

SERVICE MANUAL

LCD PC



LCD Computer

L285P

Service Manual

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About this Manual

This manual is intended for service personnel who have completed sufficient training to undertake the maintenance and inspection of personal computers.

It is organized to allow you to look up basic information for servicing and/or upgrading components of the LCD PC.

The following information is included:

Chapter 1, Introduction, provides general information about the location of system elements and their specifications.

Chapter 2, Disassembly, provides step-by-step instructions for disassembling parts and subsystems and how to upgrade elements of the system.

Appendix A, Part Lists

Appendix B, Schematic Diagrams

Preface

Related Documents

You may also need to consult the following manual for additional information:

User's Manual on CD

This describes the LCD PC's features and the procedures for operating the computer and its ROM-based setup program. It also describes the installation and operation of the utility programs provided with the LCD PC.

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1: Introduction

Overview

This manual covers the information you need to service or upgrade the L285P LCD computer. Information about operating the computer (e.g. getting started, and the *Setup* utility) is in the *User's Manual*. Information about drivers (e.g. VGA & audio) is also found in *User's Manual*. That manual is shipped with the computer.

Operating systems (e.g. *DOS*, *Windows 9x*, *Windows NT 4.0*, *Windows 2000*, *Windows XP*, *OS/2 Warp*, *UNIX*, etc.) have their own manuals as do application software (e.g. word processing and database programs). If you have questions about those programs, you should consult those manuals.

The L285P LCD computer is designed to be upgradeable. See “**Disassembly**” on page 2 - 1 for a detailed description of the upgrade procedures for each specific component. Please note the warning and safety information indicated by the “” symbol.

The balance of this chapter reviews the computer’s technical specifications and features.

Introduction

System Specifications

Processor

- Intel Pentium®4 2.0/ 2.2/ 2.4/ 2.5 GHz (400 MHz front side bus)
- CPU Package - mPGA478 pin
- 512KB L2 cache (on die)
- Intel Pentium®4SFF 1.6/ 1.8/ 2.0/ 2.2/ 2.3GHz (400MHz front side bus)
- CPU Package - mPGA478 pin
- 512KB L2 cache (on die)
- Intel Pentium®4 1.5/ 1.6/ 1.7/ 1.8 GHz (400 MHz front side bus)
- CPU Package - mPGA478 pin
- 256KB L2 cache (on die)
- Intel Celeron® 1.8 GHz (400 MHz front side bus)
- CPU Package - mPGA478 pin
- 256KB L2 cache (on die)

Core Logic Chip

- Intel 845

BIOS

- 2MB Flash ROM Phoenix BIOS
- Supports Plug and Play, ACPI 2.0

System Memory

- Two DIMM sockets supporting DDR 200/266 MHz
- Expandable memory up to 1GB (64/128/256/512 DDR DIMM modules)

Video

- ATI Mobility 7-P
- 32MB or 64MB of DDR video memory on board (factory option)
- Integrated 128-bit 2D/3D Graphics Accelerator
 - AGP 2.0 with 4x Architecture
 - Hardware Motion Compensation, IDCT for DVD Play

LCD

- Color TFT 15" XGA LCD Panel supporting a resolution of 1024*768/256K color depth

Audio

- AC97' 2.2 compatible
- SoundBlaster™ and Windows Sound System™ compatible
- Two Built-In speakers (3W)
- Three audio jacks for headphone-out, line-in, and microphone-in

Interface

- One serial port (16550A compatible, 9 pin shell, up to 115Kbps)
- One parallel port (25pin shell, SPP/Bi-Direction/ECP/EPP mode support)
- One external CRT port (15-pin D-sub) compliant DC1.1
- Two PS/2 ports
- Four USB ports
- One RJ-45 jack for 100M/10M Ethernet LAN
- One RJ-11 port for Modem
- One IEEE 1394 port (Mini-PCI I/F for IEEE 1394 Module option)

PC Card Sockets

- Supports two Type II slots or one Type III PCMCIA slot (CardBus support)

Introduction

Storage

- One 3.5", 1.44MB 3-mode Floppy Disk Drive
- One 3.5", 25.4mm height Hard Disk Drive (Ultra-66/100 I/F Support)
- One bay for the optional 12.7mm height 24X speed ATAPI CD-ROM, or 8X CD-RW, or 8X DVD-ROM, or 8X DVD-ROM & CD-RW Combo.

Modem

- Removable Internal 56K Data/Fax modem

LAN

- On board 10/100Mbps base auto-detection

Keyboard

- Multimedia/Internet instant keyboard

Power

- Internal switching power supply
- Full range AC adapter - AC in 90~264V, 160W

Power Management

- ACPI Support: S1, S3, S4, S5

Support for WFM Ver 2.0

- SMBIOS 2.2, DMI, ACPI, WOL, WOR

Indicators

- LED indicators (HDD/FDD/CD Device activity, Power)

Physical Dimensions

- 384mm (H) * 369 mm (W) * 188mm (D)

Weight

- 8.8Kg

Fan Bearing Type:

- Two ball bearings

Security

- BIOS password
- Kensington Lock

Optional

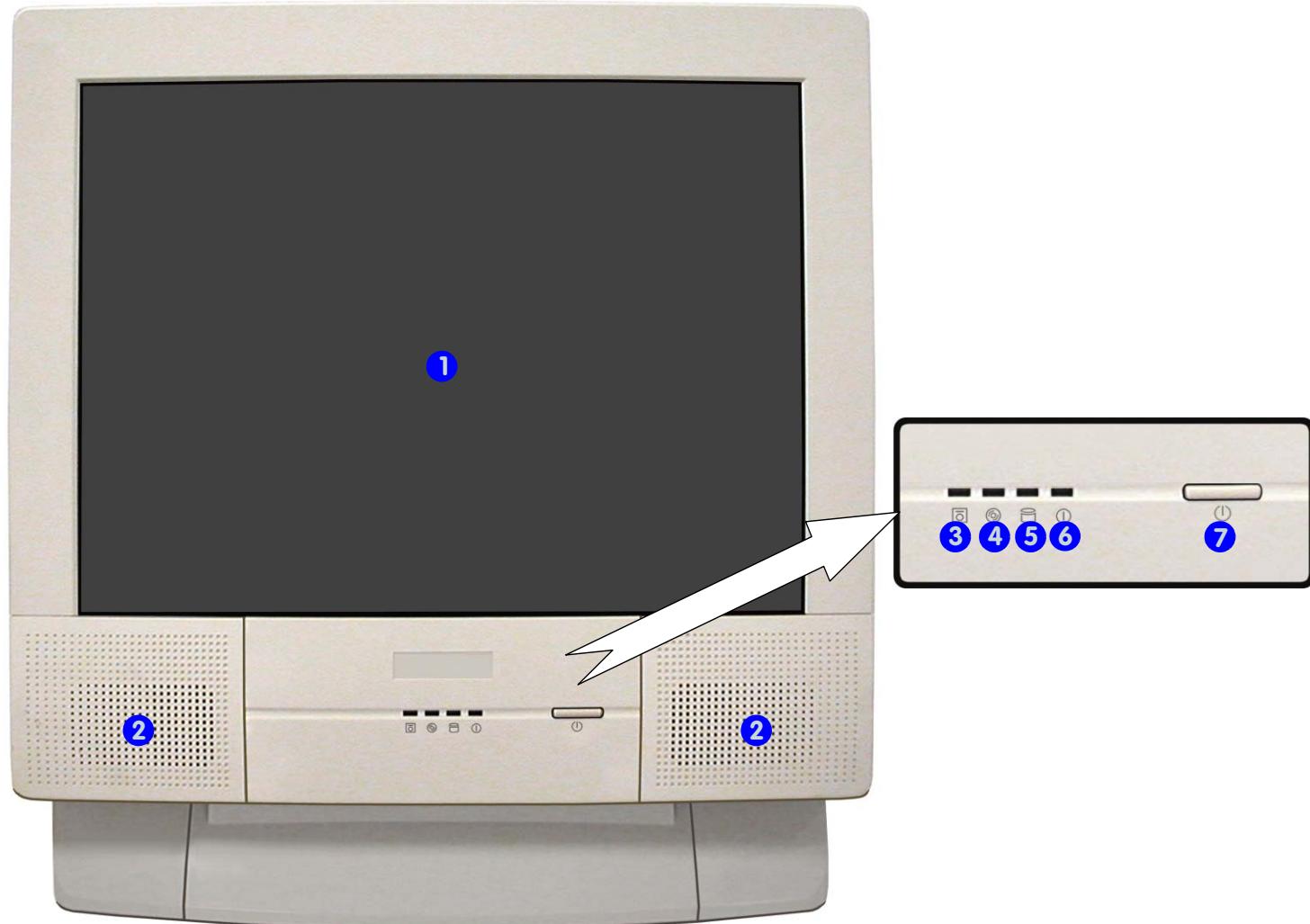
- MiniPCI I/F (Type IIIb) for IEEE 1394 Module
- MDC Module

Introduction

Figure 1 - 1
Front View

1. LCD
2. Speakers
3. FDD Activity LED
4. CD Device Activity LED
5. HDD Activity LED
6. Power LED
7. Power Button

External Locator - Front View



External Location - Left & Right Side Views

Left



Right

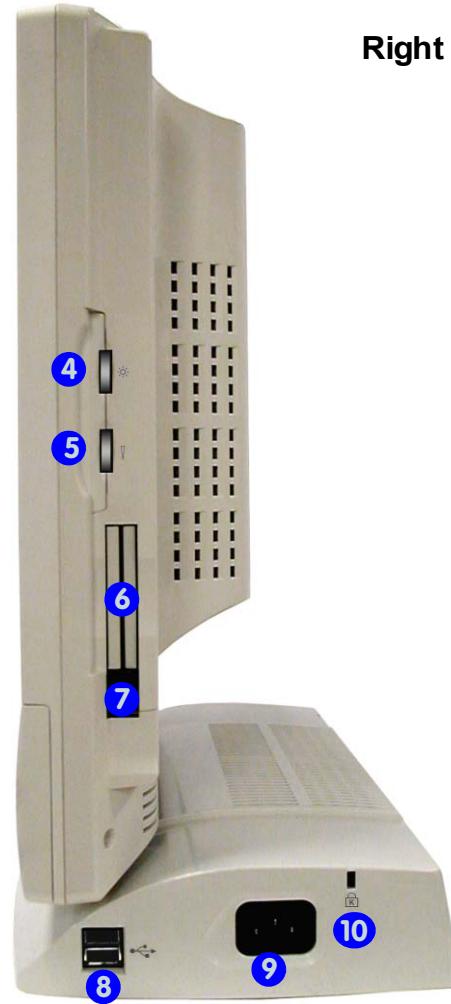


Figure 1 - 2
Left & Right Views

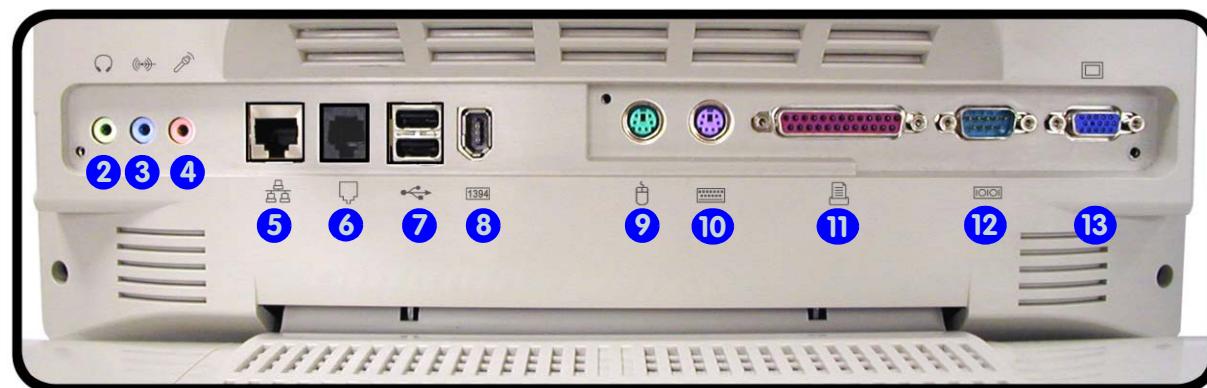
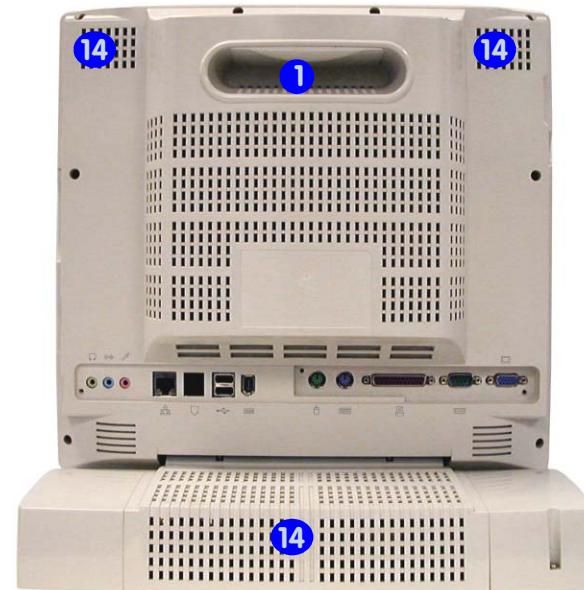
1. Floppy Disk Drive
2. CD Device
3. Hard Disk Drive (HDD) Bay
4. LCD Brightness Control Knob
5. Volume Control Knob
6. Dual PC Card Slots
7. PC Card Eject Buttons
8. Dual USB Ports
9. AC Power-In
10. Kensington Lock Slot

Introduction

Figure 1 - 3
Rear View

1. Carrying Handle
2. Headphone-Out Jack
3. Line-In Jack
4. Microphone-In Jack
5. RJ-45 LAN Jack
6. RJ-11 Phone Jack
7. Dual USB Ports
8. Unpowered - IEEE 1394 Port
9. PS/2 Mouse Port
10. PS/2 Keyboard Port
11. Printer/Parallel Port
12. Serial Port
13. External Monitor (CRT) Port
14. Vents

External Locator - Rear View



2: Disassembly

Overview

This chapter provides step-by-step instructions for disassembling parts and subsystems. When it comes to reassembly, reverse the procedures (unless otherwise indicated).

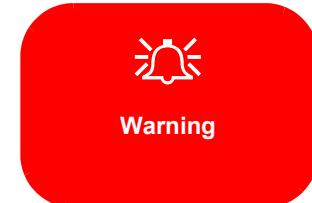
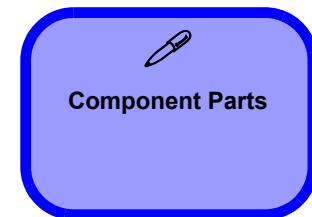
We suggest you completely review any procedure before you take the computer apart.

Procedures such as upgrading/replacing the RAM, CD device and hard disk are included in the User's Manual but are repeated here for your convenience.

To make the disassembly process easier each section may have a box in the page margin. Information contained under the figure # will give a synopsis of the sequence of procedures involved in the disassembly procedure. A box with a  lists the relevant parts you will have after the disassembly process is complete. **Note:** The parts listed will be for the disassembly procedure listed ONLY, and not any previous disassembly step(s) required. Refer to the part list for the previous disassembly procedure. The amount of screws you should be left with will be listed here also.

A box with a  will provide any possible helpful information. A box with a  contains warnings.

An example of these types of boxes are shown in the sidebar.



Disassembly

NOTE: All disassembly procedures assume that the system is turned **OFF**, and disconnected from any power supply, and that all peripheral cables are disconnected (including telephone lines and network cables).

Maintenance Tools

The following tools are recommended when working on the notebook PC:

- M3 Philips-head screwdriver
- M2.5 Philips-head screwdriver (magnetized)
- M2 Philips-head screwdriver
- Small flat-head screwdriver
- Pair of needle-nose pliers
- Anti-static wrist-strap

Connections

Connections within the computer are one of four types:

Locking collar sockets for ribbon connectors

To release these connectors, use a small flat-head screwdriver to gently pry the locking collar away from its base. When replacing the connection, make sure the connector is oriented in the same way. The pin1 side is usually not indicated.

Pressure sockets for multi-wire connectors

To release this connector type, grasp it at its head and gently rock it from side to side as you pull it out. Do not pull on the wires themselves. When replacing the connection, do not try to force it. The socket only fits one way.

Pressure sockets for ribbon connectors

To release these connectors, use a small pair of needle-nose pliers to gently lift the connector away from its socket. When replacing the connection, make sure the connector is oriented in the same way. The pin1 side is usually not indicated.

Board-to-board or multi-pin sockets

To separate the boards, gently rock them from side to side as you pull them apart. If the connection is very tight, use a small flat-head screwdriver - use just enough force to start.

Maintenance Precautions

The following precautions are a reminder. To avoid personal injury or damage to the computer while performing a removal and/or replacement job, take the following precautions:

1. **Don't drop it.** Perform your repairs and/or upgrades on a stable surface. If the computer falls, the case and other components could be damaged.
2. **Don't overheat it.** Note the proximity of any heating elements. Keep the computer out of direct sunlight.
3. **Avoid interference.** Note the proximity of any high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage components and/or data. You should also monitor the position of magnetized tools (i.e. screwdrivers).
4. **Keep it dry.** This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged.
5. **Be careful with power.** Avoid accidental shocks, discharges or explosions.
 - Before removing or servicing any part from the computer, turn the computer off and detach any power supplies.
 - When you want to unplug the power cord or any cable/wire, be sure to disconnect it by the plug head. Do not pull on the wire.
6. **Peripherals** – Turn off and detach any peripherals. **Beware of static discharge.** ICs, such as the CPU and main support chips, are vulnerable to static electricity. Before handling any part in the computer, discharge any static electricity inside the computer. When handling a printed circuit board, do not use gloves or other materials which allow static electricity buildup. We suggest that you use an anti-static wrist strap instead.
7. **Beware of corrosion.** As you perform your job, avoid touching any connector leads. Even the cleanest hands produce oils which can attract corrosive elements.
8. **Keep your work environment clean.** Tobacco smoke, dust or other air-born particulate matter is often attracted to charged surfaces, reducing performance.
9. **Keep track of the components.** When removing or replacing any part, be careful not to leave small parts, such as screws, loose inside the computer.

Cleaning

Do not apply cleaner directly to the computer, use a soft clean cloth.

Do not use volatile (petroleum distillates) or abrasive cleaners on any part of the computer.



Power Safety Warning

Before you undertake any upgrade procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines). It is advisable to also remove your battery in order to prevent accidentally turning the machine on.

Disassembly Steps

The following lists the disassembly steps, and on which page to find the related information. **PLEASE PERFORM THE DISASSEMBLY STEPS IN THE ORDER INDICATED.**

To remove the hard disk drive assembly:

- | | |
|--|------------|
| 1. Remove the hard disk drive assembly | page 2 - 5 |
|--|------------|

To remove the system memory:

- | | |
|------------------------------|------------|
| 1. Remove the LCD back cover | page 2 - 6 |
| 2. Remove the system memory | page 2 - 6 |

To remove the CPU:

- | | |
|------------------------------|------------|
| 1. Remove the LCD back cover | page 2 - 6 |
| 2. Remove the CPU | page 2 - 8 |

Removing the Hard Disk Drive Assembly

1. Turn the computer **OFF** and turn it around so that you may comfortably access the left side.
2. Remove screw **2** from the HDD Bay **1** (**Figure 2 - 1a**).
3. Carefully pull the HDD Assembly out from the bay (**Figure 2 - 1b**) and disconnect the IDE cable **3**, and power cable **4** (**Figure 2 - 1c**).
4. Remove screws **5** - **14** (**Figure 2 - 1d and 1e**) from the assembly, and slide the hard disk **15** out of the case **16**.

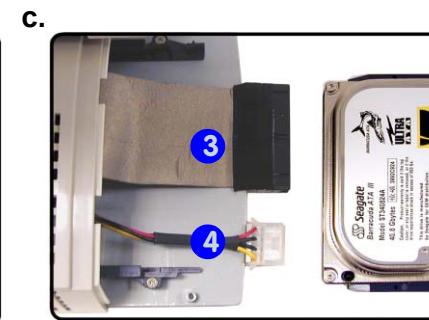
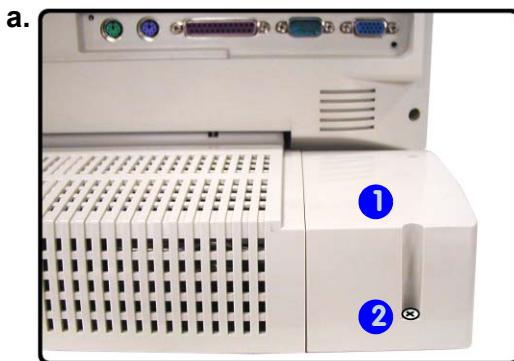


Figure 2 - 1
Hard Disk
Removal
Sequence

- a. Remove the screw from the HDD Bay.
- b. Slide the HDD assembly in the direction of the arrow.
- c. Disconnect the IDE and power cables.
- d. Remove the screws from the assembly and slide the HDD out of the case.

15. HDD
16. HDD case
• 11 Screws

Disassembly

Figure 2 - 2

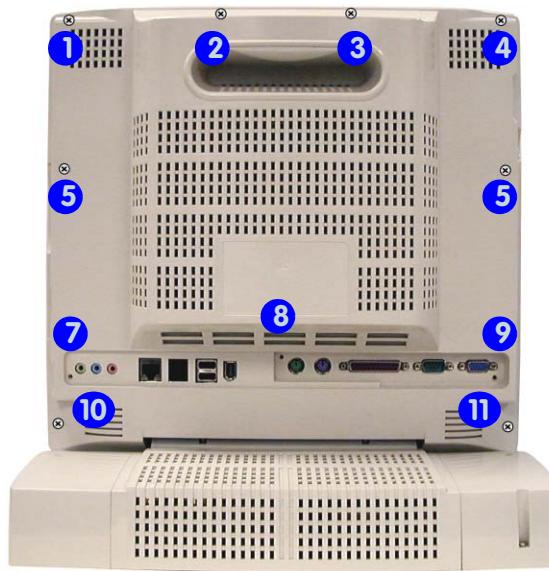
Memory Removal Sequence

- a. Remove the screws from the LCD back cover.
- b. Lift the cover out and set it aside.
- c. The memory socket will now be visible.

Removing the System Memory

1. Turn **OFF** the computer and place it with its LCD display facing down on a clean, dry, level surface.
2. Remove screws **1** - **11** (Figure 2 - 2a) from the rear of the LCD back cover **12** (Figure 2 - 2b) up towards the top of the computer.
3. Carefully remove the LCD back cover **12** from the main unit and set it aside.

a.



b.



12. Rear Cover

• 11 Screws

4. The memory sockets will not be visible at this point **1** (**Figure 2 - 3a**) in the mainboard.
5. For each module you want to replace, gently pull the two latches **2** and **3** (**Figure 2 - 3b**) toward the sides of the socket to release the module.
6. The module **4** (**Figure 2 - 3c**) will pop-up, and you can remove it.
7. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.



Figure 2 - 3
Memory Removal Sequence (cont'd)

- a. Pull the latch(es) on the memory sockets to release the module(s).
- b. When the module pops up, lift it out.

4. Memory module(s)



Contact Warning

Be careful not to touch the metal pins on the module's connecting edge. Even the cleanest hands have oils which can attract particles, and degrade the module's performance.

Disassembly

Figure 2 - 4
CPU Removal Sequence

- a. Release the latches from the top of the CPU heat sink and fan unit.
- b. Remove the power cable and lift the fan unit away.

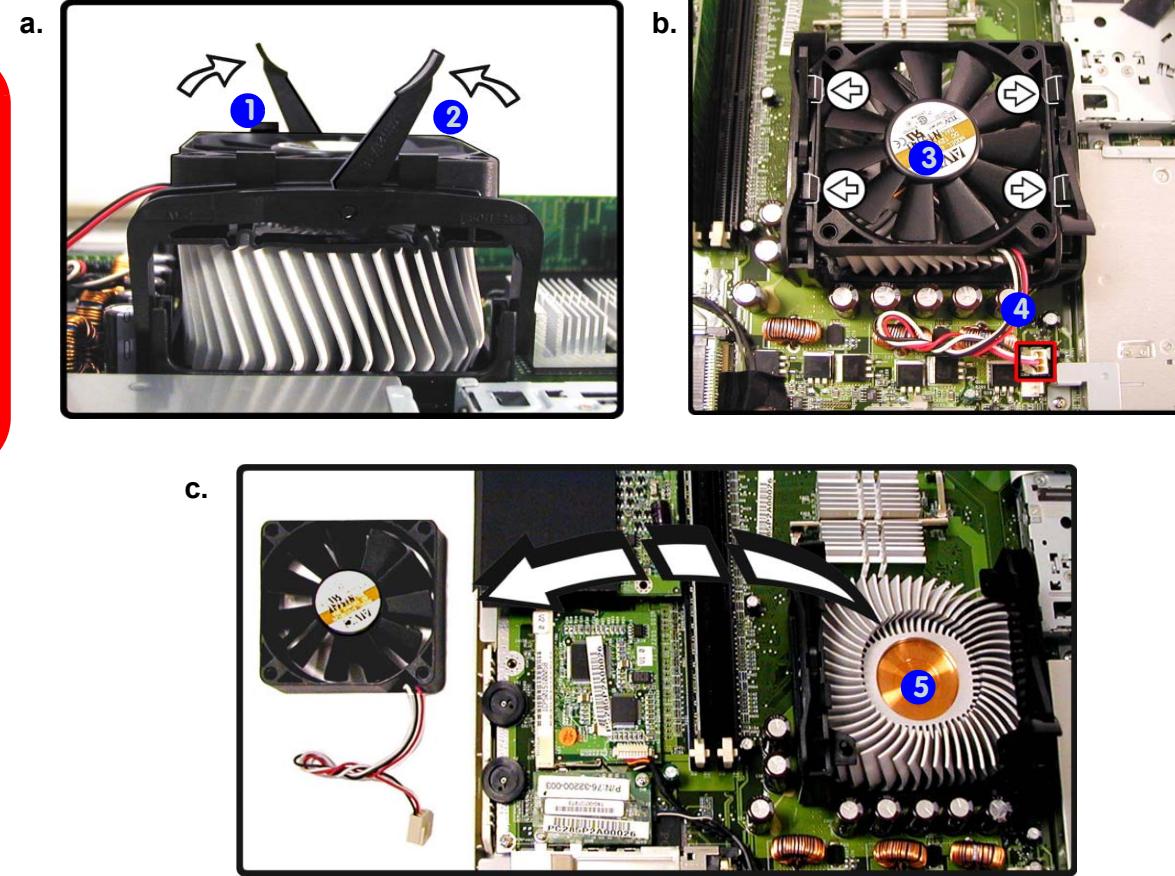


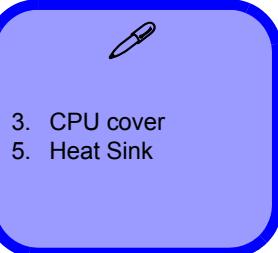
Caution

The heat sink, and CPU area in general, contains parts which are subject to high temperatures - Please allow the area time to cool before removing these parts).

Removing the CPU

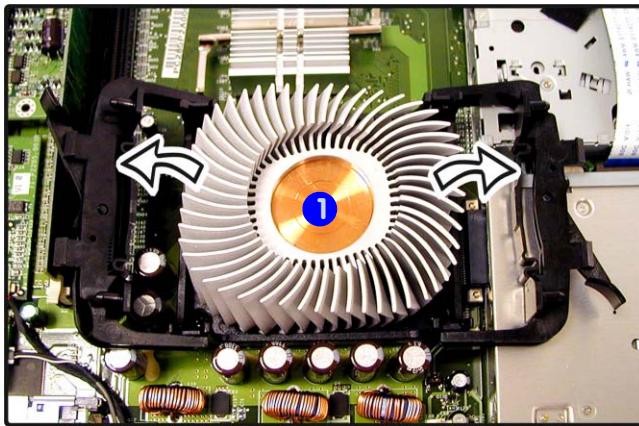
1. Follow the sequence of steps 1 to 3 as illustrated in “Removing the System Memory” on page 2 - 6 to reveal the CPU heat sink and fan unit **③** in **Figure 2 - 4a**.
2. Release the latches from the top of the CPU heat sink and fan unit **①** - **②** as indicated in **Figure 2 - 4a**.
3. Remove the power cable **④** from the board and lift the fan unit away.



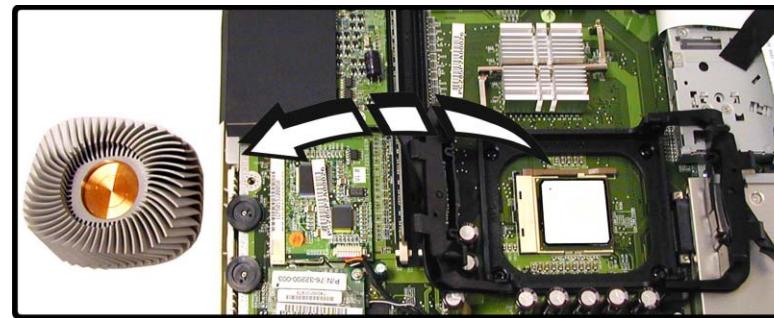
- 
3. CPU cover
 5. Heat Sink

4. Release the heat sink ① as indicated in **Figure 2 - 5a.**, and remove it.
5. Lift latch ② in the direction indicated in **Figure 2 - 5a** to unlock the CPU.
6. Carefully (it may be hot) lift the CPU ③ up out of the socket.
7. When re-inserting the CPU pay careful attention to the pin alignment, it will fit only one way (don't force it!)

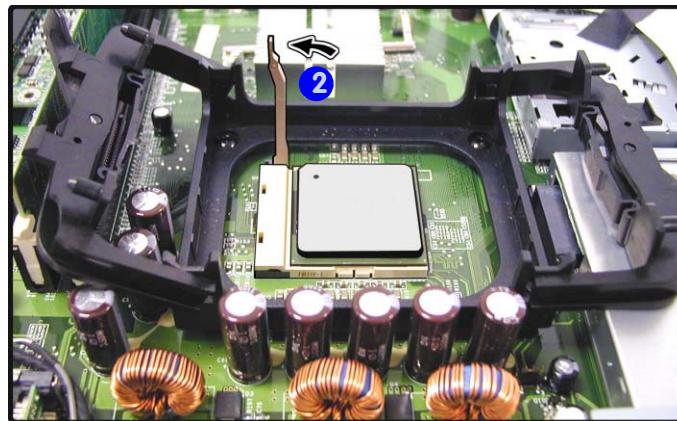
a.



b.



c.



d.

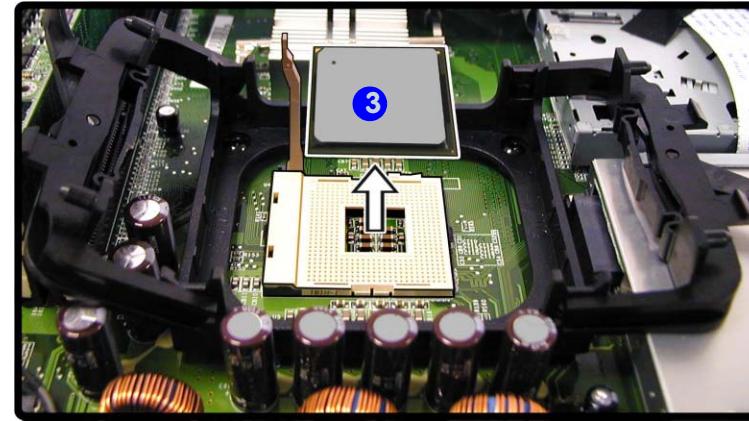


Figure 2 - 5
**CPU Removal
Sequence
(cont'd)**

- a. Release the heat sink and remove it.
- b. Lift the latch to unlock the CPU.
- c. Lift the CPU out of the socket.

1. Heat sink
3. CPU

2. Disassembly

Disassembly

Appendix A: Part Lists

This appendix breaks down the LCD PC's construction into a series of illustrations. The component part numbers are indicated in the tables opposite the drawings.

Note: This section indicates the *manufacturer's* part numbers. Your organization may use a different system, so be sure to cross-check any relevant documentation.

Note: Some assemblies may have parts in common (especially screws). However, the part lists DO NOT indicate the total number of duplicated parts used.

Note: Be sure to check any update notices. The parts shown in these illustrations are appropriate for the system at the time of publication. Over the product life, some parts may be improved or re-configured, resulting in *new* part numbers.

Part Lists**Part List Illustration Location**

The following table indicates where to find the appropriate part list illustration.

Table 1
**Part List Illustration
Location**

Part	Page #
Base-1	page A - 3
Back	page A - 4
LCD Front	page A - 5
Floppy Disk Drive	page A - 6
Hard Disk Drive	page A - 7
TEAC CD-ROM	page A - 8
SAMSUNG CD-ROM	page A - 9
SAMSUNG DVD-ROM	page A - 10
TOSHIBA DVD-ROM	page A - 11
KME Combo	page A - 12
SAMSUNG-TOSHIBA Combo	page A - 13
KME CD-RW Drive	page A - 14

Base-1 (L285P)

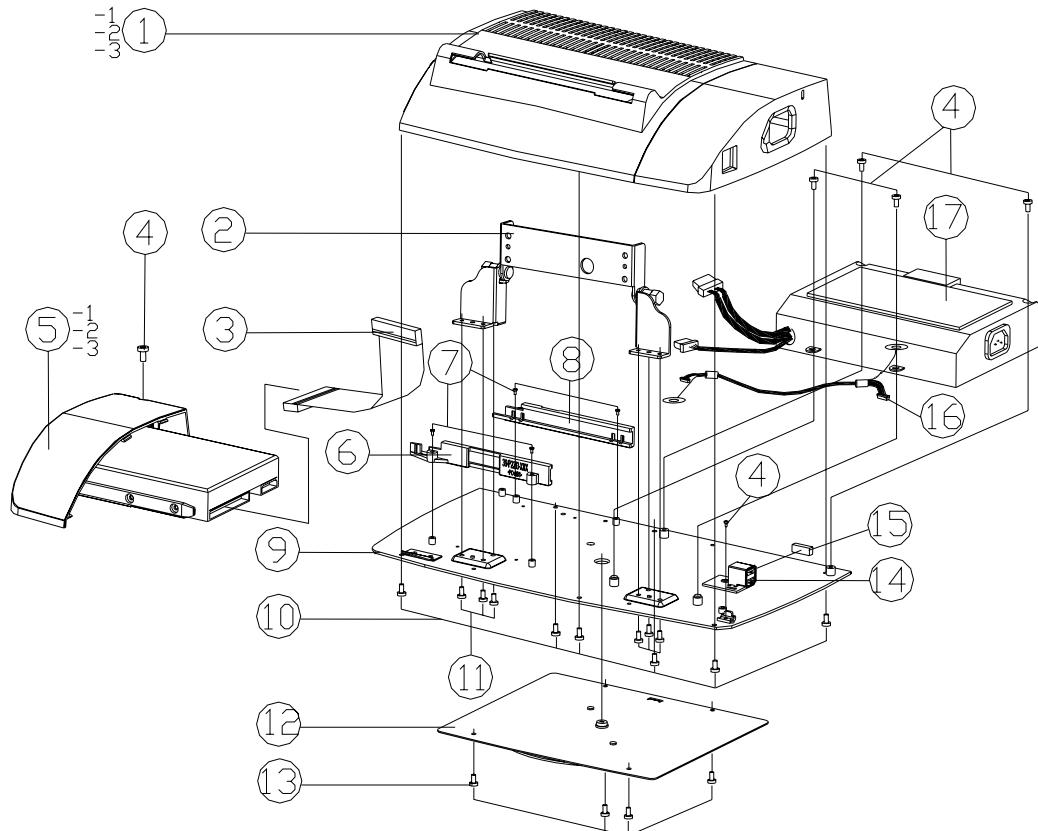
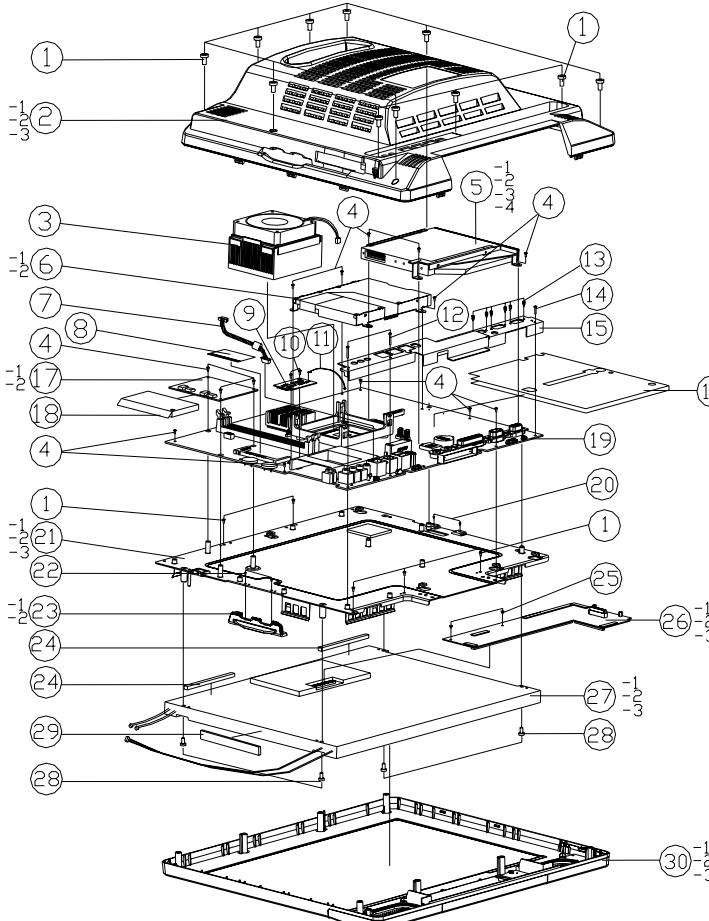


Figure 1
Base-1 (L285P)

ITEM	PART NAME	PART NO	REMARK
1-1	BASE COVER+BRACKET MODULE L285P	39-P5003-011	
1-2	BASE COVER MODULE L285PA	39-P5103-011	
1-3	BASE COVER MODULE L285PB	39-P5203-011	
2	HINGE MODULE SUS LP200	79-P220Y-014	
3	FLAT CABLE FOR HDD 40P LP260	43-P2601-010	
4	SCREW M3×6×0.5P BIND HEAD NI-PL	35-41130-6R0	
5-1	HDD COVER (W/O HDD) ASSY L285P	79-P5021-010	
5-2	HDD COVER (W/O HDD) ASSY L285PA	79-P5121-010	
5-3	HDD COVER (W/O HDD) ASSY L285PB	79-P5221-010	
6	HDD HOLDER (B) PC/ABS LP200	39-P2213-001	
7	SCREW M3×6L K1 NI ICT NY	35-B1130-6RA	
8	HDD HOLDER (A) PC/ABS LP200	39-P2212-001	
9	BASE BRACKET SECC L285P	33-P5003-010	
10	SCREW M3×6L F NI ICT NY	35-21130-6RA	
11	SCREW M3×0.5P×6L B NI ICT NY	35-04130-6R0	
12	STAND MODULE LP200	79-P220E-014	
13	SCREW M3×3L B NI ICT	35-41130-3RA	
14	EXT-USB BDARD LP200SC	77-P2C06-001	
15	GASKET (L15×W10×H6.5mm)	47-00190-154	FOR BASE ASS
16	WIRE CABLE FOR EXT USB V10 L285P	43-P500C-010	
17	POWER SUPPLY 160W PCI16014010-01	51-P5003-012	

Part Lists**Back (L285P)**

Figure 2
Back (L285P)



ITEM	PART NAME	PART NO	REMARK
1	M3x6.0x0.5 BIN HEAD NI-PL	35-41130-6R0	
2-1	LCD BACK COVER MODULE FOR L285P	39-P5001-031	EPSON
2-2	LCD BACK COVER MODULE FOR L285P	39-P5001-021	HYU/CHI MEI
2-3	LCD BACK COVER MODULE FOR L285PA/B	39-P5101-021	CHI MEI
3	HEAT SINK MODULE W/FAN 17W70m3	31-P507S-102	
4	SCREW M2.5x5L B NI ICT	35-41125-5R0	
5-1	CD-ROM ASSY Y L285P	79-P502Z-000	
5-2	CD-ROM ASSY Y L285PA/B	79-P512Z-010	
5-3	CD-ROM ASSY Y L285PA/B	79-P512Z-020	
6-1	FDD ASSY L285P	79-P502J-010	
6-2	FDD ASSY L285PA/B	79-P512J-010	
7	WIRE CABLE FOR 1994 L285P	43-P5001-030	
8	MINI PCI CARD FOR 1994 ASSY L285P	77-P2205-001A	
9	MDC MODEM ASSY L285P	79-P502U-010	
10	SCREW M2.5x4Px3L B NI ICT	35-41120-3R0	
11	WIRE CABLE FOR MDC MODEM L285P	43-P500U-010	
12	SCREW M2.5x23L K1 NI ICT	35-B1125-230	
13	MIX STUD S422 NI-PL 10m	34-96002-000	
14	SCREW M2.5x14L K1 NI ICT	35-B1125-14A	
15	I/P BRACKET-GASKET MODULE SEC L285P	33-P507S-100	
16	124x192x14x0.25m FDD MB L285P	47-01910-240	
17-1	INVERTER BOARD FOR SHARP 15P SEC L285P	77-P500R-023	
17-2	INVERTER BOARD FOR CHI MEI 15' L285P	77-P500R-013	
18	INVERTER MYLAR PC L285P	40-P505S-010	
19	MAIN BOARD	77-P5000-XXX	
20	SCREW M6x10L K1 NI ICT	35-B1120-4RB	
21-1	LCD BRACKET FOR SHARP 15P SEC L285P	33-P5001-052	
21-2	LCD BRACKET FOR HYU/CHI MEI 15P SEC L285P	33-P5001-032	L285/L285PA/L285P
21-3	LCD BRACKET FOR CHI MEI 15P SEC	33-P5001-022	
22	SCREW M2x5L K1 NI ICT	35-B1120-5RA	
23-1	VR COVER L285P	42-P507B-011	
23-2	VR COVER FOR L285PA/B	42-P517B-011	CHI MEI 150
24	CONDUCTIVE GASKET L285PA/B	47-00190-105	
25	SCREW M2x3.5L F NI ICT NY	35-21120-3RA	
26-1	LCD CONVERTER BOARD FOR SHARP 15P L285P	77-P5006-012	
26-2	LCD CONVERTER BOARD FOR HYU/CHI MEI 15P L285P	77-P5006-001	
26-3	LCD CONVERTER BOARD FOR CHI MEI 15P L285P	77-P5006-023	
27-1	LCD T SHARP LOISX010051 15P EPSON	950-12215-401-E	
27-2	LCD 15' TFT HYUNDAI HTSH11-200	50-L22H2-H00	
27-3	LCD 15' TFT CHI MEI MIS0X3 130m	50-L22D0-D00	
28	SCREW M3x10L P NI ICT NY	35-01130-100	
29	SPOON FOR SHARP 147W154H6 L285P	47-00194-140	
30-1	LCD F-CVR ASSY FOR HYU/CHI MEI 15P L285P	79-P5001-003	
30-2	LCD F-CVR ASSY FOR SHARP/CHI MEI L285PA	79-P5101-002	
30-3	LCD F-CVR ASSY FOR SHARP/CHI MEI L285P	79-P5201-001	

LCD Front (L285P)

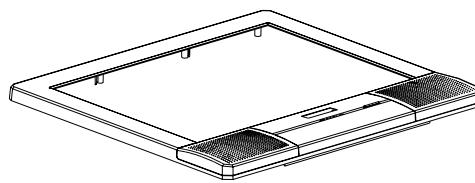
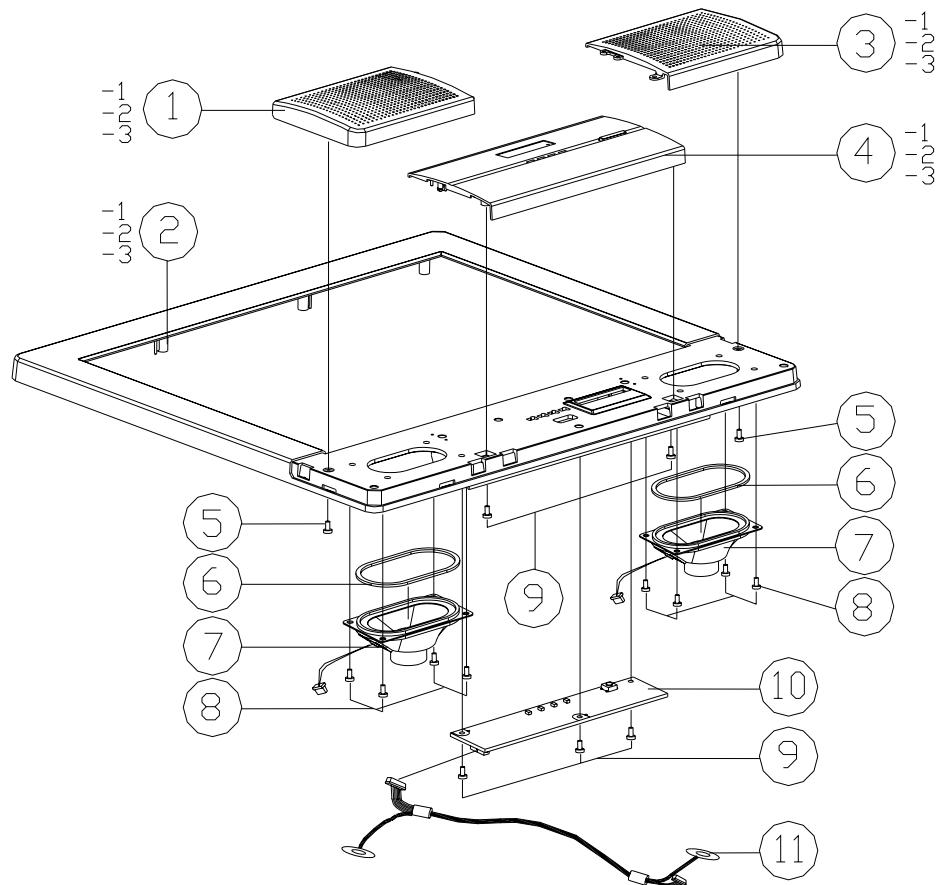
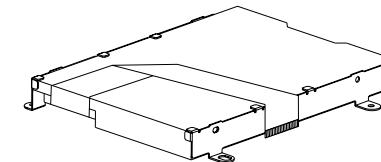
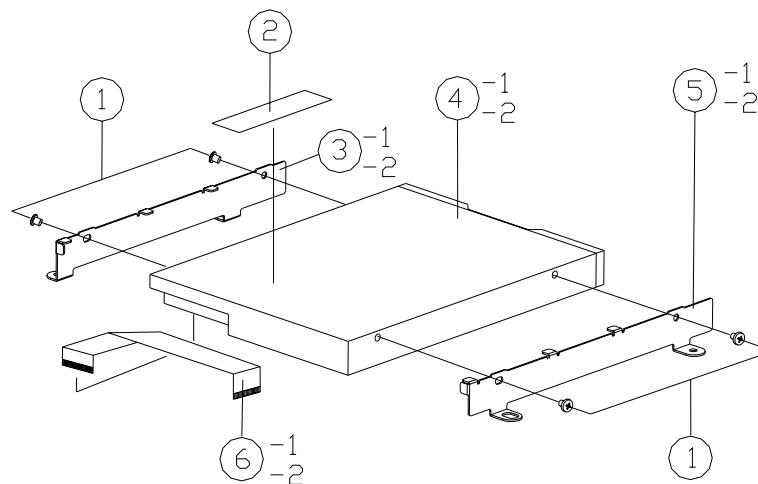


Figure 3
LCD Front (L285P)

ITEM	PART NAME	PART NO	REMARK
1-1	SPEAKER COVER(L) PC/ABS LP200C	42-P2010-001	FOR L285P
1-2	SPEAKER COVER(R) PC/ABS LP200E	42-P2E71-120	FOR L285PA
1-3	SPEAKER COVER(L) MODULE L285PB	42-P527T-100	FOR L285PB
2-1	LCD F-CVR MODULE FOR HYU/SHARP/CHI MEI L285P	39-P5001-010	
2-2	LCD F-CVR MODULE FOR SHARP/CHI MEI L285PA	39-P5101-010	
2-3	LCD F-CVR MODULE FOR SHARP/CHI MEI L285PB	39-P5201-010	
3-1	SPEAKER COVER(L) PC/ABS LP200C	39-P2009-001	FOR L285P
3-2	SPEAKER COVER(R) PC/ABS LP200E	39-P2E71-110	FOR L285PA
3-3	SPEAKER COVER(R) MODULE L285PB	39-P527T-200	FOR L285PB
4-1	CONTROL PANEL PC/ABS L285P	42-P5071-101	
4-2	CONTROL PANEL PC/ABS L285PA	42-P5191-101	
4-3	CONTROL PANEL MODULE L285PB	42-P5291-101	
5	SCREW M2.5*4L B NI ICT	35-49125-4R0	
6	SPEAKER RUBBER, SILICONE LP200	47-P2202-000	
7	SPK-CON. 71W*41D*28.7H 3W	23-5A230-13A	
8	SCREW M3*4L KI NI ICT	35-B1130-4RB	
9	SCREW M2.5*5L B NI ICT	35-41125-5R0	
10	LED BOARD	77-P5004-001	
11	WIRE CABLE FOR LED SIGNAL 10P L285P	43-P500F-010	

Floppy Disk Drive (L285P)

Figure 4
Floppy Disk Drive
(L285P)



ITEM	PART NAME	PART NO	REMARK
1	SCREW M2.5*3L P BZ IGT NY	35-06125-3R0	
2	MYLAR 16*54*0.1t FOR FDD	40-4205J-020	
3-1	FDD BRACKET (R) SECC L285P	33-P500J-012	
3-2	FDD BRACKET (R) SECC L285PA/B	33-P500J-010	
4-1	FDD 3.5" 144MB 12.7mm YD-702J-6637J-691061	85-11700-Y07	
4-2	FDD 3.5" 144MB 12.7mm YD-702J-6637J-64476	85-11700-Y06	
5-1	FDD BRACKET (L) SECC L285P	33-P500J-022	
5-2	FDD BRACKET (L) SECC L285PA/B	33-P500J-021	
6-1	FFC CABLE FOR FDD L285P	43-P500J-012	
6-2	FFC CABLE FOR FDD L285PA/B	43-P500J-011	

Hard Disk Drive (L285P)

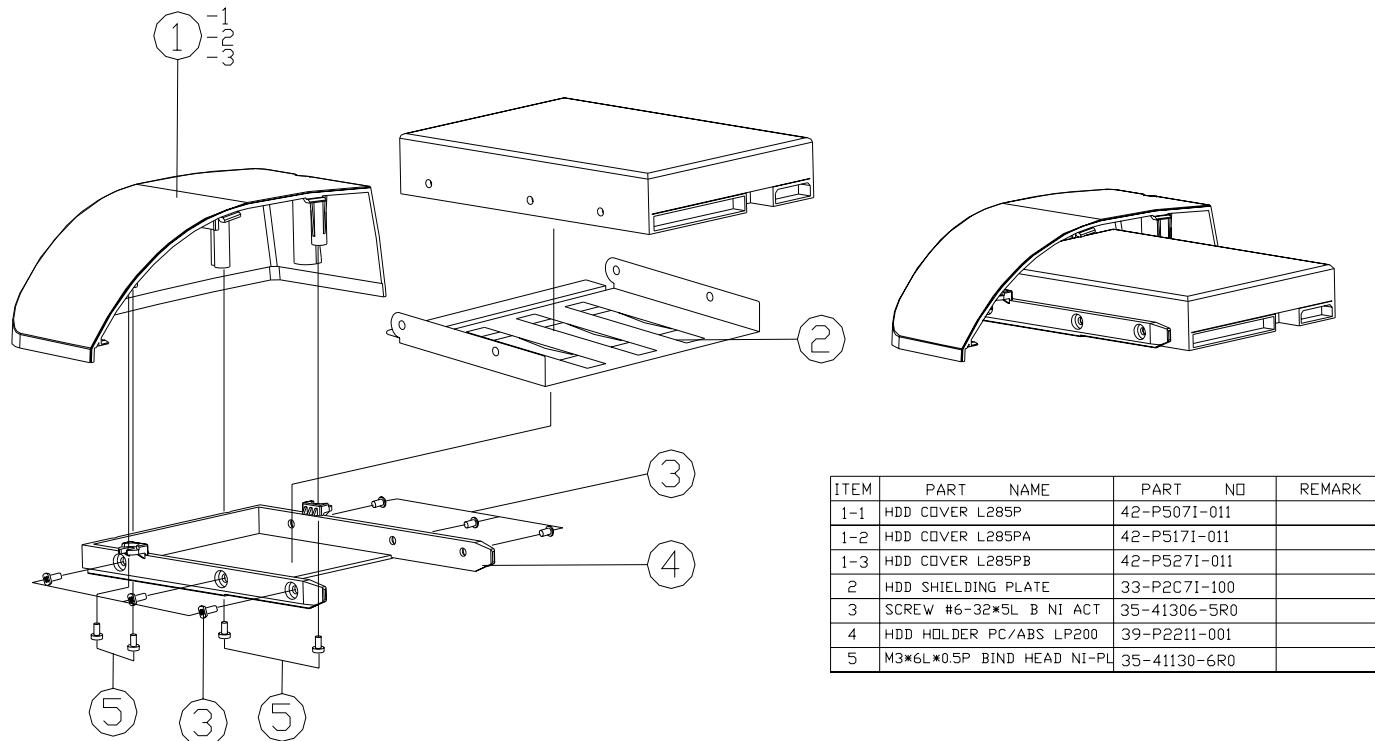
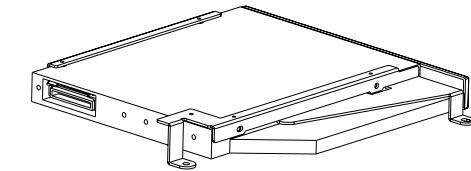
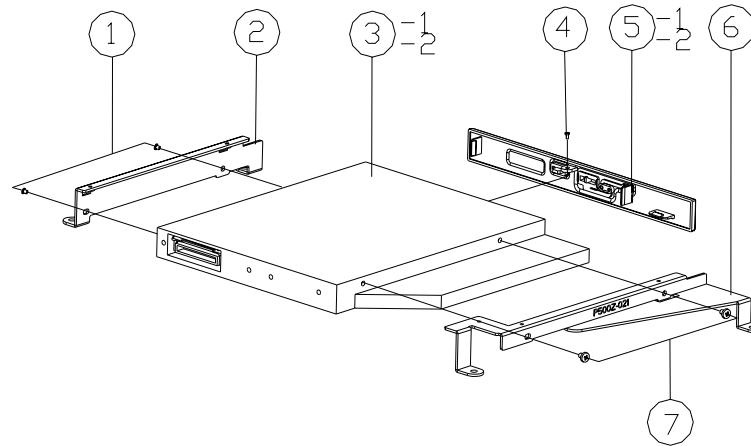


Figure 5
Hard Disk Drive
(L285P)

ITEM	PART NAME	PART NO	REMARK
1-1	HDD COVER L285P	42-P507I-011	
1-2	HDD COVER L285PA	42-P517I-011	
1-3	HDD COVER L285PB	42-P527I-011	
2	HDD SHIELDING PLATE	33-P2C7I-100	
3	SCREW #6-32*5L B NI ACT	35-41306-5R0	
4	HDD HOLDER PC/ABS LP200	39-P2211-001	
5	M3*6L*0.5P BIND HEAD NI-PL	35-41130-6R0	

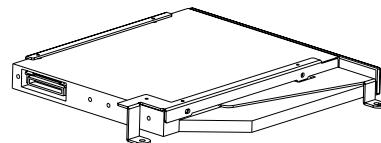
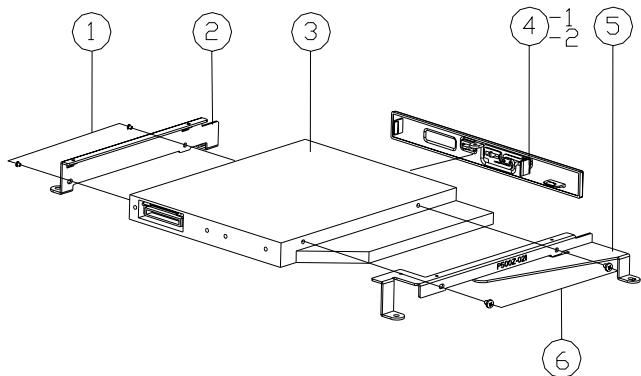
MKE-TEAC CD-ROM Drive (L285P)

Figure 6
MKE-TEAC
CD-ROM (L285P)



ITEM	PART NAME	PART NO	REMARK
1	SCREW M2*3L F NI ICT NY	35-21120-3RA	
2	CD-ROM BRACKET (R) SECC L285P	33-P500Z-041	
3-1	CD-ROM W/BEZEL 5 1/4" 24X MKE	85-607DX-P04	CR-177-DPK-1 12.
3-2	CD-ROM 5 1/4" 24X 12.7mm TEAC	85-607DX-706	CD-224E-B20
4	SCREW Ø 1.7*5L I BZ	35-C6117-5R0	
5-1	CD-ROM BEZEL MODULE FOR MKE LP2000	79-P2002-012	
5-2	TEAC CD-ROM BEZEL MODULE	39-P207Z-010	
6	CD-ROM BRACKET (L) SECC L285P	33-P500Z-030	
7	SCREW M2*3.5LF BNI ICT NY(D=3.2 D*=1.0)	35-21120-35B	

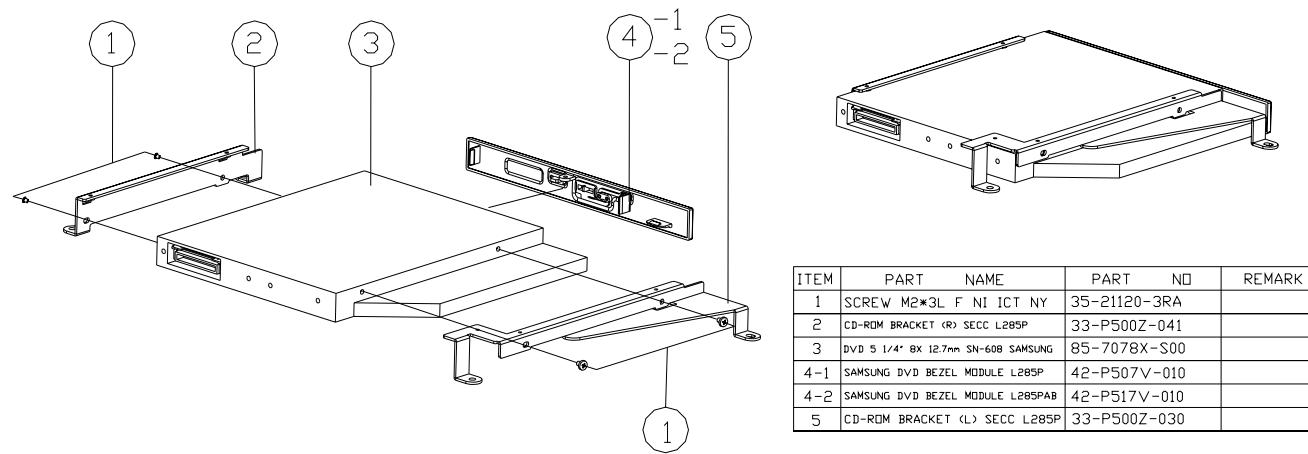
SAMSUNG CD-ROM Drive (L285P)



ITEM	PART NAME	PART NO	REMARK
1	SCREW M2x3L F NI ICT NY	35-21120-3RA	
2	CD-ROM BRACKET (R) SECC L285P	33-P500Z-041	
3	CD-ROM 5 1/4" 24X SN-124 SAMSUNG	85-607DX-S00	
4-1	SAMSUNG CD-ROM BEZEL MODULE L285P	42-P507Z-010	
4-2	SAMSUNG CD-ROM BEZEL MODULE L285PAB	42-P517Z-010	
5	CD-ROM BRACKET (L) SECC L285P	33-P500Z-030	
6	SCREW M2x3.5LF BN1 ICT NY(D=32 D1=1.0)	35-21120-35B	

Figure 7
SAMSUNG
CD-ROM (L285P)

Figure 8
SAMSUNG
DVD-ROM (L285P)



ITEM	PART NAME	PART NO	REMARK
1	SCREW M2*3L F NI I CT NY	35-21120-3RA	
2	CD-ROM BRACKET (R) SECC L285P	33-P500Z-041	
3	DVD 5 1/4" BX 12.7mm SN-608 SAMSUNG	85-7078X-S00	
4-1	SAMSUNG DVD BEZEL MODULE L285P	42-P507V-010	
4-2	SAMSUNG DVD BEZEL MODULE L285PAB	42-P517V-010	
5	CD-ROM BRACKET (L) SECC L285P	33-P500Z-030	

TOSHIBA DVD-ROM Drive (L285P)

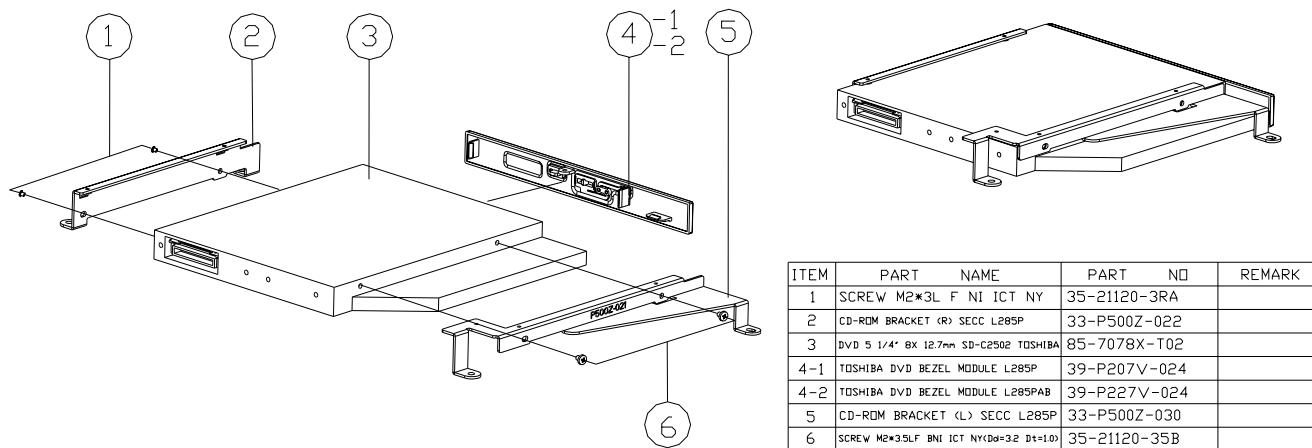
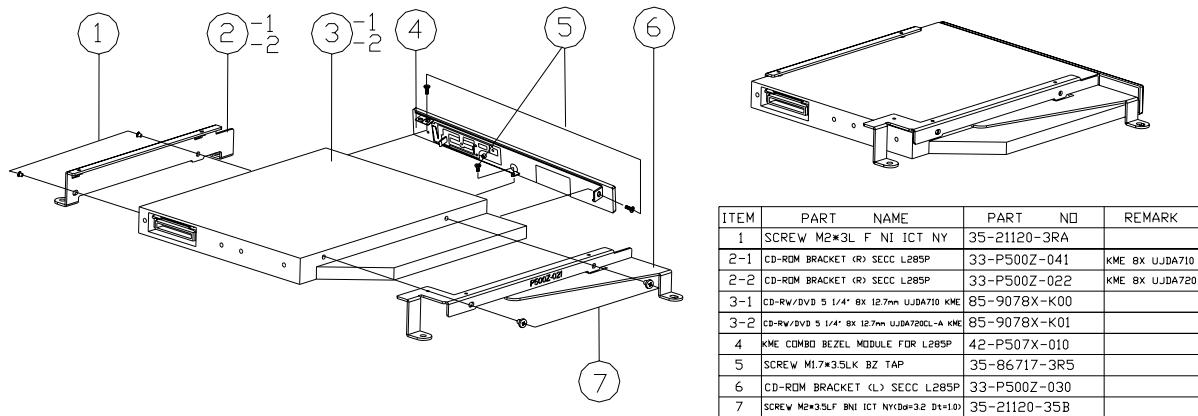


Figure 9
TOSHIBA
DVD-ROM (L285P)

KME Combo Drive (L285P)

Figure 10
KME Combo
(L285P)



ITEM	PART NAME	PART NO	REMARK
1	SCREW M2*3L F NI ICT NY	35-21120-3RA	
2-1	CD-ROM BRACKET (R) SECC L285P	33-P500Z-041	KME BX UJDA710
2-2	CD-ROM BRACKET (R) SECC L285P	33-P500Z-022	KME BX UJDA720
3-1	CD-RW/DVD 5 1/4" BX 12.7mm UJDA710 KME	85-9078X-K00	
3-2	CD-RW/DVD 5 1/4" BX 12.7mm UJDA720L-A KME	85-9078X-K01	
4	KME COMBO BEZEL MODULE FOR L285P	42-P507X-010	
5	SCREW M1.7*3.5LK BZ TAP	35-86717-3R5	
6	CD-RDM BRACKET (L) SECC L285P	33-P500Z-030	
7	SCREW M2*3.5LF BNI ICT NY(D=3.2 D1=1.0)	35-21120-35B	

SAMSUNG-TOSHIBA Combo Drive (L285P)

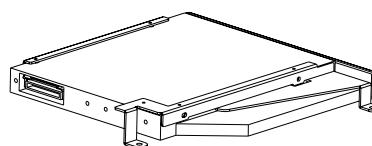
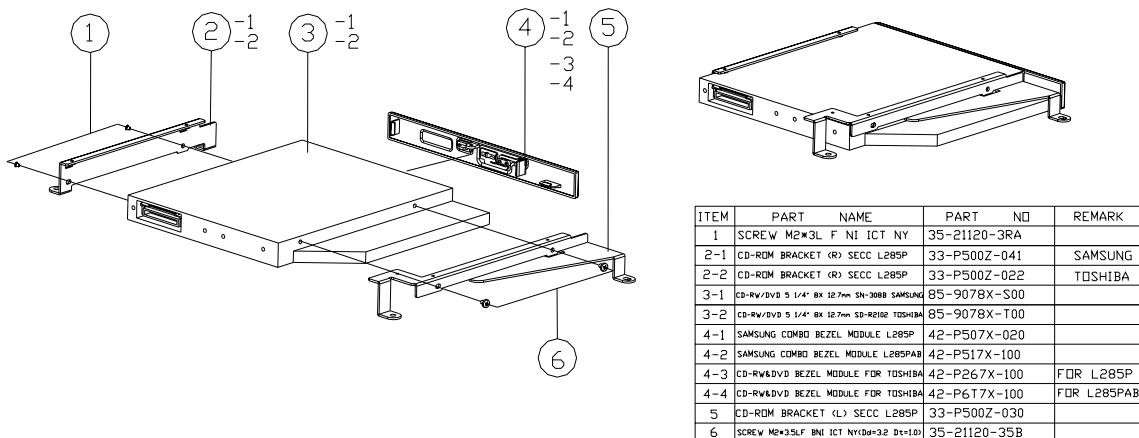
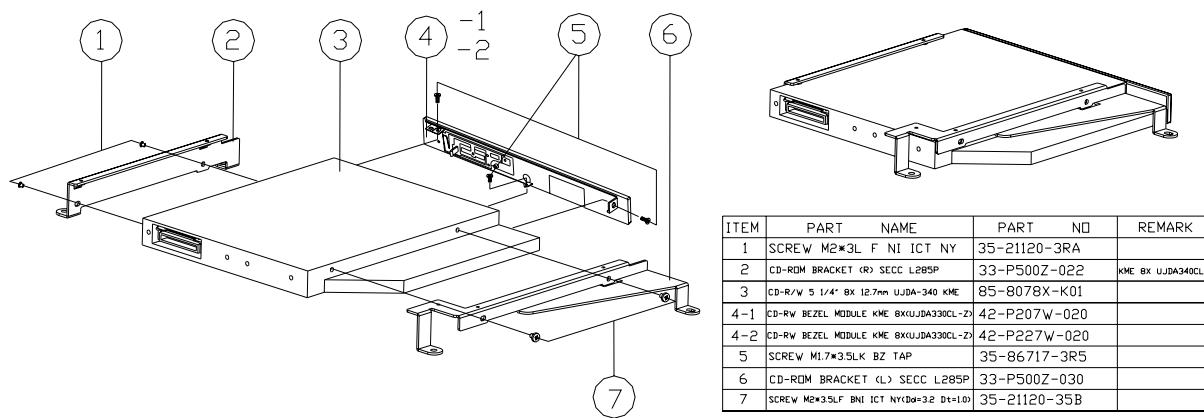


Figure 11
SAMSUNG-TOSHIBA Combo (L285P)

ITEM	PART NAME	PART NO	REMARK
1	SCREW M2×3L F NI ICT NY	35-21120-3RA	
2-1	CD-ROM BRACKET (R) SECC L285P	33-P500Z-041	SAMSUNG
2-2	CD-ROM BRACKET (R) SECC L285P	33-P500Z-022	TOSHIBA
3-1	CD-RW/DVD 5 1/4" 8X 12.7mm SN-308B SAMSUNG	85-9078X-S00	
3-2	CD-RW/DVD 5 1/4" 8X 12.7mm SN-308B TOSHIBA	85-9078X-T00	
4-1	SAMSUNG COMBO BEZEL MODULE L285P	42-P507X-020	
4-2	SAMSUNG COMBO BEZEL MODULE L285PAB	42-P517X-100	
4-3	CD-RW/DVD BEZEL MODULE FOR TOSHIBA	42-P267X-100	FOR L285P
4-4	CD-RW/DVD BEZEL MODULE FOR TOSHIBA	42-P677X-100	FOR L285PAB
5	CD-ROM BRACKET (L) SECC L285P	33-P500Z-030	
6	SCREW M2×3SLF BN1 ICT NY(D=d=3.2 Dt=t=1.0)	35-21120-35B	

KME CD-RW Drive (L285P)

Figure 12
KME CD-RW
(L285P)



ITEM	PART NAME	PART NO	REMARK
1	SCREW M2*3L F NI ICT NY	35-21120-3RA	
2	CD-ROM BRACKET (R) SECC L285P	33-P500Z-022	KME 8X UJDA340CL-Z
3	CD-R/W 5 1/4" 8X 12.7mm UJDA-340 KME	85-8078X-K01	
4-1	CD-RW BEZEL MODULE KME 8XUJDA330CL-Z1	42-P207W-020	
4-2	CD-RW BEZEL MODULE KME 8XUJDA330CL-Z1	42-P227W-020	
5	SCREW M1.7*3.5LK BZ TAP	35-86717-3R5	
6	CD-ROM BRACKET (L) SECC L285P	33-P500Z-030	
7	SCREW M2*3.5LF BNI ICT NY(Dd=3.2 Dt=1.0)	35-21120-35B	

Appendix B:Schematic Diagrams

This appendix has circuit diagrams of the systems PCB's:

<u>Printed Circuit Board</u>	<u>Part No. of the Latest Version</u>
System Board	71-P5000-005
Indicator Board	71-P5004-001
LCD Transfer Board (HYUNDAI)	71-P5006-002
LCD Transfer Board (SHARP)	71-P5006-013
LCD Transfer Board (CHI MEI)	71-P5006-023
LCD Transfer Board (AU)	71-P5006-031
PCB Inverter Board	71-P500R-003

Schematic Diagrams

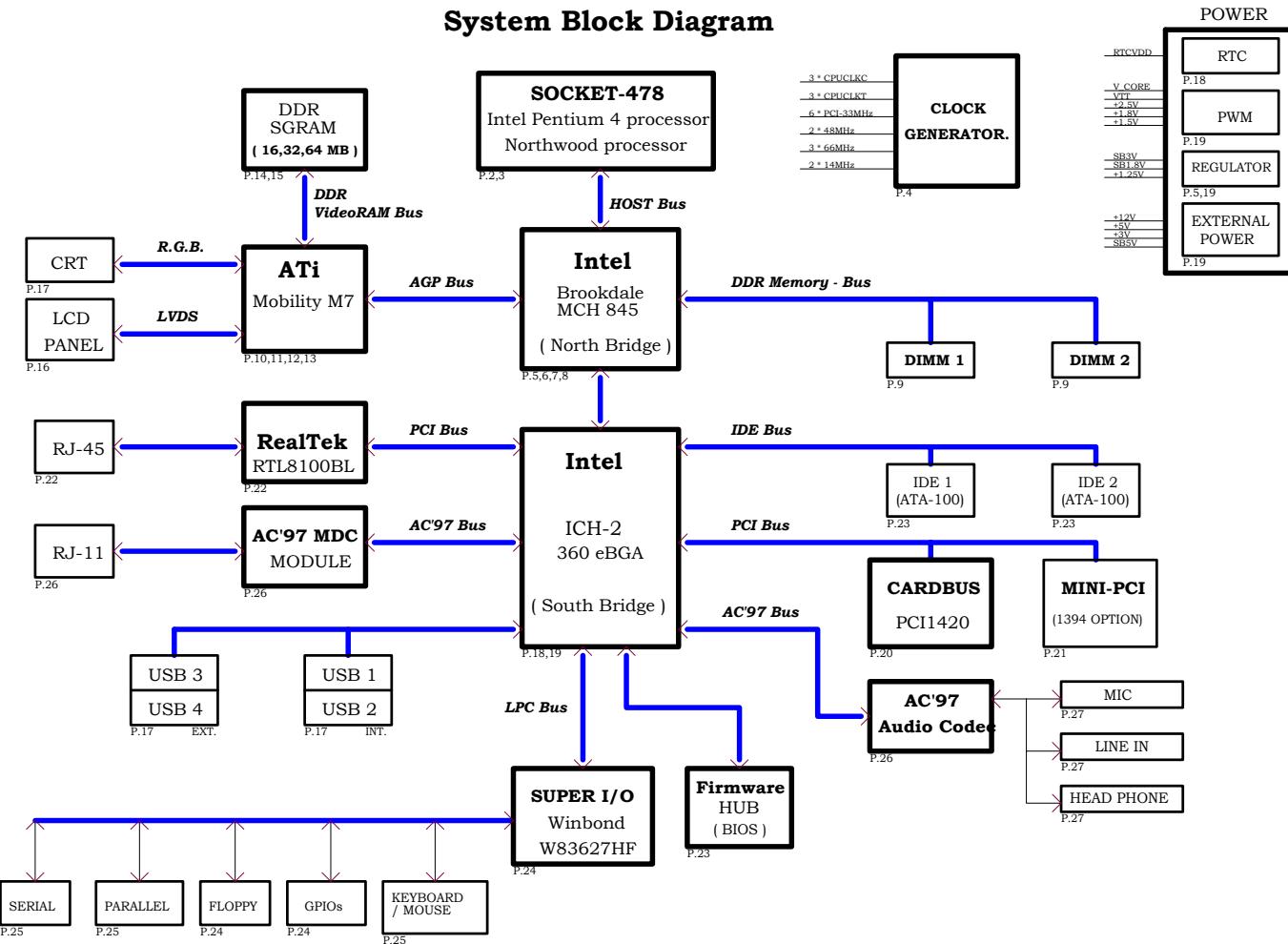
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Schematic Diagram

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System Block Diagram - Page B - 3	LAN 8193C - Page B - 24
NorthWood 845 1 of 2 - Page B - 4	IDE Connector & Firmware HUB - Page B - 25
NorthWood Memory 2 of 2 - Page B - 5	Super I/O W83627HF - Page B - 26
Clock Generator - Page B - 6	Serial & Parallel Port, MDC - Page B - 27
MCH845 Power & Ground 1 of 4 - Page B - 7	AC'97 Codec - Page B - 28
MCH845 Host Interface 2 of 4 - Page B - 8	Amplifier & Inverter Con. - Page B - 29
MCH845 Memory Interface 3 of 4 - Page B - 9	Power 1 of 3 - Page B - 30
MCH845 AGP Interface 4 of 4 - Page B - 10	Power 2 of 3 - Page B - 31
DDR RIMM - Page B - 11	Power 3 of 3 - Page B - 32
ATI Power - Page B - 12	Indicator Board - Page B - 33
ATI Host Interface - Page B - 13	LCD Transfer Board (Hyundai HT15X11-200) - Page B - 34
ATI Memory 1 of 2 - Page B - 14	LCD Transfer Board (Hyundai HT15X11-200) - Page B - 35
ATI Memory 2 of 2 - Page B - 15	LCD Transfer Board (Sharp LQ150X1DG51) - Page B - 36
32bit DDR VRAM 1 of 2 - Page B - 16	LCD Transfer Board (Sharp LQ150X1DG51) - Page B - 37
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CardBus (TI PCI1420) - Page B - 22	PCB Inverter Board 2 of 2 - Page B - 43
CardBus Slot & Mini PCI - Page B - 23	

System Block Diagram

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System Block Diagram

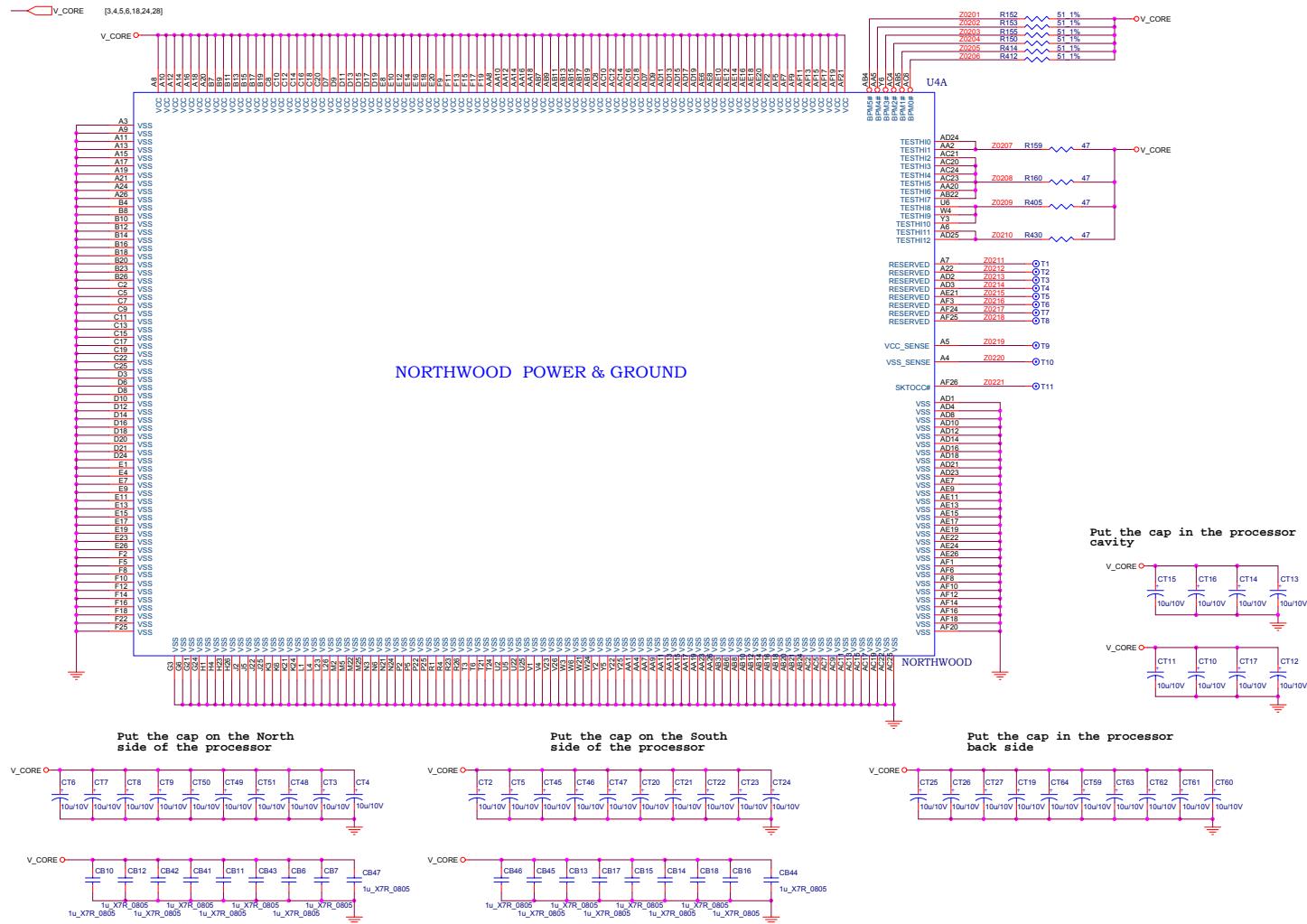


Schematic Diagrams

Schematic Diagrams

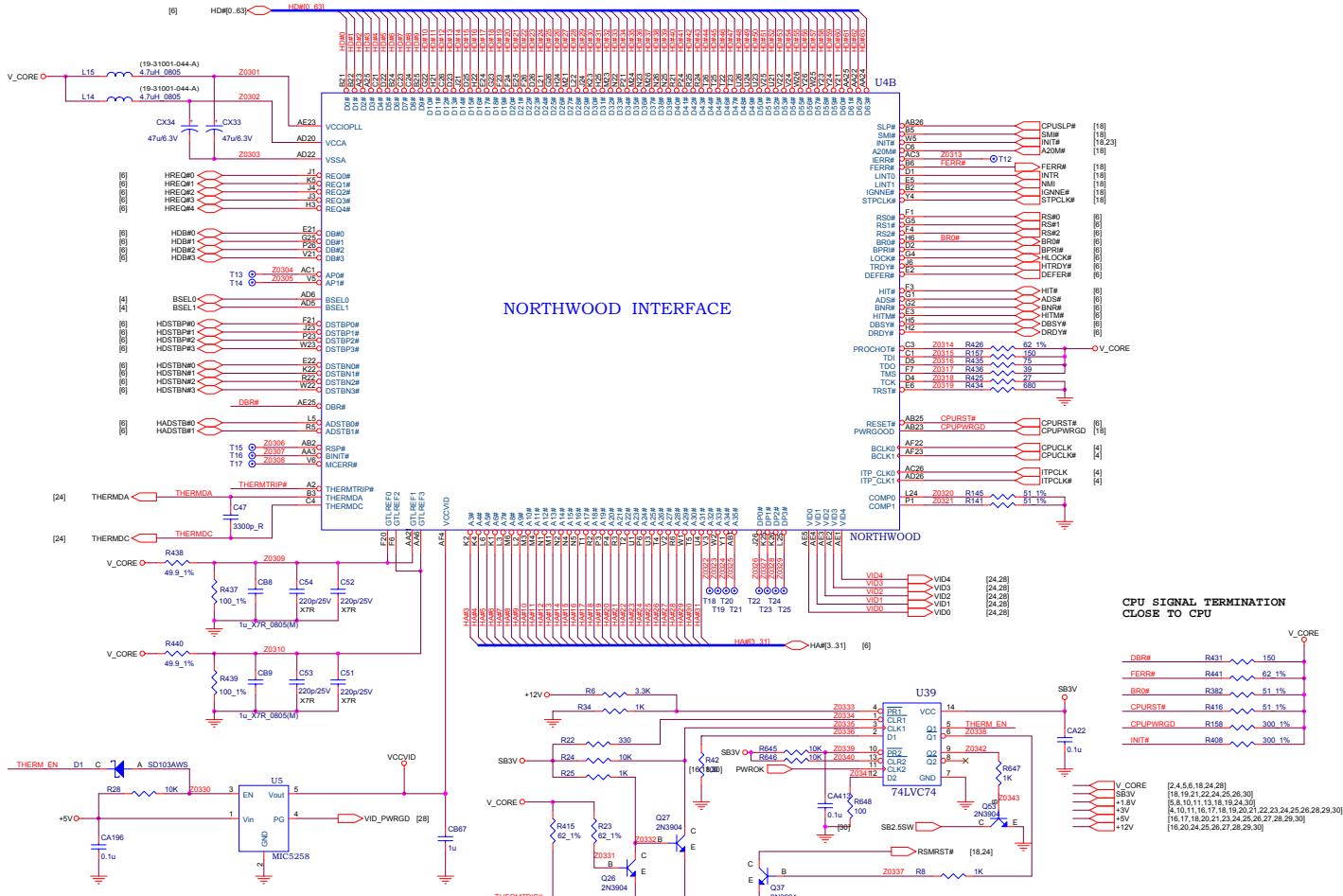
NorthWood Power & Ground - 1 of 2

Sheet 2 of 30
NorthWood 845
1 of 2



NorthWood Memory Interface - 2 of 2

Sheet 3 of 30
NorthWood Memory
2 of 2



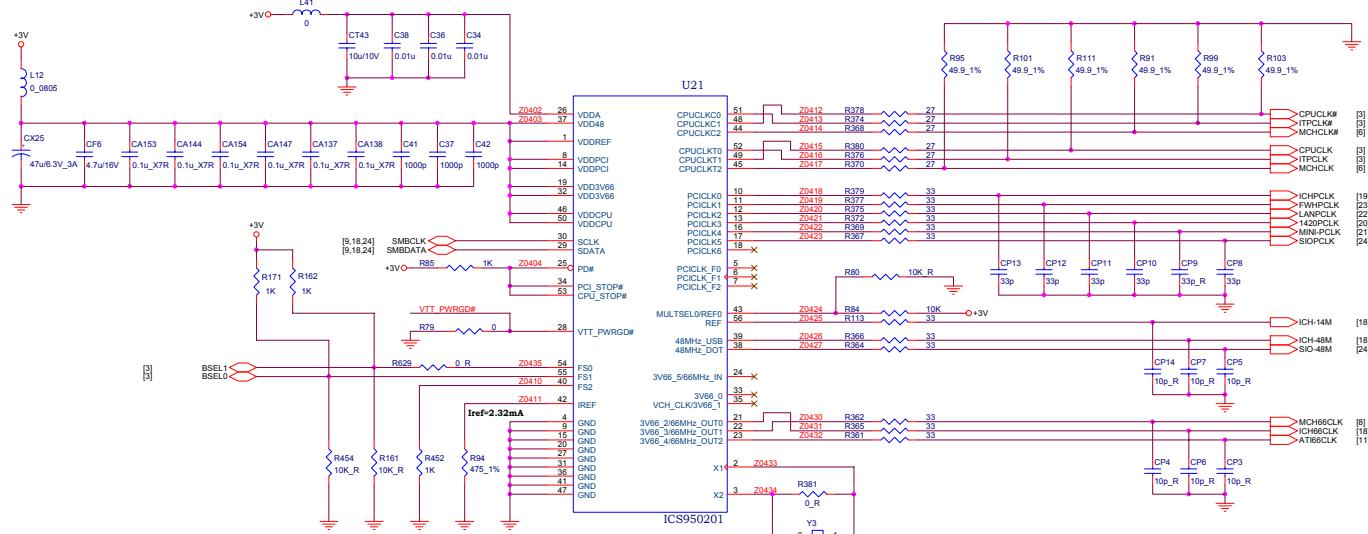
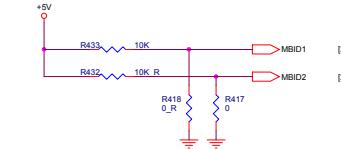
Schematic Diagrams

Clock Generator

Sheet 4 of 30
Clock Generator

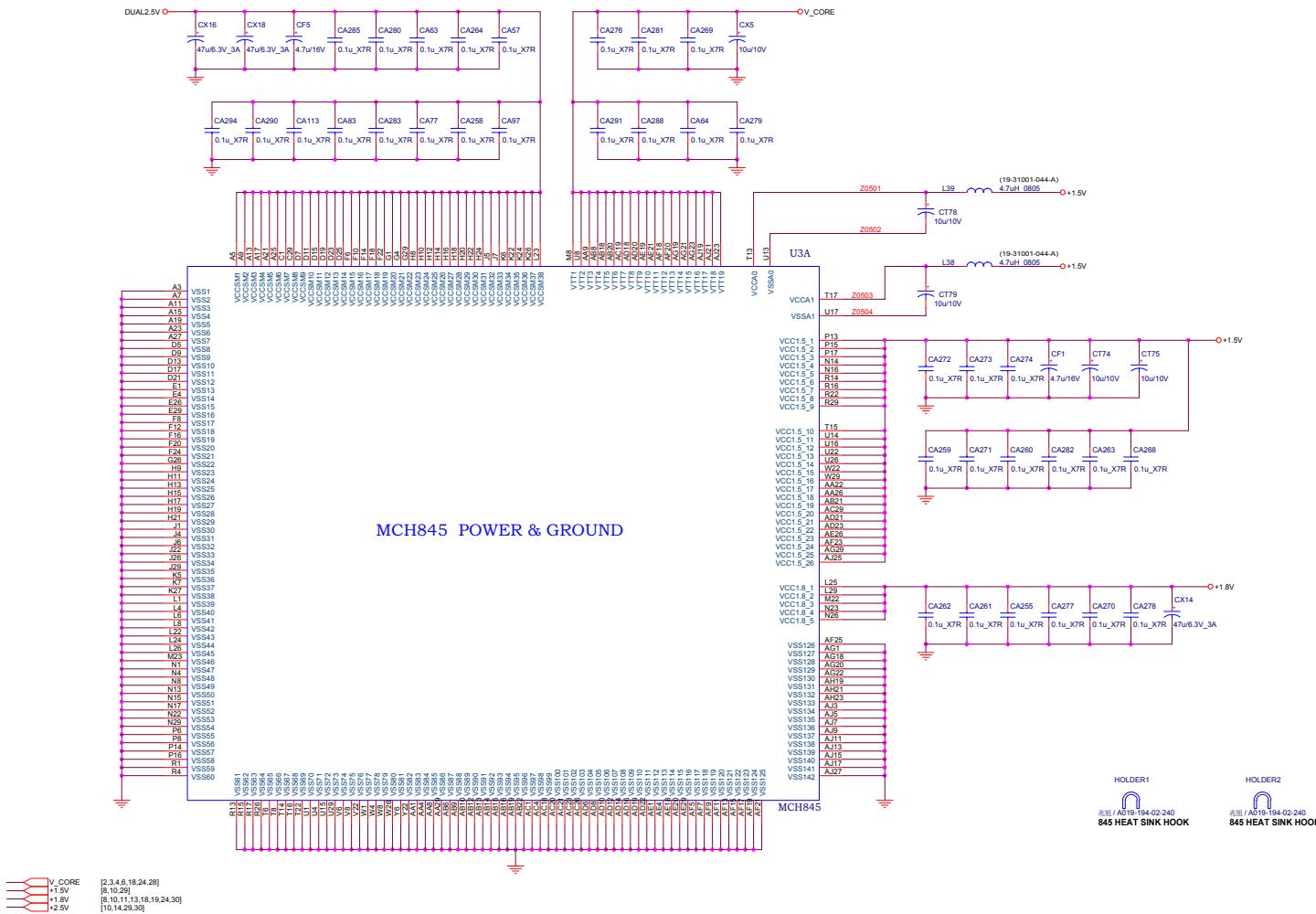
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(FS2)	(FS1)	(FS0)	CPU (MHz)	3V66 (MHz)	66MHz OUT (MHz)
0	0	0	66.66	66.66	33.33
0	0	1	100	66.66	33.33
0	1	0	200	66.66	33.33
0	1	1	133	66.66	33.33
1	0	0	66.66	66.66	66MHz_IN1
1	0	1	100	66.66	66MHz_IN2
1	1	0	200	66.66	66MHz_IN
1	1	1	133	66.66	66MHz_IN2
Mid	0	0			
Mid	0	1			
Mid	1	0			
Mid	1	1			

ON=1=Stuff	OFF=0=Open	R433	R432	R418	R417	V: 3.0
ID1	1 1		1 1	0 0		
ID2	1 0		1 0	0 1		V: 4.0, 5.0
ID3	0 1		0 1	1 0		
ID4	0 0		0 0	1 1		



MCH845 Power & Ground - 1 of 4

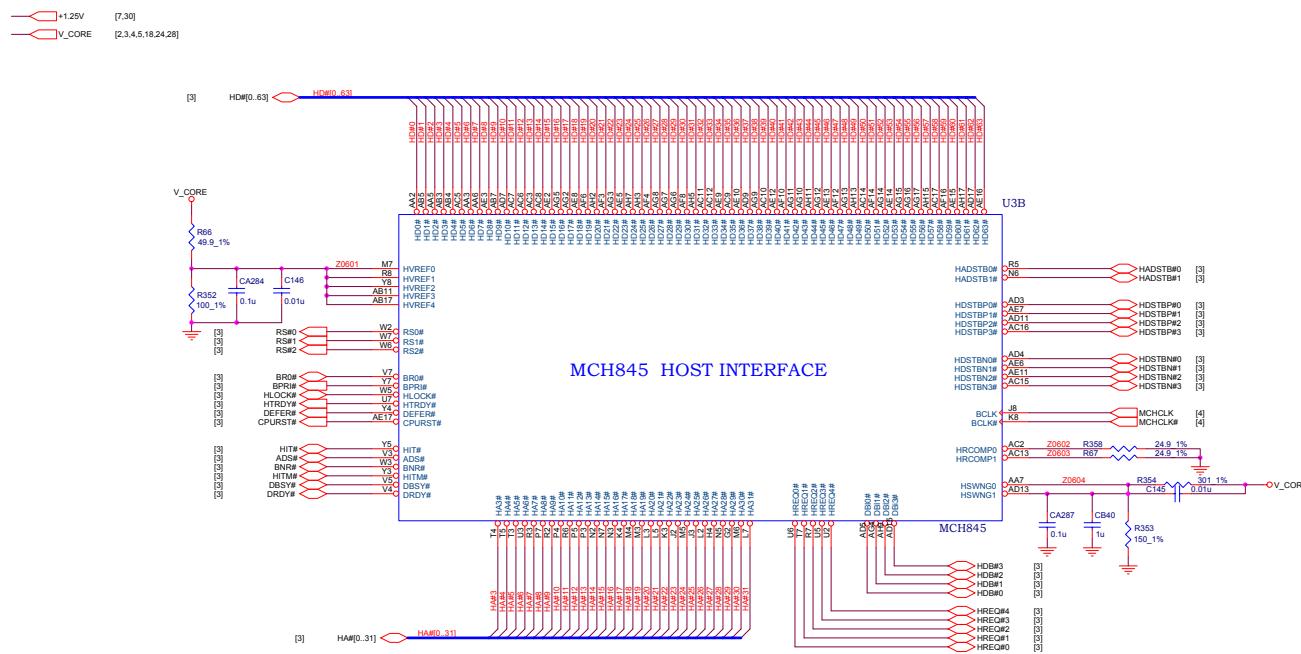
Sheet 5 of 30
MCH845
Power & Ground
1 of 4



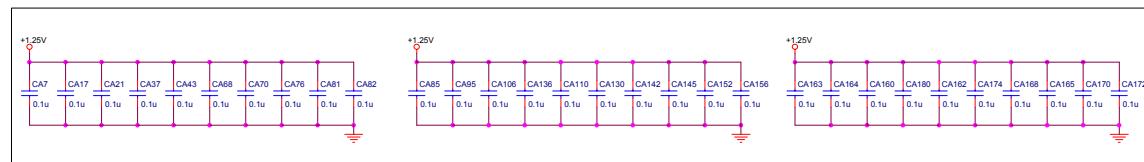
Schematic Diagrams

MCH845 Host Interface - 2 of 4

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MCH845
Host Interface
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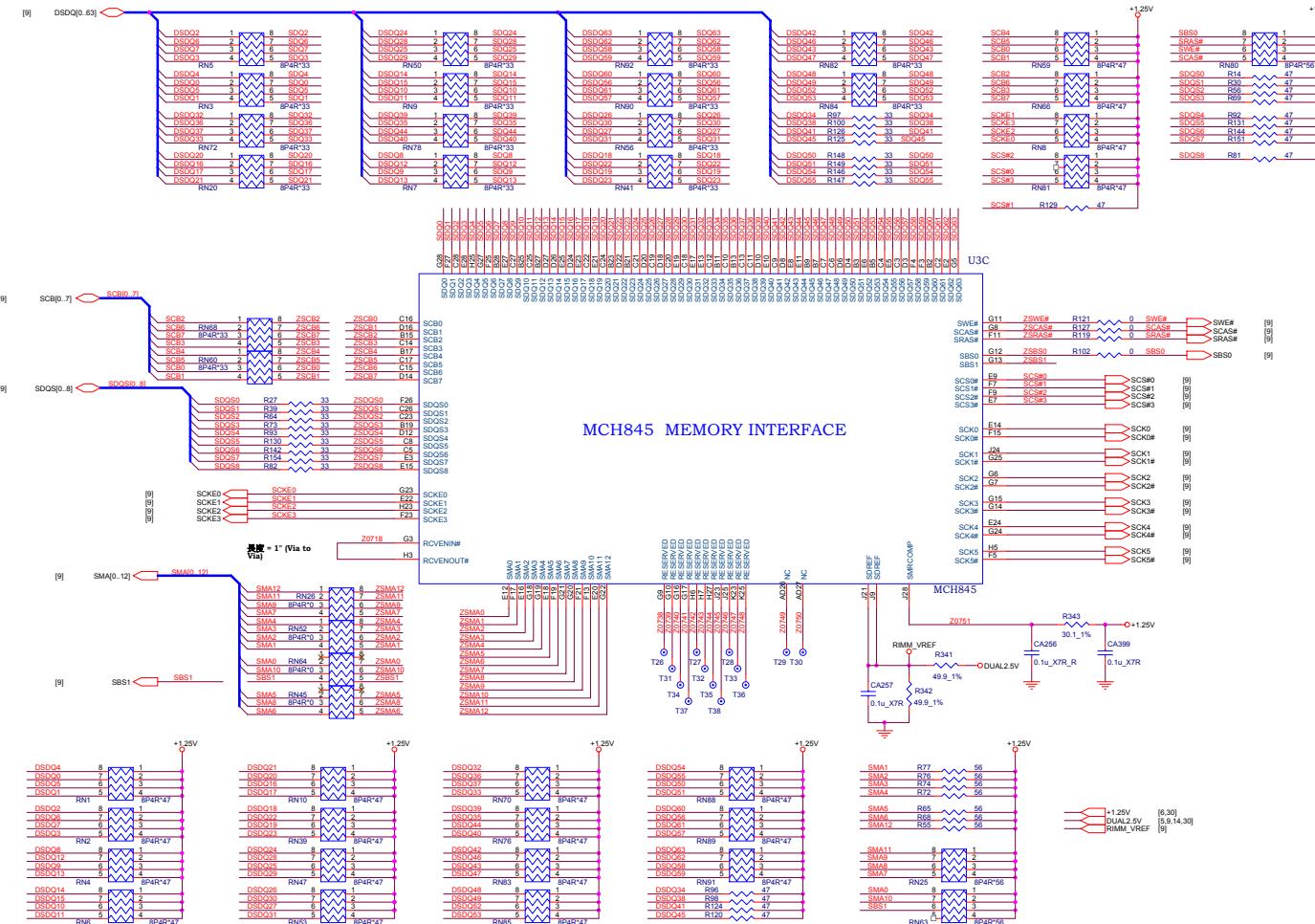
靠近 DDR Pull high 的排阻



Schematic Diagrams

MCH845 Memory Interface - 3 of 4

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MCH845
Memory Interface
3 of 4

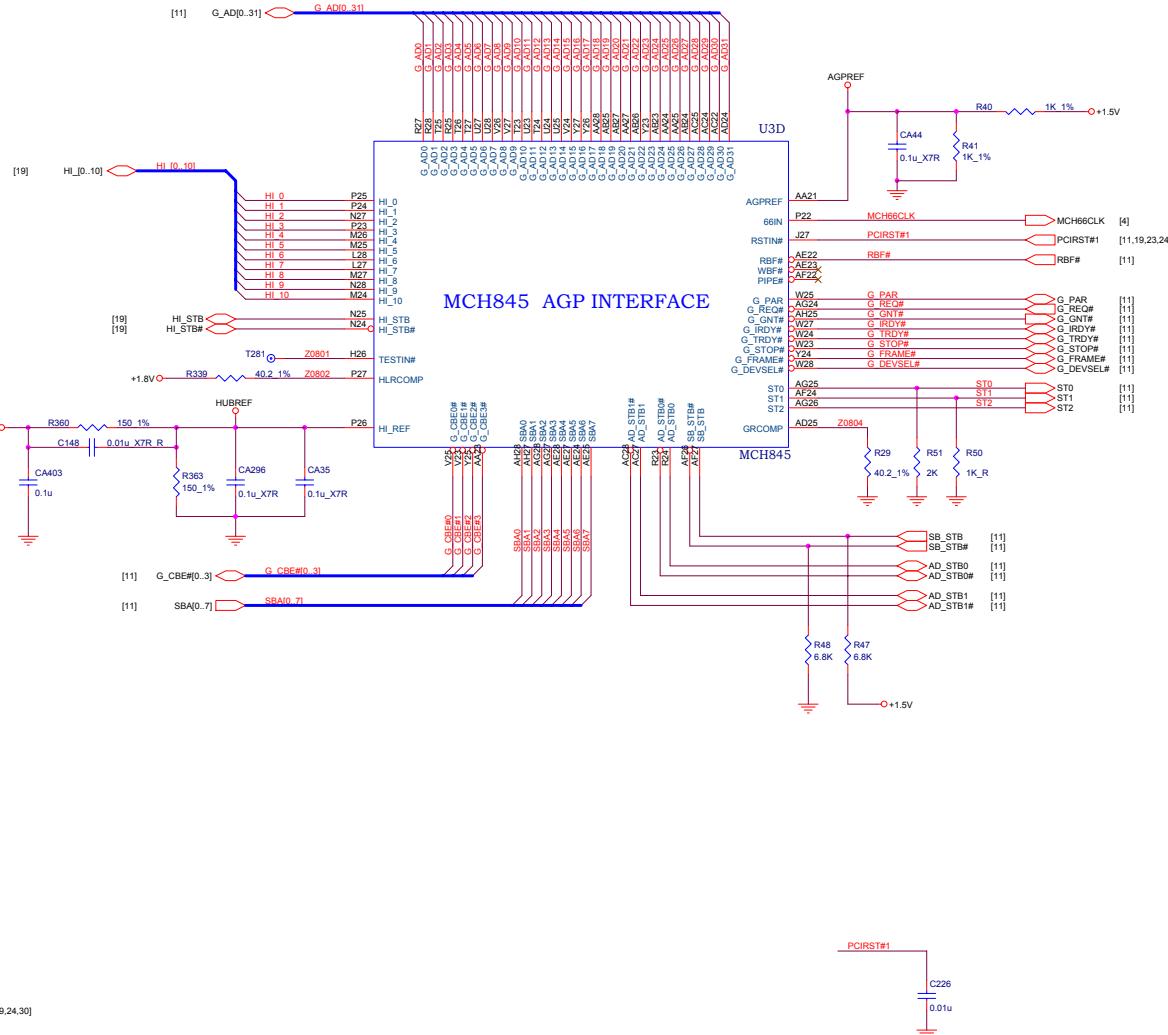


Schematic Diagrams

Schematic Diagrams

MCH845 AGP Interface - 4 of 4

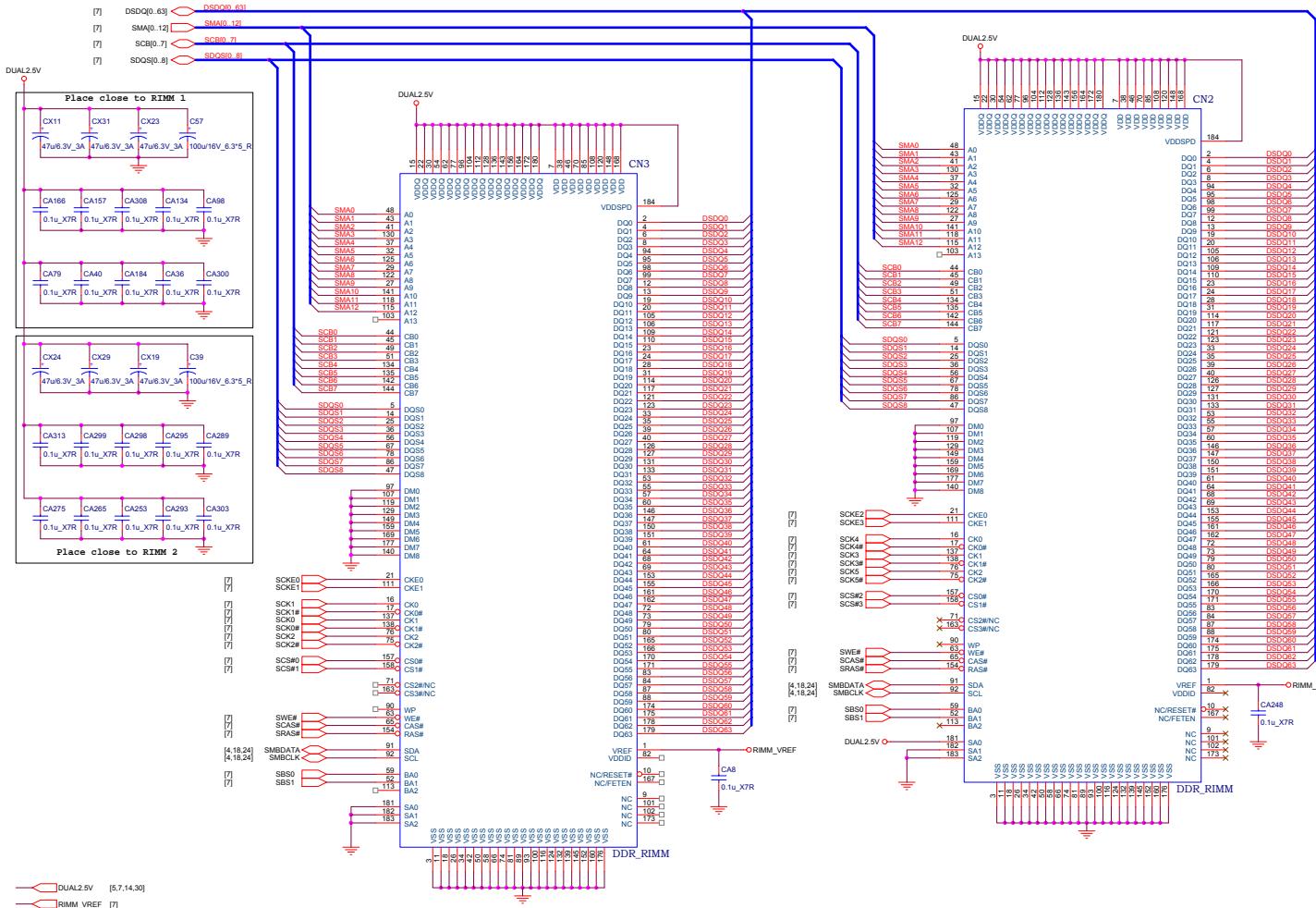
Sheet 8 of 30
MCH845
AGP Interface
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Schematic Diagrams

DDR RIMM

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DDR RIMM

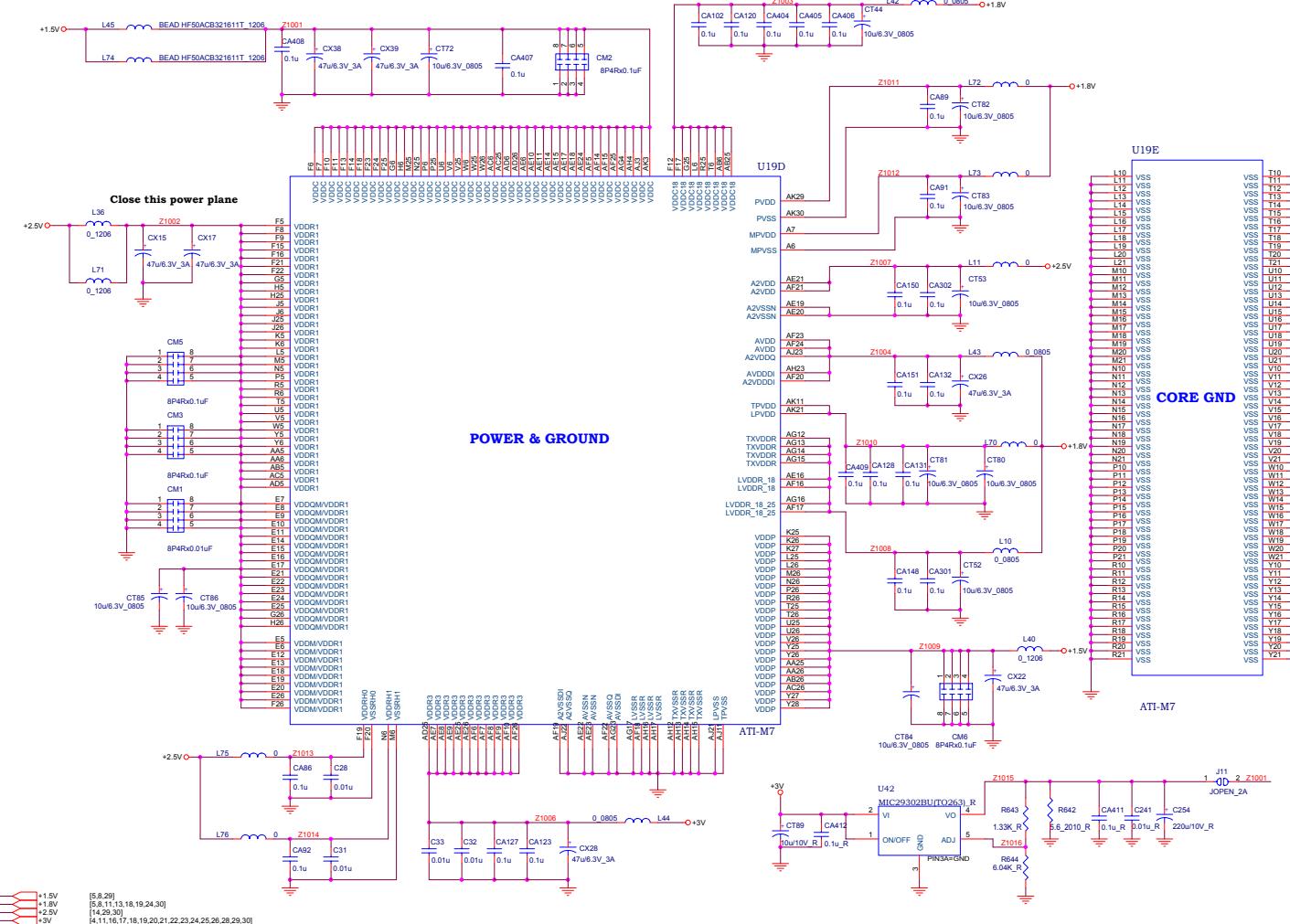


Schematic Diagrams

Schematic Diagrams

ATI Power

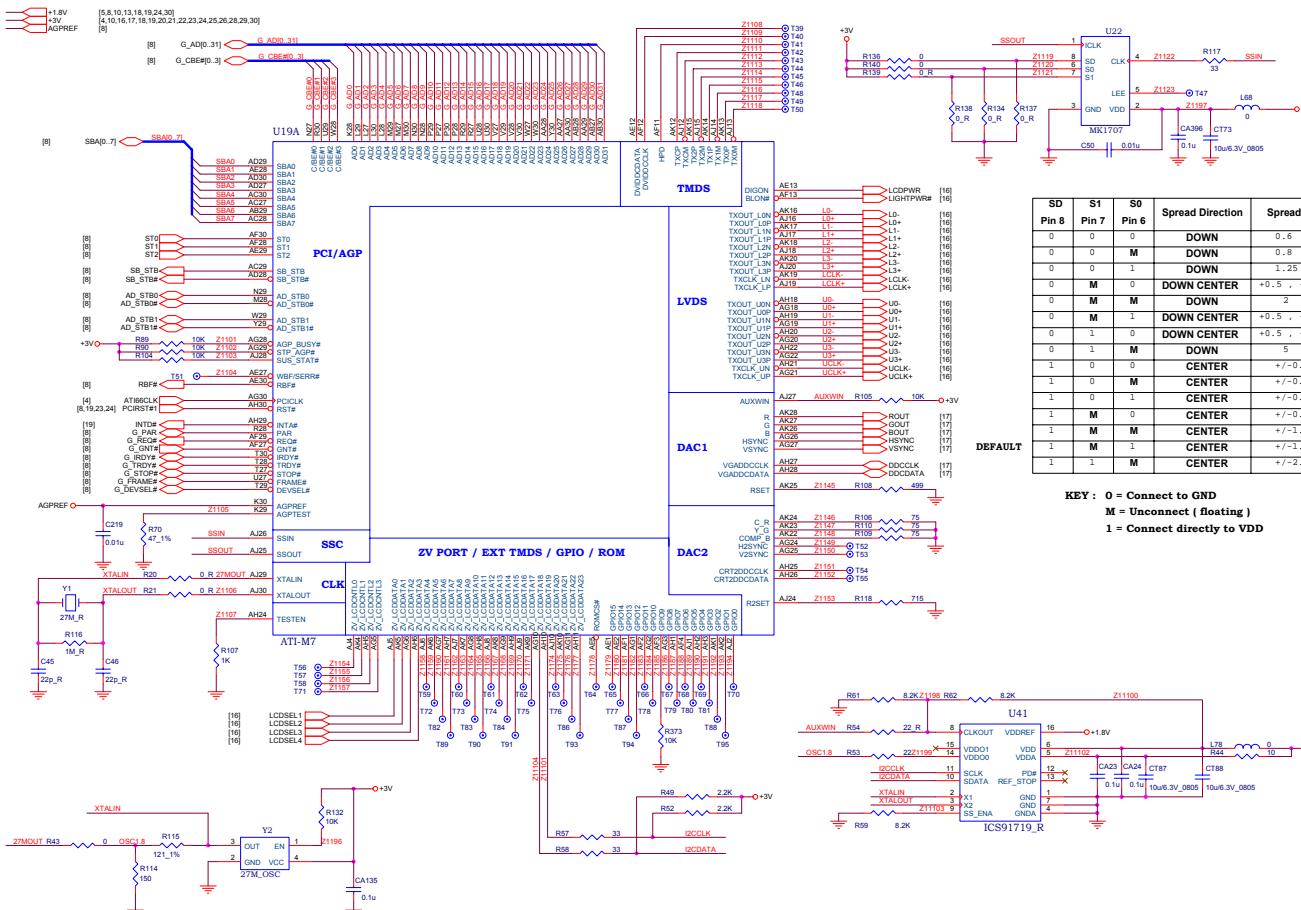
Sheet 10 of 30
ATI Power



B - 12 Mainboard (71-P5000-005)

ATI Host Interface

Sheet 11 of 30
ATI Host Interface



SD	Pin 8	Pin 7	Pin 6	Spread Direction	Spread %
0	0	0	0	DOWN	0..6
0	0	0	M	DOWN	0..8
0	0	1		DOWN	1..25
0	M	0		DOWN CENTER	+0..5, -1..5
0	M	M	DOWN	2	
0	M	1		DOWN CENTER	+0..5, -2..5
0	1	0		DOWN CENTER	+0..5, -3
0	1	M	DOWN	5	
1	0	0		CENTER	+/-0..35
1	0	M		CENTER	+/-0..5
1	0	1		CENTER	+/-0..7
1	M	0		CENTER	+/-0..8
1	M	M		CENTER	+/-1..1
1	M	1		CENTER	+/-1..4
1	1	M		CENTER	+/-2..5

KEY : 0 = Connect to GND
M = Unconnect (floating)
1 = Connect directly to VDD

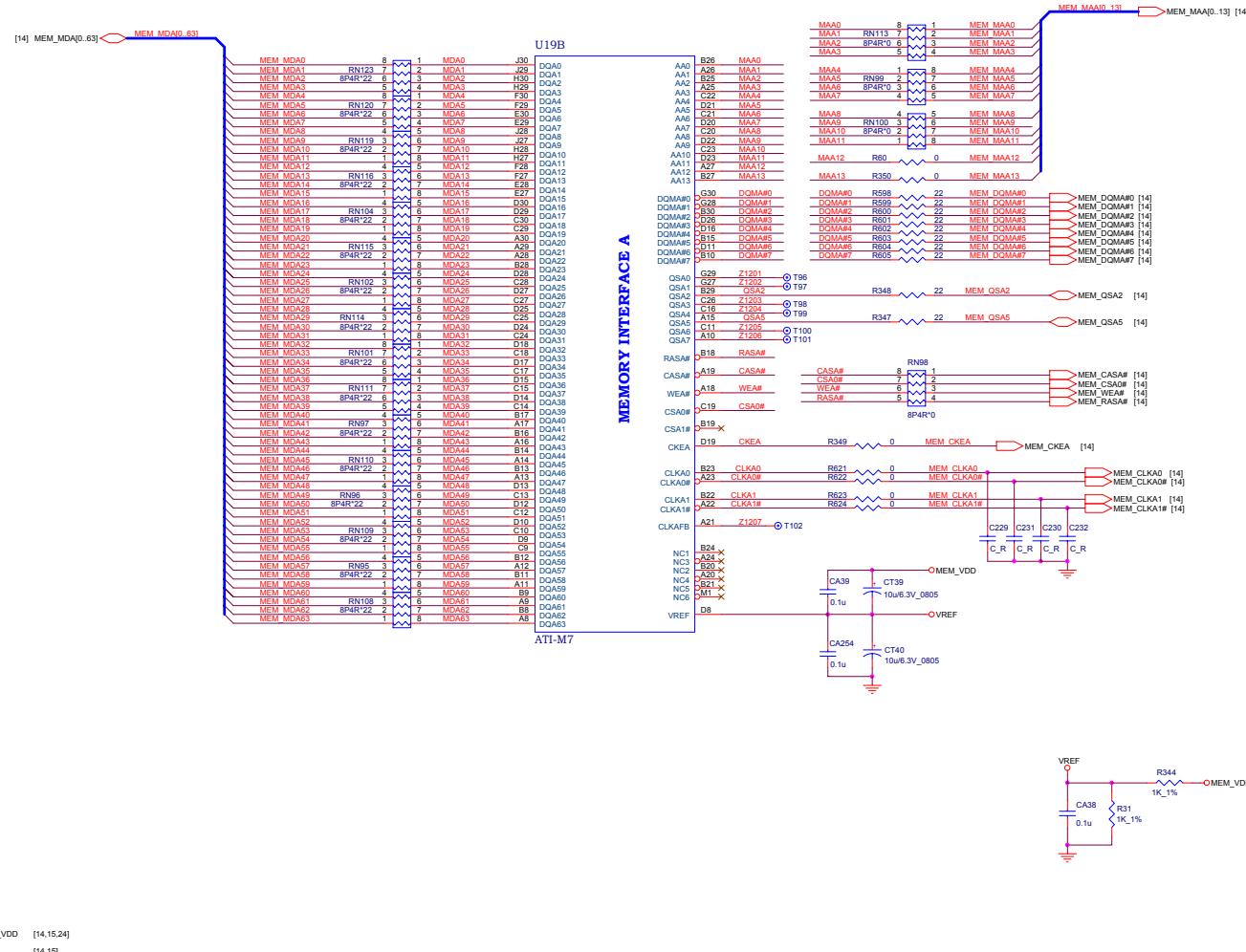


Schematic Diagrams

Schematic Diagrams

ATI Memory - 1 of 2

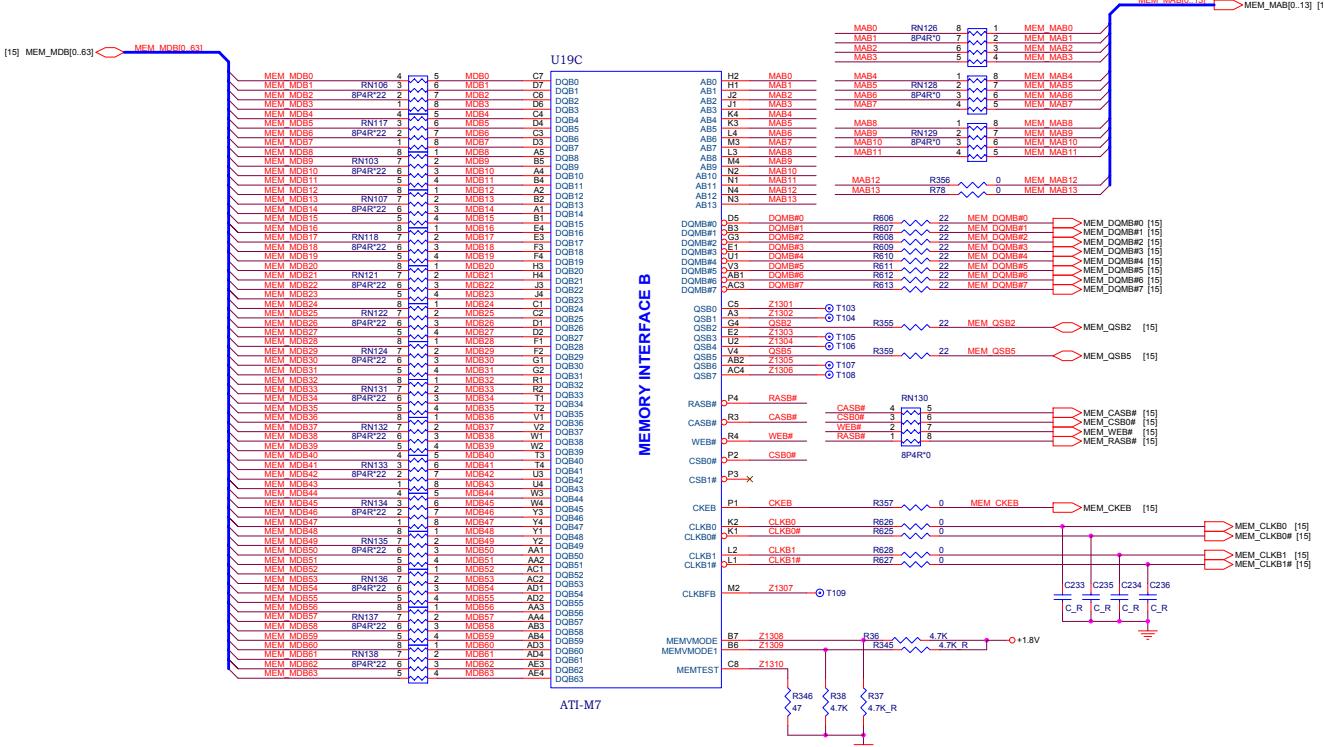
Sheet 12 of 30
ATI Memory
1 of 2



Schematic Diagrams

ATI Memory - 2 of 2

Sheet 13 of 30
ATI Memory
2 of 2



Schematic Diagrams

Schematic Diagrams

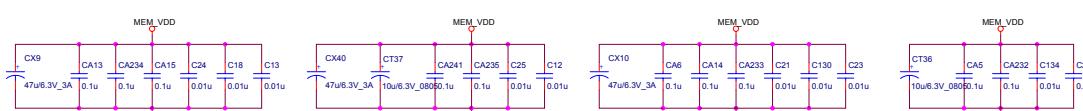
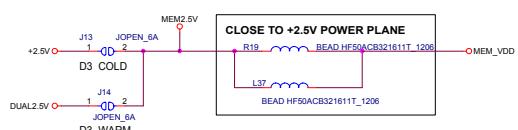
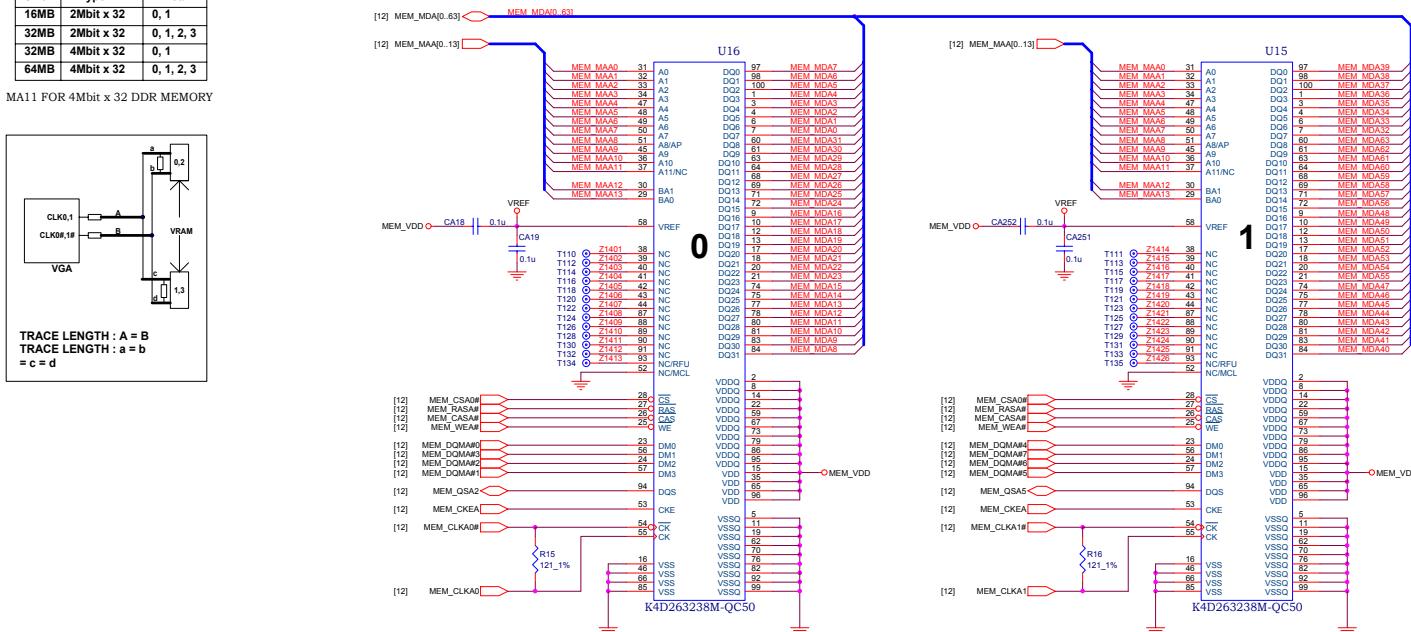
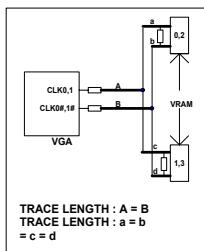
Schematic Diagrams

DDR VRAM - 1 of 2

Sheet 14 of 30
32bit DDR VRAM
1 of 2

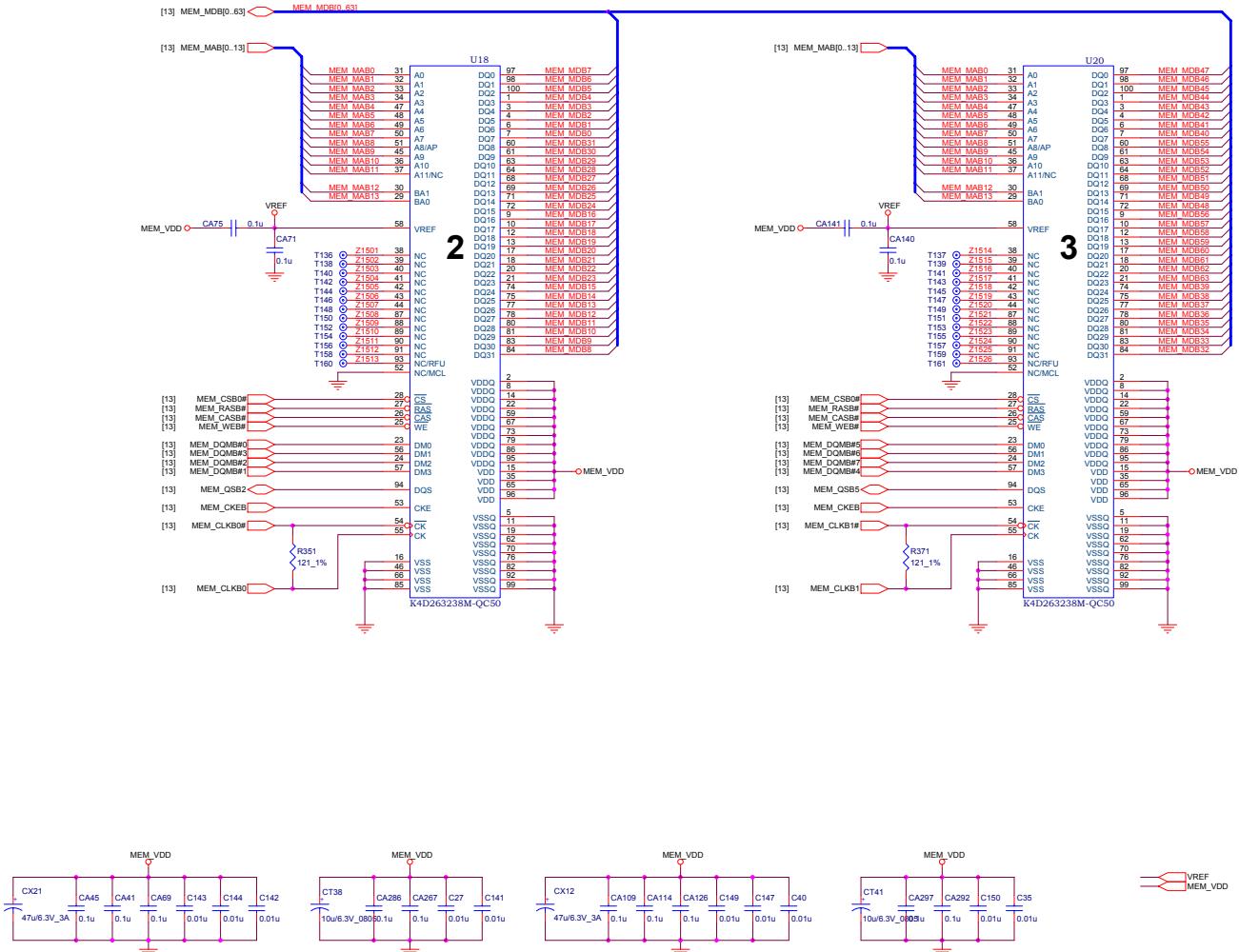
Size	Type	Install
16MB	2Mbit x 32	0, 1
32MB	2Mbit x 32	0, 1, 2, 3
32MB	4Mbit x 32	0, 1
64MB	4Mbit x 32	0, 1, 2, 3

MA11 FOR 4Mbit x 32 DDR MEMORY



DDR VRAM - 2 of 2

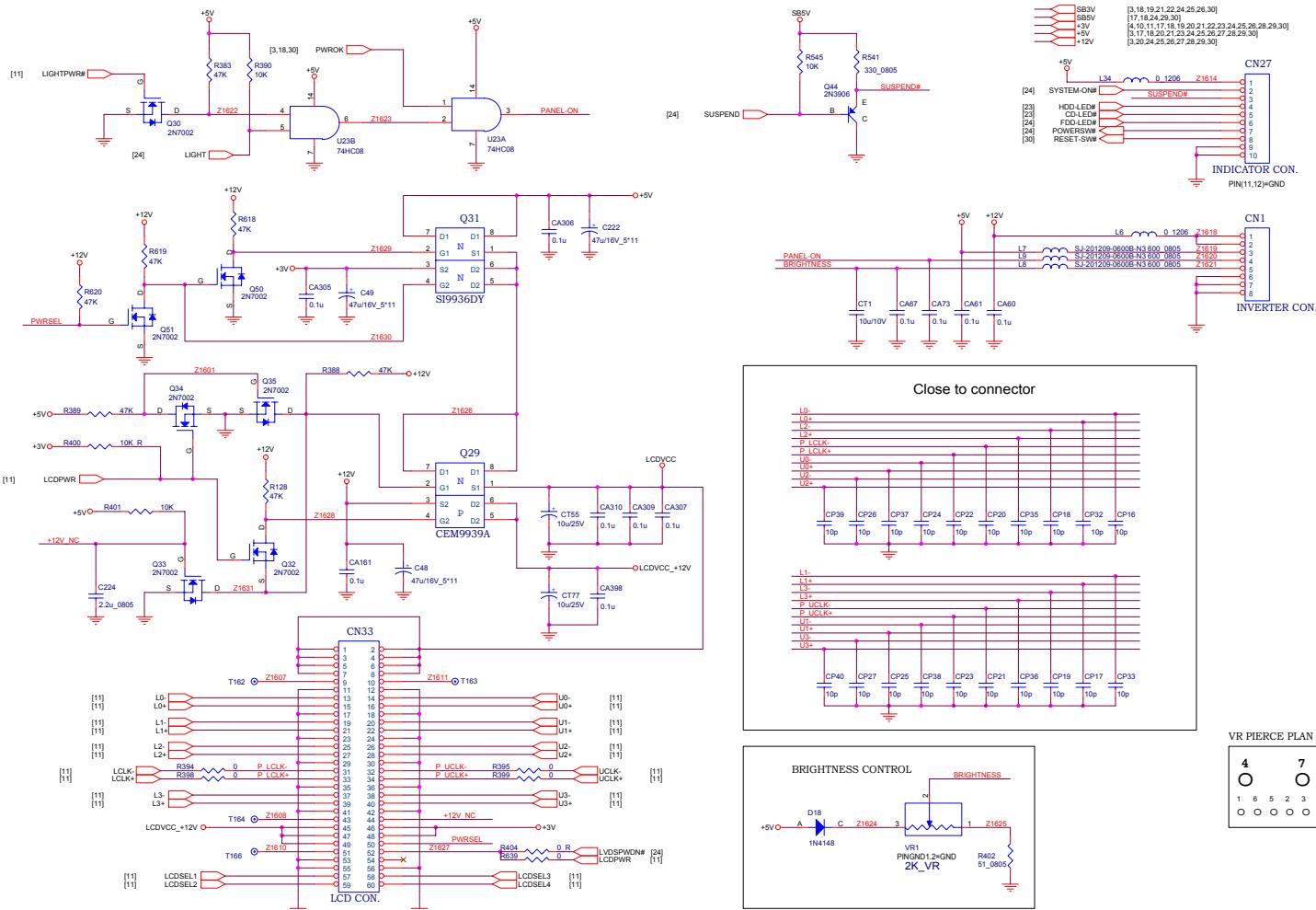
Sheet 15 of 30
32bit DDR VRAM
2 of 2



Schematic Diagrams

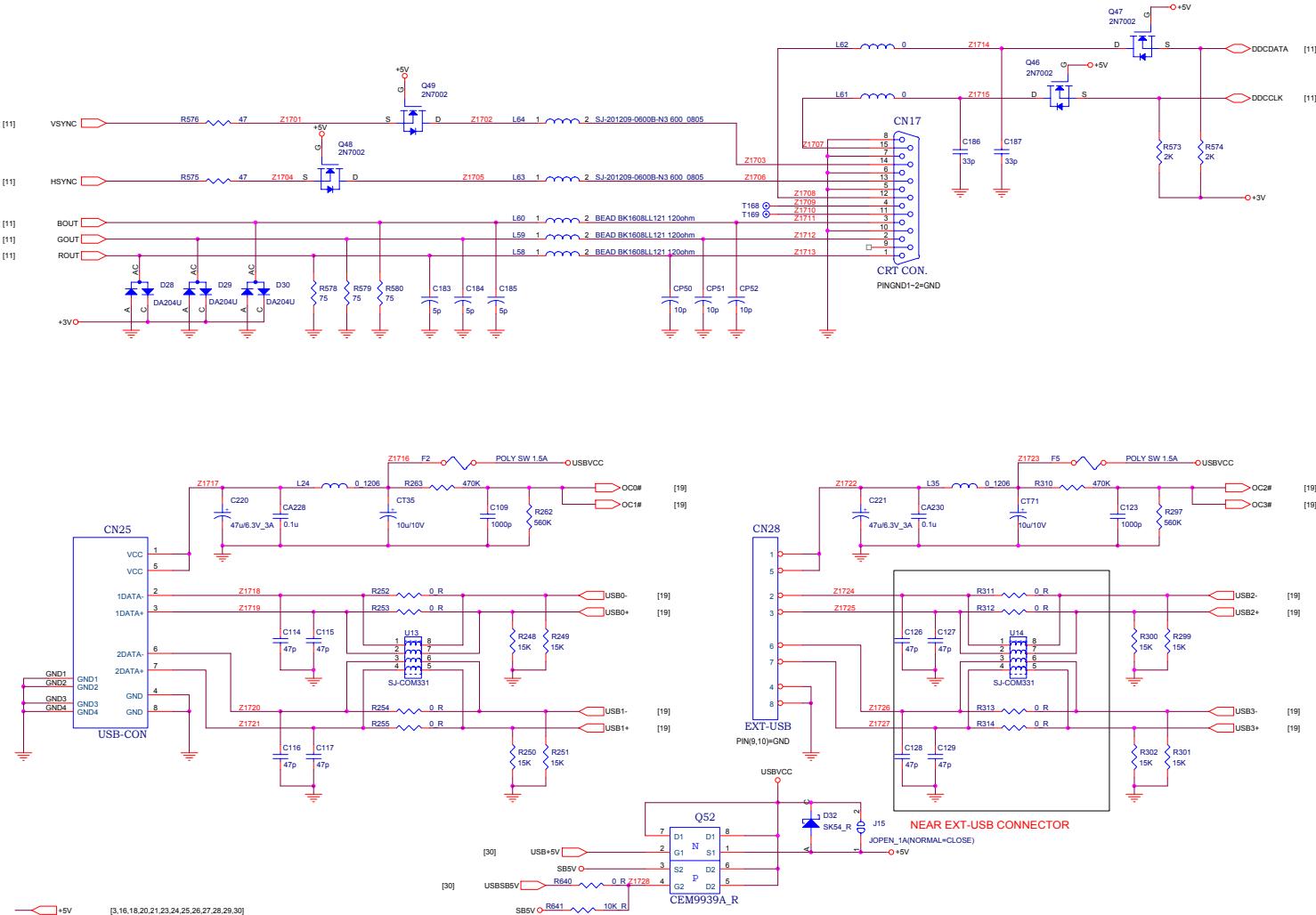
LCD Connector

Sheet 16 of 30
LCD Connector



CRT & USB

Sheet 17 of 30
CRT & USB

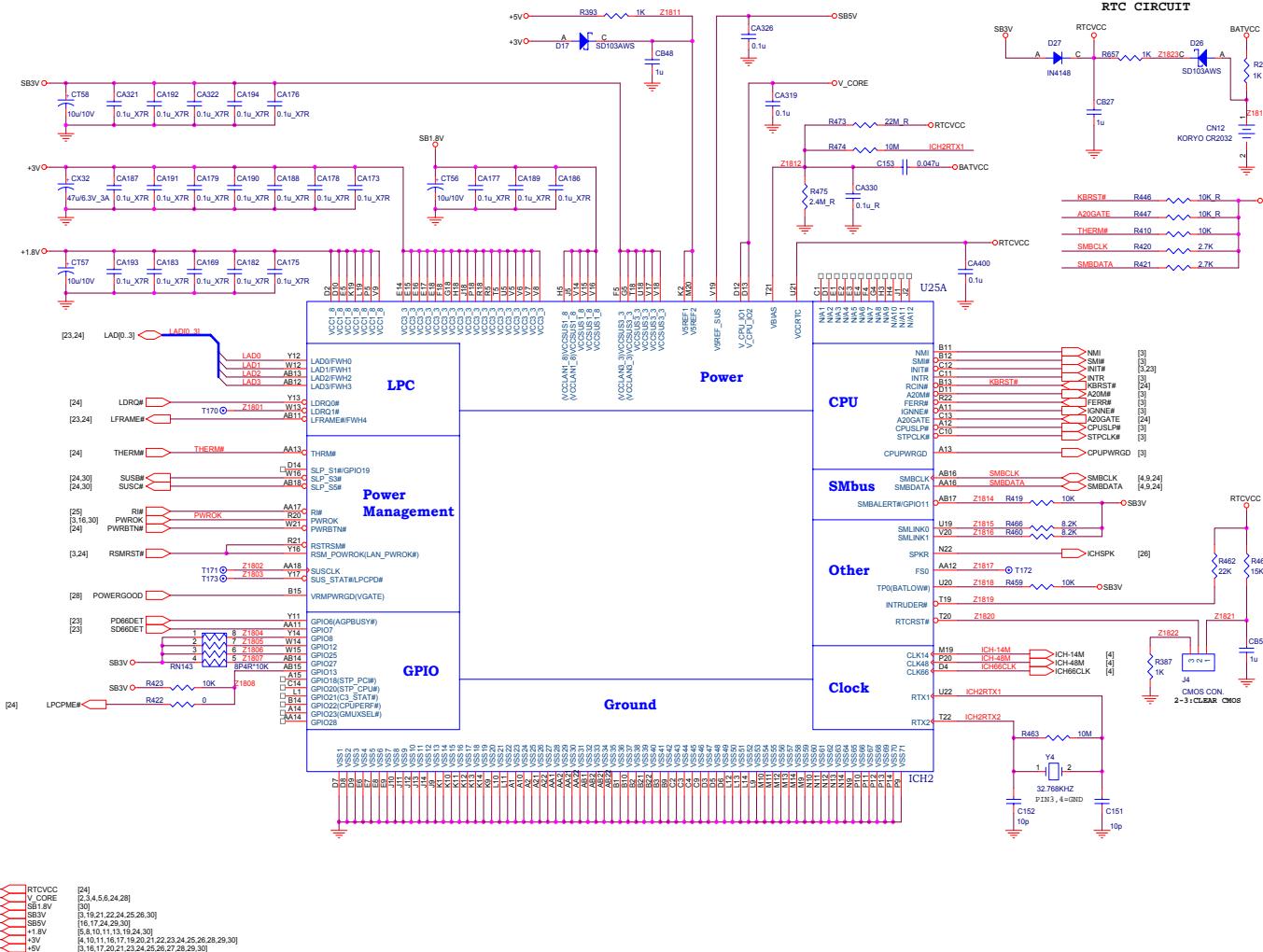


Schematic Diagrams

Schematic Diagrams

ICH2 - 1 of 2

Sheet 18 of 30
ICH2 (Power, LPC,
Clock, SMBus)
1 of 2

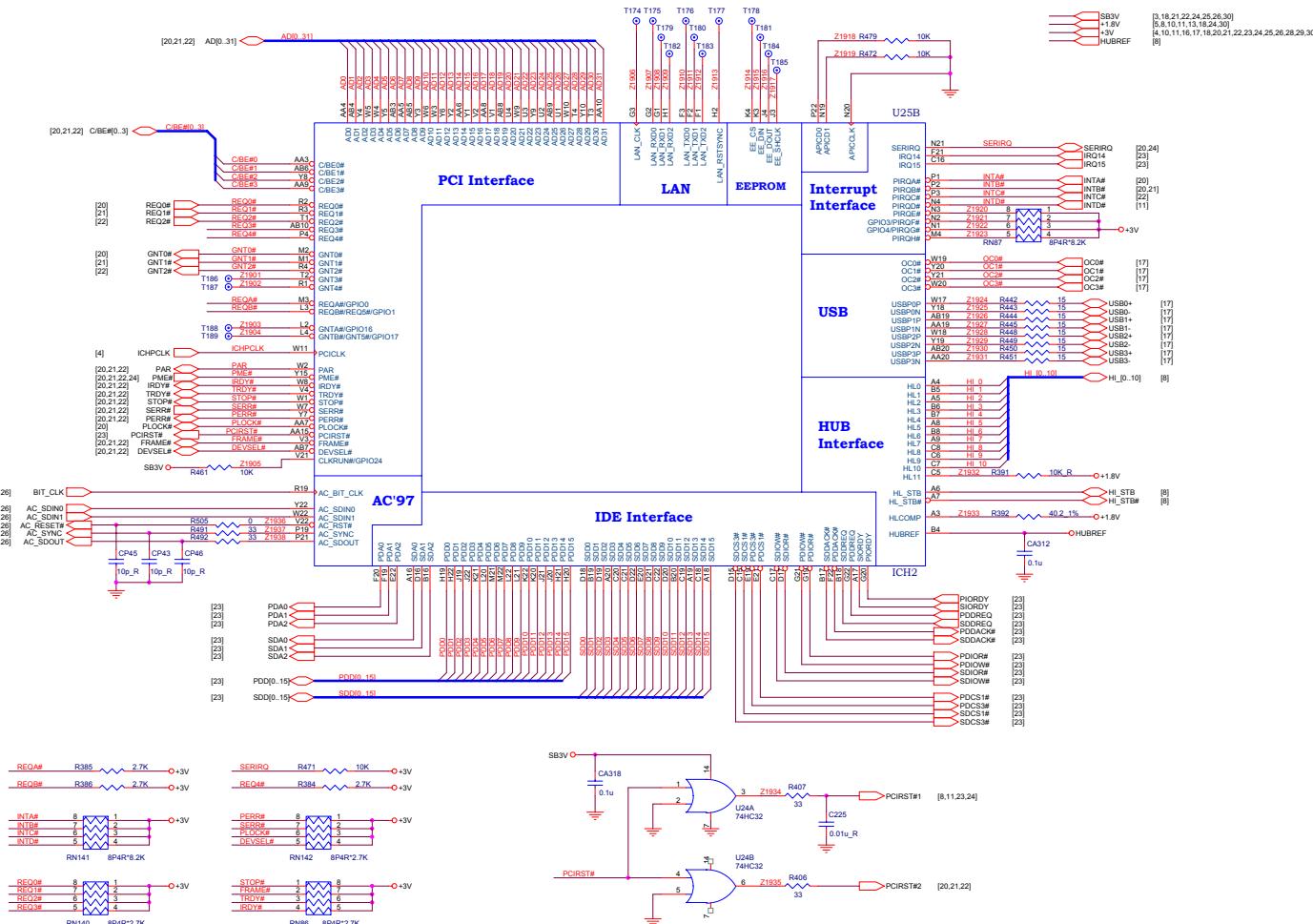


B - 20 Mainboard (71-P5000-005)

Schematic Diagrams

ICH2 - 2 of 2

Sheet 19 of 30
ICH2 (PCI, IDE, Hub,
USB, LAN)
2 of 2

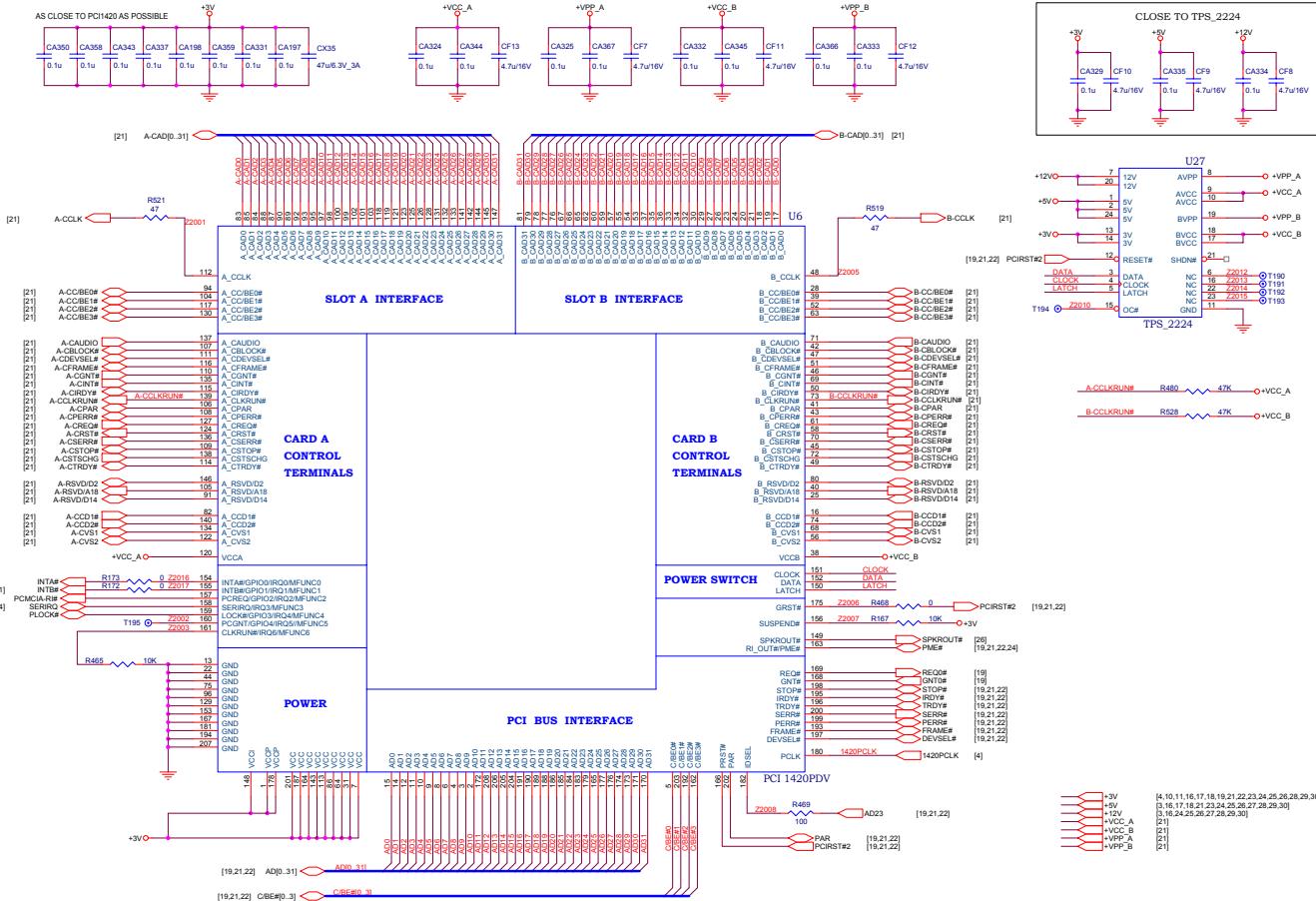


Schematic Diagrams

Schematic Diagrams

CardBus (TI PCI1420)

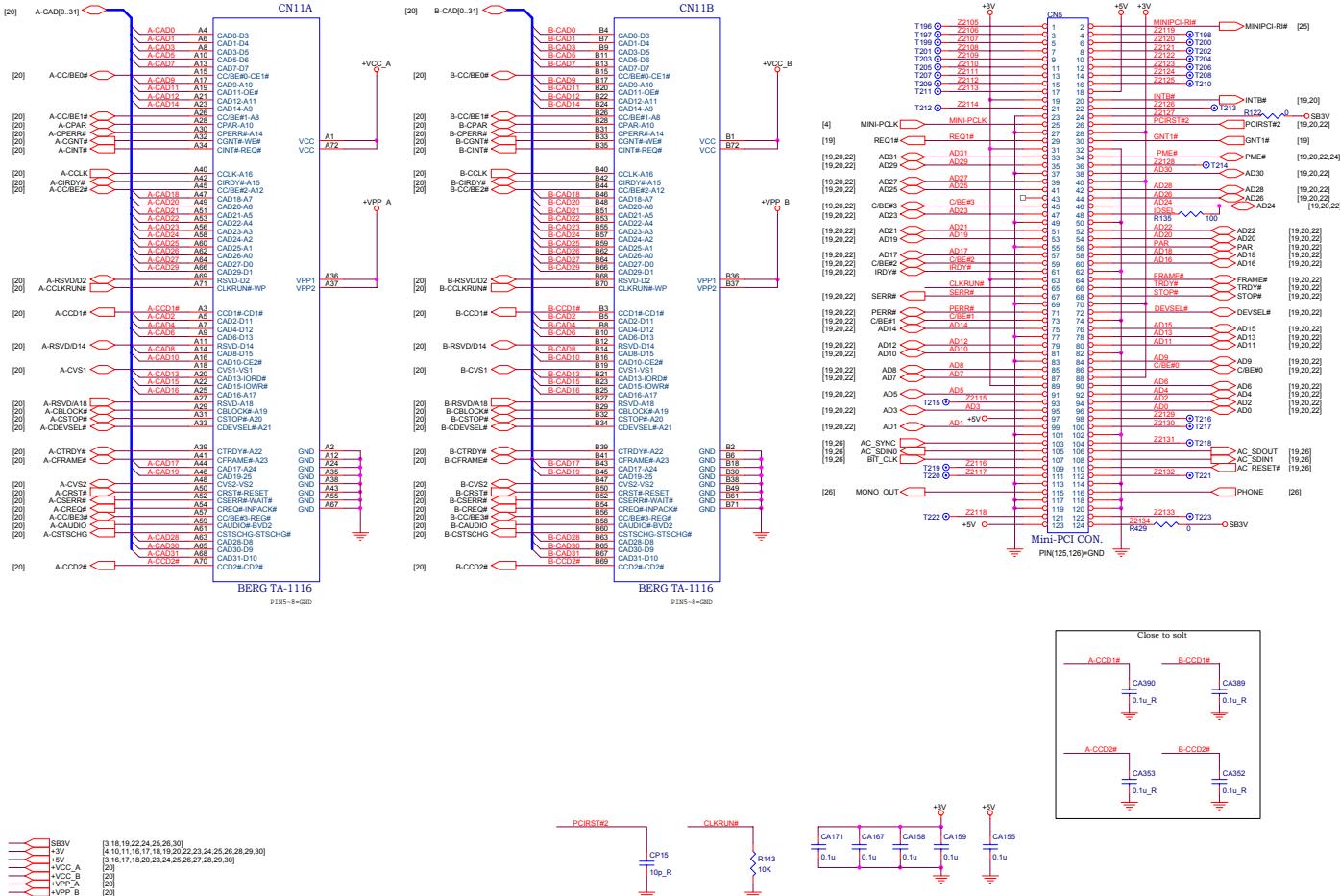
Sheet 20 of 30
CardBus (TI PCI1420)



B - 22 Mainboard (71-P5000-005)

Sheet 21 of 30 CardBus Slot & Mini PCI

CardBus Slot & Mini PCI



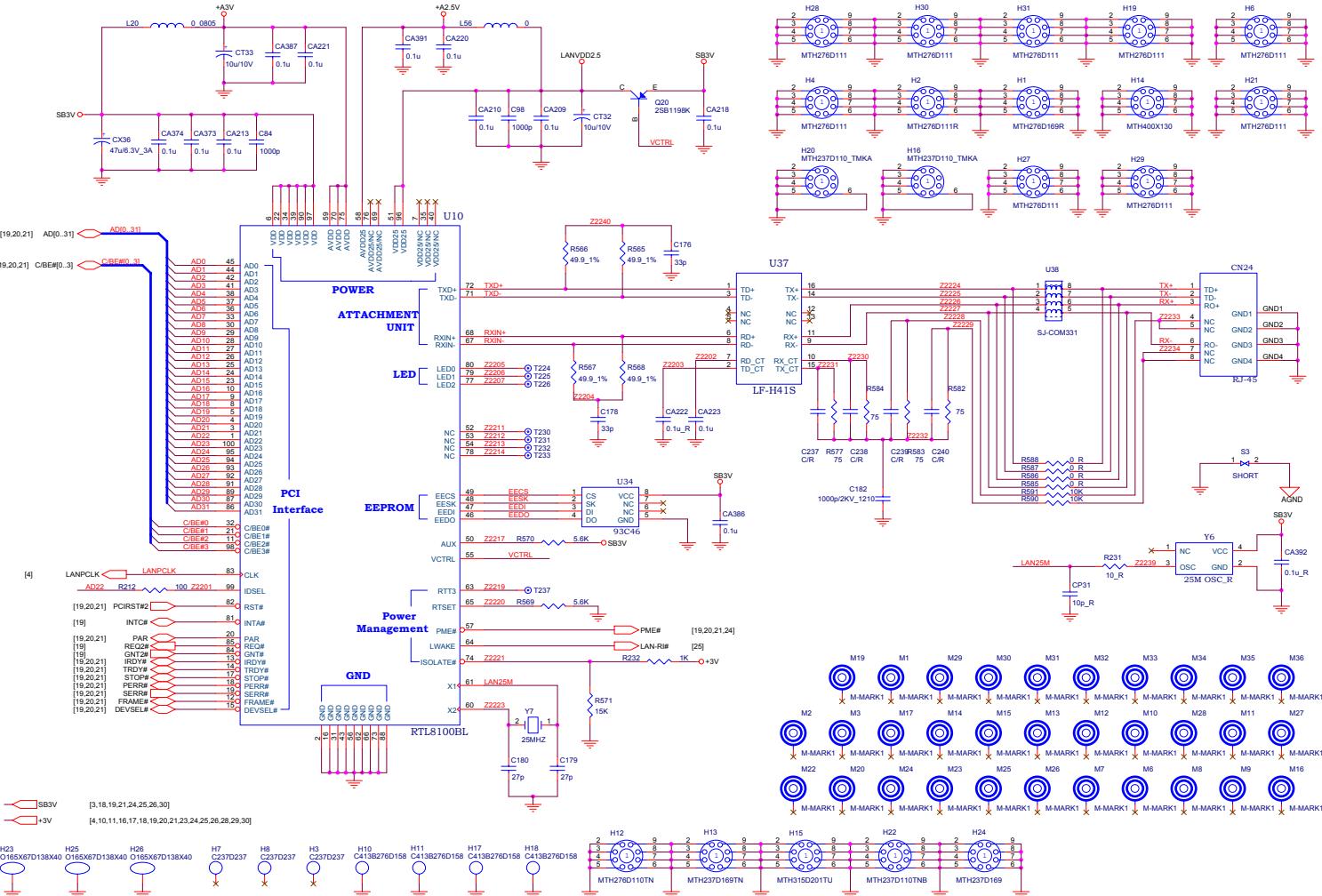
Schematic Diagrams

Schematic Diagrams

Schematic Diagrams

LAN 8193C

Sheet 22 of 30
LAN 8193C

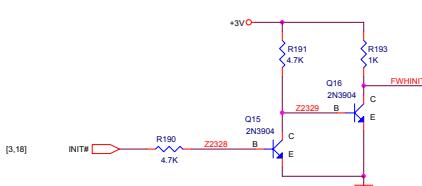
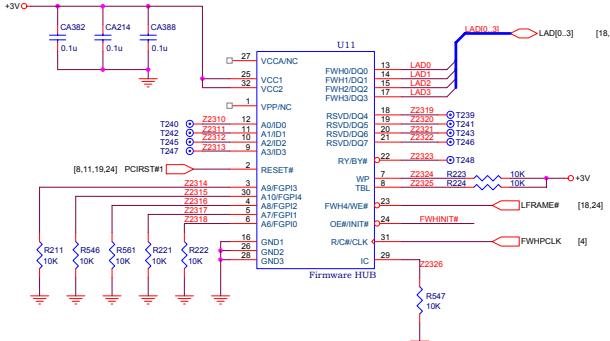
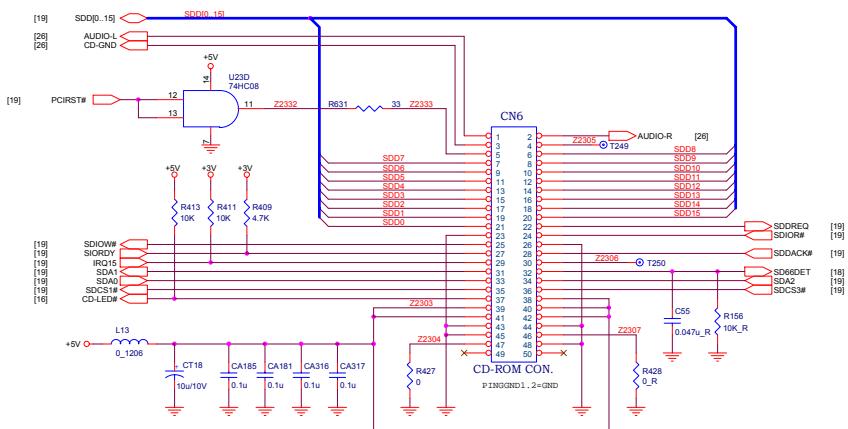
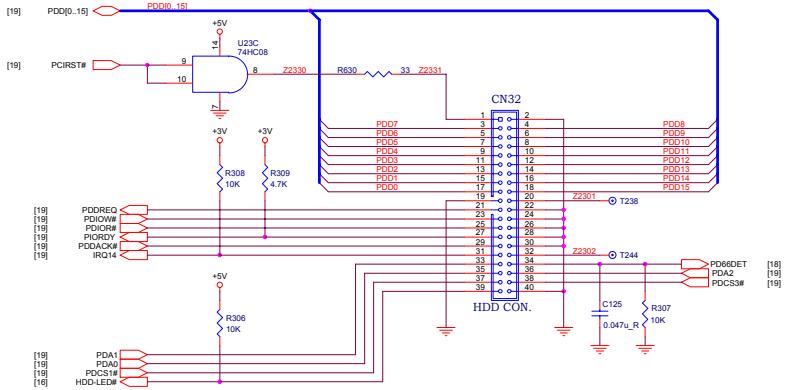


B - 24 Mainboard (71-P5000-005)

IDE Connector & Firmware HUB

Sheet 23 of 30

IDE Connector & Firmware HUB



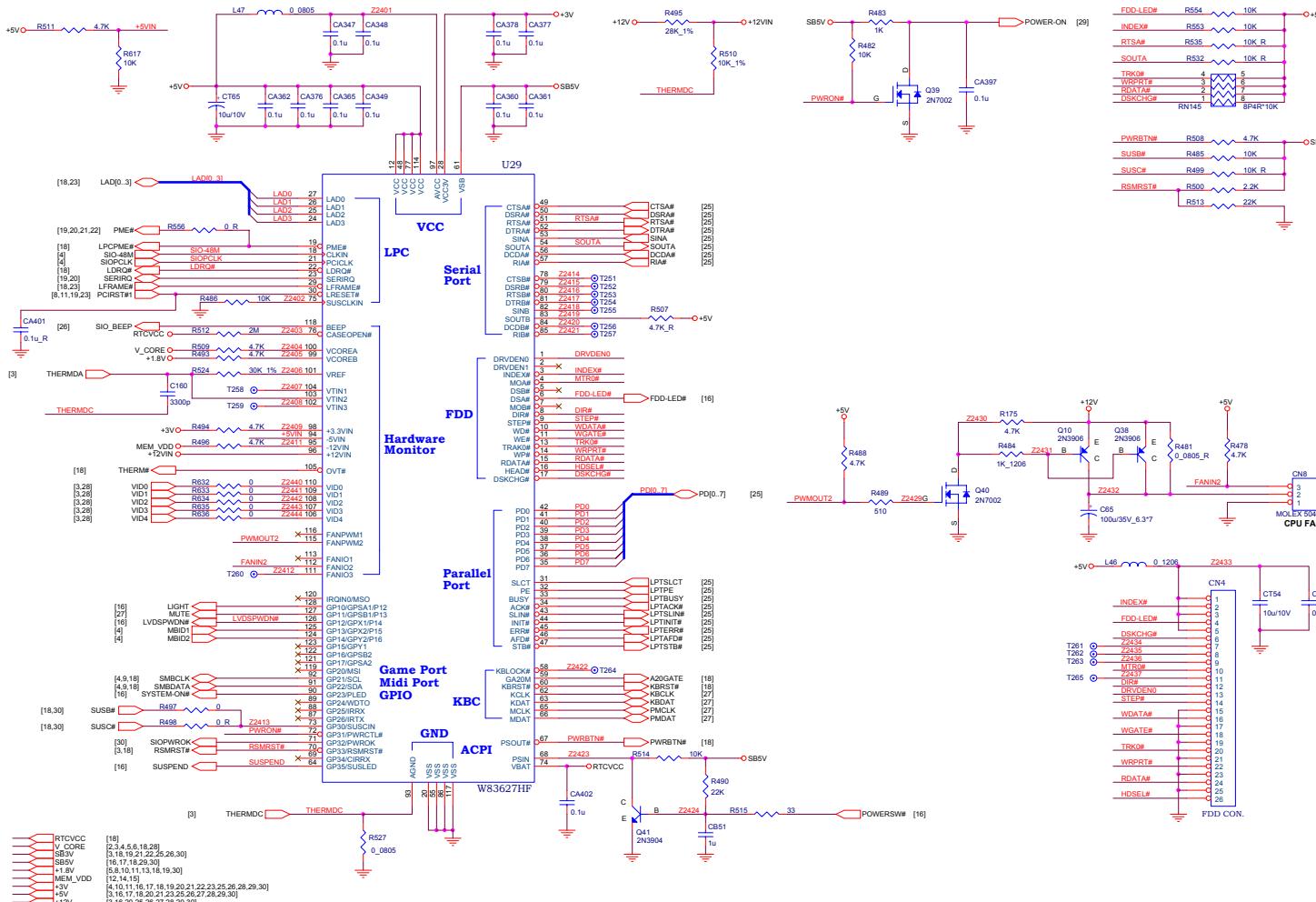
— [4,10,11,16,17,18,19,20,21,22,24,25,26,28,29,30]
— [3,16,17,18,20,21,24,25,26,27,28,29,30]

Schematic Diagrams

Schematic Diagrams

Super I/O W83627HF

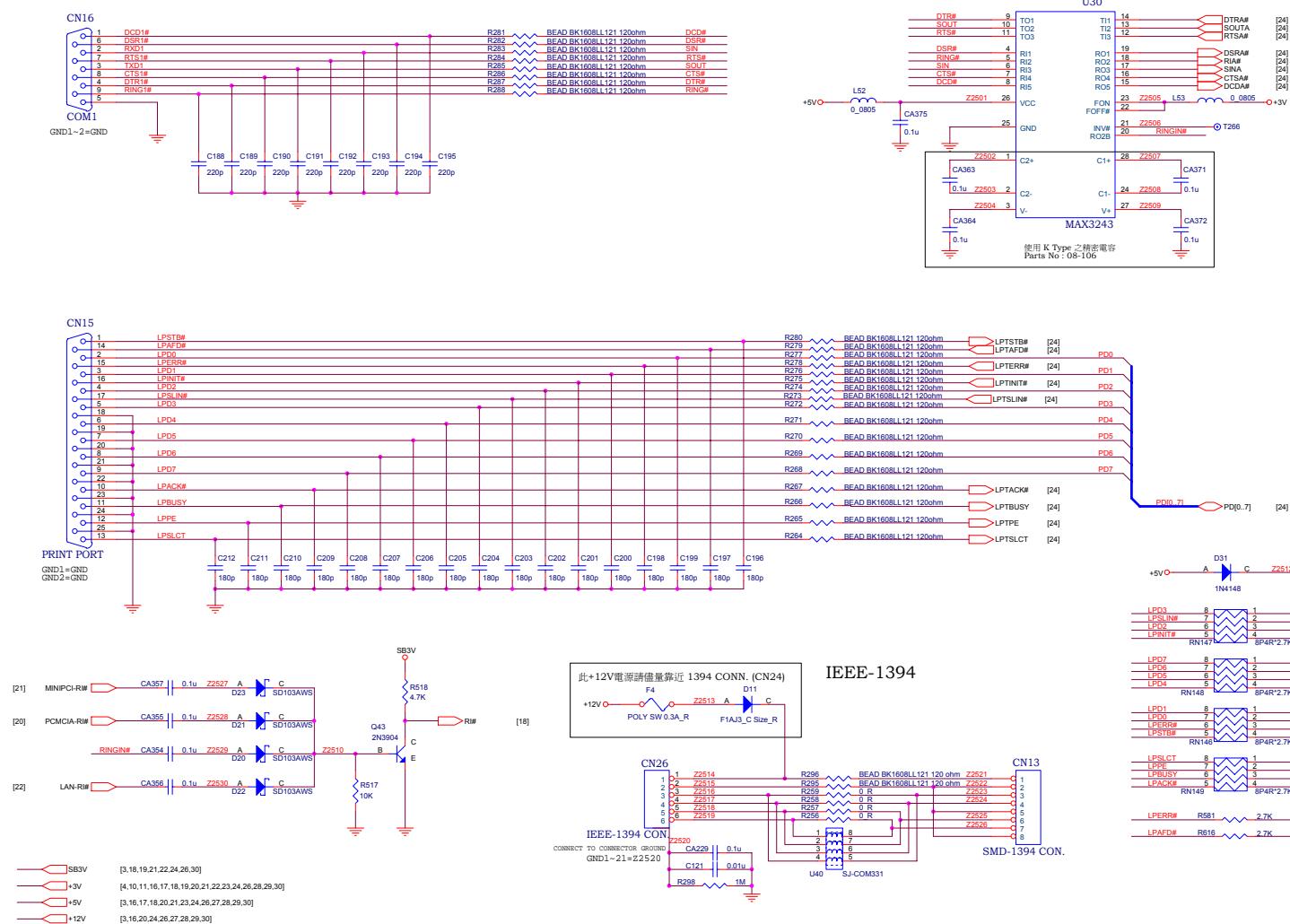
Sheet 24 of 30
Super I/O W83627HF



B - 26 Mainboard (71-P5000-005)

Serial & Parallel Port, MDC

Sheet 25 of 30
Serial & Parallel Port,
MDC

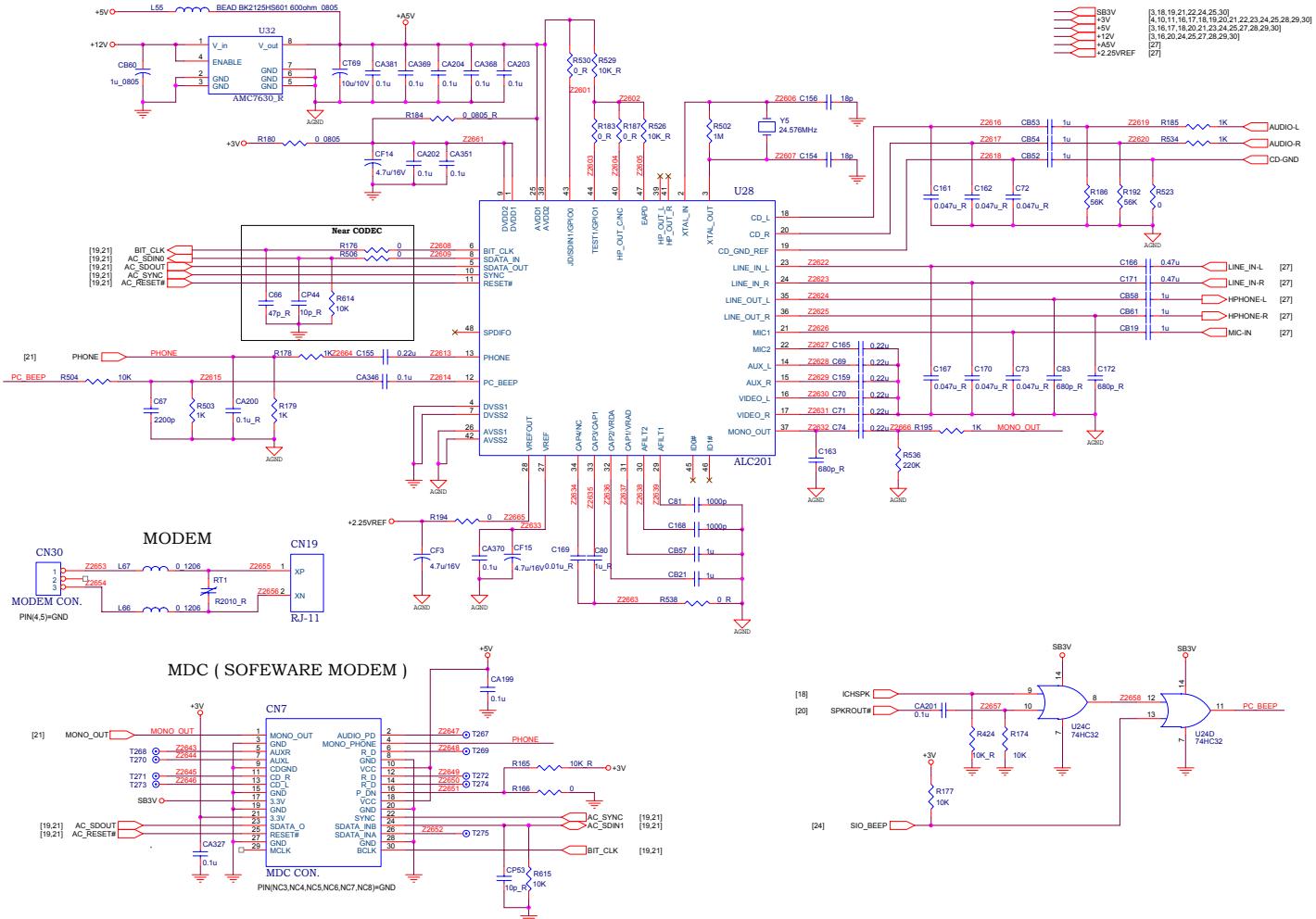


Schematic Diagrams

Schematic Diagrams

AC'97 Codec

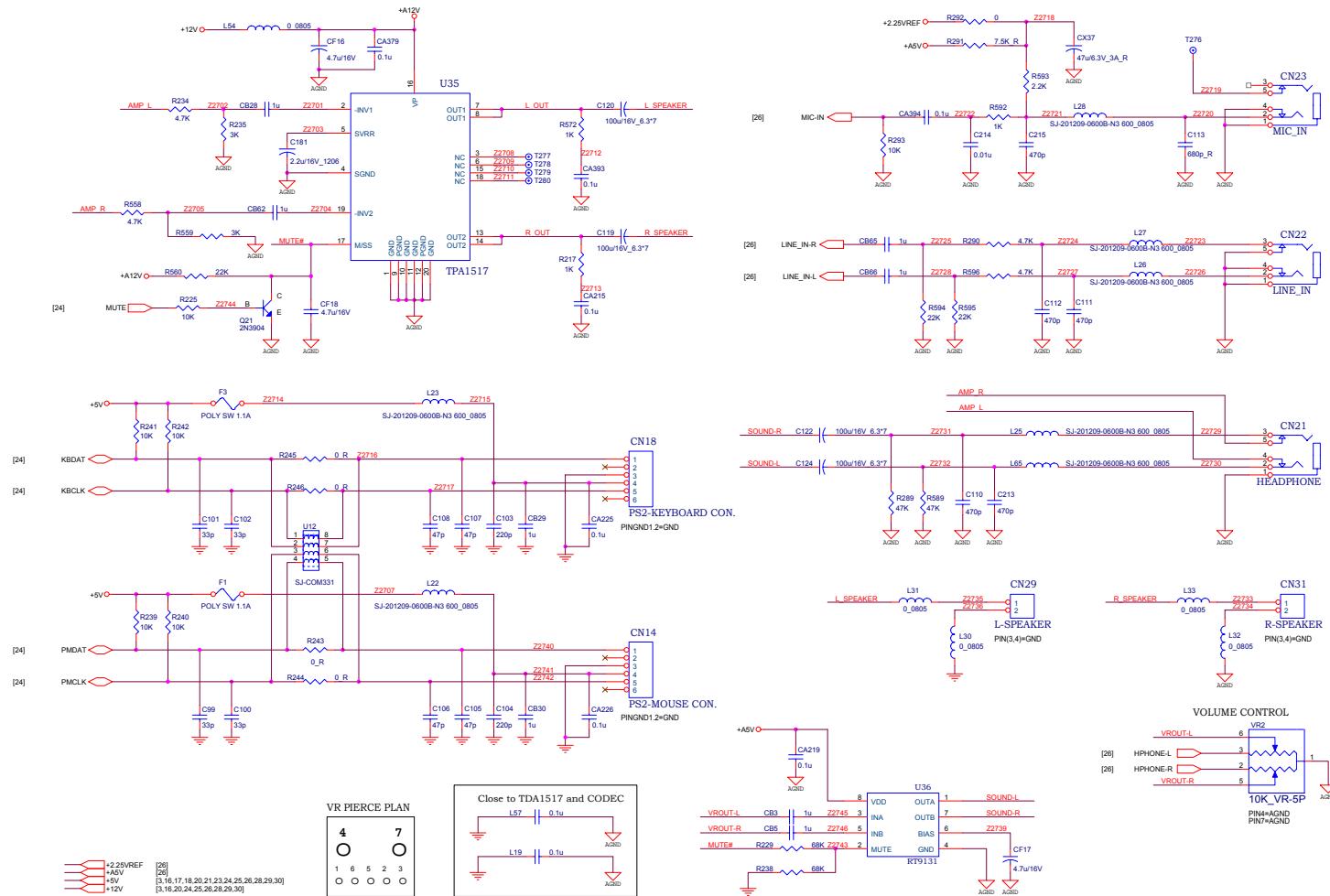
Sheet 26 of 30
AC'97 Codec



B - 28 Mainboard (71-P5000-005)

Amplifier & Inverter Con.

Sheet 27 of 30
Amplifier & Inverter
Con.

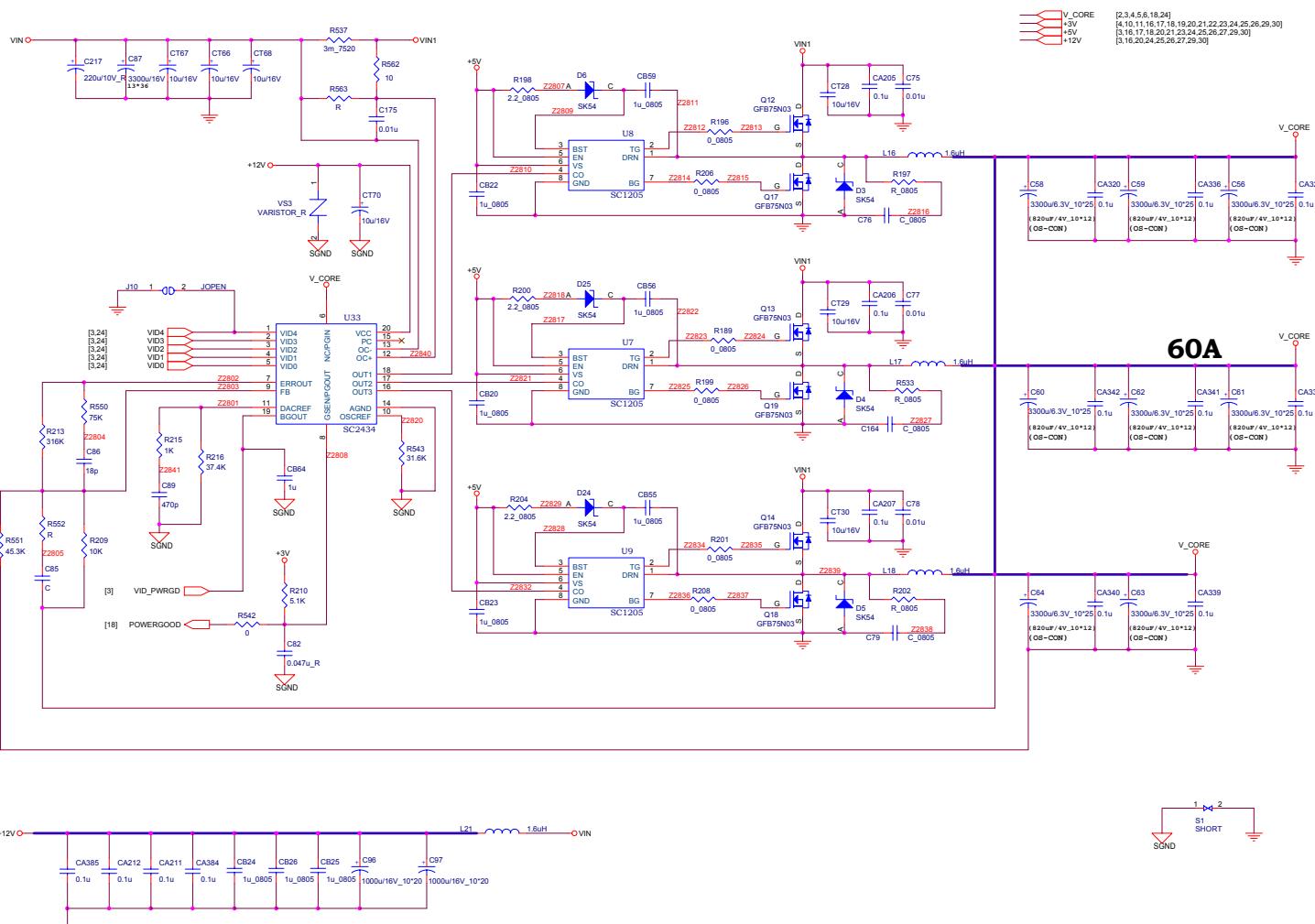


Schematic Diagrams

Power - 1 of 3

Sheet 28 of 30

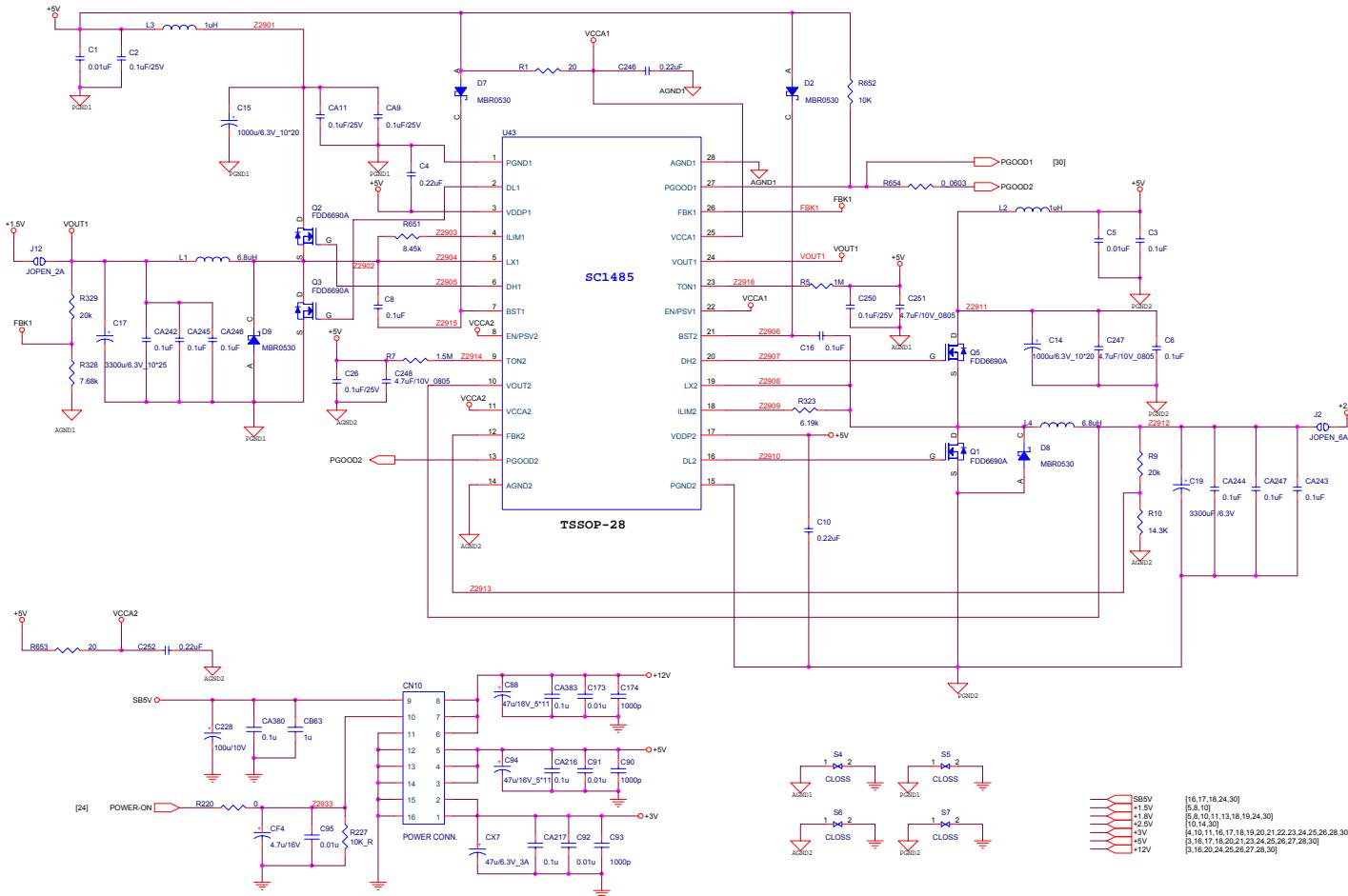
Power
1 of 3



B - 30 Mainboard (71-P5000-005)

Power - 2 of 3

Sheet 29 of 30
Power
2 of 3

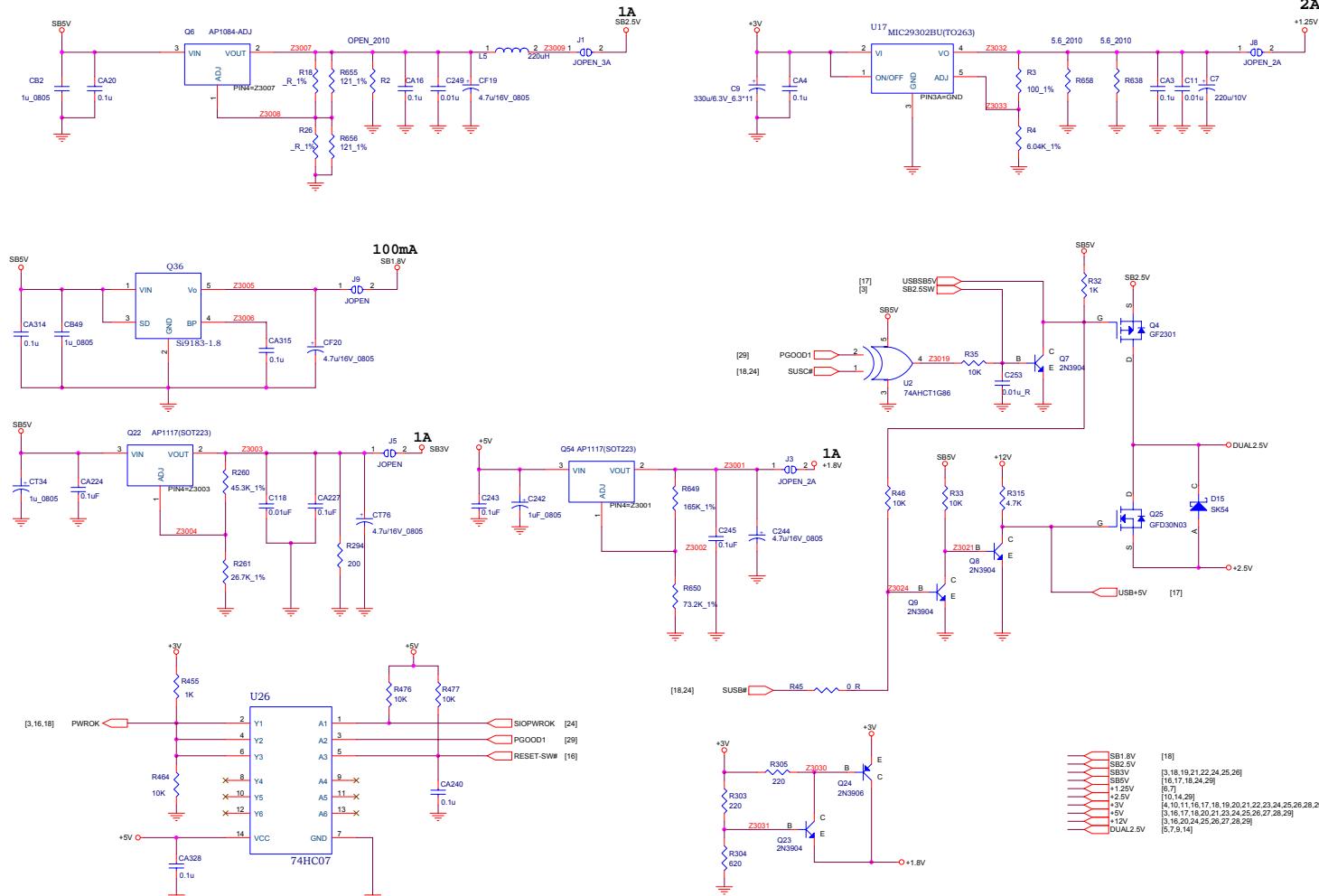


Schematic Diagrams

Schematic Diagrams

Power - 3 of 3

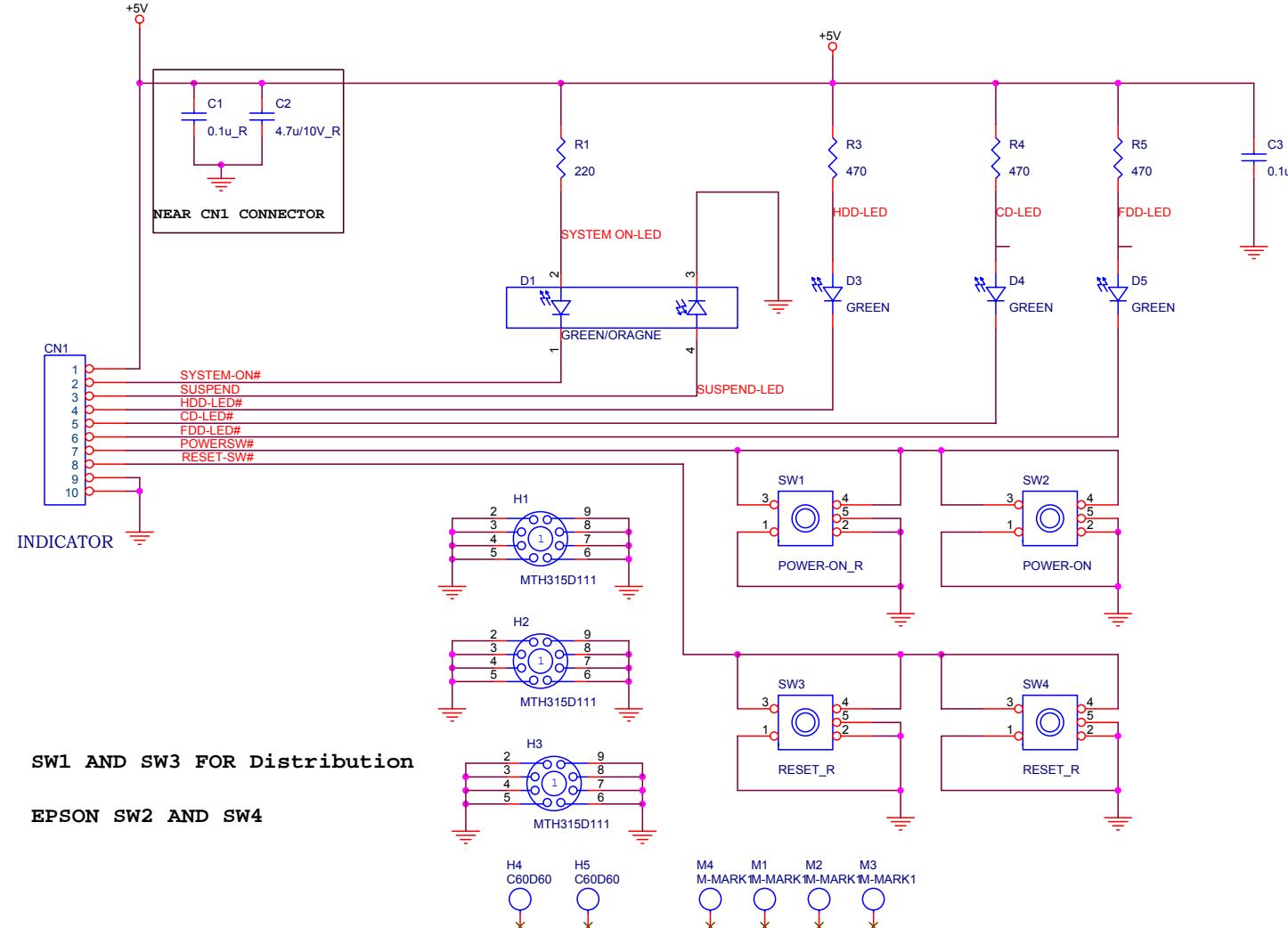
Sheet 30 of 30
Power
3 of 3



B - 32 Mainboard (71-P5000-005)

Indicator Board

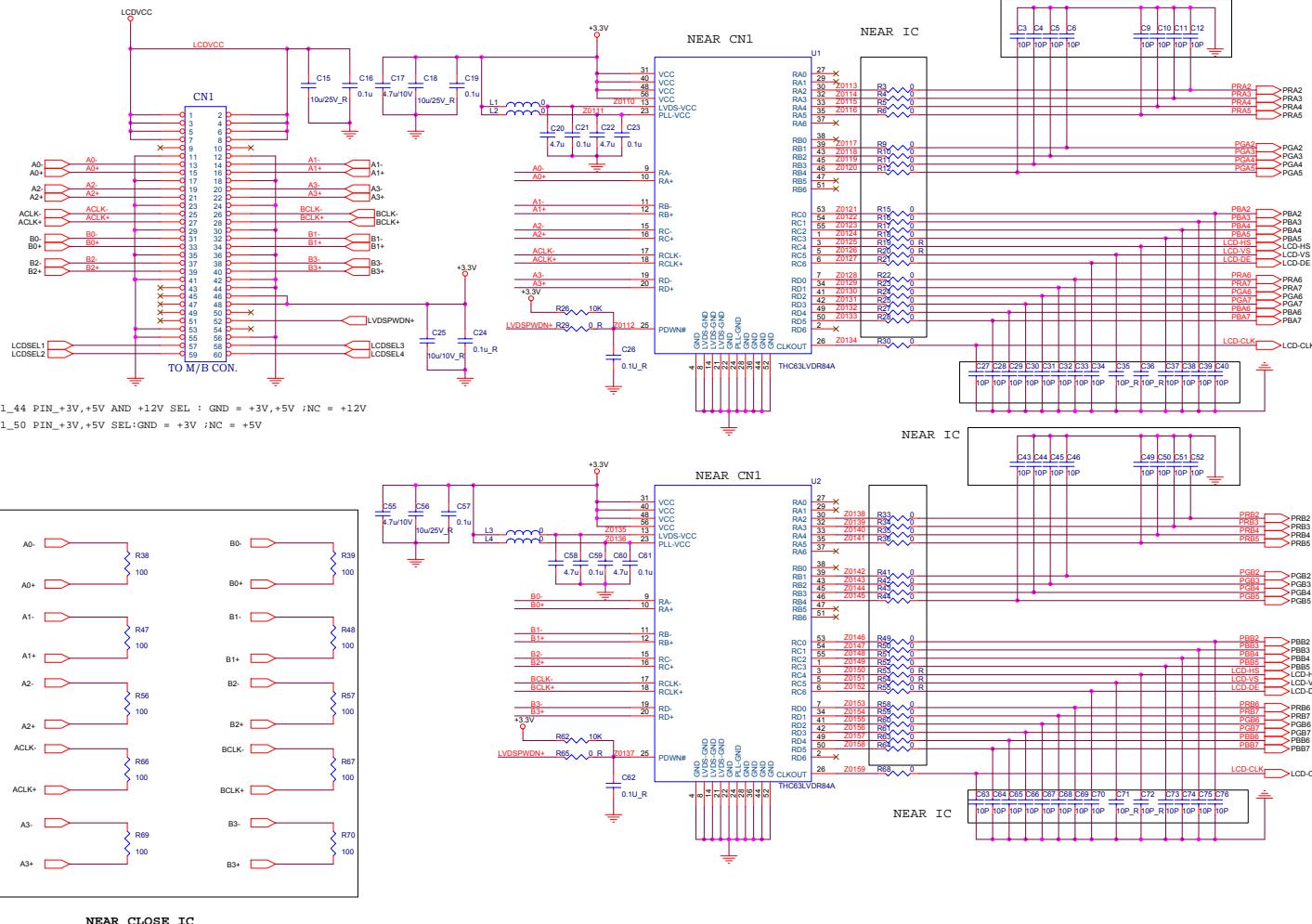
Sheet 1 of 1
Indicator Board



Schematic Diagrams

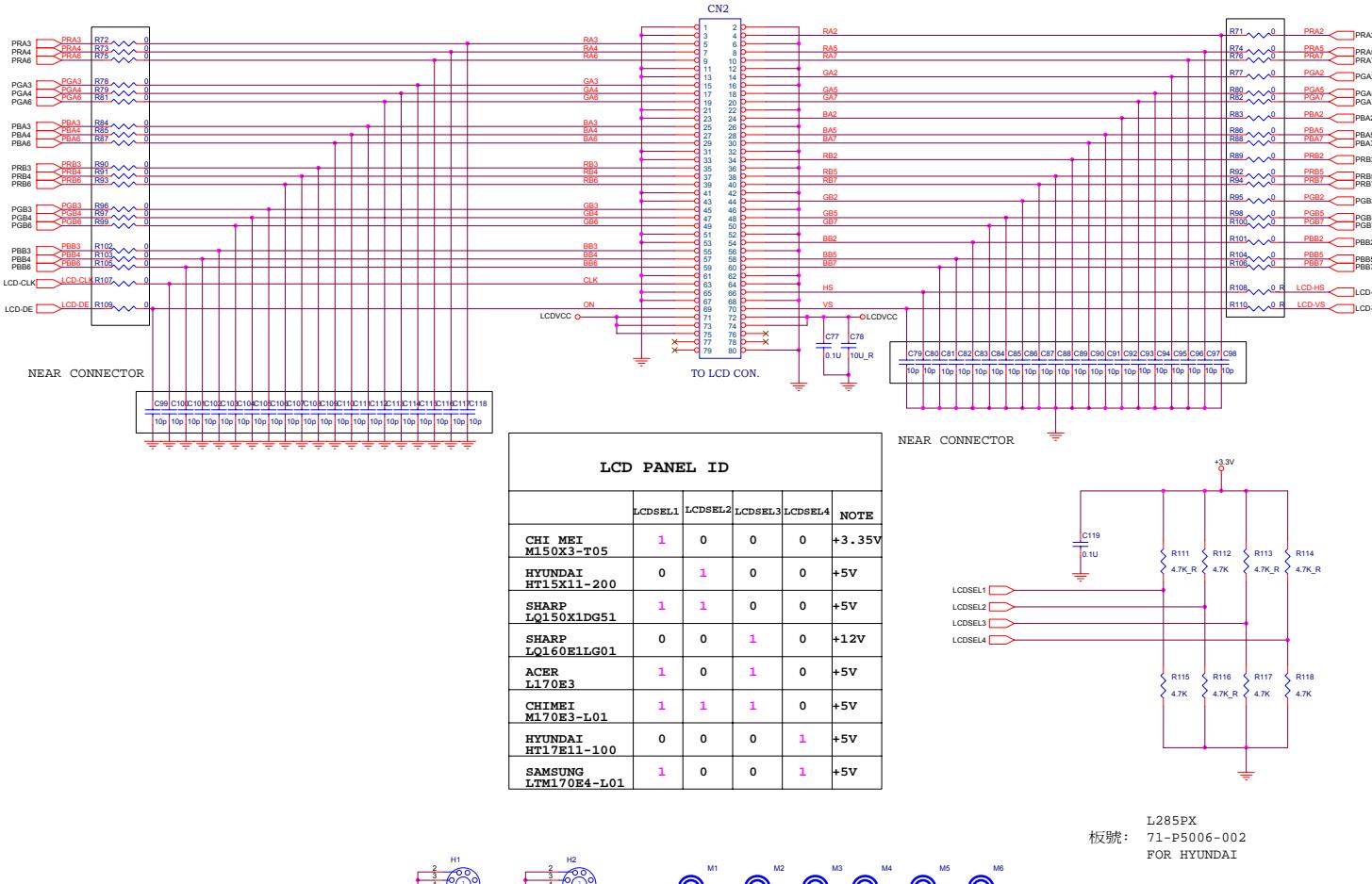
LCD Transfer Board - Hyundai

Sheet 1 of 2
LCD Transfer Board
 (Hyundai
HT15X11-200)



LCD Transfer Board - Hyundai

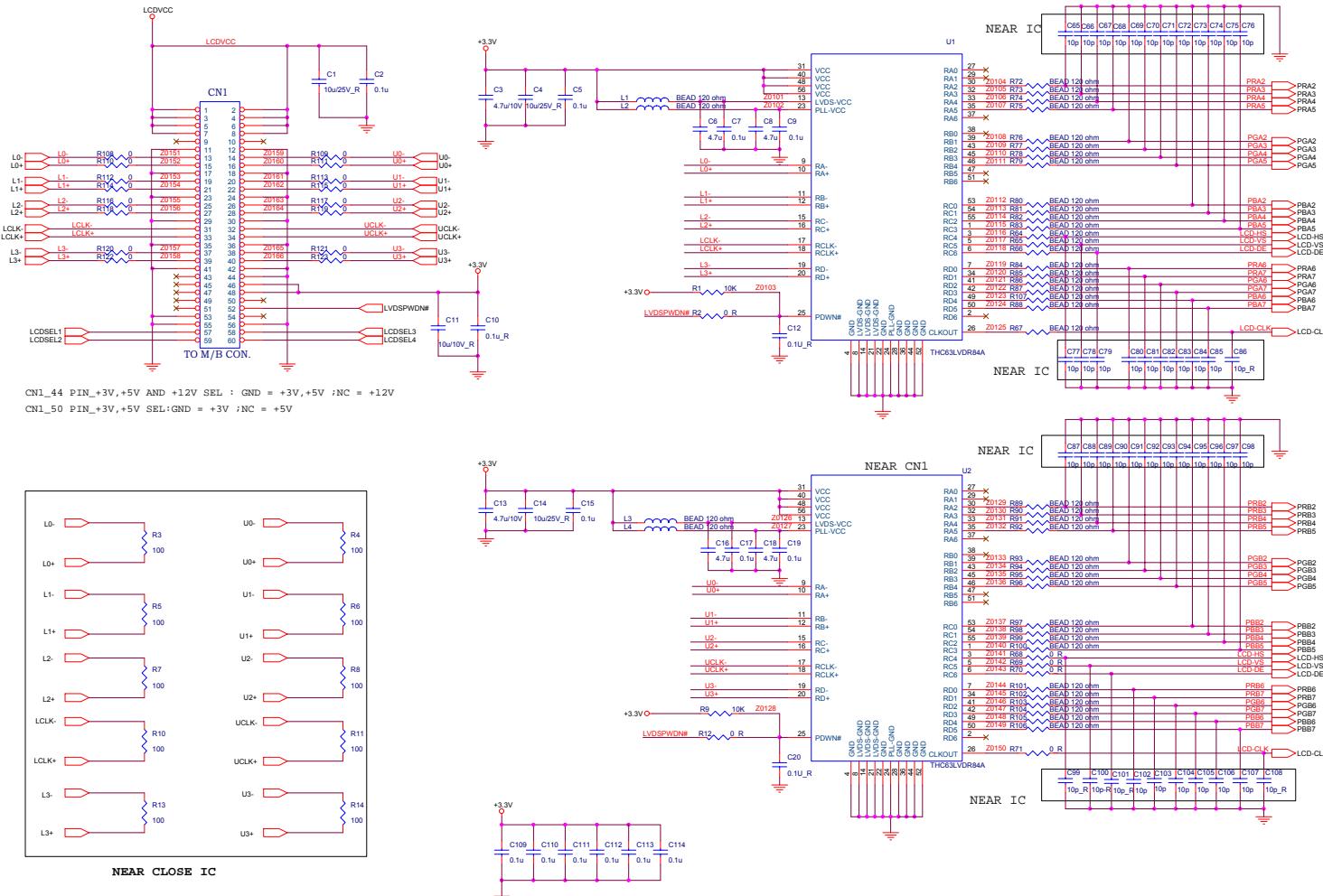
Sheet 2 of 2
LCD Transfer Board
(Hyundai
HT15X11-200)



Schematic Diagrams

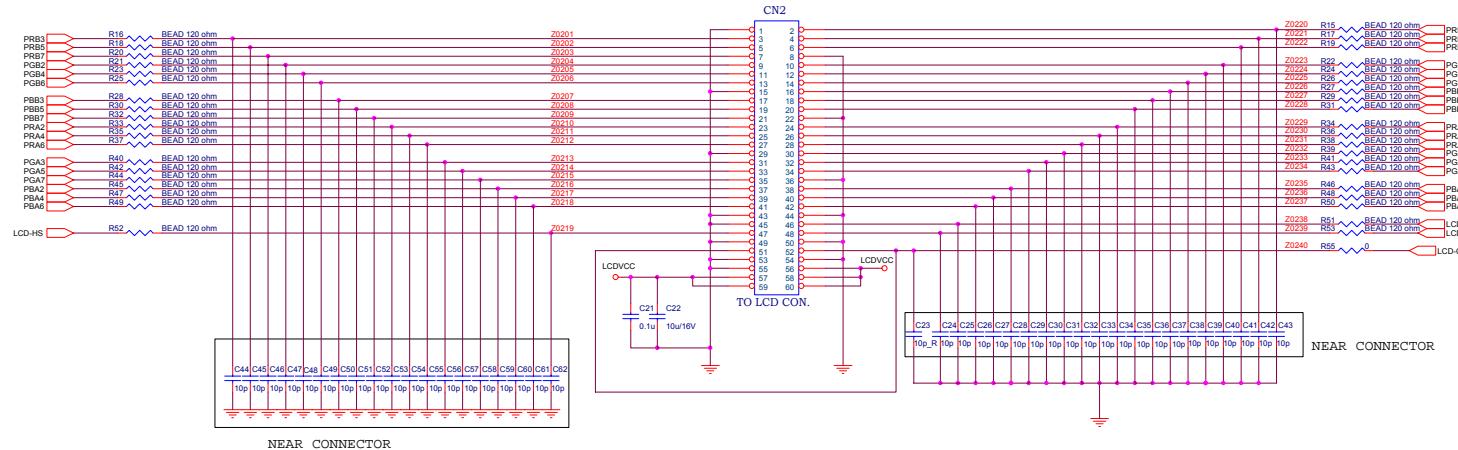
LCD Transfer Board - Sharp

Sheet 1 of 2
LCD Transfer Board
(Sharp
LQ150X1DG51)

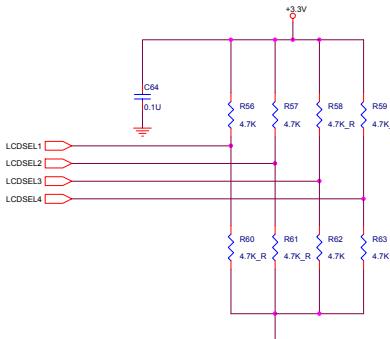
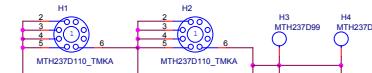


LCD Transfer Board - Sharp

Sheet 2 of 2
LCD Transfer Board
(Sharp
LQ150X1DG51)



LCD PANEL ID					
	MODEL	LCDSEL4	LCDSEL3	LCDSEL2	LCDSEL1
ID1		0	0	0	1
ID2		0	0	1	0
ID3	SHARP LQ150X1DG51	0	0	1	1
ID4		0	1	0	0
ID5		0	1	0	1
ID6		0	1	1	1
ID7		1	0	0	0
ID8		1	0	0	1



板號: 71-P5006-013
FOR SHARP

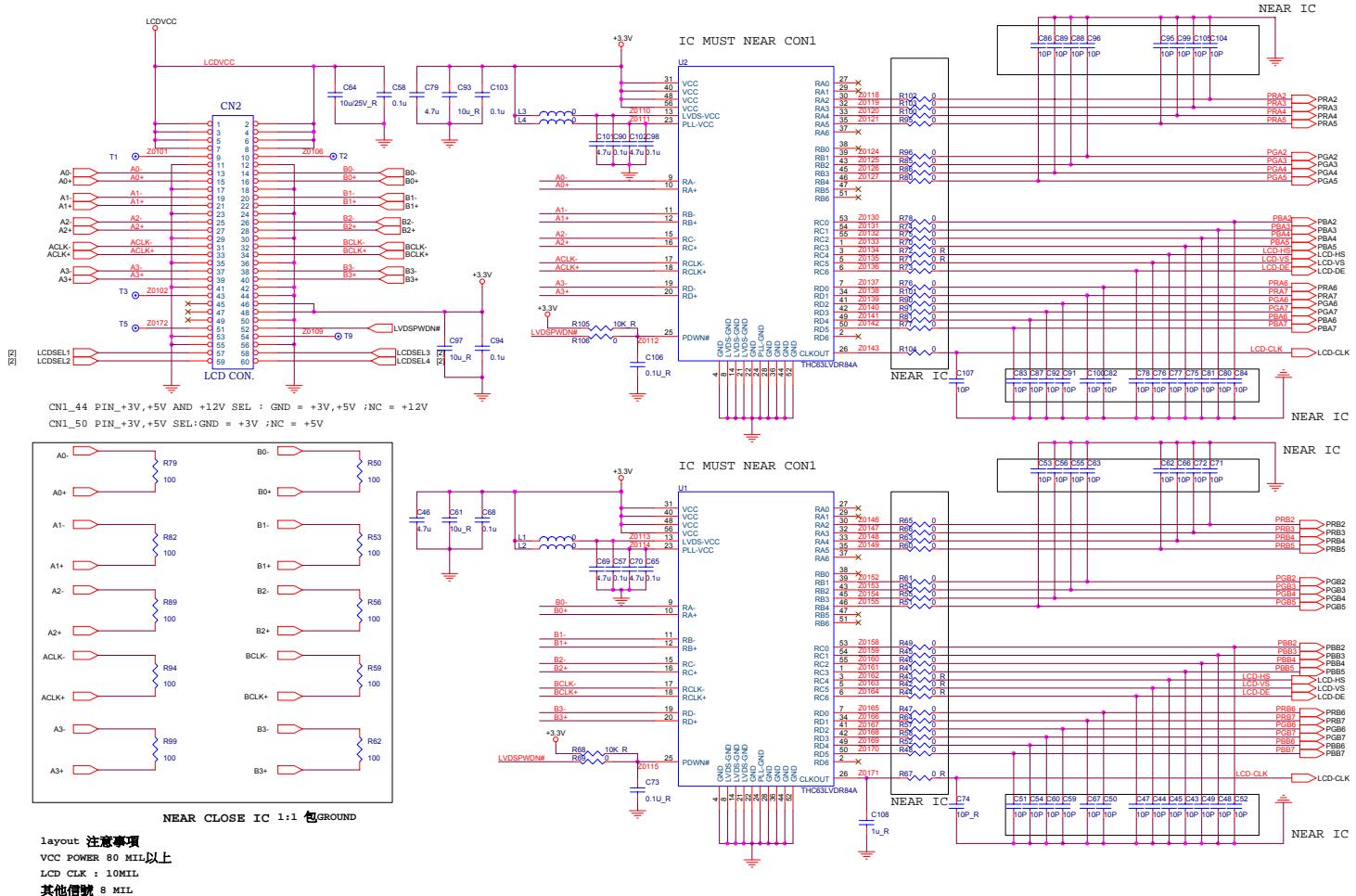
Schematic Diagrams

Schematic Diagrams

LCD Transfer Board - Chi Mei

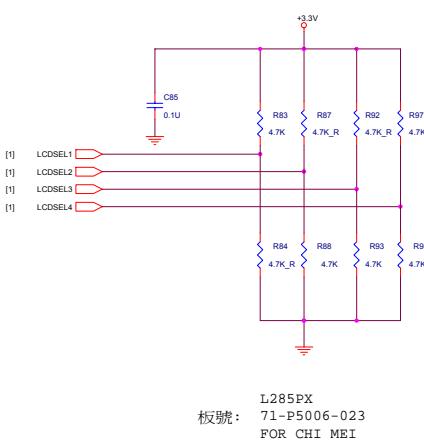
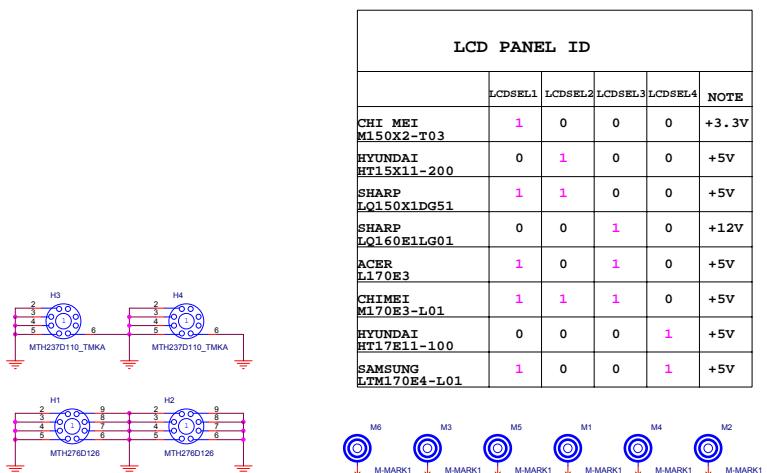
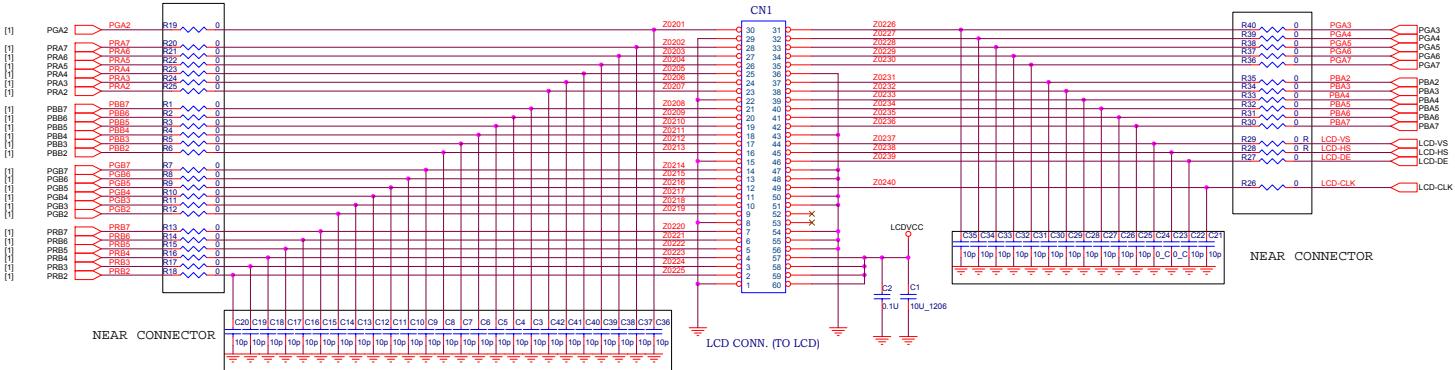
Sheet 1 of 2

LCD Transfer Board
(Chi Mei M150X3-T05)



LCD Transfer Board - Chi Mei

Sheet 2 of 2
LCD Transfer Board
(Chi Mei M150X3-T05)

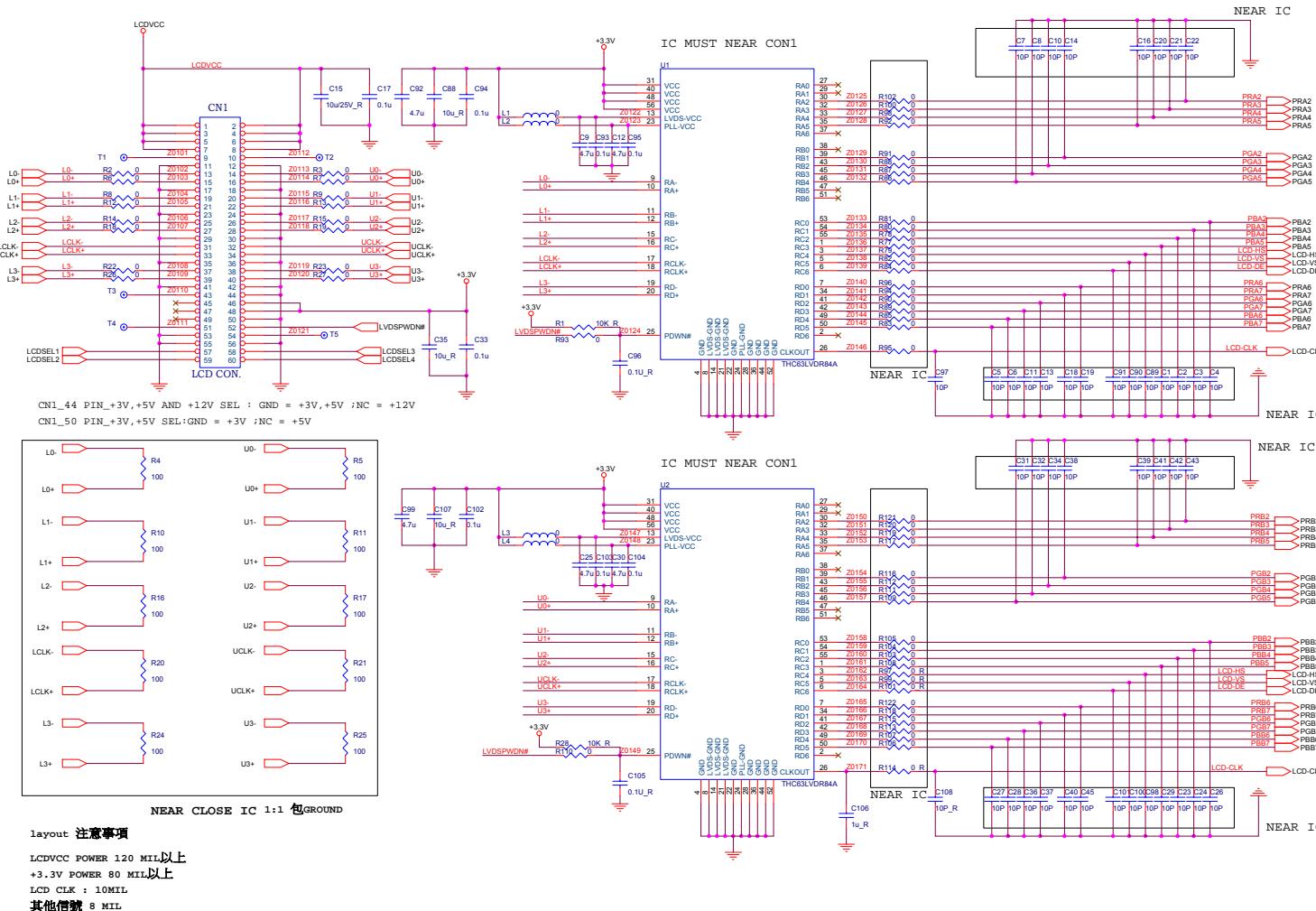


Schematic Diagrams

Schematic Diagrams

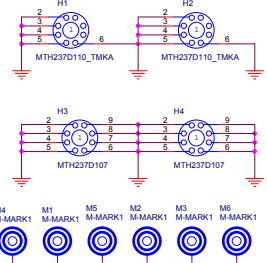
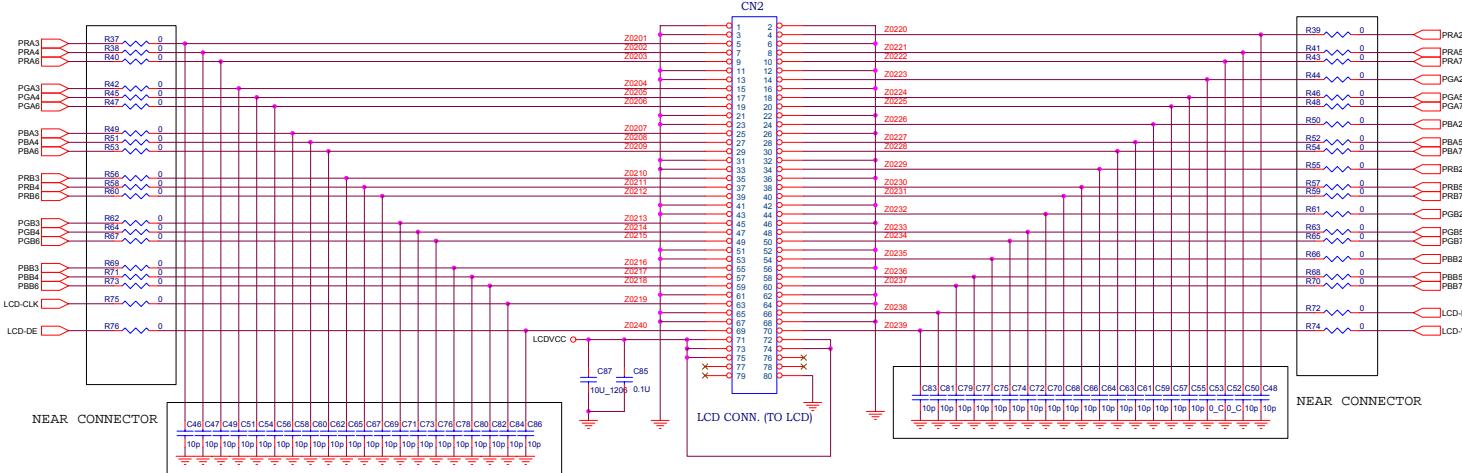
LCD Transfer Board - AU

Sheet 1 of 2
LCD Transfer Board
(AU L150X2M-1)

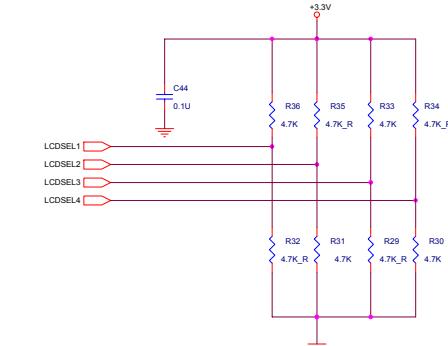


LCD Transfer Board - AU

Sheet 2 of 2
LCD Transfer Board
(AU L150X2M-1)



LCD PANEL ID					
	LCDSEL1	LCDSEL2	LCDSEL3	LCDSEL4	NOTE
CHIMEI M150X2-T03	1	0	0	0	+3.3V
HYUNDAI HT15X11-200	0	1	0	0	+5V
SHARP LQ150X1DG51	1	1	0	0	+5V
SHARP LQ160E1LG01	0	0	1	0	+12V
AU L150X2M-1	1	0	1	0	+3V
CHIMEI M170E3-L01	1	1	1	0	+5V
HYUNDAI HT17E11-100	0	0	0	1	+5V
SAMSUNG LTM170E4-L01	1	0	0	1	+5V

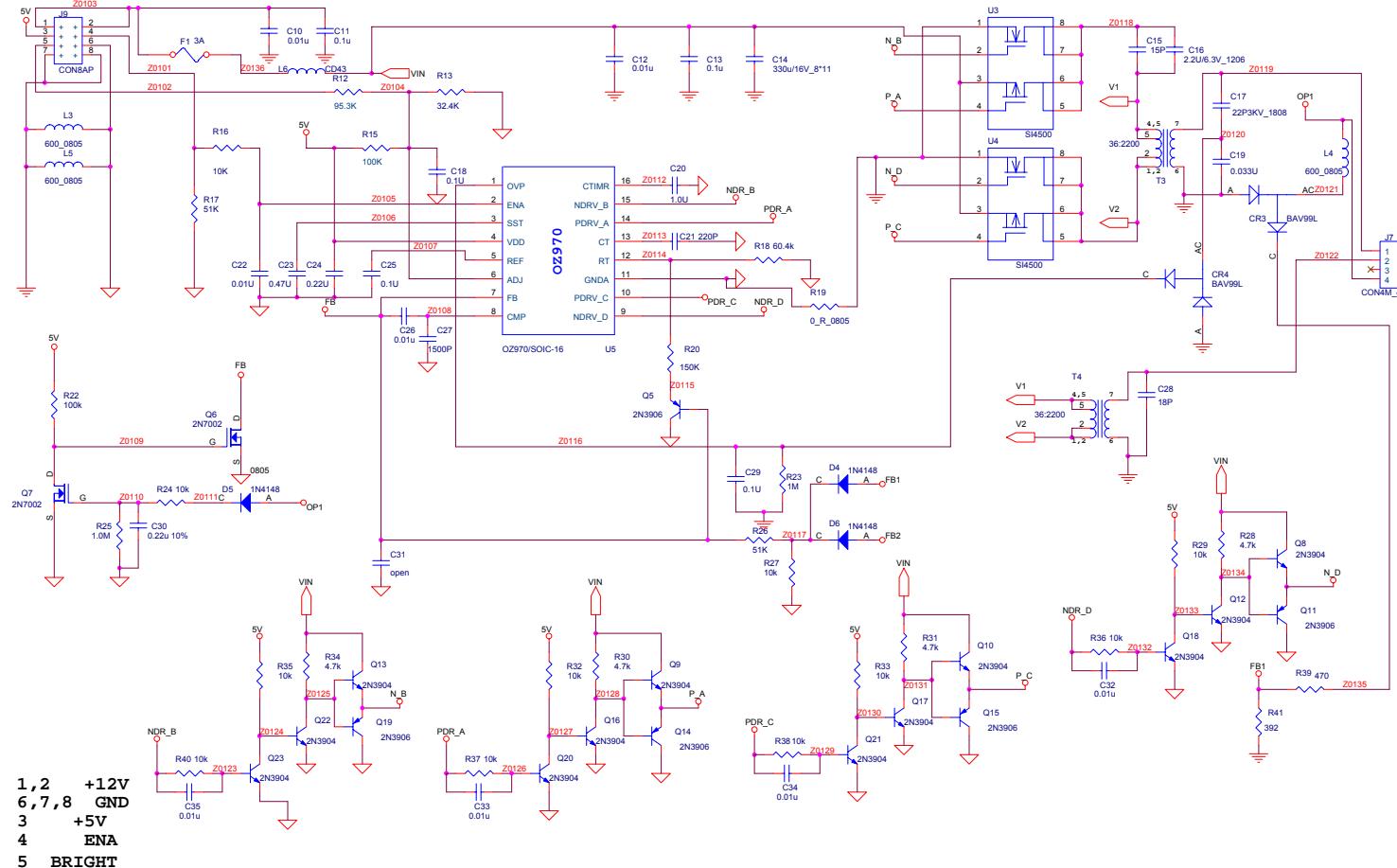


L285PX
板號: 71-P5006-031
FOR AU

Schematic Diagrams

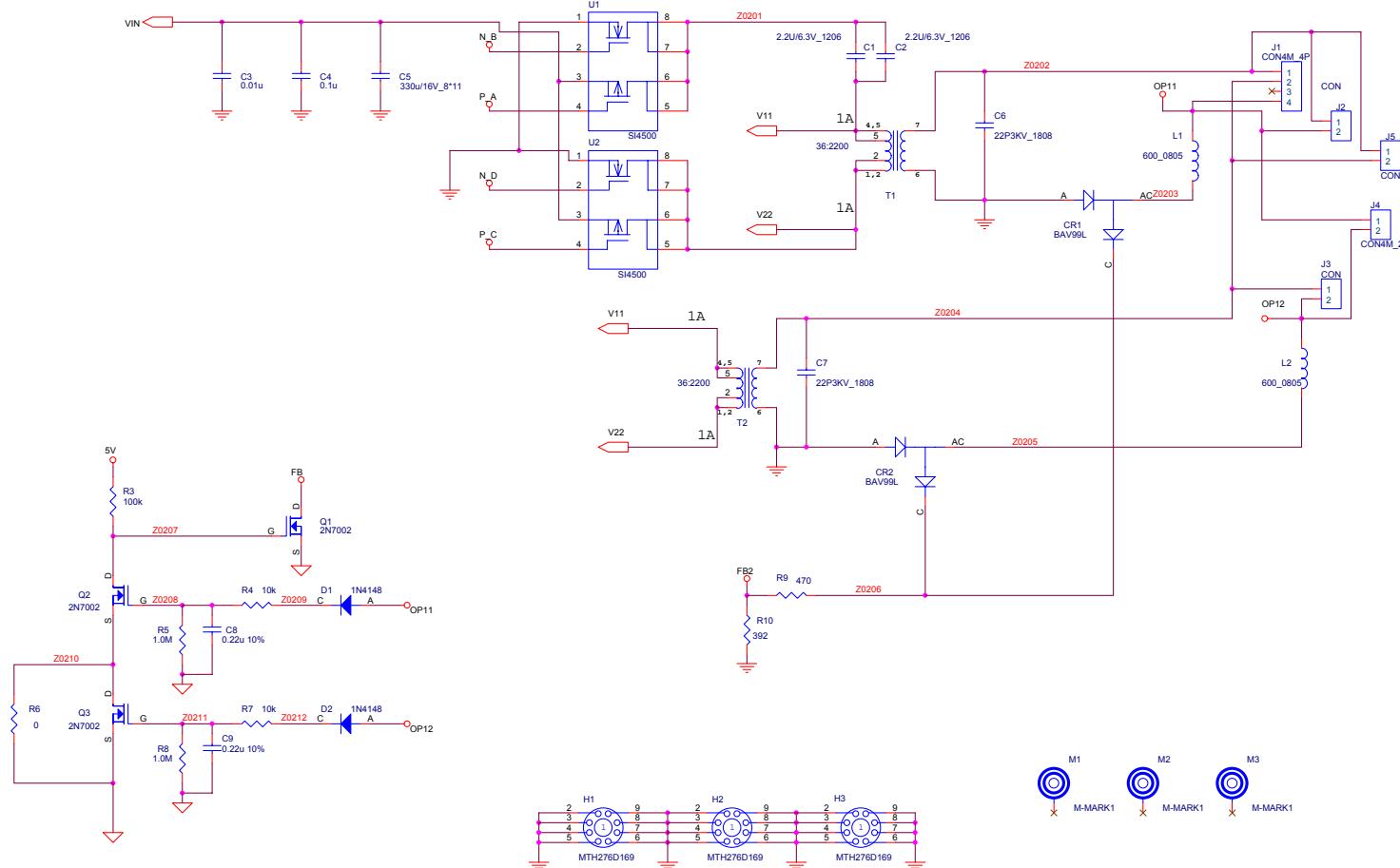
PCB Inverter Board - 1 of 2

Sheet 1 of 2
PCB Inverter Board
1 of 2



PCB Inverter Board - 2 of 2

Sheet 2 of 2
PCB Inverter Board
2 of 2



Schematic Diagrams

Schematic Diagrams
