

SERVICE MANUAL

W950SU2



notebook

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Notebook Computer

W950SU2

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 **W950SU2** 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, 2.1A (40 Watts) minimum AC/DC Adapter.

CAUTION

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

FCC Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

This device may not cause harmful interference.

This device must accept any interference received, including interference that may cause undesired operation.

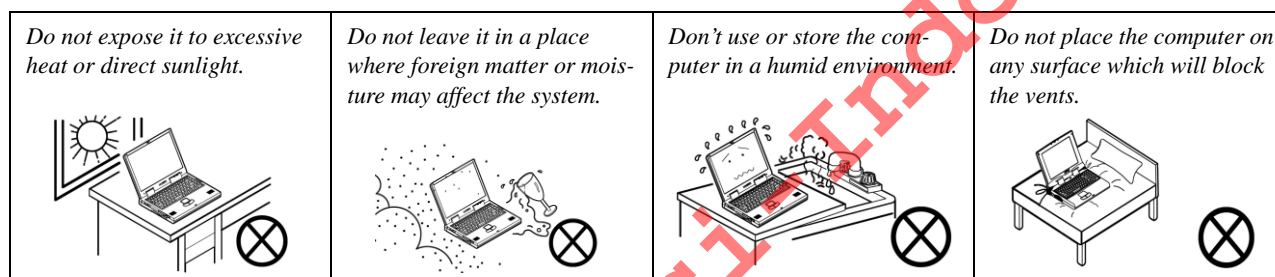
Instructions for Care and Operation

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

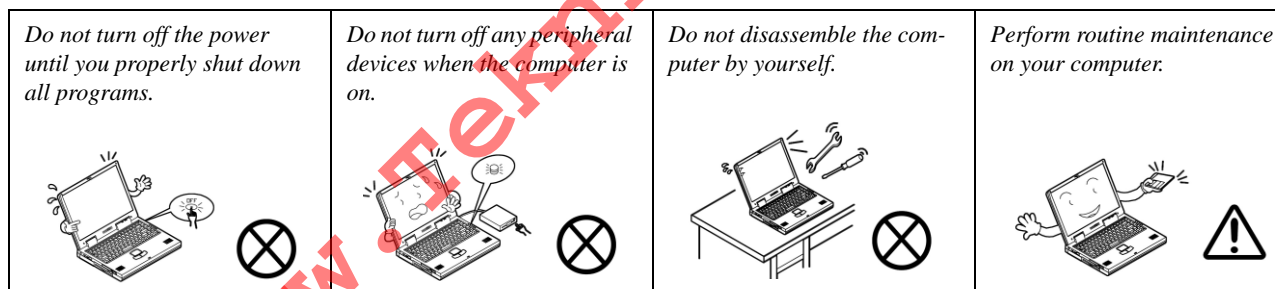
1. **Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.



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.

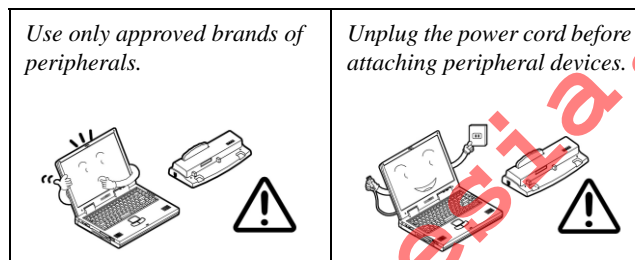


3. **Follow the proper working procedures for the computer.** Shut the computer down properly and don't forget to save your work. Remember to periodically save your data as data may be lost if the battery is depleted.



Preface

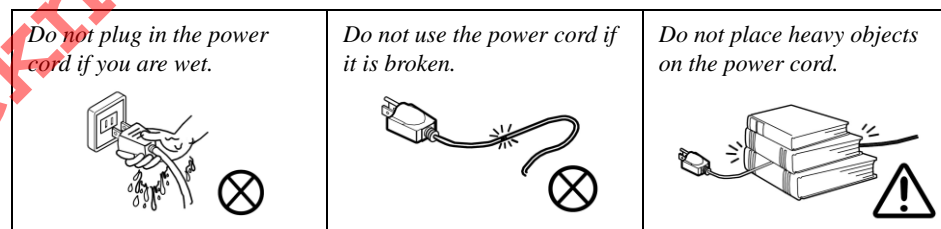
4. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.
5. **Take care when using peripheral devices.**



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 and power cord). 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 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 Guidelines

The following can also apply to any backup batteries you may have.

- If you do not use the battery for an extended period, then remove the battery from the computer for storage.
- Before removing the battery for storage charge it to 60% - 70%.
- Check stored batteries at least every 3 months and charge them to 60% - 70%.




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.

Battery Level

Click the battery icon  in the taskbar to see the current battery level and charge status. A battery that drops below a level of 10% will not allow the computer to boot up. Make sure that any battery that drops below 10% is recharged within one week.

Related Documents

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

User's Manual on CD/DVD

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.

System Startup

1. Remove all packing materials.
2. Place the computer on a stable surface.
3. Insert the battery and make sure it is locked in position.
4. Securely attach any peripherals you want to use with the computer (e.g. keyboard and mouse) to their ports.
5. Attach the AC/DC adapter to the DC-In jack at the rear of the computer, then plug the AC power cord into an outlet, and connect the AC power cord to the AC/DC adapter.
6. Use one hand to raise the lid/LCD to a comfortable viewing angle (do not exceed 130 degrees); use the other hand (as illustrated in Figure 1) to support the base of the computer (**Note: Never** lift the computer by the lid/LCD).
7. Press the power button to turn the computer "on".



Figure 1
Opening the Lid/LCD/Computer with AC/DC
Adapter Plugged-In



Shut Down

Note that you should always shut your computer down by choosing the **Shut down** command in **Windows** (see below). This will help prevent hard disk or system problems.

Click **Settings** in the **Charms Bar** (use the **Windows Logo Key** + **C** key combination to access the Charms Bar) and choose **Shut down** from the **Power** menu.

Or

Choose **Shut down or sign out** > **Shut down** from the context menu (use the **Windows Logo Key** + **X** key combination to access the context menu).

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Chapter 1: Introduction

Overview

This manual covers the information you need to service or upgrade the **W950SU2** 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 the *User's Manual*. The manual is shipped with the computer.

Operating systems (e.g. *Window 8*, etc.) have their own manuals as do application softwares (e.g. word processing and database programs). If you have questions about those programs, you should consult those manuals.

The **W950SU2** 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 take note of 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 here are correct at the time of sending them to the 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 more details.



CPU

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

Processor Options

Intel® Core™ i7 Processor

i7-4500U (1.80GHz)

4MB L3 Cache, 22nm, DDR3L-1600MHz, TDP 15W

Intel® Core™ i5 Processor

i5-4200U (1.60GHz)

3MB L3 Cache, 22nm, DDR3L-1600MHz, TDP 15W

Intel® Core™ i3 Processor

i3-4005U (1.70GHz)

3MB L3 Cache, 22nm, DDR3L-1600MHz, TDP 15W

Intel® Celeron® Processor

2957U (1.40GHz)/2955U (1.40GHz)

2MB L3 Cache, 22nm, DDR3L-1600MHz, TDP 15W

BIOS

48Mb SPI Flash ROM

AMI BIOS

Memory

Two 204 Pin SO-DIMM Sockets Supporting **DDR3L 1600MHz** Memory

Memory Expandable up to 16GB

(The real memory operating frequency depends on the FSB of the processor.)

Storage

(**Factory Option**) One Changeable 9.5mm(h) Optical Device Type Drive (Super Multi Drive Module or Blu-Ray Combo Drive Module)

(**Factory Option**) Dummy ODD

One Changeable 2.5" 7.0mm (h) SATA **HDD/SSD**

(**Factory Option**) One mSATA Solid State Drive (SSD)*

*This function is only supported by the i7-4500U and i5-4200U processors.

LCD

15.6" (39.62cm) HD/FHD (Thickness: 3.8mm)

Video Adapter

Intel GPU (CPU integrated)

Intel HD Graphics 4400 (Core i7/i5/i3 CPU)

Dynamic Frequency (Intel Dynamic Video Memory Technology for up to **1.7GB**)

Microsoft DirectX®11 Compatible

Or

Intel HD Graphics (Pentium/Celeron CPU)

Dynamic Frequency (Intel Dynamic Video Memory Technology for up to **1.7GB**)

Microsoft DirectX®11 Compatible

Audio

High Definition Audio Compliant Interface

2 * Built-In Speakers

Built-In Microphone

Security

Security (Kensington® Type) Lock Slot

BIOS Password

(**Factory Option**) TPM v1.2

Keyboard

Full-size "WinKey" keyboard (with numeric keypad)

Pointing Device

Built-in Touchpad

Interface

Two USB 3.0 Ports
One HDMI-Out Port
One External Monitor Port
One Headphone-Out Jack
One Microphone-In Jack
One RJ-45 LAN Jack
One DC-in Jack
Two USB 2.0 Ports

Mini Card Slots

Slot 1 for **WLAN** Module or **WLAN and Bluetooth** Combo Module
(Factory Option) Slot 2 for **3G** Module or mSATA **SSD**

Card Reader

Embedded Multi-In-1 Card Reader
MMC (MultiMedia Card) / RS MMC
SD (Secure Digital) / Mini SD / SDHC/ SDXC
MS (Memory Stick) / MS Pro / MS Duo

Communication

Built-In Gigabit Ethernet LAN
1.0M HD PC Camera Module
(Factory Option) 3G Mini-Card Module

WLAN/ Bluetooth Half Mini-Card Modules:

(Factory Option) Intel® Wireless-N 7260 Wireless LAN
(802.11b/g/n) + Bluetooth 4.0
(Factory Option) Intel® Wireless-AL 3160 Wireless LAN
(802.11AL, a/b/g/n) + Bluetooth 4.0
(Factory Option) Third-Party Wireless LAN (802.11b/g/n)
(Factory Option) Third-Party Wireless LAN (802.11b/g/n) +
Bluetooth 4.0

Environmental Spec**Temperature**

Operating: 5°C - 35°C
Non-Operating: -20°C - 60°C

Relative Humidity

Operating: 20% - 80%
Non-Operating: 10% - 90%

Power

Full Range AC/DC Adapter
AC Input: 100 - 240V, 50 - 60Hz
DC Output: 19V, 2.1A (**40W**)
Removable 4 Cell Smart Lithium-Ion Battery Pack, 32WH

Dimensions & Weight

374mm (w) * 258.5mm (d) * 12 - 24.7mm (h)
2.1kg (with ODD and 32WH Battery)

Introduction

Figure 1
Top View

1. PC Camera
2. *PC Camera LED
**When the PC camera is in use, the LED will be illuminated in red.*
3. Built-In Microphone
4. LCD
5. Power Button
6. Keyboard
7. Touchpad & Buttons

External Locator - Top View with LCD Panel Open



External Locator - Front & Right Side Views

FRONT VIEW



Figure 2
Front View

1. LED Indicator
2. Multi-in-1 Card Reader

RIGHT SIDE VIEW



Figure 3
Right Side View

1. Microphone-In Jack
2. Headphone-Out Jack
3. USB 2.0 Port
4. Optical Device Drive Bay
5. Emergency Eject Hole
6. Security Lock Slot

Introduction

External Locator - Left Side & Rear View

Figure 4
Left Side View

1. DC-In Jack
2. RJ-45 LAN Jack
3. External Monitor Port
4. Vent
5. HDMI-Out Port
6. USB 3.0 Ports

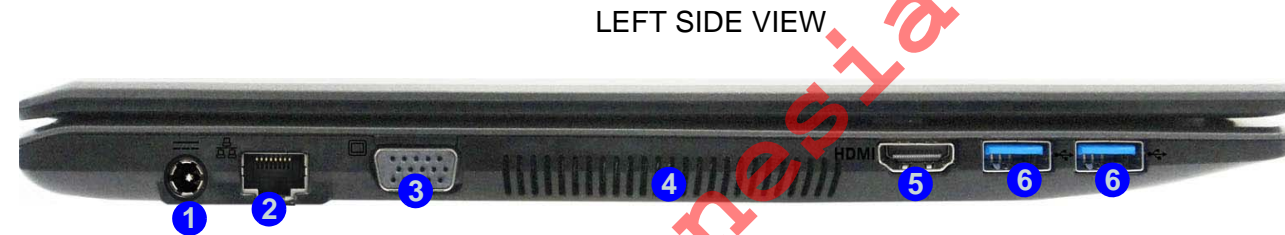


Figure 5
Rear View

1. Battery



External Locator - Bottom View



Figure 6
Bottom View

1. Battery Location
2. Vent
3. Speakers



Overheating

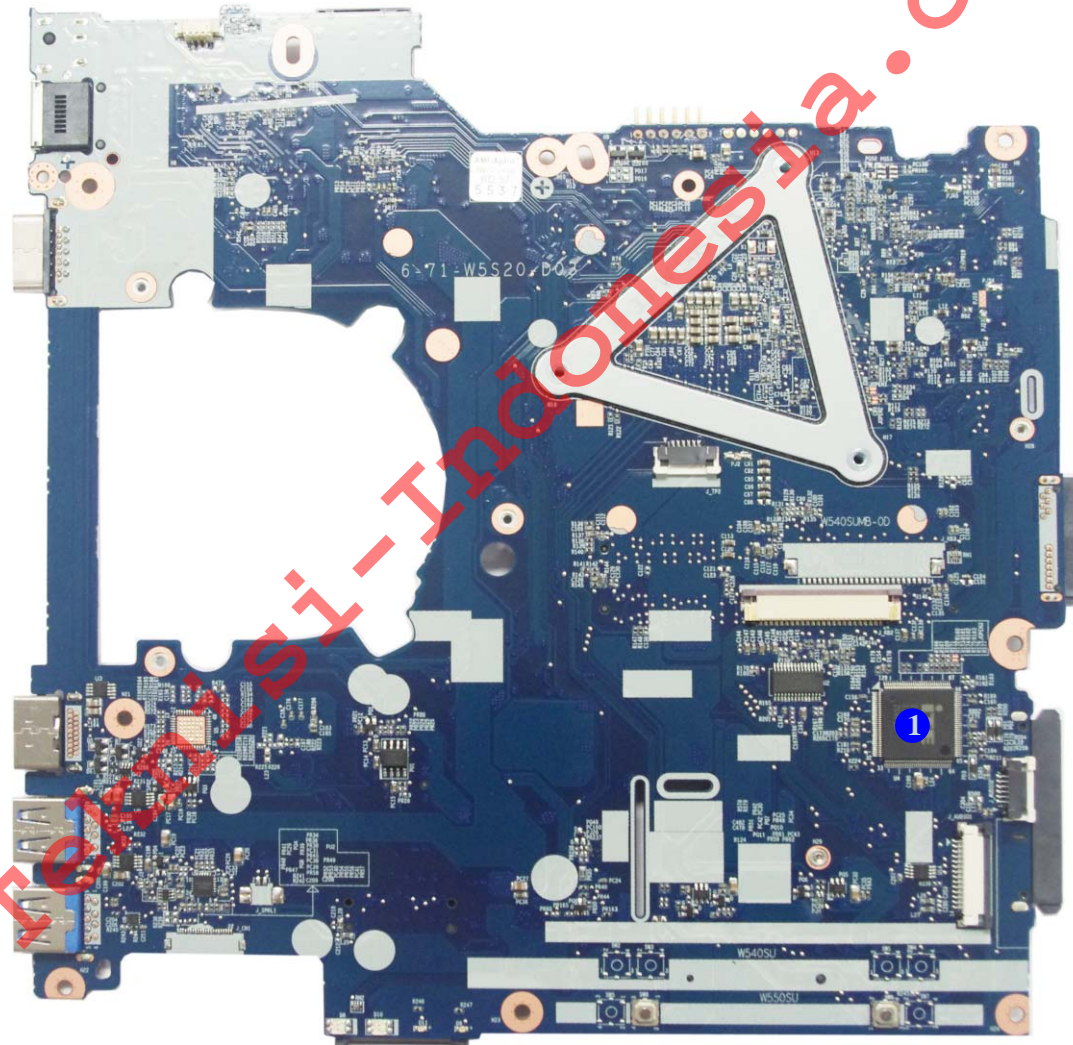
To prevent your computer from overheating, make sure nothing blocks any vent while the computer is in use.

Introduction

Figure 7
**Mainboard Top
Key Parts**

1. KBC-ITE IT8587

Mainboard Overview - Top (Key Parts)



Mainboard Overview - Bottom (Key Parts)

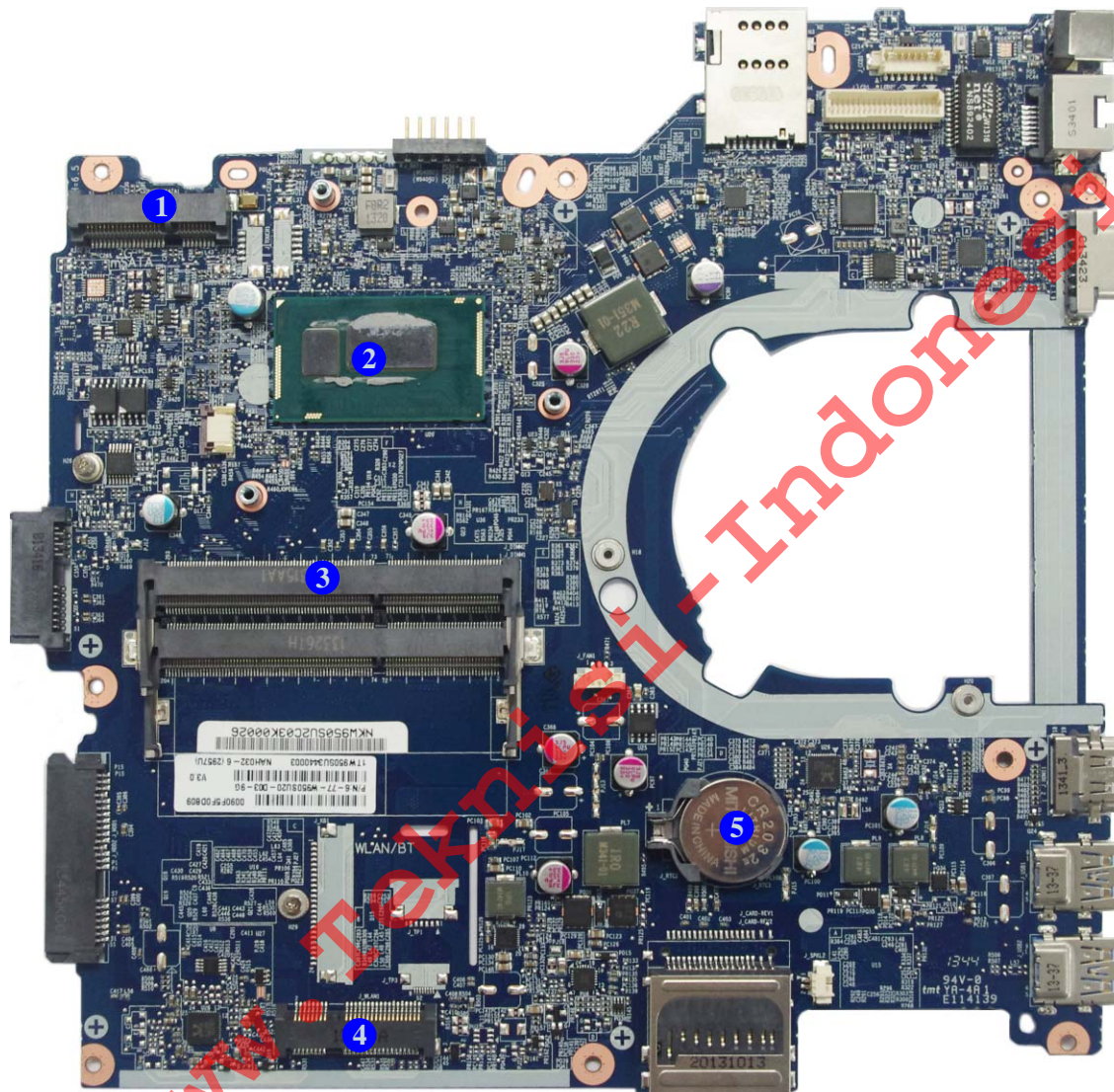


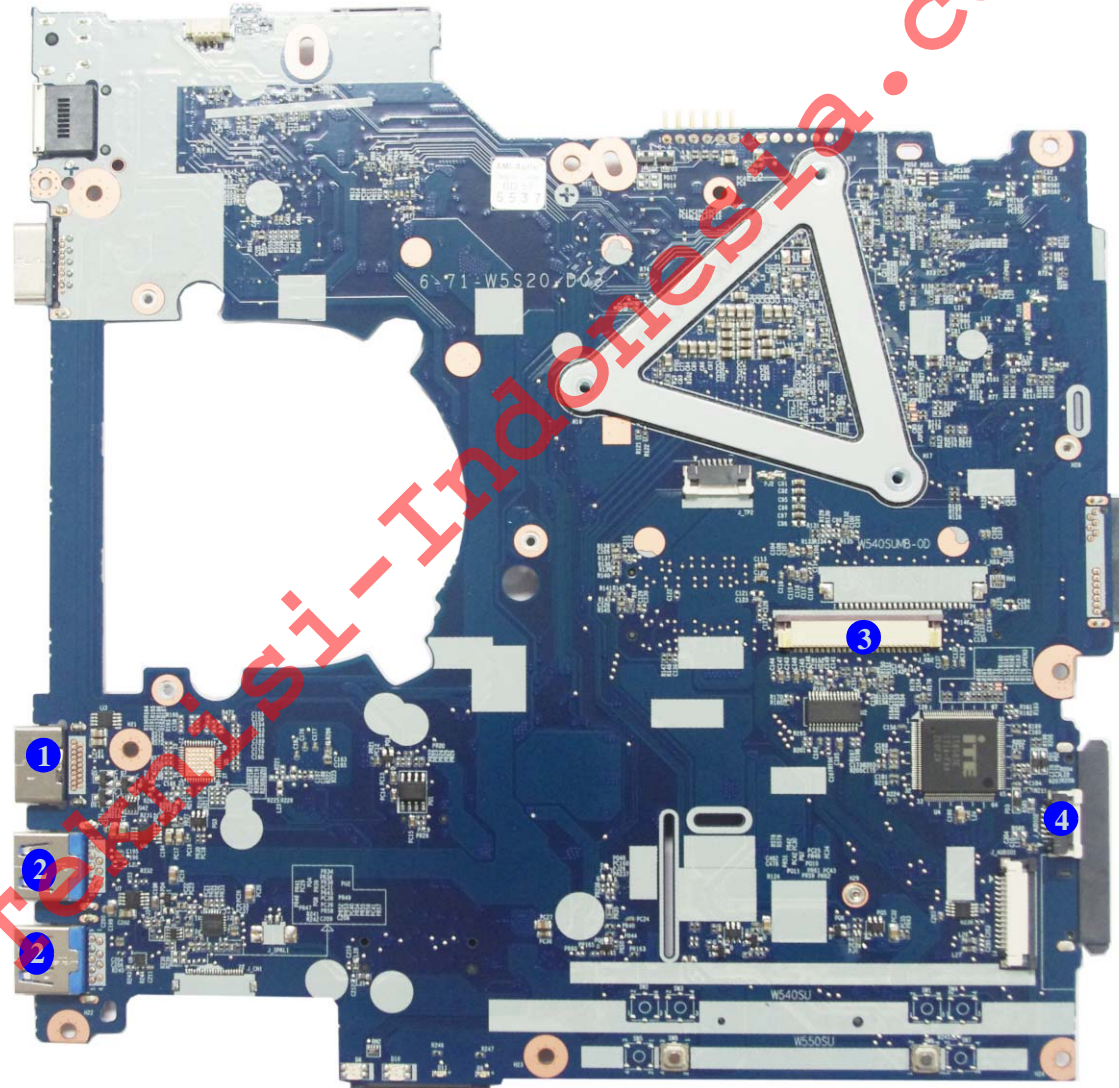
Figure 8
**Mainboard Bottom
Key Parts**

1. Mini-Card Connector (3G/mSATA module)
2. CPU
3. Memory Slots (DDR3 SO-DIMM)
4. Mini-Card Connector (WLAN Module)
5. CMOS Battery

Figure 9
**Mainboard Top
Connectors**

1. HDMI-Out Port
2. USB Port 3.0
3. Keyboard Cable Connector
4. Audio Board Cable Connector

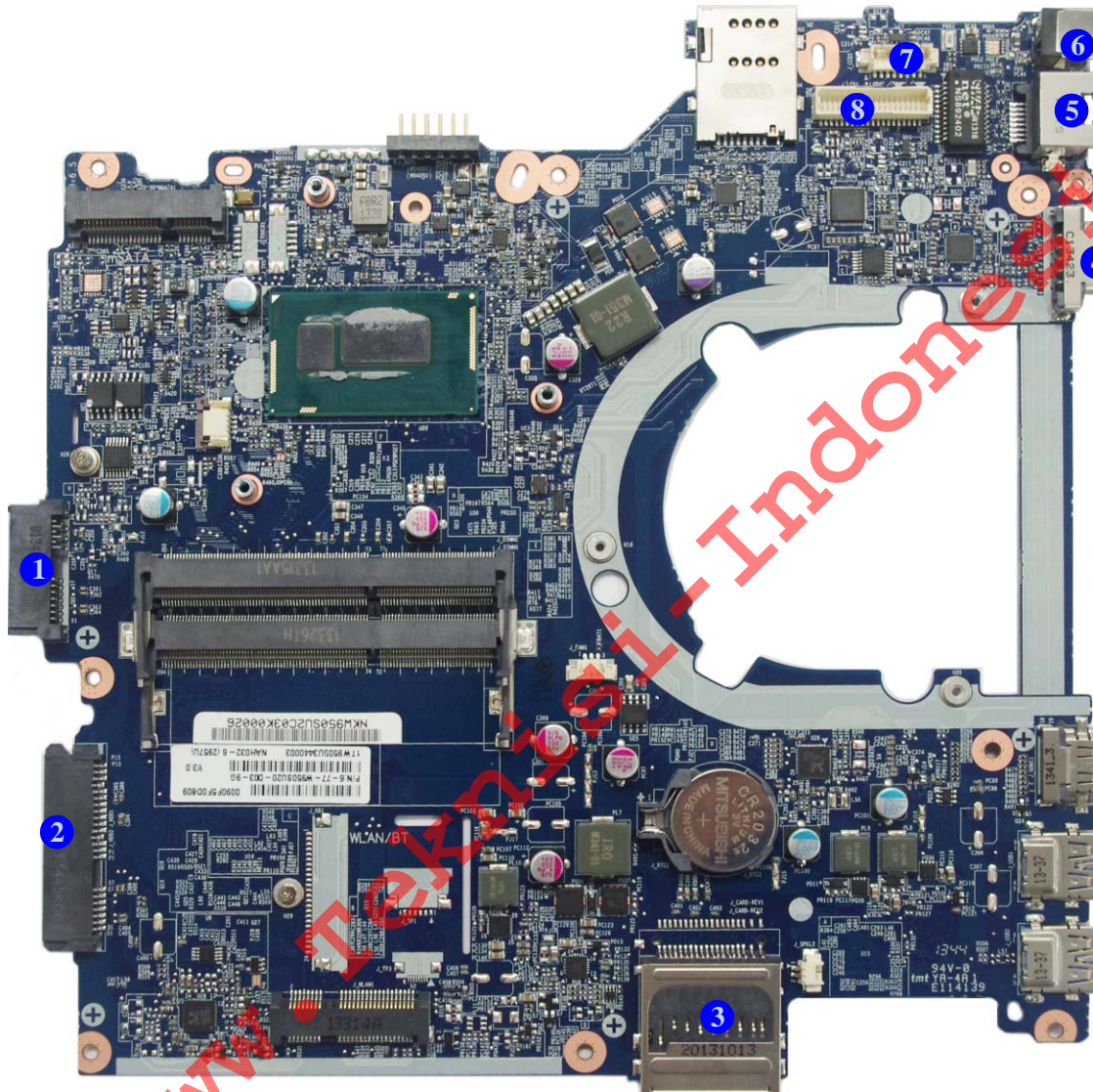
Mainboard Overview - Top (Connectors)



Mainboard Overview - Bottom (Connectors)

Figure 10
Mainboard Bottom Connectors

1. ODD Connector
2. HDD Connector
3. Multi-in-1 Card Reader
4. External Monitor Port
5. RJ-45 LAN Jack
6. DC-In Jack
7. CCD Connector
8. LCD Cable Connector



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Chapter 2: Disassembly

Overview

This chapter provides step-by-step instructions for disassembling the **W950SU2** 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-borne 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 and power cord). 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 HDD *page 2 - 6*
3. Remove the optical device *page 2 - 8*

To remove the System Memory:

1. Remove the battery *page 2 - 5*
2. Remove the HDD *page 2 - 6*
3. Remove the system memory *page 2 - 10*

To remove the Keyboard:

1. Remove the battery *page 2 - 5*
2. Remove the HDD *page 2 - 6*
3. Remove the keyboard *page 2 - 12*

To remove the Wireless LAN Module:

1. Remove the battery *page 2 - 5*
2. Remove the HDD *page 2 - 6*
3. Remove the WLAN *page 2 - 14*

To remove the CCD Module:

1. Remove the battery *page 2 - 5*
2. Remove the HDD *page 2 - 6*
3. Remove the CCD module *page 2 - 16*

Removing the Battery

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

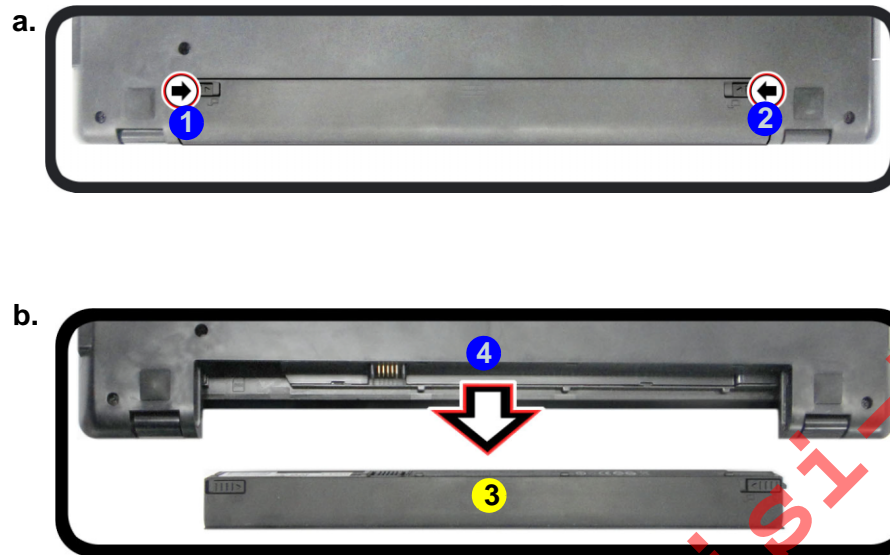


Figure 1
Battery Removal

- a. Remove screws from the bottom case.
- b. Separate the top and bottom case.
- c. The battery will be visible.



14. Bottom

Disassembly

Figure 2
HDD Assembly
Removal

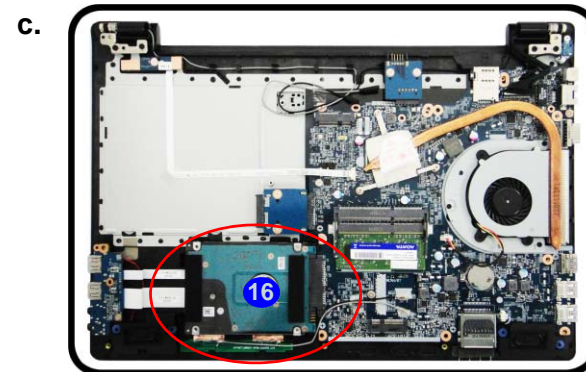
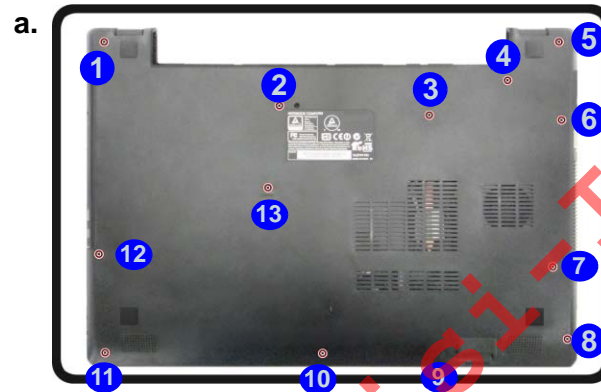
- Remove the screws.
- Remove the bottom cover.
- Locate the HDD assembly.

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

- Turn **off** the computer, turn it over to remove the battery ([page 2 - 5](#)).
- Remove the screws **1** - **13** ([Figure 2a](#)).
- Lift the bottom cover **14** up from point **15** ([Figure 2b](#)).
- The hard disk drive will be visible at point **16** ([Figure 2c](#)).



14. Bottom Cover

13 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.

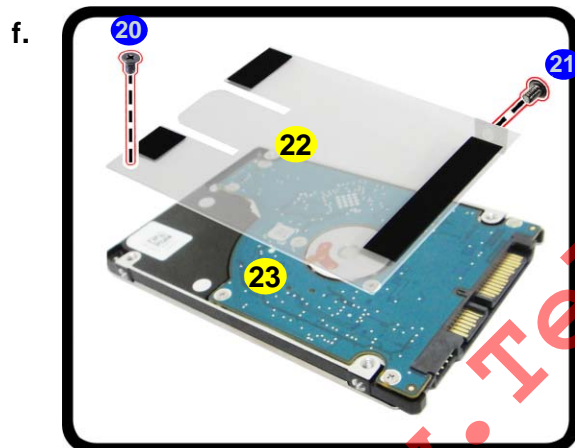
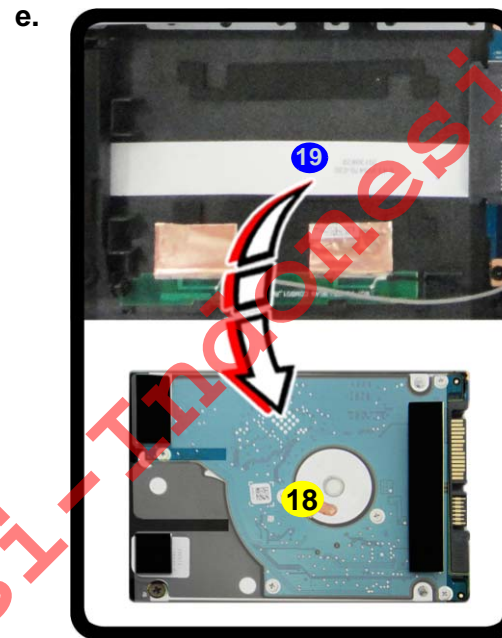
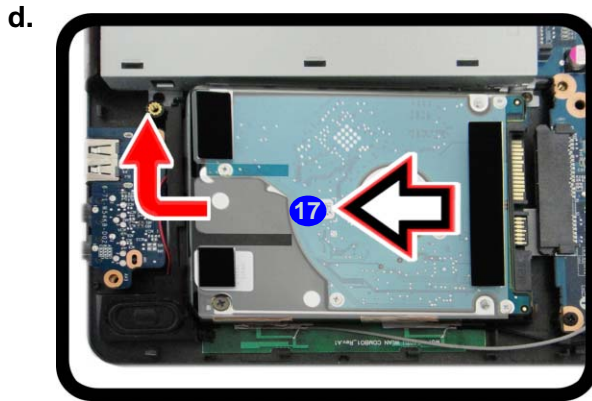
You have all the CD-ROMs and FDDs required to install your operating system and programs.

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.

5. Slightly lift and pull the hard disk assembly in the direction of arrow 17 (Figure 3d).
6. Lift the hard disk assembly 18 out of the bay 19 (Figure 3e).
7. Remove the screws 20 - 21 and the adhesive cover 22 from the hard disk 23 (Figure 3f).
8. Reverse the process to install a new hard disk (do not forget to replace all the screws and bottom cover).

Figure 3
HDD Assembly Removal (cont'd.)

- d. Slightly lift and pull the HDD assembly in the direction of the arrow.
- e. Lift the HDD assembly out of the bay.
- f. Remove the screws and adhesive cover.





18. HDD Assembly
22. Adhesive Cover
23. HDD

- 2 Screws

Disassembly

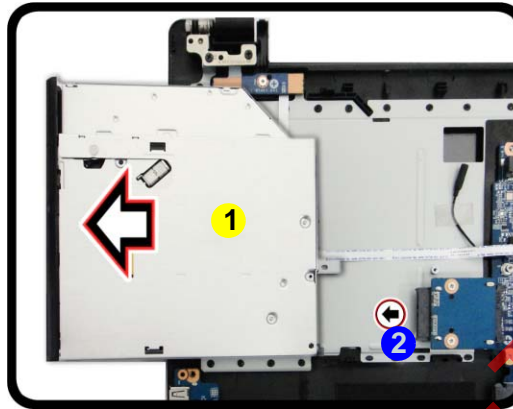
Figure 4
**Optical Device
Removal**

- Pull out the optical device.
- Pry the bezel off the optical device.
- Separate the bezel and optical device.

Removing the Optical (CD/DVD) Device

- Turn **off** the computer, turn it over to remove the battery ([page 2 - 5](#)) and bottom cover ([page 2 - 6](#)).
- Carefully pull out the optical device **1** out of the bay at point **2** ([Figure 4a](#)).
- Carefully pry the bezel **4** off the optical device at point **3** ([Figure 4b](#)).
- Separate the bezel **4** and the optical device ([Figure 4c](#)).

a.



b.



c.



- Optical Device
- Bezel

5. Reverse the process to attach the front bezel **4** with the new optical device at point **5** (*Figure 5e*).
6. Insert the new optical device **1** and carefully slide it into the computer (the device only fits one way. DO NOT FORCE IT; The screw holes should line up). Take care to avoid folding the connector underneath.
7. Replace the bottom cover and tighten the screws.
8. Restart the computer to allow it to automatically detect the new device.

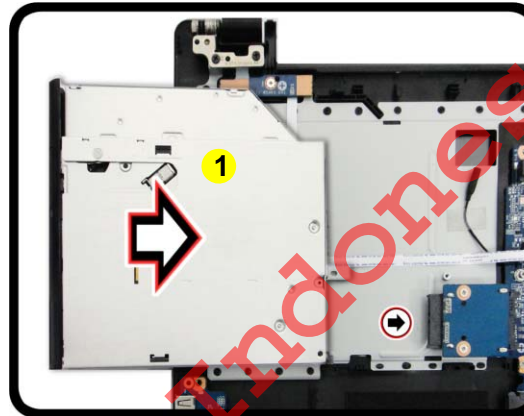
Figure 5
**Optical Device
Assembly**

- d. Install the front bezel.
e. Insert the optical device.

d.



e.



1. Optical Device
4. Bezel

Disassembly

Figure 6
RAM Module Removal

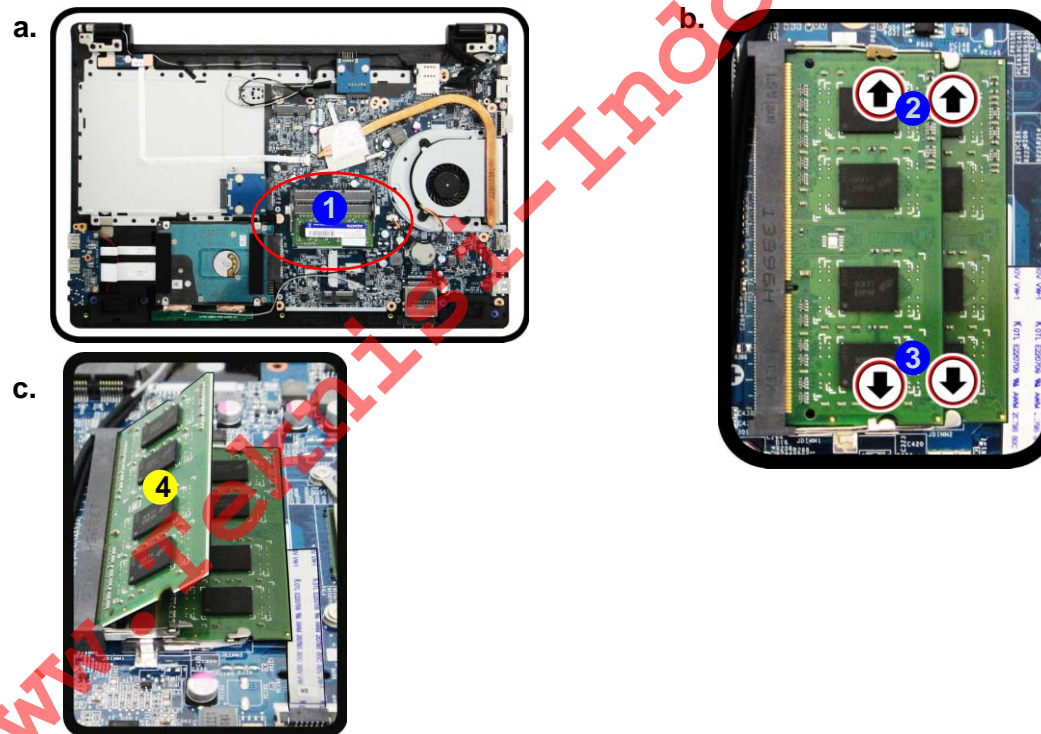
- The RAM modules will be visible at point **1** on the mainboard.
- Pull the release latches.
- Remove the module.

Removing the System Memory (RAM)

The computer has two memory sockets for 204 pin Small Outline Dual In-line Memory Modules (SO-DIMM) supporting DDRIII (DDR3) Up to 1600 MHz. The main memory can be expanded up to 16GB. The SO-DIMM modules supported are 1024MB and 2048MB **DDRIII** Modules. The total memory size is automatically detected by the POST routine once you turn on your computer.

Memory Upgrade Process

- Turn **off** the computer, turn it over to remove the battery ([page 2 - 5](#)) and bottom cover ([page 2 - 6](#)).
- The RAM modules will be visible at point **1** on the mainboard ([Figure 6b](#)).
- Gently pull the two release latches (**2** & **3**) on the sides of the memory socket in the direction indicated by the arrows ([Figure 6b](#)). The RAM module **4** will pop-up ([Figure 6c](#)), and you can then remove it.



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.

Single Memory Module Installation

If your computer has a single memory module, then insert the module into the **Channel 0 (JDIMM1)** socket. In this case this is the **upper memory socket** (the socket furthest to the mainboard).

4. RAM Module

4. Pull the latches to release the second module if necessary.
5. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory slot.
6. 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.
7. Replace the bottom case and the screws (see [page 2 - 5](#)).
8. Restart the computer to allow the BIOS to register the new memory configuration as it starts up.

Figure 7
**RAM Module
Assembly**

Disassembly

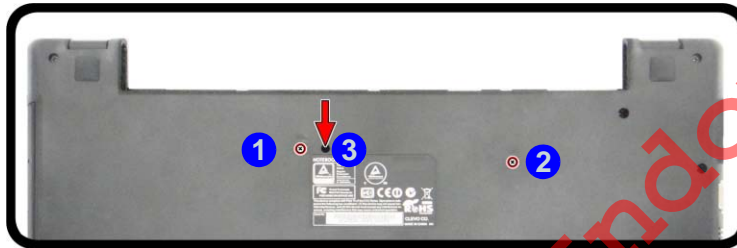
Figure 8
Keyboard Removal

- a. Remove screw and release the keyboard by pressing at point ③.
- b. Disconnect the keyboard ribbon cable from the locking collar socket.
- c. Remove the keyboard.

Removing the Keyboard

1. Turn **off** the computer, turn it over to remove the battery ([page 2 - 5](#)).
2. Remove screws ① - ② from the bottom case and press at point ③ to release the keyboard ([Figure 8a](#)).
3. Turn the computer over, remove the keyboard ④ ([Figure 8c](#)).
4. Carefully lift the keyboard up, being careful not to bend the keyboard ribbon cable ⑤. Disconnect the keyboard ribbon cable from the locking collar socket ⑥ ([Figure 8d](#)).
5. Carefully lift up the keyboard ④ off the computer ([Figure 8e](#)).

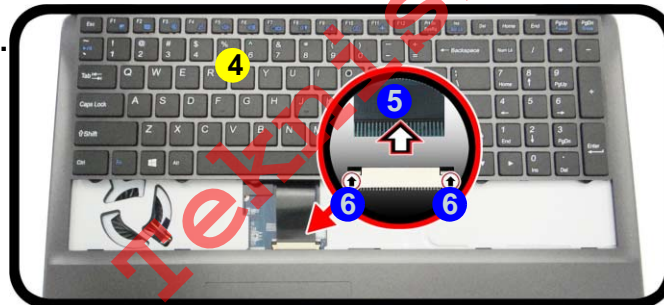
a.



c.



b.



4. Keyboard

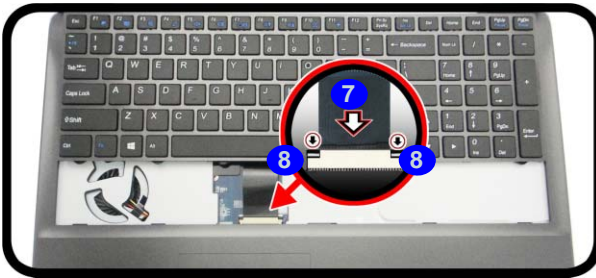
- 2 Screws

6. Connect the keyboard ribbon cable from the locking collar socket ⑧, and be careful not to bend the keyboard ribbon cable ⑦ (Figure 9d).
7. Insert the keyboard ④ at point ⑨ and then slide the keyboard in at point ⑩ and ⑪ (Figure 9e).
8. Turn the computer over, tighten the screws ⑫ - ⑬ to secure the keyboard (Figure 9f).

Figure 9
Keyboard Assembly

- d. Connect the keyboard ribbon cable to the locking collar socket.
- e. Insert the keyboard at point ⑨ and slide it in.
- f. Tighten the screws.

d.



e.



f.



4. Keyboard

- 2 Screws

Disassembly

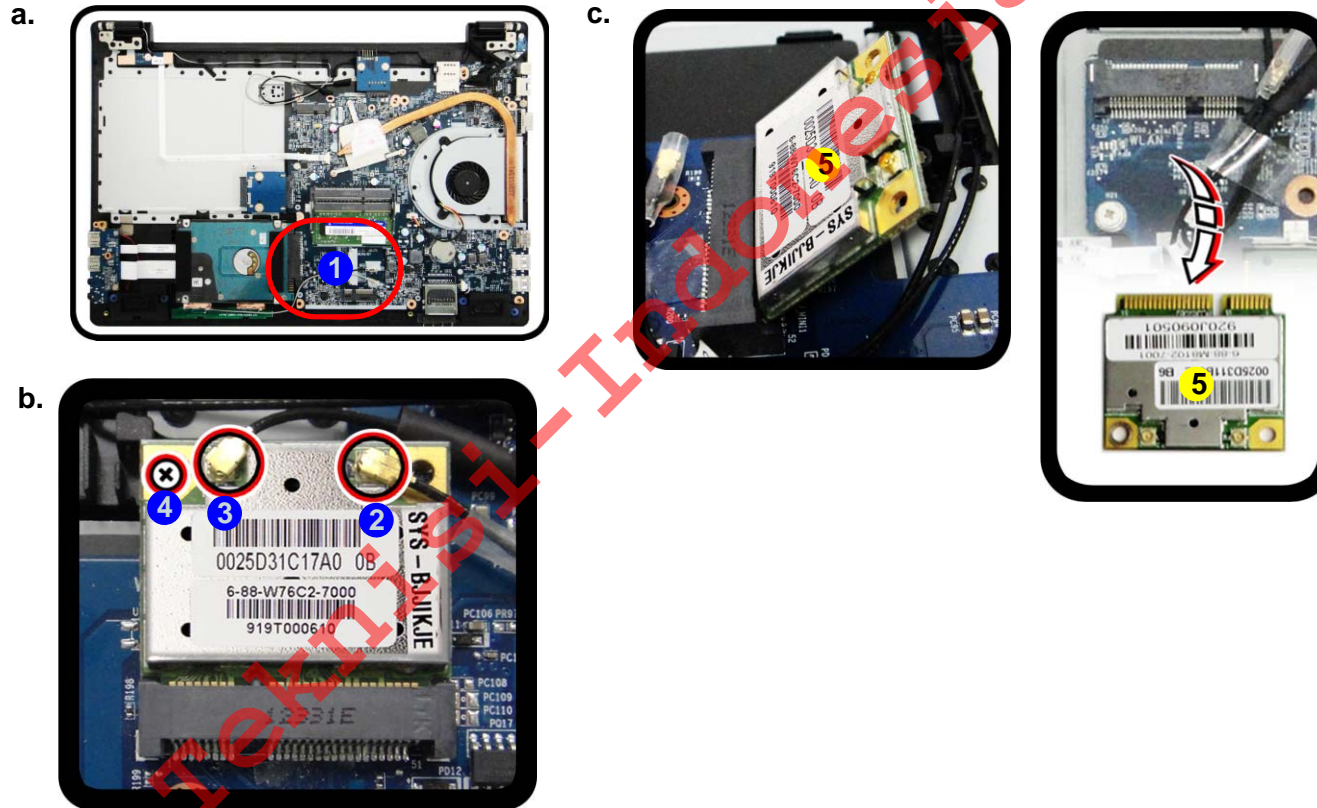
Figure 10
**Wireless LAN
Module Removal**

- a. Locate the WLAN.
- b. Disconnect the cable and remove the screw.
- c. The WLAN module will pop up and lift it out of the computer.

Note: Make sure you reconnect the antenna cable to the “1 + 2” socket (*Figure 10b*).

Removing the Wireless LAN Module

1. Turn **off** the computer, turn it over to remove the battery (*page 2 - 5*) and bottom cover (*page 2 - 6*).
2. The Wireless LAN module will be visible at point **1** on the mainboard (*Figure 10a*).
3. Carefully disconnect the cables **2** & **3**, and then remove the screw **4** (*Figure 10b*).
4. The Wireless LAN module **5** (*Figure 10c*) will pop-up, and you can remove it from the computer.




5. Wireless LAN Module

- 1 Screw

Wireless LAN and Combo Module Cables

Note that the cables for connecting to the antennae on WLAN and WLAN & Bluetooth Combo modules are not labelled. The cables/covers (each cable will have either a black or transparent cable cover) are color coded for identification as outlined in the table below.

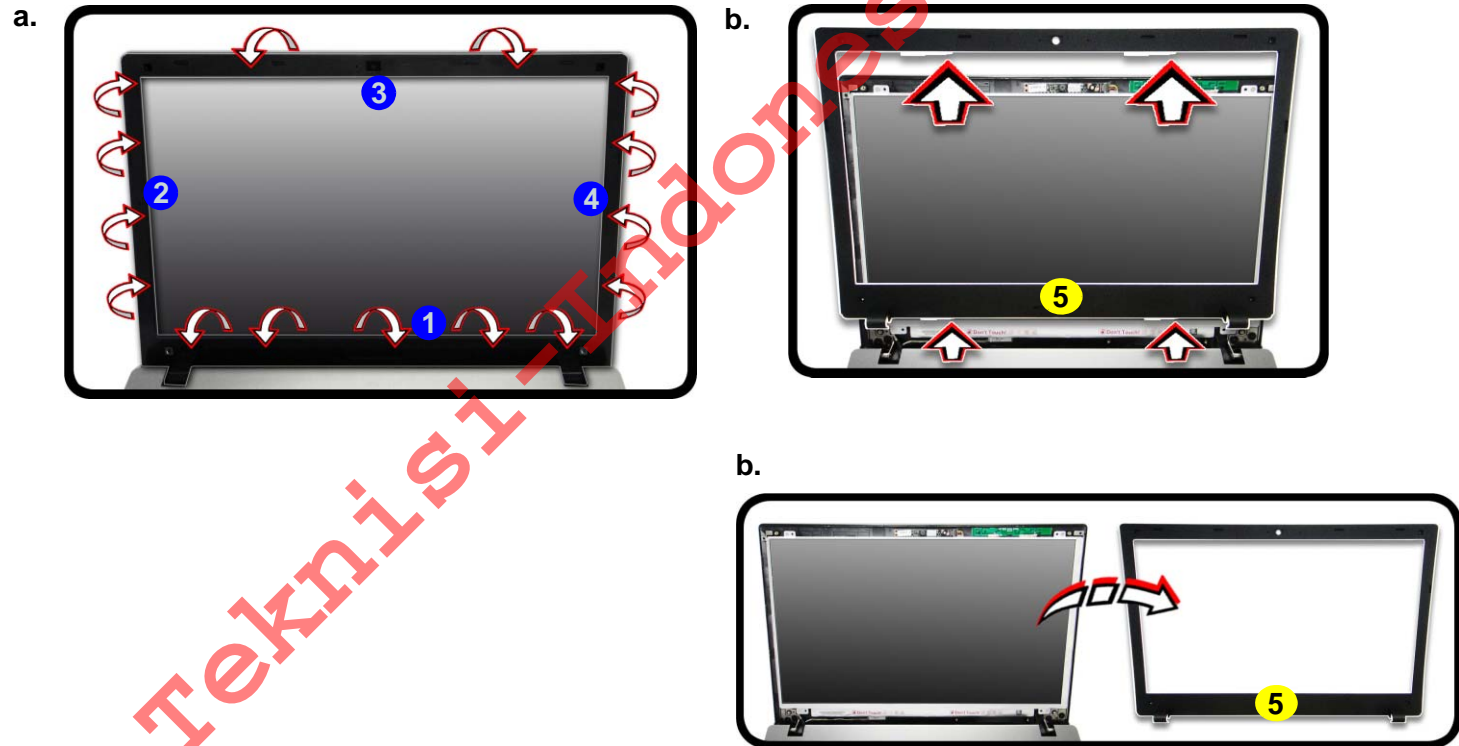
Module Type	Antenna Type	Cable Color	Cable Cover Type
WLAN/WLAN & Bluetooth Combo	WM 1	Black	Transparent
	WM 2	Gray	
	WM 3	White	
LTE Broadband	LTE 1	Black	Black
	LTE 2	Gray	
3G Broadband	3G 1	Black	Black
	3G 2	Gray	

Cable 1 is usually connected to antenna 1 (Main) on the module, and cable 2 to antenna 2 (Aux).

Disassembly

Figure 11
CCD Removal

- Run your fingers around the inner frame of the LCD panel at the points indicated by the arrows.
 - Lay the computer down on a flat surface with the top case up forming a 90 degree angle. Push the LCD front panel upwards before carefully lifting it up.
 - Remove the LCD front cover.
- Turn **off** the computer, turn it over to remove the optical device ([page 2 - 8](#)) and battery ([page 2 - 5](#)).
 - Run your fingers around the inner frame of the LCD panel at the points as indicated by the arrows **1** - **4** ([Figure 11a](#)).
 - Lay the computer down on a flat surface with the top case up forming a 90 degree angle. Push the LCD front cover **9** upwards before carefully lifting it up.
 - Remove the LCD front cover **9** ([Figure 11c](#)).




5. LCD Front Cover

5. Disconnect the cable 14.
6. Remove the CCD module 15 (Figure 12f).
7. Reverse the process to install a new CCD module.

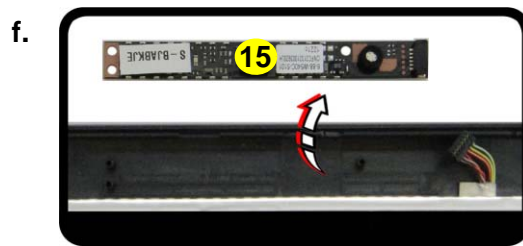


Figure 12
CCD Removal
(cont'd)

- e. Disconnect the cable.
- f. Remove the CCD module.



15. CCD Module

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Appendix A:Part Lists

This appendix breaks down the **W950SU2** 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

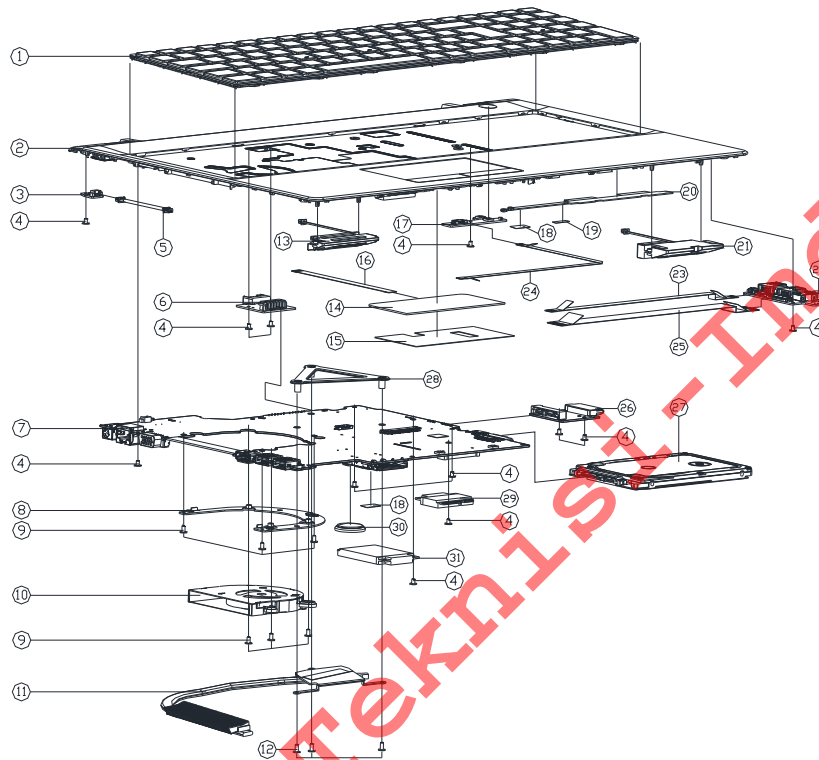
The following table indicates where to find the appropriate part list illustration.

Table A - 1

**Part List Illustration
Location**

Part	
Top	<i>page A - 3</i>
Bottom	<i>page A - 4</i>
HDD	<i>page A - 5</i>
HDD Caddy	<i>page A - 6</i>
LCD	<i>page A - 7</i>
Combo	<i>page A - 8</i>
DVD Dual Drive	<i>page A - 9</i>

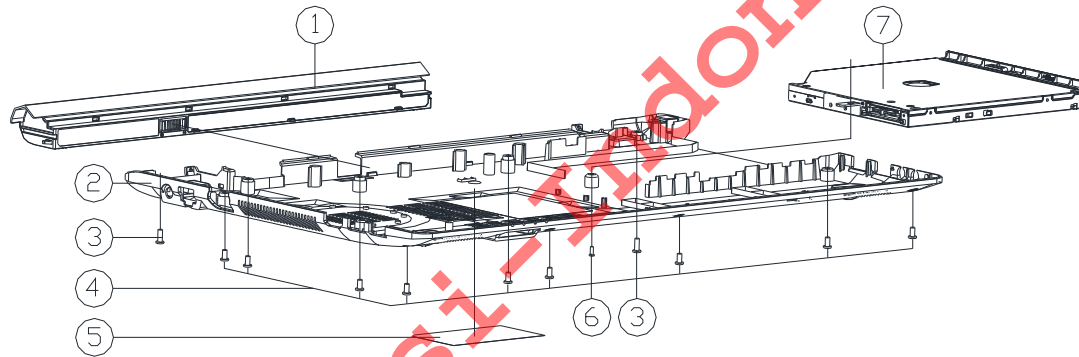
Top



ITEM	PART NAME	PART NO	REMARK
1	WIRE KIT USA (BLACK) TONE: RED MODULE W950U	6-77-W950UK-00-V	
2	TOP CASE MODULE W950SL	6-39-W95S2-011	
3	HALL SENSOR BOARD V1.0 W950U	6-77-W95K1-D01	
4	SCREW MOD. KI NI ICT NY (0.4X4.5F-0.0)	6-35-B1120-3RE	
5	WIRE CABLE FOR LID 3P 40W (0.4X4.5F-0.0)	6-43-W5503-011	
6	BATTERY BOARD V2.0 W950U	6-77-W95K0-D02	
7	WIRE CABLE FOR LID 3P 40W (0.4X4.5F-0.0)	6-77-W950U0-003-2R	
7	WIRE CABLE FOR LID 3P 40W (0.4X4.5F-0.0)	6-77-W950U0-003-4J	
7	WIRE CABLE FOR LID 3P 40W (0.4X4.5F-0.0)	6-77-W950U0-003-5C	
7	WIRE CABLE FOR LID 3P 40W (0.4X4.5F-0.0)	6-77-W950U0-003-5G	
7	WIRE CABLE FOR LID 3P 40W (0.4X4.5F-0.0)	6-77-W950U0-003-7F	
7	WIRE CABLE FOR LID 3P 40W (0.4X4.5F-0.0)	6-77-W950U0-003-9G	
7	WIRE CABLE FOR LID 3P 40W (0.4X4.5F-0.0)	6-77-W950U0-003-9J	
8	FAN PRODUCT SECONDARY W940U	6-33-W951S-012	
9	SCREW MOD. KI SZ ICT NY	6-35-B6120-4RA	
10	FAN MODULE W25H40	6-31-W25HS-100	
11	CPU HEATSINK MODULE W540SL	6-31-W552N-102	
12	SCREW W25H40 KI NI ICT NY	6-35-B1125-SRA	
13	SPR-CABLE L 2Y R 23MM (P2324P900) W950U	6-23-W95K-0L1	
14	TOUCH PAD SWITCHES TM-014G-RED MULTI-DES	6-49-C4802-010	
15	TP TAPE MYLAR PET W540EU	6-40-W5401-010	
16	ITE CABLE FOR W4 KI NI W4L SENSOR (0.4X4.5F-0.0)	6-43-W35E2-011	
17	POWER SWITCH BOARD V3.0 W950SL	6-77-W54KS-003-B	
18	TAPE MYLAR TRANSPARENT CONDUCTED P900M	6-40-P1803-020	
19	TAPE MYLAR TRANSPARENT CONDUCTED W25P40	6-40-W25P3-010	
20	WIRE CABLE FOR LID 3P 40W (0.4X4.5F-0.0)	6-23-7W951-011	
21	SPR-CABLE R 2Y R 68MM (P2324P900) W950U	6-23-W95K-0R1	
22	AUDIO BOARD (HEADPHONE) V2.0 W950SL	6-77-W95K0-D02-A	
23	ITE CABLE NO. 10 AUDIO BOARD (0.4X4.5F-0.0)	6-43-W9550-020-1	
24	ITE CABLE FOR POWER IN TO W4L (0.4X4.5F-0.0)	6-43-W9550-010	
25	ITE CABLE NO. 10 AUDIO BOARD (0.4X4.5F-0.0)	6-43-W9550-030-1	
26	ODD BOARD V3.0 W950U	6-77-W95KN-D03	
27	W/O HDD ASS'Y W950U	6-79-W950U0J-010	
27	W/O HDD ASS'Y W950U	6-79-W950U0J-020	
27	2ND HDD CADDY ASSY W/O HDD W950U	6-79-W950U0J-030	
27	2ND HDD CADDY ASSY W/O HDD W950U	6-79-W950U0J-040	
28	CPU SUPPORTER FOR HADEN RIVER DECC W950M	6-33-W150S-011	
29	WIRE CABLE FOR POWER IN TO W4L (0.4X4.5F-0.0)	6-88-W54SF-7000	
29	WIRE CABLE FOR POWER IN TO W4L (0.4X4.5F-0.0)	6-88-W54SF-9400	
29	WIRE CABLE FOR POWER IN TO W4L (0.4X4.5F-0.0)	6-88-W54SF-7010	
29	WIRE CABLE FOR POWER IN TO W4L (0.4X4.5F-0.0)	6-88-P3702-9400	
29	WIRE CABLE FOR POWER IN TO W4L (0.4X4.5F-0.0)	6-88-P3702-7000	
30	BATTERY 3V 220MA BBKCR032B (K12)	6-23-6A2B2-030	
31	WARRANTY 3D 2400 MLC COMBIBUSSED CHARGE (MS SERIES)	6-85-D4000-Z01	
31	WARRANTY 3D 2400 MLC COMBIBUSSED CHARGE (MS SERIES)	6-85-D4000-100	
31	WARRANTY 3D 2400 MLC COMBIBUSSED CHARGE (MS SERIES)	6-85-D40C8-L01	
31	WARRANTY 3D 2400 MLC COMBIBUSSED CHARGE (MS SERIES)	6-85-D40C8-100	
31	WARRANTY 3D 2400 MLC COMBIBUSSED CHARGE (MS SERIES)	6-88-W650V-8800	

Figure A - 1
Top

Bottom

Figure A - 2
Bottom

ITEM	PART NAME	PART NO	REMARK
1	W/CD/DVD SUPER MULTI ASSY (OPTION)	6-87-W95KS-42F	
2	BOTTOM CASE MODULE W950S2C	6-39-W95S3-01I	
2	BOTTOM CASE MODULE W950S2C	6-39-W95S3-01I-C	
2	BOTTOM CASE MODULE W950KL	6-39-W95K3-01O	
3	SCREW M2.5X6.1 KI BK/Z NY ICT	6-35-B6125-BRO	
4	SCREW M2.5X6.1 BZ ICT NY	6-35-B6125-GBA	
5	PRODUCT LABEL FOR W950KL	6-45-W950KL03-01O	
5	PRODUCT LABEL FOR W950KL	6-45-W950KL03-01O	
5	PRODUCT LABEL FOR W950TU	6-45-W950TU03-01O	
5	PRODUCT LABEL FOR W950S2C	6-45-W950S2C03-01O	
6	SCREW M2.5X6.1 KI BK/Z NY ICT	6-35-B6120-SRO	
7	SATA DVD SUPER MULTI ASSY (OPTION)	6-79-W950KL00-000	(OPTION)
7	SATA DVD SUPER MULTI ASSY (OPTION)	6-79-W950KL00-010	(OPTION)
7	SATA BLU-RAY COMBO ASSY (OPTION)	6-79-W950KL00-010	(OPTION)
7	W/CD/DVD ASSY W950KL	6-79-W950KL02-000	(OPTION)
7	PRE-PROCESSOR ASSY W950KL	6-79-W950KL02-010	(OPTION)

HDD

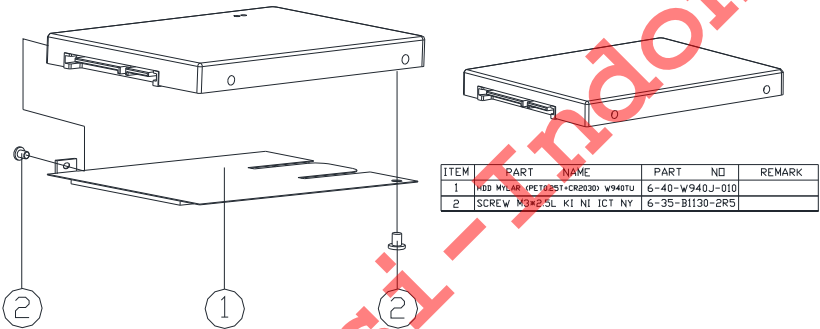
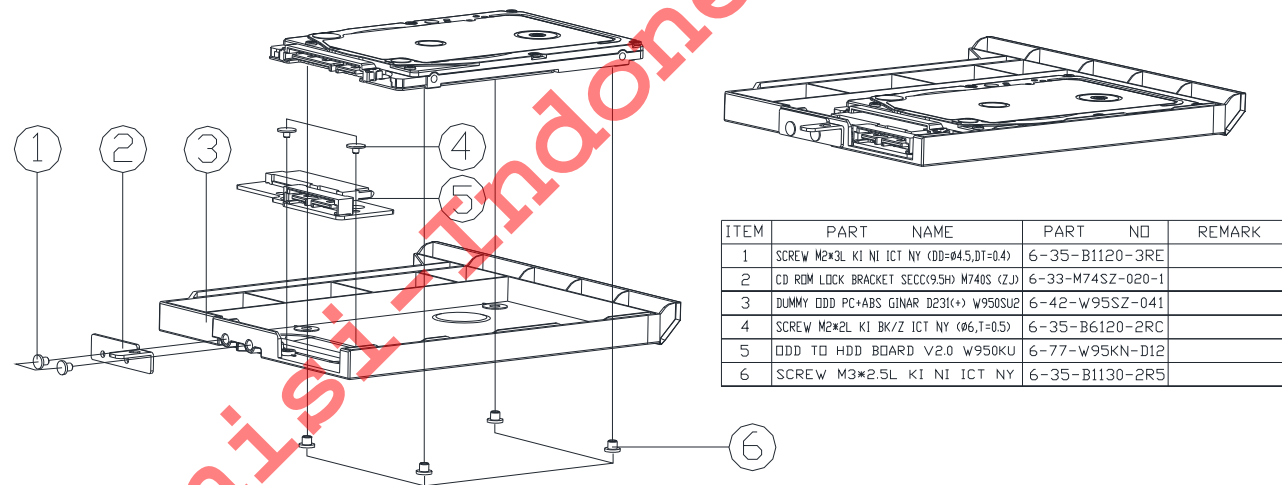
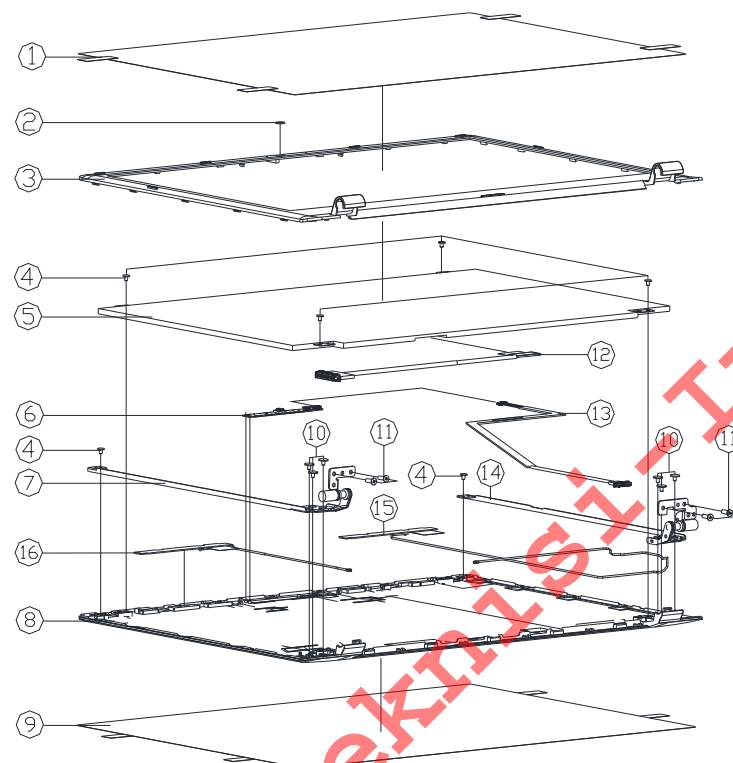


Figure A - 3
HDD

HDD Caddy

Figure A - 4
HDD Caddy

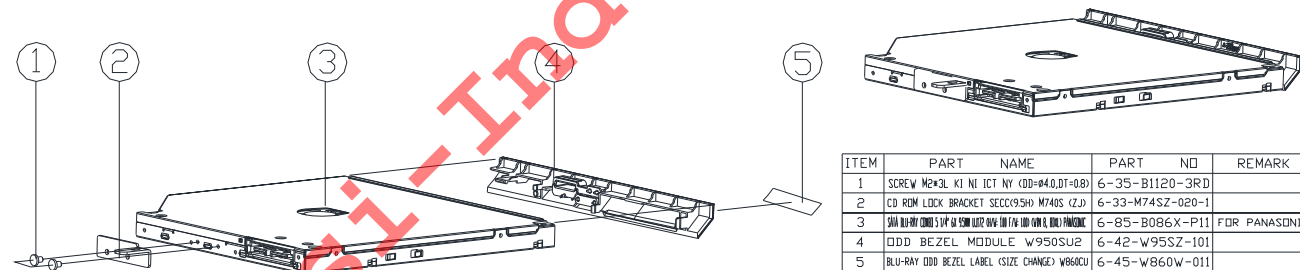
LCD



ITEM	PART NAME	PART NO	REMARK
1	LCD FRONT COVER PROTECTION MYLAR (PET-0809SD) ES200	6-40-E5101-030-1	
2	LCD LENS PMMA W650SR	6-42-W6501-010	
3	LCD FRONT COVER MODULE W950SU2	6-39-W95S1-012	
4	SCREW M2x3L K1 NI ICT NY (DD=045,DT=04)	6-35-B1120-3RE	
5	LCD 15.6" HD LG LP156WH0-TLTI (GLARE TYPE) (LED) 38 MM	6-50-L8138-L03	
5	LCD 15.6" HD LG LP156WH0-TLTI (LED) 38 MM	6-50-L8138-L02	
5	LCD 15.6" FHD CHIMEI N156HGE-LAI (LED) 32 MM	6-50-LB232-D01	
5	LCD 15.6" HD SAMSUNG LTN156AT30-300(LED) 38MM	6-50-L8138-M00	
5	LCD 15.6" HD AU 156S6TM032 (GLARE TYPE) (LED) 32MM	6-50-L8132-G00	
5	LCD 15.6" FHD CHIMEI N156HGE-LAI (GLARE TYPE) (LED) 32 MM	6-50-LB232-D00	
6	WIRE CABLE FOR LCD 15.6" HD LG LP156WH0-TLTI (GLARE TYPE) (LED) 38 MM	6-88-W940C-4901	OPTION
6	WIRE CABLE FOR LCD 15.6" HD LG LP156WH0-TLTI (LED) 38 MM	6-88-W940C-5100	OPTION
7	LCD HINGE L W950SU2	6-33-W95S1-0L1	
8	LCD BACK COVER MODULE W950SU2	6-39-W95S1-022	
8	LCD BACK COVER MODULE W950SU2-C	6-39-W95S1-022-C	
9	LCD BACK COVER PROTECTION MYLAR (PET-0809SD) W650SR	6-40-W6508-010	
10	SCREW M2x2L K1 BK/Z ICT NY(08,T=06)	6-35-B6120-2RE	
11	SCREW M2.5x6L K BZ ICT NY	6-35-82125-6RA	
12	WIRE CABLE FOR LCD 15.6" HD LG LP156WH0-TLTI (GLARE TYPE) (LED) 38 MM	6-43-W95K1-011-N	
13	WIRE CABLE FOR LCD 15.6" HD LG LP156WH0-TLTI (LED) 38 MM	6-43-W95K1-011	
14	LCD HINGE R W950SU2	6-33-W95S1-0R1	
15	WIRE CABLE FOR LCD 15.6" HD LG LP156WH0-TLTI (GLARE TYPE) (LED) 38 MM	6-23-7W95K-020	OPTION
16	WIRE CABLE FOR LCD 15.6" HD LG LP156WH0-TLTI (LED) 38 MM	6-23-7W95K-010	OPTION

Figure A - 5
LCD

Combo

Figure A - 6
Combo

DVD DUAL

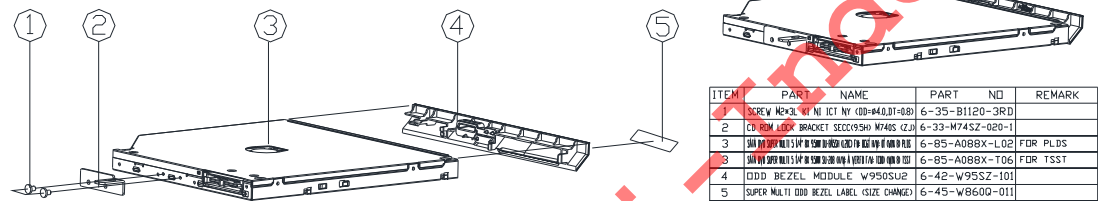


Figure A - 7
DVD DUAL

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Appendix B: Schematic Diagrams

This appendix has circuit diagrams of the **W950SU2** 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	VGA PS8613 - Page B - 17	VCore - Page B - 32
Processor 1/7 - Page B - 3	LVDS PS8625 - Page B - 18	Charger, DC In - Page B - 33
Processor 2/7 - Page B - 4	USB Hub AU6259-JGF - Page B - 19	Power Switch Board - Page B - 34
Processor 3/7 - Page B - 5	Card Reader & LAN RTL8411B - Page B - 20	Power On Sequence - Page B - 35
Processor 4/7 - Page B - 6	HDMI, RJ45, Fan - Page B - 21	Battery Con. Board - Page B - 36
Processor 5/7 - Page B - 7	WLAN, 3G, MSATA - Page B - 22	Hall Sensor Board - Page B - 37
Processor 6/7 - Page B - 8	Audio Codec ALC269 - Page B - 23	Audio Board - Page B - 38
Processor 7/7 - Page B - 9	USB 3.0, G-Sensor, TPM - Page B - 24	Ext. ODD Board - Page B - 39
Power 1 - Page B - 10	KBC-ITE IT8587 - Page B - 25	
Power 2 - Page B - 11	CCD, MIC, LID, I/O Connector - Page B - 26	
Power VSS - Page B - 12	HDD, ODD, LED - Page B - 27	
RSVD - Page B - 13	System Power - Page B - 28	
DDR3 SO-DIMM A - Page B - 14	VDD3, VDD5 - Page B - 29	
DDR3 SO-DIMM B - Page B - 15	ALC269Q, VT1802S - Page B - 30	
Panel, Inverter - Page B - 16	1.05V Series - Page B - 31	

Table B - 1
**SCHEMATIC
DIAGRAMS**

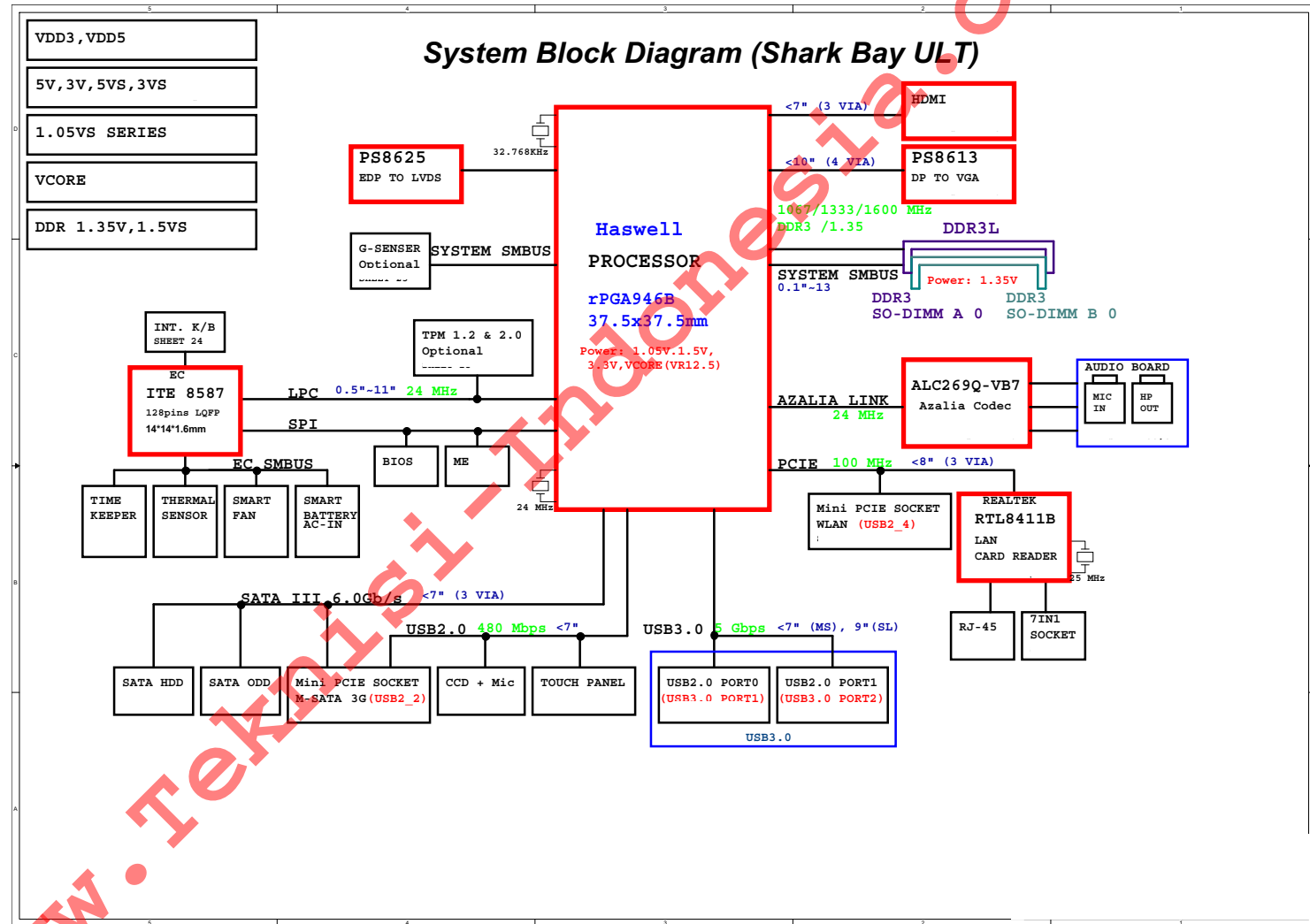


Version Note

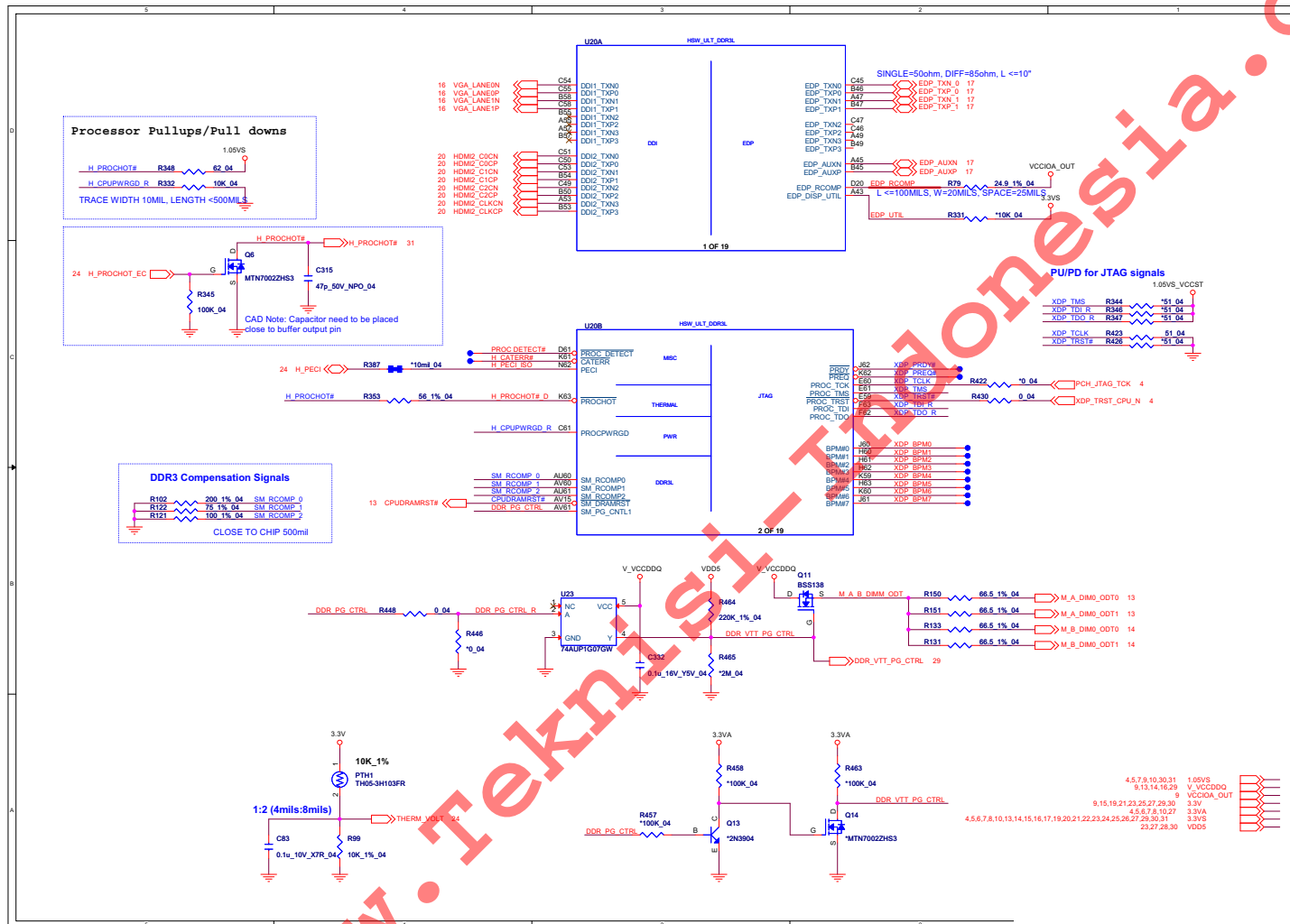
The schematic diagrams in this chapter are based upon version 6-7P-W5S27-005. If your mainboard (or other boards) are a later version, please check with the Service Center for updated diagrams (if required).

System Block Diagram

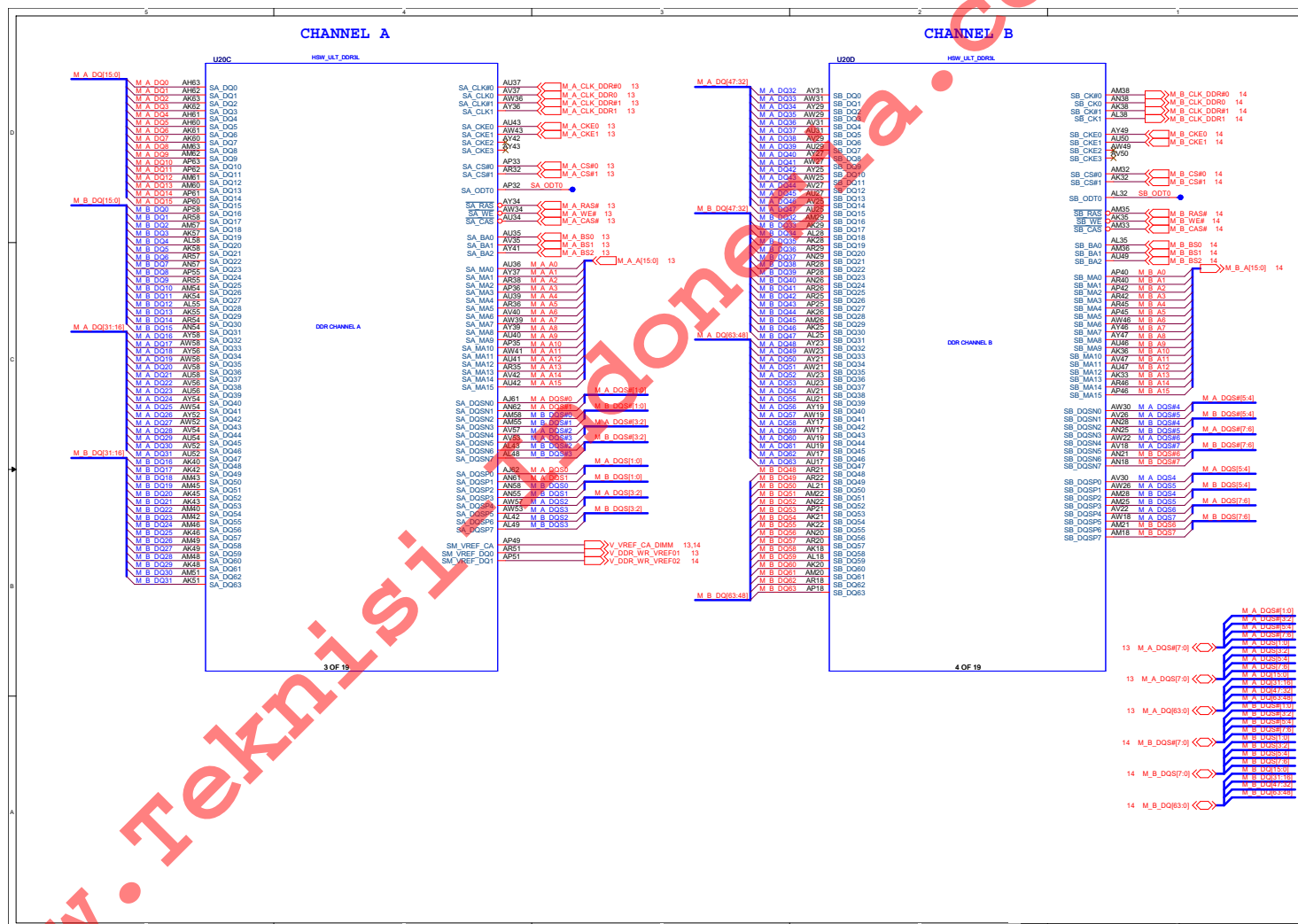
Sheet 1 of 38
System Block
Diagram



Processor 1/7

Sheet 2 of 38
Processor 1/7

Processor 2/7



Schematic Diagrams

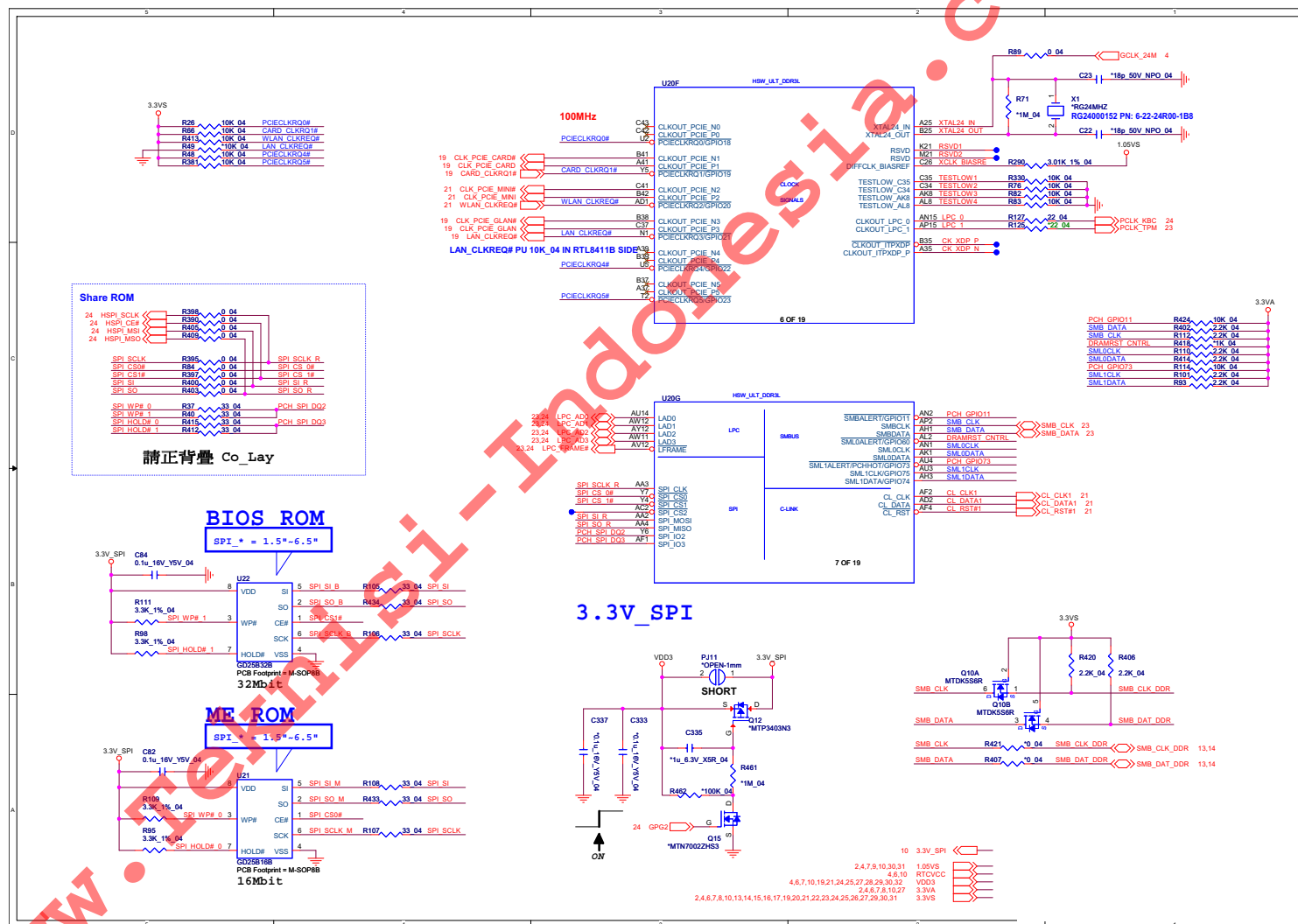


Schematic Diagrams

Processor 4/7

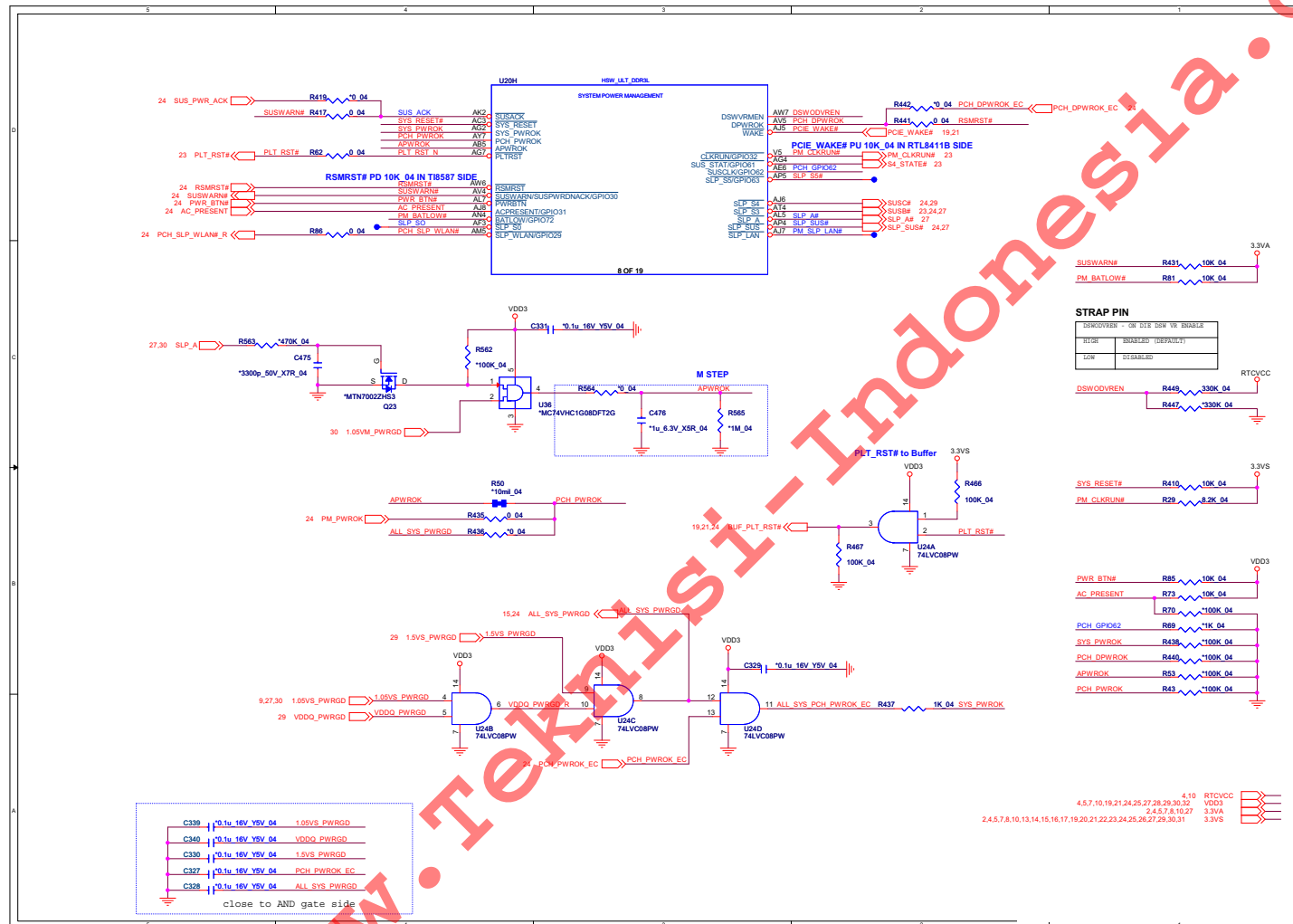
Sheet 5 of 38
Processor 4/7

B. Schematic Diagrams



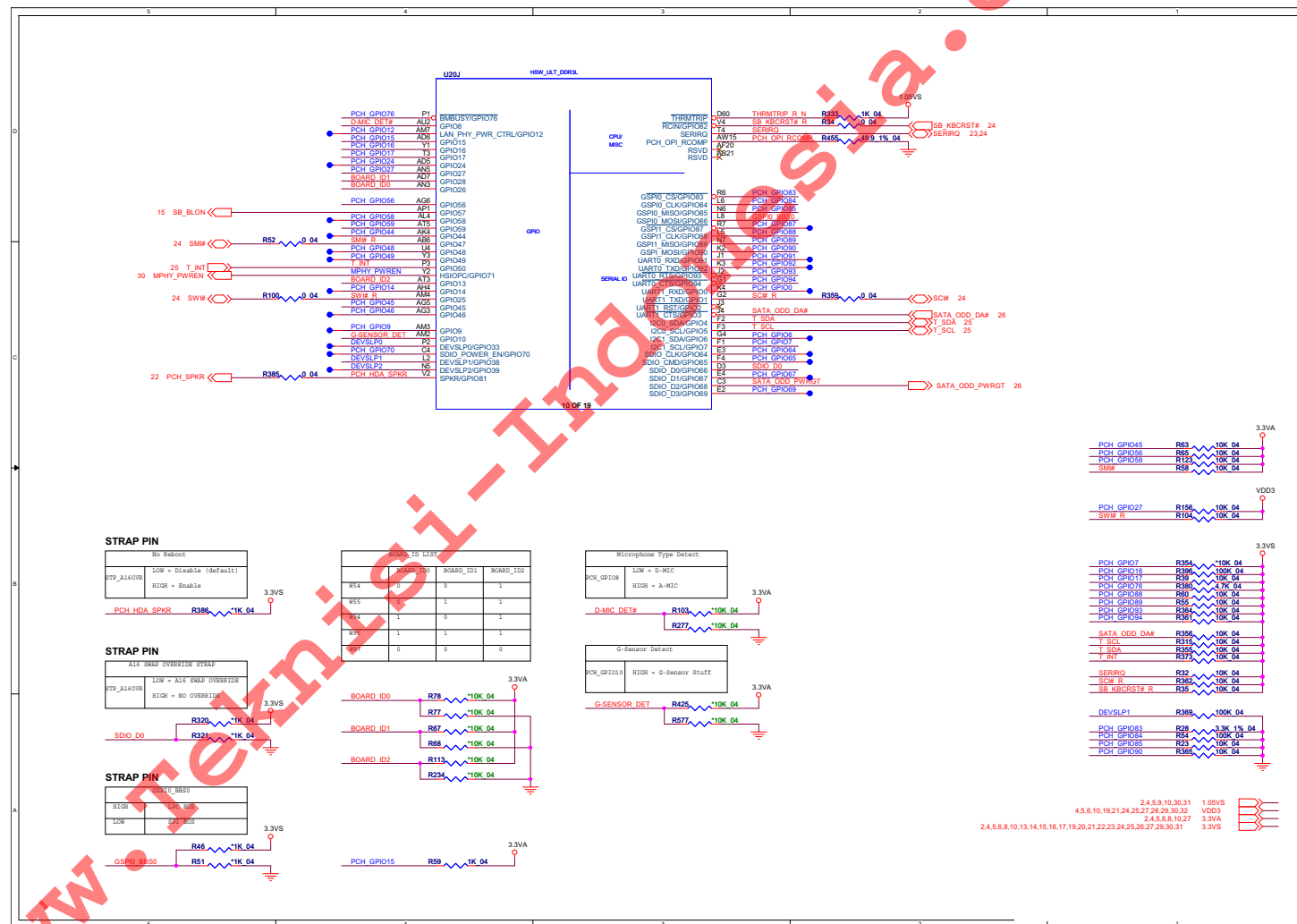
B.Schematic Diagrams

Processor 5/7 B - 7



Processor 6/7

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Processor 6/7



Schematic Diagrams

Processor 7/7

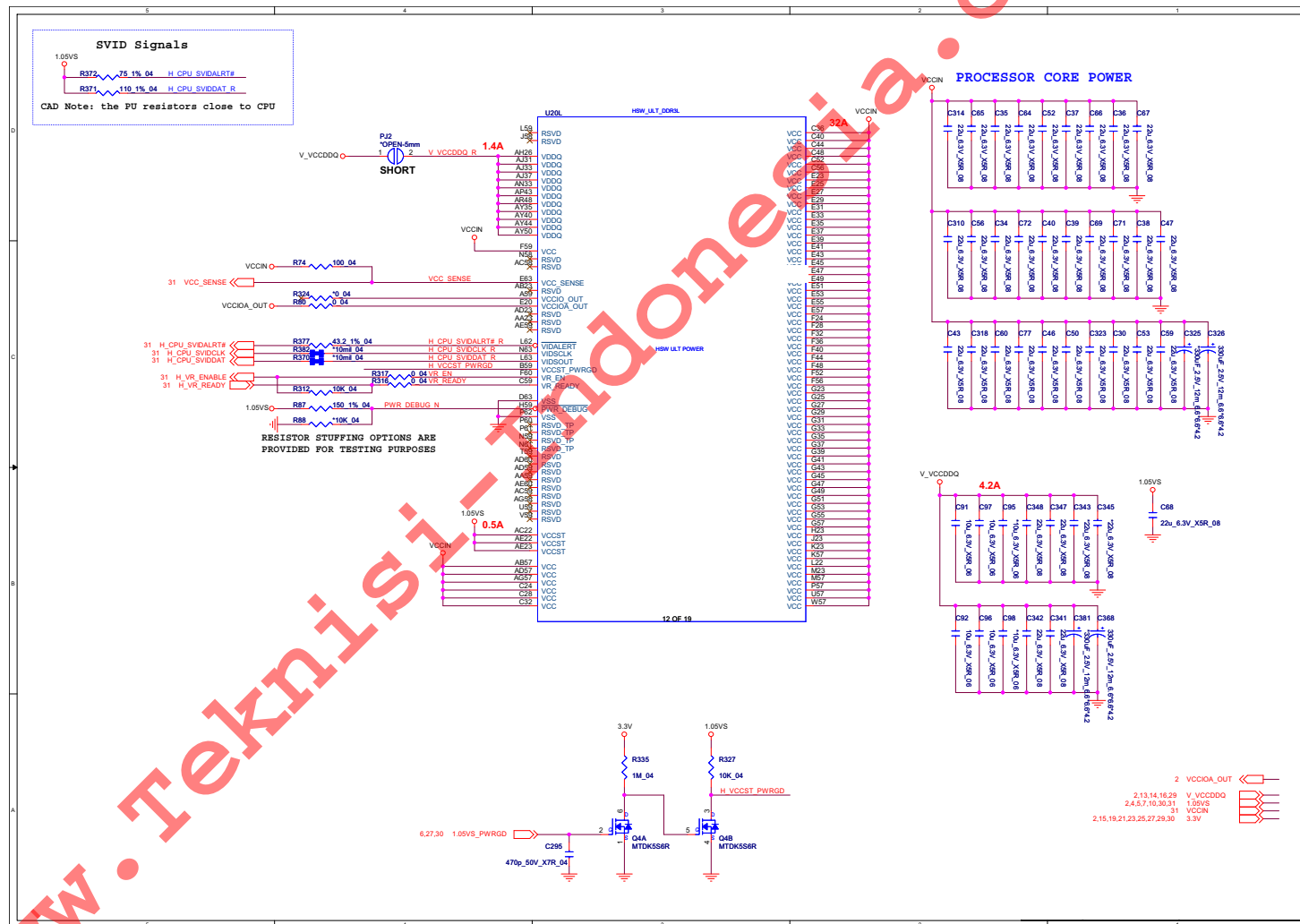


Sheet 8 of 38
Processor 7/7

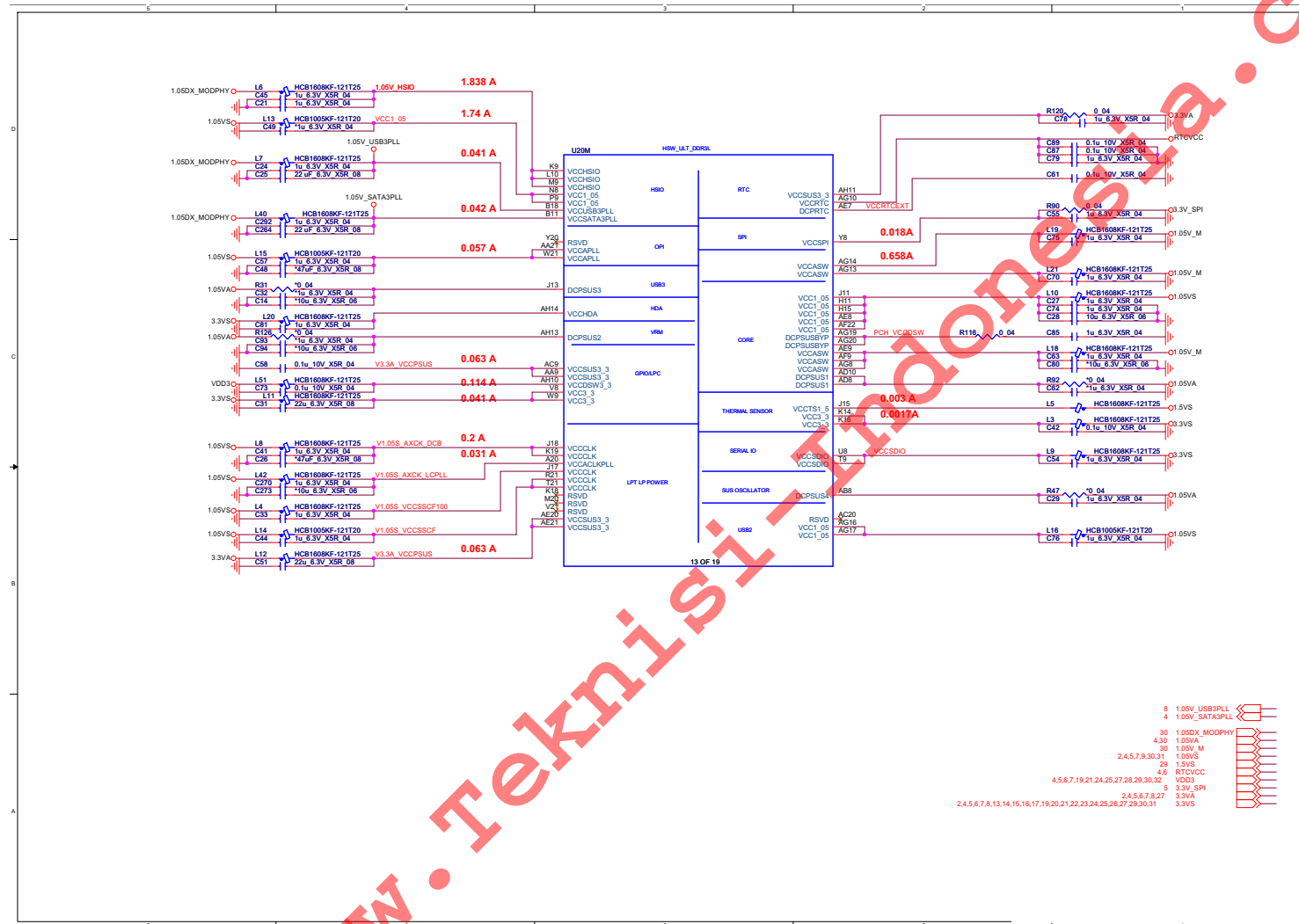
B.Schematic Diagrams

Power 1

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Power 1



Power 2

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Power 2

Schematic Diagrams

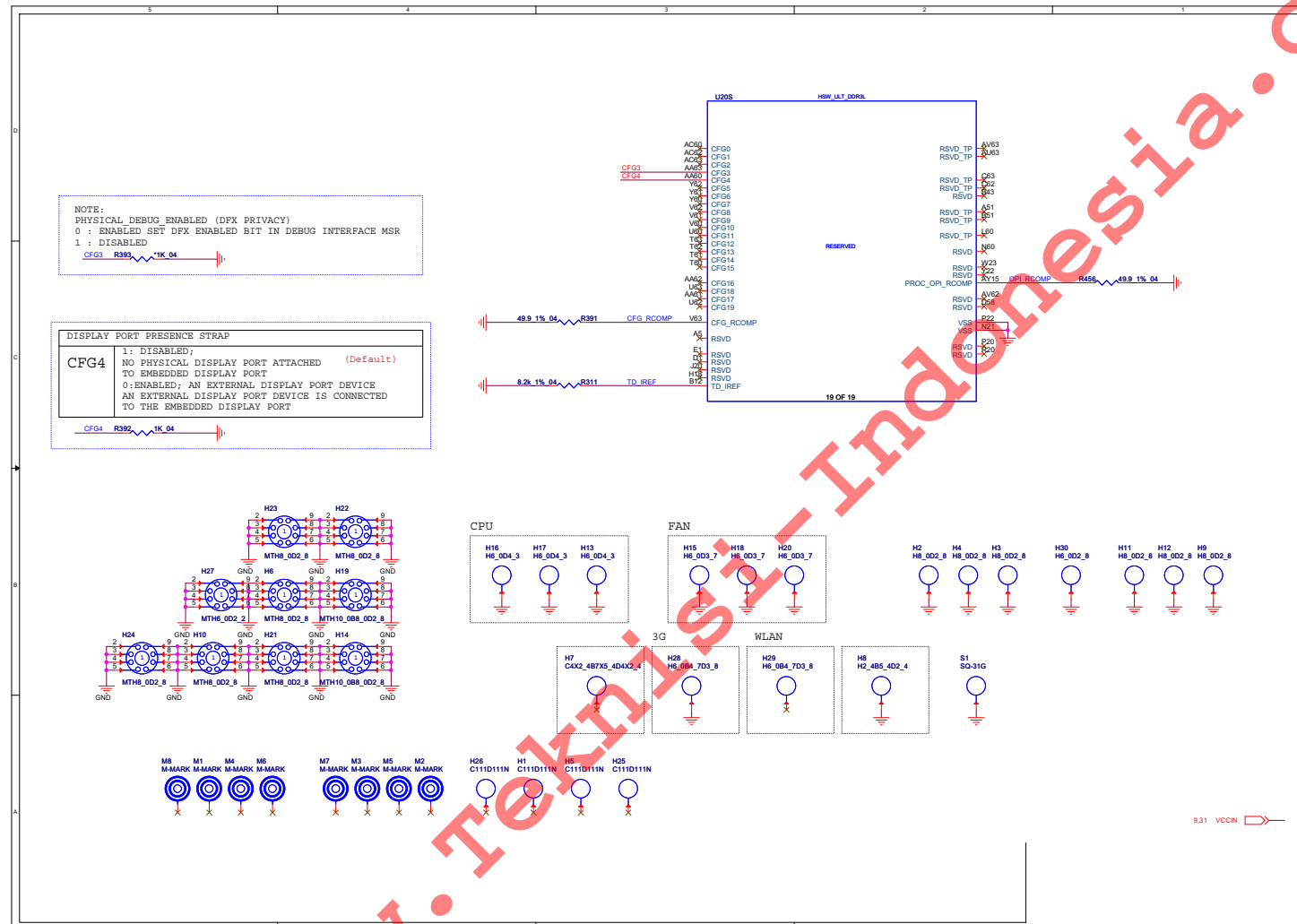
Power VSS

Sheet 11 of 38
Power VSS



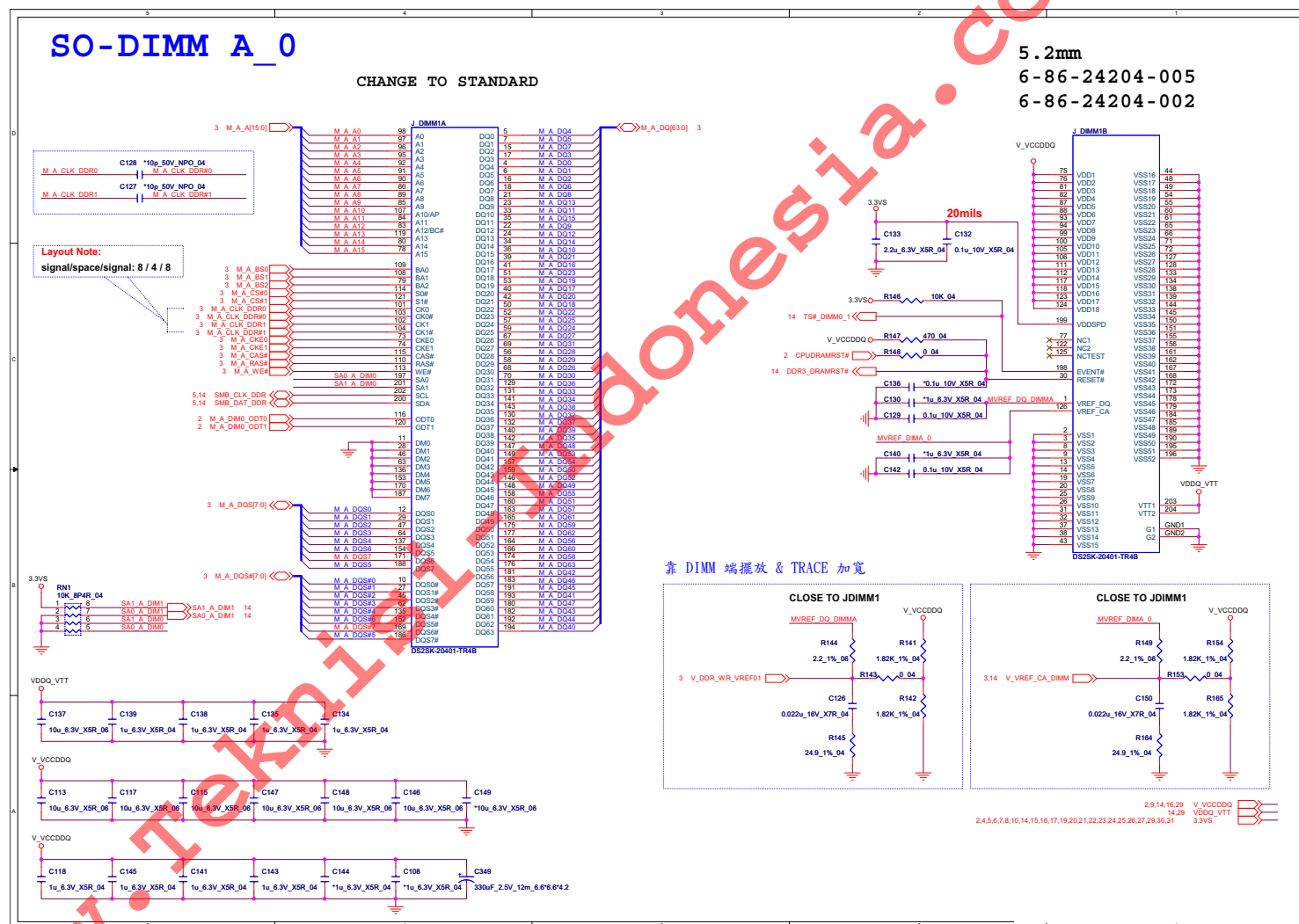
Schematic Diagrams

RSVD



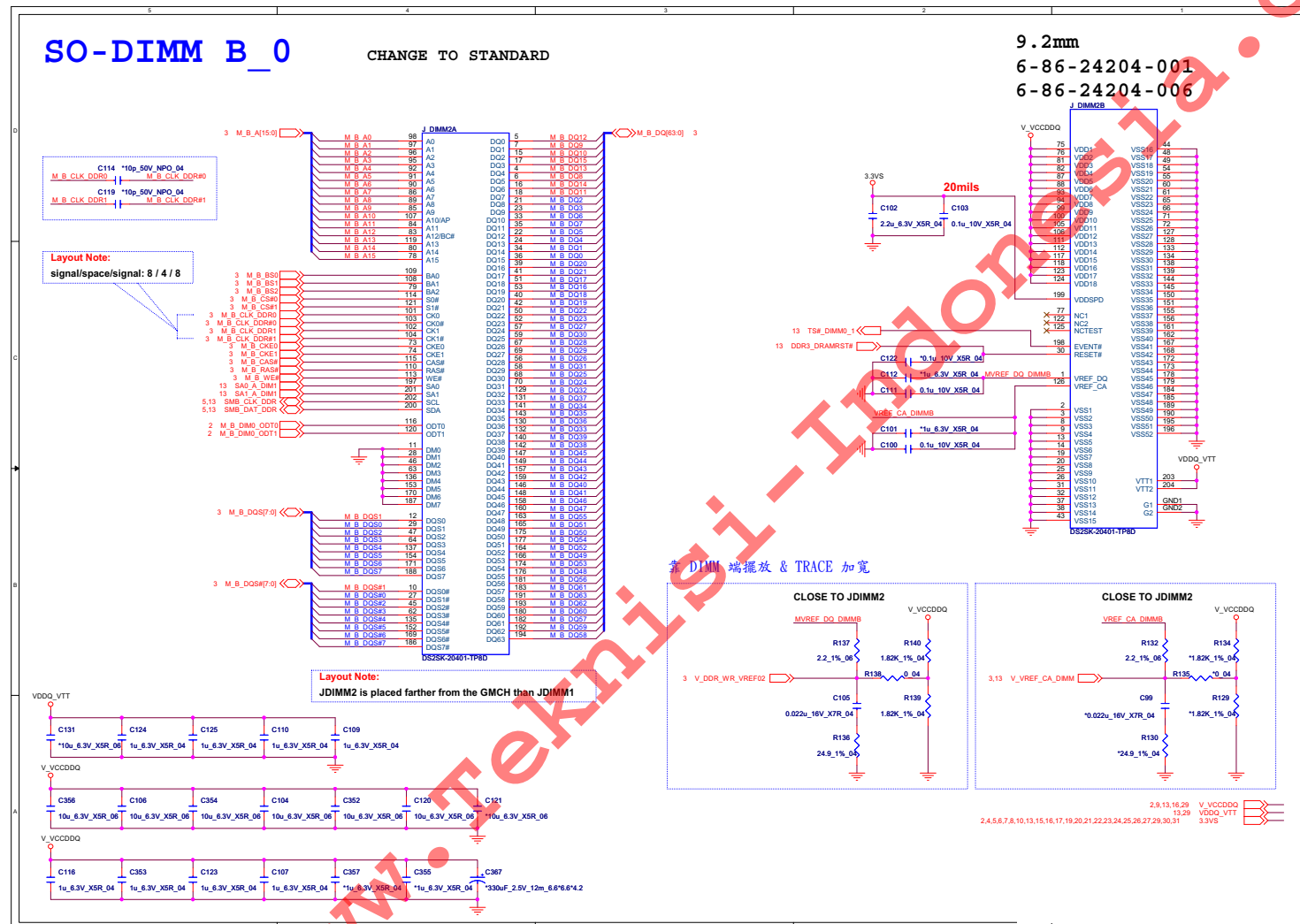
Sheet 12 of 38
RSVD

5.2mm
6-86-24204-005
6-86-24204-002



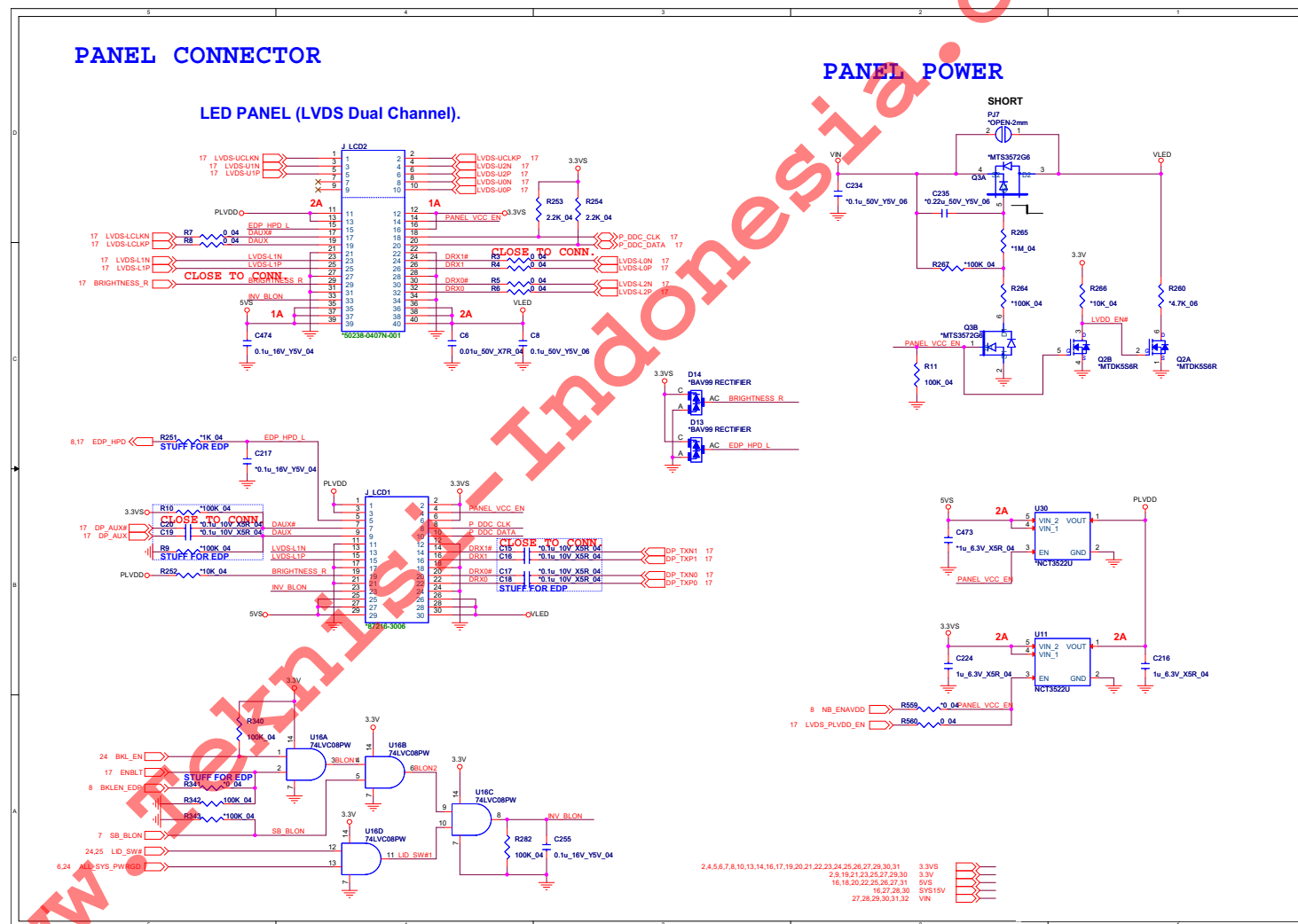
Schematic Diagrams

DDR3 SO-DIMM B



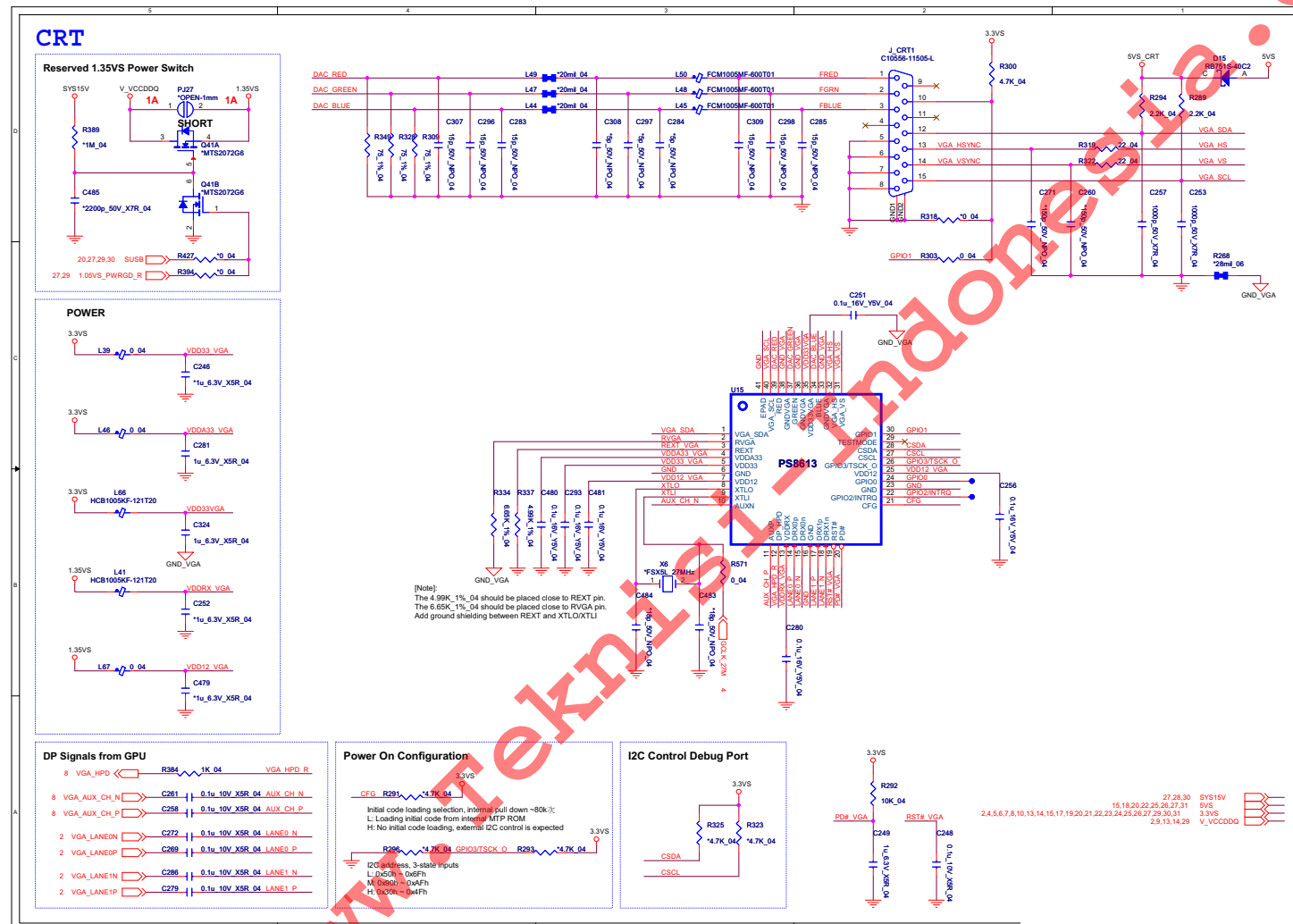
Sheet 14 of 38
DDR3 SO-DIMM B

B.Schematic Diagrams



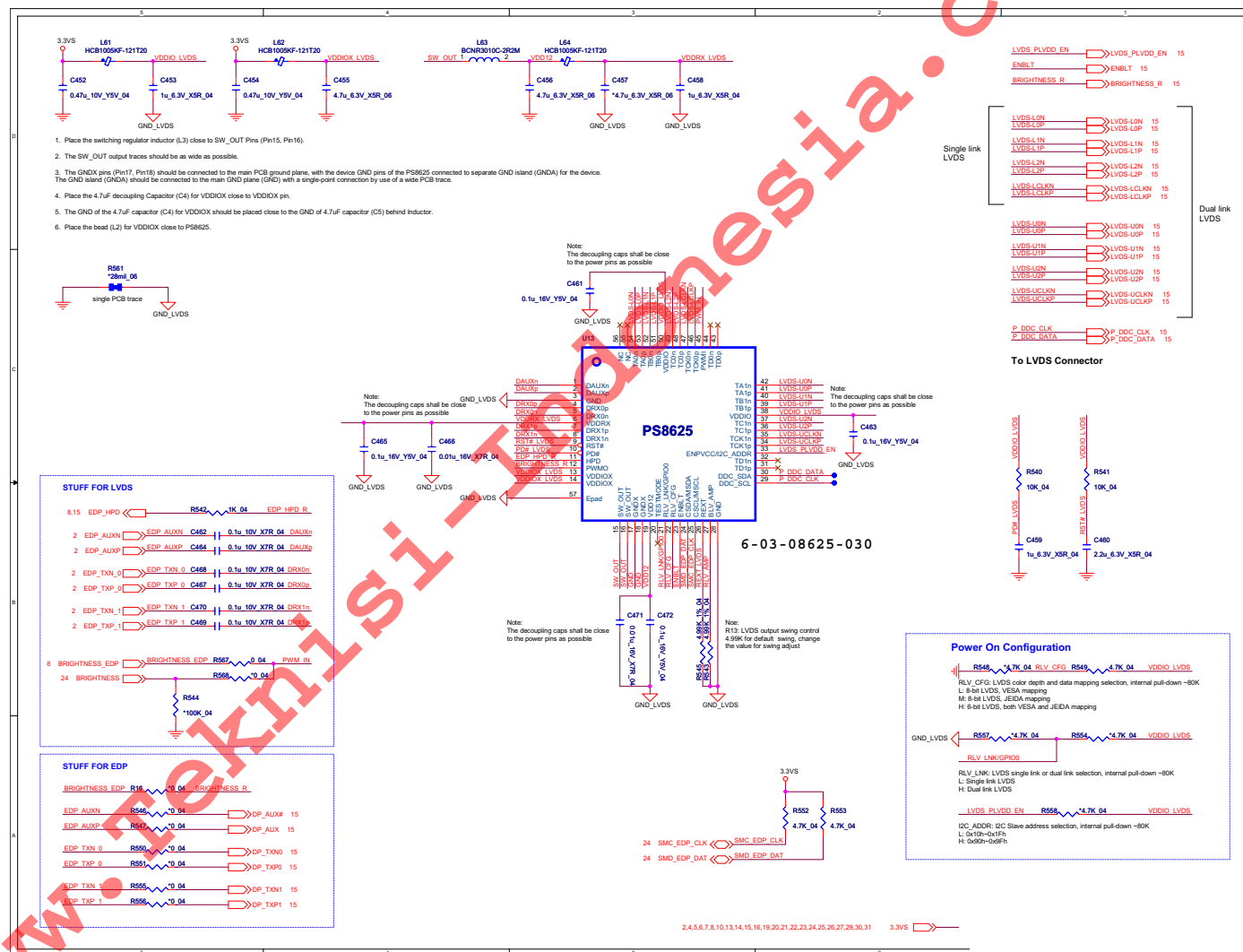
VGA PS8613 B - 17

B.Schematic Diagrams

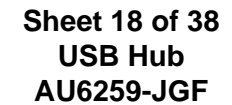


B. Schematic Diagrams

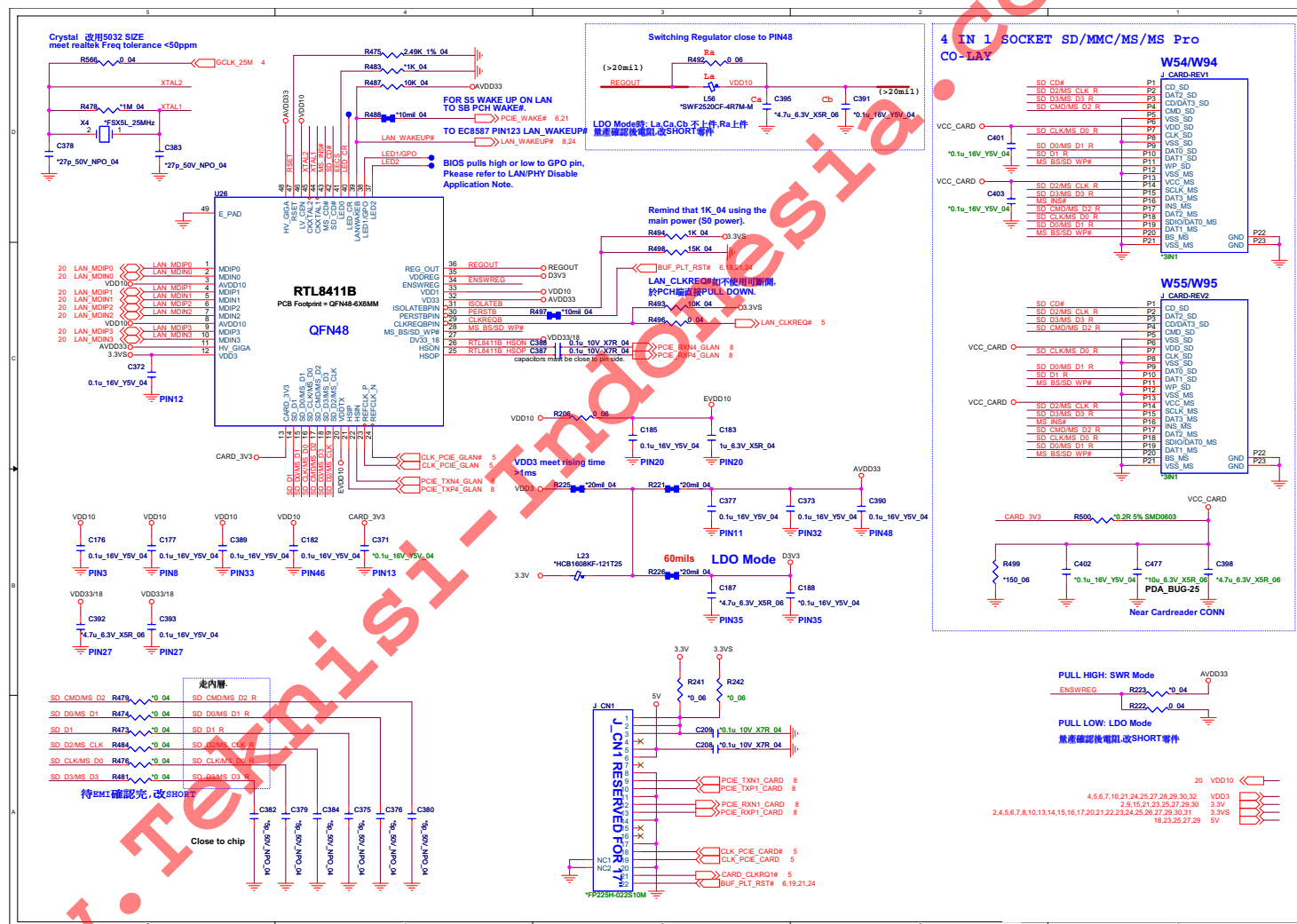
Sheet 17 of 38
LVDS PS8625



USB HUB AU6259-JGF



B - 20 Card Reader & LAN RTL8411B



HDMI

BRANCH POINT

HDMI2_C0CP C239 0.1u 10V_XTR 04
HDMI2_C0CN C239 0.1u 10V_XTR 04
HDMI2_C1CP C240 0.1u 10V_XTR 04
HDMI2_C1CN C241 0.1u 10V_XTR 04
HDMI2_C2CP C242 0.1u 10V_XTR 04
HDMI2_C2CN C242 0.1u 10V_XTR 04
HDMI2_CLKCP C241 0.1u 10V_XTR 04
HDMI2_CLKCN C243 0.1u 10V_XTR 04

BRANCH POINT

TMD5_DATA2-M R278 0.04
TMD5_DATA2-M R278 0.04
TMD5_DATA1-M R281 0.04
TMD5_DATA1-M R281 0.04
TMD5_DATA0-M R286 0.04
TMD5_DATA0-M R286 0.04
TMD5_CLOCK-M R286 0.04
TMD5_CLOCK-M R286 0.04

BRANCH POINT

TMD5_DATA2 R338 0.04
TMD5_DATA2 R338 0.04
TMD5_DATA1 R350 0.04
TMD5_DATA1 R350 0.04
TMD5_DATA0 R485 0.04
TMD5_DATA0 R485 0.04
TMD5_CLOCK R485 0.04
TMD5_CLOCK R485 0.04

CLOSE TO CONN.

R491 0.04
R491 0.04
R491 0.04
R491 0.04
R491 0.04
R491 0.04
R491 0.04
R491 0.04

HPD SINK PD 130K INTEGRATED

HPD_SINK PD 130K INTEGRATED

FOR EDS無LEVEL SHIFT時BAV99要上付

FOR EDS無LEVEL SHIFT時BAV99要上付

GIGA LAN (RTL8411)

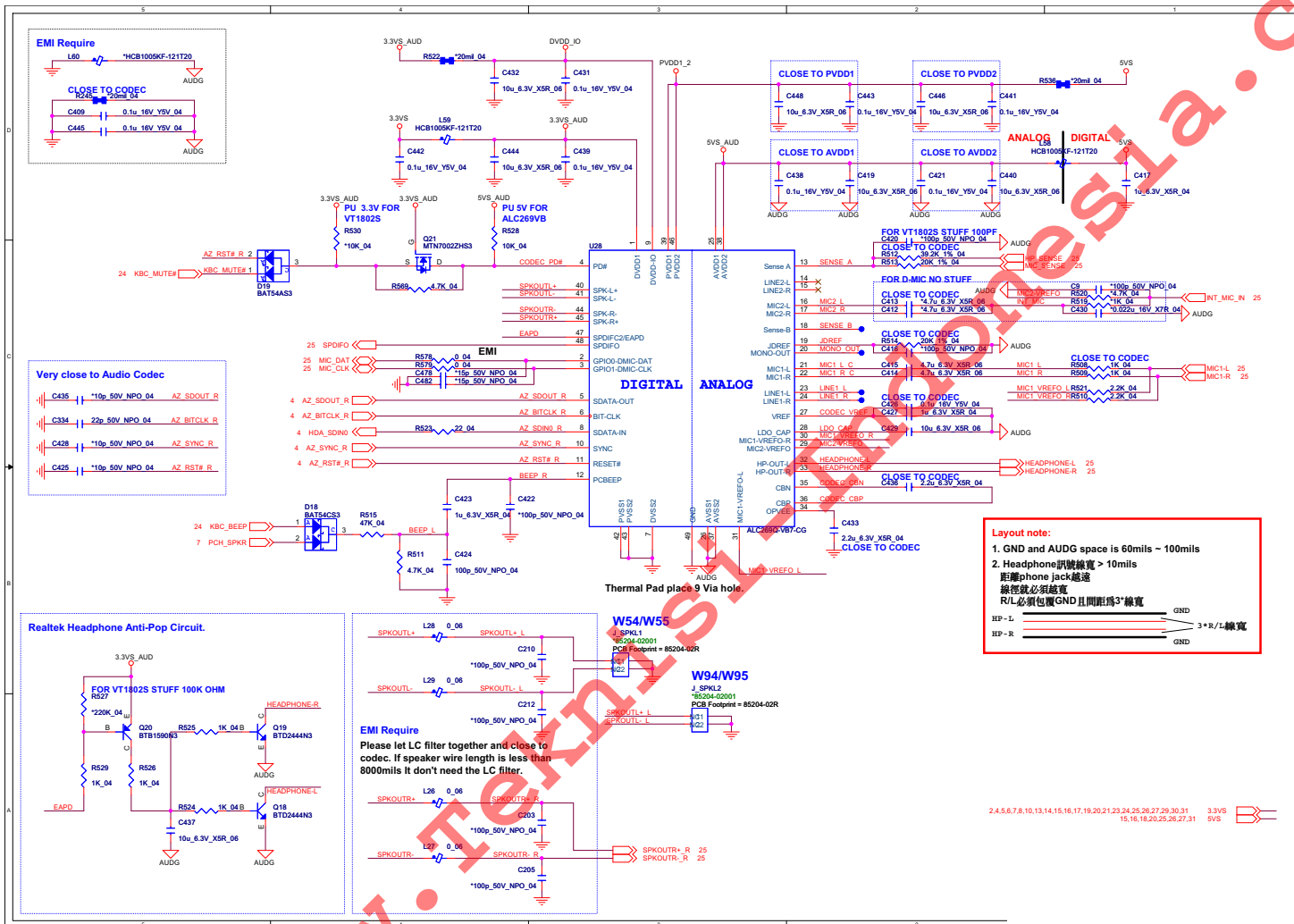
LAN POART

CPU FAN CONTROL

B. Schematic Diagrams

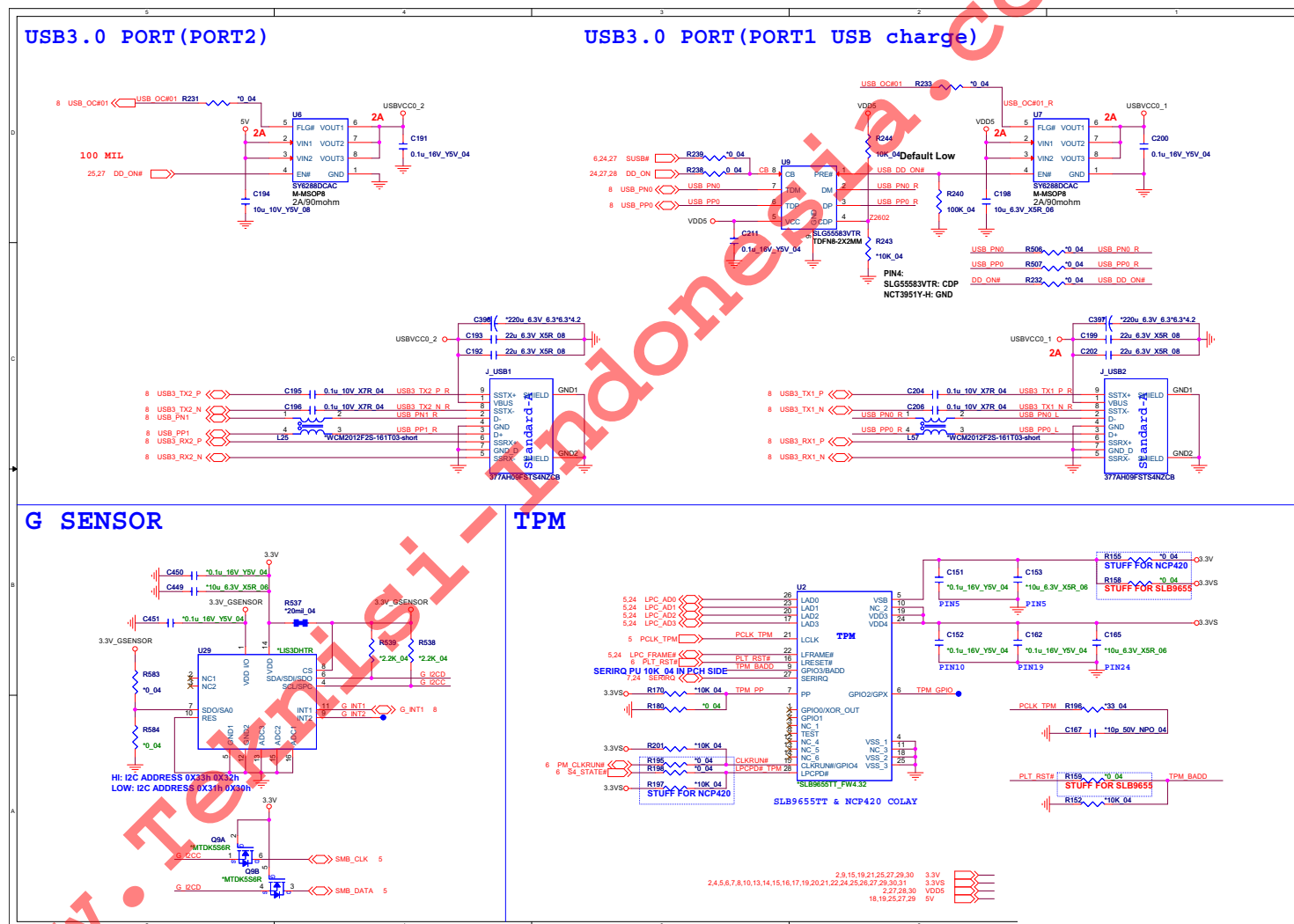
3G & MSATA MINI CARD

Audio Codec ALC269



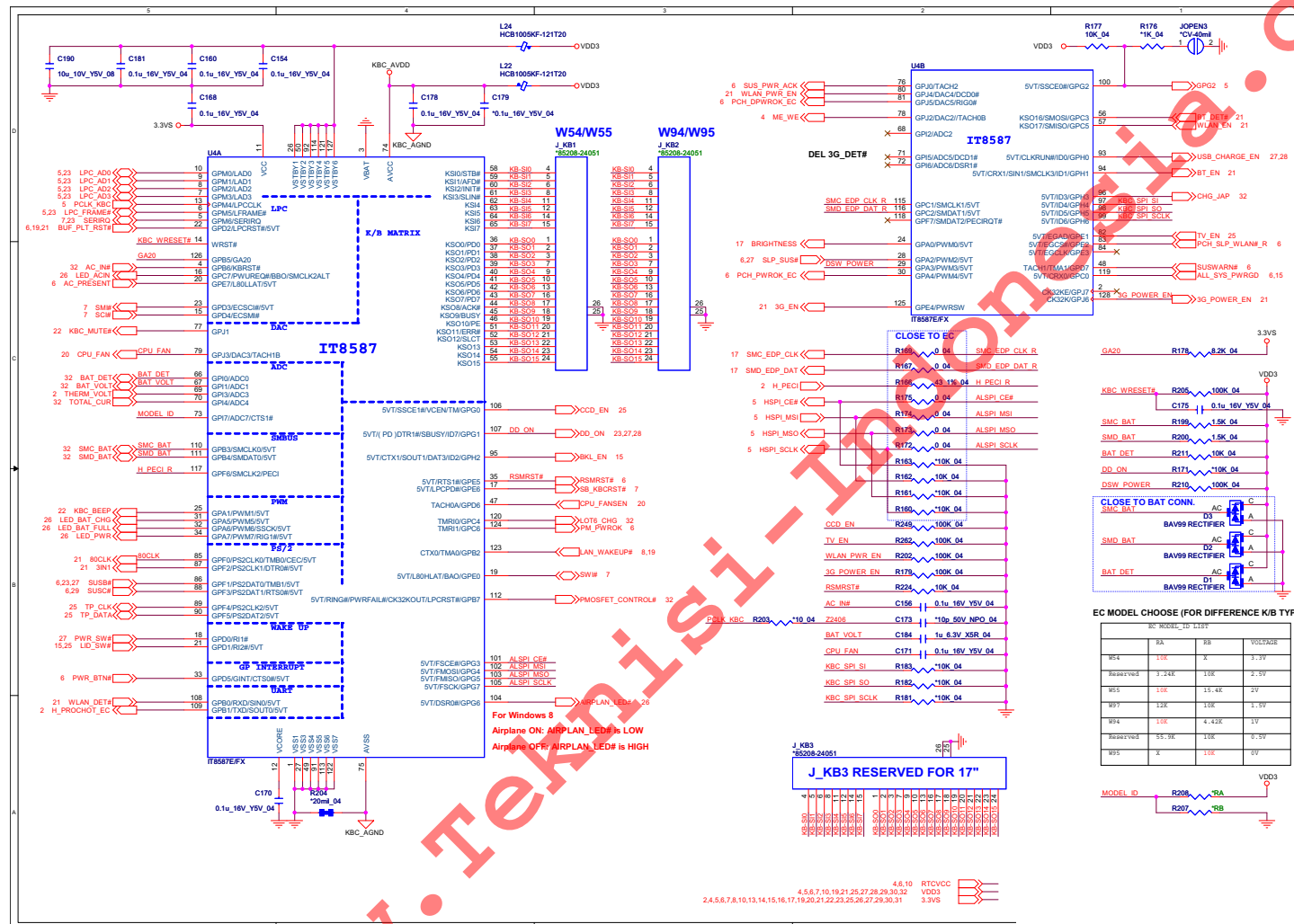
Sheet 22 of 38
Audio Codec
ALC269

B - 24 USB 3.0, G-Sensor, TPM

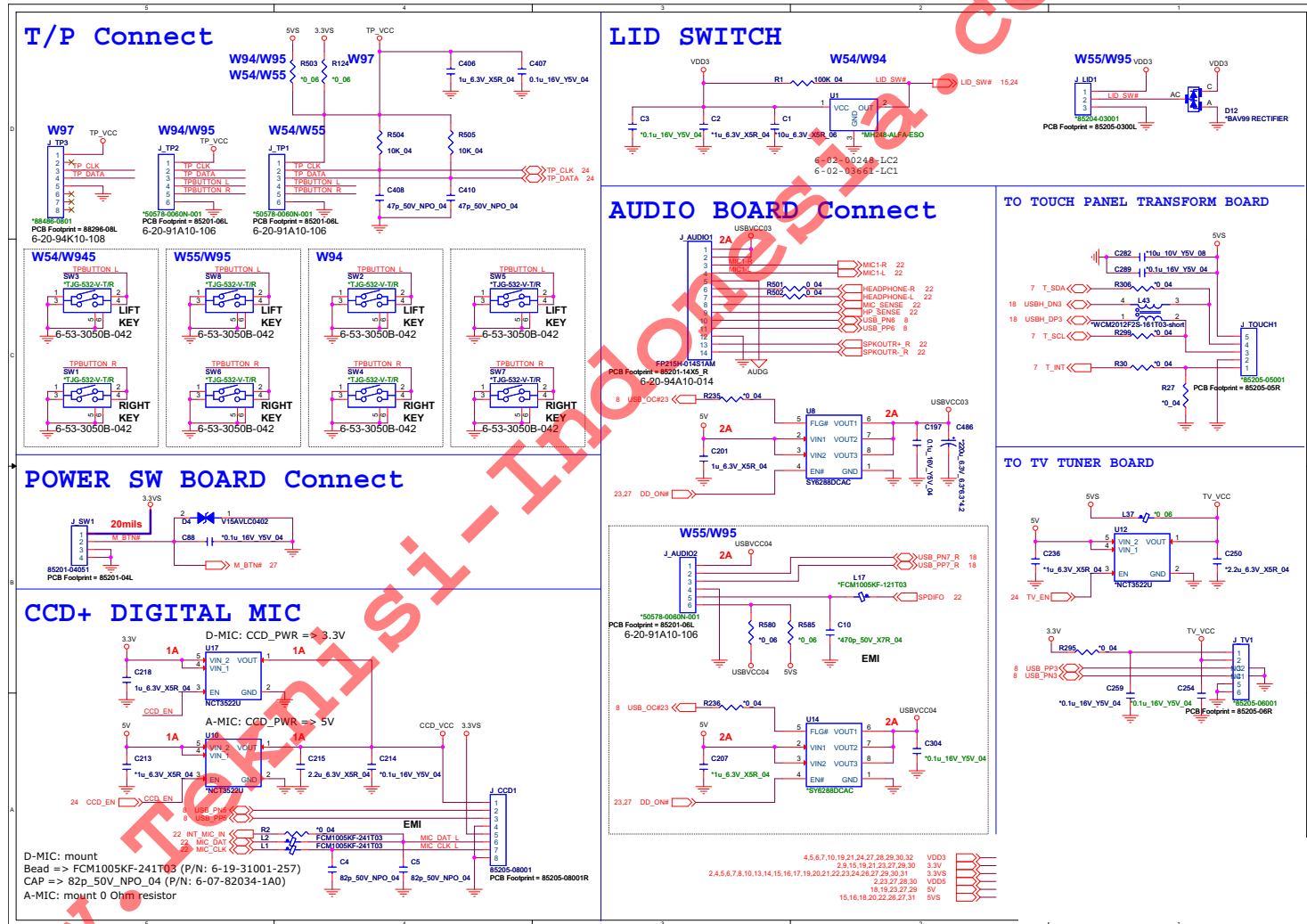


KBC-ITE IT8587 B - 25

B.Schematic Diagrams

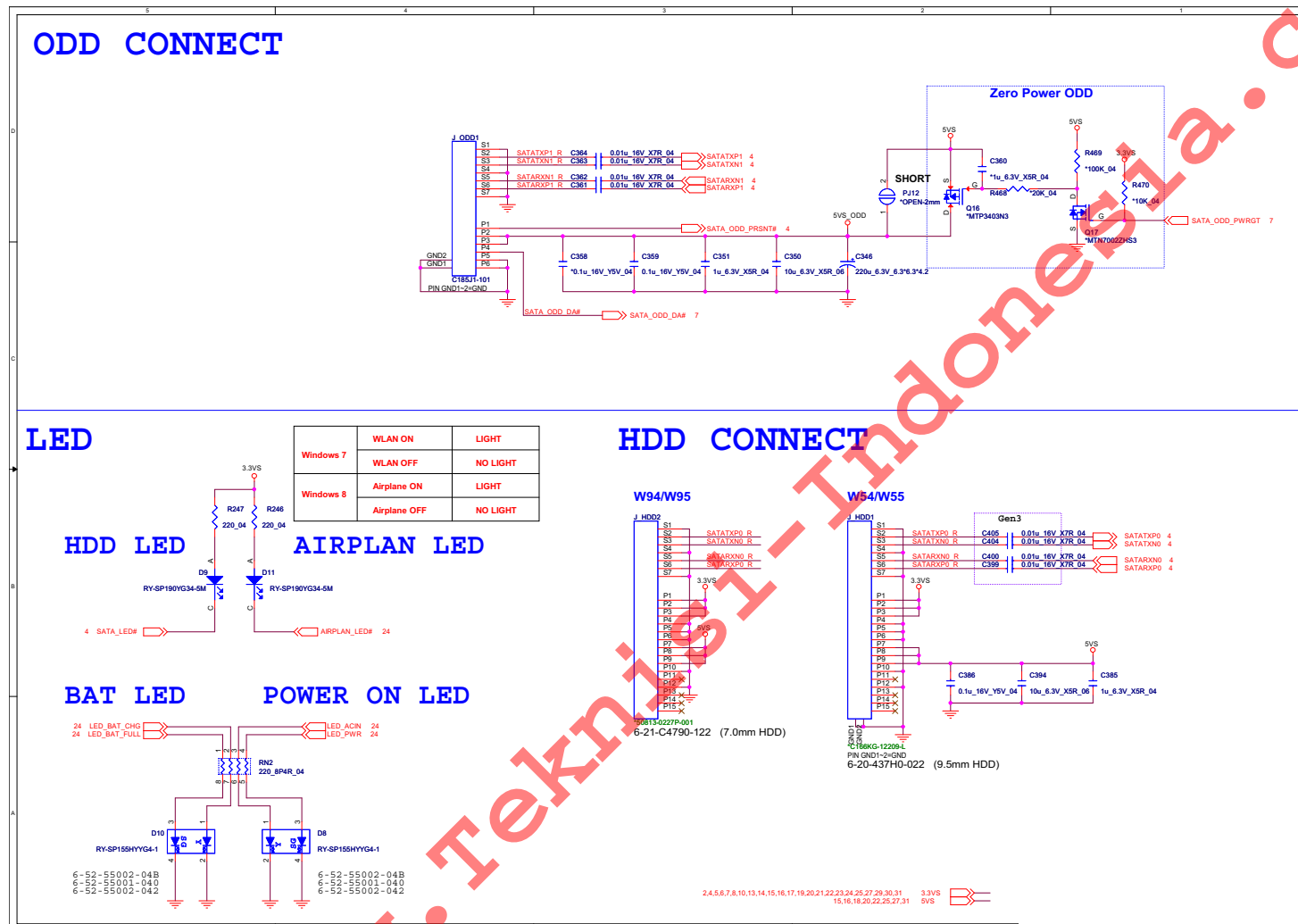


CCD, MIC, LID, I/O Connector



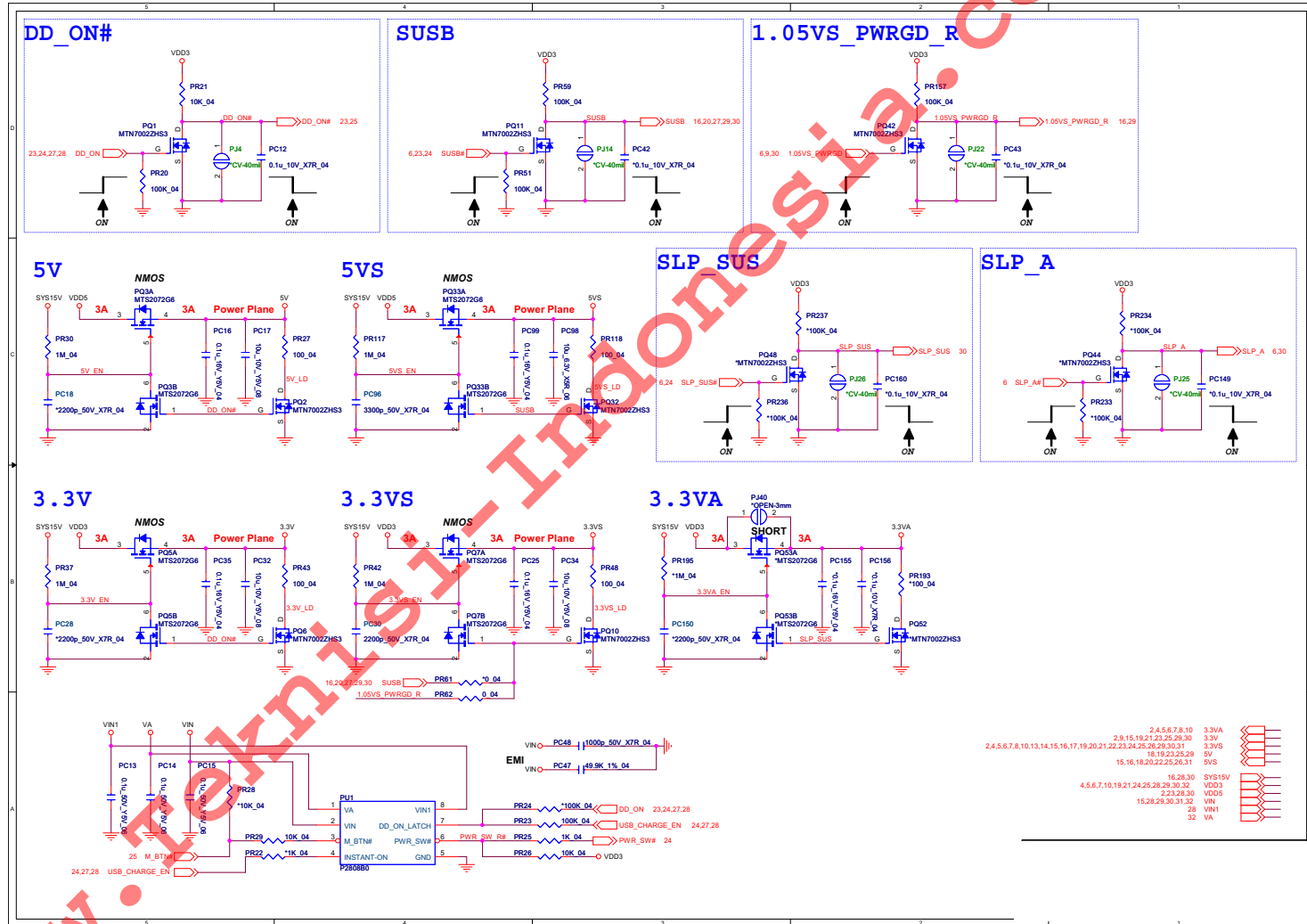
Sheet 25 of 38
CCD, MIC, LID,
I/O Connector

HDD, ODD, LED

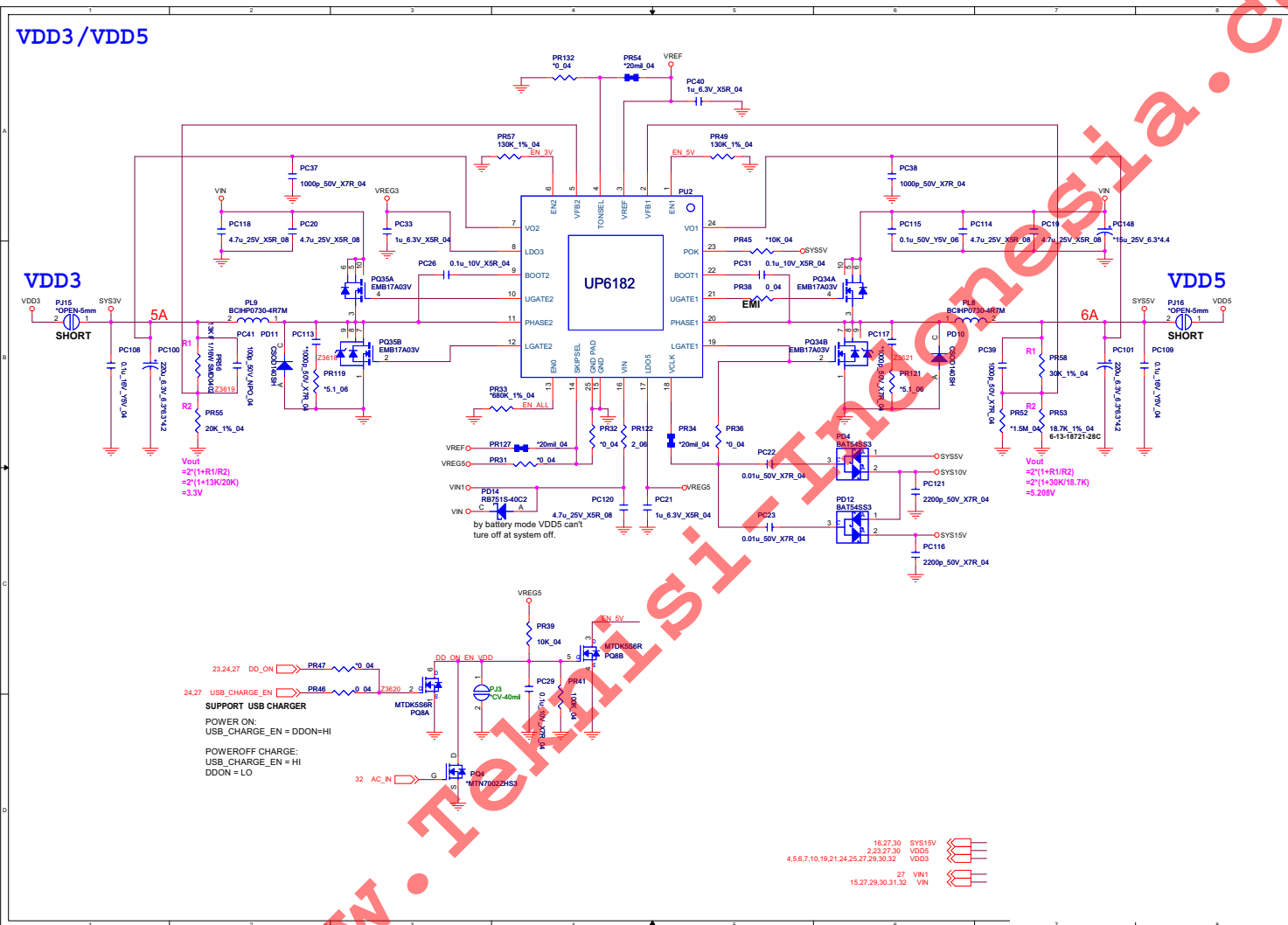
Sheet 26 of 38
HDD, ODD, LED

System Power

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System Power



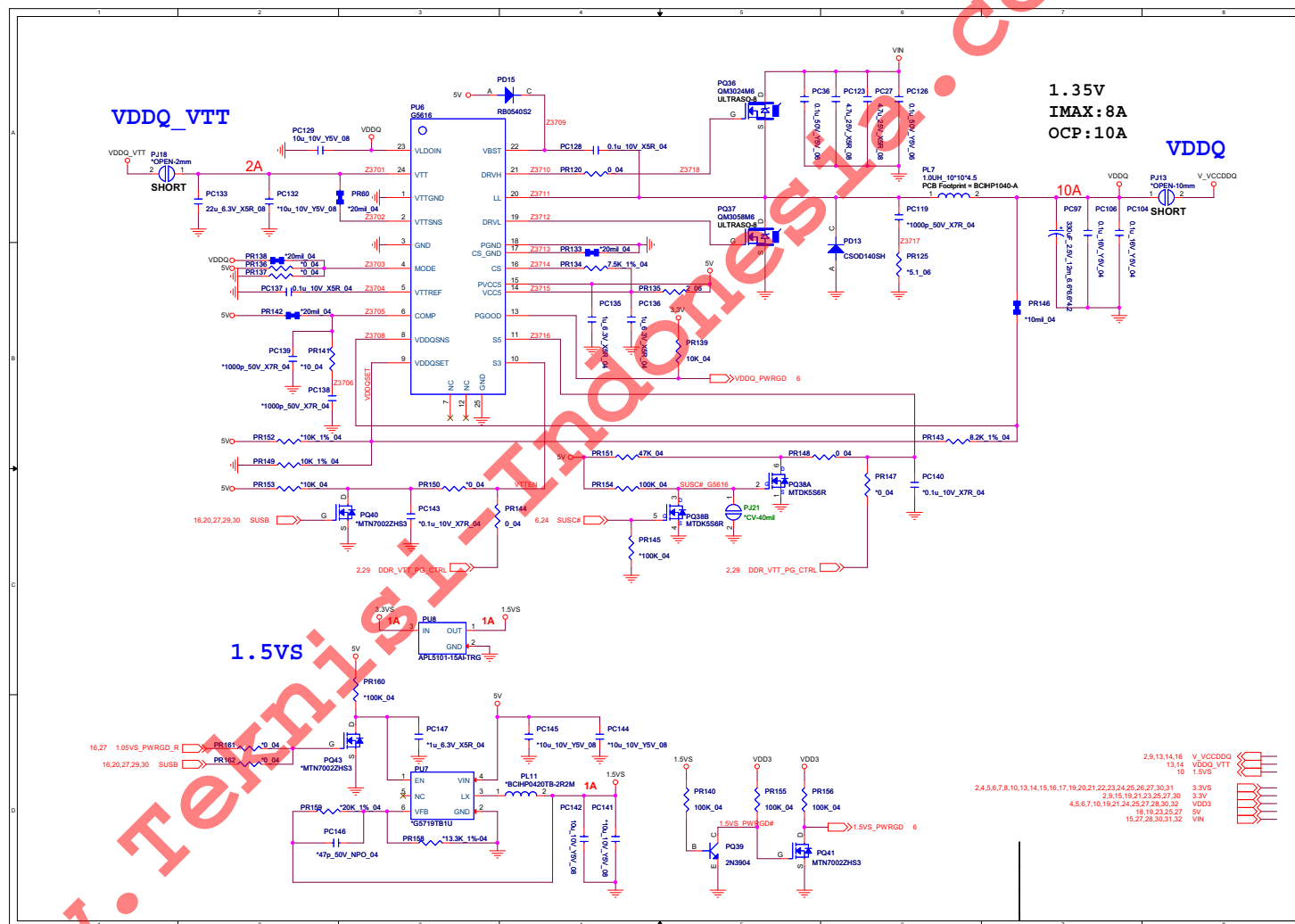
VDD3, VDD5



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VDD3, VDD5

ALC269Q, VT1802S

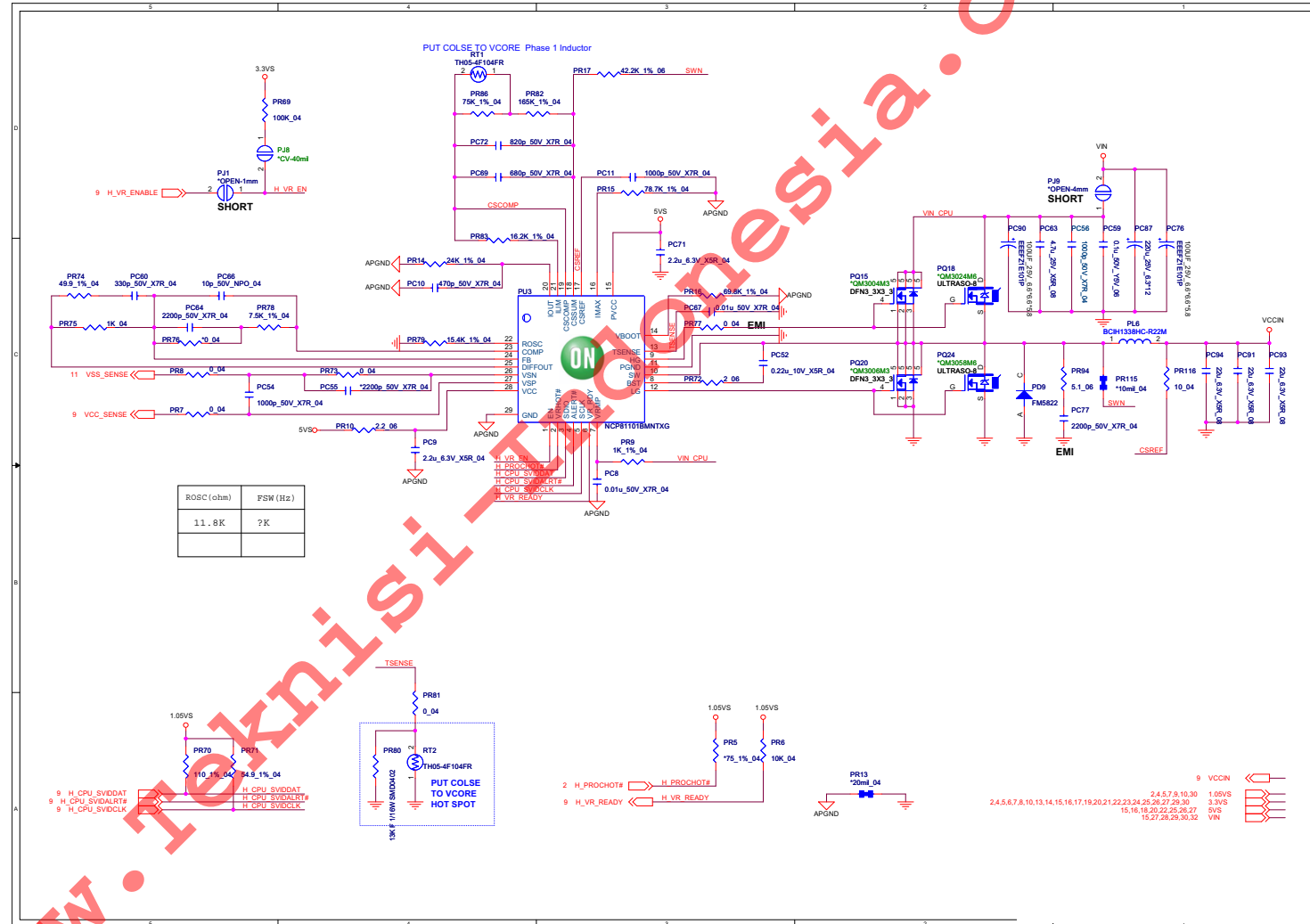
Sheet 29 of 38
VVDQ, VDDQ_VTT,
1.5VS



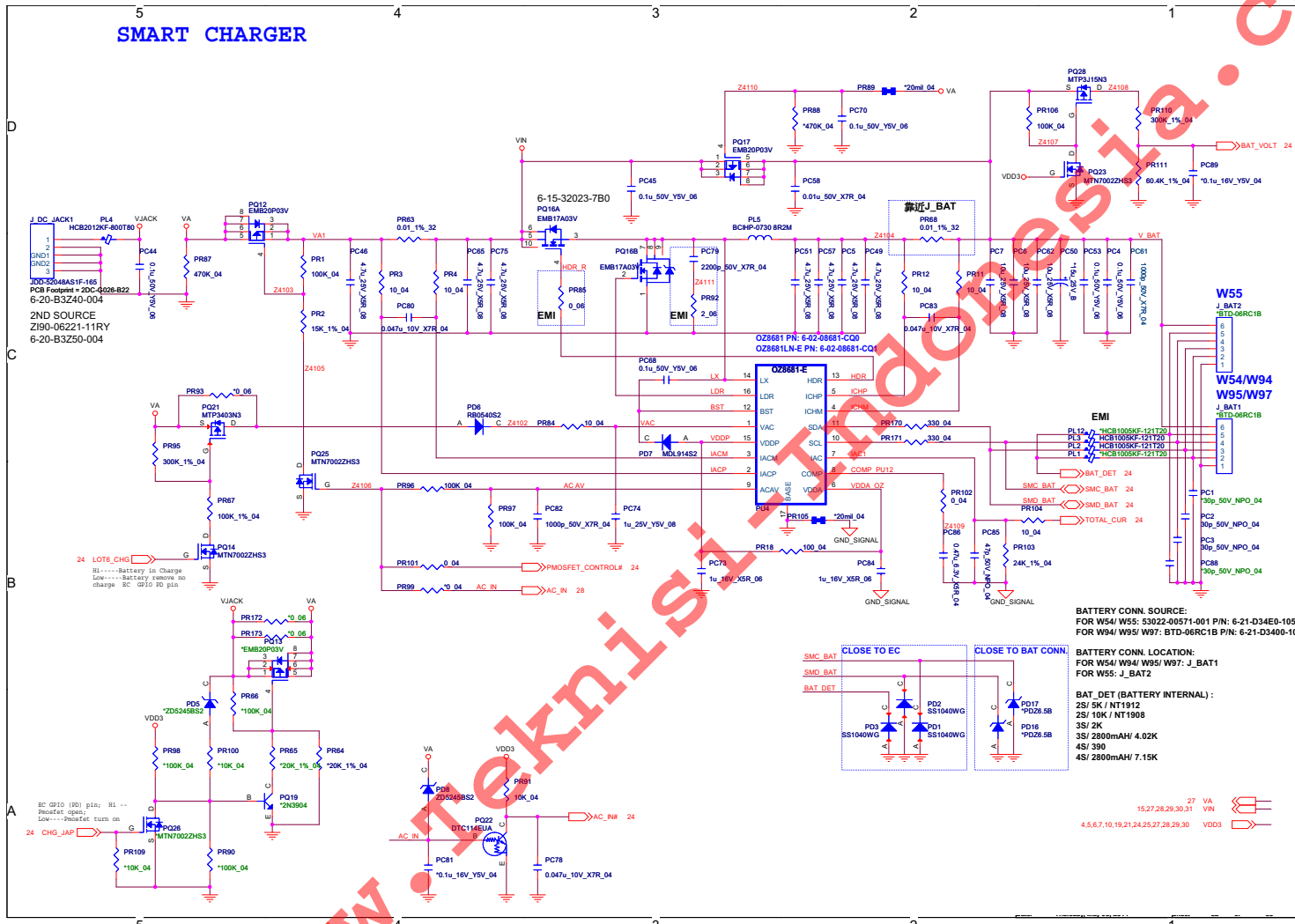
Schematic Diagrams

VCore

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VCore



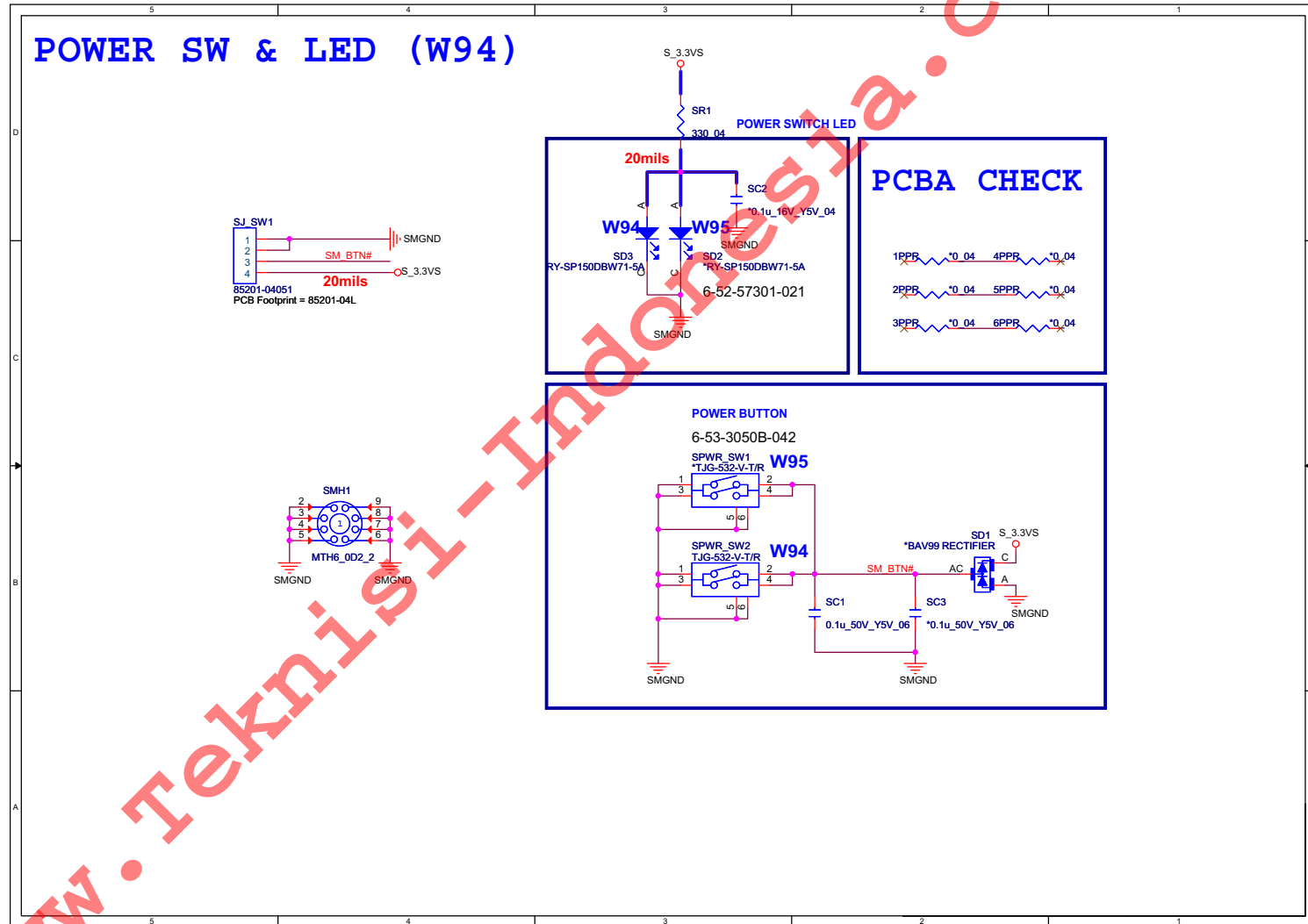
Charger, DC In

Sheet 32 of 38
Charger, DC In

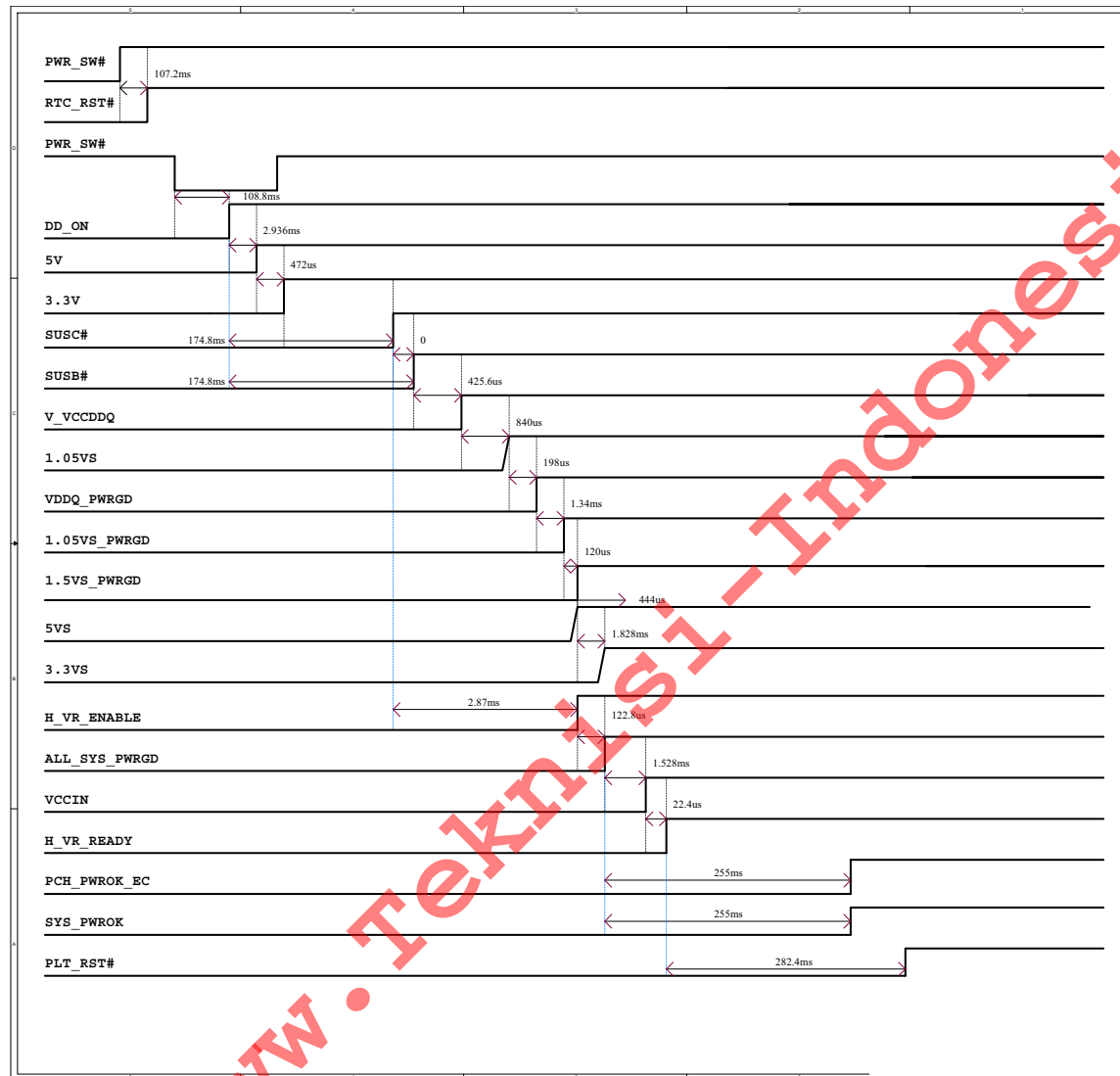
Schematic Diagrams

Power Switch Board

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Power Switch
Board



Power On Sequence

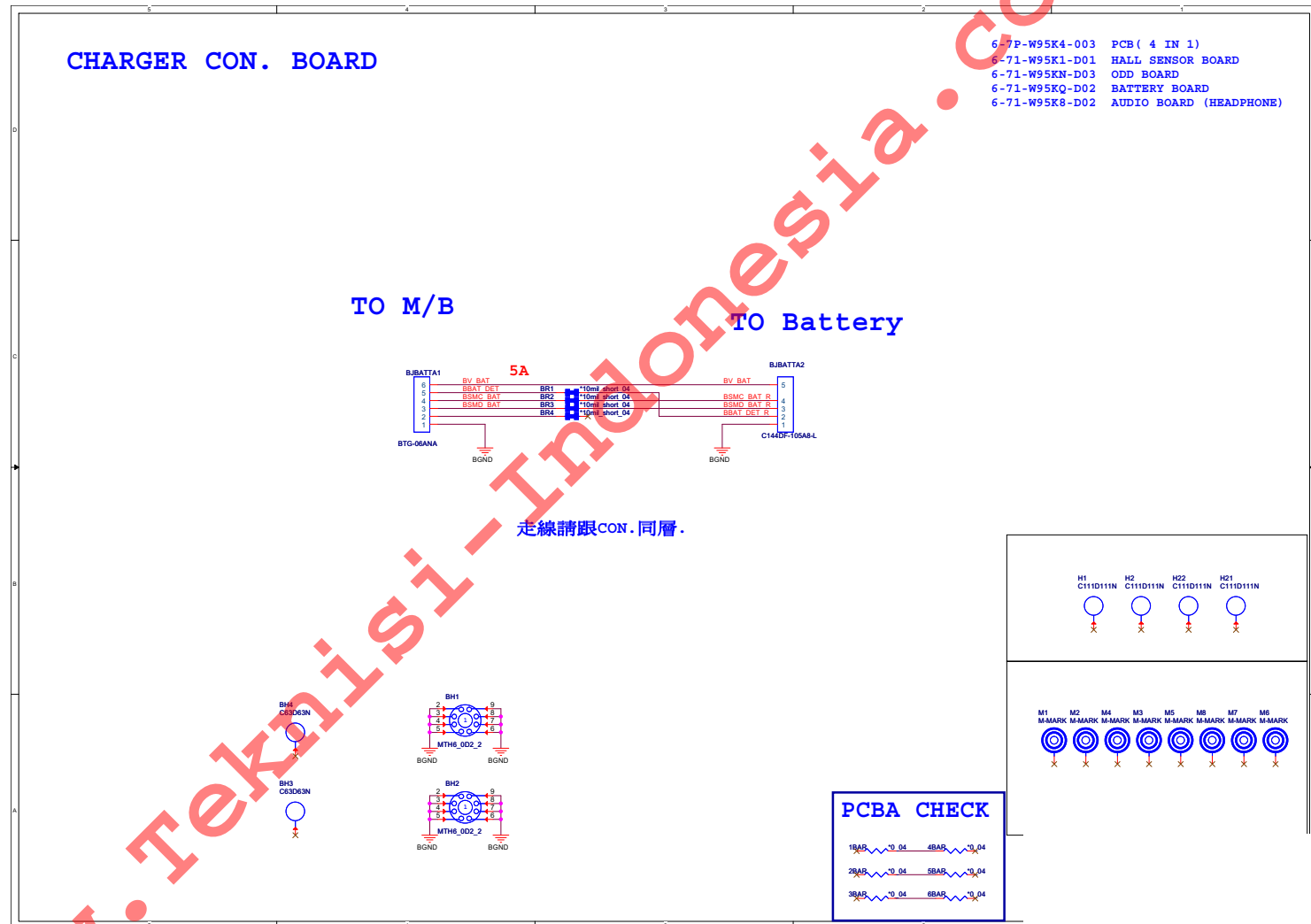


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Power On
Sequence

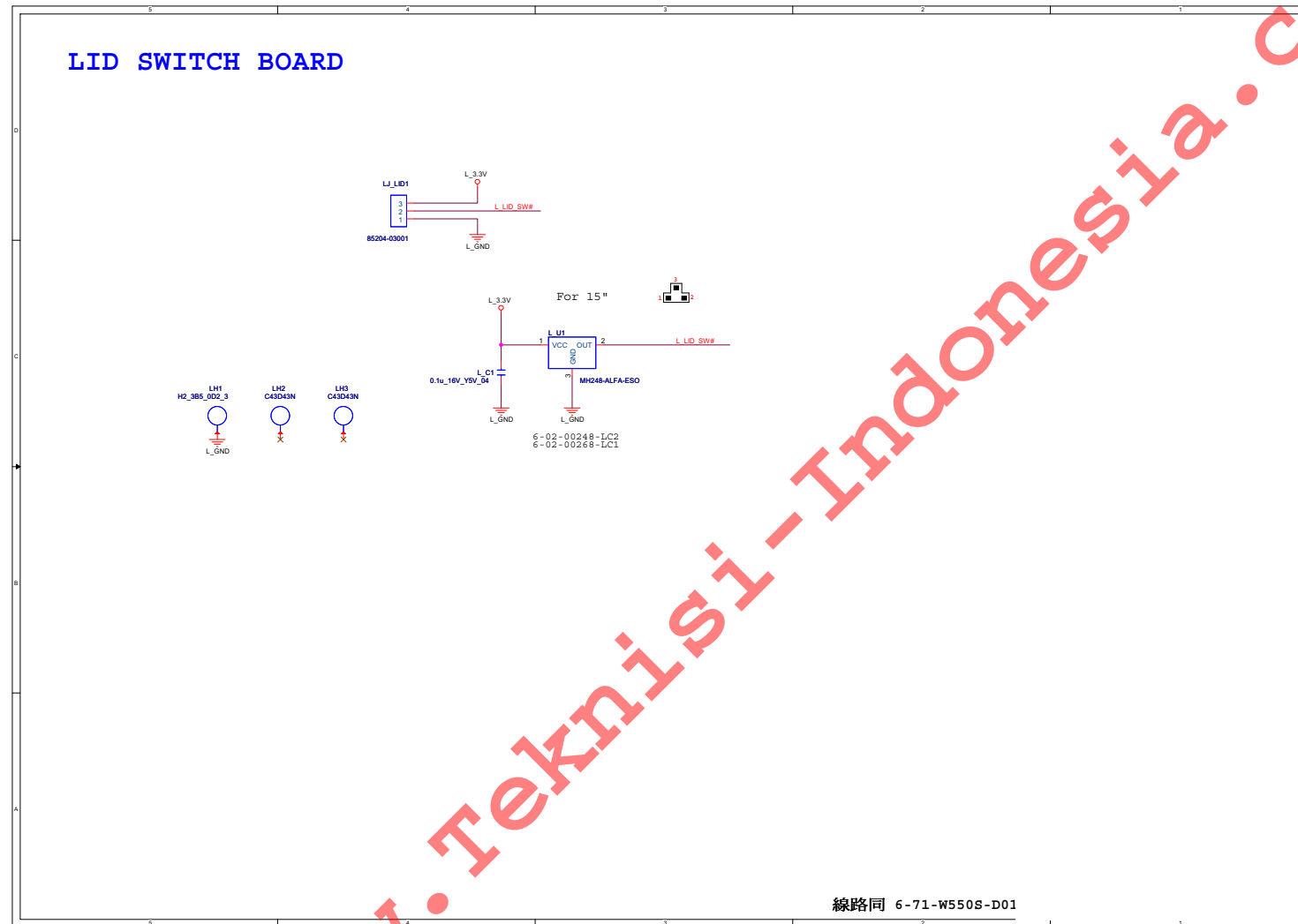
Schematic Diagrams

Battery Con. Board

Sheet 35 of 38
Battery Con. Board



LID SWITCH BOARD

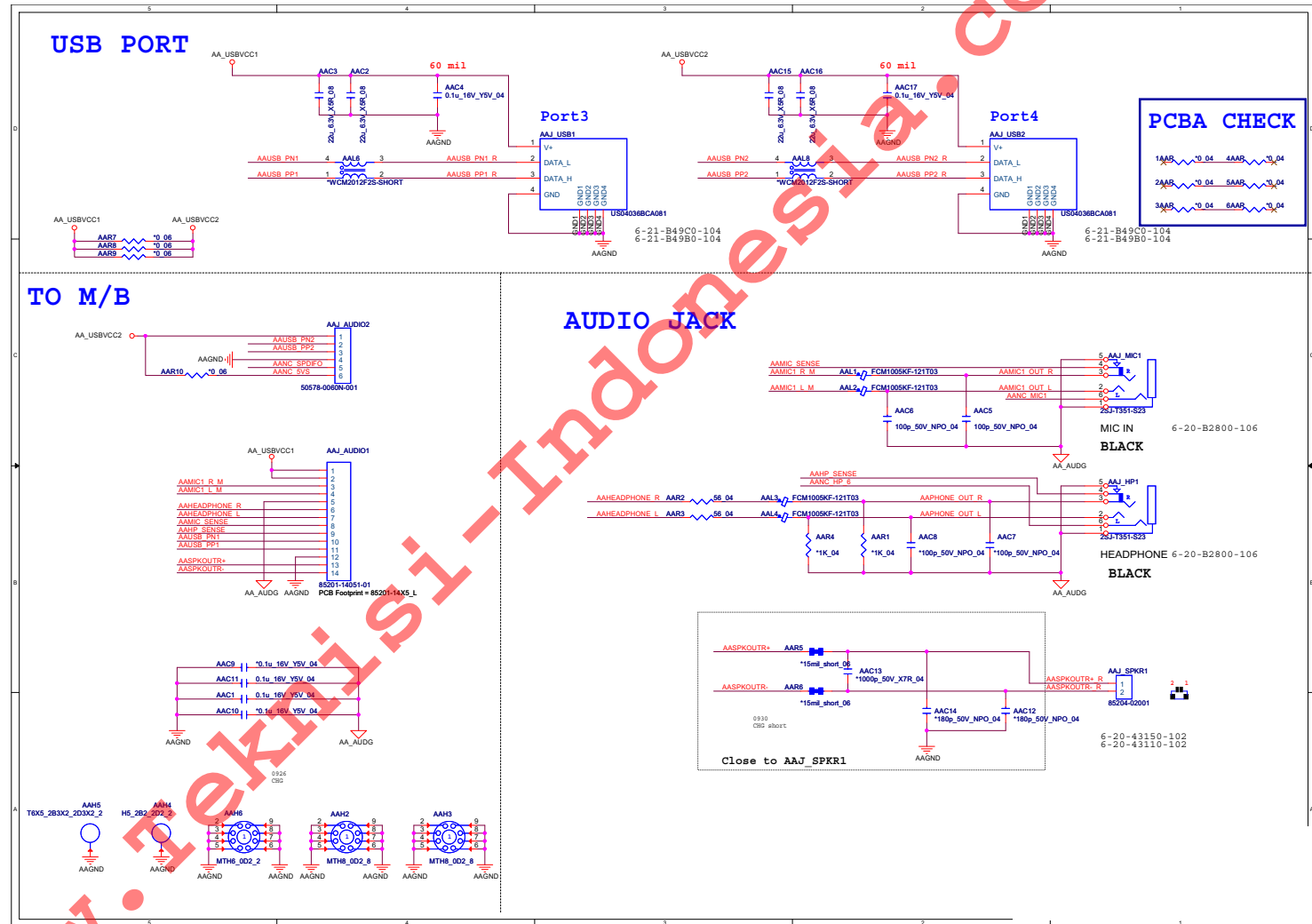


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Hall Sensor Board

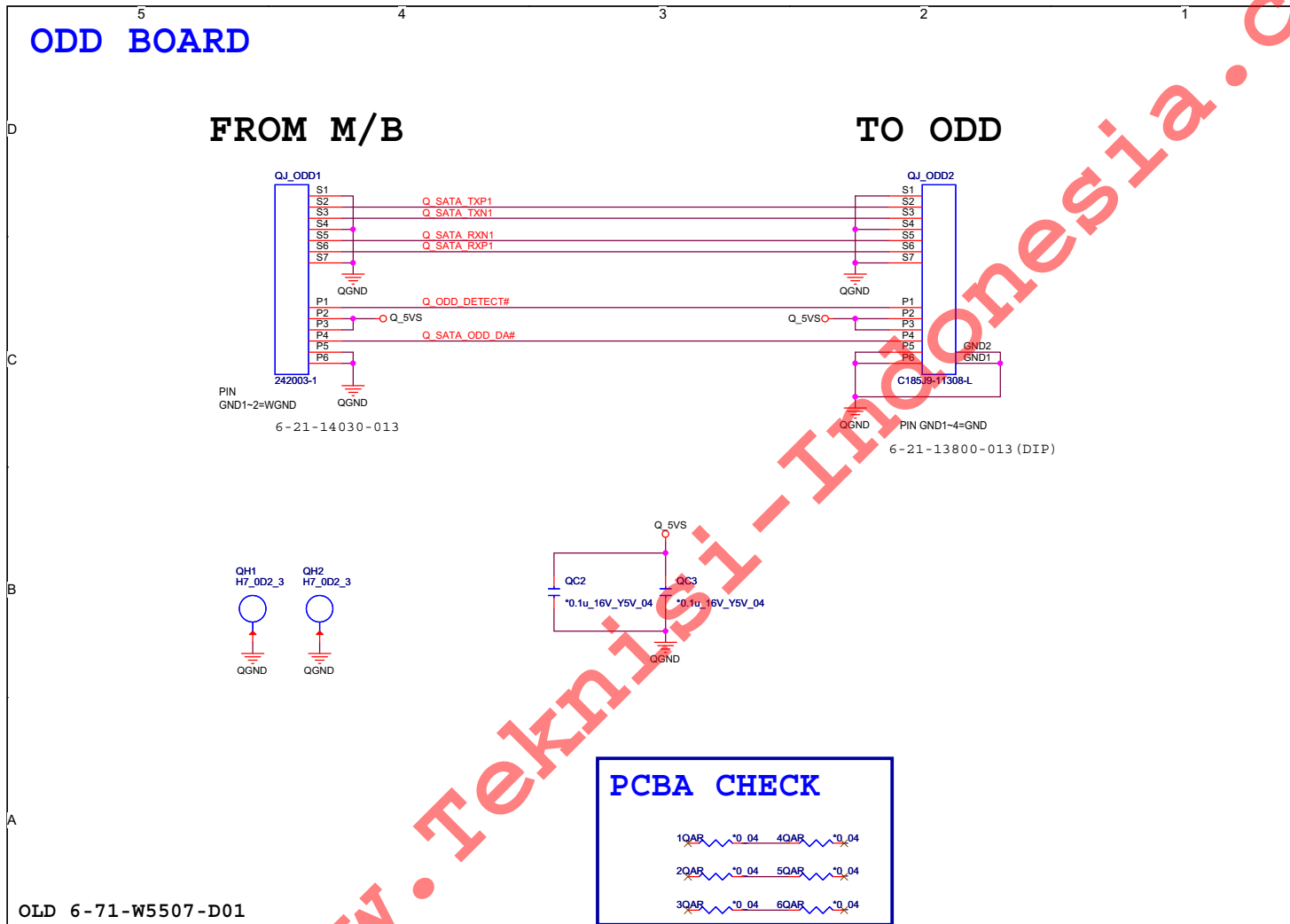
Schematic Diagrams

Audio Board

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Audio Board



Ext. ODD Board

Sheet 38 of 38
Ext. ODD Board

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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 **F4** 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:\> Flash.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 **F3**) and select “**Yes**” to confirm the selection.
5. Press **F4** 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.