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NEC:LunarEagle

MSI:MS-7420N1

Version:0A

CPU: **Conroe family processors /WolfDale/Yorkfield in LGA775 Package.**

System Chipset:

Intel EagleLake-Q+Intel ICH10-DO

On Board Device:

BIOS -- SPI Flash 32M
LAN --INTEL 82567LM Boazman
Super I/O -- SMSC5617
AUDIO -- Realtek HD ALC262
Clock GEN-IDTCV184-2
TPM-SLB 9635 TT1.2

Expansion Slots:

PCI-E(X16) Slot *1
Riser Slot :(PCIx1/PCI-E(x1)x1)

Main Memory:

Due-channel DDR-III * 2 (1066MHZ)

Intersil PWM:

Controller: Intersil ISL6334 (3 Phases)

MS-6497N1	ERP Number	Functiom
MS-7420-0A	601-7420-A10	Mainboard
MS-4046-2A	604-4046-020	Power Buttom/LED board
MS-4085-10	604-4085-020	Front Audio Board
MS-4048-3A	604-4048-040	Front USB Board
MS-4121-10	604-4121-010	Riser Card

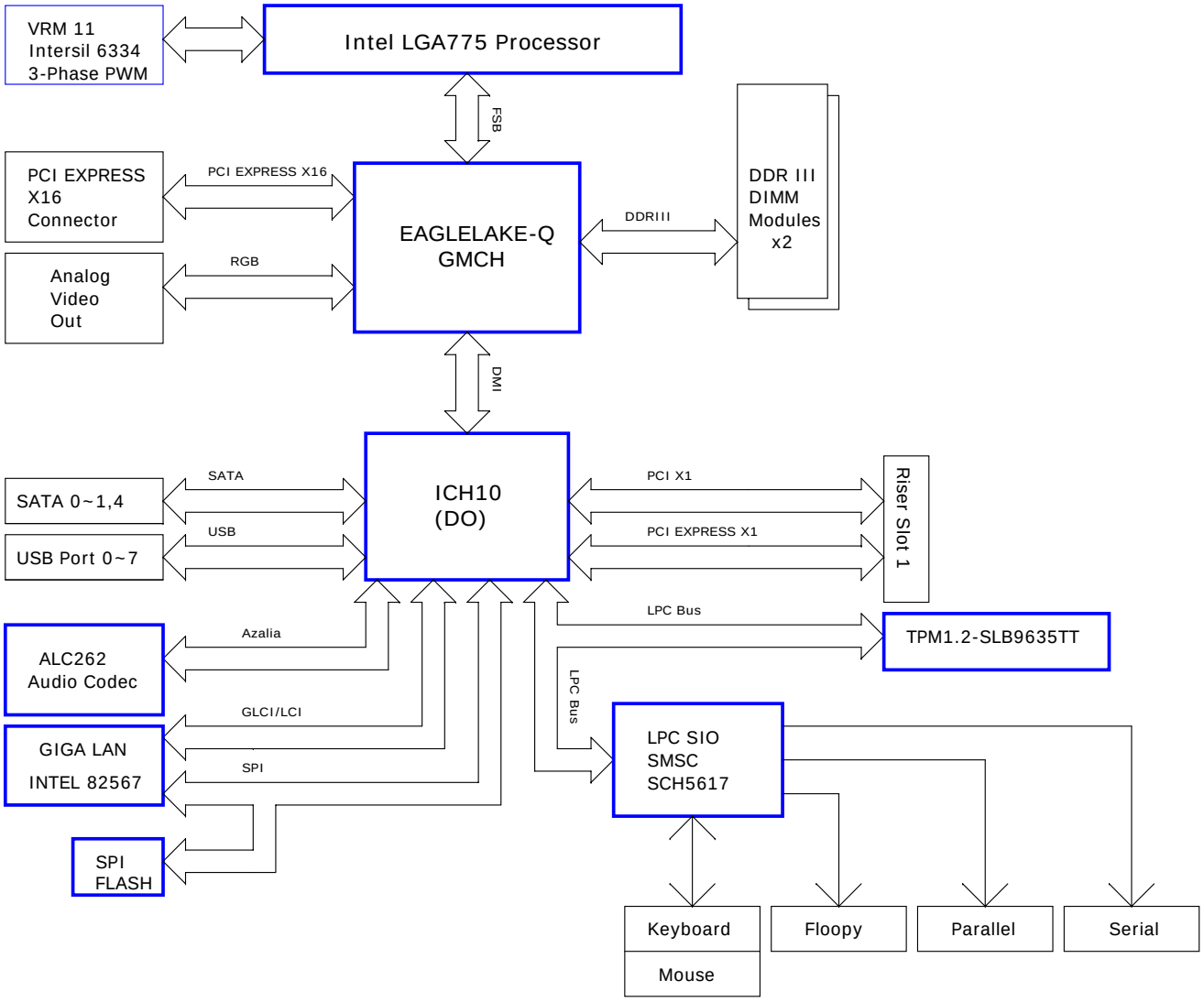
MSI MICRO-START INT'L CO.,LTD.

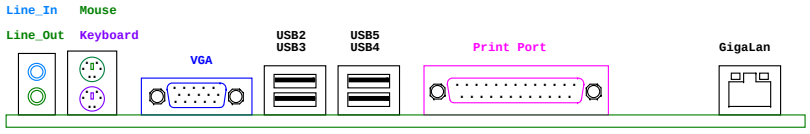
Title: COVER SHEET

Size | Document Number: MS-7420N1 | Rev: 0A

Date: Monday, January 28, 2008 | Sheet 1 of 34

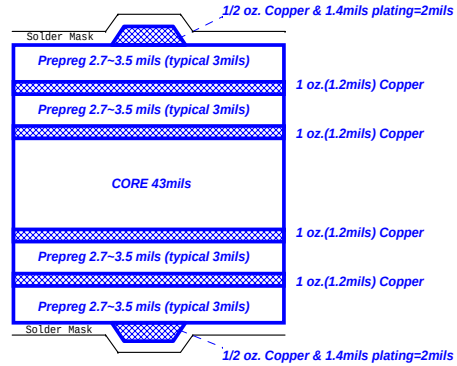
Block Diagram





Board Stack-up (6 layers)

(1080 Prepreg Considerations)



Single End 50ohm Top/Bottom : 4mils
USB2.0 - 90ohm : 15/4.5/7.5/4.5/15
SATA - 95ohm : 15/4/8/4/15
LAN - 100ohm : 15/4/8/4/15
PCIE - 95ohm : 15/4/8/4/15
IEEE1394 - 110ohm : 15/4/9/4/15
Differencial Clock : 18/4/10/4/18

Example Fab Drawing Note (1080 Prepreg PCB)

Trace Width (mils)	Differential Spacing (mils)	Target Impedance	Tolerance
4.0	NA	50-ohm,single-ended	15%
6.5	NA	40-ohm,single-ended	15%
7.5	NA	37-ohm,single-ended	15%
9.5	NA	32-ohm,single-ended	15%
3.9	8.1	95-ohm,differential	20%,reference only
4.5	7.5	90-ohm,differential	20%,reference only

Eaglelake(GMCH) Impedance Requirements by Interface

Interface	Impedance Required
FSB(All)	4x signals 42-ohm,others 50-hom,single-ended
Controller Link	50-ohm,single-ended
DDR2(DQ,DQS,DM,CLK,CLK#)	40-ohm,single-ended
DDR2(Control)	43-ohm,single-ended
DDR2(Command)	33-ohm,single-ended
DDR3(CLK,CLK#)	36-ohm,single-ended
DDR3(DQ,DQS,DM)	50/37-ohm,single-ended
DDR3(Control)	36-ohm,single-ended
DDR3(Command)	32-ohm,single-ended
PCI Express,DMI	95-ohm,differential
VGA	37-ohm,single-ended at MCH breakout,then 50-ohm,single-ended to VGA connector

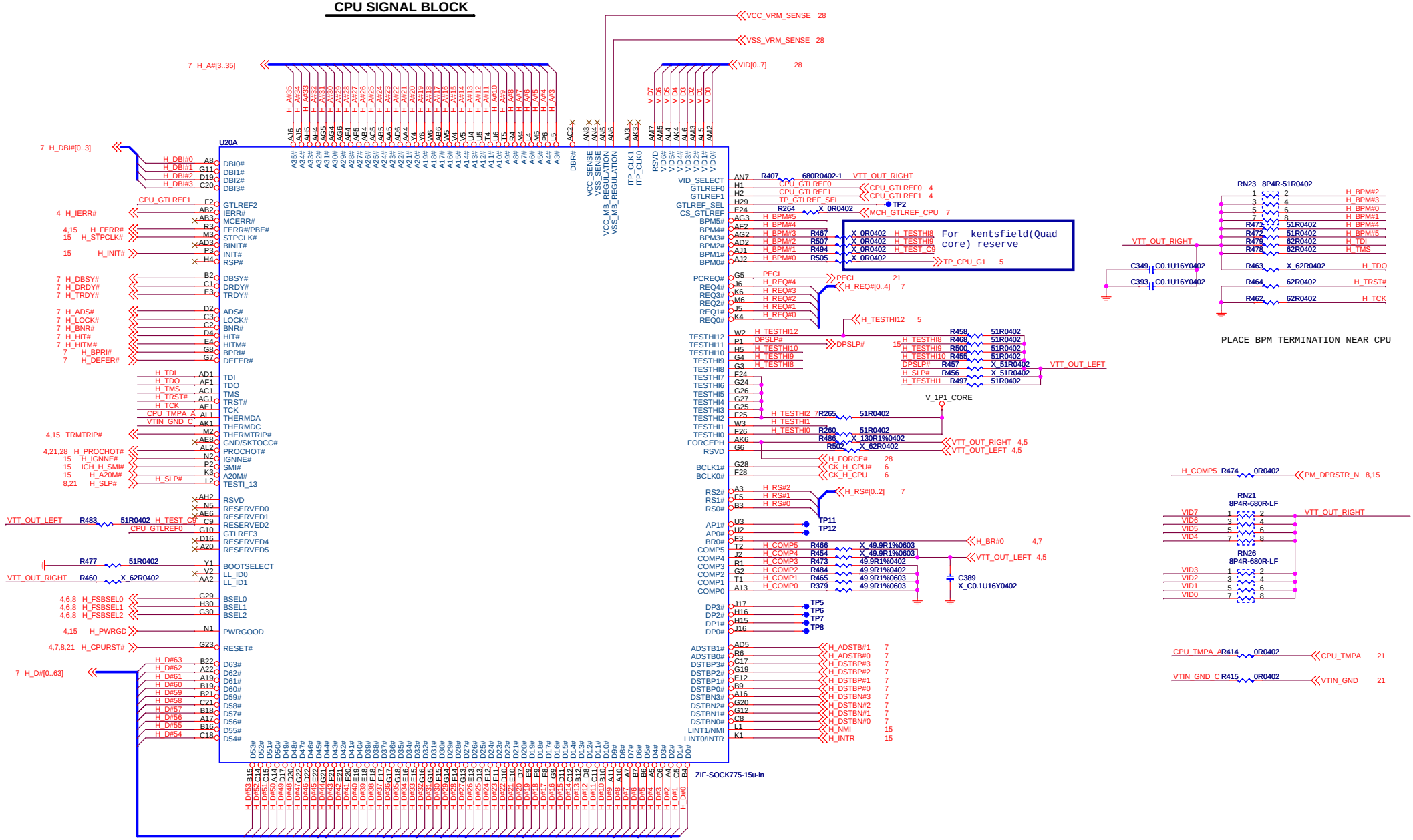
ICH10 Impedance Requirements by Interface

Interface	Impedance Required
PCI	50-ohm,single-ended
Controller Link	50-ohm,single-ended
Miscellaneous	50-ohm,single-ended
PCI Express,DMI	95-ohm,differential
SATA	95-ohm,differential
USB	90-ohm,differential

MSI Link to the Future **MICRO-START INT'L CO.,LTD.**

Title: BLOCK DIAGRAM		
Size	Document Number: MS-7420N1	Rev: 0A
Date: Monday, January 21, 2008	Sheet 2 of 34	

CPU SIGNAL BLOCK



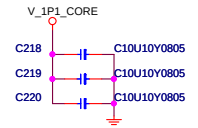
BSEL			TABLE
2	1	0	FSB FREQUENCY
0	0	0	267 MHZ (1067)
0	1	0	200 MHZ (800)
0	0	1	133 MHZ (533)
1	0	0	333 MHZ (1333)

MSI MICRO-START INT'L CO.,LTD.

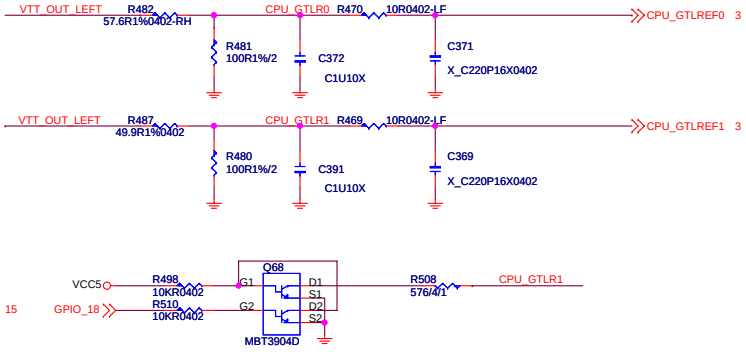
Title: INTEL LGA775 CPU SIGNAL

Size | Document Number: MS-7420N1 | Rev: 0A

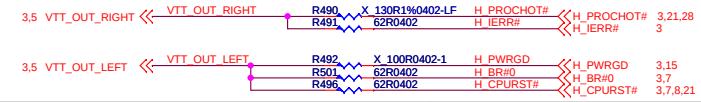
Date: Wednesday, January 23, 2008 | Sheet 3 of 34



CAPS FOR FSB GENERIC



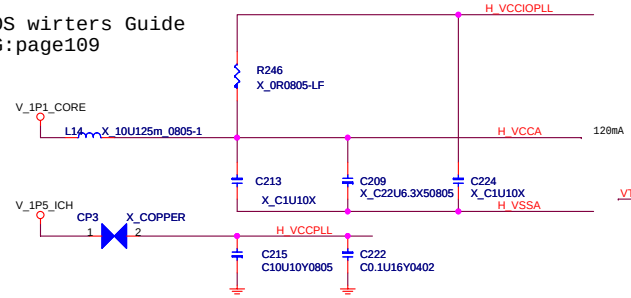
PLACE AT CPU END OF ROUTE



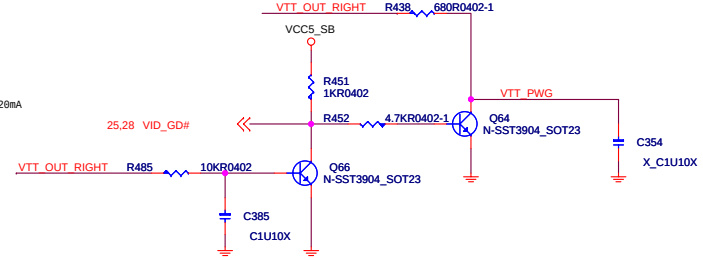
PLACE COMPONENTS AS CLOSE AS POSSIBLE TO PROCESSOR SOCKET

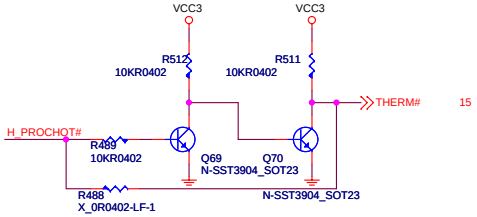
TRACE WIDTH TO CAPS MUST BE SMALLER THAN 12MILS

BIOS wirters Guide
PDG:page109

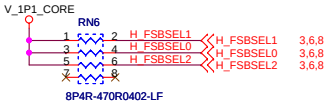


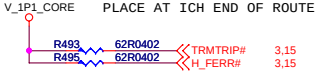
VTT_PWG SPEC :
High > 0.9V
Low < 0.3V
Trise < 150ns





FSBSEL RESISTOR CAN BE REMOVED IF ONLY TEJAS
AND CEDAR MILL ARE SUPPORTED





PLACE AT ICH END OF ROUTE

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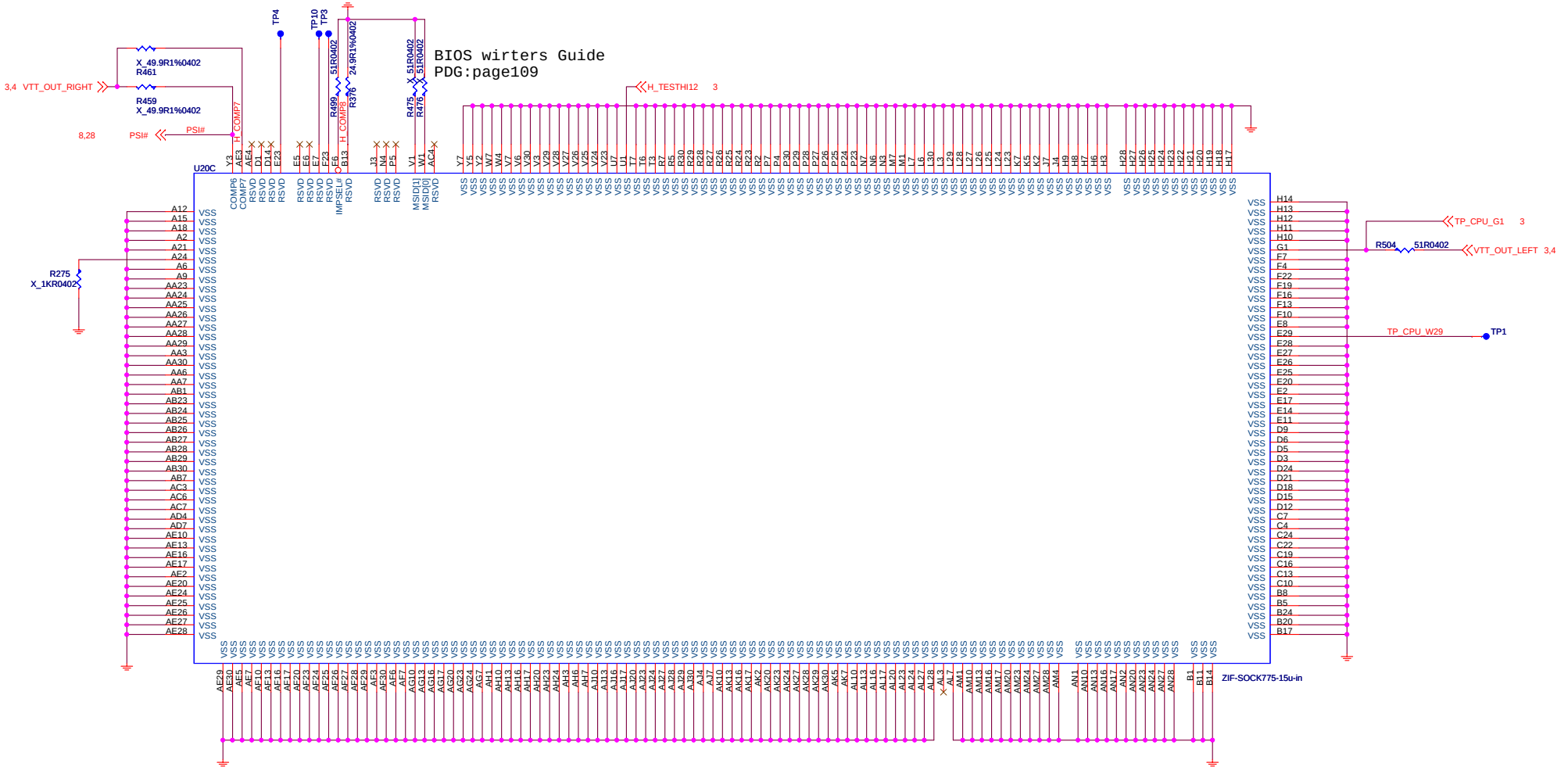
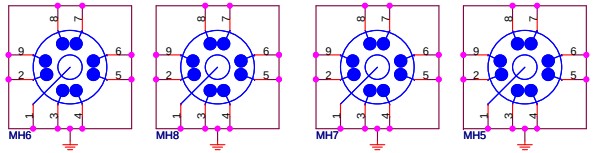
Title	INTEL LGA775 POWER	
Size	Document Number: MS-7420N1	Rev: 0A
Date: Tuesday, January 29, 2008	Sheet 4 of 34	

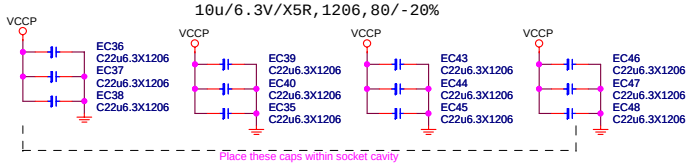
BIOS wirters Guide
PDG:page109





CPU DECOUPLING CAPACITORS

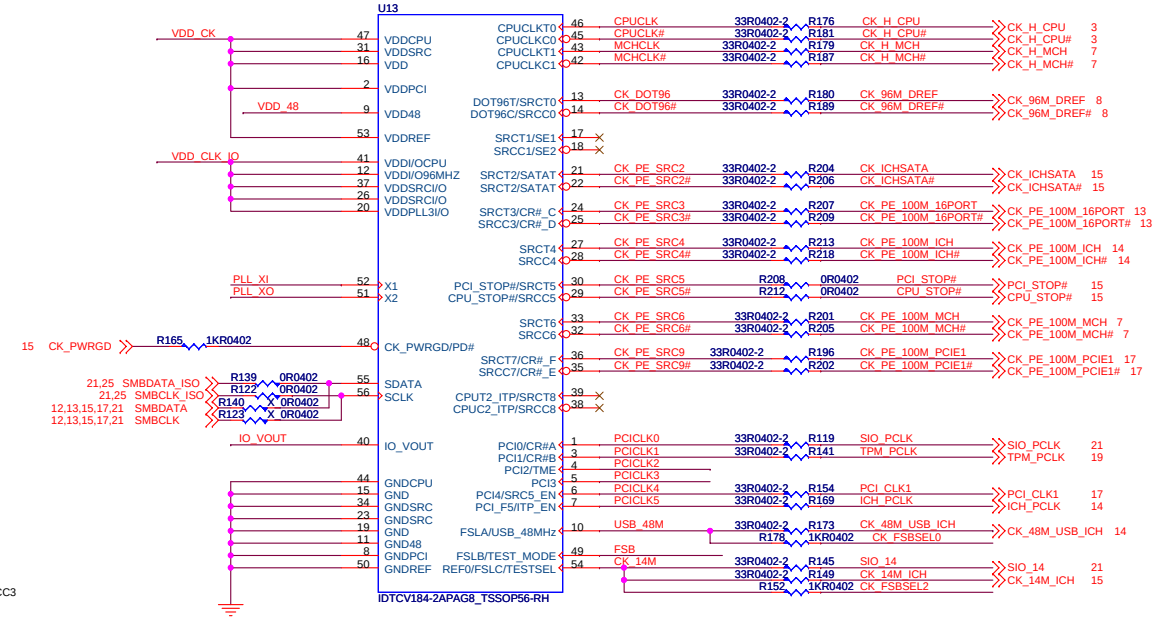
10u/6.3V/X5R,1206,80/-20%



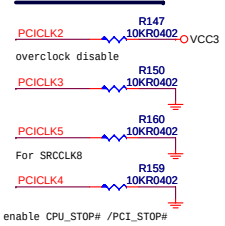
MICRO-START INT'L CO.,LTD.

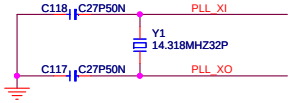
Title	INTEL LGA775 GND	
Size	Document Number: MS-7420N1	Rev: 0A
Date: Wednesday, January 23, 2008	Sheet 5 of 34	

CLOCK Generator - IDTCV184-2



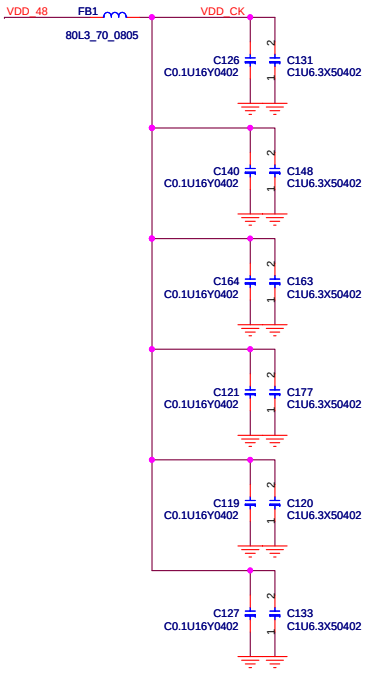
Strapping risistor



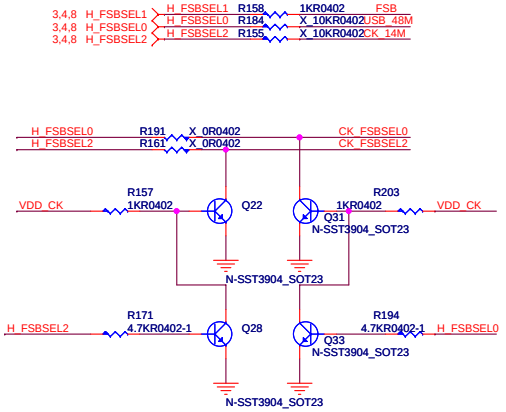


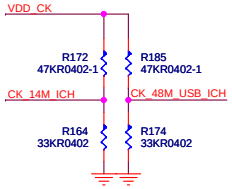
VDD_CK Decoupling

Place near each VDD_CK Pins



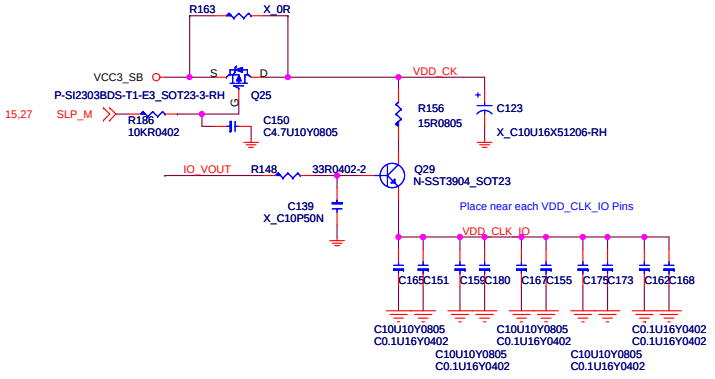
CPU Frequency select



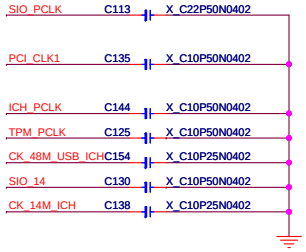


FS_C[1] B0b7	FS_B[1] B0b6	FS_A[2] B0b5	CPU MHz
0	0	0	266.66
0	0	1	133.33
0	1	0	200.00
0	1	1	166.66
1	0	0	333.33
1	0	1	100.00
1	1	0	400.00
1	1	1	Reserved

VDD_CK & VDD_CLK_IO Power

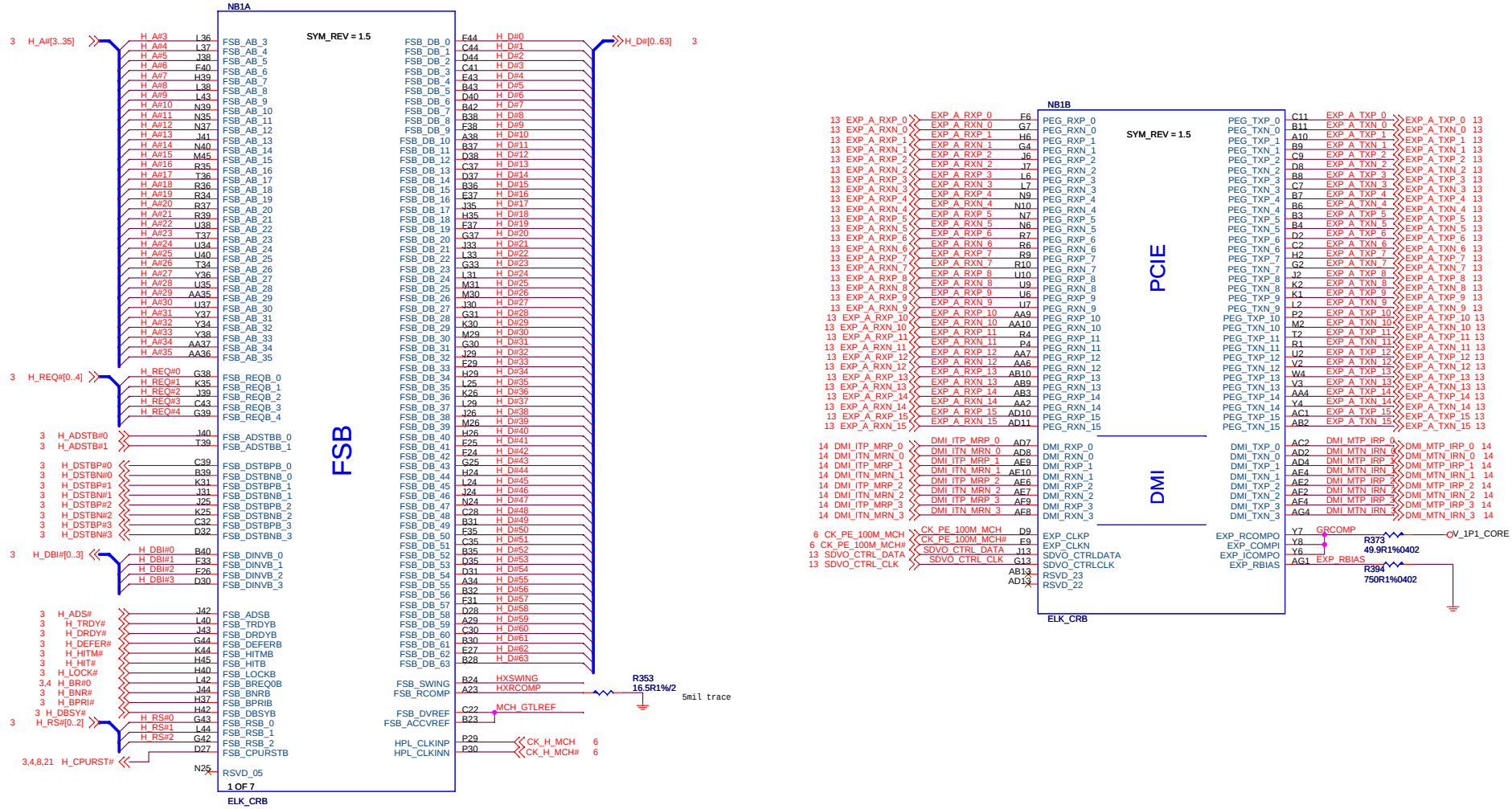


For EMI reserver



MSI Link to the Future MICRO-START INTL CO.,LTD.

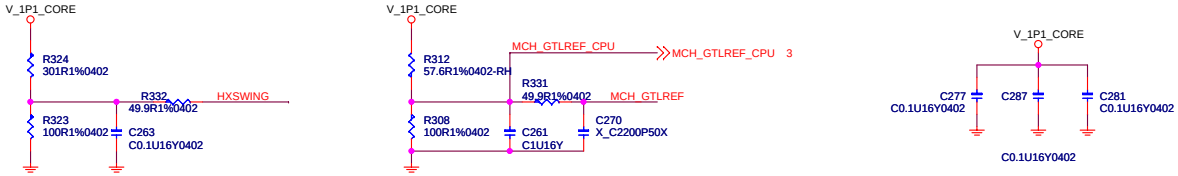
Title	CLOCK Generator-IDTCV184-2APAG8	
Size	Document Number MS-7420N1	Rev 0A
Date: Wednesday, January 23, 2008	Sheet 6 of 34	



HD_SWING VOLTAGE "10 MIL TRACE , 7 MIL SPACE" HD_SWING S/B 1/4*VTT +/- 2%

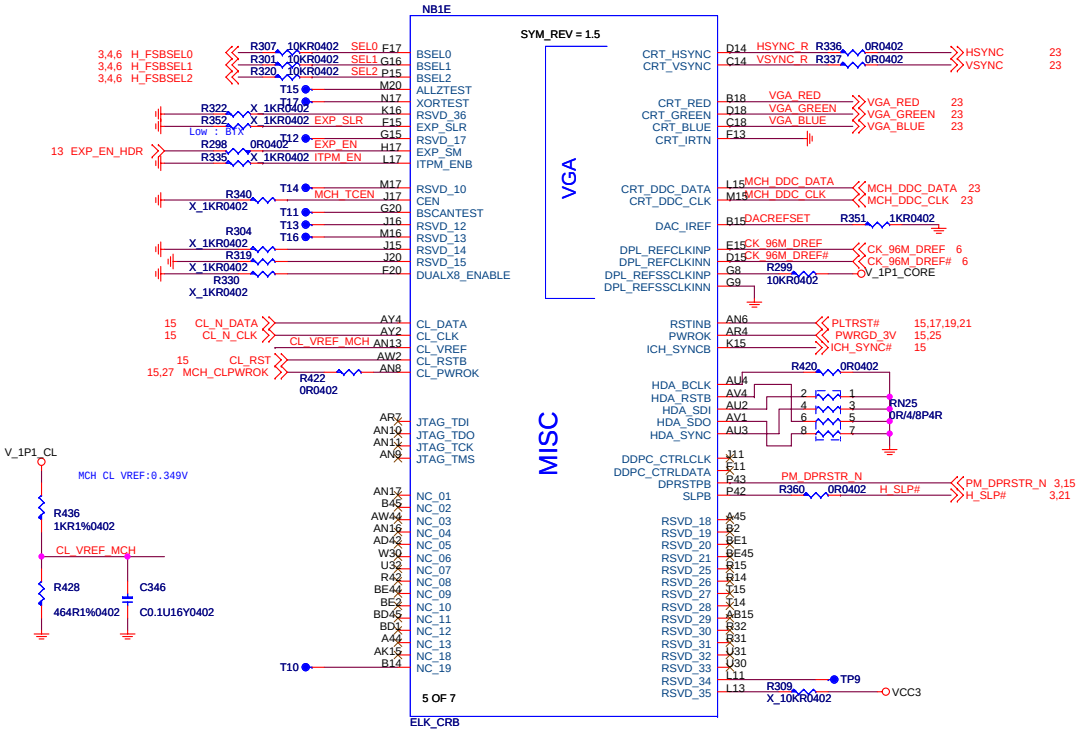
PLACE DIVIDER RESISTOR NEAR VTT

GTLREF VOLTAGE SHOULD BE 0.63*VTT=0.8V
100 OHM OVER 200 RESISTORS



MICRO-START INTL CO.,LTD.

Title	Eaglelake FSB/PCIE	
Size	Document Number: MS-7420N1	Rev: 0A
Date: Wednesday, January 23, 2008	Sheet 7 of 34	



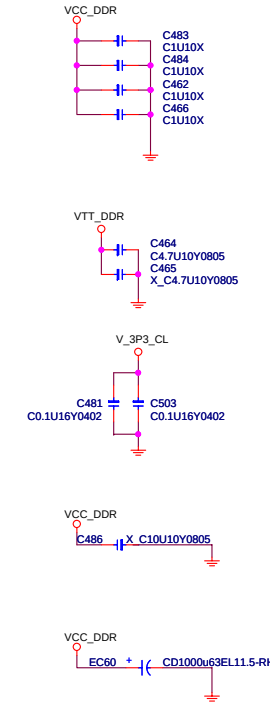
ITPM_ENB
Itegrated TPM Enable:
0=Enable iTPM
1=Disable iTPM

DualX8_Enable
0=2X8 PCIe Ports Enable
1=1X16 PCIe Port Enable

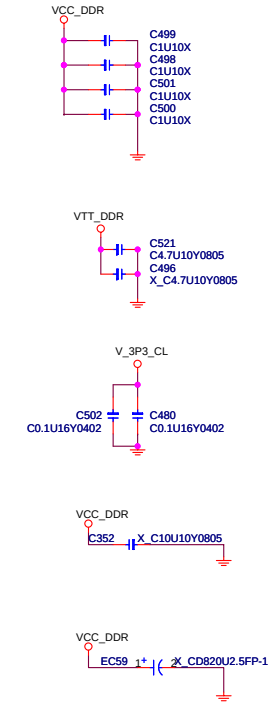
DEMO BOARD CHANGE
Primary _PEG_Presence ?
Primary PCIe port Detect:
0=PCIe Card is in Primary Slot
1=PCIe Card is not in Primary Slot

PIN	H	L	Description
EXP_SLR	Normal	Reverse	PCI_E Lane Reversal
EXP_EN	Concurrent	Non-concurrent	PCI_E/SDVO co-existence
MCH_TCEN	Enable	Disable	TLS confidentiality

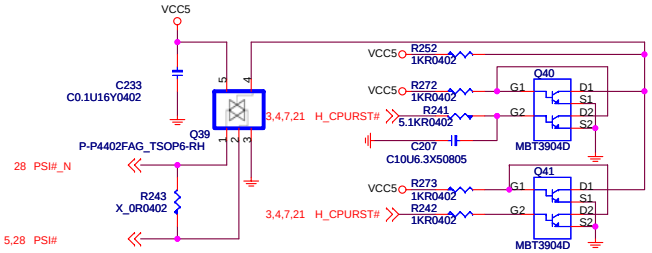
DIMM1 decouping cap



DIMM1 decouping cap



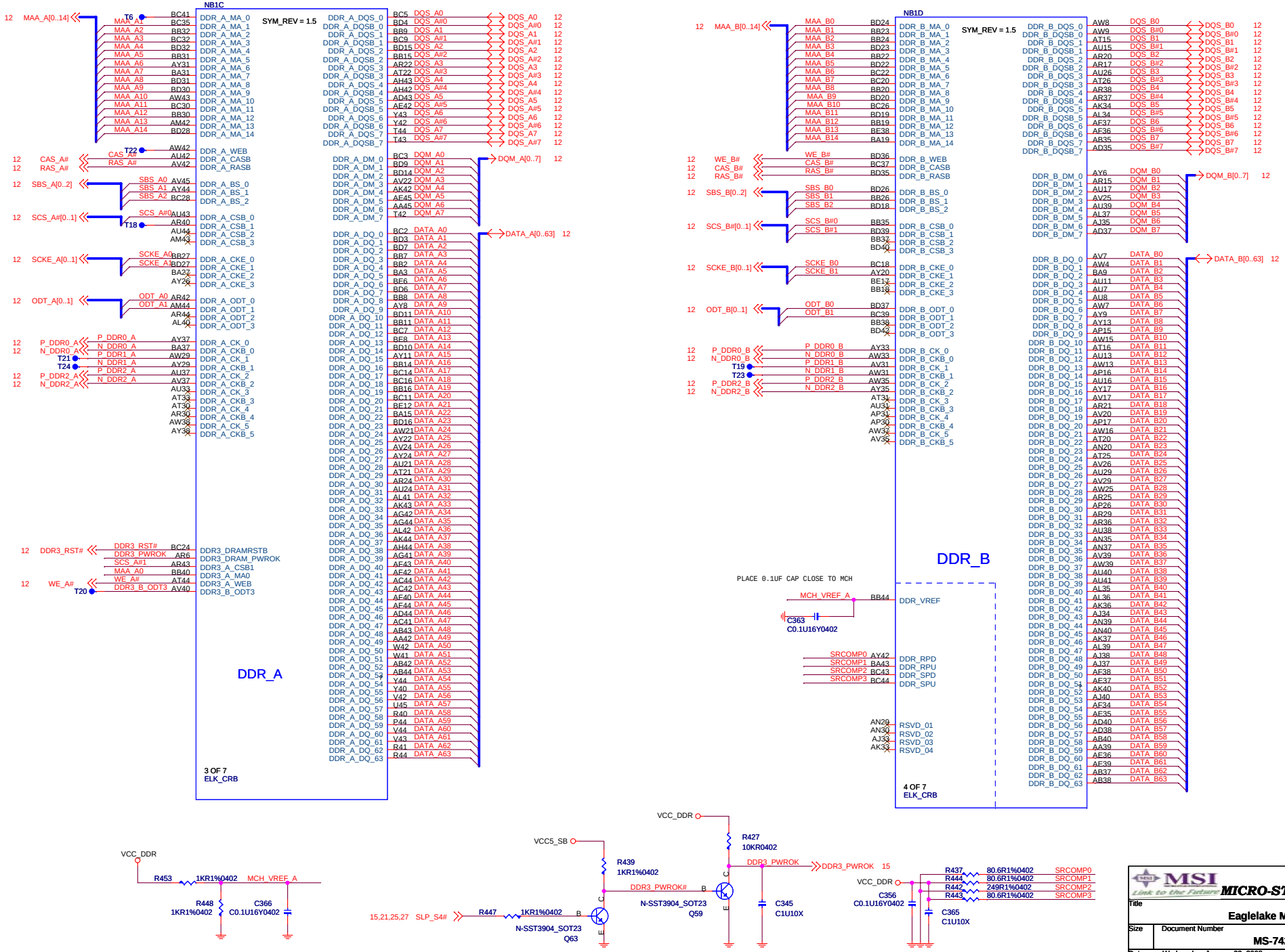
PSI(POWER STATE INDICATOR)



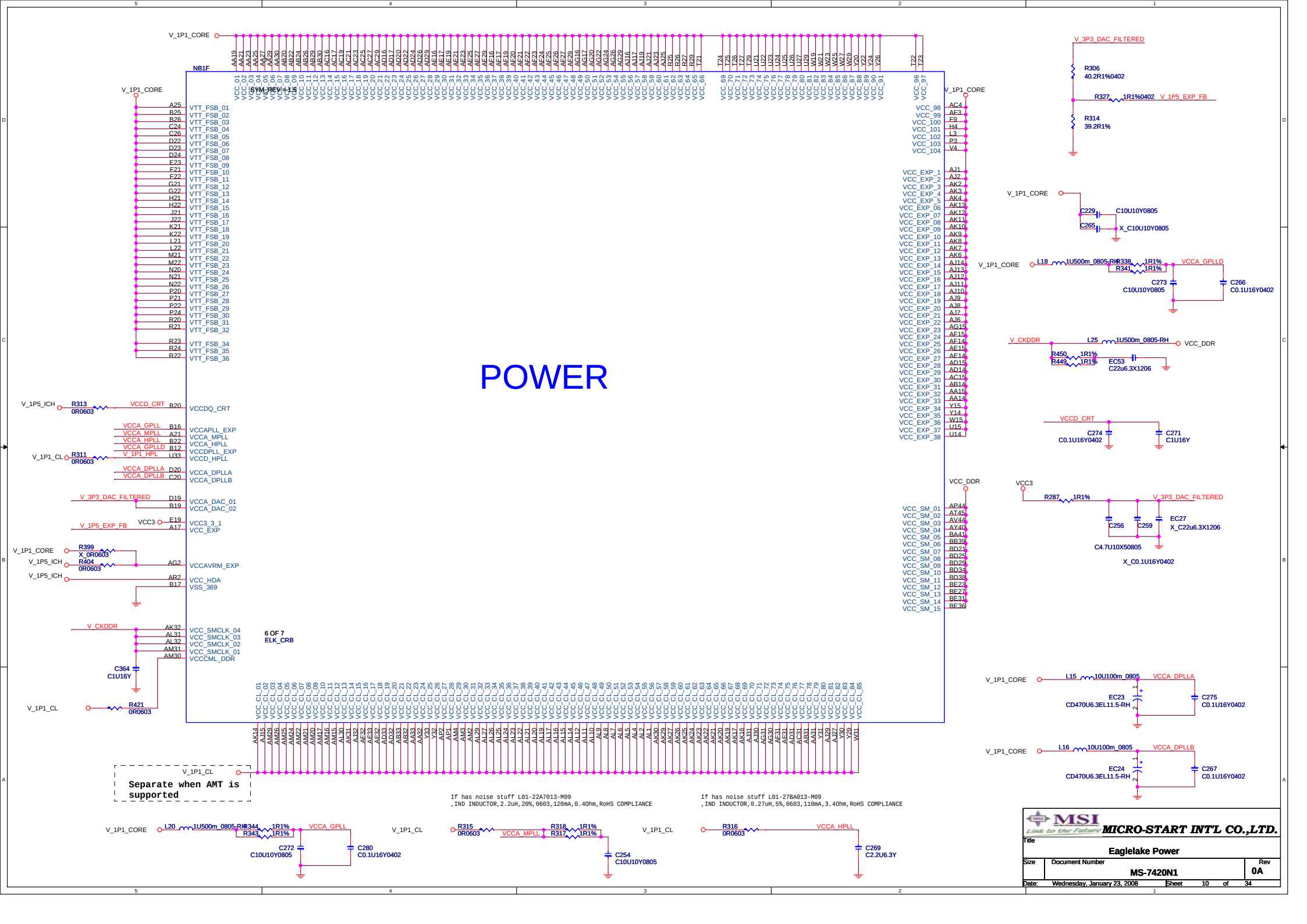
PDG:page 438 ,Please put near PWM

MSI MICRO-START INT'L CO.,LTD.

Title	Eaglelake VGA/MISC	
Size	Document Number: MS-7420N1	Rev: 0A
Date: Tuesday, January 29, 2008	Sheet 8 of 34	



MSI	MICRO-START INT'L CO.,LTD.		
Title	Eaglelake Memory		
Size	Document Number	MS-7420N1	Rev 0A
Date: Wednesday, January 23, 2008	Sheet 9 of 34		


POWER
NB1F
SYM_REV=1.15
6 OF 7
ELK_CRB
Separate when AMT is supported
If has noise stuff L01-22A7013-M09
,IND INDUCTOR,2.2uH,20%,0603,120mA,0.40hm,RoHS COMPLIANCE
If has noise stuff L01-27BA013-M09
,IND INDUCTOR,0.27uH,5%,0603,110mA,3.40hm,RoHS COMPLIANCE
MSI
MICRO-START INT'L CO.,LTD.
Title
Eaglelake Power
Size
Document Number
MS-7420N1
Rev
0A
Date: Wednesday, January 23, 2008
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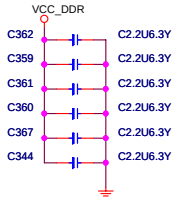
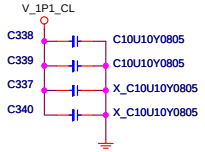
All cap place close to GMCH

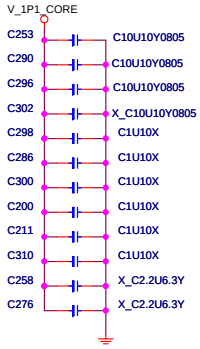
MCH memory decouping cap



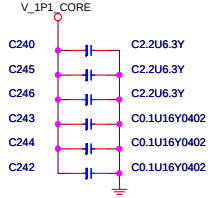
V_1P1_CL decouping cap



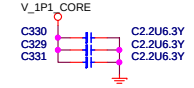
V_1P1_Core decouping cap



V_1P1_Core decouping cap(FSB)



V_1P1_Core decouping cap(PCIE)



NB1G

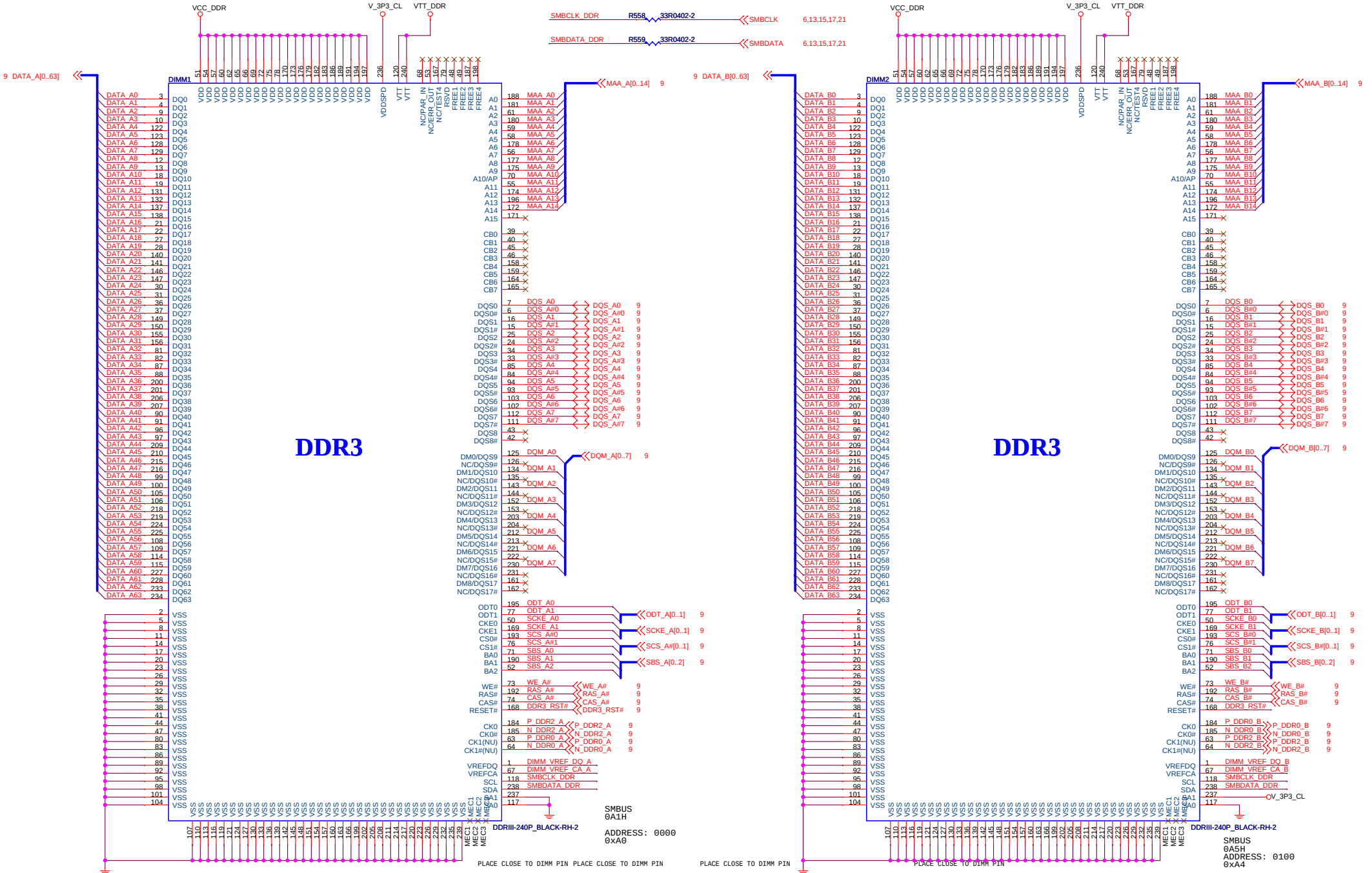
SYM_REV1.15

GND

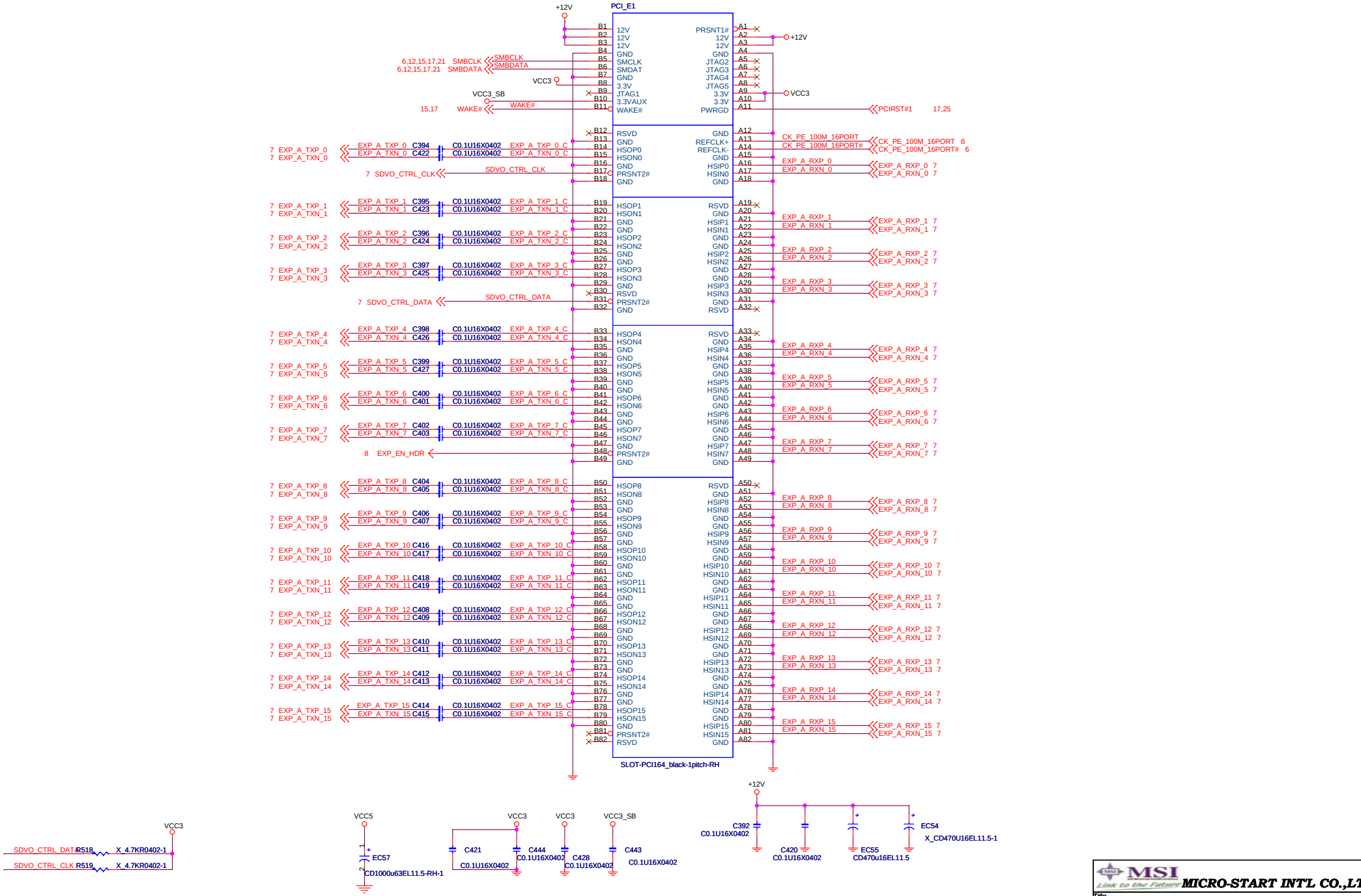
7OF 7

ELK_CRB

MSI Link to the Future	MICRO-START INT'L CO.,LTD.		
Title	Eaglelake GND		
Size	Document Number	MS-7420N1	Rev 0A
Date: Wednesday, January 23, 2008	Sheet 11 of 34		



MSI Link to the Future	MICRO-START INT'L CO.,LTD.		
Title	DDR3 DIMM 1 & 2		
Size	Document Number	MS-7420N1	Rev 0A
Date: Wednesday, January 23, 2008	Sheet 12 of 34		



MSI MICRO-START INT'L CO.,LTD.
Link to the Future

Title	PCI EXPRESS 16 PORT	
Size	Document Number: MS-7420N1	Rev: 0A
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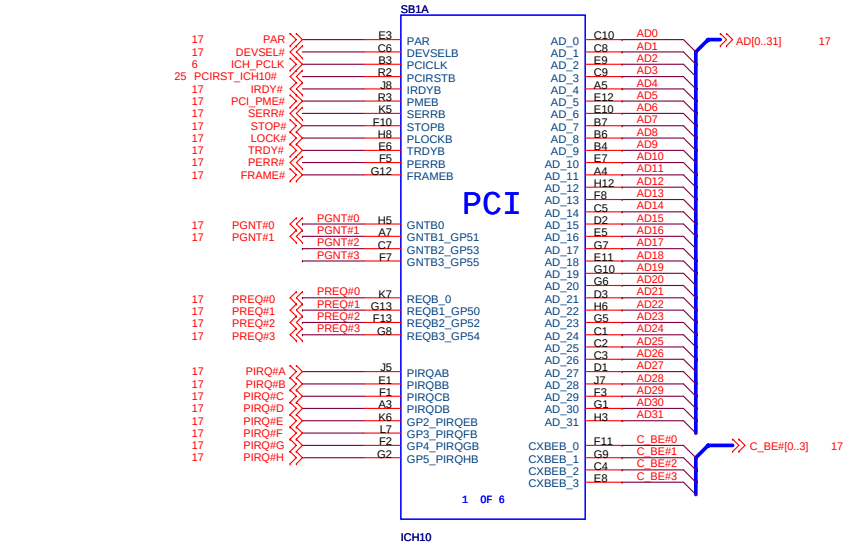
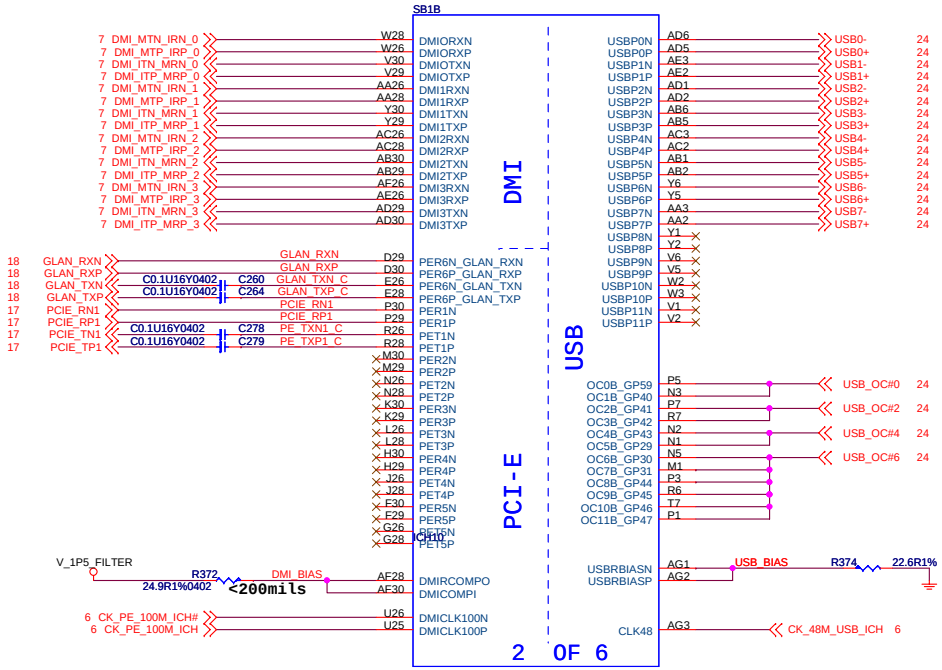
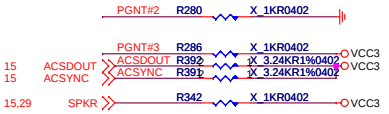
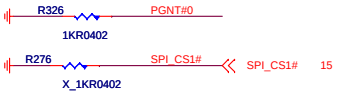




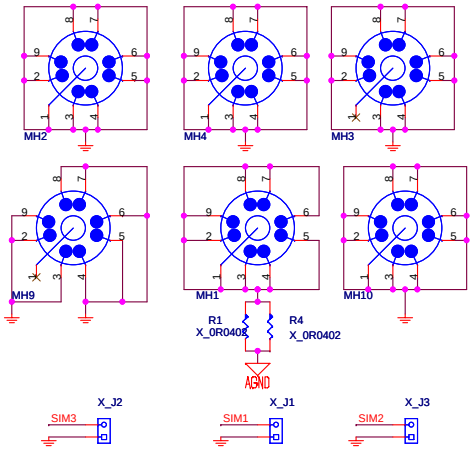
ICH10 H/W STRAPS			
SIGNAL	H	L	DES.
SPKR	DIS	EN	REBOOT
GNT3	DIS	EN	A16 OVERIDE
INTVRMEN	EN	DIS	INT VRM
SATALED	NORM	REVERSE	PCIE 0-3 ORDER
HDA_SDOUT	DFX/ PCIE	N/A	XOR MODE/PCIE PORT CONFIG BIT 1
HDA_SYNC	SET BIT	N/A	PCIE PORT CONFIG BIT 0 (1-4)
GNT2	N/A	SET BIT	PCIE PORT CONFIG 2 BIT 0 (5-6)



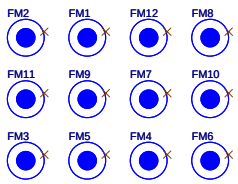
BOOT SELECT STRAPS			
BOOT DEVICE	GNT#0	SPI_CS1#	
FWH	1	1	
SPI	0	X	(Default)
PCI	1	0	



Mounting Holes

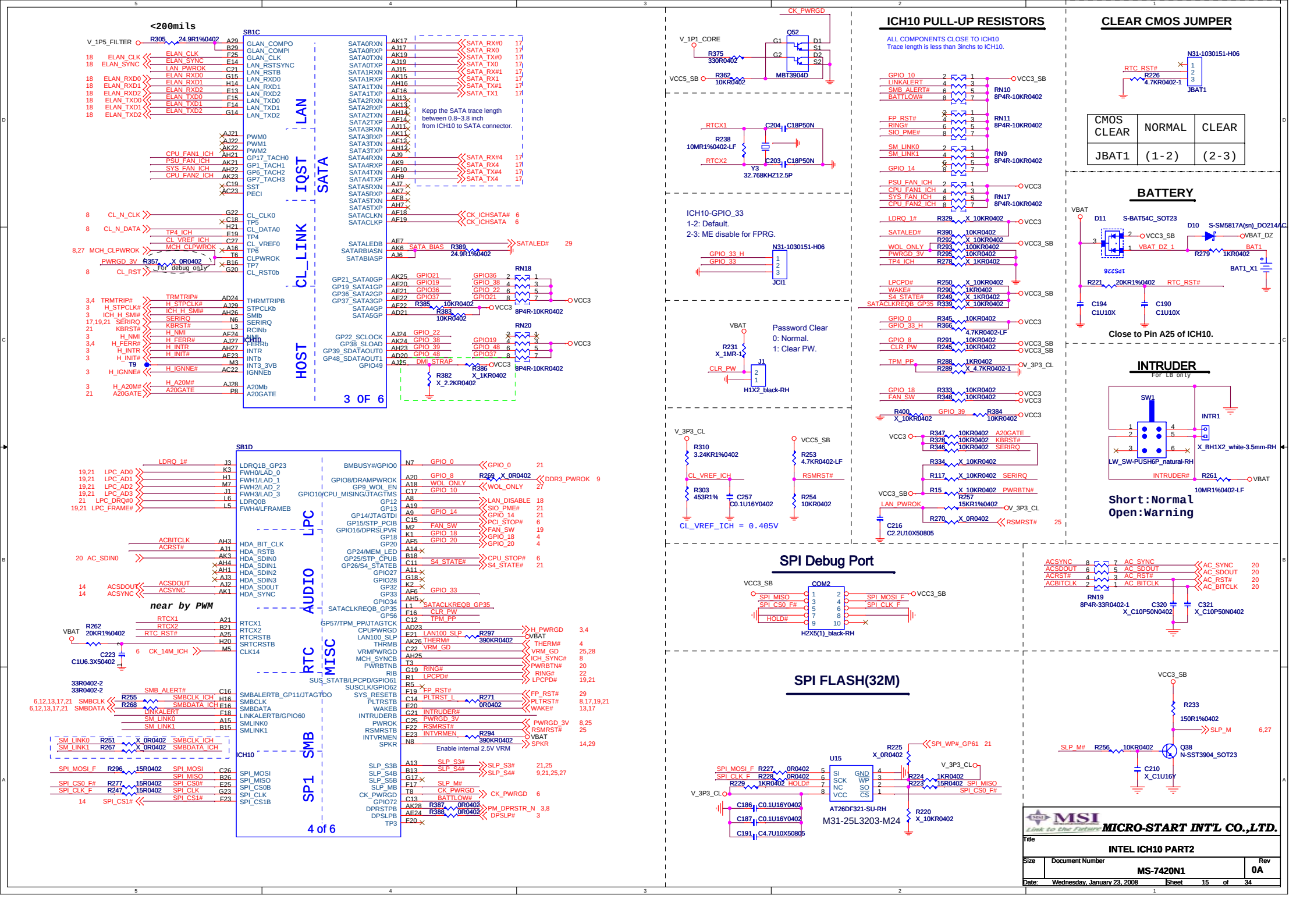


Optics Orientation Holes



MSI Link to the Future **MICRO-START INT'L CO.,LTD.**

Title	INTEL ICH10 PART1	
Size	Document Number MS-7420N1	Rev 0A
Date: Wednesday, January 23, 2008	Sheet 14 of 34	


<200mils
SB1C
LAN
IQST
SATA
CL_LINK
HOST
3 0F 6
SB1D
LPC
AUDIO
RTC
MISC
SMB
SP1
4 of 6
near by PWM
ICH10
ICH10 PULL-UP RESISTORS
ALL COMPONENTS CLOSE TO ICH10
Trace length is less than 3inchs to ICH10.
CLEAR CMOS JUMPER
CMOS CLEAR | NORMAL | CLEAR
JBAT1 | (1-2) | (2-3)
BATTERY
Close to Pin A25 of ICH10.
INTRUDER
Short:Normal
Open:Warning
SPI Debug Port
SPI FLASH(32M)
M31-25L3203-M24
AT26DF321-SU-RH
ICH10-GPIO_33
1-2: Default.
2-3: ME disable for FPRG.
Password Clear
0: Normal.
1: Clear PW.
CL_VREF_ICH = 0.405V
Kepp the SATA trace length between 0.8~3.8 inch from ICH10 to SATA connector.
Enable internal 2.5V VRM
MICRO-START INT'L CO.,LTD.
INTEL ICH10 PART2
MS-7420N1
0A
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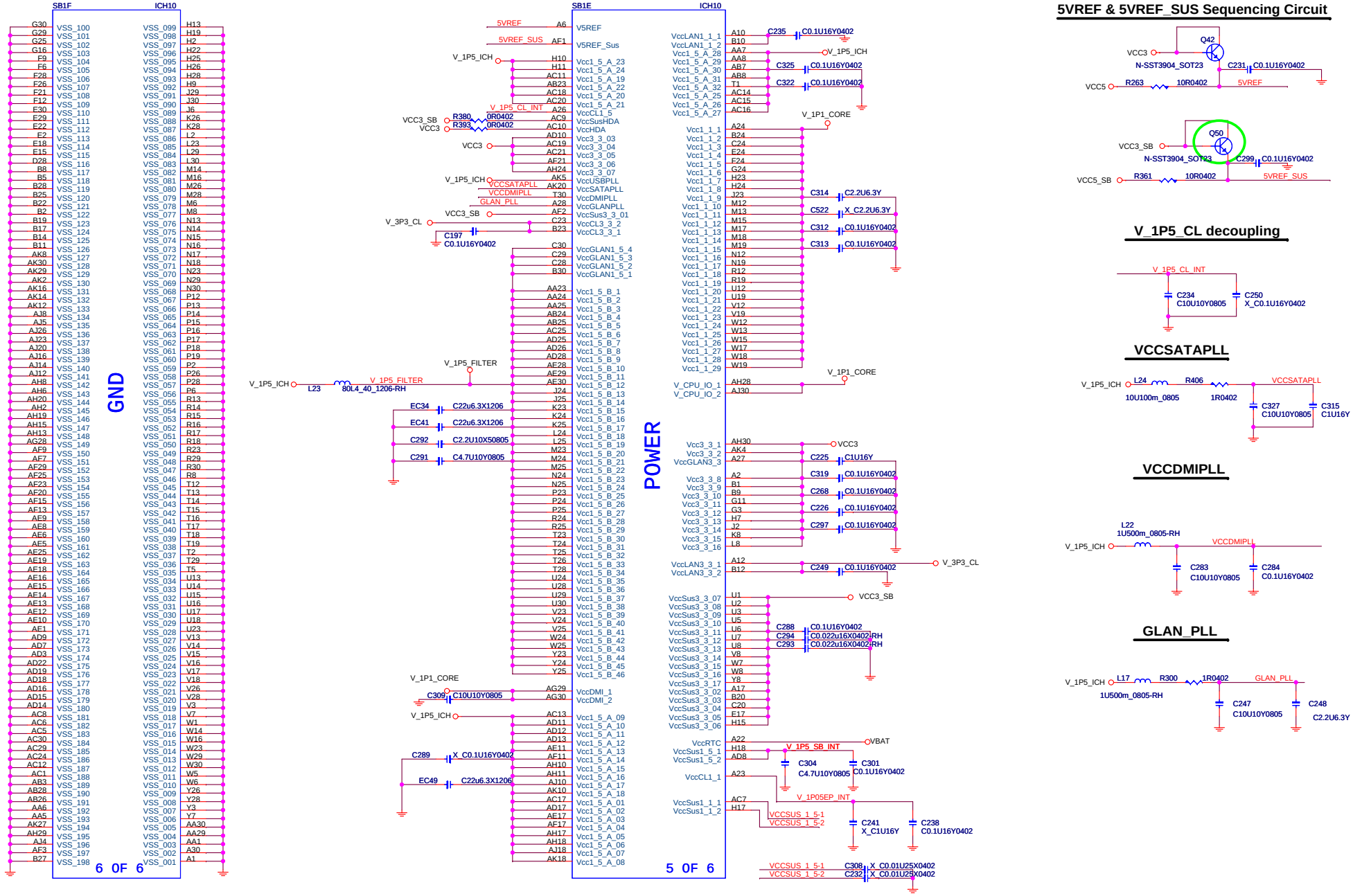
SB1F
ICH10
GND
6 OF 6
SB1E
ICH10
POWER
5 OF 6
5VREF & 5VREF_SUS Sequencing Circuit
V_1P5_CL decoupling
VCCSATAPLL
VCCDMIPLL
GLAN_PLL
MICRO-START INT'L CO.,LTD.
INTEL ICH10 POWER
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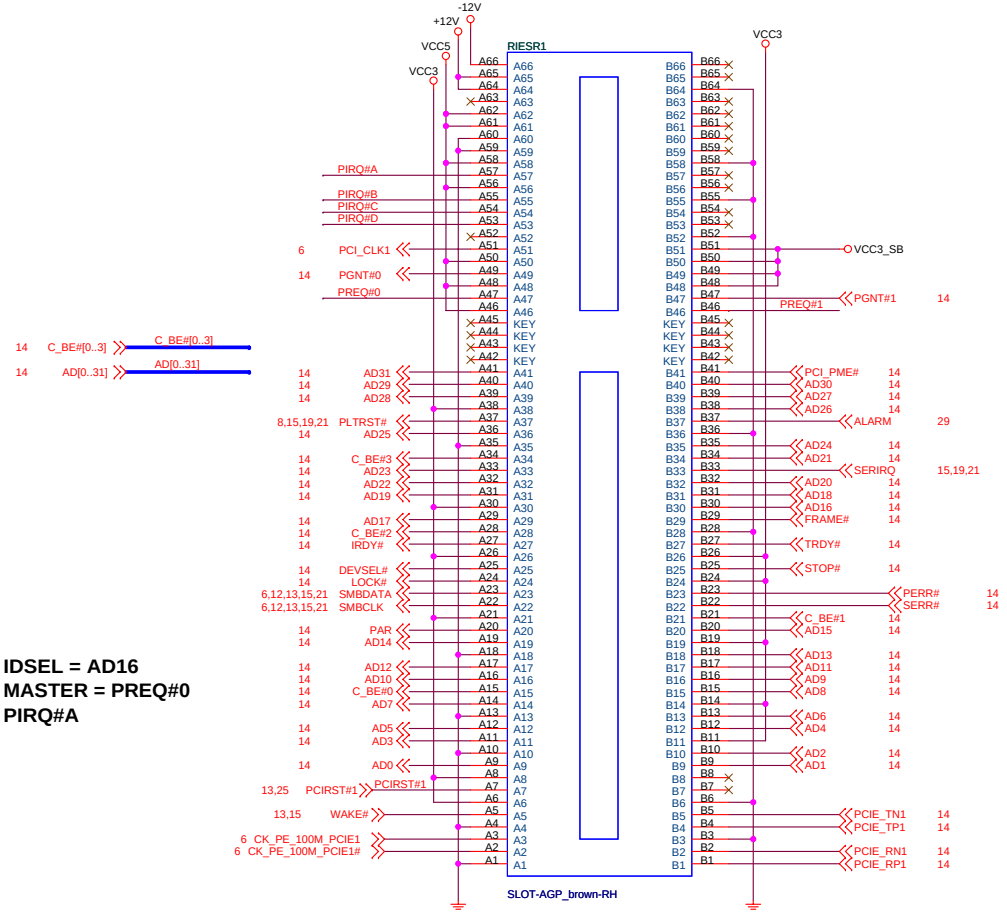
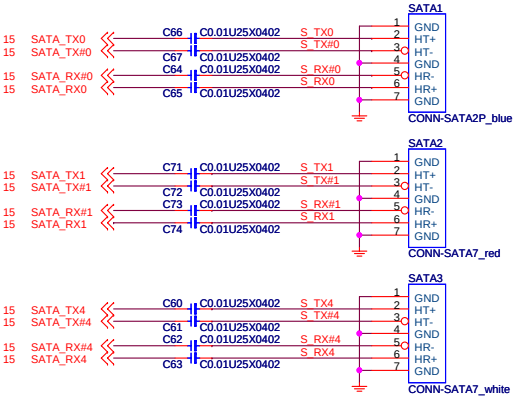
LE riser card interface

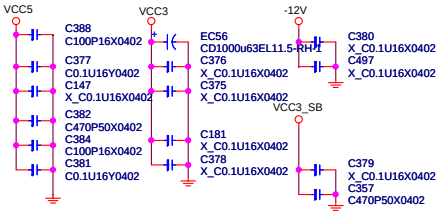


IDSEL = AD16
MASTER = PREQ#0
PIRQ#A

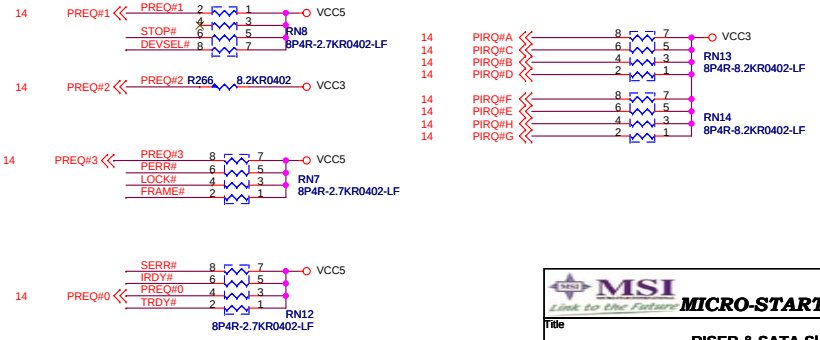
SERIAL ATA CONNECTOR BLOCK



PCI SLOT DECOUPLING CAPACITORS



PCI PULL-UP / DOWN RESISTORS



MSI MICRO-START INT'L CO.,LTD.
Link to the Future

Title	RISER & SATA Slots	
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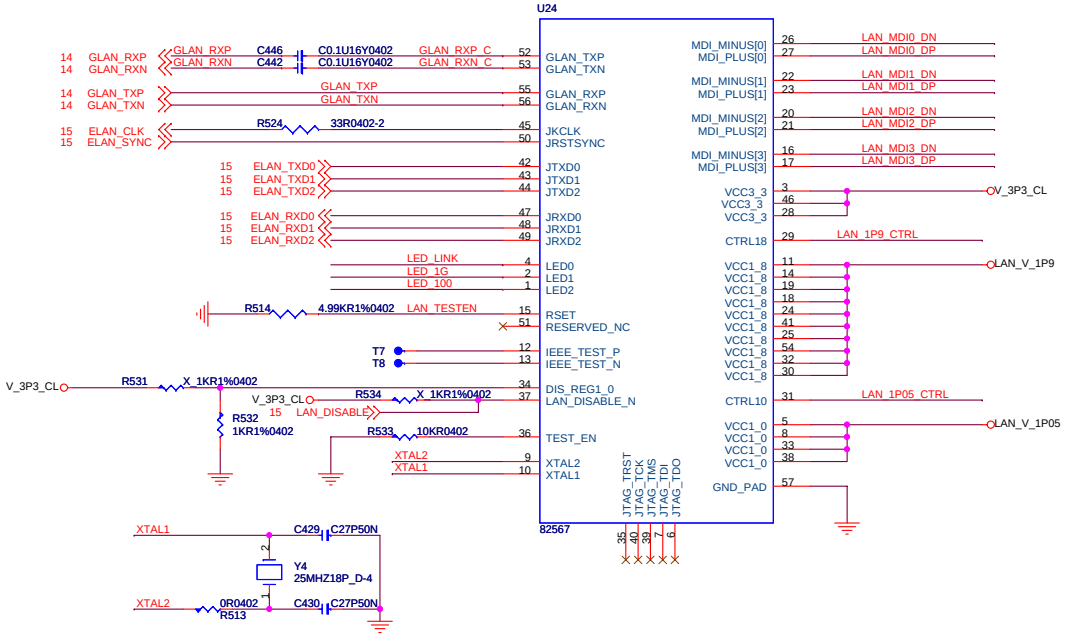
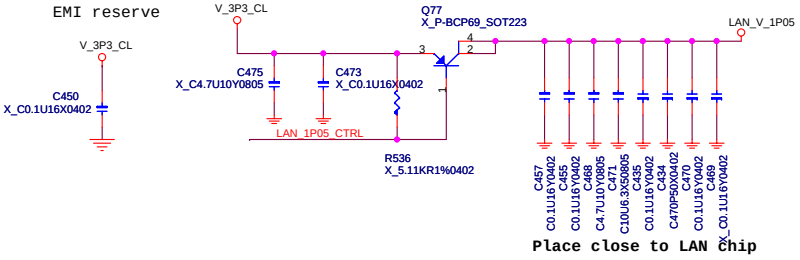
INTEL 82567(Boanman)

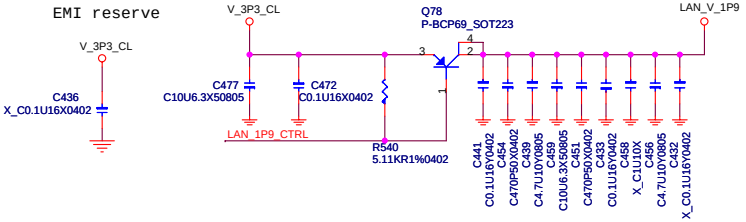


LAN 1P0 POWER
(277.2mA)



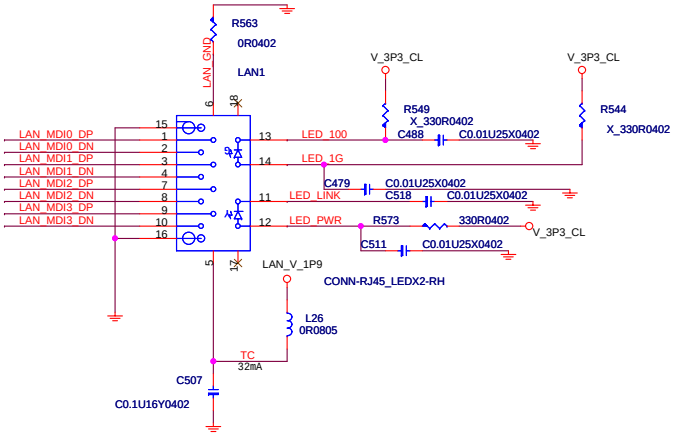
Place close to LAN chip

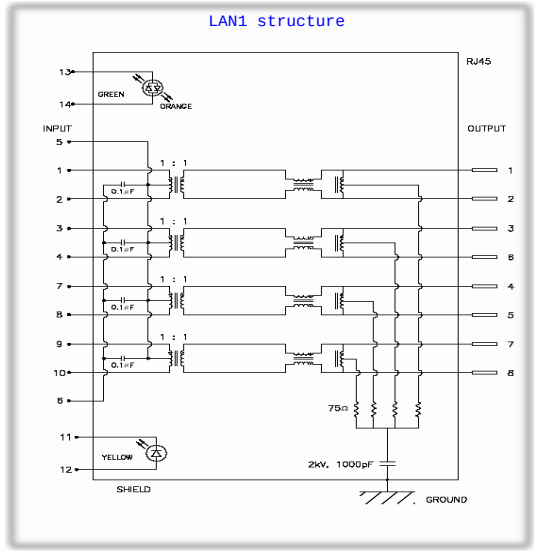
LAN 1P8 POWER
(418.2mA)



Place close to LAN chip

LAN CONNECTOR





Speed LED Type
1000Mbps : Orange
100Mbps : Green
10Mbps : LED off

For Active/Link:
Yellow

MICRO-START INT'L CO.,LTD.

Title	LAN-Boazman	
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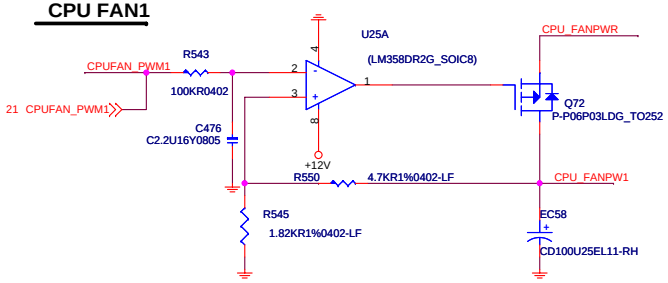
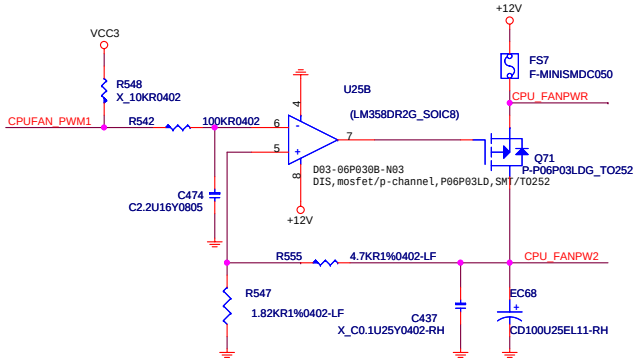
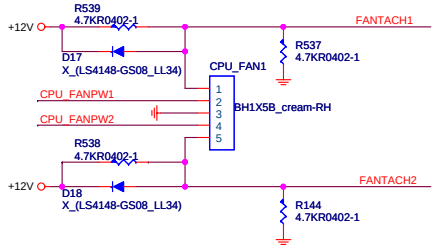
CPU FAN1

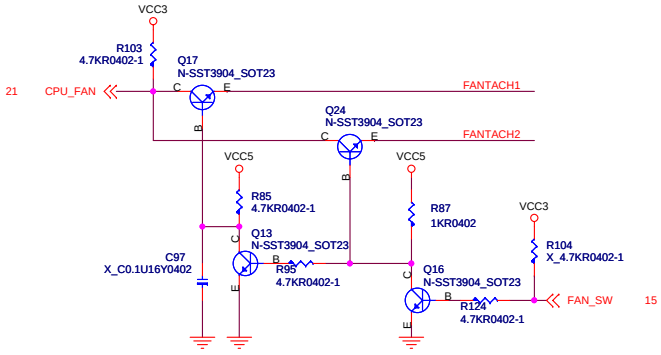


CPU FAN2

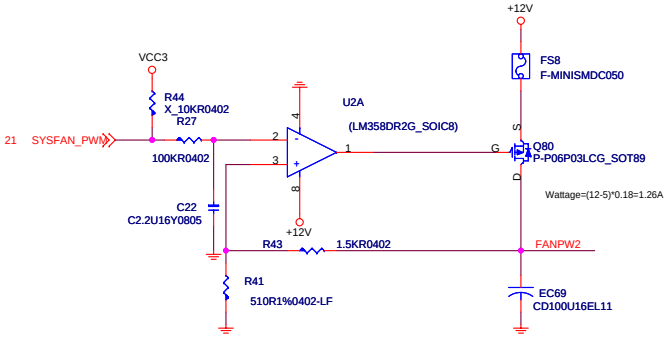


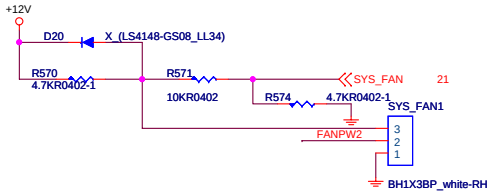


Switch circuit for CPU FAN1&FAN2 detection

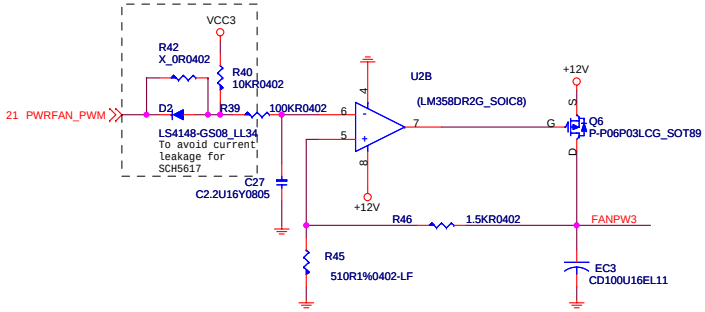


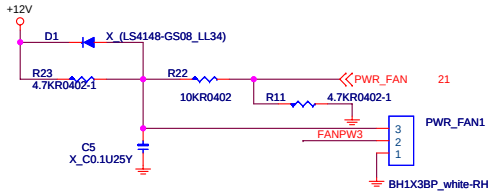
SYS FAN





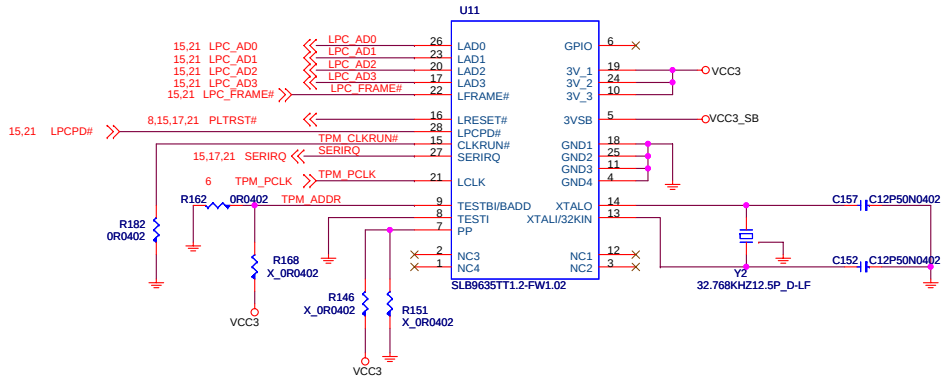
PWR FAN

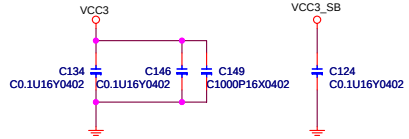




TPM 1.2

IO Address:0x02E





MSI Link to the Future MICRO-START INT'L CO.,LTD.

Title	CPU/PSU/SYS FAN & TPM1.2	
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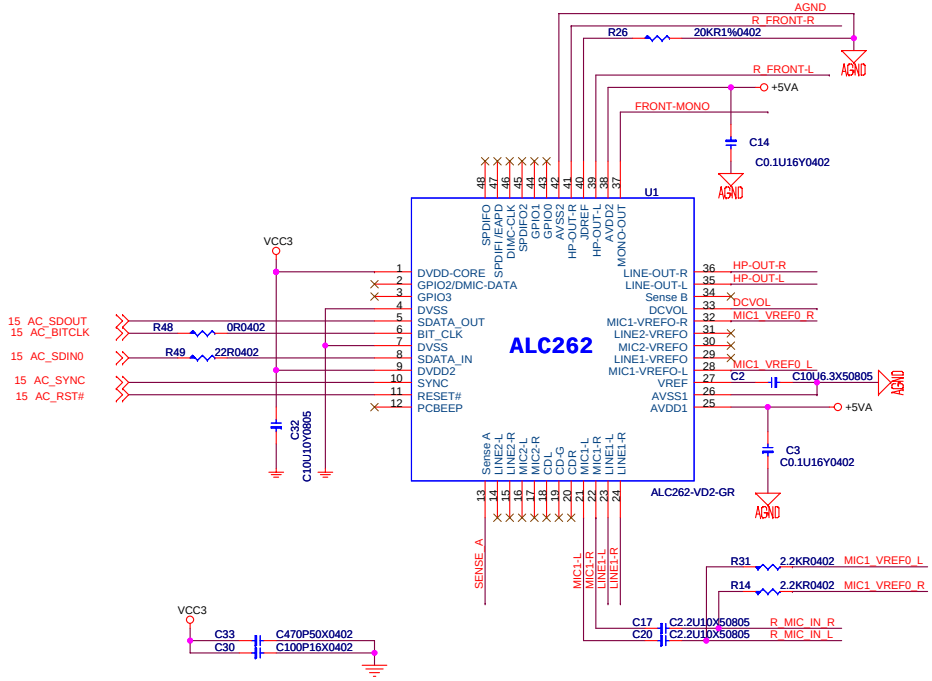
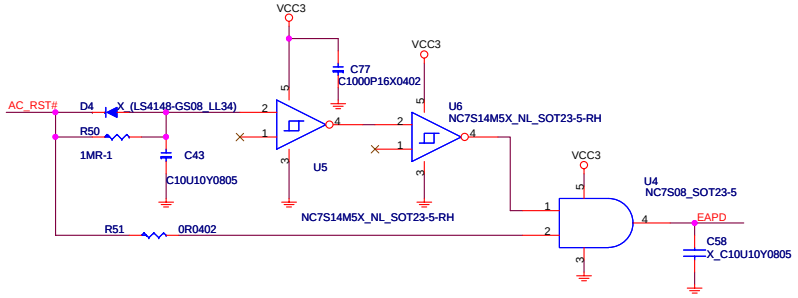
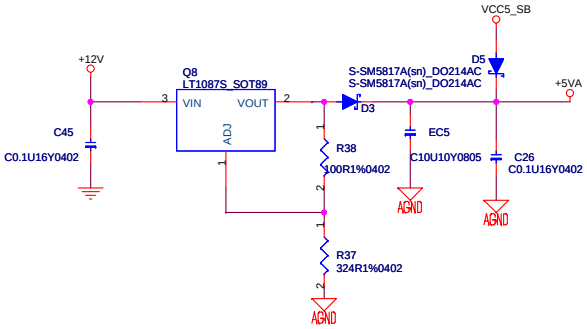
RELTEK HD ALC262VD2



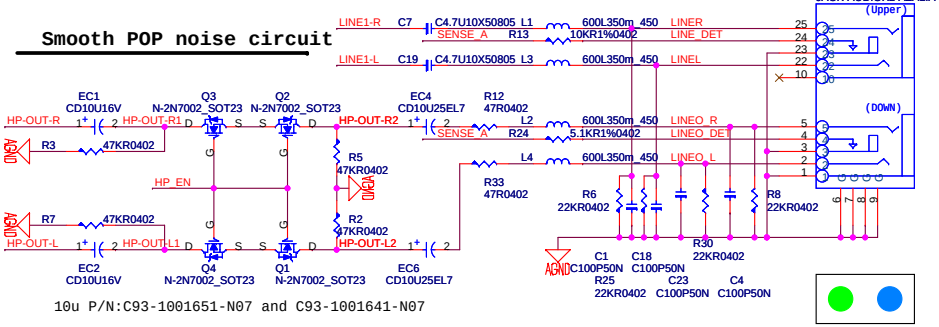
POP noise circuit



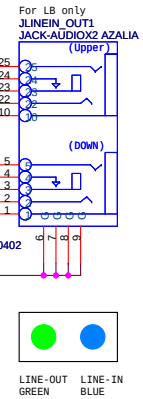
Audio CODEC REGULATOR

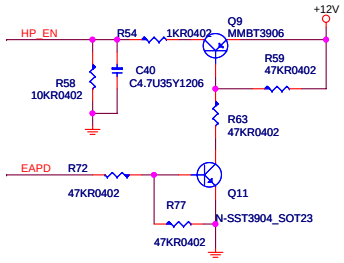


Smooth POP noise circuit

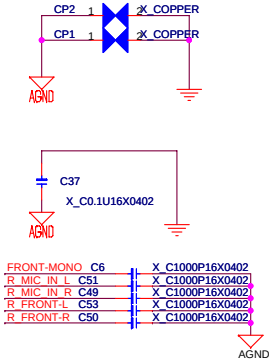


PHONE JACK

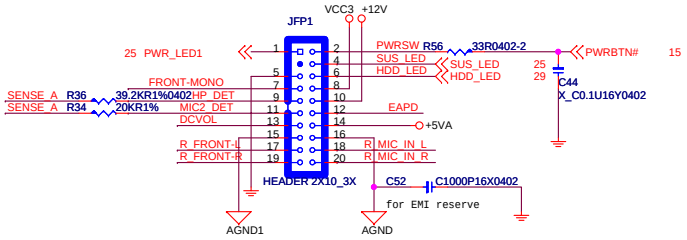




For EMI reserve

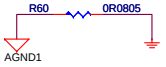


For Front Panel



JFP1

1	PWR_LED	POW_SW	2
	NC	SLP_LED	4
5	GND	HDD_LED	6
7	Mono	VCC3	8
9	HP_DET	+12V	10
11	MIC_DET	EAPD	12
13	DCVOL	+5VA	14
15	AGND1	AGND	16
17	FRONT_L	MIC_L	18
19	FRONT_R	MIC_R	20



MSI MICRO-START INT'L CO.,LTD.

Title: AUDIO-ALC262 & Front Panel

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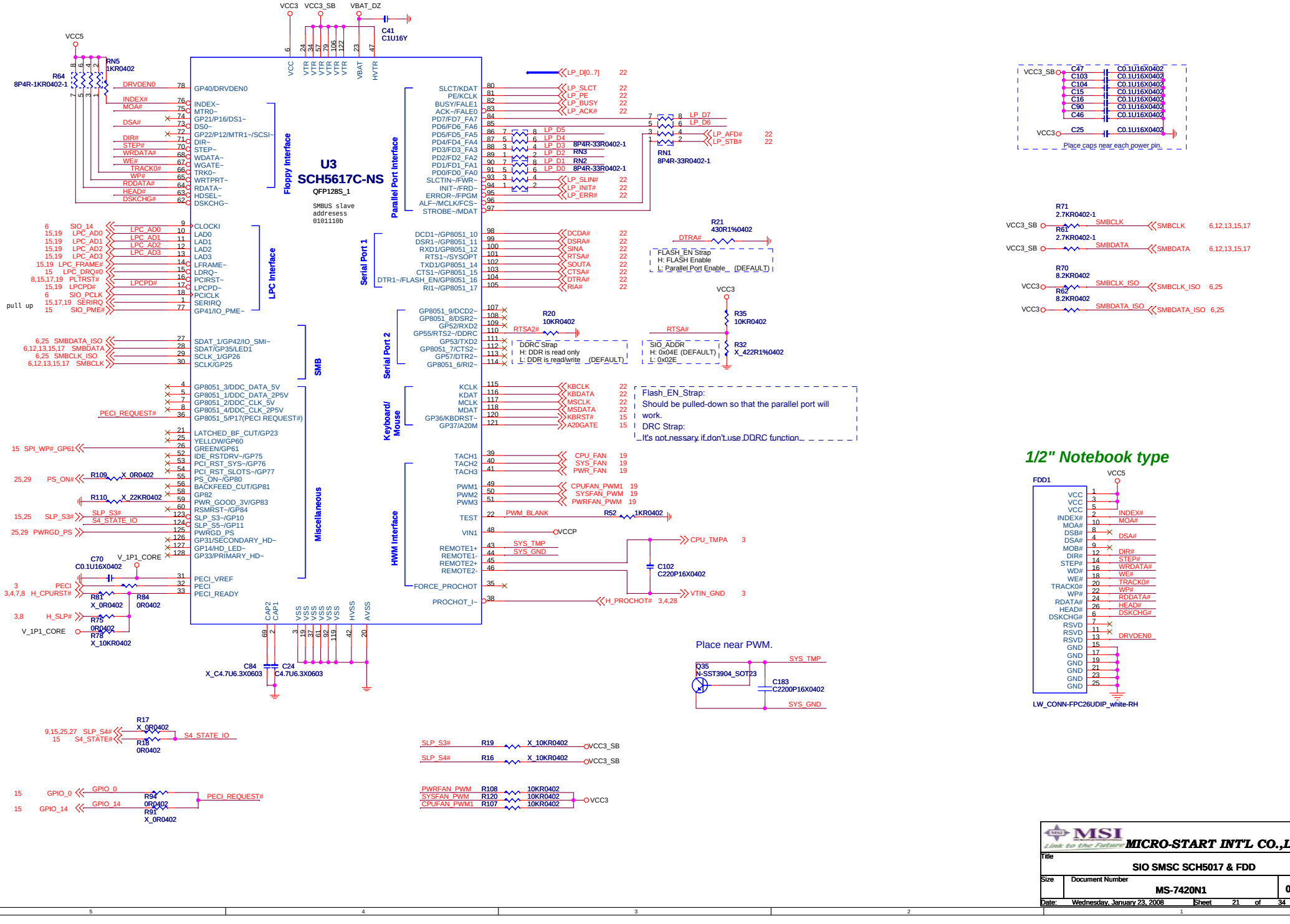
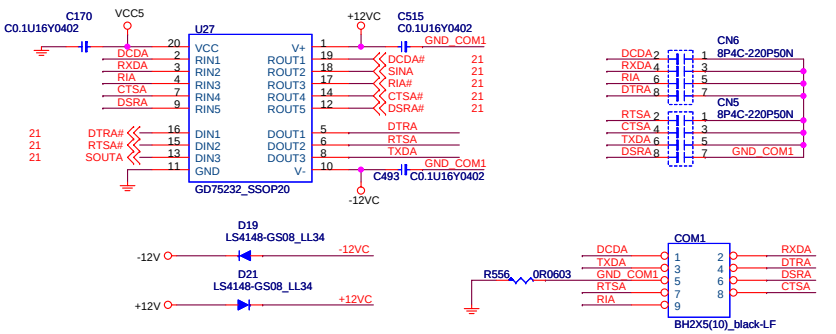
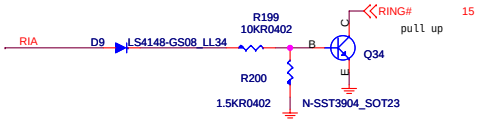

U3
SCH5617C-NS
QFP128S_1
SMBUS slave addresess 0101110b
Floppy Interface
LPC Interface
Parallel Port Interface
Serial Port 1
Serial Port 2
SMB
Keyboard/ Mouse
Miscellaneous
HWM Interface
Flash_EN_Strap:
Should be pulled-down so that the parallel port will work.
DRC Strap:
It's not nessary if don't use DDRC function.
Place caps near each power pin.
Place near PWM.
1/2" Notebook type
FDD1
LW_CONN-FPC26UDIP_white-RH
MICRO-START INT'L CO.,LTD.
SIO SMSC SCH5017 & FDD
MS-7420N1
Wednesday, January 23, 2008

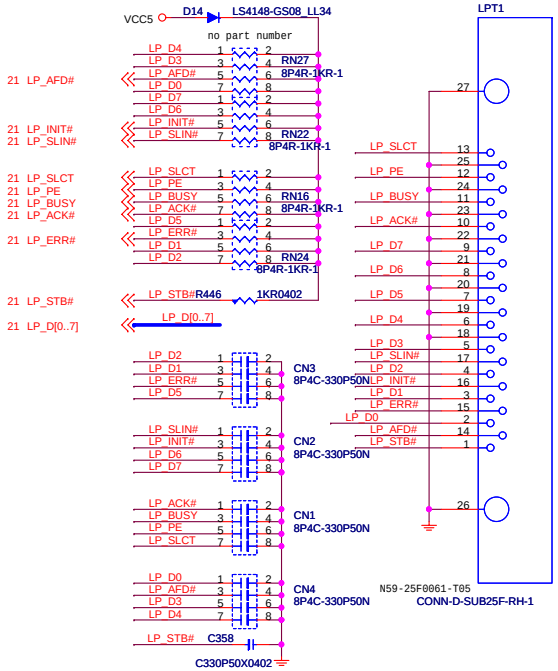
SERIAL PORT 1
For LB only



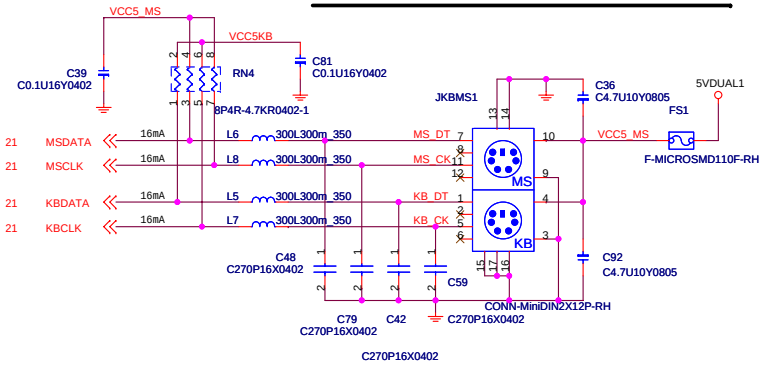
Wake On Modem Header
For LB only



PARALLAL PORT
For LB only



PS2 KEYBOARD & MOUSE CONNECTOR



MSI Link to the Future	MICRO-START INT'L CO.,LTD.	
Title: KB/MS/LPT/COM Port/FAN		
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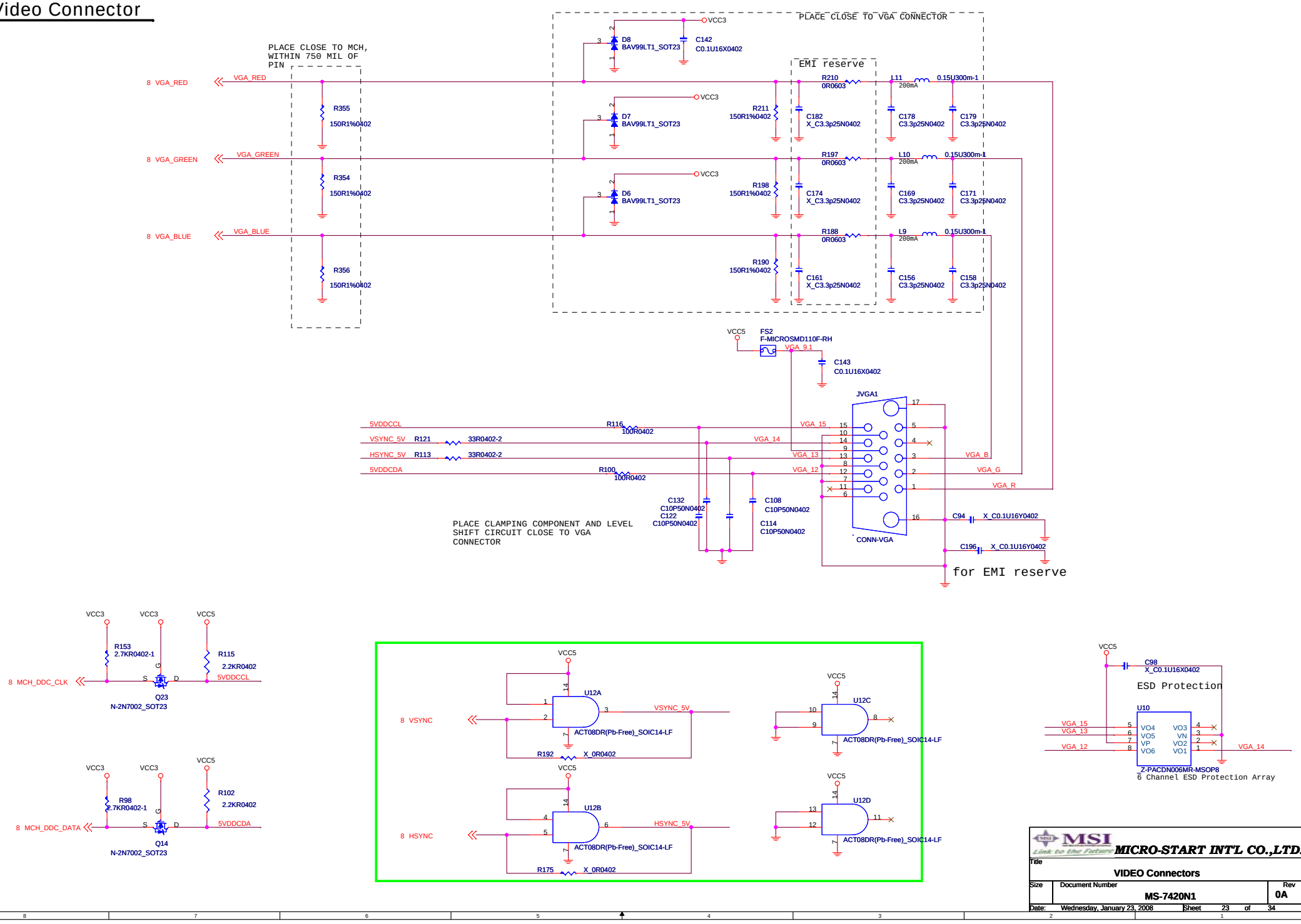
Video Connector



MICRO-START INT'L CO.,LTD.

Title	VIDEO Connectors	
Size	Document Number: MS-7420N1	Rev: 0A
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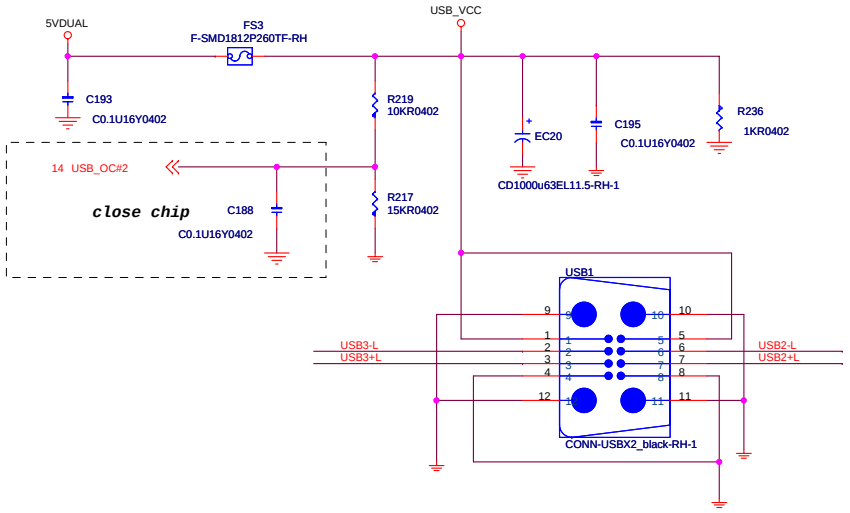
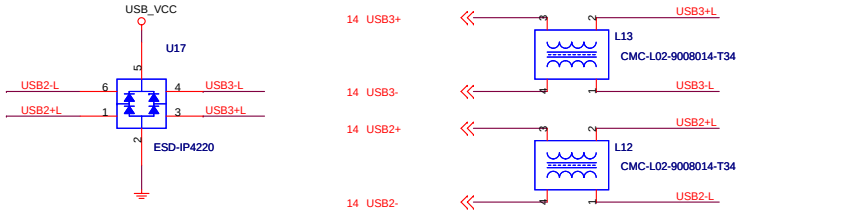
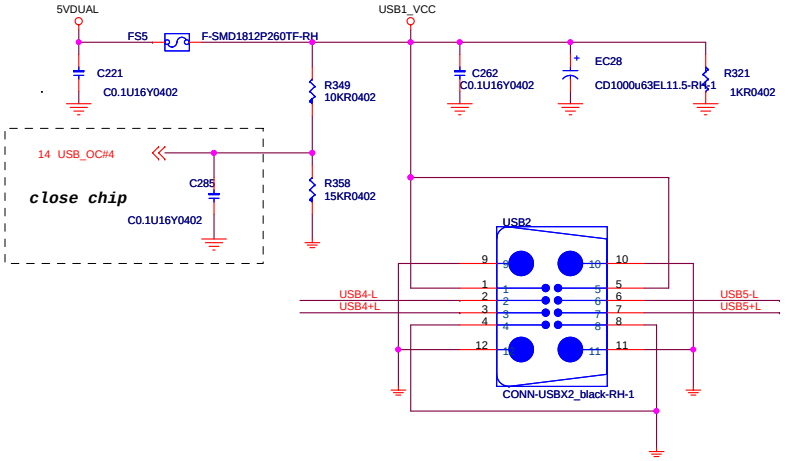
REAR PANEL USB PORT 2,3 CONNECTOR

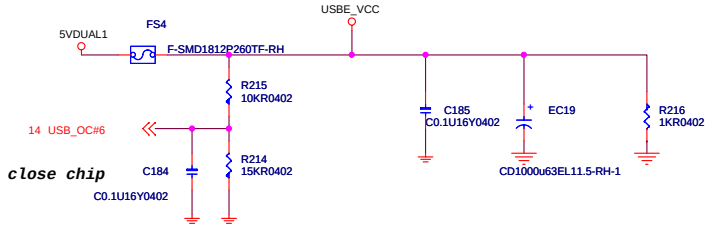


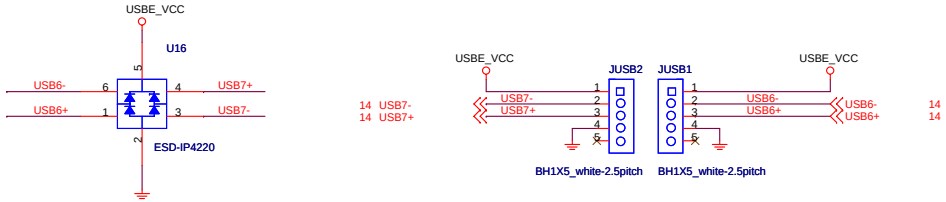


REAR PANEL USB PORT 4,5 CONNECTOR

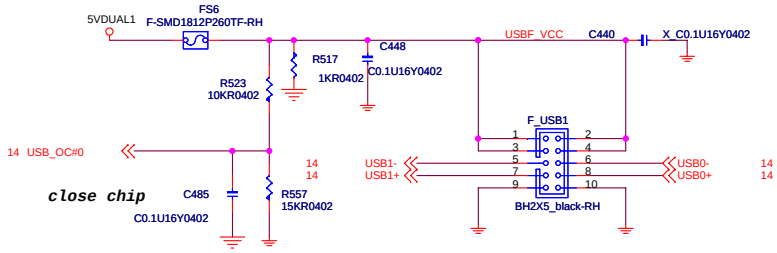


RESERVE EXTERNAL USB PORT 6,7





FRONT PANEL USB PORT 0,1 CONNECTOR



MICRO-START INT'L CO.,LTD.

Title: USB Connectors		
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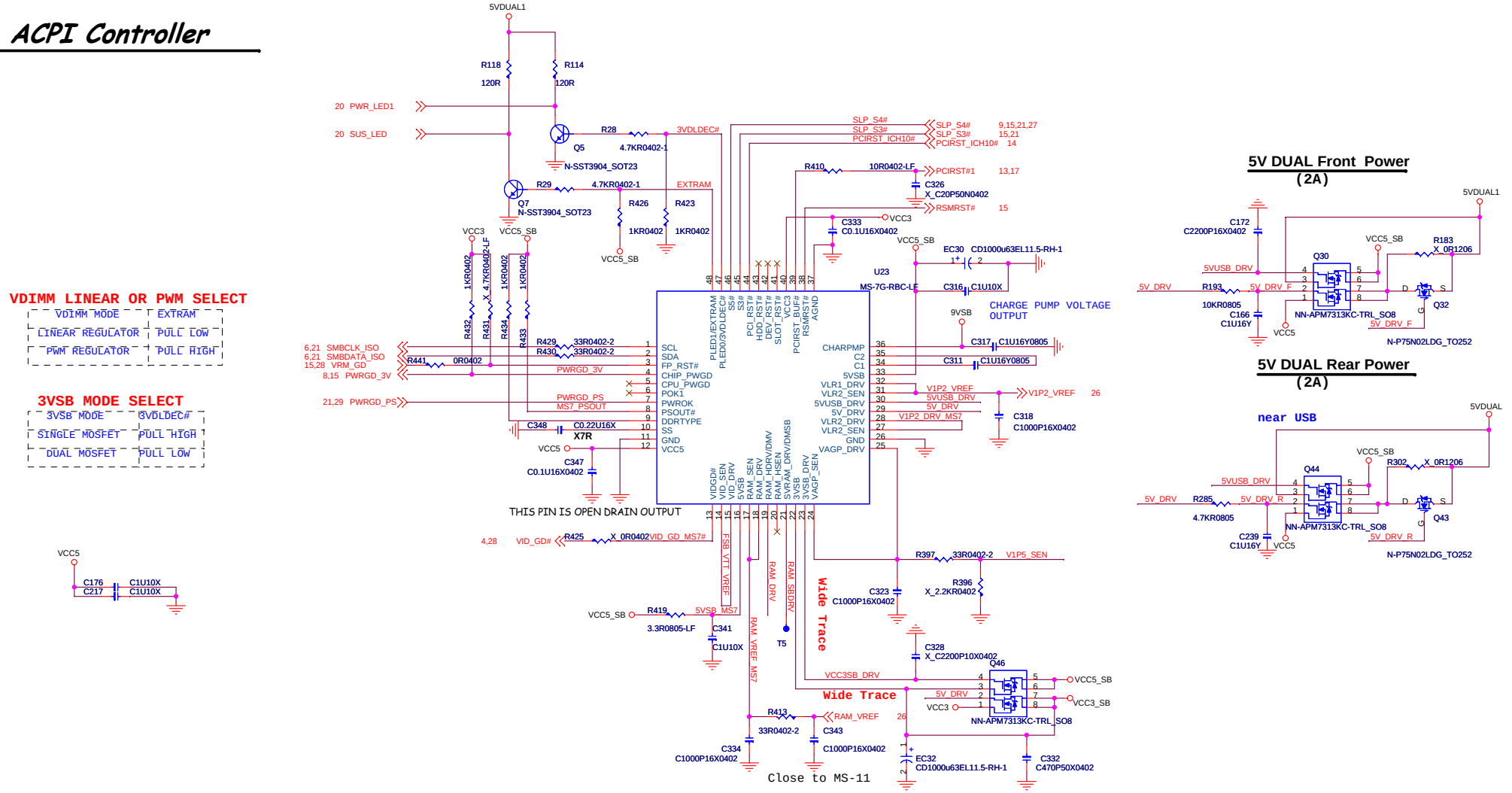
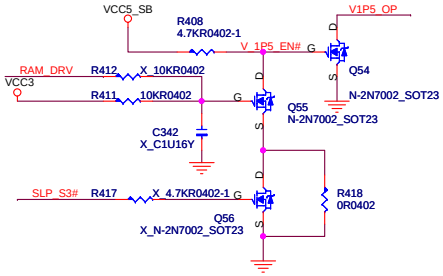
ACPI Controller



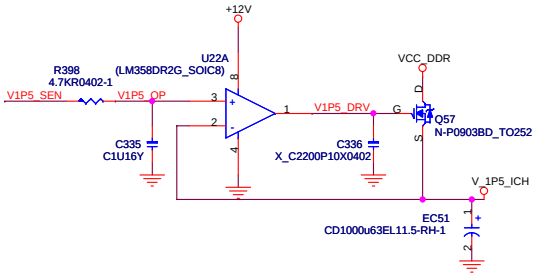
5V DUAL Front Power (2A)

5V DUAL Rear Power (2A)

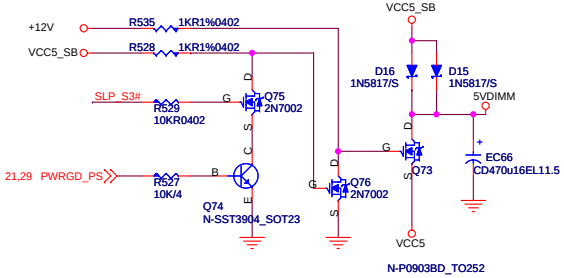
V1P5_SEN S3 power sequency



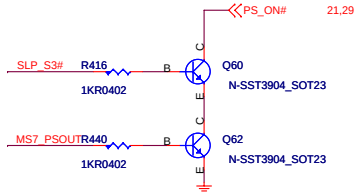
ICH10 1.5V POWER (2.385A)



5VDIMM



PSON#



MSI Link to the Future **MICRO-START INT'L CO.,LTD.**

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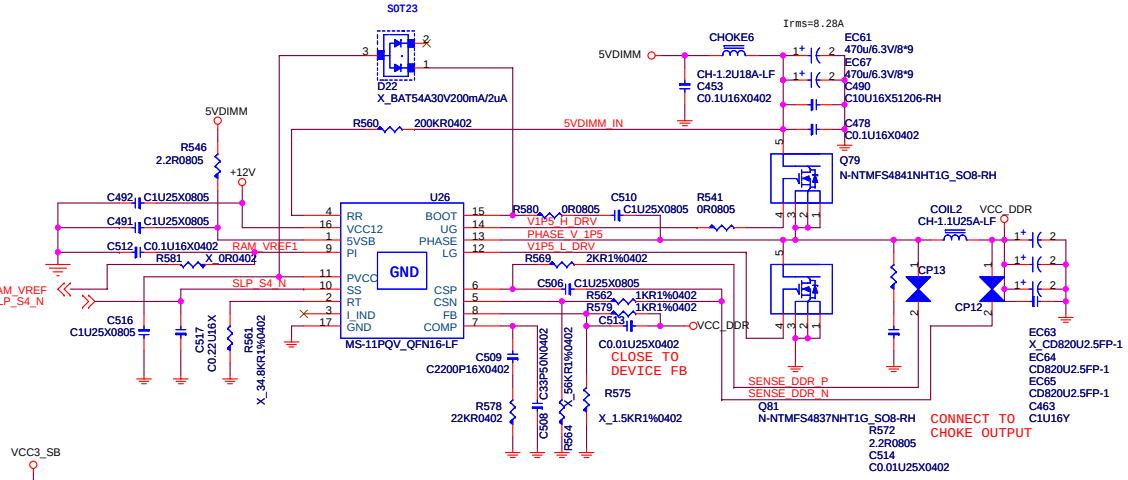
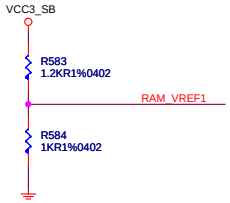
DDRIII 1.5V POWER
(18A) > 13.86A

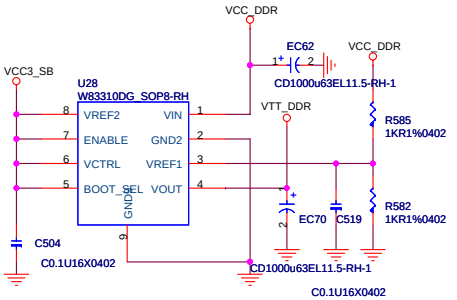




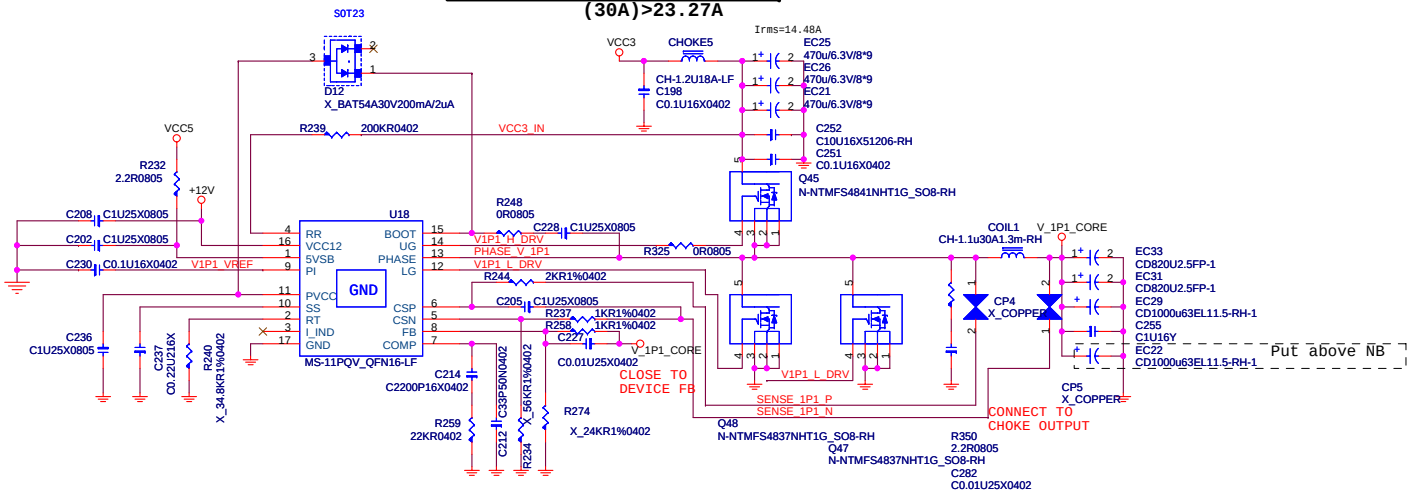
L/DCR=R*C
Rcsp >= (1.1uH/2.3m ohm)/1uF
>= 478 ohm

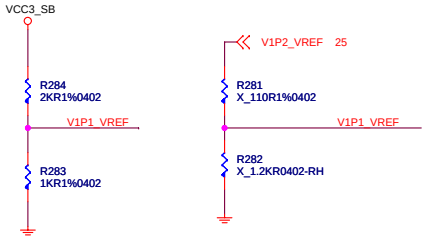
Iocp* DCR_max = Ix*Rcsn
Rcsn >= (21.3amp * 1.4 m ohm)/80uA
>= 372.75 ohm

DDR VTT Power
(0.83A)



GMCH/ICH10 1.1V POWER
(30A)>23.27A





MSI MICRO-START INT'L CO.,LTD.

Title	DIMM GMCH POWER	
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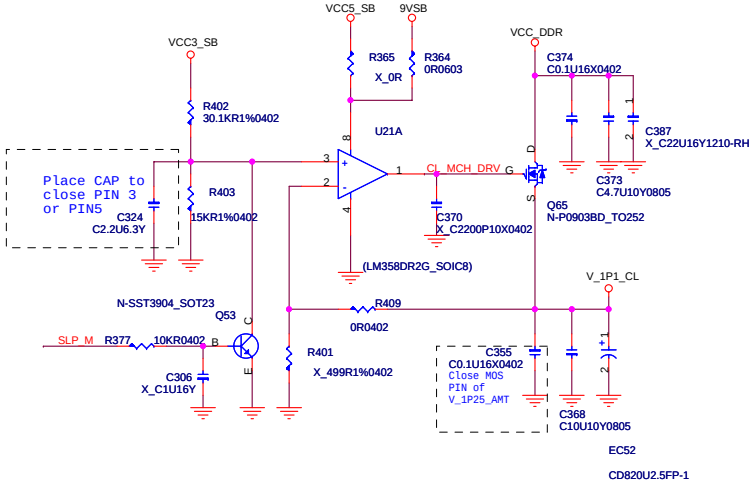
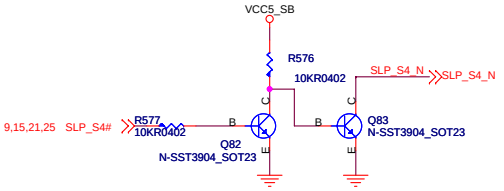
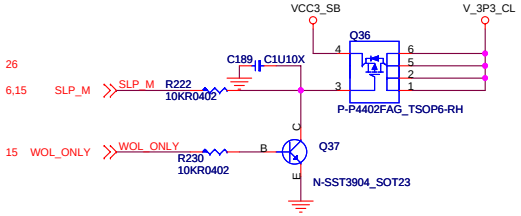
V_1P1_CL (3A)



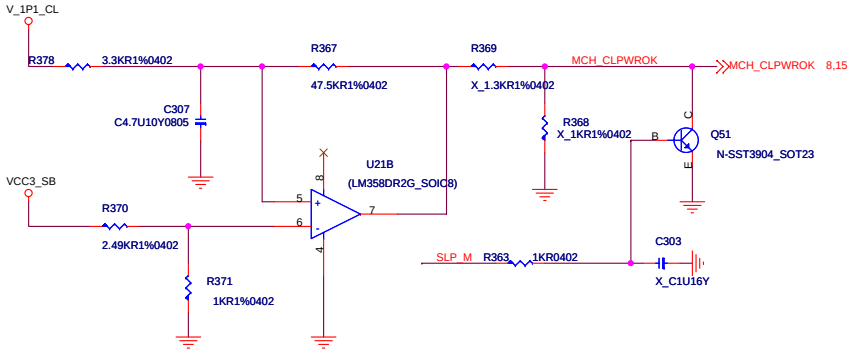
DIMM Softsart for iAMT



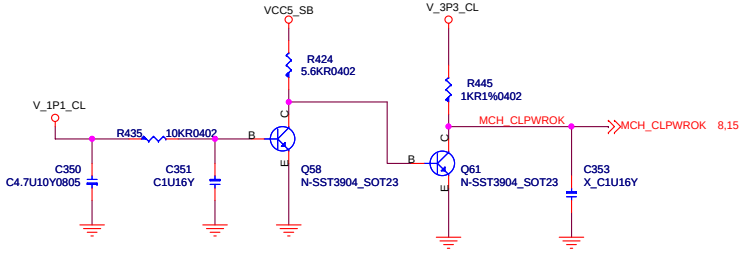
V_3P3_CL (711mA)



Reserve CL_PWROK circuit



CL_PWROK



Note:
SLP_S4#
AMT Disable-->indicate ACPI S4 state,DRAM power off.
AMT Enable-->not be assered ACPI S4 state,DRAM power ON
SLP_M#
AMT Enable SLP_M#-->Control the overall power to Intel AMT during ACPI S3-S5.
S4_SATE#
AMT Enable-->indication of ACPI S4 state

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Title: iAMTCL_POWER		
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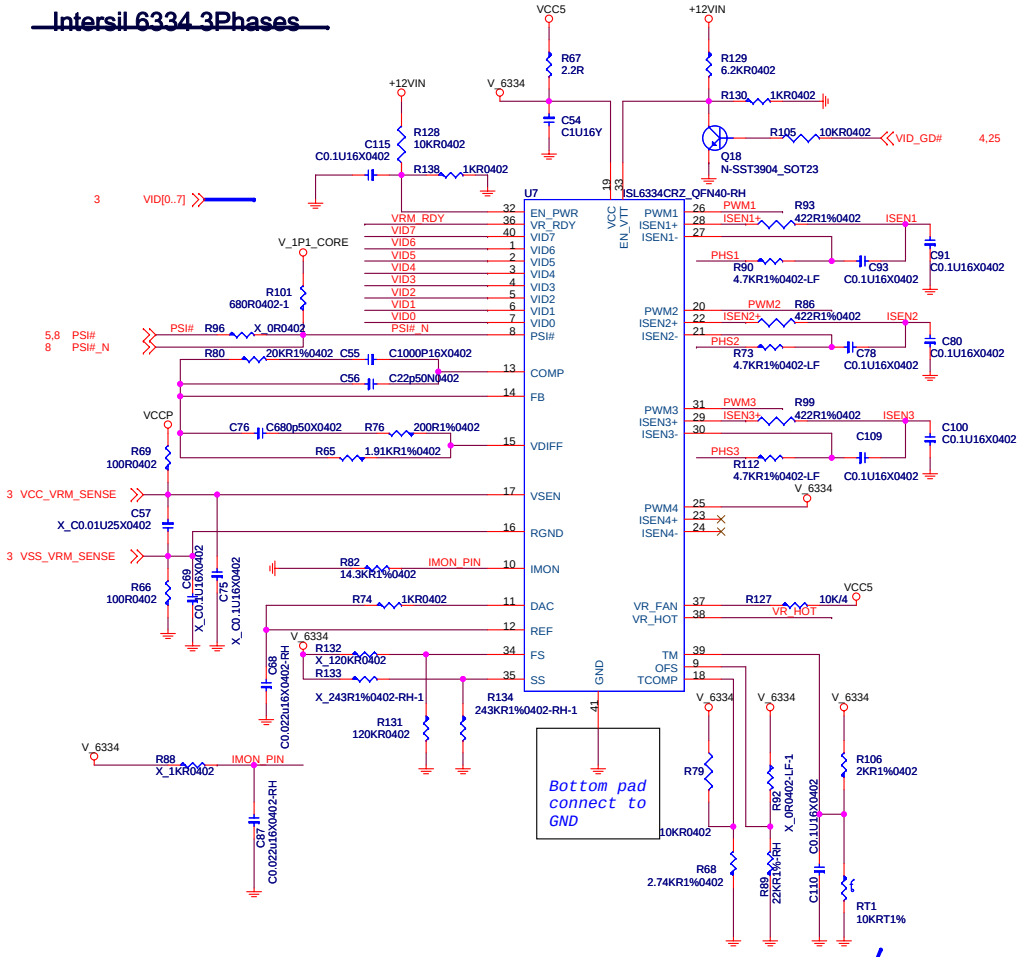
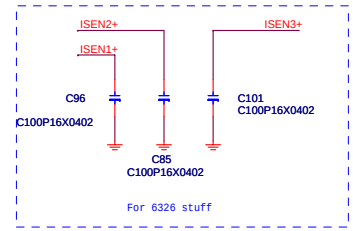
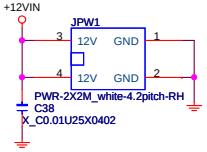
Intersil 6334 3Phases



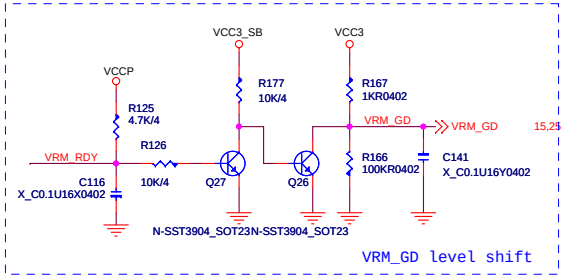


ATX12V Power Connector

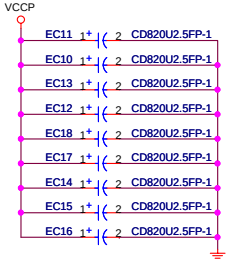


TDK
NTCG104KF104FT

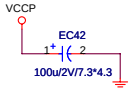
VR FAN TRIP:1.69V ~ 80 degC
VR HOT TRIP:1.44V ~ 90 degC

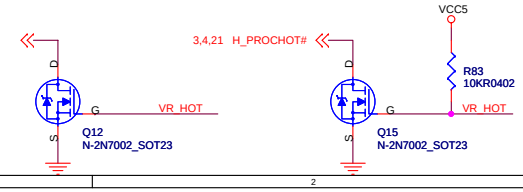


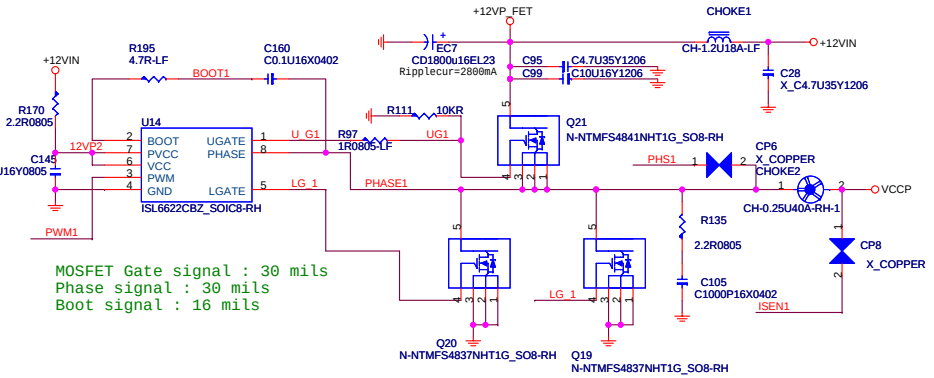
OS-CON Capactiors

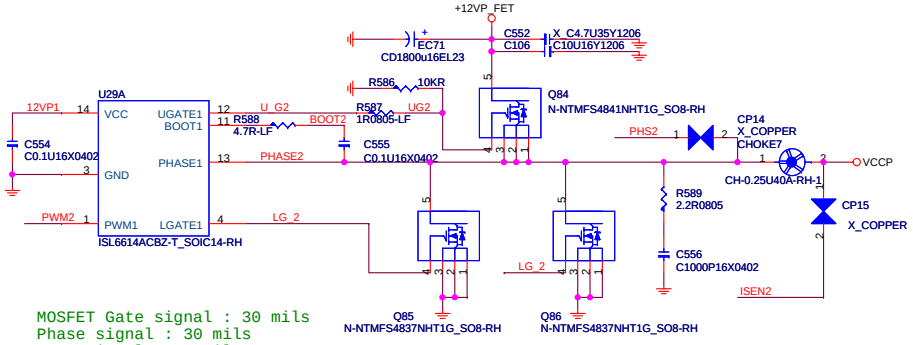


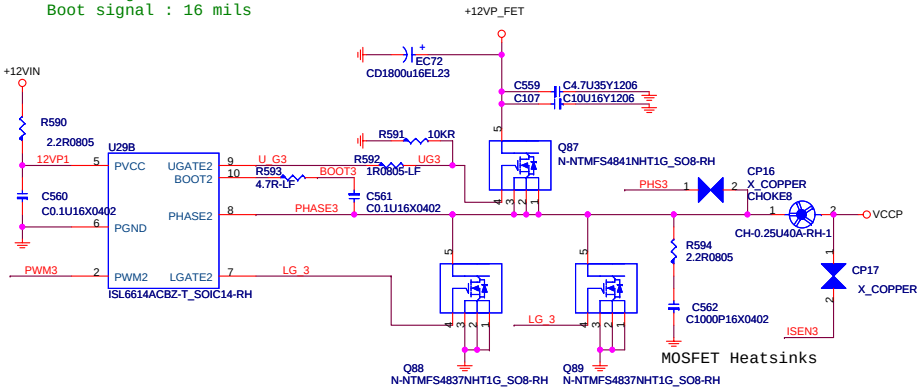
SP Capacitors











MICRO-START INT'L CO.,LTD.

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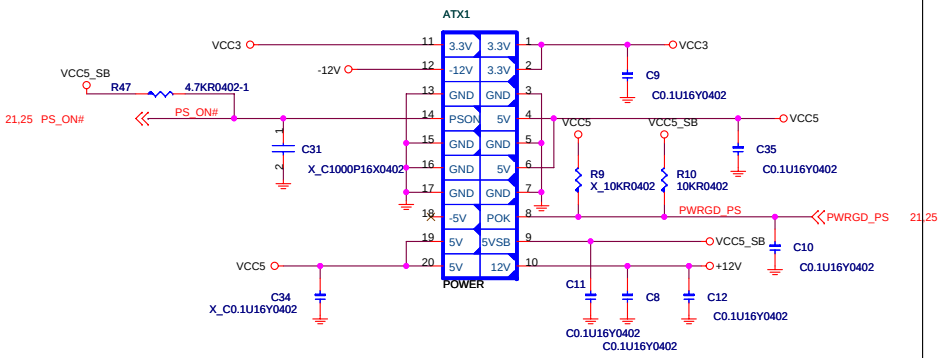
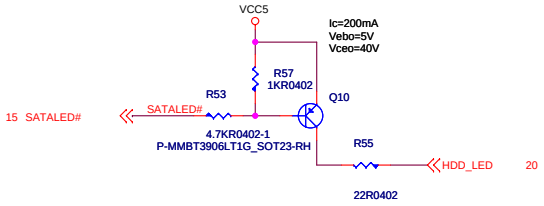
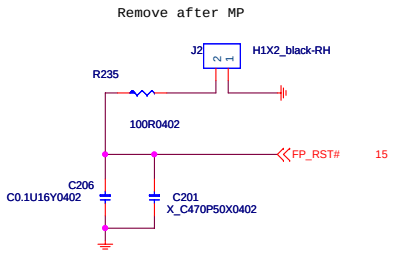
ATX Connector



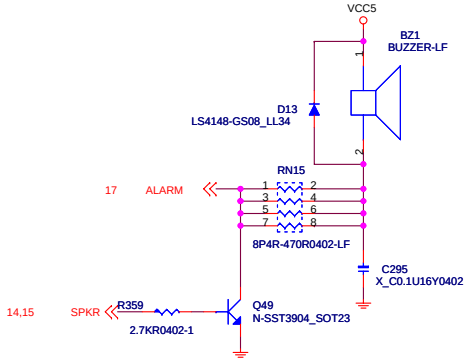
SATA LED



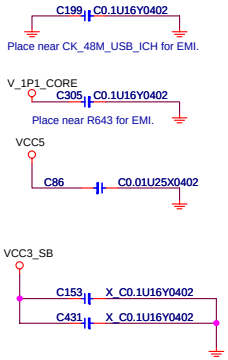
FOR DEBUG

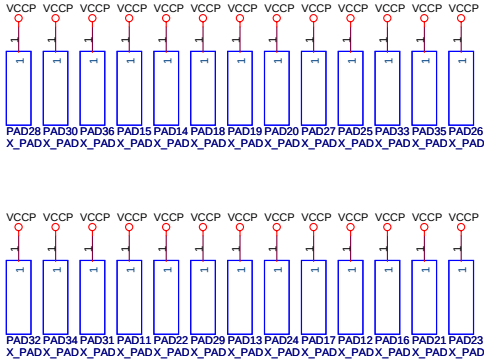


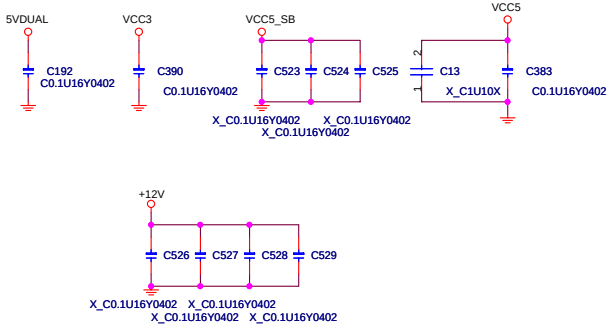
SPEAKER

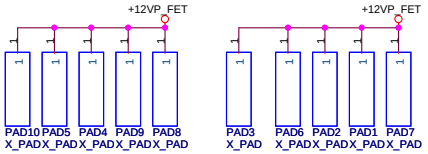


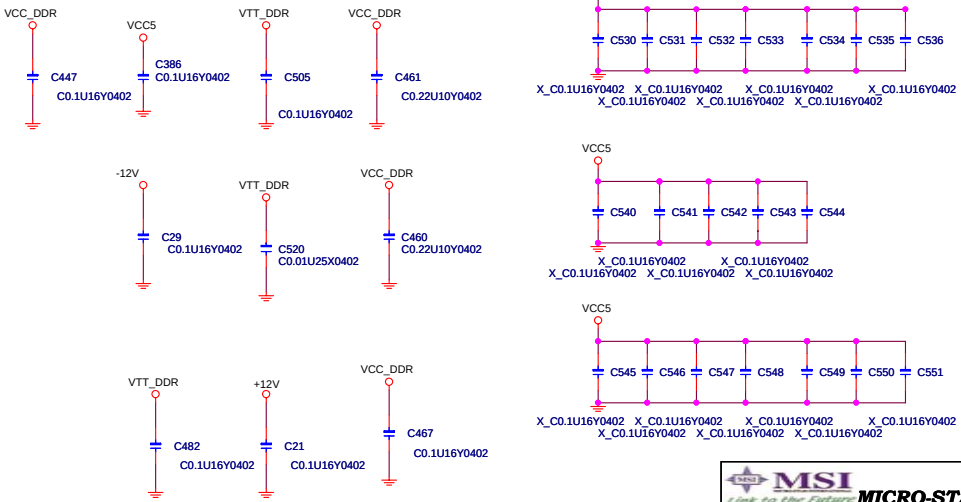
For EMI CAPs











MSI Link to the Future **MICRO-START INT'L CO.,LTD.**

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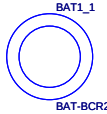
Auto-BOM Manual Parts

PCB1
P30-074200A-G37

P30-074150A-E48

BAT1_1



BAT-BCR2032P-RH

U22_A1
HS_HOOK1X3(2)_black-LF-1

U22_B1
HS_HOOK1X3(2)_black-LF-1

U22_C1
HS_HOOK1X3(2)_black-LF-1

U22_D1
HS_HOOK1X3(2)_black-LF-1

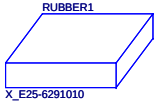
U17_X1

_HS-MS6285

U13_L1

BIOS_LABEL

RUBBER1



X_E25-6291010

LAB1

MODEL_LABEL

J1(1-2)1

_JUMPER-1X2B_black-RH

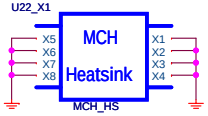
JBAT1(1-2)1

_JUMPER-1X2B_black-R

JCI1(1-2)1

_JUMPER-1X2B_black-RH

U22_X1



MCH_HS

MSI MICRO-STAR INT'L CO.,LTD.

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ICH10

GPIO Pin	Type	Default	Function	Power	MUXED/ UNMUXED	Pin-out
GPIO 0	I/O	GPI	BMBUSY# function,Pull-up to VCC3 with 10K	VCC3	MUXED	N7
GPIO 1	I/O	GPI	Pull-up to VCC3 with 10K	VCC3	MUXED	AK21
GPIO 2	I/O	GPI	PIRQ#E pull-up to VCC3 with 8.2K	VCC3		K6
GPIO 3	I/O	GPI	PIRQ#F pull-up to VCC3 with 8.2K	VCC3		L7
GPIO 4	I/O	GPI	PIRQ#G pull-up to VCC3 with 8.2K	VCC3		F2
GPIO 5	I/O	GPI	PIRQ#H pull-up to VCC3 with 8.2K	VCC3		G2
GPIO 6	I/O	GPI	Pull-up to VCC3 with 10K	VCC3	MUXED	AH22
GPIO 7	I/O	GPI	Pull-up to VCC3 with 10K	VCC3	MUXED	AK23
GPIO 8	I/O	GPI	Reseve for DDR_PEROK,Pull-up to VCC3 _SBwith 10K	VCC3_SB	UNMUXED	A20
GPIO 9	I/O	GPO/WOL	WOL_ENABLE/GPIO9, pull-down with 100K	VCC3_SB	MUXED	A18
GPIO 10	I/O	GPI	Detect AUDIO Devices, Pull-up to VCC3_SB with 10K	VCC3_SB	MUXED	C17
GPIO 11	I/O	SMBALERT#	SMB_ALERT# pull-up to VCC3_SB with 10K	VCC3_SB		C16
GPIO 12	I/O	GPO	NC	VCC3_SB	UNMUXED	A8
GPIO 13	I/O	GPI	SIO_PME# connect to SIO,pull_up VCC3_SB with 10k	VCC3_SB	UNMUXED	A19
GPIO 14	I/O	GPI	Pull-up to VCC3_SB with 10K directly	VCC3_SB	MUXED	A9
GPIO 15	I/O	GPO	PCI_STOP# for CK505 iAMT	VCC3_SB	MUXED	C15
GPIO 16	I/O	GPO	FAN switch, pull_up VCC3 with 10K.	VCC3	UNMUXED	M2
GPIO 17	I/O	GPI	Pull-up to VCC3 with 10K directly	VCC3	MUXED	AH21
GPIO 18	I/O	GPO	GTLREF GPO ,Pull-up to VCC3 with 10K directly	VCC3	UNMUXED	K1
GPIO 19	I/O	GPI	Pull-up to VCC3 with 10K	VCC3		AE20
GPIO 20	I/O	GPO	GTLREF GPO	VCC3	UNMUXED	AF5
GPIO 21	I/O	GPI	Pull-up to VCC3 with 10K	VCC3		AK25
GPIO 22	I/O	GPI	Pull-up to VCC3 with 10K	VCC3	MUXED	AJ24
GPIO 23	I/O	LDRQ1#	LDRQ_1# pull_up VCC3 with 10K(Not Use)	VCC3	MUXED	J3
GPIO 24	I/O	GPO	NC	3.3V_SB	MUXED	A14
GPIO 25	I/O	GPO	CPU_STOP# for CK505 iAMT	3.3V_SB	UNMUXED	B18
GPIO 26	I/O	GPO	S4 STATE#	3.3V_SB		C11
GPIO 27	I/O	GPO	NC	3.3V_SB		A11
GPIO 28	I/O	GPO	NC	3.3V_SB		G18
GPIO 29	I/O	OC5#	OC#4 connect to USB connector	3.3V_SB		N1
GPIO 30	I/O	OC6#	OC#6 connect to USB connector	3.3V_SB		N5
GPIO 31	I/O	OC7#	OC#6 connect to USB connector	3.3V_SB		M1
GPIO 32	I/O	GPO	NC	VCC3	UNMUXED	K2
GPIO 33	I/O	GPO	Pull-up to VCC3 with 4.7K through JCI1 jumper.(Default)	VCC3	UNMUXED	AF6
GPIO 34	I/O	GPO	NC	VCC3	UNMUXED	AH5
GPIO 35	I/O	GPO	Clear password	VCC3		L1
GPIO 36	I/O	GPI	Pull-up to VCC3 with 10K directly	VCC3		AE21
GPIO 37	I/O	GPI	Pull-up to VCC3 with 10K directly	VCC3		AE22
GPIO 38	I/O	GPI	Pull-up to VCC3 with 10K directly	VCC3		AK24
GPIO 39	I/O	GPI	Pull-up to VCC3 with 10K directly	VCC3		AH23
GPIO 40	I/O	OC1#	OC#0 connect to USB connector	3.3V_SB		N3
GPIO 41	I/O	OC2#	OC#2 connect to USB connector	3.3V_SB		P7
GPIO 42	I/O	OC3#	OC#2 connect to USB connector	3.3V_SB		R7
GPIO 43	I/O	OC4#	OC#4 connect to USB connector	3.3V_SB		N2
GPIO 44/45	I/O	OC8/9#	OC#6 connect to USB connector	3.3V_SB		P3/R6
GPIO 46/47	I/O	OC10/11#	OC#6 connect to USB connector	3.3V_SB		T7/P1
GPIO 48	I/O	GPI	Pull-up to VCC3 with 10K directly	VCC3		AD20
GPIO 49	I/O	GPO	DMI strapping ,pull-dowm 2.2K to GND	VCC3		AJ25
GPIO 50	I/O	REQ1#	REQ1 pull-up to VCC5 with 2.7K	VCC5	MUXED	G13
GPIO 51	I/O	GNT1#	GNT1#	VCC3	MUXED	A7
GPIO 52	I/O	REQ2#	REQ2 pull-up to VCC5 with 8.2K	VCC5	MUXED	F13
GPIO 53	I/O	GNT2#	GNT2#	VCC3	MUXED	C7
GPIO 54	I/O	REQ3#	REQ3 pull-up to VCC5 with 2.7K	VCC5	MUXED	G8
GPIO 55	I/O	GNT3#	GNT3#(Not Use)	VCC3	MUXED	F7
GPIO 56	I/O	GPI	Clear password, pull-up to VCC3_SB with 10K.	3.3V_SB	MUXED	F16
GPIO 57	I/O	GPI	Pull-up to VCC3_SB with 10K directly for ME	3.3V_SB	MUXED	C12
GPIO 58	I/O	SPI_CS1	SPI_CS#(Not Use) , SPI_CS1_F#(Not Use)	3.3V_SB	MUXED	F23
GPIO 59	I/O	OC0#	OC#0 connect to USB connector	3.3V_SB		P5
GPIO 60	I/O	LINKALERT	LINKALERT# pull-up to VCC3_SB with 10K	3.3V_SB		F18

PCI Configuration

DEVICE	MCP1 INT Pin	REQ#/GNT#	IDSEL	CLOCK
Riser slot (PCI1)	PIRQ#B PIRQ#C PIRQ#D PIRQ#A	PREQ#1 PGNT#1	AD17	PCI_CLK1

DDR2 DIMM Configuration

DEVICE	ADDRESS	CLOCK
DIMM 1	0A0H	SCLK_A0/SCLK_A0# SCLK_A2/SCLK_A2#
DIMM 2	0A4H	SCLK_B0/SCLK_B0# SCLK_B2/SCLK_B2#

SIO - SMSC-5617C Configuration

PIN NAME	PIN#	USAGE	Input/Output
GP41	77	SIO_PME#	OUTPUT
GP25	30	SMBCLK	INPUT
GP26	29	SMBCLK_ISO	INPUT
GP35	28	SMBDATA	OUTPUT
GP42	27	SMBDATA_ISO	OUTPUT

SMBus Distribution

SMBus	Power	Load
SMBCLK	VCC3_SB	SIO, ICH10, PCI EXPRESS[X16][X1]
SMBCLK_ISO	VCC3	DIMM, CLK GEN, MS7

Jumper Setting

JBAT1	(1-2)Normal	(2-3)Clear CMOS
JCI1	(1-2)Normal	(2-3)ME Disable for FPROG
J1	(1-2)short: Normal	(1-2)Open: Clear PW

MSI Link to the Future MICRO-START INT'L CO.,LTD.

Title: GPIO PIN definition

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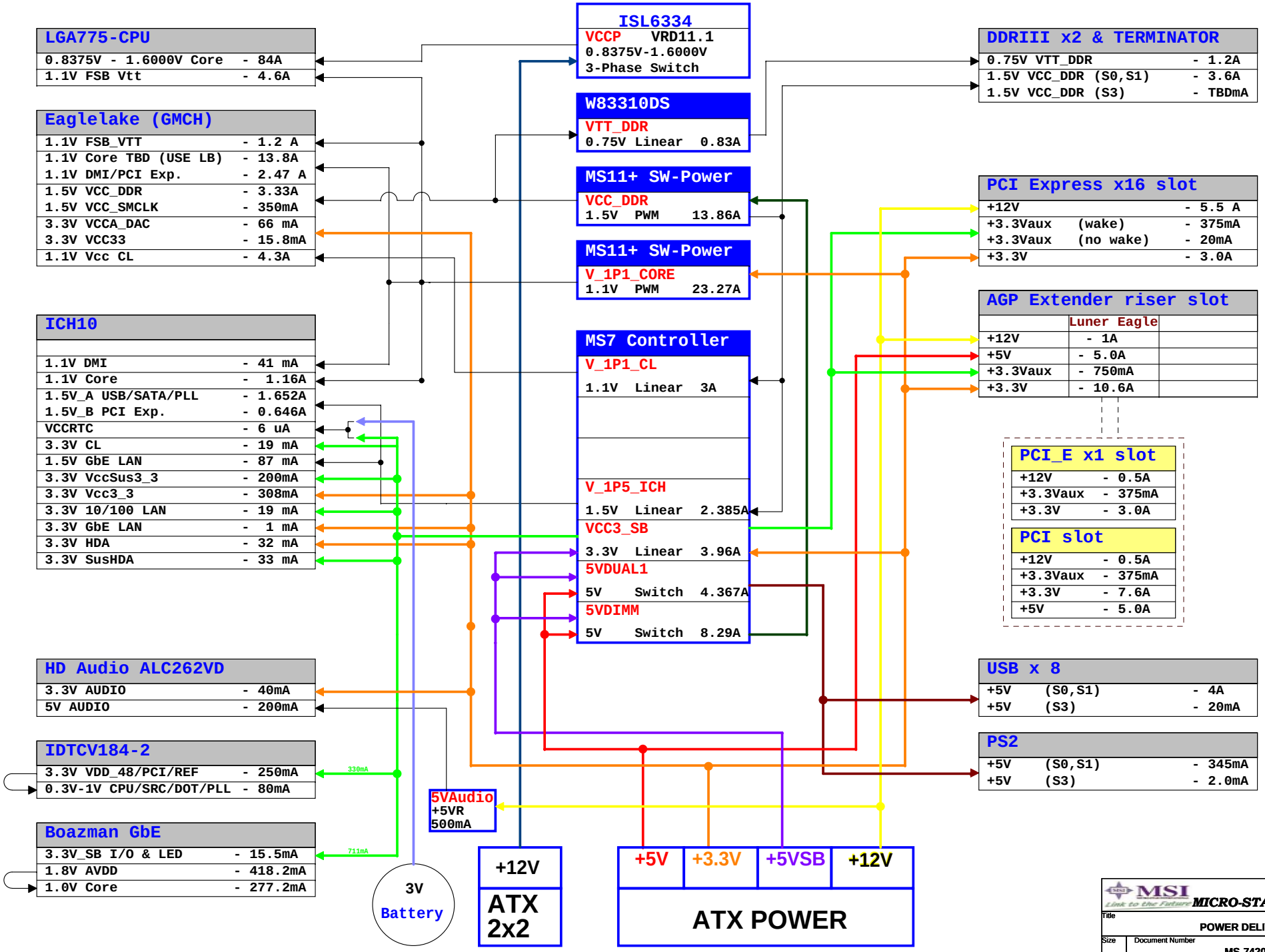

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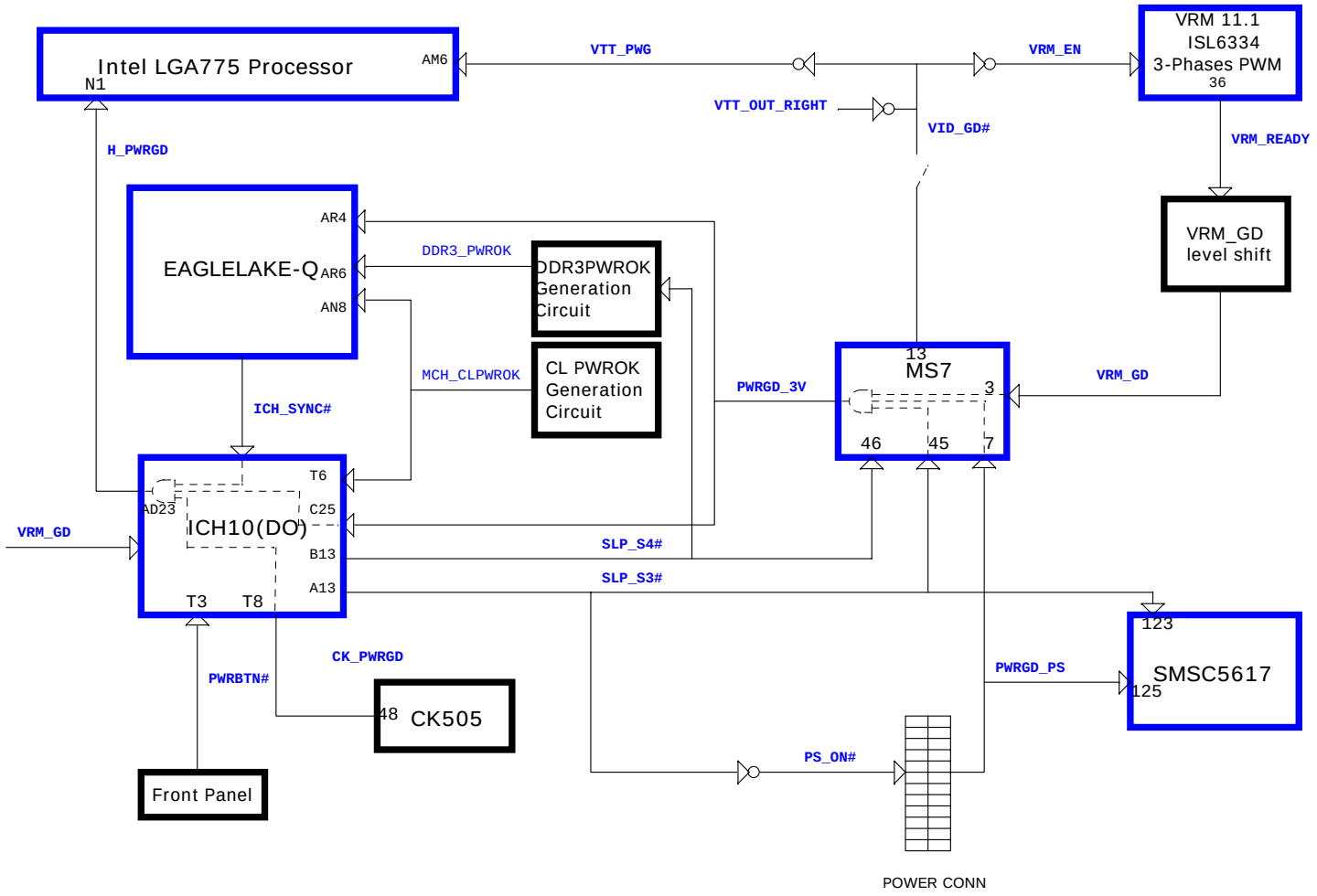
PWROK MAP



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