

LIBRA 120 III (PC620)
(MB: PC620, System Chipset: Intel 815E)
12.1" TFT Intel® Socket 370
Celeron/Pentium® III Mini Kiosk

User's Manual (Version 2503)



LIBRA w media reader bezel



LIBRA w printer bezel

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Printed in Taiwan

Unpacking

After unpacking the **LIBRA III** carton, check and see if the following items are included and in good condition.

- u **LIBRA III main system** x 1
- u **Accessories**
 - Power cord x 1
 - Utilities & drivers & user manual CD diskette x 1
(for touchscreen drivers, please download the updated drivers from the following website
<http://www.elotouch.com> or
<http://www.3m.com> or
<http://www.eturbotouch.com>

Make sure that all of the items listed above are present. If any of the above items is missing, contact your dealer immediately.

Warranty

All products manufactured by the Manufacturer. are warranted against defective materials and workmanship for one year starting from the date of delivery to the original purchaser. However, warranty or service will not be extended if 1). the product is repaired, modified or altered unless such repair, modification or alteration is authorized by the Manufacturer; or 2). the product serial number or warranty label is defaced or missing; or 3). the product is not properly used.

Important Safety Precautions

Before getting started, read these instructions and save them for later reference.

1. Turn off the computer before cleaning. Clean with a damp or dry cloth only. Do not spray any liquid cleaner on screen directly.
2. The power outlet socket used to plug in the computer power cord must be located near the system and easily accessible. Do not use outlets on the same circuit of the systems that regularly switched on and off.
3. Make sure the voltage of the power source is correct before connecting the computer to the power outlet.
4. If the computer is sharing an extension cord with other devices, make sure the total ampere rating of the devices plugged into the extension cord does not exceed the cord's ampere rating.
5. Do not expose the power cord, extension cord and power outlet to moisture.
6. Install the computer on a reliable surface to prevent damage caused by dropping.
7. This computer is not equipped with an operating system. An operating system must be loaded first before installing any software into the computer.
8. Disconnect the power cord from the computer before any installation. Make sure both the computer and the external devices are turned off. The sudden surge of power may ruin any sensitive components. Also make sure the computer is properly grounded.
9. During installation of any internal components, be sure to ground yourself to keep from any static charge. Most electronic components are sensitive to the static electric charge. Use a grounding wrist strap and place all electronic components in any static-shielded devices.

10. The openings on the computer cabinet are for the cabin ventilation to prevent the computer from overheating. **DO NOT COVER THE OPENINGS.**
11. The brightness of the flat panel display will decrease with use. However, hours of use will vary depending on the application environment.
12. If the computer is equipped with a touch panel, avoid using sharp objects to operate the touch panel. Scratches on the touch panel may cause mal-calibration or non-function to the panel.
13. The LCD panel display is not subject to shock or vibration. When assembling the computer, make sure it is securely installed.

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1. INTRODUCTION

This chapter provides background information and detail specification on the LIBRA III. Sections in this chapter include:

- u General Information
- u What covers in this Manual
- u Specification

1.1. General Information

The information revolution that started from the mid '90 inaugurated a new competitive era where consumer-computing technology was exploited to business operation quicker than ever before. Many enterprises from our life related industries such as POS, POI, Kiosk, Banking, Medical to the high-tech Telecom, Aerospace, Semiconductor ... etc. all are eager or forced to automate their industries with PCs in order to thrive in this new age. For their industrial automation, there is one thing in common, i.e. space is always a premium and system stability is always a must in their environmental applications.

Compact in its profile and self-contained in its functions, the LIBRA 120 is a 12.1" TFT Intel Socket 370 Celeron/Pentium III or Socket 478 Celeron-based mini Kiosk. By integrating a thermal receipt printer and a swipe card reader, the LIBRA Kiosk can be used as a point of sale and point of information solution for bankers, photo processors, retailers, photo kiosk operators, OEMs, and POS manufacturers... etc.... With changeable front bezel design, the LIBRA can be easily tailored to accommodate different peripheral devices to meet specific environmental requirements.

Fully configurable and with its sleek outlook, the LIBRA is an ideal platform for any space-constricted retail application

1.2. What Covers in this Manual

This handbook contains most information you need to set up and use the LIBRA IV system. **Only service technicians are allowed to open the system for service.** You do not need to read everything in this handbook to use the system.

Chapter 1 (the current chapter) provides background information and detail specification on the LIBRA III.

Chapter 2 identifies the LIBRA system exterior components and provides instructions to help you to use the system as soon as possible.

Chapter 3 helps you to recognize the LIBRA system internal modules. It also provides the installation procedures including the panel PC, display module and peripheral modules.

Chapter 4 provides detail information of the jumper settings and connector signals of the system control board.

Chapter 5 explains the AWARD BIOS setup.

Chapter 6 introduces the Ethernet, XGA, audio and touchscreen drivers.

Appendix A details the 12.1" LCD specifications.

Appendix B introduces the system's onboard DIO.

Appendix C introduces the DiskOnChip® installation.

Appendix D introduces the Wake-On-LAN feature.

Appendix E describes the system IO port address

Appendix F explains the first MB memory map.

Appendix G provides the specifications for the built-in power supply.

Appendix H provides the specifications for the 8-in-1 card reader.

Appendix I provides the specifications for the thermal printer.

1.3. Specifications

LIBRA III: 12.1" TFT Intel® Socket 370 Celeron Mini Kiosk Display Module

u LCD

- ² 12.1" color TFT, 800*600
- ² Luminance (cd/m2): 150 or above
- ² Simultaneous mode: yes

u Touchscreen

- ² 12.1" analog resistive type with RS-232 controller
- ² 12.1" capacitive type with RS-232 controller

Panel PC

u Motherboard: PC620

u CPU (Socket 370):

- ² Intel Pentium III FCPGA 1GHz/133MHz
- ² Intel Pentium III FCPGA 650-933/133MHz
- ² Intel Pentium III FCPGA 500E-850E/100MHz
- ² Intel Celeron FCPGA 800MHz-1.10GHz/100MHz
- ² Intel Celeron FCPGA 533MHz-766MHz/66MHz
- ² Intel Celeron PPGA 300A-533MHz/66MHz

u System Chipset: Intel 815E

u System BIOS: Award PnP Flash BIOS

u System Memory: 2*168pin DIMM socket supporting SDRAM up to 512MB

u L2 Cache: CPU built-in

u Ethernet

- ² 100/10 Base-T Ethernet with RJ-45 phone jack
- ² Supports WAKE-ON-LAN

u Display

- 2 Novatek NT68521 scaler
- 2 LVDS/24 bit TTL LCD Interface via jumper setting
- 2 Integrated 2D/3D graphics engine, 4X AGP
- 2 Share system memory architecture able to utilize the display memory size up to 64MB

u Standard I/O (Inside the Kiosk cabinet)

- 2 Serial ports*4: COM 1, 2 & 4 with +5V/12 power output on pin #9, COM 3 internal type reserved for touchscreen, COM2 RS-232/485 jumper selectable
- 2 Parallel Port*1: supports SPP/EPP/ECP
- 2 External FDD Interface*1
- 2 +5V/+12V DC-out*1
- 2 PS/2 Keyboard Interface*1
- 2 PS/2 Mouse Interface*1
- 2 DIO: Input*2, output*2
- 2 USB Interface*2
- 2 VGA Interface*1
- 2 Brightness VR*1
- 2 Speaker-out, MIC-in, Line in

u Audio Function

- 2 Full duplex and independent sample rate converter for audio recording & playback
- 2 Supports Microsoft DirectSound
- 2 3D positional audio effects
- 2 Hi-performance, mixed-signal, stereo
- 2 MIC-In, Speaker-Out, Line-In
- 2 Pin header for CD-audio in

u Hardware Monitor

- ² Monitoring processor & system
- ² Monitoring 5VSB, VBAT, 1.5V, 3.3V, +5V, +12V, -12V, and processor voltages
- ² Monitoring processor, chassis fan speeds
- ² Controlling processor, chassis fan speed and failure alarm
- ² Automatic fan on/off control
- ² Read back capability that displays temperature, voltage and fan speed
- ² Supporting Intel processor thermal diode output (real processor temperature)

u Power Supply: ATX 180W, input range, 100~240VAC

u Drive Bay

- ² 3.5" HDD*1
- ² Slim CD-ROM or equivalent device*1

u Speakers*2

u External USB*2

u Front Bezel options

- ² Printer bezel
- ² Media card reader bezel

PERIPHERAL DEVICES (optional)

- u** Magnetic card reader – swipe type, track I, II & III
- u** Thermal receipt printer (Printer bezel)
- u** 8-in-1 media reader (Card reader bezel)

MECHANICAL & ENVIRONMENTAL

Construction: heavy-duty steel

Dimension: 350 x 365 x 295 mm (W*H*D)

§ *Specifications are subject to change without notice.*

2. USING THE SYSTEM

- u Identifying the LIBRA Kiosk
- u System setup for the first-time use

2.1. Identifying the System

The LIBRA Kiosk features with changeable front bezel design able to accommodate different peripherals to fit into specific business requirements. It has two standard front bezel options; one is LIBRA with *printer bezel* to accommodate an Epson open-framed thermal receipt printer as illustrated in Fig. 2-1 and the other is LIBRA with *media card reader bezel*, to accommodate an 8-1 media card reader as illustrated in Fig. 2-2.

Due to the Kiosk cabinet internal space restriction, when the LIBRA is integrated with the receipt printer, no internal media card reader can be integrated into the Kiosk cabinet and the internal slim CD-ROM needs to be installed with the panel PC module and to be accessed from the right side of the Kiosk cabinet. When the LIBRA unit is integrated with an 8-1 media card reader, no internal thermal receipt printer can be installed into the Kiosk cabinet and the internal slim CD-ROM can be integrated with the media reader from easy access from the front.

Before getting started, take a moment to familiarize yourself with the LIBRA system with different peripheral bezels.

2.1.1. Front View

When the LIBRA with printer bezel is put upright on the desktop, its front view appears as below.



FIGURE 2-1: LIBRA W PRINTER BEZEL FRONT VIEW

When the LIBRA with media card reader bezel is put upright on the desktop, its front view appears as below.



FIGURE 2-2: LIBRA W MEDIA CARD READER BEZEL FRONT VIEW

2.1.2. Side Views

The left side of the LIBRA appears as below:



FIGURE 2-3: SIDE VIEW

2.1.3. Dimension

The mini Kiosk cabinet size is shown below.

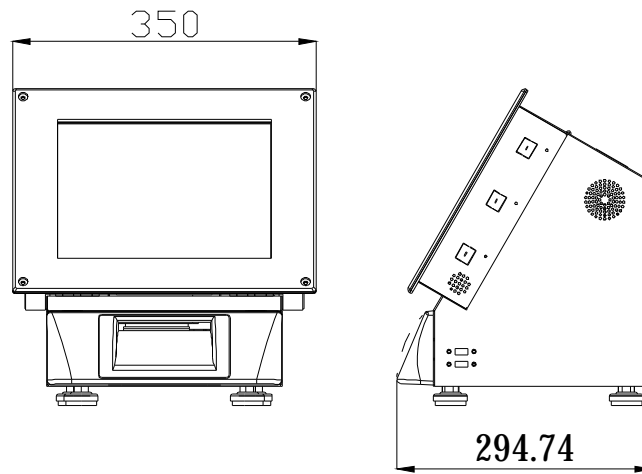


FIGURE 2-4: DIMENSION DRAWING

2.1.4. Wall Mounting

At the rear side of the cabinet, there are four avocado-shape holes reserved for system's wall mounting.

The following figure illustrates the distance between the avocado holes.

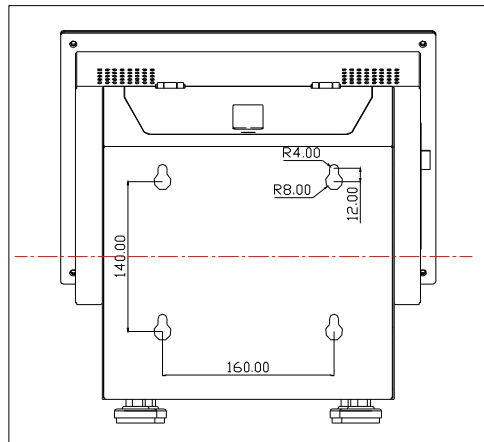


FIGURE 2-5: WALL MOUNT DRAWING

2.1.5. Panel PC I/O Outlets

When you open the security door or lift the display module upwards, you will find the power switch and all the I/O ports of the panel PC are located at upper side of the Kiosk. The following figure illustrates the LIBRA's I/O arrangement.

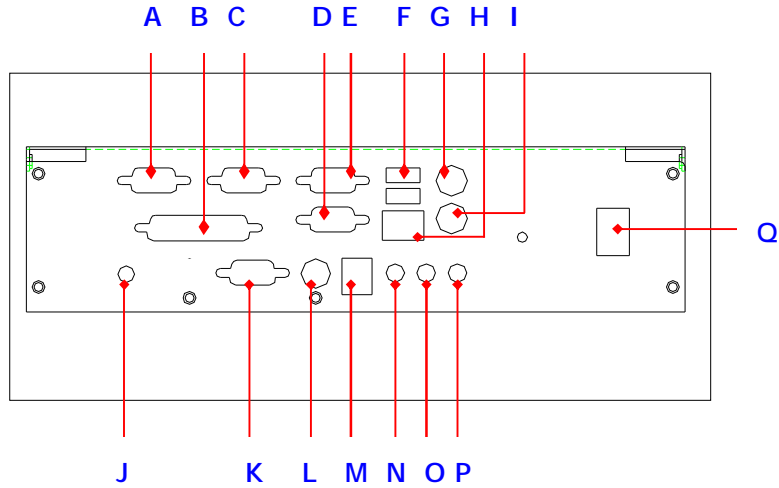


FIGURE 2-6: I/O ARRANGEMENT

- | | | |
|------------------|-----------------|---------------------|
| A. VGA PORT | B. PRINTER PORT | C. COM 4 |
| D. COM 2 | E. COM 1 | F. USB*2 |
| G. PS/2 KEYBOARD | H. PS/2 MOUSE | I. ETHERNET (RJ-45) |
| J. VR BRIGHTNESS | K. EXTERNAL FDD | L. +5/12V DC-OUT |
| M. 2-CHANNEL DIO | N. MIC-IN | O. LINE-IN |
| P. SPEAKER-OUT | Q. POWER SWITCH | |

2.2. System Setup for the First-time Use

To set up the LIBRA system for the first-time use, you should have the following items ready. The items are either in the accessory box or available in any computer stores.

- u 110V or 220V power cord
- u PS/2 keyboard or USB keyboard
- u PS/2 mouse or USB mouse

2.2.1. Installation Procedures

The LIBRA system can be powered by an AC electrical outlet (115~230V/4A @47/63Hz). Be sure to use the right power cord (110V or 220V) for connection.

1. Insert the 3-pin female end of the power cord to the Kiosk cabinet from the rectangle opening located at the left rear side of the cabinet and have it connected to the power inlet of the power supply.
2. Connect the 3-pin male end of the power cord to an electrical outlet.
3. Open the Kiosk security door at the upper side. Connect a PS/2 keyboard and a PS/2 mouse to the PC's PS/2 ports. Or connect a USB keyboard and mouse to the USB ports located at the right side of the Kiosk cabinet.
4. Power on the system by switching the power switch located at the I/O board.

2.2.2. Running the BIOS Setup

If you are a commercial user, the LIBRA system should have been properly set up and configured by your dealer. You may still find it necessary to change the system configuration information. In this case, you need to run the system's BIOS setup program.

Under the following conditions, the CMOS settings are to be changed.

1. The system is starting for the first time.
2. The hardware devices attached to the LIBRA III system have been changed.
3. The CMOS memory has lost power and the configuration information has been erased.

The BIOS setup program is stored in ROM, which can be accessed by pressing key on the keyboard immediately when the system is powered on.

In order to retain the specified setup information when the system power is turned off, the system setup information is stored in a battery-backed CMOS RAM. The battery is to ensure the settings will not be erased when the computer is turned off or reset. When the computer is powered on again, the system will read the settings stored in the CMOS RAM and compare them to the equipment check conducted during the power on self-test (POST). If any error or mismatch occurs, an error message will be shown on the screen and the computer will be prompted to run the setup program.

To change the BIOS setup, please refer to Chapter 7 for more information.

2.2.3. Operating System and Driver Installation

The LIBRA III system is not equipped with an operating system when delivered from the original manufacturer. If you are a commercial user, the system is likely to have been pre-installed proper operating system and software drivers by your dealer or system integrator.

If the system is not pre-installed with any system OS and drivers or you intend to install your preferred ones, there are several ways to load OS and software into the system.

1. Via an USB data-retrieval devices
2. Via the CD-ROM
3. Via Ethernet: You can boot up the system via Ethernet bootrom (optional) and download system OS or software from the network.

Recent releases of operating systems always include setup programs that load automatically and guide you through the installation. You can also refer to your OS user manual for instructions on formatting or partitioning the hard disk drive before any software installation.

The LIBRA III system provides the following utility drivers stored in the CD-ROM diskette or utilities diskettes;

- 2 Ethernet utilities
- 2 VGA utilities
- 2 Audio drivers
- 2 Touchscreen drivers
- 2 Printer drivers

3. HARDWARE INSTALLATION AND UPGRADE

This chapter overviews the installation of the LIBRA III's internal components and devices.

Sections include:

- u Panel PC assembly
- u Display assembly
- u Peripheral assembly
- u Kiosk cabinet assembly

The LIBRA Kiosk has two standard front bezels; one for thermal receipt printer and the other for media card reader. Due to Kiosk cabinet space limitation, the standard LIBRA cabinet can only accommodate either a receipt printer or a media card reader. Both peripherals cannot be housed in the cabinet at a given time.

When the Kiosk unit is accommodated with *thermal printer*, it is mainly composed of 2 major modules, one panel PC module and the other Kiosk cabinet module.

The panel PC module with *printer bezel* is made of five individual modules:

1. Touchscreen module
2. LCD module
3. Motherboard module
4. I/O module
5. CD-ROM module

The Kiosk cabinet module with *printer bezel* is made of four individual modules,

1. Kiosk cabinet module
2. HDD module
3. Power supply module
4. Thermal Printer module

When the Kiosk unit is accommodated with *media reader*, it is mainly composed of 2 major modules, one panel PC module and the other Kiosk cabinet module.

The panel PC module with *media card reader bezel* is made of four individual modules:

1. Touchscreen module
2. LCD module
3. Motherboard module
4. I/O module

The Kiosk cabinet module with *media card reader bezel* is made of four individual modules,

1. Kiosk cabinet module
2. HDD module
3. Power supply module
4. Media card reader and CD-ROM module

The two major modules are to be made first, and then integrated together to make a complete unit.

The assembly of LIBRA with printer bezel is basically same to that of LIBRA with media reader except the assembly of the printer, CD-ROM and media card reader.

3.1. Panel PC Assembly

The LIBRA's panel PC is composed of several modules including a touchscreen module, LCD module, motherboard module, I/O module and door module.

3.1.1. Touchscreen Module

The following steps illustrate the ways to integrate the touchscreen module. Refer to Fig. 3-1.

1. Integrate the acrylic bezel (A) to the metal bezel (B) with four bolts.
2. There are 4 one-side adhesive rubber strips. Attach the 4 rubbers to the front bezel (B). The 4 rubbers act as bumpers to absorb the pressure when the touchscreen is fixed to the front bezel.
3. There are 4 metal brackets (D) used to fix the touchscreen to the front bezel. The metal brackets have to be taped with foam sponge strips. The foam sponges are used to absorb the pressure when the metal brackets fix the touchscreen to the front bezel.
4. Fix the touchscreen (C) to the front bezel with the four metal brackets and retain them together.
5. Make sure the touchscreen flat cable comes out from the small opening of the touch bracket on the right side.

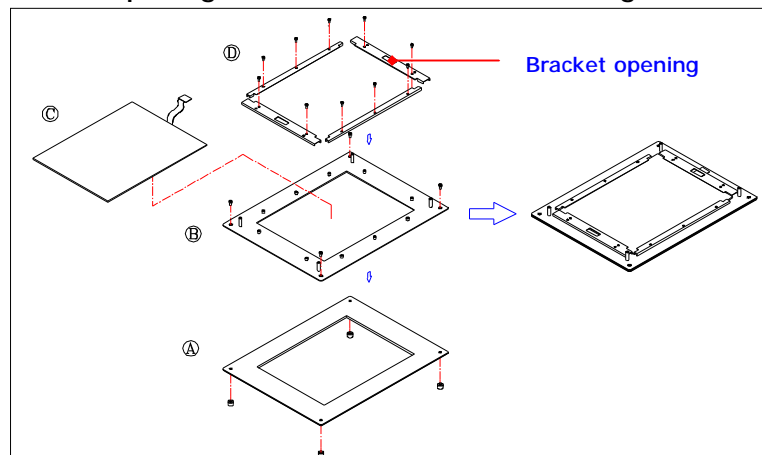


FIGURE 3-1: TOUCHSCREEN MODULE ASSEMBLY

3.1.2. LCD Module Assembly

The following steps illustrate the sequences to assemble the LCD module. Refer to Fig. 3-2.

1. Attach the insulator to the inverter (A).
2. Retain the inverter to the LCD holder (C) with two PMS M3*6 screws. The inverter cable (8) is a 4-pin to 4-pin cable with wafer connectors at both sides. Connect one end to inverter first. The other end is to go through the rectangle opening of the LCD holder to the reverse side for later connection to motherboard.
3. The standard LCD used in LIBRA 120 is TORISAN MXS121022010 or its equivalent. It is a TTL interface LCD. The LCD cable is a 35 cm DF9-41S to DF13-40 cable. Plug the DF9-41S end to the 41-pin connector at the rear side of the LCD panel. The DF11-30 end is to go through the rectangle opening (D) of the LCD holder to the reverse side for later connection to the motherboard. *MAKE SURE THE LCD JUMPER IS SET PROPERLY TO THE TTL MODE.*
4. Retain the LCD (B) to the LCD holder with four PMS M3*6 screws.
5. Connect the pink-white wires from the LCD to the inverter.

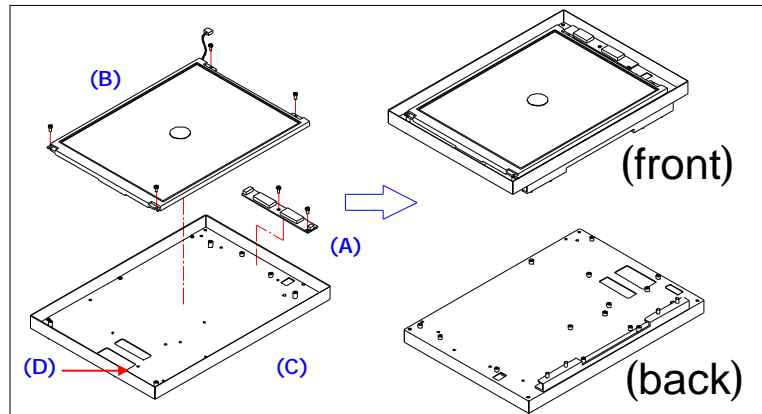


FIGURE 3-2: LCD MODULE ASSEMBLY

After finishing the LCD module assembly, the module is to be integrated to the touchscreen module to make a complete display module.

6. Use special air blower to blow any dust between the LCD and touchscreen before the two modules are assembled together.
7. Retain the LCD module (Fig. 3-4, B) and the touchscreen module (Fig. 3-4, A) together with four PMS M3*8 screws. Make sure the touchscreen flat cable is coming through the opening at the LCD holder (Figure 3-2, C) for later connection to the touchscreen controller.

If you reverse the complete display module at this time, you will see three cables, LCD cable, inverter cable and touchscreen flat cable come out from the rear-side opening (D) of the LCD holder.

3.1.3. MB & Touch Controller Assembly

3.1.3.1. Installing the CPU

The LIBRA III's motherboard, PC620 can adapt Socket 370 Intel® Celeron® or Pentium III CPU. Upgrading the CPU can increase the system performance.

The motherboard provides one 370-pin ZIF socket (Socket 370). The CPU must come with a CPU fan with a heat sink on to avoid overheating.

To install a CPU or upgrade a new CPU, follow the instructions below.

1. If there is an existing CPU on the socket, remove the CPU cooling fan first. Then remove the CPU by pulling the lever out a little and raising it, then lifting out the existing CPU from the socket.
2. To insert the CPU into the socket, the notch on the corner of the CPU (the corner with golden dot) should point toward the end of the socket lever. If the insertion of the CPU to the socket is not easy, check whether the CPU pins correspond with the holes on the socket.
3. After inserting the CPU into the socket, pull the lever down to make sure the CPU is in place.
4. The CPU cooling fan comes with a 3-pin power wire. Connect the power wire to the 3-pin power connector on the motherboard. Tie the power wires together with a nylon cable tie.
5. There are two silver clips on the CPU socket. Make sure the cooling CPU fan clips click into place.

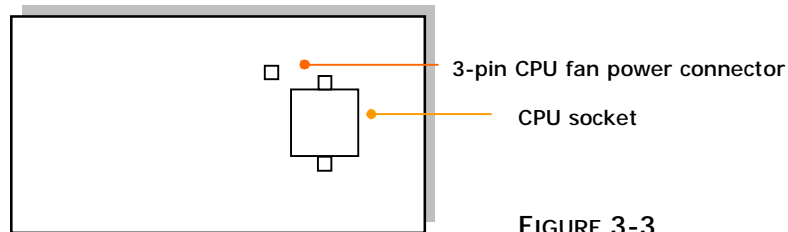


FIGURE 3-3

3.1.3.2. Installing the SDRAM Memory Module

The panel PC's control board provides 2 x 168-pin DIMM socket, able to support SDRAM memory from 32MB up to 512MB. To install the memory module, follow the instructions below.

1. Find the 168 pin DIMM socket on the motherboard
2. There are two white eject levers at each end of the DIMM socket. Push them outward until they separate from the two vertical posts.
3. Holding the memory module with the notch on the upper right corner, then insert the memory module into the DIMM socket at 90° angle.
4. Push the two eject levers toward the vertical posts until they click into place. The memory module is now upright.
5. Retain the memory module to the SDRAM socket by firmly fastening the SDRAM and the eject levers together with nylon cable ties.

The system is able to auto detect the new memory size and there is no need to change the system configuration after installation.

Make sure that the memory module you are using can handle the specified SDRAM MHz. Inadequate memory module will make the computer unable to boot up.

PLEASE NOTE THAT ALTHOUGH THE MOTHERBOARD HAS TWO 168-PIN DIMM SOCKETS, YET DUE TO CHIPSET LIMITATION, THE MAXIMUM MEMORY CAPACITY SUPPORTED IS 512MB. IF TWO 512MB SDRAM MODULES ARE INSERTED, ONLY 512MB SIZE CAN BE DETECTED.

3.1.3.3. MB & Touch Controller Assembly

Refer to Fig. 3-4. Follow the steps below to assemble the motherboard to the system chassis. Make sure the CPU with cooling fan and SDRAM are already properly installed to the motherboard before the motherboard is attached to the display metal plate.

1. Reverse the display module with the rectangle openings at the right bottom side. From your point of view, the motherboard module is to be installed to the right upper side of the metal plate.
2. Tape the motherboard insulator to the motherboard (C) first. The insulator is to separate the electronic components on the reverse side of the motherboard from the metal plate to prevent short circuitry caused during system operation.
3. Fix the motherboard with an insulator to the chassis with nine PMS M3*6 screws.
4. Fix the touchscreen controller (D) to the lower side of the metal plate with four PMS M3*5 screws.

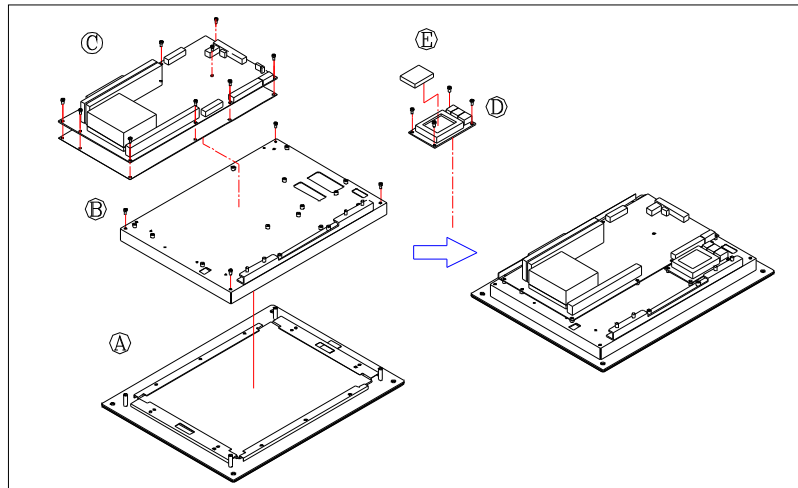


FIGURE 3-4: FRONT BEZEL MODULE ASSEMBLY

After integrating the motherboard and touchscreen controller to the reverse side of the display module, all the cable connection needs to be done.

5. There are three cables, touchscreen flat cable, LCD cable and inverter cable coming out from the rear-side opening of the LCD holder. Connect the other end of the touchscreen flat cable to the 5-pin header connector, **P5** on the touchscreen controller. Connect the DF11-30 end of the LCD cable to the **LCD2** on the motherboard. Connect the 4-pin inverter cable to the motherboard's **INV1**.
6. For Elo resistive touch, the touchscreen cable is a ribbon cable with 2*5 box headers at both side. Connect one end to **P1** on the touchscreen controller with the other end firmly plugged to the motherboard **COM3**.
7. There is a 2-pin (black & red) wire to provide the power source for the touchscreen. Connect the 2-pin touchscreen power wire to **P2** on the touch controller with the other end of plugged to the onboard **CN1**.
8. Connect one end of the 40-pin HDD ribbon cable to the onboard **IDE1**.
9. Connect one the 40-pin end of the CD-ROM ribbon cable to the motherboard **IDE2** connector.
10. There is a 4-pin CD audio-in wire to be plugged to **CD1** on the motherboard.
11. Connect the one end of the Y-shape USB cable the onboard **USB3** and **USB1** connectors. The other ends are for later connection to the exteriors of the Kiosk cabinet for external USB devices.

3.1.3.4. I/O Module Assembly

Refer to Figure 3-5.

1. Attach the IO-005 (A) I/O board to the I/O bracket (C) and fix them together with ten secure bolts.
2. Attach the IO-006 I/O board (B) to the I/O bracket and fix them together with two secure bolts and one FMS 3*5 screws.
3. Link the two IO boards together by plug one end of the 2*22 pin ribbon cable to CN4 on the IO-005 with the other end to CN6 on IO-006.
4. Insert the power switch to the small opening located at the right side of the I/O bracket.

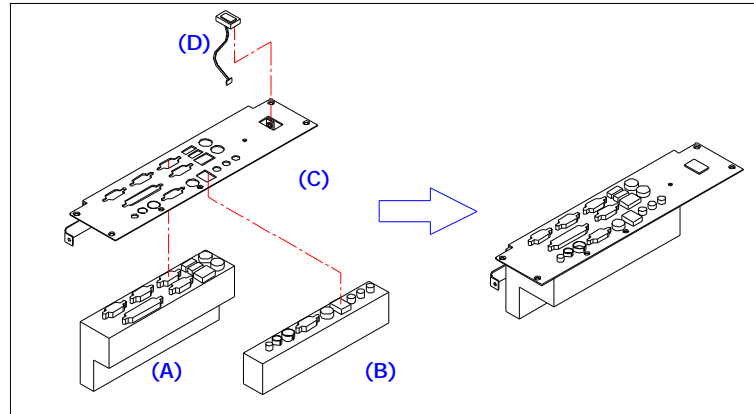


FIGURE 3-5: I/O MODULE ASSEMBLY

3.1.3.5. Security Door Module Assembly

The security door module is to be integrated to the top of Kiosk cabinet to prevent the system I/O ports from unauthorized access. By opening the door, the thermal printer status can also be monitored.

1. Insert the latch set (B) to the door plate (A) and retain them together with a set of small bolt and washer.
2. Retain the two door butt hinges (C) to the plate with two M3 nuts for each.

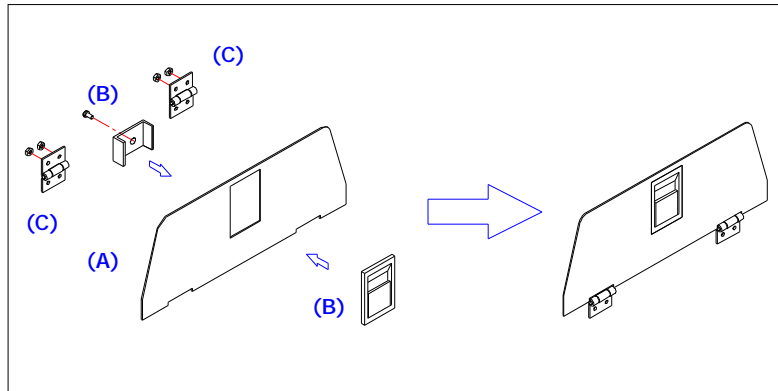


FIGURE 3-6: SECURE DOOR ASSEMBLY

3.1.3.6. CD-ROM Module Assembly

The LIBRA Kiosk provides enough space to accommodate a slim CD-ROM or an equivalent device.

If a thermal receipt printer is integrated with the Kiosk, due to space limitation, the slim CD-ROM device is to be installed in the panel PC chassis as illustrated in Fig. 3-8 and accessed from the right side of the Kiosk cabinet. If no receipt printer is integrated with the Kiosk, the slim CD-ROM device can be integrated with the media card reader module and accessed from the front side.

Refer to Fig. 3-7. The following steps show the ways to install a CD-ROM module before it is integrated to the panel PC.

1. Attach the CD-ROM board to the slim CD-ROM drive (A) and fix them together with 2 screws.
2. There is a small metal bracket (B) used to firmly fix the CD-ROM drive to the CD-ROM bracket. Retain the small bracket to the CD-ROM drive first with two IMS M2*2.25 screws. This small bracket is to prevent the CD-ROM drive from moving when installed to the CD-ROM bracket.
3. Insert the CD-ROM module with a small bracket on to the CD-ROM bracket (C) and fix them together with two IMS M2*2.25 screws and two PMS M3*5 screws.

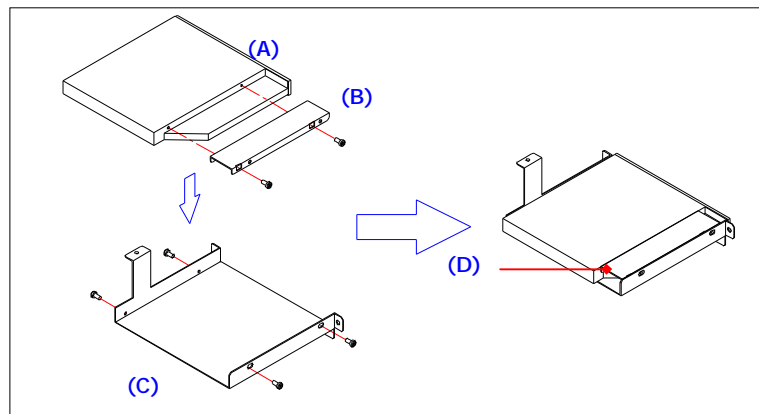


FIGURE 3-7: SLIM CD-ROM MODULE ASSEMBLY

3.1.4. Panel PC Module Assembly

The panel PC's individual modules are now ready to be integrated to a complete panel PC module. Refer to Fig. 3-8.

1. Install the two speakers (B) to the chassis (C) with two TMS MS*5 screws for each.
2. Attach the metal support bracket (G) to the chassis with one TMS M3*4 screw with washer.
3. Integrate the CD-ROM module (D) to the chassis with two TMS M3*4 screws. *If the LIBRA unit is with media reader bezel, for easy access, the CD-ROM is integrated with the media reader module instead.*
4. Retain the chassis to the front bezel module (A) with five PMS M3*6 screws.
5. Connect the other ends of the two 2-pin speaker wires to CN4 on the motherboard. The wire for the left speaker is plugged to pin# 13, 15 and the wire for the right speaker to pin# 14, 16 on CN4.
6. Connect the other end of the 40-pin IDE ribbon cable to the CD-ROM board. Plug the other end of the CD-Audio wire to the 4-pin black pin connector on the CD-ROM board.
7. Plug I/O module (F) to the IOINF 1 slot on the motherboard. Retain the I/O module to chassis with five FMS M3*5 screws. If no CD-ROM is accommodated with the system, only four screws are needed to retain the I/O module to the chassis.

8. Connect the other end of the power switch wire form the I/O module to the 2-pin POWER ON switch, **CN3** on the motherboard
9. Fix the service door plate (E) to the chassis with four M3 nuts.

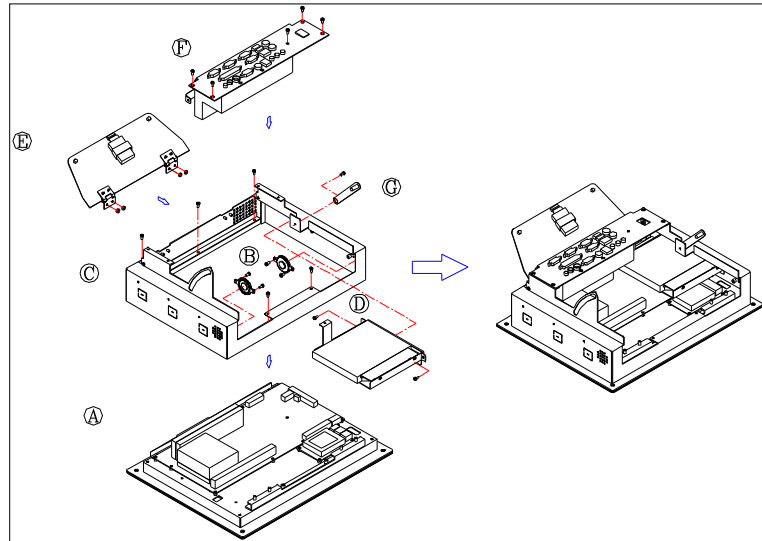


FIGURE 3-8: PANEL PC MODULE ASSEMBLY

3.2. Kiosk Cabinet & Peripheral Assembly

The Kiosk cabinet contains several individual modules including HDD module, power supply module, thermal printer module or media card reader and the cabinet module. These modules are to be made first; then integrated to make the Kiosk cabinet module.

3.2.1. HDD Module Assembly

Fix the hard disk drive to the HDD bracket with three FTS 3*5 screw as shown on Fig. 3-9.

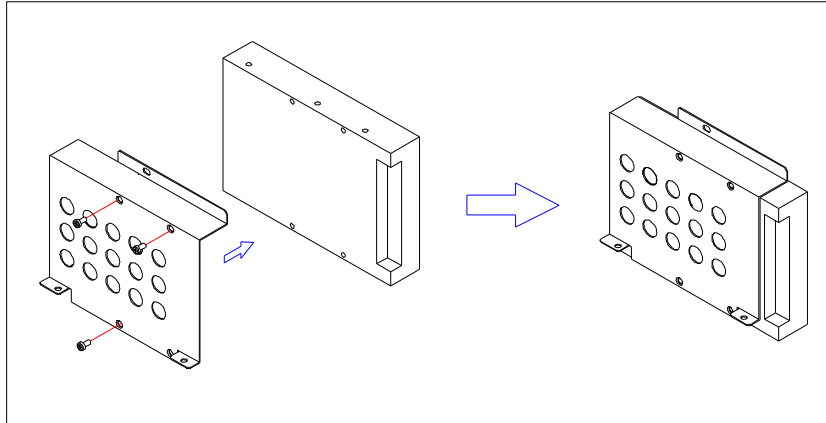


FIGURE 3-9: HDD MODULE ASSEMBLY

3.2.2. Power Module Assembly

The power supply is to be integrated with the power bracket before it is installed to the Kiosk cabinet. The following diagram shows the steps to assemble the ATX power module. For the specification of the power supply, please refer to APPENDIX.

1. Insert the power supply to power bracket and fix them together with one FMS M3*5 screw and two FMS 6#32 5L screws.
2. Attach a nylon adhesive mounting base to the surface of the power bracket.
3. Anchor the power wire bundle to the mounting base with a cable tie.

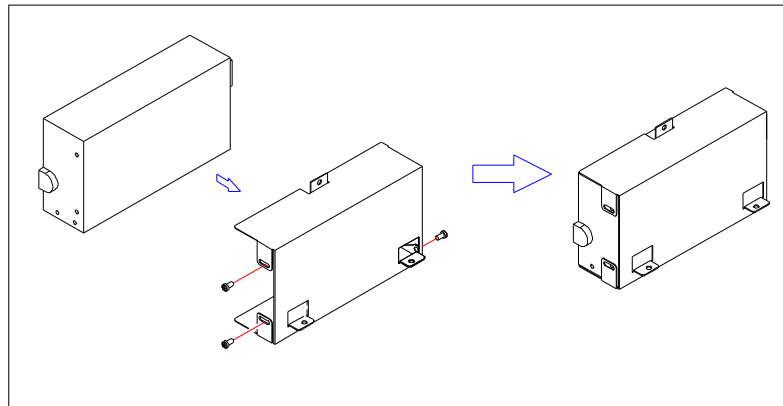


FIGURE 3-10: POWER SUPPLY MODULE ASSEMBLY

3.2.3. Printer Module Assembly

The printer module consists of two individual modules, one printer module and the other printer power module.

3.2.3.1. Printer Module Assembly

Figure 3-11 illustrates the way to assemble the printer module.

1. Plug the other end of the 6-pin LED cable to **C2** on the printer control board. Plug one end of the big 4-pin printer power cable to the onboard **CN4**. Bundle the two cables together with a plastic clamp.
2. Insert one end of the 21-pin and 15-pin flat cables to **CN6** and **CN7** on the printer control board BA-T500 (A).
3. Retain the control board to the printer bracket from the bottom side with four PMS M3*5 screws (B). Make sure the other ends of the 21-pin and 15-pin flat cables come out from the rectangle opening at the right side of the bracket.
4. Fix the paper tray (F) to the metal bracket (E) with two M3*2 nuts.
5. Connect the other ends of the 21-pin and 15-pin flat cables to the printer module (D). Fix the printer module (D) to the module bracket (E) with four TMS 3*6 screws.
6. Retain the printer module (G) to the printer bracket (B) with four TMS M3*6 screws. Fix the 21-pin and 15-pin flat cables on the exterior of the printer bracket (B) with two nylon cable clips.
7. Fix the two paper roll brackets (C) to the printer bracket with two TMS M3*6 screws for each.
8. Insert the spindle (I) to the paper roll (H) and have the paper roll module put to the paper roll brackets.
9. Align the thermal paper to the paper tray (F) to make sure the paper would go smoothly into the printer module.
10. Plug the 40-pin end of the printer cable to the printer module.

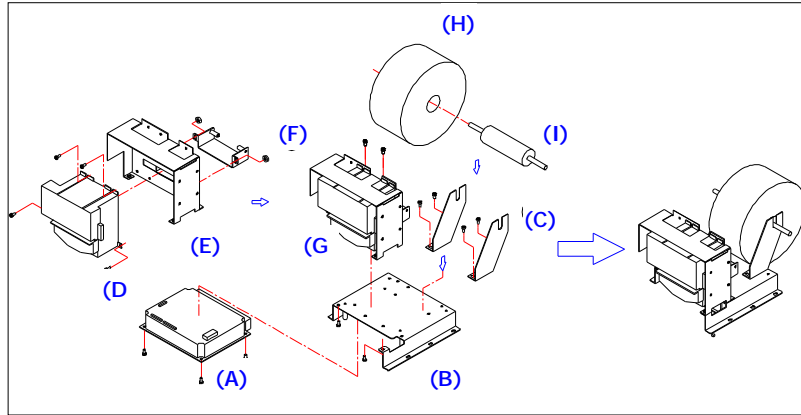


FIGURE 3-11. PRINTER MODULE ASSEMBLY

3.2.3.2. Printer Power Module Assembly

1. Fix the LED board, LPT-001 (A) to the printer power bracket (C) with two PMS M3*5 screws. The tack switch is used to control the back and forth of the thermal paper. The green LED is to indicate the printer power-on status and the two red LEDs are indicators for the thermal paper status.
2. Fix the printer power board, PW-001 (B) to the reverse side of the power bracket with two PMS M3*5 screws. The power board is used to transform the panel PC's 12V power to 24V to provide necessary power source for the thermal printer.

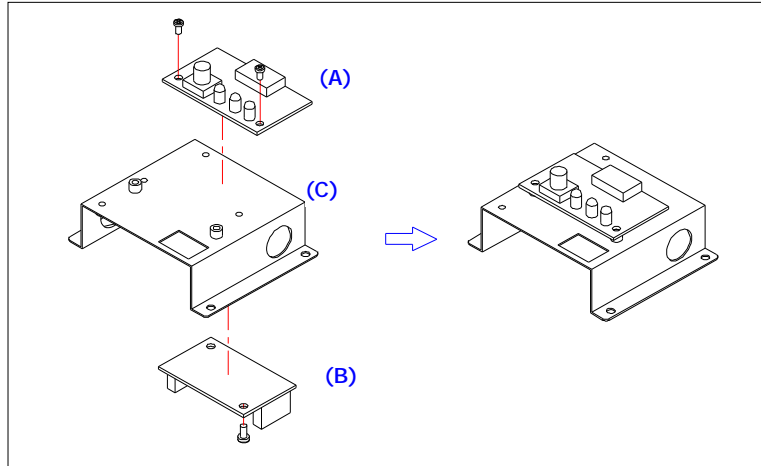


FIGURE 3-12: PRINTER POWER MODULE ASSEMBLY

Due to space restriction of the Kiosk cabinet, all the cable connection between the printer and the printer power modules needs to be done before the two modules are integrated to the Kiosk cabinet.

3. Connect the other end of the 6-pin LED cable from the printer module to **CN4** on the LPT-001 board (B).
4. Connect the 6-pin wafer connector of the power cable from the printer module to **CN1** on PW-001 board (A).
5. There is a Y-shape power cable. Connect the 8-pin wafer end to **CN2** on the PW-001 board.

3.2.4. Media Reader/CD-ROM Module Assembly

Refer to Fig. 3-7. The following steps show the ways to install a media reader/CD-ROM module before it is integrated to the panel PC.

1. Insert the media reader (B) to the media reader/CD-ROM bracket and fix them together with four TMS 3*6 screws.
2. Attach the CD-ROM board to the slim CD-ROM drive (C) and fix them together with 2 screws.
4. There is a small metal bracket (D) used to firmly fix the CD-ROM drive to the bracket. Retain the small bracket to the CD-ROM drive first with two IMS M2*2.25 screws. This small bracket is to prevent the CD-ROM drive from moving when installed to the device bracket.
5. Insert the CD-ROM module with a small bracket on to the media reader/CD-ROM bracket (A) and fix them together with two IMS M2*2.25 screws and two PMS M3*5 screws.

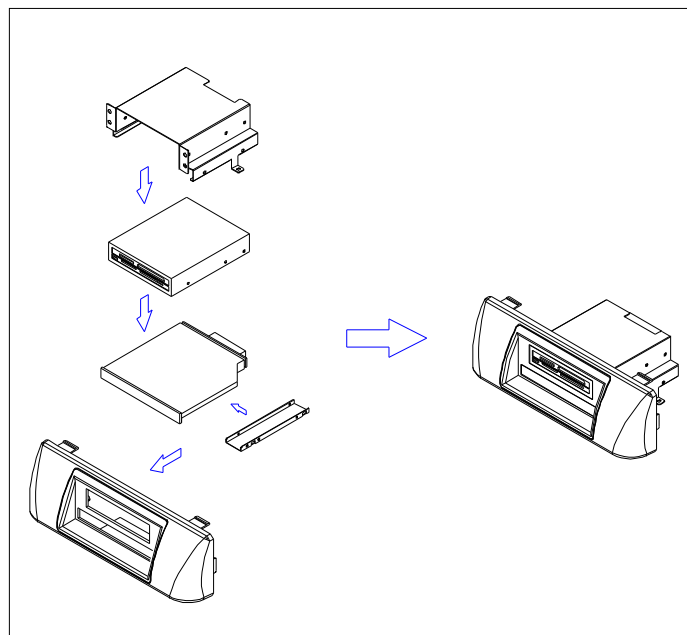


FIGURE 3-13. MEDIA READER/CD-ROM MODULE ASSEMBLY

3.2.5. Kiosk Cabinet Integration

The Kiosk cabinet integration of printer bezel model slightly differs from that of the media reader bezel model.

Before integrating the three modules into the Kiosk cabinet, some accessories need to be installed to the cabinet first.

3.2.5.1. LIBRA with printer bezel integration

Refer to Fig. 3-14.

1. The first parts to be assembled to the Kiosk cabinet are four M8*23.7 rubber feet. Acting as bumpers to prevent the table surface from abrading by the metal base of the Kiosk cabinet, the rubber feet are simply to be driven tightly to the metal cabinet from the base (A).
2. Fix the two butt hinges (B) to the cabinet with two M3 K-lock nuts for each. The K-lock nuts are zinc-plated nuts with attached free-spinning external teeth lock washer. The external teeth are used for locking and tension. The two butt hinges are used to retain the panel PC module to the cabinet later.
3. Fix the metal bracket (C) to the cabinet with two TMS M3*4 screws. This metal strip is used to click the plastic printer bezel (M) into the Kiosk cabinet.
4. Connect the two USB cables to the USB outlets (D) located at the right side of the cabinet.
5. Retain the support bracket catch (E) to the left side of the cabinet with two M3 nuts. This bracket is used to accommodate the support bracket (Fig. 3-8, G) to sustain the PC module when it is integrated to the Kiosk cabinet.
6. Fix the heat pipe (F) to the left bottom side of the cabinet with two M3 nuts. The heat pipe is used to direct the cabin heat generated by the power supply out of the cabinet.
7. The Kiosk cabinet provides one 50*50*10mm cooling fan (G) to accelerate the cabin ventilation. Attach this cooler to the right side of the Kiosk cabinet with four M3 nuts.

8. Insert the power cord (H) from the opening at the left bottom side of the cabinet. Connect the power cord to the power module and integrate the power module (I) to the left bottom side of the cabinet with three TMS M3*6 screws.
9. Fix the HDD module (J) to the right bottom side of the cabinet with three TMS M3*6 screws. Connect the big 4-pin power cable from the power module to the HDD.
10. Make sure all the cables from the printer power module (K) to the printer module (L) are already properly connected.
11. Integrate the printer power module (K) to the left upper side of the cabinet with three M3 nuts. Retain the printer module (L) to the bottom of the cabinet with four TMS M3*4 screws.
12. Plug the 4-pin male end of the Y-shape extension cable from the printer power board to the big 4-pin female end of the power supply.
13. Attach the plastic printer bezel (M) to the Kiosk cabinet front side and clip it into place.

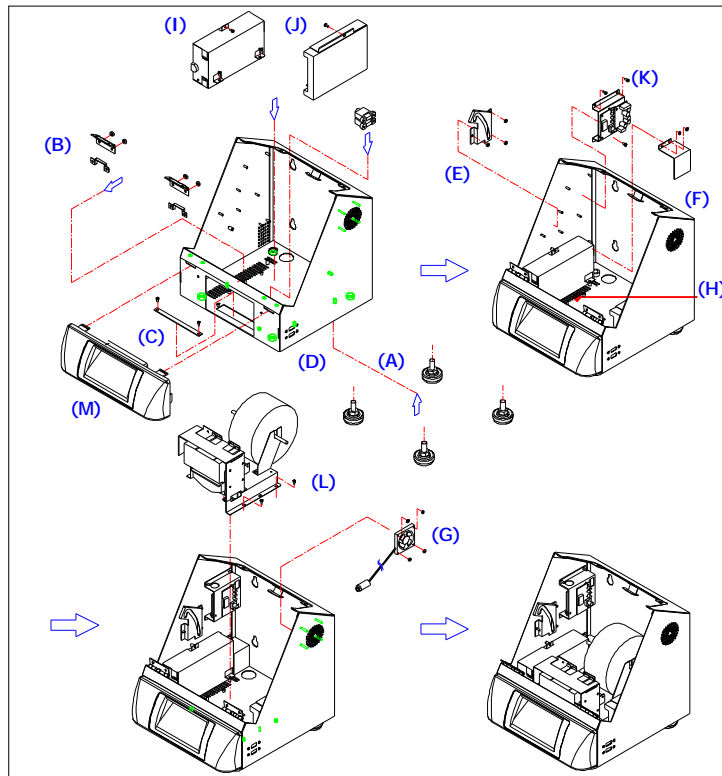


FIGURE 3-14: KIOSK ENCLOSURE W PRINTER BEZEL ASSEMBLY

3.2.5.2. LIBRA with Media reader bezel integration

The Kiosk cabinet integration of media reader bezel model is basically same to that of the printer bezel model except for the peripheral modules and front bezel integration.

Before integrating the three modules into the Kiosk cabinet, some accessories need to be installed to the cabinet first. Refer to Fig. 3-15.

1. The first parts to be assembled to the Kiosk cabinet are four M8*23.7 rubber feet. Acting as bumpers to prevent the table surface from abrading by the metal base of the Kiosk cabinet, the rubber feet are simply to be driven tightly to the metal cabinet from the base (A).
2. Fix the two butt hinges (B) to the cabinet with two M3 K-lock nuts for each. The K-lock nuts are zinc-plated nuts with attached free-spinning external teeth lock washer. The external teeth are used for locking and tension. The two butt hinges are used to retain the panel PC module to the cabinet later.
3. Fix the metal bracket (C) to the cabinet with two TMS M3*4 screws. This metal strip is used to click the plastic media reader bezel (M) into the Kiosk cabinet.
4. Retain the support bracket catch (E) to the left side of the cabinet with two M3 nuts. This bracket is used to accommodate the support bracket (Fig. 3-8, G) to sustain the PC module when it is integrated to the Kiosk cabinet.
5. Fix the heat pipe (F) to the left bottom side of the cabinet with two M3 nuts. The heat pipe is used to direct the cabin heat generated by the power supply out of the cabinet.
6. The Kiosk cabinet provides one 50*50*10mm cooling fan (G) to accelerate the cabin ventilation. Attach this cooler to the right side of the Kiosk cabinet with four M3 nuts.

7. Insert the power cord (H) from the opening at the left bottom side of the cabinet. Connect the power cord to the power module and integrate the power module (I) to the left bottom side of the cabinet with three TMS M3*6 screws.
8. Fix the HDD module (J) to the right bottom side of the cabinet with three TMS M3*6 screws. Connect the big 4-pin power cable from the power module to the HDD.
9. Retain the media reader/CD-ROM module (K) to the bottom of the cabinet with four TMS M3*4 screws.
10. Attach the plastic media reader bezel (M) to the Kiosk cabinet front side and clip it into place.

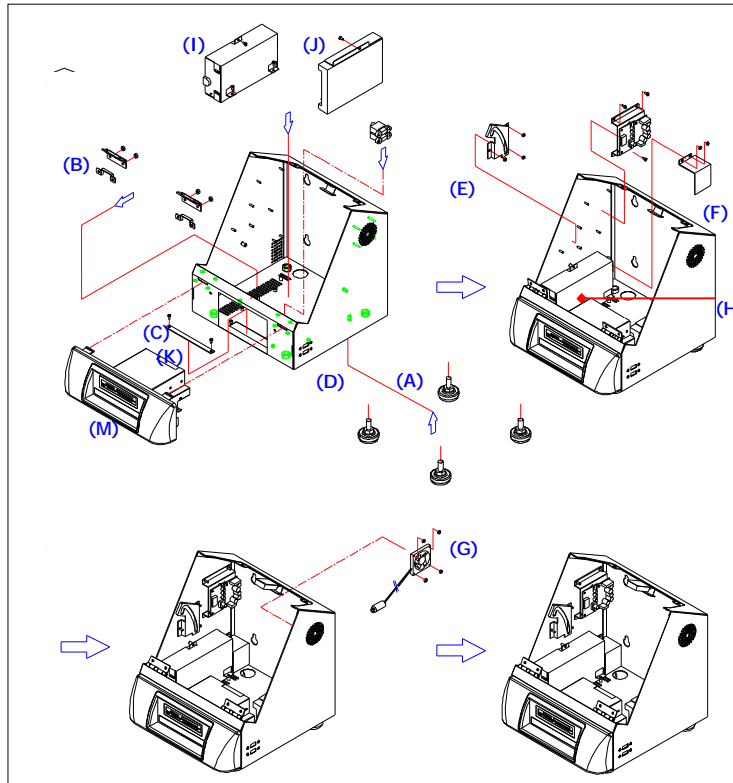


FIGURE 3-14: KIOSK ENCLOSURE W MEDIA READER BEZEL ASSEMBLY

3.3. Kiosk Integration

The panel PC module and Kiosk cabinet module are now ready for final integration to make a complete Kiosk unit.

1. Retain the panel PC module to the Kiosk cabinet with four M4 nuts.
2. Connect the small 4-pin power cable from the power supply to the CD-ROM board.
3. Plug the ATX power cable from the power supply to the ATX power connector, **ATXP2** on the motherboard.
4. Plug the ATX12V power cable to the ATX12V power connector, **ATXP1** on the motherboard.
5. Connect the HDD ribbon cable from the motherboard's **IDE1** to the hard disk drive.
6. Connect the two USB cables to the USB outlets (Fig. 3-14, 3-15 (D)) located at the right side of the cabinet.
7. Plug the cooling fan power connector to the 5V power port on the I/O board.
8. If a receipt printer is integrated with the Kiosk, plug the DB25 printer cable from the printer module to the PRT port on the I/O board.
9. If other peripherals are integrated with the Kiosk, make sure all the cables and wires are properly connected.
10. Lift the panel PC module upright and leave it ajar from the Kiosk cabinet. Retain the support bracket located at the right side of the chassis to the cabinet with one TMS M3*4 screw and one metal washer.
11. Insert the panel PC support bracket (Fig. 3-8, G) into the bracket catch (Fig. 3-13, E) at the left side of the Kiosk cabinet. The support bracket can slide in the gutter of the catch to control the up and down of the panel PC module. The status of the peripherals inside the cabinet can thus be monitored.

12. Release the PC support brackets. Align the PC module to the cabinet and click it into place. Close the service door at the top by lifting the latch (Fig. 3-6, B) on the door plate a little bit; then clip the door into place.

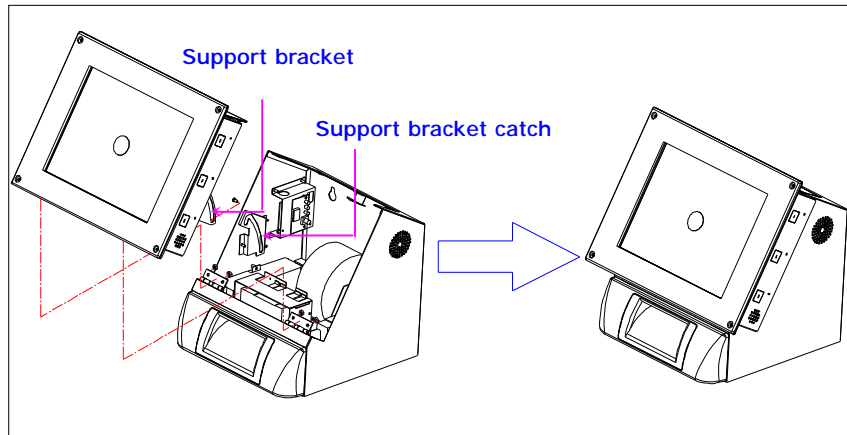


FIGURE 3-15: LIBRA W PRINTER BEZEL ASSEMBLY

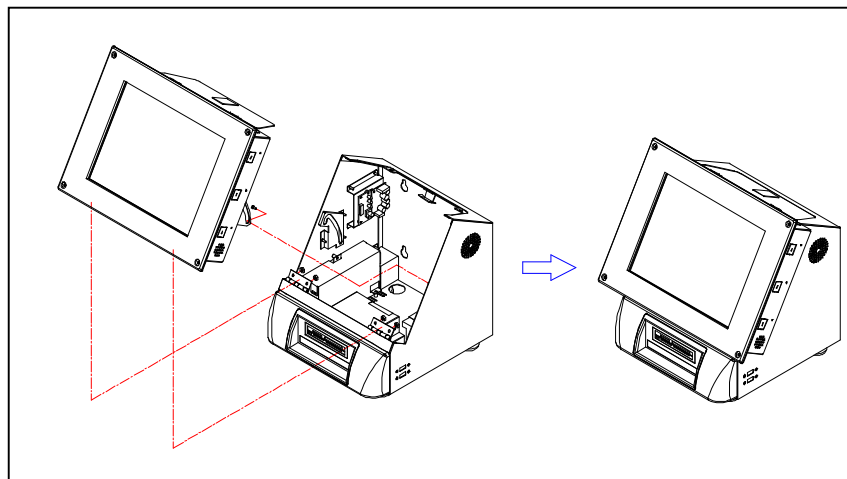


FIGURE 3-15: LIBRA W MEDIA READER BEZEL ASSEMBLY

4. SYSTEM MOTHERBOARD & I/O BOARD

The system controller used in the LIBRA III system is a special-design Celeron/Pentium® III multimedia motherboard. All the onboard signal is connected to the external I/O ports via two I/O boards. This chapter provides jumper definition and connector signal of the motherboard and the I/O boards.

4.1. LIBRA Motherboard

This section provides background information and detail specification on the APOLLO 120/150 III system engine, PC620. Sections include:

- 2 General Information
- 2 Features
- 2 Specification
- 2 Board placement & Dimension

4.1.1. General Information

The PC620 is an Intel Celeron/Pentium III (Socket 370) multimedia ATX motherboard with LCD/VGA controller, Ethernet 100/10, AC97 sound, and IDE flash disk. By integrating single chip, Intel 815E, the PC620 provides a high performance/low cost desktop solution.

Highly integrated, the PC620 can adapt Intel® Celeron (66/100MHz) and Pentium III (100/133MHz) CPU. Onboard features include four serial ports, one multi-mode Parallel ports, a floppy drive controller and a PS/2 keyboard PS/2 mouse interface. The built-in high speed PCI IDE controller supports both PIO and ATA 100 mode. Up to four IDE devices can be connected, including large hard disks, CD-ROM drives and other IDE devices. The full PC functionality coupled with its multi-I/Os stand ready to accommodate a wide range of PC peripherals. Compact in size and with its highly integrated multimedia and networking functions, the PC620 is the most powerful PC engine to build any small footprint all-in-one PC system for integration into any space-constricted embedded applications.

Fully configurable and with its modular design, the PC620 is an ideal platform for any consumer computing applications where space is a premium.

4.1.2. Specifications

PC620: Multimedia Intel Celeron/Pentium III Motherboard with XGA, LCD, Ethernet & Audio Interface

- u **CPU: Intel Socket 370**
 - Intel Pentium III FCPGA 1GHz/133MHz
 - Intel Pentium III FCPGA 650-933/133MHz
 - Intel Pentium III FCPGA 500E-850E/100MHz
 - Intel Celeron FCPGA 800MHz-1.10GHz/100MHz
 - Intel Celeron FCPGA 533MHz-766MHz/66MHz
 - Intel Celeron PPGA 300A-533MHz/66MHz
- u **Main Chipset: Intel 815E**
- u **System BIOS: Phoenix Award PnP Flash BIOS**
- u **System Memory: 2 x 168 pin DIMM sockets supporting SDRAM up to 512MB**
- u **L2 Cache: CPU built-in**
- u **Standard I/O**
 - Serial ports x 4
 - Parallel port x 1
 - ATA 100/66 IDE x 2: supports up to 4 IDE devices
 - FDD x 1: supports up to 2 floppy disk drives
 - PS/2 Keyboard Interface x 1
 - Internal Keyboard Interface x 1
 - PS/2 Mouse Interface x 1
 - USB Interface x 4 supporting USB 1.0 devices
- u **IrDA: 5-pin header with CIR support**
- u **Ethernet**
 - 100/10 Base-T Ethernet
 - Support WAKE-ON-LAN

- u **Display**
 - Novatek NT68521 scaler
 - LCD controller: LVDS/24 bits TTL via jumper setting
 - Integrated 2D/3D graphics engine, 4X AGP
 - Share system memory architecture able to utilize the display memory size up to 64MB
 - Maximum resolution for video chipset: up to 1600*1200 True-color
- u **Audio Function**
 - Full duplex and independent sample rate converter for audio recording & playback
 - Supports Microsoft DirectSound
 - 3D positional audio effects
 - Hi-performance, mixed-signal, stereo
 - MIC-In, Speaker-Out, Line-In
 - Pin header for CD-audio in
- u **Hardware Monitor**
 - Monitoring processor & system
 - Monitoring 5VSB, VBAT, 1.5V, 3.3V, +5V, +12V, -12V, and processor voltages
 - Monitoring processor, chassis fan speeds
 - Controlling processor and chassis fan speed and failure alarm
 - Automatic fan on/off control
 - Read back capability that displays temperature, voltage and fan speed
 - Supporting Intel processor thermal diode output (real processor temperature)
- u **Expansion Bus: PCI/ISA x 1**
- u **Power: ATX power**
- u **Dimension: 300*146 mm (L*W)**

Specifications are subject to change without notice.

4.1.4. Jumpers & Jumper Setting

The table below lists the function of each jumper. The related jumper settings are shown in the coming sections.

Jumper	Description
JP2	DOC Address Selection
JP5	LCD Interface Select
JP9	Clear CMOS
JP11	AT/ATX power selection

4.1.4.1. DOC 2000 Address Setting (JP2)

1-2	D000
3-4	D800

4.1.4.2. LCD Interface Select (JP5)

The PC620 provides two LCD connectors, one LVDS and the other TTL. The LCD mode is selected via Jumper setting.

1-2	LVDS Interface
2-3	TTL Level Interface

4.1.4.3. Clear CMOS (JP9)

1-2	Normal
2-3	Clear CMOS

4.1.4.4. AT/ATX power selection (JP11)

1-2	ATX Power Function
2-3	AT Power Function

4.1.5. Connectors & Pin Assignment

The table below lists the function of each connector on the PC620. Their corresponding pin assignments will be shown in the following sections.

Connector	Description
ATXP1	ATX power connector
CN1	Touchscreen power connector
PWR1	CD-ROM power connector
INV1	LCD Inverter connector
LCD1	LCD LVDS Connector
LCD2	LCD TTL Level Connector
IDE1	Primary IDE connector
IDE2	Primary IDE connector
FDD1	FDD connector
COM2	Serial port 2
COM3	Serial port 3 (For Touch Screen)
CD1	CD audio In
IR1	IR/CIR connector
CN4	KB/Mouse/Speaker/LED Connector
EISA1	PCI/ISA expansion slot
IOINF1	For I/O connector
FAN1	CPU FAN connector
FAN2/FAN3	System FAN connector
JP6	External SMI connector
CN3	ATX power ON/OFF
RST1	RESET connector
CN2	EXT. LAN Wake up connector

4.1.5.1. ATXP1: ATX Power connector

ATXP1 is a standard ATX power connector. This connector is provided to connect to an ATX power supply. The plug of the power supply will only insert in one orientation due to the different hole size. Find the proper orientation and push down the power connector firmly to make sure the pins are aligned. Its pin assignments are listed below:

Pin #	Signal	Pin #	Signal
1	3.3V	11	3.3V
2	3.3V	12	-12V
3	GND	13	GND
4	+5V	14	PSON#
5	GND	15	GND
6	+5V	16	GND
7	GND	17	GND
8	PWROK	18	-5V
9	SB5V	19	+5V
10	+12V	20	+5V

4.1.5.2. CN1: Touchscreen Power Connector

Pin #	Signal
1	GND
2	VCC

4.1.5.3. PWR1: CD-ROM Power Connector

Pin #	Signal
1	+12V
	GND
	GND
2	VCC

4.1.5.4. INV1: LCD Inverter Connector

Pin #	Signal
1	Backlight ADJ
2	GND
3	Backlight Enable
4	12V

4.1.5.5. LCD1: LVDS Connector

Pin #	Signal	Pin #	Signal
1	YA0M	2	YA0P
3	YA1M	4	YA1P
5	YA2M	6	YA2P
7	GND	8	CLKAM
9	CLKAP	10	YA3M
11	YA3P	12	YB0M
13	YB0P	14	GND
15	YB1M	16	YB1P
17	GND	18	YB2M
19	YB2P	20	CLKBM
21	CLKBP	22	YB3M
23	YB3P	24	GND
25	VCC3	26	VCC3
27	VCC3	28	VCC
29	VCC	30	VCC

4.1.5.6. LCD2: TTL Connector

Pin #	Signal	Pin #	Signal
1	VCC	2	VCC
3	GND	4	GND
5	VCC3	6	VCC3
7	NC	8	ENAVDD
9	B0	10	B1
11	B2	12	B3
13	B4	14	B5
15	B6	16	B7
17	G0	18	G1
19	G2	20	G3
21	G4	22	G5
23	G6	24	G7
25	R0	26	R1
27	R2	28	R3
29	R4	30	R5
31	R6	32	R7
33	GND	34	GND
35	SHFCLK	36	VSYNC
37	DE	38	HSYNC
39	GND	40	GND

4.1.5.7. IDE1/IDE2: Primary/Secondary HDD

The PC620 provides 2 sets of 40-pin IDE connectors. The built-in high speed PCI IDE controller supports both PIO and ATA 100 mode. Up to four IDE devices can be connected, including large hard disks, CD-ROM drives and other IDE devices. Their corresponding pin assignments are listed below:

Pin #	Signal	Pin #	Signal
1	RESET#	2	GND
3	DATA 7	4	DATA 8
5	DATA 6	6	DATA 9
7	DATA 5	8	DATA10
9	DATA 4	10	DATA11
11	DATA 3	12	DATA12
13	DATA 2	14	DATA13
15	DATA 1	16	DATA14
17	DATA 0	18	DATA15
19	GND	20	NC
21	IDEREQ	22	GND
23	IOW#	24	GND
25	IOR#	26	GND
27	ICHRDY#	28	GND
29	DACK	30	GND
31	IDEIRQ	32	NC
33	A1	34	LID
35	A0	36	A2
37	IDECS0	38	IDECS1
39	HDD LED	40	GND

4.1.5.8. FDD1: FDD connector

Pin #	Signal	Pin #	Signal
1	VCC	2	INDEX#
3	VCC	4	DSA#
5	VCC	6	DSKCHG#
7	NC	8	NC
9	NC	10	MOA#
11	NC	12	DIR#
13	RWC#	14	STEP#
15	GND	16	WD#
17	GND	18	WE#
19	GND	20	TRAK0#
21	GND	22	WP#
23	GND	24	RDATA#
25	GND	26	HEAD#

4.1.5.9. COM2:

COM2 is a RS-232, 422 or 485, selected via BIOS setup.

Pin #	Signal	Pin #	Signal
1	DCD/422TX-	2	DSR
3	RXD/422TX+	4	RTS
5	TXD/422RX+	6	CTS
7	DTR/422RX-	8	RI
9	GND	10	KEY

4.1.5.10. COM3

COM 3 is an internal RS-232 reserved for touchscreen. Its corresponding pin assignment is listed as below;

Pin #	Signal	Pin #	Signal
1	DCD	2	DSR
3	RXD	4	RTS
5	TXD	6	CTS
7	DTR	8	RI
9	GND	10	VCC

4.1.5.11. CD1: CD Audio I N

Pin #	Signal
1	Left channel
2	CD GND
3	CD GND
4	Right channel

4.1.5.12. IR1: IR/CIR Connector

IR	
Pin #	Signal
1	5V
2	NC
3	IRRX
4	GND
5	IRTX
6	CIRRX

4.1.5.13. CN4: Power LED & EXT. KB/MS, USB

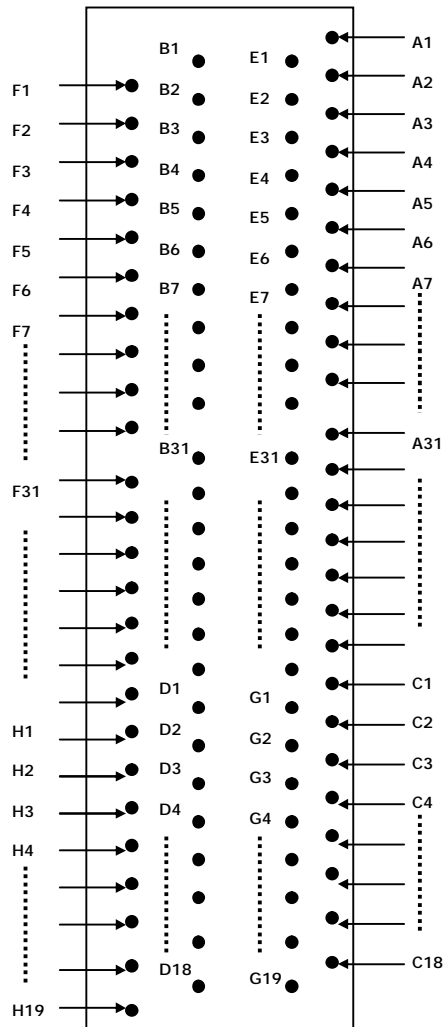
Pin #	Signal	Pin #	Signal
1	VCC	2	VCC
3	HDD LED	4	LAN LED
5	Suspend LED	6	IRTX
7	KEY	8	IRRX
9	BACKLIGHT CTRL INPUT	10	CIRRX (Option)
11	GND	12	GND
13	SPK-LO	14	SPK-RO
15	SPK-LN	16	SPK-RN
17	GND	18	GND
19	USB P2-	20	EXT.KBDAT
21	USB P2+	22	EXT.KBCLK
23	USB P3-	24	EXT.MSDAT
25	USB P3+	26	EXT.MSCLK

4.1.5.14. IOINF1: I/O Slot

The PC620B's onboard I/O signal for LAN, USB, keyboard, mouse, VGA, TV-out, COM ports and parallel port are all mixed in the IOINF1 slot. By plugging an IO-005 I/O board and connected to another IO-006 I/O board, all the onboard signal are connected to the system external I/O ports. **PLEASE BE NOTED THAT THE IOINF1 IS A SLOT IN AGP SLOT FORM, BUT IT IS NOT TO BE PLUGGED WITH ANY AGP CARD.**

4.1.5.15. EISA1: PCI/ISA Expansion Slot

The PC620 provides an ISA/PCI slot for ISA and PCI device expansion.



EISA1: PCI/ISA Slot Side View

EISA1: PCI/ISA Slot Connector Pin Assignment

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
F1	GND	B1	GND	E1	GND	A1	IOCHK
F2	GND	B2	ISARST	E2	GND	A2	SD7
F3	INTB	B3	Vcc	E3	INTC	A3	SD6
F4	INTA	B4	IRQ9	E4	INTD	A4	SD5
F5	Vcc	B5	-5V	E5	Vcc	A5	SD4
F6	KEY	B6	DRQ2	E6	KEY	A6	SD3
F7	Vcc	B7	-12V	E7	Vcc	A7	SD2
F8	PCICLK1	B8	OWS	E8	PCIRST	A8	SD1
F9	GND	B9	+12V	E9	GNT0	A9	SD0
F10	GNT3	B10	GND	E10	REQ0	A10	IORDY
F11	GND	B11	SMEMW	E11	GND	A11	AEN
F12	REQ3	B12	SMEMR	E12	PCILKE2	A12	SA19
F13	AD31	B13	IOW	E13	GND	A13	SA18
F14	AD29	B14	IOR	E14	AD30	A14	SA17
F15	NC	B15	DACK3	E15	NC	A15	SA16
F16	KEY	B16	DRQ3	E16	KEY	A16	SA15
F17	NC	B17	DACK1	E17	NC	A17	SA14
F18	AD27	B18	DRQ1	E18	AD28	A18	SA13
F19	AD25	B19	REF	E19	AD26	A19	SA12
F20	CBE3	B20	ATCLK	E20	AD24	A20	SA11
F21	AD23	B21	IRQ7	E21	AD22	A21	SA10
F22	AD21	B22	IRQ6	E22	AD20	A22	SA9
F23	AD19	B23	IRQ5	E23	AD18	A23	SA8
F24	NC	B24	IRQ4	E24	NC	A24	SA7
F25	KEY	B25	IRQ3	E25	KEY	A25	SA6
F26	NC	B26	DACK2	E26	NC	A26	SA5
F27	AD17	B27	TC	E27	AD16	A27	SA4
F28	IRDY	B28	ALE	E28	FRAME	A28	SA3

To continue...

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
F29	DEVSEL	B29	Vcc	E29	CBE2	A29	SA2
F30	LOCK	B30	OSC	E30	TRDY	A30	SA1
F31	PERR	B31	GND	E31	STOP	A31	SA0
H1	SERR	D1	MEMCS16	G1	NC	C1	SBHE
H2	AD15	D2	IOCS16	G2	NC	C2	LA23
H3	AD14	D3	IRQ10	G3	CBE1	C3	LA22
H4	AD12	D4	IRQ11	G4	PAR	C4	LA21
H5	GND	D5	IRQ12	G5	GND	C5	LA20
H6	KEY	D6	IRQ15	G6	KEY	C6	LA19
H7	GND	D7	IRQ14	G7	GND	C7	LA18
H8	AD10	D8	DACK0	G8	AD13	C8	LA17
H9	AD8	D9	DRQ0	G9	AD11	C9	MEMR
H10	AD7	D10	DACK5	G10	AD9	C10	MEMW
H11	AD5	D11	DRQ5	G11	CBE0	C11	SD8
H12	AD3	D12	DACK6	G12	AD6	C12	SD9
H13	AD1	D13	DRQ6	G13	AD4	C13	SD10
H14	AD0	D14	DACK7	G14	AD2	C14	SD11
H15	KEY	D15	DRQ7	G15	KEY	C15	SD12
H16	Vcc	D16	Vcc	G16	Vcc	C16	SD13
H17	Vcc	D17	MASTER	G17	Vcc	C17	SD14
H18	GND	D18	GND	G18	GND	C18	SD15
H19	GND			G19	GND		

4.1.5.16. FAN1~3: FAN Connector

Pin #	Signal
1	GND
2	+12V
3	FAN SPEED DETECT

4.1.5.17. JP6: External SMI Connector

Pin #	Signal
1	SMI
2	GND

4.1.5.18. CN3: ATX Power ON/OFF & Reset

Pin #	Signal
1	5VSB
2	Power ON/OFF

4.1.5.19. RST1: RESET SYSTEM Connector

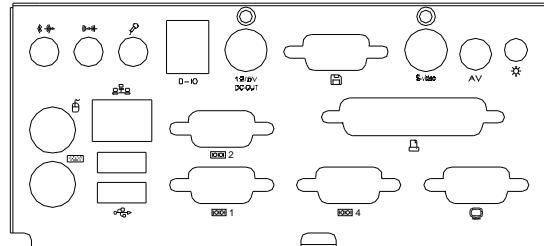
Pin #	Signal
1	RESET
2	GND

4.1.5.20. CN2: External LAN WAKE-UP

Pin #	Signal
1	5VSB
2	GND
3	LAN WAKE-UP

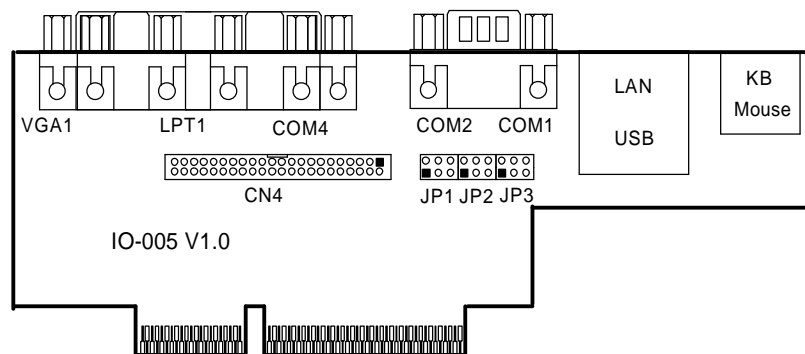
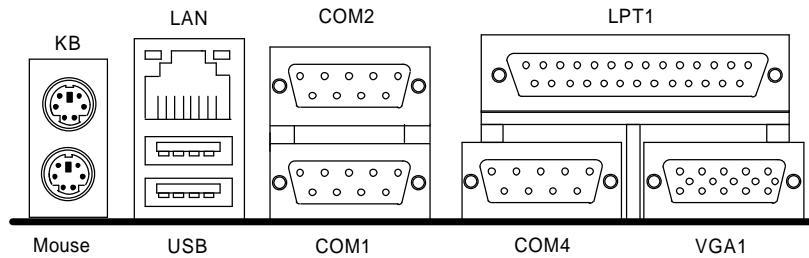
4.2. APOLLO I/O Board

All the onboard I/O signal of the APOLLO's motherboard is connected to two I/O boards, IO-005 and IO-006 for external device connection. This section provides jumper definition and connector signal of the I/O board.



4.2.1. I/O Board-IO005

The IO-005 connects the onboard keyboard, mouse, Ethernet, USB ports, COM1, COM2, COM4 , parallel port and VGA signal for external device connection.



4.2.1.1. Jumper Setting & Connectors

4.2.1.2. Jumpers & Jumper Setting

The table below lists the function of each jumper on IO-005. The related jumper settings are shown in the coming sections.

JP3	COM1 pin 9 power selection
JP2	COM2 pin 9 power selection
JP1	COM4 pin 9 power selection

The APOLLO onboard COM port power selection is selected via jumper setting

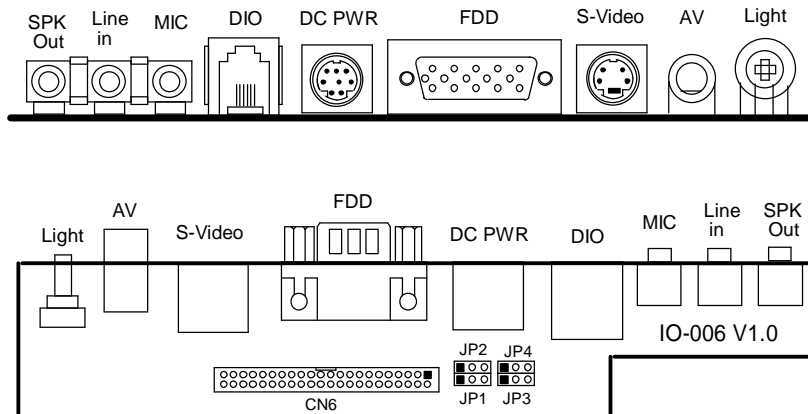
RI	5V	12V
1-2	3-4	5-6

4.2.1.3. CN4: EXT. Connector

The onboard speaker-out, line-in, MIC-in, DIO and external FDD are connected to the CN4 on IO-005. Then, via a 44-pin flat cable, these signals are linked to IO-006 for external device connection.

4.2.2. IO Board-IO006

The IO-006 is an I/O board links the onboard speaker-out, line-in, MIC-in, DIO and external FDD for external device connection.



4.2.2.1.1. Jumpers & Jumper Setting

The DIO port address setting is selected in CMOS SETTING.
Select ADDRES 200H OR 208H

Read DIO IN BIT0~BIT3 IN DIO PORT ADDRES BIT0~3
WRITE DIO OUT BIT0~3 IN DIO PORT ADDRES BIT4~7

JP2: CN4 DIO port pin#2 select

1-2	DIO IN Bit 0
2-3	DIO OUT Bit 2

JP1: CN4 DIO port pin#3 select

1-2	DIO IN Bit 1
2-3	DIO OUT Bit 3

JP4: CN4 DIO port pin#5 select

1-2	DIO OUT Bit 0
2-3	DIO IN Bit 2

JP2: CN4 DIO port pin#6 select

1-2	DIO OUT Bit 1
2-3	DIO IN Bit 3

4.2.2.2. CN6: EXT. Connector

CN6 is a 44-pin connector links the onboard speaker-out, line-in, MIC-in, DIO and external FDD to the IO-006 for external device connection.

4.2.3. Connectors & Pin Assignment

The table below lists the function of each connector on IO-005 and IO-006. Their corresponding pin assignments will be shown in the following sections.

Keyboard	Keyboard connector
Mouse	Mouse connector
COM1	Serial port 1 (3F8)
COM2	Serial port 2 (2F8)
COM4	Serial port 4 (2E8)
DC Power	DC power +5V/+12VC output
LPT	Parallel port
CRT	CRT display connector
FDD	External FDD connector
USB1	USB connector 1
USB2	USB connector 2
DIO	Digital I/O connector
LAN	Ethernet connector
MIC-in	Microphone-in connector
Line-in	Line-in connector
SPK-out	Speaker output connector
VR	LCD Backlight control

4.2.3.1. Keyboard: PS/2 KB Connector

Pin #	Signal
1	KBDATA
2	NC
3	GND
4	SB5V
5	KBCLK
6	NC

4.2.3.2. Mouse: PS/2 Mouse

Pin #	Signal
1	MSDATA
2	NC
3	GND
4	5V
5	MSCLK
6	NC

4.2.3.3. COM1, COM2, COM4 (DB-9)

Pin #	Signal	Pin #	Signal
1	DCD	6	DSR
2	RXD	7	RTS
3	TXD	8	CTS
4	DTR	9	RI (+5V/12V)
5	GND		

4.2.3.4. DC Power: DC Power Output

Pin #	Signal	Pin #	Signal
1	GND	5	+5V
2	GND	6	+12V
3	+5V	7	GND
4	+12V	8	GND

4.2.3.5. LPT1: D-SUB-25 Parallel Port

Pin #	Signal	Pin #	Signal
1	STRB#	14	AFD#
2	DATA 0	15	ERROR#
3	DATA 1	16	INIT#
4	DATA 2	17	SLINT#
5	DATA 3	18	GND
6	DATA 4	19	GND
7	DATA 5	20	GND
8	DATA 6	21	GND
9	DATA 7	22	GND
10	ACK#	23	GND
11	BUSY	24	GND
12	PE	25	GND
13	SLCT		

4.2.3.6. CRT: VGA (D-SUB 15 Pin)

Pin #	Signal	Pin #	Signal	Pin #	Signal
1	Red	6	GND	11	NC
2	Green	7	GND	12	DDCDATA
3	Blue	8	GND	13	Hsync
4	NC	9	NC	14	Vsync
5	GND	10	GND	15	DDCCLK

4.2.3.7. FDD: External FDD Connector

Pin #	Signal	Pin #	Signal	Pin #	Signal
1	RWC#	6	WP#	11	RDATA#
2	INDEX#	7	TRAKO#	12	HEAD#
3	MOA#	8	WE#	13	DSKCHG#
4	DSA#	9	WD#	14	GND
5	DIR#	10	STEP#	15	GND

4.2.3.8. J11: USB 1, USB2 Connector

USB1		USB2	
Pin #	Signal	Pin #	Signal
1	USBVCC	1	USBVCC
2	Data-	2	Data-
3	Data+	3	Data+
4	GND	4	GND

4.2.3.9. DIO1: RJ-11 Connector

Pin #	Signal	Pin #	Signal
1	+12V	2	IN_0/OUT_2
3	IN_1/OUT_3	4	GND
5	OUT_0/IN_2	6	OUT_1/IN_3

4.2.3.10. LAN1: RJ-45 Ethernet Connector

Pin #	Signal	Pin #	Signal
1	TD+	2	TD-
3	RO+	4	NC
5	NC	6	RO-
7	NC	8	NC

4.2.3.11. MIC1

Pin #	Signal
1	Vref
2	NC
3	NC
4	MIC IN
5	GND

4.2.3.12. LINE 1

Pin #	Signal
1	Right CHI
2	NC
3	NC
4	Left CH
5	GND

4.2.3.13. SPK 1

Pin #	Signal
1	Right CHI
2	NC
3	NC
4	Left CH
5	GND

5. AWARD BIOS SETUP

The chapter describes how to set up BIOS configuration.

5.1. AWARD BIOS

The Award BIOS ROM builds in a setup program, which allows the users to modify the basic system configuration such as the current date and time or the type of peripheral devices attached to the computer.

Under the following conditions, the CMOS settings are to be changed :

1. The system is starting for the first time
2. The hardware devices attached to the systems have been changed
3. The CMOS memory has lost power and the configuration information has been erased.

The BIOS setup program is stored in ROM, which can be accessed by pressing key on the keyboard immediately when the system is powered on.

In order to retain the specified setup information when the system power is turned off, the system setup information is stored in a battery-backed CMOS RAM. The battery is to ensure the settings will not be erased when the computer is turned off or reset. When the computer is powered on again, the system will read the settings stored in the CMOS RAM and compare them to the equipment check conducted during the power on self test (POST). If any error or mismatch occurs, an error message will be shown on the screen and the computer will be prompted to run the setup program.

5.2. Control Key Definition

Up arrow	Move to previous item
Down arrow	Move to next item
Left arrow	Move to the item in the left hand
Right arrow	Move to the item in the right hand
ESC key	Main Menu - Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu - Exit current page and return to Main Menu
PgUp key	Increase the numeric value or make changes
PgDn key	Decrease the numeric value or make changes
F1 key	General help, only for Status Page Setup Menu and Option Page Setup Menu
F2 key	Change color from total 16 colors
F3 key	Reserved
F4 key	Reserved
F5 key	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
F6 key	Load the default CMOS value from BIOS default table, only for Option Page Setup Menu
F7 key	Load the default
F8 key	Reserved
F9 key	Reserved
F10 key	Save all the CMOS changes, only for Main Menu

5.3. Getting Help

5.3.1. Main Menu

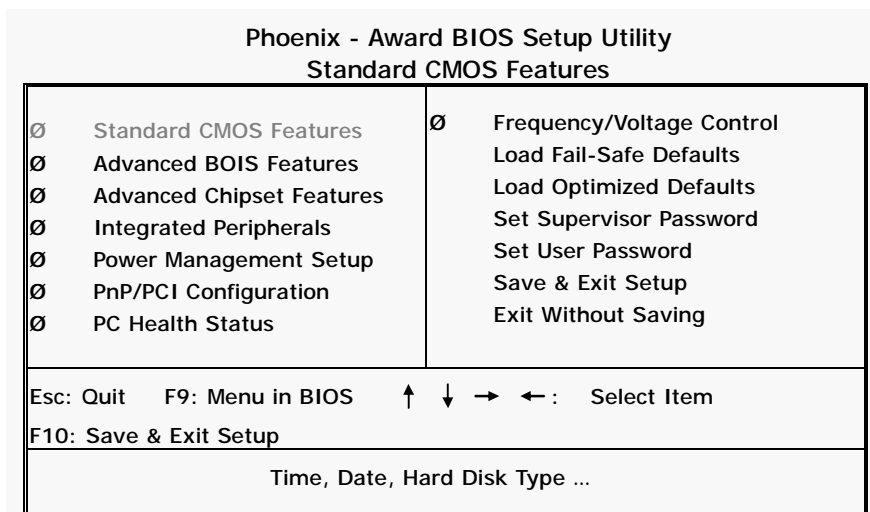
The on-line description of the highlighted setup function is displayed at the bottom of the screen.

Press <F1> to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window, press <ESC>.

5.4. AWARD BIOS Setup

5.4.1. AWARD BIOS Setup Main Menu

Power on the computer and press immediately to run the AWARD BIOS setup. The setup main menu will appear on the screen;



Use the arrow keys to move among the items and press <Enter> to enter the sub-menu.

- u **STANDARD CMOS SETUP:** This setup page includes all the items in standard compatible BIOS.
- u **ADVANCED BIOS FEATURES:** This setup page includes all the items of Award special enhanced features.
- u **ADVANCED CHIPSET FEATURES:** This setup page includes all the items of chipset special features.
- u **INTEGRATED PERIPHERALS:** This setup page includes all onboard peripherals.
- u **POWER MANAGEMENT SETUP:** This setup page includes all the items of Green function features.
- u **PNP/PCI CONFIGURATION:** This setup page includes all the configurations of PCI & PnP ISA resources.
- u **PC HEALTH STATUS:** This setup page auto detects the temperature, voltage and fan speed.
- u **FREQUENCY/VOLTAGE CONTROL:** This setup page includes the CPU/SDRAM/PCI frequency setting
- u **LOAD FAIL-SAFE DEFAULTS:** BIOS Defaults indicates the most appropriate value of the system parameters that the system would be in safe configuration.
- u **LOAD OPTIMIZED DEFAULTS:** Setup Defaults indicates the value of the system parameters that the system would be in the best performance configuration.
- u **SET SUPERVISOR PASSWORD:** Change, set, or disable password. It allows you to limit access to the system and Setup, or just to Setup.
- u **SET USER PASSWORD:** Change, set, or disable User password. It allows you to limit access to the system and Setup, or just to Setup.
- u **SAVE & EXIT SETUP:** Save CMOS value settings to CMOS and exit setup.
- u **EXIT WITHOUT SAVING:** Abandon all CMOS value changes and exit setup.

5.4.2. Standard CMOS Features

If the **STANDARD CMOS FEATURE** is selected from the main menu, the screen below will appear. This menu allows the users to configure the system components such as date, time, hard disk drive, floppy disk drive and display type. The system BIOS will automatically detect the memory size; therefore no setting is needed.

Phoenix - Award BIOS Setup Utility
Standard CMOS Features

		Item Help
Date (mm: dd: yy)	Thu. Jan. 16 2003	Menu Level ▶ Change the day, month, year and century
Time (hh: mm: ss)	11:45:58	
Ø IDE Primary Master		
Ø IDE Primary Slave		
Ø IDE Secondary Master		
Ø IDE Secondary Slave		
Drive A	(1.44M, 3.5 in.)	
Drive B	(None)	
Video	(EGA/VGA)	
Halt On	(All, But Keyboard)	
Base Memory	640K	
Extended Memory	65472K	
Total Memory	1024K	

↑ ↓ → ←: Move Enter: Select +/-/PU/PD: Value F10: Save
ESC: Exit F1: General Help F5: Previous Values F6: Fail-Safe Defaults
F7: Optimized Defaults

U DATE

The date format is <day>, <month>, <date>, <year>.

day	The day, from Sun to Sat, determined by the BIOS and is display-only
month	The month, Jan. through Dec.
date	The date, from 1 to 31 (or the maximum allowed in the month)
year	The year, from 1994 through 2079

U TIME

The times format in <hour> <minute> <second>. The time is calculated base on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00.

U PRIMARY HDDS/SECONDARY HDDS

This category identifies the types of hard disk from drive C to F that has been installed in the computer. There are two types: auto type, and user definable type. User type is user-definable; Auto type that will automatically detect HDD type.

Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category.

If you select User Type, related information will be asked to enter to the following items. Enter the information directly from the keyboard and press <Enter>. Such information should be provided in the documentation form your hard disk vendor or the system manufacturer.

CYLS.	Number of cylinders
HEADS	Number of heads
PRECOMP	Write precomp
LANDZONE	Landing zone
SECTORS	Number of sectors

If a hard disk has not been installed select *NONE* and press <Enter>.

u DRIVE A: TYPE/DRIVE B: TYPE

This category identifies the types of floppy disk drive A or drive B that has been installed in the computer.

None	No floppy drive installed
360K, 5.25"	5.25 inch PC-type standard drive; 360K byte
1.2M, 5.25"	5.25 inch AT-type high-density drive; 1.2M bytes (3.5 inch when 3 Mode is Enabled).
720K, 3.5"	3.5 inch double-sided drive; 720K byte
1.44M, 3.5"	3.5 inch double-sided drive; 1.44M byte
2.88M, 3.5"	3.5 inch double-sided drive; 2.88M byte

u VIDEO

This category selects the default video device.

Options: *EGA/VGA/CGA40/CGA80/Mono*

u HALT ON

The category determines whether the computer will stop if an error is detected during power up.

NO Errors	The system boot will not stop for any error that may be detected
All Errors	Whenever the BIOS detects a non-fatal error the system will be stopped and you will be prompted
All, But Keyboard	The system boot will not stop for a keyboard error; it will stop for all other errors
All, But Diskette	The system boot will not stop for a disk error; it will stop for all other errors
All, But Disk/Key	The system boot will not stop for a keyboard or disk error; it will stop for all other errors

5.4.3. Advanced BIOS Features

If the **ADVANCED BIOS FEATURES** option is selected from the main menu, the screen below will appear. The following sample screen consists of the default values for PC620.

Phoenix - Award BIOS Setup Utility
Advanced BIOS Features

		Item Help
Virus Warning	(Disabled)	
CPU Internal Cache	(Enabled)	Menu Level
External Cache	(Enabled)	
CPU L2 Cache ECC Checking	(Enabled)	Allow you to choose the
Processor Number Feature	(Enabled)	VIRUS warning
Quick Power On Self Test	(Enabled)	features for IDE Hard
First Boot Device	(HDD-0)	Disk boot sector
Second Boot Device	(CDROM)	protection. If this
Third Boot Device	(FDD)	function is enabled and
Boot up Other Devices	(Enabled)	someone attempt to
Swap Floppy Drive	(Disabled)	write data into this
Boot up Floppy Seek	(Disabled)	area, BIOS will show a
Boot up NumLock Status	(ON)	warning message on
Gate A20 Option	(Fast)	the screen and alarm
Typematic Rate Setting	(Disabled)	beep
Typematic Rate (Chars/Sec)	6	
Typematic Delay (Msec)	250	
Security Option	(Setup)	
OS Select For DRAM > 64MB	(Non-OS2)	
Report NO FDD for Win 95	(Yes)	
C8000-CBFFF Shadow	(Disabled)	
CC000-CFFFF Shadow	(Disabled)	
D0000-D3FFF Shadow	(Disabled)	
D4000-D7FFF Shadow	(Disabled)	
D8000-DBFFF Shadow	(Disabled)	
DC000-DFFFF Shadow	(Disabled)	
Small logo EPA Show	(Disabled)	

U VIRUS WARNING

This category allows you to choose the VIRUS Warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempts to write data into this area, BIOS will show a warning message on screen and alarm beep.

Enabled: Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table.

Disabled: No warning message will appear when anything attempts to access the boot sector or hard disk partition table.

U CPU INTERNAL CACHE/EXTERNAL CACHE

These two categories speed up memory access. However, it depends on CPU/chipset design.

Enabled: Enable cache

Disabled: Disable cache

U CPU L2 CACHE ECC CHECKING

This category allows you to enable/disable CPU L2 cache ECC checking.

The choice: *Enabled & Disabled.*

U PROCESSOR NUMBER FEATURE

Some of the new socket-370 processors are installed with a unique processor number. This number may be used for verification in Internet transactions and e-commerce. If you prefer not to use or distribute the unique processor number, use this item to suppress the processor number.

The choice: *Enabled & Disabled.*

u QUICK POWER ON SELF TEST

This category speeds up Power on Self Test (POST) after you power up the computer. If it is set to *Enable*, BIOS will shorten or skip some check items during POST.

Enabled: Enable quick POST

Disabled: Normal POST

u FIRST/SECOND/THIRD/OTHER BOOT DEVICE

The BIOS attempts to load the operating system from the devices in the sequence selected in these items.

The Choice: *Floppy, LS/ZIP, HDD, SCSI, CDROM & Disabled.*

The choice: *Enabled & Disabled.*

u SWAP FLOPPY DRIVE

If the system has two floppy drives, you can swap the logical drive name assignments.

The choice: *Enabled & Disabled.*

u BOOT UP FLOPPY SEEK

This category seeks disk drives during boot up. Disabling speeds boot up.

The choice: *Enabled & Disabled.*

u BOOT UP NUMLOCK STATUS

This category selects power on state for NumLock.

The choice: *Enabled & Disabled.*

u GATE A20 OPTION

Select this category if chipset or keyboard controller should control GateA20.

Normal A pin in the keyboard controller controls GateA20

Fast Lets chipset control GateA20

u TYPEMATIC RATE SETTING

Keystrokes repeat at a rate determined by the keyboard controller.

When *enabled*, the typematic rate and typematic delay can be selected.

The choice: *Enabled & Disabled.*

U TYPEMATIC RATE (CHARS/SEC)

This category sets the number of times a second to repeat a keystroke when you hold the key down.

The choice: *6, 8, 10, 12, 15, 20, 24 & 30.*

U TYPEMATIC DELAY (MSEC)

This category sets the delay time after the key is held down before it begins to repeat the keystroke.

The choice: *250, 500, 750 & 1000.*

U SECURITY OPTION

This category sets whether the password is required every time the system boots or only when you enter setup.

Setup The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.

Setup The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.

Note: To disable security, select PASSWORD SETTING at Main Menu and then you will be asked to enter password. Do not type anything and just press <Enter>, it will disable security. Once the security is disabled, the system will boot and you can enter Setup freely.

U OS SELECT FOR DRAM > 64MB

This category sets the operating system that is running with greater than 64MB of RAM on the system.

The choice: *Non-OS2, OS2.*

U REPORT NO FDD FOR WIN 95

Whether report no FDD for Win 95 or not.

The choice: *Yes & No.*

U VIDEO BIOS SHADOW

This category allows the video BIOS to be copied to system memory for faster performance.

The choice: *Enabled & Disabled.*

5.4.4. Advanced Chipset Features

If the **ADVANCED CHIPSET FEATURES** option is selected from the main menu, the screen below will appear. The following sample screen consists of the default values for PC620.

Phoenix - Award BIOS Setup Utility
Advanced Chipset Features

SDRAM Cycle Time Tres/Trc (Auto)		Item Help
SDRAM RAS-to-CAS Delay (Auto)		Menu Level ▶
SDRAM RAS Precharge Time (Auto)		
System BIOS Cacheable (Enabled)		
Video BIOS Cacheable (Disabled)		
Memory Hole at 15M-16M (Disabled)		
CPU Latency Time (Enable)		
Delay Transaction (Enabled)		
AGP Aperture Size (MB) (64MB)		
Display Cache Frequency (100 MHz)		
System Memory Frequency (Auto)		
On-Chip Video Windows Size (64MB)		

↑ ↓ → ←: Move Enter: Select +/-/PU/PD: Value F10: Save
 ESC: Exit F1: General Help F5: Previous Values F6: Fail-Safe Defaults
 F7: Optimized Defaults

u MEMORY FREQUENCY FOR

u SYSTEM BIOS CACHEABLE:

When *Enabled* is selected, it allows caching of the system BIOS ROM at F0000h-FFFFFh, resulting in better system performance.

However, if any program writes to this memory area, a system error may occur.

The choice: *Enabled* or *Disabled*.

u VIDEO BIOS CACHEABLE

When *Enabled* is selected, it allows caching of the Video RAM, resulting in better system performance. However, if any program writes to this memory area, a system error may occur.

The choice: *Enabled* or *Disabled*.

u MEMORY HOLE AT 15M-16M:

You can reserve this area of system memory for ISA adapter ROM. When this area is reserved, it cannot be cached. The user information of peripherals that need to use this area of system memory usually discusses their memory requirements.

u DELAYED TRANSACTION

u DELAY PRIOR TO THERMAL

u AGP APERTURE SIZE (MB)

This category selects the size of Accelerated Graphics Port (AGP) aperture. The aperture is a portion of the PCI memory address range dedicated for graphics memory address space. Host cycles that hit the aperture range are forwarded to the AGP without any translation.

The Choice: *4M, 8M, 16M, 32M, 64M, 128M & 256M*.

u DISPLAY CACHE FREQUENCY

u SYSTEM MEMORY FREQUENCY

u ON-CHIP VIDEO WINDOWS SIZE

5.4.5. Integrated Peripherals

If the **INTEGRATED PERIPHERALS** option is selected from the main menu, the screen below will appear. The following sample screen consists of the default values for PC620.

Phoenix - Award BIOS Setup Utility
Advanced BIOS Features

		Item Help
On-Chip Primary PCI IDE	(Enabled)	Menu Level
On-Chip Secondary PCI IDE	(Enabled)	
IDE Primary Master PIO	(Auto)	
IDE Primary Slave PIO	(Auto)	
IDE Secondary Master PIO	(Auto)	
IDE Secondary Slave PIO	(Auto)	
IDE Primary Master UDMA	(Auto)	
IDE Primary Slave UDMA	(Auto)	
IDE Secondary Master UDMA	(Auto)	
IDE Secondary Slave UDMA	(Auto)	
USB Controller	(Enabled)	
USB Keyboard Support	(Disabled)	
Init Display First	(PCI Slot)	
AC97 Audio	(Auto)	
Flash ROM Write	(Enable)	
Onboard LAN1 Function	(Enable)	
IDE HDD Block Mode	(Enable)	
Power On Function	(Button Only)	
KB Power On Password	(Enter)	
Hot Key Power On	(Ctrl-F1)	
Onboard FDC Controller	(Enable)	
Onboard Serial Port 1	(3F8)	
Serial Port 1 Use IRQ	(IRQ4)	
Onboard Serial Port 2	(2F8)	
Serial Port 2 Use IRQ	(IRQ3)	
UART Mode Select	(Normal)	
RxD, TxD Active	(Hi, Lo)	
IR Transmission Delay	(Enabled)	
UR2 Duplex Mode	(Half)	
Use IR Pins	(IR-Rx2Tx2)	
Onboard Parallel Port 3	(3e8)	
Serial Port 3 Use IRQ	(IRQ10)	
Onboard Serial Port 4	(2E8)	
Serial Port 4 Use IRQ	(IRQ 11)	
Onboard Parallel Port 1	(378)	
Parallel Port 1 Use IRQ	(IRQ7)	
Parallel Port 1 Mode	(SPP)	
LPT1 EPP Mode Select	(EPP1.7)	
LPT1 ECP Mode Use DMA	(3)	
PWRON After PWR-Fail	(OFF)	
DIO Port Address	(200)	

u INTERNAL PCI/IDE

This chipset contains an internal PCI IDE interface to support two IDE channels.

The choice: *Primary, Secondary* or *Both*.

u IDE PRIMARY MASTER/SLAVE PIO

The four IDE PIO (Programmed Input/Output) fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In *Auto* mode, the system automatically determines the best mode for each device.

The choice: *Auto, Mode 0, Mode 1, Mode 2, Mode 3* or *Mode 4*.

u PRIMARY MASTER/SLAVE ULTRA DMA

UDMA (Ultra DMA) is a DMA data transfer protocol that utilizes ATA commands and the ATA bus to allow DMA commands to transfer data at a maximum burst rate of 33 MB/s. When you select *Auto* in the four IDE UDMA fields (for interface supports), the system automatically determines the optimal data transfer rate for each IDE device.

The choice: *Auto* or *Disabled*.

u USB CONTROLLER

Select *Enabled* if your system contains a Universal Serial Bus (USB) controller and you have USB peripherals.

The choice: *Enabled* or *Disabled*.

u USB 2.0 CONTROLLER

Select *Enabled* if your system is using with a USB 2.0 devices

The choice: *Enabled* or *Disabled*.

u USB KEYBOARD SUPPORT

Select *Enable* if your system contains a Universal Serial Bus (USB) controller and you have a USB keyboard.

The choice: *Enabled* or *Disabled*.

u AC97 AUDIO

Select *Auto* to support AC97 Audio.

The choice: *Auto* or *Disabled*.

u INIT DISPLAY FIRST

This item allows you to decide to active which bus first (PCI slot or onboard/AGP).

The choice: *PCI Slot* or *Onboard/AGP*

u FLASH ROM WRITE

This item supports the BIOS ROM write Enable/Boot block lock/Disable.

u ONBOARD LAN FUNCTION

The item can disable the onboard built-in LAN function.

u IDE HDD BLOCK MODE:

Block mode is also called block transfer, multiple commands, or multiple sector read/write. If your IDE hard drive supports block mode (most new drives do), select *Enabled* for automatic detection of the optimal number of block read/write per sector the drive can support.

The choice: *Enabled* or *Disabled*.

u POWER ON FUNCTION

u KB POWER ON PASSWORD

This category can be used to prompt a password when the system power is resumed by keyboard action.

u HOT KEY POWER ON

u ONBOARD FDC CONTROLLER

Select *Enabled* if your system has a floppy disk controller (FDC) installed on the system board and you wish to use it. If you install and-in FDC or the system has no floppy drive, select *Disabled* in this field.

u ONBOARD SERIAL PORT1/PORT2/PORT3/PORT4

This category is to select an address and corresponding interrupt for the first and second serial ports.

The choice: *3F8/IRQ4*, *2F8/IRQ3*, *3E8/IRQ10*, *2E8/IRQ11*, *Disabled* or *Auto*.

Serial Port 2 is RS232/RS422/RS485 selected via BIOS setting.

u ONBOARD PARALLEL PORT 1:

This category allows you to determine the onboard parallel port controller's I/O address and parallel port mode.

u PWRON AFTER PWR-FAIL:

u DIO PORT ADDRESS

This category sets the DIO port address.

The choice: *200, 208 or Disabled.*

5.4.6. Power Management Setup

If the **POWER MANAGEMENT SETUP** option is selected from the main menu, the screen below will appear. The following sample screen consists of the default values for PC620.

Phoenix - Award BIOS Setup Utility
Power Management Setup

ACPI function	(Enabled)	Item Help
ACPI Suspend Type	(S3 (STR))	Menu Level ▶
Run VGABIOS if S3 Resume	(No)	
Power Management	(User Define)	
Video Off Method	(DPMS)	
Video Off In Suspend	(Yes)	
Suspend Type	(Stop Grant)	
Modem Use IRQ	(3)	
Suspend Mode	(Disabled)	
HDD Power Down	(Disabled)	
Soft-Off by PWR BTTN	(Instant Off)	
Wake-Up by PCI Card	(Enabled)	
Power-On by Ring/LAN	(Enabled)	
USB KB Wake-Up From S3	(Disabled)	
Resume by Alarm	(Disabled)	
X Date (of Month) Alarm	0	
X Time (hh: mm: ss) Alarm	0 : 0 : 0	
** Reload Global Timer Event **		
Primary IDE 0	(Disabled)	
Primary IDE 1	(Disabled)	
Secondary IDE 0	(Disabled)	
Secondary IDE 1	(Disabled)	
FDD/COM/LPT Port	(Disabled)	
PCI PIRQ (A-D)#	(Disabled)	

↑ ↓ → ←: Move Enter : Select +/-/PU/PD: Value F10: Save
 ESC: Exit F1: General Help F5: Previous Values F6: Fail-Safe Defaults
 F7: Optimized Defaults

5.4.7. PnP/PCI Configuration

If the **PNP/PCI CONFIGURATION** option is selected from the main menu, the screen below will appear. The following sample screen consists of the default values for PC620.

Phoenix - Award BIOS Setup Utility		Item Help
PnP PCI Configuration		
Reset Configuration Data	(Disabled)	Menu Level ▶
Resources Controlled By	(Auto(ESCD))	Select Yes if you are using a Plug and Play capable operation system. Select No if you need the BIOS to configure a non-boot device
x IRQ Resources	Press Enter	
x DMA Resources	Press Enter	
PCI/VGA Palette Snoop	(Disabled)	
↑ ↓ → ←: Move Enter : Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

U RESET CONFIGURATION DATA

Normally, you leave this field Disabled. Select Enabled to reset Extended System Configuration Data (ESCD) when you exit Setup if you have installed a new add-on and the system reconfiguration has caused such a serious conflict that the operating system cannot boot.

The choice: *Enabled* or *Disabled*.

U RESOURCE CONTROLLED BY

The Award Plug and Play BIOS has the capacity to automatically configure all of the boot and Plug and Play compatible devices.

However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Windows®95. If you set this field to "manual" choose specific resources by going into each of the sub menu that follows this field (a sub menu is preceded by a "Ø").

The choice: *Auto* (ESCD), *Manual*.

U IRQ RESOURCES

When resources are controlled manually, assign each system interrupt a type, depending on the type of device using the interrupt.

U IRQ3/4/5/7/9/10/11/12/14/15 ASSIGNED TO

This item allows you to determine the IRQ assigned to the ISA bus and is not available to any PCI slot. Legacy ISA for devices compliant with the original PC AT bus specification, PCI/ISA PnP for devices compliant with the Plug and Play standard whether designed for PCI or ISA bus architecture.

The Choice: *Legacy ISA* and *PCI/ISA PnP*.

U PCI/VGA PALETTE SNOOP

Leave this field at *Disabled*.

The choice: *Enabled* or *Disabled*.

5.4.8. PC Health Status

The **PC HEALTH STATUS** auto detects the system's temperature, voltage and fan speed.

Phoenix - Award BIOS Setup Utility
PC Health Status

		Item Help
Shutdown Temperature	(Disabled)	Menu Level ▶
Current System Temp.		
Current CPU1 Temp.		
VCore (From VID)		
VCore (V)		
VCC1.8 (V)		
VCC3.3 (V)		
VIO 3.3V		
+ 5 V		
+12 V		
- 12 V		
- 5 V		
Current CPU Fan Speed		
Current System Fan1 Speed		
Current System Fan2 Speed		

↑ ↓ → ←: Move Enter: Select +/-/PU/PD: Value F10: Save
ESC: Exit F1: General Help F5: Previous Values F6: Fail-Safe Defaults
F7: Optimized Defaults

u SHUTDOWN TEMPERATURE:

This category allows you to select System shutdown temperature.

The choice: *60°C/140°F, 65°C /149°F, 70°C/158°F or Disabled.*

5.4.9. Frequency Voltage Control

This setup page is for the CPU, SDRAM and PCI frequency setting.

Phoenix - Award BIOS Setup Utility
Frequency Voltage Control

Auto Detect PCI Clk	(Enabled)	Item Help
Spread Spectrum	(Disabled)	Menu Level
CPU Clock Ratio	(8X)	

↑ ↓ → ←: Move Enter : Select +/-/PU/PD: Value F10: Save
 ESC: Exit F1: General Help F5: Previous Values F6: Fail-Safe Defaults
 F7: Optimized Defaults

u CPU CLOCK RATIO

This category allows you to select CPU Ratio.

u AUTO DETECT PCI CLK

This category allows you to select auto detect PCI Clock.

The choice: *Enabled* or *Disabled*.

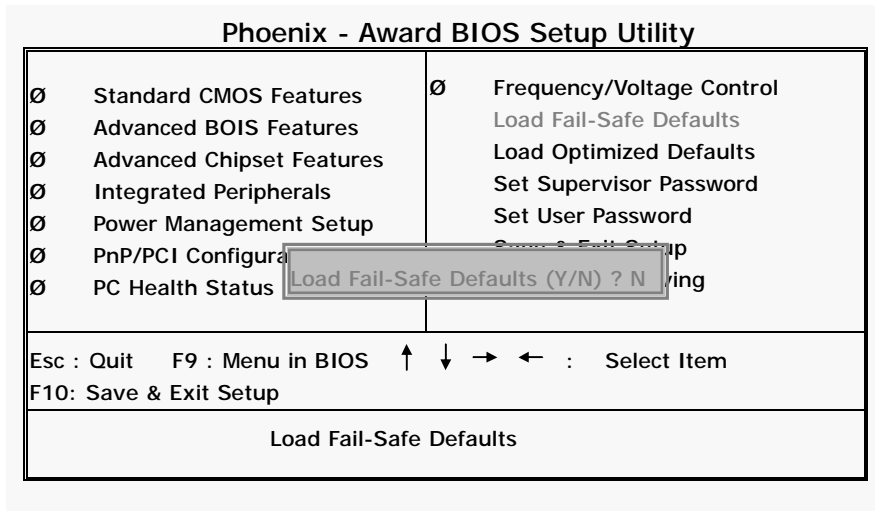
u SPREAD SPECTRUM

This category allows you to enable or disable the spread spectrum modulate.

The choice: *Enabled* or *Disabled*.

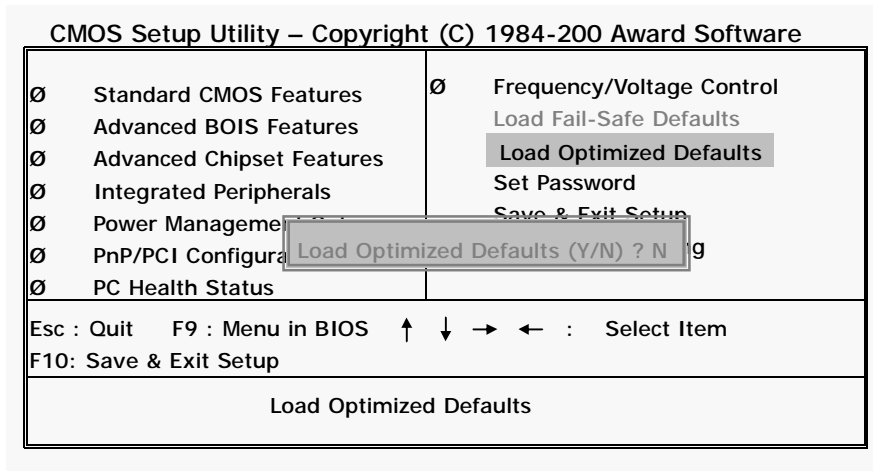
5.4.10. Load Fail-Safe Defaults

The default values of the **LOAD FAIL-SAFE DEFAULTS** indicates the most appropriate value of the system parameters that the system would be in safe configuration.



5.4.11. Load Optimized Defaults

The default values of the **LOAD OPTIMIZED DEFAULTS** indicate the most appropriate value of the system parameters that the system would be in best performance configuration.



5.4.12. User Password

The **USER PASSWORD** is used to set the password. To change the password, select this option from the main menu and press <Enter>.

If the CMOS does not work properly or the **USER PASSWORD** option is selected for the first time, then a default password is stored in the ROM. The following message will appear on the screen;

Enter Password

Press <Enter>.

If the CMOS is working properly or the **USER PASSWORD** option is selected to change the default password, then the current password (the ROM password or the use-defined password) stored in the ROM needs to be entered first. The following message will appear on the screen;

Confirm Password

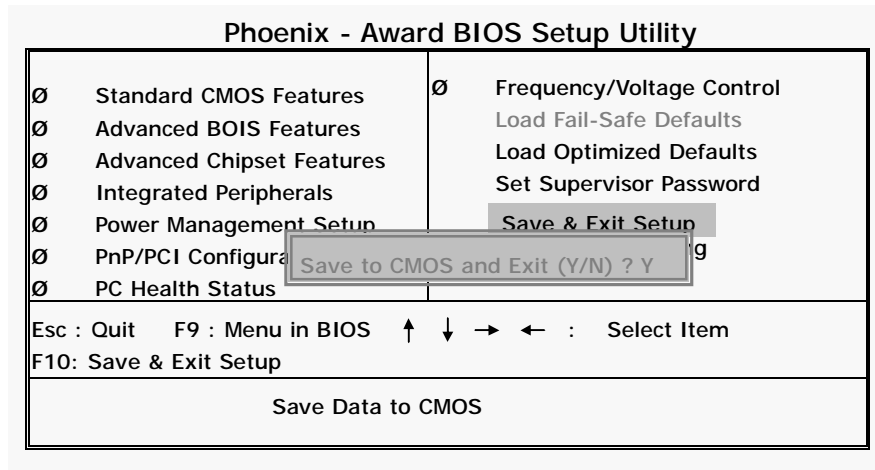
Enter the current password and press <Enter>.

After pressing <Enter>, then the new password (8 characters at most) can be entered now. The new password will be stored in the CMOS.

Please note that to enable this option, either **Setup** or **System** is to be selected from the **ADVANCED BIOS FEATRUES** first.

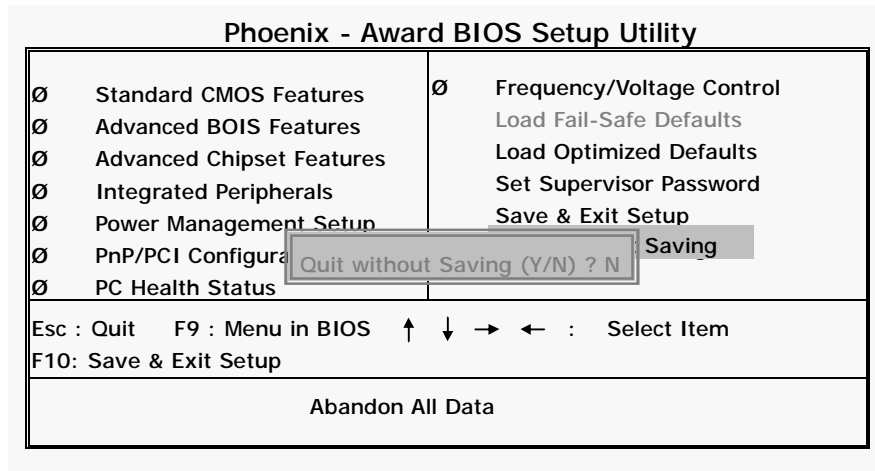
5.4.13. Save and Exit Setup

If the **SAVE & EXIT SETUP** option is selected, the values entered the setup utilities will be saved in the chipset's CMOS memory. When the system is turned on every time, the CPU will check the CMOS to compare the CMOS data to see whether it matches the system. These data are very important for the system operation.



5.4.14. Exit Without Saving

If the **EXIT WITHOUT SAVING** option is selected and **<ENTER>** is pressed, you will exit the Setup program without saving any new values. The CMOS will still keep the old values.



6. SOFTWARE & DRIVERS INSTALLATION

The chapter introduces the PC620 onboard VGA, Ethernet, Audio and the respective drivers and installation.

6.1. System Chipset Drivers

The system chipset used on PC620 is **Intel 815E**. The chipset drivers for different operating systems are stored under the following route:

PanelPC & Motherboard/Drivers & Utilities/Panel PC & Motherboard Drivers/INF (System Chipset Drivers for PC_620_700_710_800_810_820)

For updated system drivers, please have them downloaded from the following website

<http://www.intel.com>

6.2. IDE Acceleration Drivers

The PC620 is able to support UDMA IDE. To extend this functionality, the UDMA acceleration needs to be installed first. The related drivers are stored under the following route:

PanelPC & Motherboard/Drivers & Utilities/Panel PC & Motherboard Drivers/iaa (IDE accel. Drivers for PC_620_700_710_800_810_820)

6.3. Ethernet Drivers

The PC620 provides a 10/100 Base T fast Ethernet.

The Ethernet chipset used on PC620 is **Realtek RTL8100B**. The PC620 Ethernet drive diskette or CD diskette contains the following drivers.

Realtek RTL8100 Ethernet drivers for

- 2 Windows 95/95OSR2
- 2 Windows 98
- 2 Windows 2000
- 2 Windows NT
- 2 Windows ME
- 2 Windows XP

The related drivers are stored under the following route:

PanelPC & Motherboard/Drivers & Utilities/Panel PC & Motherboard Drivers/Ethernet Drivers (RTL8100 for PC_620_700_710_800_810_820)

For the Ethernet drivers, please download the updated drivers from the following website

<http://www.realtek.com.tw>

6.4. PC620 AGP XGA

By integrating an advanced hardware 2D/3D GUI engine and 64-bit graphic display interface, the PC620 can deliver AGP 4X performance and memory bandwidth of up to 1GB.

In addition to providing standard interface for analog monitor, the PC620 also provides an interface for digital flat panels.

The PC620 XGA driver diskettes contain the following driver:

Intel 815E VGA drivers for

- 2 Windows 95/95OSR2
- 2 Windows 98
- 2 Windows ME
- 2 Windows 2000
- 2 Windows NT
- 2 Windows XP

The related drivers are stored under the following route:

PanelPC & Motherboard/Drivers & Utilities/Panel PC & Motherboard Drivers/VGA Drivers for PC_620_700_710_800_810_820)/PC620 Panel PC (370_Celeron_P3_Intel815E)

For updated system drivers, please have them downloaded from the following website

<http://www.intel.com>

6.5. Audio Setup

The audio chipset used on PC620 is **Realtek ALC202A**.
PC620 audio driver diskette contains the following drivers:

The Realtek ALC202A audio drivers contain the following drivers:

- 2 Windows 95/95OSR2
- 2 Windows 98
- 2 Windows 2000
- 2 Windows NT
- 2 Windows ME
- 2 Windows XP

The related drivers are stored under the following route:

PanelPC & Motherboard/Drivers & Utilities/Panel PC &
Motherboard Drivers/Audio Drivers (ALC202A for
[PC_620_700_710_800_810_820](#))

For updated audio drivers, please have them downloaded
from the following website

<http://www.realtek.com.tw>

6.6. Touchscreen Drivers

The panel PC audio driver diskette contains the following drivers and are stored in the following route:

PanelPC & Motherboard/Drivers & Utilities/Touchscreen
Drivers

- 2 Elo resistive/SAW touch driver
- 2 3M capacitive touch drivers
- 2 3M resistive touch drivers
- 2 e-Turbo touch drivers

The most updated touch drivers are also downloadable from the following websites:

<http://www.elotouch.com> or
<http://www.3m.com> or
<http://www.eturbotouch.com>

6.7. Peripheral Device Drivers

The drivers to set up the media card reader is stored in the following directory:

[Kiosk/Kiosk Device Drivers/Media Card Reader 8 in 1 Pro 9](#)

The drivers to set up the printer is stored in the following directory:

[Kiosk/Kiosk Device Drivers/Kiosk Printer/EPSON BAT-500](#)

6.8. Driver Installation

To install the Ethernet, VGA and Audio drivers, make sure you know the chipset models on the motherboard.

Motherboard Model	PC620
System Chipset	Intel 815E
VGA Chipset	Intel 815E integrated
Ethernet Chipset	Realtek RTL8100B
Audio Chipset	Realtek ALC202A

Find the correct drivers from the correct directory and execute the execution files. All the related drivers are stored in the floppy diskettes or the panel PC tool CD under the following route:

PanelPC & Motherboard/Drivers & Utilities/Panel PC & Motherboard Drivers

Please refer to the readme.txt file under each directory for more drivers' information.

Recent releases of operating systems always include setup programs that load automatically and guide you through the installation.

Appendix

A: LCD Specification

The standard display used for the LIBRA 120 is a TORISAN 12.1" TFT LCD, [MXS121022010](#) or a LG.Phillips 12.1" TFT LCD, [LB121S02](#) or its equivalent.

A-1. 12.1" [MXS121022010](#)

It composes of LCD panel, driver ICs, control circuit and backlight. By applying 6 bit digital data, 800x600, 260K-color images are displayed on the 12.1" diagonal screen. Input power voltage is single 3.3V for LCD driving.

A-1-1. SPECIFICATION

Inverter backlight is not included in this LCD module. General specifications are summarized in the following:

ITEM	SPECIFICATION
Display Area (mm)	246.0 (H) x 184.5 (V) (12.106 inch diagonal)
Number of Pixel	800 x R.G.B (W) x 600 (H)
Sub Pixel Pitch (mm)	0.1025 (W) x 0.3075 (H)
Pixel Pitch (mm)	0.3075 (W) x 0.3075 (H)
Number of Color	262144 colors
Active Viewing Angle	246.0 (W) x 184.5 (H)
Bezel opening area	250.0 (W) x 188.5 (H)
Brightness (cd/m ²)	150 (cd/m ²)
Module Size (mm)	275.0(W)*199(H)*6.9max (T)
Module Weight (g)	440 g (TYP.)
Backlight Unit	CCFL, 1-tube

A-2. 12.1" LB121S02

The LB121S02 is a color active matrix liquid crystal display with an integrated Cold Cathode Fluorescent Lamp (CCFL) backlight system. The matrix employs a-Si Thin Film Transistor as the active element. It is a transmissive type display operating in the normally white mode. This TFT-LCD has 12.1 inches diagonally measured active display area with SVGA resolution (600 vertical by 800 horizontal pixel array). Each pixel is divided into Red, Green and Blue sub-pixels or dots that are arranged in vertical stripes. Gray scale or the brightness of the sub-pixel color is determined with a 6-bit gray scale signal for each dot, thus, presenting a palette of more than 262,144 colors

A-2-1. GENERAL SPECIFICATION

Inverter backlight is not included in this LCD module. General specifications are summarized in the following:

ITEM	SPECIFICATION
Active Screen Size	12.1 inches (30.75cm) diagonal
Outline Dimension	280(H) × 218(V) × 12(D) mm
Pixel Pitch	0.1025 (W) × 0.3075 (H)
Pixel Format	800 horiz. By 600 vert. Pixels RGB strip arrangement
Color Depth	6-bit, 262,144 colors
Brightness (cd/m ²)	300 cd/m.(Typ.)
Power Consumption	7.8 Watt (Typ.)
Module Weight (g)	675 g (Typ.)
Display Operating Mode	Transmissive mode, normally white
Surface Treatment	Hard coating (3H) Anti-glare treatment of the front polarizer

A-2-2. ABSOLUTE MAXIMUM RATING

Parameter	Symbol	Value		Units	Notes
		Min.	Max.		
Power Input Voltage	V _{CC}	-0.3	4.0	V _{DC}	at 25 ± 5°C
Operating Temperature	T _{OP}	0	50	°C	1
Storage Temperature	T _{ST}	-20	60	°C	1
Operating Ambient Humidity	H _{OP}	10	90	%RH	1
Storage Humidity	H _{ST}	10	90	%RH	1

NOTE 1. Temperature and relative humidity range are shown in the figure below. Wet bulb temperature should be 39°C Max, and no condensation of water.

A -2-3. ELECTRICAL ABSOLUTE MAXIMUM RATINGS

The LB121S02-A2 requires two power inputs. One is employed to power the LCD electronics and to drive the TFT array and liquid crystal.

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
Module					
Power Supply Input Voltage	V _{CC}	3.0	3.3	3.6	V _{DC}
Power Supply Input Current	I _{CC}	-	-240	-310	mA
Power Consumption	P _C	-	0.8	1	Watt
Lamp					
Operating Voltage	V _{BL}	540 (8.0mA)	580 (6.0mA)	665 (3.0mA)	V _{RMS}
Operating Current	I _{BL}	3.0	6.0	8.0	mA _{RMS}
Life Time		50,000			hrs

B: DIO (Digital Input & Output)

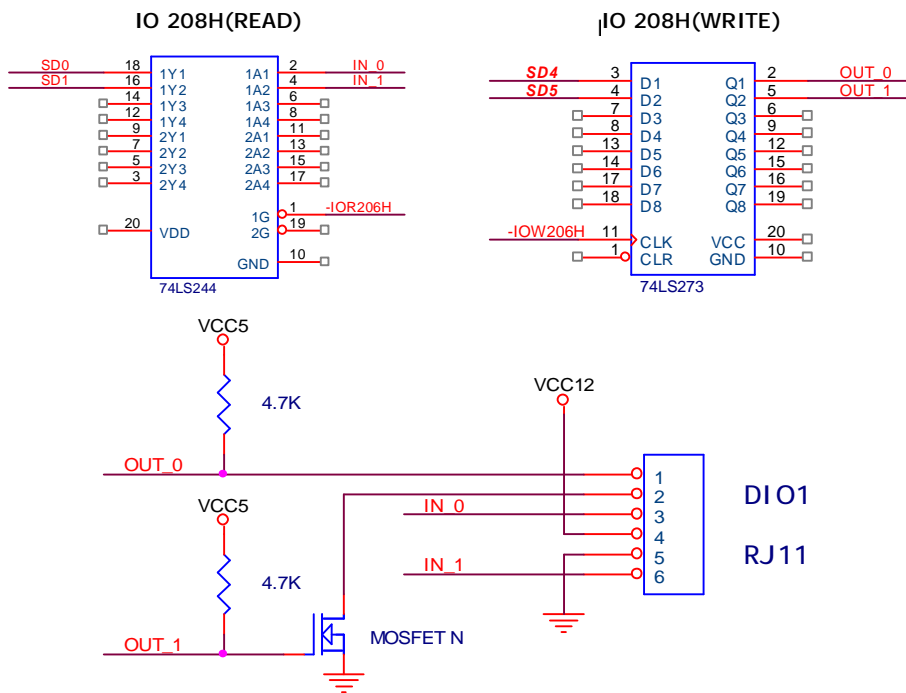
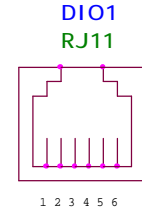
The LIBRA III provides 2-channel digital input and output that can be used for the system's simple automation control needs. The digital I/O can be configured to control the opening of a cash drawer or to sense the warning signal of an uninterruptured power system (UPS) or to do the store security control.

The DIO port address and pin definition is listed below;

I/O Port address: 200H/208H By CMOS Setting

Read: SD0, SD1

Write: SD4, SD5



The Digital I/O is of TTL interface. It is controlled via software programming.

Digital I/O Programming

Input/output address: 208H

In_Data 0~3=SD0~SD1

Out_Data 0~3 SD4~SD7

EXAMPLE:

```
10 REM Digital I/O example program
20 X = INP (&H208) REM INPUT Digital I/O port
   for 4 bit
30 X = OUT (&H208) REM OUTPUT Digital I/O port
   for 4 bit
   ⋮
60 END
100 Return
Port 208H Definition
```

C: DiskOnChip® Installation

The LIBRA 120 III is equipped with an internal flash disk which can emulate a floppy disk drive by adapting DiskOnChip® memory chips from 2MB to 144MB capacity, and the flash disk is fully compatible with floppy disk format of MS-DOS system.

To install a DiskOnChip® memory to the provided socket, follow the instructions below;

1. Make sure the computer is turned off
2. Insert the DiskOnChip® memory device into the onboard socket. Make sure that pin 1 of the DiskOnChip® is aligned with the pin 1 of the socket.
3. Power up the computer
4. During the power up, the DiskOnChip® drivers will be automatically loaded into the system memory.
5. At this time, the DiskOnChip® can be accessed as any disk drive.
6. If it is the only disk in the system, it will appear as the first drive, drive C: .
7. If there are more drives already attached to the system, then by default, the DiskOnChip® will appear as the last drive unless specially programmed.
8. If the DiskOnChip® is to be bootable, then follow the steps below
 - a. Use DOS command to copy the operating files into the DiskOnChip®
 - b. The DiskOnChip® is to be configured as the first drive, drive C: in the system. Use the DUPDATE utility.
DUPDATE D /S: DOC104.EXB /FIRST (set as c:)
DUPDATE C /S: DOC104.EXB (set as d:)

For more information and for the latest software utility and utilities manual on the DiskOnChip®, visit M-System website at www.m-sys.com .

D: System I/O Ports

Address range (Hex)	Device
000-01F	DMA controller
020-021	Interrupt controller 1, master
022-023	Chipset address
040-05F	8254 timer
060-06F	8024 keyboard controller
070-07F	Real time clock, non-maskable interrupt mask (NMI)
080-09F	DMA page register
0A0-0BF	Interrupt controller 2
0C0-0DF	DMA controller
0F0	Clear math co-processor
0F1	Reset math co-processor
0F8-0FF	Math co-processor
1F0-1F8	Fixed disk
200-207	Game Port (not used)
443	Watchdog timer
143	Watchdog timer
208	DIO port
2E8	Serial port #4
2F8-2FF	Serial port #2
300-31F	Prototype card (not used)
330-331	MPU-401 Compatible
360-36F	Reserved
378-37F	Parallel printer port 1 (LPT1)
380-38F	SDLC, bisynchronous 2 (not used)
3A0-3AF	Bisynchronous 1 (not used)
3B0-3BF	Monochrome display and printer adapter (LPT1) (not used)
3C0-3CF	Reserved
3D0-3DF	Color/graphics monitor adapter
3E8	Serial port #3
3F0-3F7	Diskette controller
3F8-3FF	Serial port #1

E: Wake-On-LAN

The Wake-On-LAN is a remote management tool with the advantage to reduce system management workload. It provides the capability to remotely power on the client computers supporting Wake-On-LAN by simply sending a "wake up packet". After powering up the client systems, the user is able to monitor the remote systems' status and to upload or download files to or from the clients. With this feature, MIS persons can flexibly perform client maintenance during off-hours; the Total Cost of Ownership (TCO) will be thus lowered.

To use Wake On LAN function, the client system must have a network card with chipset that supports the Wake-On-LAN and an ATX power supply meeting 2.01 with at least 720mA standby current is also required to support the Ethernet card for this function. The LIBRA is a panel PC system with these two features. To use the LIBRA Wake-On-LAN function, please refer to the following;

1. **Download the "Wake up packet", PCnet Family Software Magic Packet Utility.** This utility is downloadable from AMD website at

http://www.amd.com/us-en/Networking/ProductInformation/0,,50_2330,00.html

Or refer to the **Magic Packet™ Technology** at AMD website for how to write your own wake-up program.

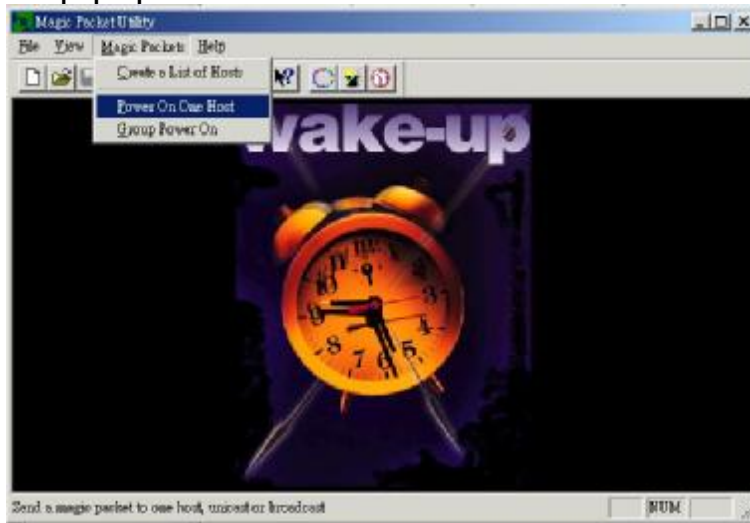
http://www.amd.com/us-en/Networking/TechnicalResources/0,,50_2334_2481,00.html

2. BIOS Setting

Enter the *\POWER MANAGEMENT SETUP\PM WAKE UP EVENTS* to enable the *MACPME POWER UP CONTROL*

3. Wake up Packet

To use the AMD's Magic Packet, program installation is not needed. Just open the MAGPAC.EXE, then the following screen will pop up.

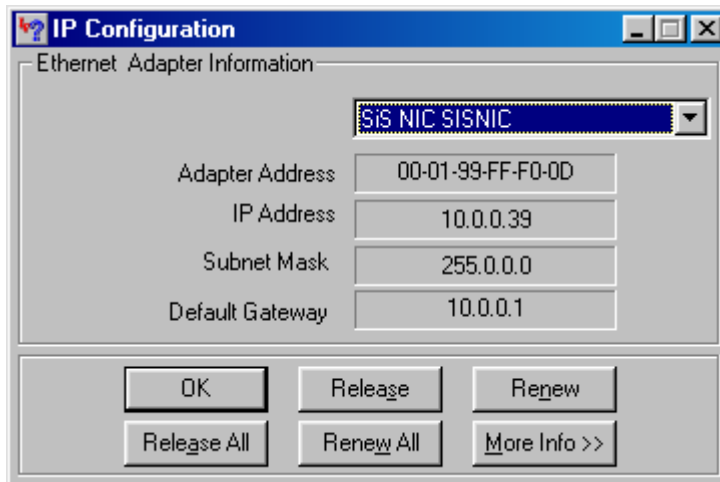


The remote computer can be waken up by selecting the *MAGIC PACKETS \ POWER ON ONE HOST* as shown below.



Do not change the *IP BROADCAST ADDRESS*. The *DESTINATION ETHERNET ADDRESS* is to be filled in with the Ethernet card's MAC address.

To obtain the Ethernet card MAC, under Windows 9x, just enter *START\RUN* to open the *winipcfg.exe*, then the following screen will pop up. If the OS is Windows NT 4.0 or 2000 or XP, then you need to enter DOS mode to run *ipconfig.exe* to obtain the MAC.



The adapter address is the LAN card's MAC address.

4. After obtaining all the above information, the remote computer can be powered on now.

Now you can use *Desktop On Call* or other remote software to control the remote computer.

F: First MB Memory Map

Address range (Hex)	Device
F000h-FFFFh	System ROM
CC00h-EFFFh	Unused
C000h-CBFFh	Expansion ROM
B800h-BFFFh	CGA/EGA/VGA text
B000h-B7FFh	Unused
A000h-AFFFh	EGA/VGA graphics
0000h-9FFFh	Base memory
D000-D7FFh	DiskOnChip®(Default)

G: Power Supply

The AC power supply used in the LIBRA 120 III is a 180 watts, 1U ATX power supply, [FSP180-50PLA](#).

G-1. ELECTRICAL REQUIREMENT

G-1-1: OUTPUT RATING

Nominal	Regulation	Ripple & Noise	Min	Max
+3.3V	+/- 5%	50mV	0.3A	16.8A
+5V	+/- 5%	50mV	0.3A	12.0A
+12V	+/- 5%	120mV	1.5A	10.0A
-12V	+/- 10%	120mV	0.0A	0.8A
+5V _{SB}	+/- 5%	50mV	0.0A	2.0A

* -12V, +3.3V, +5V, +12V will have the regulation to +/-10% when all load take off.

* The +3.3V and +5V total output shall not exceed 61 watts. The +3.3V, +5V and +12V total output shall not exceed 165 watts. Ripple and noise measurements shall be made under all specified conditions through a single pole low pass filter with 20MHz cutoff frequency.

G-1-2: HOLD-UP TIME (@FULL LOAD)

- u 115V/60Hz: 17 msec min.
- u 230V/50Hz: 17 msec min.

G-1-3: OUTPUT RISE TIME

- u 115V-rms or 230V-rms +5V_{DC} 20ms min.

G-1-4: OVER VOLTAGE PROTECTION

- u +5V_{DC} output: +5.7V_{DC} output min. +6.5V_{DC} output max.
- u +12V_{DC} output: +13.3V_{DC} output min. +15.6V_{DC} output max.
- u +3.3V_{DC} output: +3.7V_{DC} output min. +4.5V_{DC} output max.

G-1-5: SHORT CIRCUIT PROTECTION

Output short circuit is defined to be a short circuit load of 0.1 ohm. In the event of short circuit condition on +3.3V, +5V or +12V, the power supply will shutdown and latch off. The power supply shall return to normal operation after the short circuit has been removed and the power switch has been turned off for no more than 2 seconds.

In the event of short circuit condition on -12V, the power supply will not latch off. The power supply shall return to normal operation as soon as the short circuit has been removed and the power switch has been turned off for no more than 2 seconds.

G-1-6: AC INPUT LINE REQUIREMENT

Parameter	Min.	Nom.	Max.	Unit
V _{IN} (115V _{AC})	90	115	135	V _{AC} rms
V _{IN} (230V _{AC})	180	230	263	V _{AC} rms
V _{IN} Frequency	47	-	63	Hz

- u Input current: 4.0A @115V_{AC}, 2.0A @230V_{AC}
- u Inrush current: 50A @115V_{AC}, 80A @230V_{AC}
- u Efficiency: >68% min. @full load, 115V_{AC} & 230V_{AC}

G-1-7: ENVIRONMENTAL

- u Operating temperature: 0° C to +50° C
- u Storage temperature: -50° C to +80° C
- u Operating humidity: 5~95% RH, non-condensing
- u Storage humidity: 5~95% RH, non-condensing
- u MTBF: >100,000 hours of continuous operation at 25°C maximum-output load, and nominal input voltage

G1-8: SAFETY

The power supply is designed to meet the following safety standard.

- u NEMKO
- u TUV or VDE
- u UL 1950
- u CSA 22.2 LEVEL3
- u CE

H: 8-in-1 Card Reader

The model number of the standard 8-in-1 card reader integrated in the LIBRA Kiosk is Pro-9.

FEATURES

- u Ultra High speed USB 2.0 interface - up to 480 Mb/s transfer rates. It is also backward compatible with USB 1.1 interface.
- u Front IEEE 1394 (FireWire) extension port* - for easy connection to FireWire devices, such as Digital Video (DV) camcorders, FireWire Hard Drives and etc.
- u 4 independent card slots - allow you to access 4 different media cards concurrently and direct file transferring among media cards in different slots.
- u Fully Plug and Play - No software driver needed on Windows ME, XP or later.
- u USB powered - no additional power adaptor or battery required. External or Internal Use - can be installed into a computer 3.5" drive bay or use externally.

SPECIFICATIONS:

- U** Dimension (W x H x D):
4.02 inch x 1 inch x 4.92 inch
(102 mm x 25 mm x 125 mm)
- U** Power Requirement:
5V DC (USB Bus powered)
- U** Transfer rate:
Up to 480 Mbps (Via USB 2.0)
or Up to 12 Mbps (Via USB 1.1)
- U** Supported O/:
Windows 98 SE,
Windows 2000,
Windows ME (No driver required)
Windows XP (No driver required)
Mac OS 9.0 or higher
- U** Supported media format:
Compact Flash™ (Type I & II),
IBM MicroDrive™
Smart Media™ (3.3V),
MultiMedia™,
Secure Digital™,
Memory Stick™,
Memory Stick Pro™,
xD-Picture Card™*.

The drivers to set up the card reader is stored in the following directory:

[Kiosk/Kiosk device driver/Media Card Reader 8-in-1 Pro 9](#)

I: Thermal Printer

The standard receipt printer integrated in the LIBRA is an Epson open-framed thermal printer with a semi-cut paper cutter. The printer control board model no. [BA-T500](#).

SPECIFICATIONS:

- u Print Method: Thermal line printing
- u Print font: Font A: 12x24/Font B: 9x17/Kanji: 24x24
- u Column capacity: 48 (Font A), 64 (Font B), 24 (Kanji)
- u Character size: 1.25 (W) x 3.0 (H)
- u Character set: 95 alphanumeric, 37 international, 11 pages of 128 graphic
- u Data buffer: 4 K bytes
- u Interface: Serial RS-232 or IEEE 1284 Bi-directional parallel
- u Print speed: 150 mm/sec
- u Paper dimensions: 80mm
- u Power: 24VDC
- u Reliability MCBF: 37 000 000 lines
- u Operating temperature: 5 - 50
- u Dimensions (W x D x H): 133 x 198 x 138.5; 133 x 225 x 145 with 80mm roll option)
- u Weight: 2.5kg
- u Sensors:
 - 1 Print head temperature sensor: Thermistor
 - 2 Platen open sensor: Micro switch
 - 3 Black mark sensor: Reflecting photosensor
 - 4 Paper-end sensor: Mechanical Switch
- u Bar Codes: EAN-8, EAN-13, UPC-A, UPC-E, Code 39, Code 93, Code 128, ITF, CODABAR
- u Software: Windows™ Driver; Status Monitor

The drivers to set up the printer is stored in the following directory:

[Kiosk/Kiosk device driver/KIOSK printer/EPSON BAT-T500](#)

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