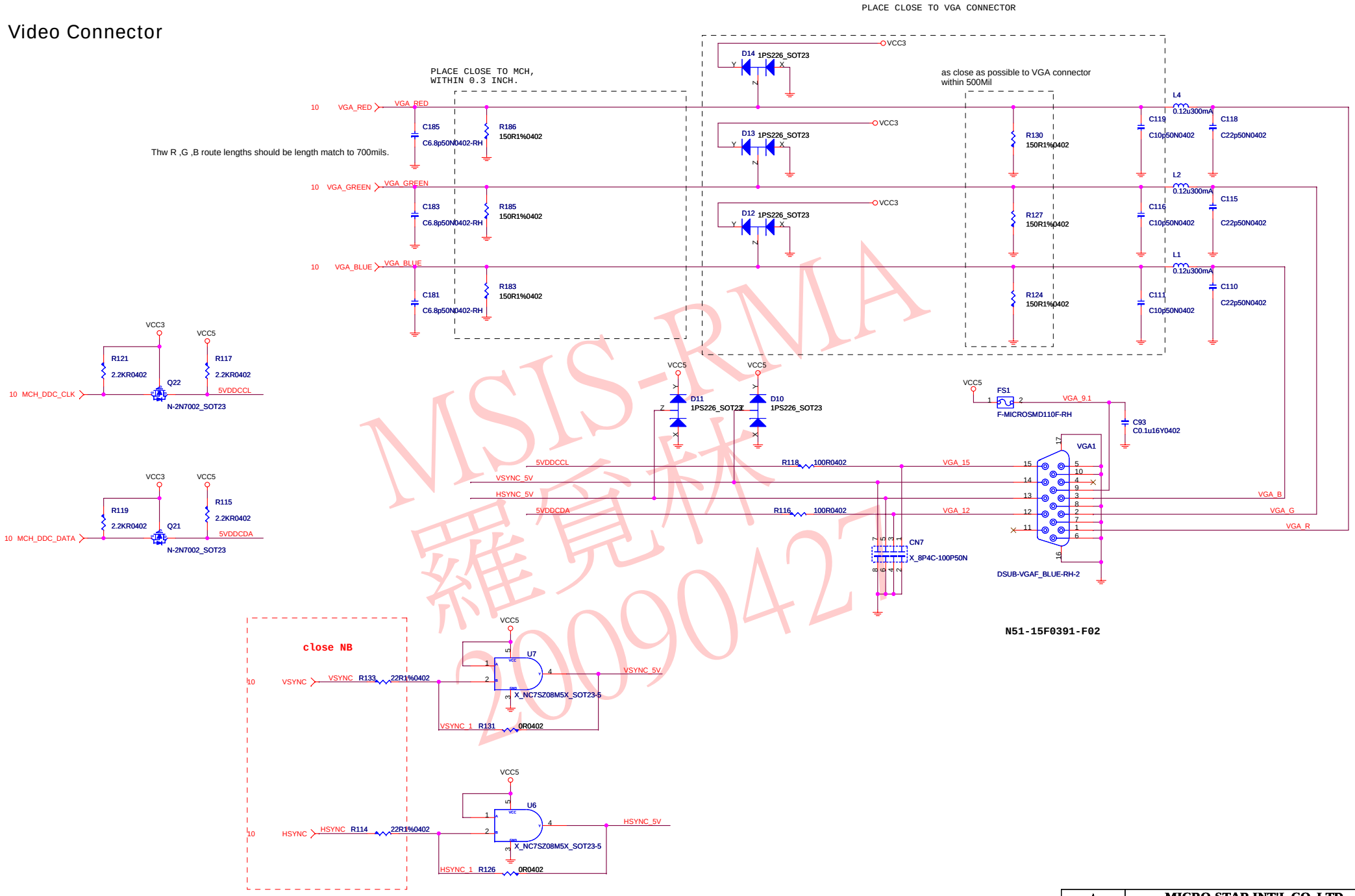
Video Connector



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Size: Custom	Document Description: VGA Connector	Rev: 1.6
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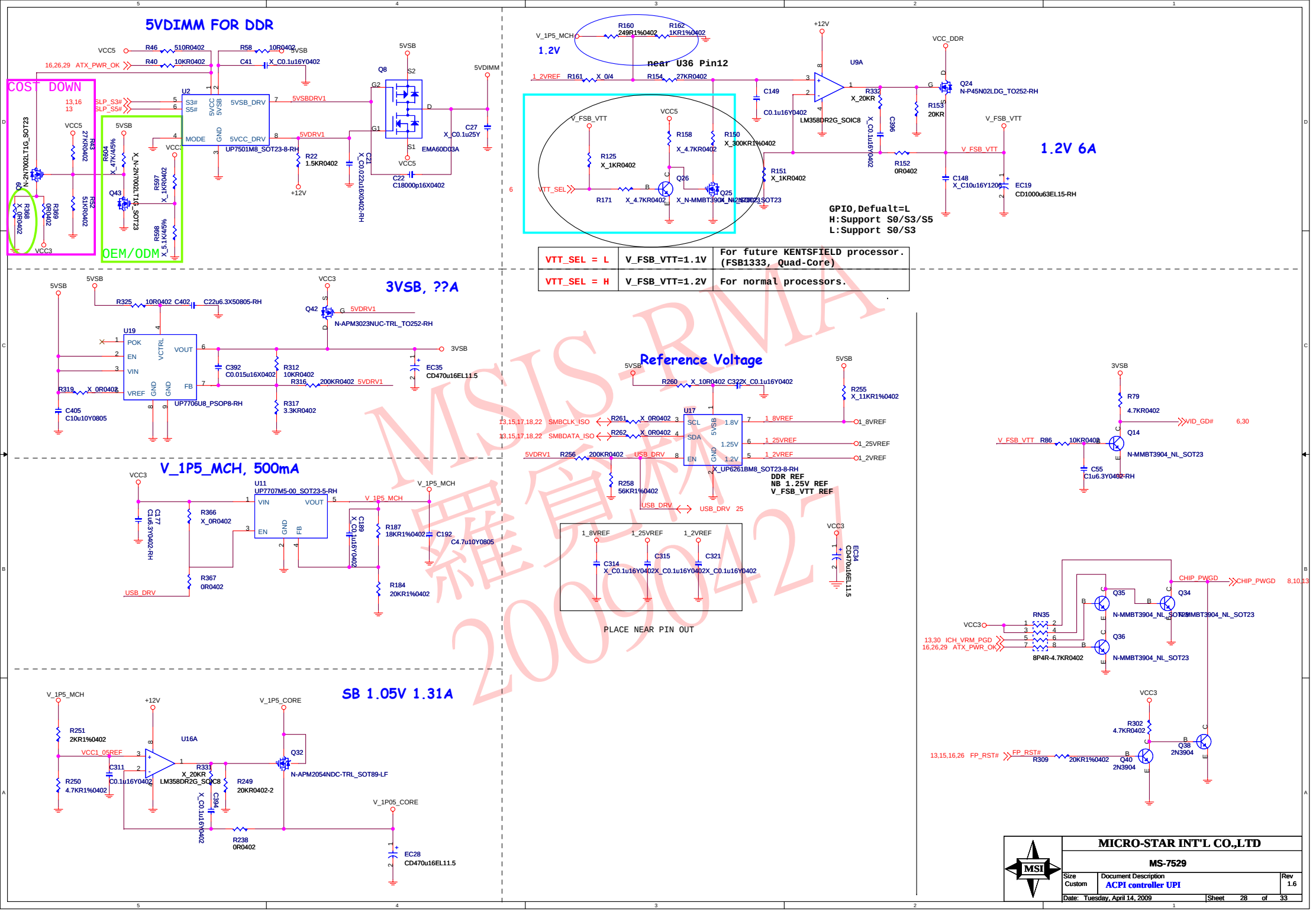
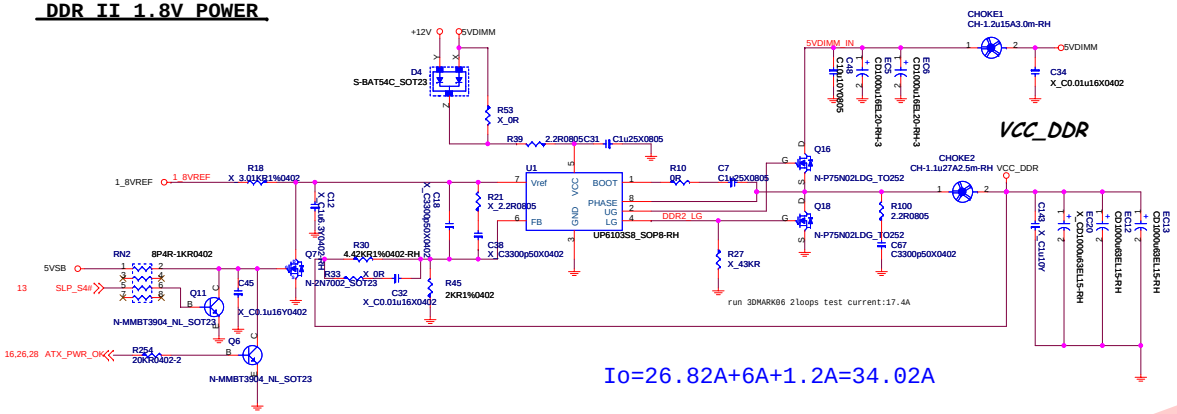
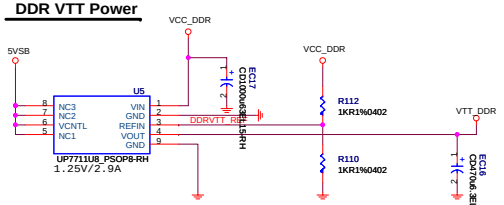


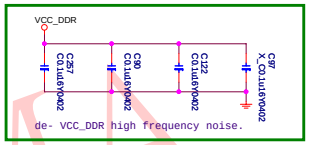
DDR II 1.8V POWER



DDR VTT Power



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

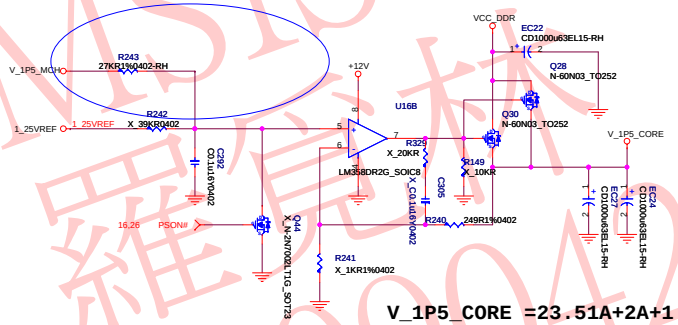


de- VCC_DDR high frequency noise.

Do it need so many?

1.5V Core

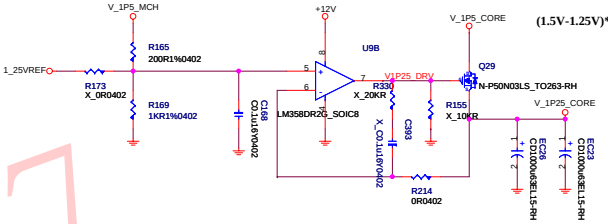
For cost down



V_1P5_CORE =23.51A+2A+1.31A=26.82A

(1.9V-1.5V)*26.82A=10.728W

V_1P5_CORE 18.1A+2.47A+2.94A=23.51A



(1.5V-1.25V)*23.51A=5.8775W

MSI	MICRO-STAR INT'L CO.,LTD	
	MS-7529	
Size: Custom	Document Description: NB Core Power & DDR Power	Rev: 1.6
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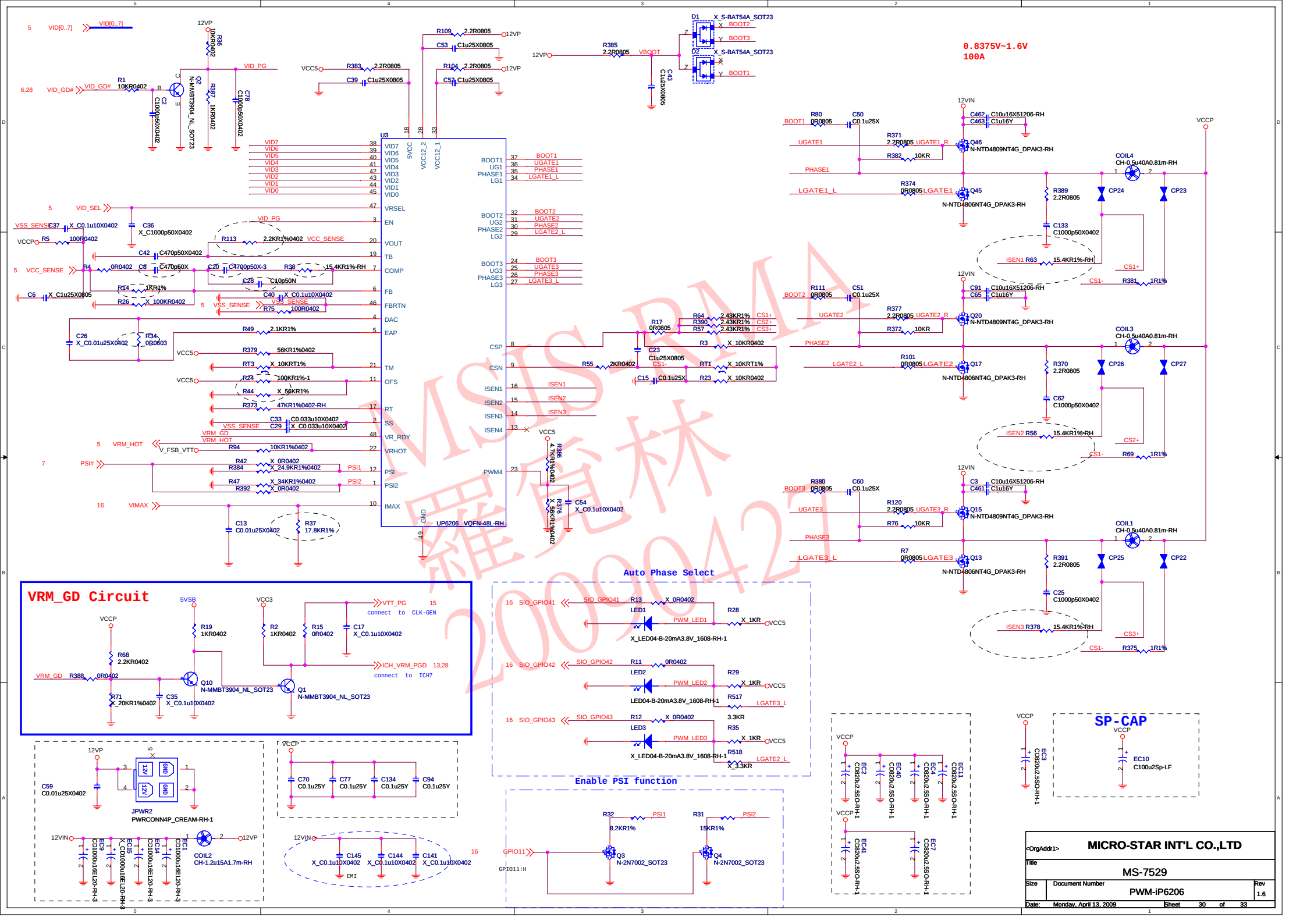
0.8375V~1.6V
100A
U3
UP6206_VQFN-48L-RH
VRM_GD Circuit
Auto Phase Select
Enable PSI function
SP-CAP
MICRO-STAR INT'L CO.,LTD
MS-7529
PWM-iP6206
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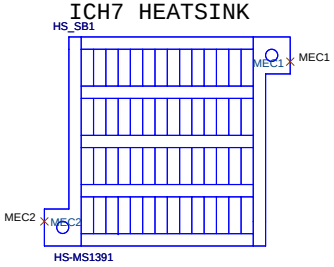
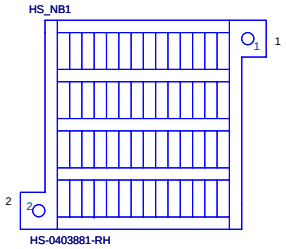
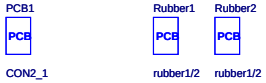
MSI-RMA
羅宮林
20090421

ICH7 HEATSINK

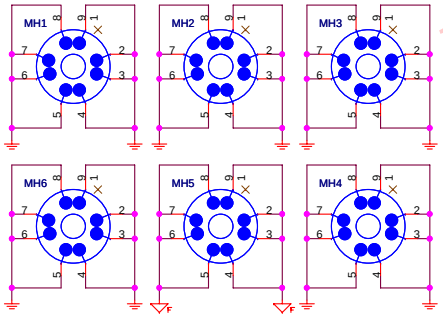


MCH HEATSINK

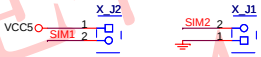




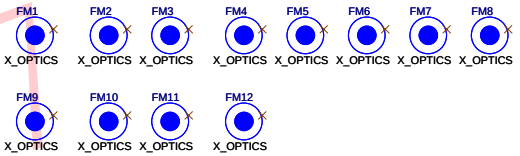
Mounting Holes



Simulation



Optics Orientation Holes



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ICH7

GPIO	Alt Func	PIN	I/O/NC	POWER	PU	SMI	TOL	DEFAULT	SIGNAL NAME
GPIO0	Unmultiplexed	AB18	I/O	CORE	N	Y	3.3V	GPI	GPI0(pull high)
GPIO1	REQ5#	C8	I/O	CORE	N	Y	5V	GPI	PREQ#5
GPIO2	PIRQE#	G8	I/OD	CORE	N	Y	5V	GPI	GPIO2(pull high)
GPIO3	PIRQF#	F7	I/OD	CORE	N	Y	5V	GPI	GPIO3(pull high)
GPIO4	PIRQG#	F8	I/OD	CORE	N	Y	5V	GPI	GPIO4(pull high)
GPIO5	PIRQH#	G7	I/OD	CORE	N	Y	5V	GPI	GPIO5(pull high)
GPIO6	Unmultiplexed	AC21	I/O	CORE	N	Y	3.3V	GPI	ATADET0
GPIO7	Unmultiplexed	AC18	I/O	CORE	N	Y	3.3V	GPI	STRAPPED HI
GPIO8	Unmultiplexed	E21	I/O	Resume	N	Y	3.3V	GPI	STRAPPED HI
GPIO9	Unmultiplexed	E20	I/O	Resume	N	Y	3.3V	GPI	STRAPPED HI
GPIO10	Unmultiplexed	A20	I/O	Resume	N	Y	3.3V	GPI	STRAPPED HI
GPIO11	SMBALERT#	B23	I/O	Resume	N	Y	3.3V	Native	STRAPPED HI
GPIO12	Unmultiplexed	F19	I/O	Resume	N	Y	3.3V	GPI	SIO_PME#
GPIO13	Unmultiplexed	E19	I/O	Resume	N	Y	3.3V	GPI	STRAPPED HI
GPIO14	Unmultiplexed	R4	I/O	Resume	N	Y	3.3V	GPI	STRAPPED HI
GPIO15	Unmultiplexed	E22	I/O	Resume	N	Y	3.3V	GPI	STRAPPED HI
GPIO16	Unmultiplexed	AC22	I/O	CORE	N	N	3.3V	GPO	NC
GPIO17	GNT5#	D8	I/O	CORE	N	N	3.3V	GPO	STRAPPED L
GPIO18	Unmultiplexed	AC20	I/O	CORE	N	N	3.3V	GPO	NC
GPIO19	SATA_1GP	AH18	I/O	CORE	N	N	3.3V	GPI	STRAPPED HI
GPIO20	Unmultiplexed	AF21	I/O	CORE	N	N	3.3V	GPO	NC
GPIO21	SATA_0GP	AF19	I/O	CORE	N	N	3.3V	GPI	STRAPPED HI
GPIO22	REQ4#	A13	I/O	CORE	N	N	3.3V	Native	STRAPPED HI
GPIO23	LDRQ_1#	AA5	I/O	CORE	N	N	3.3V	Native	STRAPPED HI
GPIO24	Unmultiplexed	R3	I/O	Resume	N	N	3.3V	GPO	NC
GPIO25	Unmultiplexed	D20	I/O	Resume	Y	N	3.3V	GPO	GPIO25(high 7507,low 7398)
GPIO26	Unmultiplexed	A21	I/O	Resume	N	N	3.3V	GPO	USB_EN
GPIO27	Unmultiplexed	B21	I/O	Resume	N	N	3.3V	GPO	NC
GPIO28	Unmultiplexed	E23	I/O	Resume	N	N	3.3V	GPO	NC
GPIO29	OC5#	C3	I/O	Resume	N	N	3.3V	GPI	USB_OCP#2
GPIO30	OC6#	A2	I/O	Resume	N	N	3.3V	GPI	USB_OCP#3
GPIO31	OC7#	B3	I/O	Resume	N	N	3.3V	GPI	USB_OCP#3
GPIO32	Unmultiplexed	AG18	I/O	CORE	N	N	3.3V	GPO	BIOS_WP#(fill with 1)
GPIO33	Unmultiplexed	AC19	I/O	CORE	N	N	3.3V	GPO	NC
GPIO34	Unmultiplexed	U2	I/O	CORE	N	N	3.3V	GPO	NC
GPIO35	SATACLKREQ#	AD21	I/O	CORE	N	N	3.3V	GPO	NC
GPIO36	SATA2GP	AH19	I/O	CORE	N	N	3.3V	GPI	STRAPPED HI
GPIO37	SATA3GP	AE19	I/O	CORE	N	N	3.3V	GPI	STRAPPED HI
GPIO38	Unmultiplexed	AD20	I/O	CORE	N	N	3.3V	GPI	STRAPPED HI
GPIO39	Unmultiplexed	AE20	I/O	CORE	N	N	3.3V	GPI	STRAPPED HI
GPIO48	GNT4#	A14	I/O	CORE	N	N	3.3V	Native	STRAPPED HI
GPIO49	CPUPWRGD	AG24	I/O	V_CPU_IO	N	N	V_CPU_IO	Native	H_PWRGD

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.

SIO Fintek71882FG(CONTINUE)

GPIO	Alt Func	PIN	Usage	Input/Output	NOTES
GPIO0	VIDOUT0	49	MCH_BSEL0	O12	
GPIO1	VIDOUT1	50	MCH_BSEL1	O12	
GPIO2	VIDOUT2	51	MCH_BSEL2	O12	
GPIO3	VIDOUT3	52	NC	O12	
GPIO4	VIDOUT4	53	NC	O12	
GPIO5	VIDOUT5/SIC	54	NC	I/OOD12t	
GPIO6	SLOTOCC#	55	GPO	I/OOD12t	
GPIO7	Turbo1#/WDTRST#	56	WDTRST#	OD12-5v	
GPIO15	LED_VSB/ALERT#	64	LED_VSB	OD12	
GPIO16	LED_VCC/Turbo2#	65	LED_VCC	OD12	
GPIO20	PCIRST1#	74	PCIRST1#	OD12	
GPIO21	PCIRST2#	75	PCIRST2#	O12	
GPIO22	PCIRST3#	76	PCIRST3#	O12	
GPIO23	RSTCON#	77	RSTCON#	OD12	
GPIO24	ATXPG_IN	78	ATXPG_IN	AIN	
GPIO32	PWROK	84	PWROK	OD12	
GPIO26	PWSIN#	80	PWSIN#	INts5v	
GPIO27	PWSOUT#	80	PWSOUT#	OD12	
GPIO30	S3#	82	S3#	INts5v	
GPIO31	PSON#	83	PSON#	OD12-5v	
GPIO33	RSMRST#	85	RSMRST#	OD12	
GPIO40	FANIN3	25	FANIN3	INts5v	
GPIO41	FAN_CTL3	26	FAN_CTL3(NC)	OD12-5v	
GPIO25	PME#	79	PME#	OD12-5v	
GPIO10	SPI_SLK/FANIN4	59	GPIO10(NC)	I/OOD12t	
GPIO11	SPI_CS0#/FANCTL4	60	GPIO11(NC)	I/OOD12t	
GPIO12	SPI_MISO/FANCTL1_1	61	GPIO12(NC)	I/OOD12t	
GPIO13	SPI_MOSI/BEEP	62	BEEP(NC)	OD24	
GPIO14	FWH_DIS/WDTRST#/SPI_CS1#	63	GPIO14	I/OOD12t	
GPIO42	IRTX	27	IRTX	O12	
GPIO43	IRRX	28	IRRX	INts	
GPIO17		66	NC	I/OOD12t	

PCI Config.

DEVICE	MCP1 INT PIN	REQ#/GNT#	IDSEL	CLOCK
PCI1	PIRQ#A PIRQ#B PIRQ#C PIRQ#D	PREQ#0 PGNT#0	AD16	PCI_CLK0
PCI2	PIRQ#B PIRQ#C PIRQ#D PIRQ#A	PREQ#1 PGNT#1	AD17	PCI_CLK1

DDRII DIMM Config.

DEVICE	ADRRESS	CLOCK
DIMM A	A0H	P_DDR0_A/N_DDR0_A P_DDR1_A/N_DDR1_A P_DDR2_A/N_DDR2_A
DIMM B	A4H	P_DDR0_B/N_DDR0_B P_DDR1_B/N_DDR1_B P_DDR2_B/N_DDR2_B

JCI1	*Chassis Intrusion*
Open	Normal
(1-2)	Chassis Open

JUMPER SETTING		
JBAT1	(1-2)NORMAL	(2-3)CLEAR

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0A Change list:

1. Add DMI Audio net name
2. Change LED Power pull high to 680 Change r20 to 1.5K
3. Change D10 D11 Power pull VCC5, Q20 Pull up VCC3
4. Delet R252 R254 C132 R22 C60,change U5 to I95-7523212-T07
5. Modify footprint : C_P3_5_D8_H9 NC_0402_6 NC_0603_10 C0805MSB C0603MS_BOT
6. Swap RN65 RN61 RN23 RN64 RN63 RN24 RN28 RN25 RN66 ; Delet EC20,
7. Add 5VCC TO 3VCC sequence
8. change TESTPIN30 to TPC20B
9. RENAME ,Swap RN37, X_J1 Change to GND , Change C300 C301 to 0.22UF
10. Modify V_1P25_CORE to G31

1.0 Change list:

1. U11 EN(pin3)change to USB_DRV
2. Add SIO pin55 SKTOCC# pull up to 3vsb
3. Swap RN26
4. add Control UP7501 power seqence

1.6 Change list:

1. PWM Controller change to UPI 6206
2. LAN : GB - 8111DL & 10/100 : 8103EL
3. Audio : 888S VC2 (all solid CAP - reference from MS-7592-10)
4. Add OC switch
5. Add APS (reference from MS-7592-20)
6. exchange PCI_CLK0,CK_P_33M_SIO,TPM_PCLK,PCI_CLK1 for unkown issue
7. Delete RN26 because page15 have one pull high, add R254 for ATX_PWR_OK
8. page16 add some gpio for aps,bios
9. swap 4 pciclk for some FAE issue
10. change ATX1 to JPWR1,change JKBMS1 to KB_MS1,change JVGA1 to VGA1
11. For linear power:add R332 C396 R331 C394 R238 R329 R149 C305 R330 C393 R155 R214
12. for customer issue:reserve R326 for PGNT#3 pull up
13. add RN26
14. by sales request ,Remove Print port connector and change to pin header .
15. update footprint:EC43 EC44 EC1 EC14 EC9 EC15
16. modify 5VDIMM circuit: change Q8 footprint
17. Change C180 C186 C194 footprint
18. add C141 C144 C145 for EMI
19. update footprint: KB_MS1 JTPM1,add C288
20. update COIL2 PN&footprint,modify C402 to debug PSU issue
21. Swap RN56 RN59 CN10 RN63 RN27 CN9
22. add R426
23. modify R229 R424 R425 value

Title: History			
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