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MS-7174H1

Version 1B

Intel (R) Grantsdale (GMCH) + ICH6 Chipset
Intel Prescott LGA775 Processor

CPU:

Intel Prescott Celeron D 350J (3.2GHz), P4 550J (3.4GHz)

System Chipset:

**Intel Grantsdale - GMCH (North Bridge 915GV or 910GE)
Intel ICH6 (South Bridge)**

On Board Chipset:

**BIOS -- FWH FLASH 4Mb
AC97 AUDIO -- ALC880
LPC Super I/O -- SMSC47M997
LAN -- Intel 82562GT
1394 -- VIA VT-6307
CLOCK -- Cypress CY28416**

Main Memory:

2 CHANNEL DDR II * 1 (Max 2GB)

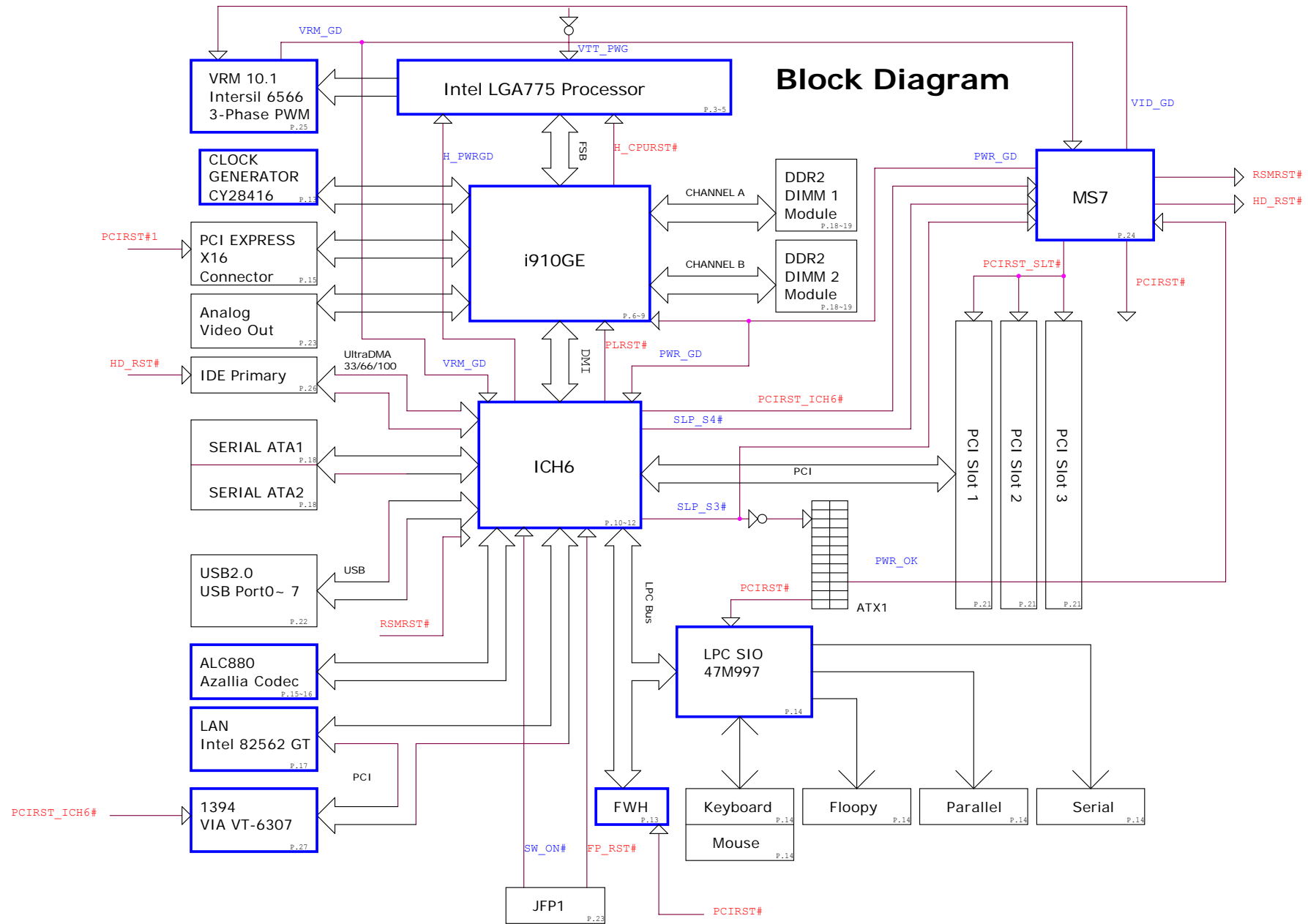
Expansion Slots:

PCI 2.3 SLOT * 3

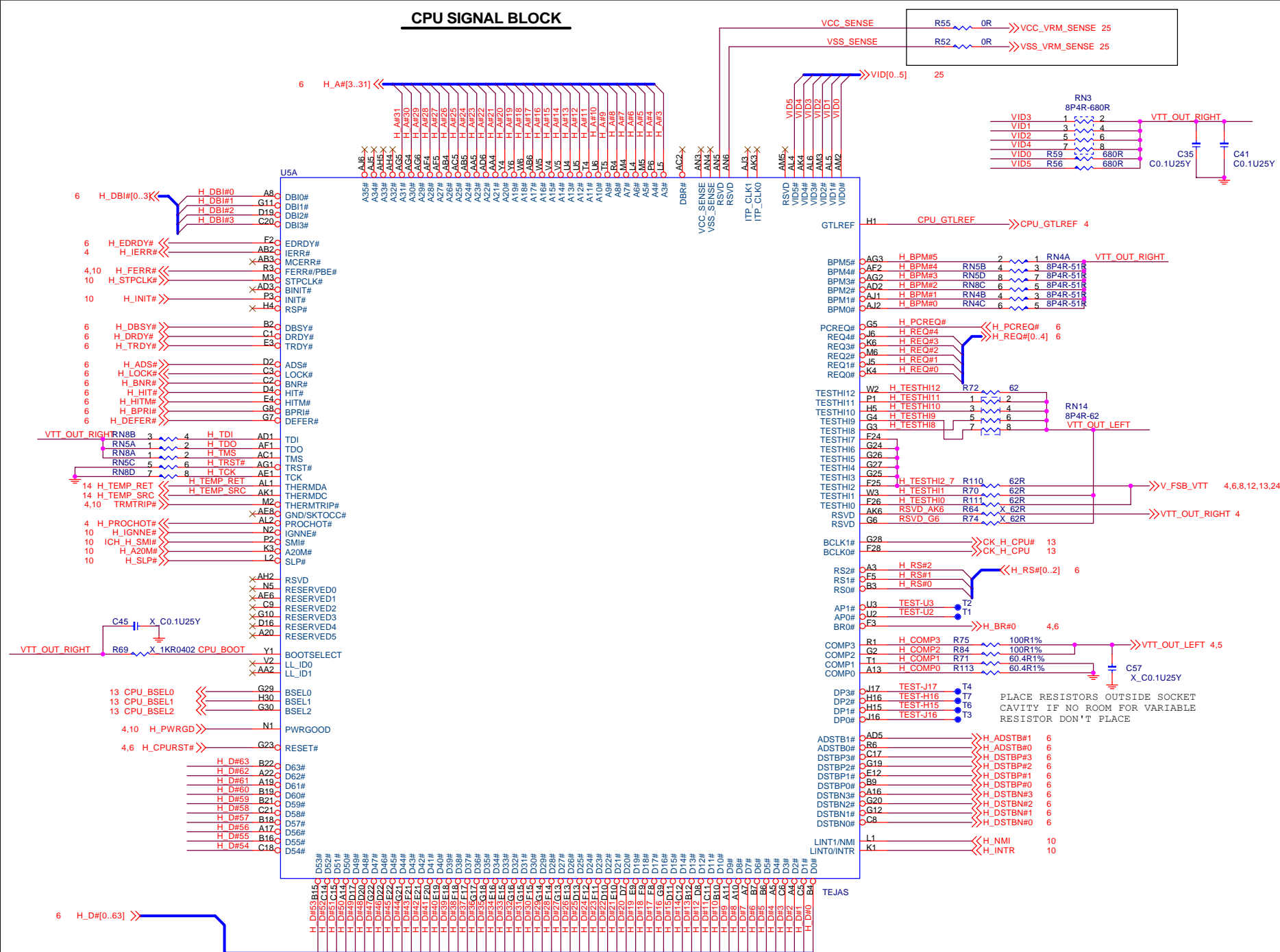
Intersil PWM:

Controller: INTERSIL 6566 3PHASE

Block Diagram

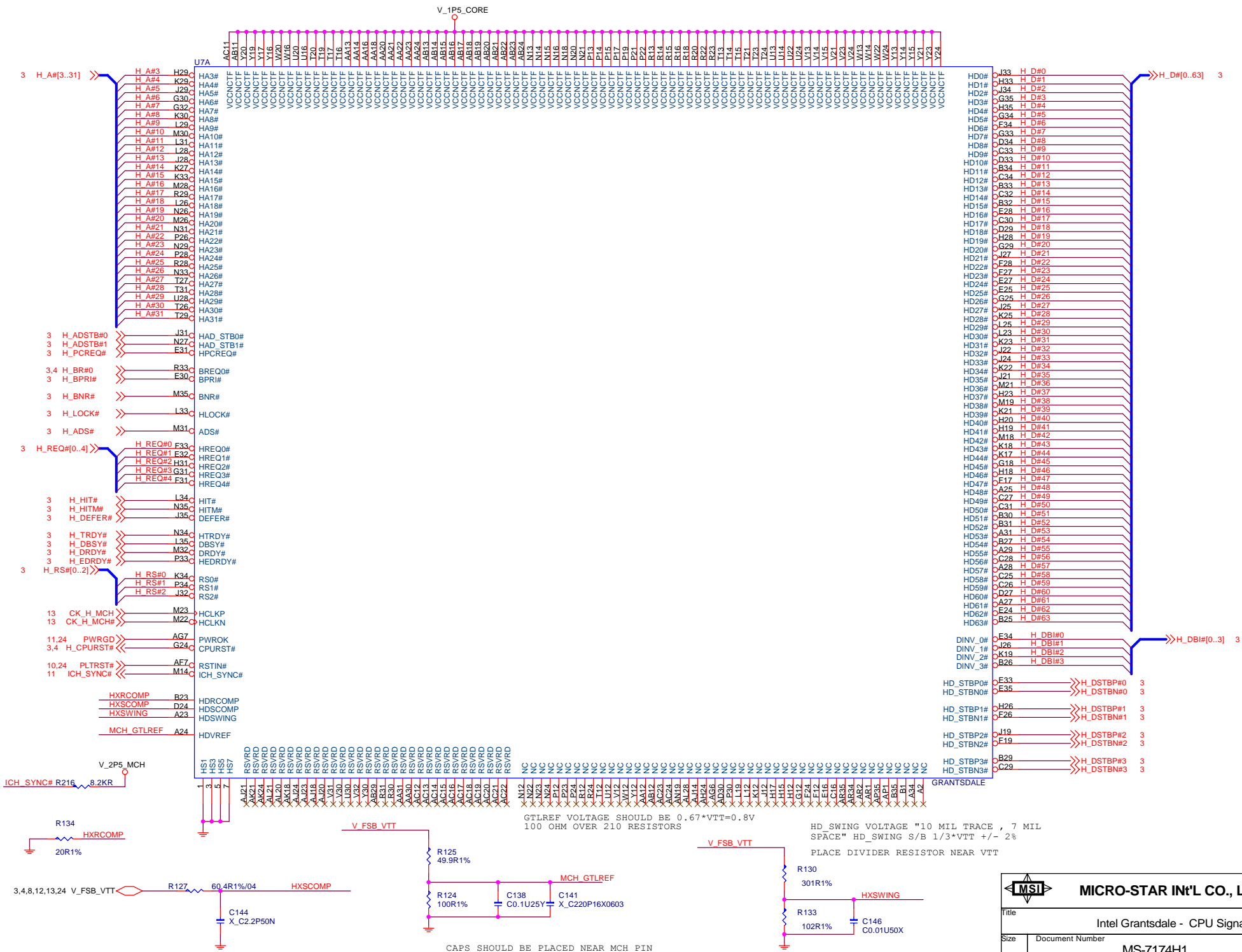


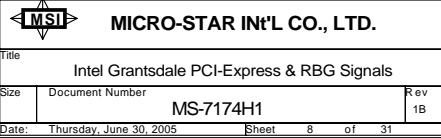
CPU SIGNAL BLOCK

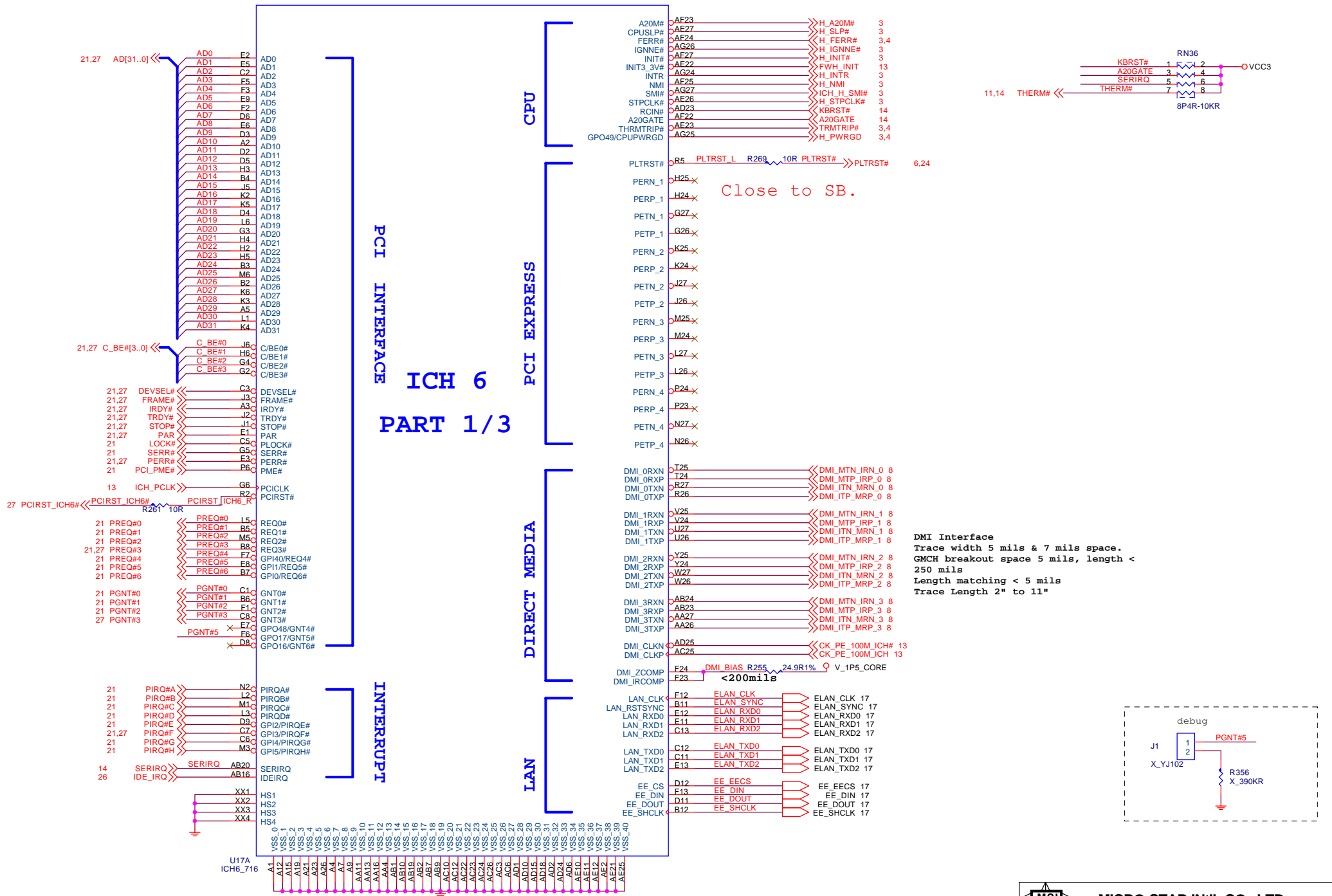


MICRO-STAR INT'L CO., LTD.

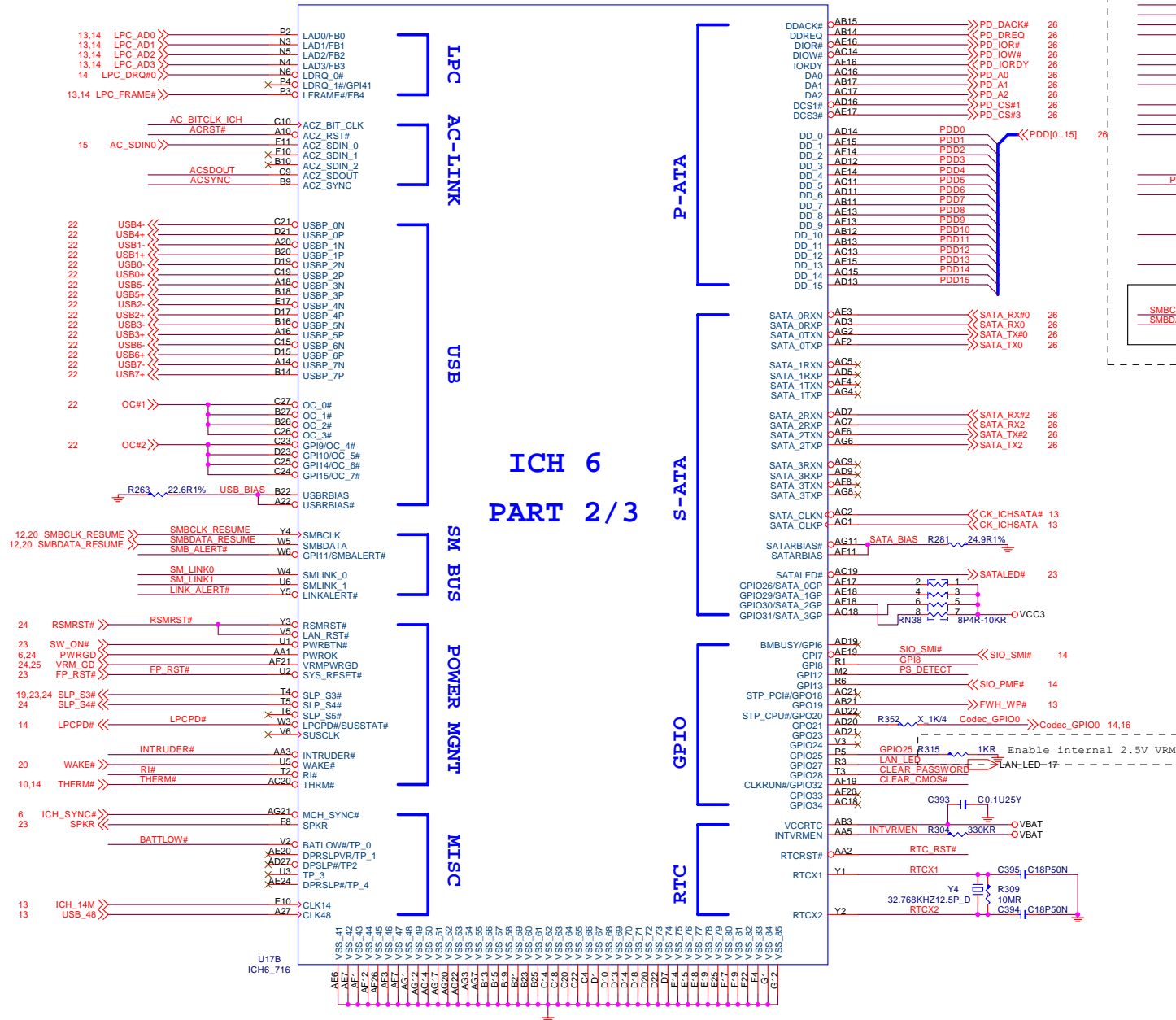
Title			
Intel LGA775 CPU - Signals			
Size	Document Number		Rev
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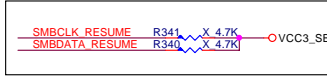
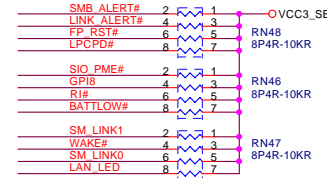
ICH 6 PART 2/3



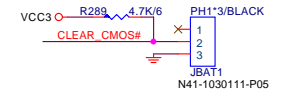
ICH6 STRAPPING RESISTORS

ALL COMPONENTS CLOSE TO ICH6

Trace length is less than 3inches to ICH6.

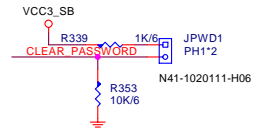


CLEAR CMOS JUMPER



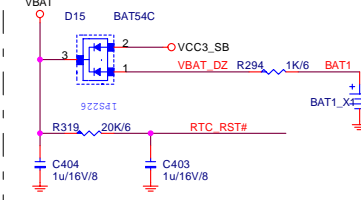
CMOS CLEAR	NORMAL	CLEAR
JBAT1	(1-2)	(2-3)

PASSWORD CLEAR JUMPER

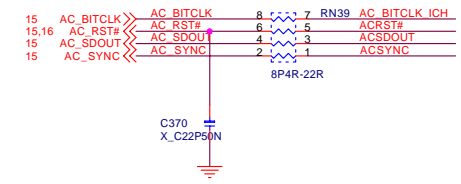


JPWD1	Short	Normal
OPEN	CLEAR	PASSWORD

BATTERY

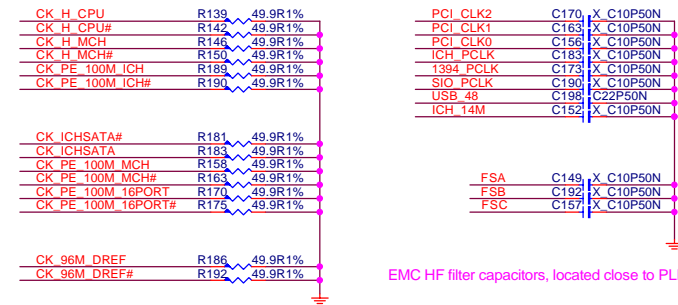


Close to Pin AA2 of ICH6.



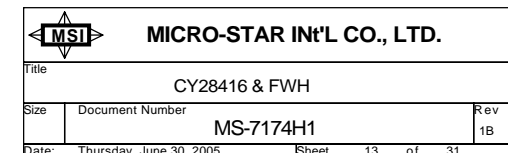


Trace length less than 0.5inches

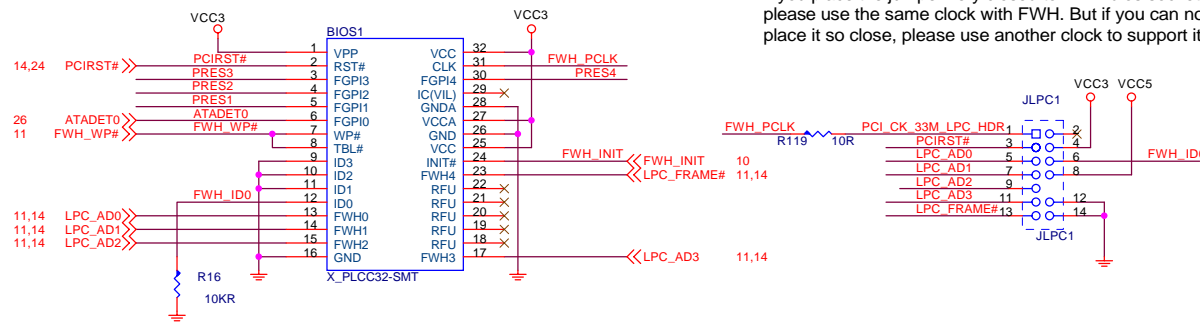


The schematic diagram illustrates the CPU board connections. It features a central CPU component with various pins connected to external components and signals. The connections are as follows:

- V_FSB_VTT:** A 3.3V signal connected to pins 4, 6, 8, 12, and 24.
- FSA, FSB, FSC:** Signals connected to pins 1, 2, and 3 respectively, each through a 10K resistor (R131, R159, R137).
- CPU_BSEL1, CPU_BSEL0, CPU_BSEL2:** Signals connected to pins 3, 3, and 3 respectively.
- H_BSL1, H_BSL0, H_BSL2:** Signals connected to pins 2, 4, and 6 respectively, each through a 10K resistor (RN34).
- Other components:** The diagram also shows a 8P4R-470R component connected to pins 2, 4, and 6, and a 8P4R-10K component connected to pins 2, 4, and 6.



If you place the jumper very closed to FWH bios socket, please use the same clock with FWH. But if you can not place it so close, please use another clock to support it.



default is high

PRES1 1 2 3 4 5 6 7 8

PRES2

PRES3

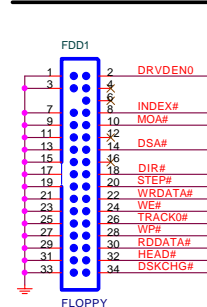
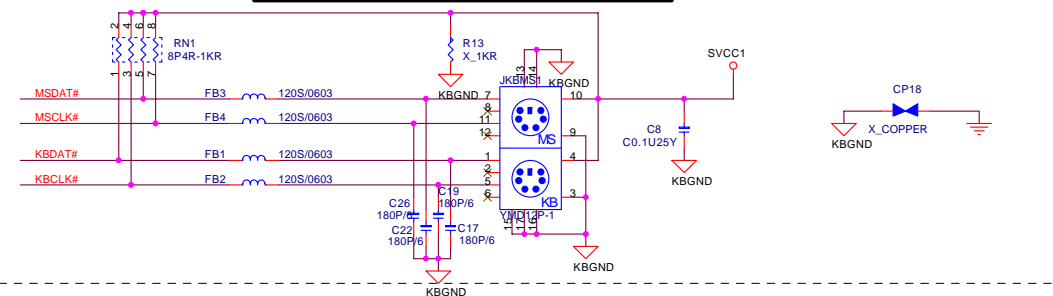
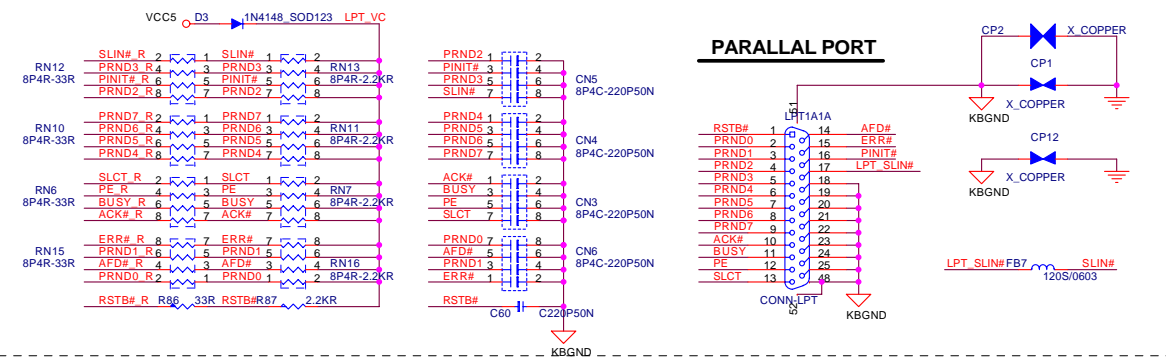
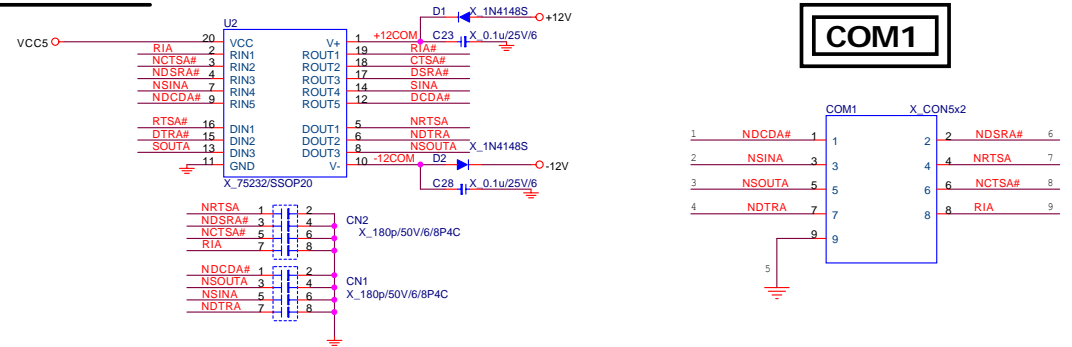
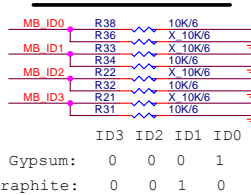
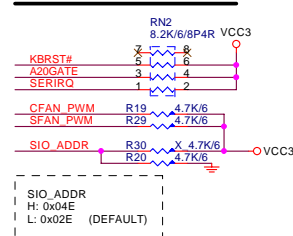
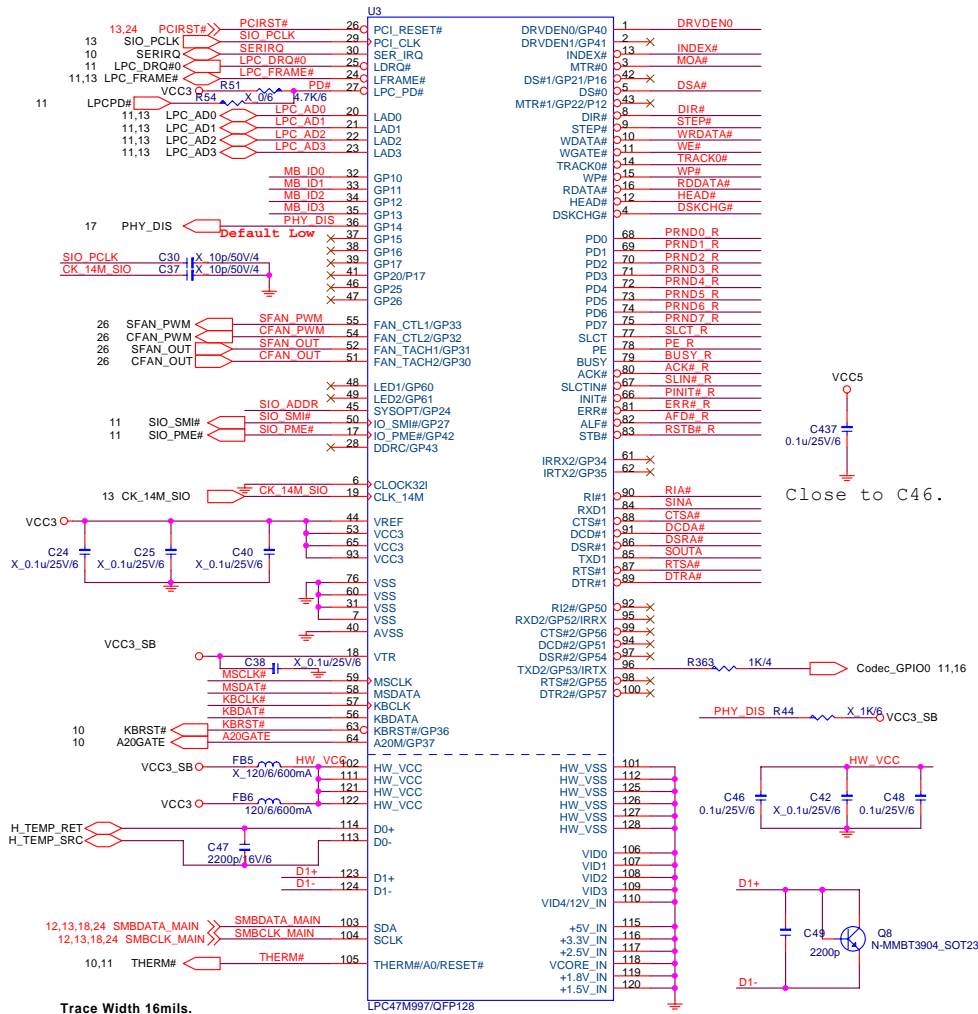
PRES4 R120 1KR

FWH_INITR153 X 8.2KR

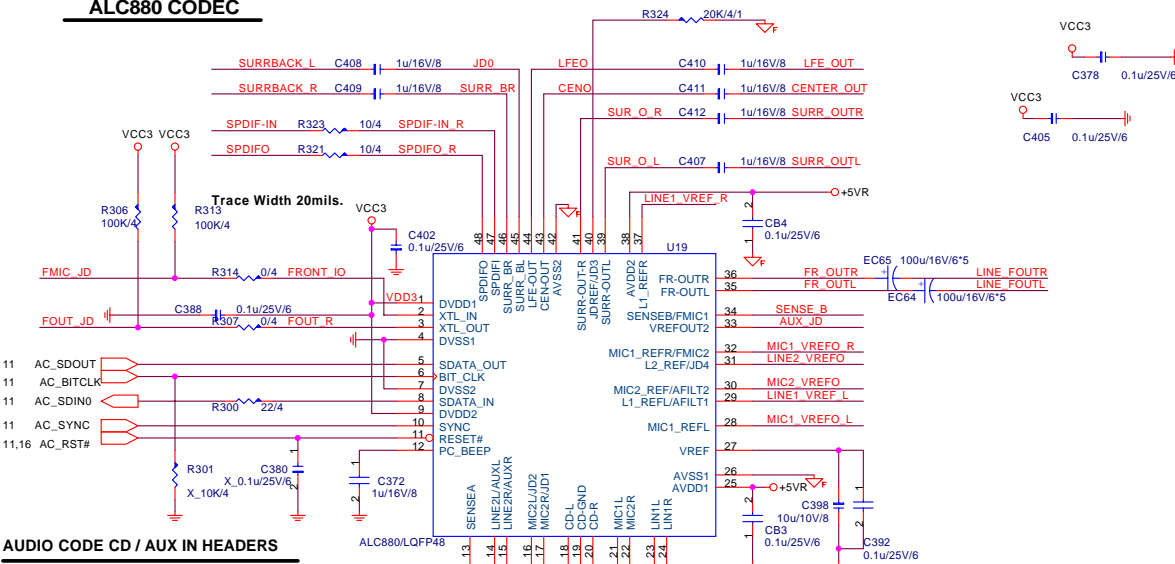
VCC3

GND

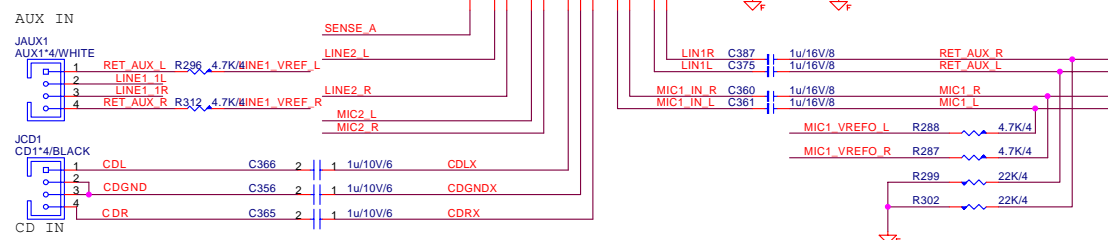
VCC3



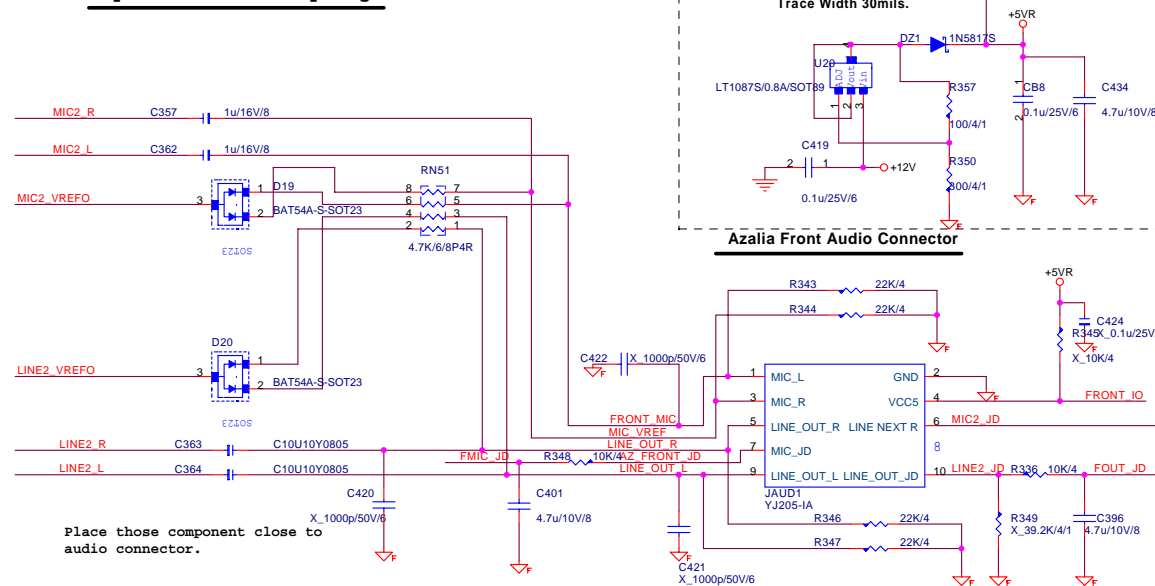
ALC880 CODEC



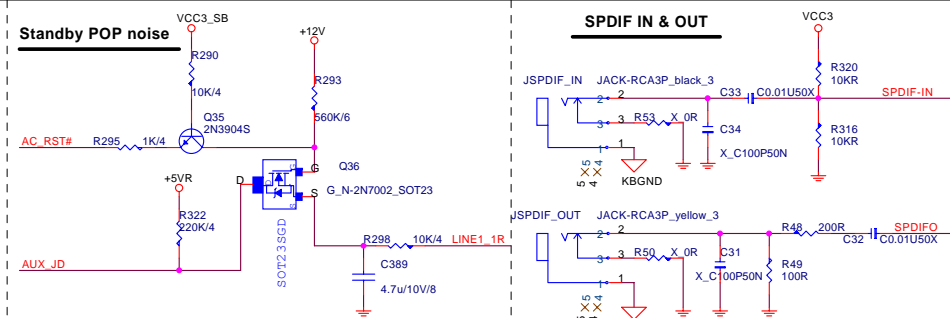
AUDIO CODE CD / AUX IN HEADERS



Speaker Out Decoupling

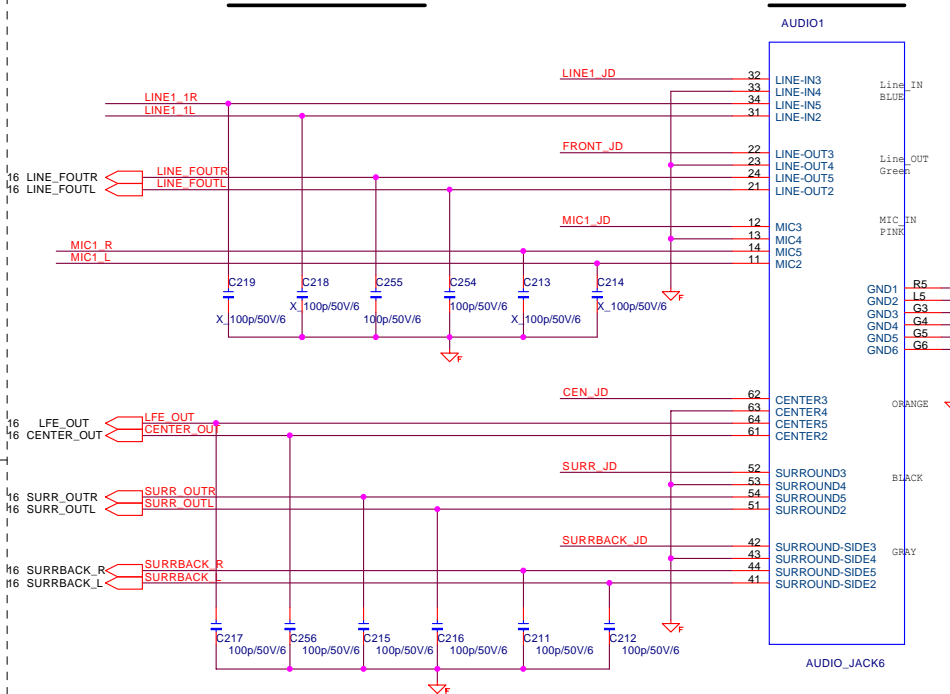


Standby POP noise

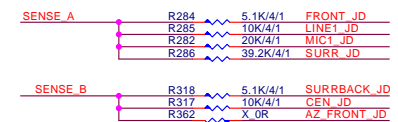


SPDIF IN & OUT

Rear audio jack



ALC880 JACK DETECT

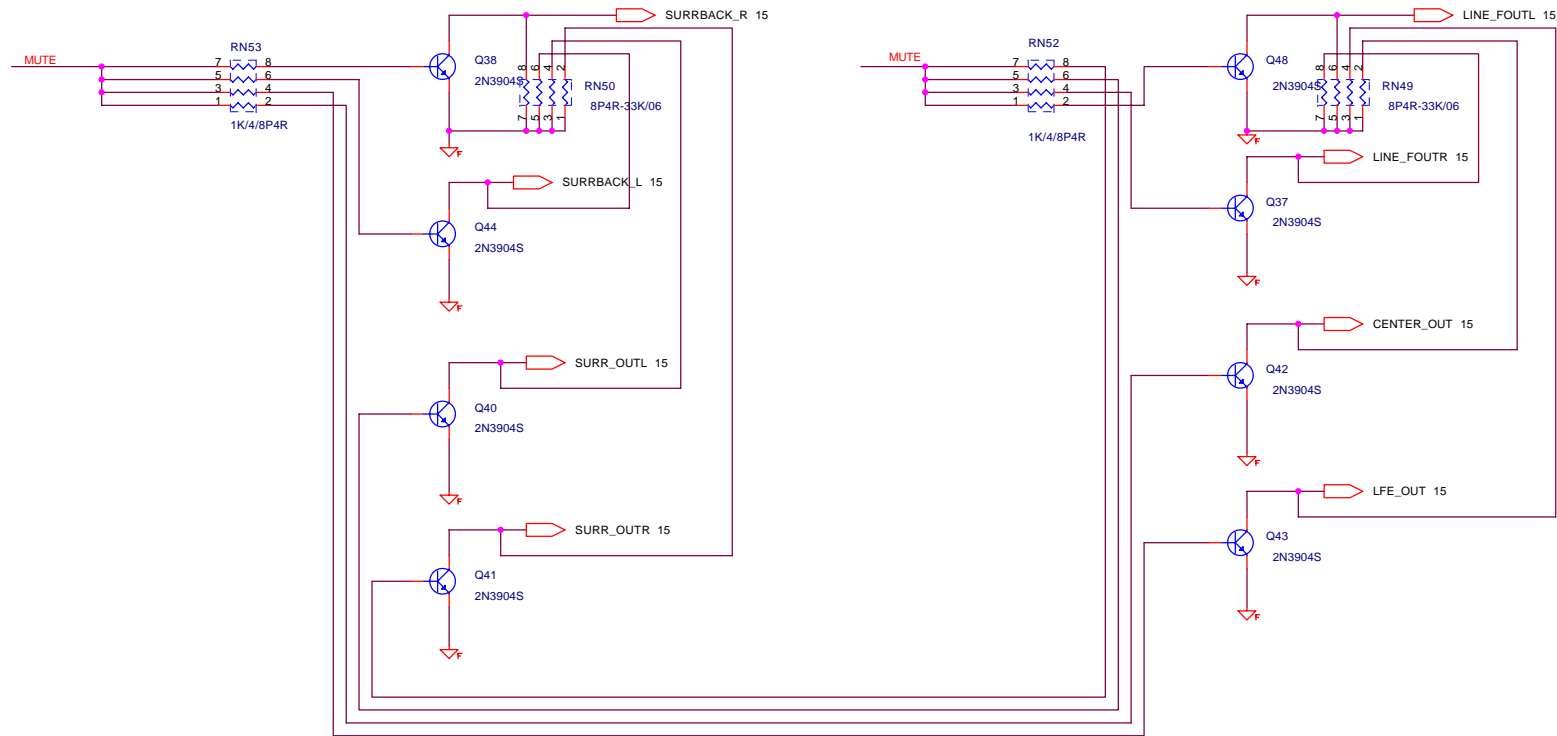


Closer to Codec.

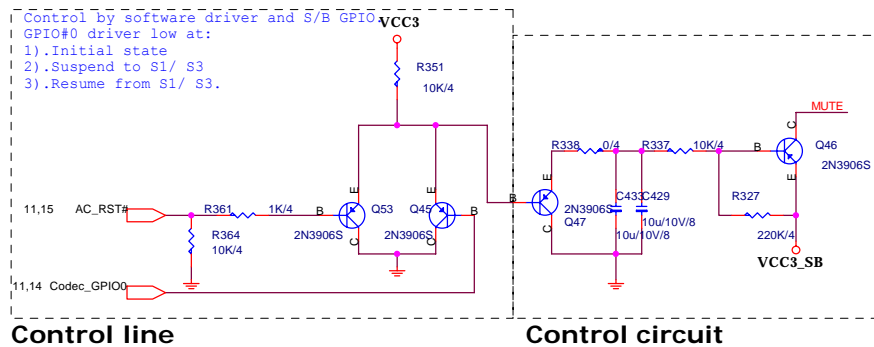


MICRO-STAR INT'L CO., LTD.

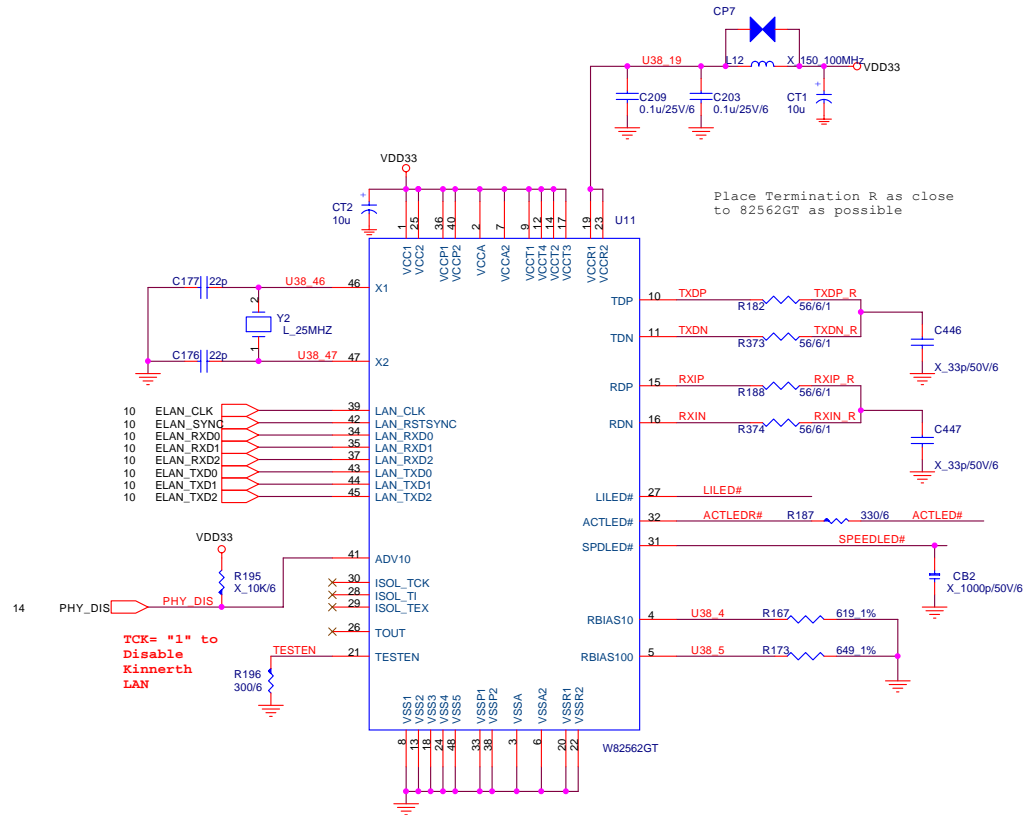
Title			
Azalia & Interanl SPK			
Size	Document Number		Rev
	MS-7174H1		1B
Date:	Thursday, June 30, 2005	Sheet	15 of 31



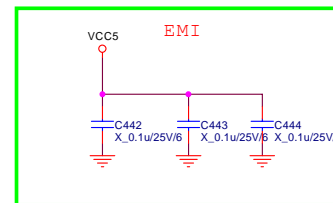
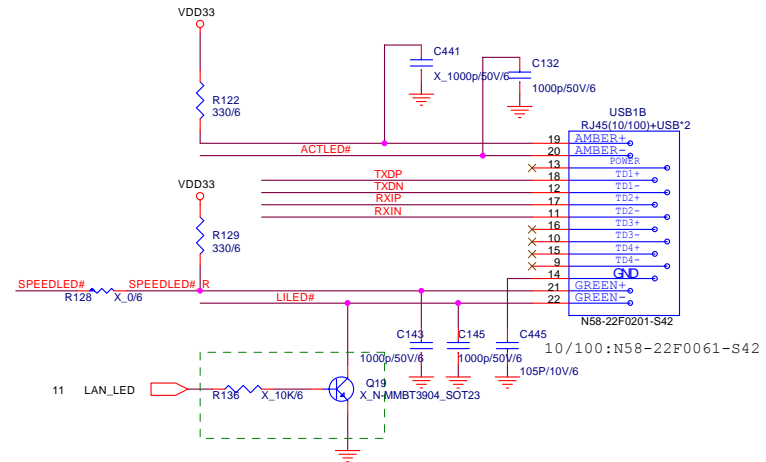
darlington circuit



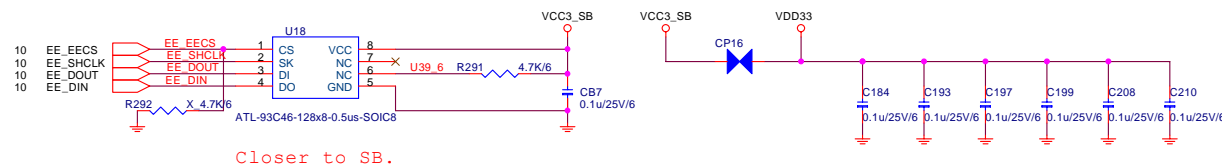
LAN - KINNERITH



LAN CONNECTOR

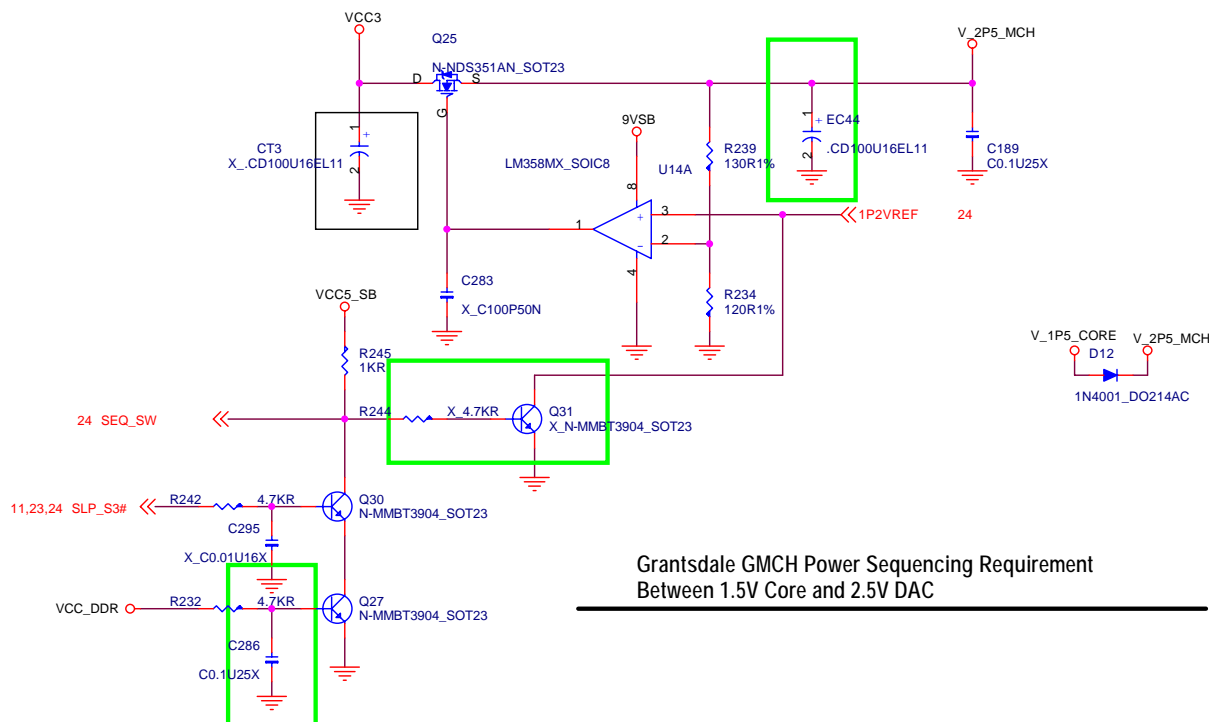
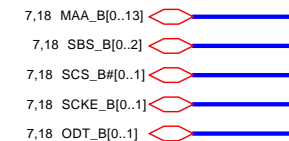
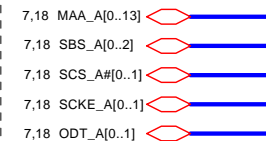
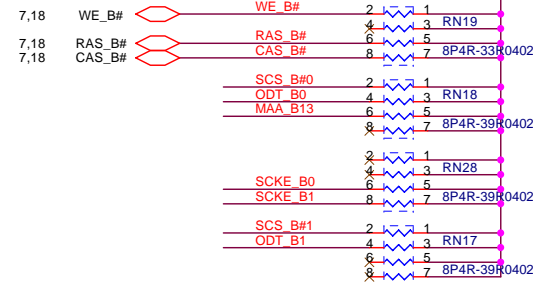
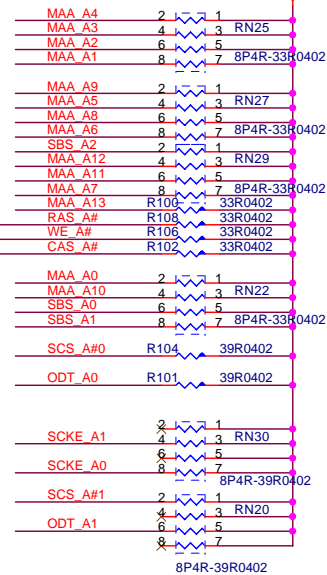
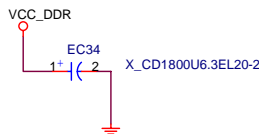
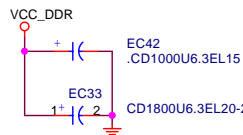
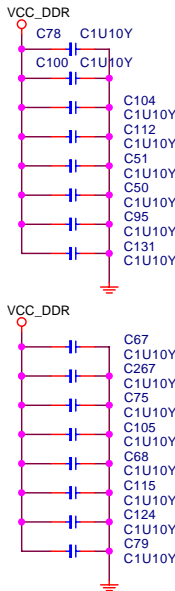
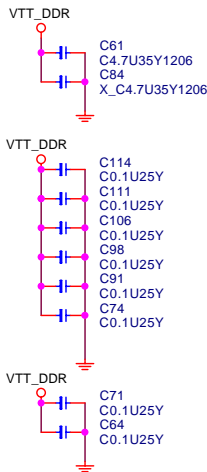
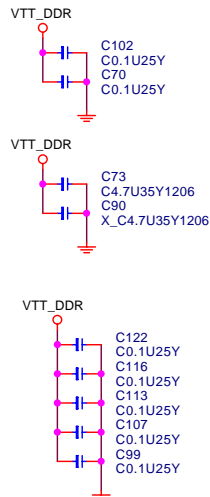


EEPROM



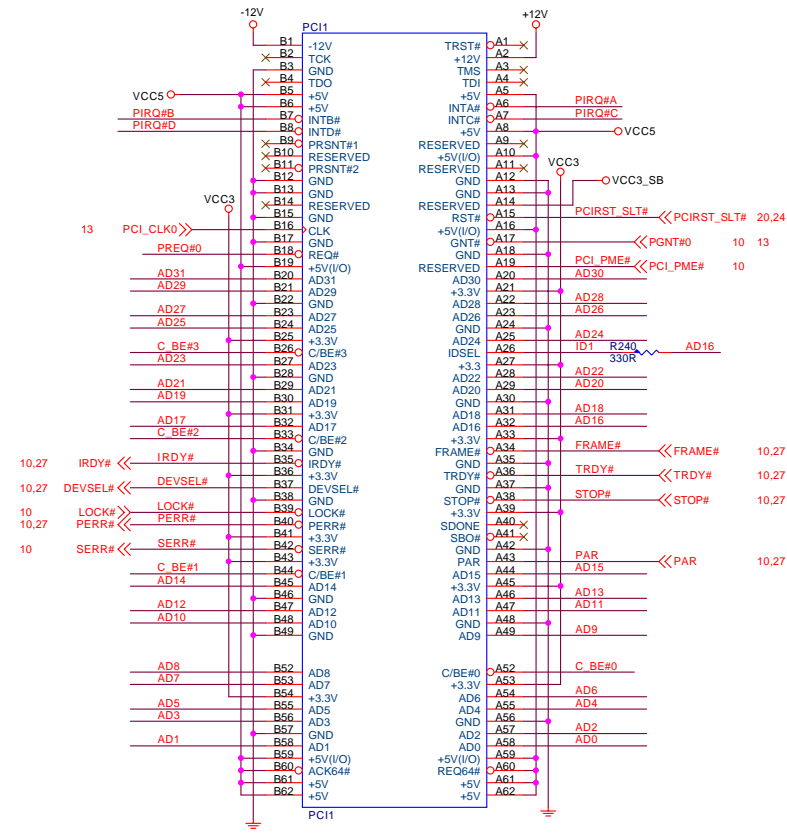
CHANNEL A V_SM_VTT DECOUPLING CAPS

CHANNEL B V_SM_VTT DECOUPLING CAPS

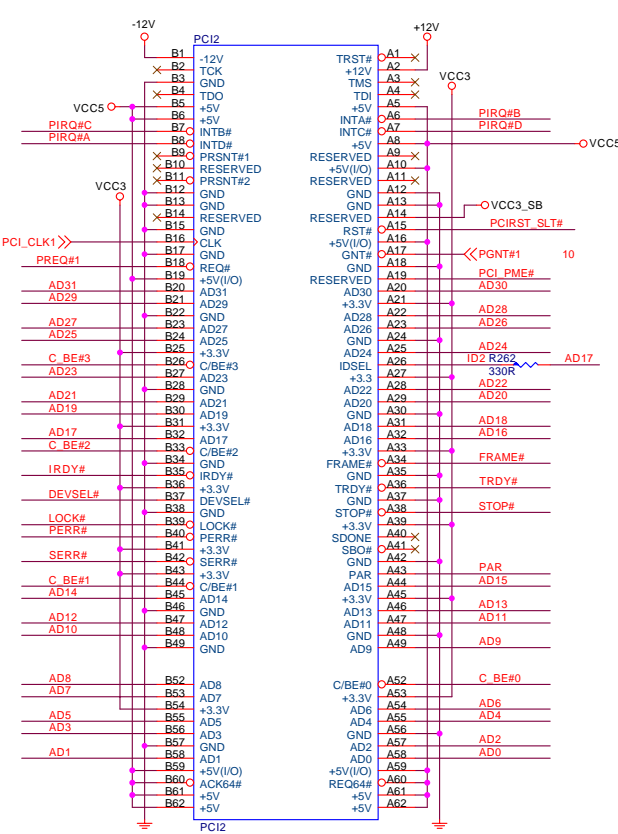


PCI SLOT 1 (PCI VER: 2.2 COMPLY)

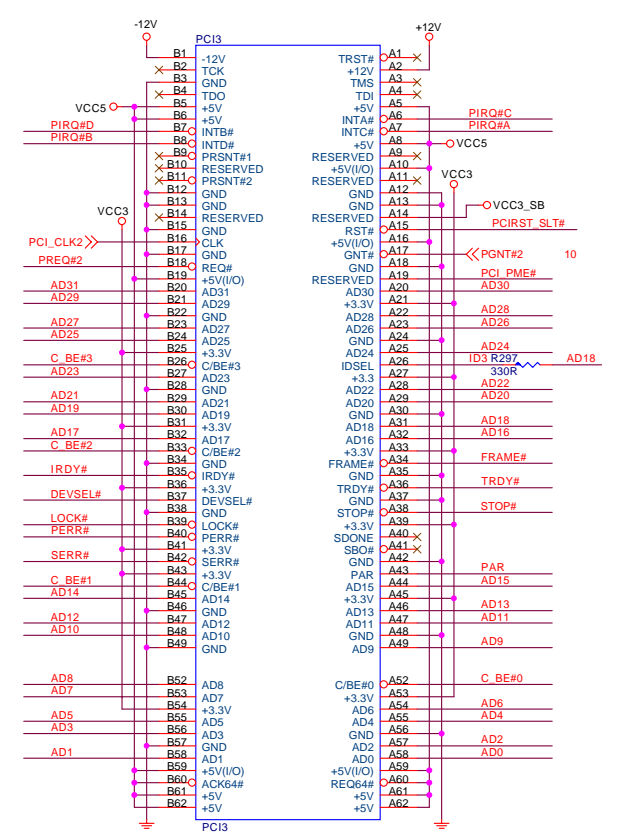
PCI SLOT 2 (PCI VER: 2.2 COMPLY)



ISDEL = AD16
MASTER = PREQ#0
PIRQ#A

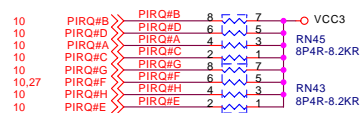
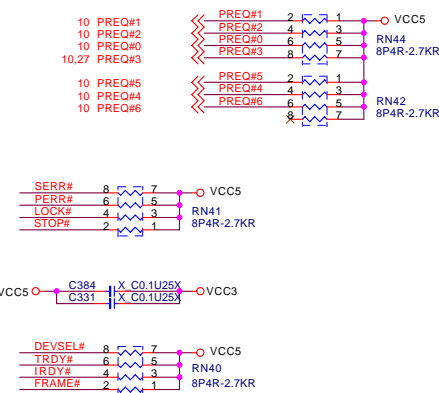


ISDEL = AD17
MASTER = PREQ#1
PIRQ#B

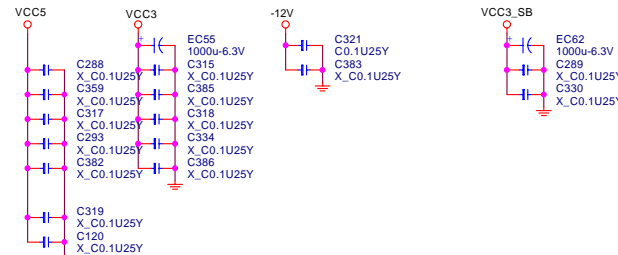


ISDEL = AD18
MASTER = PREQ#2
PIRQ#C

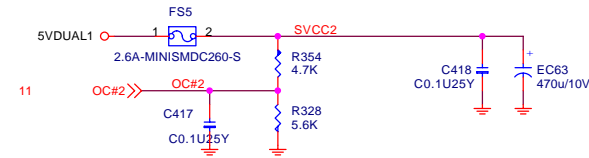
PCI PULL-UP / DOWN RESISTORS



PCI SLOT DECOUPLING CAPACITORS



POWER CIRCUIT FOR USB PORT 4,5,6,7 (FRONT)

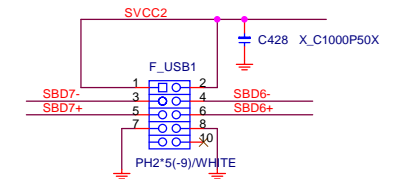
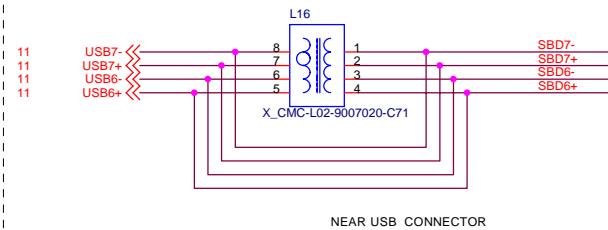


Close to C417.

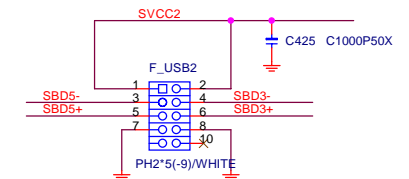
Close to C428.

Close to R269.

USB Interface
Diff. Trace width 7.5 mils & 7.5 mils space.
Diff. & other space 20 mils.
Length matching: < 150 mils
Ttrace length 0" to 17"

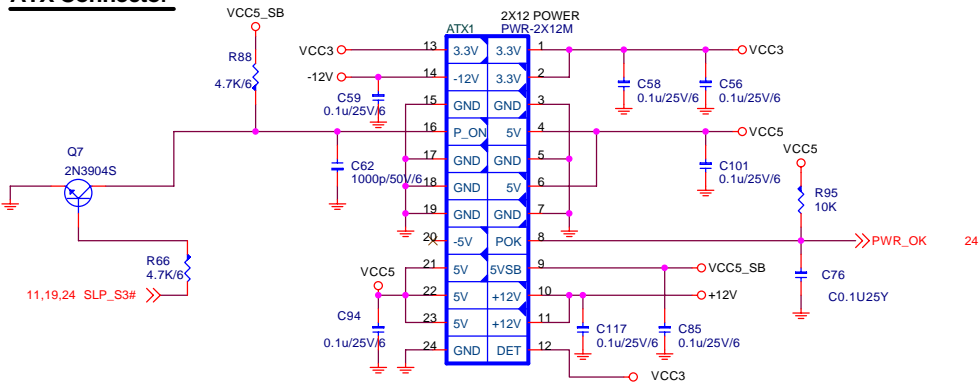


The diagram shows the internal wiring of the USB connector. On the left, four USB signals are shown: USB5-, USB5+, USB3-, and USB3+. These are connected to a blue inductor labeled L15. The inductor has four pins: 8, 7, 6, and 5 on the left, and 1, 3, 4, and 2 on the right. The connections are as follows: USB5- to pin 8, USB5+ to pin 7, USB3- to pin 6, and USB3+ to pin 5. On the right side, four SBD signals are shown: SBD5-, SBD5+, SBD3-, and SBD3+. The connections are: SBD5- to pin 1, SBD5+ to pin 3, SBD3- to pin 4, and SBD3+ to pin 2. The component is identified as X_CMC-L02-9007020-C71. The label 'NEAR USB CONNECTOR' is at the bottom.

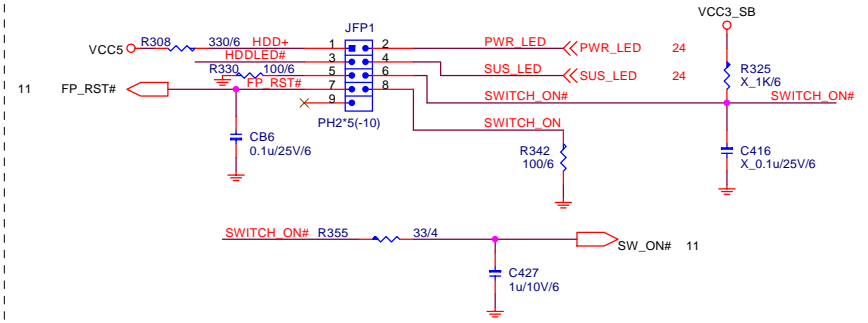


USB Interface
Diff. Trace width 7.5 mils & 7.5 mils space.
Diff. & other space 20 mils.
Length matching: < 150 mils
Ttrace length 0" to 17"

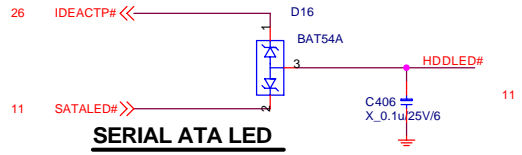
ATX Connector



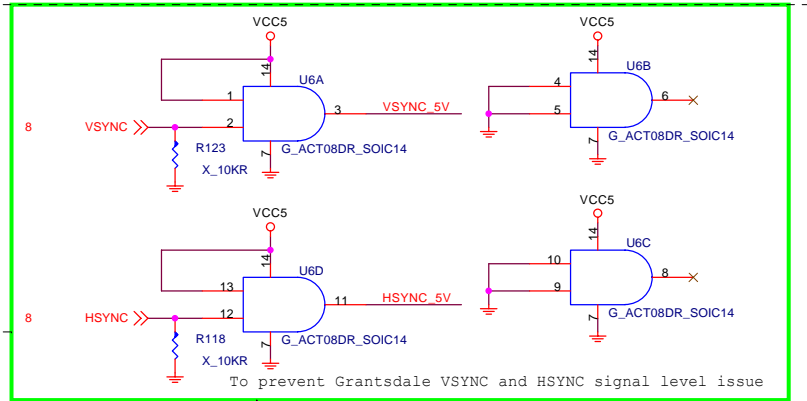
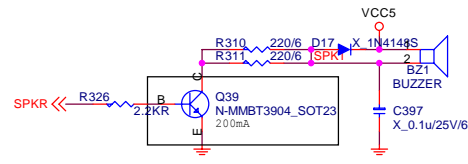
Intel Front Panel



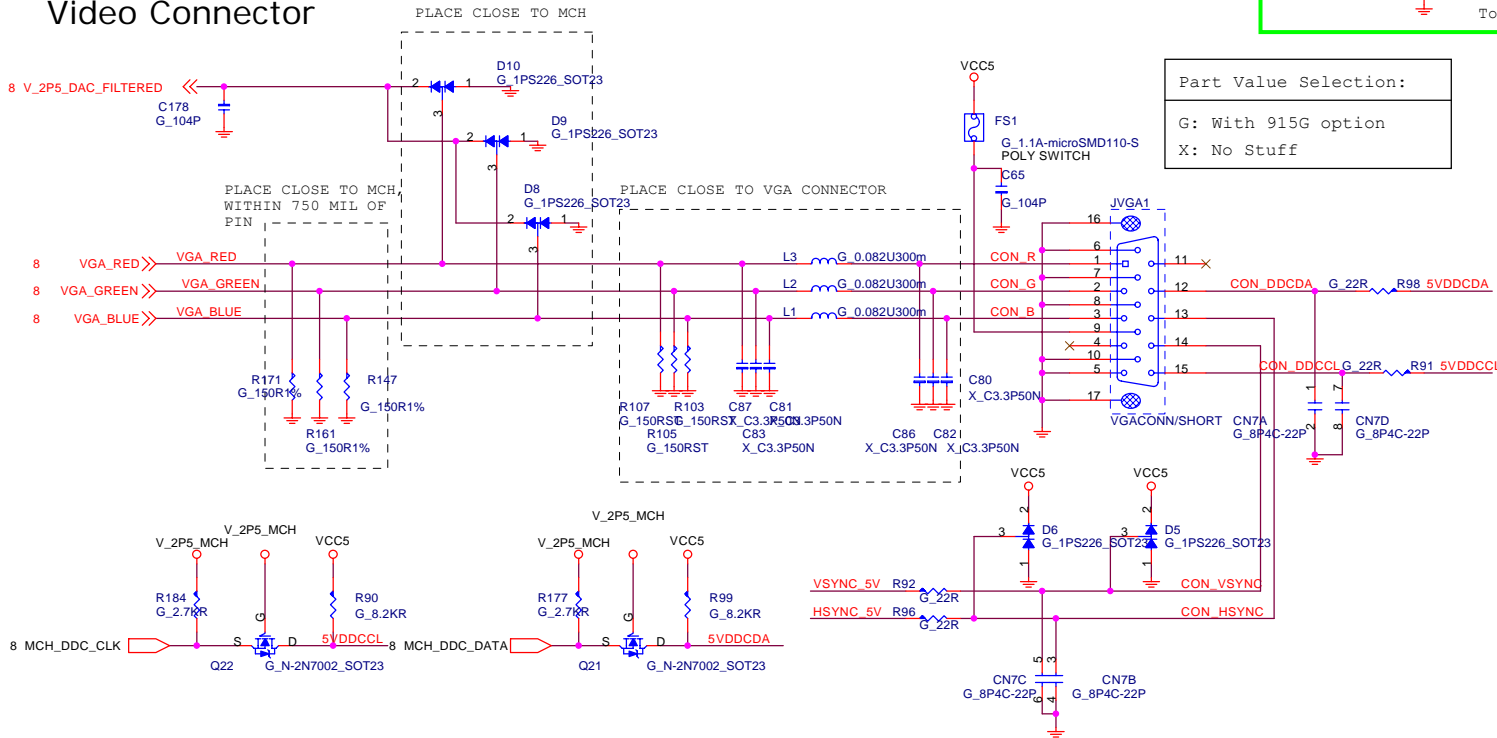
IDE LED



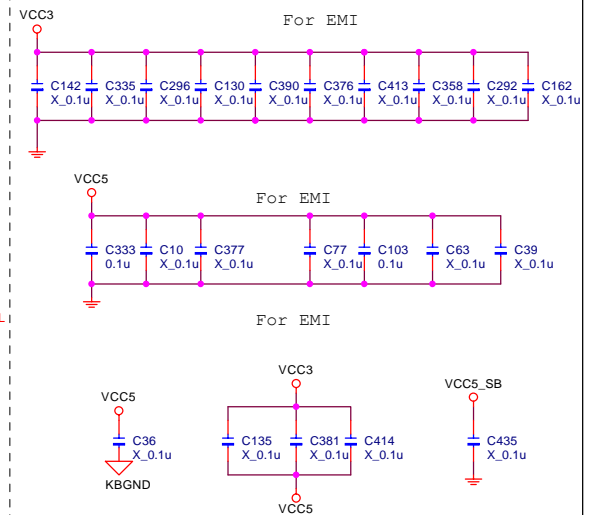
BUZZER



Video Connector



Part Value Selection:
G: With 915G option
X: No Stuff



ACPI Controller

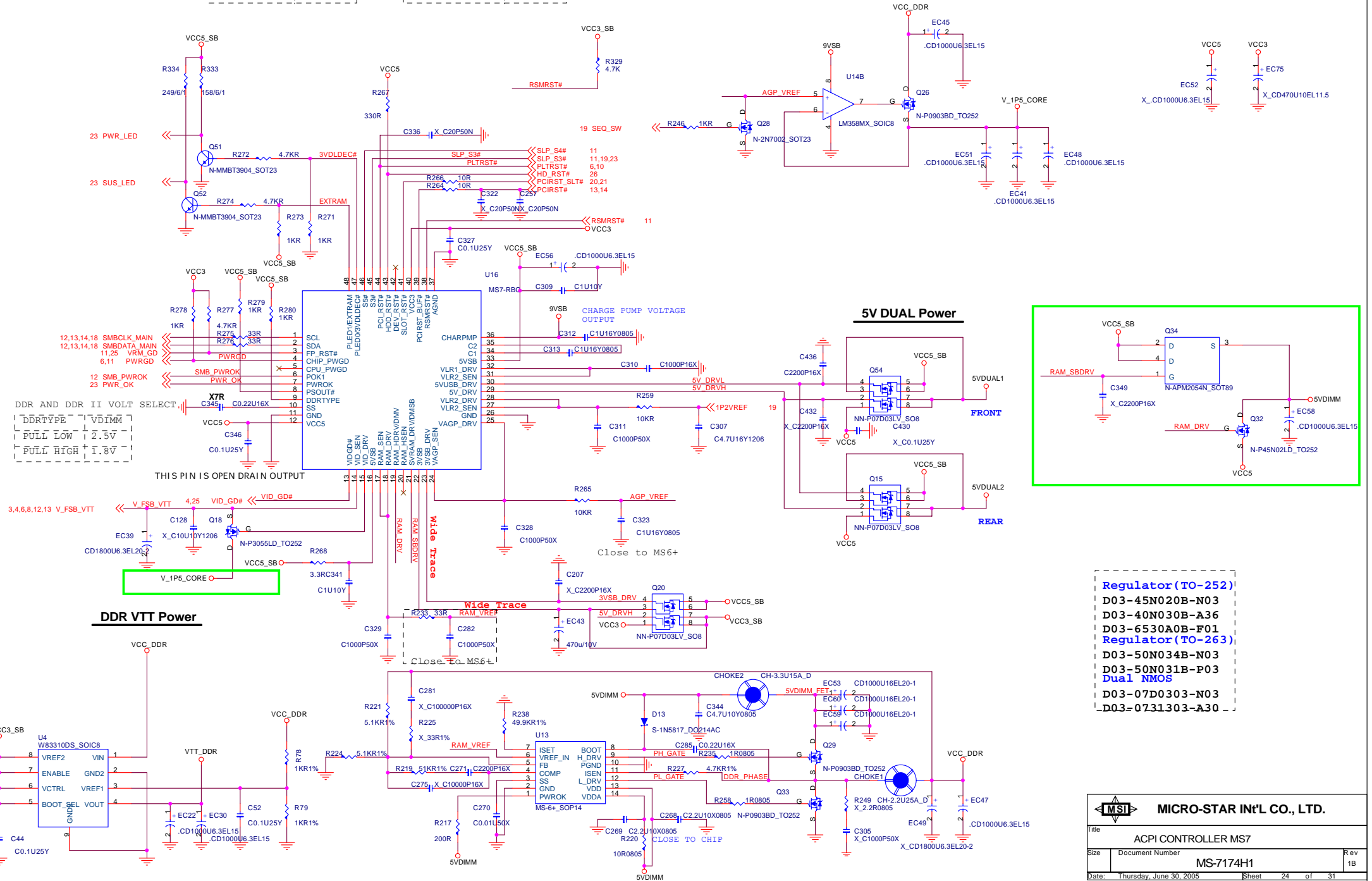
3VSB MODE SELECT

3VSB MODE	3VBLDEC#
SINGLE MOSFET	FULL HIGH
DUAL MOSFET	FULL LOW

VDIMM LINEAR OR PWM SELECT

VDIMM MODE	EXTRAM
LINEAR REGULATOR	PULL LOW
PWM REGULATOR	PULL HIGH

PCI-Express POWER



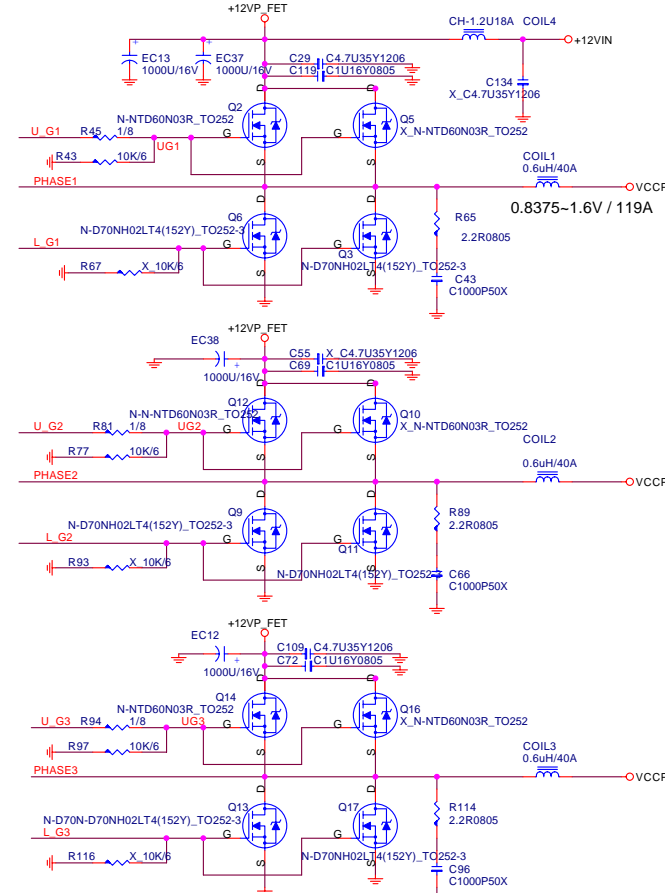
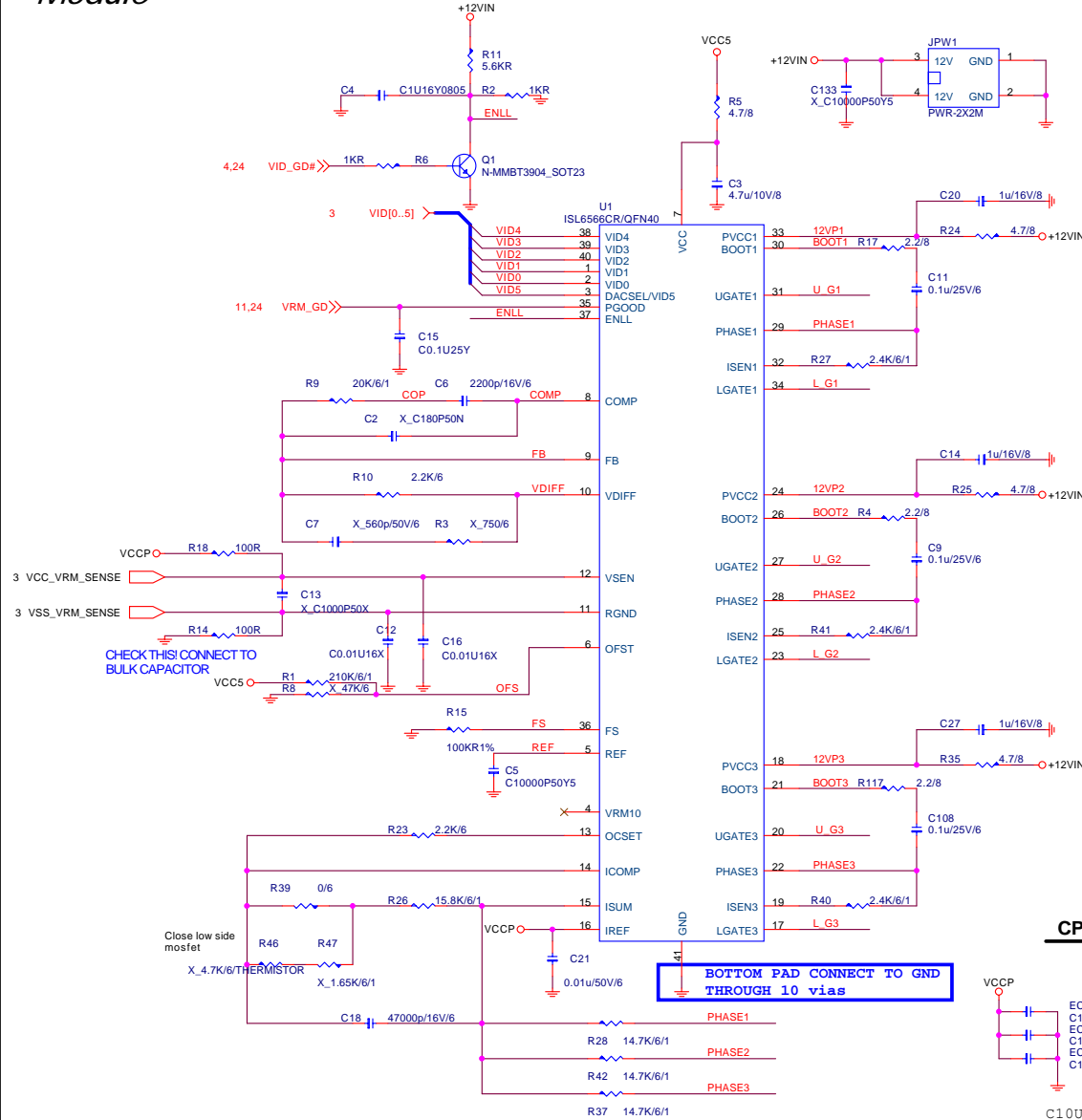
Regulator (TO-252)

D03-45N020B-N03
D03-40N030B-A36
D03-6530A0B-F01
Regulator (TO-263)
D03-50N034B-N03
D03-50N031B-P03
Dual NMOS
D03-07D0303-N03
D03-0731303-A30

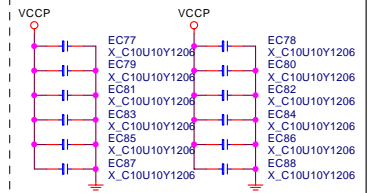
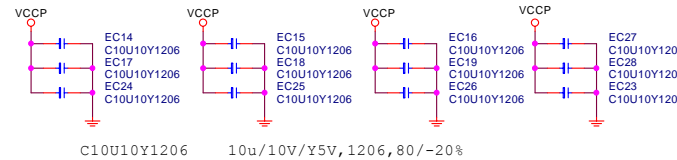
Voltage Regular Module

IPF06N03LA Rds(on)=8.7mΩ (@4.5V, 30A), Vgs(on)=1.2~2V, Id=50A, Ciss=3110pf, Qg=10nC, Vds=25V, Vgs=±20V
C100U2SP ESR<13mΩ, Ripple cur.<2.7A, Lc<12uA, 105C
.CD3300U6.3EL25 ESR<12mΩ, Ripplecur.<2800mA, 105C, longlife3000hrs, KZGSeries
560u_2.5V ESR=6mΩ, Ripplecur.=4400mA, Lc.<500uA, 105C/2000hrs
1800UF/6.3V ESR<12mΩ, Ripplecur.<2350mA, 105C, longlife change from 2000hrs to 3000hrs ,KZJ series
0.6uH/40A
CH-1.2U18A 1.2u/20%, Isat=40A, Rdc=1.2m ohm, PEW wire
1.2u/20%, Dip-2/vertical 17.5mm, 1.2ψ/5.5turns, 18A

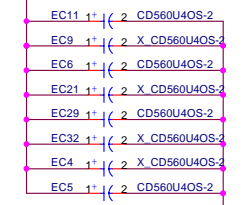
TDP = 115 W
VR_TDC = 101 A
Icc(max) = 119 A
Tejas Tcase = [P x 0.213] + 43.3
Prescott Tcase = [P x 0.25] + 43.3



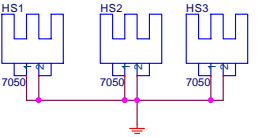
CPU DECOUPLING CAPACITORS



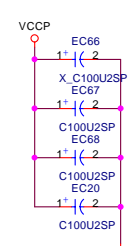
OS-CON Capacitors



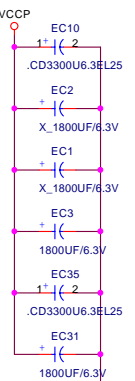
MOSFET Heatsinks



SP Capacitors



EL Capacitors



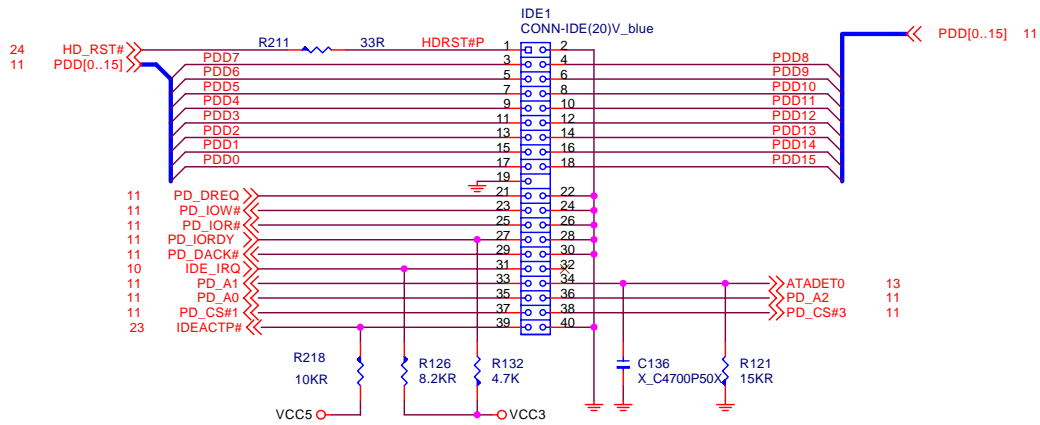
Solder Side



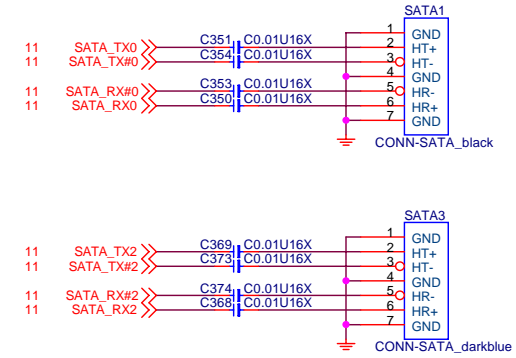
MICRO-STAR IN'L CO., LTD.

Title			VRM 10.1 - Intersil 6565ACV 3 Phase		
Size	Document Number		MS-7174H1		Rev
Date	Thursday, June 30, 2005		Sheet 25 of 31		1B

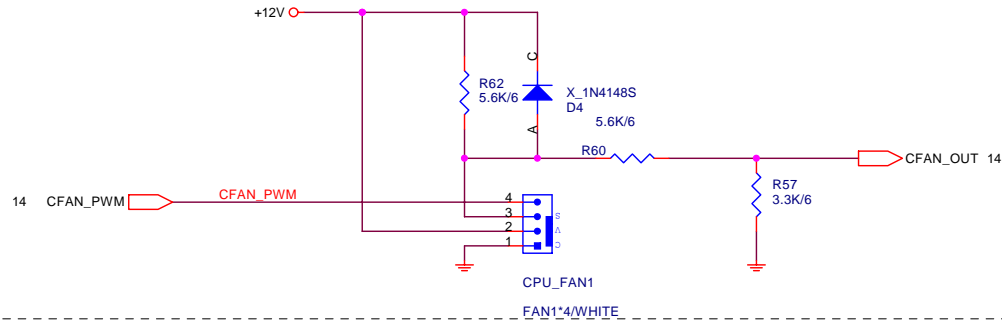
ATA 33/66/100 IDE Connectors



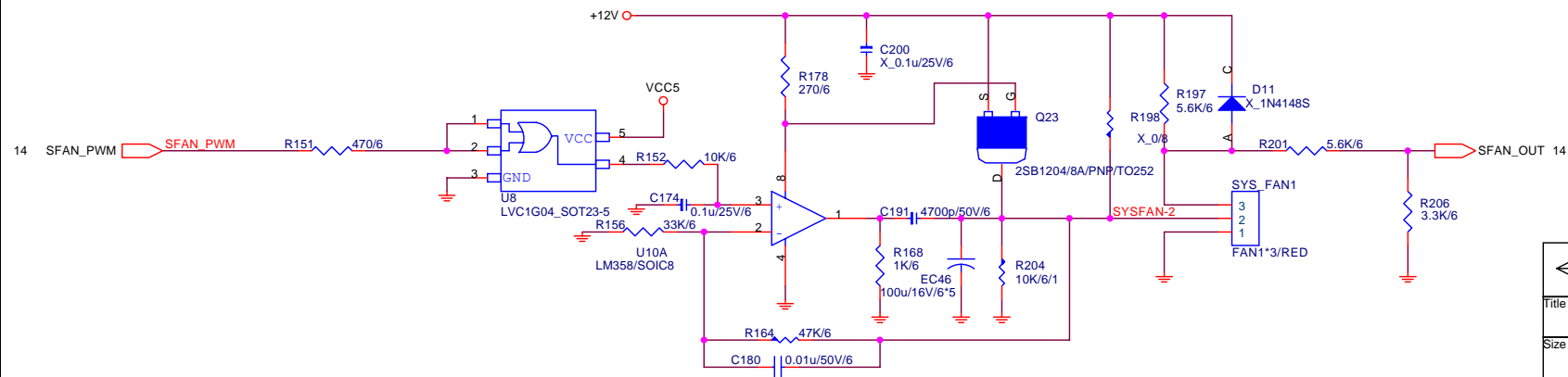
SERIAL ATA CONNECTOR BLOCK



CPU FAN



SYSTEM FAN



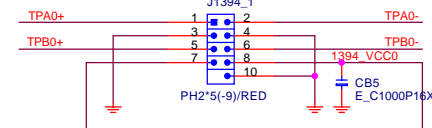
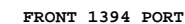
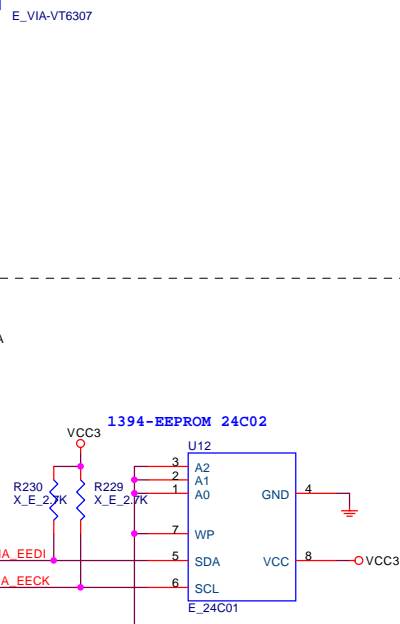
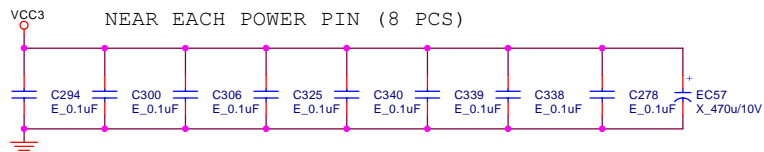
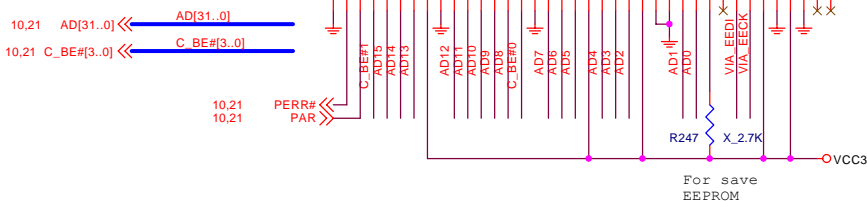
MSI MICRO-STAR INT'L CO., LTD.			
Title FAN & IDE Connectors			
Size	Document Number	MS-7174H1	Rev 1B
Date:	Thursday, June 30, 2005	Sheet 26 of 31	

X: No Stuff

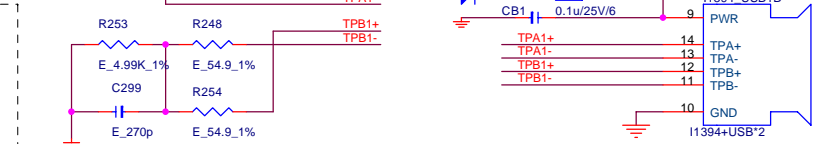
```

IDSEL = AD25
MASTER = PREQ#3
PIRQ#F


```



Rear 1394 PORT



Place close to pin 74
(Less then 500 mils)

 MICRO-START INT'L CO., LTD.			
Title			
VIA-6307 IEEE1394 Controller			
Size	Document Number	Rev	
A3	MS-7174H1	1B	
Date:	Thursday, June 30, 2005	Sheet	27 of 31

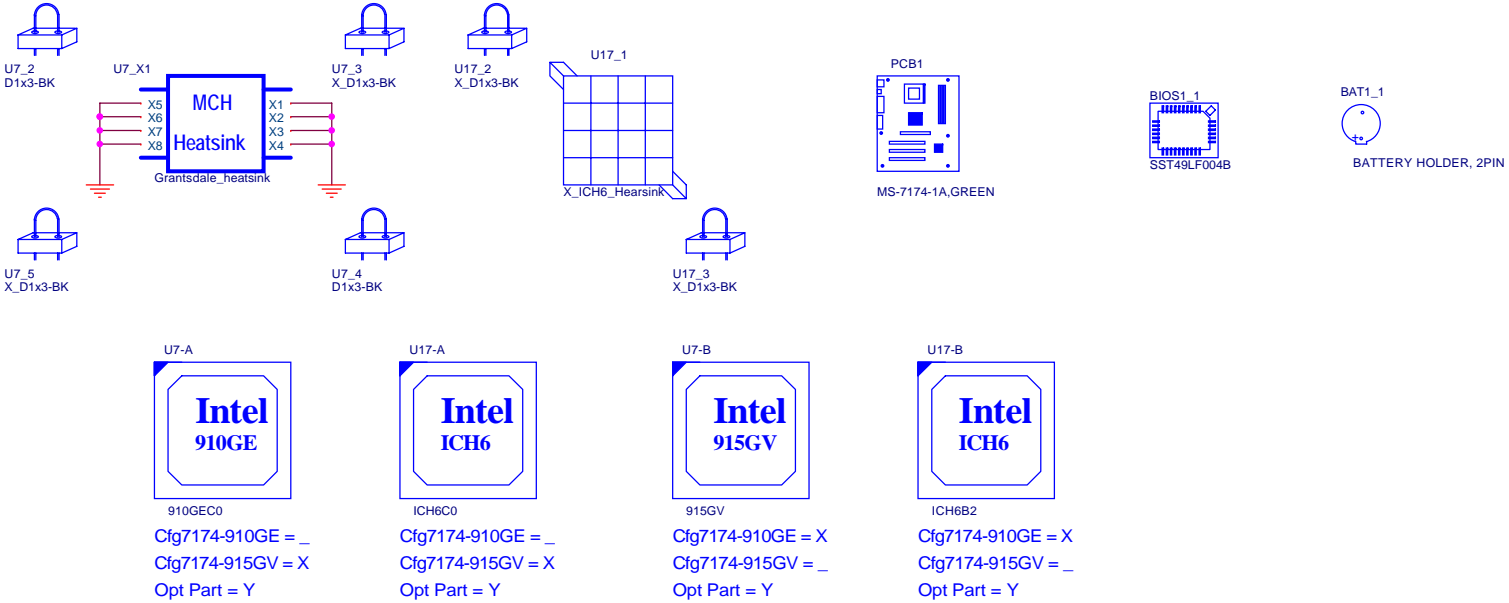
 **MSI**
Look for the Dragon Logo **MICRO-START INTL CO.,LTD.**

Title	VIA-6307 IEEE1394 Controller
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Size A3	Document Number MS 717414	Rev 1B
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AS	MS-7174H1	1B
Date:	Thursday, June 30, 2005	Sheet 27 of 31

MANUAL PART



Model option table

Model type	Function	BOM Config	ERP BOM No.
MS7174 (Graphite)	915GV+ICH6+47M997+82562GT+ALC880+3PCI+u-ATX+2PS2+8USB+1COM+VGA+1Audio+LPT+RJ45+Intel pinhead+1394	Cfg7174-915GV	601-7174-***
MS7174 (Gypsum)	910GE+ICH6+47M997+82562GT+ALC880+3PCI+PCIE X16+u-ATX+2PS2+8USB+1COM+VGA+1Audio+LPT+RJ45+Intel pinhead+1394	Cfg7174-910GE	601-7174-02S