SERVICE MANUAL

notebook

M375E

Notebook Computer

M375E

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 ***M375E*** series notebook 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

IMPORTANT SAFETY INSTRUCTIONS

When using your telephone equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock and injury to persons, including the following:

1. Do not use this product near water, for example near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
2. Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electrical shock from lightning.
3. Do not use the telephone to report a gas leak in the vicinity of the leak.
4. Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.
5. This product is intended to be supplied by a Listed Power Unit.

CAUTION

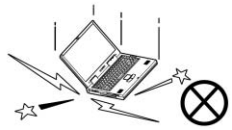
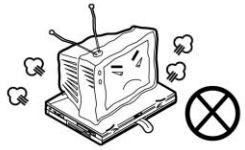
Always disconnect all telephone lines from the wall outlet before servicing or disassembling this equipment.

TO REDUCE THE RISK OF FIRE, USE ONLY NO. 26 AWG OR LARGER, TELECOMMUNICATION LINE CORD

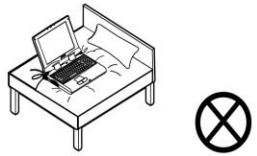
Instructions for Care and Operation

The notebook computer is quite rugged, but it can be damaged. To prevent this, follow these suggestions:

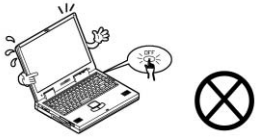
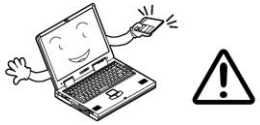
1. **Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.

Do not expose the computer to any shock or vibration.	*Do not place it on an unstable surface.*	*Do not place anything heavy on the computer.*
		

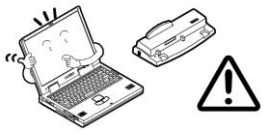
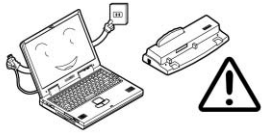
2. **Keep it dry, and don't overheat it.** Keep the computer and power supply away from any kind of heating element. This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged.

Do not expose it to excessive heat or direct sunlight.	*Do not leave it in a place where foreign matter or moisture may affect the system.*	*Don't use or store the computer in a humid environment.*	*Do not place the computer on any surface which will block the vents.*
			

3. **Follow the proper working procedures for the computer**. Shut the computer down properly and don't forget to save your work. Remember to periodically save your data as data may be lost if the battery is depleted.

Do not turn off the power until you properly shut down all programs.	*Do not turn off any peripheral devices when the computer is on.*	*Do not disassemble the computer by yourself.*	*Perform routine maintenance on your computer.*
			

4. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.
5. **Take care when using peripheral devices**.

Use only approved brands of peripherals.	*Unplug the power cord before attaching peripheral devices.*
	

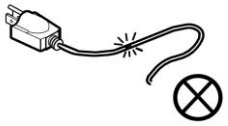
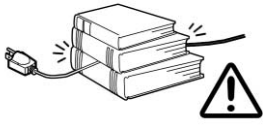
Power Safety

The computer has specific power requirements:

- Only use a power adapter approved for use with this computer.
- Your AC adapter may be designed for international travel but it still requires a steady, uninterrupted power supply. If you are unsure of your local power specifications, consult your service representative or local power company.
- The power adapter may have either a 2-prong or a 3-prong grounded plug. The third prong is an important safety feature; do not defeat its purpose. If you do not have access to a compatible outlet, have a qualified electrician install one.
- When you want to unplug the power cord, be sure to disconnect it by the plug head, not by its wire.
- Make sure the socket and any extension cord(s) you use can support the total current load of all the connected devices.
- Before cleaning the computer, make sure it is disconnected from any external power supplies.

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.

Do not plug in the power cord if you are wet.	*Do not use the power cord if it is broken.*	*Do not place heavy objects on the power cord.*
		

Battery Precautions

- Only use batteries designed for this computer. The wrong battery type may explode, leak or damage the computer.
- Recharge the batteries using the notebook's system. Incorrect recharging may make the battery explode.
- Do not try to repair a battery pack. Refer any battery pack repair or replacement to your service representative or qualified service personnel.
- Keep children away from, and promptly dispose of a damaged battery. Always dispose of batteries carefully. Batteries may explode or leak if exposed to fire, or improperly handled or discarded.
- Keep the battery away from metal appliances.
- Affix tape to the battery contacts before disposing of the battery.
- Do not touch the battery contacts with your hands or metal objects.

Battery Disposal

The product that you have purchased contains a rechargeable battery. The battery is recyclable. At the end of its useful life, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for recycling options or proper disposal.

Caution

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used battery according to the manufacturer's instructions.

Related Documents

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

User's Manual on CD
This describes the notebook 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 notebook PC.

Contents

1: Introduction

Overview

This manual covers the information you need to service or upgrade the ***M375E*** series notebook 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 ***M375E*** series notebook 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.

System Specifications

Feature	Specification	
Processor Types	Intel® Pentium® M Processor (478-pin) Micro-(µ)FCPGA Package	(µ0.13) 0.13 Micron Process Technology, 1MB On-die L2 Cache & 400MHz Front Side Bus - **1.3**/ **1.4**/ **1.5**/ **1.6**/ **1.7** GH
		(µ0.09) 0.09 Micron Process Technology, 2MB On-Die L2 Cache & 400MHz Front Side Bus - **1.5A**/ **1.6A**/ **1.7A**/ **1.8** / **2.0** GHz
Core Logic	Intel 855PM + ICH4-M	
Security	Security (Kensington® Type) Lock Slot	BIOS Password
Memory	Two 200 Pin DDR SODIMM Sockets Supporting DDR 266/333 MHz Modules	Supporting 128/256/512/1024 MB DDR RAM Modules Expandable up to 2GB
BIOS	One 512KB Flash ROM	Insyde BIOS
LCD	15.4" WXGA TFT LCD (16:9 Wide Screen Aspect Ratio)	
Display	ATI Mobility Radeon 9600 (M10) High Perfomance Chip Integrated 128-bit 2D/3D Graphics Accelerator Advanced HW Acceleration for DVD Playback Fully DirectX® 9 Support Ultra AGP™ 4x Up to 128MB DDR SGRAM On Board (Default 64MB - Upgrade 128MB) Dual-View Display Monitor External Display Resolution up to 1600 * 1200 UXGA	
Storage	One Changeable Optical Device (CD-ROM/ DVD-ROM/ CD-RW/ DVD-RW Combo/ DVD-Dual etc.) One Changeable Primary 2.5" 9.5mm (h) Hard Disk Drive Support LBA Mode, Master Mode IDE, PIO Mode 4 / ATA-33/66/100	
Audio	AC'97 2.2 Compliant Device Advanced Wavetable Synthesizer DirectSound™ 3D Accelerator Full-Duplex	S/PDIF Digital Output (5.1 CH) Built-In Microphone Built-In 4 Speakers (25 * 15mm)

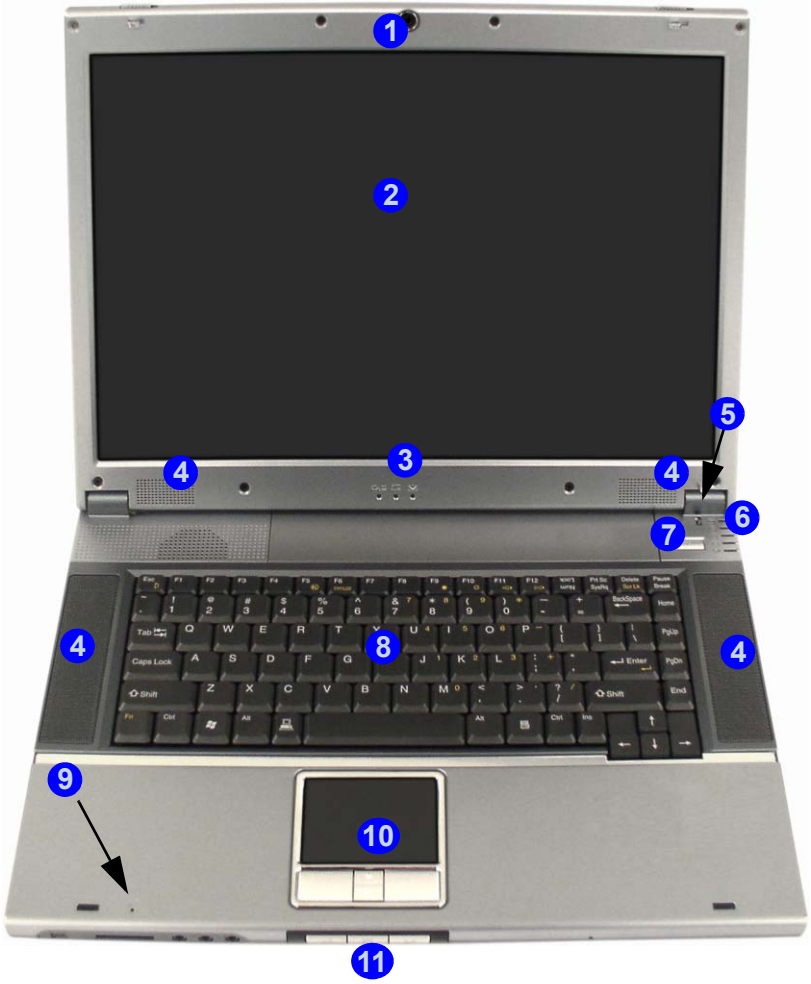
Video Memory

The system allocates or "shares" a portion of system memory for video use. "Shared" memory is user-configurable via the SCU. The default setting is set to 8MB.

Feature	Specification	
Keyboard, Pointing Device & Buttons	Full Size Winkey Keyboard with Numeric Keypad	Built-In TouchPad (Scroll Functionality Included)
PCMCIA	One Type II PCMCIA 3.3V/5V Socket	
Interface & Communication	Three USB 2.0/1.1 Ports One Mini IEEE1394 Ports One External Monitor (VGA) Port One S-Video Jack for TV Output One Serial Port One Infrared Transceiver (IrDA 1.1/FIR/SIR/ASKIR) Infrared Transfer 1cm ~ 1M Operating Distance 115.2K bps SIR 4M bps FIR One Headphone Jack One Microphone Jack One S/PDIF Out Port	One New 4-in-1 built-in Card Reader One RJ-11 Jack (Modem) Integrated V.90/l56K MDC Modem (V.92) One RJ-45 Jack (Local Area Network) 1000BASE-T (Gigabit) LAN On Board 10/100 BASE-T Compatible IEEE 802.3 & 802.3u Compliant DC-In Jack 802.11b / 802.11b+g Wireless LAN (**Factory Option**) Video Camera Module (**Factory Option**) Bluetooth 1.1 + MDC Module (**Factory Option**)
Indicators	LED Indicators (System Activity, Suspend/Power On/AC-In, Battery Charging/Battery Full, Num Lock, Caps Lock, Scroll Lock, email, 802.11b+ Bluetooth)	
Power Management	Supports ACPI 2.0 Supports Hibernate/Standby Modes	Supports Battery Low Sleep Supports Resume From Modem Ring Supports Resume from LAN
Power	Full Range AC Adapter - AC-In 100~240V, 47~63Hz, DC Output 65W Easy Changeable Main Battery Smart Lithium-Ion (6 cells)	
Buttons	email/ browser/ power/ WLAN+ Bluetooth	
Environmental Spec	**Temperature** Operating: 5°C ~ 35°C Non-Operating: -20°C ~ 60°C	**Relative Humidity** Operating: 20% ~ 80% Non-Operating: 10% ~ 90%
Physical Dimensions & Weight	360mm (w) * 273mm (d) * 29.5(h) mm	3.15KG (with battery)

Feature	Specification	
Optional	CD-RW Drive Module Combo Drive Module DVD-ROM Drive Module DVD-RW Drive Module DVD-Dual Drive Module Software DVD Player	Mini PCI Intel PRO/ Wireless 2100 WLAN Module Mini PCI Intel PRO / Wireless 2200BG WLAN Module Bluetooth 1.1 + MDC Module USB VGA Camera Module

External Locator - Top View with LCD Panel Open



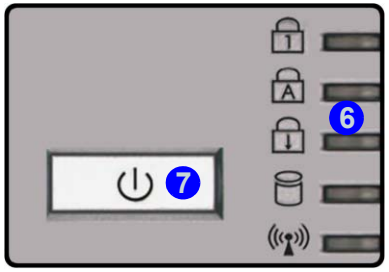


Figure 1
Top View

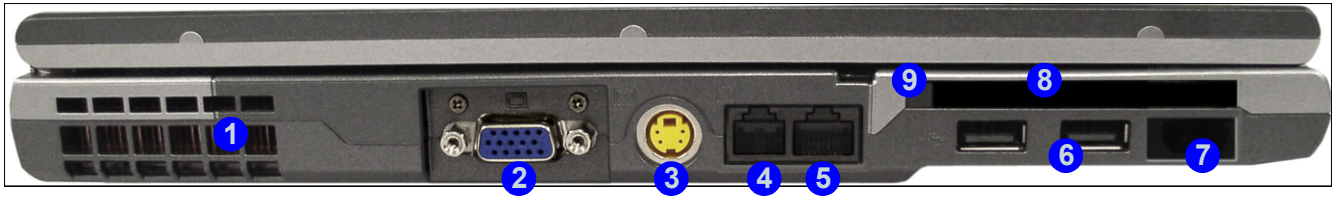
1. Optional Built-In PC Camera
2. LCD
3. LED Power & Communication Indicators
4. Speakers
5. Close Cover Switch
6. LED Status Indicators
7. Power Button
8. Keyboard
9. Built-In Microphone
10. TouchPad and Buttons
11. Hot-Key Buttons

External Locator - Front & Left Side Views

Figure 2
Front View

1. LCD Latches
2. Mini-IEEE 1394 Port
3. 3-in-1 Card Reader
4. S/P DIF Out Port
5. Microphone-In Jack
6. Headphone-Out Jack
7. Hot-Key Buttons

Figure 3
Left Side View



1. Vent/Fan Intake
2. External Monitor (VGA) Port
3. S-Video-Out Port
4. RJ-11 Phone Jack
5. RJ-45 LAN Jack
6. 2 * USB 2.0 Ports
7. Infrared Transceiver
8. PC Card Slot
9. PC Card Slot Eject Button

External Locator - Right Side & Rear Views

Figure 4
Right Side View

1. USB 2.0/1.1 Port
2. Serial Port
3. Optical Device Bay
4. DC-In Jack

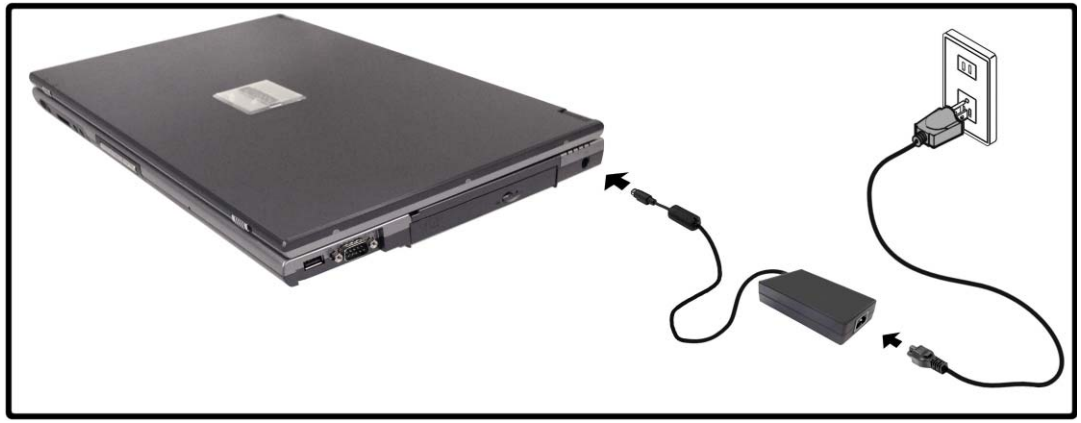


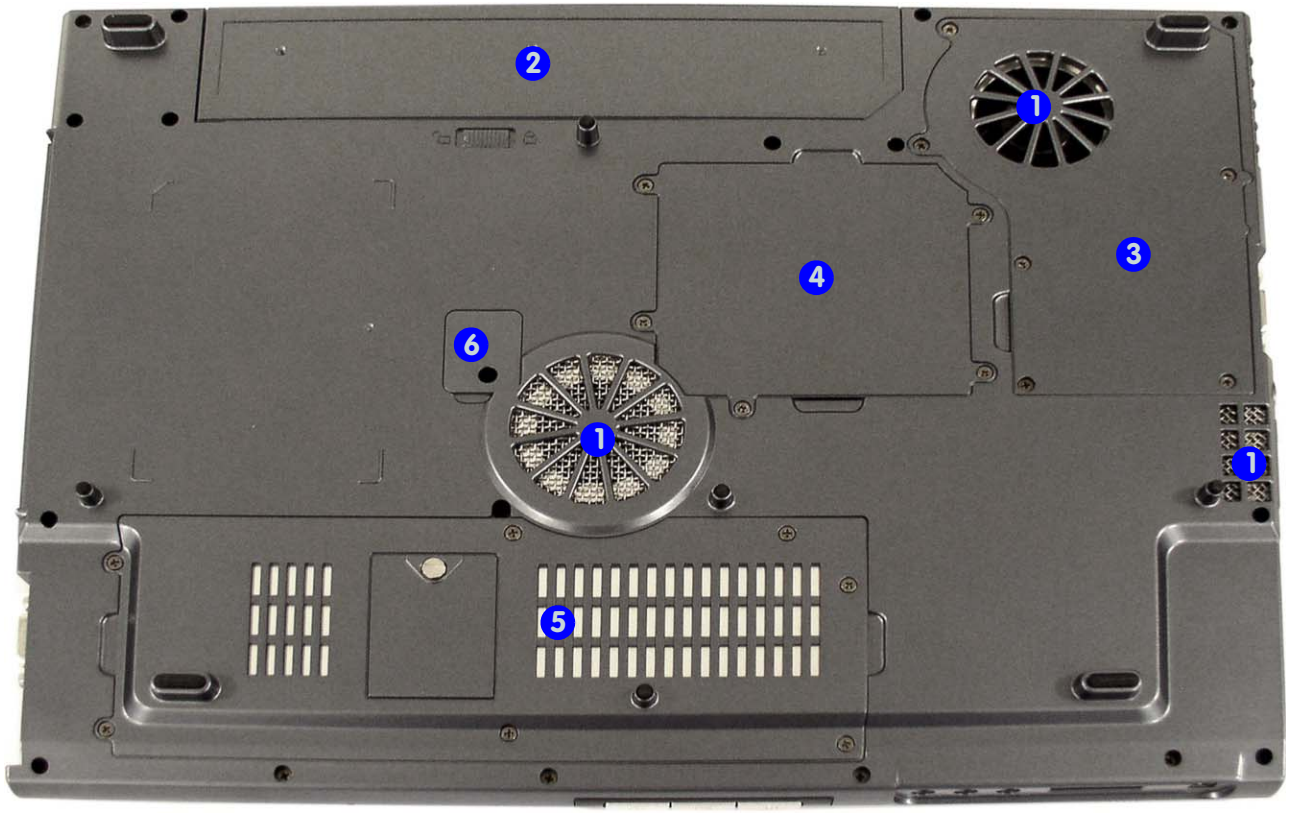
Figure 5
Rear View

1. Security Lock Slot

External Locator - Bottom View

Figure 6
Bottom View

1. Vent/Fan Intakes
2. Battery
3. CPU Bay Cover
4. RAM Module Cover
5. Hard Disk, WLAN & Bluetooth Module Cover
6. Optical Device Removal Cover



Overheating

To prevent your computer from overheating make sure nothing blocks the vent/fan intakes while the computer is in use.

Mainboard Overview - Top (Key Parts)

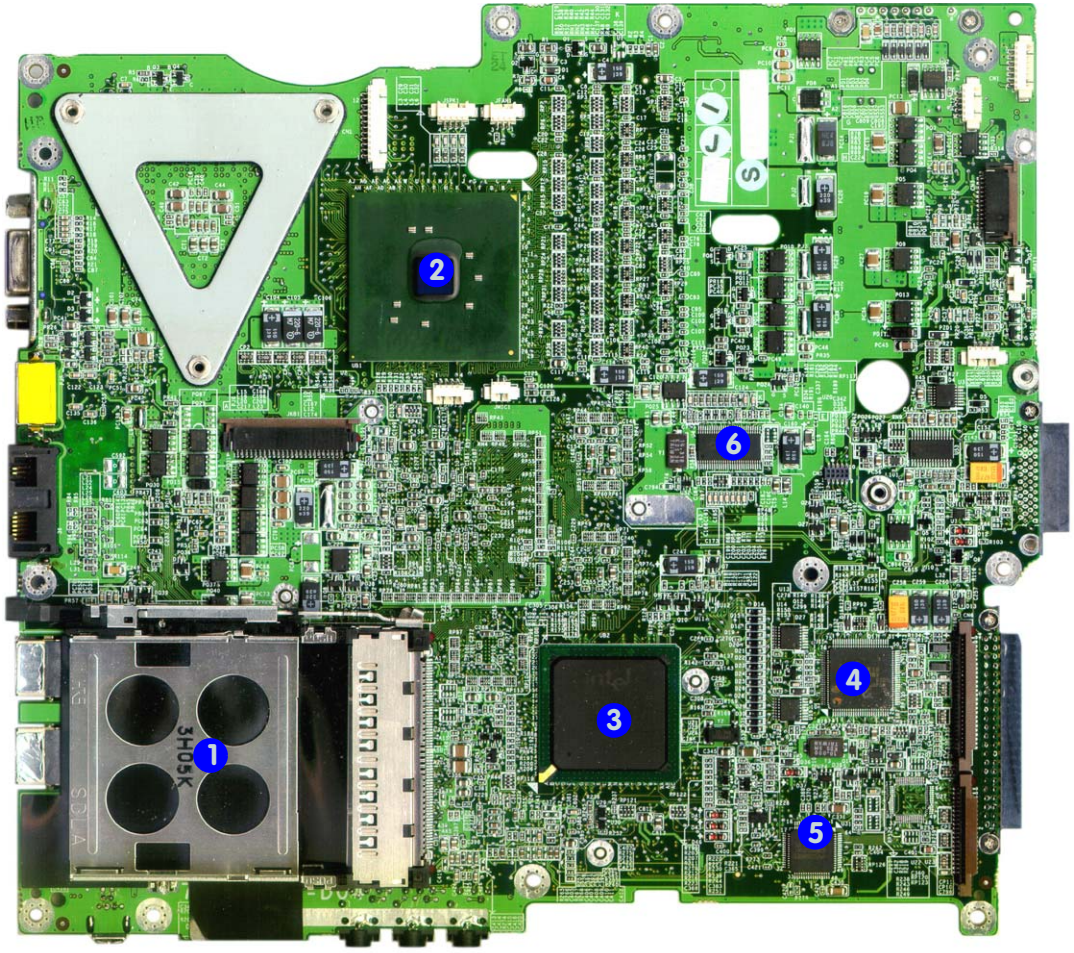


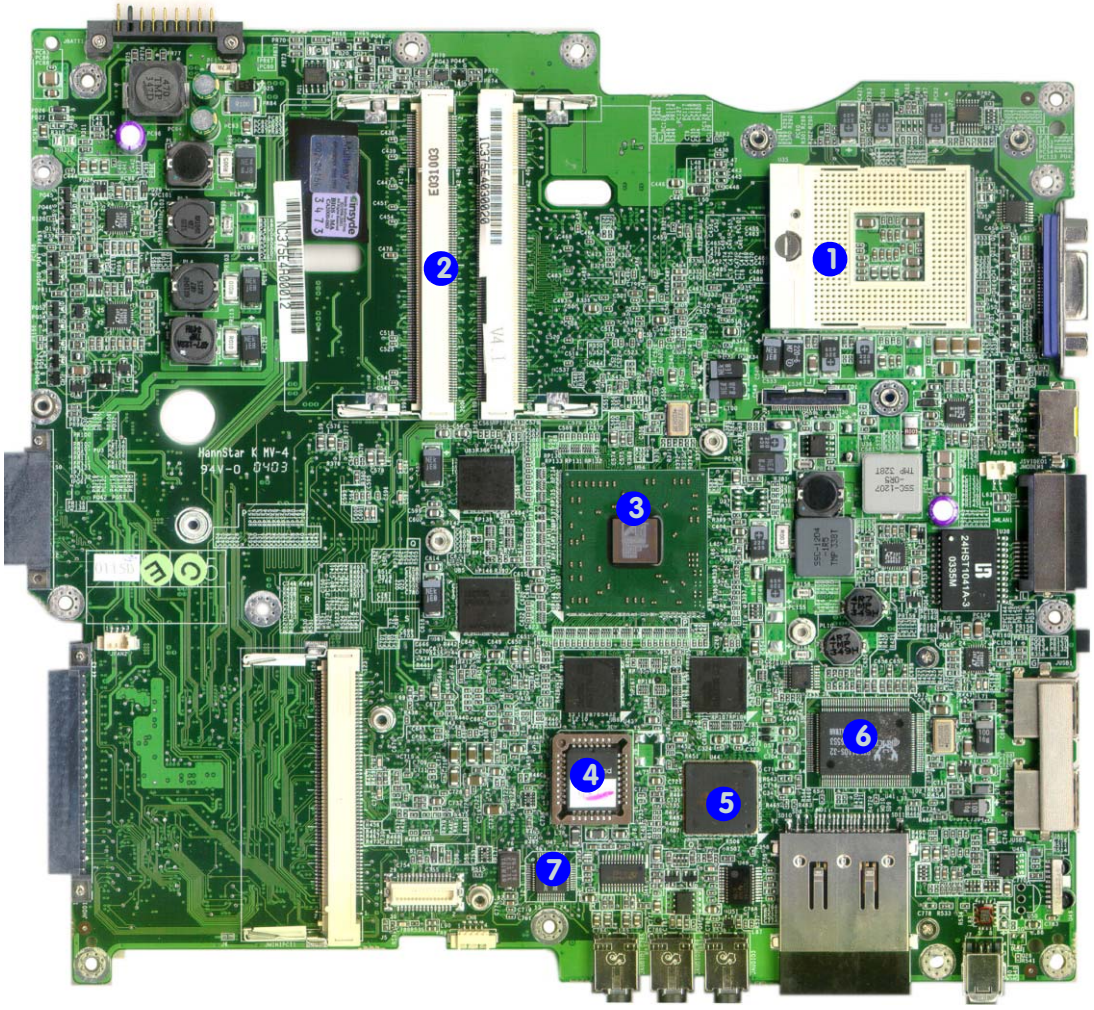
Figure 7
Mainboard Top Key Parts

1. PC Card Assembly
2. Northbridge - Intel 855PM
3. Southbridge - 82801DBM
4. H8
5. LPC Super I/O NS PC87383
6. Clock Generator

Mainboard Overview - Bottom (Key Parts)

Figure 8
Mainboard Bottom Key Parts

1. CPU Socket (no CPU installed)
2. Memory Slots (no memory installed)
3. ATI Mobility Radeon 9600 Pro
4. Flash BIOS ROM
5. CardBus PCI1620
6. LAN Controller RTL8110S-32
7. ALC202 - Audio Codec



Mainboard Overview - Top (Connectors)

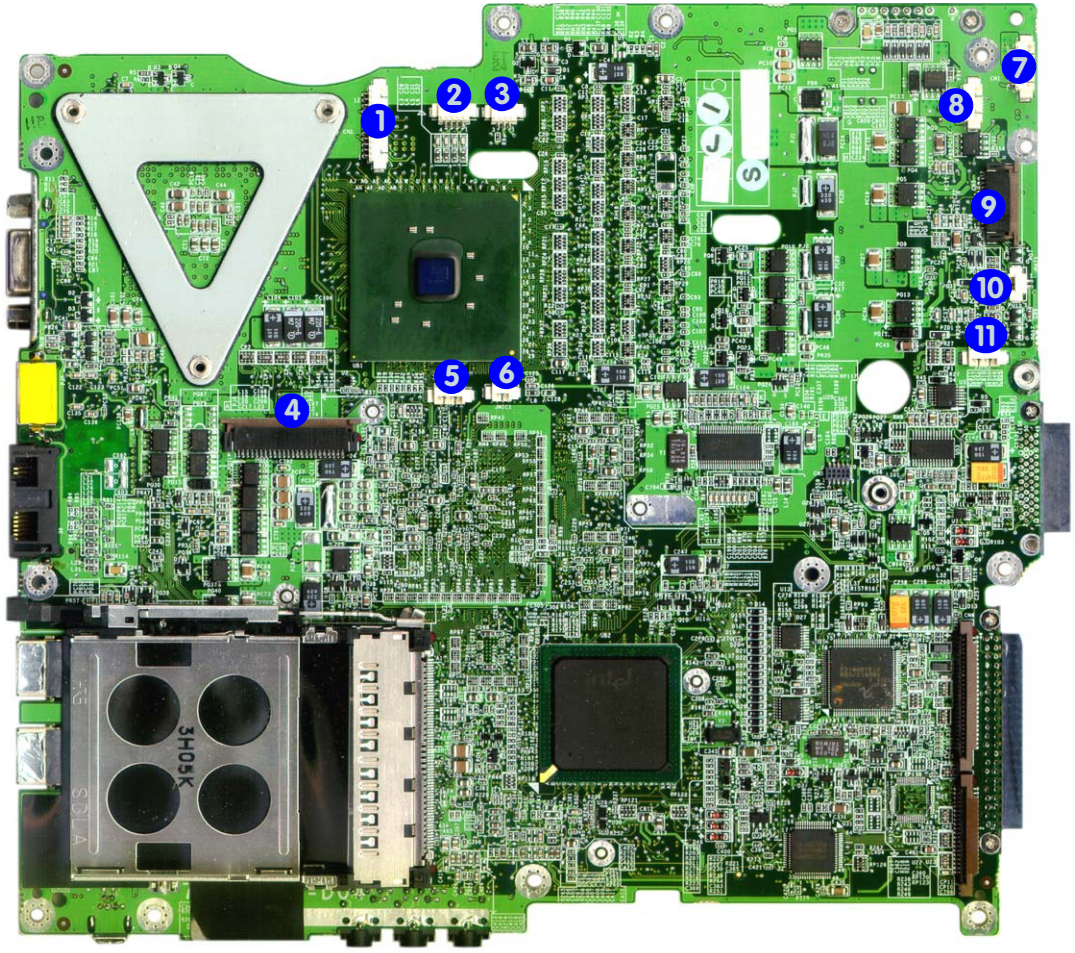
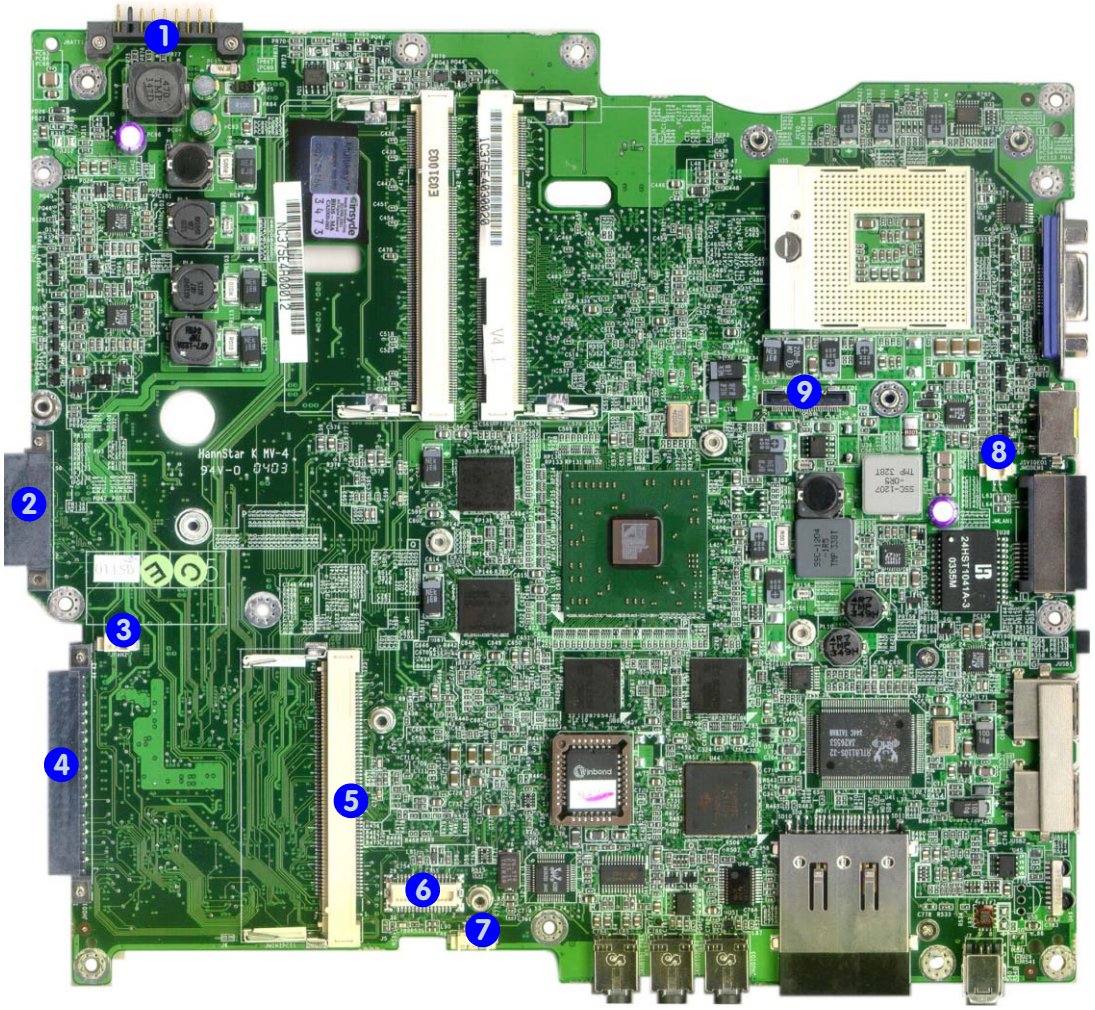


Figure 9
Mainboard Top Connectors

1. Inverter Cable Connector (CN2)
2. Speaker Cable Connector (JSPK1)
3. Fan Cable Connector (JFAN1)
4. Keyboard Cable Connector (JKB1)
5. TouchPad Cable Connector (JTP1)
6. Microphone Cable Connector (JMIC1)
7. Power Cable Connector (CN1)
8. CCD Cable Connector (JCCD1)
9. Multi-Function Board (CN3)
10. CMOS Battery Cable Connector (JBAT1)
11. Speaker Cable Connector (JSPK2)

Mainboard Overview - Bottom (Connectors)

Figure 10
Mainboard Bottom Connectors



1. Battery Connector (JBATT1)
2. CD-ROM Connector (J3)
3. Fan Cable Connector (JFAN2)
4. Hard Disk Connector (JHDD1)
5. Mini-PCI (Wireless Lan Module) Connector (JMINIPCI1)
6. Modem Module Connector (J4)
7. Hot-Key Cable Connector (CN6)
8. Modem Cable Connector (JMODEM1)
9. LCD Panel Cable Connector (JLCD1)

2: Disassembly

Overview

This chapter provides step-by-step instructions for disassembling the ***M375E*** series notebook's parts and subsystems. When it comes to reassembly, reverse the procedures (unless otherwise indicated).

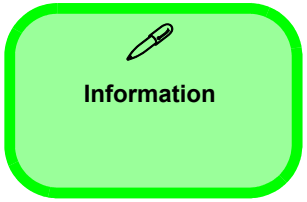
We suggest you completely review any procedure before you take the computer apart.

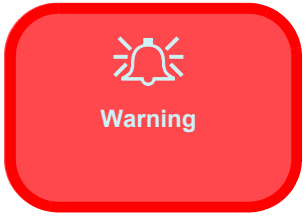
Procedures such as upgrading/replacing the RAM, CD device and hard disk are included in the User's Manual but are repeated here for your convenience.

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

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





NOTE: All disassembly procedures assume that the system is turned **OFF**, and disconnected from any power supply (the battery is removed too).

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.
7. **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.
8. **Beware of corrosion**. As you perform your job, avoid touching any connector leads. Even the cleanest hands produce oils which can attract corrosive elements.
9. **Keep your work environment clean**. Tobacco smoke, dust or other air-born particulate matter is often attracted to charged surfaces, reducing performance.
10. **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.

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.

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.

Disassembly Steps

The following table 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 Battery:

1. Remove the battery *page 2 - 5*

To remove the HDD:

1. Remove the battery *page 2 - 5*
2. Remove the HDD *page 2 - 6*

To remove the Modem:

1. Remove the battery *page 2 - 5*
2. Remove the HDD *page 2 - 6*
3. Remove the modem *page 2 - 8*

To remove the Wireless LAN:

1. Remove the battery *page 2 - 5*
2. Remove the HDD *page 2 - 6*
3. Remove the wireless LAN *page 2 - 9*

To remove the System Memory:

1. Remove the battery *page 2 - 5*
2. Remove the system memory *page 2 - 10*

To remove the Optical Device:

1. Remove the battery *page 2 - 5*
2. Remove the Optical device *page 2 - 12*

To remove the Processor:

1. Remove the battery *page 2 - 5*
2. Remove the processor *page 2 - 13*

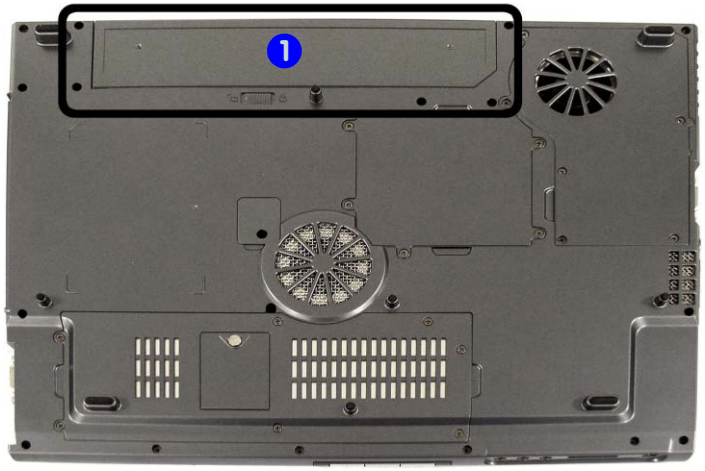
To remove the Keyboard:

1. Remove the battery *page 2 - 5*
2. Remove the keyboard *page 2 - 15*

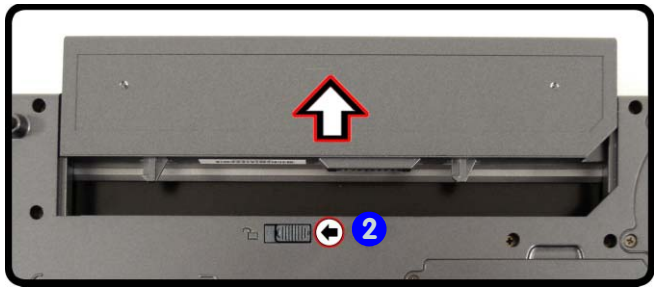
Removing the Battery

1. Turn the computer **off**, and turn it over.
2. Locate the battery bay at point 1 (*Figure 1a*).
3. Slide the battery lock 2 in the direction of the arrow (towards the unlock symbol), and hold it in place (as shown in *Figure 1b*).
4. Slide the Battery 3 out of the computer's battery bay (*Figure 1c*).

a.



b.



c.

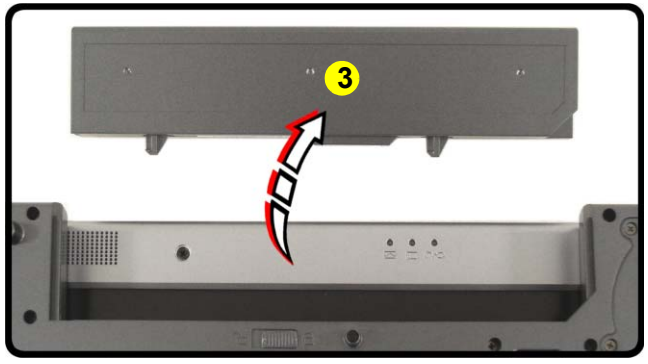


Figure 1
Battery Removal

a. Locate the battery release latch.
b. Slide the latch to the left and hold.
c. Slide the battery out.

3. Battery

Removing the Hard Disk Drive

Figure 2
HDD Assembly Removal

a. Locate the HDD bay cover
b. Remove the 7 screws.
c. Remove the cover.

The hard disk drive is mounted in a removable case and can be taken out to accommodate other 2.5" IDE hard disk drives with a height of 9.5mm (h). Follow your operating system's installation instructions, and install all necessary drivers and utilities (as outlined in **Chapter 4 of the User's Manual**) when setting up a new hard disk.

Hard Disk Upgrade Process

1. Turn **off** the computer, and remove the battery (*page 2 - 5*).
2. Locate the hard disk and HDD bay cover 1.
3. Remove screws 2 - 8 and remove the HDD bay cover 1.

HDD System Warning

New HDD's are blank. Before you begin make sure:

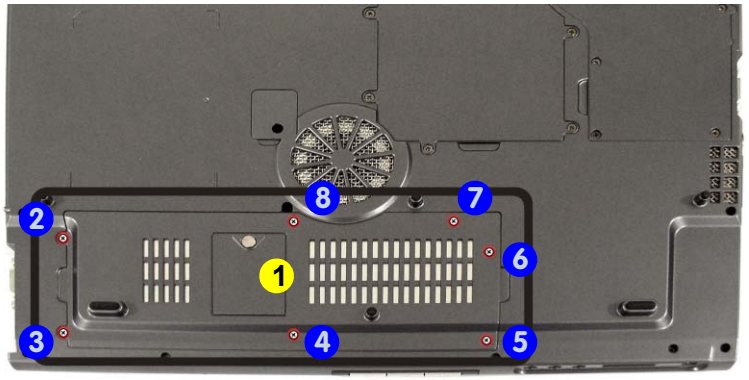
You have backed up any data you want to keep from your old HDD.

You have all the CD-ROMs and FDDs required to install your operating system and programs.

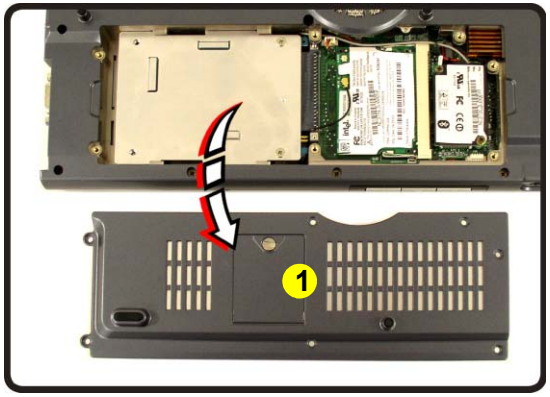
If you have access to the internet, download the latest application and hardware driver updates for the operating system you plan to install. Copy these to a removable medium.

1. HDD Bay Cover
- 7 Screws

a.



b.

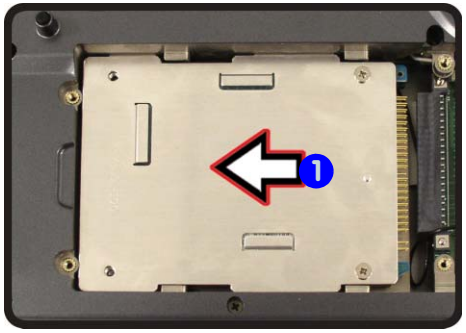


4. Slide the hard disk assembly in the direction of the arrow 1.
5. Carefully lift the hard disk assembly 2 up out off the computer.
6. Remove screws 3 - 6 in order to separate the cover 7 from the hard disk 8 (*Figure 3c*).
7. Reverse the process to install a new hard disk (pay careful attention to the orientation of the disk under the cover).

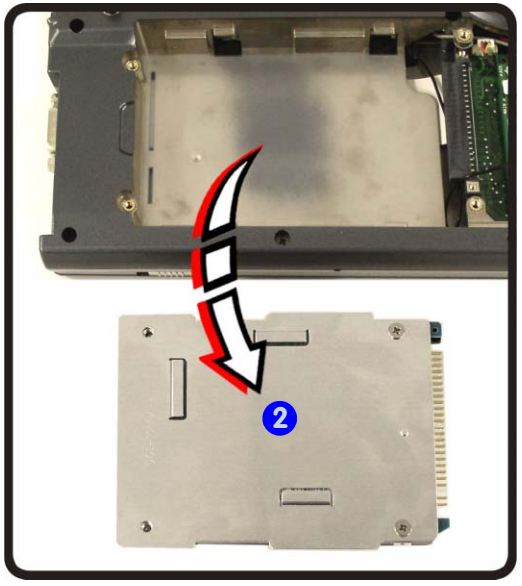
Figure 3
HDD Assembly Removal (Cont.)

a. Slide out the HDD assembly.
b. Lift the HDD assembly out of the bay.
c. Remove the screws and separate the cover and HDD.

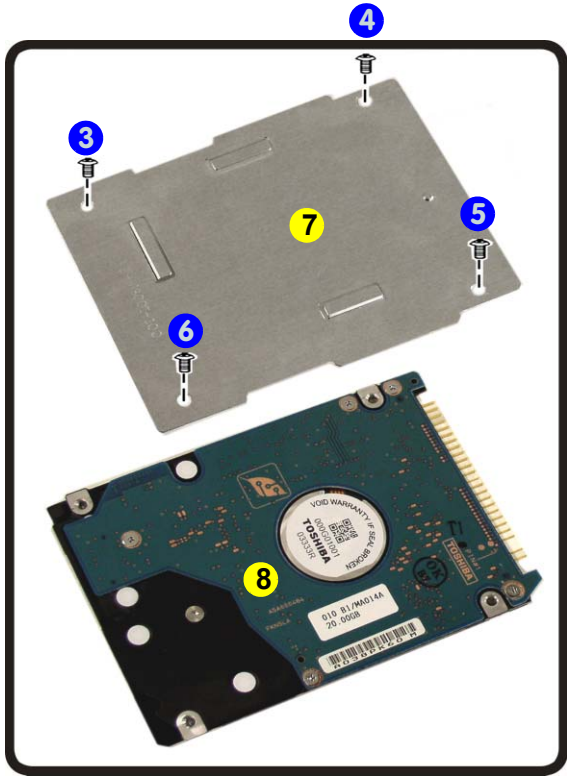
a.



b.



c.



7. HDD Cover
8. Hard Disk

- 4 Screws

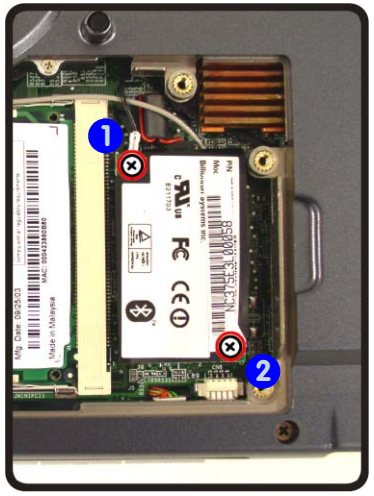
Figure 4
Modem Removal

a. Remove the screws and disconnect the cable and connector.
b. Remove the module.

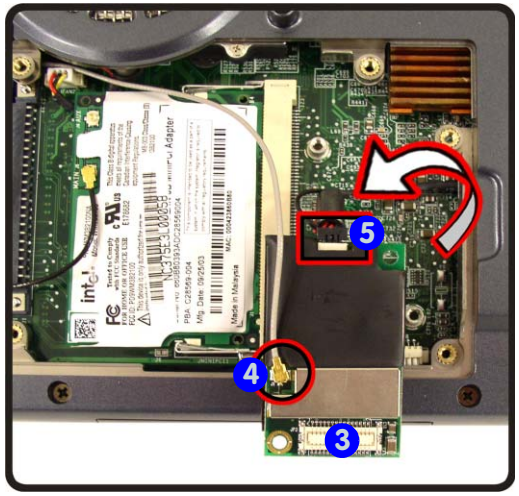
Removing the Modem

1. Turn **off** the computer, remove the battery (***page 2 - 5***) and the HDD bay cover (***page 2 - 6***).
2. Remove screws 1 - 2 (***Figure 4a***), carefully separate the modem from the connector 3 and disconnect cables 4 - 5.
3. Lift the modem 6 (***Figure 4b***) up and off the computer.

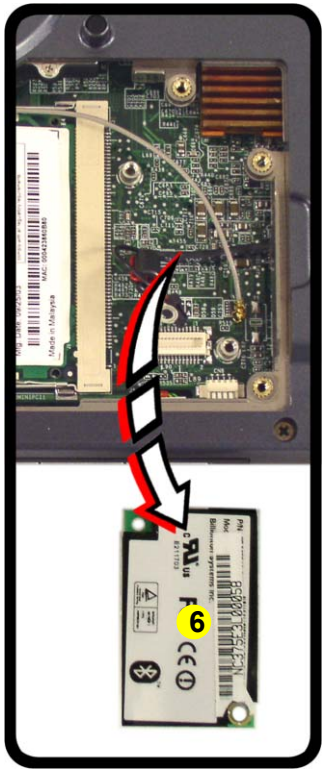
a.



b.



c.



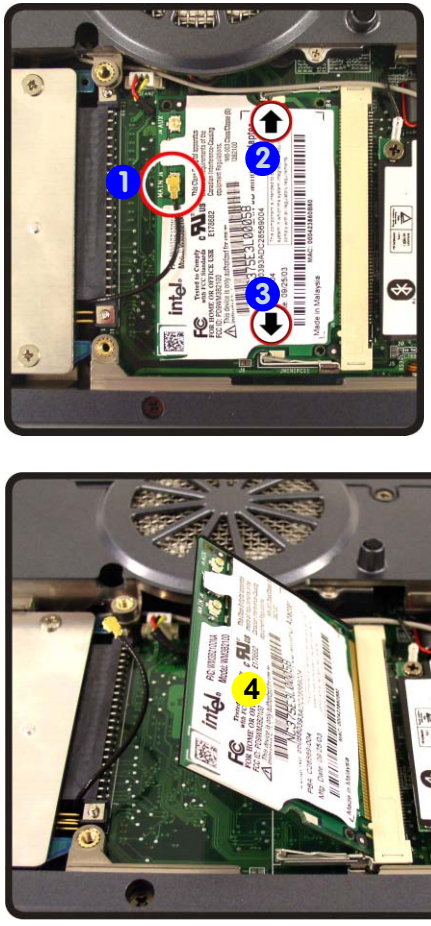
5. Modem

- 2 Screws

Removing the Wireless LAN

1. Turn **off** the computer, remove the battery (*page 2 - 5*) and the HDD bay cover (*page 2 - 6*).
2. Carefully disconnect cable 1, then gently pull the two release latches (2 - 3) on the sides of the module socket.
3. The wireless LAN 4 (*Figure 5b*) will pop-up, and you can remove it.

a.



b.

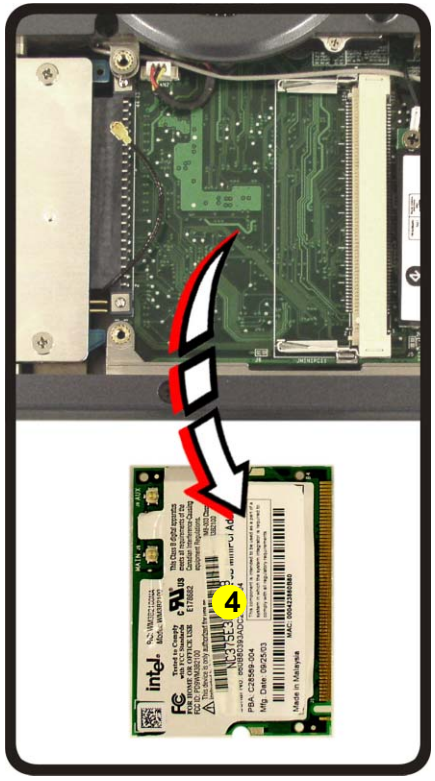


Figure 5
Wireless LAN Removal

a. Disconnect the cable and pull the release latches.
b. Remove the wireless LAN module.

Note: Make sure you re-connect the antenna cable to the “Main” socket (*Figure 5a*).

4. Wireless LAN module

Removing the System Memory (RAM)

The computer has two memory sockets for 200 pin Small Outline Dual In-line Memory Modules (SO-DIMM) supporting DDR 266/333MHz. The main memory can be expanded up to 2GB. The SO-DIMM modules supported are 128Mb, 256Mb, and 512Mb. The total memory size is automatically detected by the POST routine once you turn on your computer.

Figure 6
Removing/ Installing a RAM Module

a. Remove the screws & cover.
b. Pull the release latche(s).
c.Remove the 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.

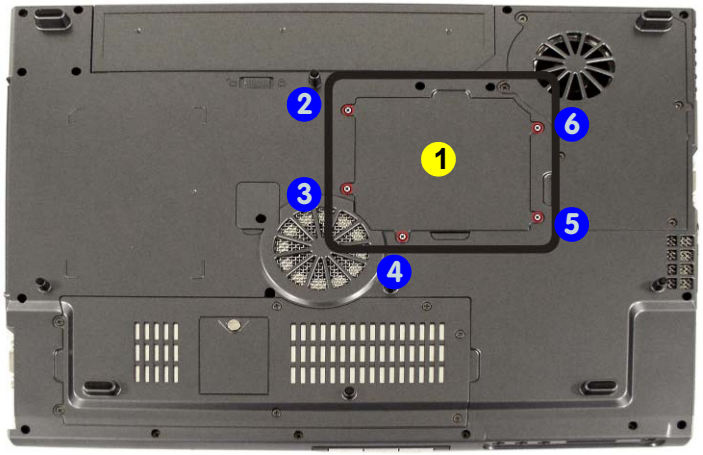
1. RAM Bay Cover
9. RAM Module

- 5 Screws

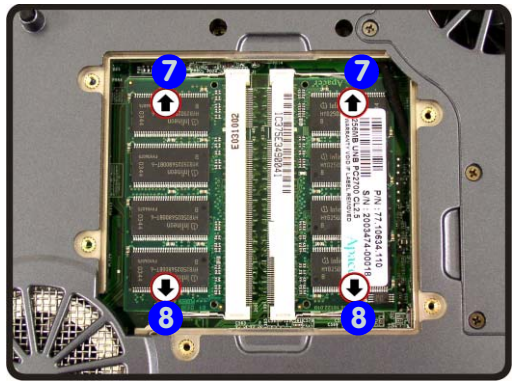
Memory Upgrade Process

1. Turn **off** the computer, remove the battery (*page 2 - 5*).
2. Locate the RAM bay cover 1, and remove screws 2 - 6 (*Figure 6a*).
3. Remove the bay cover.
4. Gently pull the two release latches (7 & 8) on the sides of the memory socket in the direction indicated by the arrows (*Figure 6b*).
5. The RAM module(s) 9 will pop-up (*Figure 6c*), and you can remove it then.

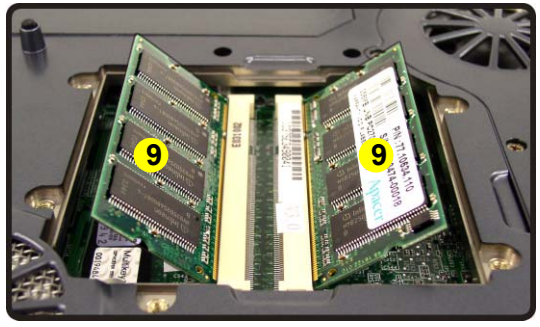
a.



b.



c.



6. Pull the latches to release the second module if necessary.
7. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
8. The module will only fit one way as defined by its pin alignment. Make sure the module is seated as far into the slot as it will go. DO NOT FORCE IT; it should fit without much pressure.
9. Press the module down towards the mainboard until the slot levers click into place to secure the module.
10. Replace the memory socket cover and the **5** screws (see ***page 2 - 10***).
11. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.

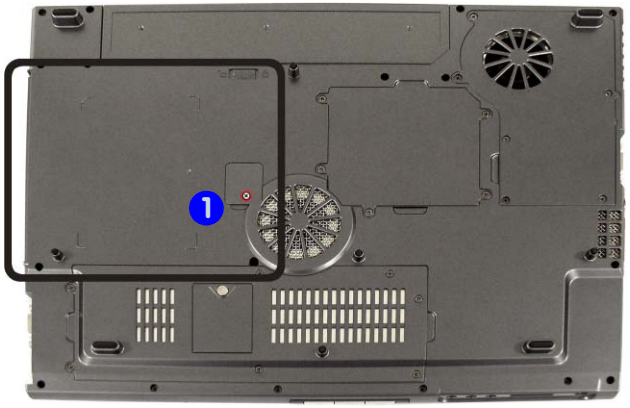
Removing the Optical (CD/DVD) Device

1. Turn **off** the computer, and remove the battery (*page 2 - 5*).
2. Remove screw at point 1 (*Figure 7a*) and carefully lift up the optical device screw cover 2 (*Figure 7b*).
3. Apply presure at point 3 to push the optical device 4 out of the computer (*Figure 7c*).
4. Insert the new device and carefully slide it into the computer (the device only fits one way. DO NOT FORCE IT; The screw holes should line up.
5. Restart the computer to allow it to automatically detect the new device.

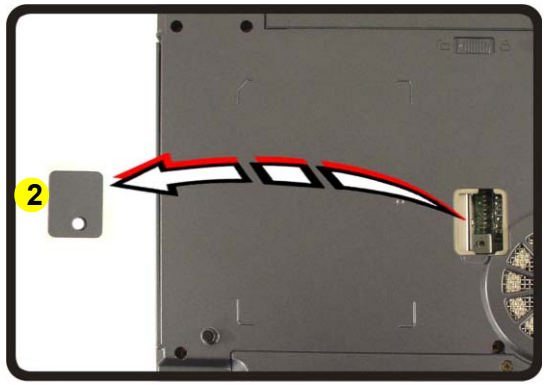
Figure 7
Optical Device Removal

a. Remove the screws.
b. Carefully lift the cover off the computer.
c. Push the optical device out off the computer at point 3.

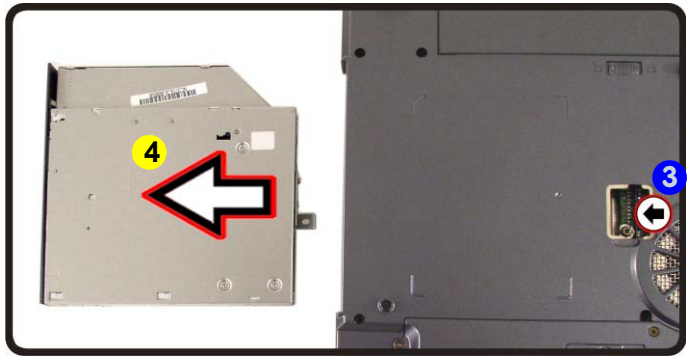
a.



b.



c.



2. Optical Device screw Cover
3. Optical Device

- 1 Screw

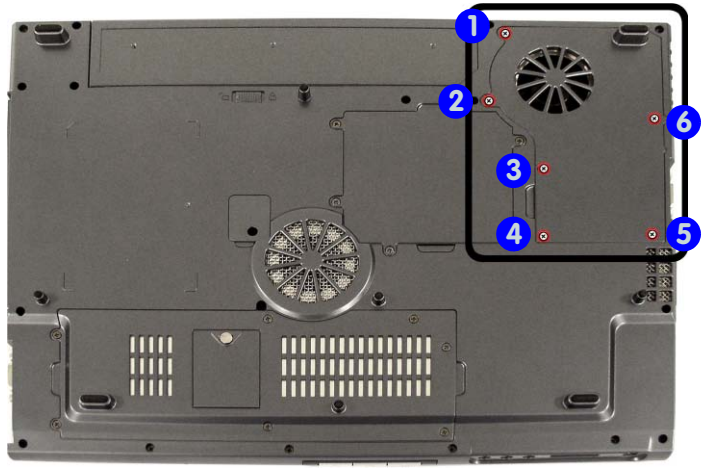
Removing the Processor

1. Turn **off** the computer, and remove the battery (*page 2 - 5*).
2. Remove screws 1 - 6 from the CPU cover.
3. Carefully lift up the CPU cover 7 off the computer.
4. Remove screws 8 - 10 (*Figure 8c*) from the heat sink in the order indicated.
5. Carefully lift up the heat sink 11 (*Figure 8d*) off the computer.

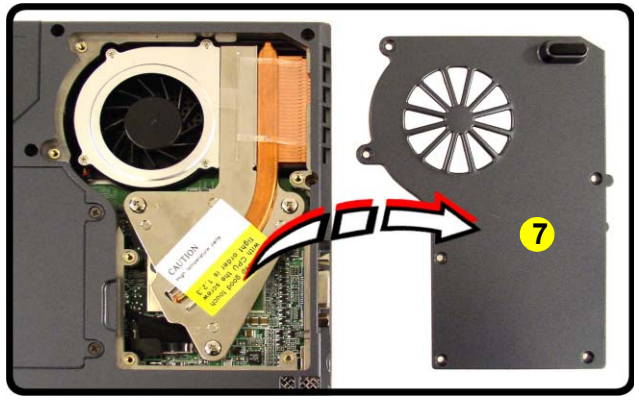
Figure 8
Processor Removal

a. Remove the screws.
b. Carefully lift the cover off the computer.
c. Remove the screws in the order indicated.
d. Remove the heat sink.

a.

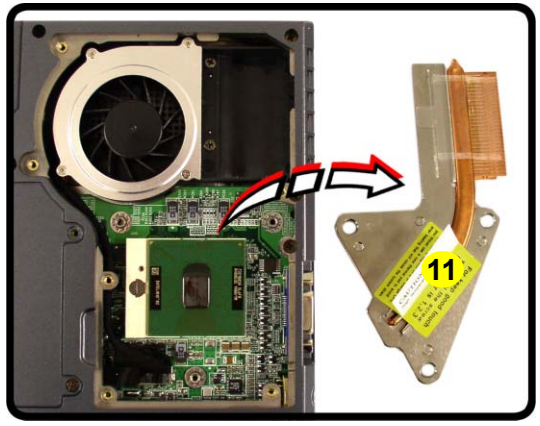


b.



c.

d.



7. CPU Cover
11. Heat Sink

- 9 Screws

6. Turn the release latch 1 towards the unlock symbol, to release the CPU (*Figure 9a*).
7. Carefully (it may be hot) lift the CPU 2 up out of the socket (*Figure 9b*).
8. Reverse the process to install a new CPU.
9. When re-inserting the CPU, pay careful attention to the pin alignment, it will fit only one way (DO NOT FORCE IT!).

Figure 9
Processor Removal (cont'd)

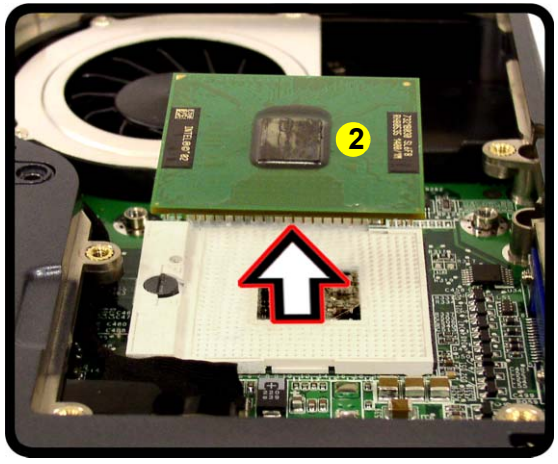
a. Turn the release latch to unlock the CPU.
b. Lift the CPU out of the socket.

a.

Unlock

Lock

b.



Caution

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

2. CPU

Removing the Keyboard

1. Turn **off** the computer, and remove the battery (*page 2 - 5*).
2. Press the **three** keyboard latches at the top of the keyboard to elevate the keyboard from its normal position (you may need to use a small screwdriver to do this).
3. Carefully lift the keyboard 5 up, being careful not to bend the keyboard ribbon cable 6 (*Figure 10c*).
4. Disconnect the keyboard ribbon cable 6 from the locking collar socket 7.

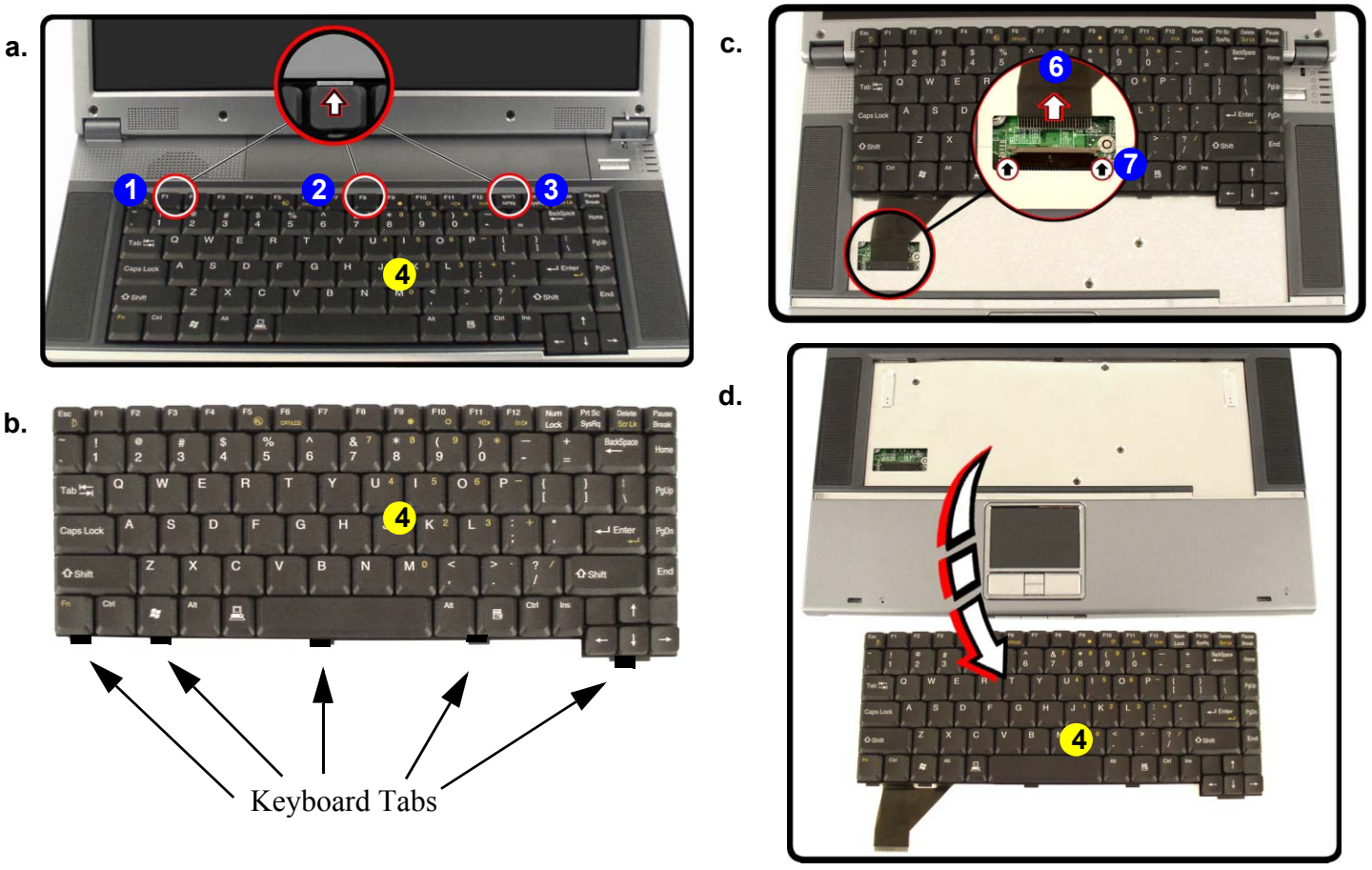


Figure 10
Keyboard Removal

a. Press the three latches to release the keyboard.
b. Lift the keyboard up.
c. Disconnect the cable from the locking collar.

Re-Inserting the Keyboard

When re-inserting the keyboard firstly align the **five** keyboard tabs (*Figure 10b*) at the bottom of the keyboard with the slots in the case.

4. Keyboard

Appendix A:Part Lists

This appendix breaks down the ***M375E*** series notebook'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.

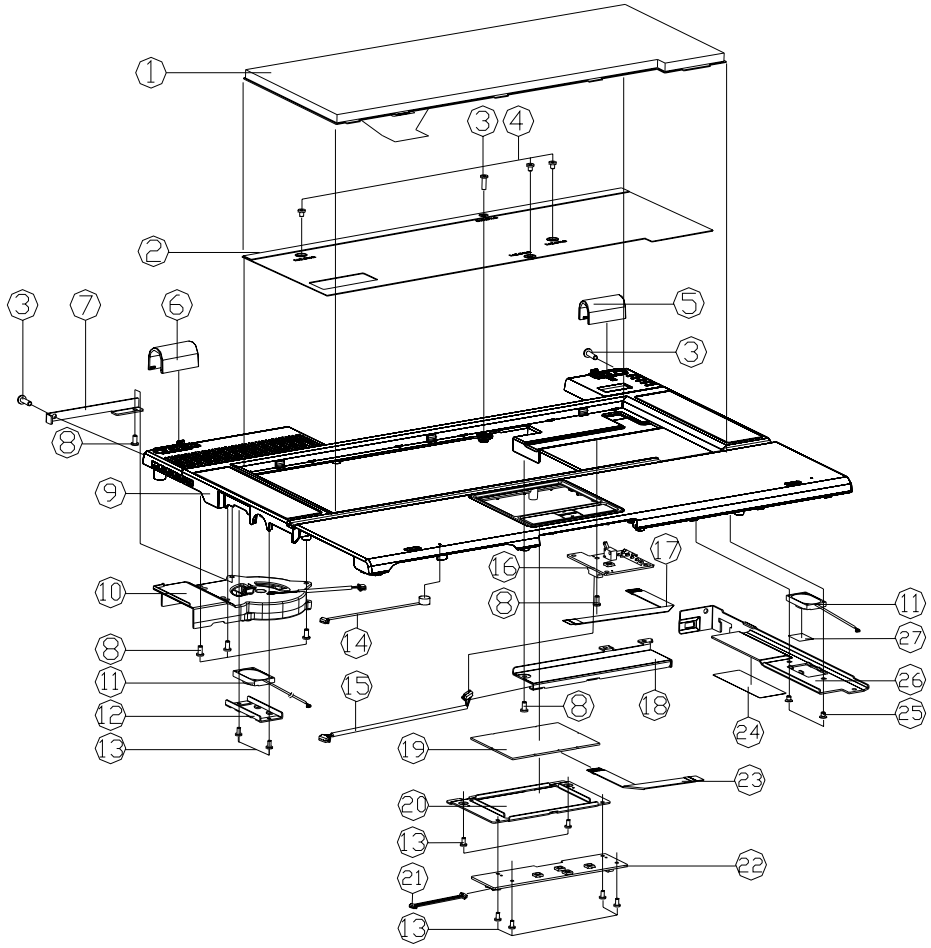
Part List Illustration Location

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

Table 1 - 1
Part List Illustration Location

Part	M375E
Top	*page A - 3*
Bottom	*page A - 4*
LCD	*page A - 5*
CD-ROM Drive - Samsung	*page A - 6*
CD-RW Drive - TEAC	*page A - 7*
Combo Drive - Samsung	*page A - 8*
DVD-Dual Drive - Pioneer	*page A - 9*
DVD-ROM Drive - Toshiba	*page A - 10*
DVD-RW Drive - Toshiba	*page A - 11*

Top (M375E)

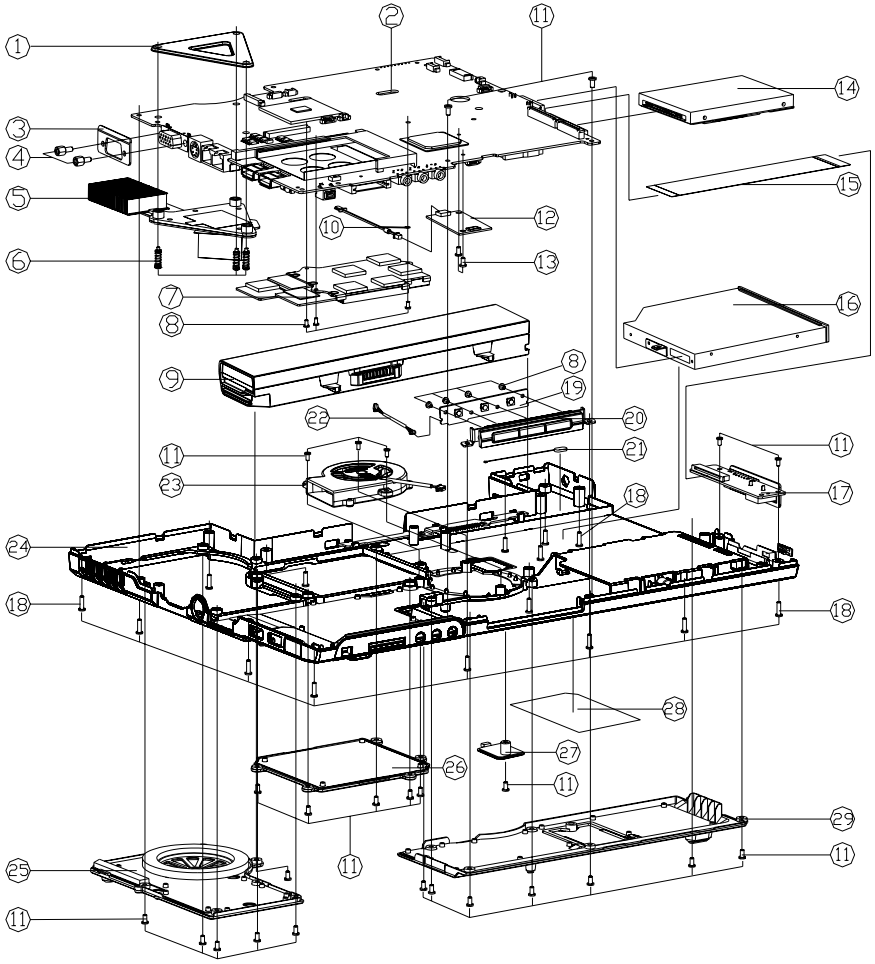


ITEM	PART NAME	PART NO	REMARK
1	KEYBOARD	80-M3708-7G0	
2	KB SHIELDING	33-M37E7-021	
3	SCREW M2.5*8L K1 BNI ICT NY	35-B9125-8R0	
4	SCREW M2.5*0.45P*3L K1 BN ICT NY	35-B9125-3R0	
5	HINGE COVER (R)	42-M375Y-030	
6	HINGE COVER (L)	42-M375Y-040	
7	SPLINE BRACKET	33-M37E2-080	
8	SCREW M2.5*5L K1 BNI ICT NY	35-B9125-5R0	
9	TOP CASE MODULE	39-M37E2-000	
10	FAN MODULE FOR CPU(M375E)	31-M37ES-101	
11	SPEAKER Ø=19.5MM L=270MM/W 4 FYH-25N15A	23-52510-301	
12	SPEAKER BRACKET	33-M375T-050	
13	SCREW M2*4L K1 BNI ICT NY	35-B9120-4RA	
14	MB TO MICROPHONE CABLE D=6,H=5	43-M37ET-010	
15	WIRE CABLE FOR MB TO MULTI FUNCTION BOARD	43-M37EV-020	
16	MULTI FUNCTION BOARD	77-M37EV-D04	
17	FFC CABLE FOR MAIN BD TO MULTI FONCTION BD	43-M37EV-011	
18	CABLE ALIGN BRACKET	33-M37E2-060	
19	TOUCH PAD SYNAPTICS TM41PDG351-1	49-42002-010	
20	TOUCH PAD BRACKET	33-M3752-010	
21	WIRE CABLE FOR CLICK BOARD L=130mm	43-M3002-010-1	
22	CLICK BOARD	77-M37E2-D01	
23	FFC CABLE FOR TOUCHPAD L=65mm	43-M3752-010	
24	MYLAR 55*20*0.1(BLACK)	40-M37ES-011	
25	SCREW M2.5*3L F NI ICT NY	35-21125-3R0	
26	BRACKET(R)	33-M37E2-041	
27	MYLAR 20L*14W	40-88800-010	

Figure 1
Top (M375E)

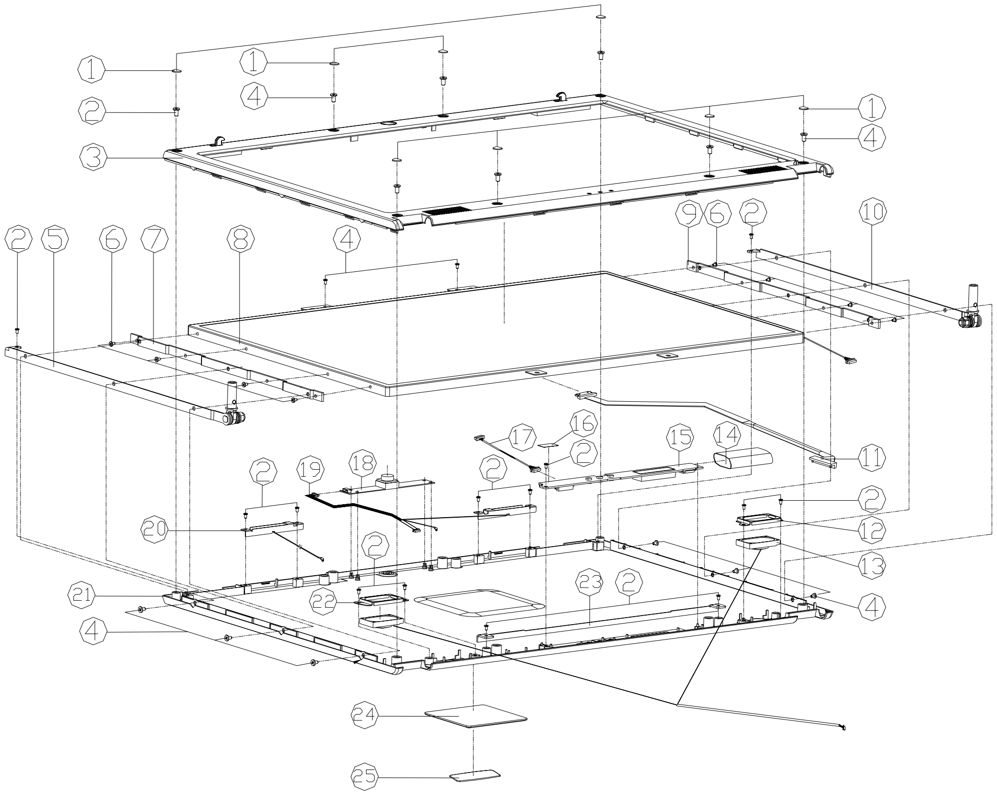
Bottom (M375E)

Figure 2
Bottom (M375E)



ITEM	PART NAME	PART NO	REMARK
1	CPU SUPPORTER	33-M37ES-010	
2	MAIN BOARD	77-M37E0-D0X	
3	BRACKET FOR CRT PORT (MB)	33-M37E2-020	
4	HEX STUD (SUM22 NI-PL) 11MM	34-07009-011-A	
5	CPU HEATSINK MODULE	31-M37ES-300	
6	SCREW M2.5*0.45P*9.5 DI=3.5,L=9.5,S=2.5R	35-41025-095	
7	HEATSINK FOR VGA CHIP	31-M37ES-010	
8	SCREW M2*3L K1 N1 ICT NY	35-B1120-3RA	
9	SMART BATTERY 3S2P 11.1V 4400MAH SMP (SAMS	87-M37ES-4D4	
10	MDC CABLE 2 PIN TO 2PIN	43-M37EU-012	
11	SCREW M2.5*5L K1 BNI ICT NY	35-B9125-5R0	
12	MDC MODEM+TEL.CABLE MODULE	76-32200-101	
13	SCREW M2.5*0.45P*3L K1 BN ICT NY	35-B9125-3R0	
14	W/O HDD ASS'Y M300N	79-M3001-010	
15	FFC 26PIN M/B TO DAUGHTER BOARD	43-M37E0-010	OPTION
16	CD-ROM ASS'Y (OPTION)	79-M37EZ-010	Reference Assy Bag (99-M37E5-040)
16	CD-RW ASS'Y (OPTION)	79-M375W-000	Reference Assy Bag (99-M375E-050)
16	COMBO ASS'Y (OPTION)	79-M37EX-010	Reference Assy Bag (99-M37E5-060)
16	DVD-ROM ASS'Y (OPTION)	79-M37EV-010	Reference Assy Bag (99-M37E5-070)
16	DVD/RW ASS'Y (OPTION)	79-M37EQ-010	Reference Assy Bag (99-M37E5-080)
16	DVD DUAL RW ASSY(OPTION)	79-M37EQ-110	Reference Assy Bag (99-M37E5-061)
17	USB COMI BOARD VD1.0 M375E	77-M37E3-D11	
18	SCREW M2.5*8L K1 BNI ICT NY	35-B9125-8R0	
19	HOTKEY CONVERTR BOARD	77-M3754-D02	
20	HOT KEY MODULE M375C	42-M3751-400	
21	BAT. 20M 3V 230MAH VARTA 0740TP W/CABLE TSSMC	23-22015-P3B	
22	WIRE CABLE FOR HOT KEY L=45mm	43-M3750-010	
23	FAN MODULE FOR SYSTEM(M375E)	31-M37ES-201	
24	BOTTOM CASE (COM-I) MODULE 藍灰色 無貼	39-M37E3-023	
25	CPU COVER MODULE	42-M37ES-102	
26	DDR COVER MODULE M375E	42-M37ES-200	
27	CD-ROM LOCK COVER	42-M375Z-010	
28	PRODUCT LABEL FOR M375E	45-M37E3-010	
29	HDD COVER MODULE	42-M37EI-102	

LCD (M375E)



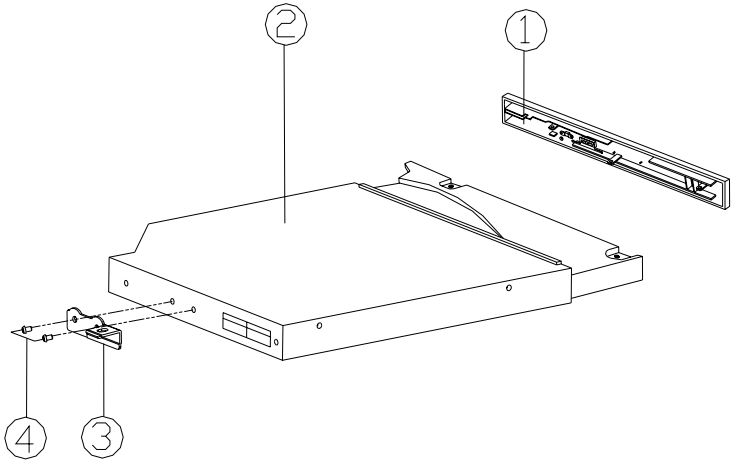
ITEM	PART NAME	PART NO	REMARK
1	LCD F-CVR RUBBER,SILICONE M360C	47-M36C1-040	
2	SCREW M2*4L KI BNI ICT NY	35-B9120-4RA	
3	LCD FRONT COVER MODULE W/CCD	39-M3751-111	
3	LCD FRONT COVER MODULE W/O CCD	39-M3751-011	
4	SCREW M2.5*4L K1 BK/O ICT NY	35-B4125-4RA	
5	LCD HINGE L FOR SAM/CPT	33-M3751-050	
6	SCREW M2*3L K1 NI ICT NY	35-B1120-3RA	
7	CONVERTER BRACKET (L) SAM/CPT	33-M3752-050	
8	LCD 15.4" 1280*800 TFT CPT CLAA150WA01 6.0MM	50-L8260-C00	
8	LCD T LG LP154W01(A1) 15.4" WXGA 6.0MM	50-L8260-L00	
8	LCD 15.4" 1280*800 TFT HITACHI TX39D89VC1F	50-L8265-I01	
9	CONVERTER BRACKET (R) SAM/CPT	33-M3752-070	
10	LCD HINGE R FOR SAM/CPT	33-M3751-060	
11	LCD COAXIAL CABLE FOR CPT(CLAA154WA01)	43-M37E1-010	
12	SPEAKER FIXTURE(R)	33-M300T-031	
13	SPEAKER (R=270MM L=7MM,COMMON=145MM)1W 4? FYH-2515AP4 4PIN	23-52510-070	
14	KAPTON(44*37*0.075) FOR INVERTER	40-M375S-010	
15	INVERTER MODULE FOR M375E(EPS)	76-M375R-001	
16	MYLAR(12*7*0.1T) FOR INVERTER	40-M375R-010	
17	WIRE CABLE FOR INVERTER L=280MM	43-M375R-011	
18	VIDEO CAMERA CAMTEL(CMM-3130)ASS'Y M300N	79-M300C-010	OPTION
18	VIDEO CAMERA (PN-616)ASS'Y M300N	79-M300C-020	OPTION
19	ANTENNA 2.4GHZ PIEA FOR WLAN+CAMERA CABLE(??)M375E	23-742R4-AB0	
20	ANTENNA 2.4GHZ PIEA FOR BLUETOOTH CABLE M375E	23-742R4-AA0	OPTION
21	LCD BACK COVER MODULE	39-M3751-021	
22	SPEAKER FIXTURE(L)	33-M300T-041	
23	LCD BRACKET DOWN FOR SAM/CPT	33-M3751-030	
24	NAME PLATE M375C	45-M3752-010	
25	NAME PLATE "NOTEBOOK"	45-42001-010	

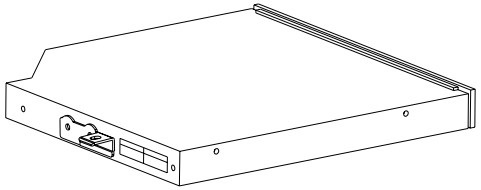
Figure 3
LCD (M375E)

A.Part Lists

CD-ROM Drive - SAMSUNG (M375E)

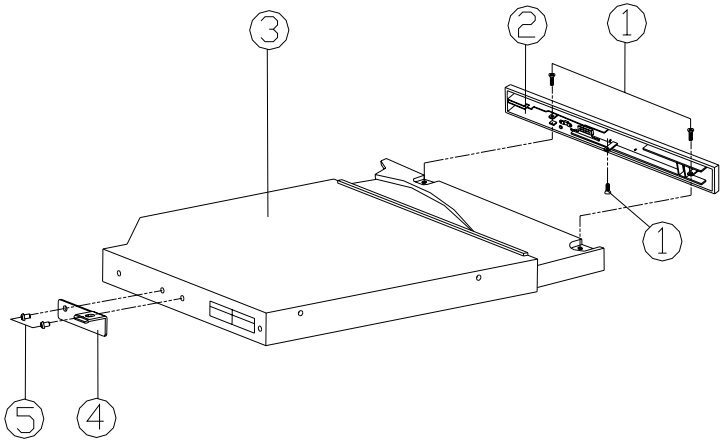
Figure 4
CD-ROM Drive - SAMSUNG (M375E)

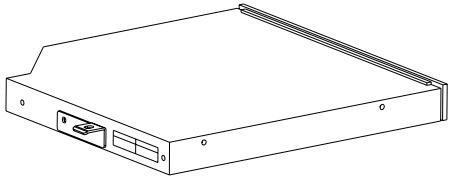




ITEM	PART NAME	PART NO	REMARK
1	CD-ROM BEZEL MODULE SAMSUNG	42-M375Z-200	
2	CD-ROM 5 1/4" 24X SN-124 SAMSUNG	85-607□X-S00	
3	CD ROM BRACKET M375E	33-M37EZ-010	
4	SCREW M2*4L K1 NI ICT NY	35-B1120-4R0	

CD-RW Drive - TEAC (M375E)



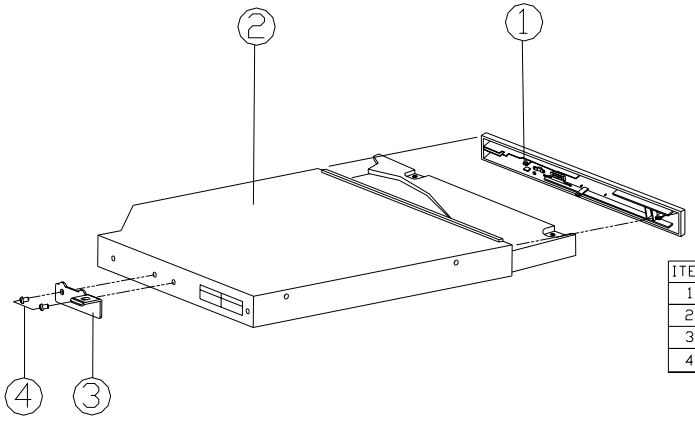


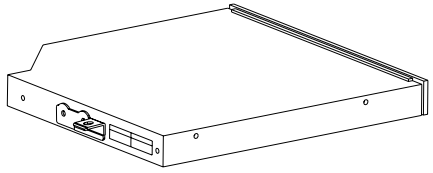
ITEM	PART NAME	PART NO	REMARK
1	SCREW M2*5L K1 BK/□ TAP/	35-B4920-5R0	
2	CD-RW BEZEL MODULE TEAC(CD-W224E-A82)	42-M375W-100	
2	CD-RW BEZEL MODULE TEAC(CD-W224E-A82)	42-M385W-100	
3	CD-R/W 5 1/4" 24X CD-W224E-A82 12.7mm TEAC	85-807□X-701	
4	CD-ROM BRACKET	33-M300Z-010	
5	SCREW M2*4L K1 NI ICT NY	35-B1120-4R0	

Figure 5
CD-RW Drive - TEAC (M375E)

Combo Drive - SAMSUNG (M375E)

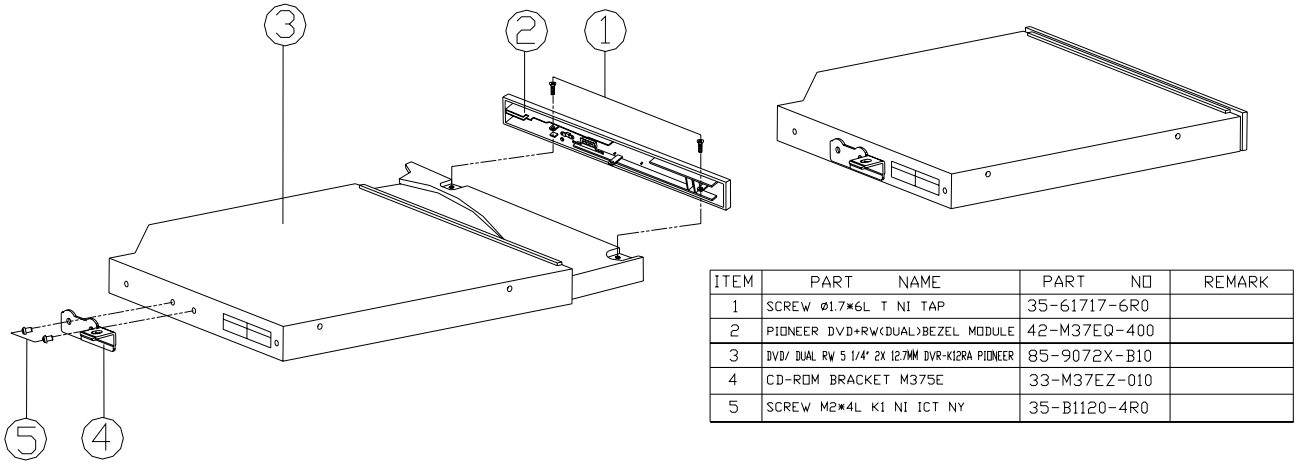
Figure 6
Combo Drive - SAMSUNG (M375E)





ITEM	PART NAME	PART NO	REMARK
1	COMBO BEZEL MODULE FOR SAMSUNG	42-M37EX-200	
2	CD-RW/DVD 5 1/4" 24X 12.7mm SN-324F SAMSUNG F/W=U20I	85-907□X-S02	
3	CD ROM BRACKET M375E	33-M37EZ-010	
4	SCREW M2*4L K1 NI ICT NY	35-B1120-4R0	

DVD-Dual Drive - PIONEER (M375E)

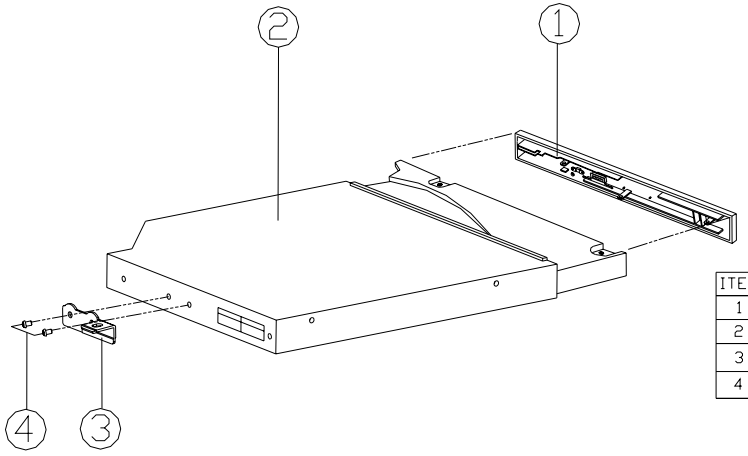


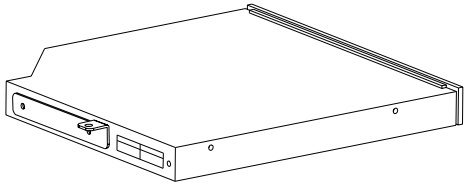
ITEM	PART NAME	PART NO	REMARK
1	SCREW Ø1.7*6L T NI TAP	35-61717-6R0	
2	PIONEER DVD+RW(DUAL)BEZEL MODULE	42-M37EQ-400	
3	DVD/ DUAL RW 5 1/4" 2X 12.7MM DVR-K12RA PIONEER	85-9072X-B10	
4	CD-ROM BRACKET M375E	33-M37EZ-010	
5	SCREW M2*4L K1 NI ICT NY	35-B1120-4R0	

Figure 7
DVD-Dual Drive - PIONEER (M375E)

DVD-ROM Drive - TOSHIBA (M375E)

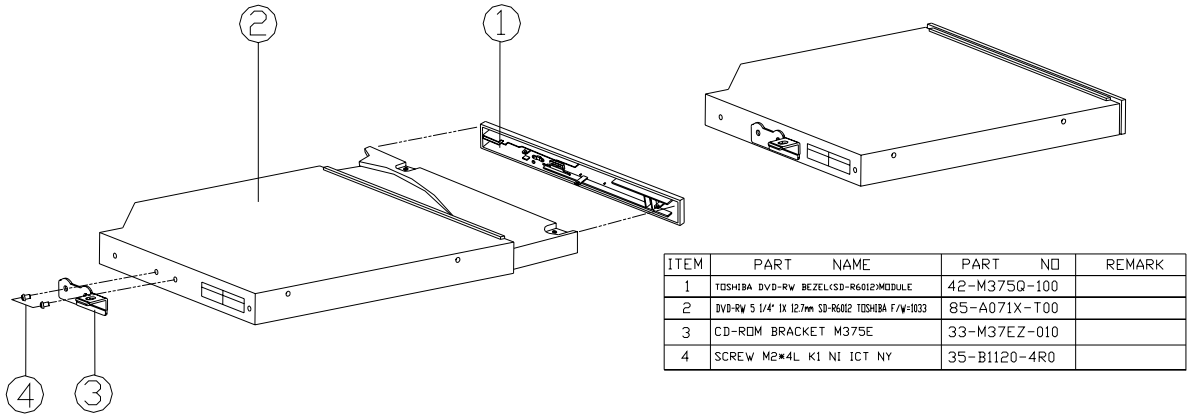
Figure 8
DVD-ROM Drive - TOSHIBA (M375E)





ITEM	PART NAME	PART NO	REMARK
1	TOSHIBA DVD±8X SD-C2612-10E>BEZEL MODULE	42-M375V-200	
2	DVD 5 1/4" 8X 12.7mm SD-C2612-10E TOSHIBA	85-7078X-T04	
3	CD-ROM BRACKET M375E	33-M37EZ-010	
4	SCREW M2*4L K1 NI ICT NY	35-B1120-4R0	

DVD-RW Drive - TOSHIBA (M375E)



ITEM	PART NAME	PART NO	REMARK
1	TOSHIBA DVD-RW BEZEL<SD-R6012>MODULE	42-M375Q-100	
2	DVD-RW 5 1/4" IX 12.7mm SD-R6012 TOSHIBA F/W=1033	85-A071X-T00	
3	CD-ROM BRACKET M375E	33-M37EZ-010	
4	SCREW M2*4L K1 NI ICT NY	35-B1120-4R0	

Figure 9
DVD-RW Drive - TOSHIBA (M375E)

Appendix B:Schematic Diagrams

This appendix has circuit diagrams of the ***M375E*** notebook's PCB's. The following table indicates where to find the appropriate schematic diagram.

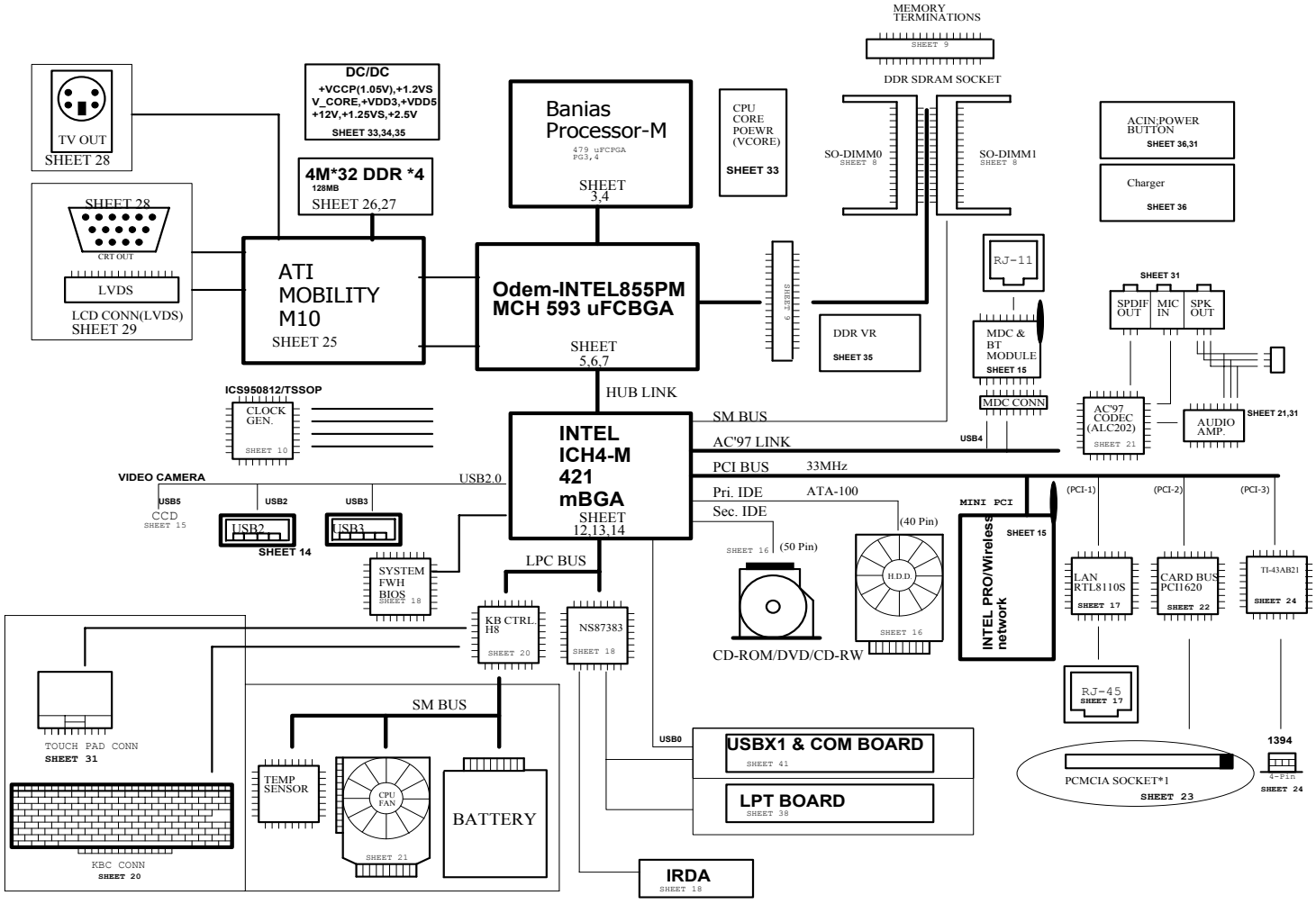
Table 1
Schematic Diagrams

Version Note

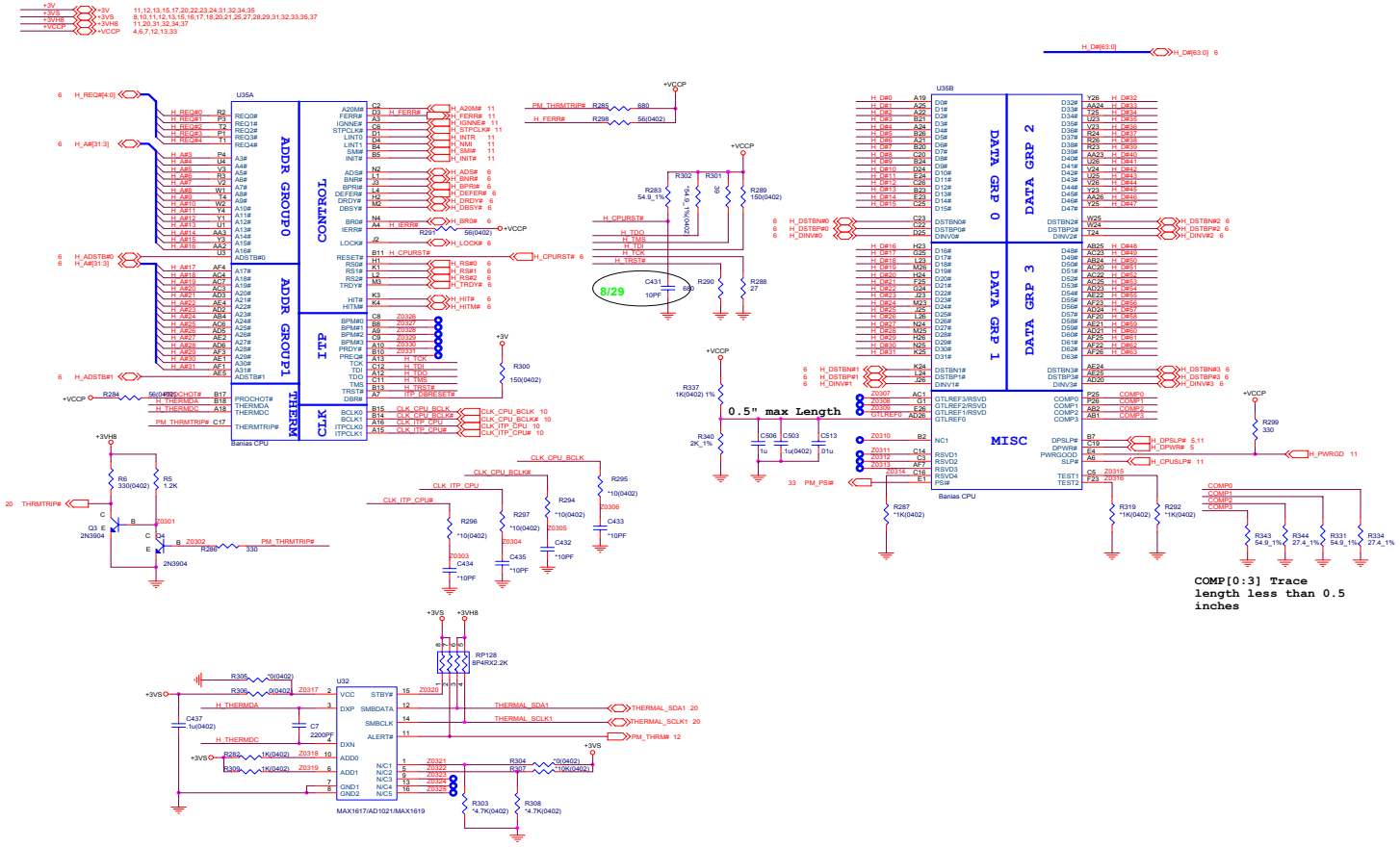
The schematic diagrams in this chapter are based upon version **71-M37E0-D04**. If your mainboard (or other boards) are a later version, please check with the Service Center for updated diagrams (if required).

System Block Diagram

Sheet 1 of 36
System Block Diagram



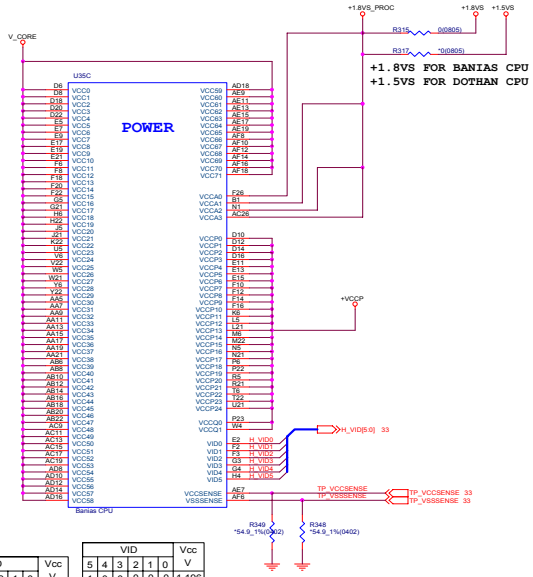
Socket 479 - 1 of 2



Sheet 2 of 36
Socket 479
1 of 2

Socket 479 - 2 of 2

Sheet 3 of 36
Socket 479
2 of 2



VID						Vcc
5	4	3	2	1	0	V
0	0	0	0	0	0	1.708
0	0	0	0	0	1	1.692
0	0	0	0	1	0	1.676
0	0	0	0	1	1	1.660
0	0	0	1	0	0	1.644
0	0	0	1	0	1	1.628
0	0	0	1	1	0	1.612
0	0	0	1	1	1	1.596
0	0	1	0	0	0	1.580
0	0	1	0	0	1	1.564
0	0	1	0	1	0	1.548
0	0	1	0	1	1	1.532
0	0	1	1	0	0	1.516
0	0	1	1	0	1	1.500
0	0	1	1	1	0	1.484
0	0	1	1	1	1	1.468
0	1	0	0	0	0	1.452
0	1	0	0	0	1	1.436
0	1	0	0	1	0	1.420
0	1	0	0	1	1	1.404
0	1	0	1	0	0	1.388
0	1	0	1	0	1	1.372
0	1	0	1	1	0	1.356
0	1	0	1	1	1	1.340
0	1	1	0	0	0	1.324
0	1	1	0	0	1	1.308
0	1	1	0	1	0	1.292
0	1	1	0	1	1	1.276
0	1	1	1	0	0	1.260
0	1	1	1	0	1	1.244
0	1	1	1	1	0	1.228
0	1	1	1	1	1	1.212

VID						Vcc
5	4	3	2	1	0	V
1	0	0	0	0	0	1.196
1	0	0	0	0	1	1.180
1	0	0	0	1	0	1.164
1	0	0	0	1	1	1.148
1	0	0	1	0	0	1.132
1	0	0	1	0	1	1.116
1	0	0	1	1	0	1.100
1	0	0	1	1	1	1.084
1	0	1	0	0	0	1.068
1	0	1	0	0	1	1.052
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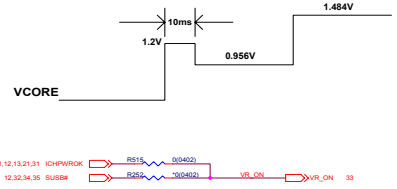
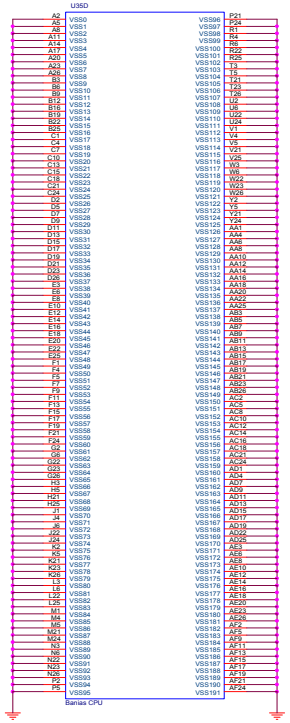
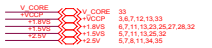
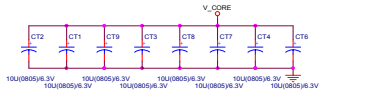
1	0	1	0	1	1	1.020
1	0	1	1	0	0	1.004
1	0	1	1	0	1	0.988
1	0	1	1	1	0	0.972
1	0	1	1	1	1	0.956
1	1	0	0	0	0	0.940
1	1	0	0	0	1	0.924
1	1	0	0	1	0	0.908
1	1	0	0	1	1	0.892
1	1	0	1	0	0	0.876
1	1	0	1	0	1	0.860
1	1	0	1	1	0	0.844
1	1	0	1	1	1	0.828
1	1	1	0	0	0	0.812
1	1	1	0	0	1	0.796
1	1	1	0	1	0	0.780
1	1	1	0	1	1	0.764
1	1	1	1	0	0	0.748
1	1	1	1	0	1	0.732
1	1	1	1	1	0	0.716
1	1	1	1	1	1	0.700

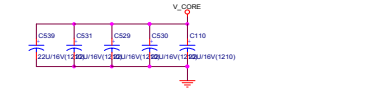
1.4G-1.7G

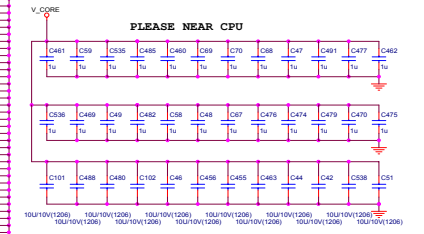


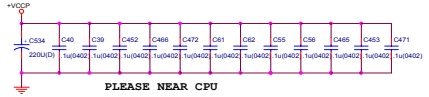




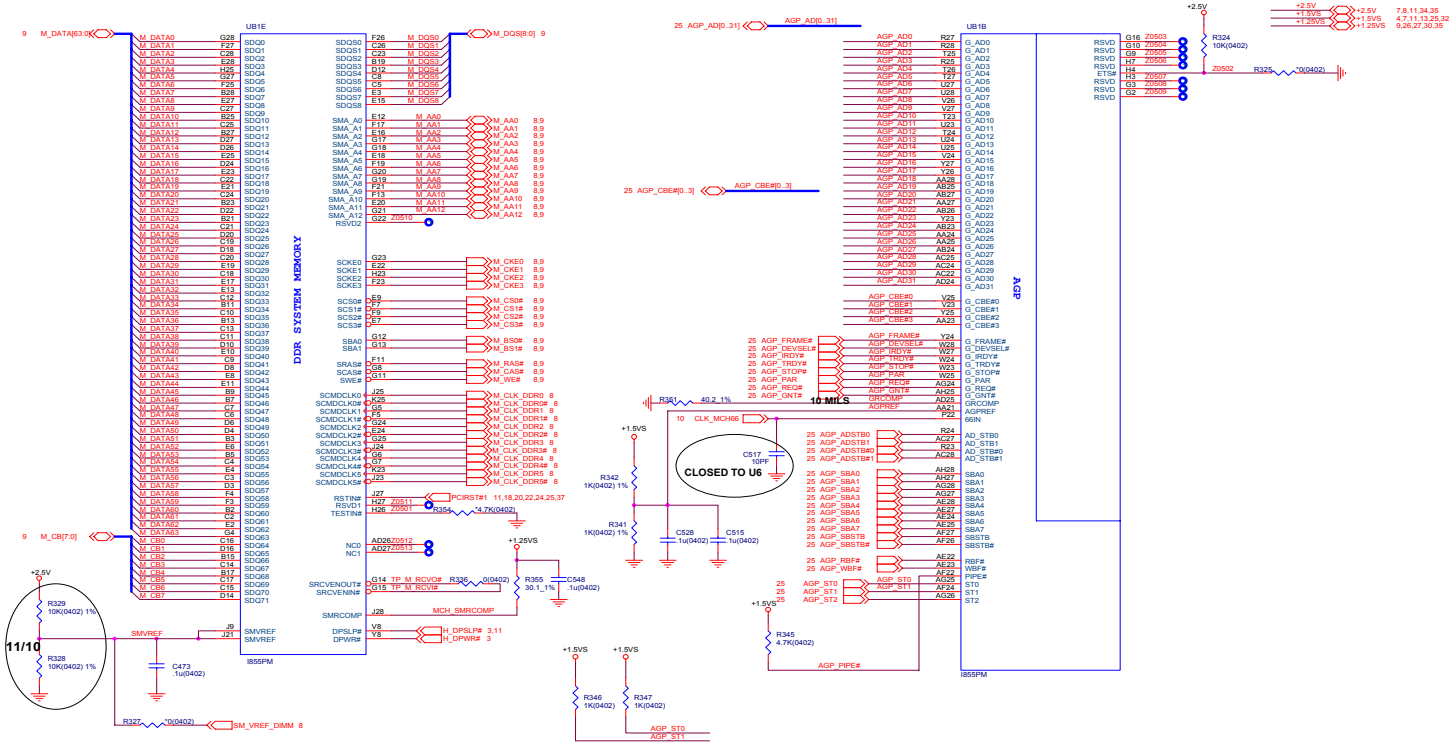








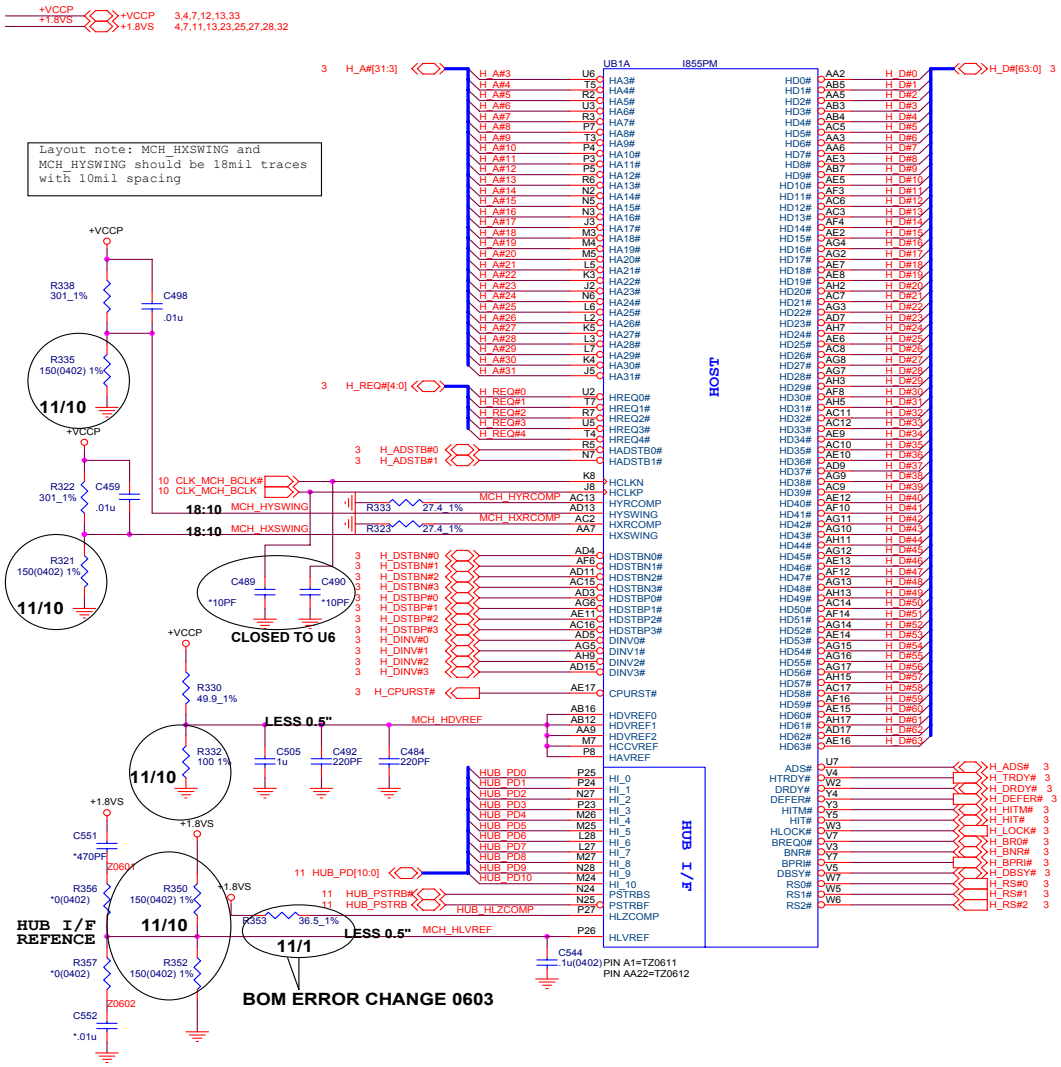
855PM MCH-1



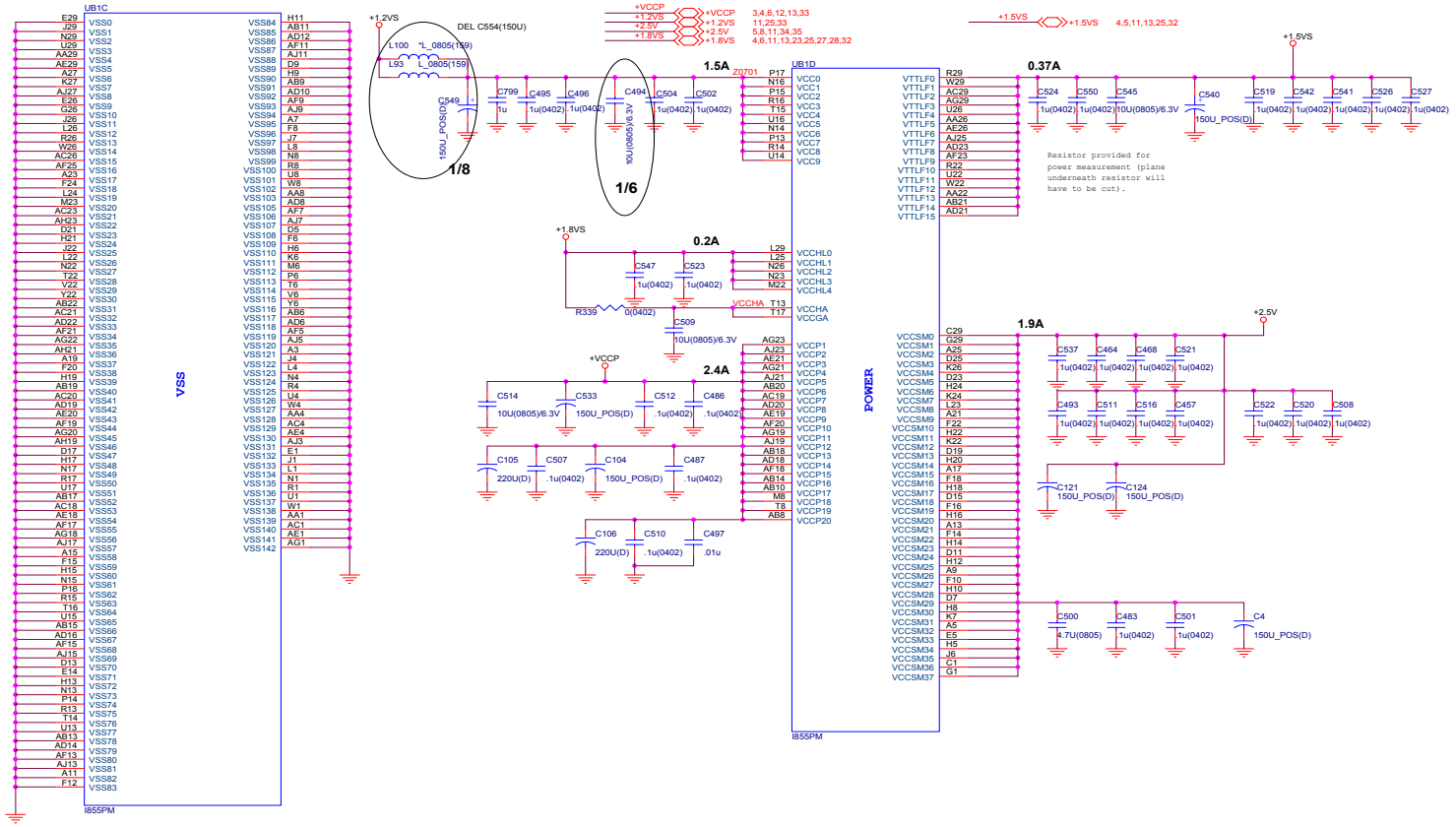
Sheet 4 of 36
855PM MCH-1

855PM MCH-2

Sheet 5 of 36
855PM MCH-2



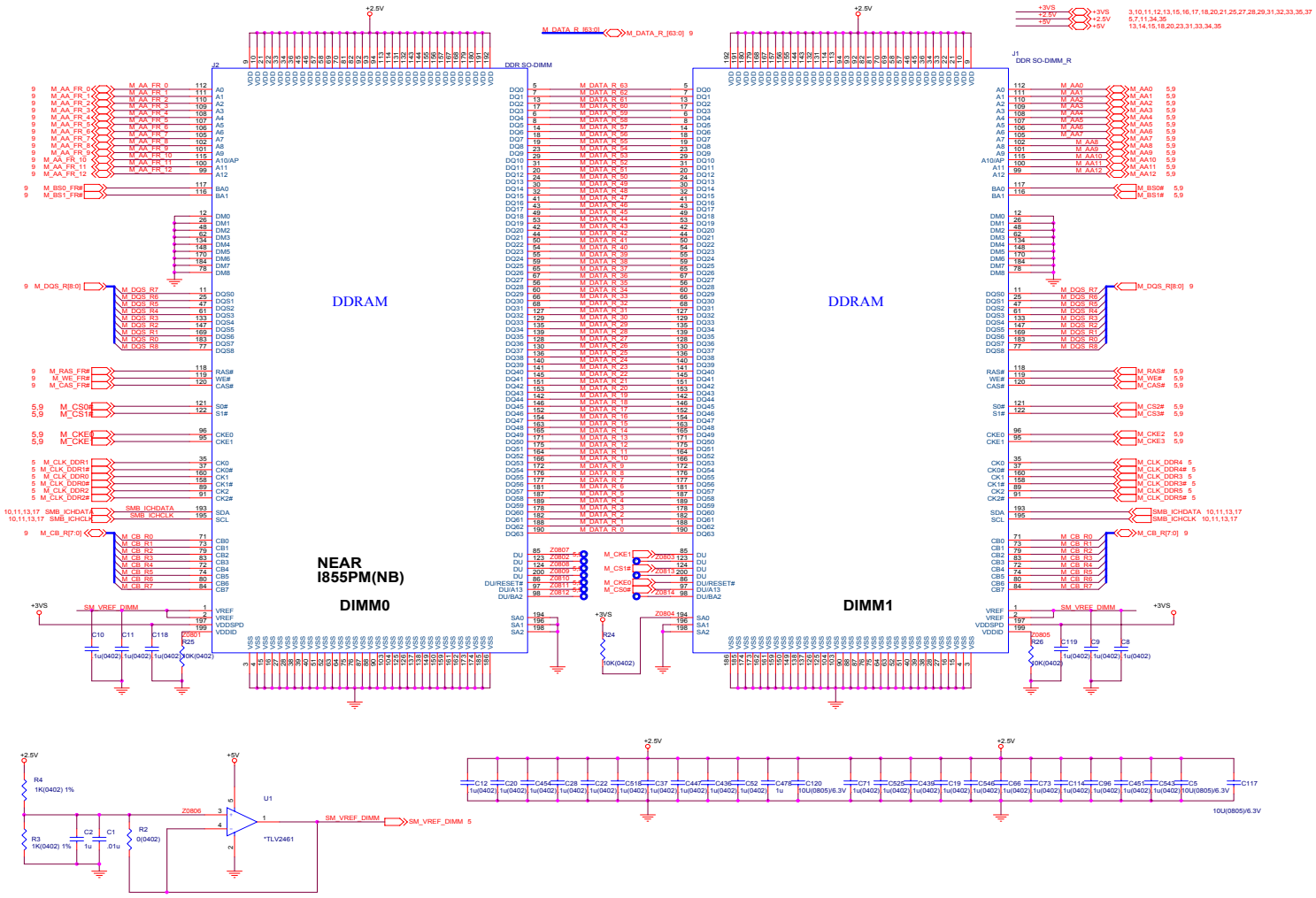
855PM MCH-3



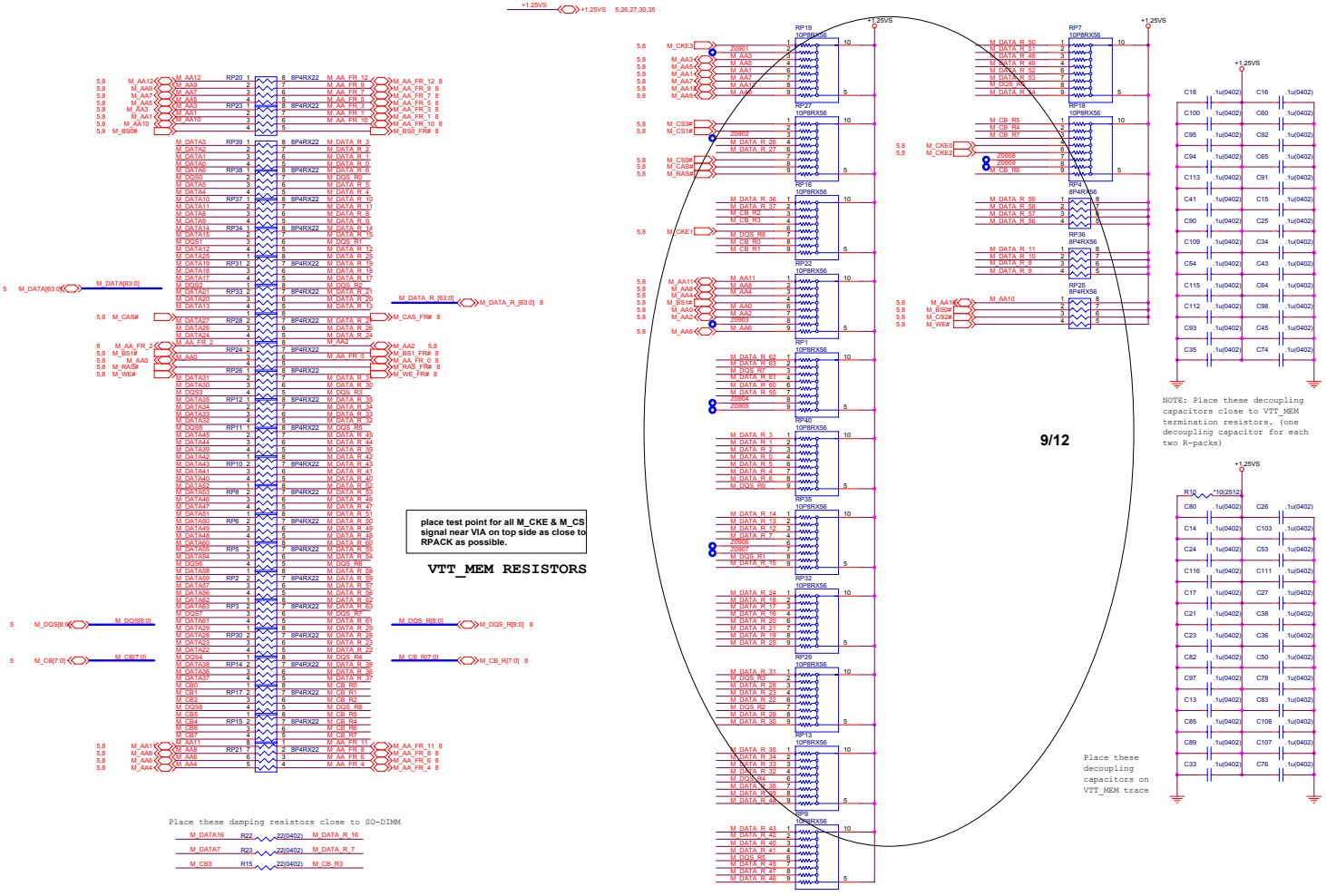
Sheet 6 of 36
855PM MCH-3

DDRAM

Sheet 7 of 36
DDRAM



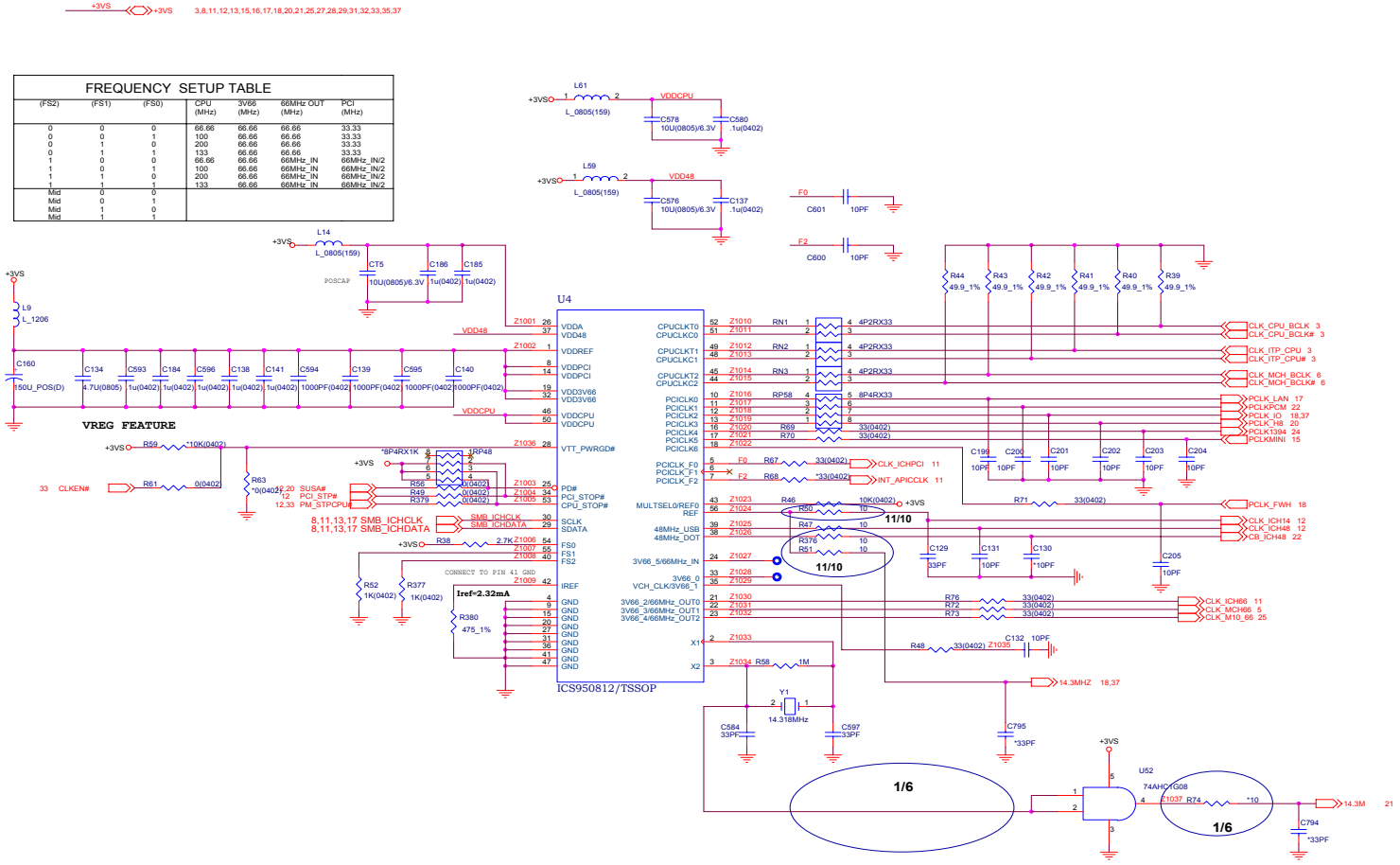
DDR Termination



Sheet 8 of 36
DDR Termination

Clock Generator

Sheet 9 of 36
Clock Generator



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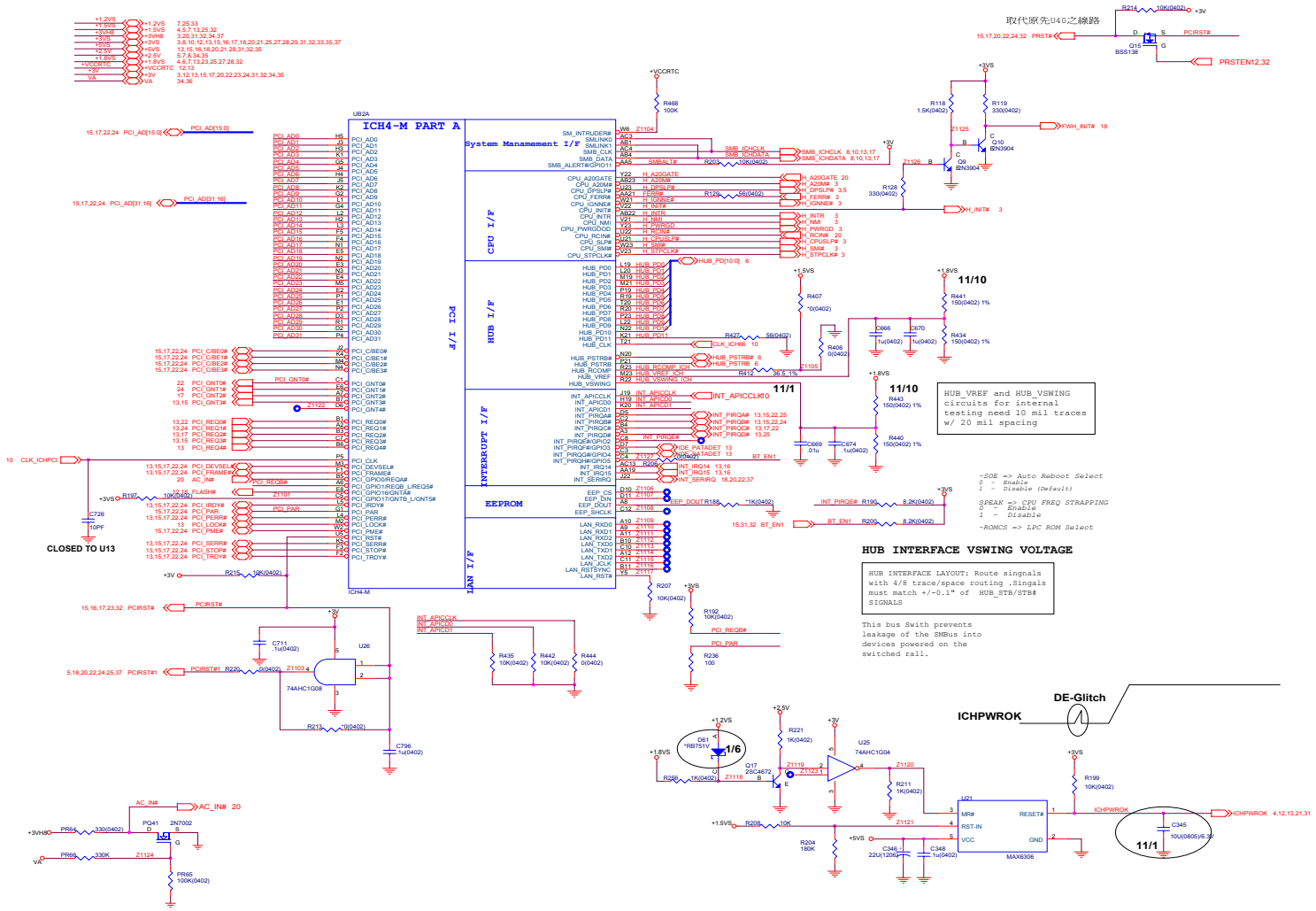
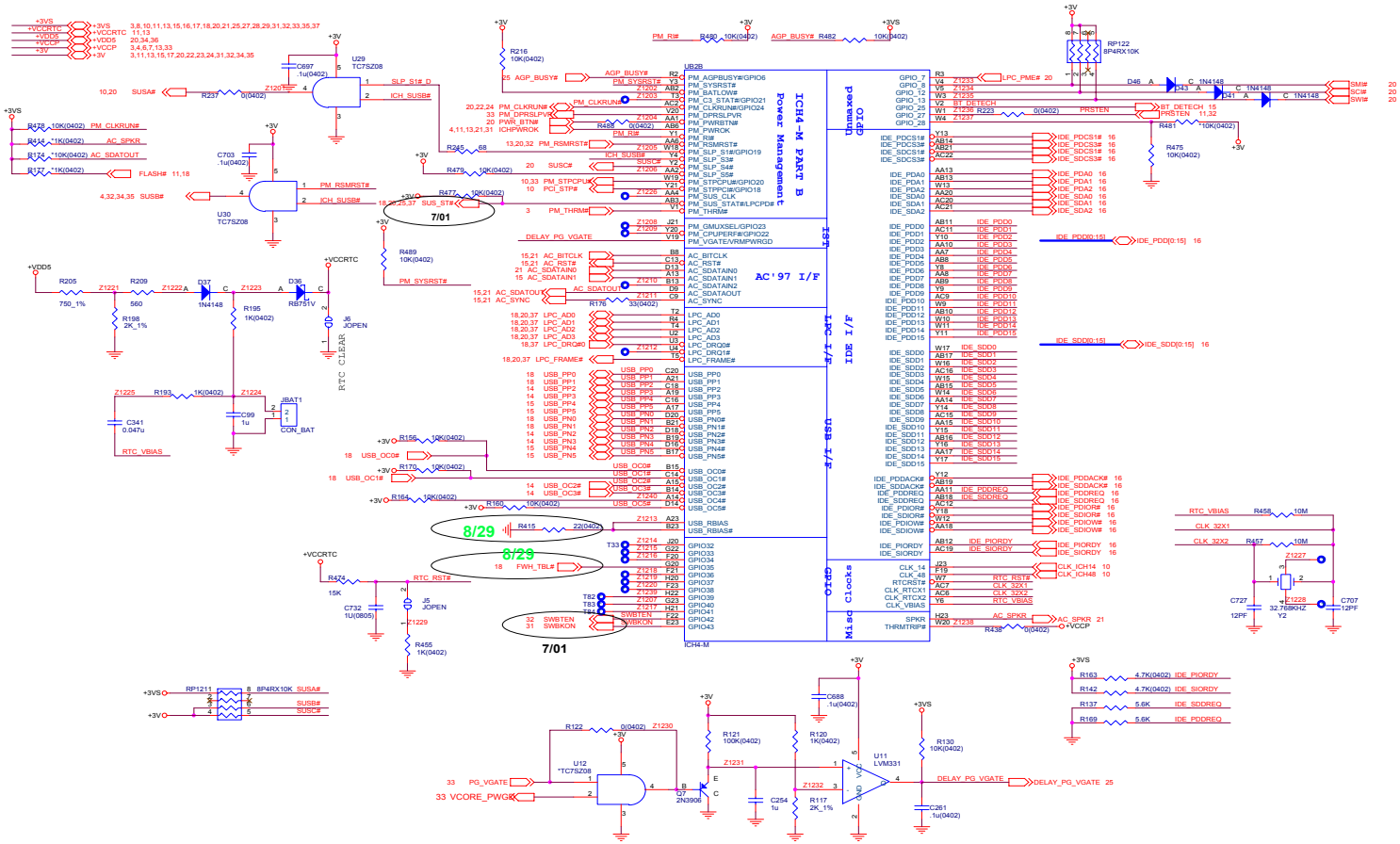


Sheet 10 of 36
ICH4-1
(1 of 3)

ICH4-2 (2 of 3)

Sheet 11 of 36
ICH4-2
(2 of 3)



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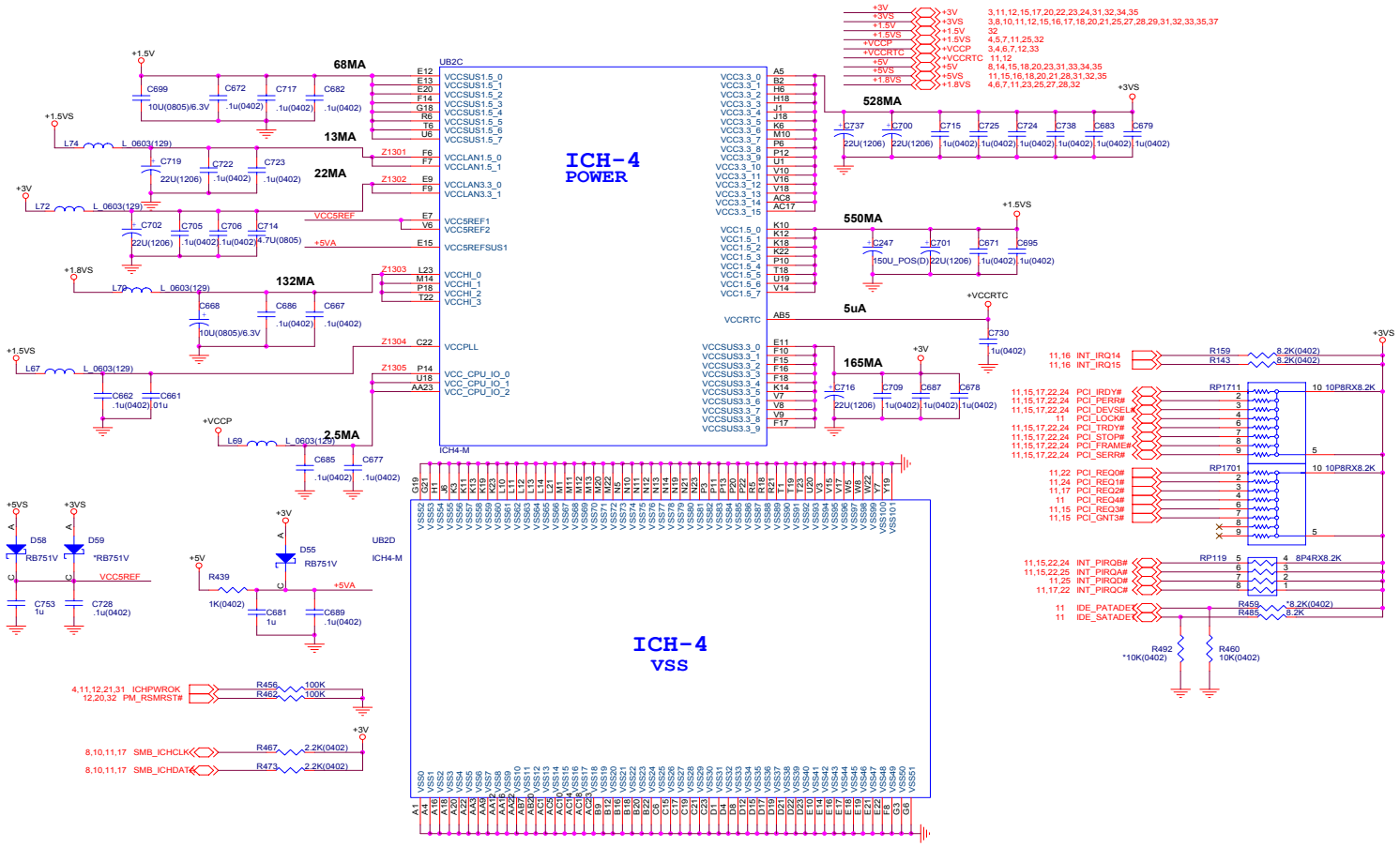
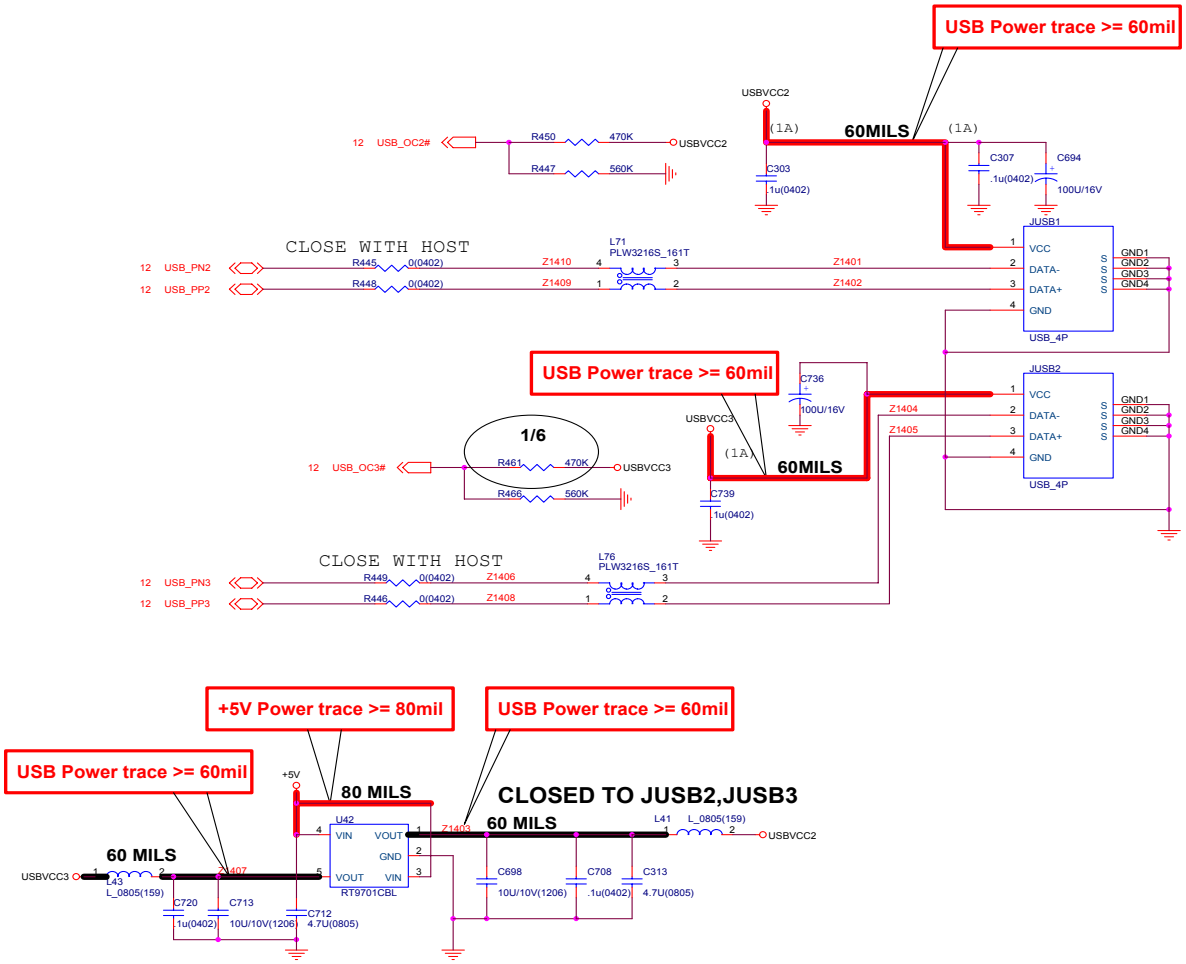


Sheet 12 of 36
ICH4-3
(3 of 3)

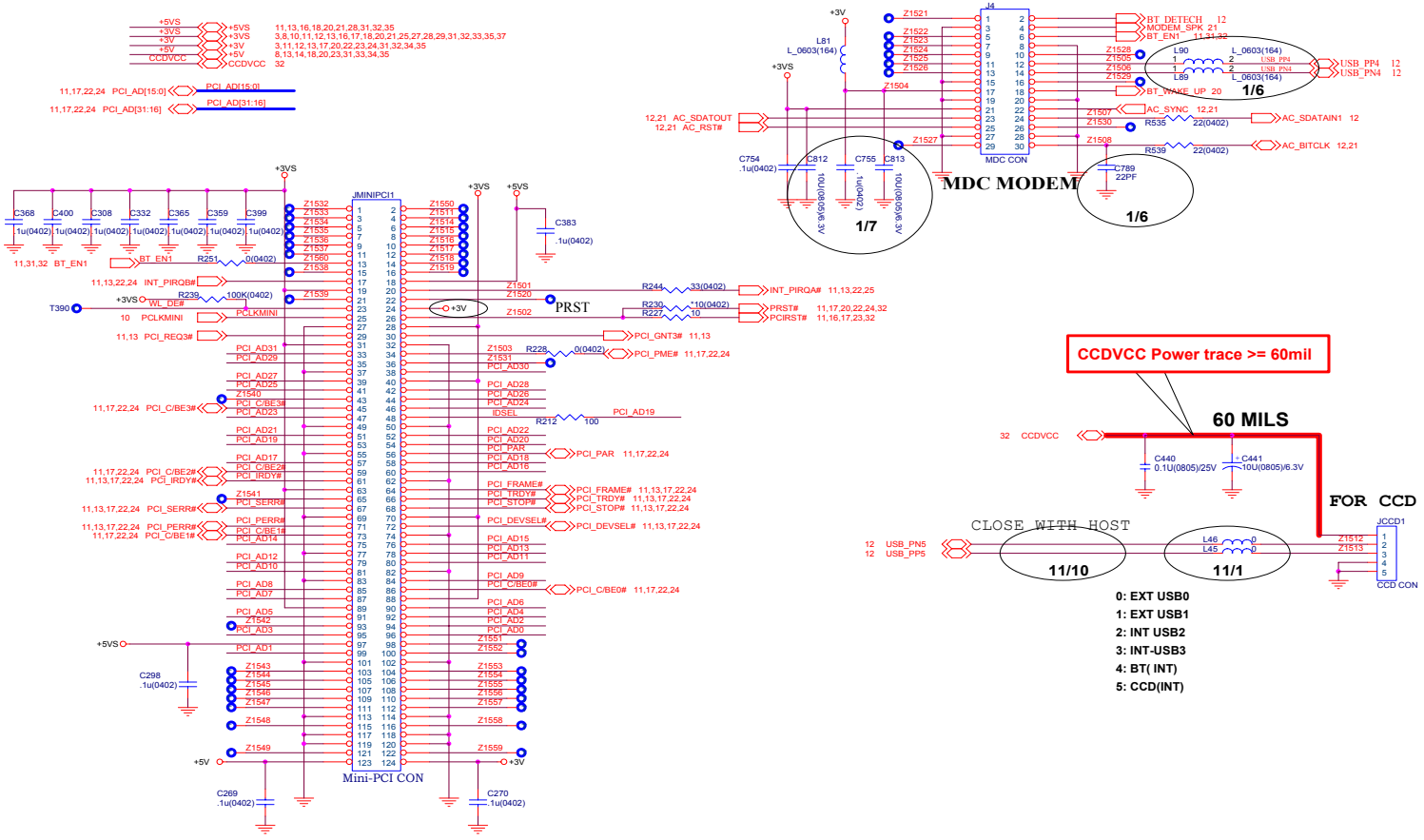
B.Schematic Diagrams

USB 2.0

Sheet 13 of 36
USB 2.0



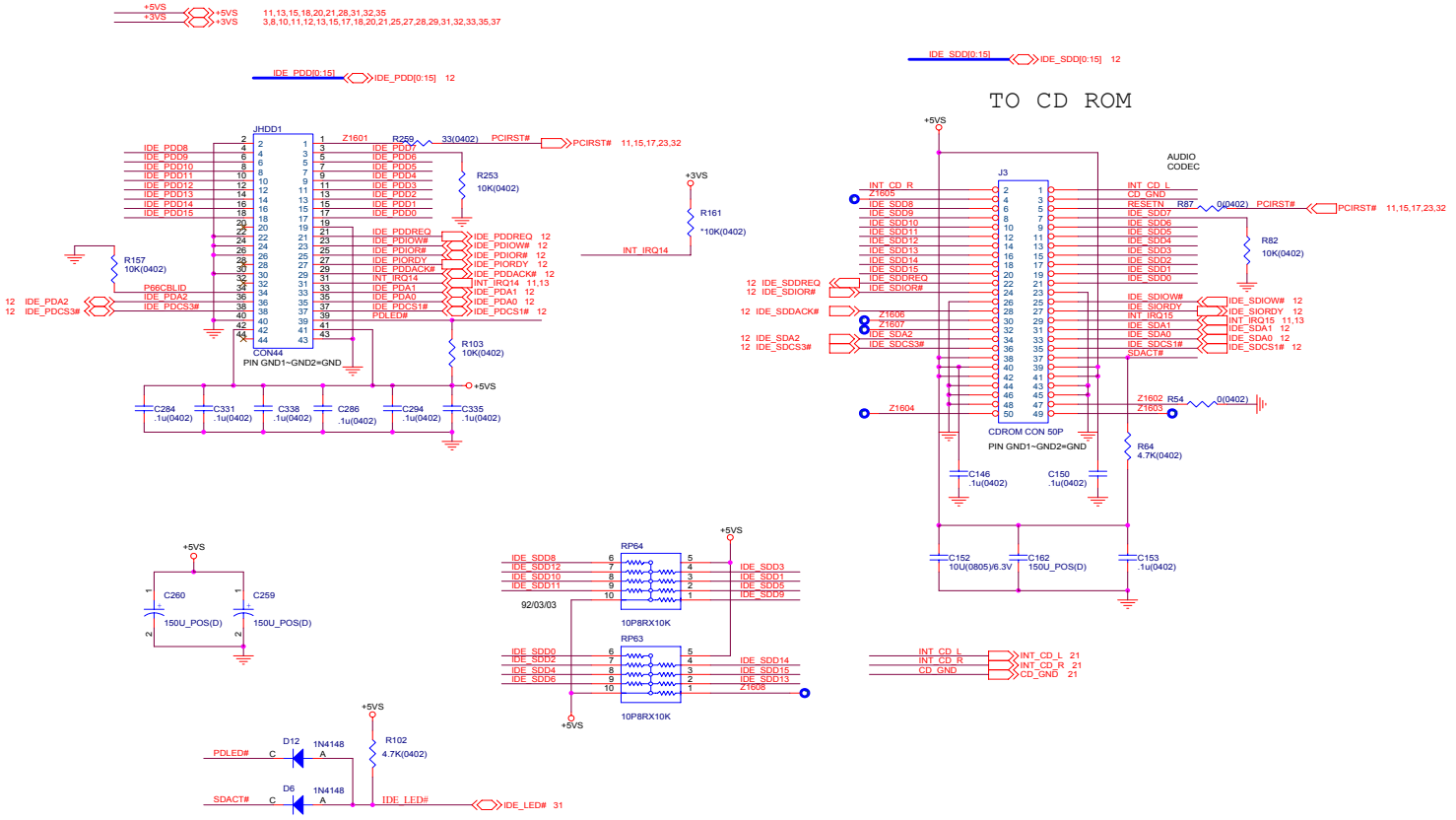
MDC, BT, CCD, Mini PCI



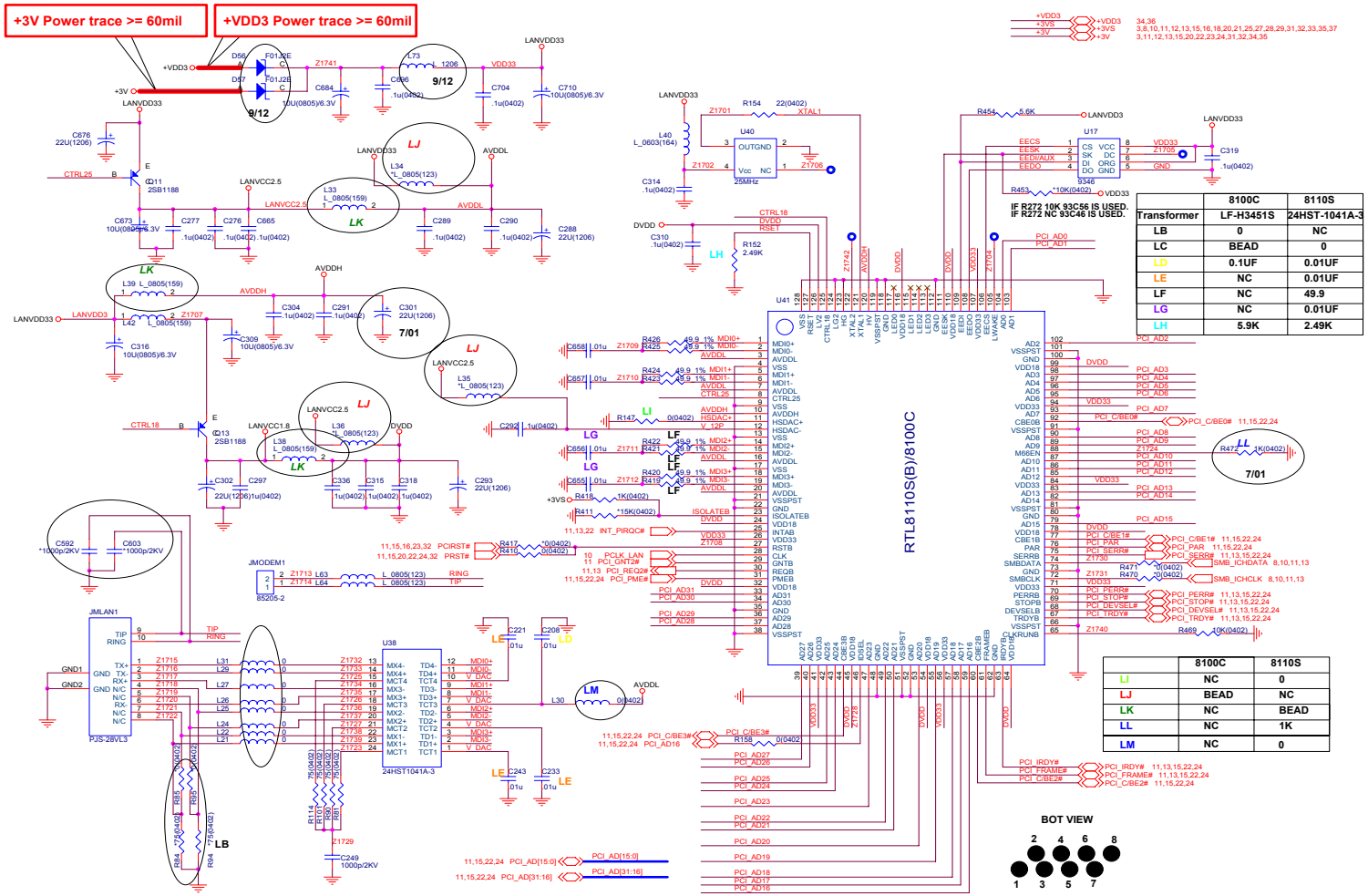
Sheet 14 of 36
MDC, BT, CCD, Mini PCI (Wireless LAN)

HDD, CDROM

Sheet 15 of 36
HDD, CDROM



LAN RTL8110S (B)-32



Transformer	8100C	8110S
	LF-H3451S	24HST-1041A-3
LB	0	NC
LC	BEAD	0
LD	0.1UF	0.01UF
LE	NC	0.01UF
LF	NC	49.9
LG	NC	0.01UF
LH	5.9K	2.49K

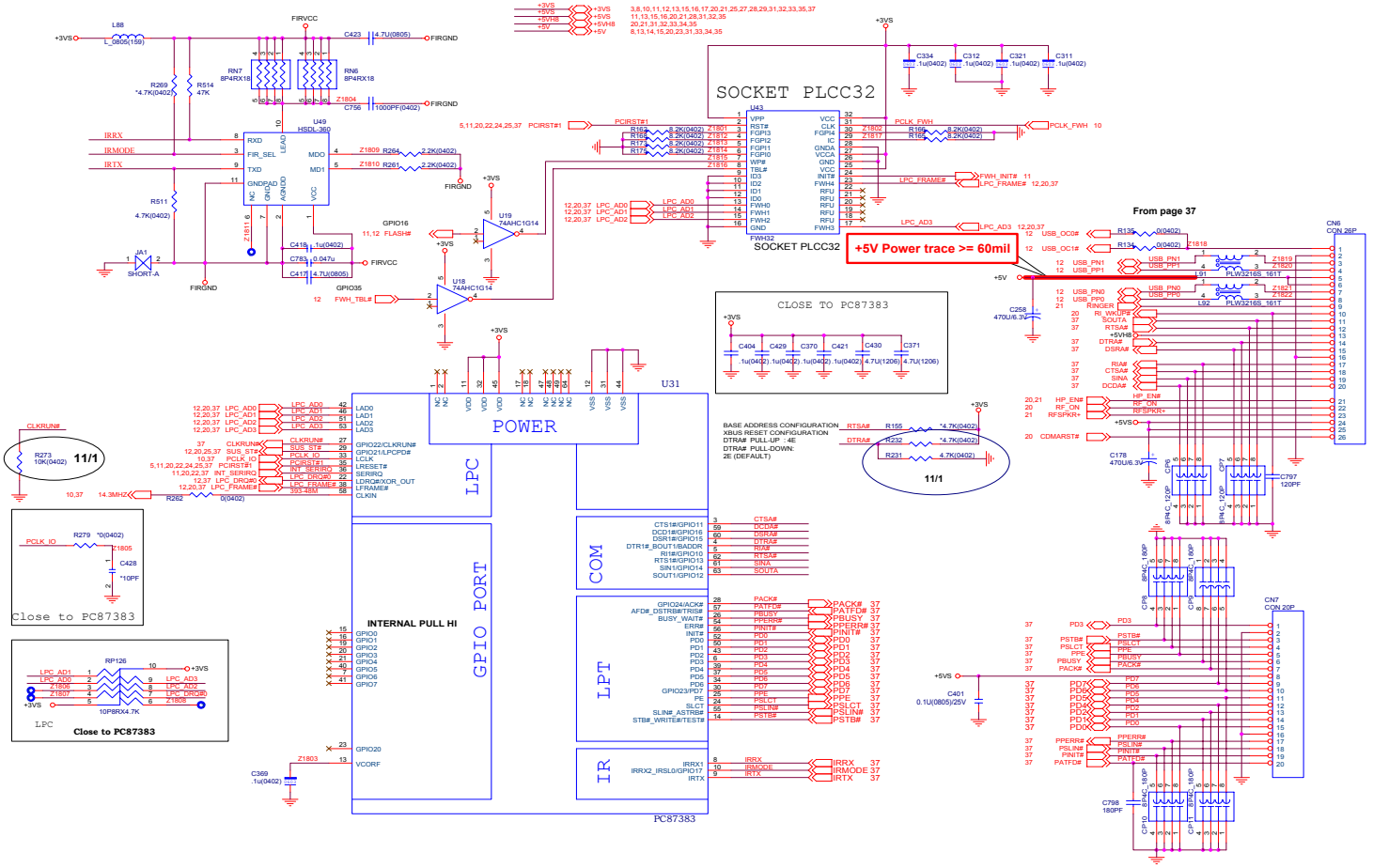
IF R272 10K 93C56 IS USED.
IF R272 NC 93C46 IS USED.

	8100C	8110S
LI	NC	0
LJ	BEAD	NC
LK	NC	BEAD
LL	NC	1K
LM	NC	0

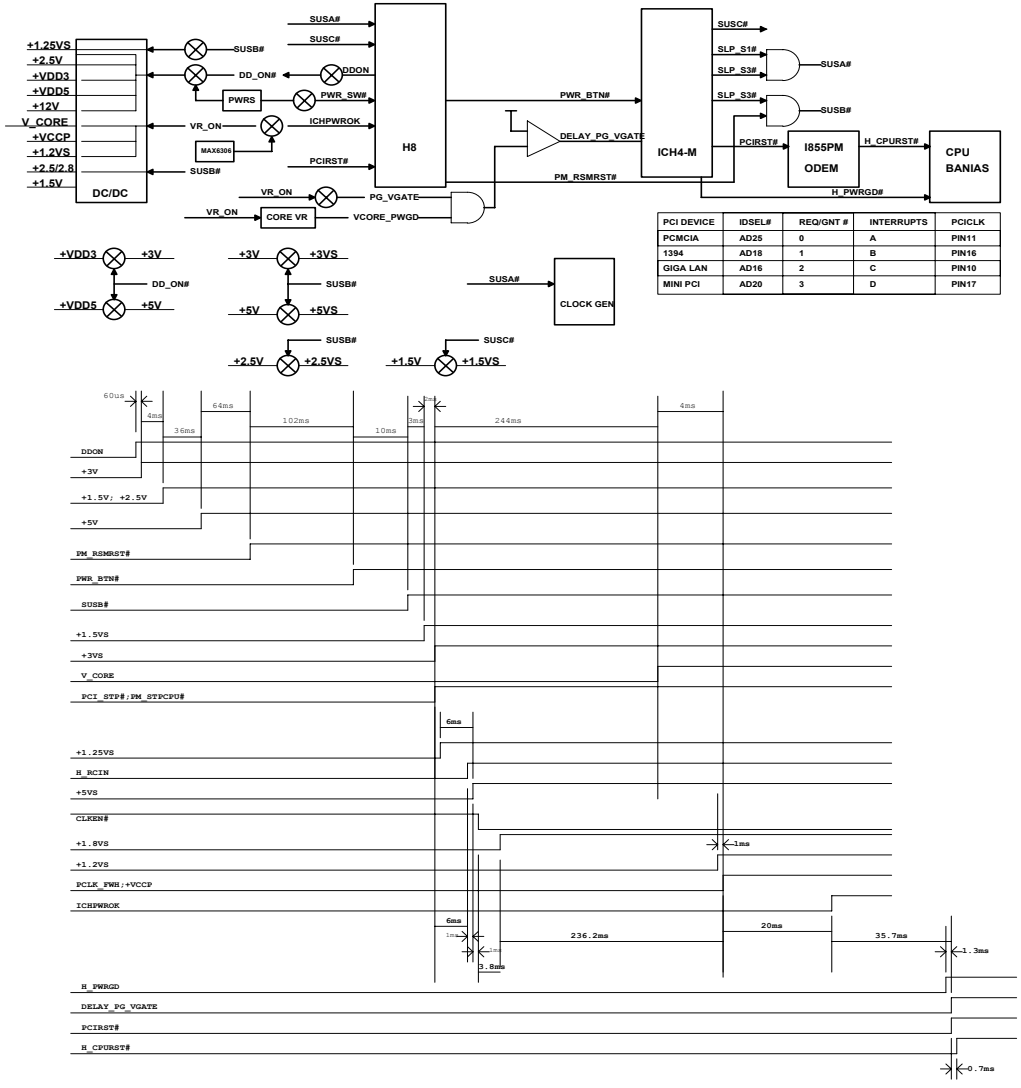
Sheet 16 of 36
LAN
RTL8110S(B)-32

LPC S I/O, Flash ROM

Sheet 17 of 36
LPC S I/O,
Flash ROM



Power On Checklist

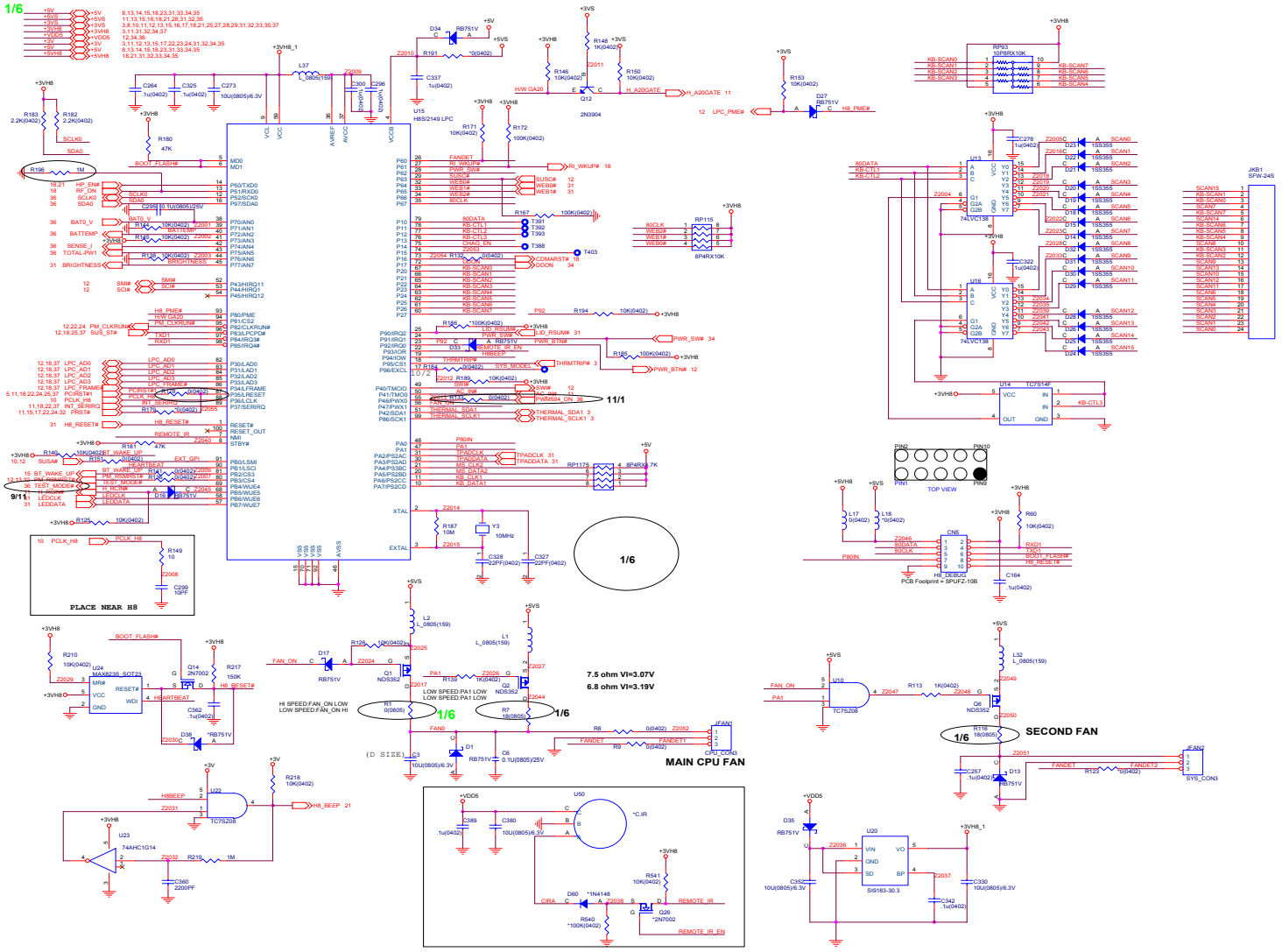


PCI DEVICE	IDSEL#	REQ/GNT #	INTERRUPTS	PCICLK
PCMCIA	AD25	0	A	PIN11
1394	AD18	1	B	PIN16
GIGA LAN	AD16	2	C	PIN10
MINI PCI	AD20	3	D	PIN17

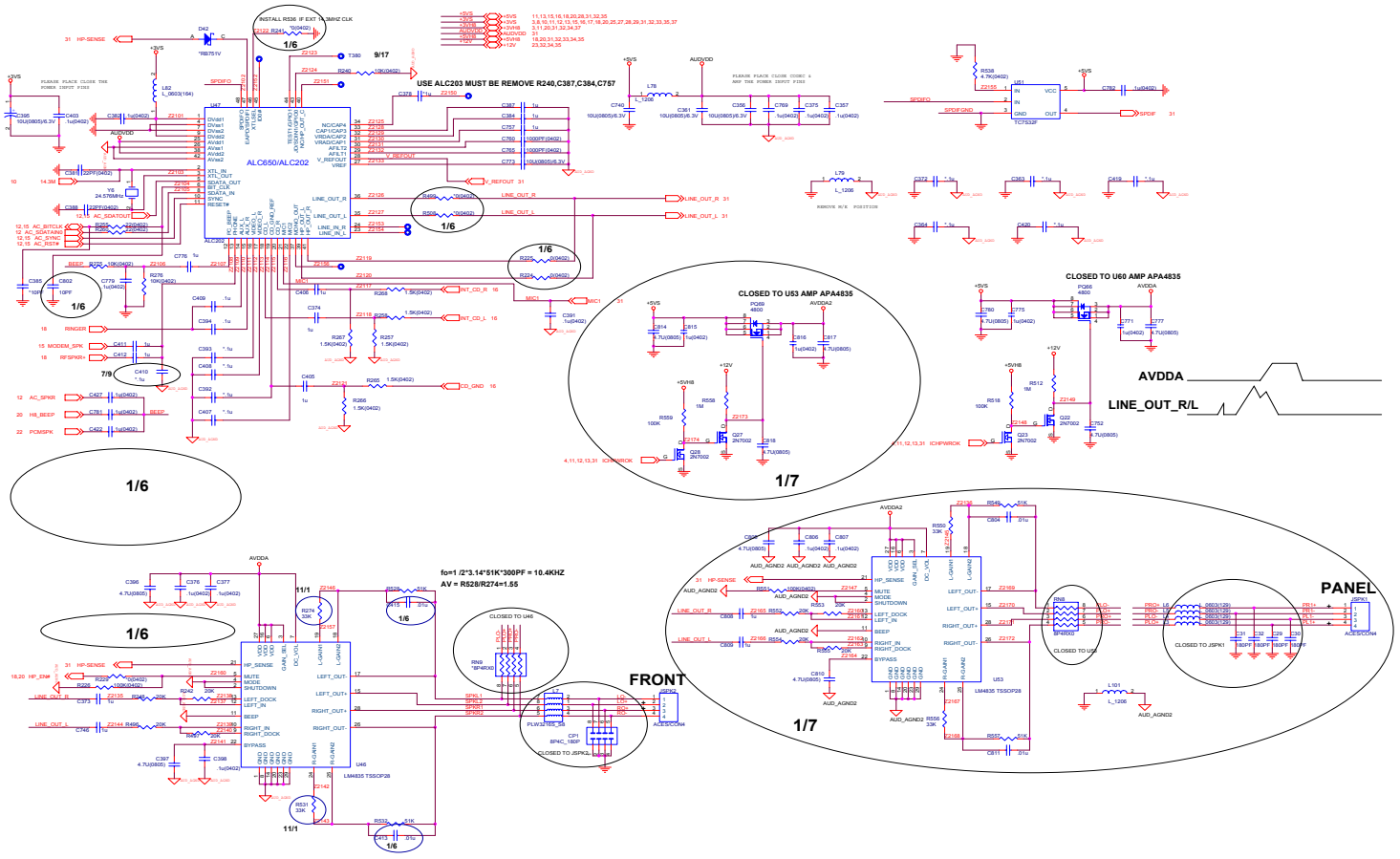
Sheet 18 of 36
Power On Checklist

Hitachi H8S

Sheet 19 of 36
Hitachi H8S



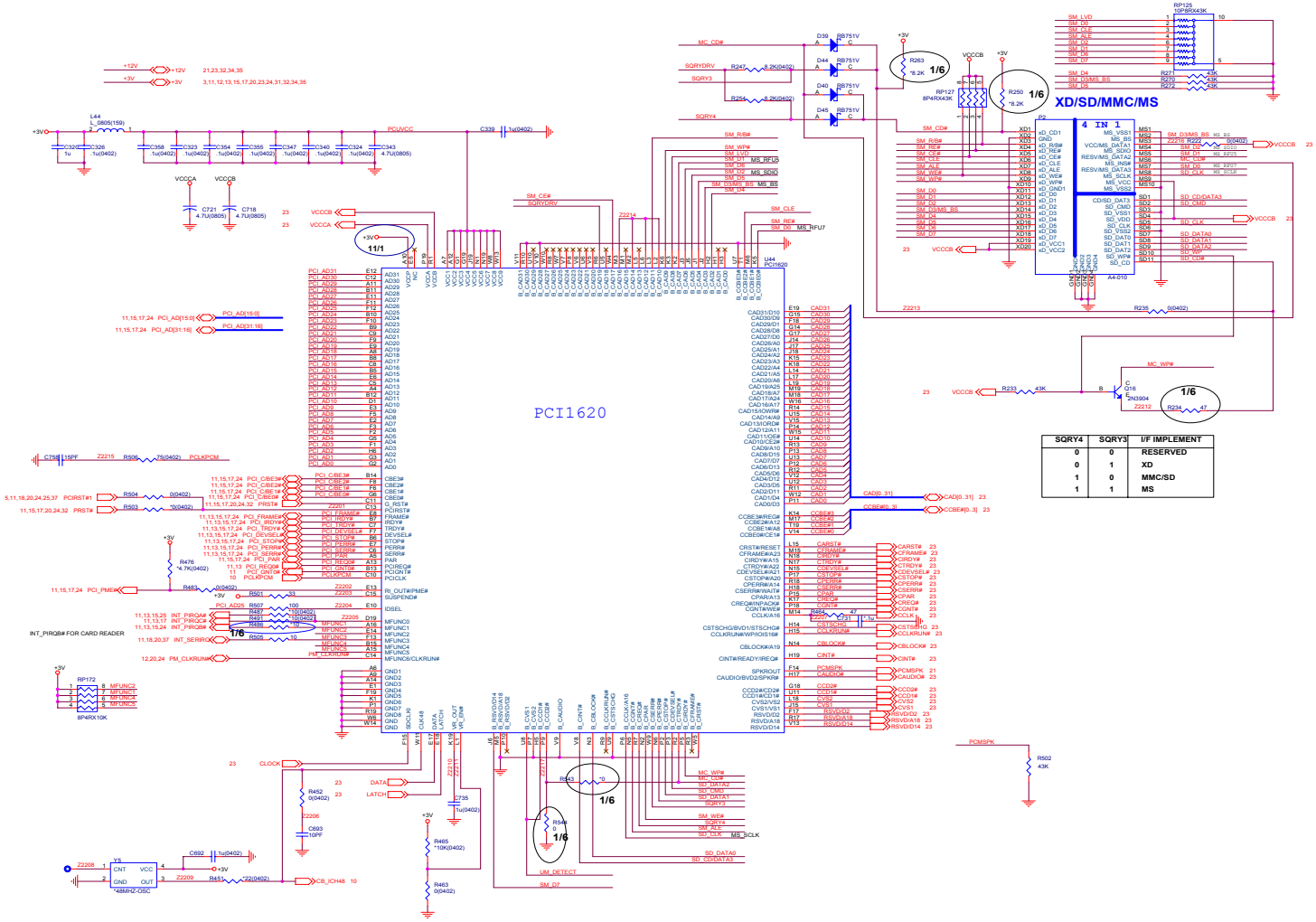
Audio Codec ALC202



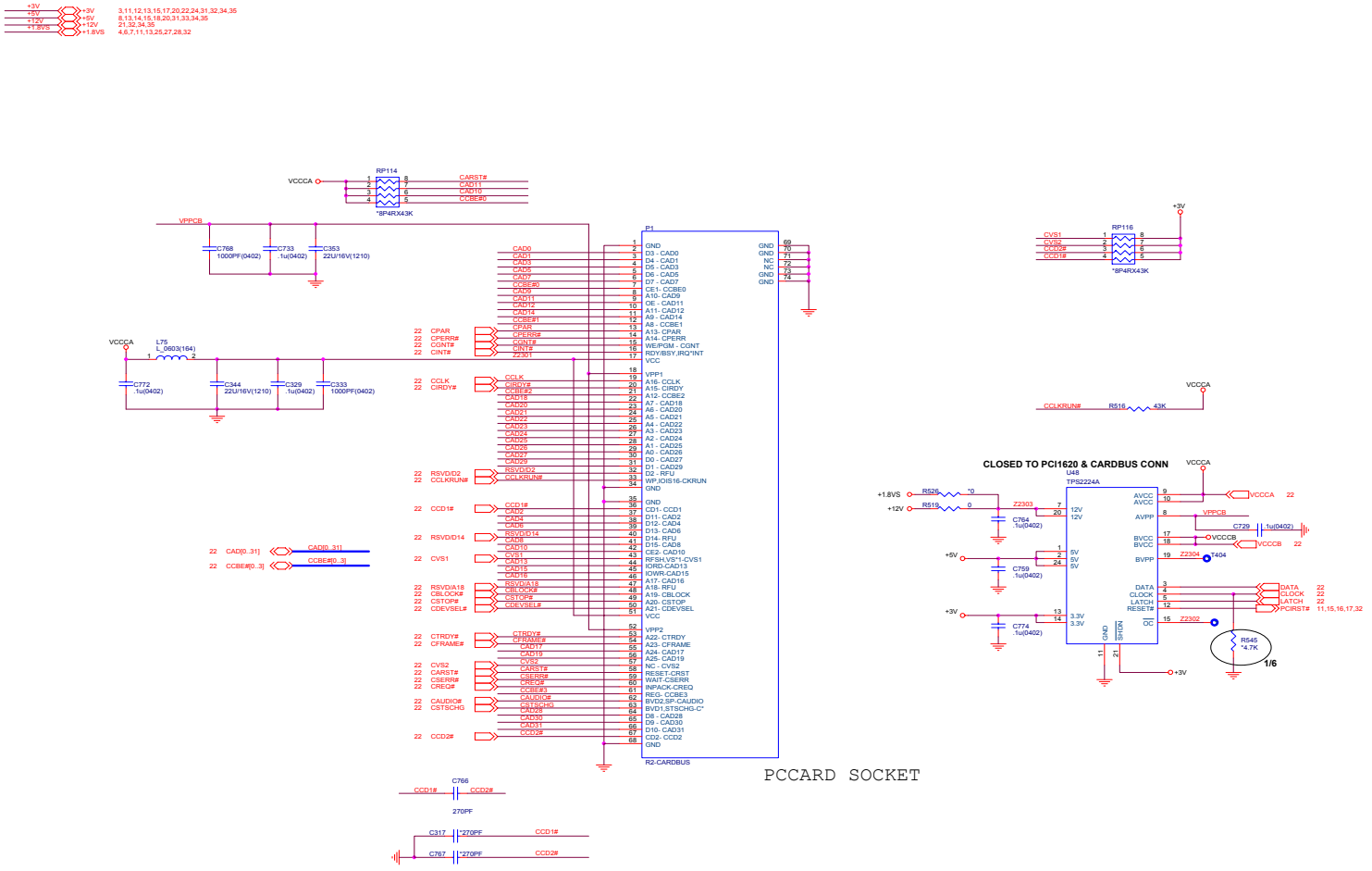
Sheet 20 of 36
Audio Codec
ALC202

PCMCIA (PCI1620)

Sheet 21 of 36
PCMCIA (PCI1620)



PCMCIA Socket



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PCMCIA Socket

TI1394 (TSB43AB21)

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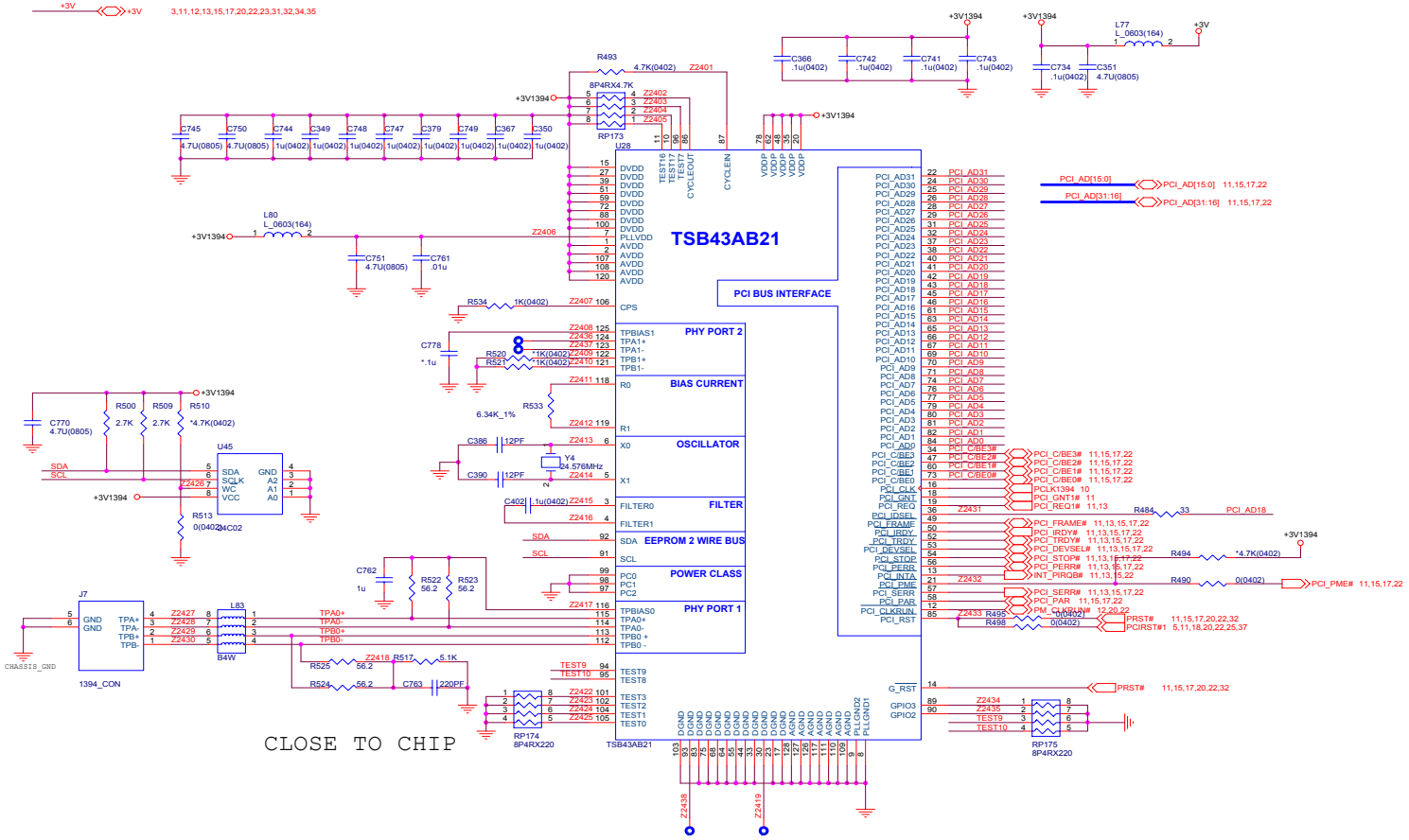
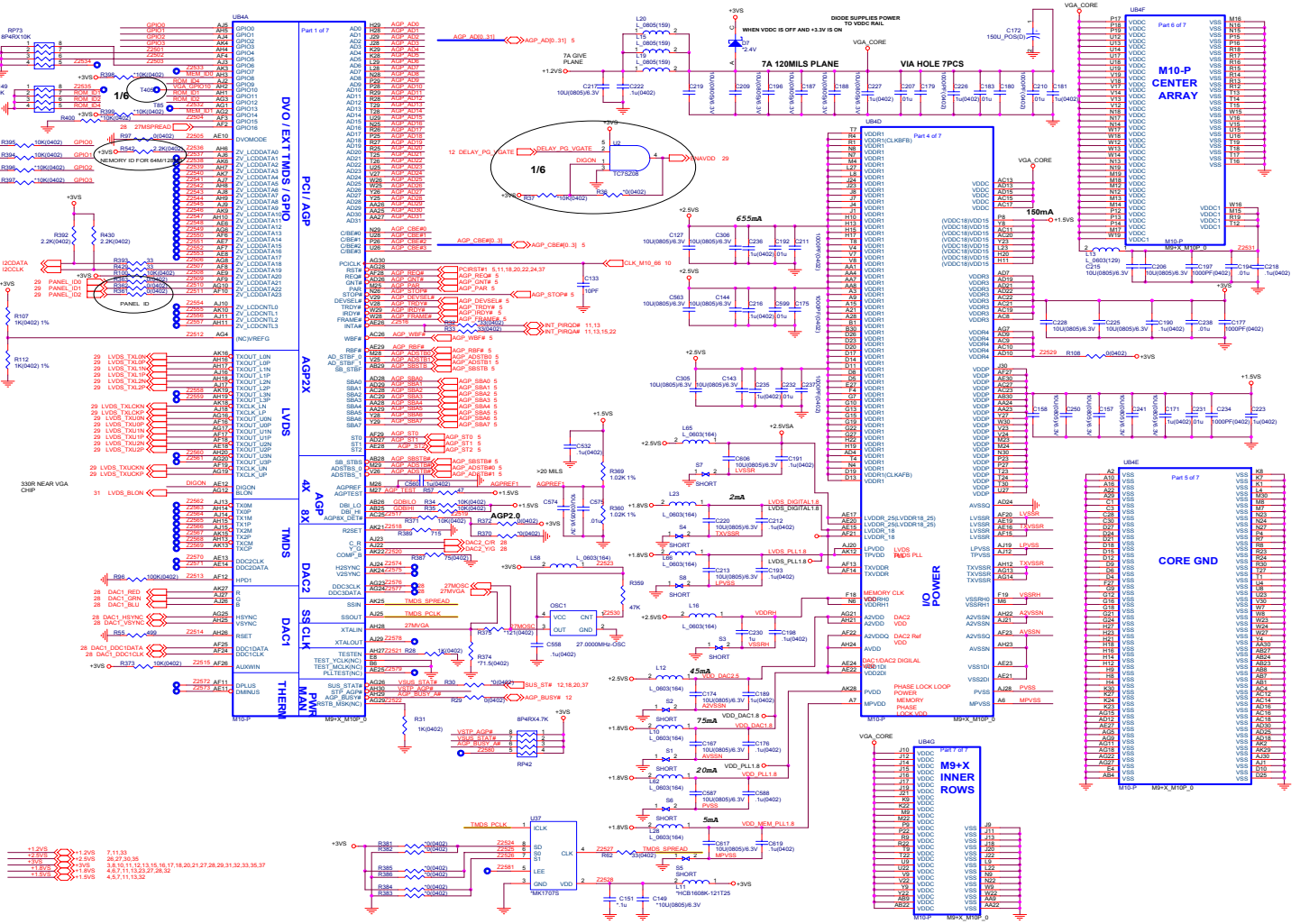
TI1394
(TSB43AB21)



M10 AGP/PCI/Power



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M10
AGP/PCI/Power

M10 MEM I/F-A

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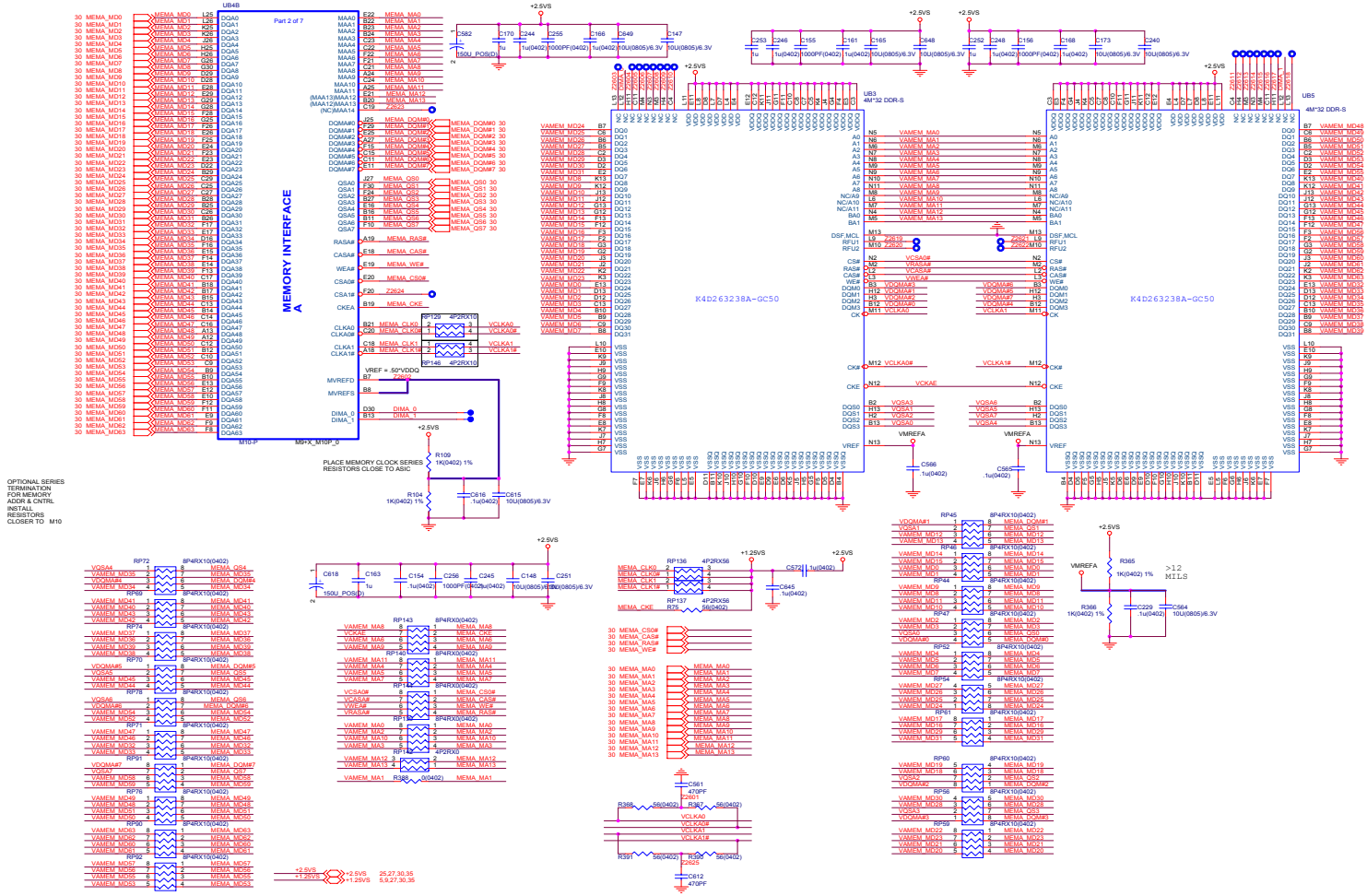
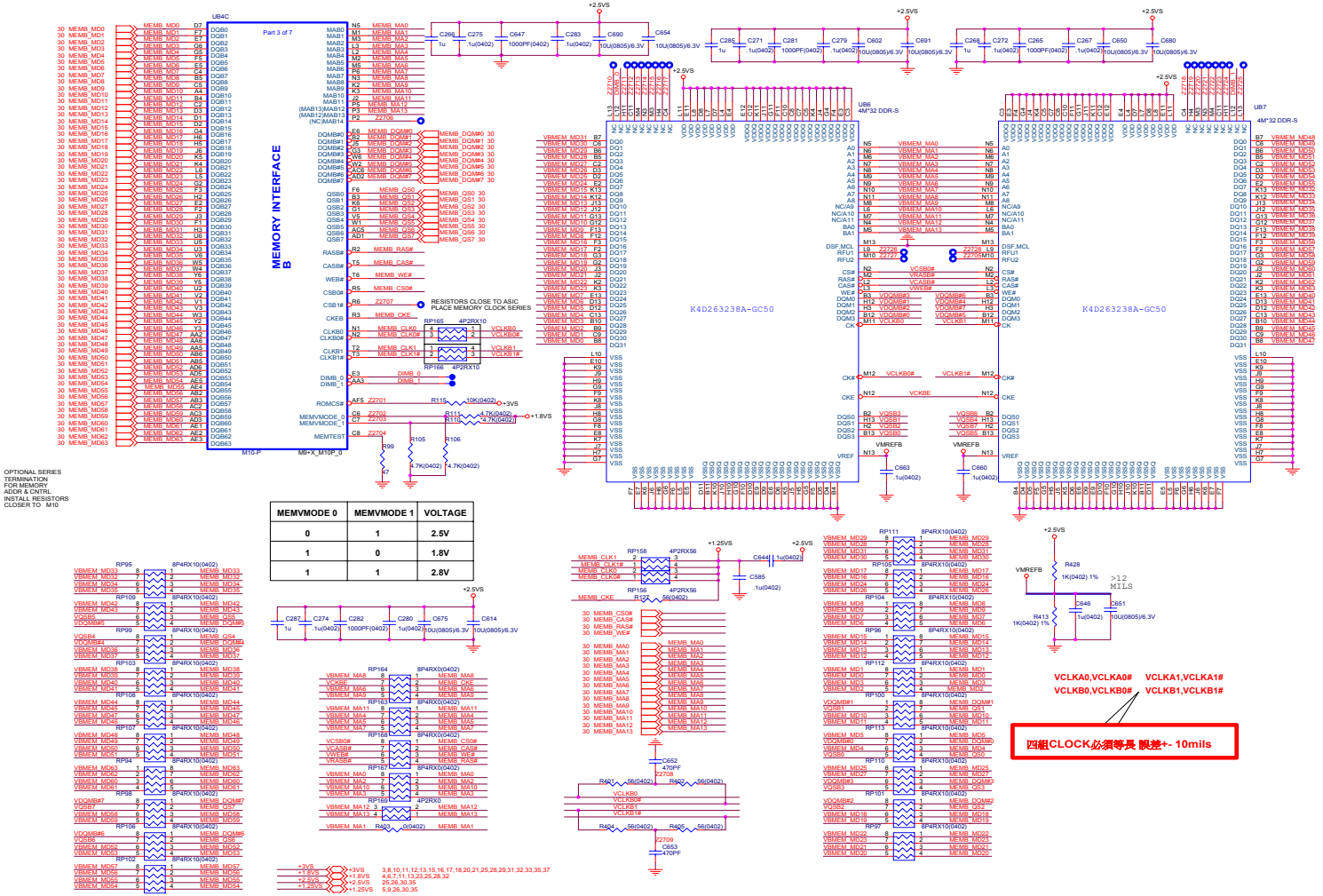
M10 MEM I/F-A



M10 MEM I/F-B



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M10 MEM I/F-B

M10 VGA Connector

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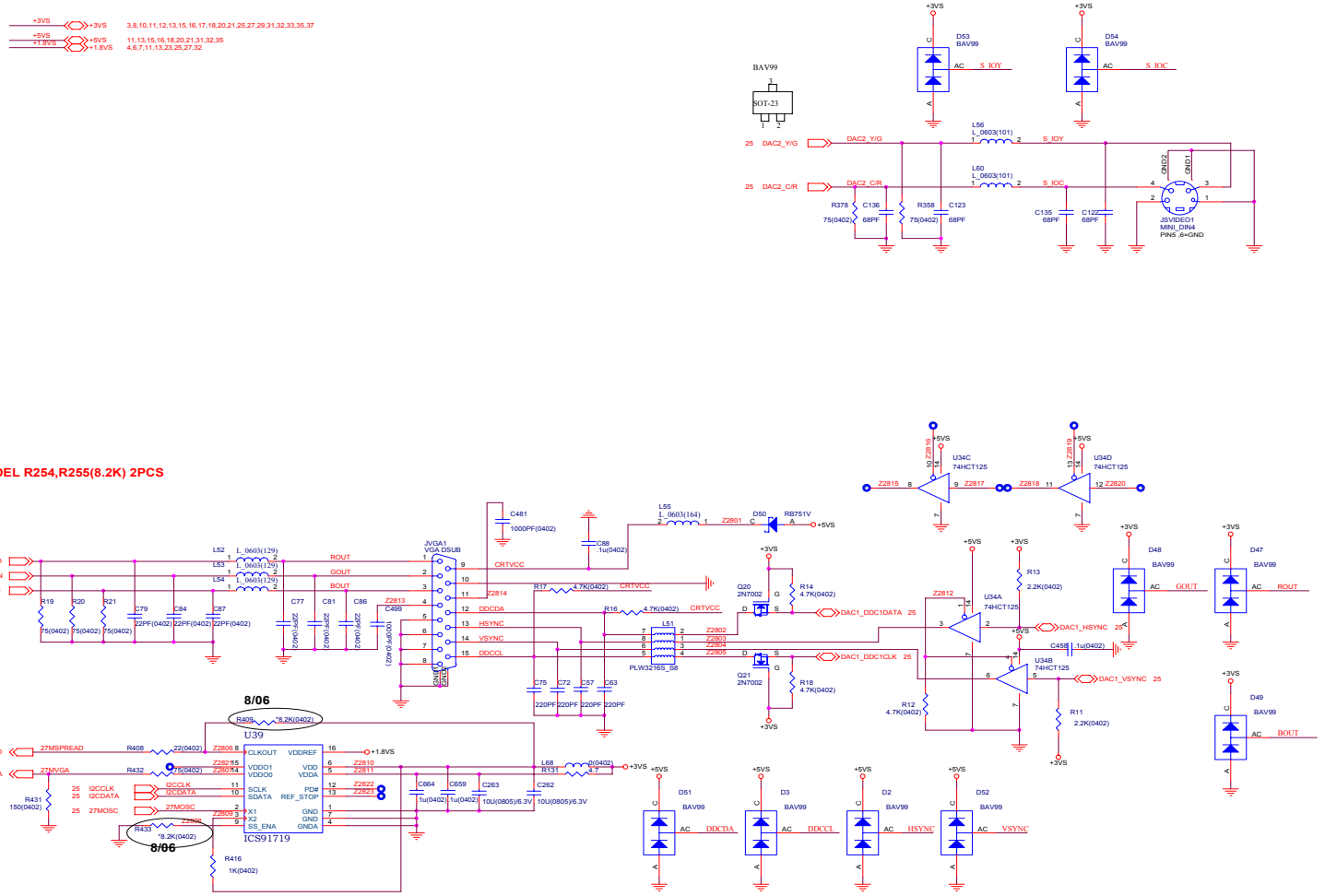
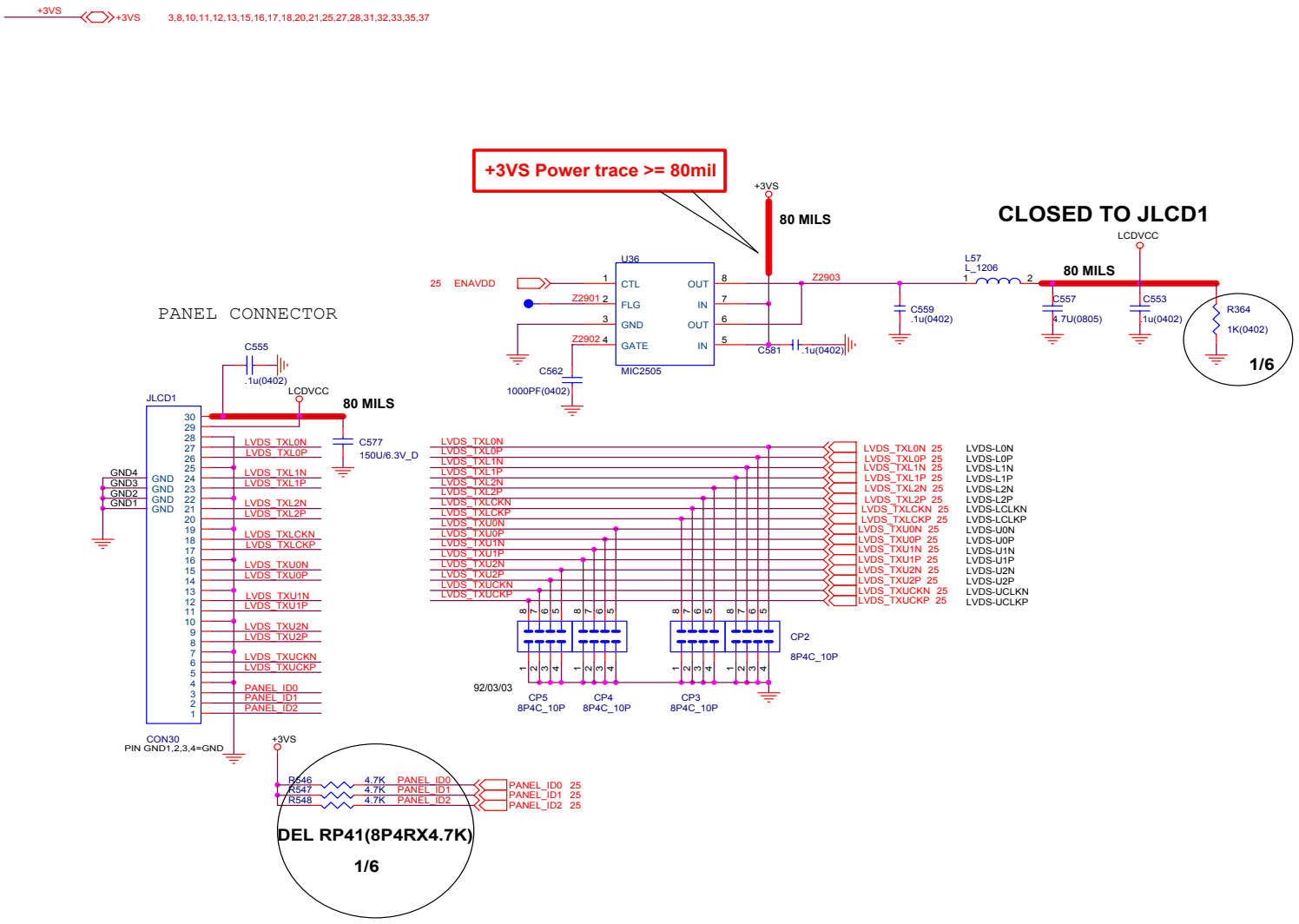
M10
VGA Connector



Panel CON



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Panel CON

VGA DDR DRAM Termination

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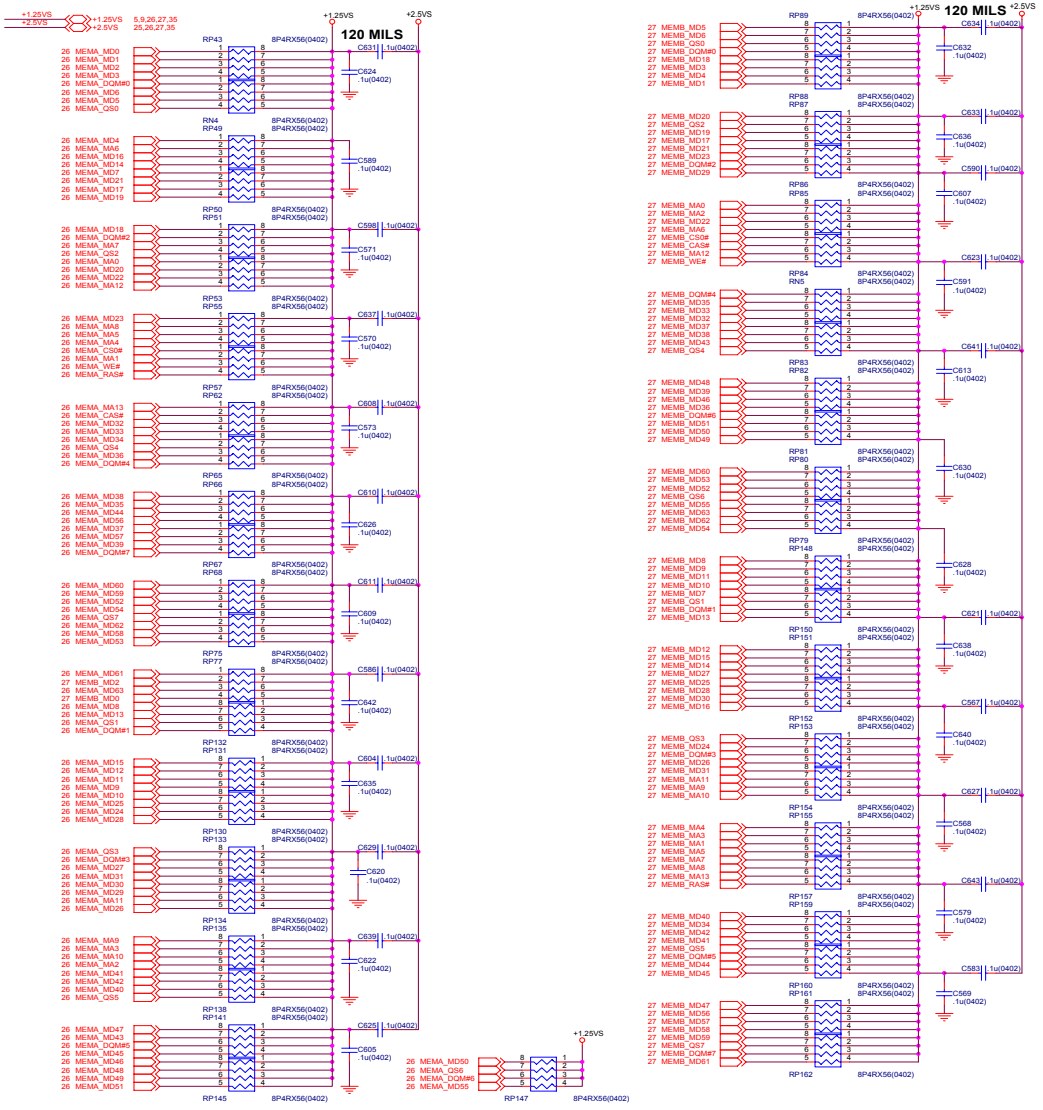
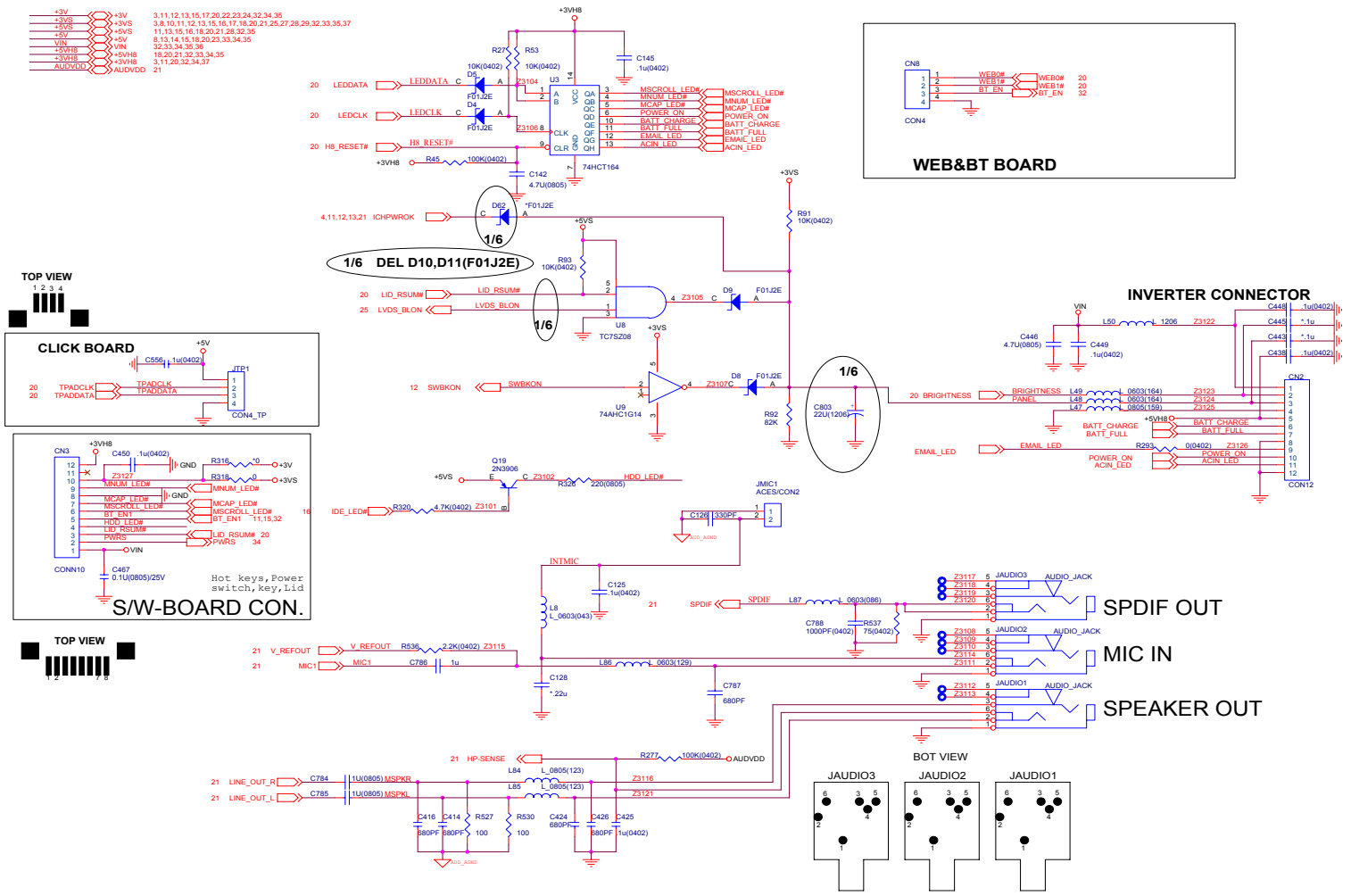
VGA DDR DRAM Termination



Audio Out & Off Board



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Audio Out &
OFF Board

B.Schematic Diagrams

BTVCC, +1.5V, +1.8VS

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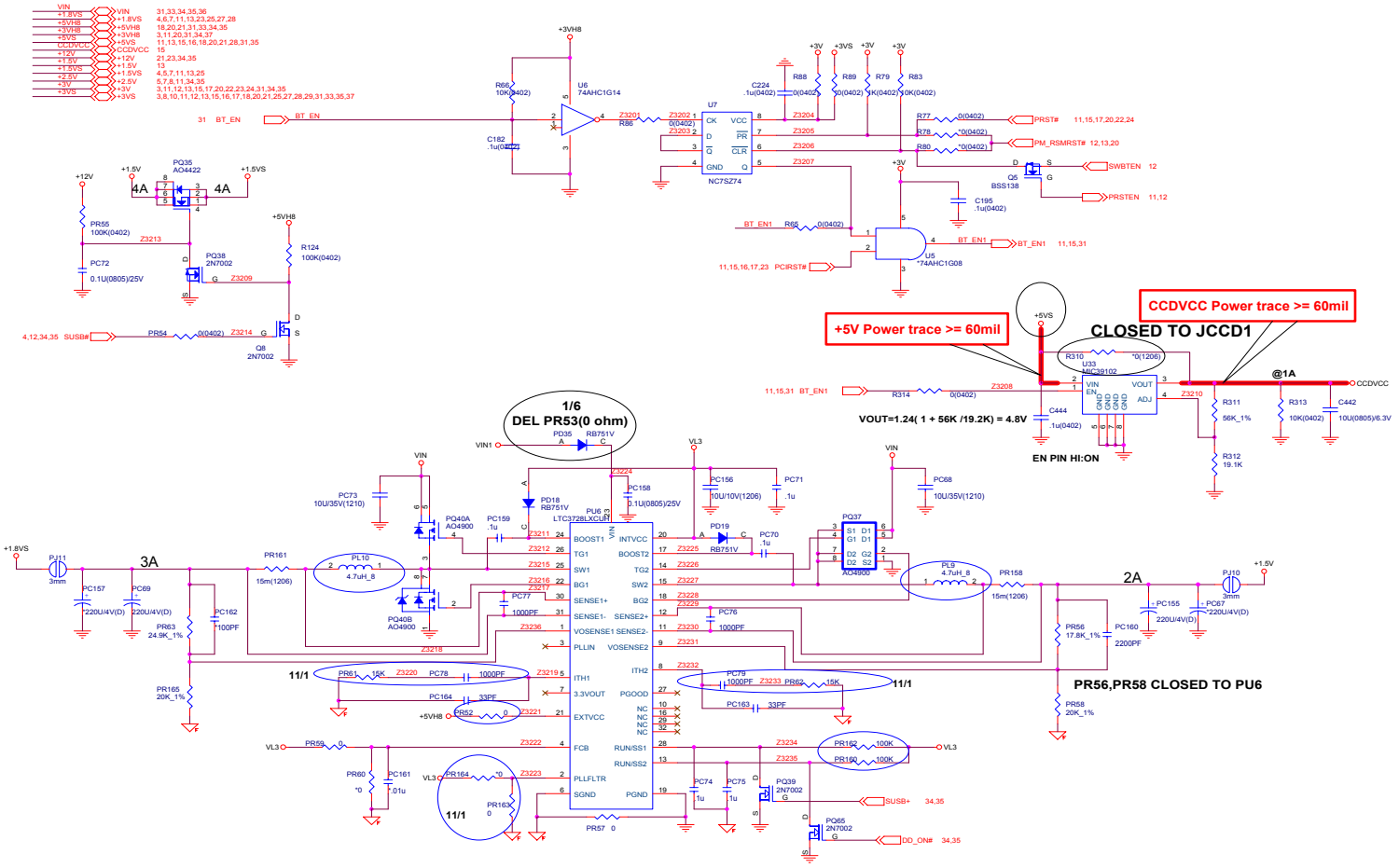
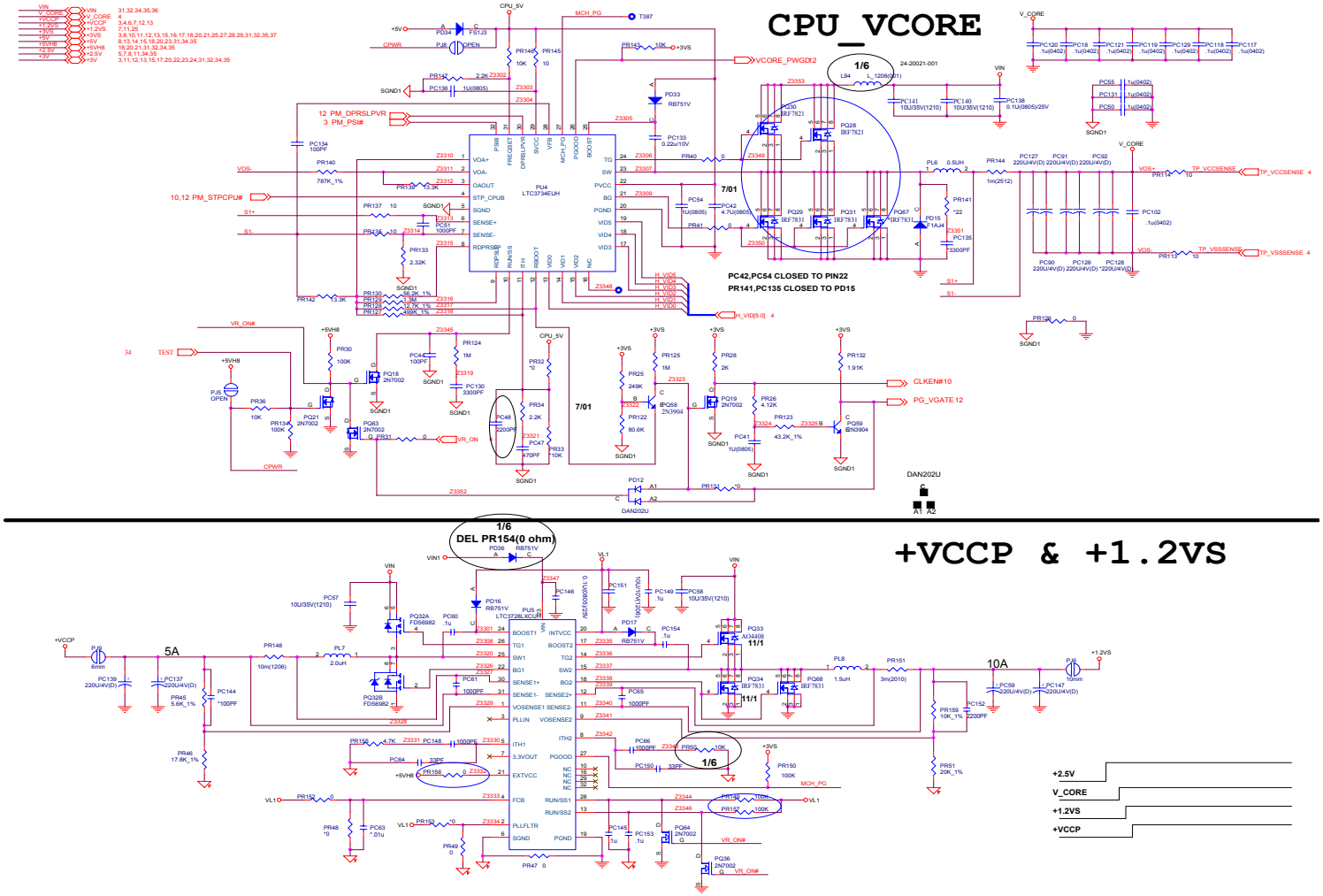
BTVCC, +1.5V, +1.8VS



V_CORE



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V_CORE

+VDD3, +VDD5, +12V, +3V, +5V

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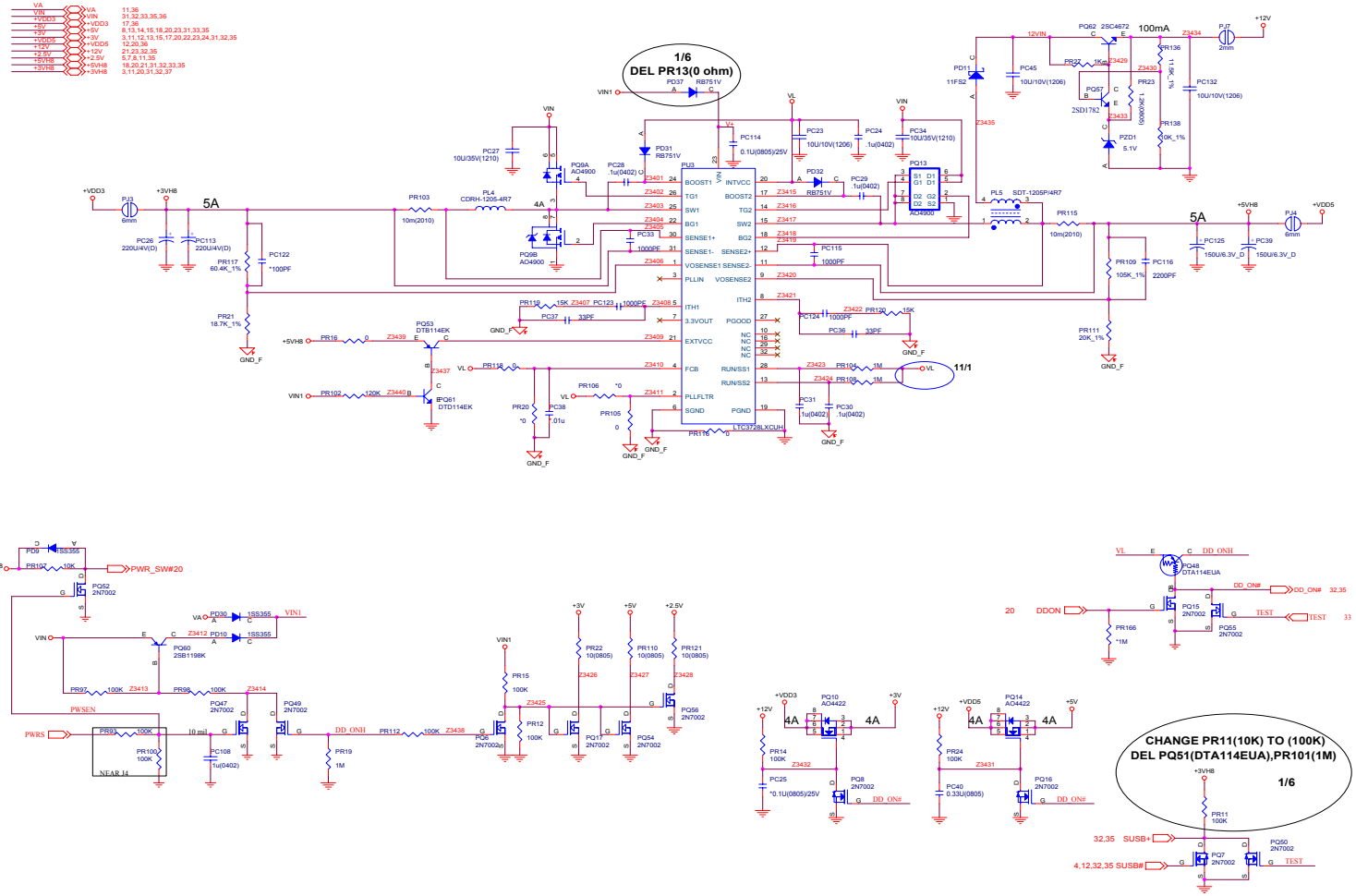
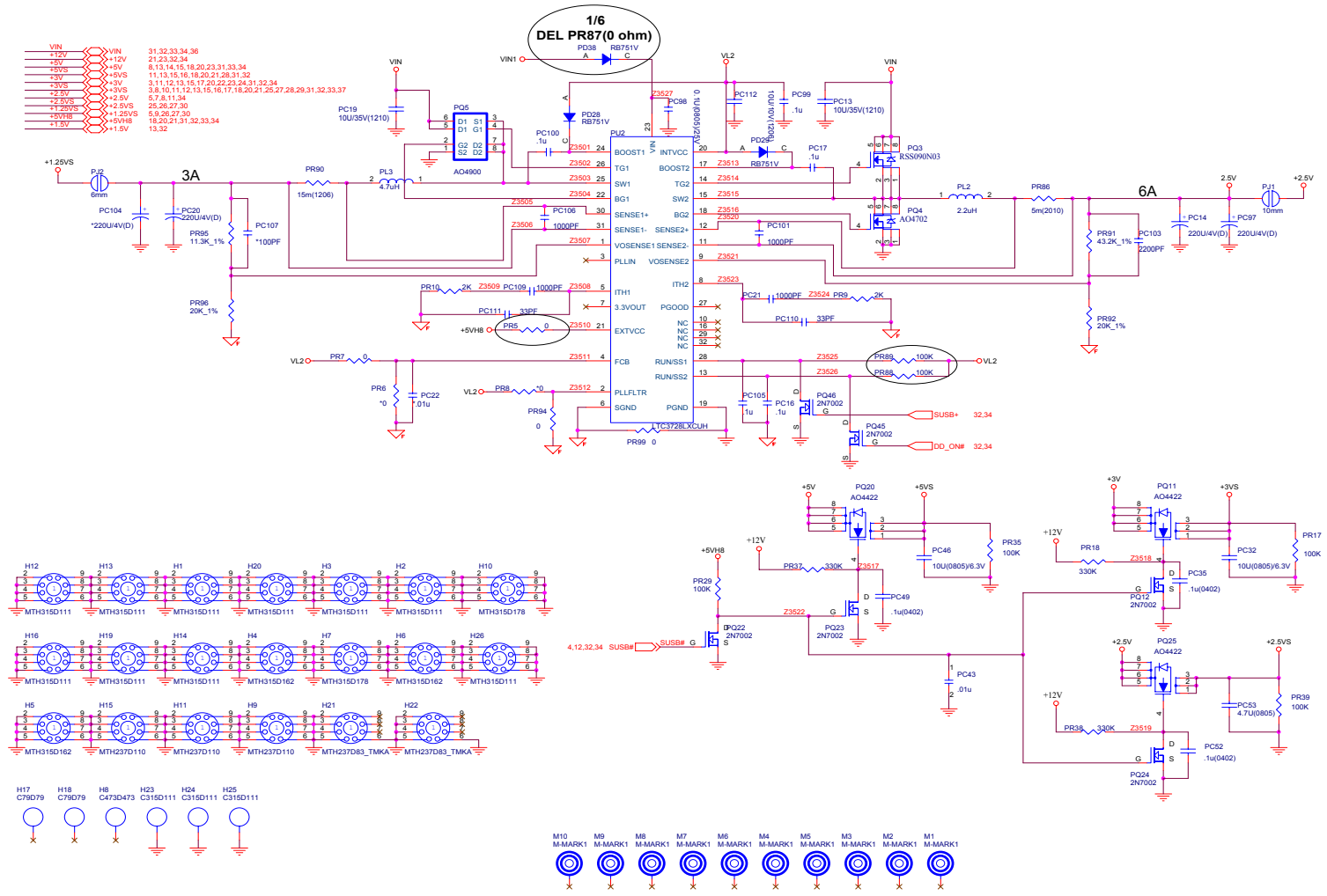
+VDD3, +VDD5, +12V, +3V, +5V



+2.5VS, +1.25VS, +5VS, +3VS



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+2.5VS, +1.25VS,
+5VS, +3VS

Charger

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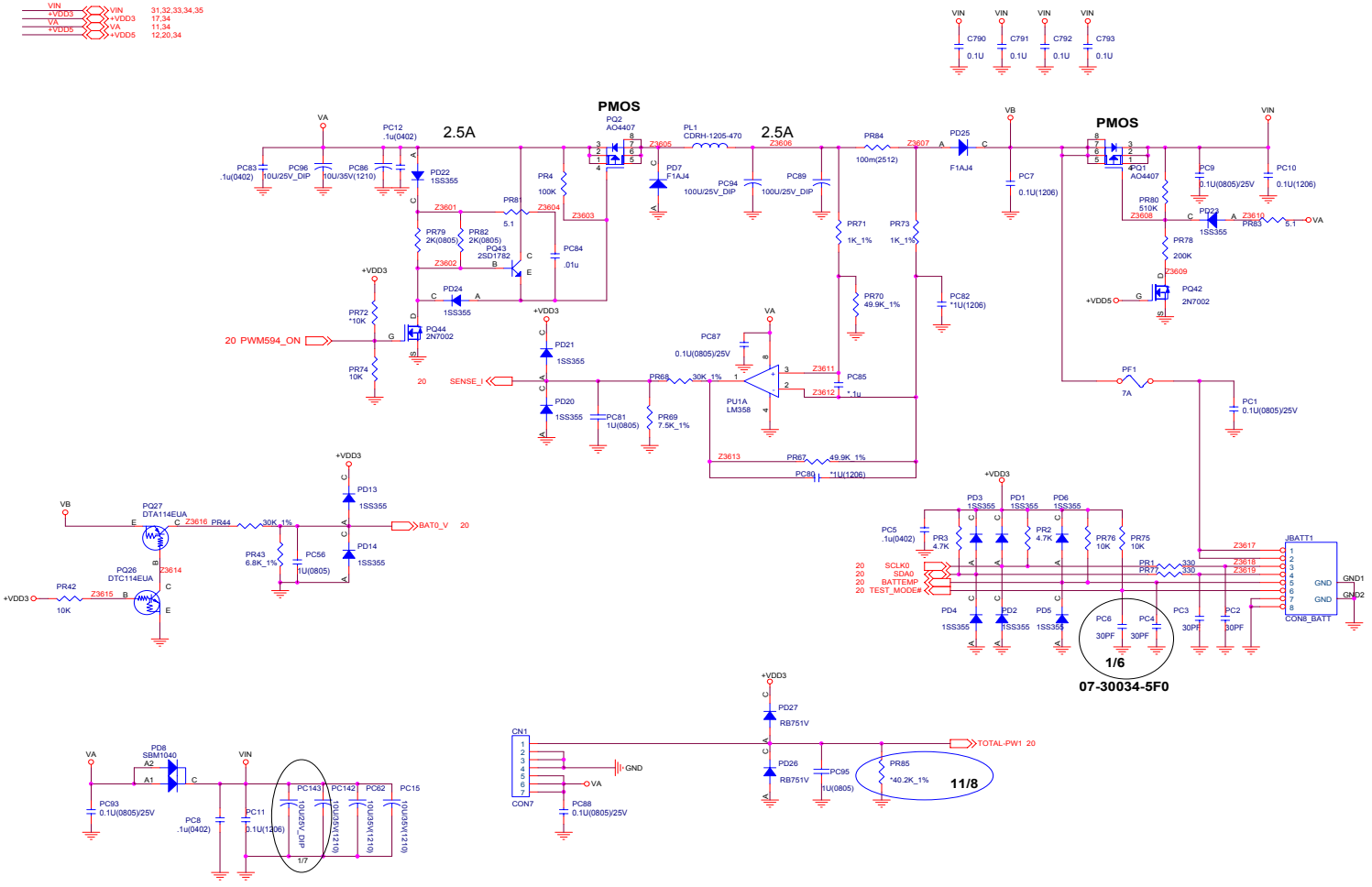
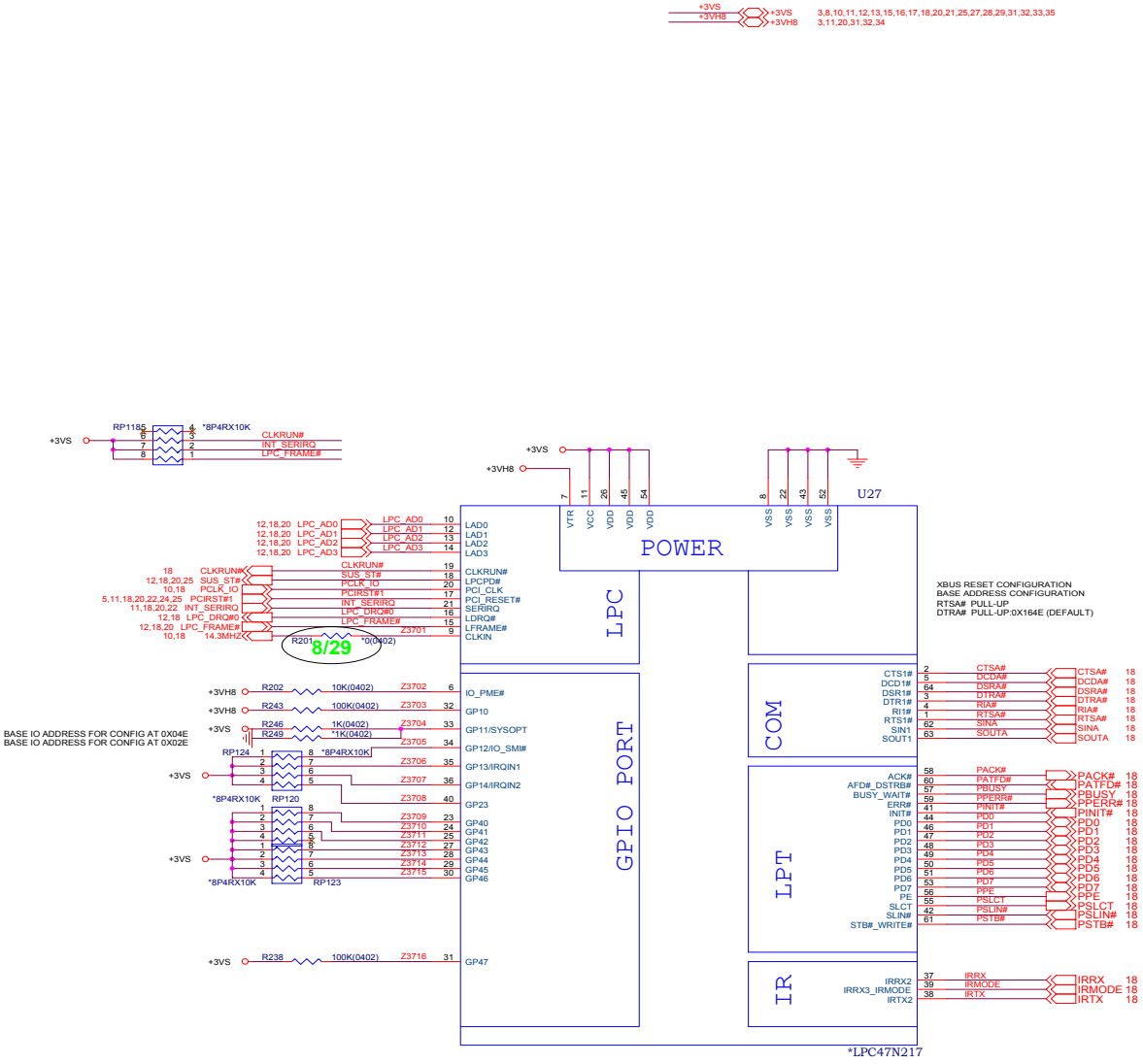
Charger



SMSC LPC47N217 LPC I/F



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SMSC LPC47N217
LPC I/F