

SERVICE MANUAL

M740TH / M748TH

notebook

Notebook Computer

M740TH/ M748TH

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 **M740TH/M748TH** 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

Appendix C, Updating the FLASH ROM BIOS

Preface

IMPORTANT SAFETY INSTRUCTIONS

Follow basic safety precautions, including those listed below, to reduce the risk of fire, electric shock and injury to persons when using any electrical equipment:

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 with an AC Input of 100 - 240V, 50 - 60Hz, DC Output of 19V, 3.42A or 18.5V, 3.5A (**65W**) minimum AC/DC Adapter.

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**

This Computer's Optical Device is a Laser Class 1 Product

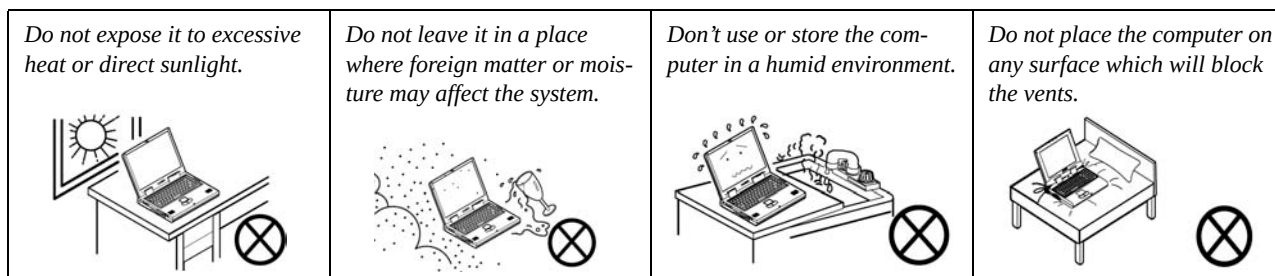
Instructions for Care and Operation

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

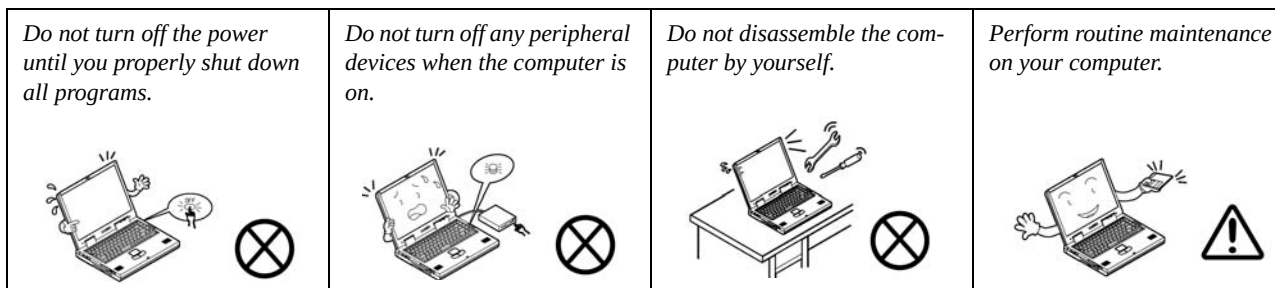
1. **Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.



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.

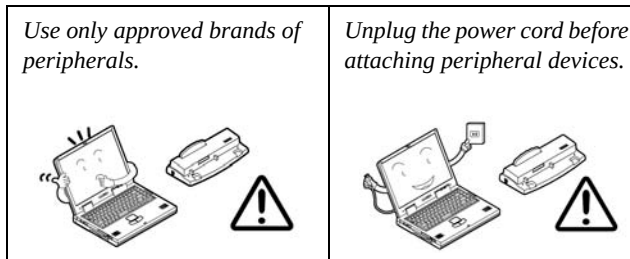


3. **Follow the proper working procedures for the computer.** Shut the computer down properly and don't forget to save your work. Remember to periodically save your data as data may be lost if the battery is depleted.



Preface

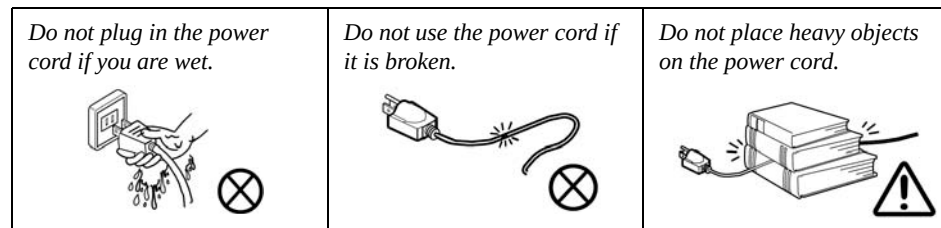
4. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.
5. **Take care when using peripheral devices.**



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.

Battery Precautions

- Only use batteries designed for this computer. The wrong battery type may explode, leak or damage the computer.
- Do not remove any batteries from the computer while it is powered on.
- Do not continue to use a battery that has been dropped, or that appears damaged (e.g. bent or twisted) in any way. Even if the computer continues to work with a damaged battery in place, it may cause circuit damage, which may possibly result in fire.
- 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.

Preface

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.

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1: Introduction

Overview

This manual covers the information you need to service or upgrade the **M740TH/M748TH** 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. *Windows Vista/ Window 7*, 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 **M740TH/M748TH** 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.

Introduction

Specifications



Latest Specification Information

The specifications listed in this here are correct at the time of going to press. Certain items (particularly processor types/speeds) may be changed, delayed or updated due to the manufacturer's release schedule. Check with your service center for details.



CPU

The CPU is not a user serviceable part. Accessing the CPU in any way may violate your warranty.

Processor Options

Intel® Core™2 Duo Processor
T6600 (2.2GHz), T6500 (2.1GHz),
T6400 (2.0GHz)

2MB L2 Cache & 800MHz FSB

Intel® Pentium® Processor
T4300 (2.1GHz), T4200 (2.0GHz)

1MB L2 Cache & 800MHz FSB

Intel® Celeron® Processor
T3100 (1.9GHz), T3000 (1.8GHz)

1MB L2 Cache & 800MHz FSB

T1700 (1.83GHz), T1600 (1.66GHz)

1MB L2 Cache & 667MHz FSB

900 (2.2GHz)

1MB L2 Cache & 800MHz FSB

Core Logic

Intel® GL40 + ICH9M Chipset

BIOS

One 16Mb SPI Flash ROM

Phoenix™ BIOS

LCD Options

14.1" WXGA TFT LCD

Memory

Two 200 Pin SO-DIMM Sockets Supporting **DDR2 667/**
800MHz Memory

Memory Expandable up to 4GB

Video Adapter

Intel® GL40 Integrated Video

Shared Memory Architecture up to **1GB**

MS DirectX® 10.0 compatible

Security

Security (Kensington® Type) Lock Slot

BIOS Password

Storage

(**Factory Option**) One Changeable 12.7mm(h) Optical
Device Type (Super Multi Drive Module)

One Changeable 2.5" 9.5 mm (h) **SATA** (Serial) HDD

Audio

High Definition Audio Compliant Interface

2 * Built-In Speakers

Built-In Microphone

Keyboard

"WinKey" keyboard (with embedded numeric keypad)

Pointing Device

Built-in Touchpad

Interface

Three USB 2.0 Ports

One Headphone-Out Jack

One Microphone-In Jack

One S/PDIF Out Jack

One RJ-11 Modem Jack

One RJ-45 LAN Jack

One DC-in Jack

One External Monitor Port

One ExpressCard/34(54) Slot

Card Reader

Embedded 7-in-1 Card Reader (MS/ MS Pro/ SD/ Mini SD/
MMC/ RS MMC/ MS Duo)

Note: MS Duo/ Mini SD/ RS MMC Cards require a PC
adapter

Communication

56K MDC Modem, V.90 & V.92 Compliant

10Mb/100Mb Ethernet LAN

Wireless LAN Module Options:

(Factory Option) Intel® WiFi Link 5300 (802.11a/g/n)

Wireless LAN Half Mini-Card Module

(Factory Option) Intel® WiFi Link 1000 (802.11b/g/n)

Wireless LAN Half Mini-Card Module

(Factory Option) 3rd Party 802.11b/g/n Wireless LAN Half Mini-Card Module

(Factory Option) 1.3M Pixel USB PC Camera Module

(Factory Option) Bluetooth 2.1 + EDR Module

(Factory Option) 3.75G/HSPA Mini-Card Module

Power

6 Cell Smart Lithium-Ion Battery Pack, 48,84WH

(Factory Option) 9 Cell Smart Lithium-Ion Battery Pack, 79,92WH

Full Range AC/DC Adapter

AC Input: 100 - 240V, 50 - 60Hz

DC Output: 19V, 3.42A or 18.5V, 3.5A **(65W)**

Environmental Spec

Temperature

Operating: 5°C - 35°C

Non-Operating: -20°C - 60°C

Relative Humidity

Operating: 20% - 80%

Non-Operating: 10% - 90%

Dimensions & Weight

336mm (w) * 250mm (d) * 24.8 - 35.7mm (h)

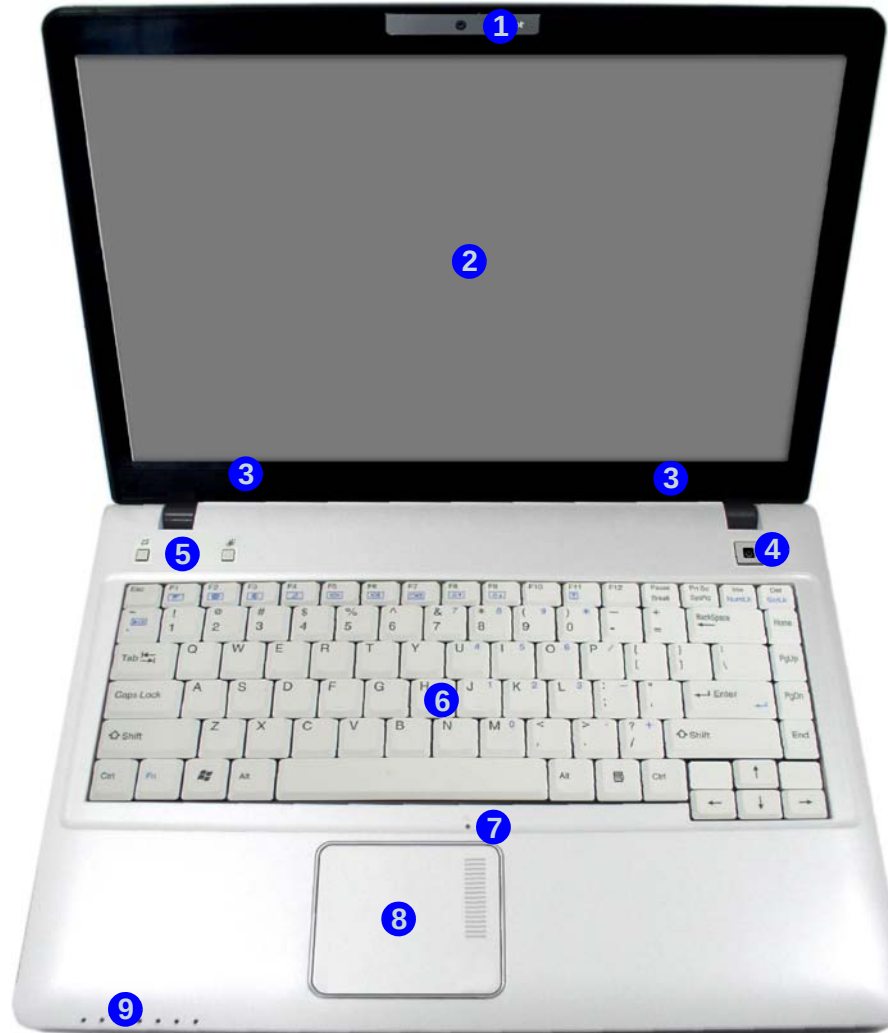
2.2 kg With 6 Cell Battery and ODD

Introduction

Figure 1
Top View

1. Optional Built-In PC Camera
2. LCD
3. Speakers
4. Power Button
5. Hot Key Buttons
6. Keyboard
7. Built-In Microphone
8. Touchpad & Buttons
9. LED Indicators

External Locator - Top View with LCD Panel Open



External Locator - Front & Right side Views



Figure 2

Front Views

1. LED Power & Communication Indicators



Figure 3

Right Side Views

1. S/PDIF-Out Jack
2. Microphone-In Jack
3. Headphone-Out Jack
4. USB 2.0 Port
5. Optical Device Drive Bay
6. RJ-11 Phone Jack
7. Security Lock Slot

Introduction

External Locator - Left Side & Rear View

Figure 4
Left Side View

1. DC-In Jack
2. External Monitor Port
3. RJ-45 LAN Jack
4. Vent
5. 2 * USB 2.0 Ports
6. 7-in-1 Card Reader
7. ExpressCard Slot

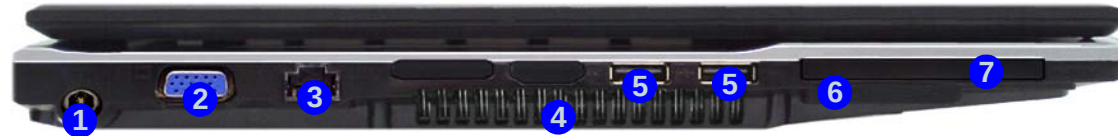
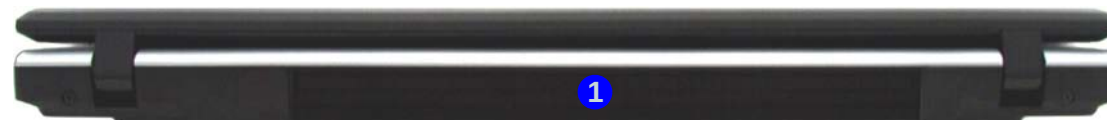


Figure 5
Rear View

1. Battery



External Locator - Bottom View

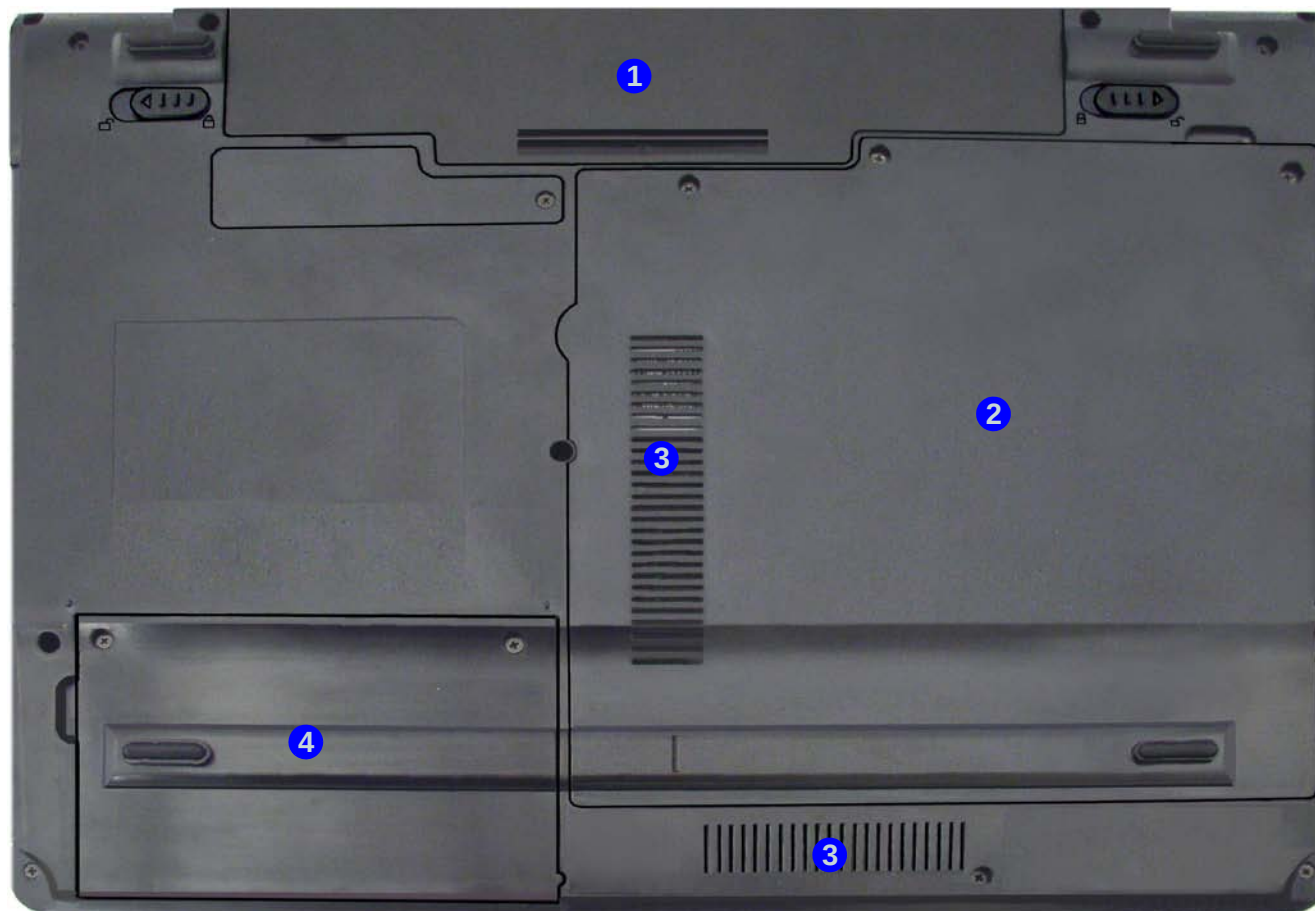


Figure 6
Bottom View

1. Battery
2. RAM & CPU Bay Cover
3. Vent/Fan Intake/Outlet
4. Hard Disk Bay Cover



Overheating

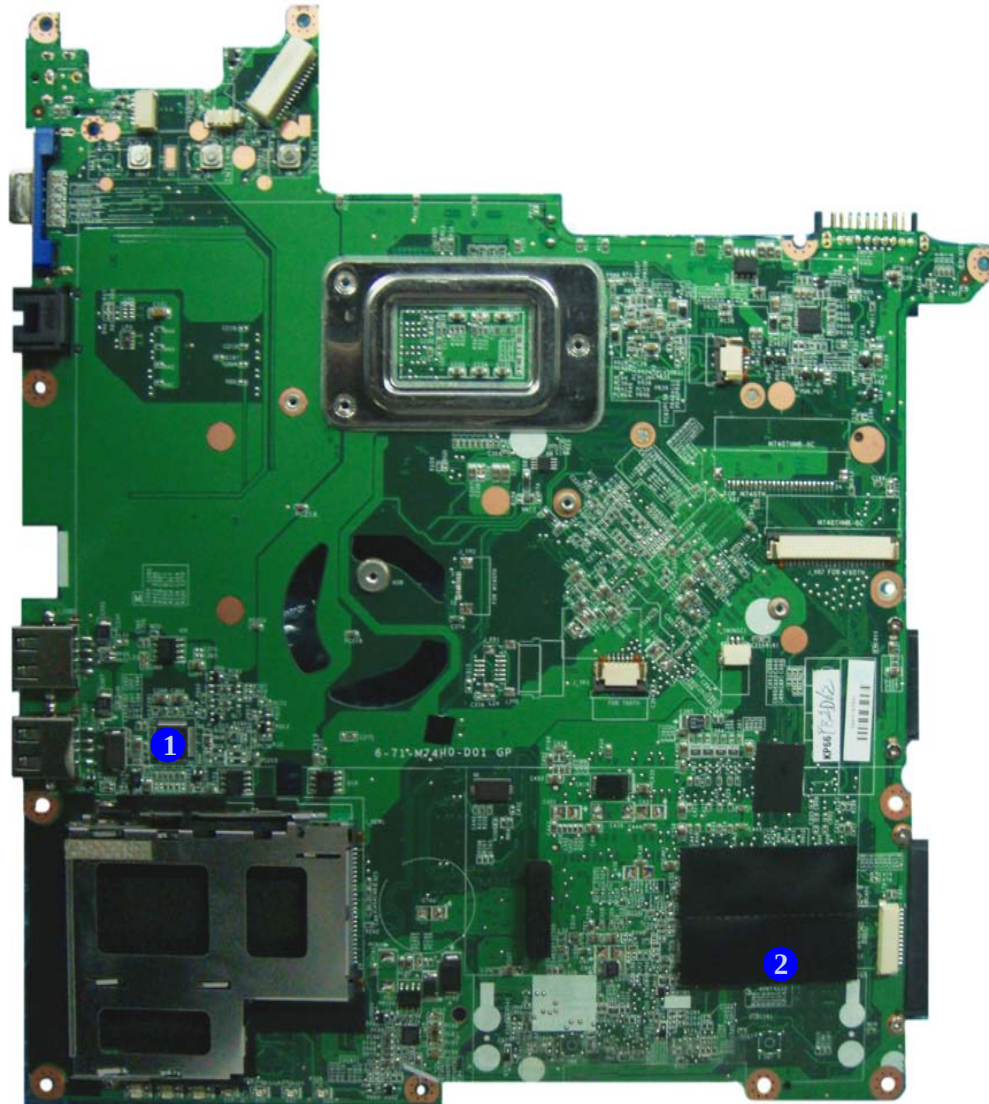
To prevent your computer from overheating make sure nothing blocks the vent/fan intakes while the computer is in use.

Introduction

Figure 7
Mainboard Top
Key Parts

1. JMB261
2. KBC ITE IT8502E

Mainboard Overview - Top (Key Parts)



Mainboard Overview - Bottom (Key Parts)

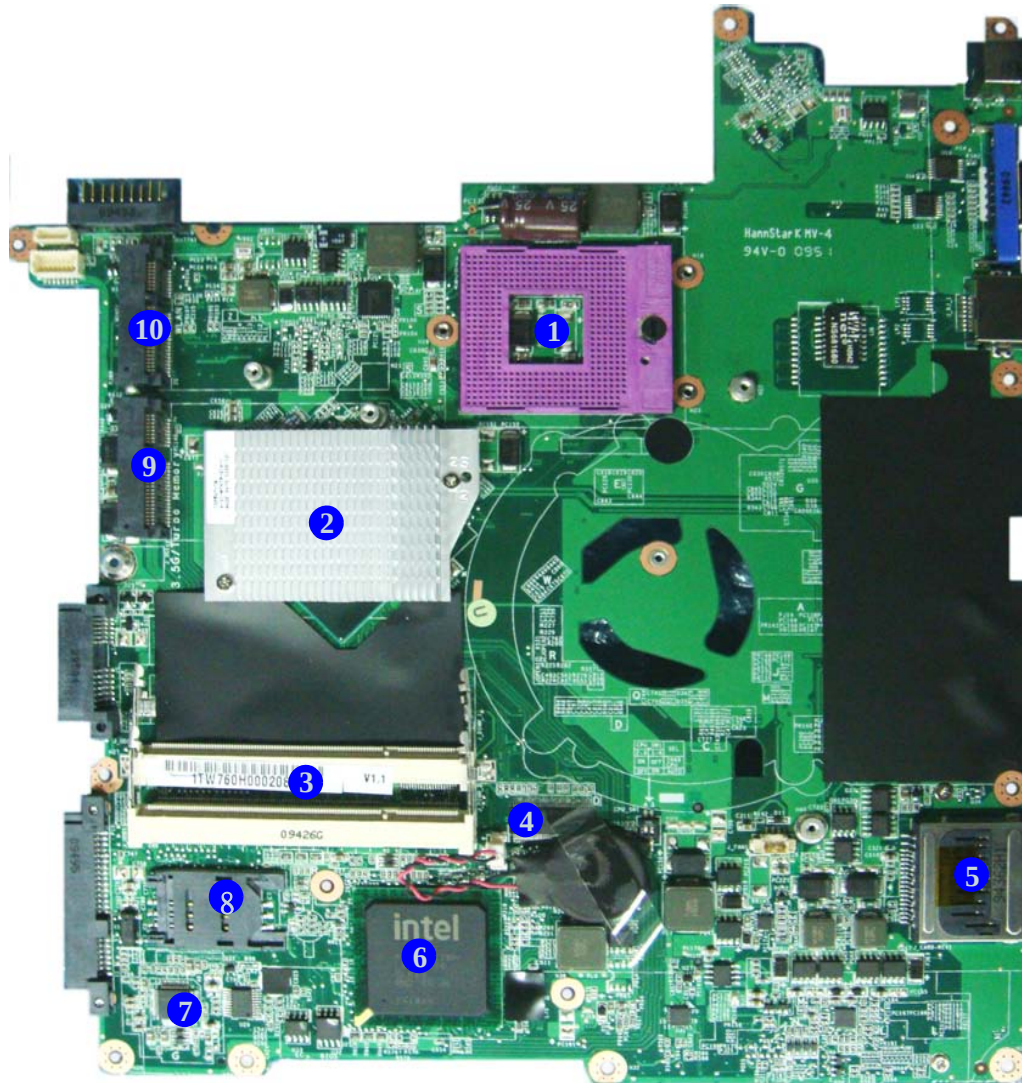


Figure 8
**Mainboard Bottom
Key Parts**

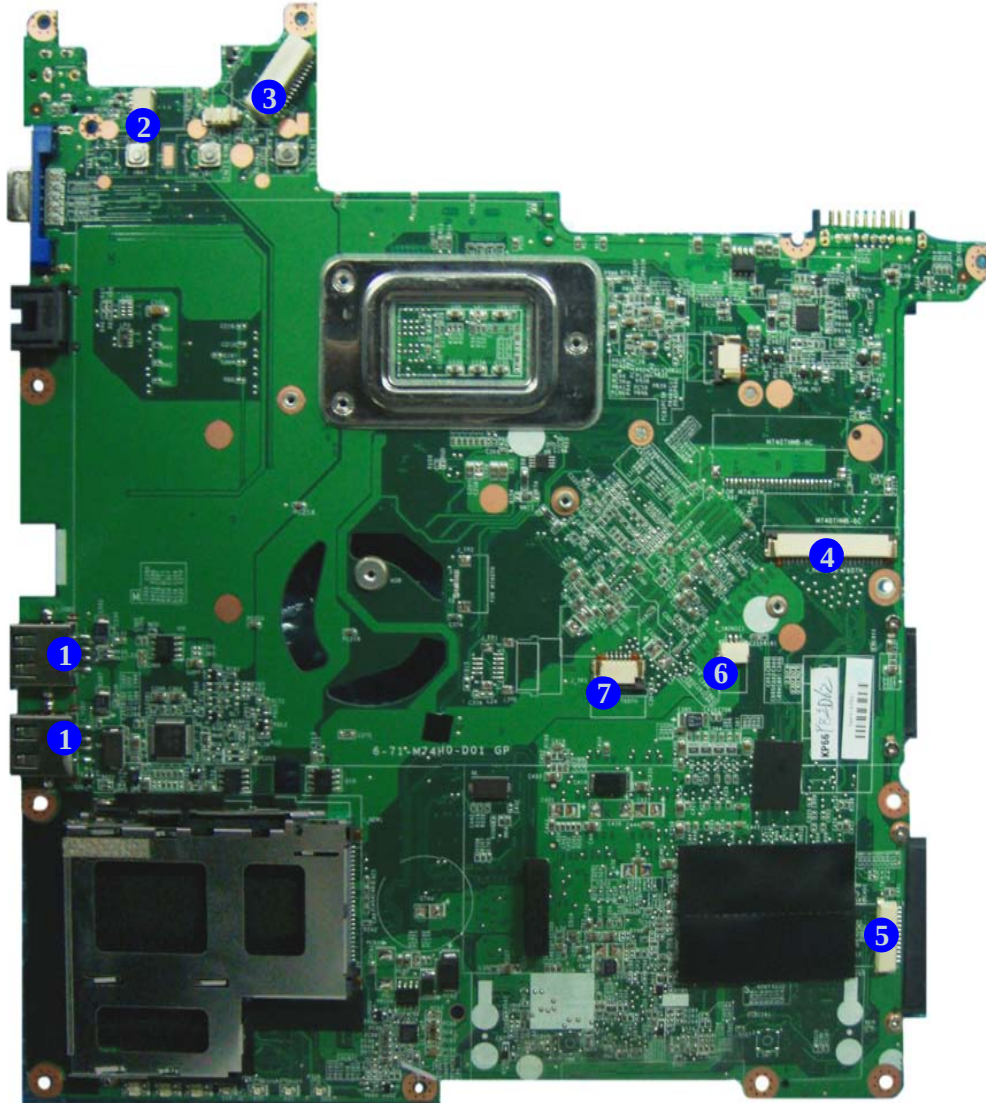
1. CPU Socket (no CPU installed)
2. North Bridge
3. Memory Slots
DDR2 SO-DIMM
4. Clock Generator
5. Card Reader
Socket
6. South Bridge
7. Audio Codec
8. SIMLOCK
9. 3.5G Slot
10. Mini-Card Slot
(WLAN Module)

Introduction

Figure 9
**Mainboard Top
Connectors**

1. USB Port
2. Inverter board Connector
3. LCD Cable Connector
4. Keyboard Cable Connector
5. Audio Board Connector
6. Microphone Cable Connector
7. TouchPad Cable Connector

Mainboard Overview - Top (Connectors)



Mainboard Overview - Bottom (Connectors)

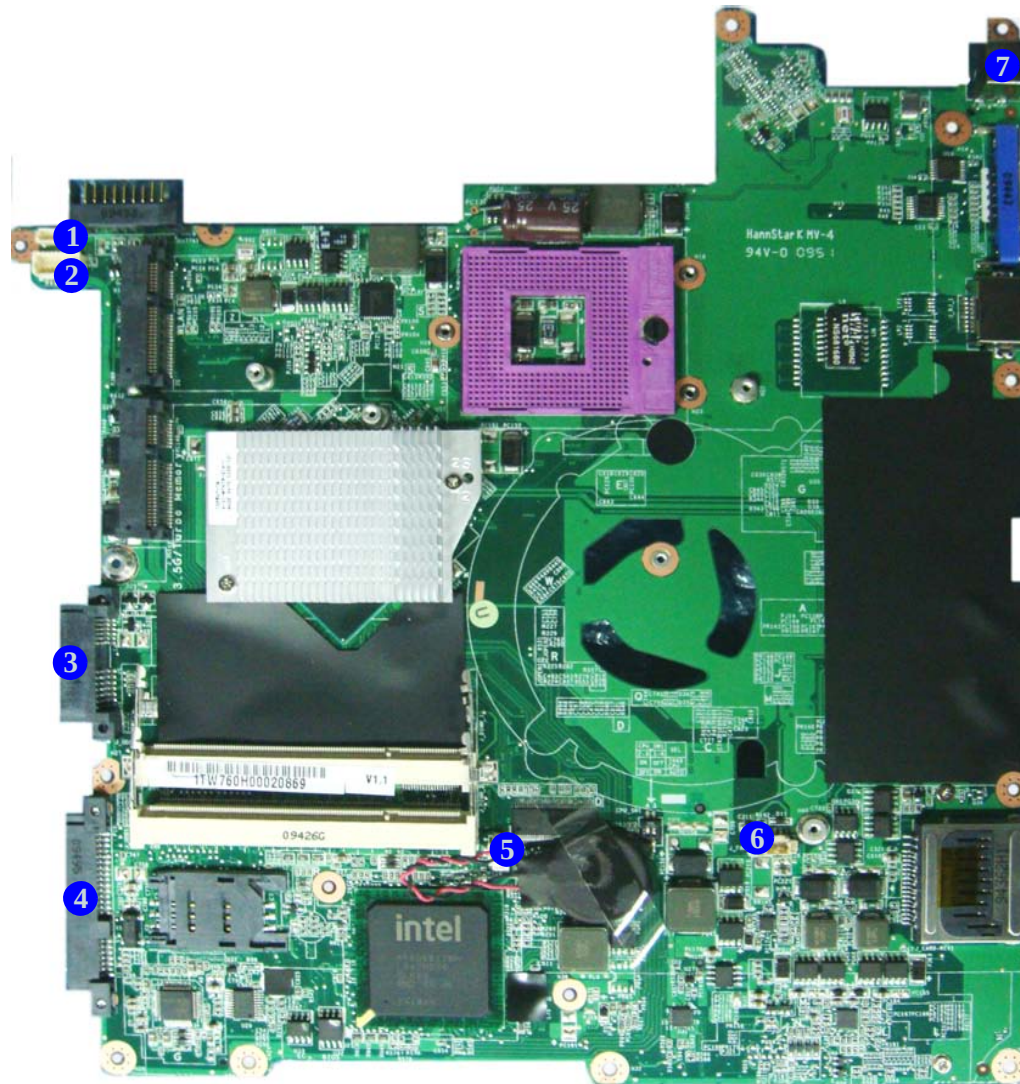


Figure 10
**Mainboard Bottom
Connectors**

1. BT Cable Connector
2. Multi Board Connector
3. CD-ROM Connector
4. HDD Connector
5. CMOS Bat. Connector
6. CPU Fan Cable Connector
7. DC-In Jack

Chapter 2: Disassembly

Overview

This chapter provides step-by-step instructions for disassembling the **M740TH/ M748TH** 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, optical 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.


Information
Warning

Disassembly

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.

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 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 Optical Device:

1. Remove the battery [page 2 - 5](#)
2. Remove the Optical device [page 2 - 8](#)

To remove the System Memory:

1. Remove the battery [page 2 - 5](#)
2. Remove the system memory [page 2 - 9](#)

To remove the Inverter Board:

1. Remove the battery [page 2 - 5](#)
2. Remove the inverter board [page 2 - 11](#)

To remove and install a Processor:

1. Remove the battery [page 2 - 5](#)
2. Remove the processor [page 2 - 12](#)
3. Install the processor [page 2 - 14](#)

To remove the Wireless LAN Module:

1. Remove the battery [page 2 - 5](#)
2. Remove the wireless LAN [page 2 - 15](#)

To remove the Bluetooth Module:

1. Remove the battery [page 2 - 5](#)
2. Remove the Bluetooth [page 2 - 16](#)

To remove the Keyboard:

1. Remove the battery [page 2 - 5](#)
2. Remove the keyboard [page 2 - 17](#)

To remove the Modem:

1. Remove the battery [page 2 - 5](#)
2. Remove the HDD [page 2 - 6](#)
3. Remove the Optical device [page 2 - 8](#)
4. Remove the processor [page 2 - 12](#)
5. Remove the keyboard [page 2 - 17](#)
6. Remove the modem [page 2 - 18](#)

Removing the Battery

1. Turn the computer **off**, and turn it over.
2. Slide the latch **1** in the direction of the arrow.
3. Slide the latch **2** in the direction of the arrow, and hold it in place.
4. Slide the battery **3** in the direction of the arrow **4**.

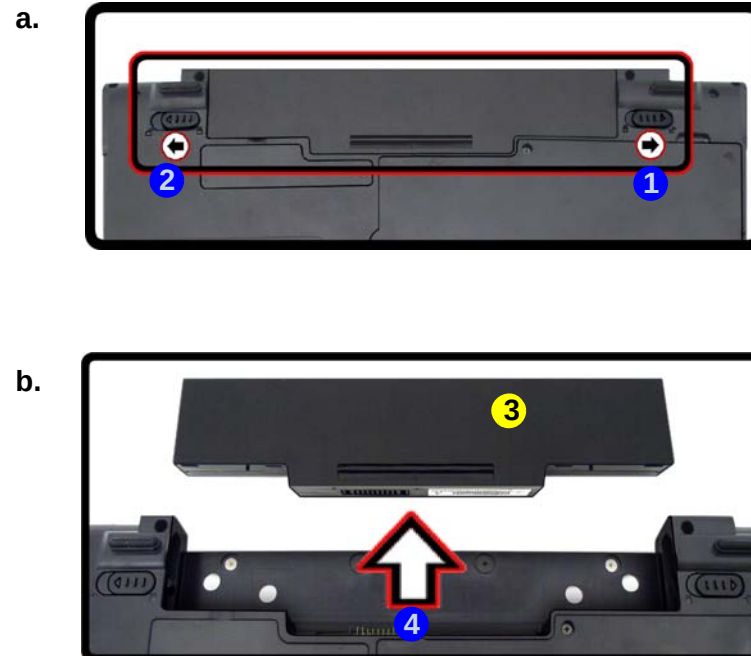


Figure 1
Battery Removal

- a. Slide the latch and hold in place.
- b. Slide the battery in the direction of the arrow.



3. Battery

Disassembly

Figure 2
**HDD Assembly
Removal**

- a. Locate the HDD bay cover and remove the screw(s).

Removing the Hard Disk Drive

The hard disk drive can be taken out to accommodate other 2.5" serial (SATA) 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 bay cover and remove screw **1** & **2**.



- 2 Screws



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.

3. Remove the hard disk bay cover **3**.
4. Grip the tab and slide the hard disk in the direction of arrow **4**.
5. Lift the hard disk out of the bay **5**.
6. Remove the screw **6** and the adhesive cover **7** from the hard disk **8**.
7. Reverse the process to install a new hard disk (do not forget to replace all the screws and covers).

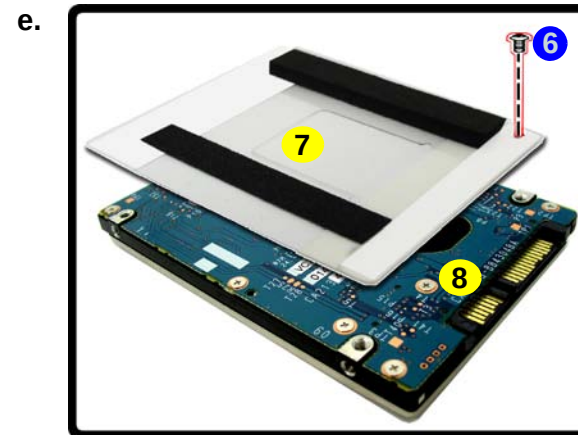
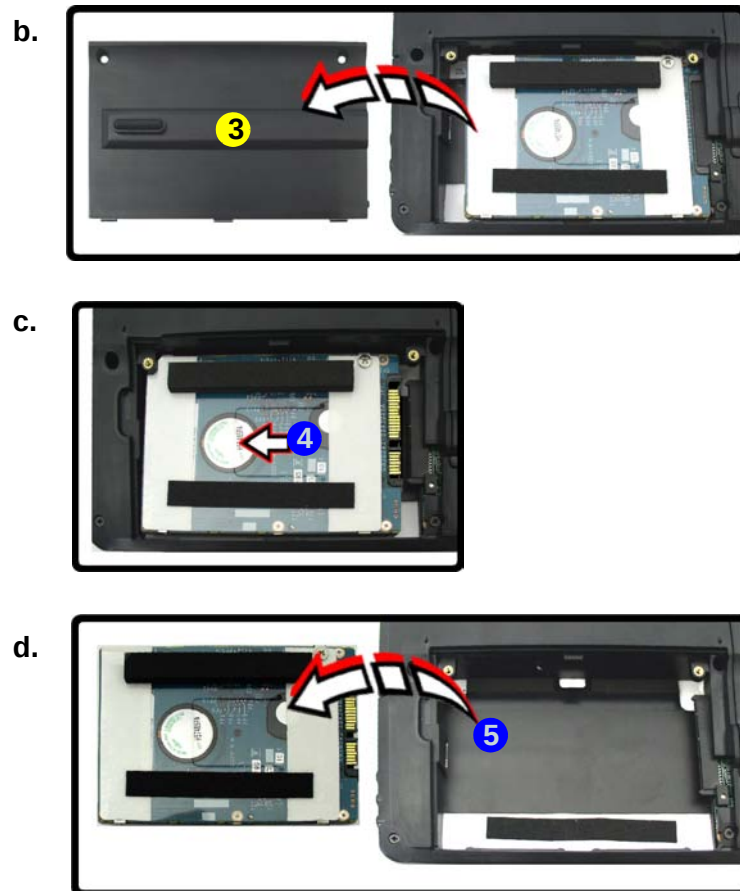


Figure 3
HDD Assembly
Removal (cont'd.)

- b. Remove the HDD bay cover.
- c. Grip the tab and slide the HDD in the direction of the arrow.
- d. Lift the HDD assembly out of the bay.
- e. Remove the screw and adhesive cover.



- 3. HDD Bay Cover
- 7. Adhesive Cover
- 8. HDD
- 1 Screw

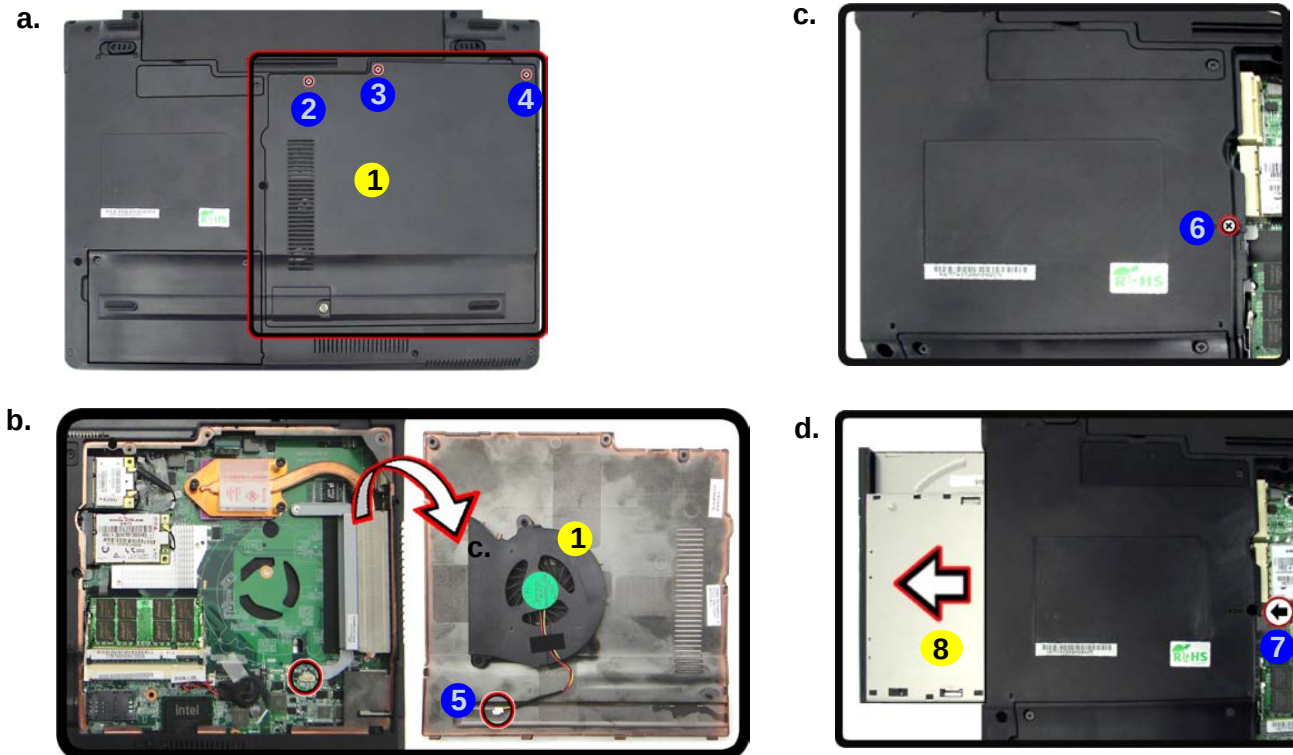
Disassembly

Figure 4
Optical Device
Removal

- a. Remove the screws.
- b. Disconnect the fan cable and remove the cover.
- c. Remove the screw.
- d. Push the optical device out off the computer at point 7.

Removing the Optical (CD/DVD) Device

1. Turn **off** the computer, and remove the battery ([page 2 - 5](#)).
2. Locate the component bay cover **1** and remove screws **2** - **4**.
3. Carefully (**a fan and cable are attached to the under side of the cover**) lift up the bay cover.
4. Carefully disconnect the fan cable **5**, and remove the cover **1**.
5. Remove the screw at point **6**, and use a screwdriver to carefully push out the optical device **8** at point **7**.
6. 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).
7. Restart the computer to allow it to automatically detect the new device.



1. Component Bay Cover
8. Optical Device

- 4 Screws

Removing the System Memory (RAM)

The computer has two memory sockets for 200 pin Small Outline Dual In-line Memory Modules (SO-DIMM) supporting **DDR2** 667/800MHz. The main memory can be expanded up to 4GB. The SO-DIMM modules supported are 1024MB, and 2048MB and **DDRII** Modules. The total memory size is automatically detected by the POST routine once you turn on your computer.

Memory Upgrade Process

1. Turn **off** the computer, remove the battery ([page 2 - 5](#)).
2. Locate the component bay cover **1**, and remove screws **2** - **4**.
3. Carefully (**a fan and cable are attached to the under side of the cover**) lift up the bay cover.
4. Carefully disconnect the fan cable **5**, and remove the cover **1**.

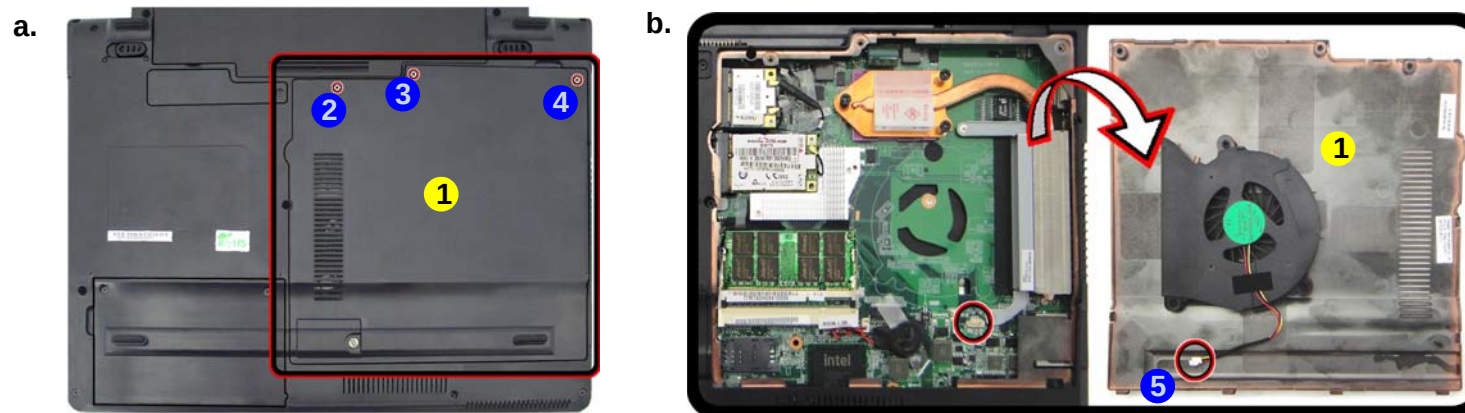


Figure 5
**RAM Module
Removal**

- a. Remove the screws.
- b. Remove the cover.



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. Component Bay Cover

- 3 Screws

Disassembly

Figure 6
RAM Module Removal (cont'd.)

- c. Pull the release latch(es).
- d. Remove the module(s).
- e. Properly re-insert the bay cover pins.

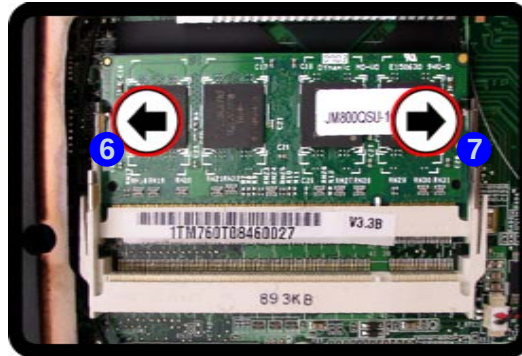
Single Memory Module Installation

If your computer has a single memory module, then insert the module into the **Channel 0 (J_DIMM_1)** socket. In this case, this is the lower memory socket (the socket closest to the mainboard) as shown in *Figure 6d*.

8. RAM Module(s)

- 5. Gently pull the two release latches (6 & 7) on the sides of the memory socket in the direction indicated by the arrows (*Figure 6c*).

c.



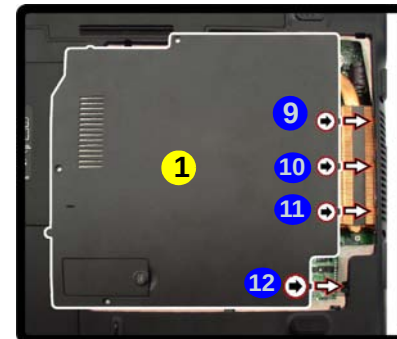
d.



- 6. The RAM module(s) 8 will pop-up (*Figure 6d*), and you can then remove it.
- 7. Pull the latches to release the second module if necessary.
- 8. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
- 9. The module's pin alignment will allow it to only fit one way. Make sure the module is seated as far into the slot as it will go. DO NOT FORCE the module; it should fit without much pressure.
- 10. Press the module in and down towards the mainboard until the slot levers click into place to secure the module.
- 11. Replace the bay cover and screws (**make sure you reconnect the fan cable before screwing down the bay cover**).

Note for M760TUN computers that there are four 9 - 12 cover pins which need to be aligned with slots in the case, to insure a proper cover fit, before screwing down the bay cover 1.

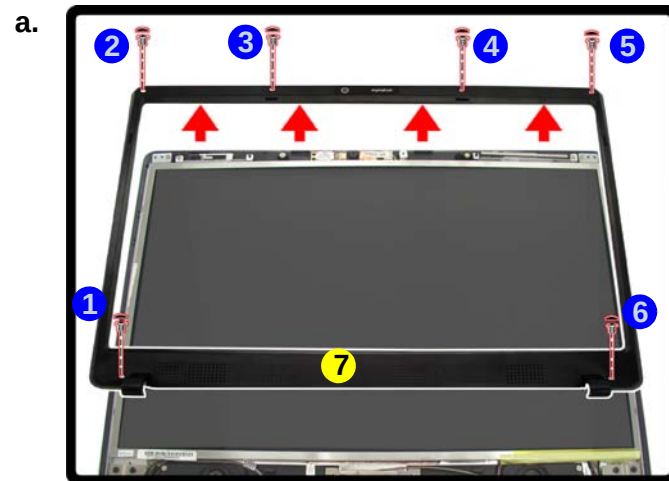
e.



- 12. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.

Removing the Inverter Board

1. Turn **off** the computer, and remove the battery ([page 2 - 5](#)).
2. Remove any rubber covers, screws **1** - **6** ([Figure 7a](#)), then run your finger around the middle of the frame to carefully unsnap the LCD front panel module **7** from the back.
3. Discharge the remaining system power (see [?\\$paratext>?](#) below).
4. Remove screw **8** ([Figure 7b](#)) from the inverter, and carefully lift the inverter board up slightly.
5. Disconnect cables **9** & **10** ([Figure 7c](#)) from the inverter, then remove the inverter **11** ([Figure 7d](#)) from the top case assembly.



Inverter Power Warning

In order to prevent a short circuit when removing the inverter it is necessary to discharge any remaining system power. To do so, press the computer's power button for a few seconds before disconnecting the inverter cable.

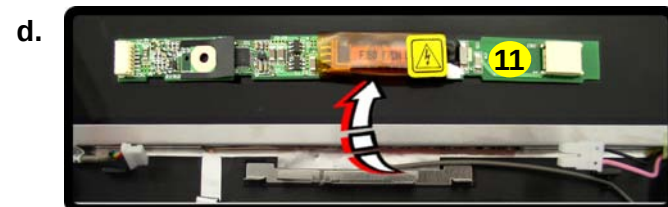
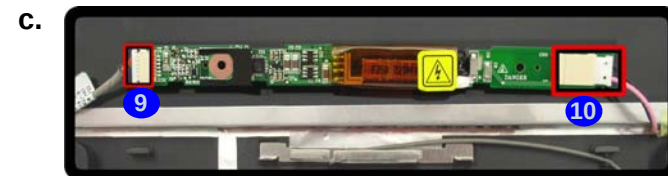


Figure 7
Inverter Board Removal

- a. Remove the 6 screws and unsnap the LCD front panel module from the back.
- b. Remove the screw and discharge the remaining power from the inverter board and lift the board up slightly.
- c. Disconnect the cables from the inverter.
- d. Remove the inverter.



7. LCD Front Panel
11. Inverter Board

- 6 Screws

Disassembly

Removing and Installing the Processor

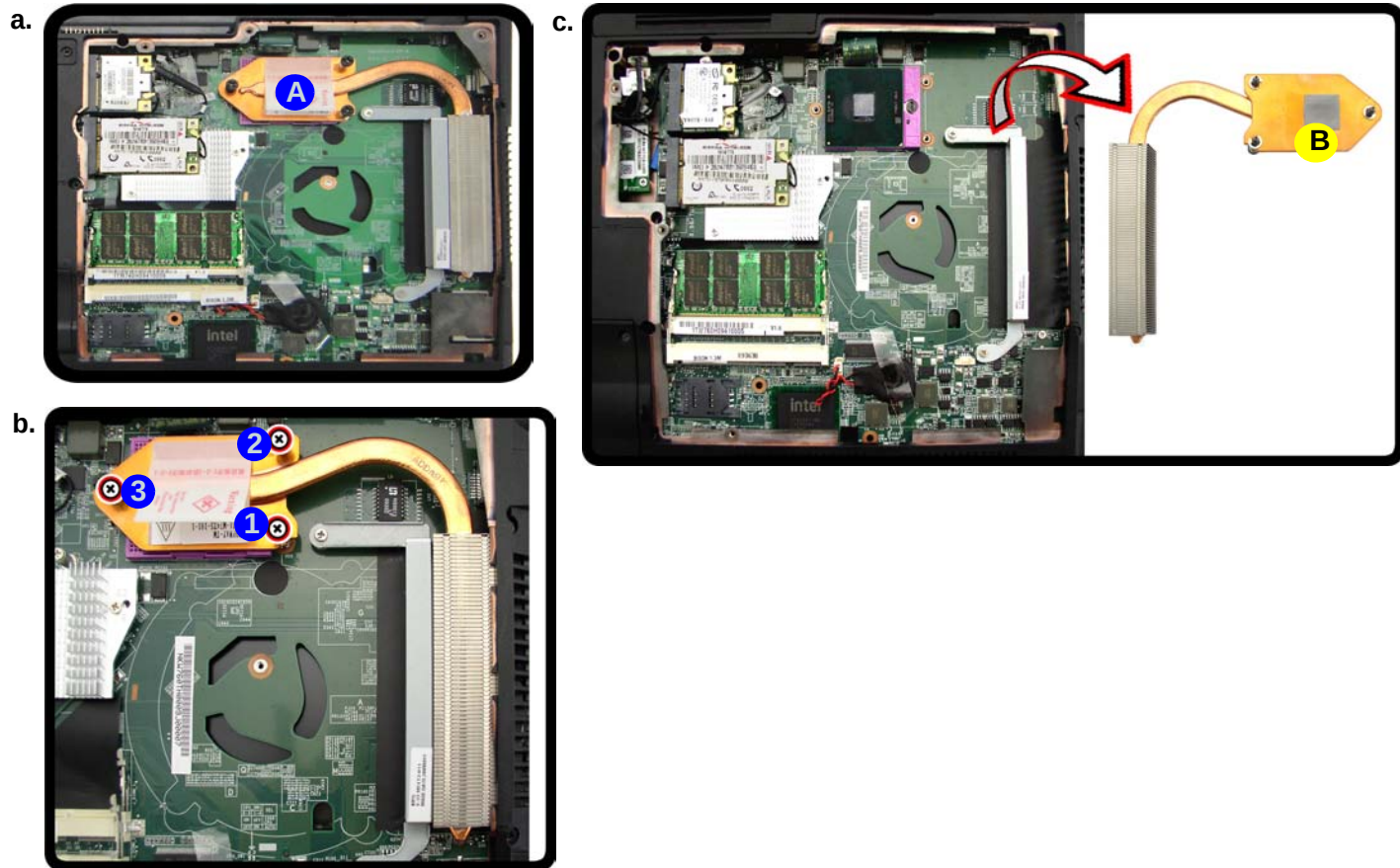
Processor Removal Procedure

Figure 8

Processor Removal

- Remove the cover and locate the heat sink.
- Remove the screws in the order indicated.
- Remove the heat sink.

- Turn off the computer, remove the battery ([page 2 - 5](#)) and the component bay cover ([page 2 - 9](#)).
- The CPU heat sink will be visible at point **A** on the mainboard.
- Loosen screws **3**, **2**, **1** ([Figure 8b](#)) the reverse order to that indicated on the label.
- Carefully lift up the heat sink **B** ([Figure 8c](#)) off the computer.



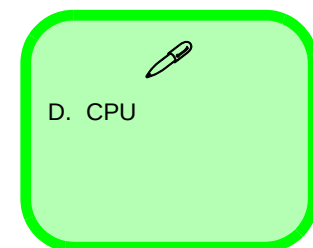
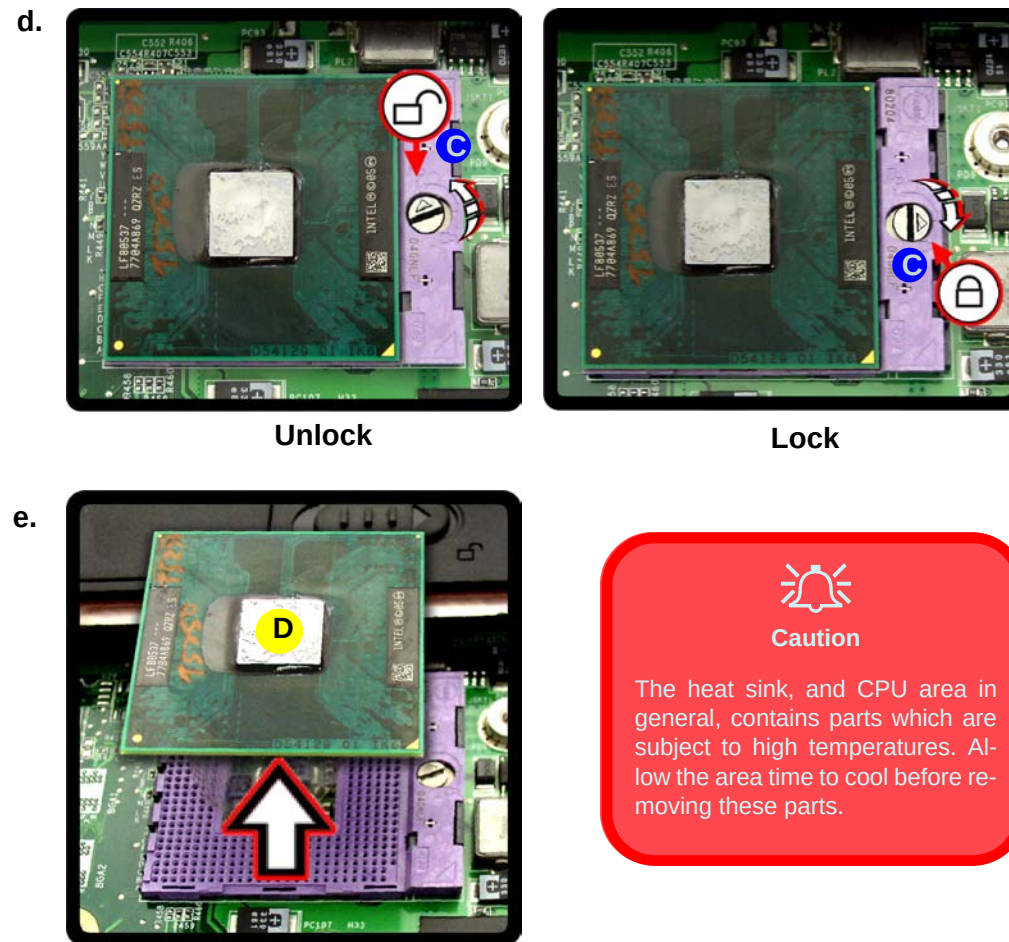
B. Heat Sink

- 3 Screws (Loosen Only)

5. Turn the release latch **C** towards the unlock symbol , to release the CPU (**Figure 9d**).
6. Carefully (it may be hot) lift the CPU **D** up out of the socket (**Figure 9e**).
7. See [page 2 - 14](#) for information on inserting a new CPU.
8. 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)

- d. Turn the release latch to unlock the CPU.
- e. Lift the CPU out of the socket.



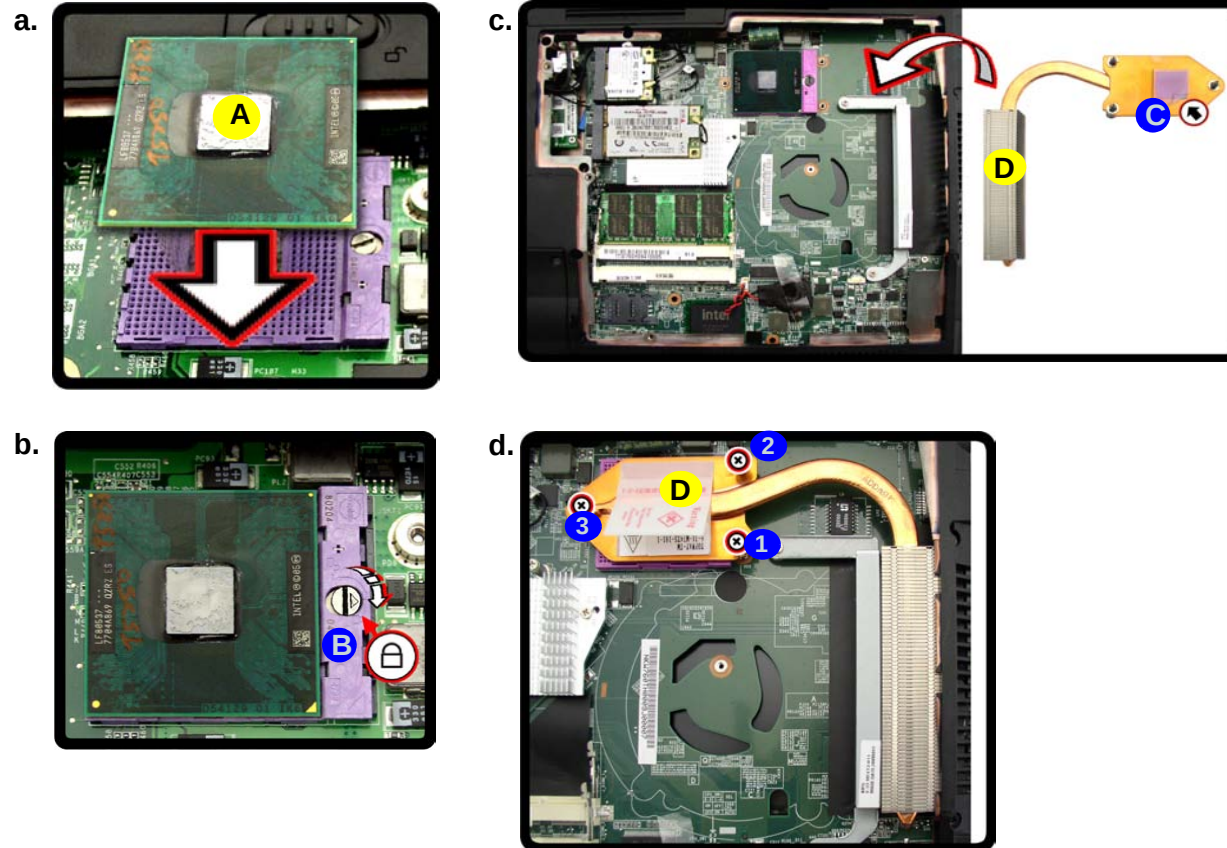
Disassembly

Figure 10
Processor Installation

- Insert the CPU.
- Turn the release latch towards the lock symbol.
- Remove the sticker from the heat sink and insert the heat sink.
- Tighten the screws.

Processor Installation Procedure

- Insert the CPU **A**, pay careful attention to the pin alignment, it will fit only one way (DO NOT FORCE IT!), and turn the release latch **B** towards the lock symbol  (*Figure 10b*).
- Remove the sticker **C**** (*Figure 10c*) from the heat sink.
- Insert the heat sink **D** as indicated in *Figure 10c*.
- Tighten screws **1** - **3** in the order indicated on the label.
- Replace the component bay cover and tighten the screws (*page 2 - 9*).



A. CPU
D. Heat Sink

- 3 Screws (Tighten Only)

Removing the Wireless LAN Module

1. Turn **off** the computer, remove the battery ([page 2 - 5](#)) and the component bay cover ([page 2 - 9](#)).
2. The Wireless LAN module will be visible at point **1** on the mainboard.
3. Carefully disconnect cables **2** - **3**, then remove screw **4** from the module socket.
4. The Wireless LAN module **5** will pop-up.
5. Lift the Wireless LAN module ([Figure 11d](#)) up and off the computer.

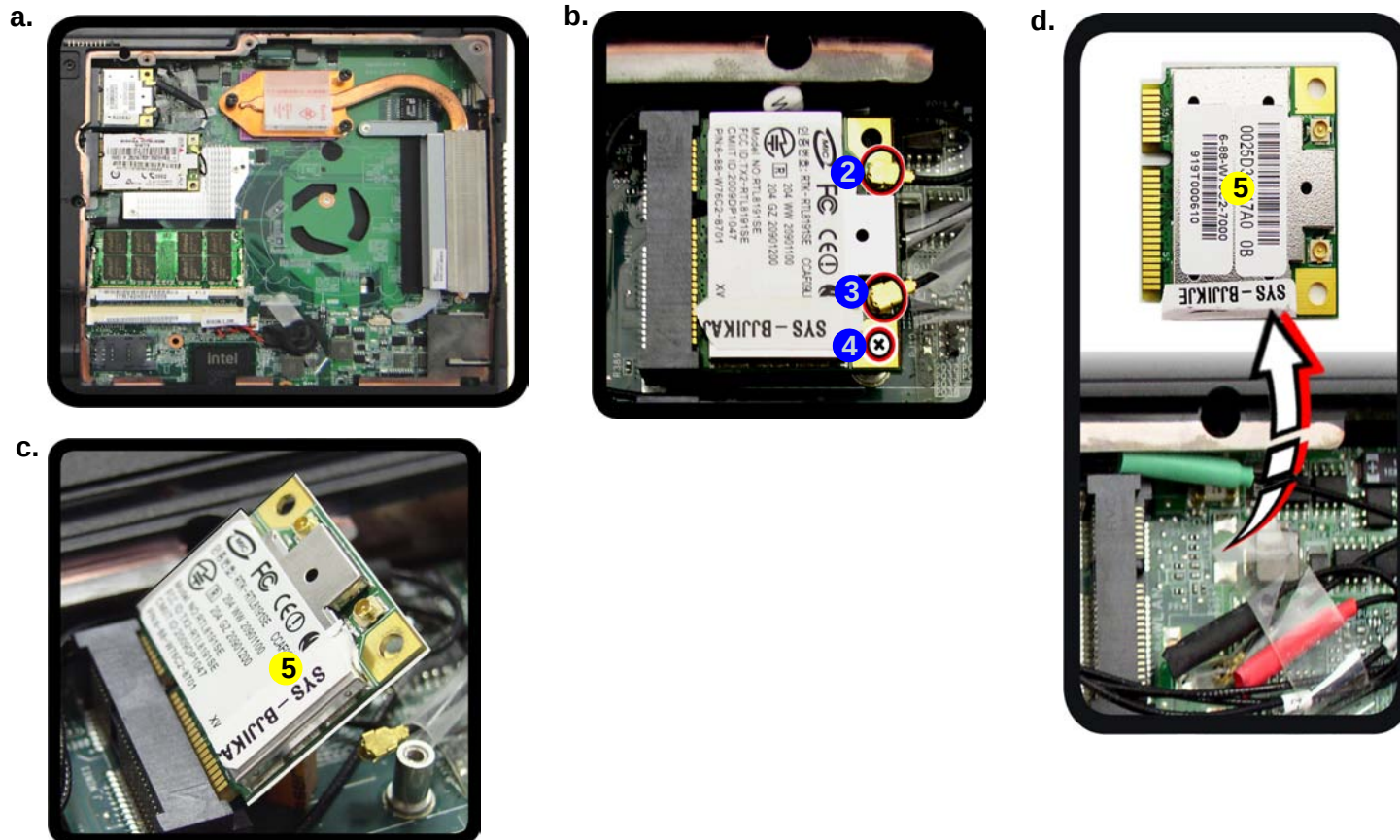


Figure 11
Wireless LAN
Module Removal

- a. Remove the cover.
- b. Disconnect the cable and remove the screw.
- c. The WLAN module will pop up.
- d. Lift the WLAN module out.

Note: Make sure you reconnect the antenna cable to “1” + “2” socket ([Figure b](#)).



5. WLAN Module.

- 1 Screw

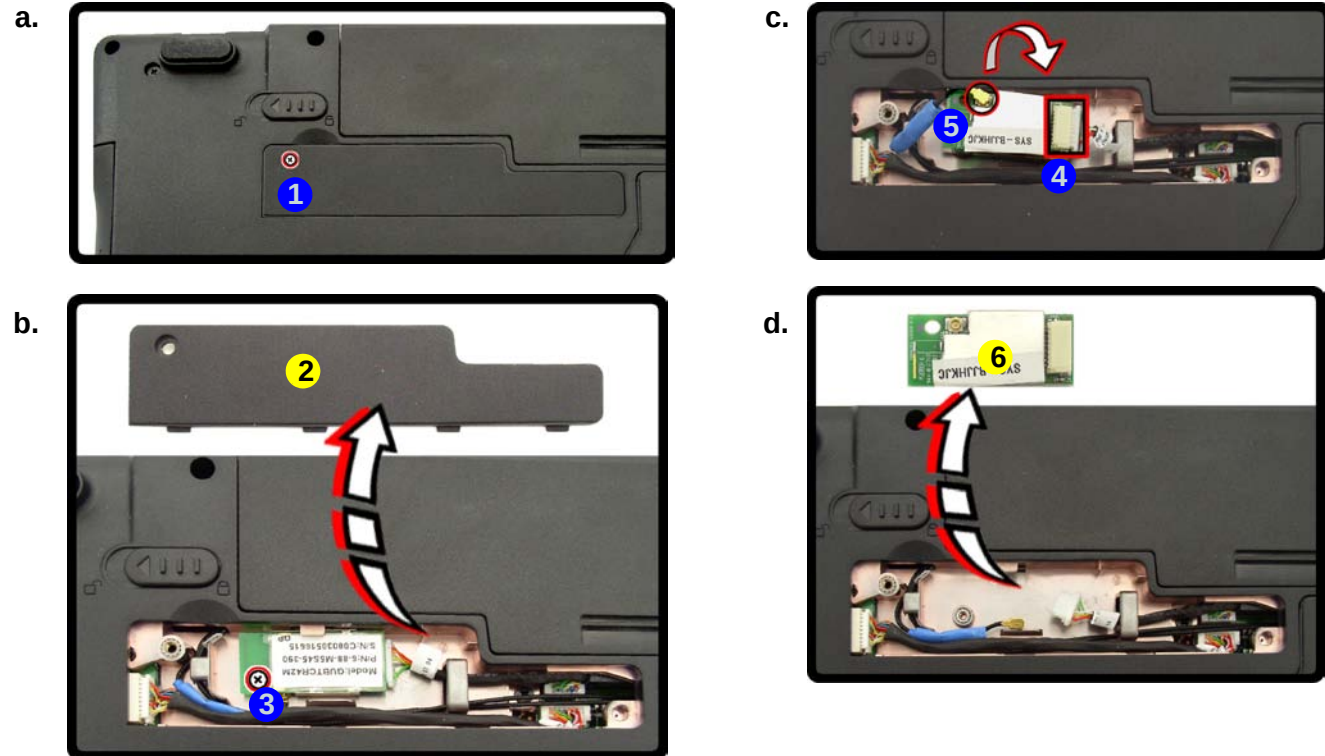
Disassembly

Figure 12
**Bluetooth Module
Removal**

- Remove the screw.
- Lift the cover and remove the screw.
- Disconnect the cable and the connector.
- Lift the Bluetooth module up off the socket.

Removing the Bluetooth Module

- Turn **off** the computer, remove the battery ([page 2 - 5](#)).
- Locate the Bluetooth bay cover, and remove the screw ① and cover ②.
- Remove the screw ③ and turn the module over.
- Carefully separate the Bluetooth module from the connector ④ and disconnect the cable ⑤.
- Lift the Bluetooth module ⑥ ([Figure 12c](#)) up and off the computer.



- Cover
- Bluetooth Module

- 2 Screws

Removing the Keyboard

1. Turn **off** the computer, and remove the battery ([page 2 - 5](#)).
2. Press the **four** 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 ([Figure 13b](#)).
4. Disconnect the keyboard ribbon cable **6** from the locking collar socket **7**.

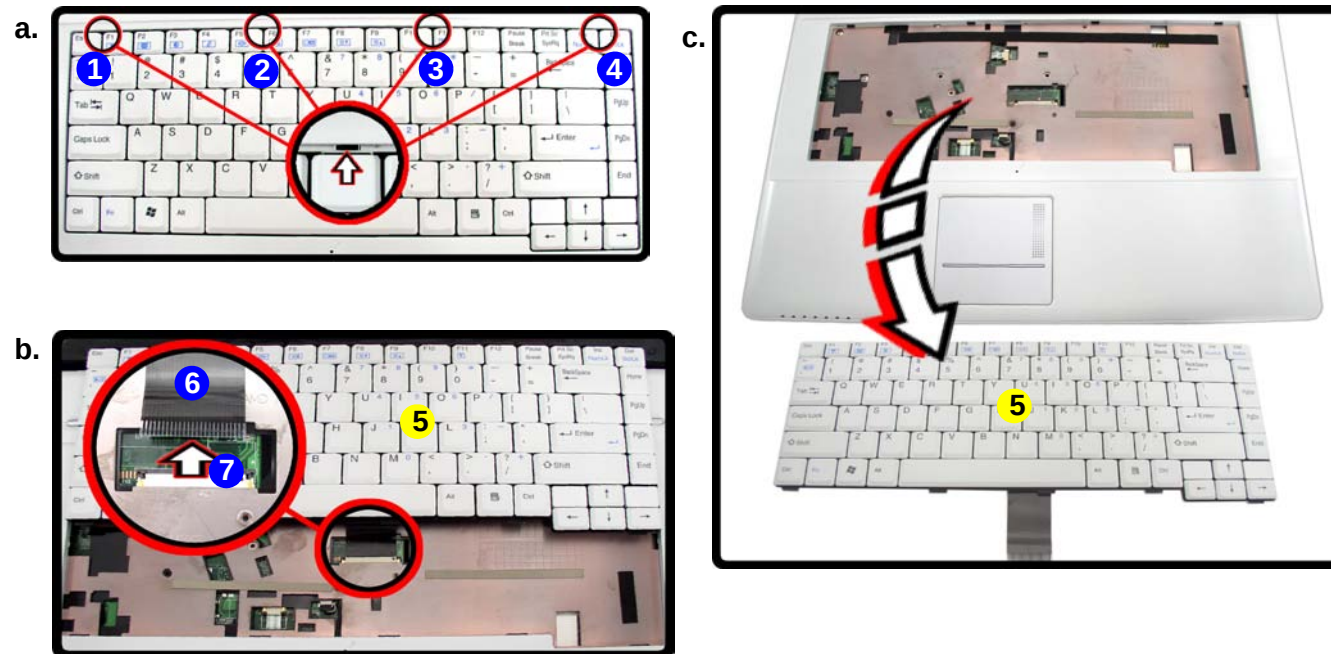


Figure 13
Keyboard Removal

- a. Press the four latches to release the keyboard.
- b. Lift the keyboard up and disconnect the cable from the locking collar.
- c. Remove the keyboard.



Re-Inserting the Keyboard

When re-inserting the keyboard firstly align the **four** keyboard tabs at the bottom of the keyboard with the slots in the case.



5. Keyboard

Disassembly

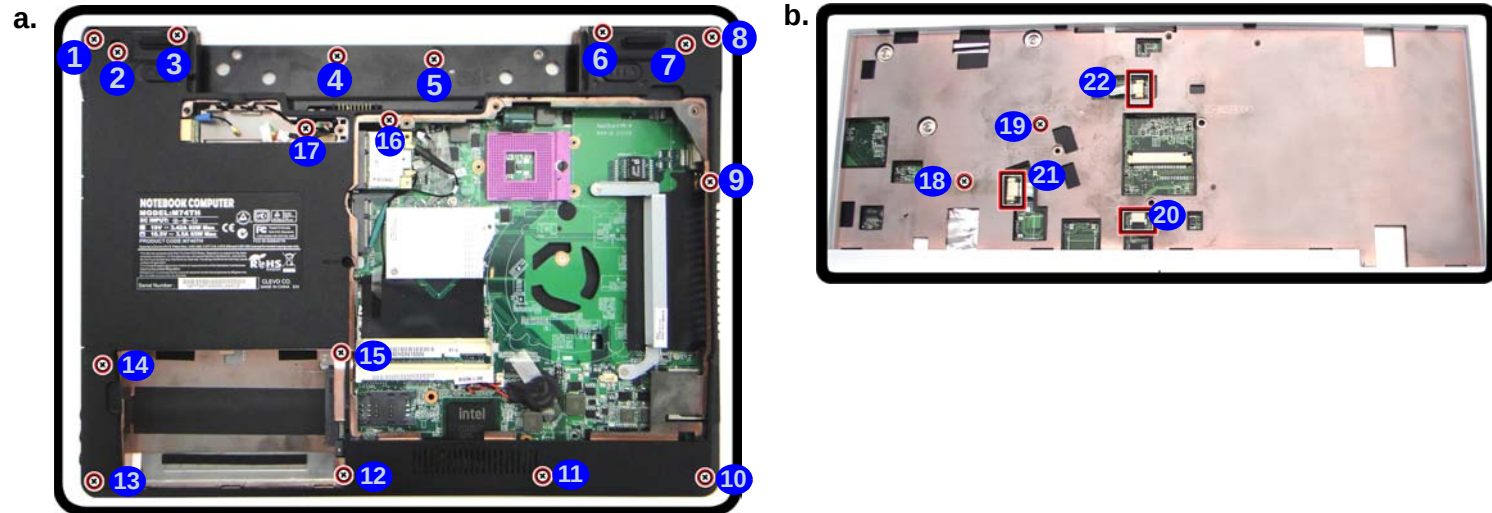
Figure 14

Modem Removal

- Remove the screws and disconnect the cable.
- Turn the computer over, remove the screws and disconnect the cable.

Removing the Modem

- Turn **off** the computer, remove the battery ([page 2 - 5](#)), HDD ([page 2 - 6](#)), component bay cover ([page 2 - 9](#)), optical device ([page 2 - 8](#)), CPU ([page 2 - 12](#)), bluetooth ([page 2 - 16](#)) and keyboard ([page 2 - 17](#)).
- Remove screws ① - ⑱ from the bottom case.
- Turn the computer over, remove screws ⑲ - ⑳ and disconnect cables ㉔ - ㉖ ([Figure 15b](#)).



- 19 Screws

4. Carefully lift the top case **23** up and off the computer (**Figure 15d**).
5. Remove screws **24** - **26** (**Figure 15e**) from the computer.
6. Remove screws **27** - **28** (**Figure 15f**) from the modem module.
7. Lift the modem up and separate the modem from the connector **29**.
8. Lift the modem **30** off the computer.

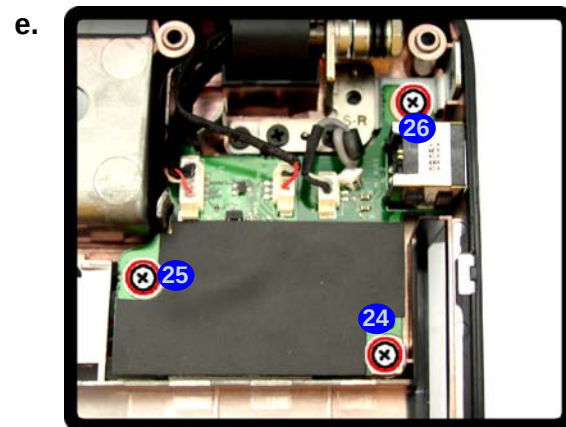
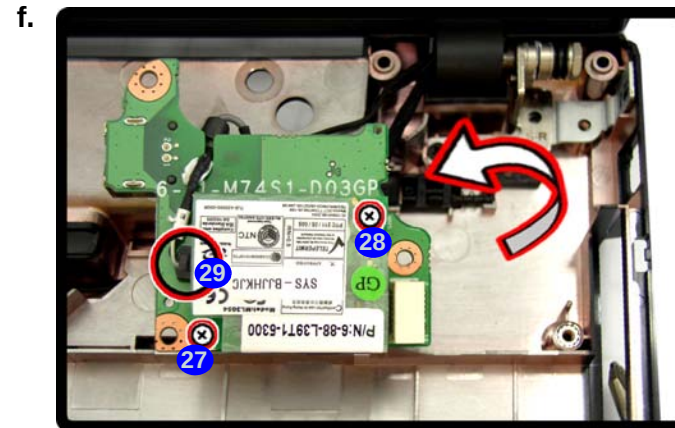
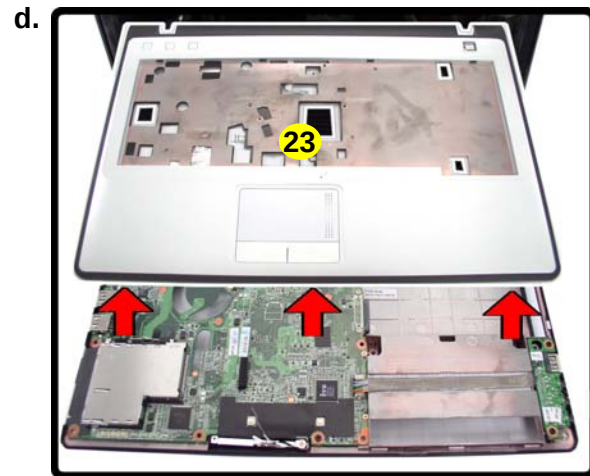


Figure 15
Modem Removal
(cont'd.)

- d. Lift the cover off the computer.
- e. Remove the screws.
- f. Remove the screws and disconnect the connector.
- g. Lift the modem out.



23 Top Case
30. Modem

- 5 Screws

Appendix A: Part Lists

This appendix breaks down the *M740TH/ M748TH* 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 A- 1
Part List Illustration
Location

Parts	PAGES
Top (M740TH)	<i>page A - 3</i>
Top (M748TH)	<i>page A - 4</i>
Bottom	<i>page A - 5</i>
LCD	<i>page A - 6</i>
DVD SUPER-MULTI	<i>page A - 7</i>

Top (M740TH)

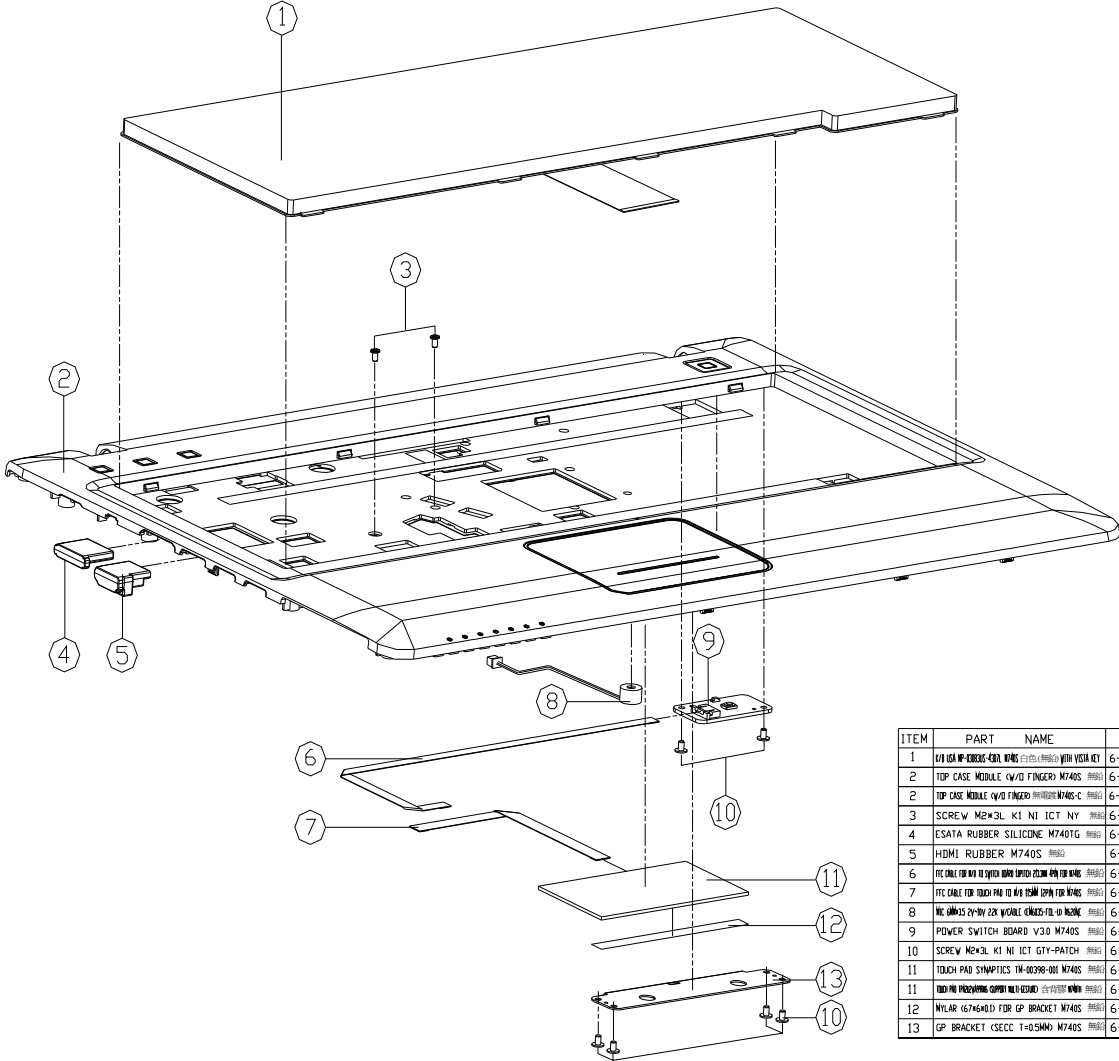


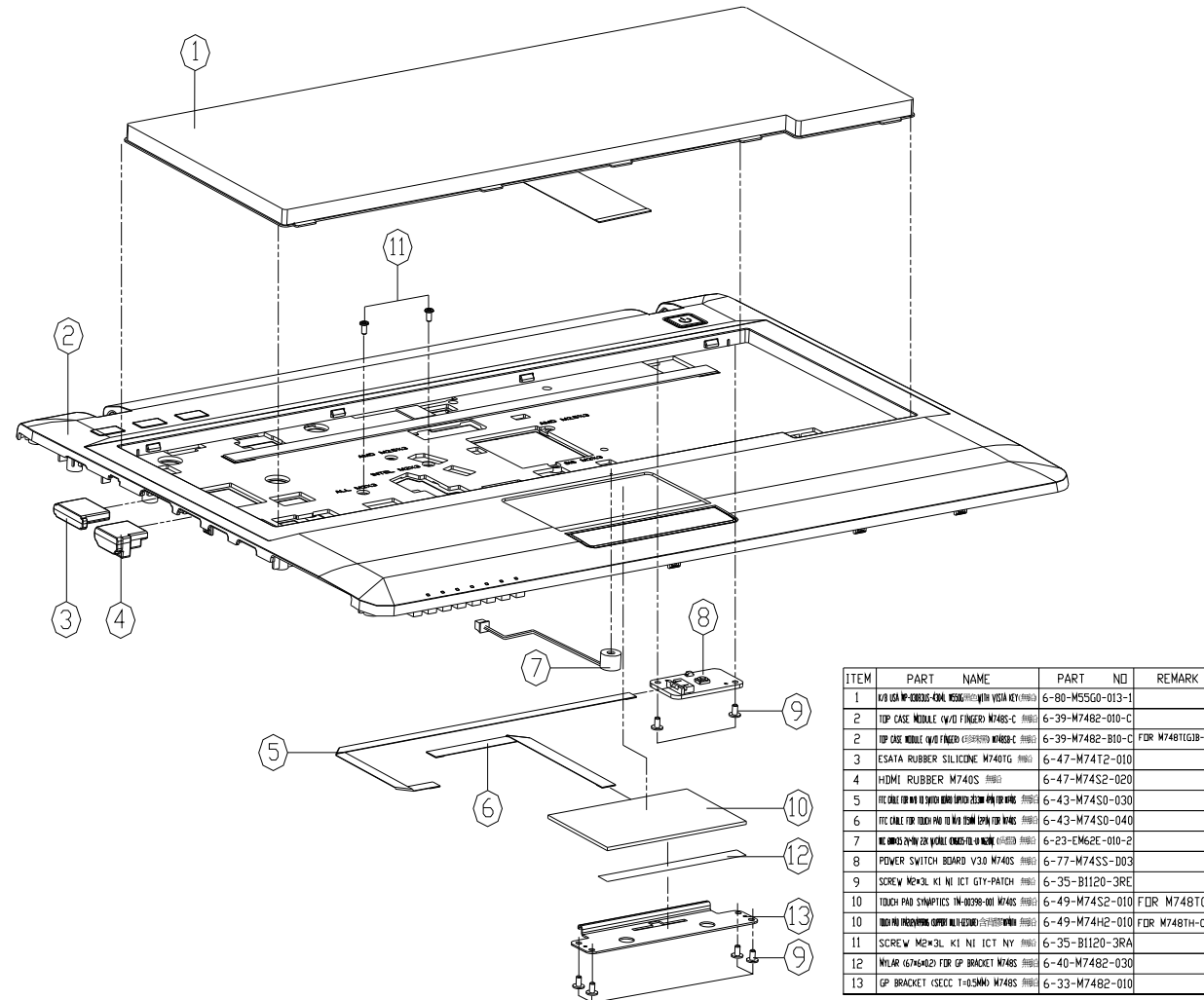
Figure A - 1
Top (M740TH)

ITEM	PART NAME	PART NO	REMARK
1	TOP CASE MODULE (W/O FINGER) M740S	6-80-M74S0-011-1	
2	TOP CASE MODULE (W/O FINGER) M740S	6-39-M74S2-016	
3	TOP CASE MODULE (W/O FINGER) M740S-C	6-39-M74S2-013-C	FOR M740T-C
4	SCREW M2*3L K1 NI ICT NY	6-35-B1120-3RA	
5	ESATA RUBBER SILICONE M740TG	6-47-M74T2-010	
6	HDMI RUBBER M740S	6-47-M74S2-020	
7	FPC CABLE FOR TOUCH PAD TO MAIN BOARD	6-43-M74S0-030	
8	FPC CABLE FOR TOUCH PAD TO MAIN BOARD	6-43-M74S0-040	
9	POWER SWITCH BOARD V3.0 M740S	6-23-EM62E-010	
10	SCREW M2*3L K1 NI ICT GTY-PATCH	6-77-M74SS-D03	
11	TOUCH PAD SYNAPTICS TM-00398-001 M740S	6-35-B1120-3RE	
12	TOUCH PAD SYNAPTICS TM-00398-001 M740S	6-49-M74S2-010	FOR M740TG
13	WHLR 167464111 FOR GP BRACKET M740S	6-49-M74H2-010	FOR M740TH
14	GP BRACKET (SECC T=0.5MM) M740S	6-40-M74S2-060	
15	GP BRACKET (SECC T=0.5MM) M740S	6-33-M74S2-010	

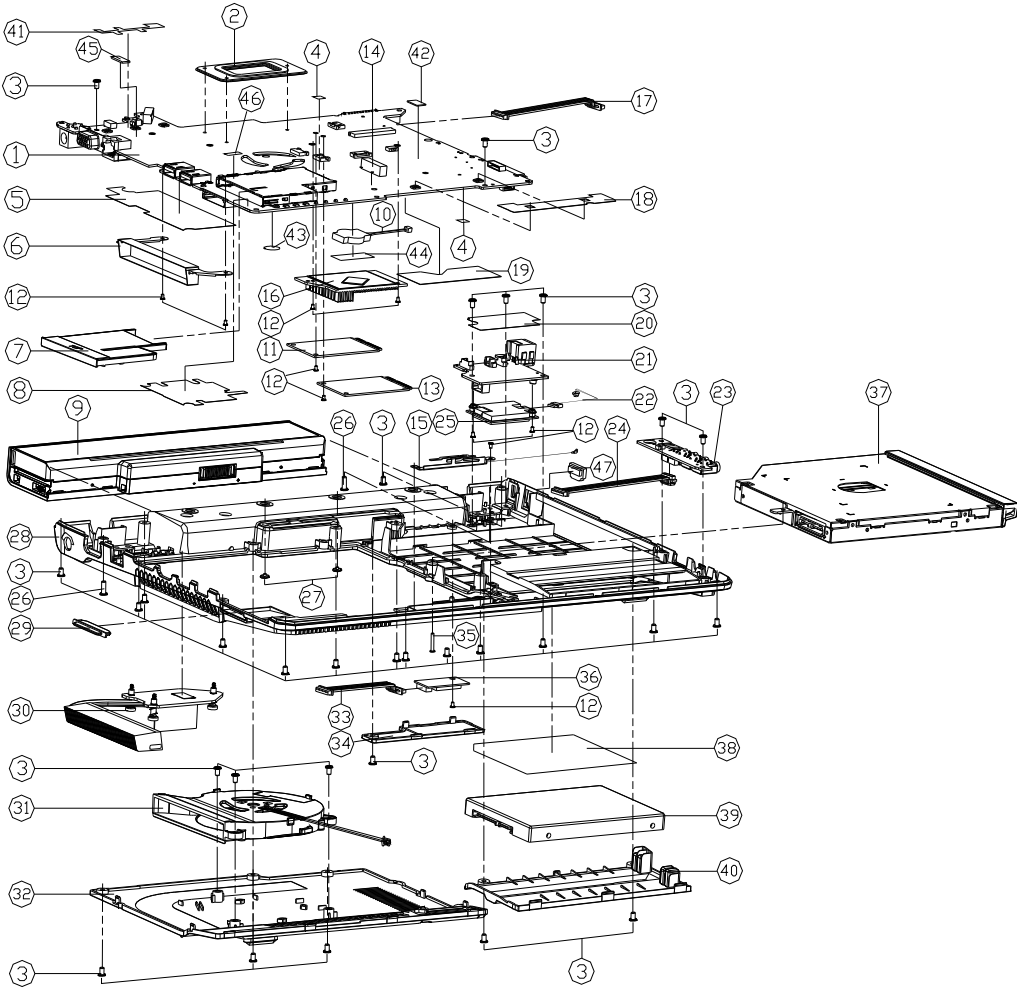
A.Part Lists

Part Lists

Top (M748TH)

Figure A - 2
Top (M748TH)

Bottom

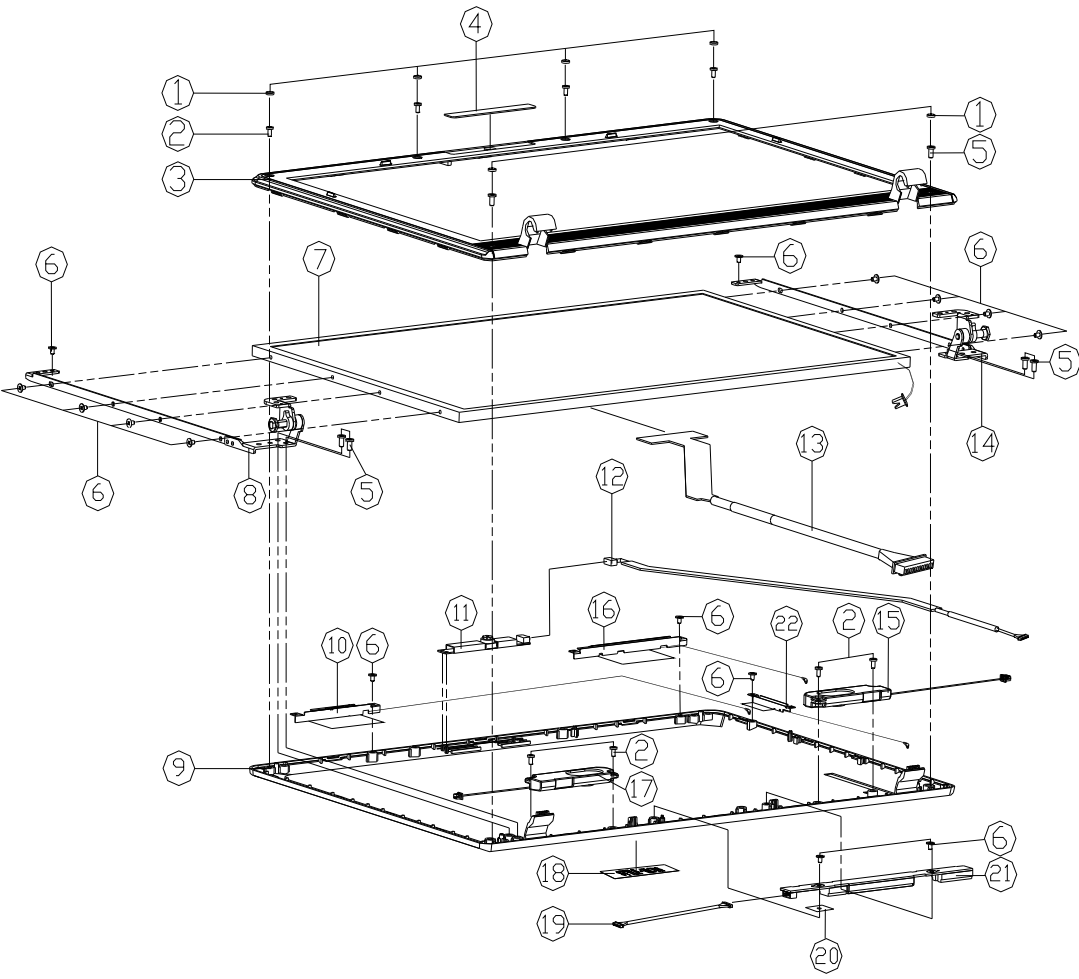


ITEM	PART NAME	PART NO	REMARK
1	MAIN BOARD V1.0 (V/D 3D) M740TH	6-77-M74H0-D01	
1	MAIN BOARD V1.0 (V/D 3D) M740TH	6-77-M74H0-D01-1	
2	CPU SUPPORT BRACKET SUS 430C/D M50N	6-33-M59NS-022	
3	SCREW M2.5XSL K1 BK/Z ICT NY	6-35-B612S-5RA	
4	PROTECT MB MYLAR FRB3 M740S	6-40-M74SS-020	
5	HEAT SINK MYLAR FRB3 M500N M740S	6-40-M74SN-013	
6	FAN AIR DUCT AL M740T	6-33-M74TS-011	
7	DUMMY NEW CARD PC4AS T120R	6-42-T12R3-011	
8	NEW CARD MYLAR FRB3 M500N M740T	6-40-M74TS-011	
9	IMP 5 (1) 10V/44M 32P SMP/DAK-220 9	6-87-M660S-4P4	(OPTION)
9	IMP 5 (1) 10V/44M 32P SMP/PWAS200	6-87-M74SS-4CA	(OPTION)
10	IMP 20M 2V 220M VICALI SAM C8002-M	6-23-220IS-T90	
11	IMP 20M 2V 220M VICALI SAM C8002-M	6-88-W76CP-7000	(OPTION)
11	IMP 20M 2V 220M VICALI SAM C8002-M	6-88-C4802-4701	(OPTION)
12	SCREW M2XSL K1 NI ICT NY	6-35-B1120-3RA	
13	MYLAR MPA (R77) HUNT M740T	6-88-M810W-8800	
14	TOUCH PAD SPRING (R77) HUNT M740T	6-47-0019A-20A	
15	MYLAR MPA (R77) HUNT M740T	6-23-M74TS-010	
16	MYLAR MPA (R77) HUNT M740T	6-31-M74TS-014-1	
17	IMP 20M 2V 220M VICALI SAM C8002-M	6-43-M74SS-011	
18	FINGER BOARD MYLAR FRB3 M740S	6-40-M74SS-011	
19	DDR RAM MYLAR FRB3 M740T	6-40-M74TS-010	
20	MOC MYLAR FRB3 M500N M740S	6-40-M74SU-011	
21	MULTI I/O BOARD V3.0 M740S	6-77-M74SL-D03	
22	IMP 20M 2V 220M VICALI SAM C8002-M	6-43-M74SS-011-1	
23	PHONE JACK & USB BOARD V3.0A M740S	6-77-M74SA-D03A	
24	IMP 20M 2V 220M VICALI SAM C8002-M	6-43-M74SS-021	
25	IMP 20M 2V 220M VICALI SAM C8002-M	6-88-W76SL-5300	(OPTION)
25	IMP 20M 2V 220M VICALI SAM C8002-M	6-88-W76HL-8110	(OPTION)
26	SCREW M2.5XSL K1 BK/Z NY ICT	6-35-B612S-8RQ	
27	SCREW M2.5XSL K1 BK/Z NY ICT	6-35-B6120-2RE	
28	BOTTOM CASE MODULE M740S	6-39-M74S3-01S	FOR M740TH
28	BOTTOM CASE MODULE M740S	6-39-M74S3-01S-C	FOR M740TH-C
29	M500G CARD READER RUBBER	6-47-M50GB-010	
30	CPU THERMAL MODULE AL M740T	6-31-M74TS-101-1	
31	FAN MODULE M740S	6-31-M74SS-102-1	
32	CPU COVER MODULE V/D 3.0 M740T	6-42-M74SS-010-P	
33	IMP 20M 2V 220M VICALI SAM C8002-M	6-43-M74SS-010	
34	IMP 20M 2V 220M VICALI SAM C8002-M	6-42-M74SS-010-C	FOR M740TH
34	IMP 20M 2V 220M VICALI SAM C8002-M	6-42-M74SS-010-C	FOR M740TG-C
35	SCREW M2XSL K1 BK/Z NY ICT	6-35-B6120-100	
36	IMP 20M 2V 220M VICALI SAM C8002-M	6-88-M73TS-3900	(OPTION)
36	IMP 20M 2V 220M VICALI SAM C8002-M	6-88-M73TS-3900	(OPTION)
37	SATA I/O SUPER MULTI ASST (OPTION) M740S	6-79-M74TG00-010	(OPTION)
38	PRODUCT LABEL FOR M740TH	6-45-M74TH03-010	FOR M740TH
38	PRODUCT LABEL FOR M740TH	6-45-M74TH03-010	FOR M740TH-C
39	W/D HDD ASS'Y M740S	6-79-M74S00J-010	
40	HDD COVER MODULE M740S	6-42-M74SJ-103	FOR M740TH
40	HDD COVER MODULE M740S	6-42-M74SJ-103-C	FOR M740TH-C
41	IMP 20M 2V 220M VICALI SAM C8002-M	6-40-M74TS-021	
42	IMP 20M 2V 220M VICALI SAM C8002-M	6-40-M74SS-031	
43	MYLAR DIO FRB3 M760S	6-40-M76S0-010	
44	TAPE MYLAR (A) MYLAR M500J	6-40-M55J2-010	
45	MB TOP RUBBER SILICONE M740T	6-47-M74TS-030	
46	IMP 20M 2V 220M VICALI SAM C8002-M	6-47-M76TS-010	
47	RUBBER FOR MOC JACK/IO MOC M66N	6-47-M66NU-010	

Figure A - 3
Bottom

LCD

Figure A - 4
LCD



ITEM	PART NAME	PART NO	REMARK
1	LCD FRONT COVER SCREW HOLE RUBBER W/20S	6-47-M72S1-021	
2	SCREW M2.5XSL KI BK/Z ICT NY	6-35-C6120-4RB	
3	LCD FRONT COVER MODULE M740S	6-39-M74S1-012-2	
4	CCD LINES (PMMA) M740S	6-42-M74S1-010	FOR CCD
4	CCD LINES (FR700) M740S	6-42-M74S1-020	FOR W/O CCD
5	SCREW M2.5XSL KI BK/Z ICT NY	6-35-B6125-5RA	
6	SCREW M2.5XSL KI NI ICT GTY-PATCH	6-35-B1120-3RE	
7	LCD M74 VEGA OPT CLAMM/HINGE/LINE TYPE SSM	6-50-J8255-X00	FOR M74XTG
7	LCD M74 VEGA ICE M74M74B-100 CLAMM TYPE SSM	6-50-J8255-C02	FOR M74XTH
7	LCD M74 VEGA ICE M74M74B-100 CLAMM TYPE SSM	6-50-J8255-Z00	FOR M74XTH
7	LCD M74 VEGA ICE M74M74B-100 CLAMM TYPE SSM	6-50-JC255-B01-A	FOR M74XTH
7	LCD M74 VEGA CHINESE M74113-L05 SSM	6-50-JC255-D07	FOR M74XTG
8	LCD HINGE L (SECC+SK7) M740S	6-33-M74S1-022	
9	LCD BACK COVER MODULE M740S	6-39-M74S1-021	FOR M740TG/TH
9	LCD BACK COVER MODULE M740S-C (OPTION)	6-39-M74S1-021-1C	FOR M746TG-C
9	LCD BACK COVER MODULE M740S-C	6-39-M7481-020-C	FOR M748TG-C/TH
9	LCD BACK COVER MODULE M740S-C (OPTION)	6-39-M7481-B20-C	FOR M748TG-C
10	ANTENNA W/246 PIFA 246 PIFA 246 PIFA	6-23-7M74S-020	
11	IMV CAMERA DISCON FOR DISCONNECT 1.5M W/246 PIFA	6-88-M810C-4910	(OPTION)
11	IMV CAMERA DISCON FOR DISCONNECT 1.5M W/246 PIFA	6-88-M741C-5100	(OPTION)
12	WIRE CABLE SPIN W/8 TO CCD 274.25MM MODULE	6-43-M74S1-012	FOR CCD
13	WIRE CABLE SPIN W/8 TO LCD 274.25MM	6-43-M74S1-012	
14	LCD HINGE R (SECC+SK7) M740S	6-33-M74S1-012	
15	SPK+CABLE 76MM 15W R/P 02806/VAG68-1-7LK	6-23-5M74S-030	
16	ANTENNA W/246 PIFA 450MM W/246 PIFA	6-23-7M74S-010	(OPTION)
17	SPK+CABLE 76MM 15W R/P 02806/VAG68-1-7LK	6-23-5M74S-043	
18	STYLE-MODE L (SECC+SK7) M740S	6-45-M74S1-012-1	FOR M740TG/748TG-C
18	FOR M540G LOGO "SVOA"	6-45-M54G1-020-S	FOR M746TG-C
18	FOR M540G LOGO "SVOA"	6-45-M741S-020-D4	FOR M748TG-C
18	LOGO (DNS+DNS) M748	6-45-M54G1-020-D1	FOR M748TG-C
19	WIRE CABLE FOR W/8 TO INVERTER 246 PIFA 246 PIFA	6-43-M74SR-011	
20	INVERTER W/246 PIFA 246 PIFA 246 PIFA	6-40-M76S1-011	
21	INVERTER W/246 PIFA 246 PIFA 246 PIFA	6-76-M66GR-010	(OPTION)
21	INVERTER W/246 PIFA 246 PIFA 246 PIFA	6-76-M66GR-011	(OPTION)
22	ANTENNA BLUETOOTH 246 PIFA 246 PIFA 246 PIFA	6-23-7M74S-030	(OPTION)

DVD SUPER-MULTI

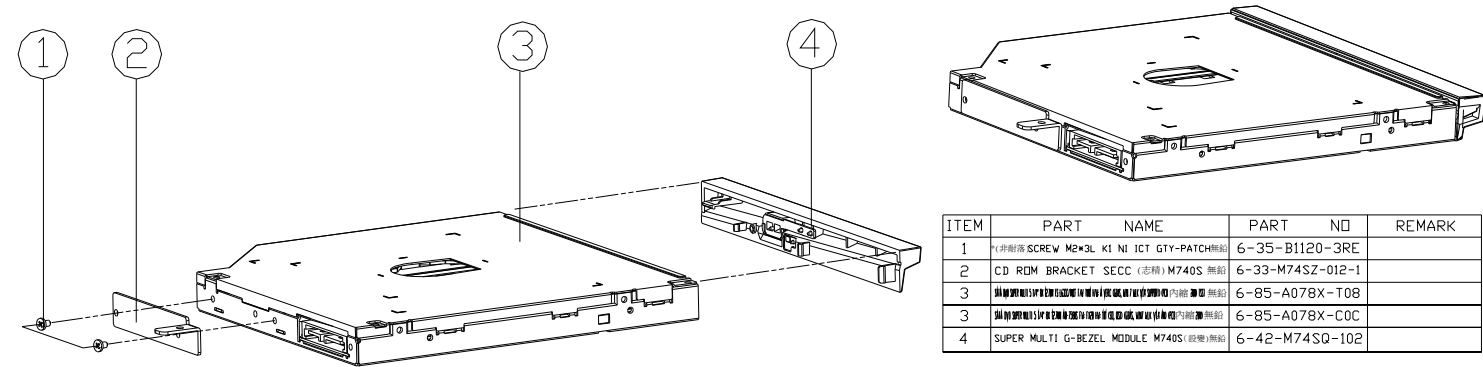


Figure A - 5
DVD SUPER-MULTI

Appendix B: Schematic Diagrams

This appendix has circuit diagrams of the **M740TH/ M748TH** notebook's PCB's. The following table indicates where to find the appropriate schematic diagram.

Diagram - Page	Diagram - Page	Diagram - Page
System Block Diagram - Page B - 2	ICH9M 1/4, SATA - Page B - 16	POWER 1.5VS/1.05VS - Page B - 30
Clock Generator - Page B - 3	ICH9M 2/4, PCI, USB - Page B - 17	POWER 1.8V/0.9V - Page B - 31
Penryn (Socket-P) CPU 1/2 - Page B - 4	ICH9M 3/4 - Page B - 18	POWER GPU/NVVD - Page B - 32
Penryn (Socket-P) CPU 2/2 - Page B - 5	ICH9M 4/4 - Page B - 19	AC_IN, CHARGE - Page B - 33
CANTIGA 1/7, Host - Page B - 6	NEW CARD, MINI PCIE - Page B - 20	VCORE - Page B - 34
CANTIGA 2/7, Graphics - Page B - 7	3G, POWERGOOD - Page B - 21	ODD BOARD FOR M760T - Page B - 35
CANTIGA 3/7 - Page B - 8	USB, FAN, TP, FP, MULTI CON - Page B - 22	CLICK FINGER BOARD FOR M77 - Page B - 36
CANTIGA 4/7 - Page B - 9	CARD READER(JMB261) - Page B - 23	MULTI FUNCTION BOARD - Page B - 37
CANTIGA 5/7 - Page B - 10	SATA ODD, LED, HOTKEY, LID SW - Page B - 24	AUDIO BOARD - Page B - 38
CANTIGA 6/7 - Page B - 11	LAN(JMB261) - Page B - 25	POWER SWITCH BOARD FOR M76 - Page B - 39
CANTIGA 7/7 - Page B - 12	AUDIO CODEC ALC272 - Page B - 26	FINGER BOARD FOR M74 - Page B - 41
DDRII SO-DIMM - 0 - Page B - 13	KPC-ITE IT8502E - Page B - 27	POWER SWITCH BOARD FOR M76 - Page B - 42
DDRII SO-DIMM - 1 - Page B - 14	5VS, 3VS, 3.3VM, 1.05VS, V1N1 - Page B - 28	EXTERNAL ODD BOARD FOR W76 - Page B - 43
Panel, Inverter, CRT - Page B - 15	POWER 3.3V/5V - Page B - 29	

Table B - 1
Schematic
Diagrams

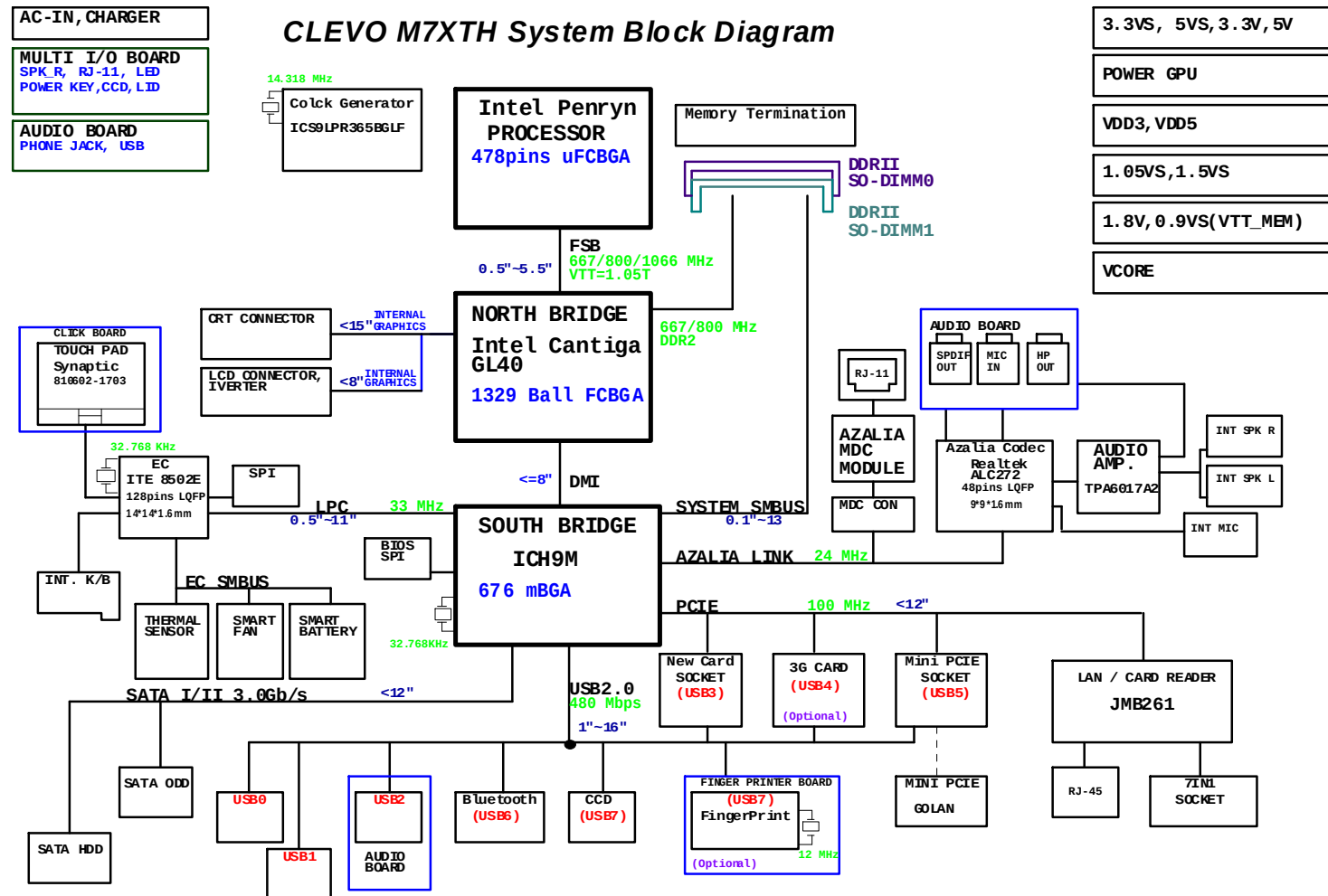


Version Note

The schematic diagrams in this chapter are based upon version 6-7P-M74H6-001. If your mainboard (or other boards) are a later version, please check with the Service Center for updated diagrams (if required).

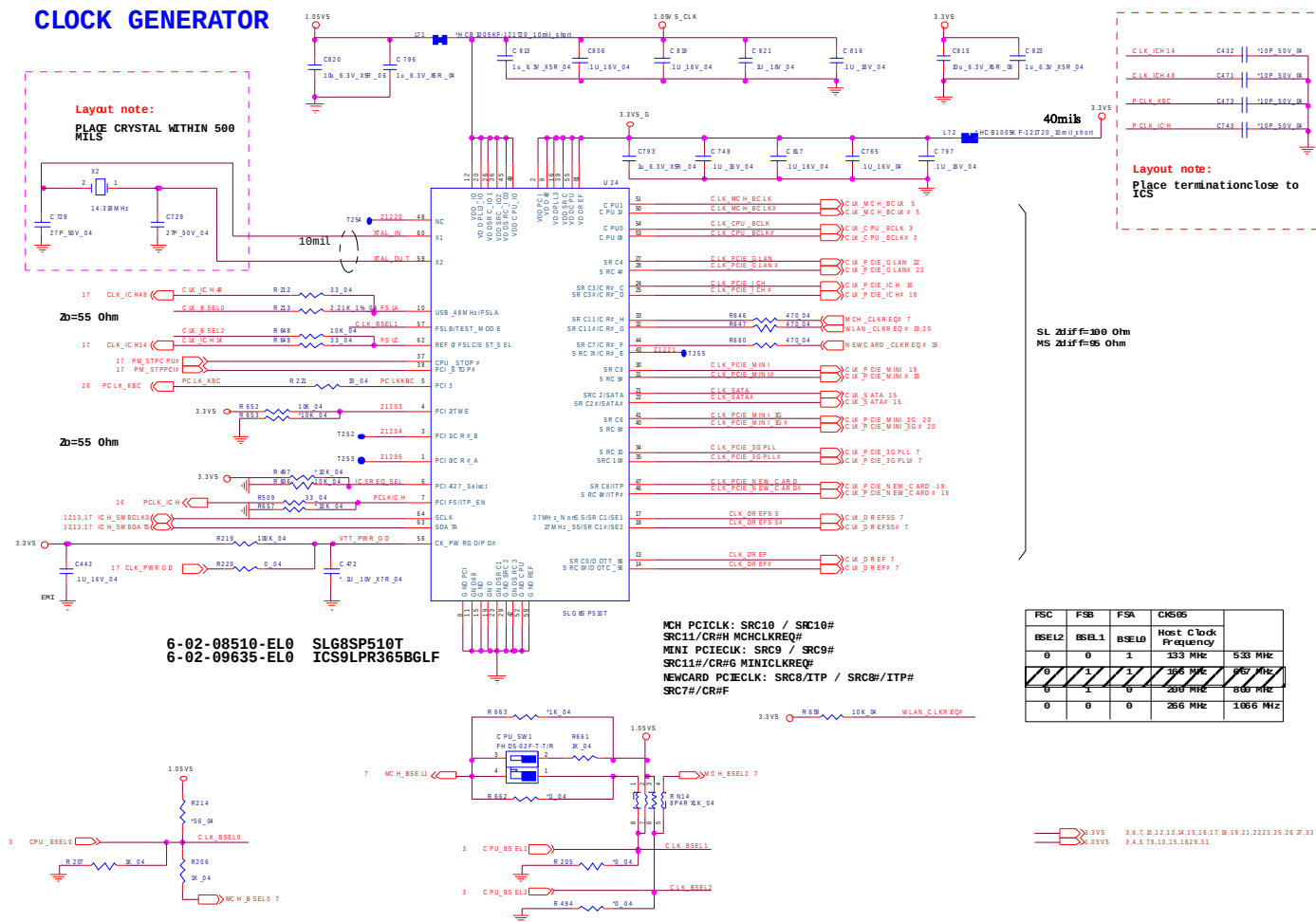
System Block Diagram

Sheet 1 of 42
System Block
Diagram



Clock Generator B - 3

Clock Generator



Sheet 2 of 42
Clock Generator

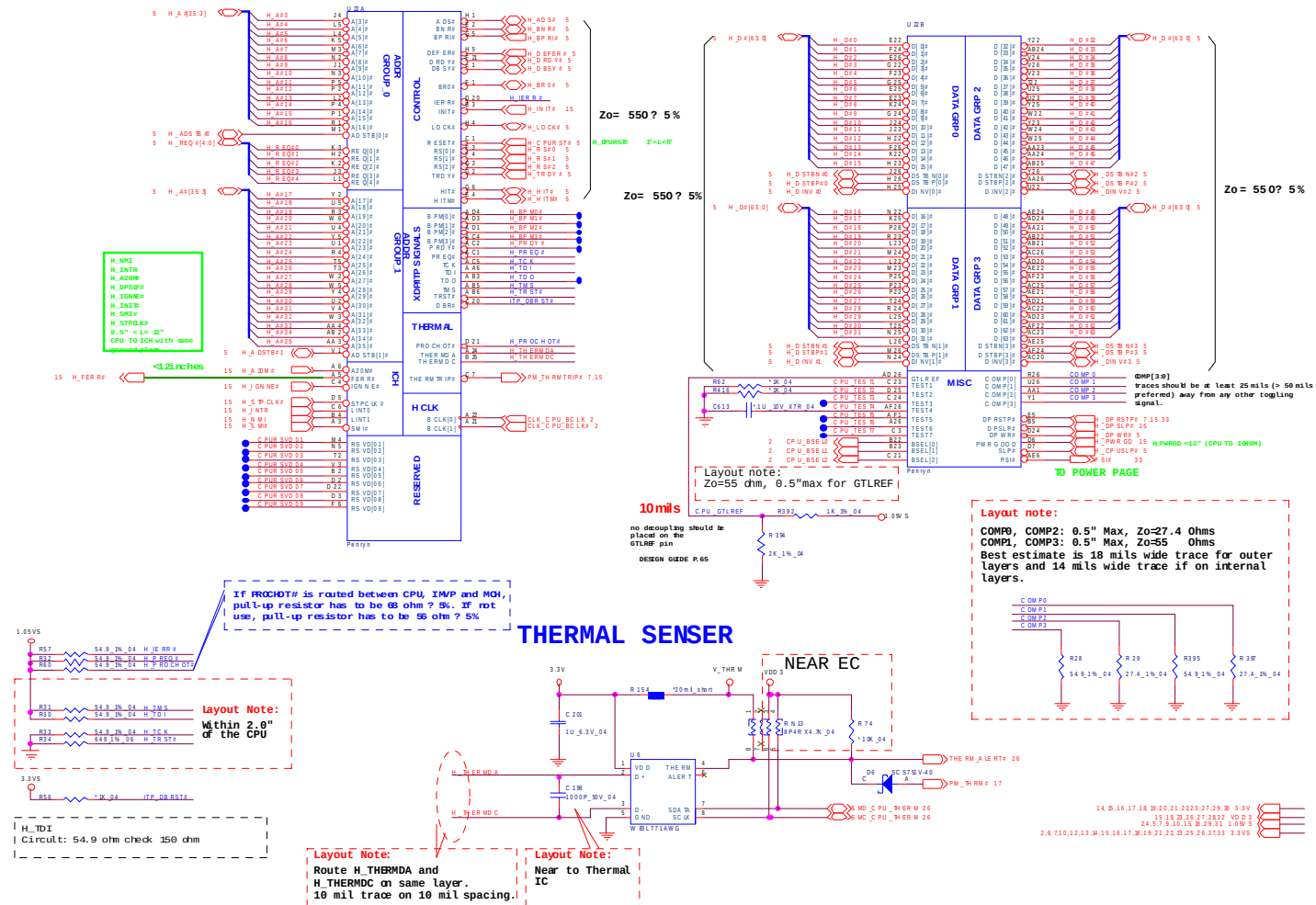
B.Schematic Diagrams

FSC	FSB	FSA	CRS05	
BSEL2	BSEL1	BSEL0	Host Clock Frequency	
0	0	1	133 MHz	533 MHz
0	1	1	166 MHz	667 MHz
0	1	0	200 MHz	800 MHz
0	0	0	266 MHz	1066 MHz

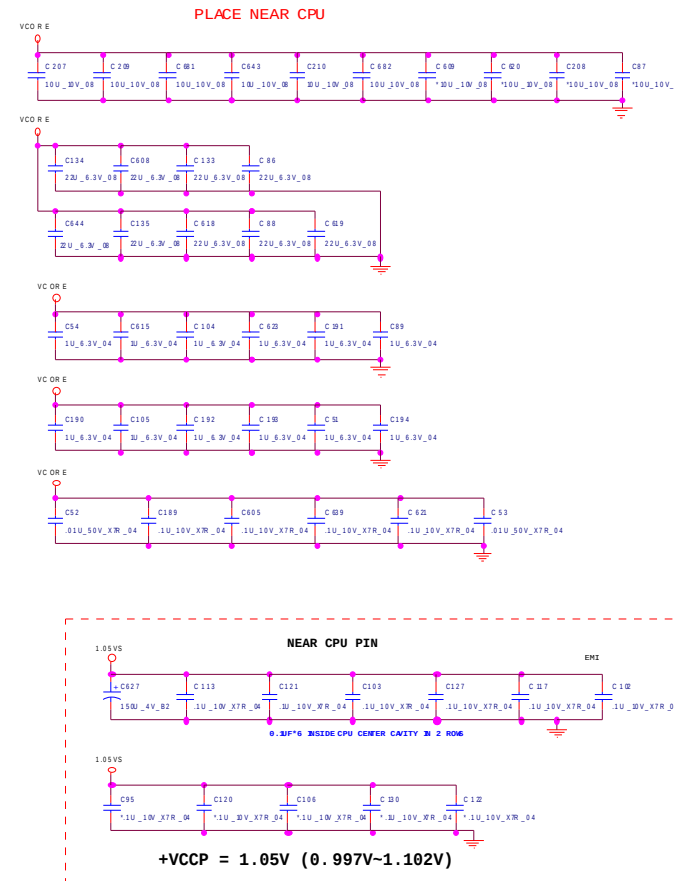
	3.3VS	3,6,7,10,12,13,14,15,16,17,18,19,21,22,23,25,26,27,31
	1.05VS	3,4,5,7,9,10,15,18,29,31

Penryn (Socket-P) CPU 1/2

Sheet 3 of 42
Penryn (Socket-P)
CPU 1/2



B.Schematic Diagrams

[illegible]

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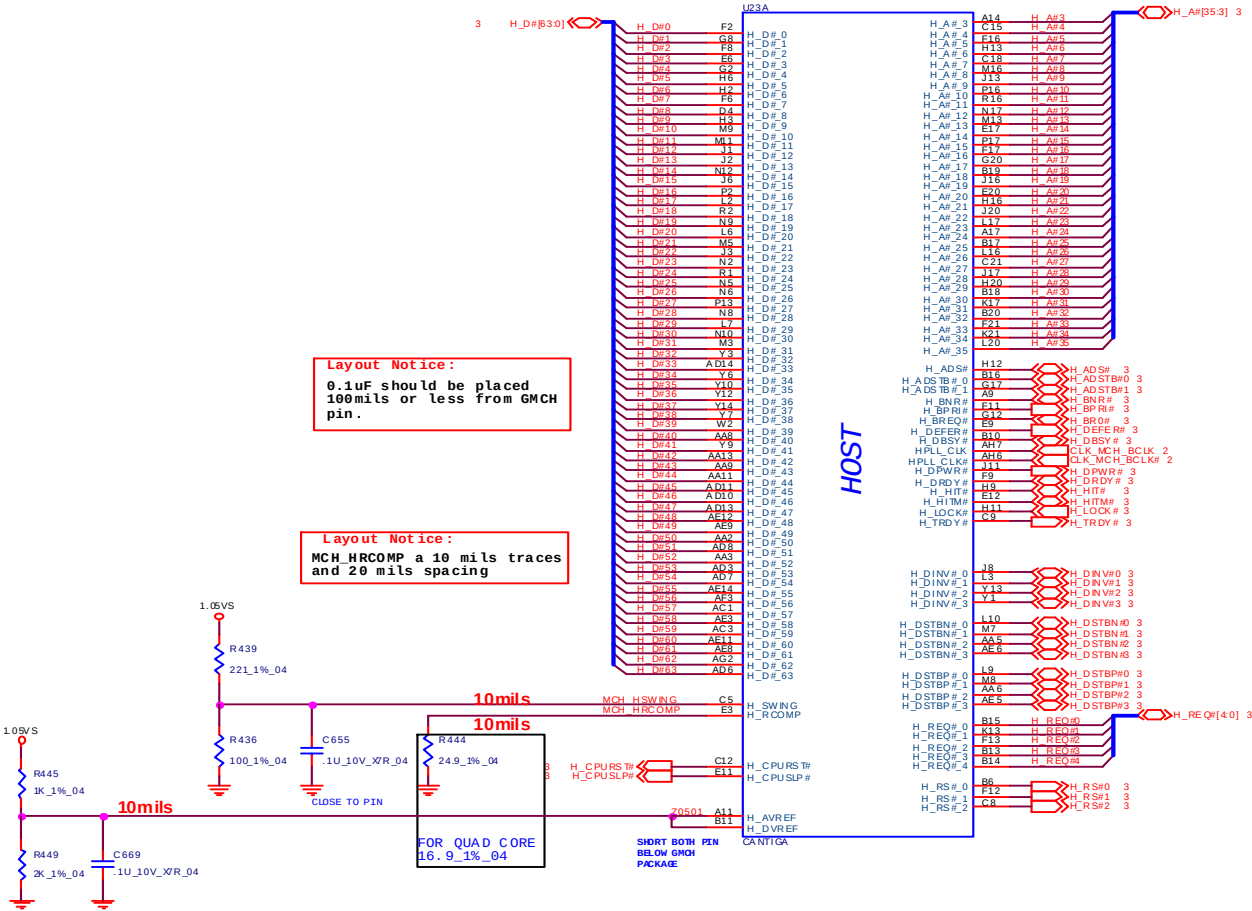
10,15,16,18,19,20,29 1.5VS
2,3,5,7,9,10,15,18,29,31 1.05VS
33 VCORE

```

Schematic Diagrams

CANTIGA 1/7, Host

Sheet 5 of 42
CANTIGA 1/7, Host



2,3,4,7,9,10,15,18,29,31 1.05V

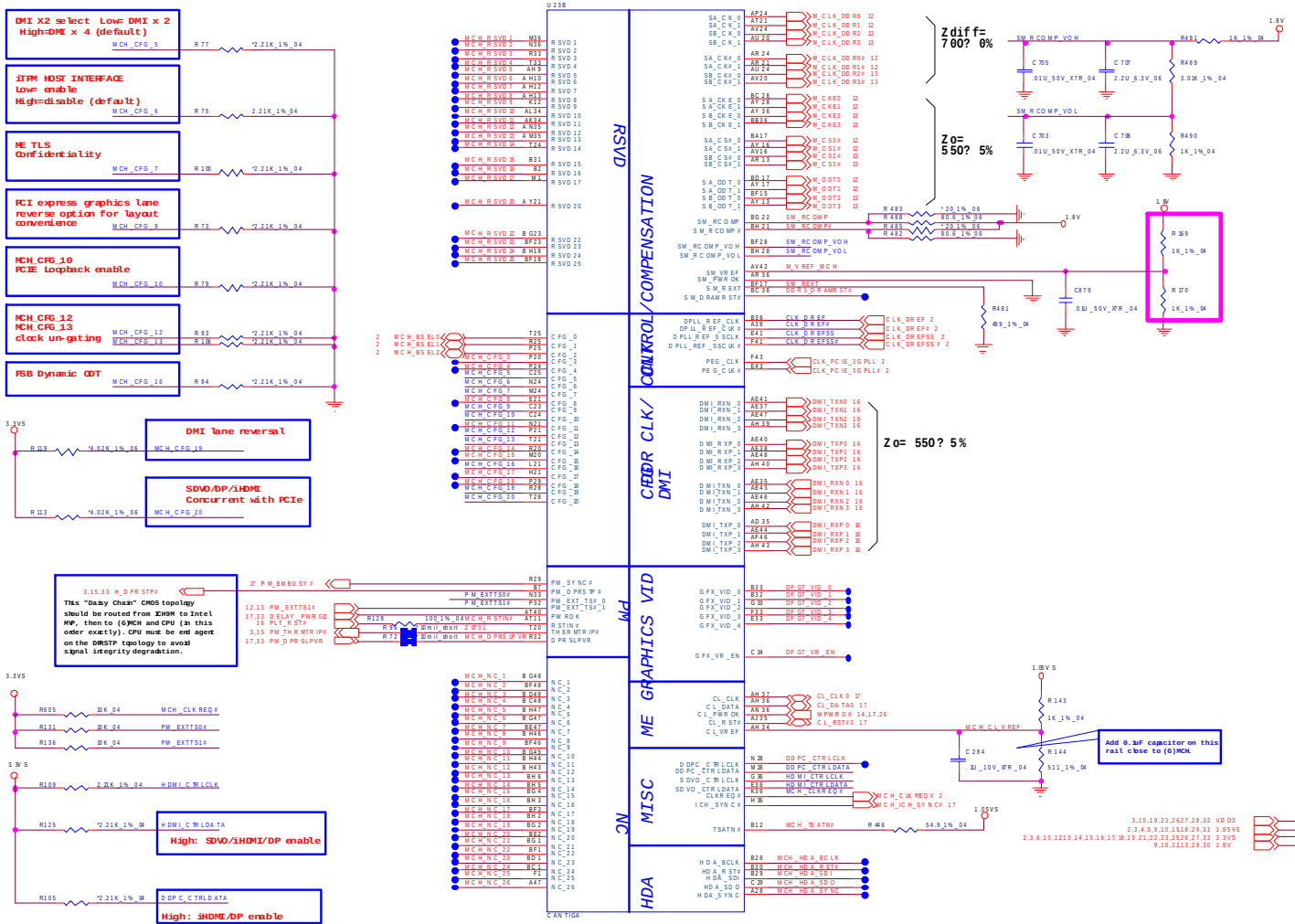
Sheet 6 of 42
CANTIGA 2/7,
Graphics



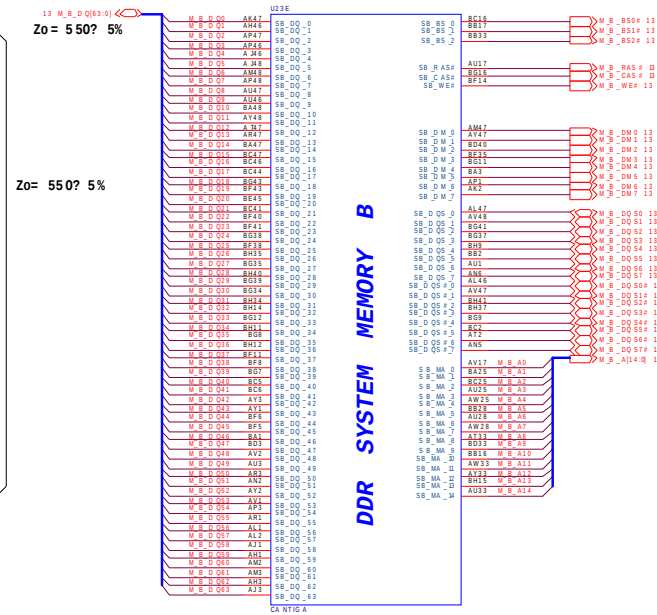
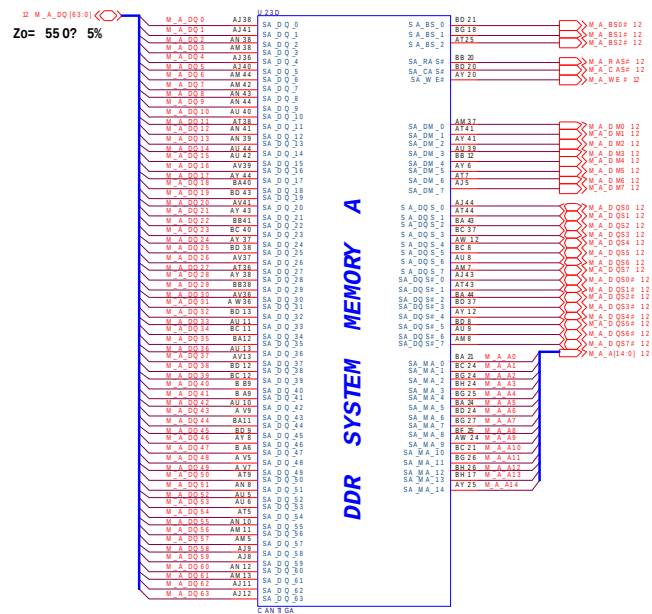
Schematic Diagrams

CANTIGA 3/7

Sheet 7 of 42
CANTIGA 3/7



CANTIGA 4/7

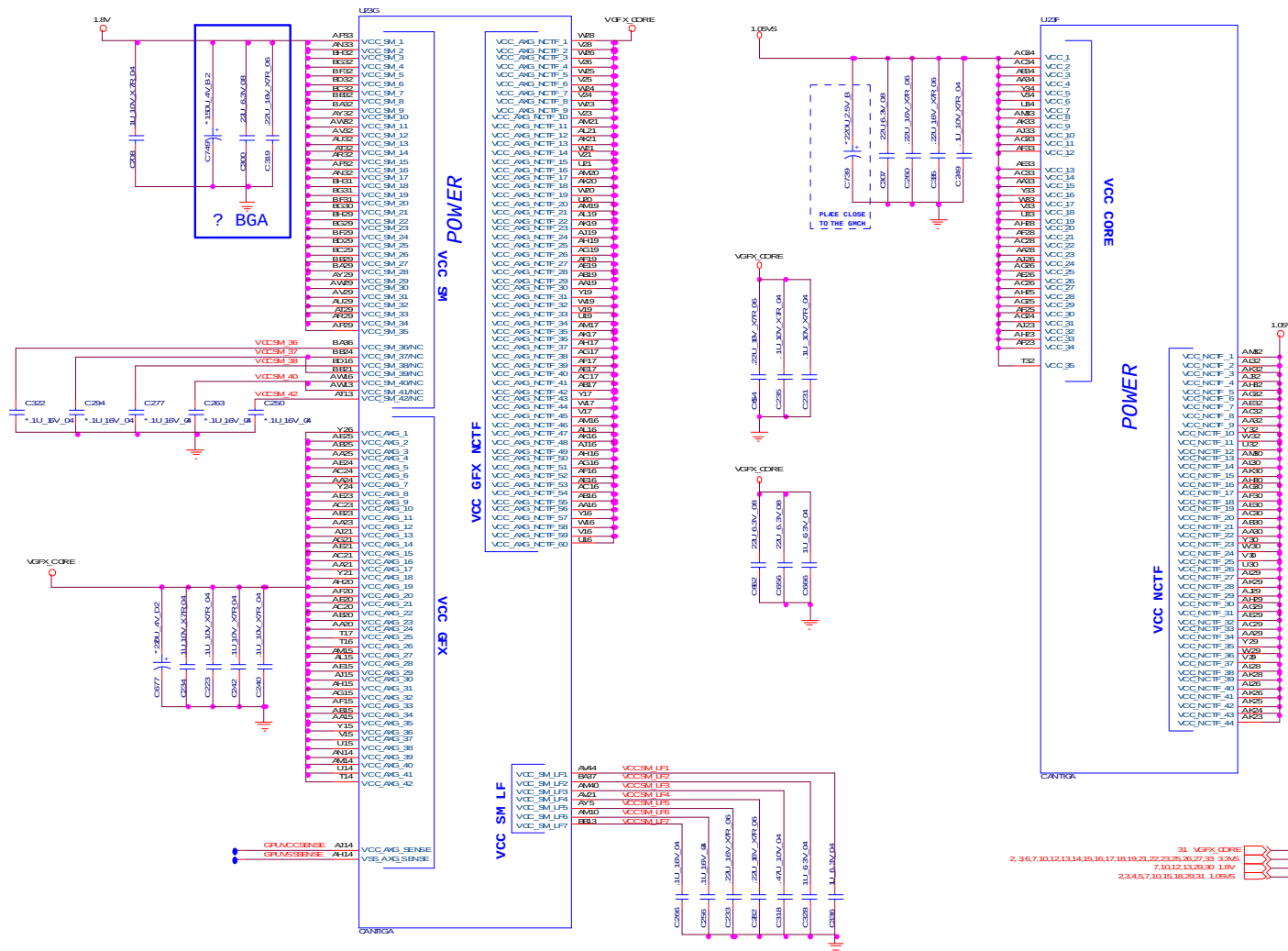


Zo= 550? 5%

Sheet 8 of 42
CANTIGA 4/7

CANTIGA 5/7

Sheet 9 of 42
CANTIGA 5/7

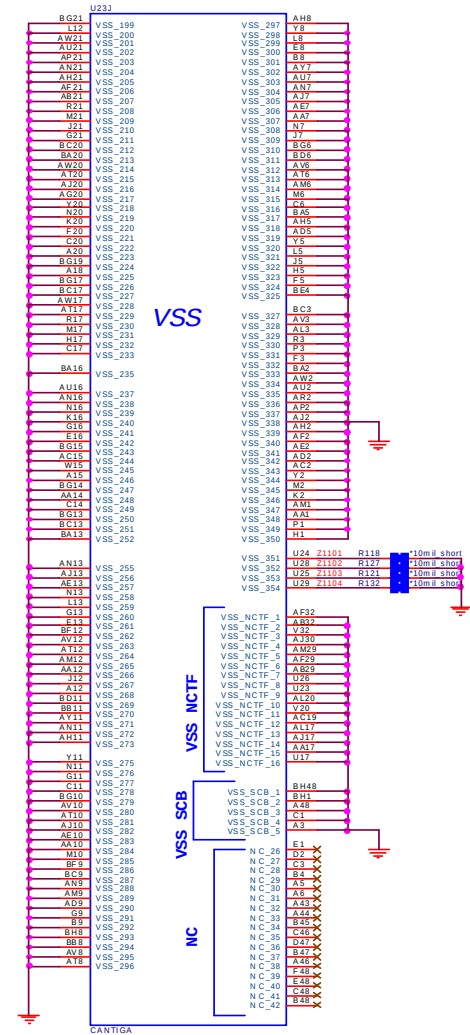
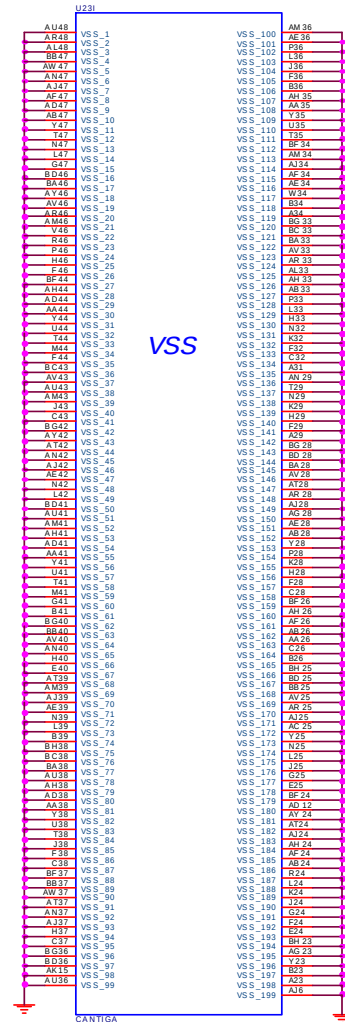


CANTIGA 6/7 B - 11

B. Schematic Diagrams

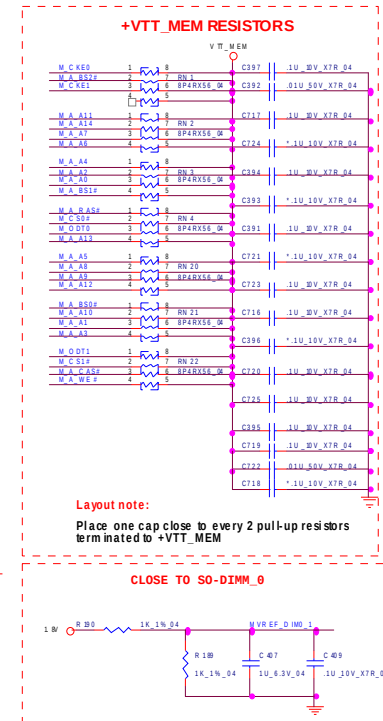


CANTIGA 7/7

Sheet 11 of 42
CANTIGA 7/7

B.Schematic Diagrams

SO-DIMM ①

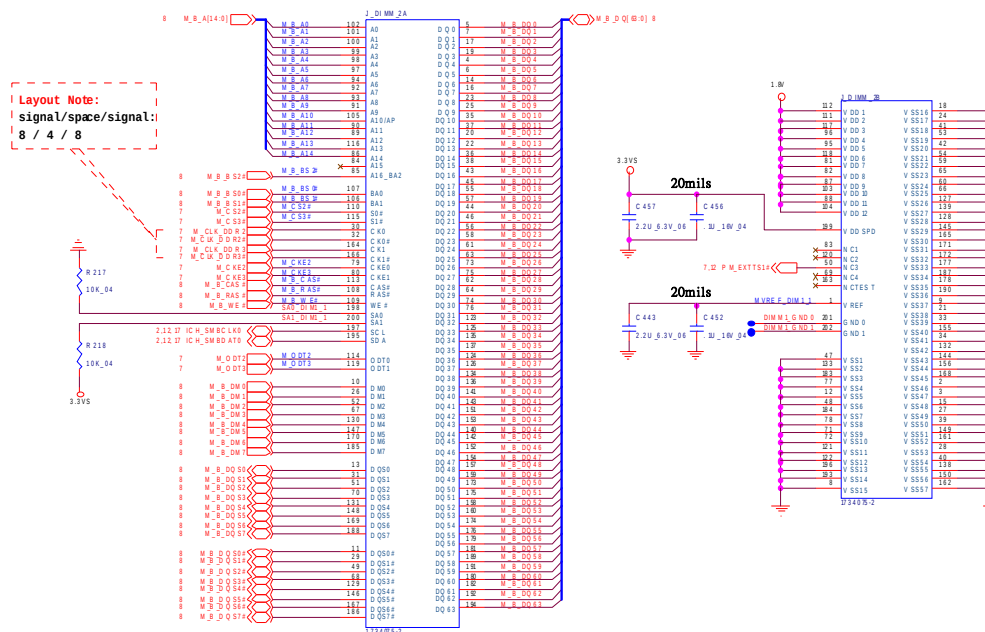


DDRII SO-DIMM - 0 B - 13

DDRII SO-DIMM - 1

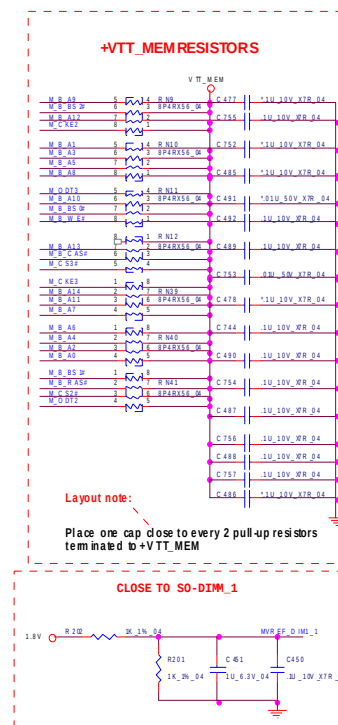
Sheet 13 of 42
DDRII SO-DIMM - 1

SO-DIMM 1



3.3VS

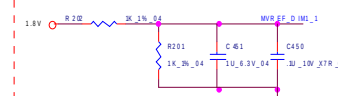
2



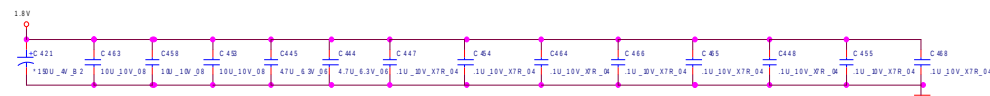
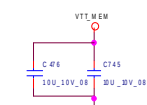
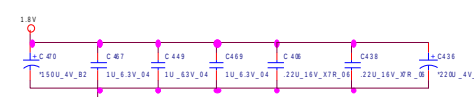
Layout note:

Place one cap close to every 2 pull-up resistors terminated to +VTT MEM

CLOSE TO SO-DIMM_1

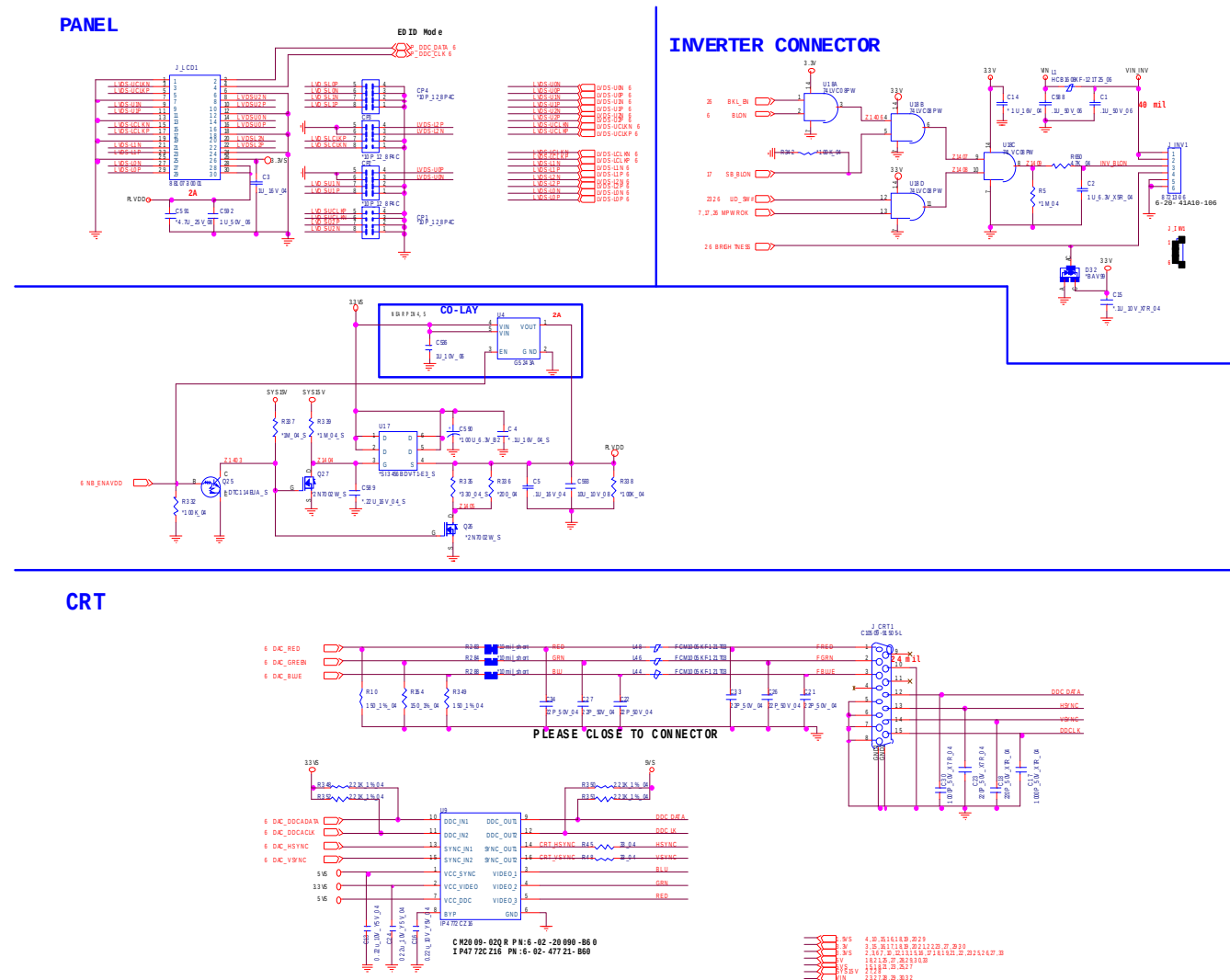


Layout note:
SO-DIMM_1 is placed farther from the GMCH than SO-DIMM_0



2,3,6,7,20,12,14,15,26,17,18,19,21,22,23,25,26,27,33 33VS
7,9,20,12,29,30 18V
12,30 VTT_MEM

Panel, Inverter, CRT

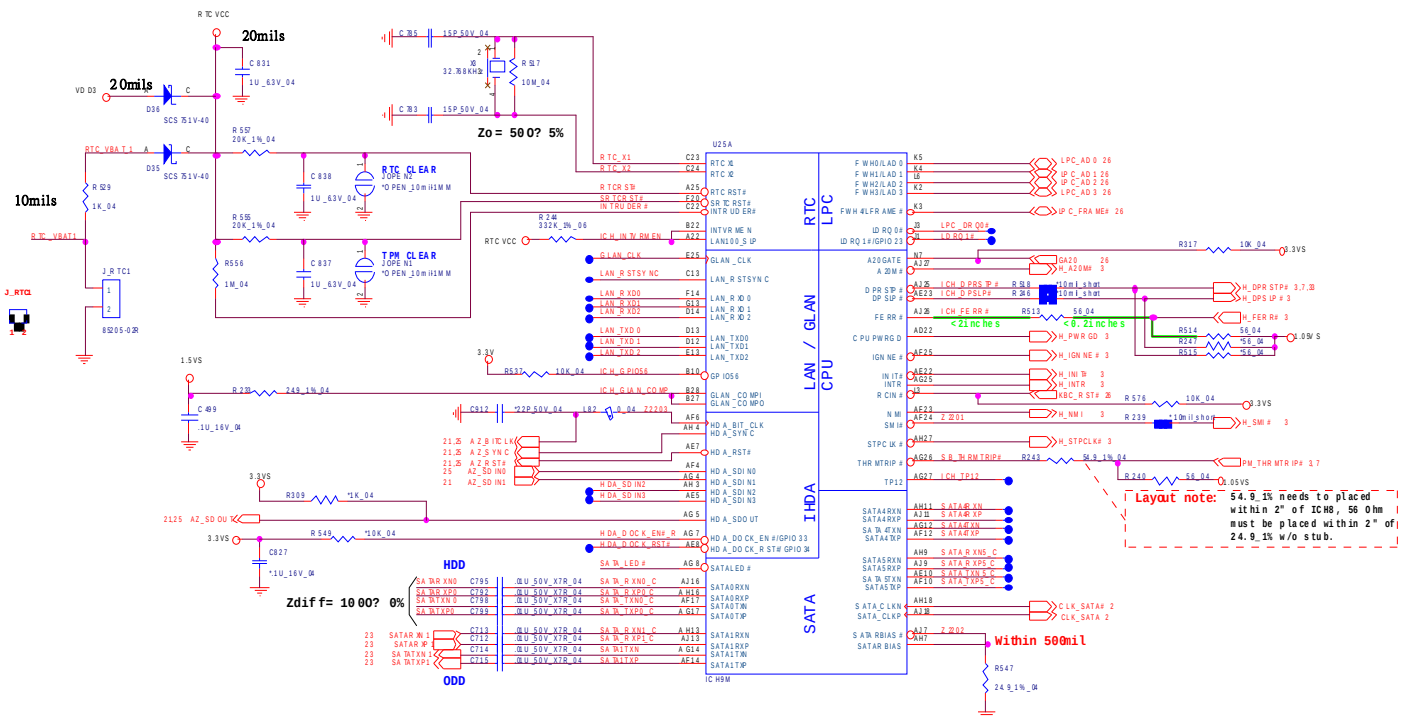


Sheet 14 of 42
Panel, Inverter,
CRT

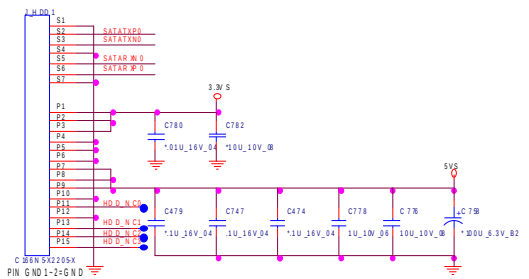
Schematic Diagrams

ICH9M 1/4, SATA

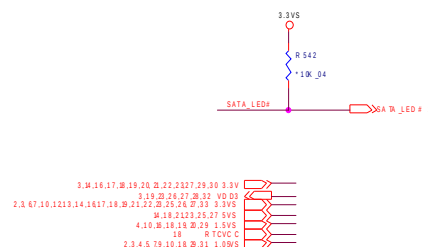
Sheet 15 of 42
ICH9M 1/4, SATA



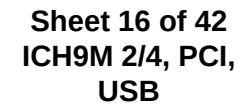
SATA HDD



SATA HDD & ODD LED



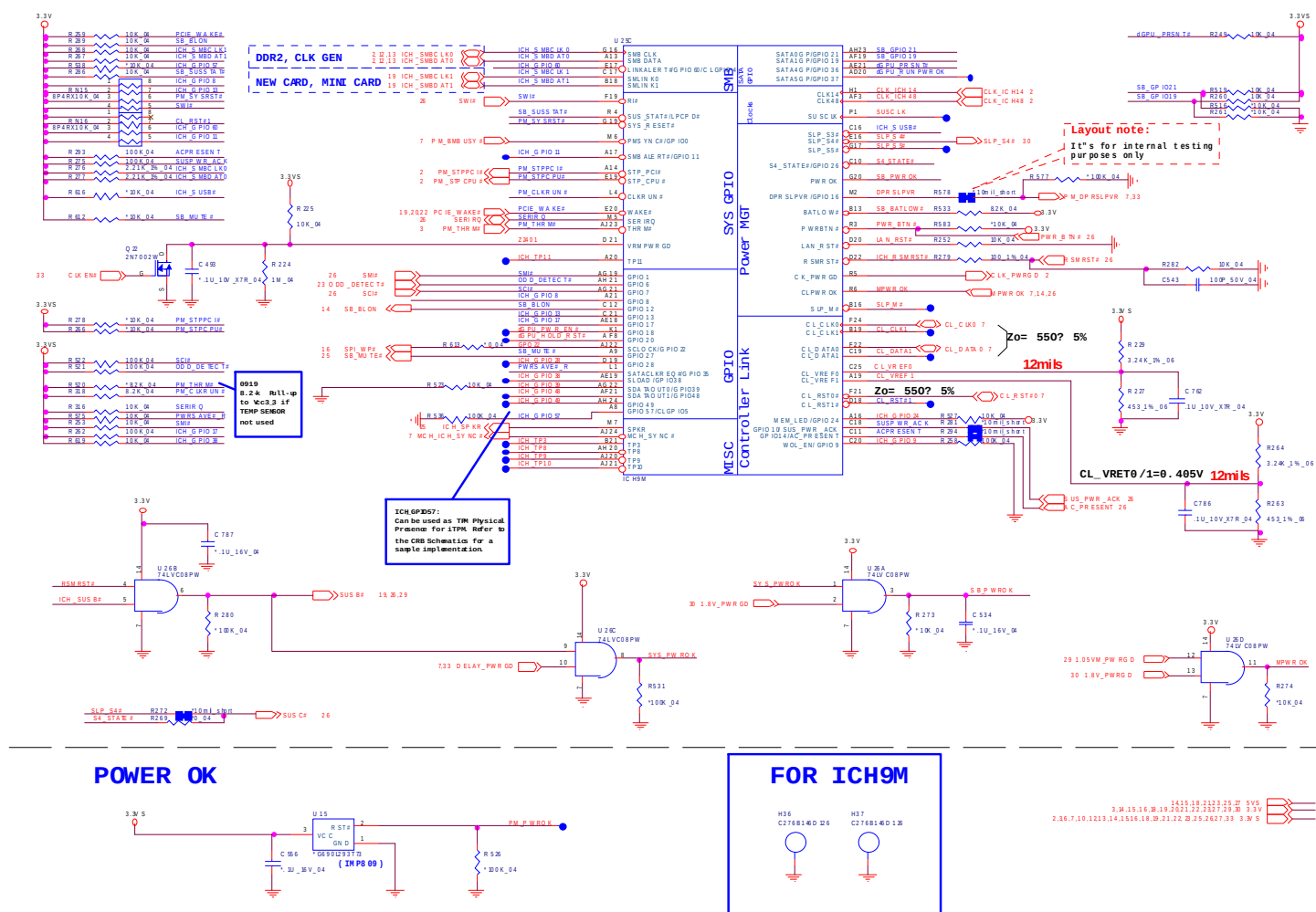
M 2/4, PCI, USB B - 17



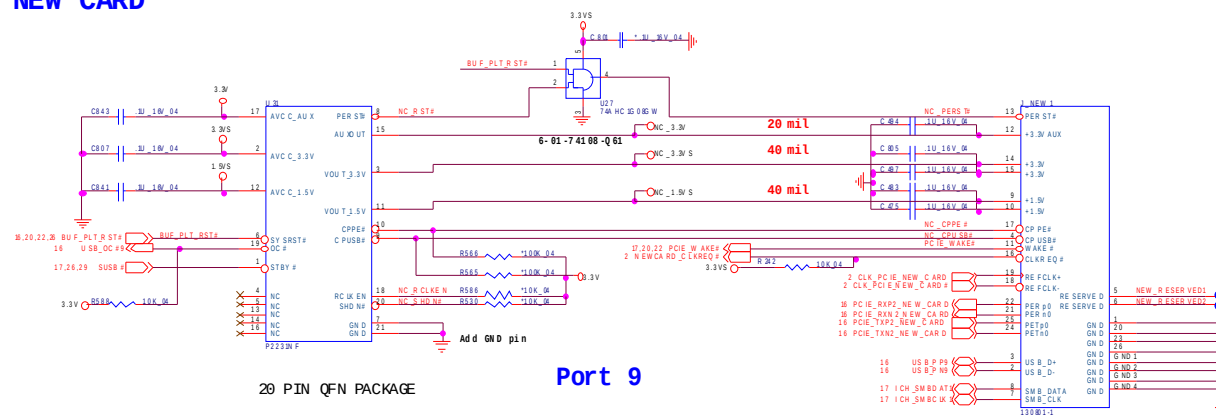
ICH9M 3/4

B.Schematic Diagrams

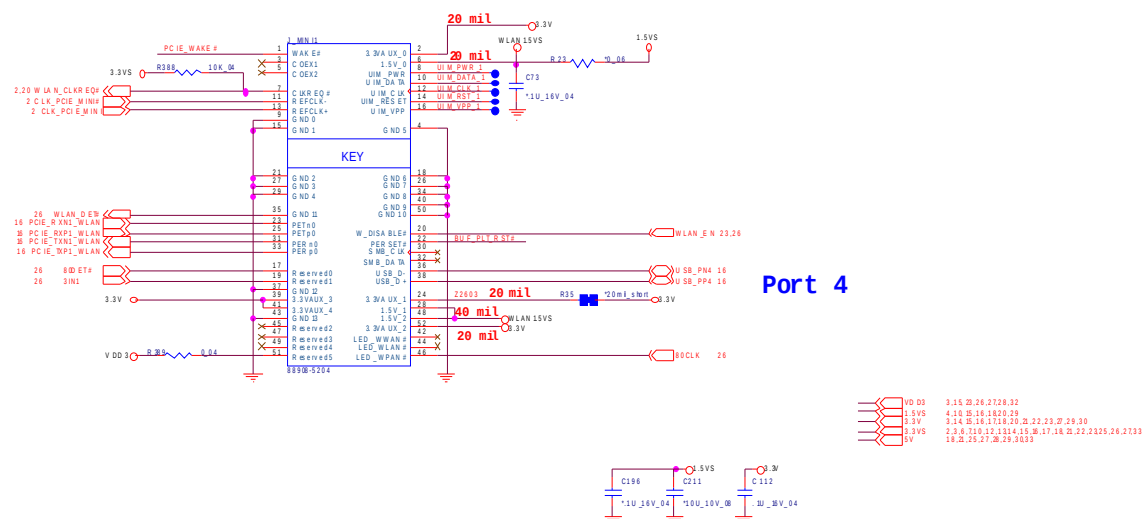
Sheet 17 of 42
ICH9M 3/4



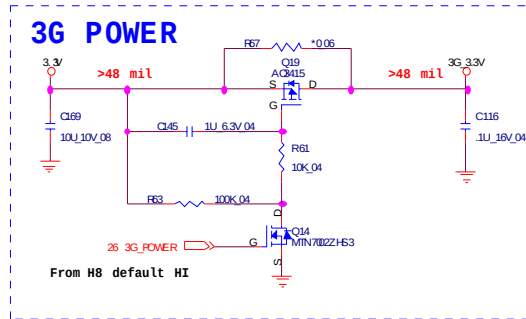
NEW CARD



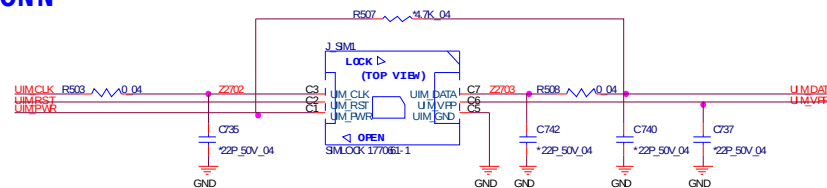
MINI CARD



3G



SIM CONN



Layout note:

1. SIM? Signal Trace(10mil)
2. All signal trace reference GND
3. SIM hold body around add GND
4. SIM CONN NEAR MINI CARD CONN

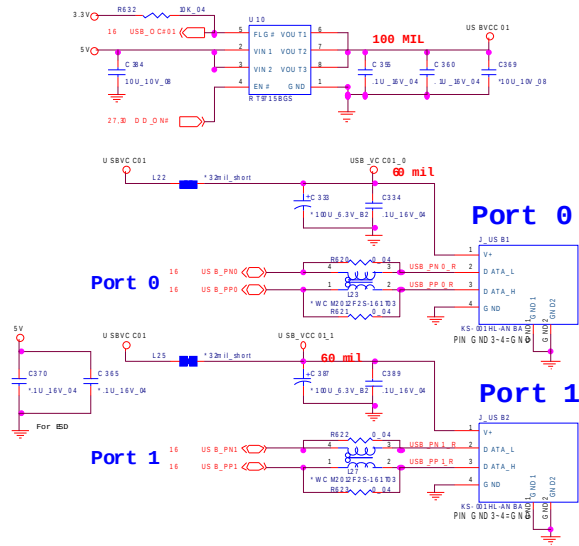
	15V	4,10,15, 16, 18,19,29
	3.3V	3,14,15, 16, 17,18,19,21,22,23,27,29,30
	3.3V	2,3, 6,7,10,12,13,14,15,16,17,18,19,21,22,23, 25,26,27,33
	5V	14,15,18,21, 28, 25,27

Schematic Diagrams

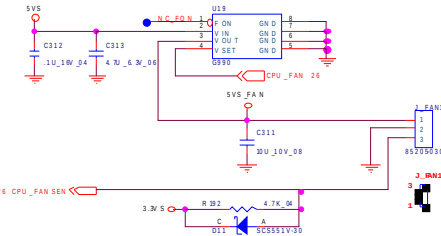
USB, FAN, TP, FP, MULTI CON

Sheet 21 of 42
USB, FAN, TP, FP,
MULTI CON

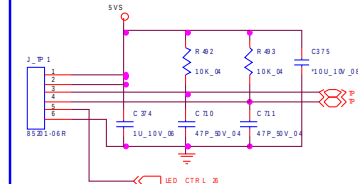
USB PORT*2



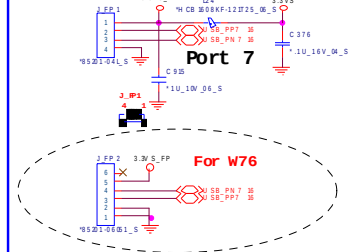
FAN CONTROL



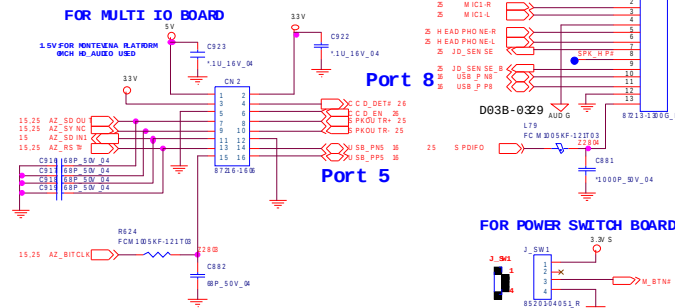
CLICK CONN FOR M760T



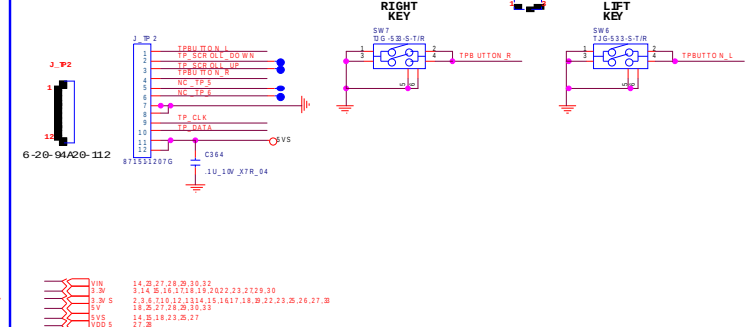
FP CONN



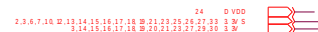
MULTI I/O CONN



CLICK CONN FOR M740T

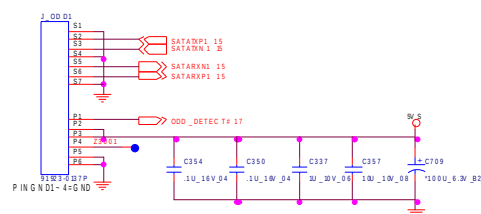


JMC251/JMC261



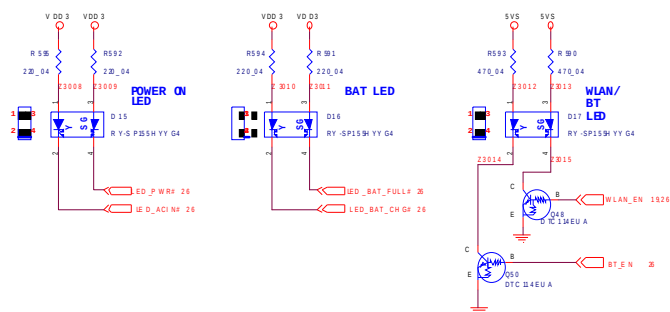
Card Reader Connector

SATA ODD



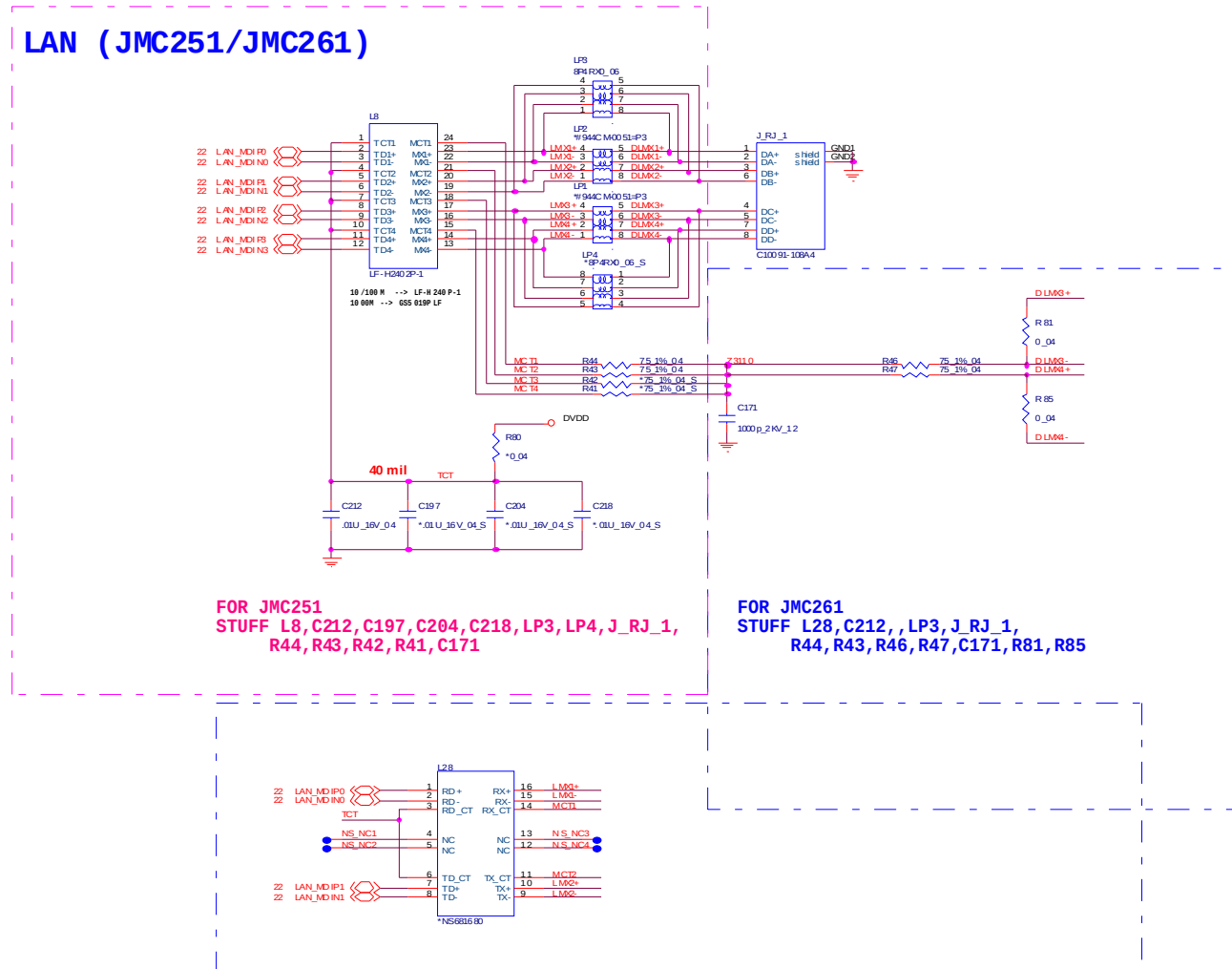
The image contains three circuit diagrams, each showing a different LED connection:

- SATA_LED1:** A 3.3V supply is connected to a resistor R325 (220_04) and a diode D20 (R15-SP1T0204). The other end of the diode is connected to a resistor R326 (220_04) and an LED labeled SATA_LED1 15.
- HDD/CD-ROM LED:** A 3.3V supply is connected to a resistor R325 (220_04) and a diode D20 (R15-SP1T0204). The other end of the diode is connected to a resistor R326 (220_04) and an LED labeled LED_CD_ROM 16.
- SCROLL LOCK LED:** A 3.3V supply is connected to a resistor R328 (220_04) and a diode D22 (R15-SP1T0204). The other end of the diode is connected to a resistor R328 (220_04) and an LED labeled LED_SCROLL 16.

[illegible]

VD D3	3,15,19,26,27,28,32
VIN	14,27,28,29,30,32
1.5VS	4,10,15,16,18,19,20,29
3.3V	3,14,15,16,17,18,19,20,21,22,27,29,30
3.3VS	2,3,6,7,10,12,13,14,15,16,17,18,19,21,22,25,26,27,33
5V	18,21,25,27,28,29,30,33
5VS	14,15,18,21,25,27
VD D5	27,28

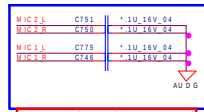
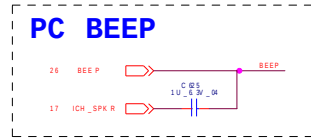
LAN(JMB261)



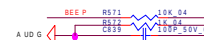
Sheet 24 of 42
LAN(JMB261)

AUDIO CODEC ALC272

CODEC (ALC272-GR)



Layout Note:
Very close to Audio Codec



Layout Note:
Codec pin 1 ~ pin 11 and pin 44 ~ pin 48 are Digital signals.
The others are Analog signals.

PIN 13, PIN34 JD SENSE MUST AVOID NOISE

M776CU SPEAKER 4ohm/2W, use 33K
W766CU SPEAKER 8ohm/1.5W, use 33K
W766C use 47K

Low mute!

17 SB_MUTE#

18 KBC_MUTE#

19 KBC_MUTE#

20 KBC_MUTE#

21 KBC_MUTE#

22 KBC_MUTE#

23 KBC_MUTE#

24 KBC_MUTE#

25 KBC_MUTE#

26 KBC_MUTE#

27 KBC_MUTE#

28 KBC_MUTE#

29 KBC_MUTE#

30 KBC_MUTE#

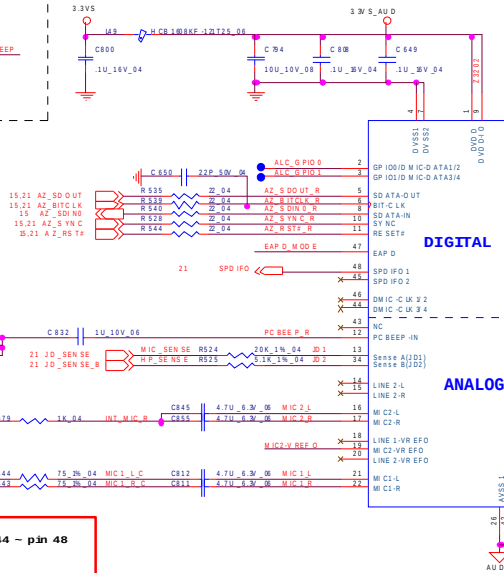
31 KBC_MUTE#

32 KBC_MUTE#

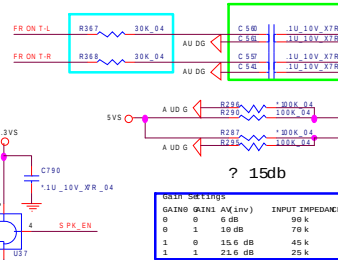
33 KBC_MUTE#

34 KBC_MUTE#

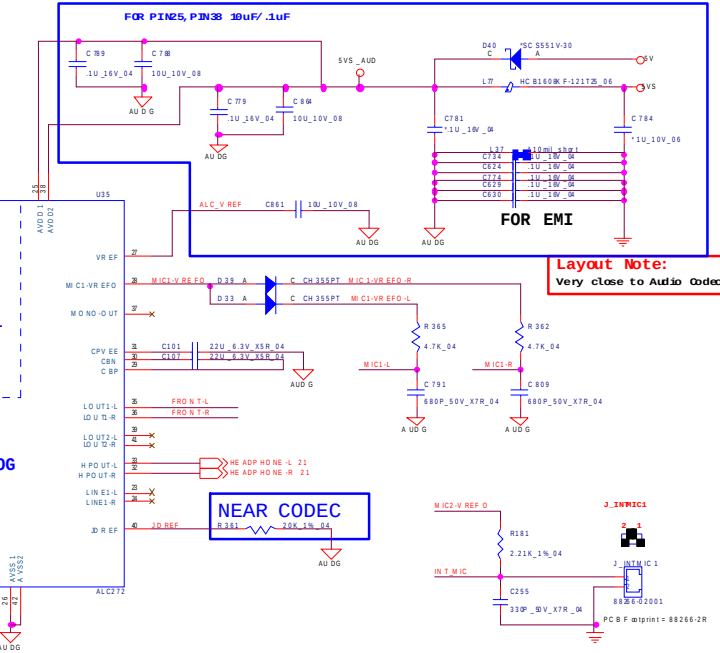
35 KBC_MUTE#



AMP (TPA6017)

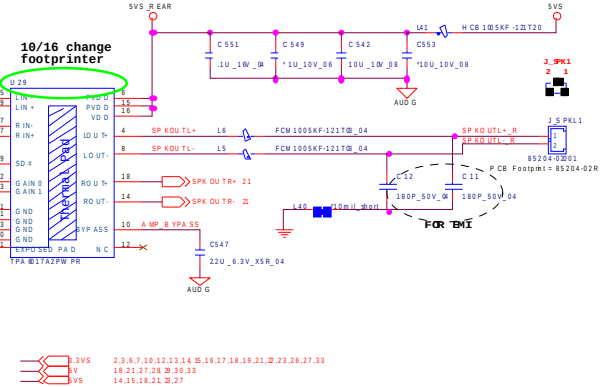


GAIN	INPUT IMPEDANCE
0	90k
1	70k
2	45k
3	25k



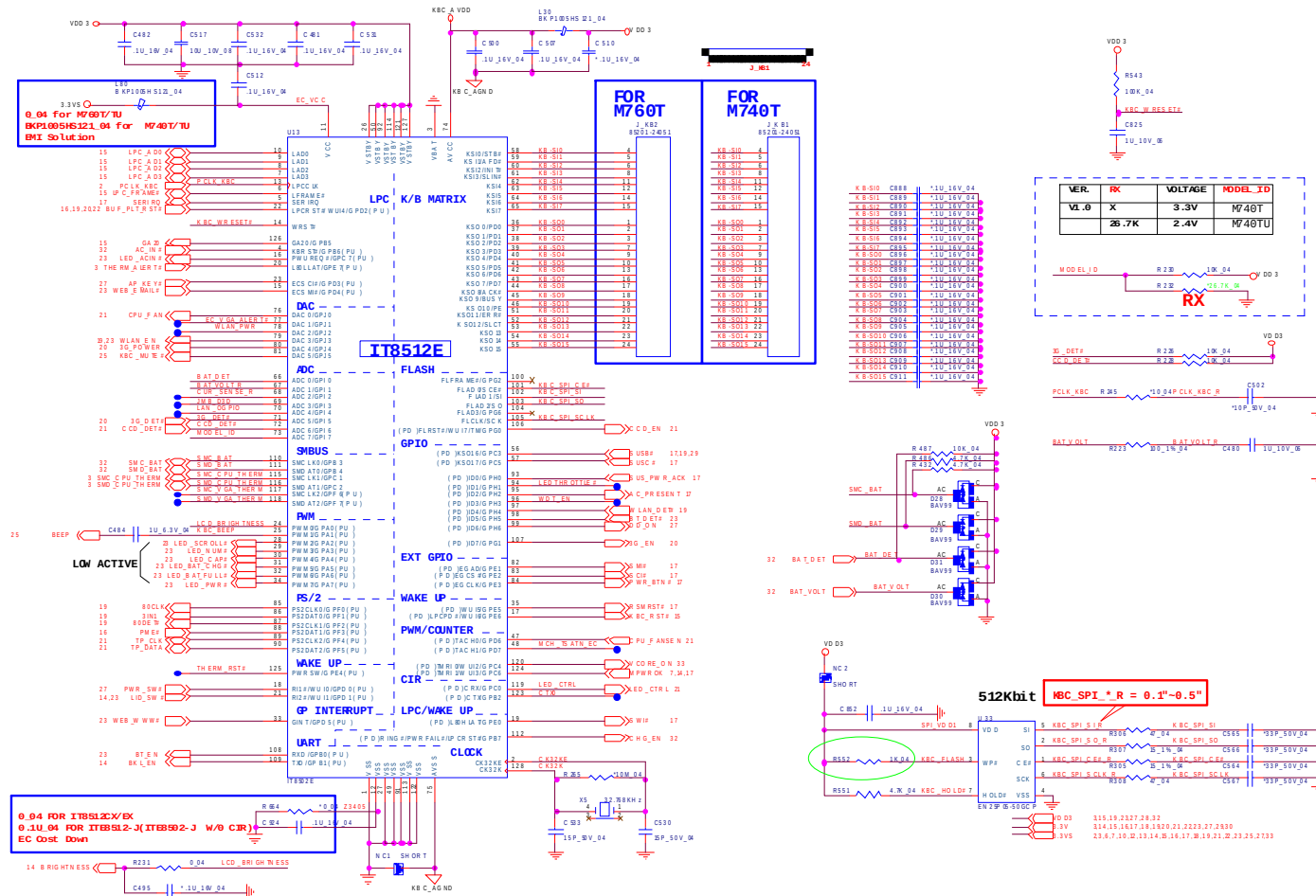
Layout Note:
Very close to Audio Codec

NEAR CODEC



3V3 2,3,6,7,10,12,13,14,15,16,17,18,19,21,22,23,26,27,33
1.8V 18,21,27,28,29,30,31
1.2V 14,15,18,21,29,27

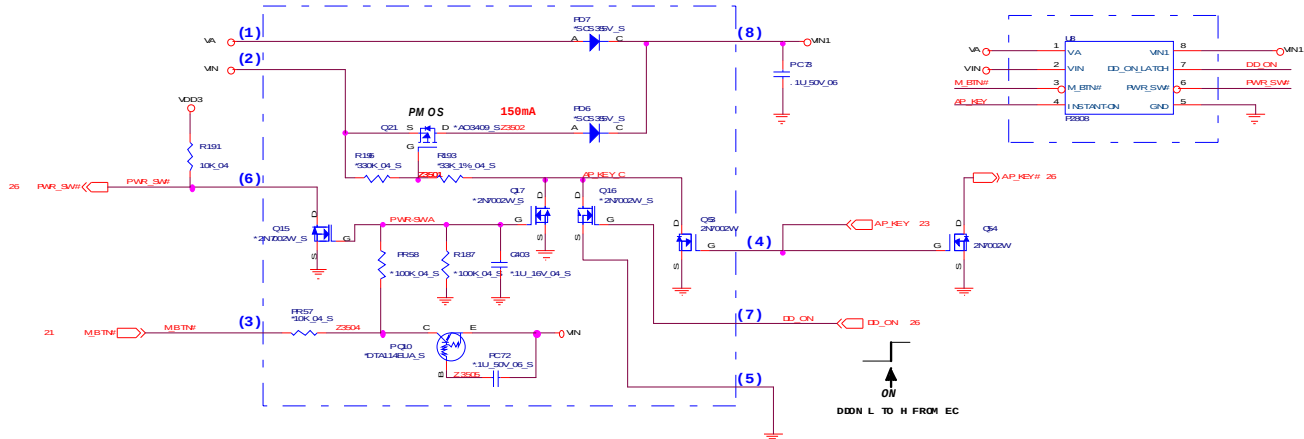
KPC-ITE IT8502E

Sheet 26 of 42
KPC-ITE IT8502E

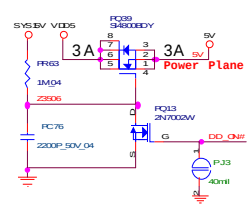
Schematic Diagrams

5VS, 3VS, 3.3VM, 1.05VS, V1N1

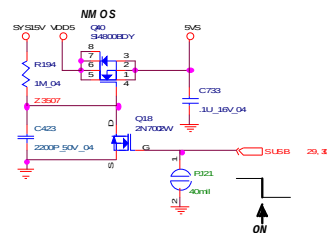
Sheet 27 of 42
5VS, 3VS, 3.3VM,
1.05VS, V1N1



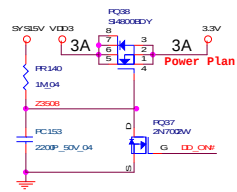
5V



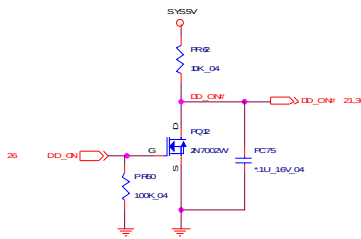
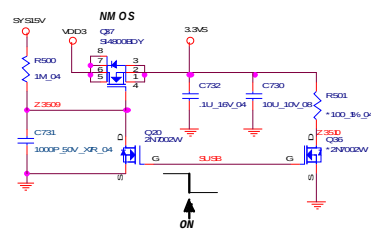
5VS



3.3V

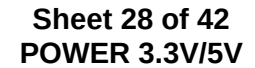


3.3VS



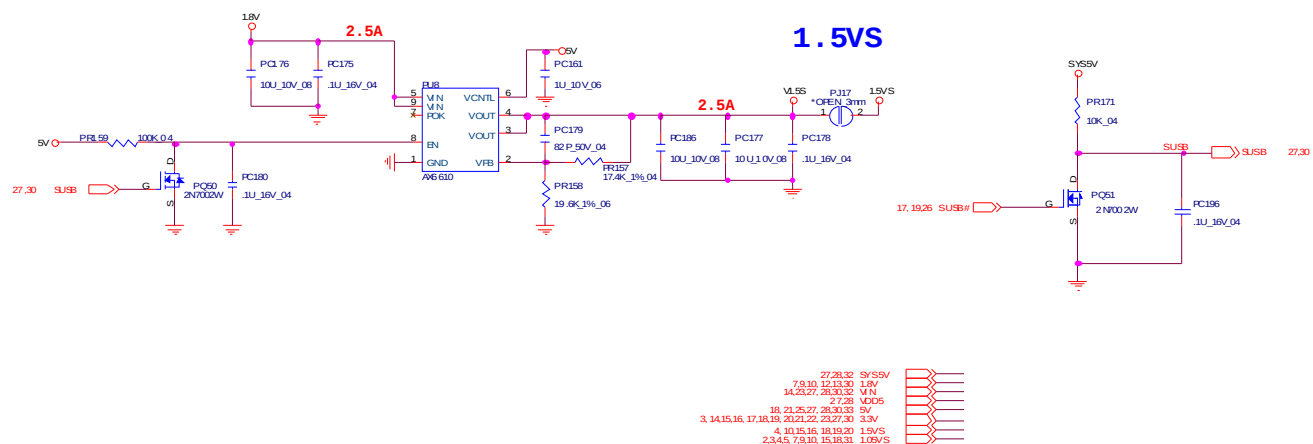
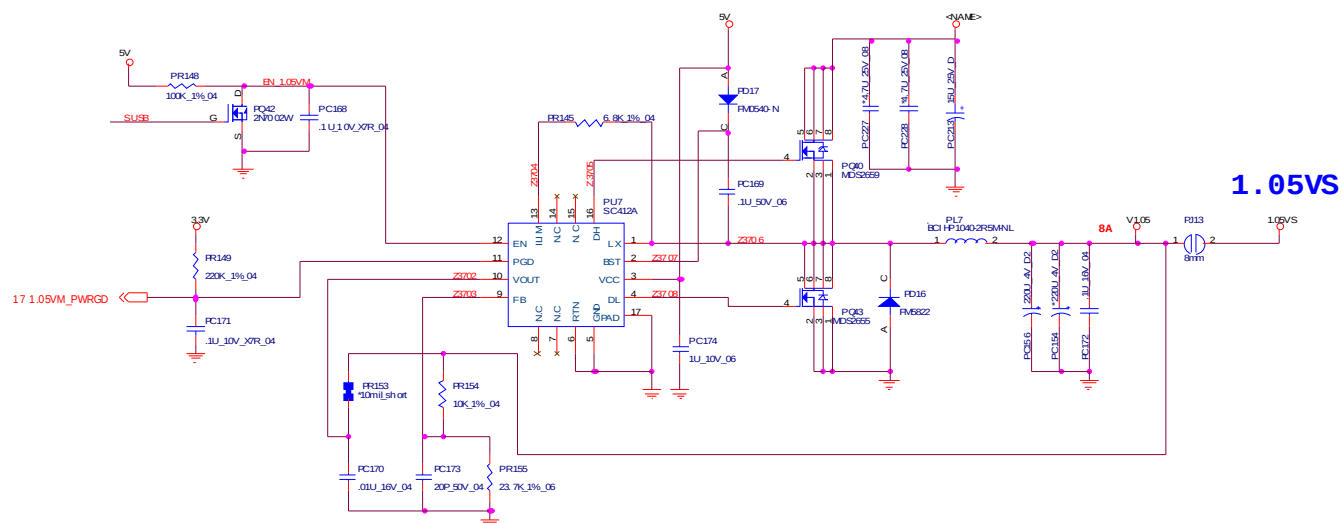
1.05VS	2,3,4,5,7,9,10,15,16,20,31
5VS	26,29,32
3VS	18,21,25,28,29,30,33
3.3V	3,14,15,16,17,18,19,20,21,22,23,29,30
VIN	28
V/A	14,23,28,29,30,32
V/D8	32
V/D8	28
V/D8	3,15,19,25,26,28,32
3VS	14,15,16,21,22,25
3.3VS	2,3,6,7,10,12,13,14,15,17,18,19,21,22,23,25,26,33
5VS	14,28

B.Schematic Diagrams



B.Schematic Diagrams

Sheet 29 of 42
POWER 1.5VS/
1.05VS



VTT_MEM

1.5A

1.8V

1.1A

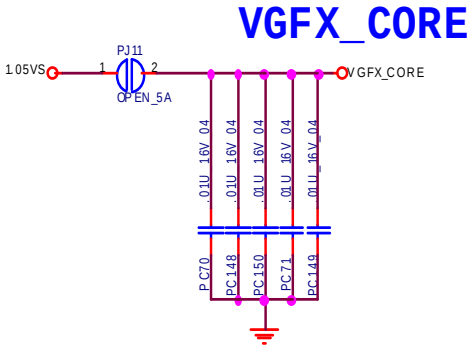
Legend:

Reference Designator	Value
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H9	C1580158
H35	C1580158
H34	C1580158
H22	C230146
H24	C3170111
H25	C270111
H23	C270158
H18	C270158
H26	C2370146
H25	C2370146
H13	C67017
H30	C67017
H6	C3540350158
H7	C237
H8	C237
H5	C237
H4	C237
H3	C237
H2	C237
H1	SMD79K778
H38	C350158
M3	M-MARK1
M4	M-MARK1
M5	M-MARK1
M6	M-MARK1
M2	M-MARK1
M7	M-MARK1
M1	M-MARK1
M1	M-MARK1
M3	M-MARK1
M10	M-MARK1
M8	M-MARK1
M12	M-MARK1
M9	M-MARK1
M4	M-MARK1
C270	140158

1.8V

POWER GPU/NVVDD

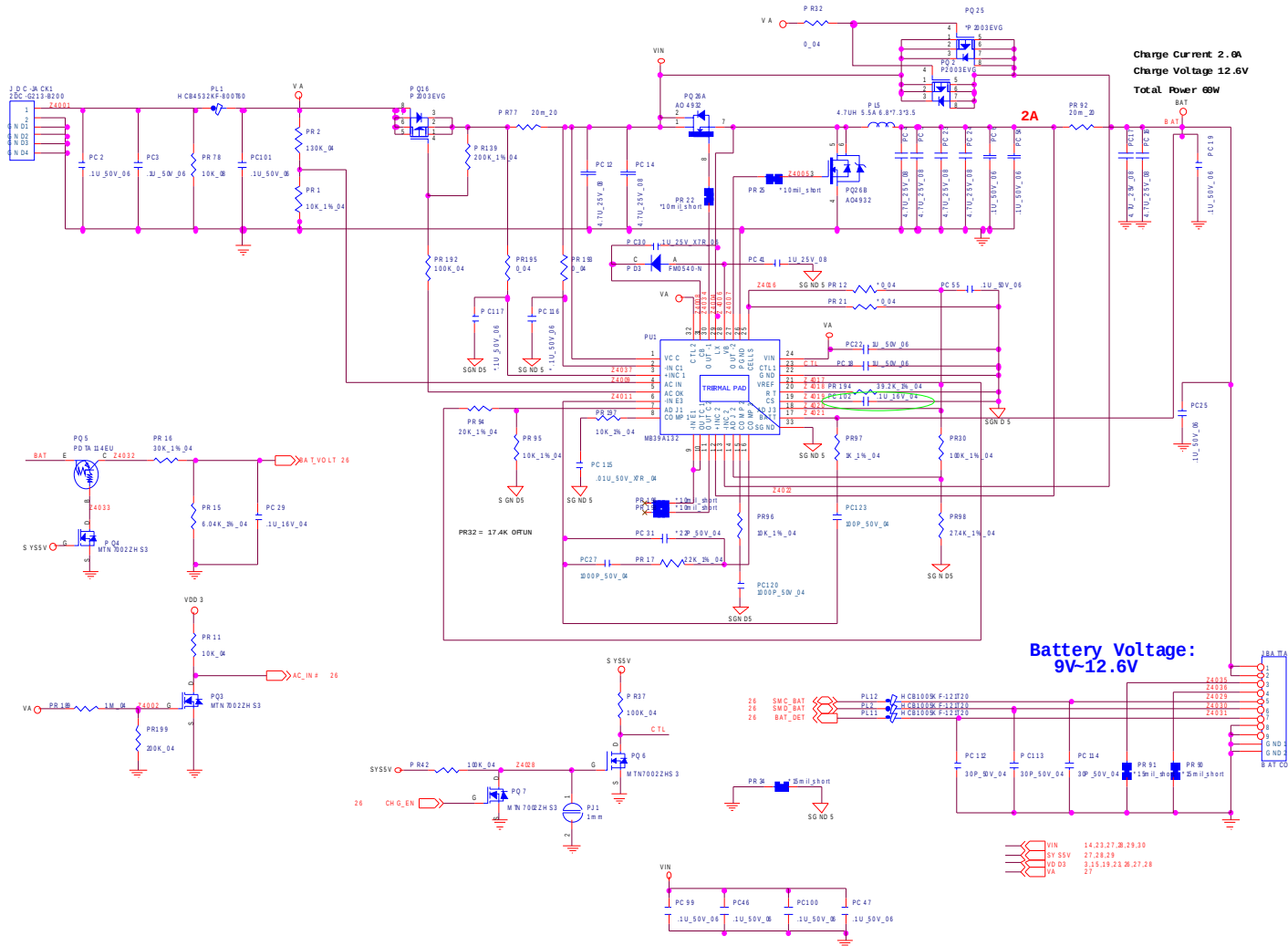
Sheet 31 of 42
POWER GPU/
NVVDD



2,3,4,5,7,9,10,15,18,29 1.05V/S

9 VGFX_CORE

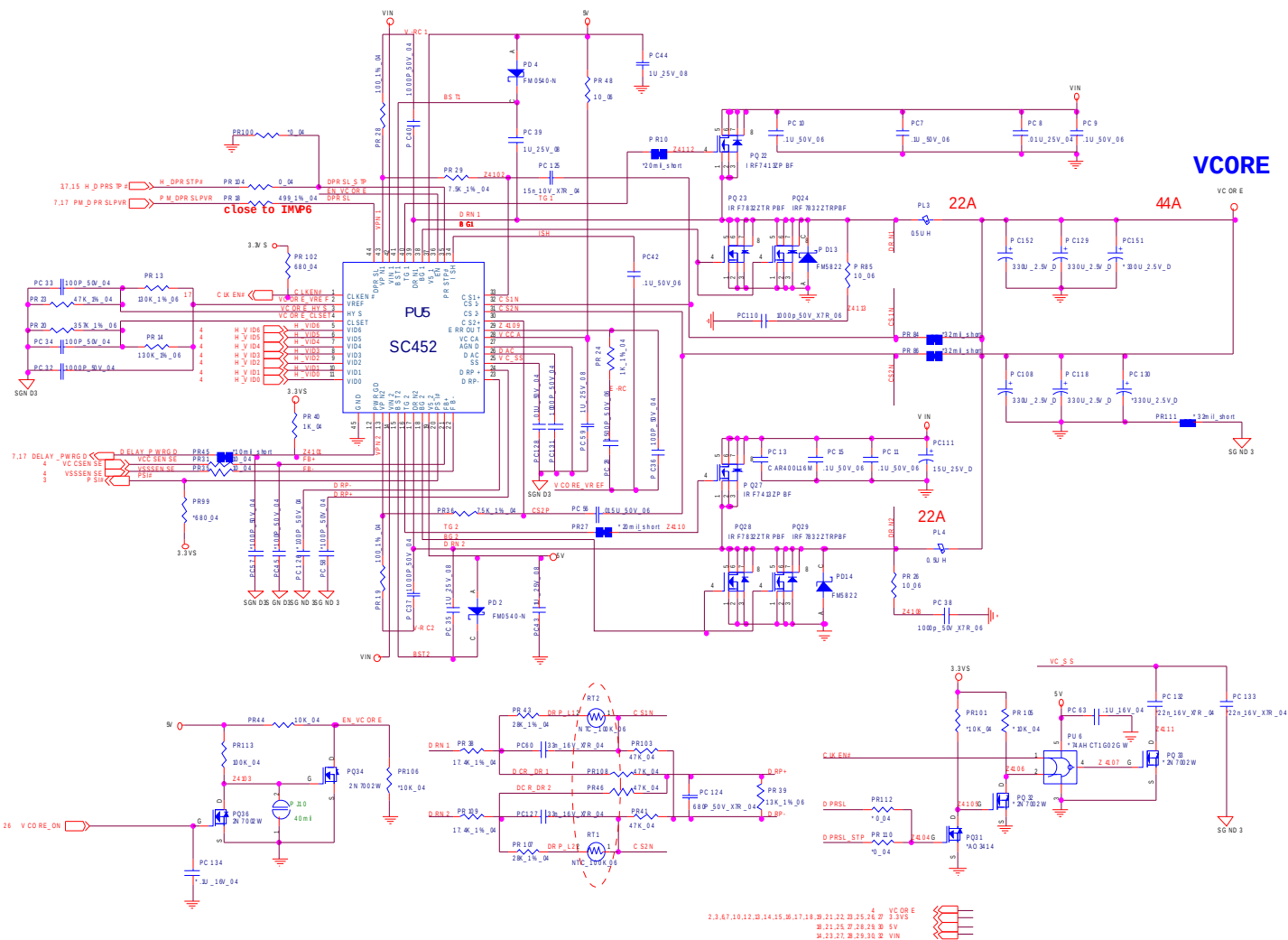
AC_IN, CHARGE



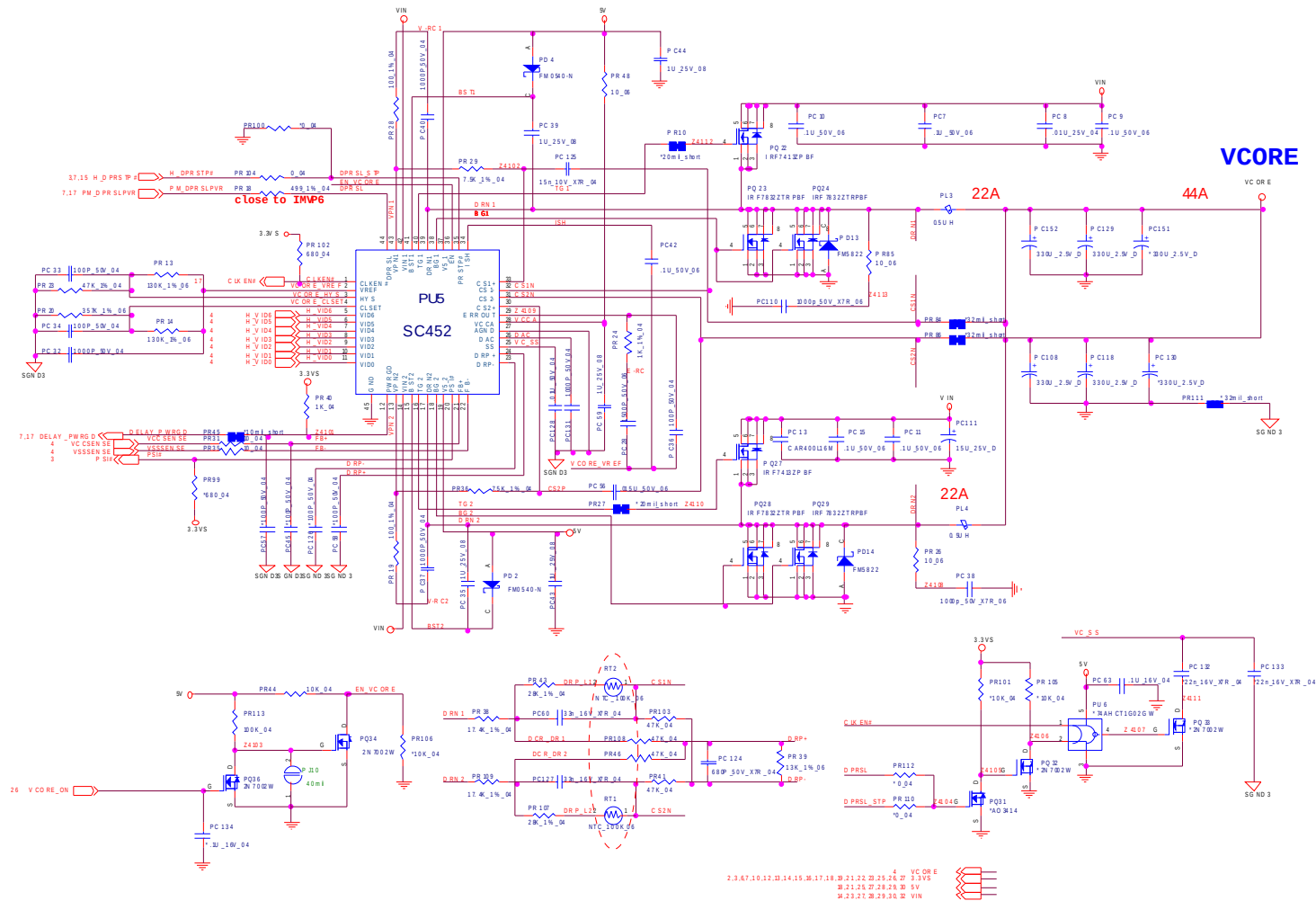
Sheet 32 of 42
AC_IN, CHARGE

VCORE

Sheet 33 of 42
VCORE



ODD BOARD FOR M760T



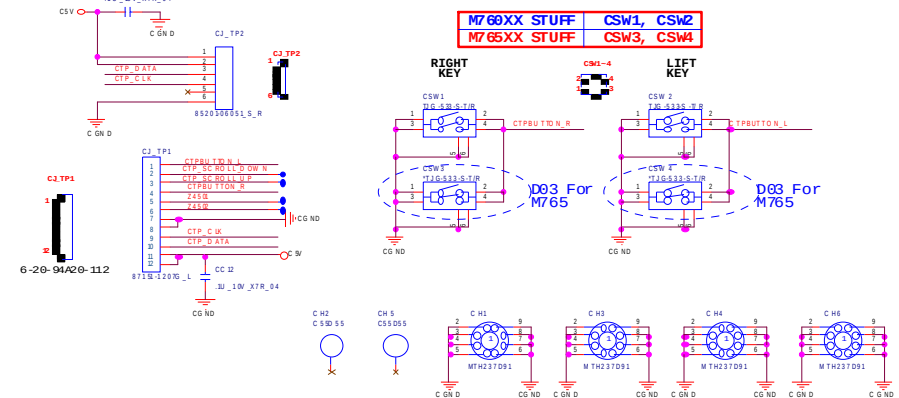
Sheet 34 of 42
CLICK FINGER
BOARD FOR M77

Schematic Diagrams

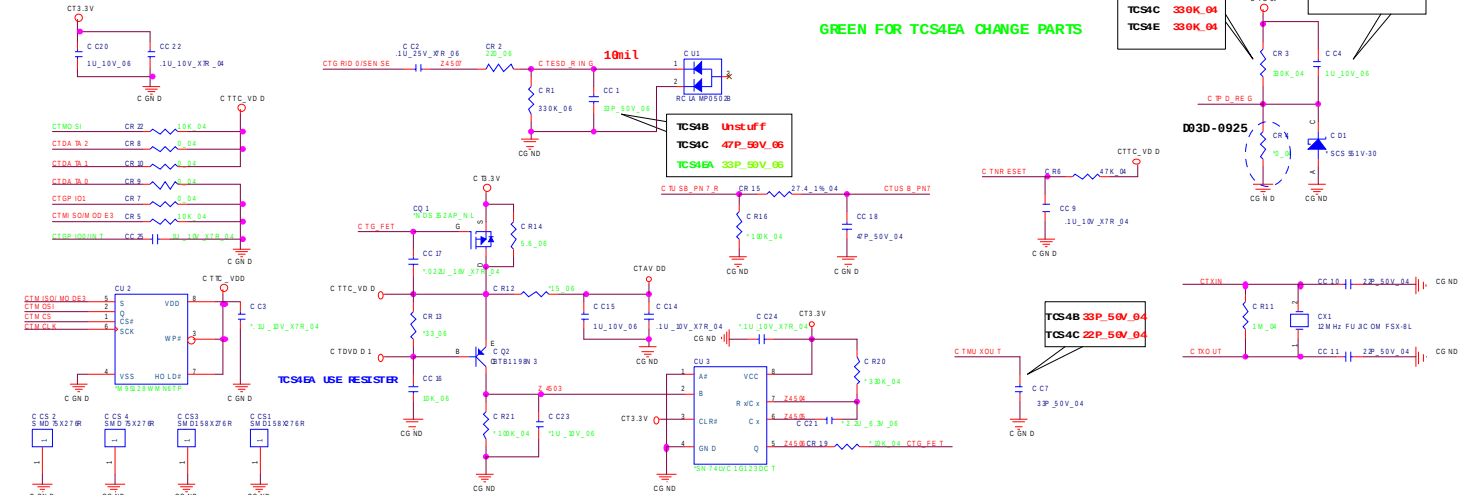
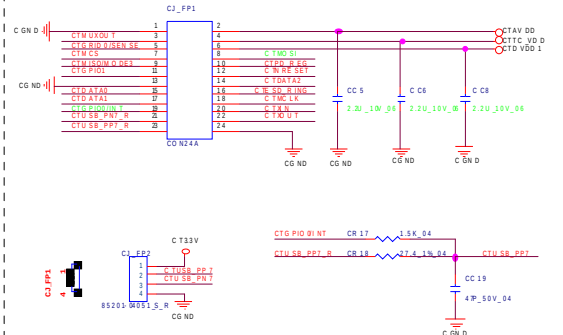
CLICK FINGER BOARD FOR M77

Sheet 35 of 42
CLICK FINGER
BOARD FOR M77

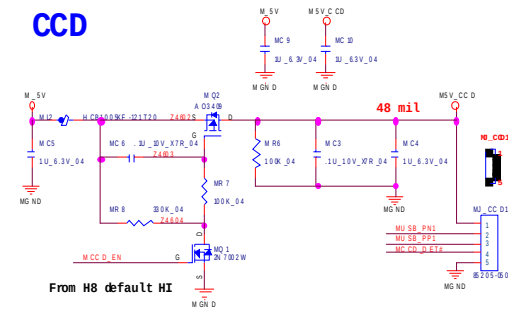
CLICK BOARD



FINGER BOARD

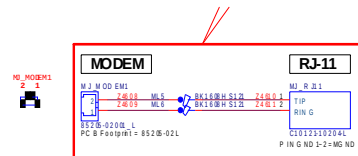


CCD

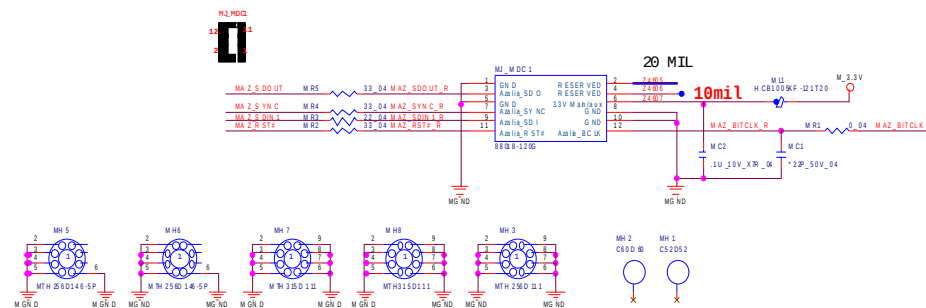


RJ-11

FAR AWAY ANOTHER PARTS >2.5mm

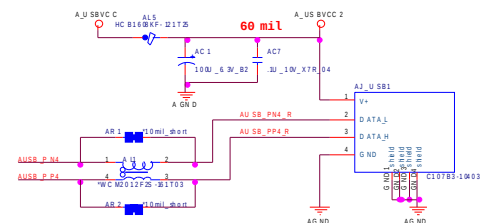
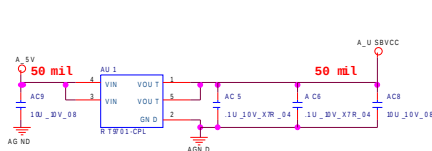


MDC MODULE



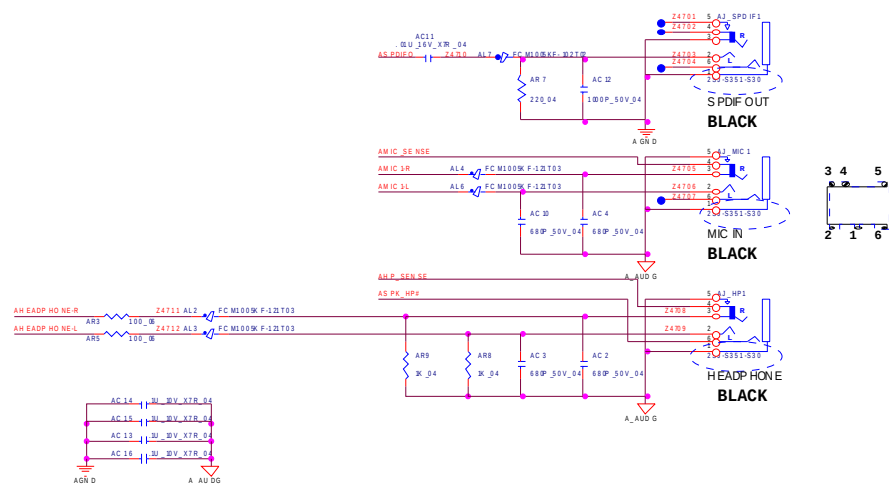
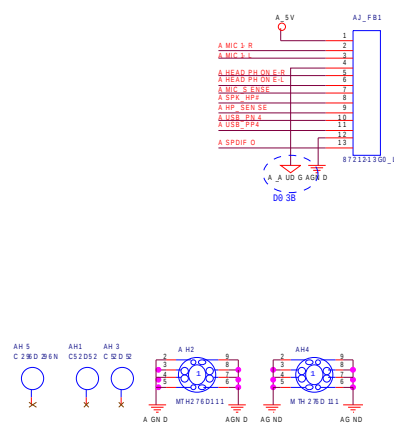
Sheet 36 of 42
MULTI FUNCTION
BOARD

USB PORT

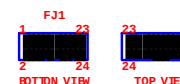
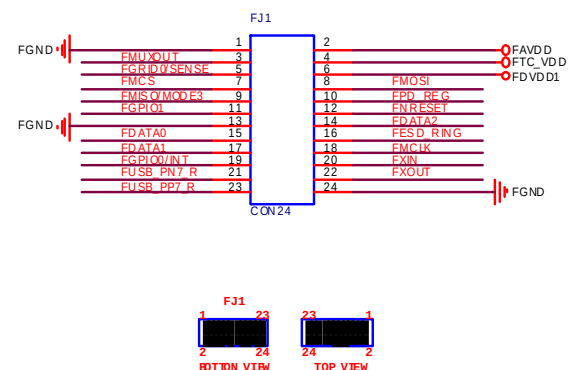
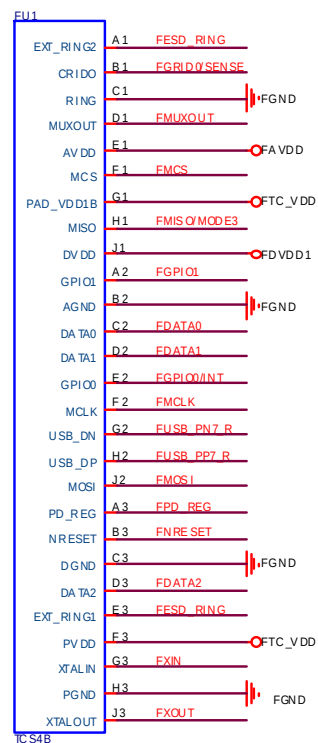


Sheet 37 of 42
AUDIO BOARD

AUDIO JACK



POWER SWITCH BOARD FOR M76



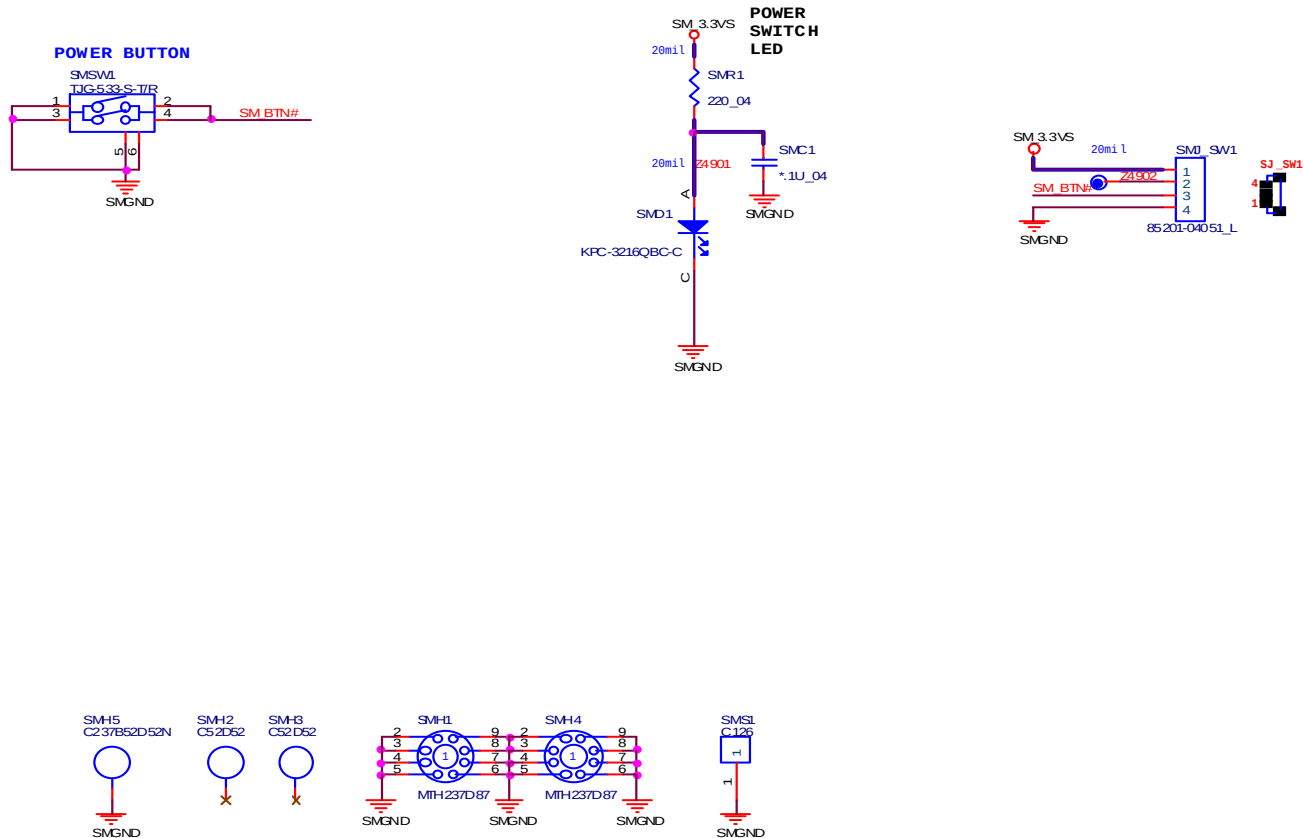
Sheet 38 of 42
POWER SWITCH
BOARD FOR M76

Schematic Diagrams

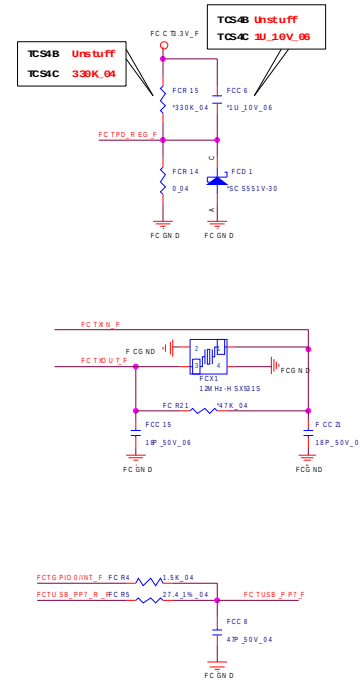
POWER SWITCH BOARD FOR M74

POWER SW & POWER LED FOR M74

Sheet 39 of 42
POWER SWITCH
BOARD FOR M74



FINGER BOARD FOR M74



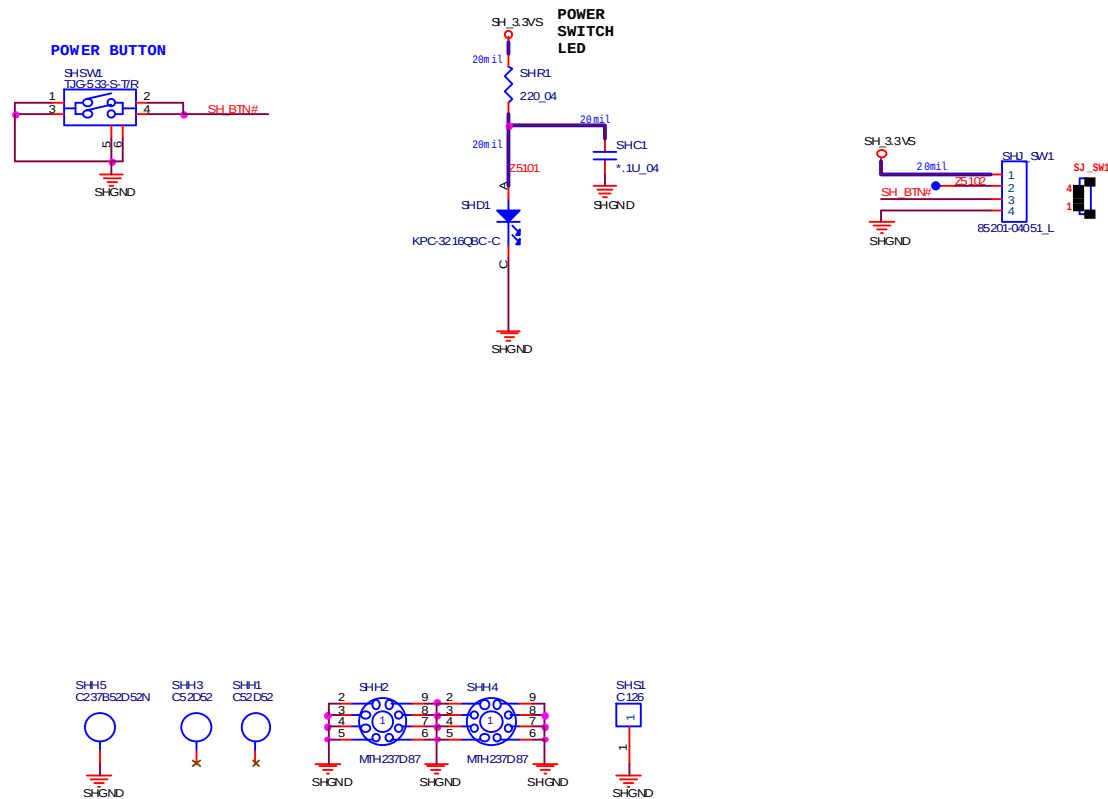
FINGER BOARD FOR M74 B - 41

Schematic Diagrams

POWER SWITCH BOARD FOR M76

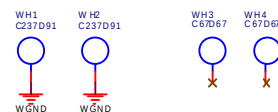
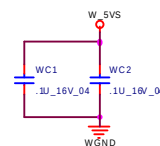
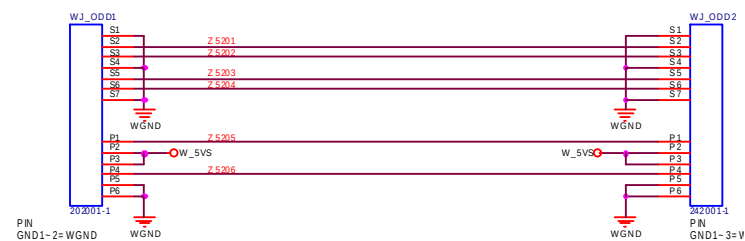
POWER SW & POWER LED FOR M76

Sheet 41 of 42
POWER SWITCH
BOARD FOR M76



EXTERNAL ODD BOARD FOR W76

ODD BOARD FOR W76



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EXTERNAL ODD
BOARD FOR W76

Appendix C: Updating the FLASH ROM BIOS

To update the FLASH ROM BIOS you must:

- Download the BIOS update from the web site.
- Unzip the files onto a bootable CD/DVD/USB Flash Drive.
- Reboot your computer from an external CD/DVD/USB Flash Drive.
- Use the flash tools to update the flash BIOS using the commands indicated below.
- Restart the computer booting from the HDD and press **F2** at startup enter the BIOS.
- Load setup defaults from the BIOS and save the default settings and exit the BIOS to restart the computer.
- After rebooting the computer you may restart the computer again and make any required changes to the default BIOS settings.

Download the BIOS

1. Go to www.clevo.com.tw and point to **E-Services** and click **E-Channel**.
2. Use your user ID and password to access the appropriate download area (BIOS), and download the latest BIOS files (the BIOS file will be contained in a batch file that may be run directly once unzipped) for your computer model (see sidebar for important information on BIOS versions).

Unzip the downloaded files to a bootable CD/DVD/ or USB Flash drive

1. Insert a bootable CD/DVD/USB flash drive into the CD/DVD drive/USB port of the computer containing the downloaded files.
2. Use a tool such as Winzip or Winrar to unzip all the BIOS files and refresh tools to your bootable CD/DVD/USB flash drive (you may need to create a bootable CD/DVD with the files using a 3rd party software).

Set the computer to boot from the external drive

1. With the bootable CD/DVD/USB flash drive containing the BIOS files in your CD/DVD drive/USB port, restart the computer and press **F2** (in most cases) to enter the BIOS.
2. Use the arrow keys to highlight the **Boot** menu.
3. Use the “+” and “-” keys to move boot devices up and down the priority order.
4. Make sure that the CD/DVD drive/USB flash drive is set first in the boot priority of the BIOS.
5. Press **F10** to save any changes you have made and exit the BIOS to restart the computer.



BIOS Version

Make sure you download the latest correct version of the BIOS appropriate for the computer model you are working on.

You should only download BIOS versions that are **V1.01.XX or higher** as appropriate for your computer model.

Note that BIOS versions are not backward compatible and therefore you may not downgrade your BIOS to an older version after upgrading to a later version (e.g if you upgrade a BIOS to ver 1.01.05, you **MAY NOT** then go back and flash the BIOS to ver 1.01.04).

BIOS Update

Use the flash tools to update the BIOS

1. Make sure you are not loading any memory management programs such as HIMEM by holding the **F8** key as you see the message “**Starting MS-DOS**”. You will then be prompted to give “**Y**” or “**N**” responses to the programs being loaded by DOS. Choose “**N**” for any memory management programs.
2. You should now be at the DOS prompt e.g: `DISK C:\>` (C is the designated drive letter for the CD/DVD drive/USB flash drive).
3. **Type the following command** at the DOS prompt:

C:\> XXX.bat

4. The utility will then proceed to flash the BIOS.
5. You should then be prompted to press any key to restart the system or turn the power off, and then on again but make sure you remove the CD/DVD/USB flash drive from the CD/DVD drive/USB port before the computer restarts.

Restart the computer (booting from the HDD)

1. With the CD/DVD/USB flash drive removed from the CD/DVD drive/USB port the computer should restart from the HDD.
2. Press **F2** as the computer restarts to enter the BIOS.
3. Use the arrow keys to highlight the **Exit** menu.
4. Select **Load Setup Defaults** (or press **F9**) and select “**Yes**” to confirm the selection.
5. Press **F10** to save any changes you have made and exit the BIOS to restart the computer.

Your computer is now running normally with the updated BIOS

You may now enter the BIOS and make any changes you require to the default settings.

www.s-manuals.com