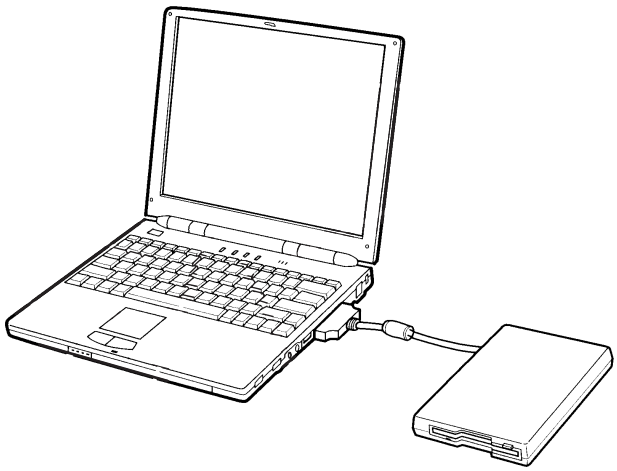
PC-A250

SHARP SERVICE MANUAL

CODE : 00ZPCA250SM-E



PERSONAL COMPUTER

MODEL PC-A250

CONTENTS

Parts marked with "⚠" is important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

SHARP CORPORATION

Caution about Battery

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

Attention : Il y a danger d'explosion s'il y a remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou d'un type recommandé par le constructeur. Mettre au rébut les batteries usagées conformément aux instructions du fabricant.

CHAPTER 1. OUTLINE

1. Features

The PC-A250 comes with a newly-developed "low-reflection TFT black-matrix LCD. It has been upgraded in both hardware and software to ensure easier operations at offices and homes as well as on the road. This just-fit notebook PC features a fashionable compact design ideal for mobile professionals.

1-1. New low-reflection TFT black-matrix LCD

The PC-A250 comes with a new technology 11.3-inch low-reflection TFT black-matrix LCD. With the reflection of light from outside restrained, the screen displays both text and images more clearly and brightly. In addition, the 11.3-inch SVGA (800 x 600 dots) screen, one of the largest in its class, is clear and displays up to 16,770,000 colors*, making it ideal for office work as well as for outdoor mobile applications. Besides, this unit also uses wide viewing angle technology for better viewing.

* This is achieved by dithering feature.

1-2. A thin, light-weight, stylish design with a magnesium alloy shell

With the magnesium alloy cover, the PC-A250 features a fashionable design, measuring 21.0 mm (minimum) to 26.0 mm thin*, weighing only about 1.3 kg, making it just fit for mobile operation.

* The projection is excluded.

1-3. High performance by a mobile 300 MHz Pentium® II processor with 64MB of RAM and 6.4GB HDD.

The unit features a high performance by using the latest mobile 300 MHz Pentium® II processor with 64 MB of RAM and 6.4GB HDD. With versatile features equivalent to the A4 size notebook PC, it allows easy image processing and large-volume data processing.

1-4. Use of no cooling fan reduces operating noise

The heat generated from the mobile 300 MHz Pentium® II processor can be efficiently released without using any cooling fan. Any annoying operating noise has been significantly reduced.

1-5. 56kbps high-speed modem and 100 BASE-TX high-speed LAN

1) The high-speed modem of V.90 / K56flex specification offers a speedy communication environment (U, Y, A, H).

   The high-speed modem of V.90/K56 flex specification is standard and offers a data transfer rate of up to 56kbps*. You can easily connect to the Internet by dial-up access through the public telephone line.

   Maximum data transfer rate: 56,000 bps (reception) and 33,600 bps (transmission) / fax 14,400 bps

2) The 100BASE-TX high-speed LAN interface offers speedy operation over the network

   With a 100BASE-TX high-speed LAN interface the unit can be connected to the high-speed LAN of your office. You can easily enjoy high-speed operations over the network such as gathering information through intranets and the Internet, as well as PC operations and e-mail at your office.

3) Equipped with high-speed 4Mbps optical communication port complying with IrDA1.1

1-6. Versatile system expandability suitable for office and mobile use

1) Stylish design FD drive unit with I/O port

   The FD drive unit is equipped with a slim, stylish design. At the back of the unit are 3 types of ports parallel, serial, PS/2 which serve as a port replicator.

2) Outside monitor port for multimedia presentation

   You can connect to a large-size display unit such as a large-size LCD projector, with a single cable, far easily than those which need a special port replicator. The unit is suitable for variety of presentations.

3) Two USB ports for versatility in mobile use

   The two USB ports allow the connection and disconnection of the cables when the unit is powered on. Outside the office, you can create a document using a USB mouse and print it through the USB printer.

1-7. Add-on lithium-ion battery option allows an operation of up to about 6.5 hours

The unit operates for about 2.0 hours with the built-in battery (with battery indicator). If an add-on lithium-ion battery is used, you can operate for up to about 6.5 hours. The add-on lithium-ion battery can be easily connected to the unit when it is turned on.

1-8. Other features

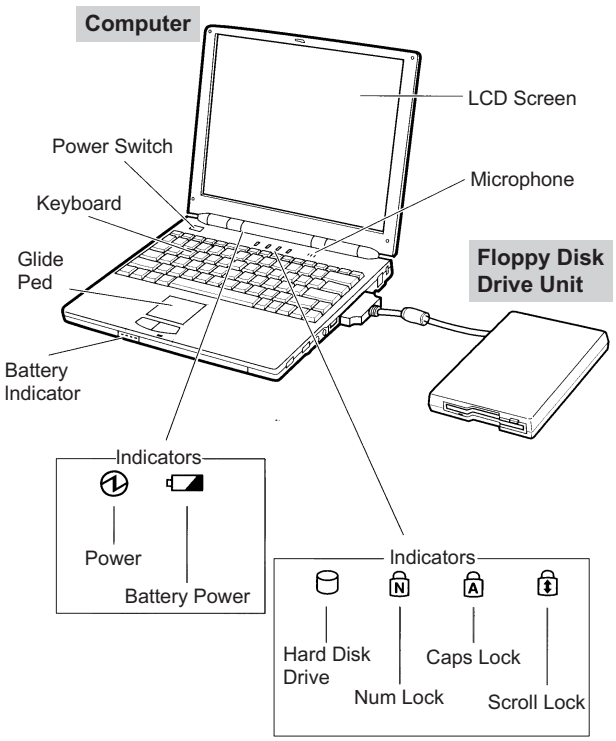
17-mm key pitch, 2.5-mm stroke, easy-to-use keyboard

Pad-type pointing device that accommodates wheel function

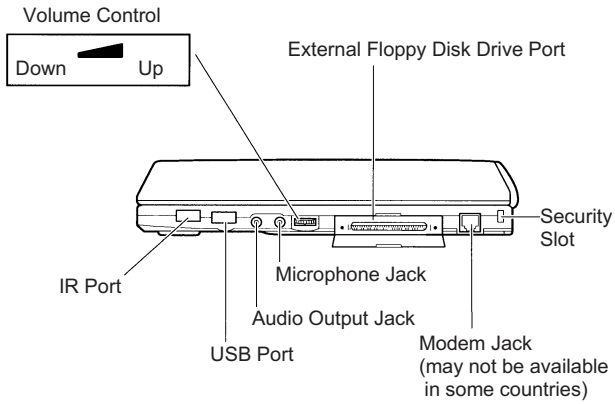
Overview of Computer

Each number after an arrow indicates the page referring to the part. Actual appearance of your computer may be slightly different depending on the model.

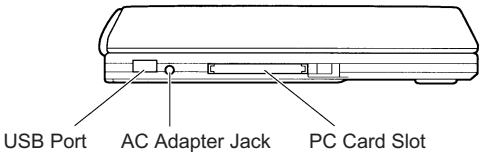
Front



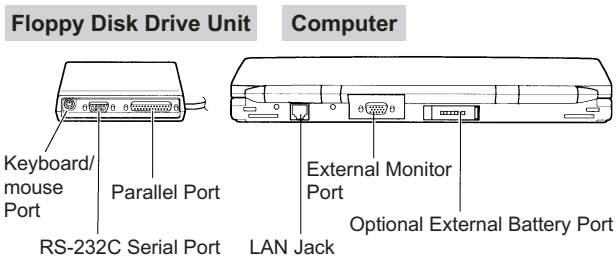
Right



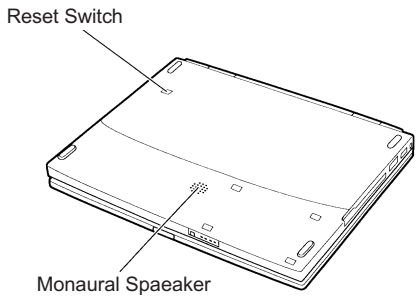
Left



Rear



Bottom



Basic Operations

This chapter describes the basic operations of your computer.

Choosing Power Source

You can use the computer with one of the following power sources :

- AC power from a wall outlet
  Use AC power whenever possible ; rely on the battery only when AC power is not available.
- Rechargeable battery
  There is an internal standard battery in the computer. You can use an optional external battery pack adding to the standard battery.

About the Power Indicators

The following indicators show the power status of your computer.

Indicator	Light	Meaning
Battery Power	On (green)	Fully charged
	On (orange)	Being charged
	Blinking (orange)	In abnormal state
	On and blinking (red)	Almost completely discharged. The warning beep sounds.
Power	On (green)	Operating
	Blinking (green)	Suspended to RAM
	Off	Suspended to Disk or powered off

Using the AC Adapter

When connected to a wall outlet, the AC adapter provides power for operation and charges the battery. The AC input voltage can range from 100 to 240 volts so that you can use the computer with the appropriate plug adapter.

Resetting the System

You may need to reset the system after adding hardware or software so that your computer will recognize the newly installed devices or software. When the message appears after the installation, click OK, Yes, etc. to restart Windows 98.

You can also restart Windows 98 from the Start menu. Select Shut down ; then, Restart.

Warm Boot

If the system is locked up because of a software problem, you can reset or reboot the system by pressing the Ctrl + Alt + Del keys simultaneously. Press the Ctrl + Alt + Del keys again to restart the computer.

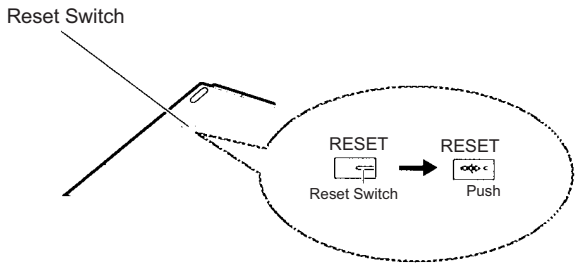
Resetting may cause data loss. Use the software reset only if the normal Windows 98 Shut Down does not work because of software malfunction. Although resetting will not damage the system, you may lose the data you are processing.

Power Switch

You can turn off the computer with the power switch if you encounter hardware or software problems which lock up the system. In this case, press the switch for more than six seconds.

Reset Switch

If you cannot turn off the computer by pressing the power switch, you can use the reset switch on the bottom of your computer. To reset the system, insert a narrow object into the small hole to slide the switch as shown.



Do not use metallic materials to slide the reset switch. It may cause malfunction.

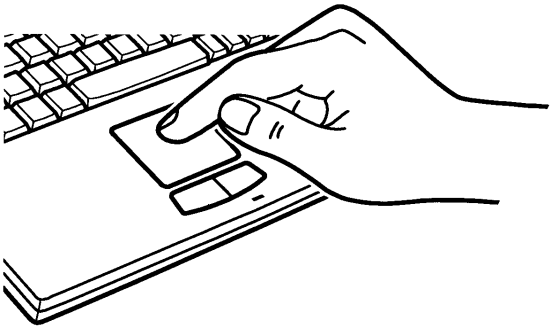
Using The Glide Pad

Your computer is equipped with an integrated pointing device called a glide pad. Using the glide pad, you can move the pointer, select an item from a menu, and perform other tasks in the same way you would with a mouse.

- Do not hit or scratch the surface of the glide pad with pointed objects (such as a ballpoint pen).
- Do not operate the glide pad with a moist finger. This may cause the glide pad to operate incorrectly.
- You cannot use the glide pad when a mouse is connected.

Using the Glide Pad

Take a moment to become familiar with how the glide pad works.



Place Your Fingertip

Place your left or right hand next to the glide pad, resting your wrist naturally in a relaxed manner. Place your thumb or finger on the glide pad.

Move Your Fingertip

The rectangular pad of the glide pad acts like a miniature duplicate of the display. As you slide your fingertip across the pad the pointer on the screen moves in the same direction across the screen. The glide pad is very sensitive, so you do not have to exert a lot of pressure on the pad. The glide pad will respond to a light touch from your fingertip.

Click, Double-click, and Right-click

To click or double-click, you can use the left button just like that of a mouse. Instead of clicking by pressing the left button, you can just tap gently anywhere on the rectangular pad. For right-clicking, you can use the right button.

Drag and Drop

You can move icons or windows by using "drag and drop" below :

1. Position the pointer over the object.
2. Press the left button ; do not release it.
3. Holding down the button move the pointer. The object moves together with the pointer.
4. Release the button when the object reaches its destination.

Scroll

You can scroll through information in a list or in a document by using the glide pad. Place your finger on the right part of the glide pad and move it back and forth. This procedure works only vertically, and in the limited applications.

Changing the Configuration

In the Mouse Properties dialog box, you can change the configuration of the glide pad, such as swapping left and right buttons, changing the pointer size, etc.

- If you swap the left and right buttons, "tapping" on the glide pad as an alternative method of pressing the left button will no longer function.
- If you prefer to use a mouse and turn off the glide pad, you can disable the glide pad in the Setup Utility.

Using The Keyboard

Your computer, equipped with the Windows Enhanced Keyboard, provides all the functionality of a full-sized desktop keyboard.

Windows Logo Keys

Opens the Windows Start menu.

Opens an application-specific short-cut menu equivalent to right-clicking.

System Function Keys

When pressed together with the Fn key, function keys set specific system parameters. This combination is sometimes referred to as "hot keys".

Fn + F5: Switches the display output between the LCD screen and external monitor (if connected).

Fn + F6: Decreases the LCD screen brightness.

Fn + F7: Increases the LCD screen brightness.

Fn + F11: Turns the screen backlight on and off.

Fn + F12: Puts the computer in suspend mode (to RAM or to Disk, according to the setup selection).

Using External Floppy Disk Drive Unit

You can use double-density (2DD) 720KB or high-density (2HD) 1.44MB floppy disks with the external floppy disk drive unit.

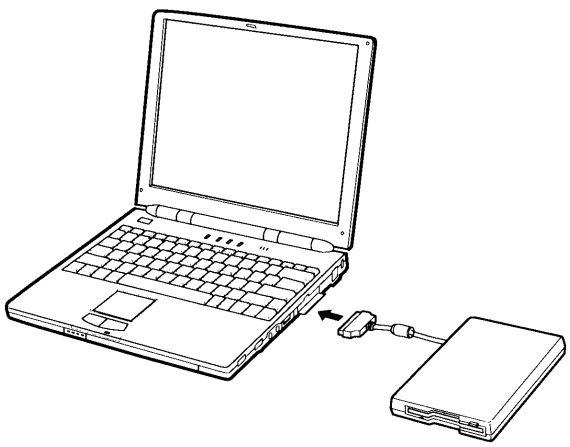
The keyboard/mouse port, RS-232C serial port and parallel port are available on the rear side of the floppy disk drive unit. You can connect peripherals to the floppy disk drive unit.

Connecting External Floppy Disk Drive Unit

Turn off the computer before connecting the external floppy disk drive unit ; otherwise the floppy disk drive unit may not be recognized.

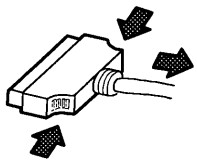
- Do not place the floppy disk drive unit on its side or upside down.
- Do not press on the floppy disk drive unit. It may damage the drive or cause malfunction.
- Do not place the AC adapter on the floppy disk drive. It may cause the drive to malfunction.

1. Turn off the computer.
2. Open the cover of the external floppy disk drive port on the right side of the computer.
3. Connect the connector of the floppy disk drive unit to the floppy disk drive port.



Removing External Floppy Disk Drive Unit

1. Remove the floppy disk from the floppy disk drive.
2. Turn off the computer.
3. Disconnect the floppy disk drive unit by simultaneously pressing the buttons on each side of the connector and pulling it out.
4. Close the cover of the floppy disk drive port.



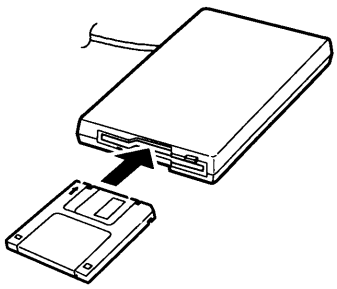
Handling Floppy Disks

- Do not open the shutter and touch the disk inside ; otherwise, you will not be able to read or write data to the disk.
- Do not place floppy disks near magnets or heat source, in direct sunlight or in a dusty place, etc.
- Never subject a disk to sudden shocks or extreme vibration. Do not drop, bend, or place heavy objects on a disk.
- Do not spill liquid onto a disk.

Inserting and Removing a Floppy Disk

Inserting

Hold the floppy disk with the arrow facing up and towards the drive. Slide the disk into the drive until it locks into place.

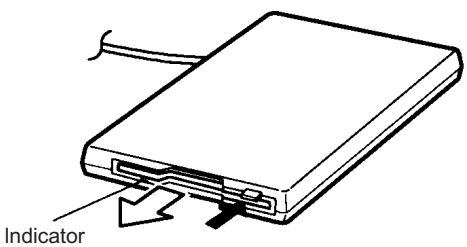


- Always insert a floppy disk straight into the floppy disk drive.
- When inserting the disk, make sure it is not upside down.
- Do not use excessive force when inserting the floppy disk. If you have difficulty inserting or removing disks, seek the assistance of an authorized service technician.

Removing

Before removing the floppy disk, make sure the indicator of the floppy disk drive unit is not lit.

Press the eject button firmly. The disk will pop out slightly. Remove it and store it properly.



Formatting a Floppy Disk

1. Make sure the floppy disk is not write-protected, and insert it into the floppy disk drive.
2. Double-click My Computer on the desktop.
3. Click 3 1/2 Floppy [A :]. From the File menu, select Format.
4. From the capacity drop-down list, select 1.44MB or 720KB.
5. Click Start to start formatting.

When you format a floppy disk, all data previously stored on the disk is lost.

Backing Up Data

We recommend that you regularly backup the data on your hard disk drive. Windows 98 has a backup function you can use to back up your data. See Windows 98 Help for details.

Battery and Power Management

This chapter explains how to manage the computer's power effectively and use the standard battery or an optional battery pack.

Standard Battery Pack

When not connected to an external power source, your computer operates with the rechargeable internal standard battery pack. The duration of the battery life may be longer if the computer's Power Management is active.

To keep the battery life long :

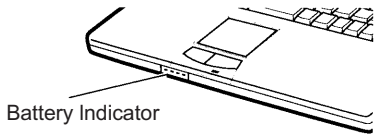
- Initialize the battery pack if the actual remaining power in your battery is less than what the battery indicator lights suggest as per the procedure.
- Turn off your computer when you are not using it.

- The duration a battery charge will last will depend on the computer usage. Applications which heavily use the peripherals, like the external floppy disk drive unit or the optional external CD-ROM drive, will experience shorter power duration.
- When the battery is not charged, your computer may not operate properly. Connect the AC power to charge the battery.

Checking the Battery Level

You can check the battery level in the Power Management properties dialog box in the Control Panel or double-clicking the battery or AC plug icon on the taskbar.

You can also check with the battery indicator on the front side of the computer.



Press the button on the right of the battery indicator to show the battery power remaining. Refer to the table below.

Battery Indicator Status	Capacity Remaining
(All on)	76% – 100%
(Three on)	51% – 75%
(Two on)	26% – 50%
(One on)	1% – 25%
(One blinking)	Nearly 0% (Empty)
(All off)	0% (Empty)

This battery indicator turns on automatically while the battery is being charged (when connected to AC power). When the battery is fully charged, the battery indicator turns off.

The battery power remaining is an approximate figure. The remaining operating time expected may be different from the actual remaining time, depending on the use of the computer. If the actual remaining power in your battery is less than what the battery indicator lights suggest, you should initialize the battery pack.

Low Battery Indication

When the battery power becomes significantly low, the battery power indicator ( ) turns red and the warning beep sounds. Save your data and turn off the computer, or connect the computer to a wall outlet immediately. If you set Critical Battery Suspend to Enabled in the Power menu of the Setup Utility, the computer will be suspended to disk in case of significantly low battery power. When your computer suspends, do not turn on the computer before connecting to a wall outlet or connecting a fully charged optional external battery pack.

In Windows 98, you can set the alarm to inform you of the remaining battery level.
In Power Management properties dialog box, select Alarms tab and set Low battery alarm and Critical battery alarm.

The remaining operating time depends on the power you are consuming. If you are using the audio system, PC card slot, hard disk drive or external floppy disk drive unit, your computer may consume more battery life.

Charging the Battery Pack

1. Connect the AC adapter to the computer. While the battery is being charged, the battery power indicator is orange and the battery indicator turns on.
2. When the battery is fully charged, the battery power indicator turns green and the battery indicator turns off. Charging time may vary according to the status of the computer.

When the battery is hot (for example, after long use), it may take longer to fully charge the battery.

Initializing the Battery Pack

You need to initialize the battery pack when the actual remaining power in your battery is less than what the battery indicator lights suggest.

1. Connect the computer to AC power and wait until the battery is fully charged. The battery power indicator turns green and the battery indicator turns off. It will take about 2 hours and 30 minutes if the battery is completely discharged.
2. Turn on the computer.
3. When the message Press <F2> to enter Setup Utility appears, press F2 to open the Setup Utility.
4. Disable the power management and set Critical Battery Suspend to Disabled in the Power menu of the Setup Utility.

5. Press Esc ; then Enter twice. The system restarts.
6. When the message Press <F2> to enter Setup Utility appears, press F2 to open the Setup Utility. Leave the computer in the Setup Utility.
7. Disconnect the AC adapter, and leave the computer until the battery is completely discharged and the system shuts down automatically. It will take about 3 hours.
8. Connect the computer to the AC adapter and let the battery fully charge.

- Do not connect the computer to wall outlet while discharging the battery. The initialization will be cancelled.
- You can initialize the standard battery alone only if the optional external battery pack is disconnected. When the external battery pack is connected, both the standard and the external battery will be initialized together.

Changing the Battery Pack

The capacity of a battery pack gradually decreases when used repeatedly (the deterioration rate depends on the operating temperature and environment). If the battery life becomes extremely short even after the initialization, you should change the standard battery pack. Bring your computer to a local dealer for replacement of the standard battery pack.

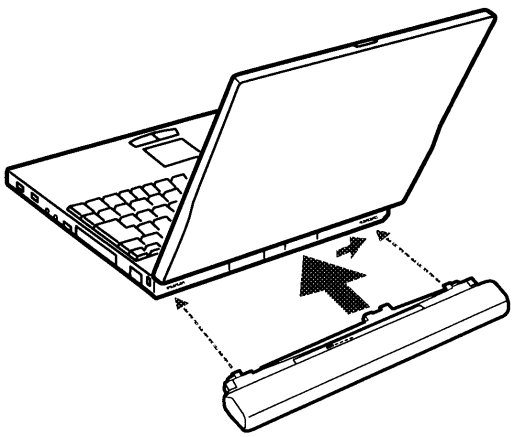
Optional External Battery Pack

You can use an optional external battery pack to power your computer for longer periods of time.

Use only the appropriate optional external battery pack (CE-BL03), and attach it correctly.

Connecting External Battery Pack

1. Slide the cover of the external battery port to locate the port.



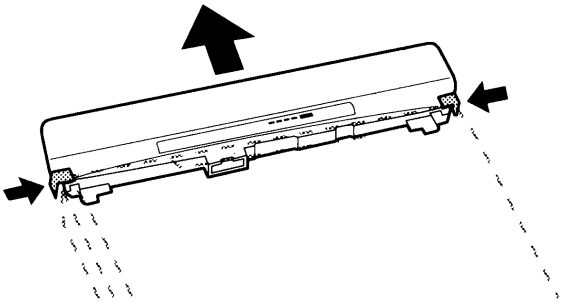
2. Connect the optional battery by matching the projections on either of the battery side to the notched parts of the computer. Make sure that the battery connector lines up with the external battery port of the computer. If you hear the clicking sound, the external battery pack is correctly connected.

- While the external battery pack is connected, do not carry the computer by holding the battery pack only. Firmly hold both the computer and the external battery pack.
- You can connect neither an external monitor nor a LAN cable when the external battery pack is connected.

Removing External Battery Pack

Before removing the external battery pack, turn off the computer or confirm that the standard battery pack has power remaining. If the standard battery pack has no power remaining, connect the computer to AC power ; otherwise the computer will be shut down and data may be lost.

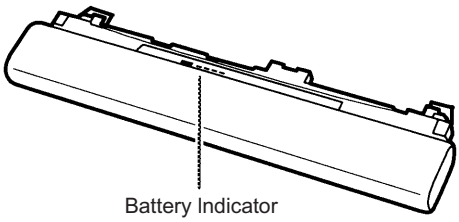
Remove the optional battery by pressing the buttons on each end of the battery and sliding the battery off the computer.



Close the cover of the external battery port after the external battery pack is removed.

Checking the Battery Level

You can check the battery level of the external battery pack (in the same way as the standard battery pack) with the battery indicator. Press the button on the right of the indicator. The status of the indicator is the same as that of the standard battery.



Charging External Battery Pack

You can charge the external battery pack by connecting AC power to the computer with the external battery connected.

To charge most effectively, the standard and external battery pack will be charged as follows :

1. Charge standard battery pack to about 80%.
2. Charge external battery pack to about 80%.
3. Charge standard battery pack remaining about 20%.
4. Charge external battery pack remaining about 20%.

When the computer is turned off or in the suspend-to-disk mode, it will take about 5 hours and 30 minutes to charge both the standard and external battery packs from empty to full. When the computer is turned on, it will take about 7 hours and 30 minutes. (The charging time depends on the power you are consuming.)

Initializing External Battery Pack

The procedure for initializing an external battery pack is the same as that of the standard battery. But, you cannot initialize the external battery pack only. If you begin the initializing process, both standard and external battery packs will be initialized.

Power Management

Power management saves electricity and extends battery life by controlling power supply to built-in devices. You can set the power man-

agement properties in the Setup Utility or in Windows 98. Your computer is controlled by the power management settings in which the time set is shorter.

Note that the power management may not seem to function in the following conditions :

- When you are using an application program that accesses the hard disk periodically
- When the IR monitor is available
- When Windows CD Auto Play is functioning

Stopping Power Supply to the Hard Disk

Setting in Windows 98

1. In the Power Management Properties dialog box, select Power Schemes tab.
2. Set Turn off hard disks to an appropriate value, and click OK.

Setting in the Setup Utility

In the Power menu, set Power Management Function to Enabled and set Hard Disk Power Down after to an appropriate value.

Stopping Power Supply to the Display

This procedure is also effective for an attached external monitor complying with power management.

Setting in Windows 98

1. In the Power Management Properties dialog box, select Power Schemes tab.
2. Set Turn off monitor to an appropriate value, and click OK.

Setting in the Setup Utility

In the Power menu, set Power Management Function to Enabled and set Video Power Down after to an appropriate value.

Suspend Modes

The power management contains two types of suspend modes : suspend-to-RAM mode and suspend-to-disk mode. In the Setup Utility, you can define which suspend mode the system enters in what conditions.

- Suspend-to-RAM mode stores the current condition of the computer in RAM and stops power supply to all but a few essential components. Your system enters and resumes from the suspend-to-RAM mode per the conditions mentioned below. In the suspend-to-RAM mode, the Power indicator blinks green.
- Suspend-to-disk mode saves the current condition of the computer in an area of the hard disk, which is called "suspend-to-disk partition," and turns off the computer. Your system enters and resumes from the suspend-to-disk mode per the conditions mentioned below. In the suspend-to-disk mode, the Power indicator turns off.

Before suspending the system

Finish communications, printing, and playing music or video.

Entering the Suspend modes

Your computer enters a suspend mode in each of the following cases. You can select the suspend mode that the system will enter in Suspend Mode in the Power menu of the Setup Utility.

- You press the power switch when the item Power Switch Function is set to Suspend/Resume in the Setup Utility.
- You press Fn + F12.
- The specified time in System Standby of Power Management Properties dialog box has passed without any operation.
- You select Standby in the Shut Down Windows dialog box.

You can select the suspend mode that the system will enter in Cover Close in the Power menu of the Setup Utility.

- The screen cover is closed.

The following case functions if Critical Battery Suspend is set to Enabled in the Power menu of the Setup Utility.

- The battery level is low (always suspended to disk).

Resuming from Suspend-to-RAM mode

Your computer resumes from the suspend-to-RAM mode in each of the following cases :

- You press any key.
- The screen cover is opened.
- The built-in modem receives a call if Resume On Modem Ring in the Power menu of the Setup Utility is set to Enabled (the built-in modem may not be available in some countries).
- You press the power switch when the item Power Switch Function is set as Suspend/Resume in the Setup Utility.

Resuming from Suspend-to-Disk mode

Your computer resumes from the suspend-to-disk mode by pressing the power switch. The system restores the exact state as it was when entering the suspend mode. If the computer enters the suspend mode due to low battery power, however, you have to connect the computer to AC power first. Suspend to Disk is useful when you want to turn off the computer and reopen the same windows after turning it on.

- If your battery becomes completely discharged during Suspend to RAM, you will lose unsaved data and will need to reboot your computer. Therefore, if you are planning to leave your computer suspended for long periods of time, we recommend Suspend to Disk.
- When the system enters or resumes from the suspend-to-disk mode, you can see some flicker on the display. This is not a malfunction.
- If sufficient battery power does not remain, your computer will not resume from the suspend-to-disk mode. To resume it from the suspend-to-disk mode, connect the computer to AC power.
- If a PC card does not work properly after your computer resumes from the Suspend to Disk, restart the computer.

When entering or resuming from a suspend mode, be sure to observe the following precautions. Otherwise, the computer may not operate correctly after it has resumed from the suspend mode.

- Do not turn off the computer when the system is suspended to RAM. The RAM contents will be lost.
- Do not operate the keyboard, glide pad or mouse while the system is entering or resuming from a suspend mode.

Disabling Power Management

In Windows 98

1. In the Power Management Properties dialog box, select Power Schemes tab.
2. Set System Standby, Turn off monitor and Turn off harddisks to Never, and click OK.

In the Setup Utility

1. In the Power menu, set Power Management Function to Enabled.
2. Set Hard Disk Power Down after, Video Power Down after and Auto Suspend to Disabled.
3. Set Power Management Function to Disabled.

When you are using communication software or if sound or voice pauses or skips while played back, disable power management.

Security Features

This chapter describes how to protect your computer against unauthorized use, computer viruses and theft.

Passwords

Setting a password will help protect against unauthorized access to your computer. When a password is set and the computer is turned on or resumes from the suspend-to-disk mode, the system will require a password.

If you lose your password, you will be unable to access the computer or change the configuration. Make sure you select a password you will never forget, and write it down and save it in a secure place. Otherwise, you will have to contact your dealer for assistance.

If you enter a wrong password three times, the message System Disabled appears. Press the power switch to turn off the computer, turn it on again, and enter the correct password.

Supervisor Password and User Password

Two types of passwords limit the access at different levels. To set the user password, you always have to set the supervisor password. When you set the two passwords, a person who knows only the user password has the limitations below :

When setting items in the Setup Utility

The person who does not know the supervisor password cannot set :

- Set Supervisor Password
- Password on boot
- Power Management Security
- Diskette access
- Fixed disk boot sector

When the system starts or resumes from the suspend-to-disk mode

If you have enabled Password on boot in the Security menu of the Setup Utility, the system requires a password when you turn on the computer. If you have enabled Power Management Security in the Power menu of the Setup Utility, the system requires a password when the system resumes from the suspend-to-disk mode.

The person who does not know the supervisor password cannot read/write a floppy disk when the item of Diskette access is defined as Supervisor in the Security menu of the Setup Utility.

Setting the Password

1. In the Security menu of the Setup Utility, select Set Supervisor Password or Set User Password and press Enter.
2. Type your password (up to eight characters), and press Enter.
3. Type the same password again, and press Enter.
4. When the confirmation message appears, press Enter.
5. Press Esc and select Exit Saving Changes.
6. Press Enter twice. The system restarts and asks the password you have set.

If you use the computer personally

We recommend that you set the supervisor password. You can prevent other people from using your computer by enabling Password on boot in the Security menu of the Setup Utility.

If you share the computer with others

We recommend that a person who administers the computer sets both supervisor and user passwords and lets the other people know only the user password.

Deleting the Password

1. In the Security menu of the Setup Utility, select the password item you want to delete and press Enter.
2. Type your current password, and press Enter.
3. Without typing any characters, press Enter.
4. Press Enter again.
5. When the confirmation message appears, press Enter.
6. Press Esc and select Exit Saving Changes.
7. Press Enter twice. The system restarts.

Preventing Infection of Computer Viruses

You can protect against some viruses by limiting writing to the hard disk. To limit writing to the hard disk, set the item Fixed disk boot sector to Write Protect in the Security menu of the Setup Utility.

- You cannot prevent infection of all types of viruses with the above operation.
- Even if a warning message appears, the system may be infected in some cases.

Setup Utility

This chapter describes how to run the Setup Utility to change settings on your computer.

Running the Setup Utility

With the Setup Utility, you can customize the system configuration information, such as time and date, port assignments, passwords, or power management settings. The information you have specified is saved in a special area called CMOS RAM, which the system reads every time you turn on the computer.

Contents of the Setup Utility

The Setup Utility consists of five menu pages, as follows :

- Main : Basic system configuration
- Advanced : Device interface configuration (I/O ports, etc.)
- Security : Password settings
- Power : Power management (battery saving settings)
- Exit : Exit the Setup Utility or return to the default values

Entering and Exiting the Setup Utility

1. Turn on the computer.
2. When Press <F2> to enter SETUP appears, press F2.
3. Change the desired settings.
4. Press Esc to select the Exit menu.
5. Select one of the exit methods, and press Enter.
6. When the message Setup Confirmation appears, press Enter again. The system restarts.

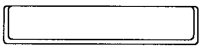
To turn off the computer when the Setup Utility is open, press the power switch.

Using the Setup Utility

To navigate through the different menus, you can use the following keys :

Moves the cursor from one menu to another.

Moves the cursor from one item to another in a menu.



Increases the numeric value or changes an item to the next value.

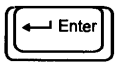
Decreases the numeric value or changes an item to the previous value.

Enters the Exit menu. When a sub-menu is open, this key closes the sub-menu.

Replaces the settings on the current menu with their default values (date and time are not changed).

Saves the settings you have changed and exits the Setup Utility.

Displays online help for the Setup Utility.



Displays sub-menu. Items with marks contain sub-menus.

Main menu

System Time Defines the system time, using the format hour : minute : second (24-hour format). The Tab key moves the cursor, and the space bar and the "-" key change numerals.

System Date Defines the system date. The Tab key moves the cursor, and the space bar and the "-" key change numerals.

Diskette A Defines whether to use the floppy disk. To use it, set this item to 1.44MB, 3 1/2".

Hard Disk Type Specifies the hard disk type. Set to Auto during normal use.

Boot Sequence Specifies the sequence in which the boot program looks for operating system files.

Internal Numlock Defines whether you can input numerals through keys with blue legends on the built-in keyboard when you connect an external keyboard and lock its numeral keys.

Memory Cache Enables or disables the memory cache function that accelerates the access speed to data previously accessed.

QuickBoot Mode Enables or disables the quick boot function. When this item is enabled, the system skips certain tests while booting.

Quiet Boot Enables or disables the quiet boot function. When this item is enabled, the system shows SHARP logo screen while booting.

BIOS version Shows BIOS version of your notebook.

EC version Shows the version of power source firmwear.

System Memory shows the size of conventional memory for starting MS-DOS.

Extended Memory Shows the size of extended memory with 1MB or larger.

Advanced menu

Serial Port Sets the RS-232C serial port, selecting the base I/O address. Enabled means that you can select the item yourself. Auto means that the item is automatically assigned. Disabled means that you cannot use the port.

IR Port Sets the infrared port, selecting the mode, the I/O channel, the IRQ channel, and the DMA channel. Enabled means that you can select the items yourself. Auto means that all the items except the mode are automatically assigned. Disabled means that you cannot use the port. Set to Auto during normal use.

Mode Specifies the IR mode : IrDA or ASK. Set to IrDA during normal use.

LPT Port Sets the printer port, selecting the mode and the base I/O address. Enabled means that you can select the items yourself. Auto means that the base I/O address is automatically assigned. Disabled means that you cannot use the port.

Mode Specifies the LPT port mode : Bi-directional, Output Only, EPP (Enhanced Parallel Port mode) or ECP (Extended Capabilities Port mode).

Internal Pointing Device Enables or disables the glide pad.

Resolution Expansion Defines whether the screen is expanded when the resolution is 640 x 480. Enabled means that the screen is expanded.

USB Port Enables or disables the USB port. Always set to Enabled ; otherwise, some PC cards may malfunction.

LAN Enables or disables the LAN port.

Plug & Play O/S Defines whether the operating system supports the plug & play function. Set to Yes during normal use.

Large Disk Access Mode Selects the operating system. Set to DOS during normal use. If you use another operating system such as UNIX, select Other.

Security menu

- See the previous chapter about setting passwords.
- In some password settings, you cannot select some items.

Set Supervisor Password Defines the supervisor password (up to eight characters).

Set User Password Defines the user password (up to eight characters). You cannot set the user password unless you have set the supervisor password.

If you lose your password, you will be unable to access the computer or change the configuration. Make sure to select a password you will never forget, or write it down and protect it in a secure place.

Password on boot Defines whether the system requires passwords during the boot process. Enabled means that you need to input a password to continue.

Power Management Security Defines whether the system requires a password when it resumes from the suspend-to-disk mode. Enabled means that you need to input a password to continue.

Diskette access Specifies who can access the floppy disk drive.

Fixed disk boot sector Defines whether the boot sector of the hard disk is write-protected. When formatting the hard disk or when reinstalling software, set it to Normal.

Power menu

Power Switch Function Defines the function of the power switch. If

you select On / Off , the switch works only to turn on/off the computer. If you select Suspend / Resume, the system enters the mode that is specified in the item Suspend Mode when you press the power switch. To resume the system, press the power switch again.

Cover Close Specifies the mode the system enters when the screen cover is closed.

Power Management Function Enables or disables the items below : Hard Disk Power Down after, Video Power Down after, and Auto Suspend.

Hard Disk Power Down after Defines the duration of non-access to the hard disk after which the power supply for the hard disk stops automatically.

Video Power Down after Defines the duration of non-access to the screen after which the power supply for the screen stops automatically.

Suspend Mode Defines which mode the system enters when the system is suspended.

Auto Suspend Defines whether the system enters a suspend mode when you do not operate the computer for the specified length of time. This item does not function under Windows 98.

Critical Battery Suspend Defines whether the system enters the suspend-to-disk mode when the battery power becomes low.

Auto Backlight Control Enables or disables the self-adjustment of the display backlight. When this item is enabled, for example, backlight brightness is reduced when the system operates on battery power.

Resume On Modem Ring Defines whether the system resumes from the suspend- to-RAM mode when the modem receives a call.

The built-in modem may not be available in some countries.

Battery Level Shows the amount of battery power remaining. Battery 1 refers to the standard battery ; Battery 2 refers to the optional external battery pack.

Exit menu

Exit Saving Changes Saves the settings you have changed and exits the Setup Utility.

Exit Discarding Changes Exits the Setup Utility without saving the settings you have changed.

Load Setup Defaults Returns the values of all items to default. To exit, select one of the above items.

Discard Changes Returns the values of all items to the values you last saved.

Save Changes Saves the settings you have changed.

CHAPTER 2. SPECIFICATIONS

1. Specifications

Model name		PC-A250
CPU		Mobile Pentium II Processor 300 MHz (BGA)
Second cache		256KB (built in CPU)
Chip set		Intel 440DX (82443DX, 82371EB)
ROM		512 KB, Phoenix NOTE BIOS 4.06, VGA BIOS, AMP, Plug&Play BIOS
RAM	Main	64MB SDRAM (max. 128MB)
	Video	2.5MB (included in display controller)
Display	Panel	SVGA (800 x 600 dots) TFT color LCD (with backlight)
	Display controller	Trident-make Cyber9525DVD (with video RAM) Possible to offer simultaneous display on external CRT connected through PCI bus
	LCD display	800 x 600 dots (max. 16,770,000 colors *1) 640 x 480 dots (max. 16,770,000 colors *1)
	CRT display	1,600 x 1,200 dots (max. 16 colors) 1,280 x 1,024 dots (max. 256 colors) 1,024 x 768 dots (max. 16,770,000 colors) 800 x 600 dots (max. 16,770,000 colors) 640 x 480 dots (max. 16,770,000 colors)
	Simultaneous display	800 x 600 dots (max. 16,770,000 colors *1) 640 x 480 dots (max. 16,770,000 colors *1)
Keyboard		87 keys, 17 mm pitch, 2.5 mm stroke
Auxiliary memory	HDD	6.4GBx1, enhanced IDE connection
	FDD	External 3.5 inch x 1, 3-mode (1.44MB / 1.2MB / 720KB)
Sound function		Sound blaster Pro compatible, monaural speaker
Standard interface		CRT x 1 (analog), optical communicationx1 (data transfer rate: IrDA 4Mbps, 115kbps/ASK 9,600bps), audio output x 1 (stereo), microphone inpout x 1 (monaural), floppy disk x 1, USB x 2, add-on lithium-ion battery x 1, 100BASE-TX x 1
FDD interface		RS-232C x 1 (16550A compatible), printer x 1 (EPP/ECP), keyboard / mouse x 1 (PS/2 type)
Modem		Max. communication speed: data 56,000bps (reception), 33,600 kbps (transmission) / FAX14,400 bps, compatible with k56flex / V90 specification
PC card slot		Type II x 1 slot, compatible with PCMCIA Rev2.1 / JEIDA Ver.4.2 specification
Power source		AC adapter (supplied with the unit) Built-in battery, add-on lithium-ion battery (both lithium ion)
Battery life		1 hour 50 min. (only built-in battery) 6 hours (total of built-in battery plus add-on lithium-ion battery) (The battery life varies depending upon the operating conditions.)
OS		Microsoft Windows 98
External dimensions and weight		263 mm wide x 212 mm deep x 26.8 mm high (max. No projection is included.) less than 1.4 kg (unit only)
		FDD unit with I/O port, AC adapter, AC cable, starting FDD, recovery CD x 2, modular cable, Instruction Manual
Option		Add-on lithium-ion battery, PC card connected CD-ROM drive (same as for PC-A100 / PC-A150) AC adapter (same as that supplied with the unit)

*1 : This function is achieved by dithering feature of the display controller.

2. Differences in specifications

Model name	PC-A250	←	←	←	←	←	←
Destination (destination code)	SEC (U)	SRS, SCOT (Y)	SRH (A)	SCA (E)	SUK (H)	SEEG (G)	SEIS (I)
Country	U.S.A	Singapore, Taiwan	Hong Kong	Australia	UK	Germany	Italy

Major specifications

CPU	Pentium II 300 MHz	←	←	←	←	←	←
Second cache	256KB (built in CPU)	←	←	←	←	←	←
Memory	64MB SDRAM (Max. 128MB)	←	←	←	←	←	←
Display	11.3" SVGA TFT (AGAR)	←	11.3" SVGA TFT (AGAR + GRP)	11.3" SVGA TFT (AGAR)	←	←	←
HDD	6.4GB	←	←	←	←	←	←
FDD	External 3.5" 1.44MB / 720KB	←	←	←	←	←	←
CD-ROM drive	Optional	←	←	←	←	←	←
Modem	56 kbps	←	←	None	56 kbps	None	←
LAN	10Base-T / 100Base-TX	←	←	←	←	←	←
PC card slot	Type II x 1 (Card Bus)	←	←	←	←	←	←
Key board	US	←	←	←	UK	German	Italian
Pointing device	Glide pad	←	←	←	←	←	←
IR	ASK + IrDA (4Mbps)	←	←	←	←	←	←
OS	Windows 98 (English)	←	Windows 98 (English')	Windows 98 (English)	←	Windows 98 (German)	Windows 98 (Italian)

OS / Software

HDI version	U	E	A	E	E	G	I
Windows 98	English	←	←	←	←	German	Italian
IE4.0	English	←	←	←	←	German	Italian
LapLink Pro	English	←	←	←	←	German	Italian
Sharp Battery Utility	None	←	←	←	←	←	←
SRS 3D sound utility	None	←	←	←	←	←	←
Sharp IR utility	English	←	←	←	←	German	Italian
Presentation F/X 5.0	None	←	←	←	←	←	←
Adobe Acrobat Reader	English	←	←	←	←	German	Italian
Shortcut icon PC Week Award info	None	←	←	←	←	←	←
Default Wallpaper	ACTIUS ver.	SHARP ver. (sharp2. bmp)	←	←	←	SHARP ver. (sharp1. bmp)	SHARP ver. (sharp3. bmp)

Accessories

AC cable	North America	←	None	None	UK	Germany	←
AC adapter	Yes	←	←	←	←	←	←
Modem cable	Yes	←	←	None	Yes (UK)	None	←
Windows 98 shrink pack (Recovery CD, Manual, Boot FD)	U ver.	E ver.	A ver.	E ver.	←	G ver.	I ver.
Warranty	US	None	←	←	UK	None	←
US Service Pack	Yes	None	←	←	←	←	←
Operation manual	English	←	← Label for Hong Kong	←	←	German	None
Re-install manual	English	←	←	←	←	German	None
LapLink coupon	None	←	←	←	←	Yes (German)	None
MindPath brochure		None	←	←	←	←	←
Welcome sheet	Yes (US ver.)	Yes (Other ver.)	←	←	←	Yes (German ver.)	None

CPU

- Intel Mobile Pentium II 300PE
- Core Voltage : 1.6V, CPU CMOS : 1.8V, Signal interface : 2.5V
- 1st Cache : 32KB, 2nd Cache : 256KB
- 615pin BGA package

System core logic

- Intel 440DX PCIset
- North bridge (System Controller) : 82443DX, Host to PCI bridge and system memory. Core Voltage : 3.3V, 492pin BGA package
- South bridge (PCI to ISA / IDE Xcelerator) : 82371EB (PIIX4E), PCI to ISA bridge, controls IDE, USB and Power Management, Includes RTC. 3.3V (5V tolerance), 324pin BGA package

System memory

- Standard 64MB SDRAM
- 64M bits SDDRAM x 8, 3.3V
- Expanded 64MB SDRAM (Total 128MB)

Clock Generator

- ICS ICS9148-12
- Input 14.31813 MHz, Controlled via SM bus i/f
- Core Voltage : 3.3V, Output 3.3V & 2.5V, 28pin SSOP package

Video Controller

- Trident Cyber9525DVD
- Includes 2.5MB VRAM, System i/f : PCI, LCD i/f : LVDS
- Resolutions and Colors

Resolution	Number of Colors
640 x 480	256 64K 16M (*1)
800 x 600	256 64K 16M (*1)
1024 x 768 (*2)	256 64K 16M (*1)
1280 x 768 (*2)	256

*1 : The number of colors in this mode is made using a Dithering algorithm (on the internal LCD only).

*2 : Only 800 x 600 dots are displayed on the internal LCD. Move the cursor to show the remainder of the 1024 x 768 dots.

- Resolutions and Colors in the multiple displays

		640 x 480			800 x 600			1024 x 768			1280 x 1024
		256 colors	65,536 colors	16,770,000 colors	256 colors	65,536 colors	16,770,000 colors	256 colors	65,536 colors	16,770,000 colors	256 colors
640 x 480	256 colors	O	O	O	O	O	O	O	O	x	O
	65,536 colors	O	O	O	O	O	O	O	O	x	O
	16,770,000 colors	O	O	O	O	O	x	O	x	x	O
800 x 600	256 colors	O	O	O	O	O	O	O	O	x	O
	65,536 colors	O	O	O	O	O	x	O	O	x	O
	16,770,000 colors	O	O	x	O	x	x	x	x	x	x
1024 x 768	256 colors	O	O	O	O	O	x	O	O	x	O
	65,536 colors	O	O	x	O	O	x	O	x	x	x
	16,770,000 colors	x	x	x	x	x	x	x	x	x	x
1280 x 1024	256 colors	O	O	O	O	O	x	O	x	x	x

LCD

- Sharp LQ113S1R20, 11.3" SVGA TFT LCD with 1CCFT backlight
- Resolution : 800 x 600
- Effective viewing area (H x V) : 230.4 x 172.8 mm
- Pixel pitch : 0.288 x 0.288 mm
- Power source : 3.3V, 5V, 12V
- I / F : LVDS

LVDS Controller

- NS DS90C363MTD
- 3.3V, 48pin SSOP package

PCMCIA Controller

- Ricoh RL5C475A rev.0
- 1 slot PCMCIA Controller, Supports 16bit card, Card bus card, ZB port.
- 3.3V, 144pin LQFP package
- Power Switch : Micrel MIC2562A-1BM (3.3V, 5V, 12V, 14pin SOP package)

HDD

- Toshiba 2.5" 6.4GB HDD MK6412MAT/HDD2136
- 5V i/f, 8.45mm H

BIOS

- ATMEL AT29F040 4Mbits Flash EEPROM
- Includes System, Video, PnP and APM.
- 5V, 32pin PLCC package

Keyboard Controller

- Mitsubishi M38813
- Support 2 PS/2 ports and 1 Touch pad.
- 5V, 64pin TQFP package

Keyboard

- Sejin 81 keys keyboard for US, 82 keys for Europe
- IBM 101/102 keys compatible keyboard
- Supports 2 windows keys
- 17mm pitch, 2.5mm stroke

Touch Pad

- Alps Glide pad
- PS/2 mouse compatible
- 2 click buttons
- Resolution (X x Y) : 290 ± 30 x 255 ± 30 cpi
- Supports IntelliMouse scroll function.
- Automatically disabled when external mouse is connected.

I / O controller

- NS PC97338VJG
- Controls Serial port, Parallel port, IR port and FDD.
- 5V, 100pin TQFP package

RS232C driver / Receiver

- Harris HIS213
- 5V, 28pin TSOP package

FDD

- Mitsubishi 3.5" FDD MF355H
- 5V i/f

Audio Controller

- ESS ES1946
- Sound Blaster, Sound Blaster Pro, Windows Sound System compatioble
- Full duplex operation
- PCI i/f
- 5V, 100pin TQFP package

Modem Controller (may not be available in some countries)

- PCtel Software Modem PCT789T
- Supports K56Flex, V90
- PCI i/f
- 5V, 100pin TQFP package
- CODEC & DAA : PCtel PCT303D/PCT303W, 5V 16pin SOP package x 2

LAN Controller

- Realtek RTL8139AL
- Supports 10Base-T, 100Base-TX
- 5V PCI i/f (3.3V / 5V exchanged by Bus switch)
- 5V, 128pin LQFP package

Embedded Controller

- Hitachi 1chip micro controller H8
- Controls Power Sequence, Battery Charge, SM bus for Battery Gage.
- 5V, 100pin TQFP

DC/DC Controller

- 5V, 3.3V : Maxim MAX786CAI, VAB (Battery or AC adapter), 28pin SSOP
- VCPUCORE (1.6V) : Toyota SB3030, 5V, 20pin TSOP
- VPP (12V) : Linear Tech. LT1301, 5V, 8pin SOP

Regulator

- VCPUIO (2.5V) : Sharp PQ2TZ15, 3.3V, 6pin
- VCPUCMOS (1.8V) : Trex XC62FP1802M, 3pin
- VMCU (4.7V) : NS LP2951CM, VAB, 8pin SOP
- VRTC (3.1V) : Trex XC62FP3102M, VMCU, 3pin

Battery Charger

- Linear Tech. LT1511
- 22V, 24pin SOP package

Battery

- Li-ion Battery

  Internal : Panasonic 3.7V x 1400mAh x 4cells (4 series)

  External : Panasonic 3.7V x 1500mAh x 8cells (4 series, 2 parallel)

- Battery Gauge : Benchmarq BQ2092
- Li-coin battery for CMOS backup : Hitachi Maxell CR2032, 3V 220mAh

✳) Danger of explosion if battery is incorrectly replace. Replace only with the same or equivalent type recommended by the manufacture. Discard used batteries according to the manufacture's instructions.

AC adapter

- SAMSUNG 22V 2.045A AC Adapter
- Input Voltage : 100-240VAC, Input Frequency : 50/60 Hz

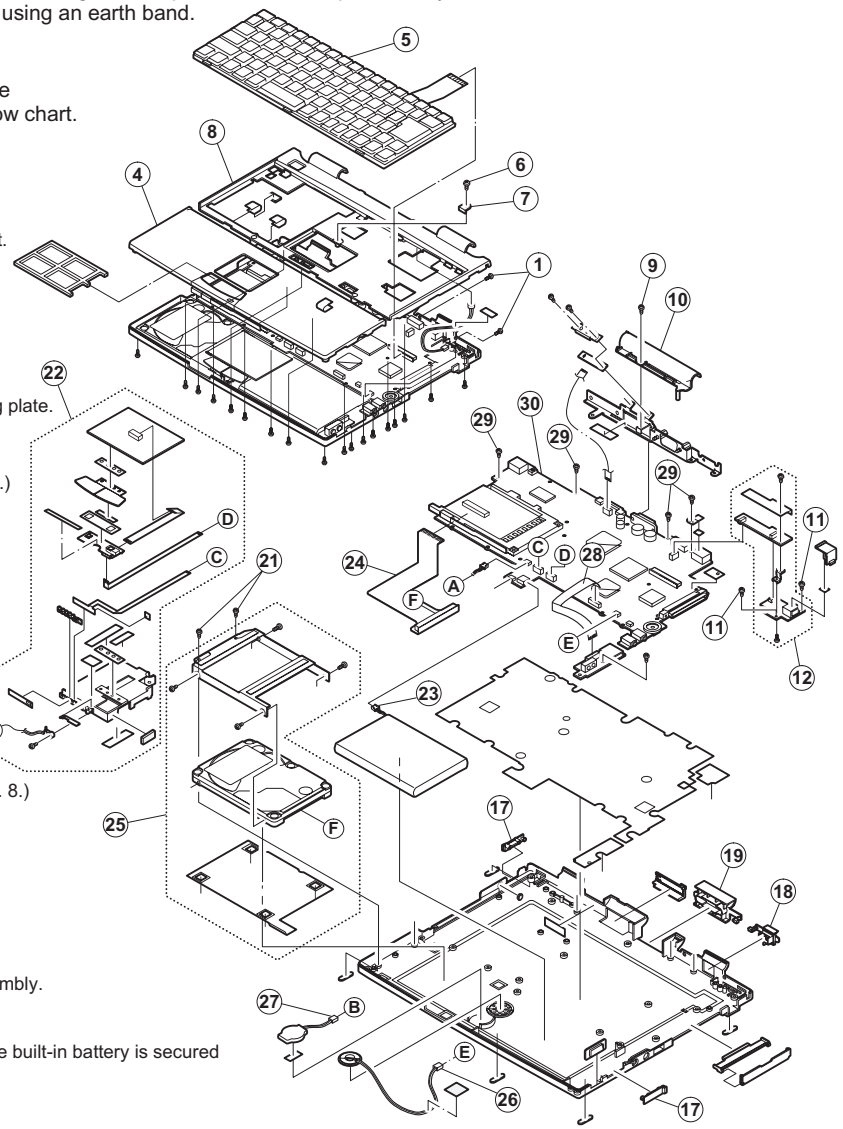
CHAPTER 3. DISASSEMBLY AND REASSEMBLY

1. This section covers the disassembly procedure of the unit. Reassembly is made in the reverse order of disassembly.
2. Some parts that can be easily disassembled and reassembled may be omitted.
3. Before trying to disassemble the unit, make sure of the wiring and the positions of the tapes and Mylars used.
4. Take an appropriate antistatic measure, such as by using an earth band.

1. Removing main board

Remove the keyboard, upper cabinet, LCD unit and the main board from the lower cabinet, according to the flow chart.

Main unit



1. Remove the two screws (X2P+4S) from the back of the unit.
2. Remove the 11 screws (X2P+5S) from the bottom of the unit. (Refer to Fig. A.)
3. Remove the seven screws (X2P+8S) securing the keyboard and hinges from the bottom of the unit.
4. Remove the palm rest.
5. Remove the keyboard.
6. Remove the screw (X2P+4S) securing the memory mounting plate.
7. Remove the memory mounting plate.
8. Remove the upper cabinet. (Pay attention to the microphone.)
9. Remove the screw (X2P+2.8S) securing the indicator cover.
10. Remove the indicator cover.
11. Remove the two screws (with washers M2 x 4) securing the modem.
12. Remove the modem unit.
13. Disconnect the LCD cable.
14. Remove the screw (X2P+6S) securing the display unit. (Refer to Fig. B.)
15. Remove the three screws (X2P+5S) securing the display unit. (Refer to Fig. B.)
16. Remove the display unit and heat sink unit (N). (Refer to Fig. 8.)
17. Remove the two USB caps.
18. Remove the LAN cap.
19. Remove the D-SUB connector cover.
20. Disconnect the cables from the glide pad.
21. Remove the two screws (X2P+2.8S) securing the HDD assembly.
22. Remove the glide pad assembly.
23. Disconnect the connector from the built-in battery. (Note: The built-in battery is secured on the bottom cabinet with double-sided adhesive tape.)
24. Disconnect the HDD FPC cable from the HDD.
25. Remove the HDD.
26. Remove the speaker.
27. Remove the coin-type battery.
28. Disconnect the IR FFC cable.
29. Remove the screw (with washer M2 x 4) securing the main board.
30. Remove the main board assembly.

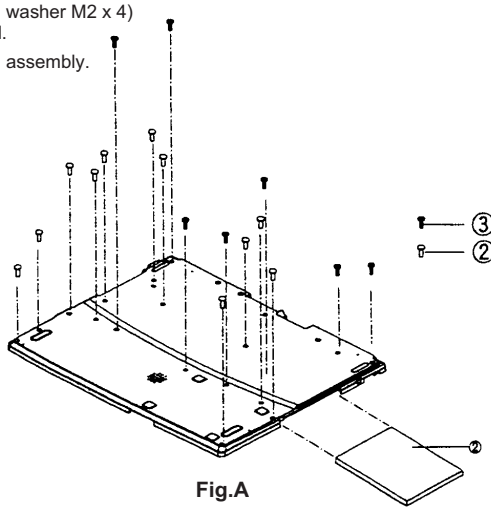


Fig.A

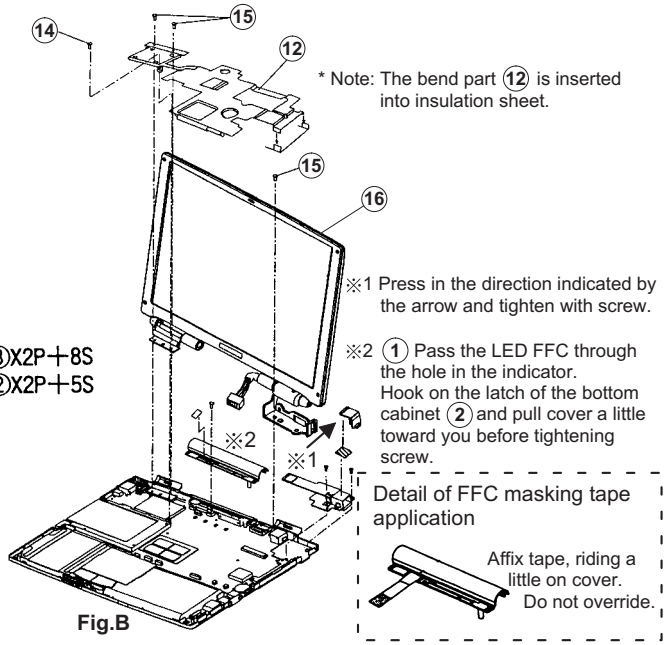


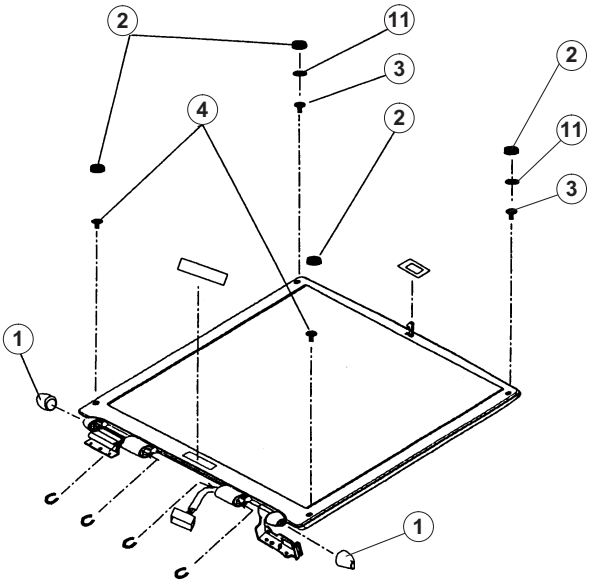
Fig.B

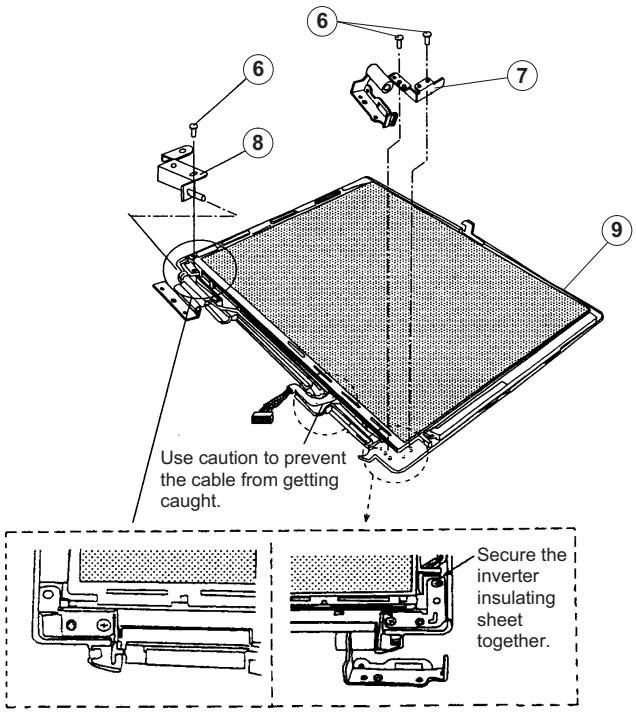
2. Removing LCD

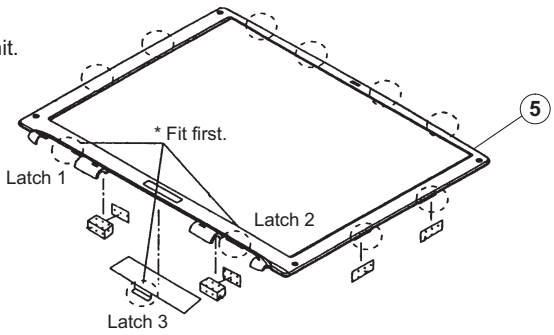
Here is the procedure to be used after removing the display unit from the main unit.

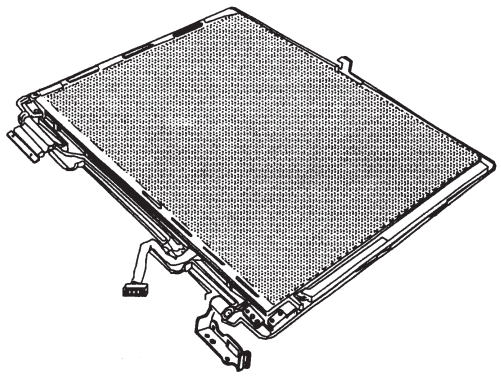
Display unit

1. Remove the hinge caps L and R. (Their parts codes are different.)
2. Remove the four rubber caps.
11. Remove rubber spacer.
3. Remove the two screws (X2P+2.8S).
4. Remove the screw (X2P+6S).
5. Remove the display mask.
6. Remove the three screws (X2P+6S) securing the hinges.
7. Remove the hinge L.
8. Remove the H/P hinge support angle.
9. Remove the LCD unit assembly.
10. Remove the inverter and LCD cable from the LCD unit assembly.

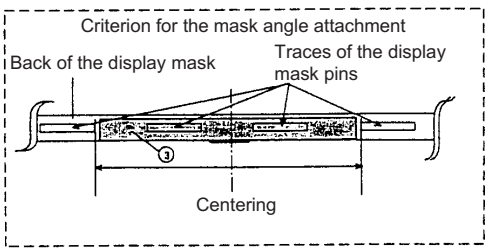


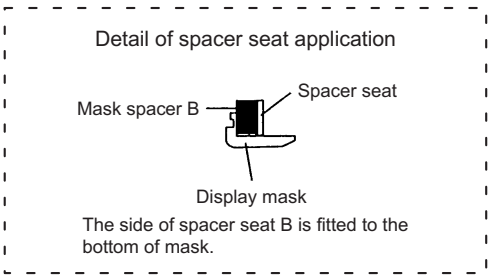


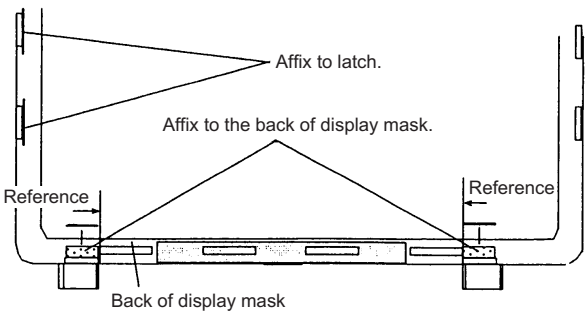




(Note)
1. Fit the three latches (1, 2 and 3) on the front side to the LCD cover unit assembly. (Use caution to prevent the inverter insulation sheet from getting caught.)
2. Then, fit in the clockwise direction.





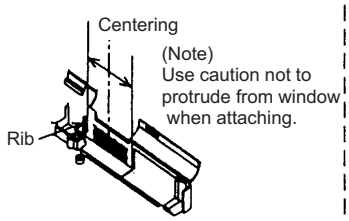


3. Cautions to be taken when reassembling

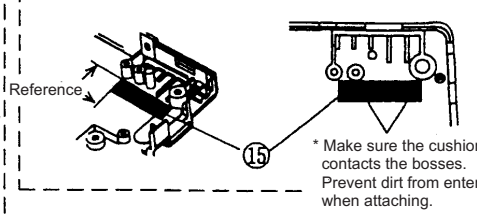
Here are cautions to be taken when reassembling the units and parts.

(1) Bottom cabinet

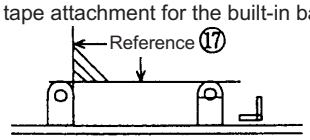
Detail of EX slide sheet attachment



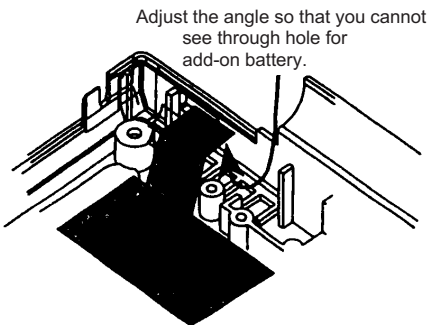
Detail of blind cushion attachment



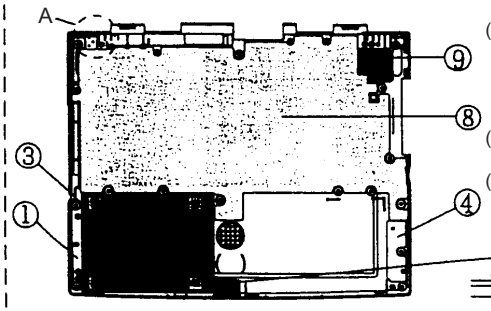
Detail of double-sided adhesive tape attachment for the built-in battery



Adjustment of insulation sheet lower angle

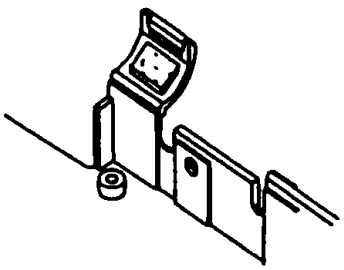


Detail of a set of insulating sheets attachment

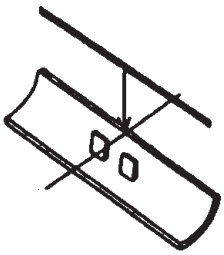


(Note) Attach the HDD cushion using the double-sided adhesive tape on the back.
Do not peel off the blue vinyl tape on the surface.
(Note) Attach the insulating sheets 3, 4, 8 and 9 side by side. Do not overlap on each another.
(Note) Lift the part A not to contact the sheet when the external battery is attached.
Do not protrude from the concave part in the bottom cabinet.
Attach inside this area.

Detail of gasket C application

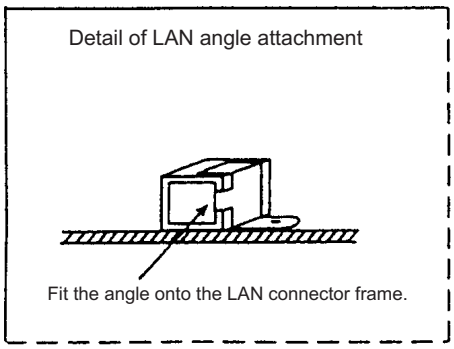


Detail of hinge rear spacer application

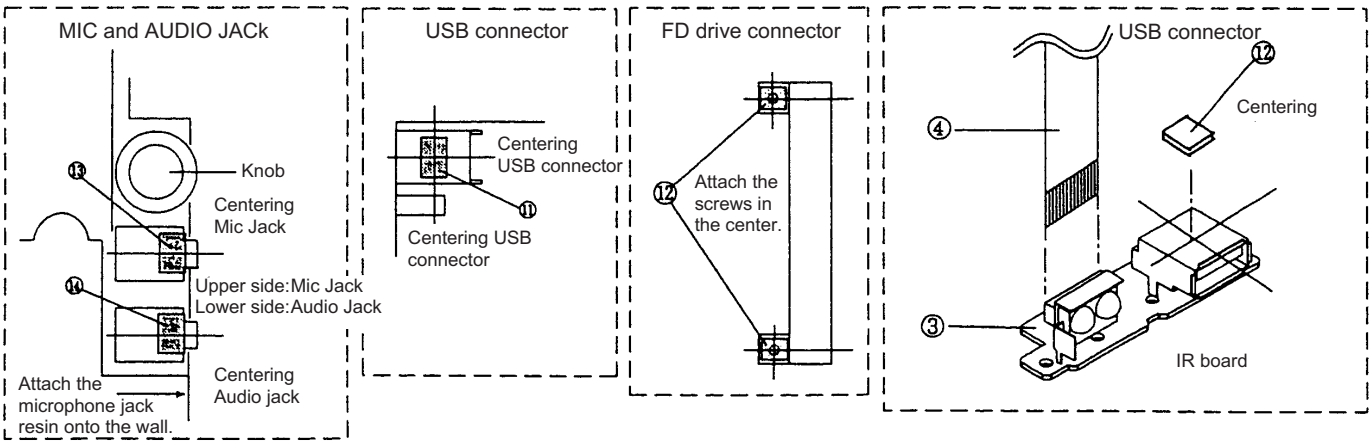


After welding hinge cover, affix to its center.

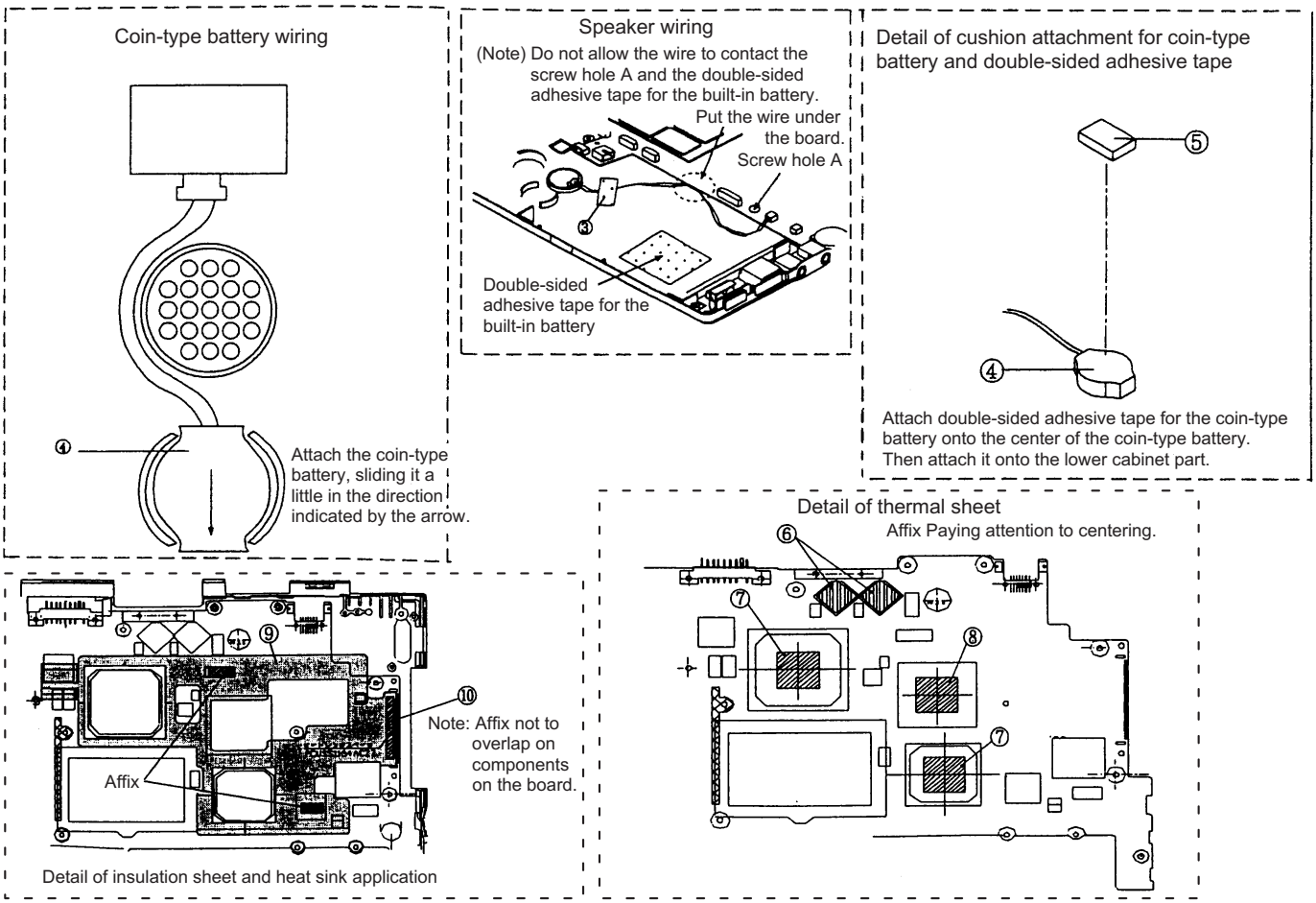
(2) Main board unit



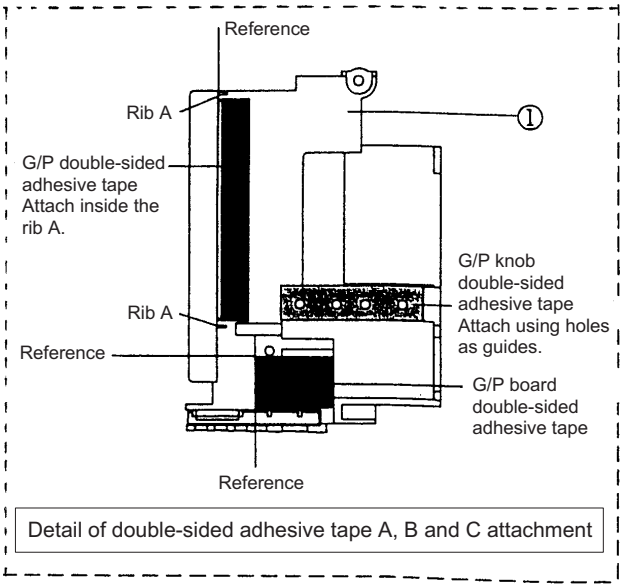
Drawing of gasket attachment



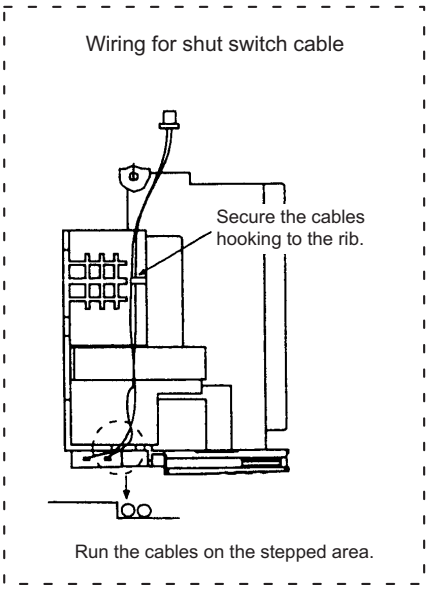
(3) Coin-type battery and speaker

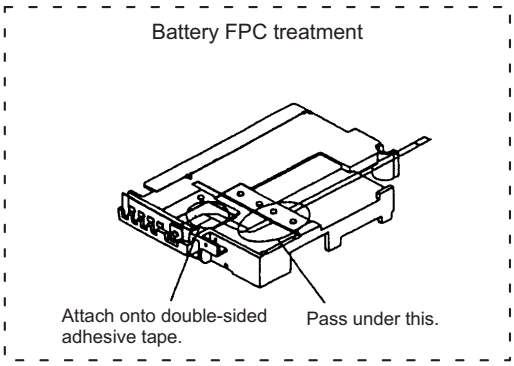


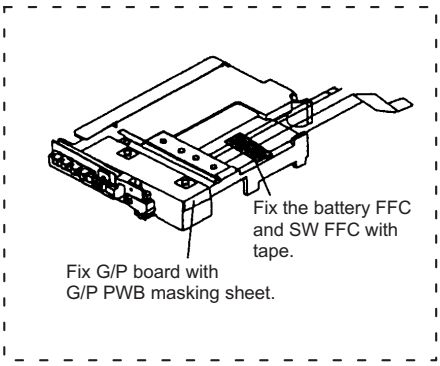
(4) HDD chassis unit

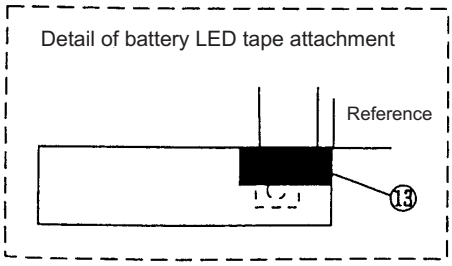


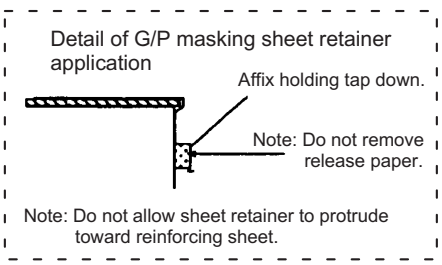
Detail of double-sided adhesive tape A, B and C attachment

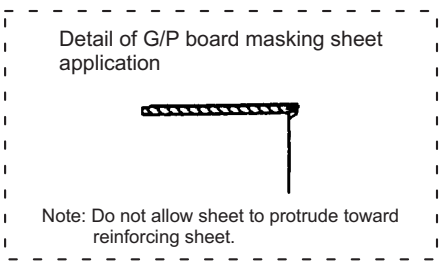




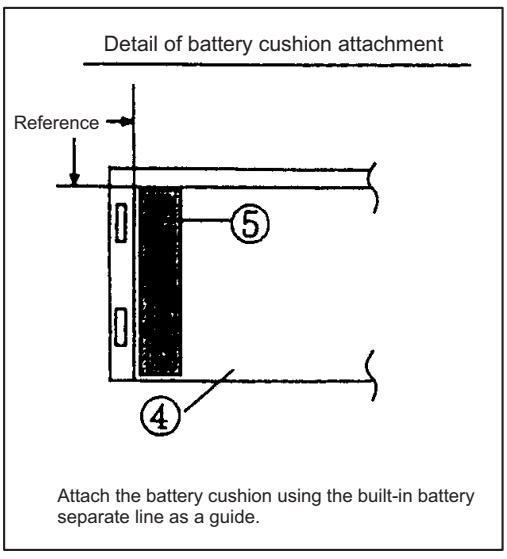


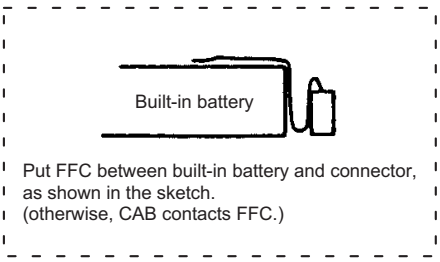




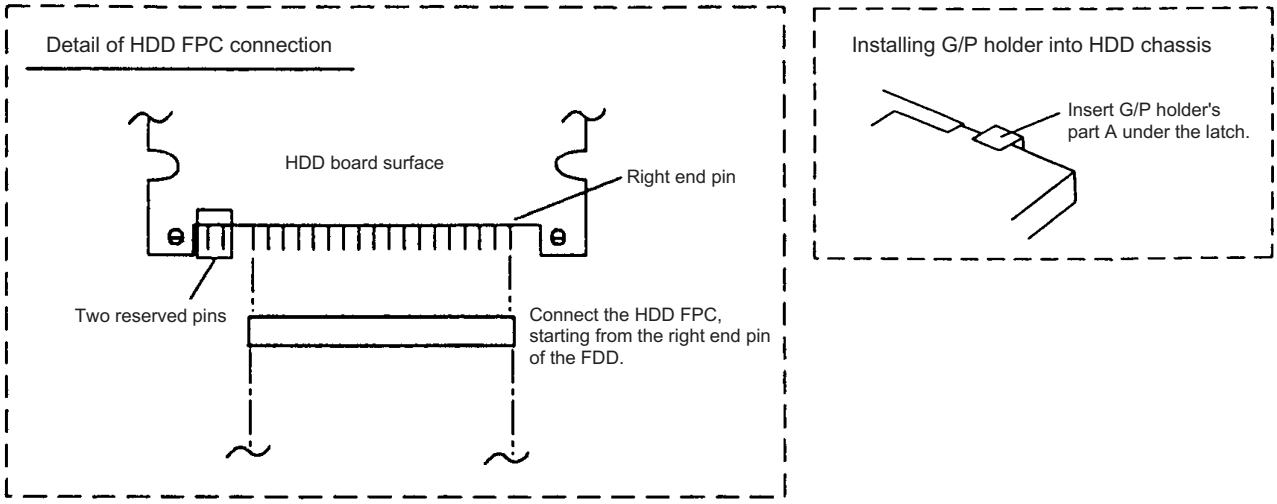


(5) Battery unit

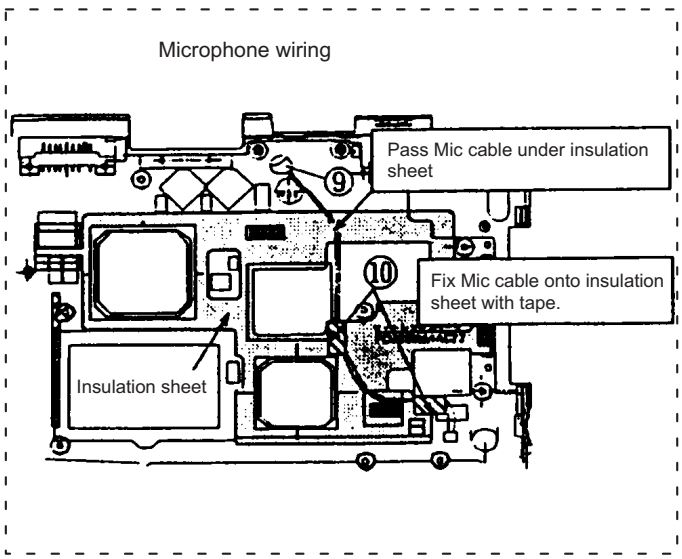




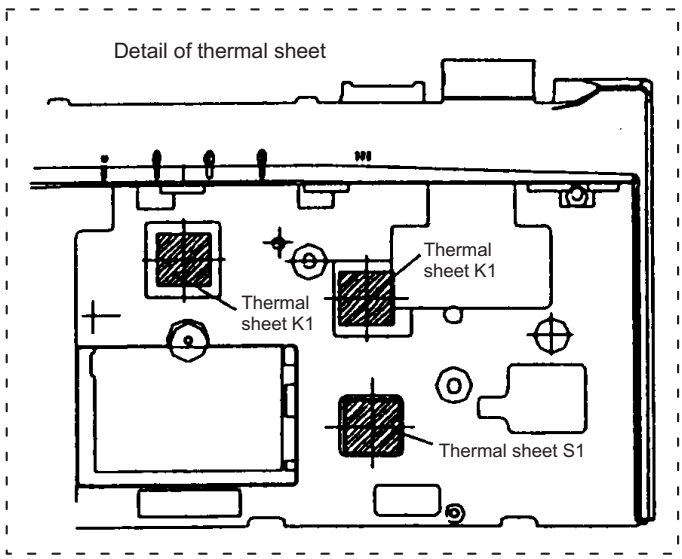
(6) HDD unit



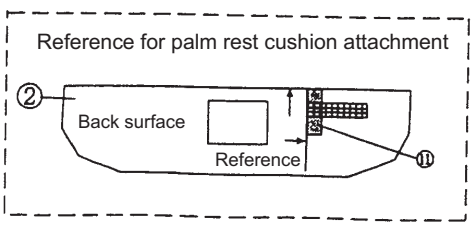
(7) Microphone



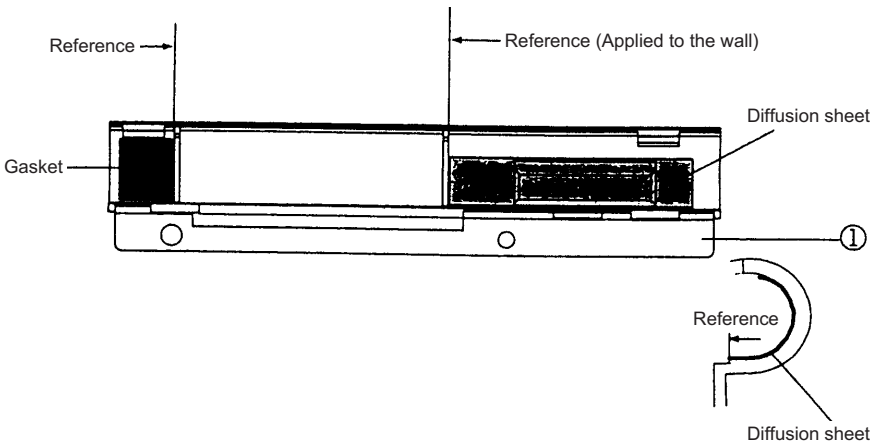
(8) Detail of thermal sheet application



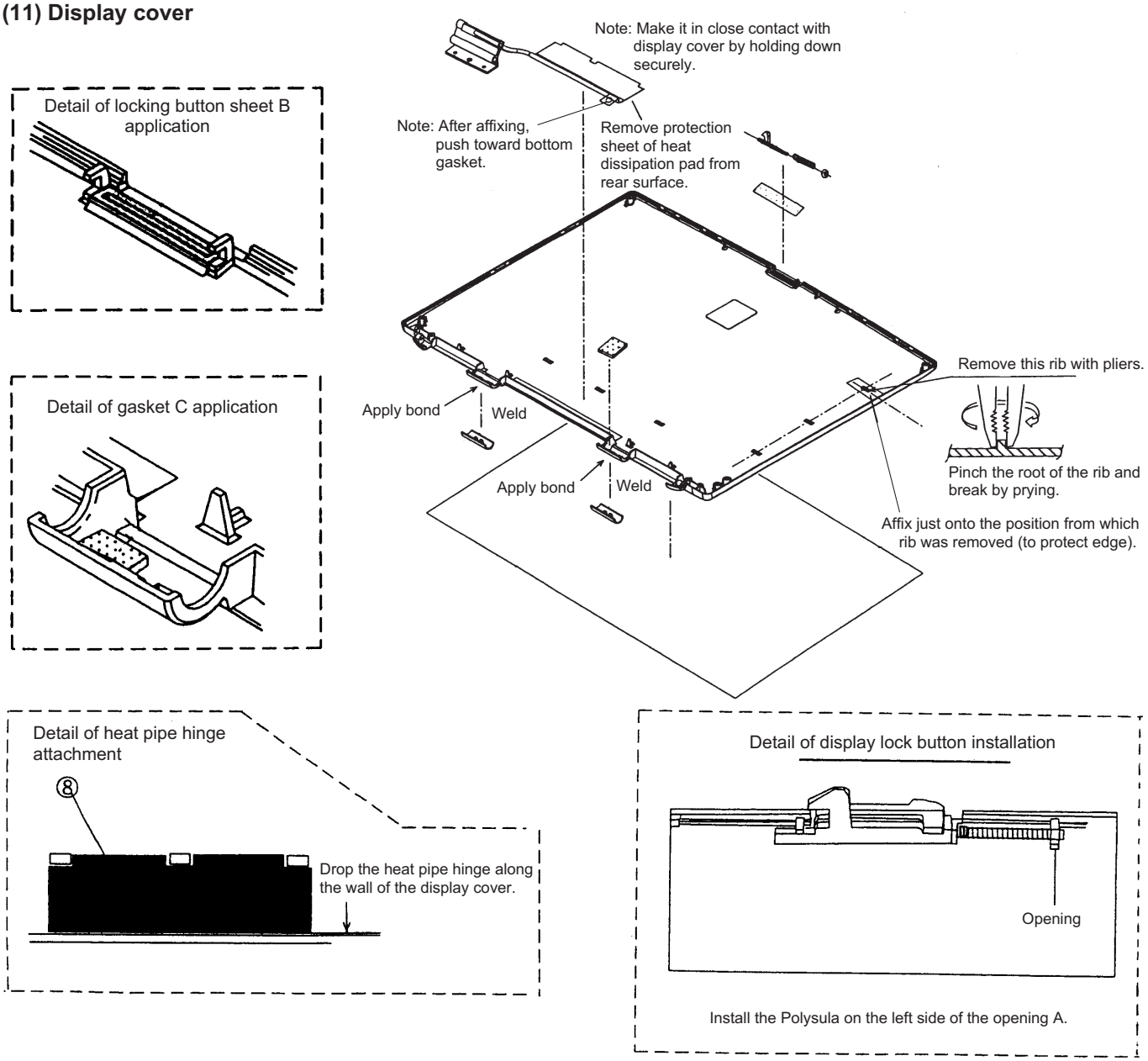
(9) Palm rest cushion



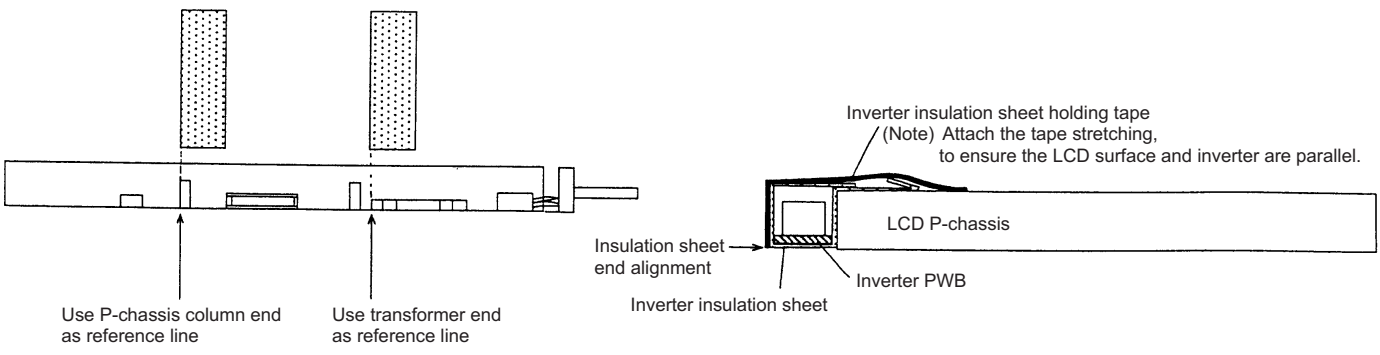
(10) Indicator cover



(11) Display cover



(12) Inverter insulation sheet holding tape

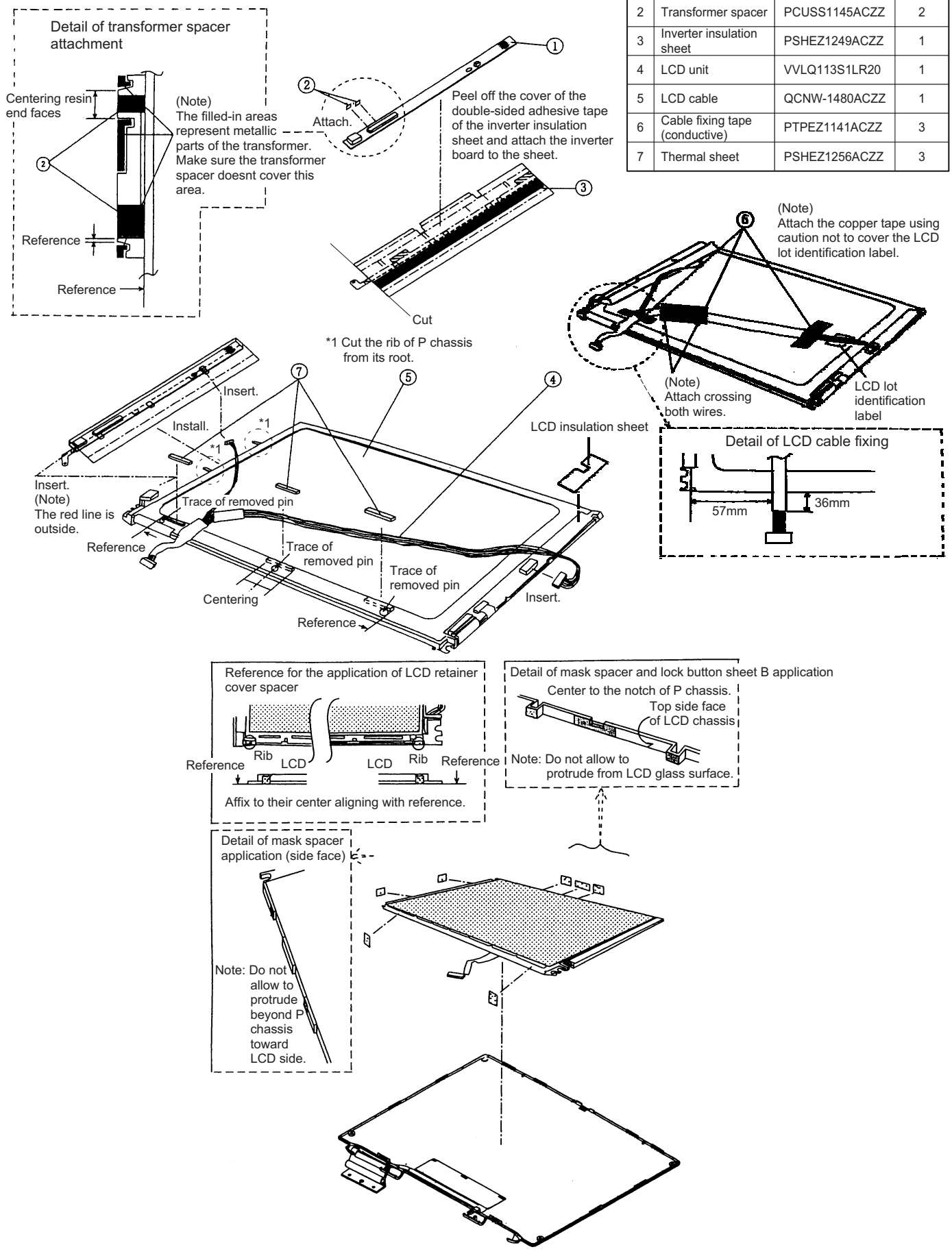


View looking from A

View looking from B

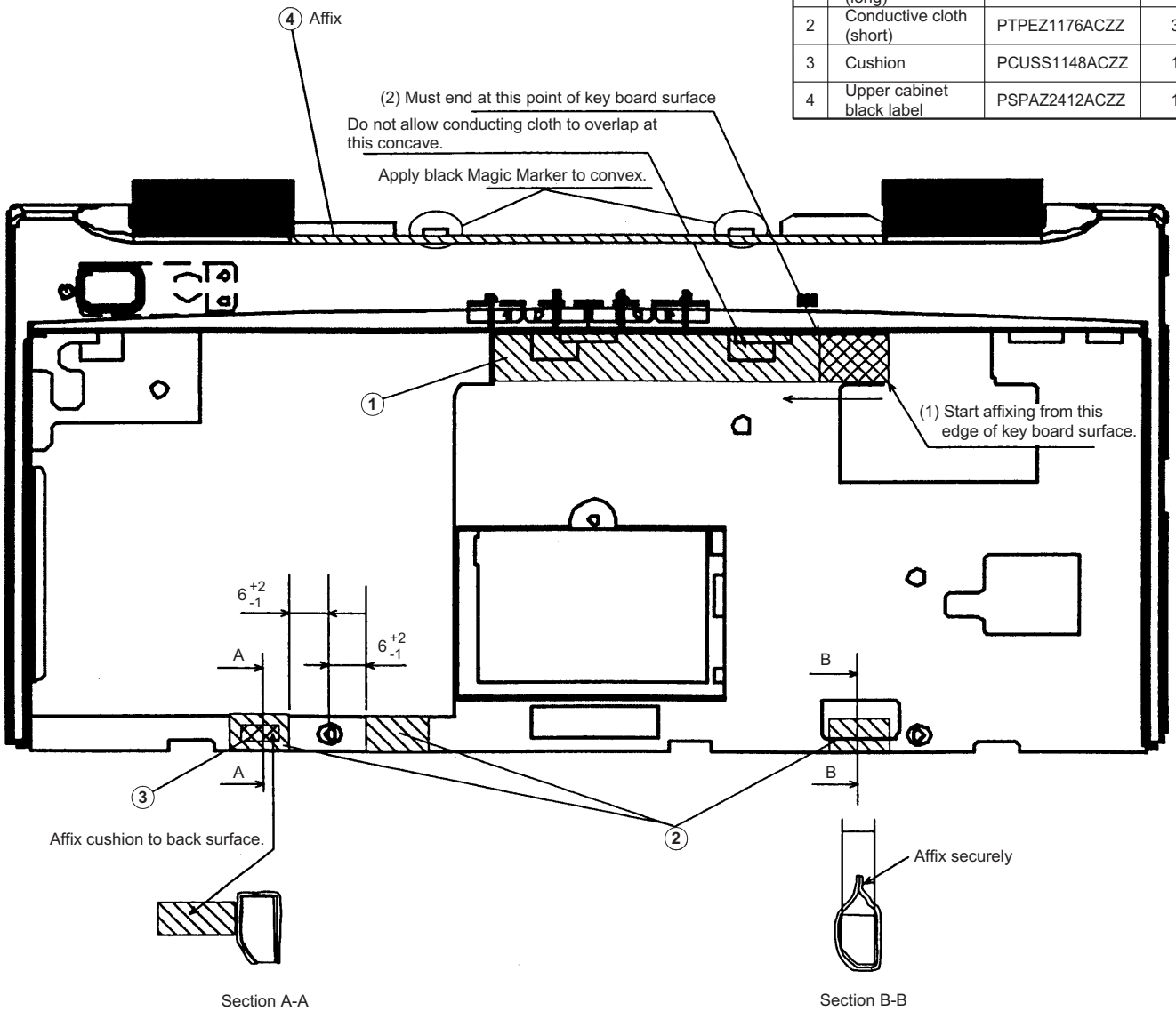
(13) Display unit

No.	Part names	Part code	Q'ty
1	Inverter unit	DUNK5265ACZZ	1
2	Transformer spacer	PCUSS1145ACZZ	2
3	Inverter insulation sheet	PSHEZ1249ACZZ	1
4	LCD unit	VVLQ113S1LR20	1
5	LCD cable	QCNW-1480ACZZ	1
6	Cable fixing tape (conductive)	PTPEZ1141ACZZ	3
7	Thermal sheet	PSHEZ1256ACZZ	3



(14) Upper cabinet assembly

No.	Part names	Part code	Q'ty
1	Conductive cloth (long)	PTPEZ1177ACZZ	1
2	Conductive cloth (short)	PTPEZ1176ACZZ	3
3	Cushion	PCUSS1148ACZZ	1
4	Upper cabinet black label	PSPAZ2412ACZZ	1



CHAPTER 4. PRECAUTIONS

FDD/HDD/CD-ROM

(Precautions when unpacking the package)

1. Be careful not to expose unit to any physical shock since it is a precision instrument. (do not give it a shock equivalent to or exceeding a drop from the height of 7 0 cm in a packed condition)
2. Be sure workers and their cloths are not charged with electricity when th ey handle the parts. (be sure they wear a grounding band)
3. Packing must be done under the following conditions: (same conditions apply to the assembling)

Temperature (°C)	Humidity (% RH)	Temperature change (°C/H)
10 ~ 40	20 ~ 80	20

   ∗ When the temperature is low, do not forget to take measures against static e lectricity.

   ∗ Temperature change means the difference in temperature between before and a fter the unpacking.

4. Be sure not to pile up precision instuments by themselves but to place each of them on a stable and non-shocking underlay. (be sure to keep the board surface down)

(Storage)

◆ Storage method common in servicing and in packed condition

1. Be sure to store it in the following conditions:

Temperature (°C)	Humidity (% RH)
–16 ~ 60	20 ~ 80

   ∗ Do not store in a car in summer.

   ∗ When the temperature is low, do not forget to take measures agains t static electricity.

◆ Storage method in servicing

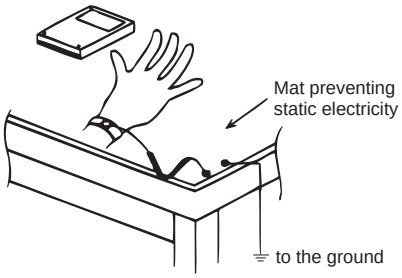
1. When parts are stored alone, they should be covered. (be sure to take measures against dust)
2. Be sure to take measures against static electricity. (Place the part on a mat which prevent static electricity)
3. Do not pile up the parts. (also be sure not place any other part on a part)

◆ Storage method in packed condition

1. Regardless the length of the storage period, store it in the same condition as it is originally packed and delivered.

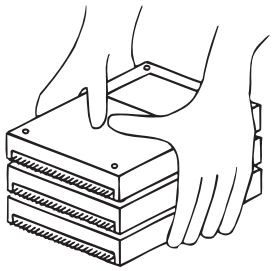
(Handling)

1. Do not forget to wear a grounding band when working on unit.

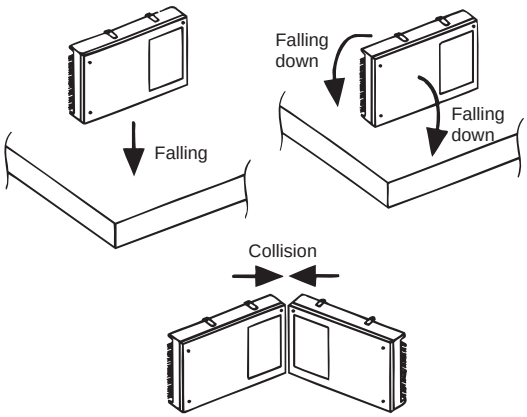


   ∗ Confirm with a tester when you put the grounding band (1MΩ ~ 10MΩ) on. A grounding wire should be installed at an appropriate location.

2. For any unit, do not stack in piles.

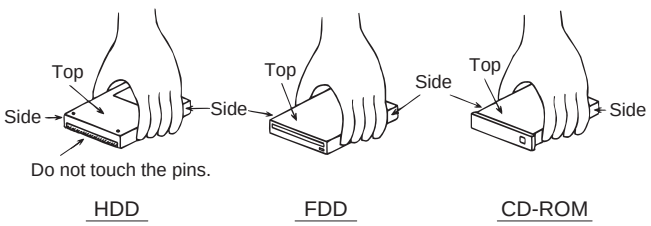


3. Avoid any impact with the unit.



   ∗ Be sure not to use the unit(s) if they were subject to any physical shock.

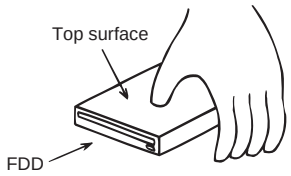
4. Hold the units by the side.



5. Use designated torque/tools (low impact drivers)
6. Keep magnetic materials away from the unit.

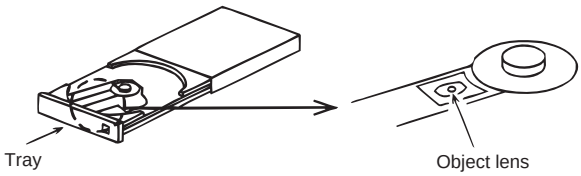
Precaution when handling FDD

1. Do not press the top surface of FDD.



Precautions when handling CD-ROM drive

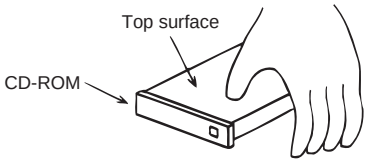
1. Be sure not to touch the object lens.
2. Be sure to keep dust and dirt away from the object lens.



✳ If the object lens is stained with dust and/or dirt, remove them with one of the following methods:

- Blow the dust with an airgun.
- Use Hitachi-Maxell's CD-ROM lens cleaner.
- Wipe the lens gently with an applicator using Nippon Appicators' CD lens cleaner liquid B4.

3. Do not press the top surface of CD-RM drive.



4. Do not pull the tray by force.
5. Do not apply any upward, downward, leftward or rightward force to the tray.
6. Be sure to insert a CD-ROM by pressing it in the middle.

Precaution on HDD

1. Cable connection/disconnection and transfer of HDD shall be performed after t he unit is left untoutched for more than 15 seconds after the power suppy is t urned off (a state where the motor of HDD has been stopped or green/red light has been on).

CHAPTER 5. RE-INSTALLATION

Preparation for Re-installation

You can format the hard disk and re-install the preinstalled software with the recovery CD-ROM, and set the status of your computer to the same configuration as shipped from the factory. Necessary for re-installation are the following :

- Optional external CD-ROM drive (SHARP CE-CD01)
- Product Recovery CD-ROM
- Floppy disks or other external media for data backup
- Getting Started Microsoft Windows 98 manual

Unless otherwise specified, the instructions in this booklet assume that you use SHARP CE-CD01 CD-ROM drive.

- It will take about 30 minutes to complete the re-installation. The time depends on the data transfer rate of the CD-ROM drive.
- It takes about five seconds for the system to recognize a CD-ROM. If you operate too quickly, an error message may appear. In this case, return to the first step and repeat the installation.
- Use the Product Recovery CD-ROM only for your computer.
- Unless otherwise specified, the instructions in this booklet assume that you are installing Windows 98 into the C : \ WINDOWS directory.

In the re-installation procedures, use only AC power. If you use the battery and the battery power becomes low, you cannot continue the re-installation.

Backing up the data

Before formatting the hard disk, you should back up your data. For details on how to back up your data, see the Windows Online Help.

Although the pointer may be shown on the screen, never touch the keyboard or the glide pad during recovery except when the message prompts you to.

Formatting the hard disk and reinstalling Windows 98 and other programs

1. If any peripheral devices, except the external floppy disk drive and the CD-ROM drive, are connected to your computer, disconnect them. See Chapter 4 of the Operation Manual.
2. Connect the external CD-ROM drive to the computer and turn it on.
3. Turn on the computer.
4. When the message Press <F2> to enter Setup appears, press F2. The Setup Utility opens.
5. Insert the Product Recovery CD-ROM into the CD-ROM drive.
6. In the Exit menu, select Load Setup Defaults ; then, press Enter twice.
7. Set the items in each menu as follows :

   Main

   Boot Sequence : Set 1 to Option CD-ROM Drive

   Power

   Power Management Function Disabled
8. Press Esc ; then, Enter twice. The system restarts.
9. Read the message and press Enter.
10. Follow the instruction on the screen.
11. After the hard disk is recovered, remove the Product Recovery CD-ROM and press any key. The system restarts.
12. Set up Windows 98, following the instructions on the screen.
13. After the setup is completed, select Shut Down.... from the Start menu.
14. In the Shut Down Windows dialog box, select Restart ; then, Yes. The system restarts.
15. When the message Press <F2> to enter Setup appears, press F2. The Setup Utility opens.
16. In the Exit menu, select Load Setup Defaults ; then, press Enter twice.
17. Make sure the item Exit Saving Changes is highlighted and press Enter twice. The system restarts, and recovery is completed.

CHAPTER 6. INSTALLING EXTENDED MEMORY

Working procedure

1. Turn the personal computer off.
2. Remove the screws "A" to "G" from the bottom of the set.

Note : There are 2 types of screws.
Shorter screws: A, B, F and G
Longer screws: C, D and E

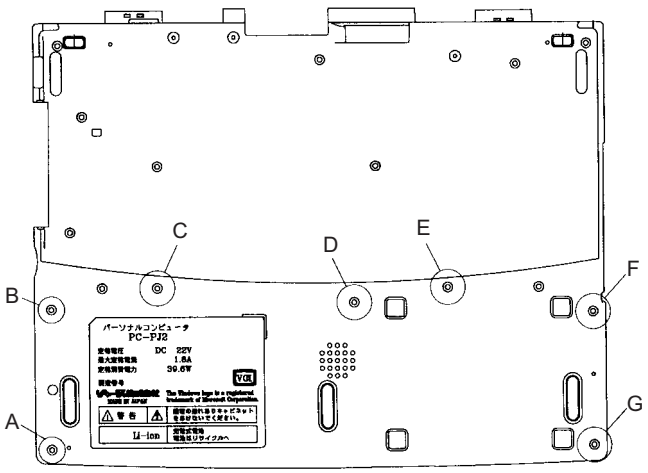
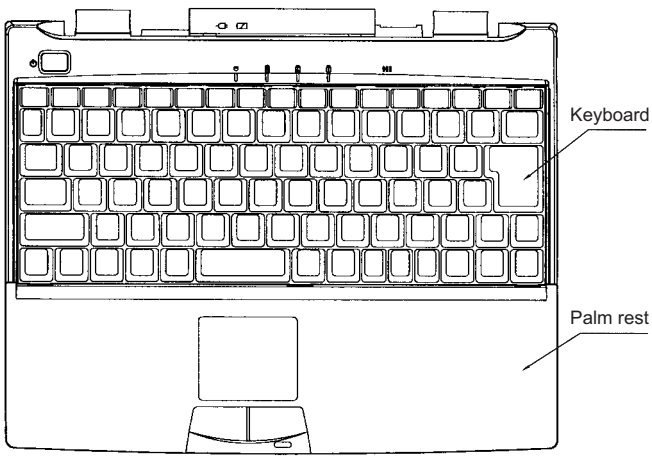


Fig. 1



3. Open the display unit. Remove the palm rest and keyboard.

Note : The keyboard is connected to the motherboard through the connector. First, unlock the connector and remove the film slowly.

- When installing the keyboard, install the film as far as it will go and lock

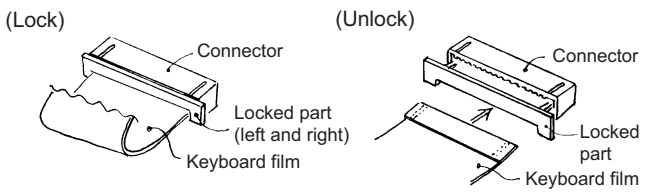


Fig. 2

4. Remove the screws securing the memory fixing plate.
5. Remove the memory fixing plate and connect the memory board.
6. Secure the memory fixing plate with screws.
7. Reinstall the disassembled parts in the reverse order of disassembly. in Fig.1 and 2.

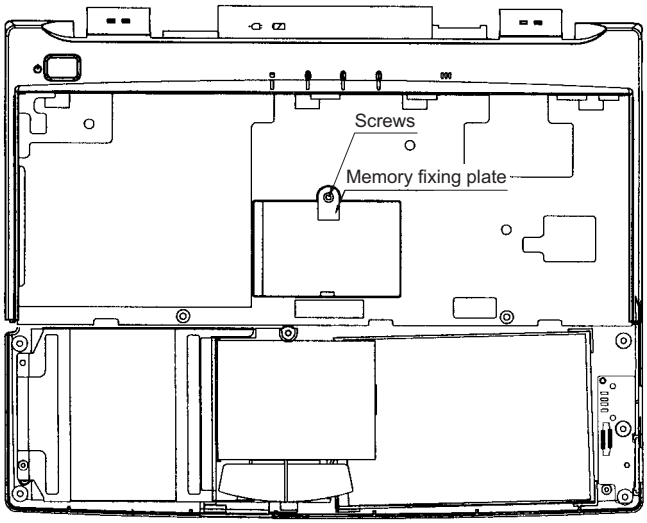


Fig. 3

8. Install the keyboard and palm rest, and close the display unit.

Note : Make sure that the latches of the keyboard hook on the palm rest when installing the keyboard and palm rest.

9. Install the screws removed in Fig.1.
10. Turn the power on and make sure that the Extended memory on the BIOS Set-Up screen shows 130048KB.
11. Turn off the power.

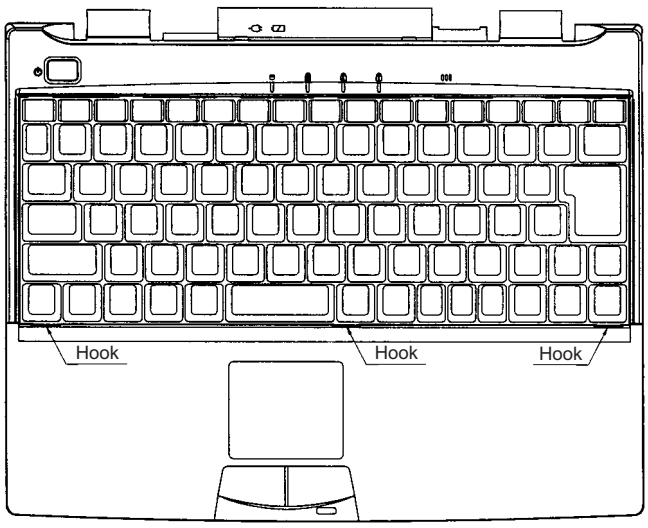


Fig. 4

CHAPTER 7. DIAGNOSTICS

The production diagnostics is used as the service diagnostics for this model.

Note that some items cannot be diagnosed without proper jigs.

1. Scope

These specifications are used for testing the PC-A250 unit and checking the CE-BL03 charge.

2. Items to be tested

The following items are tested.

- Memory
- RTC
- HDD
- Serial port
- Parallel port
- VRAM
- FDD (720KB/1.44MB/1.25MB)
- CPU clock
- MCU version
- PC card slot
- LCD
- CRT output
- LED
- CPU temperature
- Key board
- Internal microphone
- Glide point
- PS/2 port (Internal unit / FDD unit)
- Sound source
- Speaker
- Volume
- Suspend / shut switch
- IR port
- USB port
- Hard disk image
- LAN MAC address confirmation
- LAN testing (10BASE-T)
- Internal modem

3. Testing tools

The following tools are required for testing.

- Boot disk for diagnostics
- Serial loop-back connector
- Parallel loop-back connector
- 3 FDs for testing (formatted for 720KB, 1.44MB and 1.25MB)
- Sycard
- CRT display
- Mouse (for PS/2 connection)
- Numeric keypad (for PS/2 connection)
- Y connector
- IR receive
- USB checker
- Hub cable for LAN testing

4. General procedure

The general procedure for testing is as follows:

Item	Checking and operating items
Operation	The operation is carried out by the person in charge. [ ] mean the key(s) that need to be pressed. If two pairs of brackets are written, like [Space][Enter], press the two keys in succession. If two keys are connected with the sign plus (+) like [Fn]+[F12], press the two keys simultaneously.
Confirmation	Items that must be confirmed by the person in charge. He confirms them and determines whether they passes or fails the test.
Description	Contents of tests and operations

"STARTUP MENU" screen

```
MICROSOFT WINDOWS '95 STARTUP MENU
----------------------------------------

1. SYSTEM
2. AGING
3. FINAL
4. MENU
5. DIAG INSTALL
6. DIAG UNINSTALL

ENTER A CHOICE :
```

(1) Insert the diagnostic starting disk into the FDD. Turn the power on to display "STARTUP MENU". Select the option "5. DIAG INSTALL" and install the diagnostic data into the HDD.

(2) After the complete of the diagnostic installation, check the device you choose on the option "4. MENU" screen.

(3) The model selection menu appears on the screen. Select the number of your model.

MENU screen

```
MENU

1. CPU CLOCK          11. PRINTER PORT      21. MIC
2. RTC                12. IR PORT           22. SUSPEND (RAM)
3. MCU · VERSION      13. USB PORT          23. BATTERY
4. MEMORY             14. PCMCIA            24. IR RECEIVE
5. VRAM               15. LCD / CRT         25. LAN
6. HDD                16. LOCK KEY LED      26. Mac ADDRESS
7. FDD (720K)         17. KEYBOARD          27. CPU TEMPERATURE
8. FDD (1.44M)        18. TRNKEY /PS/2 PORT 28. MODEM
9. FDD (1.25M)        19. GLIDE POINT /PS/2 PORT
10. SERIAL PORT       20. SOUND CHIP
```

(4) Erase the diagnostic program from the HDD after testing. Run the option "6. DIAG UNINSTALL" of "STARTUP MENU". The diagnostic program is erased from the HDD.

5. Contents of tests

The test procedures describe the content of the system test.

Select the option "4. MENU" of "STARTUP MENU" when the test items are checked respectively.

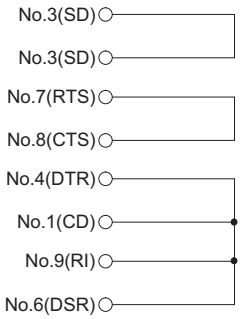
System test (including installation)

No.	Item	Operation (The word inside the parentheses is the key to be pressed.)	Confirmation / display	Description
1	Preparation	Connect serial loop-back connector	—	
		Connect parallel loop-back connector	—	
		(When FDD unit is not installed) Install FDD unit.	—	
		Connect keyboard (numeric keypad) and PS2 mouse to PS/2 port on FDD unit.	—	
2	Power ON	[Power supply]	Check the boot disk in the FDD.	
3	Set BIOS	[F2]	Press any key while the [SHARP] logo is being displayed.	
		[Esc] [🡻] [🡻] [Enter] [Enter]	Load Set Defaults	Read standard settings
		[➡]	Main	Display [Main] menu
		[(Present time)] [Tab] [(Present hour, minute)] [🡻]	(Example) [11 : 22 : 33]	Set present time
		[(Month)] [Tab] [(Day)] [(AD)]	(Example) [11 / 22 / 1997]	Set date
		[➡]	[Advanced] menu	
		Press [Space] key twice on Serial.	Serial : [Auto]	Set serial port to Auto
		Press [Space] key on LAN.	LAN : [Enabled]	Enable LAN
		Press [Space] key on Plug & Play OS.	Plug & Play OS : [No]	Set for non plug-and-play OS
		[➡] [➡] [🡻] [Space]	Cover Close : [Suspend to RAM]	Set the shut switch operation for [Suspend (RAM)]
		[🡻] [Space]	Power Management Function : [Disabled]	Disable power management function
	(Reset)	[Esc] [Enter] [Enter]	Exit Saving Changs	Save settings and reboot
4	Select test item/model machine	Select [System] from menu and press [Enter] Select the name of your machine in the menu and press [Enter]	—	To return to the menu, hold [CTRL] + [C] down simultaneously until the screen stops. Then press [Y], [1] and [Enter]
5	Install Diag (Confirm HD image.)	Confirm HD image and press [Enter]	Transfer Diag data from boot disk to HDD Confirm HD image After message "Install Complete" appears, it is finished	
6	Replace FDs	After making sure that FDD lamp goes out, remove the boot disk from FDD and insert test FD.	Make sure the test FD is formatted for 720KB	
7	Main memory (size)	Passed: no operation/Rejected failing: judgment [N]G / [R]etry	(Auto judgment)	
8	RTC	Passed: no operation/Rejected failing: judgment [N]G / [R]etry	(Auto judgment)	
9	HDD	Passed: no operation/Rejected failing: judgment [N]G / [R]etry	(Auto judgment)	
10	Serial port	Passed: no operation/Rejected failing: judgment [N]G / [R]etry	(Auto judgment)	
11	Parallel port	Passed: no operation/Rejected failing: judgment [N]G / [R]etry	(Auto judgment)	
12	VRAM	Passed: no operation/Rejected failing: judgment [N]G / [R]etry	(Auto judgment)	
13	FDD (720K)	Passed: no operation/Rejected failing: judgment [N]G / [R]etry	(Auto judgment)	If 720kB FD isn't inserted, the test is suspended displaying a message. Insert 720kB FD and press the space key.
14	CPU clock	Passed: no operation/Rejected failing: judgment [N]G / [R]etry	(Auto judgment)	
15	MCU version	Judgment [Y]es / [N]o	Make sure displayed MCU version is correct	
16	PC card slot	Insert the test card (Sycard) into the slot	—	
		[Space]	—	
		Passsed: no operation / Rejected failing: judgment [N]G / [R]etry	(Auto judgment)	
17	LCD selection	Press [Space] ten times. Judgement [Y]es / [N]o / [R]etry	Turn on / off LCD to make sure the screen is normal.	

No.	Item	Operation (The word inside the parentheses is the key to be pressed.)	Confirmation / display	Description
18	LCD	After confirmation, press [Space].	Gradation (red): Make sure the gradation is smooth.	Press [Backspace] to go back screen
		After confirmation, press [Space].	Gradation (green): Make sure the gradation is smooth.	
		After confirmation, press [Space].	Gradation (blue): Make sure the gradation is smooth.	
		After confirmation, press [Space].	Gradation (white): Make sure the gradation is smooth.	
		After confirmation, press [Space].	Horizontal stripes 1: Make sure the stripe pattern is normal.	
		After confirmation, press [Space].	Horizontal stripes 2: Make sure the stripe pattern is normal. (the reverse video of the horizontal stripes 1)	
		After confirmation, press [Space].	Vertical stripes 1: Make sure the stripe pattern is normal.	
		After confirmation, press [Space].	Vertical stripes 2: Make sure the stripe pattern is normal. (the reverse video of the vertical stripes 1)	
		After confirmation, press [Space].	Black screen: Make sure the luminous points are located within the allowable range.	
		After confirmation, press [Space].	White screen: Make sure the dark points are located within the allowable range.	
		After confirmation, press [Space].	Wallpaper: Make sure the screen is free from flickers.	
		Judgment [Y]es / [N]o / [R]etry	—	
19	Lock key LED	Judgment [Y]es / [N]o	Check if [NumLock], [CapsLock] and [ScrollLock] LEDs come on / go out.	
20	Keyboard	Press all keys (except [Fn] keys).	(Auto judgment)	
		[Esc] [Esc] (If key-in is incomplete, operation is interrupted.)	—	
		Judgment [Y]es / [N]o / [R]etry	—	
21	Sound source (speaker / volume)	Switch over speakers by pressing the [Space] key.	Make sure the sound comes from internal speakers.	Switch over speakers to make sure both right and left signals are out putted from the internal speakers.
		Turn the volume knob to the full to pull it toward you.	Make sure no sound is heard when the volume is turned to MIN.	
		Turn the volume knob to the full to push it to the far end.	Make sure enough sound is heard when the volume is turned to MAX.	
		Judgment: [Y]es / [N]o	—	
22	Internal microphone	[Space]	Start recording	
		Voice input	—	
		[Space]	Start reproducing	
		—	Make sure the recorded sound is output properly.	If it is difficult to catch the sound, lift the unit slightly. (The speaker is installed at the bottom of the unit.)
		Judgement [Y]es / [N]o / [R]etry	—	
23	External microphone	Install external microphone	—	
		[Space]	Start recording	
		Voice input	—	
		[Space]	Start reproducing	
		—	Make sure the recorded sound is output properly.	If it is difficult to catch the sound, lift the unit slightly. (The speaker is installed at the bottom of the unit.)
		Judgement [Y]es / [N]o / [R]etry	—	
24	Glide point	Move the cursor.	Make sure the cursor moves smoothly.	
		Click the left button.	Make sure the left button is clicked to input commands.	
		Click the right button.	Make sure the right button is clicked to input commands.	
		Tap. (Tap the pad.)	Make sure the left button is clicked to input commands.	
	(PS/2 port)	Move the cursor (by PS/2 mouse).	Make sure the cursor moves smoothly.	
		Click the left button of PS/2 mouse.	Make sure the left button is clicked to input commands.	
		Click the right button of PS/2 mouse.	Make sure the right button is clicked to input commands.	
		Judgement [Y]es / [N]o	—	

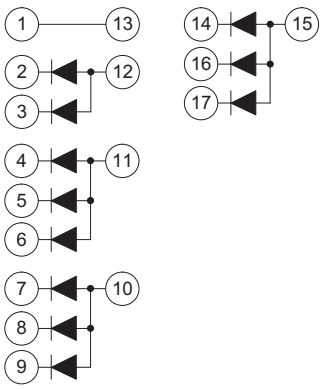
No.	Item	Operation (The word inside the parentheses is the key to be pressed.)	Confirmation / display	Description
25	FDD unit PS/2 port (Numeric keypad)	Enter [1] of the numeric keypad connected to PS/2 port.	(Auto judgment)	
		Passed: no operation / Rejected: judgment [N]G / [R]etry	—	
26	IR port (IrDA 1.0 115.2 K)	Point the IR port towards the IR port of the device you want to communicate.	—	
		[Space]	Execute testing (auto judgement)	
		Rejected: Terminate forcefully [Esc] / Judgement [N]G / [R]etry	—	
27	Connect LAN cable	Connect LAN cable		
28	Confirm LAN MAC address	Judgment [Y]es / [N]o	Make sure the address (the last 6 digits) is displayed are correctly.	
29	Confirm LAN (IOBASE-T)	Passed: no operation / Rejected failing: judgment [N]G / [R]etry	—	
30	USB port	Connect the USB checker to the unit.	—	Check functions using "USB Host Production Tester (USB checker)"
		[Space]	Execute testing	
		After testing, [Space]	(auto judgement)	
		Passed: no operation / Rejected: judgement [N]G / [R]etry	—	
31	Connect modem connector	Passed: no operation / Rejected: judgement [N]G / [R]etry	(Auto judgment)	
32	Suspend (RAM) / shut switch	Close LCD	Make sure the LCD is suspended.	
		—	Make sure the power supply LED blinks.	
		Open LCD	Make sure the LCD returns to the state before it has been suspended.	
		Judgement [Y]es / [N]o	—	
33	Display results	—	Check if each test item has been passed/failed the test.	
		[Space]	Display the menu for individual checks.	
34	Power supply off	[Power supply]	Make sure the power supply is turned off.	
35	After testing	Remove the testing jig.	—	
		Remove the testing media.	—	

Serial loop-back connector wiring diagram



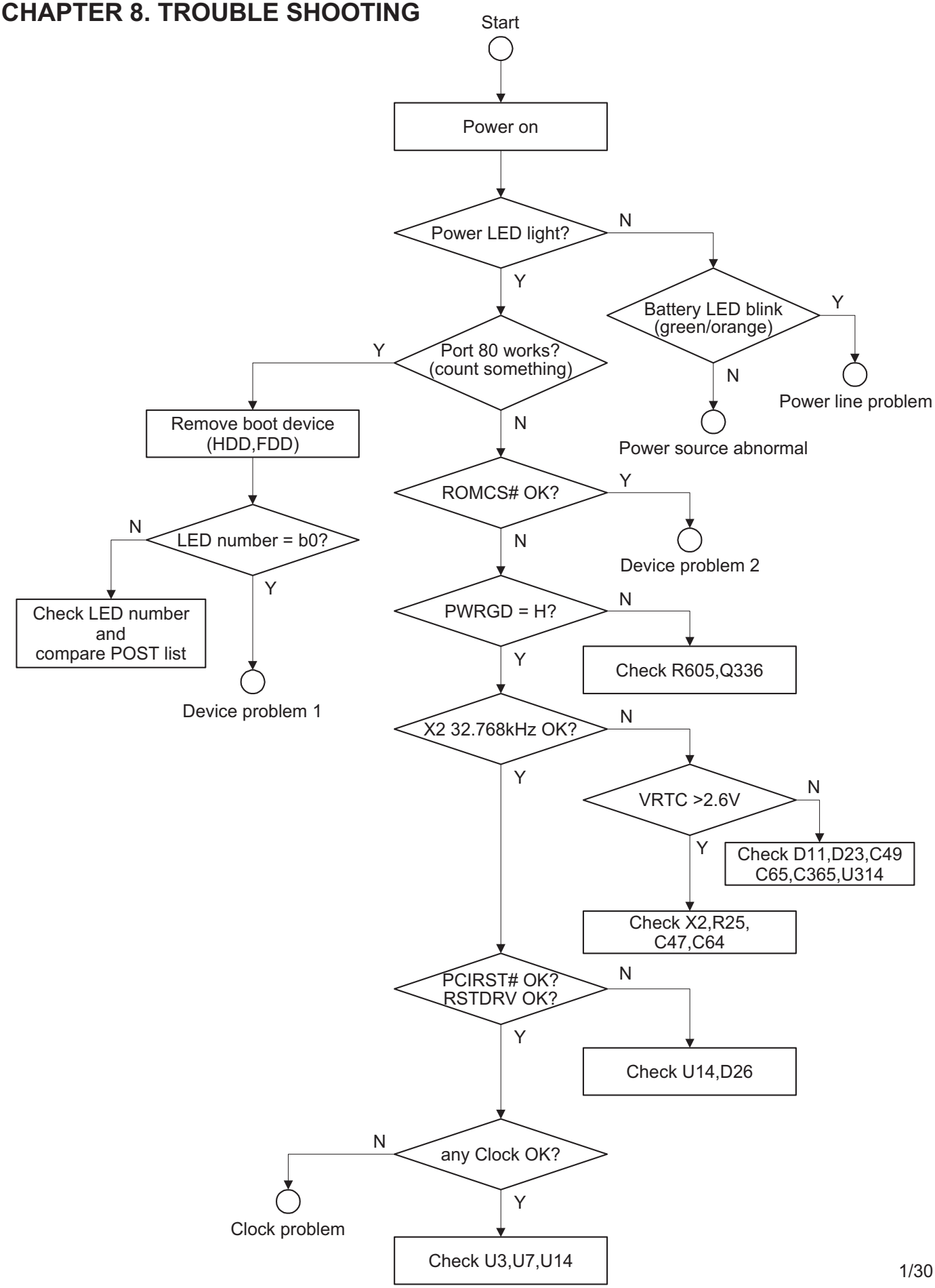
9 pin D-SUB connector

Parallel loop-back connector wiring diagram

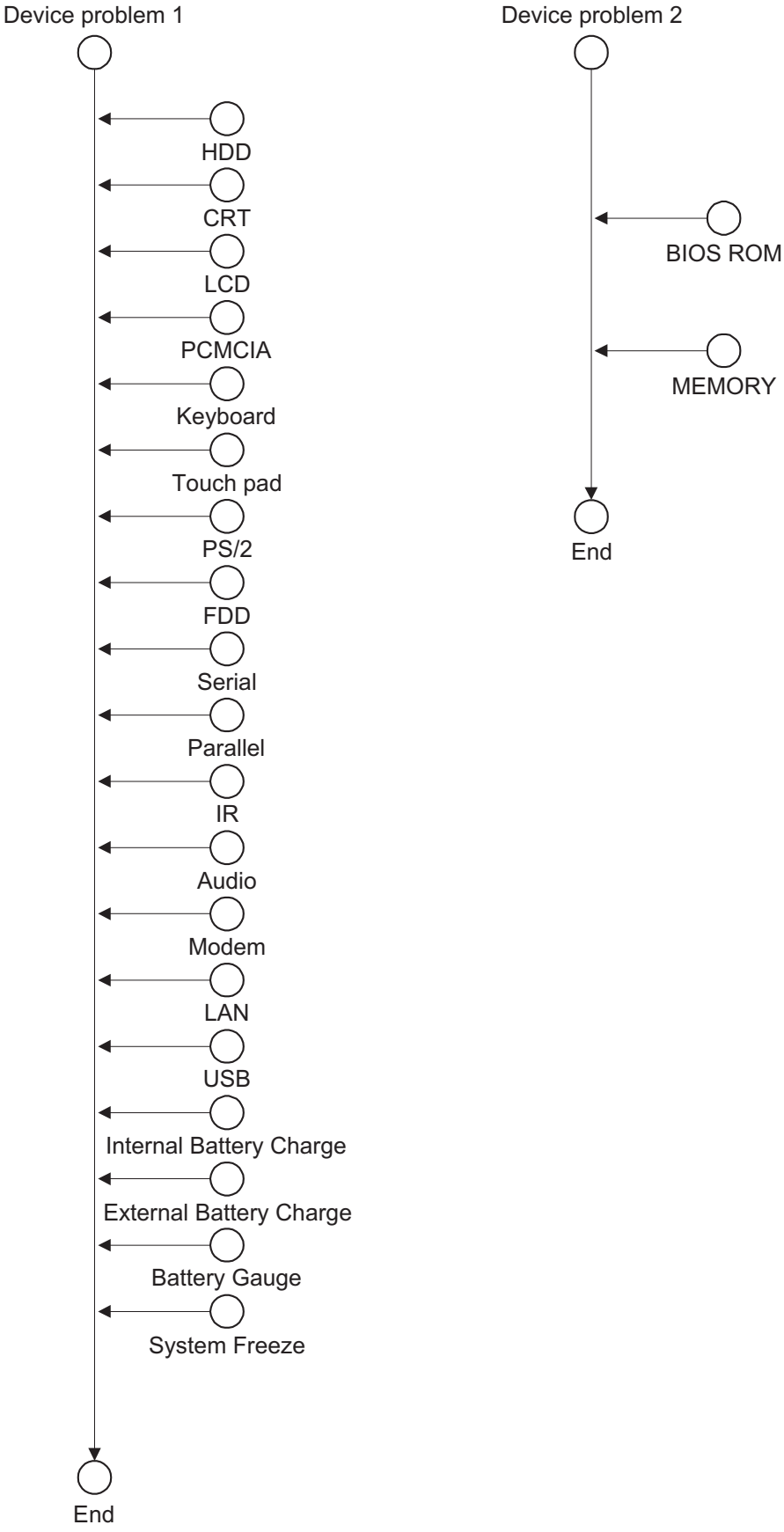


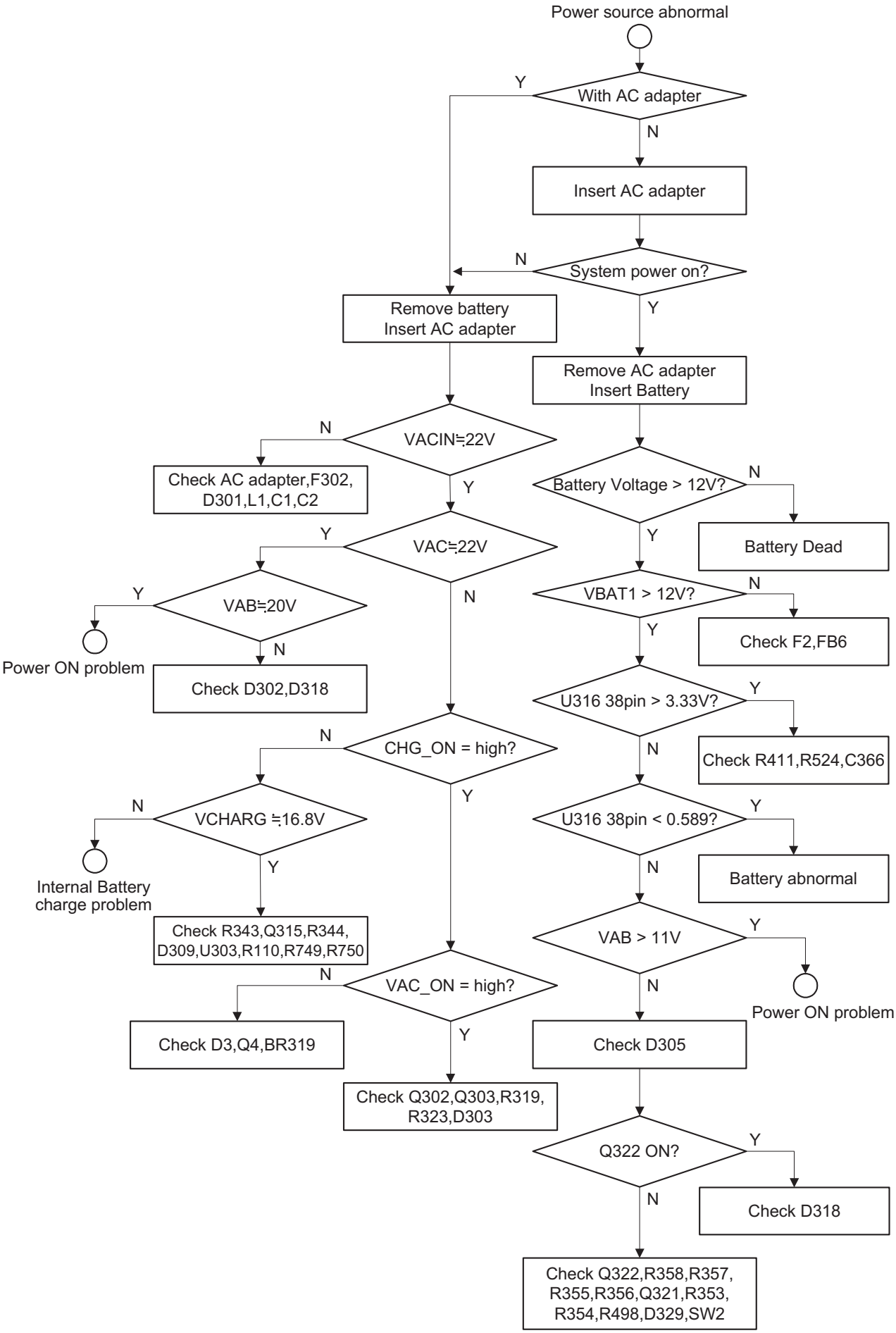
Diodes are all silicon type. (1S1588 or equivalent)

CHAPTER 8. TROUBLE SHOOTING

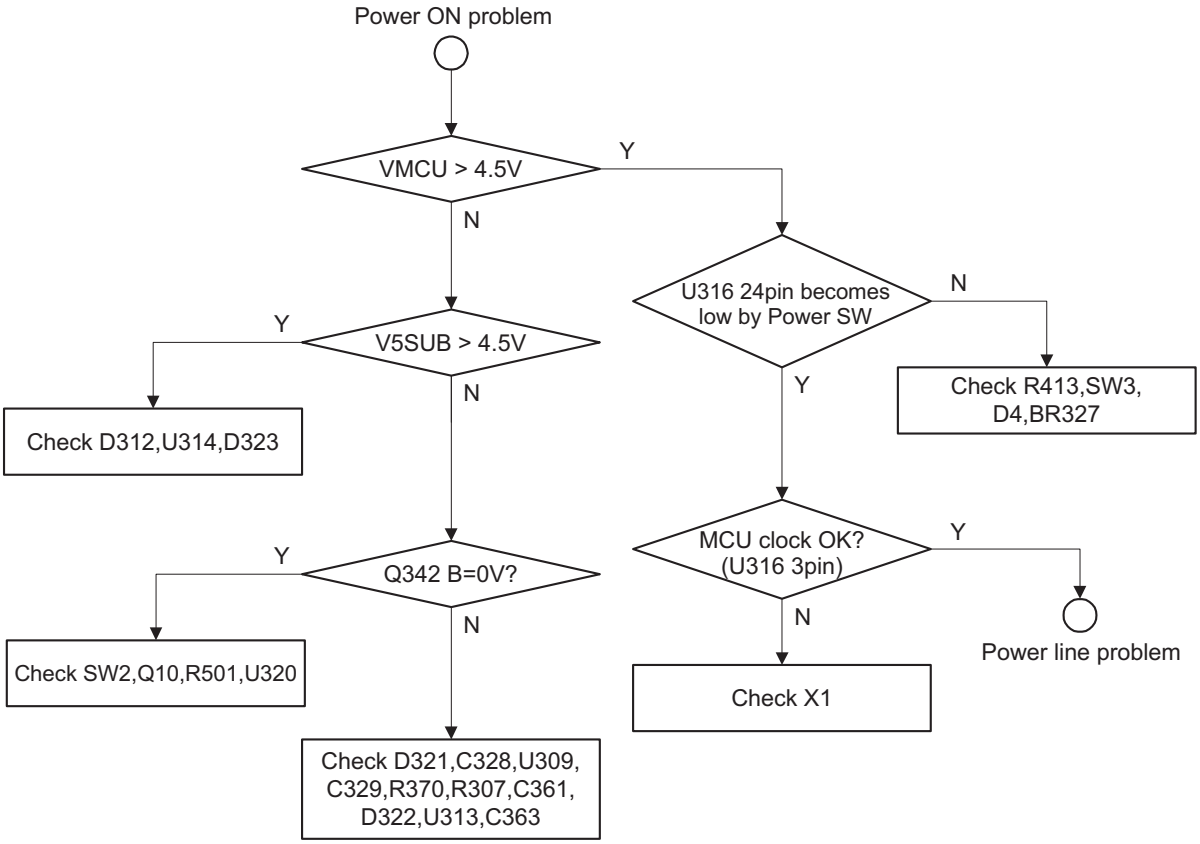


1/30

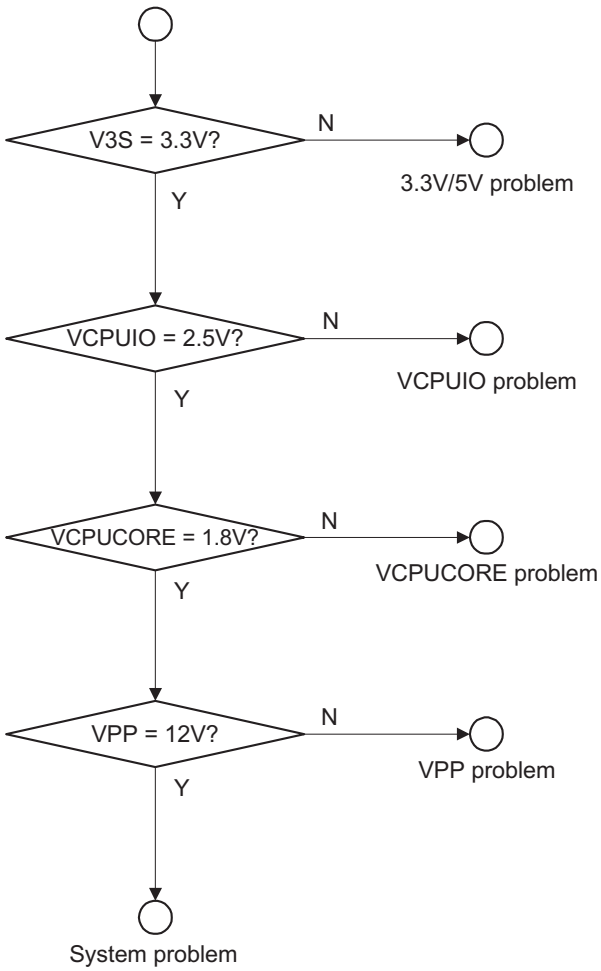

Device problem 1
HDD
CRT
LCD
PCMCIA
Keyboard
Touch pad
PS/2
FDD
Serial
Parallel
IR
Audio
Modem
LAN
USB
Internal Battery Charge
External Battery Charge
Battery Gauge
System Freeze
End
Device problem 2
BIOS ROM
MEMORY
End


Power source abnormal
With AC adapter
Y
N
Insert AC adapter
System power on?
N
Y
Remove battery
Insert AC adapter
Remove AC adapter
Insert Battery
VACIN≒22V
N
Y
Check AC adapter,F302,
D301,L1,C1,C2
Battery Voltage > 12V?
N
Y
Battery Dead
VAC≒22V
Y
N
VAB≒20V
Y
N
Power ON problem
Check D302,D318
VBAT1 > 12V?
N
Y
Check F2,FB6
U316 38pin > 3.33V?
Y
N
Check R411,R524,C366
CHG_ON = high?
N
Y
VCHARG ≒16.8V
N
Y
Internal Battery
charge problem
Check R343,Q315,R344,
D309,U303,R110,R749,R750
U316 38pin < 0.589?
Y
N
Battery abnormal
VAB > 11V
Y
N
Power ON problem
VAC_ON = high?
N
Y
Check D3,Q4,BR319
Check D305
Check Q302,Q303,R319,
R323,D303
Q322 ON?
Y
N
Check D318
Check Q322,R358,R357,
R355,R356,Q321,R353,
R354,R498,D329,SW2

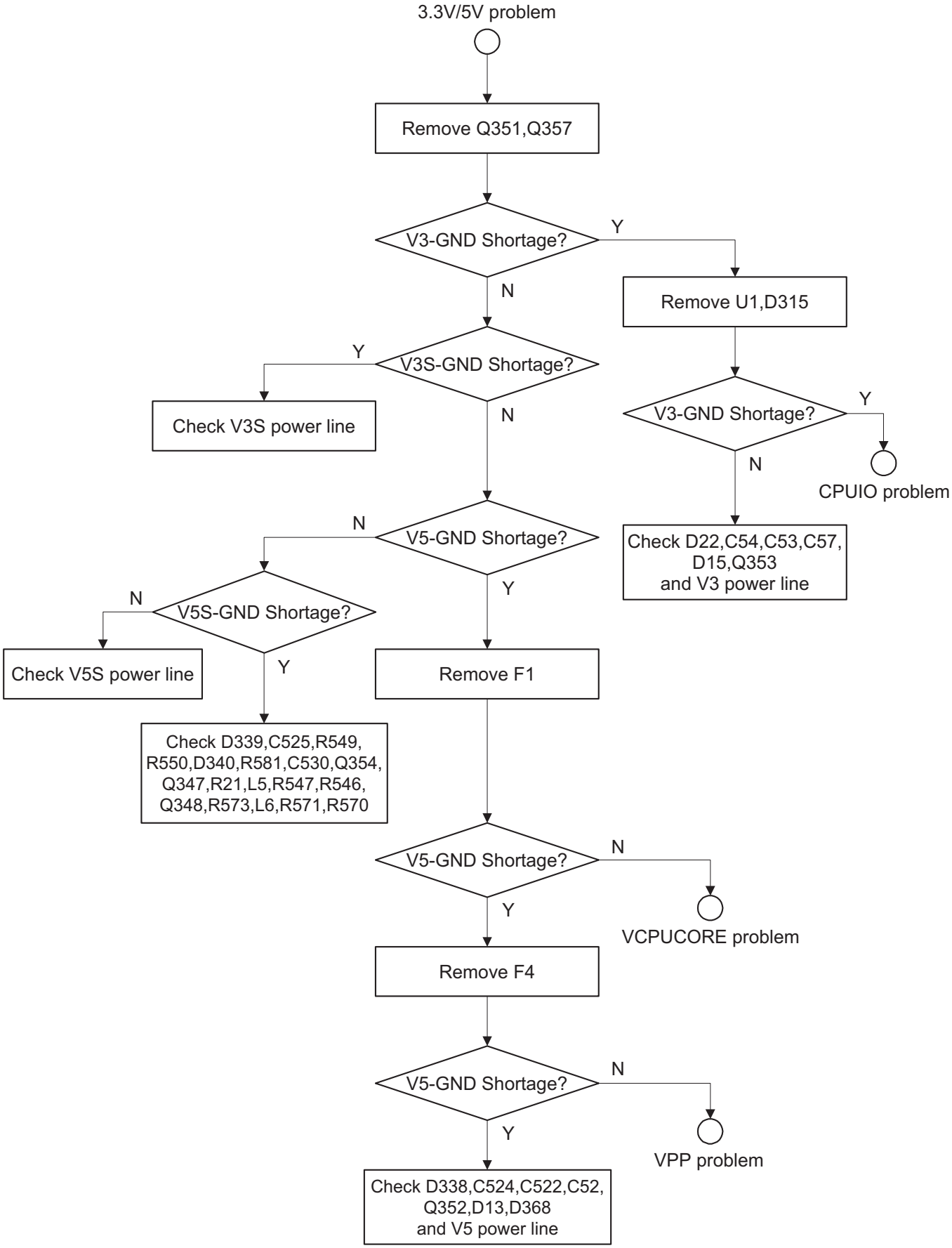
3/30


Power ON problem
VMCU > 4.5V
Y
N
V5SUB > 4.5V
Y
N
Check D312,U314,D323
Q342 B=0V?
Y
N
Check SW2,Q10,R501,U320
Check D321,C328,U309,
C329,R370,R307,C361,
D322,U313,C363
U316 24pin becomes
low by Power SW
N
Y
Check R413,SW3,
D4,BR327
MCU clock OK?
(U316 3pin)
Y
N
Power line problem
Check X1

4/30

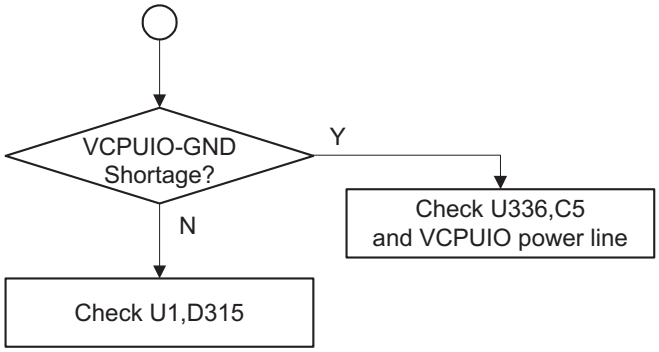

Power line problem
V3S = 3.3V?
N
3.3V/5V problem
Y
VCPUIO = 2.5V?
N
VCPUIO problem
Y
VCPUCORE = 1.8V?
N
VCPUCORE problem
Y
VPP = 12V?
N
VPP problem
Y
System problem

5/30


3.3V/5V problem
Remove Q351,Q357
V3-GND Shortage?
Y
N
Remove U1,D315
V3S-GND Shortage?
Y
N
Check V3S power line
V3-GND Shortage?
Y
N
CPUIO problem
Check D22,C54,C53,C57,
D15,Q353
and V3 power line
V5-GND Shortage?
N
Y
V5S-GND Shortage?
N
Y
Check V5S power line
Remove F1
Check D339,C525,R549,
R550,D340,R581,C530,Q354,
Q347,R21,L5,R547,R546,
Q348,R573,L6,R571,R570
V5-GND Shortage?
N
Y
VCPUCORE problem
Remove F4
V5-GND Shortage?
N
Y
VPP problem
Check D338,C524,C522,C52,
Q352,D13,D368
and V5 power line

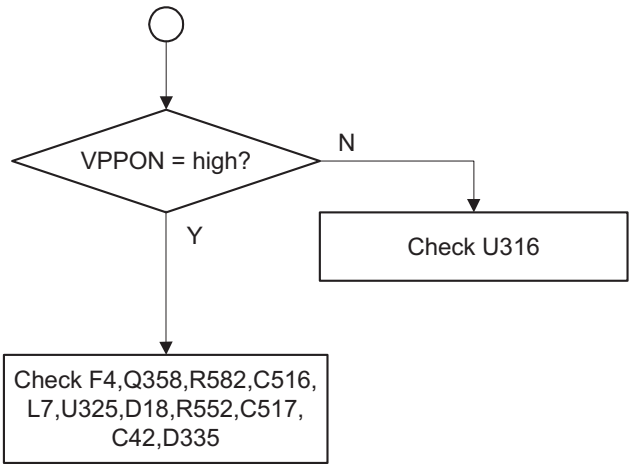
6/30

VCPUIO problem



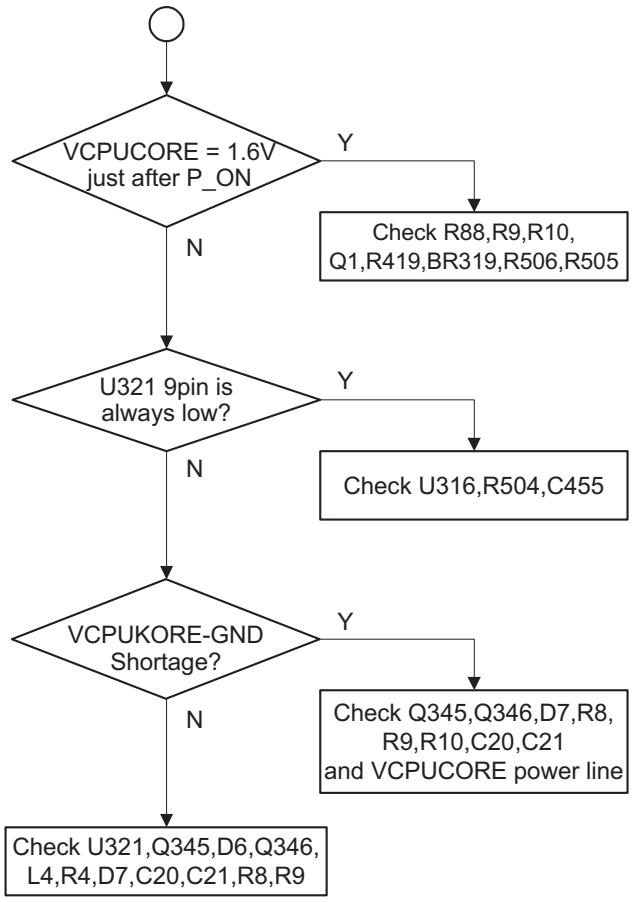
7/30

VPP problem



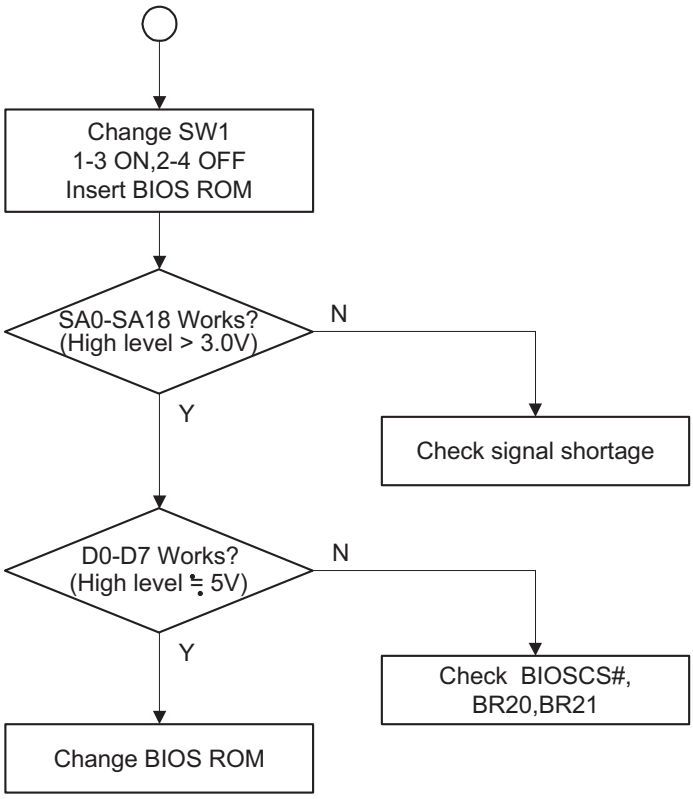
9/30

VCPUCORE problem

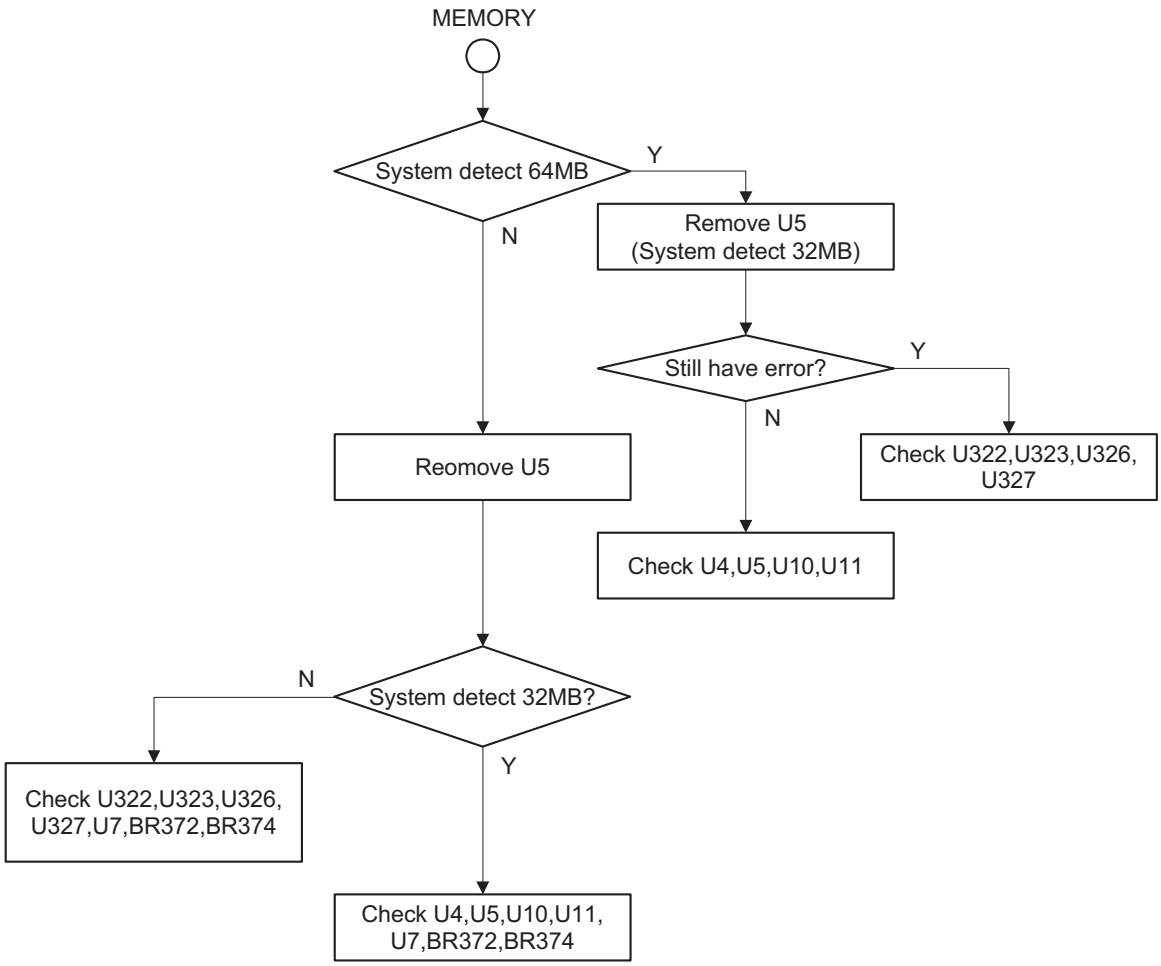


8/30

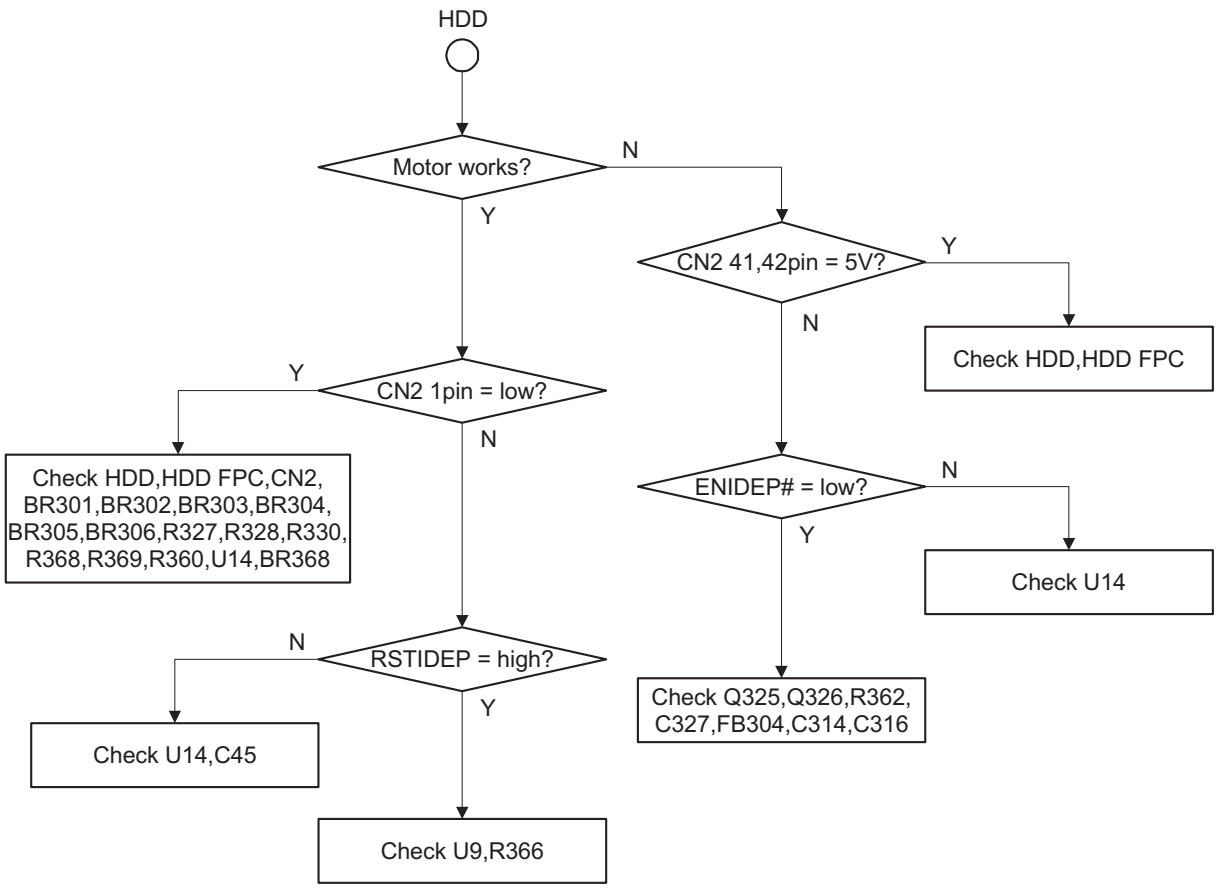
BIOS ROM



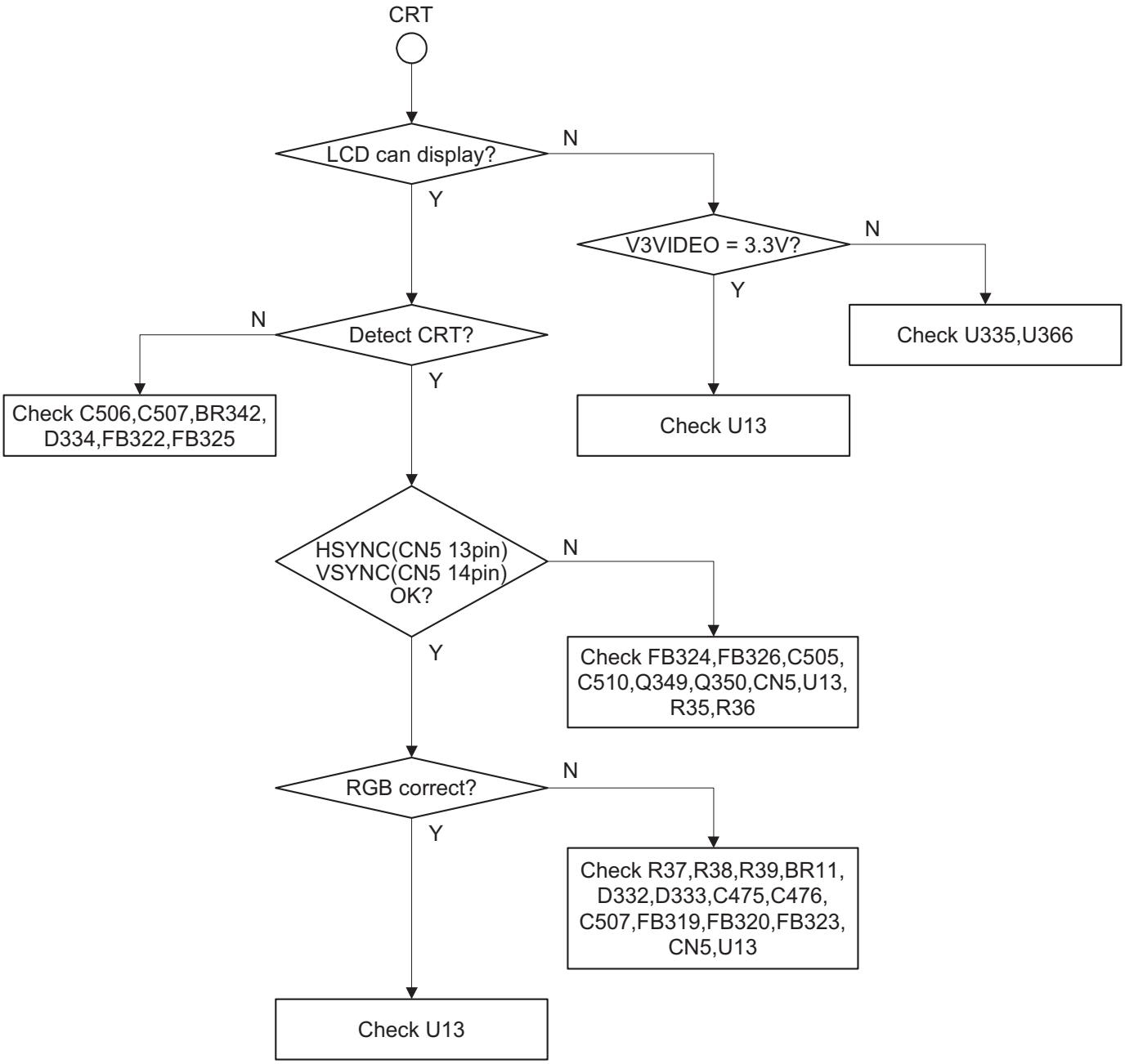
10/30

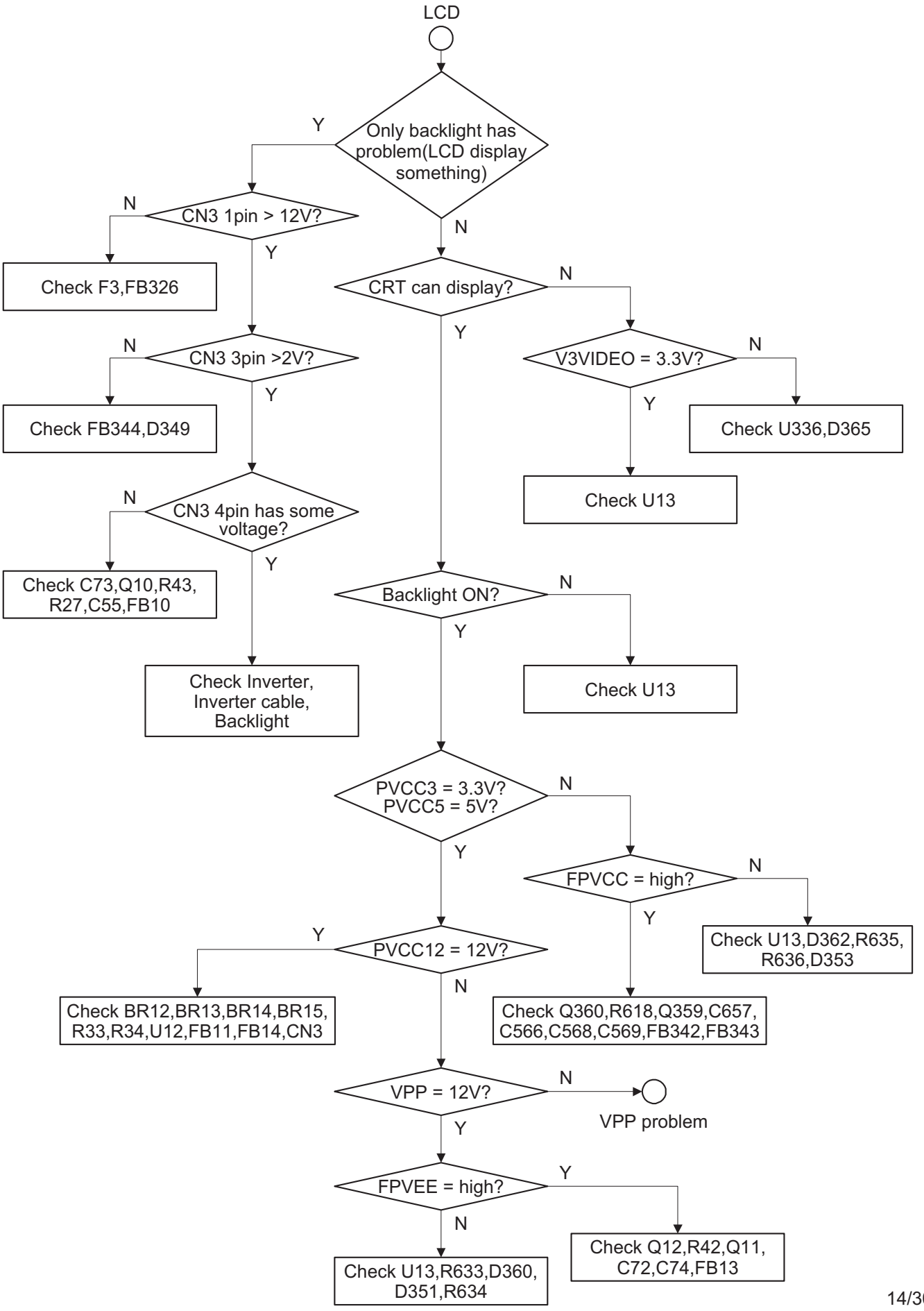

MEMORY
System detect 64MB
Y
N
Remove U5
(System detect 32MB)
Still have error?
Y
N
Check U322,U323,U326,
U327
Reomove U5
Check U4,U5,U10,U11
N
System detect 32MB?
Y
Check U322,U323,U326,
U327,U7,BR372,BR374
Check U4,U5,U10,U11,
U7,BR372,BR374

11/30


HDD
Motor works?
N
Y
CN2 41,42pin = 5V?
Y
N
Check HDD,HDD FPC
Y
CN2 1pin = low?
N
Check HDD,HDD FPC,CN2,
BR301,BR302,BR303,BR304,
BR305,BR306,R327,R328,R330,
R368,R369,R360,U14,BR368
ENIDEP# = low?
N
Y
Check U14
N
RSTIDEP = high?
Y
Check U14,C45
Check Q325,Q326,R362,
C327,FB304,C314,C316
Check U9,R366

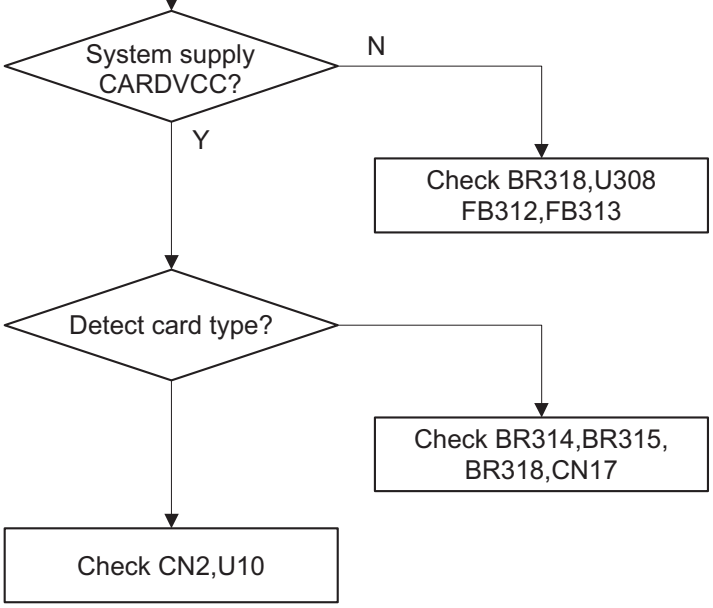
12/30


CRT
LCD can display?
N
Y
V3VIDEO = 3.3V?
N
Y
Check U335,U366
Detect CRT?
N
Y
Check C506,C507,BR342,
D334,FB322,FB325
Check U13
HSYNC(CN5 13pin)
VSYNC(CN5 14pin)
OK?
N
Y
Check FB324,FB326,C505,
C510,Q349,Q350,CN5,U13,
R35,R36
RGB correct?
N
Y
Check R37,R38,R39,BR11,
D332,D333,C475,C476,
C507,FB319,FB320,FB323,
CN5,U13
Check U13


LCD
Only backlight has problem(LCD display something)
Y
N
CN3 1pin > 12V?
N
Y
Check F3,FB326
CRT can display?
N
Y
CN3 3pin >2V?
N
Y
Check FB344,D349
V3VIDEO = 3.3V?
N
Y
Check U336,D365
Check U13
CN3 4pin has some voltage?
N
Y
Check C73,Q10,R43, R27,C55,FB10
Backlight ON?
N
Y
Check Inverter, Inverter cable, Backlight
Check U13
PVCC3 = 3.3V? PVCC5 = 5V?
N
Y
FPVCC = high?
N
Y
Check U13,D362,R635, R636,D353
PVCC12 = 12V?
Y
N
Check BR12,BR13,BR14,BR15, R33,R34,U12,FB11,FB14,CN3
Check Q360,R618,Q359,C657, C566,C568,C569,FB342,FB343
VPP = 12V?
N
VPP problem
Y
FPVEE = high?
Y
N
Check U13,R633,D360, D351,R634
Check Q12,R42,Q11, C72,C74,FB13

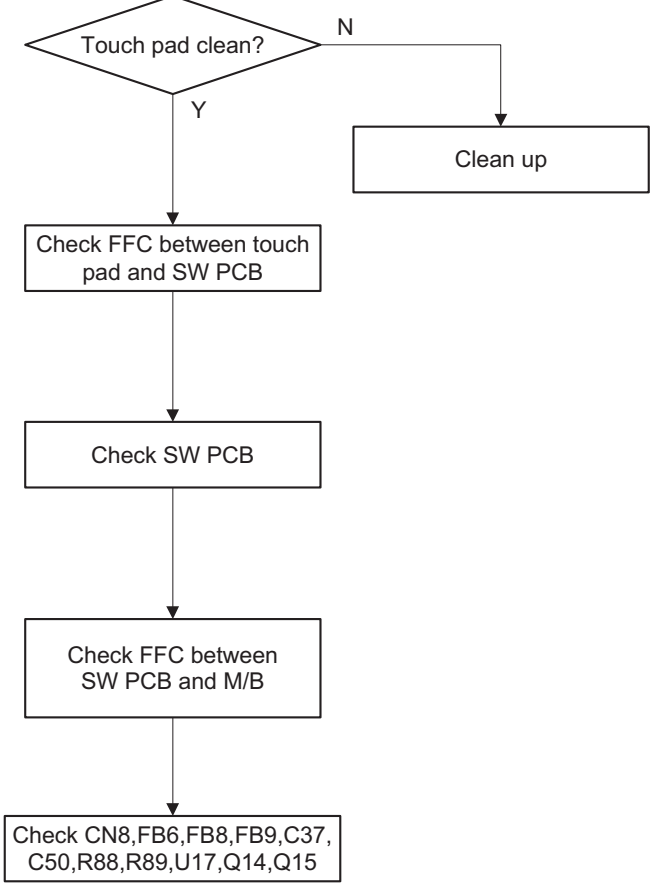
14/30

PCMCIA



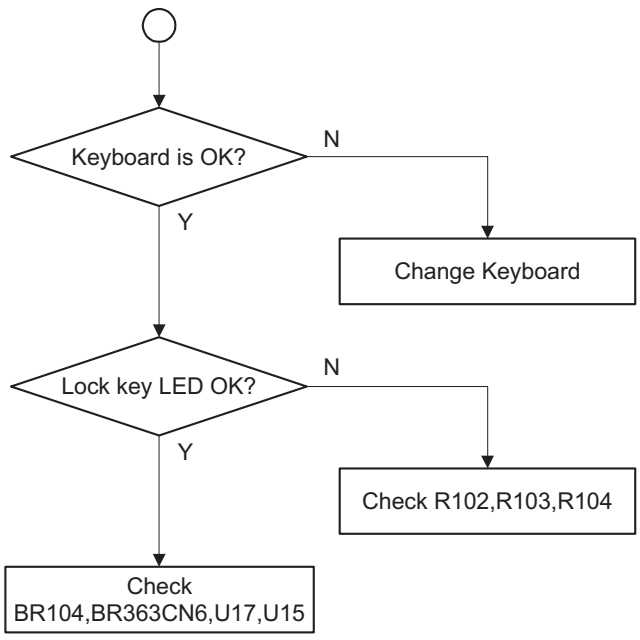
15/30

Touch pad



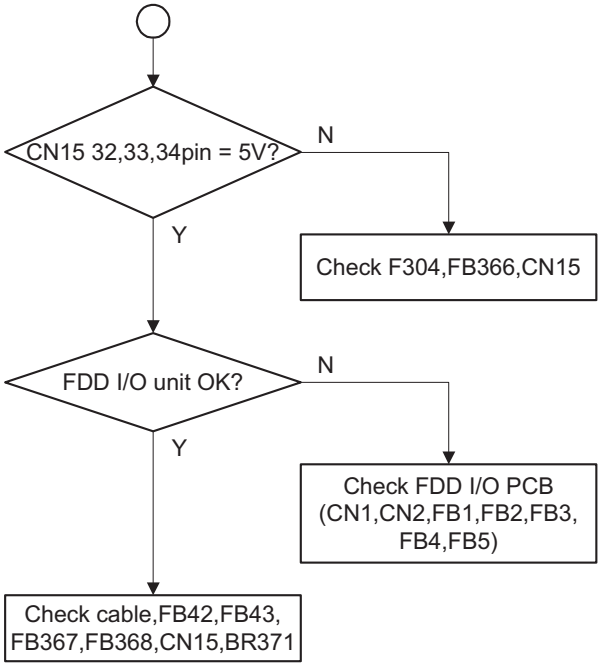
17/30

Keyboard

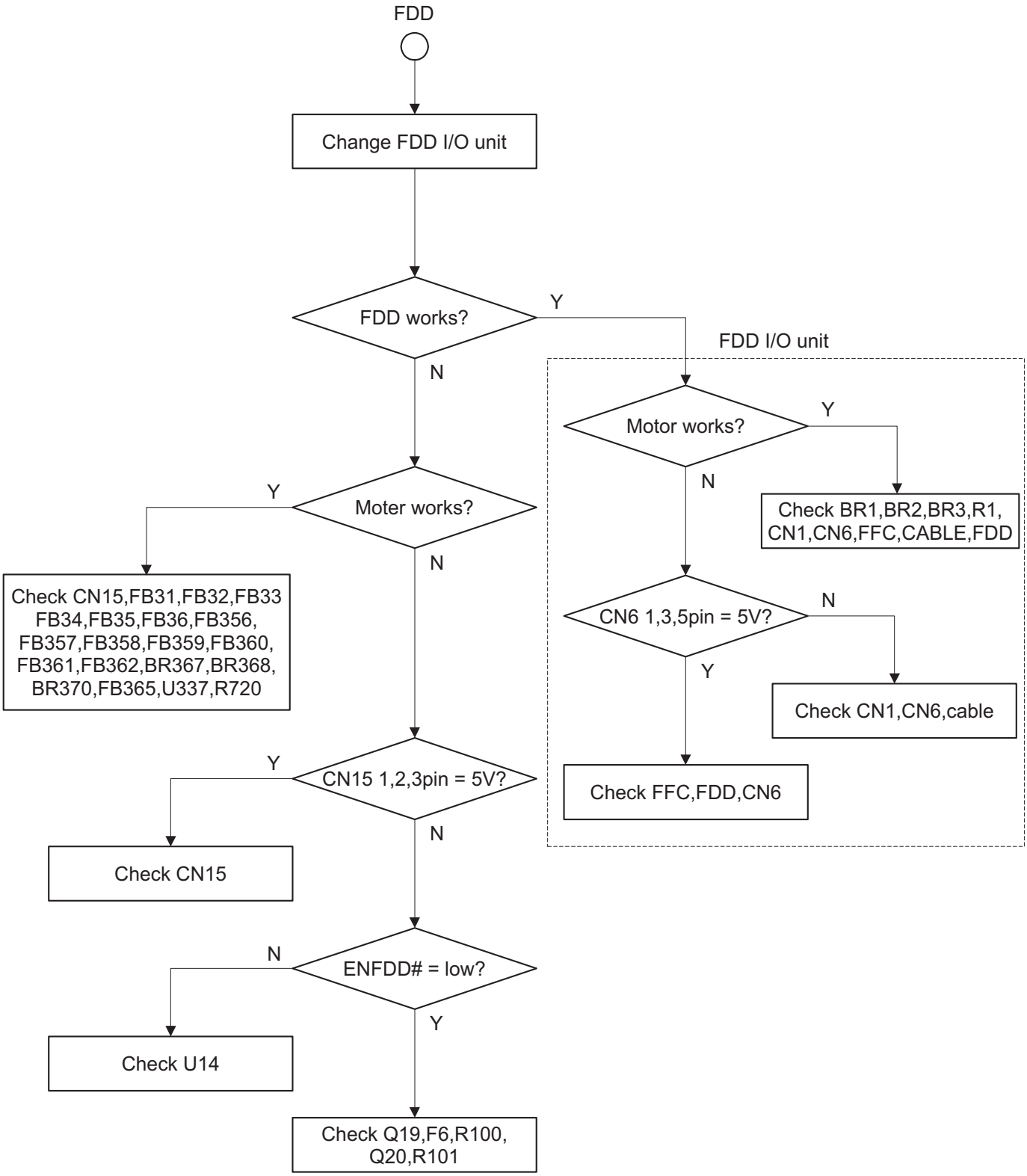


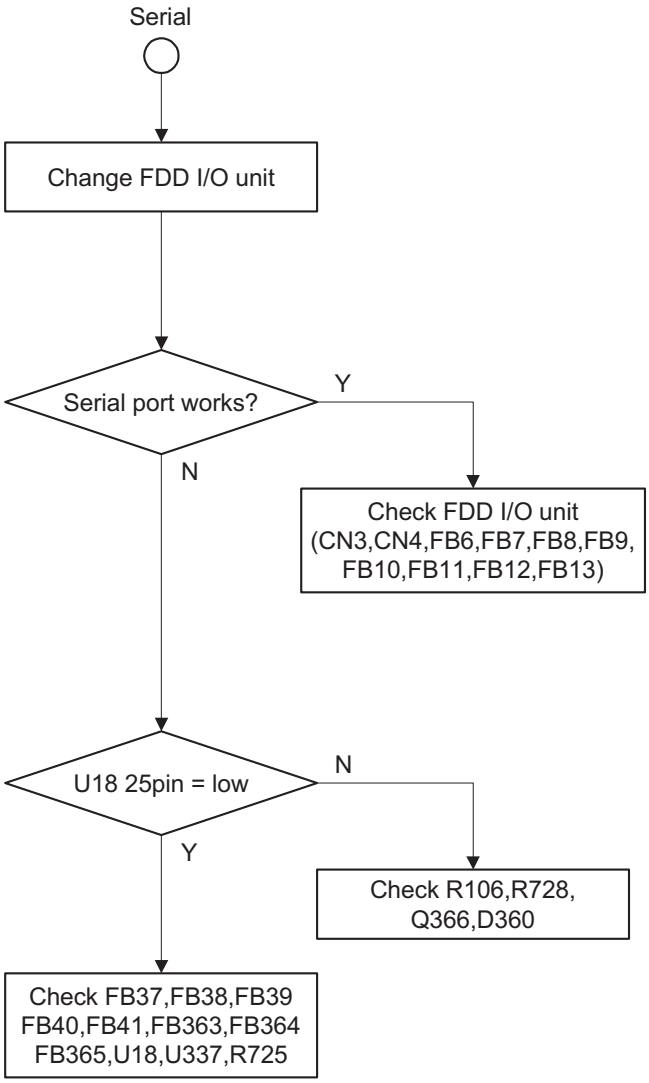
16/30

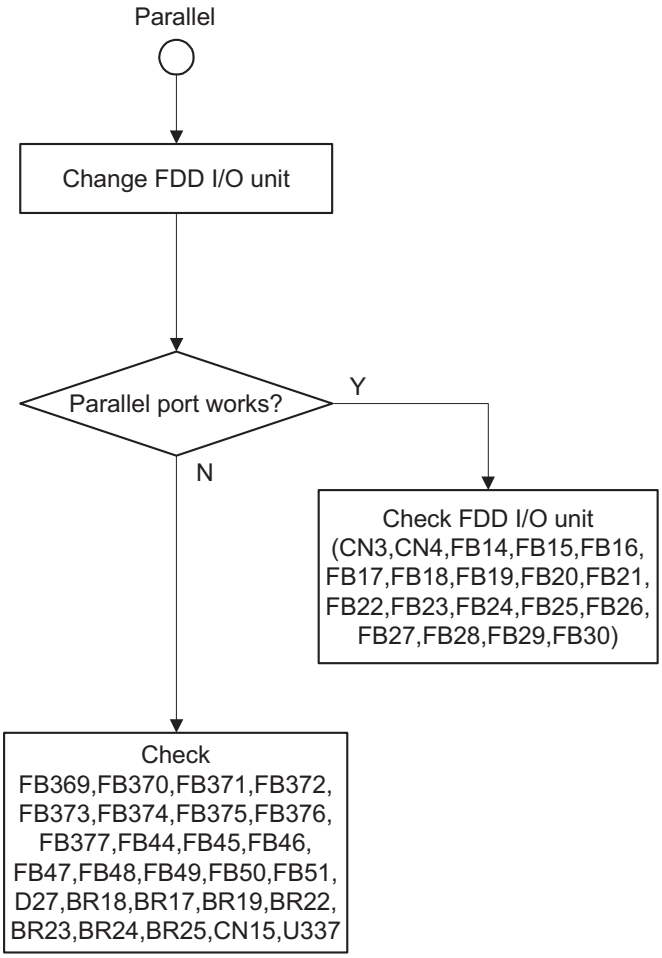
PS/2



18/30

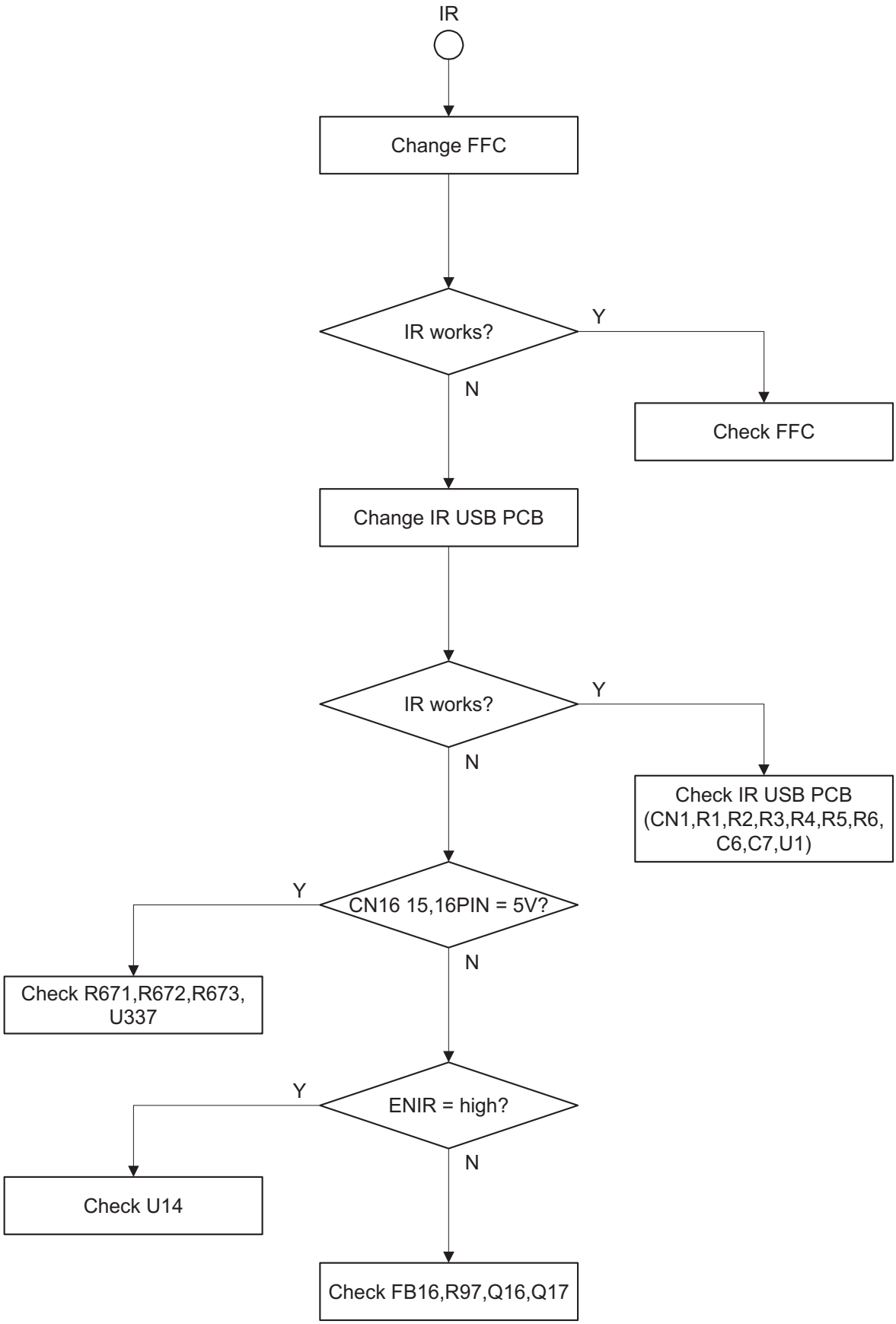

FDD
Change FDD I/O unit
FDD works?
Y
N
FDD I/O unit
Motor works?
Y
N
Check BR1,BR2,BR3,R1,
CN1,CN6,FFC,CABLE,FDD
CN6 1,3,5pin = 5V?
N
Y
Check CN1,CN6,cable
Check FFC,FDD,CN6
Moter works?
Y
N
Check CN15,FB31,FB32,FB33
FB34,FB35,FB36,FB356,
FB357,FB358,FB359,FB360,
FB361,FB362,BR367,BR368,
BR370,FB365,U337,R720
CN15 1,2,3pin = 5V?
Y
N
Check CN15
ENFDD# = low?
N
Y
Check U14
Check Q19,F6,R100,
Q20,R101

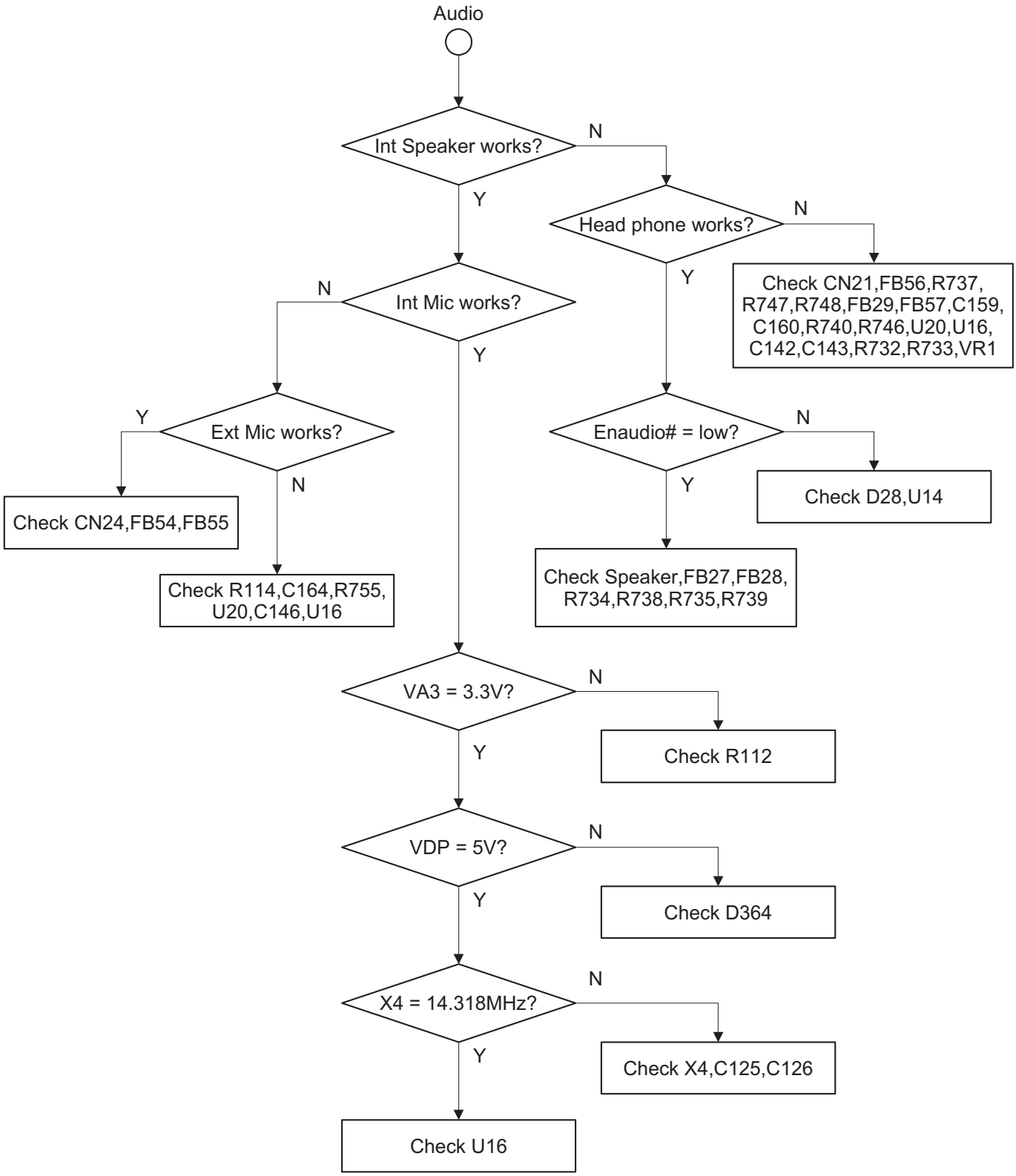

Serial
Change FDD I/O unit
Serial port works?
Y
N
Check FDD I/O unit
(CN3,CN4,FB6,FB7,FB8,FB9,
FB10,FB11,FB12,FB13)
U18 25pin = low
N
Y
Check R106,R728,
Q366,D360
Check FB37,FB38,FB39
FB40,FB41,FB363,FB364
FB365,U18,U337,R725

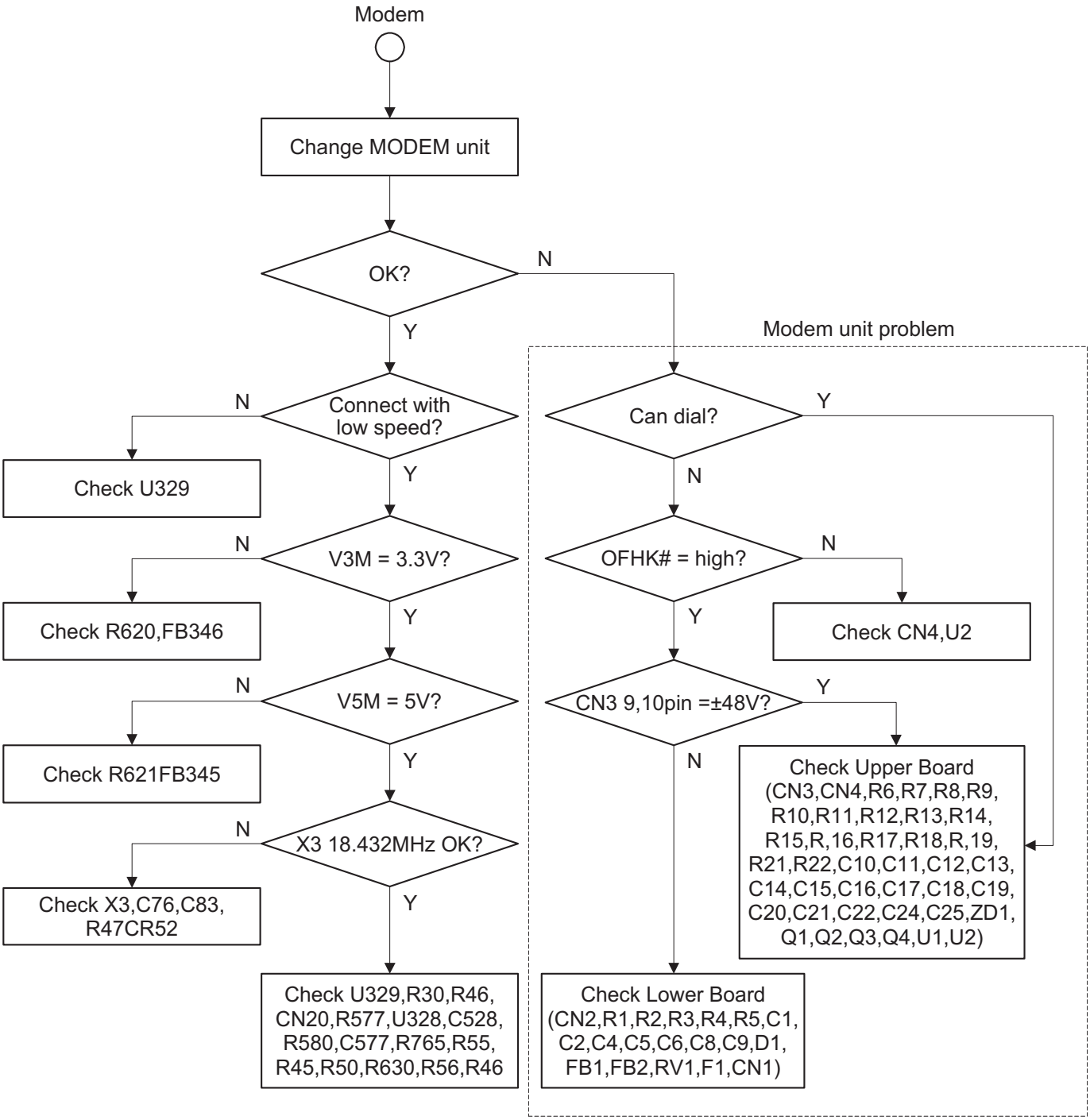

Parallel
Change FDD I/O unit
Parallel port works?
Y
N
Check FDD I/O unit
(CN3,CN4,FB14,FB15,FB16,
FB17,FB18,FB19,FB20,FB21,
FB22,FB23,FB24,FB25,FB26,
FB27,FB28,FB29,FB30)
Check
FB369,FB370,FB371,FB372,
FB373,FB374,FB375,FB376,
FB377,FB44,FB45,FB46,
FB47,FB48,FB49,FB50,FB51,
D27,BR18,BR17,BR19,BR22,
BR23,BR24,BR25,CN15,U337

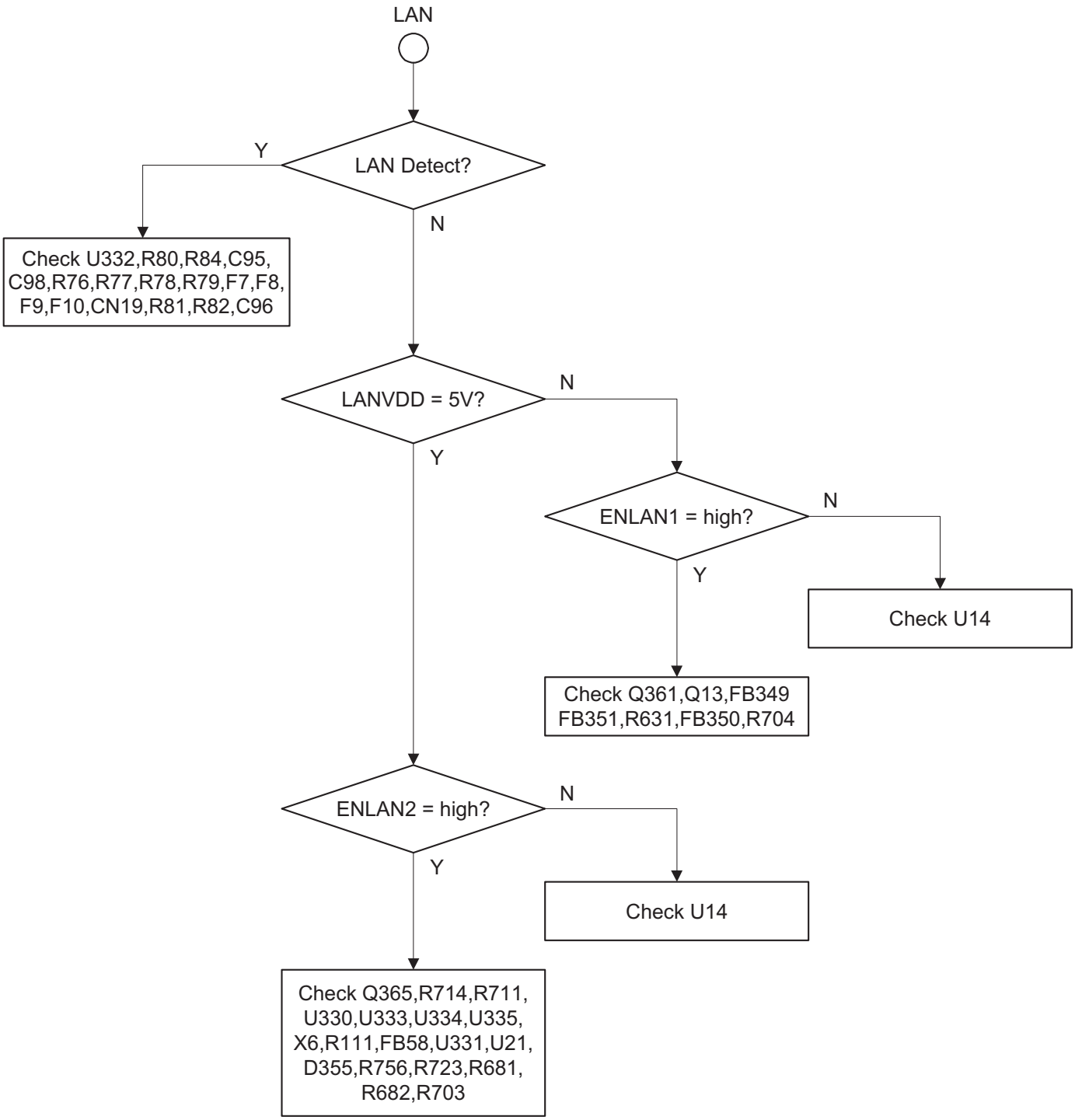
20/30

21/30

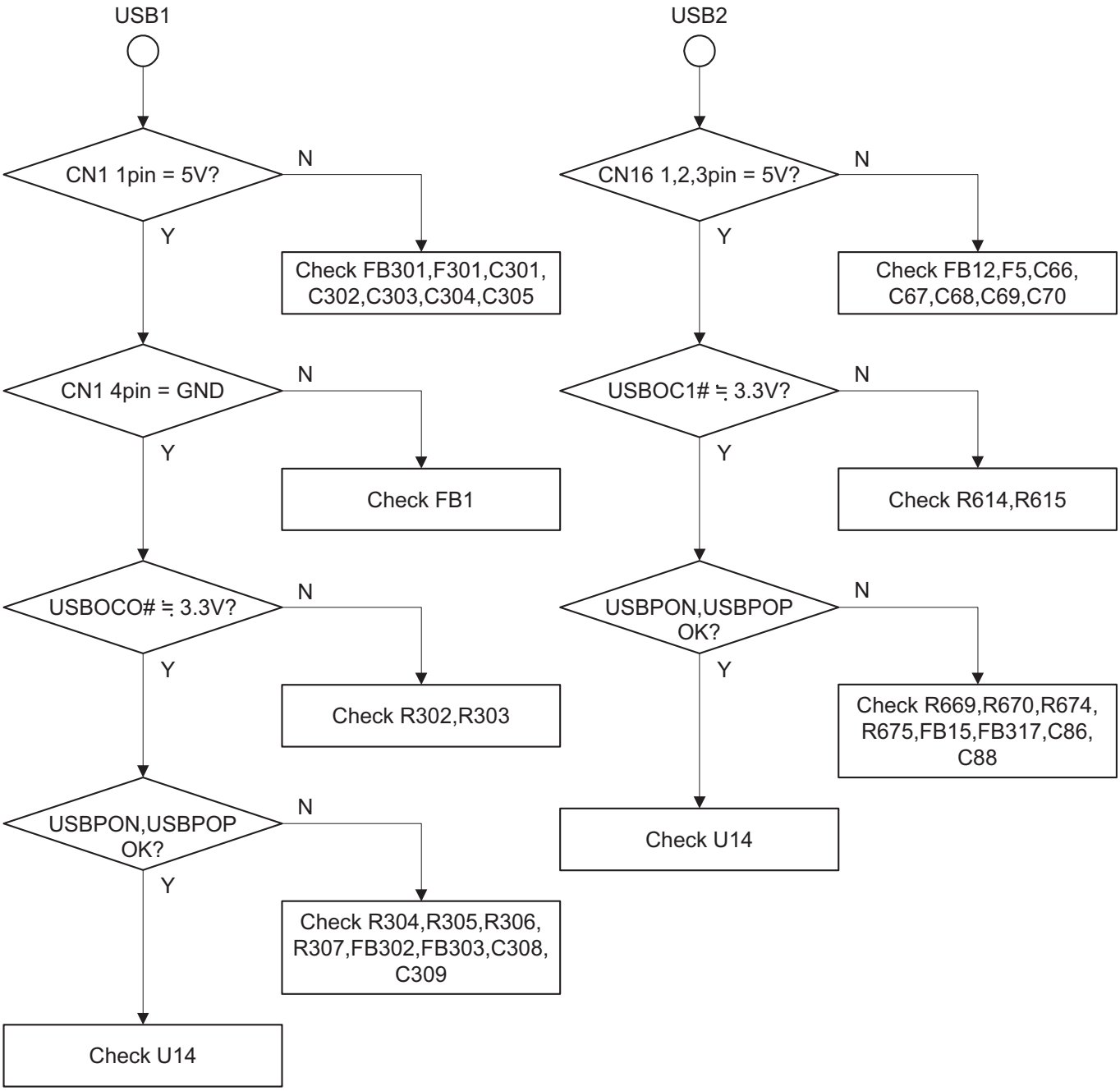

IR
Change FFC
IR works?
Y
N
Check FFC
Change IR USB PCB
IR works?
Y
N
Check IR USB PCB
(CN1,R1,R2,R3,R4,R5,R6,
C6,C7,U1)
Y
CN16 15,16PIN = 5V?
N
Check R671,R672,R673,
U337
Y
ENIR = high?
N
Check U14
Check FB16,R97,Q16,Q17


Audio
Int Speaker works?
N
Y
Head phone works?
N
Y
Check CN21,FB56,R737,
R747,R748,FB29,FB57,C159,
C160,R740,R746,U20,U16,
C142,C143,R732,R733,VR1
N
Int Mic works?
Y
Y
Ext Mic works?
N
Check CN24,FB54,FB55
Check R114,C164,R755,
U20,C146,U16
Enaudio# = low?
N
Y
Check D28,U14
Check Speaker,FB27,FB28,
R734,R738,R735,R739
VA3 = 3.3V?
N
Y
Check R112
VDP = 5V?
N
Y
Check D364
X4 = 14.318MHz?
N
Y
Check X4,C125,C126
Check U16

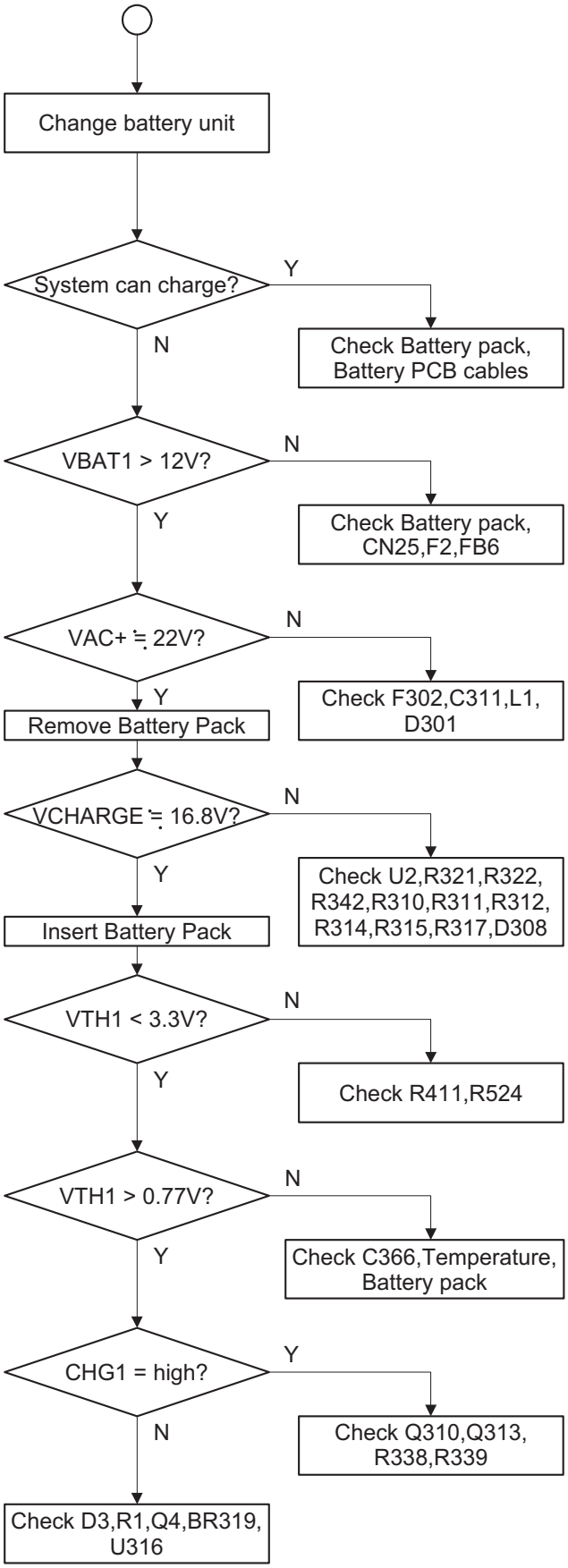

Modem
Change MODEM unit
OK?
N
Y
Modem unit problem
Connect with low speed?
N
Y
Check U329
V3M = 3.3V?
N
Y
Check R620,FB346
V5M = 5V?
N
Y
Check R621FB345
X3 18.432MHz OK?
N
Y
Check X3,C76,C83, R47CR52
Check U329,R30,R46, CN20,R577,U328,C528, R580,C577,R765,R55, R45,R50,R630,R56,R46
Can dial?
Y
N
OFHK# = high?
N
Y
Check CN4,U2
CN3 9,10pin =±48V?
Y
N
Check Upper Board (CN3,CN4,R6,R7,R8,R9, R10,R11,R12,R13,R14, R15,R,16,R17,R18,R,19, R21,R22,C10,C11,C12,C13, C14,C15,C16,C17,C18,C19, C20,C21,C22,C24,C25,ZD1, Q1,Q2,Q3,Q4,U1,U2)
Check Lower Board (CN2,R1,R2,R3,R4,R5,C1, C2,C4,C5,C6,C8,C9,D1, FB1,FB2,RV1,F1,CN1)


LAN
LAN Detect?
Y
N
Check U332,R80,R84,C95,
C98,R76,R77,R78,R79,F7,F8,
F9,F10,CN19,R81,R82,C96
LANVDD = 5V?
N
Y
ENLAN1 = high?
N
Y
Check U14
Check Q361,Q13,FB349
FB351,R631,FB350,R704
ENLAN2 = high?
N
Y
Check U14
Check Q365,R714,R711,
U330,U333,U334,U335,
X6,R111,FB58,U331,U21,
D355,R756,R723,R681,
R682,R703

25/30

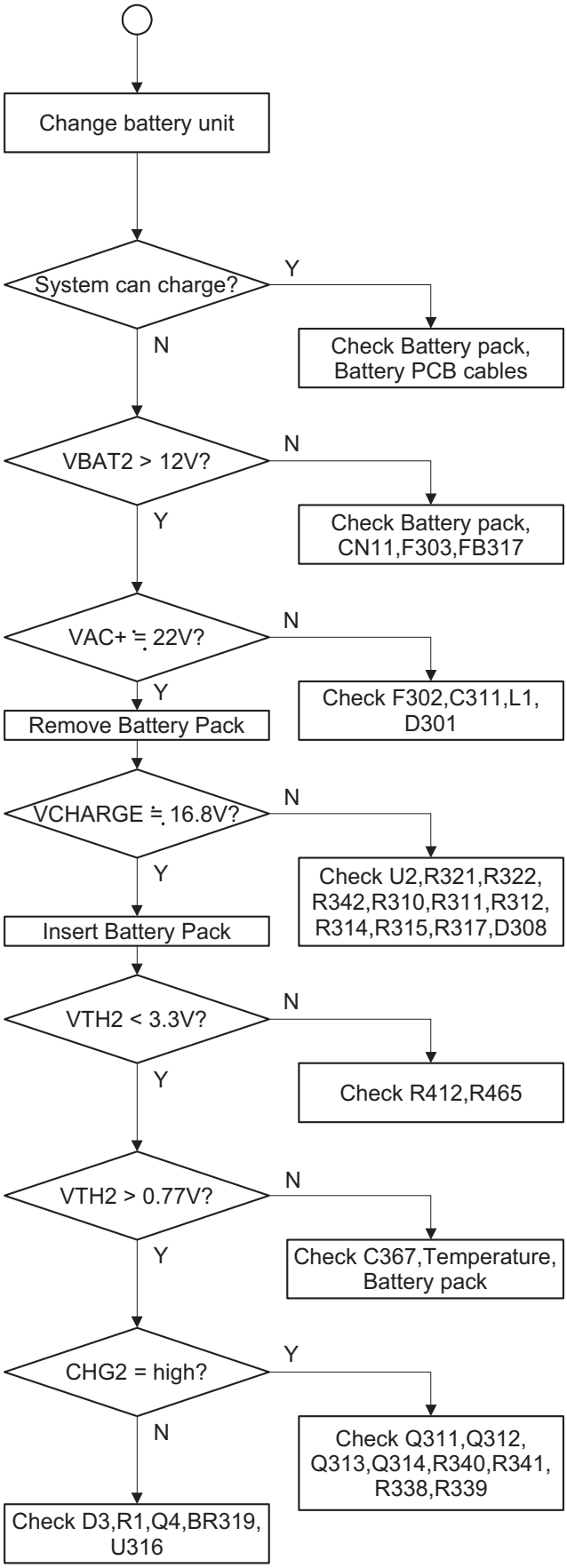

USB1
CN1 1pin = 5V?
N
Check FB301,F301,C301, C302,C303,C304,C305
Y
CN1 4pin = GND
N
Check FB1
Y
USBOCO# ≒ 3.3V?
N
Check R302,R303
Y
USBPON,USBPOP OK?
N
Check R304,R305,R306, R307,FB302,FB303,C308, C309
Y
Check U14
USB2
CN16 1,2,3pin = 5V?
N
Check FB12,F5,C66, C67,C68,C69,C70
Y
USBOC1# ≒ 3.3V?
N
Check R614,R615
Y
USBPON,USBPOP OK?
N
Check R669,R670,R674, R675,FB15,FB317,C86, C88
Y
Check U14

Internal Battery charge problem

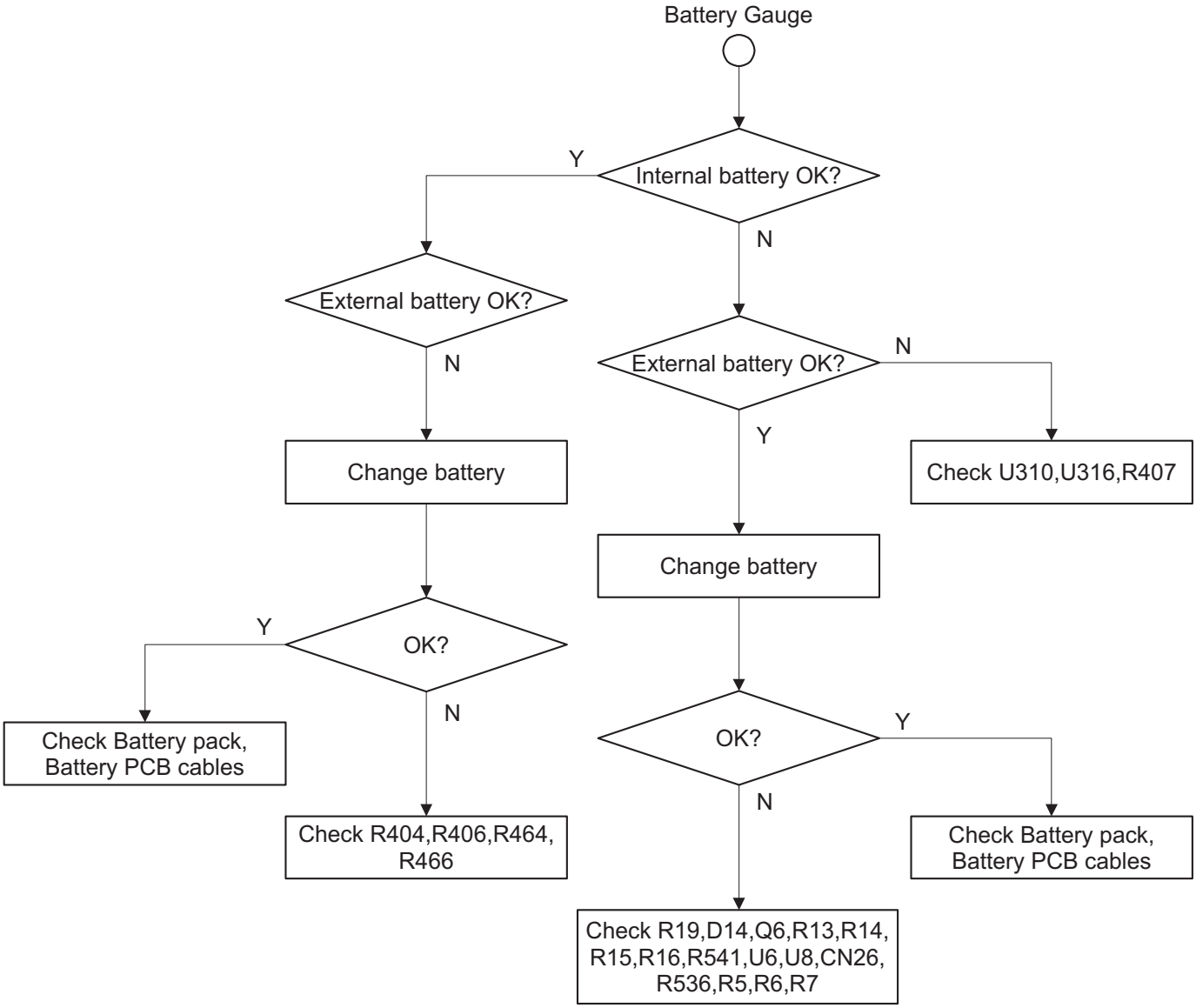


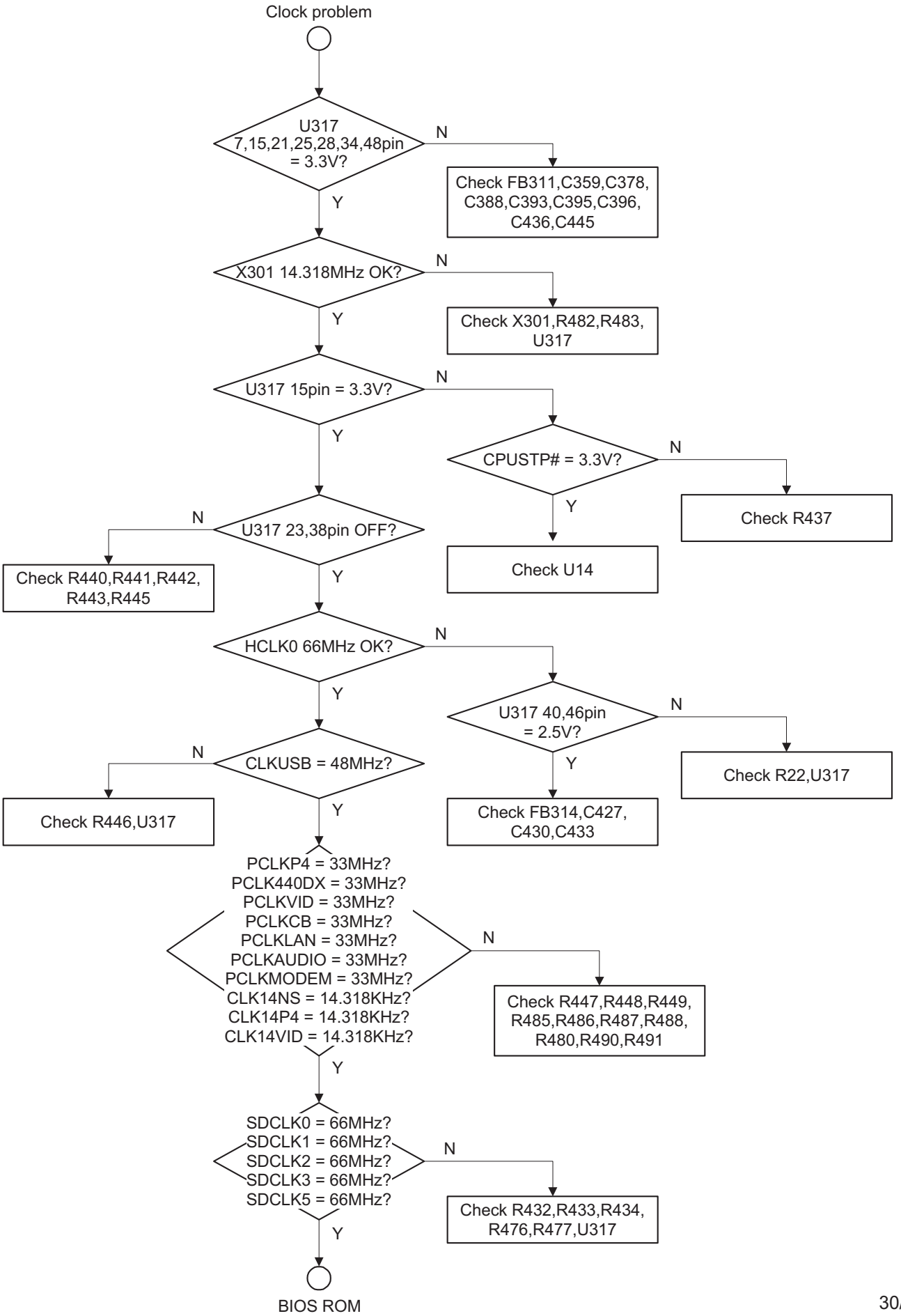
27/30

External Battery charge problem



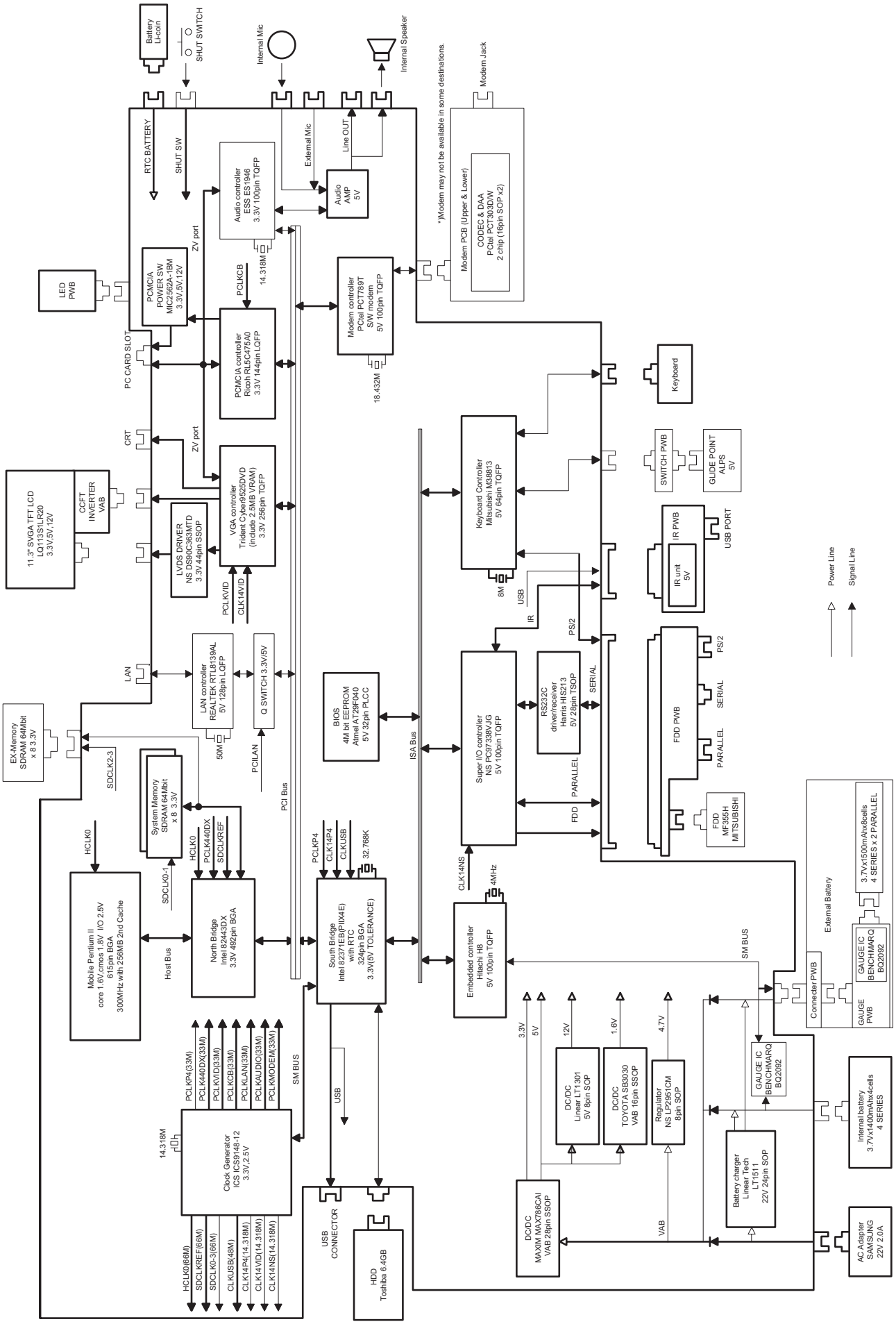
28/30


Battery Gauge
Internal battery OK?
Y
N
External battery OK?
N
Change battery
OK?
Y
N
Check Battery pack,
Battery PCB cables
Check R404,R406,R464,
R466
External battery OK?
N
Y
Check U310,U316,R407
Change battery
OK?
Y
N
Check Battery pack,
Battery PCB cables
Check R19,D14,Q6,R13,R14,
R15,R16,R541,U6,U8,CN26,
R536,R5,R6,R7


Clock problem
U317 7,15,21,25,28,34,48pin = 3.3V?
N
Check FB311,C359,C378, C388,C393,C395,C396, C436,C445
Y
X301 14.318MHz OK?
N
Check X301,R482,R483, U317
Y
U317 15pin = 3.3V?
N
Y
CPUSTP# = 3.3V?
N
Check R437
Y
Check U14
U317 23,38pin OFF?
N
Check R440,R441,R442, R443,R445
Y
HCLK0 66MHz OK?
N
Y
U317 40,46pin = 2.5V?
N
Check R22,U317
Y
Check FB314,C427, C430,C433
CLKUSB = 48MHz?
N
Check R446,U317
Y
PCLKP4 = 33MHz?
PCLK440DX = 33MHz?
PCLKVID = 33MHz?
PCLKCB = 33MHz?
PCLKLAN = 33MHz?
PCLKAUDIO = 33MHz?
PCLKMODEM = 33MHz?
CLK14NS = 14.318KHz?
CLK14P4 = 14.318KHz?
CLK14VID = 14.318KHz?
N
Check R447,R448,R449, R485,R486,R487,R488, R480,R490,R491
Y
SDCLK0 = 66MHz?
SDCLK1 = 66MHz?
SDCLK2 = 66MHz?
SDCLK3 = 66MHz?
SDCLK5 = 66MHz?
N
Check R432,R433,R434, R476,R477,U317
Y
BIOS ROM

30/30

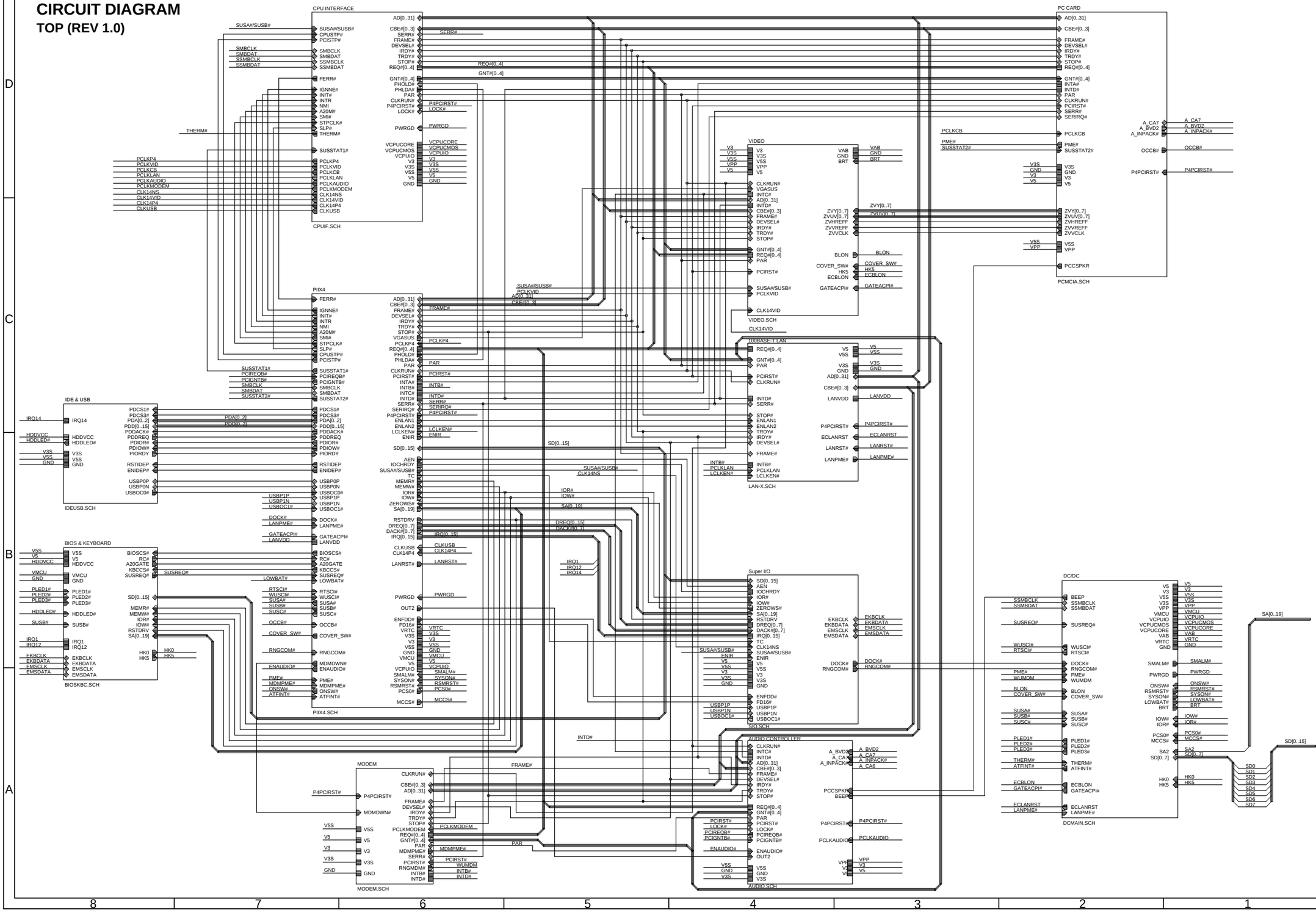
CHAPTER 9. BLOCK DIAGRAM



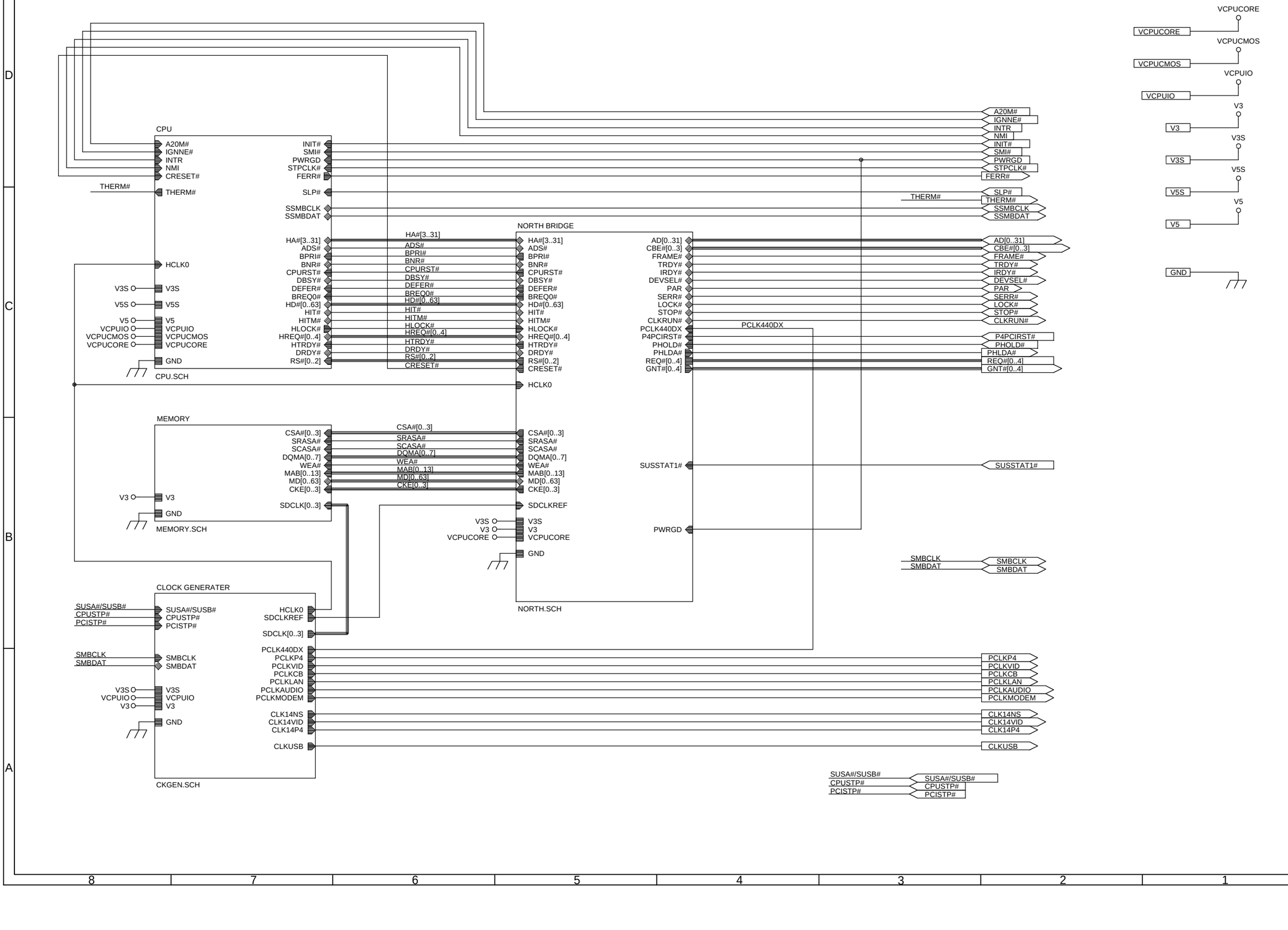
CHAPTER 10. CIRCUIT DIAGRAM AND PARTS LAYOUT

CIRCUIT DIAGRAM

TOP (REV 1.0)



CPU I/F (REV 1.0) **2/19**

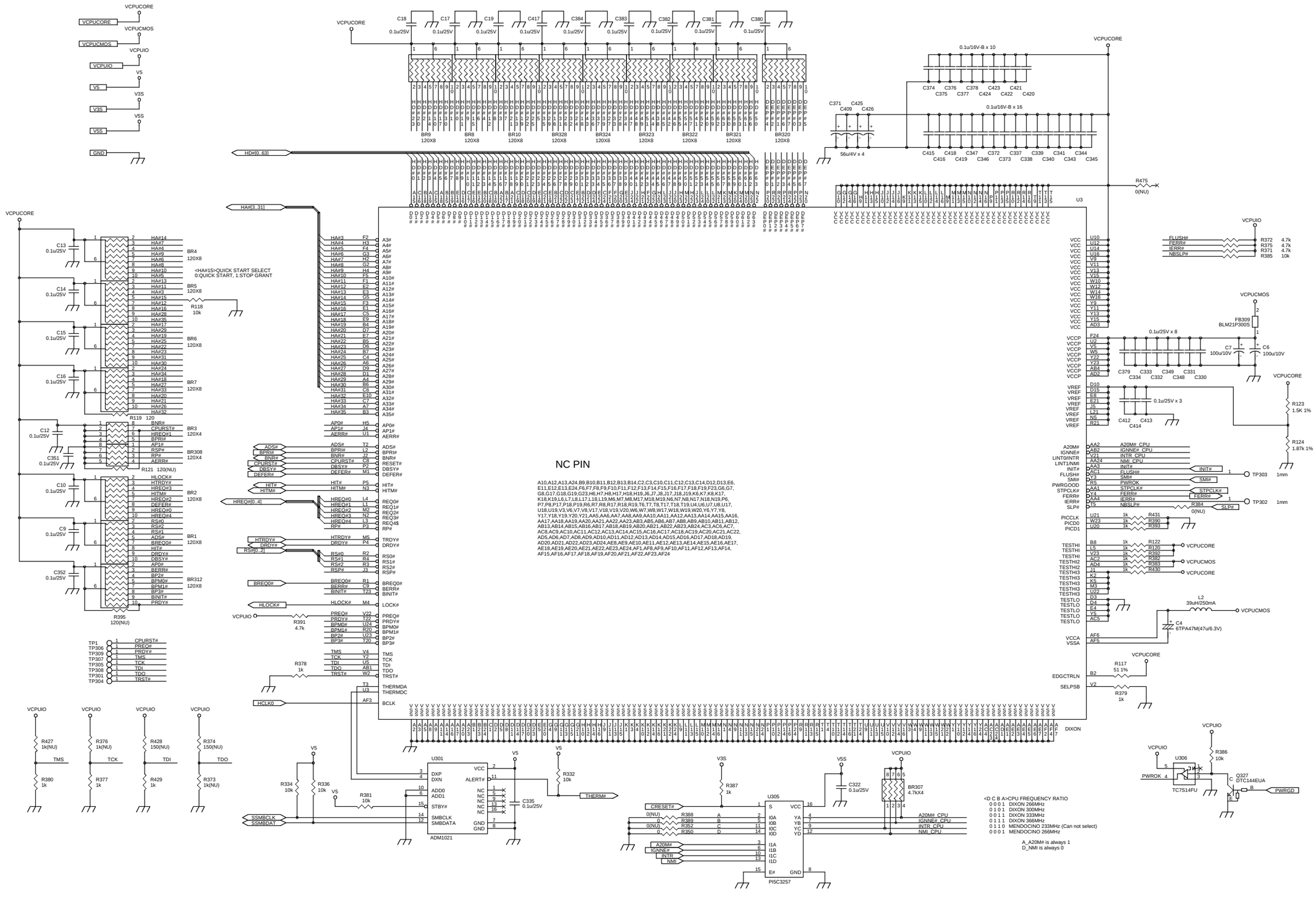


CPU (REV 1.0)

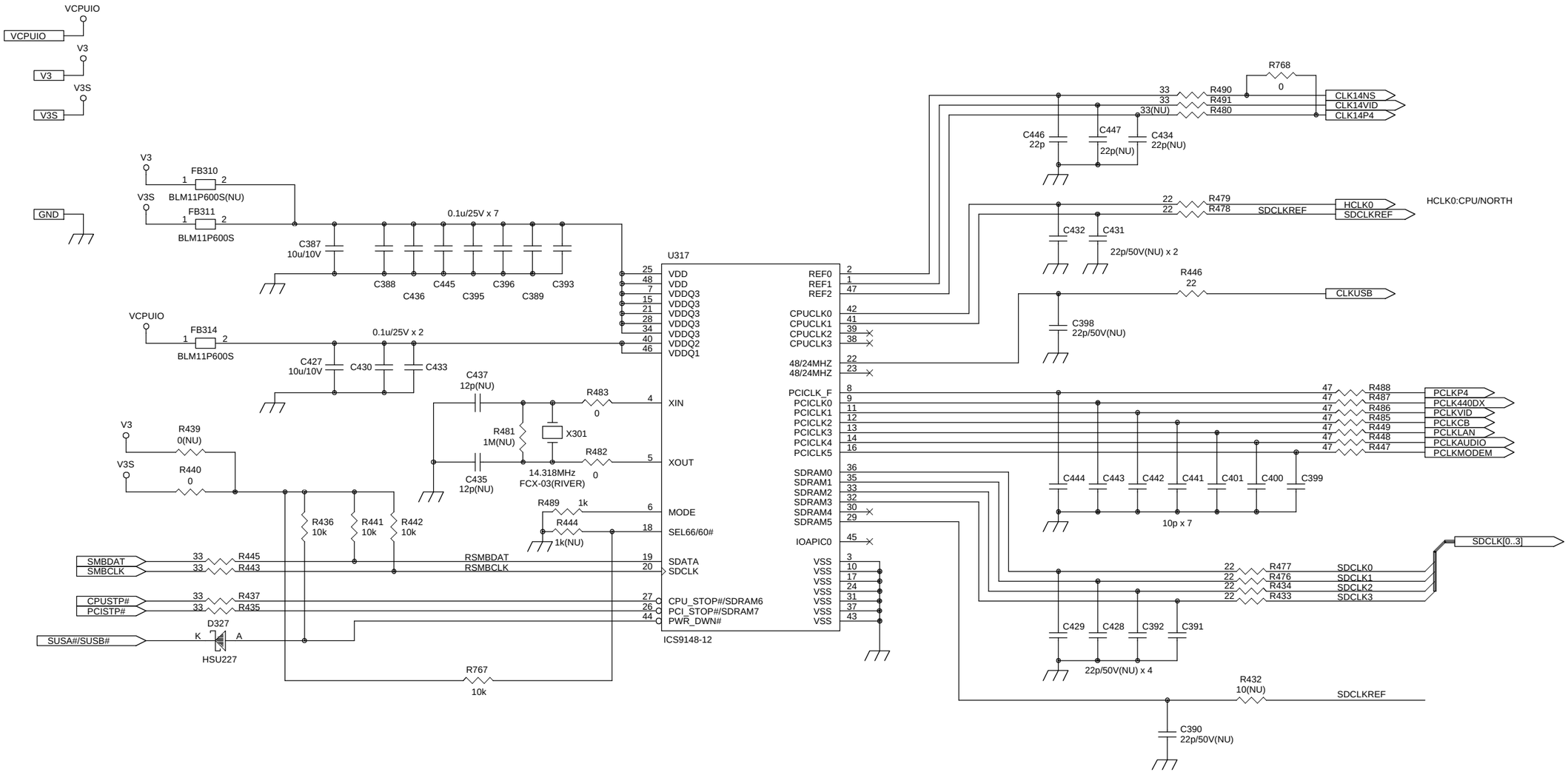
3/19

NC PIN

A10,A12,A13,A24,B9,B10,B11,B12,B13,B14,C2,C3,C10,C11,C12,C13,C14,D12,D13,E6,
E11,E12,E13,E24,F6,F7,F8,F9,F10,F11,F12,F13,F14,F15,F16,F17,F18,F19,F23,G6,G7,
G8,G17,G18,G19,G23,H6,H7,H8,H17,H18,H19,J6,J7,J8,J17,J18,J19,K6,K7,K8,K17,
K18,K19,L6,L7,L8,L17,L18,L19,M6,M7,M8,M17,M18,M19,N6,N7,N8,N17,N18,N19,P6,
P7,P8,P17,P18,P19,R6,R7,R8,R17,R18,R19,T6,T7,T8,T17,T18,T19,U4,U6,U7,U8,U17,
U18,U19,V3,V6,V7,V8,V17,V18,V19,V20,W6,W7,W8,W17,W18,W19,W20,Y6,Y7,Y8,
Y17,Y18,Y19,Y20,Y21,AA5,AA6,AA7,AA8,AA9,AA10,AA11,AA12,AA13,AA14,AA15,AA16,
AA17,AA18,AA19,AA20,AA21,AA22,AA23,AB3,AB5,AB6,AB7,AB8,AB9,AB10,AB11,AB12,
AB13,AB14,AB15,AB16,AB17,AB18,AB19,AB20,AB21,AB22,AB23,AB24,AC3,AC6,AC7,
AC8,AC9,AC10,AC11,AC12,AC13,AC14,AC15,AC16,AC17,AC18,AC19,AC20,AC21,AC22,
AD5,AD6,AD7,AD8,AD9,AD10,AD11,AD12,AD13,AD14,AD15,AD16,AD17,AD18,AD19,
AD20,AD21,AD22,AD23,AD24,AE8,AE9,AE10,AE11,AE12,AE13,AE14,AE15,AE16,AE17,
AE18,AE19,AE20,AE21,AE22,AE23,AE24,AF1,AF8,AF9,AF10,AF11,AF12,AF13,AF14,
AF15,AF16,AF17,AF18,AF19,AF20,AF21,AF22,AF23,AF24



CLOCK GENERATOR (REV 1.0)



NORTH BRIDGE (REV 1.0)

5/19

NORTH BRIDGE

82443DX

MEMORY BOARD (REV 1.0)

6/19

MAB[0..13]
MD[0..63]
CSA#[0..3]
DQMA[0..7]
SRASA#
SCASA#
WEA#

U5 / U11 / U4 / U10 — VMEM0 — 64MBITSDRAM

MAB0	23	A0	VDD	1	
MAB1	24	A1	VDD	14	
MAB2	25	A2	VDD	27	
MAB3	26	A3	VDDQ	3	
MAB4	29	A4	VDDQ	9	
MAB5	30	A5	VDDQ	43	
MAB6	31	A6	VDDQ	49	
MAB7	32	A7			
MAB8	33	A8	VSS	28	
MAB9	34	A9	VSS	41	
MAB10	22	A10	VSS	54	
MAB13	35	A11	VSSQ	6	
MAB12	21	A12	VSSQ	12	
MAB11	20	A13	VSSQ	46	
			VSSQ	52	
MD0	2	DQ0			
MD1	4	DQ1			
MD2	5	DQ2			
MD3	7	DQ3			
MD4	8	DQ4			
MD5	10	DQ5	NC	36	
MD6	11	DQ6	NC	40	
MD7	13	DQ7			
MD8	42	DQ8			
MD9	44	DQ9			
MD10	45	DQ10			
MD11	47	DQ11			
MD12	48	DQ12			
MD13	50	DQ13			
MD14	51	DQ14			
MD15	53	DQ15			
CSA#0	19	CS#			
SDCLK0A	38	CLK			
CKE0	37	CKE			
DQMA0	15	LDQM			
DQMA1	39	UDQM			
SRASA#	18	RAS#			
SCASA#	17	CAS#			
WEA#	16	WE#			

U323 / U327 / U322 / U326 — VMEM1 — 64MBITSDRAM

MAB0	23	A0	VDD	1	
MAB1	24	A1	VDD	14	
MAB2	25	A2	VDD	27	
MAB3	26	A3	VDDQ	3	
MAB4	29	A4	VDDQ	9	
MAB5	30	A5	VDDQ	43	
MAB6	31	A6	VDDQ	49	
MAB7	32	A7			
MAB8	33	A8	VSS	28	
MAB9	34	A9	VSS	41	
MAB10	22	A10	VSS	54	
MAB13	35	A11	VSSQ	6	
MAB12	21	A12	VSSQ	12	
MAB11	20	A13	VSSQ	46	
			VSSQ	52	
MD16	2	DQ0			
MD17	4	DQ1			
MD18	5	DQ2			
MD19	7	DQ3			
MD20	8	DQ4			
MD21	10	DQ5	NC	36	
MD22	11	DQ6	NC	40	
MD23	13	DQ7			
MD24	42	DQ8			
MD25	44	DQ9			
MD26	45	DQ10			
MD27	47	DQ11			
MD28	48	DQ12			
MD29	50	DQ13			
MD30	51	DQ14			
MD31	53	DQ15			
CSA#1	19	CS#			
SDCLK1A	38	CLK			
RCKE1	37	CKE			
DQMA2	15	LDQM			
DQMA3	39	UDQM			
SRASA#	18	RAS#			
SCASA#	17	CAS#			
WEA#	16	WE#			

V3

R26 10k(NU) MAB11 — <MAB11>IN-ORDER QUEUE DEPTH ENABLE 0:DISABLE, 1:ENABLE
R522 10k MAB10 — <MAB10>QUICK START SELECT 0:STOP CLOCK MODE, 1:QUICK START MODE
R520 10k MAB9 — <MAB9>AGP DISABLE 0:AGP ENABLED, 1:AGP DISABLED
R12 10k MAB7 — <MAB7>MEMORY MODULE CONFIGURATION 0:NORMAL OPERATION, 1:OUTPUTS TRI-STATE
MAB6 — <MAB6>HOST BUS BUFFER MODE SELECT 0:DESKTOP GTL+, 1:MOBILE LOW POWER GTL+
R11 10k

CN18 — 54363-1405

MD0	127	DQ0	DQ32	139	MD32
MD1	125	DQ1	DQ33	137	MD33
MD2	123	DQ2	DQ34	135	MD34
MD3	121	DQ3	DQ35	133	MD35
MD4	140	DQ4	DQ36	128	MD36
MD5	138	DQ5	DQ37	126	MD37
MD6	136	DQ6	DQ38	124	MD38
MD7	134	DQ7	DQ39	122	MD39
MD8	115	DQ8	DQ40	116	MD40
MD9	113	DQ9	DQ41	114	MD41
MD10	111	DQ10	DQ42	112	MD42
MD11	109	DQ11	DQ43	110	MD43
MD12	103	DQ12	DQ44	104	MD44
MD13	101	DQ13	DQ45	102	MD45
MD14	99	DQ14	DQ46	100	MD46
MD15	97	DQ15	DQ47	98	MD47
MD16	52	DQ16	DQ48	40	MD48
MD17	50	DQ17	DQ49	38	MD49
MD18	48	DQ18	DQ50	36	MD50
MD19	46	DQ19	DQ51	34	MD51
MD20	28	DQ20	DQ52	16	MD52
MD21	26	DQ21	DQ53	14	MD53
MD22	24	DQ22	DQ54	12	MD54
MD23	22	DQ23	DQ55	10	MD55
MD24	43	DQ24	DQ56	31	MD56
MD25	41	DQ25	DQ57	29	MD57
MD26	39	DQ26	DQ58	27	MD58
MD27	37	DQ27	DQ59	25	MD59
MD28	19	DQ28	DQ60	7	MD60
MD29	17	DQ29	DQ61	5	MD61
MD30	15	DQ30	DQ62	3	MD62
MD31	13	DQ31	DQ63	1	MD63
	9	VCC	VSS	4	
	11	VCC	VSS	6	
	21	VCC	VSS	8	
	23	VCC	VSS	18	
	33	VCC	VSS	20	
	35	VCC	VSS	30	
	45	VCC	VSS	32	
	47	VCC	VSS	42	
	57	VCC	VSS	44	
	59	VCC	VSS	54	
	81	VCC	VSS	56	
	83	VCC	VSS	66	
	93	VCC	VSS	68	
	95	VCC	VSS	69	
	105	VCC	VSS	71	
	107	VCC	VSS	72	
	117	VCC	VSS	75	
	119	VCC	VSS	82	
	129	VCC	VSS	84	
	131	VCC	VSS	106	
MAB0	80	A0	VSS	108	
MAB1	78	A1	VSS	118	
MAB2	76	A2	VSS	120	
MAB3	74	A3	VSS	130	
MAB4	67	A4	VSS	132	
MAB5	65	A5	DQM0	91	DQMA0
MAB6	63	A6	DQM1	89	DQMA1
MAB7	61	A7	DQM2	87	DQMA2
MAB8	64	A8	DQM3	85	DQMA3
MAB9	62	A9	DQM4	92	DQMA4
MAB10	60	A10	DQM5	90	DQMA5
MAB11	58	A13	DQM6	88	DQMA6
MAB12	55	A12	DQM7	86	DQMA7
MAB13	53	A11	CS0#	79	CSA#2
SRASA#	94	RAS#	CS1#	77	CSA#3
SCASA#	96	CAS#	CLK0	70	SDCLK2
WEA#	51	WE#	CLK1	73	SDCLK3
RCKE2	49	CKE0	CKE1	2	RCKE3

V3 / GND

CKE[0..3]
CKE0 — R558 0 — CKE1 — R555 0(NU) — RCKE1
CKE0 — R557 0 — CKE2 — R554 0(NU) — RCKE2
CKE0 — R556 0 — CKE3 — R553 0(NU) — RCKE3

SDCLK[0..3]
SDCLK0 — R536 10 — SDCLK0A; R18 10 — SDCLK0B
SDCLK1 — R17 10 — SDCLK1A; R535 10 — SDCLK1B
SDCLK2
SDCLK3

V3 — FB7 BLM41P600S — VMEM0 — C44 10u/10V; 0.1u/25V x 4: C26 C36 C48 C35 C25 C34 C46 C33

V3 — FB3 BLM41P600S — VMEM1 — C22 10u/10V; 0.1u/25V x 4: C474 C504 C520 C505 C469 C502 C519 C503

V3 — FB4 BLM41P600S — VMEM2 — C24 10u/10V; 0.1u/25V x 6: C23 10u/10V, C468 C467 C466 C518 C646 C647

SOUTH BRIDGE (REV 1.0)

7/19

SOUTH BRIDGE

FW82371EB

R654 R686
A250 U,S,A,H: 100k NU
A250 E,G,I : NU 100k

PCMCIA CONTROLLER (REV 1.0)

8/19

(PCMCIA CONTROLLER)

(PCMCIA SLOT)

VIDEO CONTROLLER (REV 1.0)

[VGA CONTROLLER]

(CRT CN)

(LCD CN)

[9525 CONFIG]

[CFG15..12]:GENERAL PURPOSE

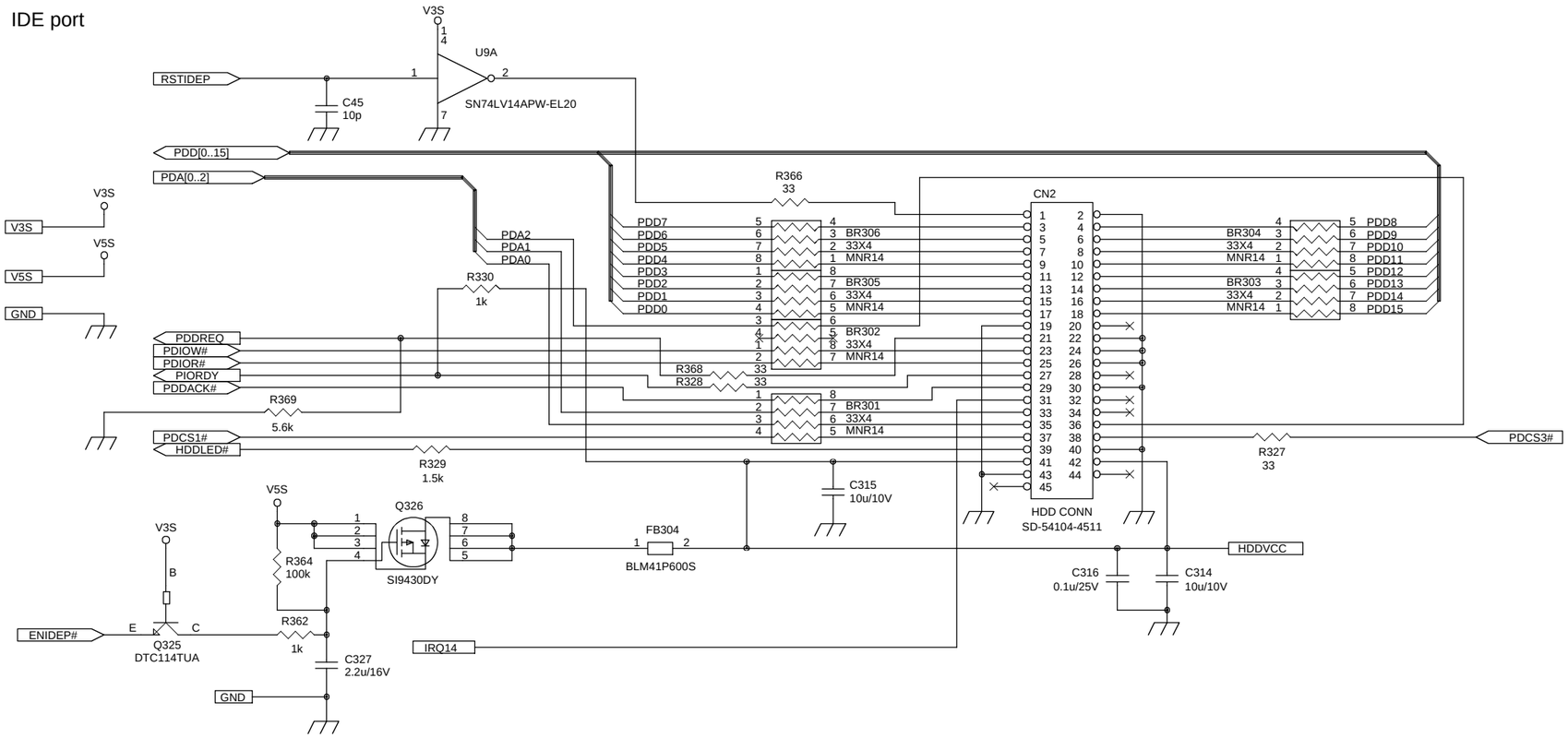
[CFG11..8]:PANEL TYPE SELECT
0000:TFT6x4-18
0001:TFT8x6-18
0010:10x7-18
0100:TFT12X10-18+18
0101:TFT10x6-18+18

[CFG7..2]:GENERAL PURPOSE

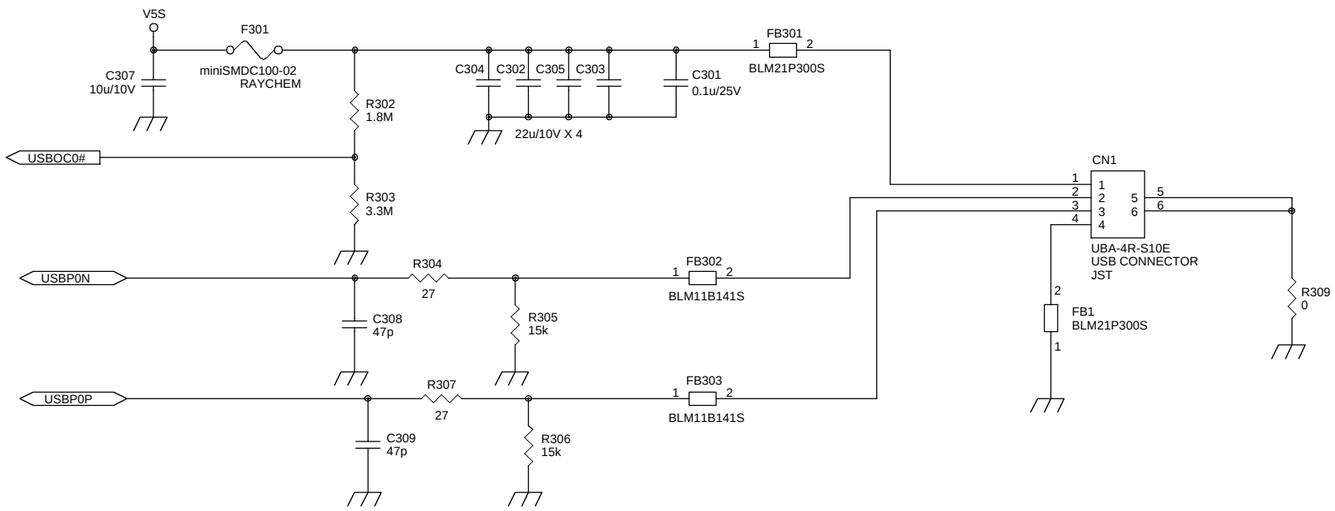
[CFG1..0]:MEMORY CLOCK
00:66MHz
01:83MHz
10:100MHz
11:125MHz

IDE/USB INTERFACE (REV 1.0) **10/19**

IDE port



USB port



SUPER I/O (REV 1.0)

11/19

* ADD CAP FOR EMI (97-6-5)
PLACE NEAR PRT CONN

U337
NS-PC97338VJG/TQFP

CN15
BLM11A601S X 13
BLM11A601S X 8
BLM11A601S X 21

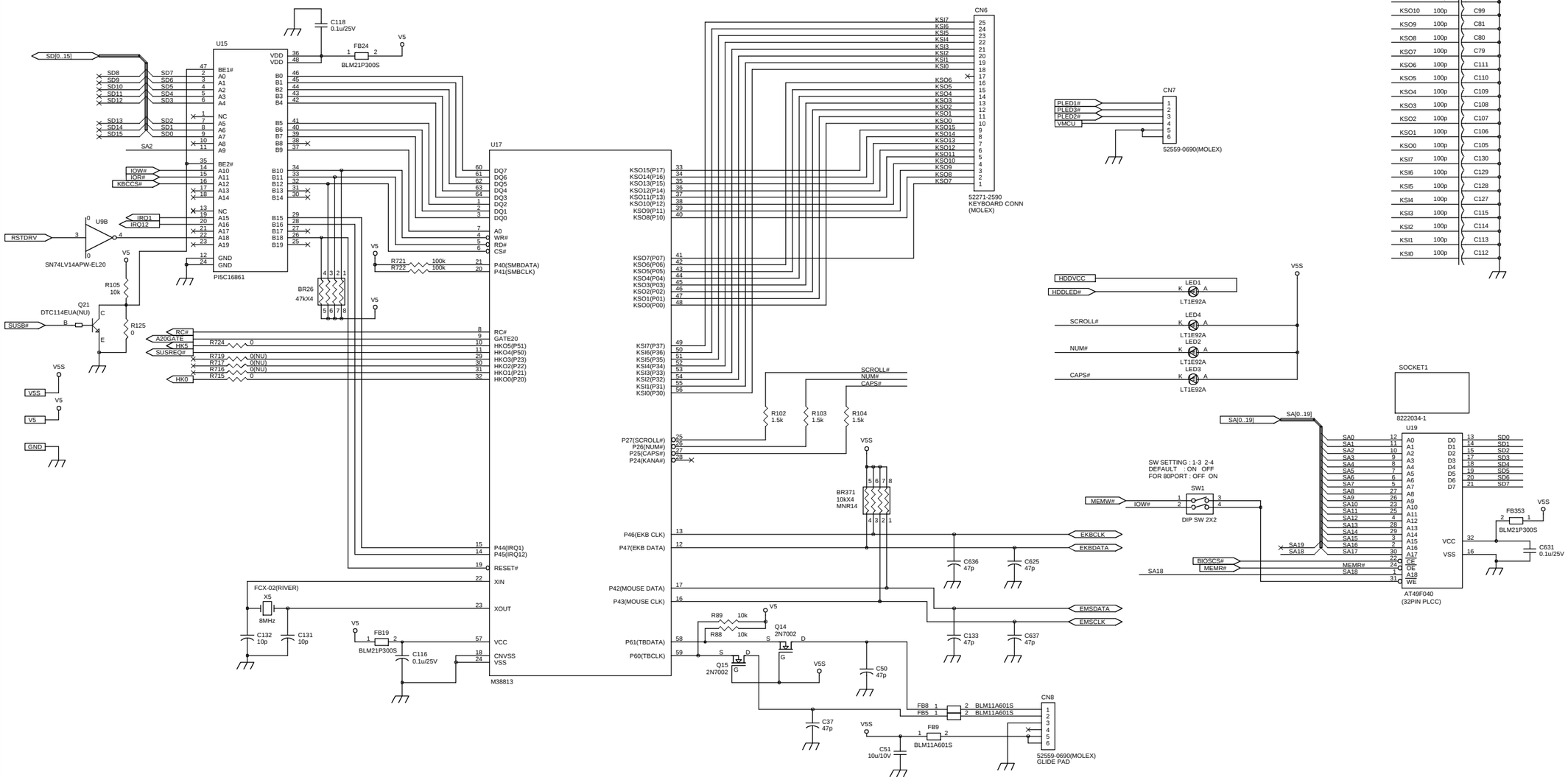
CN16
52559-1690
IR

S4265-6811
I/O CONN
(MOLEX)

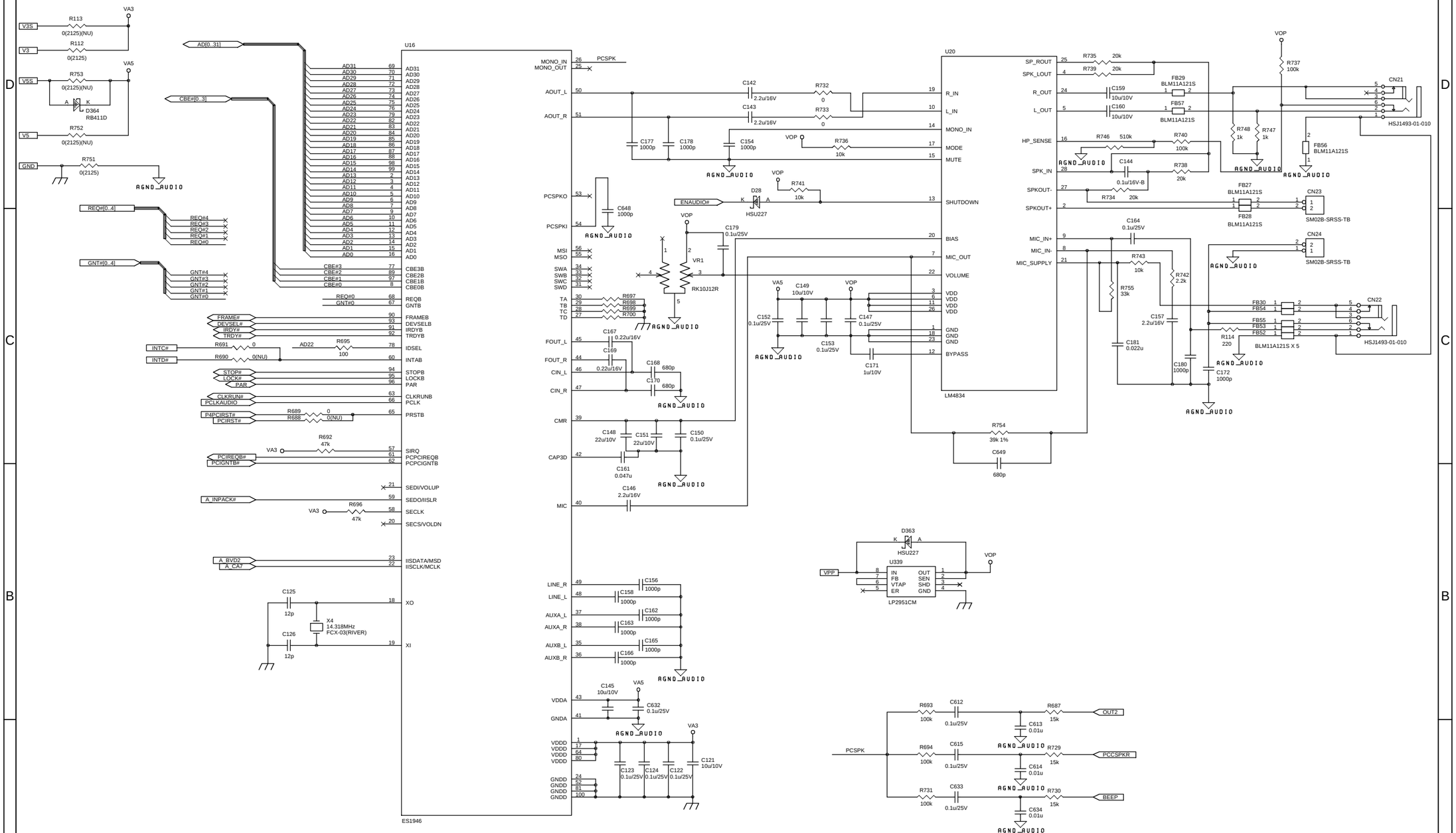
U18
HIN213

BIOS AND KEYBOARD CONT. (REV 1.0)

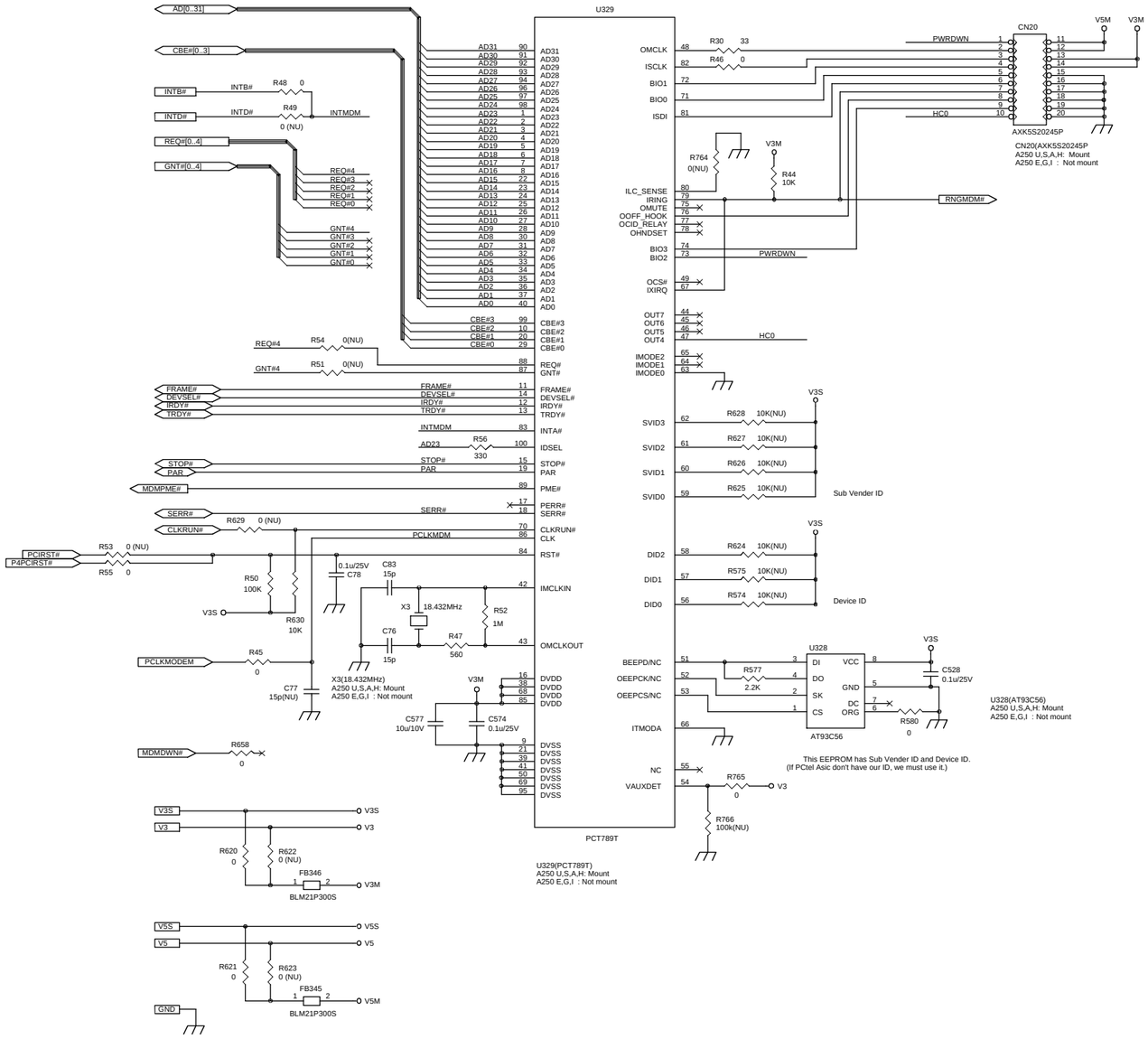
12/19



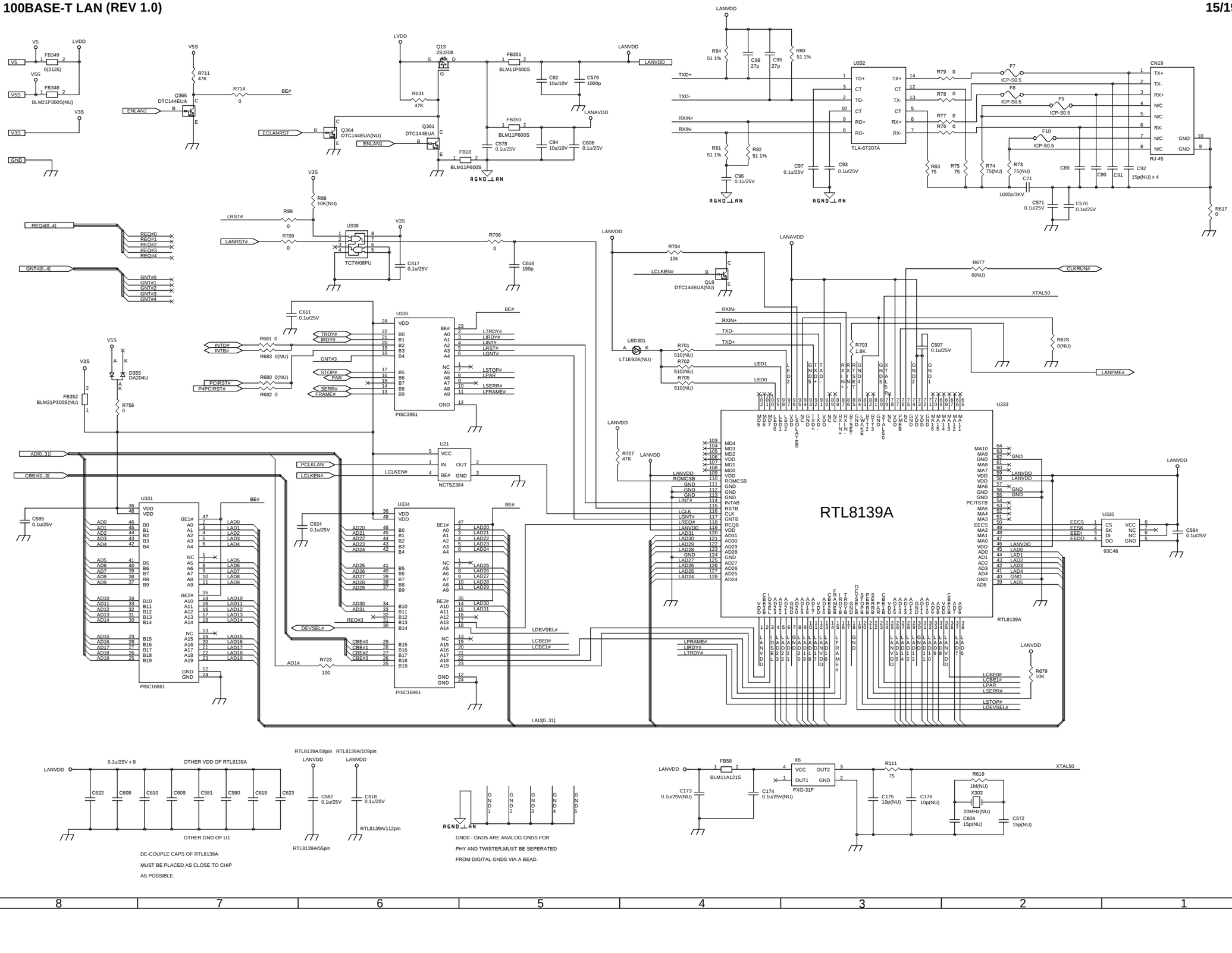
AUDIO (REV 1.0)


U16
ES1946
U20
LM4834
AD[0..31]
CBE#[0..3]
REQ#[0..4]
GNT#[0..4]
AGND_AUDIO
VA3
VA5
VOP
R113 0(2125)(NU)
R112 0(2125)
R753 0(2125)(NU)
D364 RB411D
R752 0(2125)(NU)
R751 0(2125)
C648 1000p
C142 2.2u/16V
C143 2.2u/16V
C177 1000p
C178 1000p
C154 1000p
R732 0
R733 0
R736 10k
R741 10k
D28 HSU227
ENAUDIO#
VR1 RK10J12R
C179 0.1u/25V
C167 0.22u/16V
C169 0.22u/16V
C168 680p
C170 680p
C148 22u/10V
C151 22u/10V
C150 0.1u/25V
C161 0.047u
C146 2.2u/16V
C149 10u/10V
C152 0.1u/25V
C153 0.1u/25V
C147 0.1u/25V
C171 1u/10V
R754 39k 1%
C649 680p
R735 20k
R739 20k
C159 10u/10V
C160 10u/10V
FB29 BLM11A121S
FB57 BLM11A121S
R746 510k
R740 100k
C144 0.1u/16V-B
R738 20k
R734 20k
FB27 BLM11A121S
FB28 BLM11A121S
R737 100k
R748 1k
R747 1k
FB56 BLM11A121S
CN21
HSJ1493-01-010
CN23
SM02B-SRSS-TB
CN24
SM02B-SRSS-TB
C164 0.1u/25V
R743 10k
R742 2.2k
R755 33k
C157 2.2u/16V
C181 0.022u
C180 1000p
C172 1000p
R114 220
FB30 FB54 FB55 FB53 FB52
BLM11A121S X 5
CN22
HSJ1493-01-010
C125 12p
C126 12p
X4 14.318MHz FCX-03(RIVER)
D363 HSU227
U339 LP2951CM
VPP
C145 10u/10V
C632 0.1u/25V
C121 10u/10V
C123 0.1u/25V
C124 0.1u/25V
C122 0.1u/25V
R692 47k
R696 47k
R691 0
R690 0(NU)
R695 100
R689 0
R688 0(NU)
R693 100k
R694 100k
R731 100k
C612 0.1u/25V
C615 0.1u/25V
C633 0.1u/25V
R687 15k
R729 15k
R730 15k
C613 0.01u
C614 0.01u
C634 0.01u
OUT2
PCCSPKR
BEEP
PCSPK

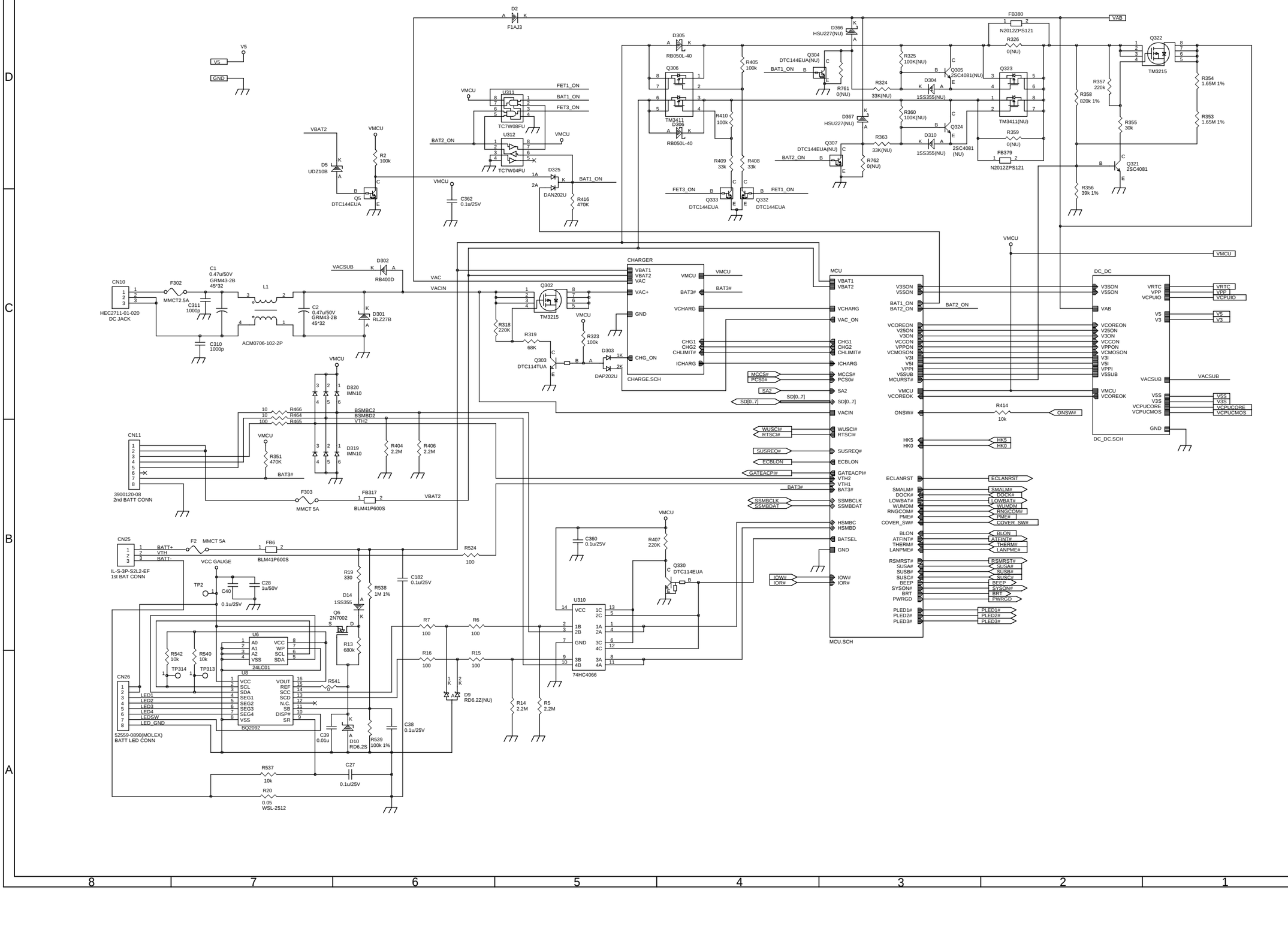
MODEM (REV 1.0)


U329
AD[0..31]
CBE#[0..3]
INTB#
INTD#
REQ#[0..4]
GNT#[0..4]
R48 0
R49 0 (NU)
INTMDM
REQ#4
REQ#3
REQ#2
REQ#1
REQ#0
GNT#4
GNT#3
GNT#2
GNT#1
GNT#0
AD31 90
AD30 91
AD29 92
AD28 93
AD27 94
AD26 96
AD25 97
AD24 98
AD23 1
AD22 2
AD21 3
AD20 4
AD19 5
AD18 6
AD17 7
AD16 8
AD15 22
AD14 23
AD13 24
AD12 25
AD11 26
AD10 27
AD9 28
AD8 30
AD7 31
AD6 32
AD5 33
AD4 34
AD3 35
AD2 36
AD1 37
AD0 40
CBE#3 99
CBE#2 10
CBE#1 20
CBE#0 29
REQ# 88
GNT# 87
R54 0(NU)
R51 0(NU)
FRAME# 11
DEVSEL# 14
IRDY# 12
TRDY# 13
INTA# 83
IDSEL 100
R56 330
AD23
STOP# 15
PAR 19
PME# 89
PERR# 17
SERR# 18
CLKRUN# 70
CLK 86
RST# 84
IMCLKIN 42
OMCLKOUT 43
R629 0 (NU)
PCLKMDM
PCIRST#
P4PCIRST#
R53 0 (NU)
R55 0
R50 100K
R630 10K
V3S
C78 0.1u/25V
C83 15p
X3 18.432MHz
R52 1M
C76 15p
R47 560
PCLKMODEM
R45 0
C77 15p(NU)
X3(18.432MHz)
A250 U,S,A,H: Mount
A250 E,G,I : Not mount
V3M
C577 10u/10V
C574 0.1u/25V
DVDD 16
DVDD 38
DVDD 68
DVDD 85
DVSS 9
DVSS 21
DVSS 39
DVSS 41
DVSS 50
DVSS 69
DVSS 95
MDMDWN#
R658 0
V3S
V3
R620 0
R622 0 (NU)
FB346
BLM21P300S
V3M
V5S
V5
R621 0
R623 0 (NU)
FB345
BLM21P300S
V5M
GND
OMCLK 48
ISCLK 82
BIO1 72
BIO0 71
ISDI 81
R30 33
R46 0
R764 0(NU)
R44 10K
ILC_SENSE 80
IRING 79
OMUTE 75
OOFF_HOOK 76
OCID_RELAY 77
OHNDSET 78
BIO3 74
BIO2 73
PWRDWN
OCS# 49
IXIRQ 67
OUT7 44
OUT6 45
OUT5 46
OUT4 47
HC0
IMODE2 65
IMODE1 64
IMODE0 63
SVID3 62
SVID2 61
SVID1 60
SVID0 59
R628 10K(NU)
R627 10K(NU)
R626 10K(NU)
R625 10K(NU)
Sub Vender ID
DID2 58
DID1 57
DID0 56
R624 10K(NU)
R575 10K(NU)
R574 10K(NU)
Device ID
BEEPD/INC 51
OEEPCK/INC 52
OEEPCS/NC 53
ITMODA 66
NC 55
VAUXDET 54
R765 0
V3
R766 100k(NU)
PCT789T
U329(PCT789T)
A250 U,S,A,H: Mount
A250 E,G,I : Not mount
CN20
PWRDWN
HC0
AXK5S20245P
CN20(AXK5S20245P
A250 U,S,A,H: Mount
A250 E,G,I : Not mount
U328
DI
DO
SK
CS
VCC
GND
DC
ORG
R577 2.2K
C528 0.1u/25V
R580 0
AT93C56
U328(AT93C56)
A250 U,S,A,H: Mount
A250 E,G,I : Not mount
This EEPROM has Sub Vender ID and Device ID.
(If PCtel Asic don't have our ID, we must use it.)

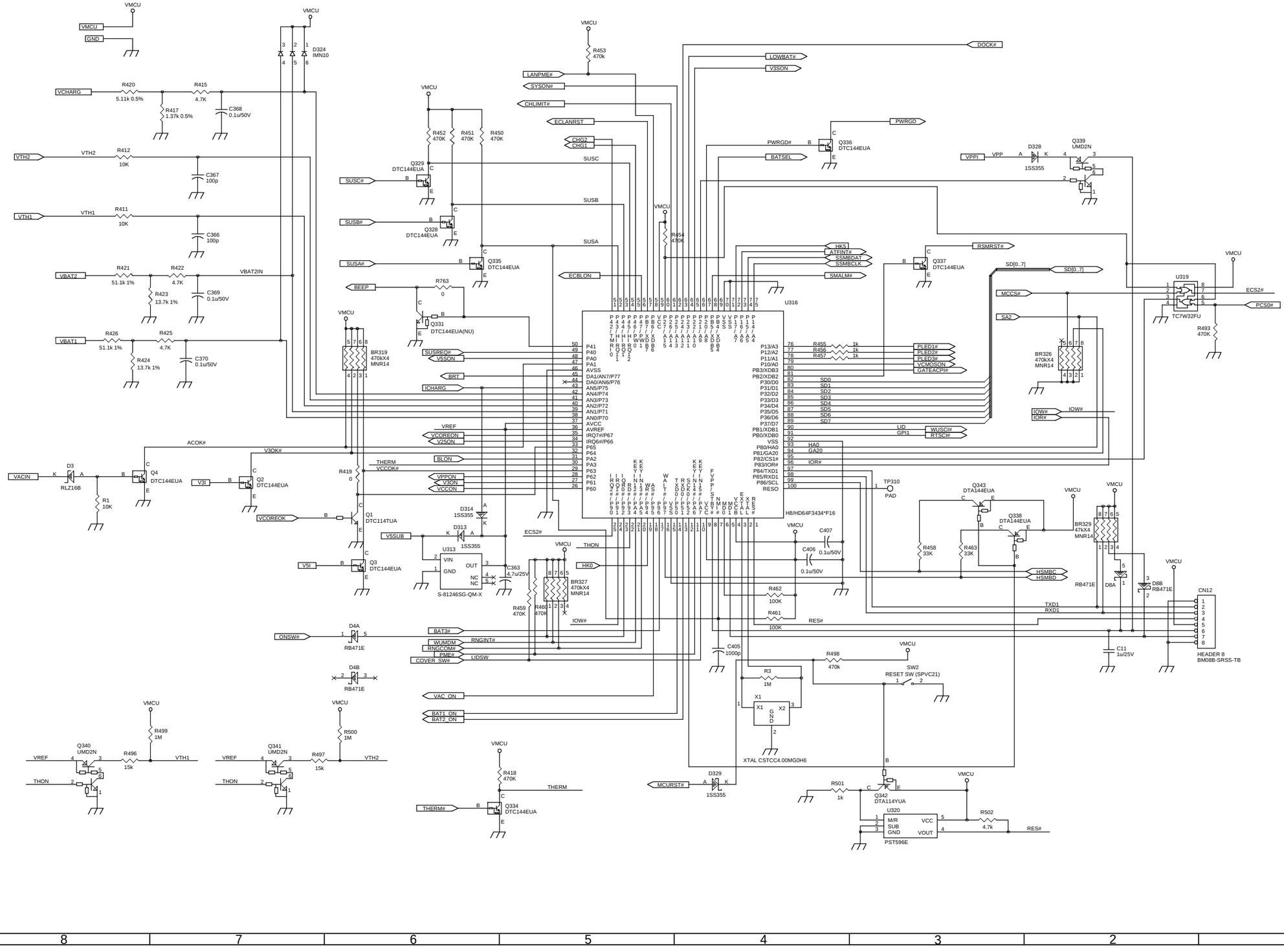
100BASE-T LAN (REV 1.0)

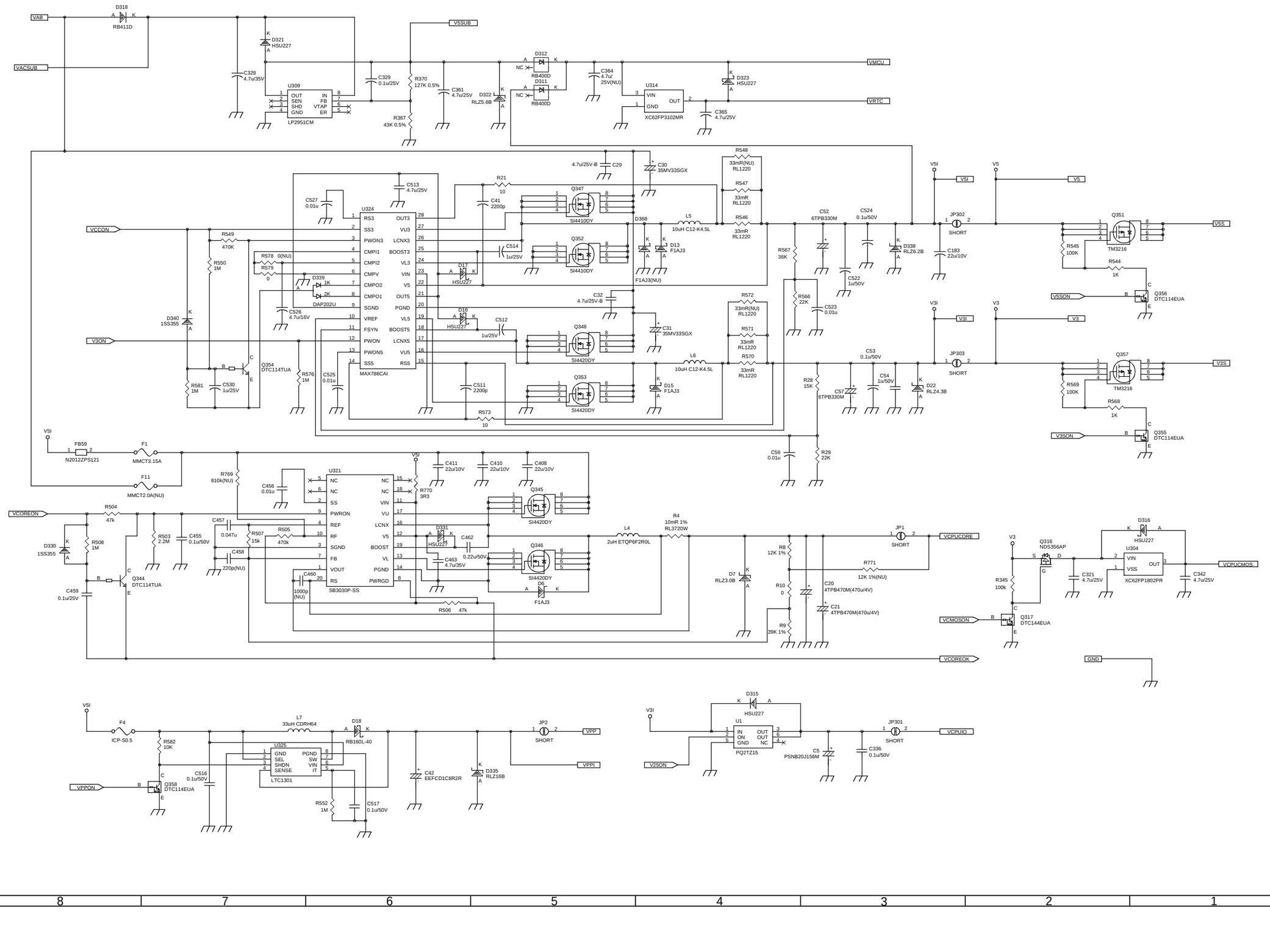


DC POWER MAIN (REV 1.0)

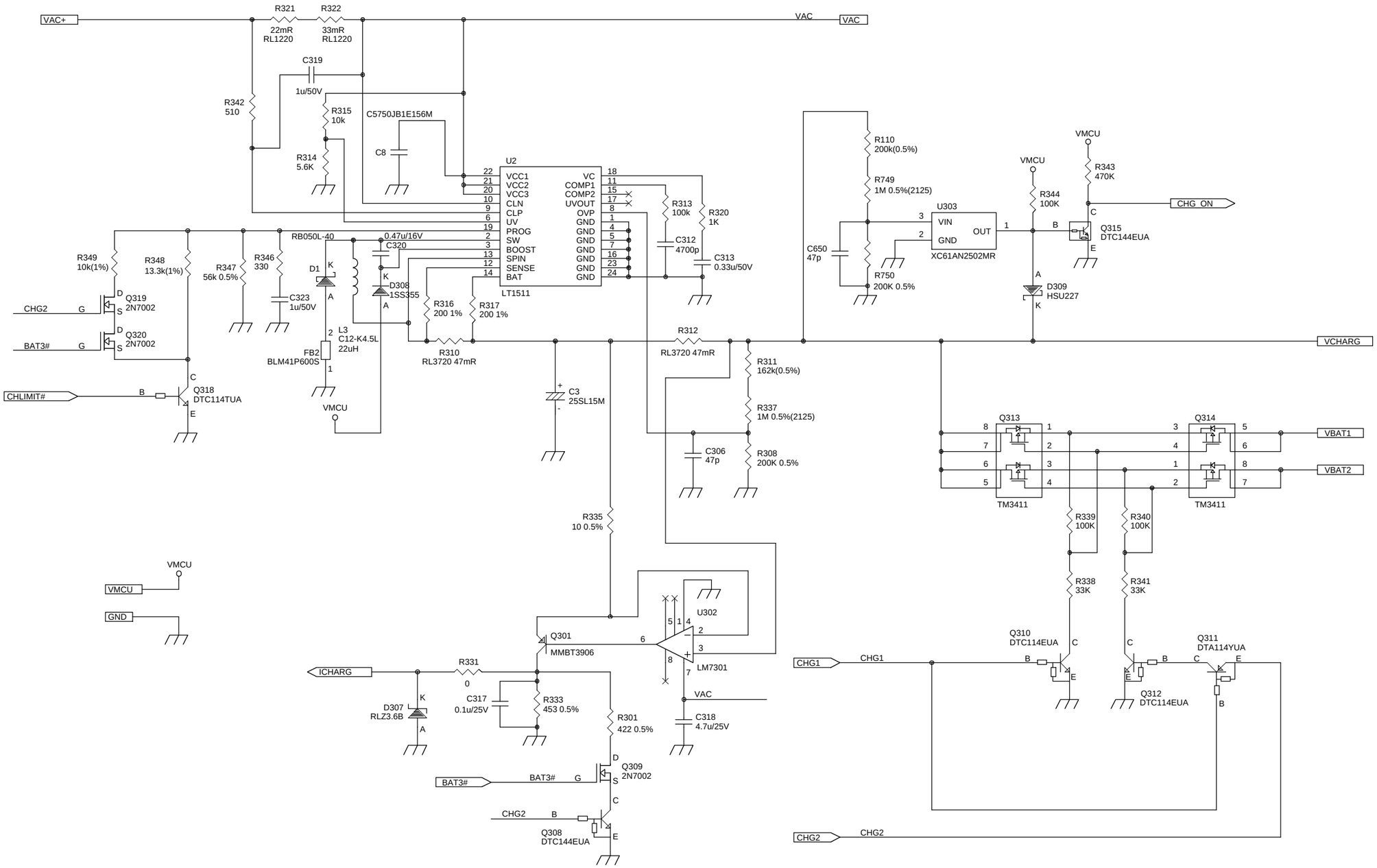


MCU H8/3434 (REV 1.0)




VAB
VACSUB
D318
RB411D
D321
HSU227
C328
4.7u/35V
U309
OUT
SEN
SHD
GND
IN
FB
VTAP
ER
LP2951CM
C329
0.1u/25V
R370
127K 0.5%
R367
43K 0.5%
C361
4.7u/25V
V5SUB
D322
RLZ5.6B
D312
RB400D
D311
RB400D
C364
4.7u/
25V(NU)
U314
VIN
GND
OUT
XC62FP3102MR
D323
HSU227
C365
4.7u/25V
VMCU
VRTC
C513
4.7u/25V
C527
0.01u
U324
RS3
SS3
PWON3
CMPI1
CMPI2
CMPV
CMPO2
CMPO1
SGND
VREF
FSYN
PWON
PWON5
SS5
OUT3
VU3
LCNX3
BOOST3
VL3
VIN
V5
OUT5
PGND
VL5
BOOST5
LCNX5
VU5
RS5
MAX786CAI
R21
10
C41
2200p
Q347
SI4410DY
C514
1u/25V
Q352
SI4410DY
D17
HSU227
D368
F1AJ3(NU)
D13
F1AJ3
L5
10uH C12-K4.5L
R548
33mR(NU)
RL1220
R547
33mR
RL1220
R546
33mR
RL1220
C30
35MV33SGX
4.7u/25V-B
C29
C32
4.7u/25V-B
D16
HSU227
C512
1u/25V
Q348
SI4420DY
Q353
SI4420DY
D15
F1AJ3
C31
35MV33SGX
L6
10uH C12-K4.5L
R572
33mR(NU)
RL1220
R571
33mR
RL1220
R570
33mR
RL1220
C511
2200p
R573
10
C525
0.01u
C526
4.7u/16V
VCCON
V3ON
R549
470K
R550
1M
R578
0(NU)
R579
0
D339
1K
2K
DAP202U
D340
1SS355
Q354
DTC114TUA
R581
1M
C530
1u/25V
R576
1M
C52
6TPB330M
C524
0.1u/50V
C522
1u/50V
C523
0.01u
R567
36K
R566
22K
D338
RLZ6.2B
C183
22u/10V
JP302
SHORT
V5I
V5
V5S
Q351
TM3216
R545
100K
R544
1K
Q356
DTC114EUA
V5SON
V3I
V3
V3S
JP303
SHORT
C53
0.1u/50V
C54
1u/50V
C57
6TPB330M
D22
RLZ4.3B
R28
15K
Q357
TM3216
R569
100K
R568
1K
Q355
DTC114EUA
V3SON
C56
0.01u
R29
22K
FB59
N2012ZPS121
F1
MMCT3.15A
F11
MMCT2.0A(NU)
R769
810k(NU)
C456
0.01u
U321
NC
NC
SS
PWRON
REF
RF
SGND
FB
VOUT
RS
NC
NC
VIN
VU
LCNX
V5
BOOST
VL
PGND
PWRGD
SB3030P-SS
C411
22u/10V
C410
22u/10V
C408
22u/10V
R770
3R3
Q345
SI4420DY
D331
HSU227
C462
0.22u/50V
Q346
SI4420DY
D6
F1AJ3
C463
4.7u/35V
R506
47k
C460
1000p
(NU)
L4
2uH ETQP6F2R0L
R4
10mR 1%
RL3720W
VCOREON
R504
47k
R508
1M
R503
2.2M
C455
0.1u/50V
C457
0.047u
R507
15k
R505
470k
C458
220p(NU)
D330
1SS355
Q344
DTC114TUA
C459
0.1u/25V
D7
RLZ3.0B
R8
12K 1%
R10
0
R9
39K 1%
C20
4TPB470M(470u/4V)
C21
4TPB470M(470u/4V)
R771
12K 1%(NU)
JP1
SHORT
VCPUCORE
VCOREOK
V3
Q316
NDS356AP
R345
100k
C321
4.7u/25V
D316
HSU227
U304
VIN
VSS
OUT
XC62FP1802PR
C342
4.7u/25V
VCPUCMOS
VCMOSON
Q317
DTC144EUA
GND
F4
ICP-S0.5
R582
10K
L7
33uH CDRH64
U325
GND
SEL
SHDN
SENSE
PGND
SW
VIN
IT
LTC1301
D18
RB160L-40
C516
0.1u/50V
Q358
DTC114EUA
VPPON
R552
1M
C517
0.1u/50V
C42
EEFCD1C8R2R
D335
RLZ16B
JP2
SHORT
VPPF
VPPI
D315
HSU227
U1
IN
ON
GND
OUT
OUT
NC
PQ2TZ15
V25ON
C5
PSNB20J156M
C336
0.1u/50V
JP301
SHORT
VCPUIO

BATTERY CHARGER (REV 1.0)

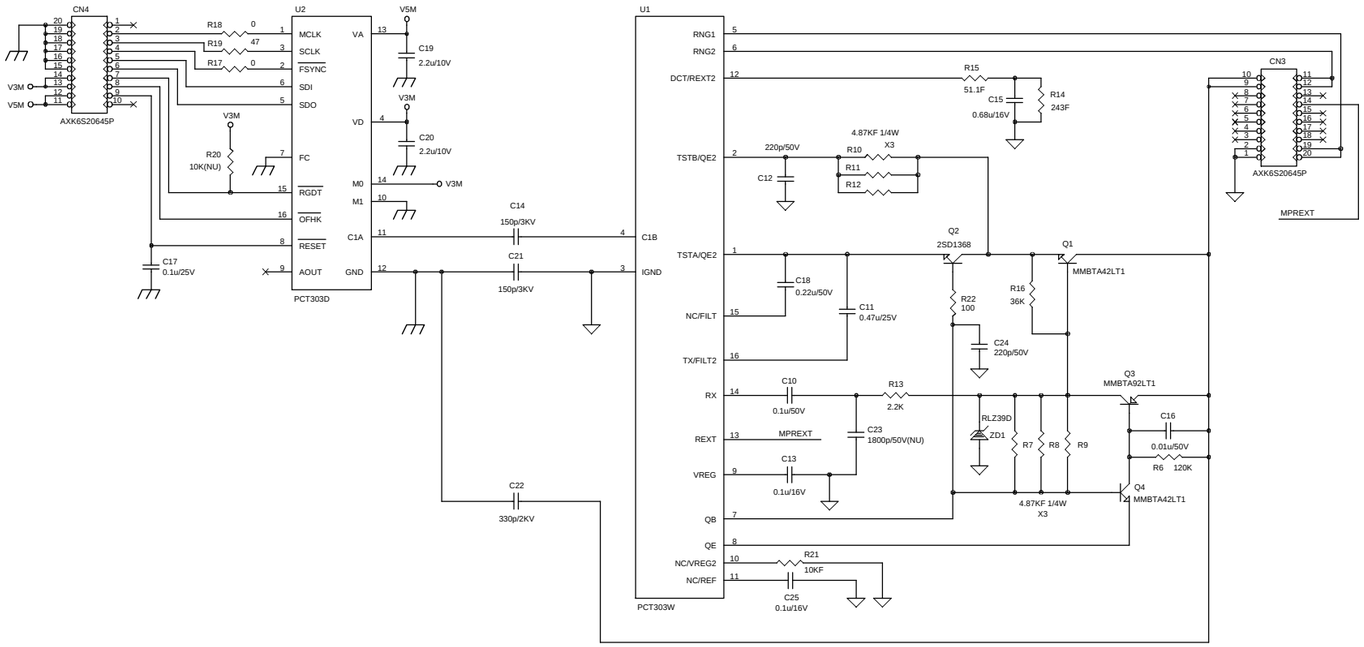


MODEM DAA

1/1

Upper Board

Lower Board

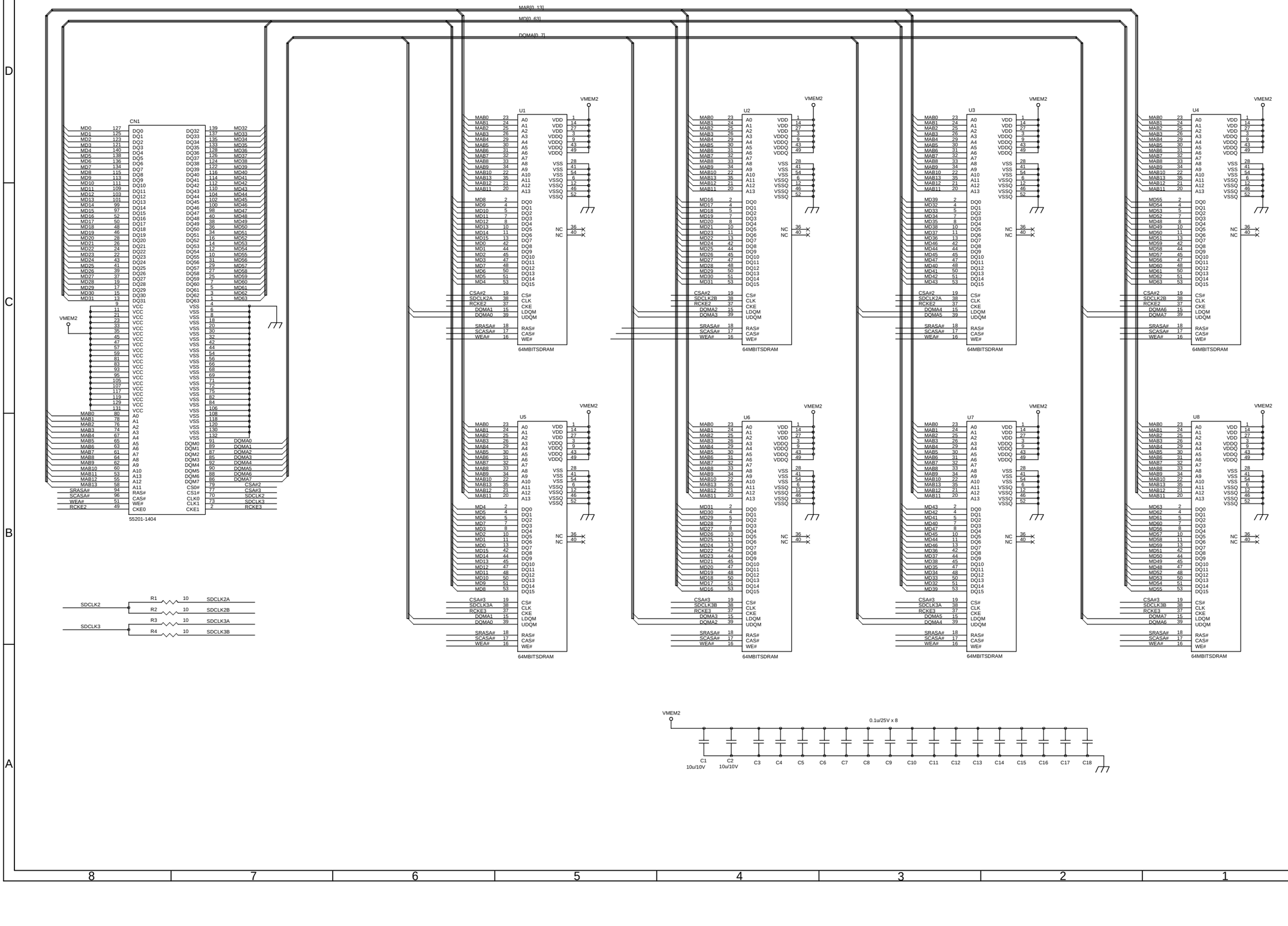


Secondary

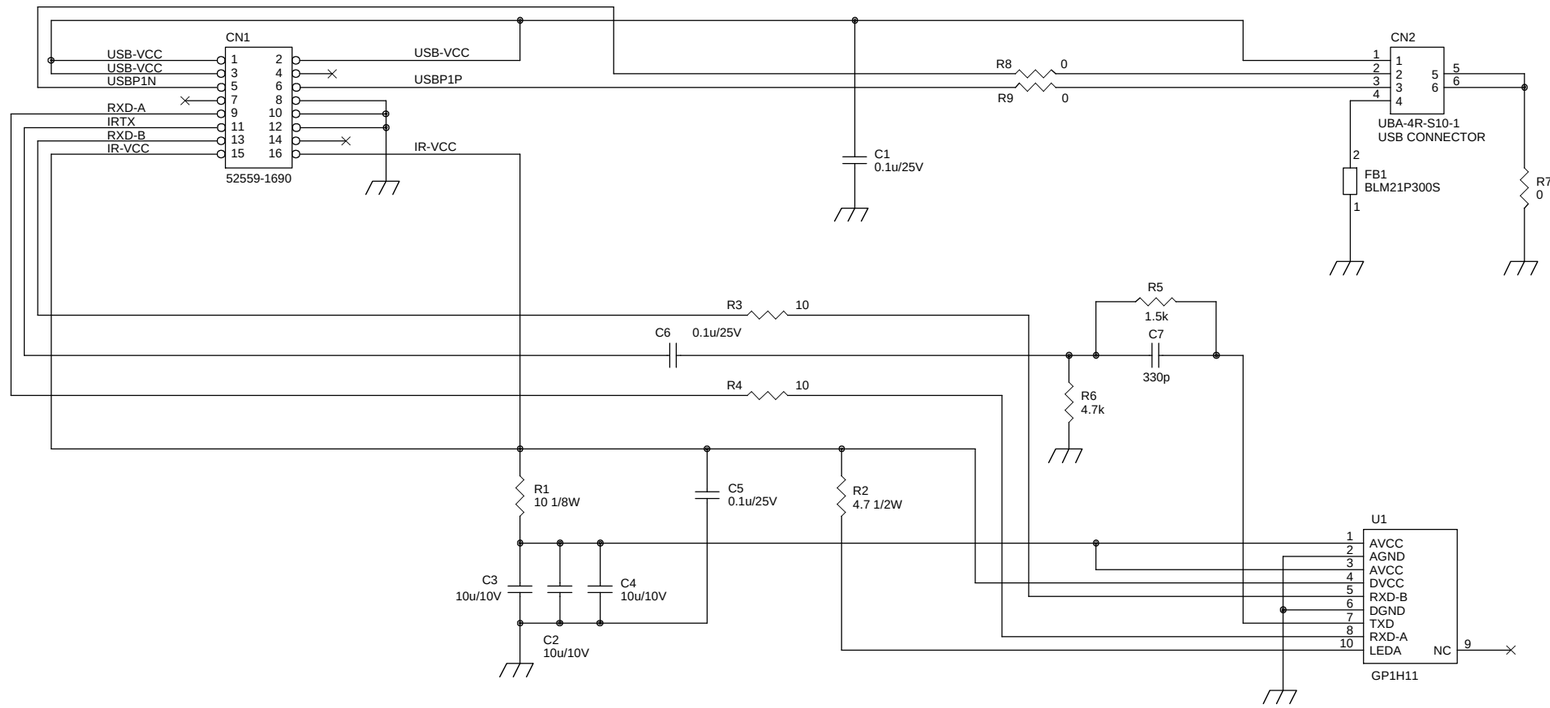
Primary

EXT. MEMORY BOARD

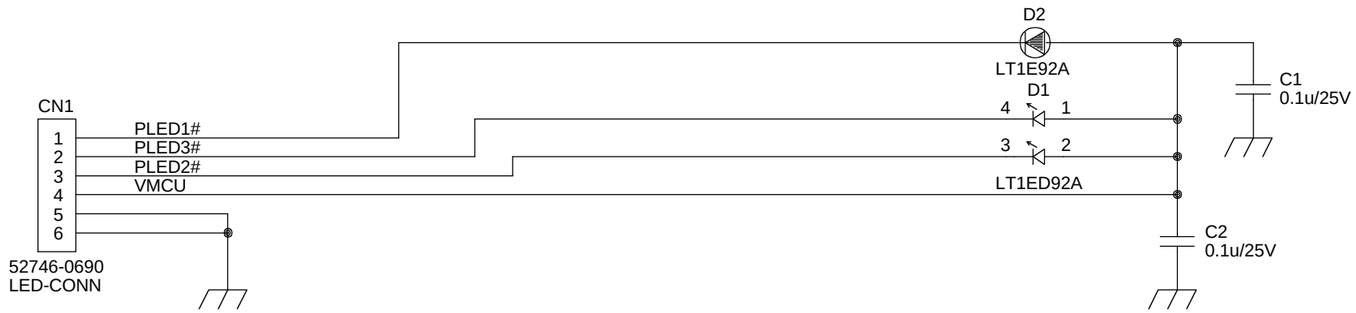
1/1



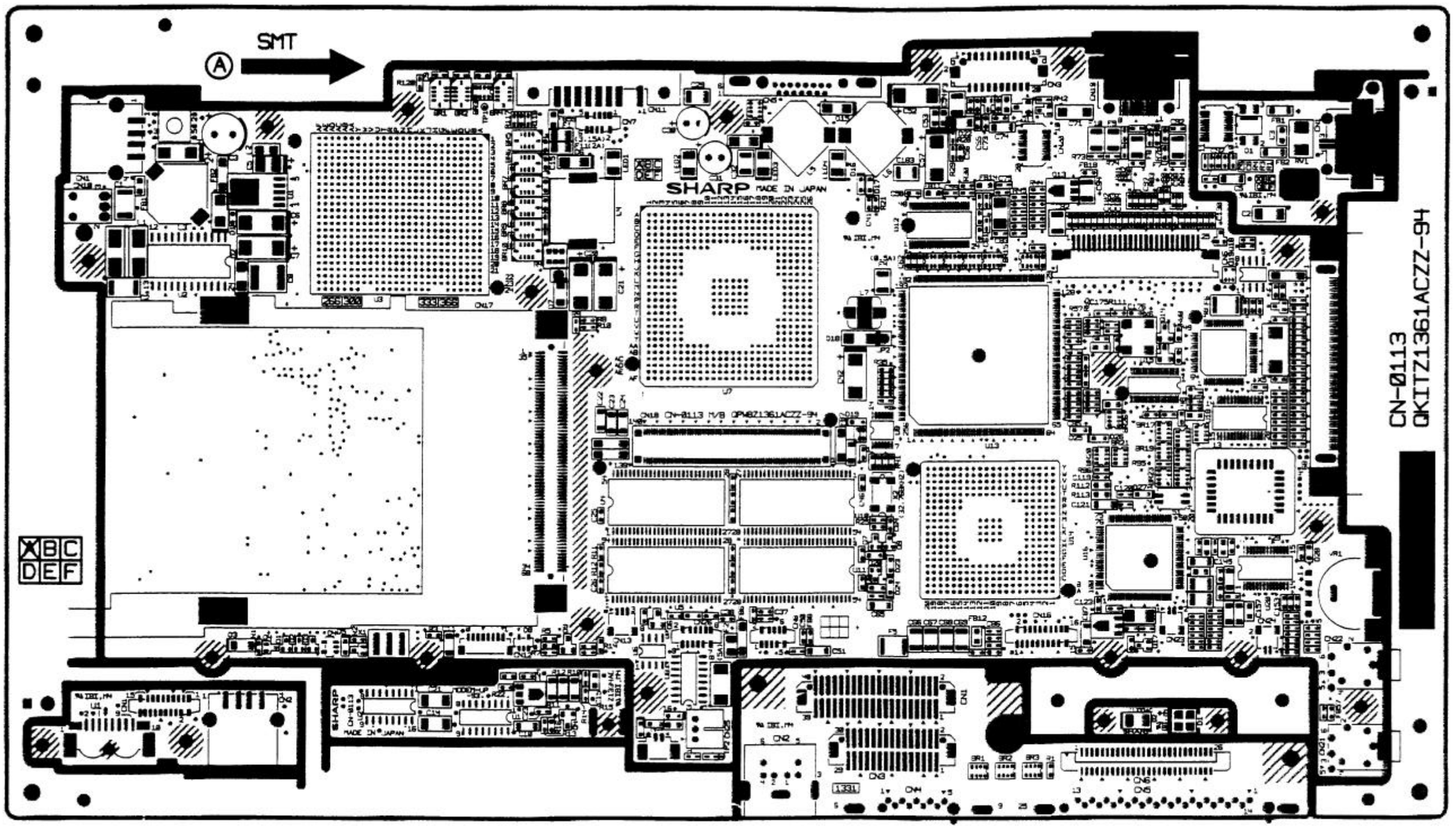
IR & USB PCB **1/1**


CN1
USB-VCC
USB-VCC
USBP1N
RXD-A
IRTX
RXD-B
IR-VCC
1 2
3 4
5 6
7 8
9 10
11 12
13 14
15 16
52559-1690
USB-VCC
USBP1P
IR-VCC
C1
0.1u/25V
R8 0
R9 0
CN2
UBA-4R-S10-1
USB CONNECTOR
FB1
BLM21P300S
R7
0
R3 10
C6 0.1u/25V
R4 10
R5
1.5k
C7
330p
R6
4.7k
R1
10 1/8W
C5
0.1u/25V
R2
4.7 1/2W
C3
10u/10V
C4
10u/10V
C2
10u/10V
U1
1 AVCC
2 AGND
3 AVCC
4 DVCC
5 RXD-B
6 DGND
7 TXD
8 RXD-A
10 LEDA
NC 9
GP1H11

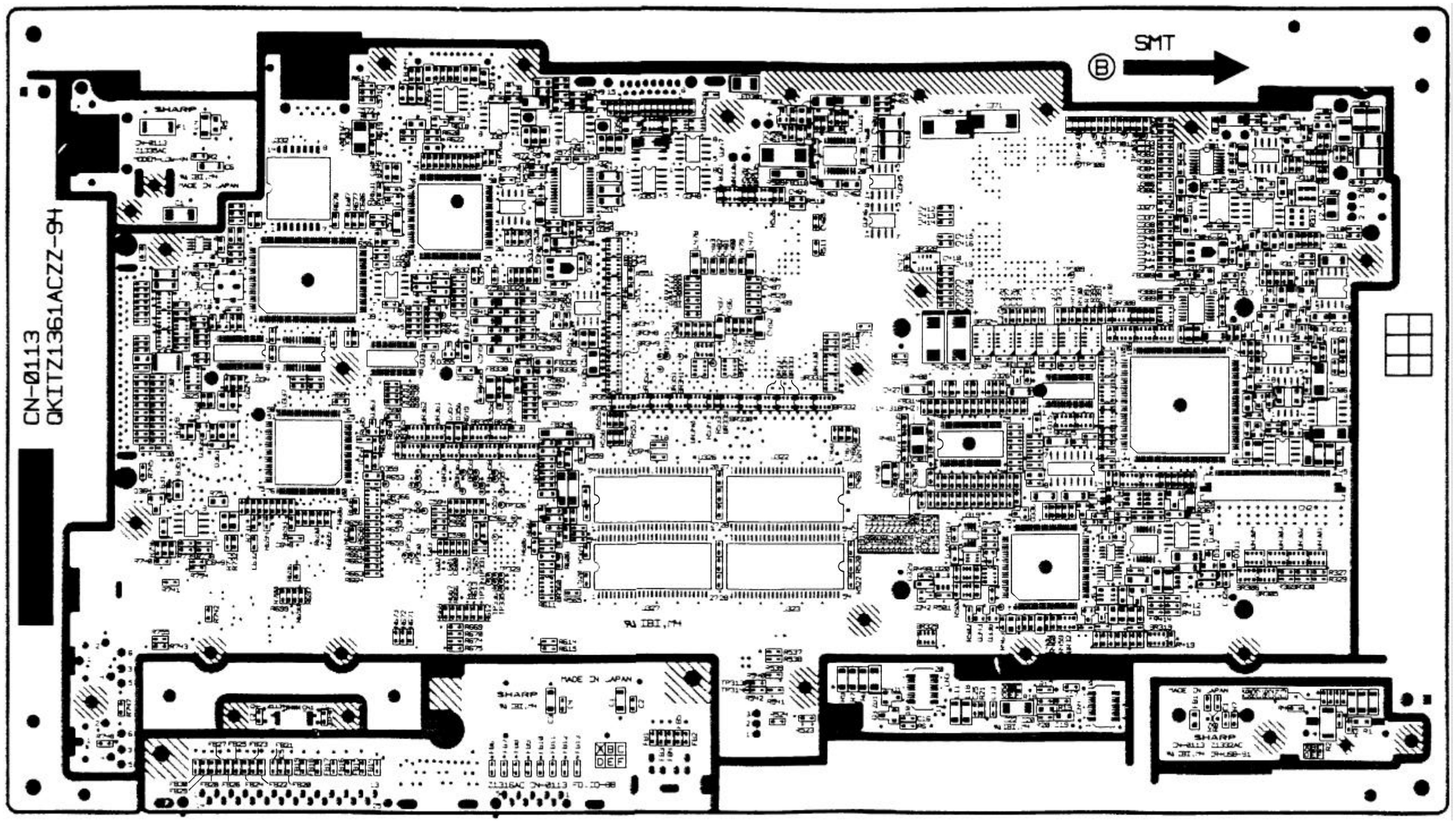
LED PCB **1/1**


D2
LT1E92A
D1
LT1ED92A
CN1
1
2
3
4
5
6
PLED1#
PLED3#
PLED2#
VMCU
52746-0690
LED-CONN
C1
0.1u/25V
C2
0.1u/25V

PARTS LAYOUT
(SADE A)



PARTS LAYOUT
(SADE B)



PC-A250

SHARP

SHARP CORPORATION
Information Systems Group
Quality & Reliability Control Center
Yamatokoriyama, Nara 639-1186, Japan

1999 April Printed in Japan (t)