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MS-7174H1

Version 0B

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:

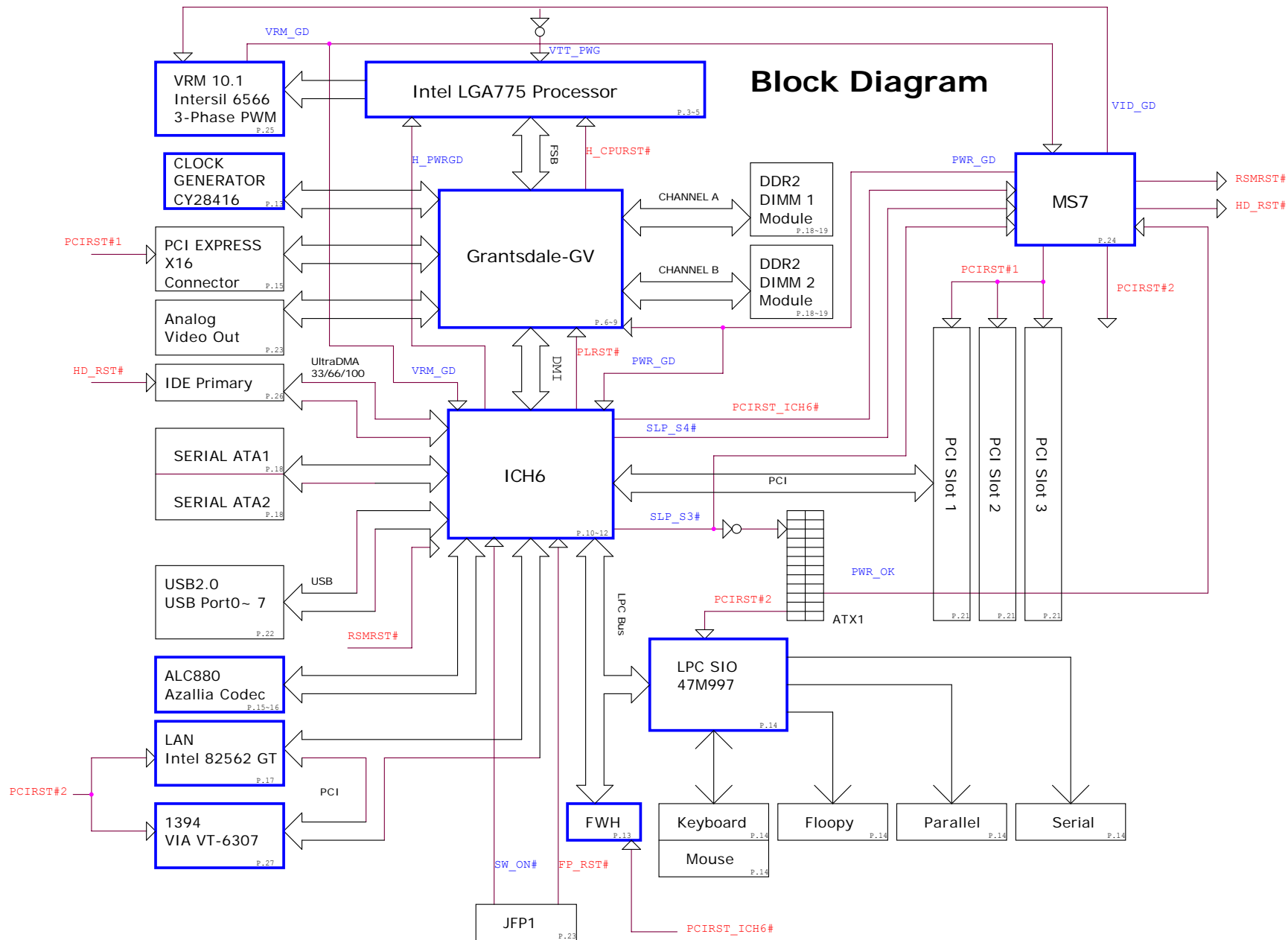
2 CHANNEL DDR II * 1 (Max 2GB)

Expansion Slots:

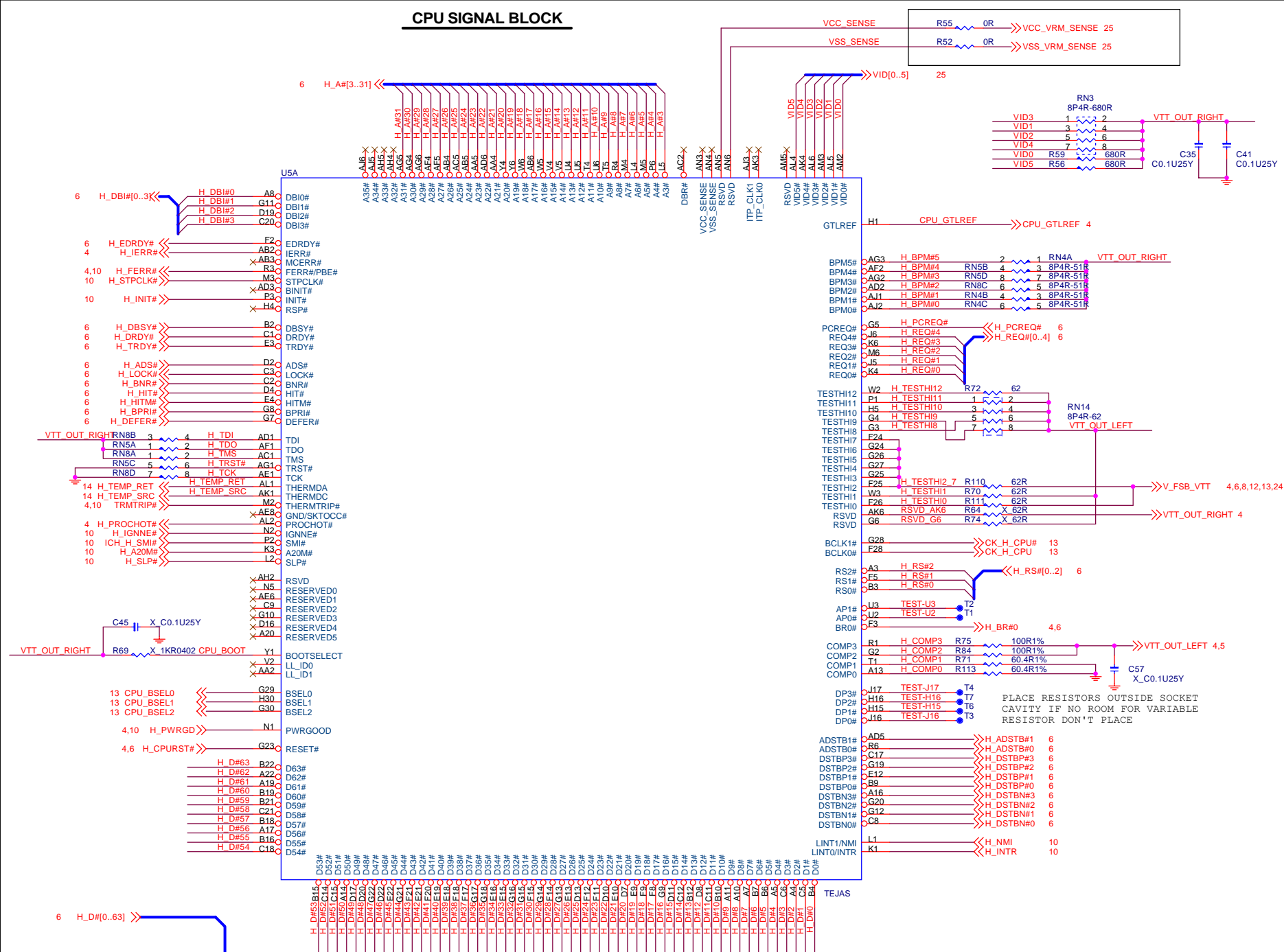
PCI 2.3 SLOT * 3

Intersil PWM:

Controller: INTERSIL 6566 3PHASE

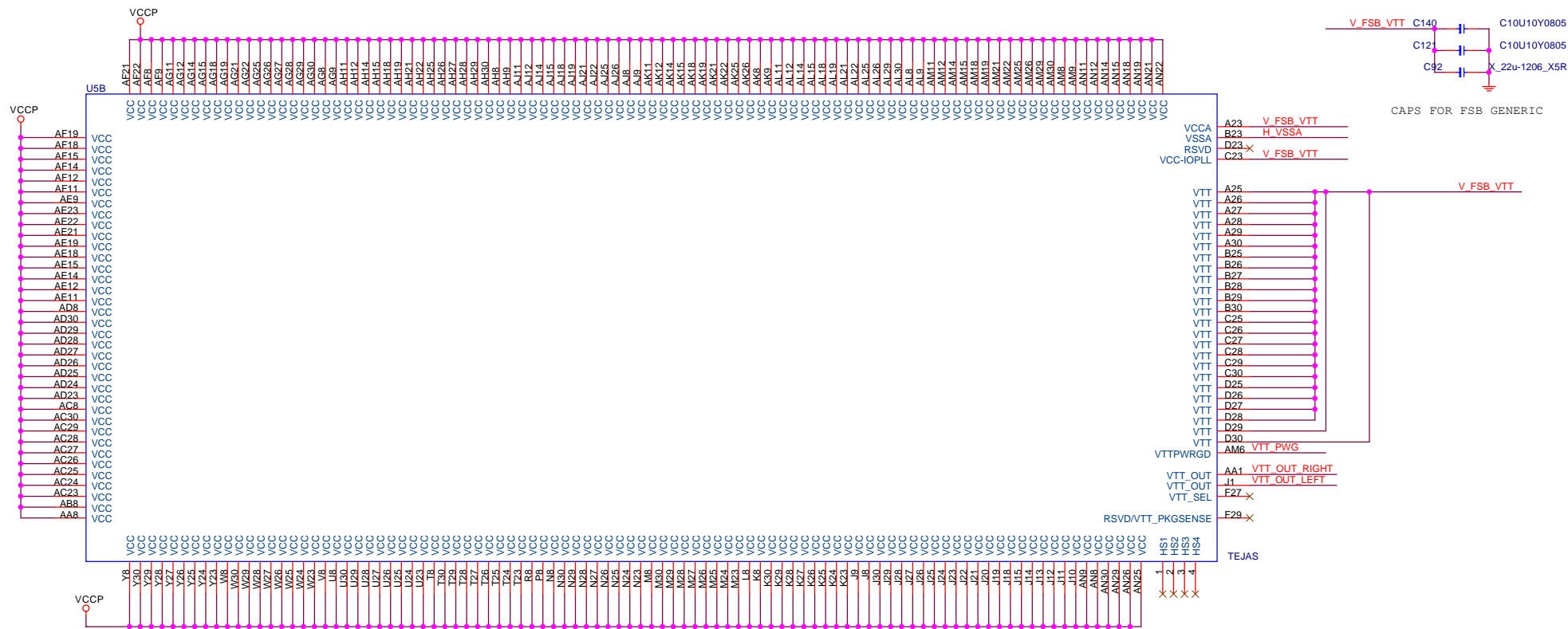


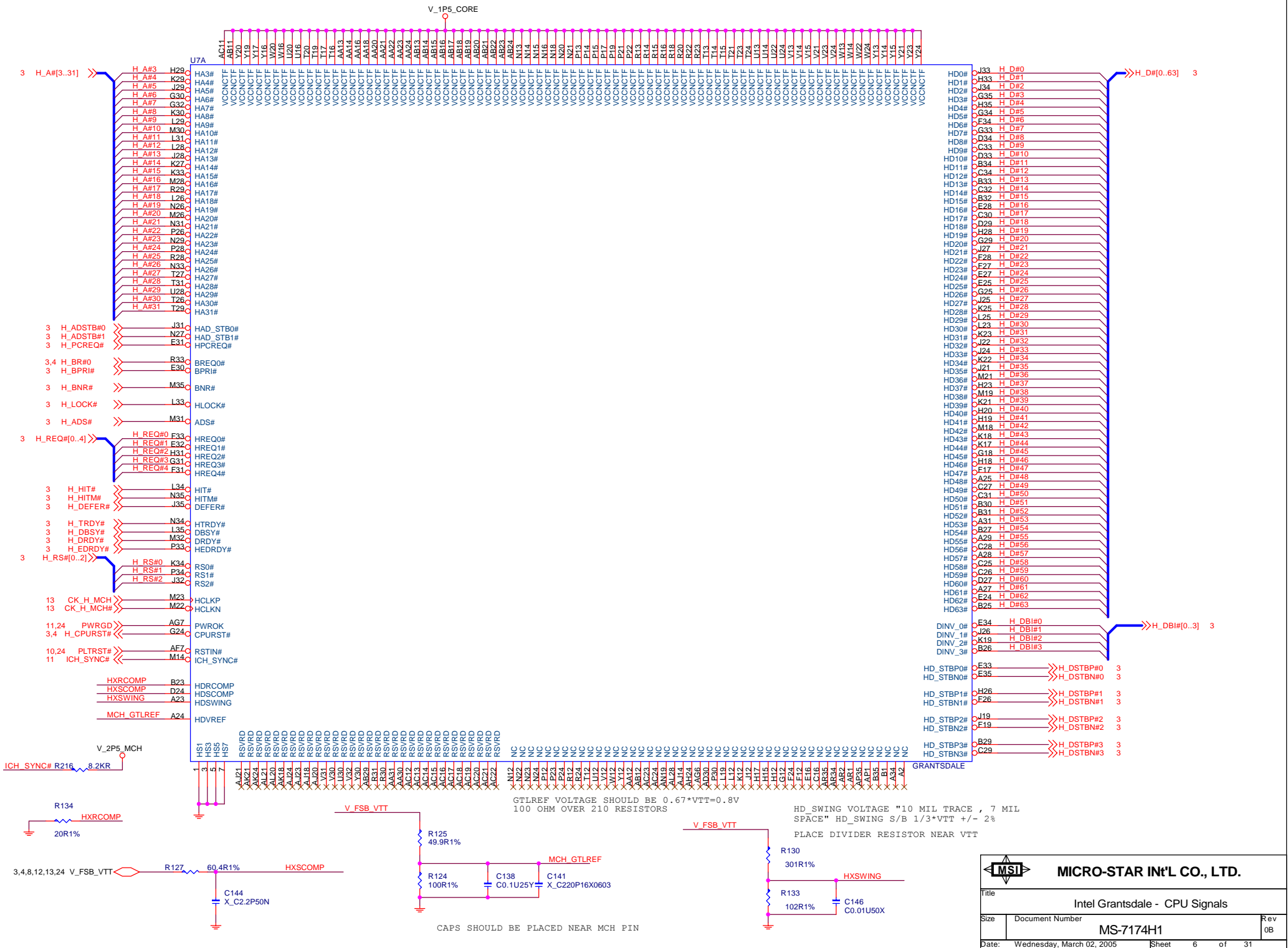
CPU SIGNAL BLOCK

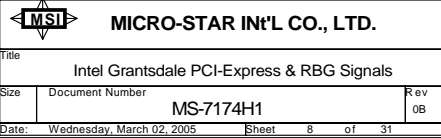


MICRO-STAR INT'L CO., LTD.

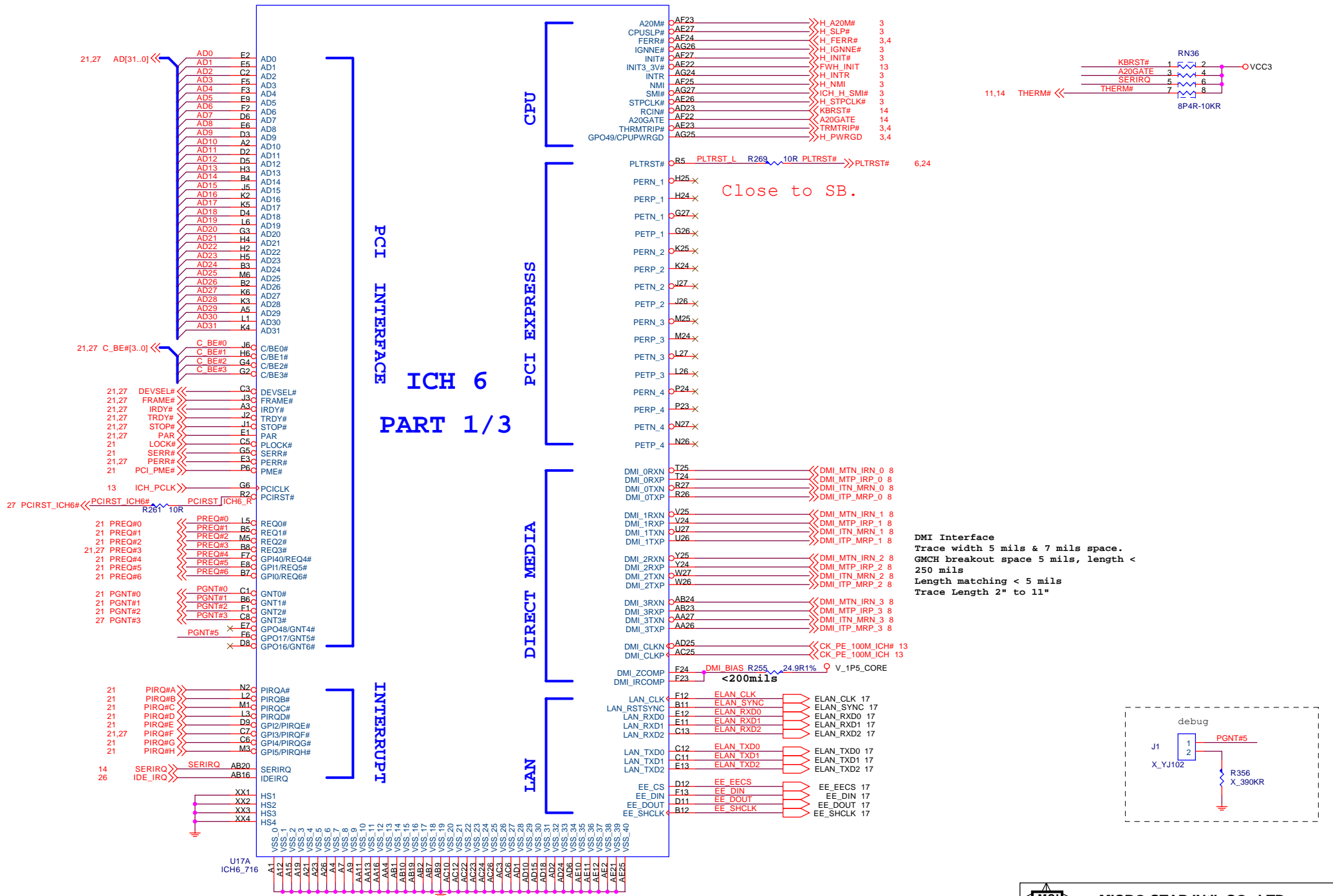
Title			
Intel LGA775 CPU - Signals			
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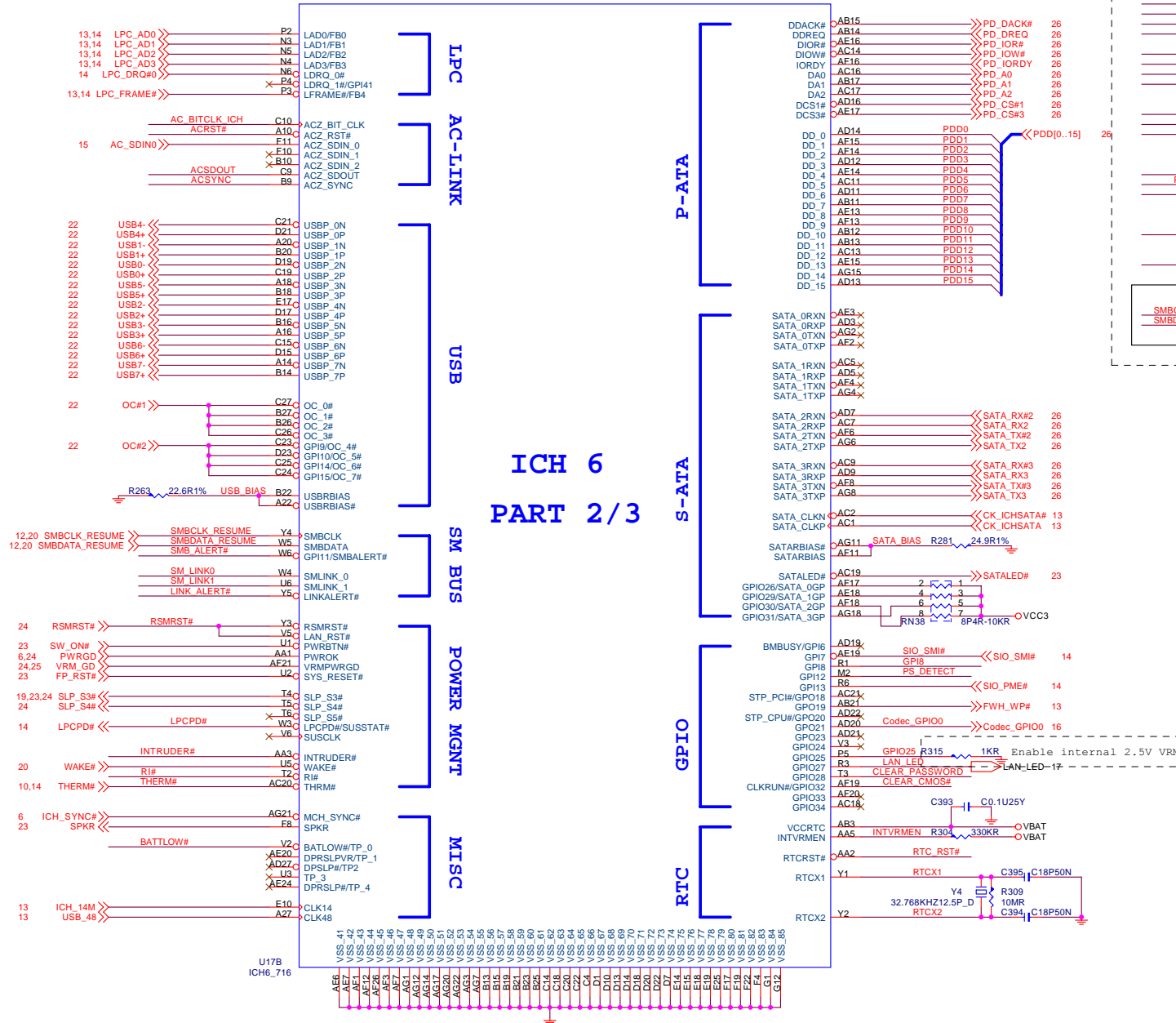






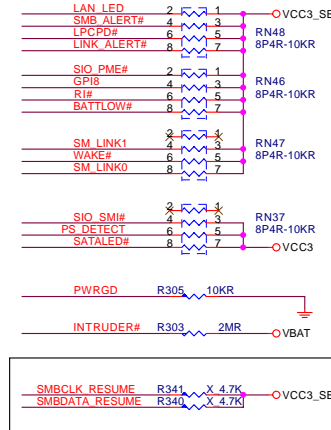


ICH 6 PART 2/3



ICH6 STRAPPING RESISTORS

ALL COMPONENTS CLOSE TO ICH6
Trace length is less than 3inches to ICH6.

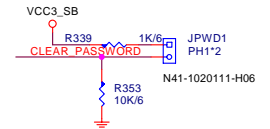


CLEAR CMOS JUMPER



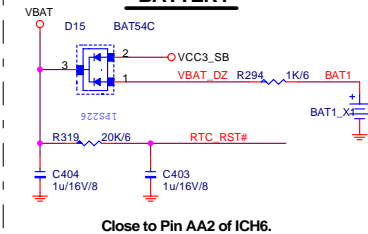
CMOS CLEAR	NORMAL	CLEAR
JBAT1	(1-2)	(2-3)

PASSWORD CLEAR JUMPER

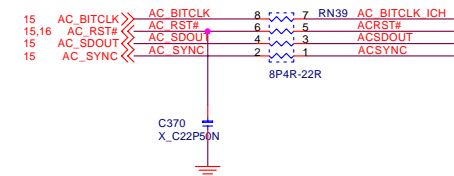


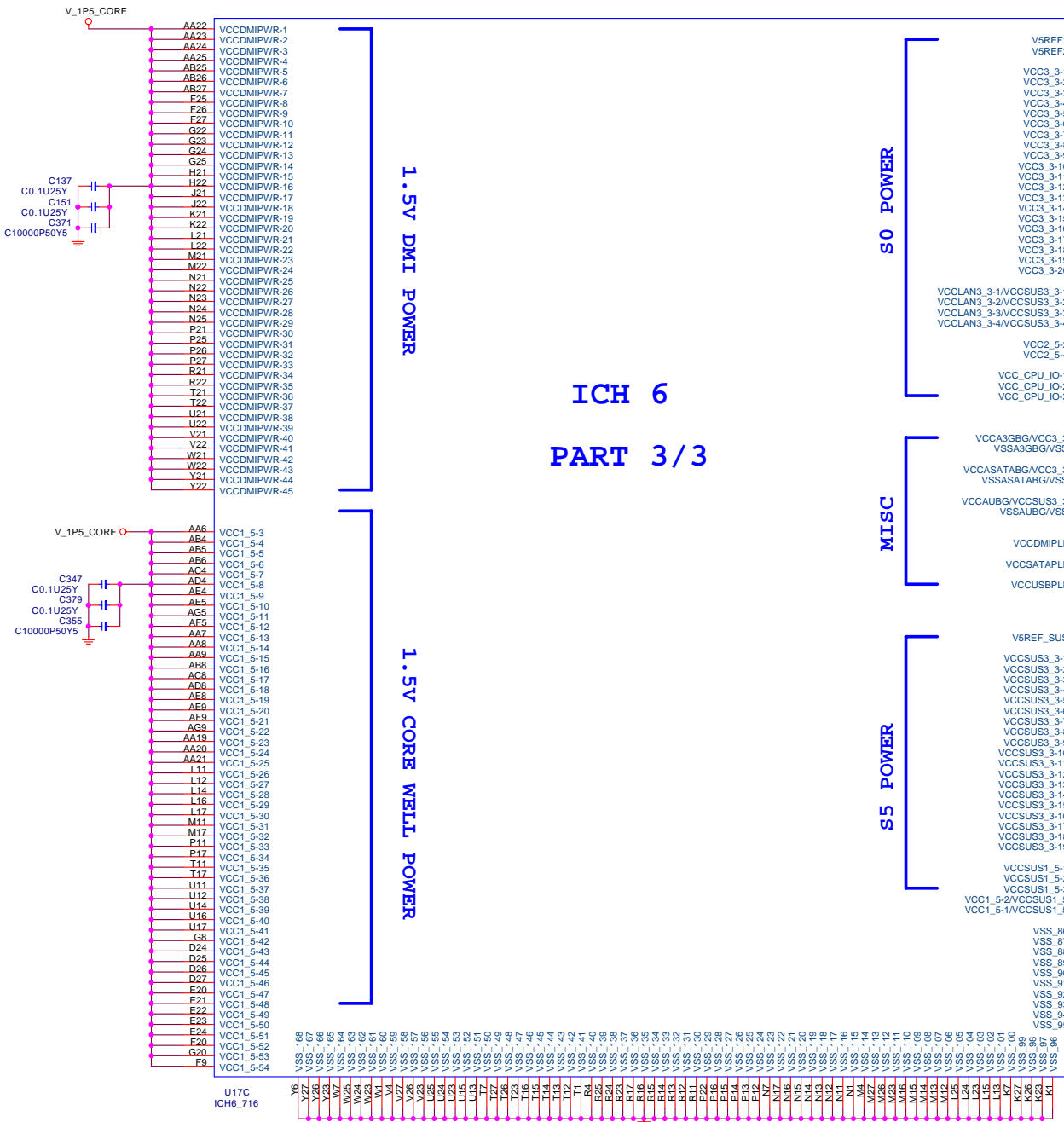
JPWD1	Short	Normal
OPEN	CLEAR	PASSWORD

BATTERY



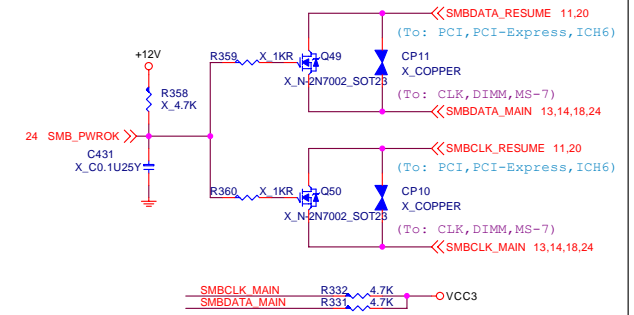
Close to Pin AA2 of ICH6.



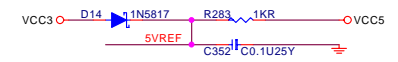


U17C
ICH6_716

SM BUS ISOLATION



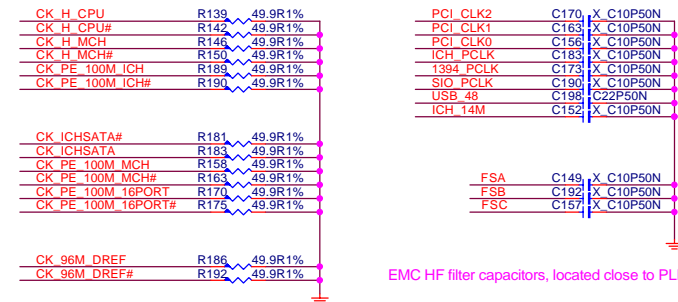
5VREF Sequencing Circuit



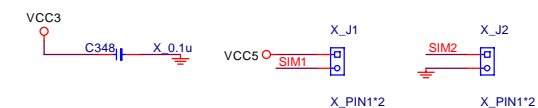
MICRO-STAR INT'L CO., LTD.

Title			Intel ICH6 - POWER
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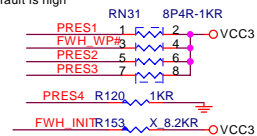
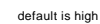
Trace length less than 0.5inches



EMC HF filter capacitors, located close to PLL



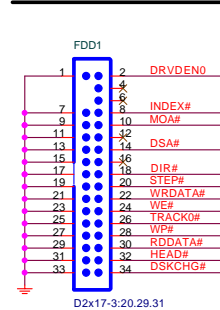
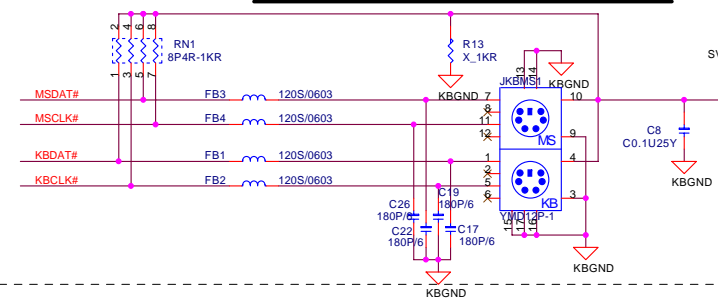
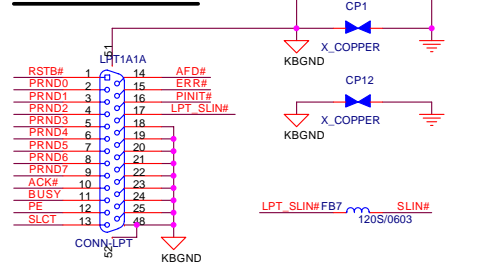
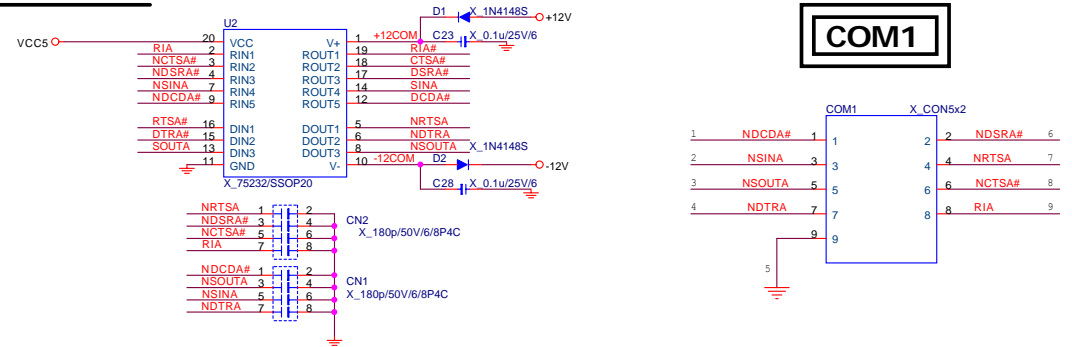
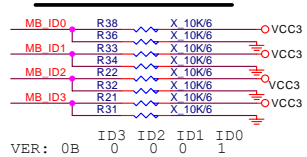
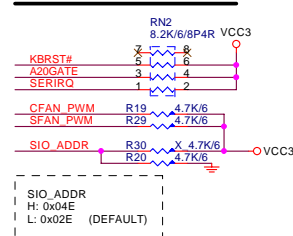
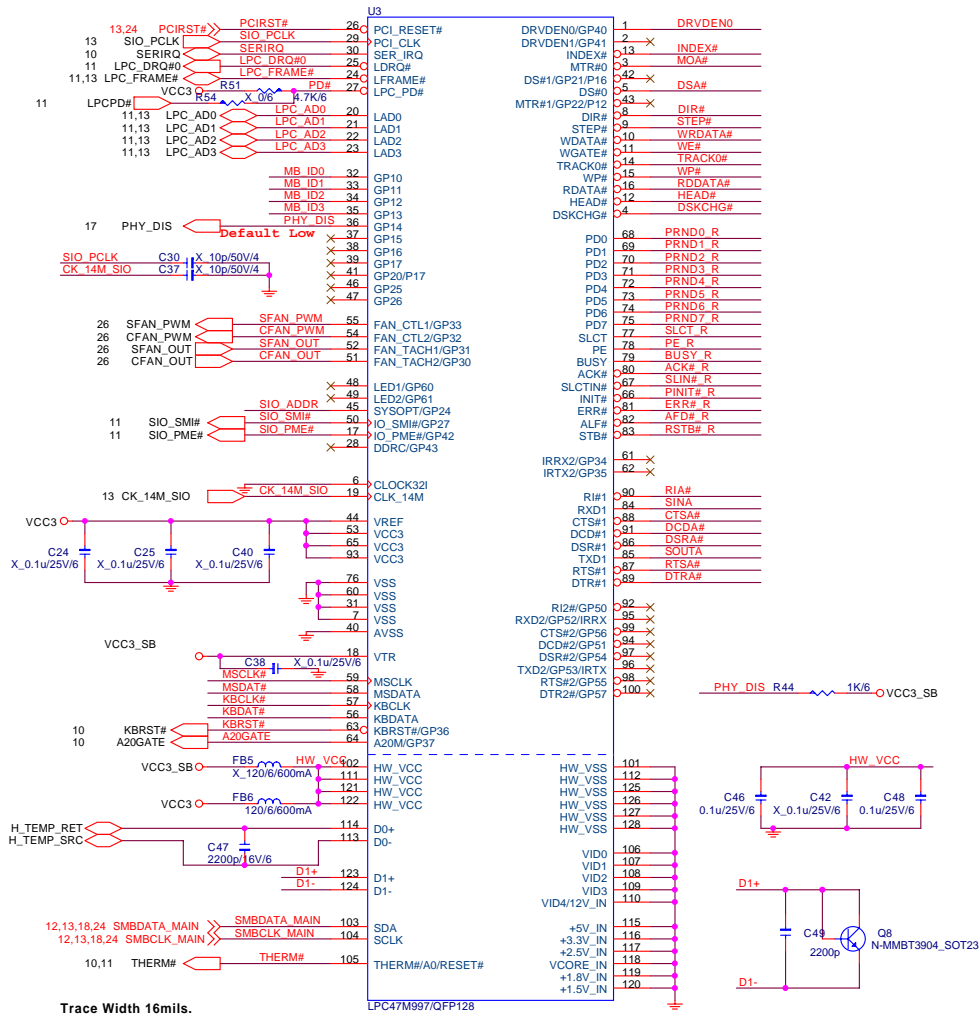
FWH Resistors



Place Cap. as Close to FWH< 350 mil



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ALC880 CODEC

Trace Width 20mils.

VCC3 VCC3

R306 100K/4

R313 100K/4

R307 0/4

R314 0/4

R320 22/4

R321 10/4

R323 10R

R324 20K/4/1

R330 100u/16V/6

R332 100u/16V/6

R334 100u/16V/6

R336 100u/16V/6

R338 100u/16V/6

R340 100u/16V/6

R342 100u/16V/6

R344 100u/16V/6

C372 1u/16V/8

C373 1u/16V/8

C374 1u/16V/8

C375 1u/16V/8

C376 1u/16V/8

C377 1u/16V/8

C378 0.1u/25V/6

C379 0.1u/25V/6

C380 0.1u/25V/6

C381 0.1u/25V/6

C382 0.1u/25V/6

C383 0.1u/25V/6

C384 0.1u/25V/6

C385 0.1u/25V/6

C386 0.1u/25V/6

C387 0.1u/25V/6

C388 0.1u/25V/6

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C531 0.1u/25V/6

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C541 0.1u/25V/6

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C553 0.1u/25V/6

C554 0.1u/25V/6

C555 0.1u/25V/6

C

The schematic diagram illustrates the audio input section of the TDA1546Q. It shows the following components and connections:

- AUX IN:**
 - JAX1:** A 4-pin connector with pins 1 (RET_AUX_L), 2 (LINE1_1L), 3 (LINE1_1R), and 4 (RET_AUX_R). Pins 1 and 2 are connected to a 4.7K resistor (R296) and a 1uF capacitor (C375) to ground. Pins 3 and 4 are connected to a 4.7K resistor (R312) and a 1uF capacitor (C360) to ground.
 - SENSE_A:** Connected to pin 1 of JAX1.
 - LINE2_L:** Connected to pin 2 of JAX1.
 - LINE2_R:** Connected to pin 3 of JAX1.
 - MIC2_L:** Connected to pin 4 of JAX1.
 - MIC2_R:** Connected to pin 4 of JAX1.
- JCD1:** A 4-pin connector with pins 1 (CDL), 2 (CDLX), 3 (CDGND), and 4 (CDR). Pins 1 and 2 are connected to a 1uF capacitor (C366) and a 10V/6 capacitor (C356) to ground. Pins 3 and 4 are connected to a 1uF capacitor (C365) and a 10V/6 capacitor (C356) to ground.
- CD IN:**
 - CDL:** Connected to pin 1 of JCD1.
 - CDLX:** Connected to pin 2 of JCD1.
 - CDGND:** Connected to pin 3 of JCD1.
 - CDGNDX:** Connected to pin 4 of JCD1.
 - CDR:** Connected to pin 4 of JCD1.
 - CDRX:** Connected to pin 4 of JCD1.
- Other Components:**
 - RET_AUX_L:** Connected to pin 1 of JAX1.
 - RET_AUX_R:** Connected to pin 4 of JAX1.
 - MIC1_L:** Connected to pin 4 of JAX1.
 - MIC1_R:** Connected to pin 4 of JAX1.
 - MIC1_VREF_L:** Connected to pin 4 of JAX1.
 - MIC1_VREF_R:** Connected to pin 4 of JAX1.
 - R288:** 4.7K/4 resistor connected to MIC1_VREF_L.
 - R287:** 4.7K/4 resistor connected to MIC1_VREF_R.
 - R299:** 22K/4 resistor connected to MIC1_L.
 - R302:** 22K/4 resistor connected to MIC1_R.

Azalia Front Audio Connector

Diagram illustrating the Azalia Front Audio Connector circuit, showing connections for LINE2_VREF, LINE2_R, LINE2_L, FRONT MIC, and various resistors (R343, R344, R346, R347, R348, R349) and capacitors (C420, C421, C422, C363, C364, C396).

Key components and connections:

- LINE2_VREF** (Pin 3): Connected to **BAT54A-S-SOT23** and **C363** (1u/16V/8).
- LINE2_R** (Pin 4): Connected to **C363** (1u/16V/8).
- LINE2_L** (Pin 5): Connected to **C364** (1u/16V/8).
- FRONT MIC** (Pin 1): Connected to **C422** (X 1000p/50V/6) and **R348** (10/4).
- FRONT IO** (Pin 2): Connected to **R343** (22K/4) and **R344** (22K/4).
- FRONT IO** (Pin 6): Connected to **R349** (X_39.2K/4/1) and **C396** (4.7u/10V/8).
- FRONT IO** (Pin 10): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 11): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 12): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 13): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 14): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 15): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 16): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 17): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 18): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 19): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 20): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 21): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 22): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 23): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 24): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 25): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 26): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 27): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 28): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 29): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 30): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 31): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 32): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 33): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 34): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 35): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 36): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 37): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 38): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 39): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 40): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 41): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 42): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 43): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 44): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 45): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 46): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 47): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 48): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 49): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 50): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 51): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 52): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 53): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 54): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 55): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 56): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 57): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 58): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 59): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 60): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 61): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 62): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 63): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 64): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 65): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 66): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 67): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 68): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 69): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 70): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 71): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 72): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 73): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO** (Pin 74): Connected to **R346** (22K/4) and **R347** (22K/4).
- FRONT IO**

Standby POP noise

VCC3_SB

+12V

5V_R

AUX_JD

LINE1_1R

R290 10K/4

R295 1K/4

R293 560K/6

R322 220K/4

R298 10K/4

Q35 2N3904S

Q36 G_N-2N7002_SOT23

SOT23SCD

C389 4.7u/10V/8

D

G

S

SPDIF IN & OUT

The top diagram illustrates the SPDIF-IN circuit. It features a 100k resistor (R320) connected to VCC3, a 10k resistor (R316) connected to ground, a 100k resistor (R43) connected to the input signal, and a 100pF capacitor (C34) connected to ground. The bottom diagram illustrates the SPDIF-OUT circuit. It features a 200k resistor (R48) connected to the output signal, a 100k resistor (R49) connected to ground, a 100pF capacitor (C31) connected to ground, and a 100k resistor (R90) connected to the input signal. Both diagrams show the connection to a JACK-RCA3P_yellow_3 connector and a KBGND ground.

Rear audio jack

ALC880 JACK

AUDIO1

AUDIO_JACK6

CONNECTOR

LINE1_JD

FRONT_JD

MIC1_JD

CEN_JD

SURR_JD

SURRBACK_JD

LINE1 1R

LINE1 1L

LINE_FOUTR

LINE_FOUTL

MIC1_R

MIC1_L

LFE_OUT

CENTER_OUT

SURR_OUTR

SURR_OUTL

SURRBACK_R

SURRBACK_L

C219

C218

C255

C254

C213

C214

C217

C256

C215

C216

C211

C212

D3

D4

D5

D2

E3

E4

E5

E2

F3

F4

F5

F2

A3

A4

A5

A2

B3

B4

B5

B2

C3

C4

C5

C2

LINE-IN3

LINE-IN4

LINE-IN5

LINE-IN2

LINE-OUT3

LINE-OUT4

LINE-OUT5

LINE-OUT2

MIC3

MIC4

MIC5

MIC2

CENTER3

CENTER4

CENTER5

CENTER2

SURROUND3

SURROUND4

SURROUND5

SURROUND2

SURROUND-SIDE3

SURROUND-SIDE4

SURROUND-SIDE5

SURROUND-SIDE2

Line_IN

Line_OUT

MIC_IN

G1

G2

G3

G4

G5

G6

ORANGE

BLACK

GRAY

ALC880 JACK DETECT

The diagram illustrates the pin connections for the ALC880 JACK DETECT feature. It is divided into two main sections: SENSE A and SENSE B.

SENSE A: This section shows four pins connected to a common vertical line on the left. The connections are as follows:

- R284:** Connected to **5.1K/4/1** and **FRONT_JD**.
- R285:** Connected to **10K/4/1** and **LINE1_JD**.
- R282:** Connected to **20K/4/1** and **MIC1_JD**.
- R286:** Connected to **39.2K/4/1** and **SURR_JD**.

SENSE B: This section shows three pins connected to a common vertical line on the left. The connections are as follows:

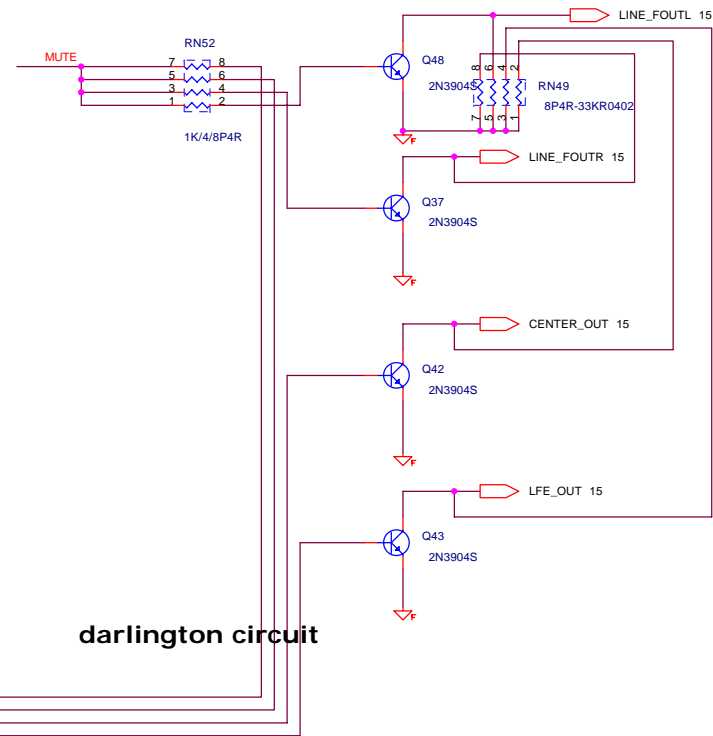
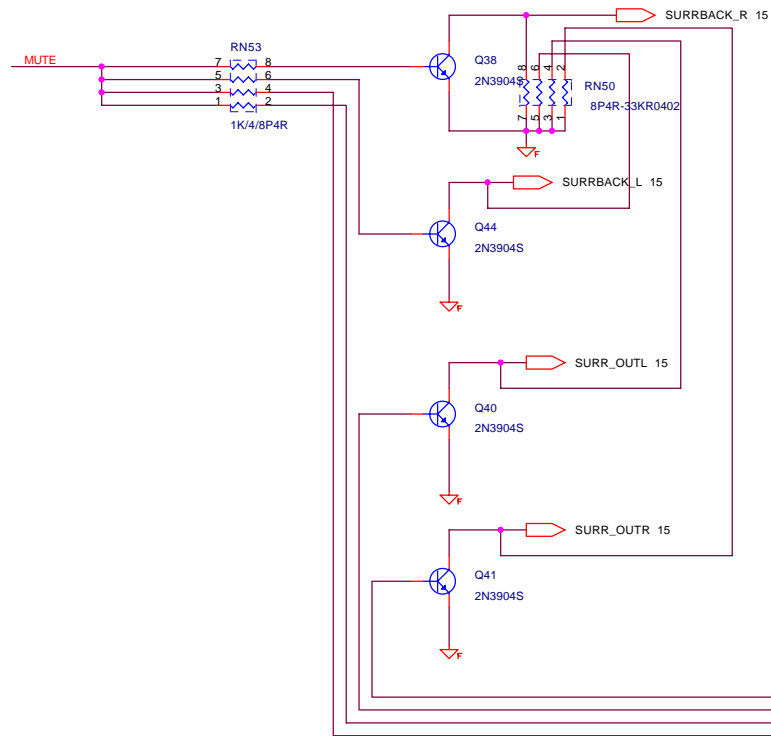
- R318:** Connected to **5.1K/4/1** and **SURRBACK_JD**.
- R317:** Connected to **10K/4/1** and **CEN_JD**.
- CP9:** Connected to **1** and **AZ_FRONT_JD**.

At the bottom, there is a note: **CP9 1 X_COPPER**, indicating that the CP9 pin is connected to the X_COPPER signal.

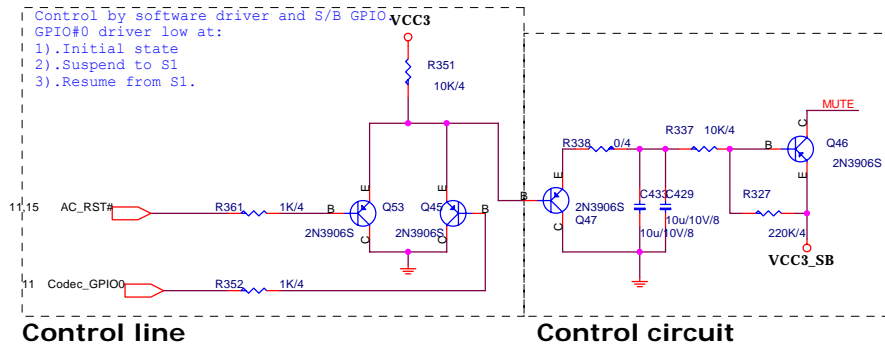
Closer to Codec.

EMI Solution

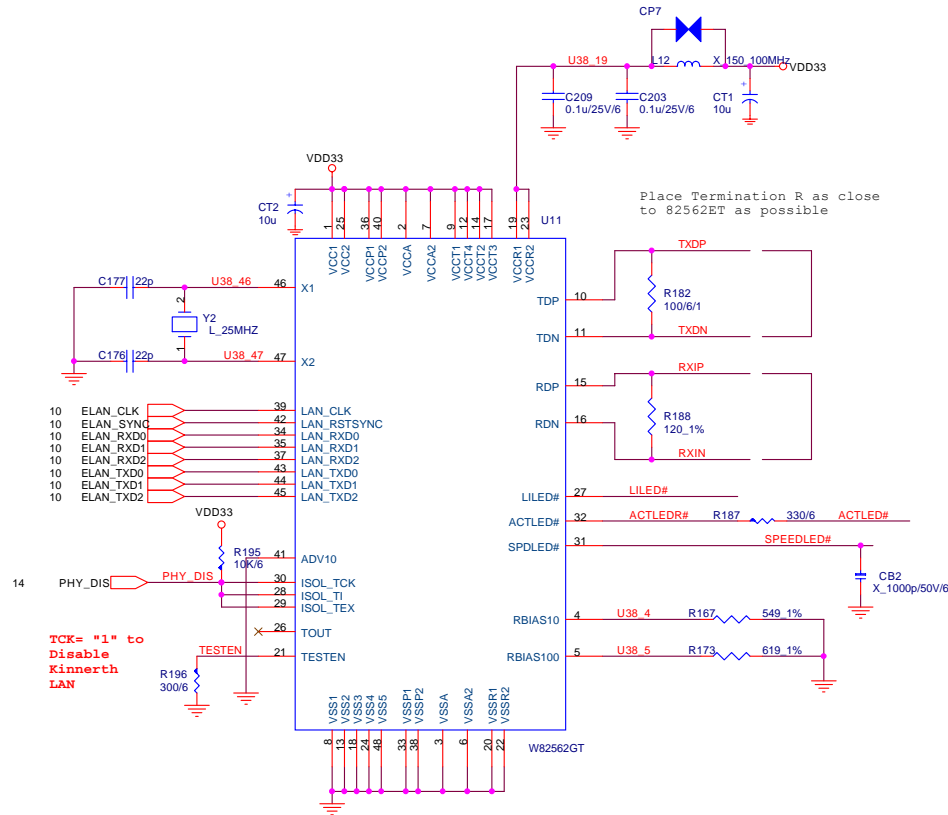
The diagram shows a circuit with two ground symbols (red triangles with horizontal lines) connected by a wire. A resistor, labeled R144_OR, is connected in series with the wire between the two ground symbols.



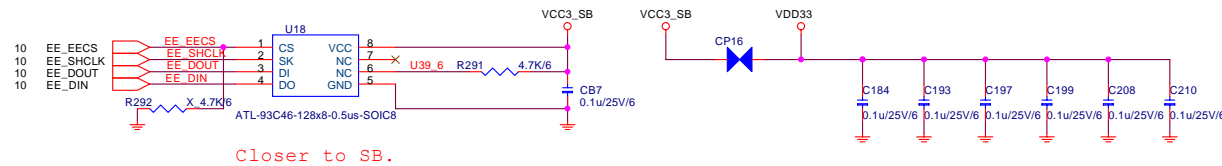
darlington circuit



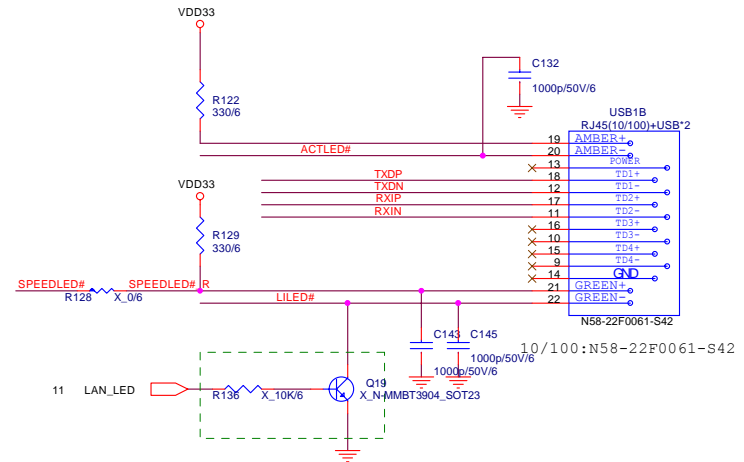
LAN - KINNERITH

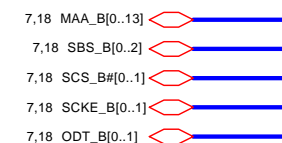
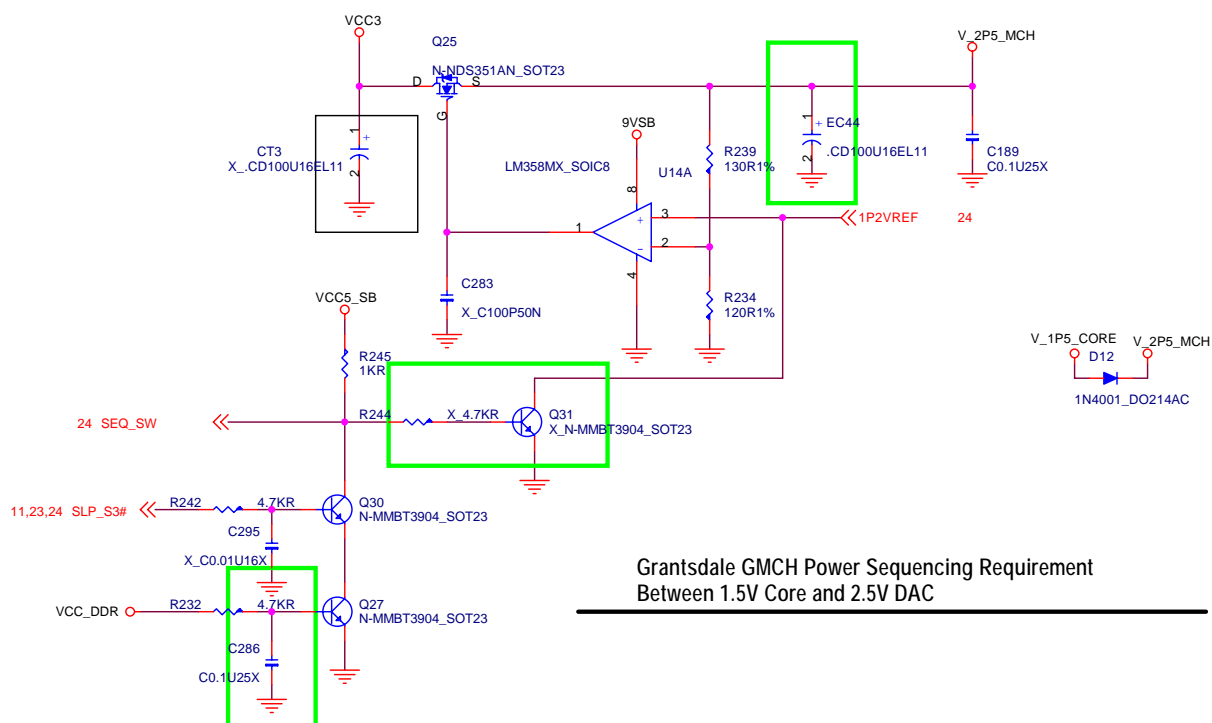
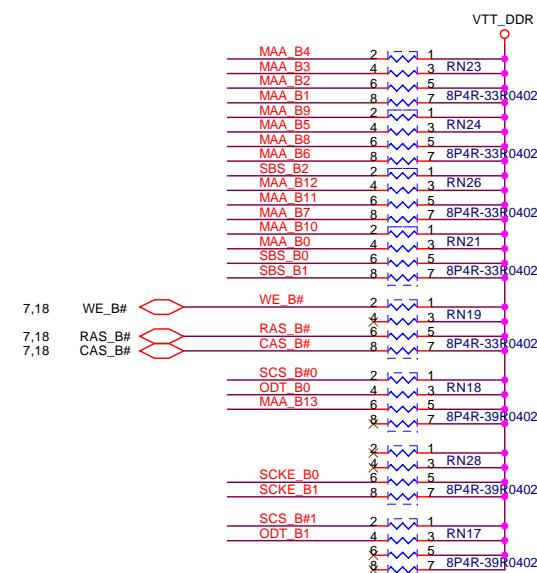
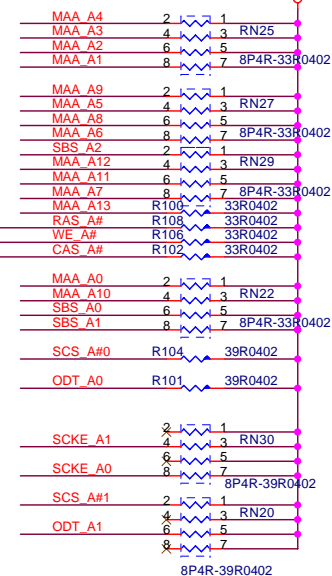
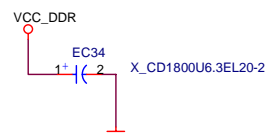
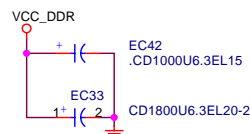
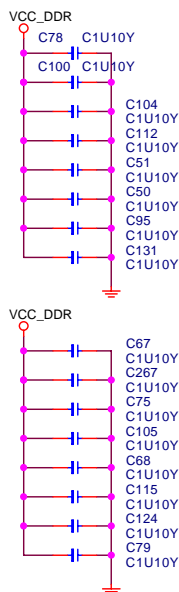
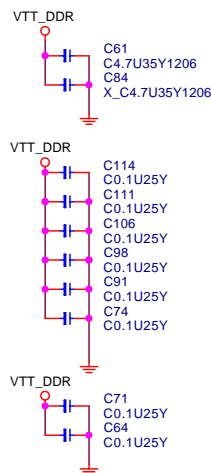
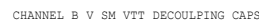


EEPROM



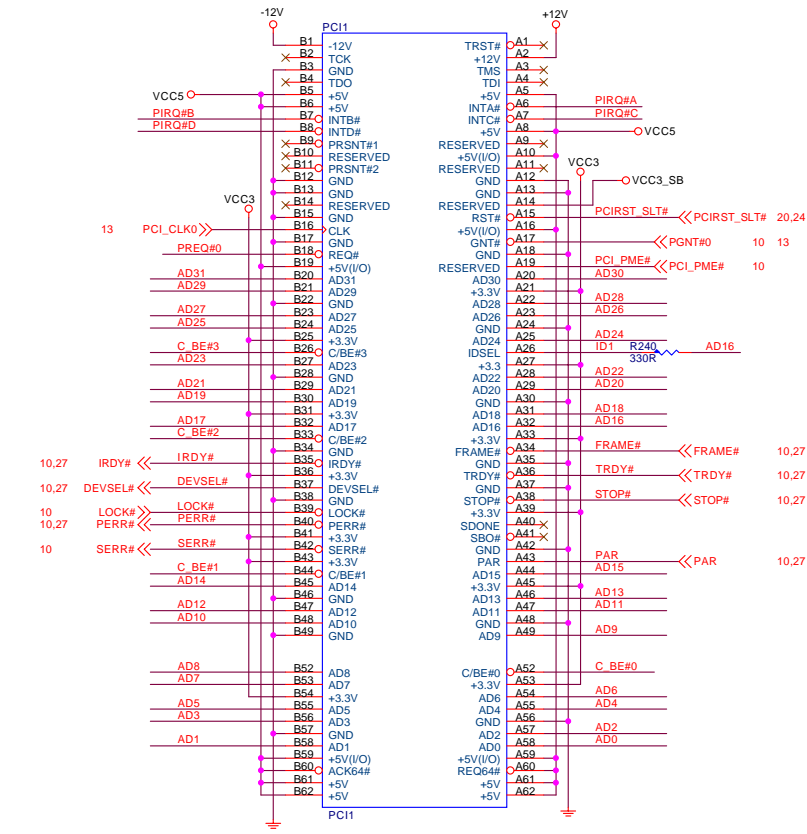
LAN CONNECTOR





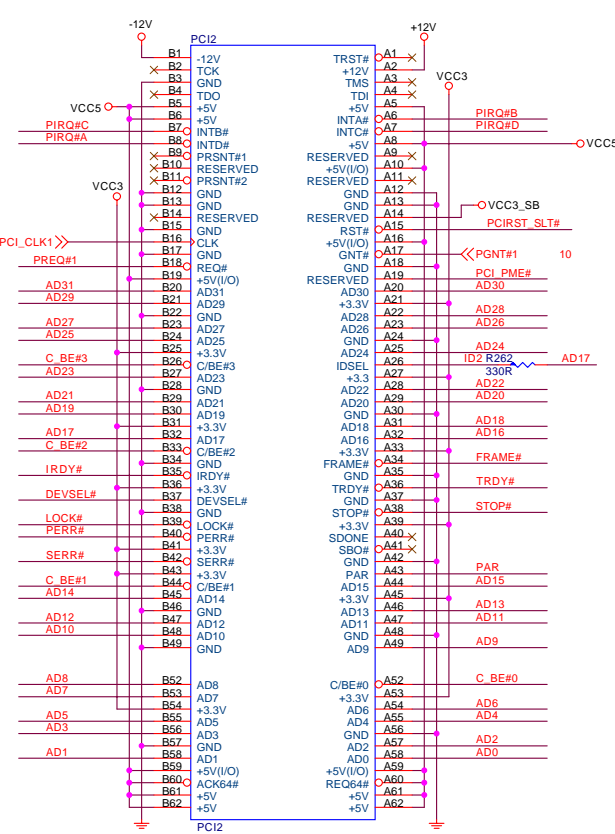
PCI SLOT 1 (PCI VER: 2.2 COMPLY)

PCI SLOT 2 (PCI VER: 2.2 COMPLY)

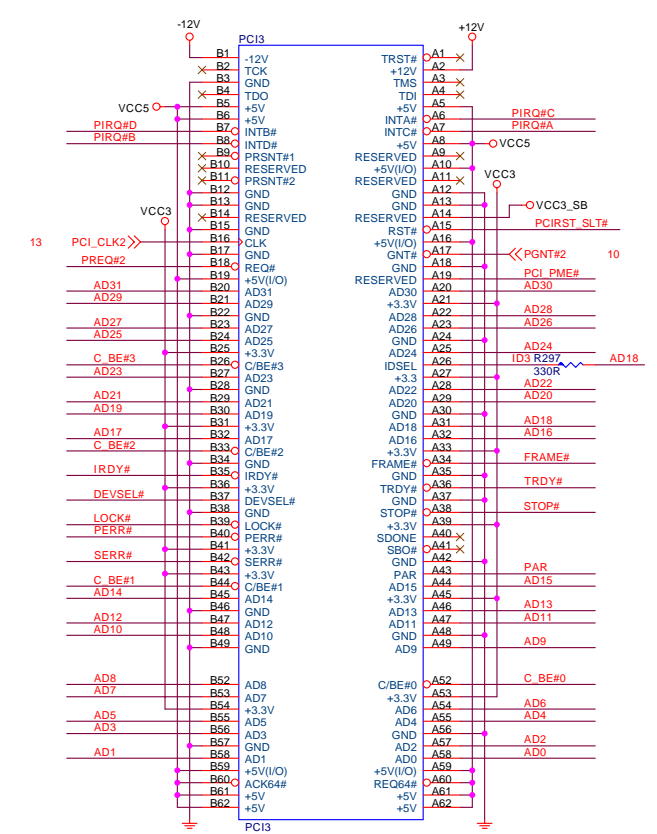


10,27 ADJ[31..0] << ADJ[31..0]
 10,27 C_BE#[3..0] << C_BE#[3..0]

IDSEL = AD16
MASTER = PREQ#0
PIRQ#A

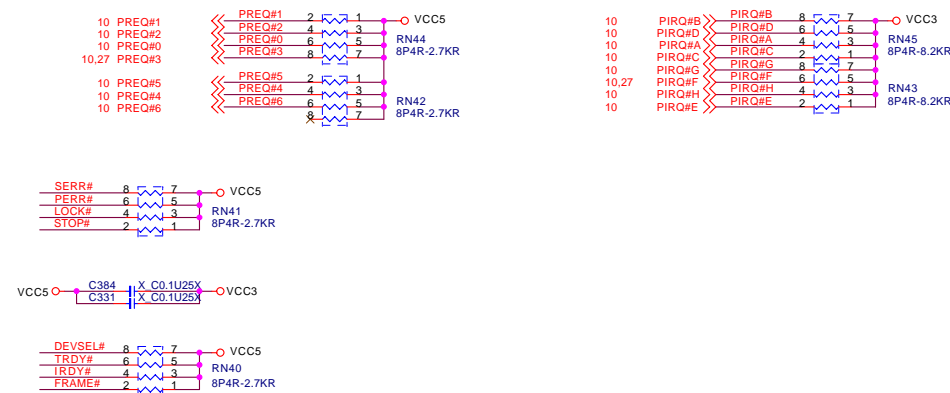


IDSEL = AD17
MASTER = PREQ#1
PIRQ#B

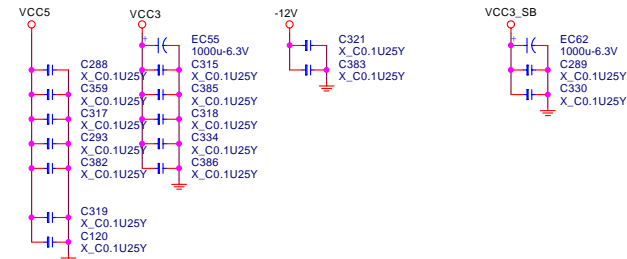


IDSEL = AD18
MASTER = PREQ#2
PIRQ#C

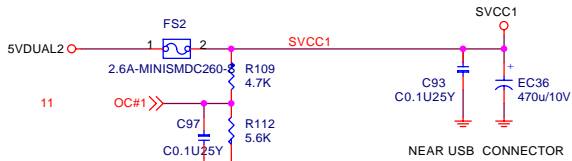
PCI PULL-UP / DOWN RESISTORS



PCI SLOT DECOUPLING CAPACITORS

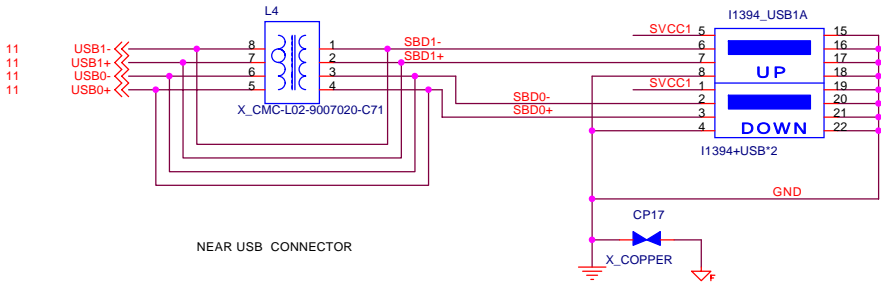


POWER CIRCUIT FOR USB PORT 0,1,2,3 (REAR)

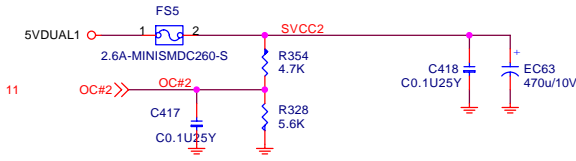


REAR PANEL USB CONNECTOR FOR USB PORT 0,1

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"

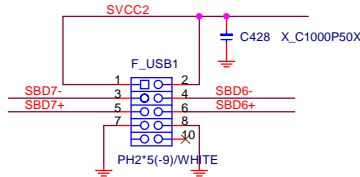
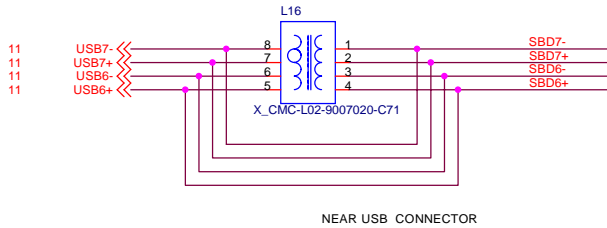


POWER CIRCUIT FOR USB PORT 4,5,6,7 (FRONT)

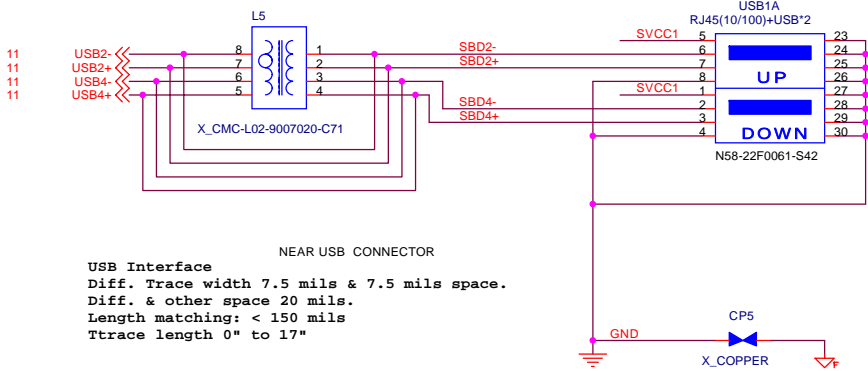


FRONT PANEL USB CONNECTOR FOR USB PORT 6,7

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"

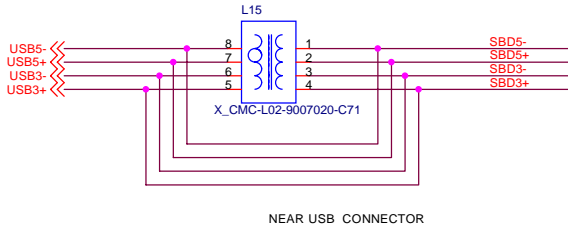


REAR PANEL USB CONNECTOR FOR USB PORT 2,3

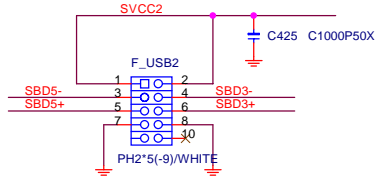


USB Interface
Diff. Trace width 7.5 mils & 7.5 mils space.
Diff. & other space 20 mils.
Length matching: < 150 mils
Ttrace length 0" to 17"

FRONT PANEL USB CONNECTOR FOR USB PORT 4,5

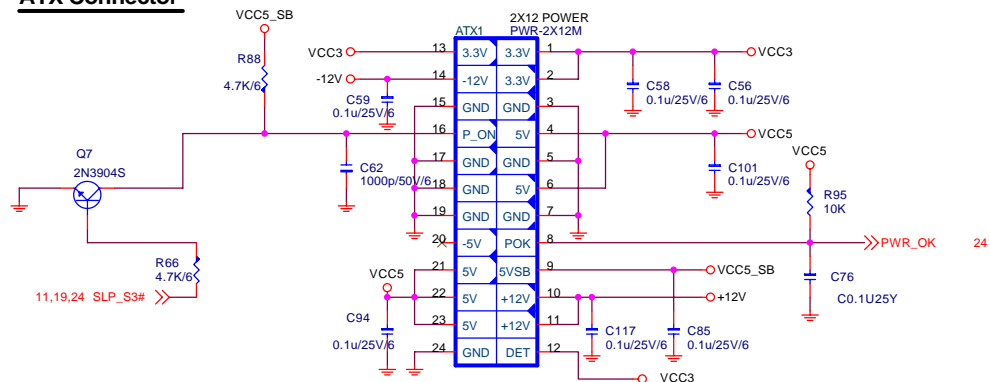


USB Interface
Diff. Trace width 7.5 mils & 7.5 mils space.
Diff. & other space 20 mils.
Length matching: < 150 mils
Ttrace length 0" to 17"

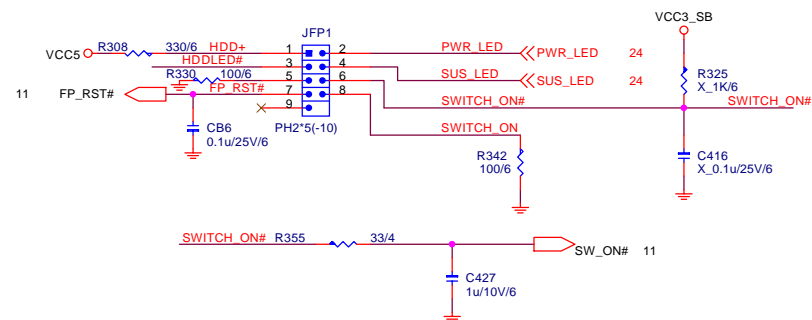


Title			USB Connectors
Size	Document Number	MS-7174H1	Rev 0B
Date:	Wednesday, March 02, 2005	Sheet	22 of 31

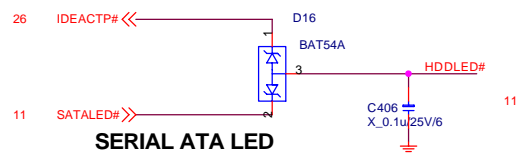
ATX Connector



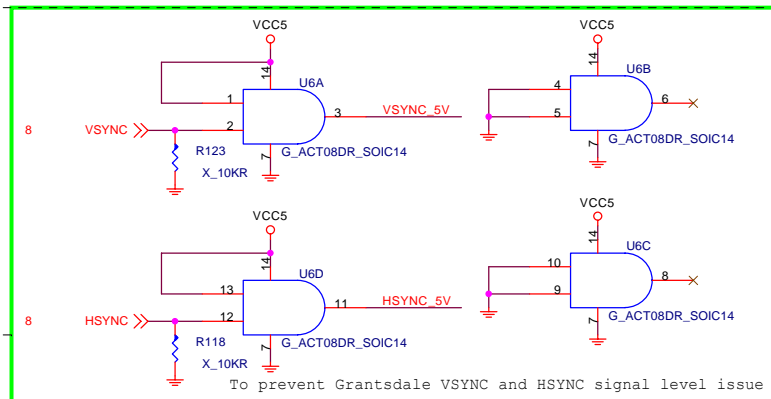
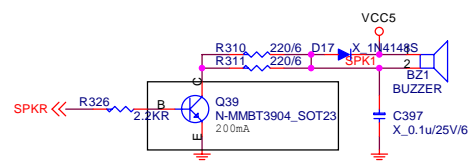
Intel Front Panel



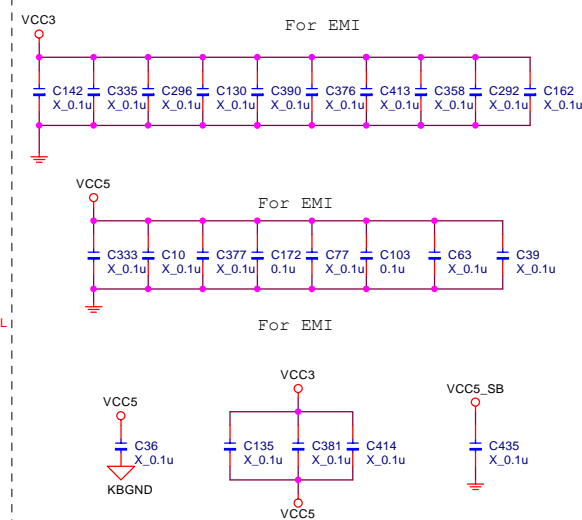
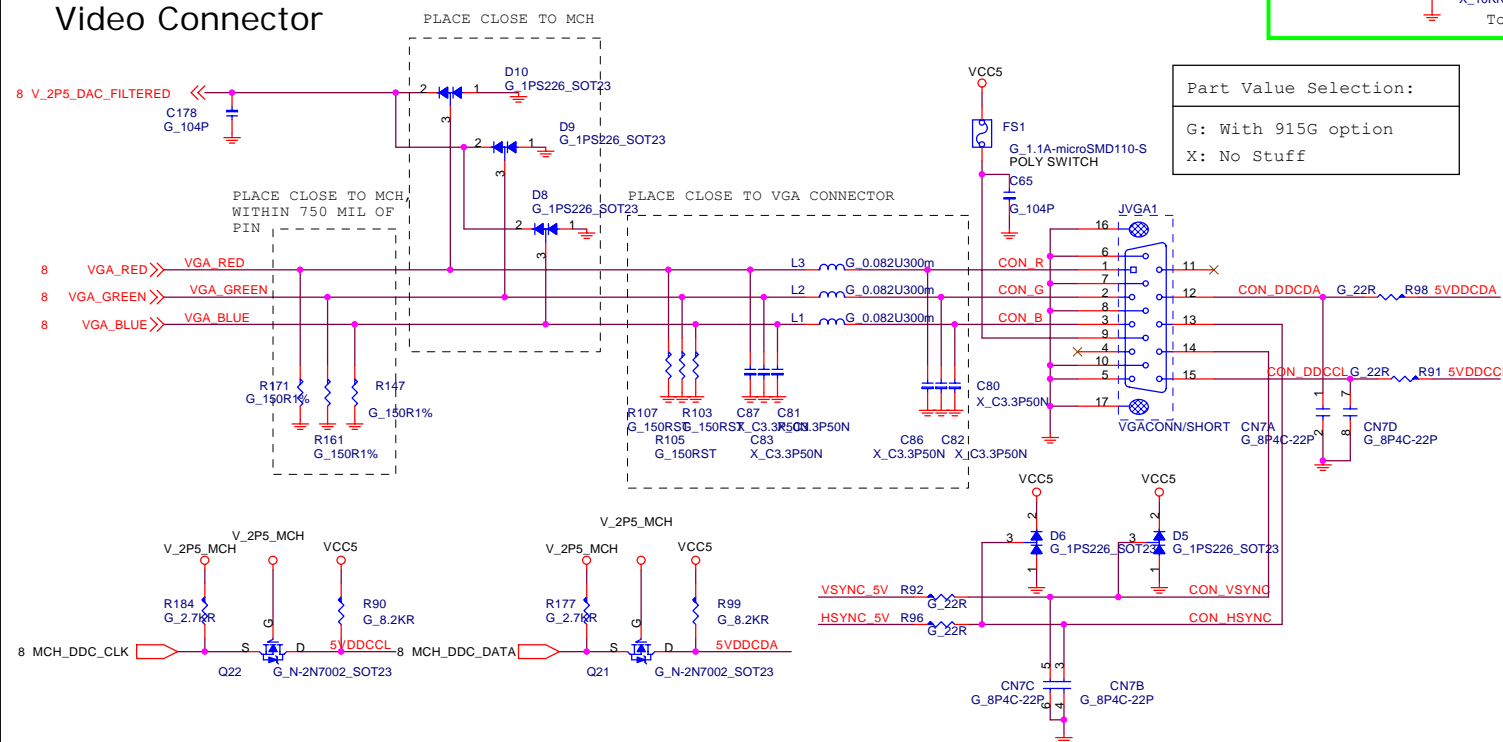
IDE LED



BUZZER



Video Connector



ACPI Controller

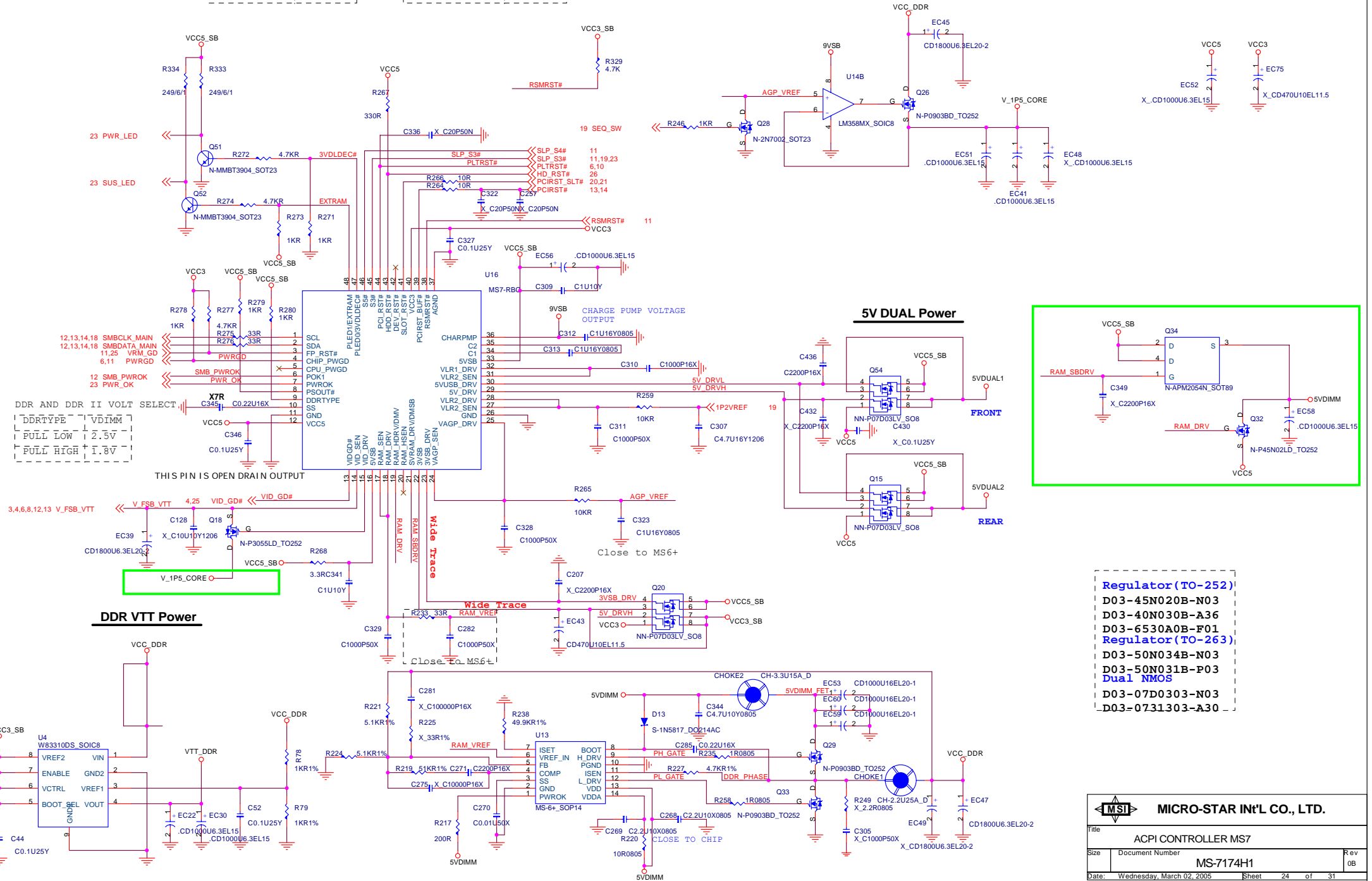
3VSB MODE SELECT

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)

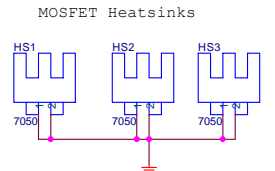
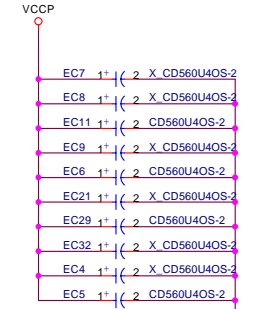
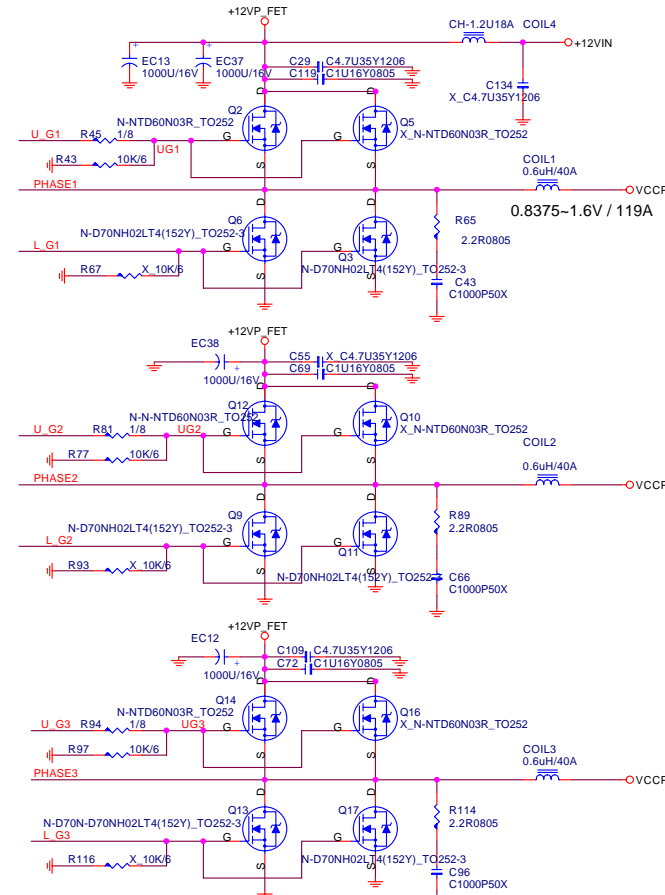
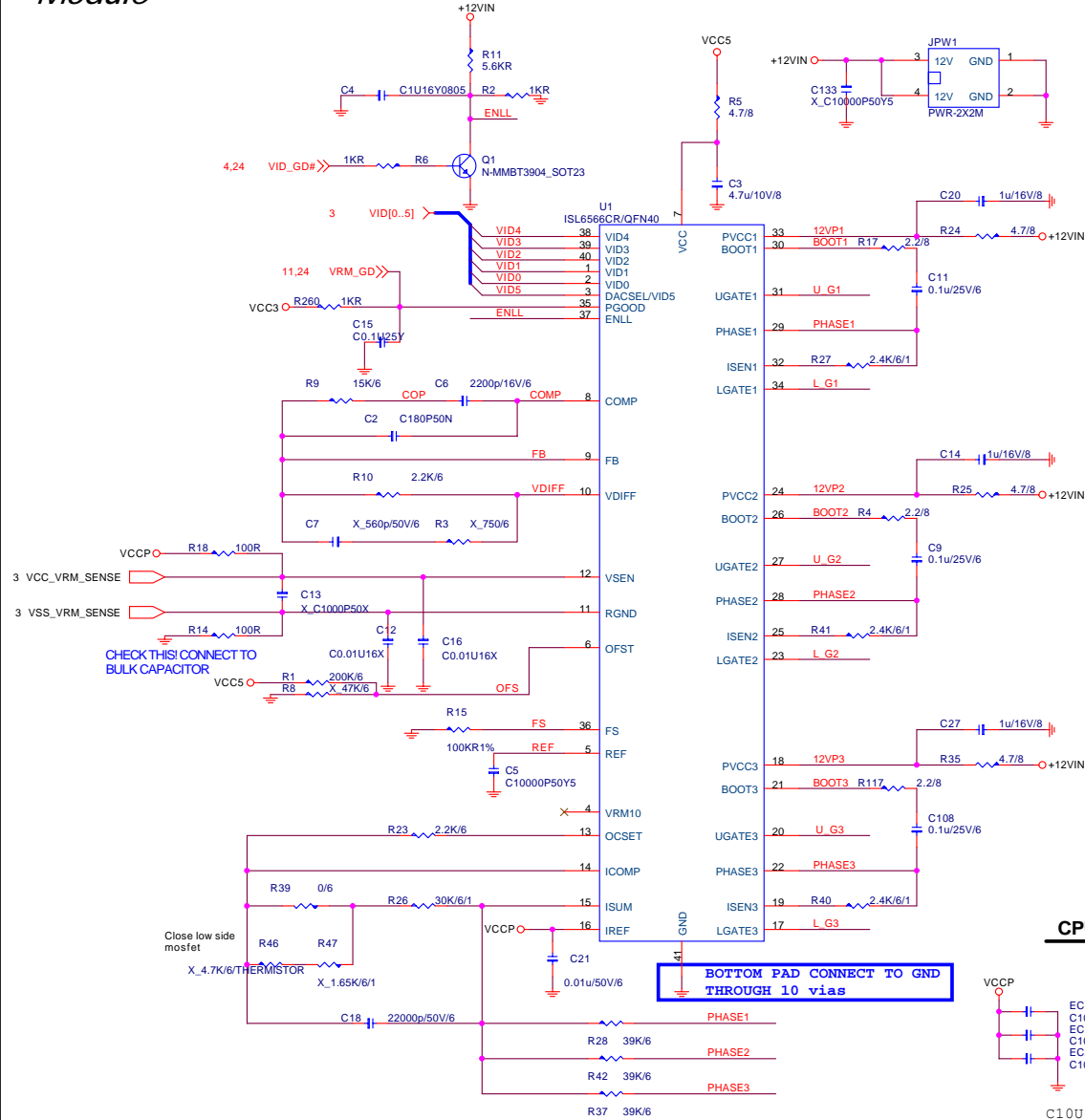
D03-45N020B-N03
D03-40N030B-A36
D03-6530A0B-F01
Regulator (TO-263)
D03-50N034B-N03
D03-50N031B-P03
Dual NMOS
D03-07D0303-N03
D03-0731303-A30

Voltage Regular Module

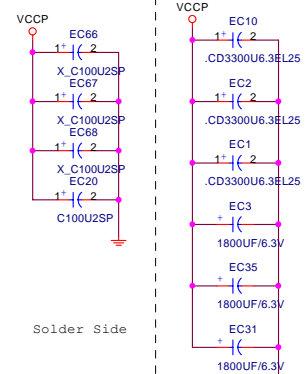
IPF06N03LA Rds(on)=8.7mΩ(@4.5V,30A), Vgs(on)=1.2~2V, Id=50A, Ciss=3110pf, Qg=10nC, Vds=25V, Vgs=±20V
C100U2SP ESR<13mΩ, Ripple cur.<2.7A, LC<12uA, 105C
.CD3300U6.3EL25 ESR<12mΩ, Ripplecur.<2800mA, 105C, longlife3000hrs, KZGSeries
560u_2.5V ESR=6mΩ, Ripplecur.=4400mA, Lc.<500uA, 105C/2000hrs
1800UF/6.3V ESR<12mΩ, Ripplecur<2350mA, 105C, longlife change from 2000hrs to 3000hrs ,KZJ series
0.6uH/40A Isat=40A, Rdc=1.2m ohm, PEW wire
CH-1.2U18A 1.2u/20%, Dip-2/vertical17.5mm, 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

OS-CON
Capacitors

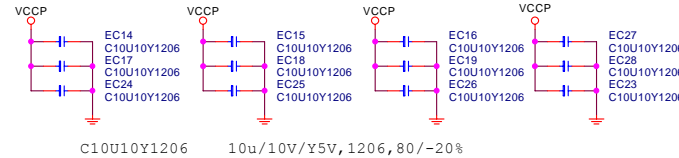


SP Capacitors EL Capacitors



Solder Side

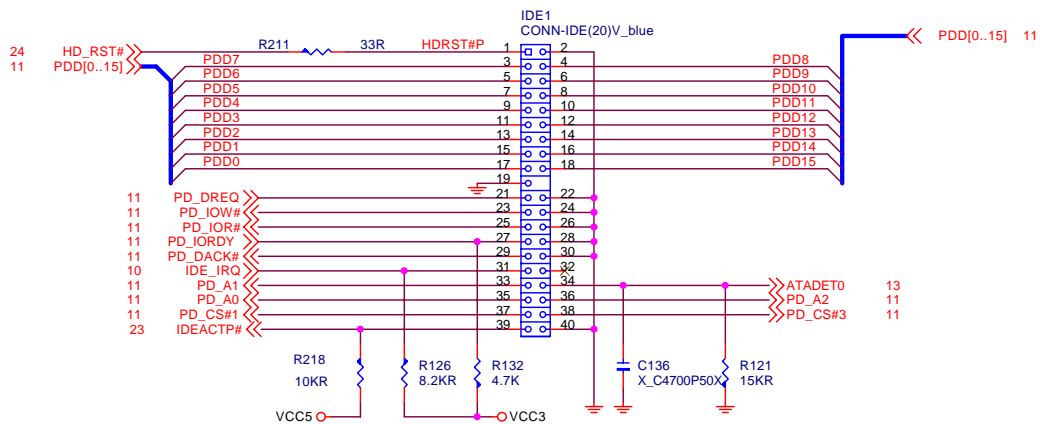
CPU DECOUPLING CAPACITORS



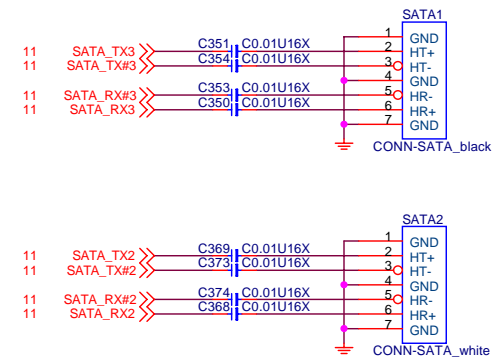
Place these caps within socket cavity

MICRO-STAR IN'L CO., LTD.			
Title VRM 10.1 - Intersil 6565ACV 3 Phase			
Size	Document Number	MS-7174H1	
Date: Wednesday, March 02, 2005	Sheet	25	of 31

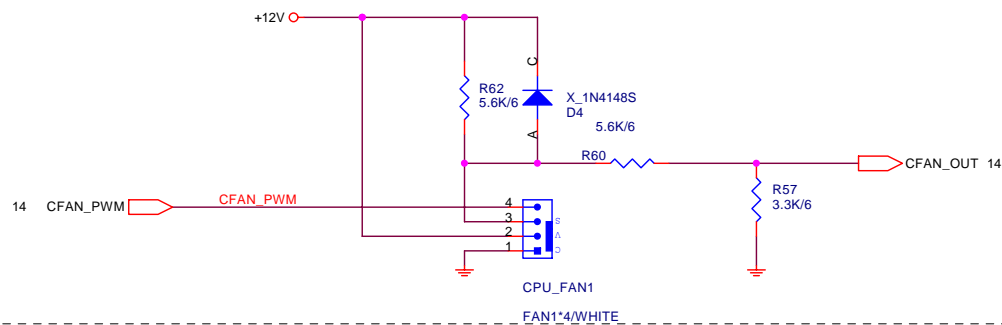
ATA 33/66/100 IDE Connectors



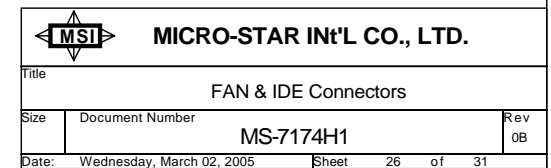
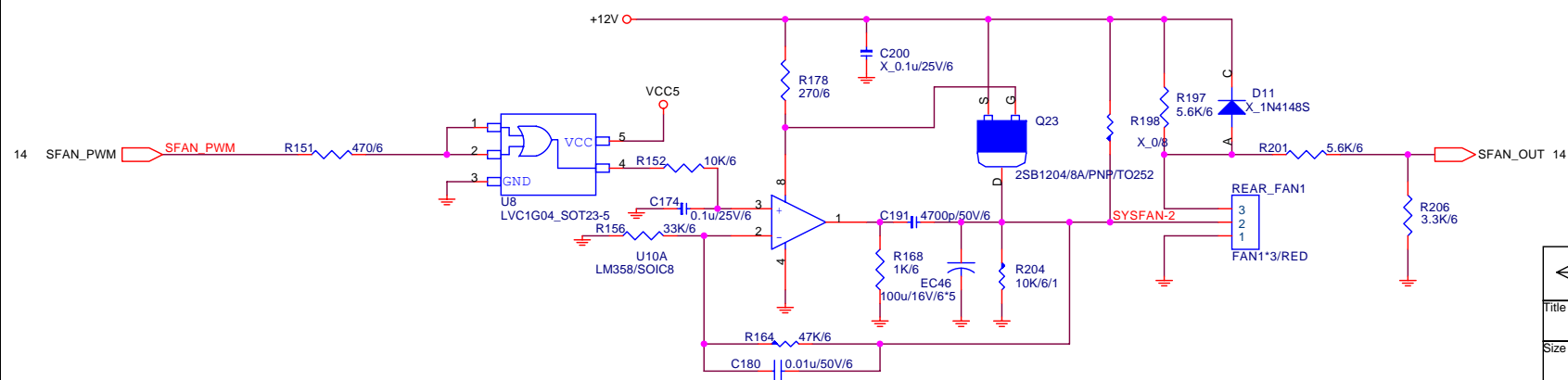
SERIAL ATA CONNECTOR BLOCK



CPU FAN



SYSTEM FAN



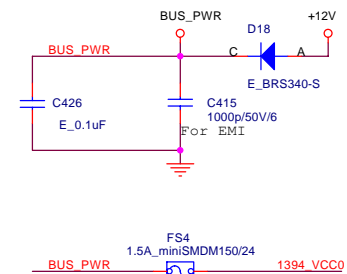
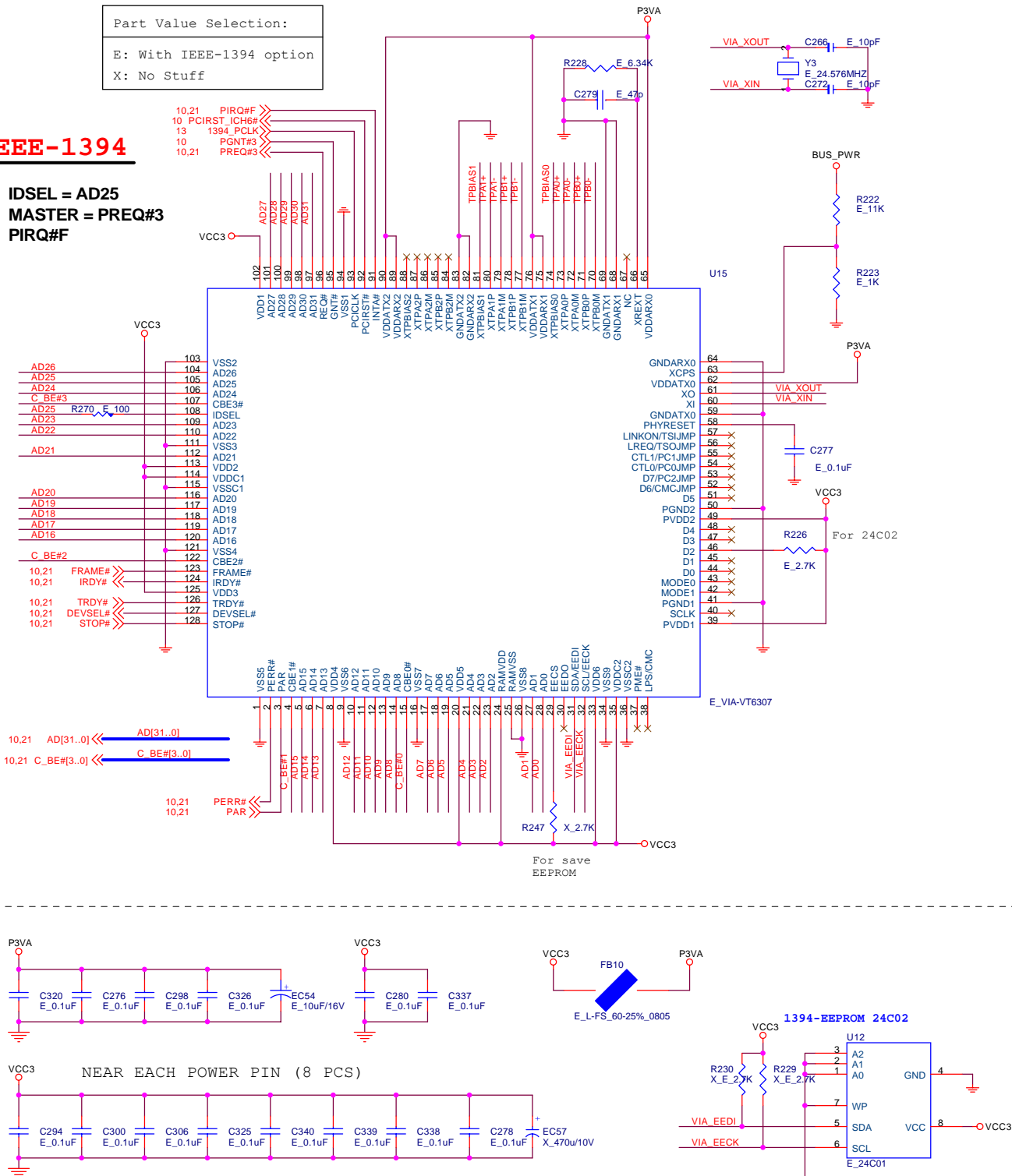
X: No Stuff

IEEE-1394

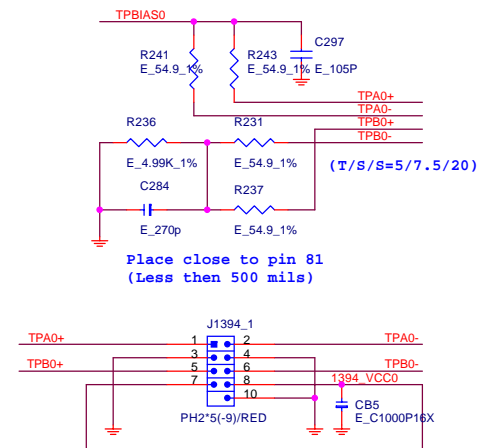
```

IDSEL = AD25
MASTER = PREQ#3
PIRQ#F

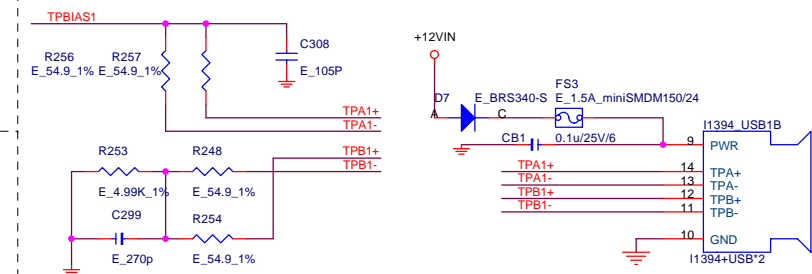
```



FRONT 1394 PORT



Rear 1394 PORT



(T/S/S=5/7.5/20)

Place close to pin 74
(Less then 500 mils)

TC = 0-55°C, VCC = 3.3V+/-10%, GND = 0V

Symbol	Parameter	Typ	Max	Unit	Condition
I _{CC}	Power Supply Current-VCC	89	107	mA	S400, two ports transmitting

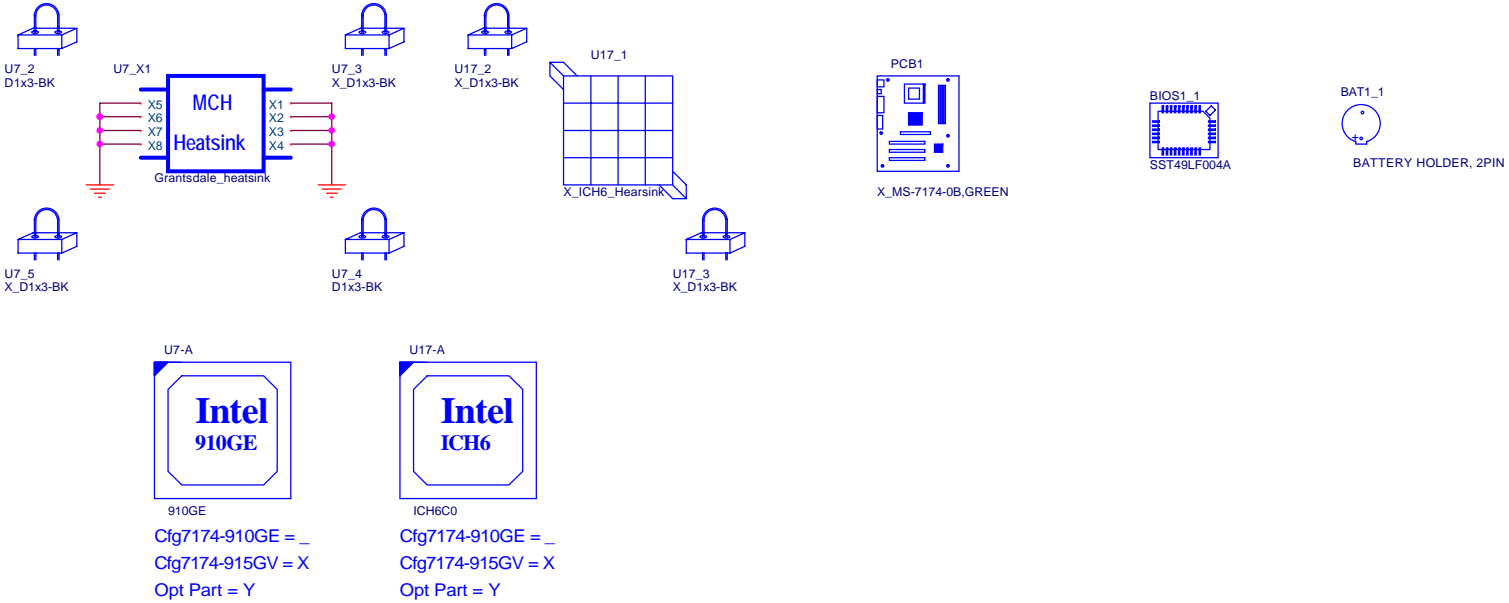
 **MSI**
Look for the Micromaster **MICRO-START INT'L CO., LTD.**

Title	VIA-6307 IEEE1394 Controller
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Size A3	Document Number MS-7174H1	Rev 0B
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Date: Wednesday, March 02, 2005		Sheet 27 of 31	
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MANUAL PART



Model option table

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