AMB-655 Series

15" TFT Flat-panel

Industrial Workstation

Copyright Notice

Packing List

Before installing your Industrial Workstation, please check if the package contains the following items.

■ AMB-655 series Industrial Workstation

■ CD-ROM

    Contains User's Manual, Drivers and Utilities

■ Accessories

    - A MBC-2690 VGA card (optional)

    - A full size CPU card (optional)

    - A power cord

    - Key Board encoder to CPU card cable

    - Screw bag with screws

  With the touchscreen option

    - RS232 Cable

If any of these items are missing or damaged, you should contact your distributor or sales representative immediately.

Safety & Warranty

1. Read these safety instructions carefully.

2. Keep this user's manual for later reference.

3. Disconnect this equipment from any AC outlet before cleaning. Do not use liquid or spray deterg ents for cleaning. Use a damp cloth.

4. For pluggable equipment, the power outlet must be installed near the equipment and must be easily accessible.

5. Keep this equipment away from humidity.

6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall could cause damage.

7. The openings on the enclosure are for air convection. Protect the equipment from overheating. DO NOT COVER THE OPENINGS.

8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.

9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.

10. All cautions and warnings on the equipment should be noted.

11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient over-voltage.

12. Never pour any liquid into an opening. This could cause fire or electrical shock.

13. Never open the equipment. For safety reasons, only qualified service personnel should open the equipment.

14. If any of the following situations arises, get the equipment checked by service

personnel:

  a. The power cord or plug is damaged.

  b. Liquid has penetrated into the equipment.

  c. The equipment has been exposed to moisture.

  d. The equipment does not work well, or you cannot get it to work

    according to the users manual.

  e. The equipment has been dropped and damaged.

  f. The equipment has obvious signs of breakage.

15. DO NOT LEAVE THIS EQUIPMENT IN AN UNCONTROLLED
ENVIRONMENT WHERE THE STORAGE TEMPERATURE IS
BELOW -20° C (-4°F) OR ABOVE 60° C (140° F). IT MAY DAMAGE
THE EQUIPMENT.

FCC Safety

Warning!

This device complies with Part 15 FCC Rules.

Operation is subject to the following two conditions:

(1) this device may not cause harmful interference,

and (2) this device must accept any interference

received including interference that may cause

undesired operation.

Contents

Chapter

1

General Information

Introductions

AAEON designed the AMB-655 specifically for the factory floor and other harsh industrial environments. This 19" rack -mount workstation offers full state-of-the-art industrial computing technology packaged within one compact unit. It includes a 15" XGA color TFT LCD monitor, 10-slot passive backplane, 250W AT or 300W ATX power supply, 3½ " floppy disk drive, CD-ROM and 3½" HDD and front 5-pin keyboard connectors. All of these features are housed in a rugged workstation chassis, which provides protection from dust, vibration and moisture.

Features:

59-key sealed-membrane operating keypad

You can enter numerical data using the workstation's convenient 59-key sealed-membrane operating keypad. The keypad has excellent tactile response. You can also attach an external keyboard through a connector on the front panel.

Front-accessible control panel

You can easily access the workstation's controls from the front of the unit via a sturdy protective door. Controls include switches for power. The front panel also holds a 3½ " 1.44MB FDD and a CD ROM. The aluminum door protects the controls from the environment outside. The door has a waterproof foam-rubber seal and captive hand screw to hold it closed. In addition, the door offers protection against accidental operation of the unit's controls.

Passive backplane

The AMB-655 series offers two types of passive backplane, the 4PCI, 2 ISA/PCI, 4 ISA or 6PCI, 2 ISA/PCI, 2 ISA. They allow you to run your industrial applications from a variety of full-featured CPU cards. The backplanes are formed from four-layer PCBs with ground and power planes to reduce noise and power-supply impedance. They have LED power indicators for +5 V, +12 V, -5 V, -12 V and 3.3V.

Specifications:

General

- **Construction**: Painted metal steel chassis & aluminum alloy
- **Disk drive housing**: One 3½ " FDD, one CD-ROM and one 3½ " HDD
- **Cooling system**: One 64 CFM fan
- **OS Support:** MS DOS, Windows 98/SE, Windows NT4.0, Windows 2000,
  AMB-655HT(T)-A series also support Windows XP
- **Dimensions** (W x D x H): 483 x 255 x 354 mm
- **Weight:** 16 kg

Note: We recommend you to integrate with AAEON full-size CPU card.

Detailed CPU card specification and user manual, please find it in the

following path.

> ***"cd-rom": \Manual\ CPU Card\ "***
> *(Remarks: **"cd-rom"** means your CD-ROM drive letter)*

LCD display

- **Size:** 15" diagonal
- **Screen:** Hi-brightness TFT color LCD
- **Max. Resolution:** 1024 x 768
- **Dot pitch:** 0.297 x 0.297 mm
- **View angle:** 160°
- **Contrast ratio:** 400
- **Luminance (cd/m²):** 250 (TYP.)

Note: All AAEON's LCD products are manufactured with High precision

technology. However, in all LCD panels there maybe a small number of

defective pixels that do not change color. This is a normal occurrence for all

LCD displays from all manufacturers and should not be noticeable or objectionable under normal operation. AAEON qualify the LCD panel following industry standard: total 7 dead pixels on a screen or if there are 3 within 1 inch square area of each other on the display.

Front panel

- **Keypads**: One with 59 operating keys, one with 24 function keys
- **Keyboard connector**: Pre-wired 5-pin DIN connector with dust-protection cover on front panel

If you would like to connect external keyboard or mouse, please notice:

1. The PS/2 connector on front panel of AMB-655 series support external keyboard only

2. The PS/2 connector at CPU card's bracket support PS/2 mouse only, because the signals are connected to membrane keypad/PS2 ports at front panel

- **Switches**: Power on/off

Passive backplane

- 4 PCI, 2 ISA/PCI, 4 ISA slot passive backplane
- 6 PCI, 2 ISA/PCI, 2 ISA slot passive backplane (optional)
- 9 PCI, 2 PICMG slot passive backplane (optional)

Power supply

AC input 250 W AT

- **Input voltage**:
85 ~ 265V AC @ 47 ~ 63 Hz, switching

The inrush current will not exceed 30A at 115V AC input or 60A at 230

VAC input cold start, 25° C

AC input 300W ATX

   • **Input voltag**e:

110 ~ 240 V AC @ 47 ~ 63 Hz, switching

6A typ. (AC IN 110V), 3A typ. (AC IN 220V)

24 V DC input 250 W (optional)

   • **Input voltage:** 19 ~ 30 V DC

12 V DC input 160 W (optional)

   • **Input voltage:** 10 ~ 30 V DC

Touchscreen (Optional)

   • Type: Analog resistive

   • Resolution 1024 x 1024

   • RS-232 Interface

   • Support 8 wire touchscreen

   • Visible Light Transmission: > 75%

Environmental specifications

   • Operating temperature: 0 ~ 45° C (32 ~ 113 ° F)

   • Storage temperature: -20° to 60° C

   • Shock: 10G, peak acceleration (11msc. Duration)

   • Vibration:

1.2G / 5 ~ 500Hz / random non-operation

Thumbscrew-On Doors

It's very convenient for you to add or exchange card by the rear cover turning the thumbscrews by hand to open/close it, called thumbscrew-on rear door.

Oppositely, there is a thumbscrew-on front door, anti-dust front door, can isolate dust, water, or something like that form the outside.
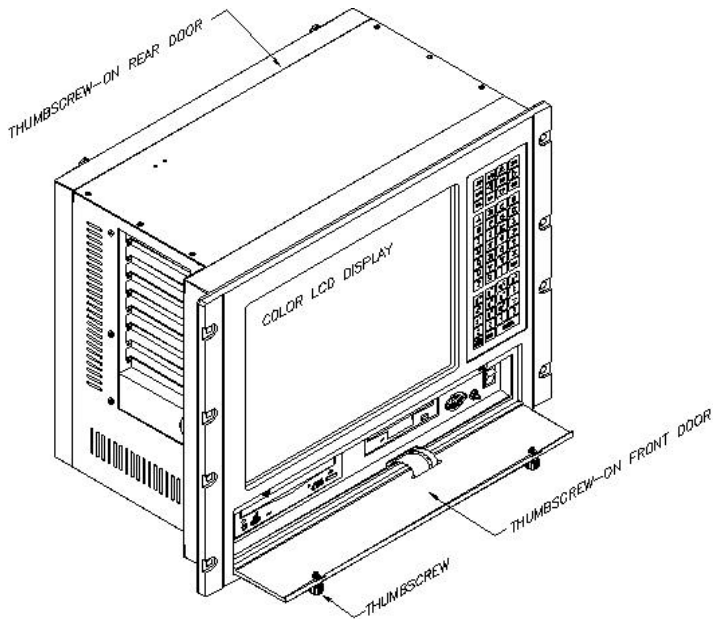
Basic Operations

All the operations of your works can be down from panel. You can enter any kind of data by using the two sealed membrane keypads: one with 59 data keys and the other with 24 function keys. Furthermore, opening the thumbscrew-on front door, you can use 3.5" FDD or CD-ROM to read/write data and connect external keyboard for fast data key in.
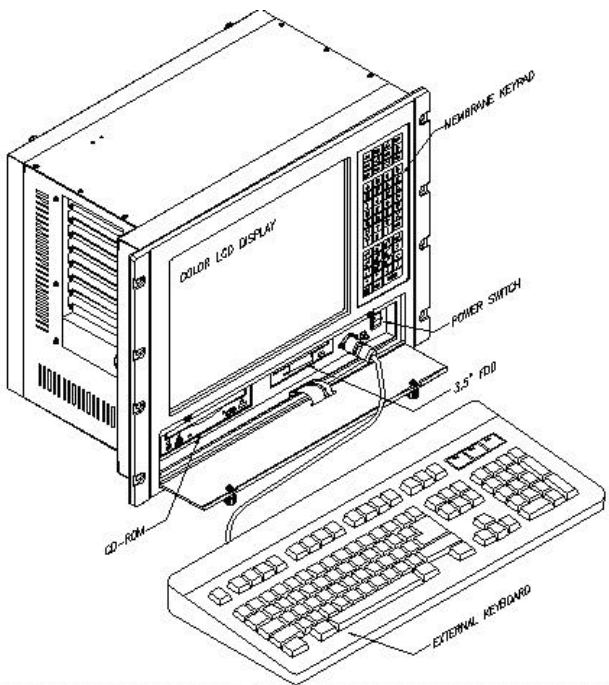
Rack Mounting

The AMB-655 series can be mounted in a 19" rack. Ensure that all additional equipment has been installed correctly and that the cabling has been reattached. (See Fig.) Remove the screw covers on the front panel. Attach the case to the rack using screws on both sides.
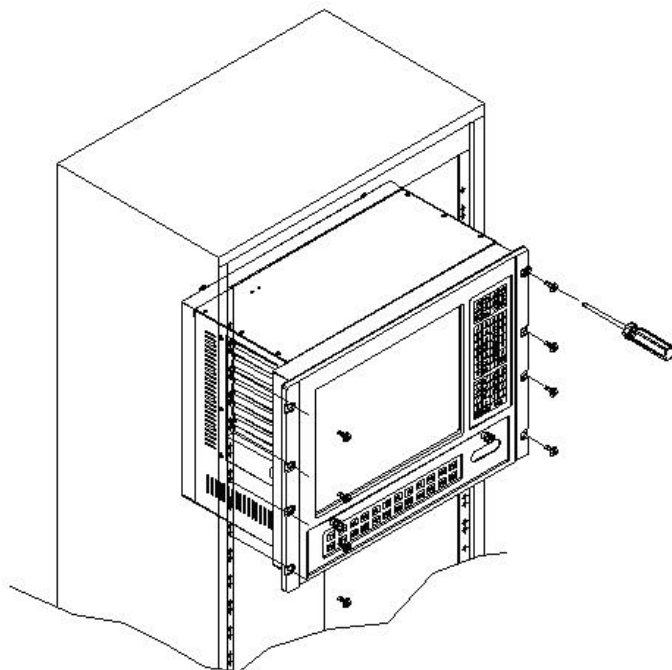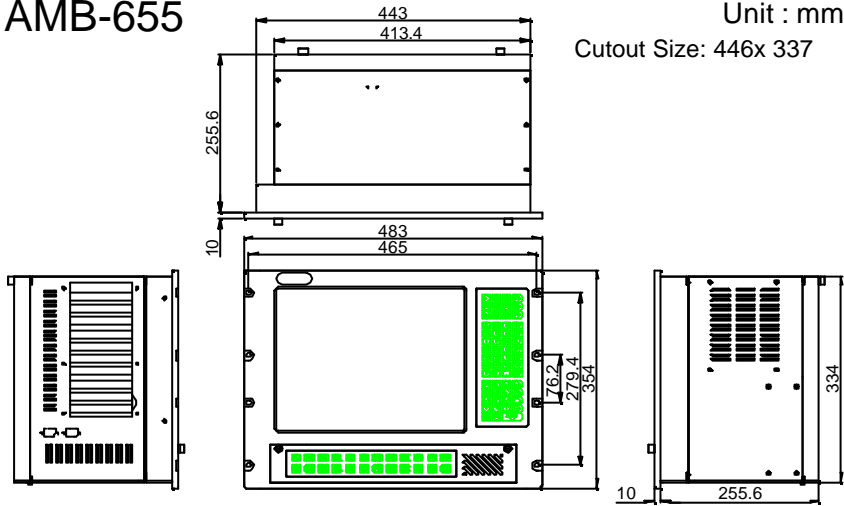
Dimensions

AMB-655

Unit : mm
Cutout Size: 446x 337

443
413.4
255.6
10
483
465
76.2
279.4
354
334
10   255.6

Chapter

2

Hardware Installation

Removing/Installing Passive Backplane

As we said in chapter 1, the workstation each come with an ISA/PCI bus 10 slots passive backplane. For the purpose of either maintenance or upgrading please follow the steps to take the backplane off.
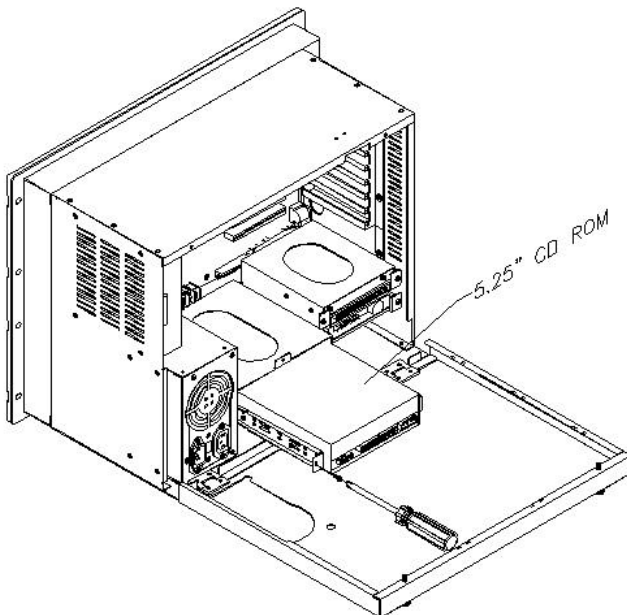
1. Remove all the add-on cards and connecting cords on it.
2. Unfasten the 9 attachment screws, which was fastened behind the bracket.
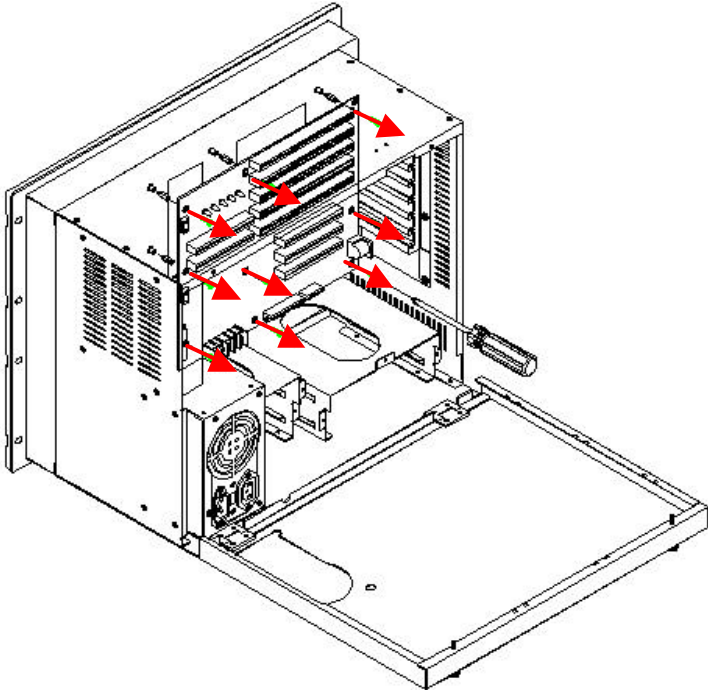
Removing/Installing CD-ROM Disk Drive

Every disk drive bay has two glide-bard, which fastened to its bay with screws on the both sides. From the rear view there are three bays for installing disk drive, on the right side for a 5.25" FDD or CD-ROM. To install disk drives, you should follow the steps:

1. Take off the two glide-bars on its both sides.
2. Using a bar to fasten it to both sides of disk drives. Showed in the following figure.
3. Slide the disk drive into the bay gently.
4. Fasten the glide-bar with a screw on its bay.

Removing/Installing Floppy Disk Drive

Every disk drive bay has two glide-bard, which fastened to its bay with screws on the both sides. From the rear view there are three bays for installing disk drive, on the right side for a 5.25" FDD or CD-ROM. To install disk drives, you should follow the steps:
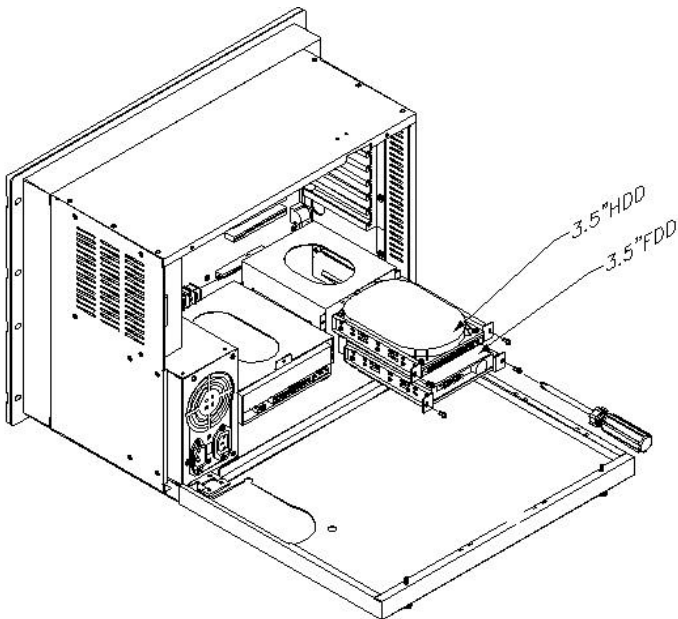
1. Take off the two glide-bars on its both sides.
2. Using a bar to fasten it to both sides of disk drives. Showed in the following figure.
3. Slide the disk drive into the bay gently.
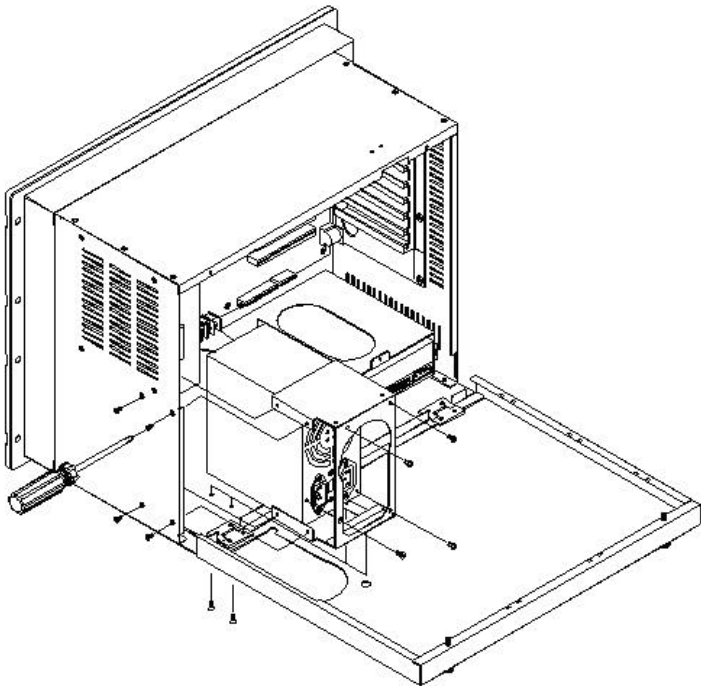4. Fasten the glide-bar with a screw on its bay.

Removing Power Supply

A universal 300W switching power supply is provided in the Workstation (for other options please refer to Appendix B). Ten screws shown in the following figure fix it. Unfasten the six scr ews and pull it out and then you can start either maintenance or upgrading work.

Removing/Installing Cooling Fan

A 64 CFM fan is installed with in a housing to keep the working temperature inside of the chassis. You are expected to clean and replace the filter in it form time to time and for that you don't need to strip the housing and take the whole unit off. There is a small handle standing out from the housing, unfasten the single screw and pull it out by hand. The filter is coming out.
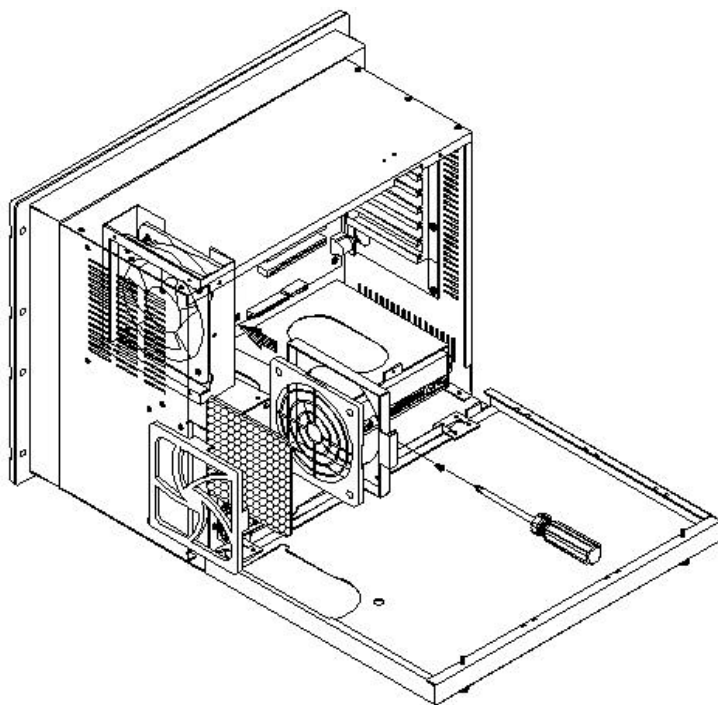
Chapter

3

Drivers Installation

The AMB-655 comes with a CD-ROM, which contains most of drivers and utilities of your needs.

There are several installation ways depending on the driver package under different Operating System application.

If you utilize Windows 2000 series OS, you are strongly recommended to download the latest version Service Pack from Microsoft website and install it before installing any driver.

Please follow the sequence below to install the SBC-780 drivers:

Step 1 – Install VIA 4-in-1 Driver

Step 2 – Install VGA Driver

Step 3 – Install Ethernet Driver

Step 4 – Install Audio Driver

Note:
1. *For SBC-860 CPU card, please refer to the user manual (Chapter 4) in the following path.*
    "cd-rom": \Manual\ CPU Card\SBC-860 Manual 4th Ed.pdf"
    (Remarks: "cd-rom" means your CD-ROM drive letter)
2. *For Touchscreen installation please refers to the excel file:*
    ReadMe_All-Prods-Touch-list.xls to find out your match touchscreen type and follow the installation guide in respective folders.

Applicable for Windows 2000/98/ME/NT

1. Insert the supporting CD-ROM into drive.

2. Click on "*Start*" button and then click on "*Run*" button, find the installation wizard "*setup.exe*" in the following path:
   "cd-rom": \Driver\ CPU Card\ SBC-780\ Step 1 – Install VIA 4-in-1 Driver"

   For Step 2, look for the respective OS folders in the following path:
   "cd-rom": \Driver\CPU Card\SBC-780\Step 2 – Install VGA Driver. Under the selected OS folder, find the installation wizard "*Setup.exe*" button.

Again Step 3 & 4, find the installation wizard "**Setup.exe**" button in the following path:
"cd-rom": \Driver\CPU Card\SBC-780\Step 3 – Install Ethernet Driver"
"cd-rom": \Driver\CPU Card\SBC-780\Step 4 – Install Audio Driver"

Press the <Enter> key or click OK to begin the installation.
*(Remarks: **"cd-rom"** means your CD-ROM drive letter)*

3. The setup will automatically detect your OS and complete the installation. Simply following the step-by-step instruction.

4. Shut down and restart your system.

Appendix

A

Power Supply Specification

Power supply constitutes an essential part of the panel PCs, so we make this section to let you know more about the power supply used in them. It is a universal 300W AC switching power supply (default).

Industrial Features:

- 110-240VAC input voltage
- 47-63Hz and 440Hz input frequency
- Equipped "NIPPON CHEMI-CON" super high reliability aluminum electrolytic capacitors
- 60KHz switching frequency control IC inside55   operating temperature
- High reliability "Ball Bearing" cooling fan
- High precision and stable DC outputs for long term operation

General Specifications:

Ripple and Noise: The peak-to-peak ripple and noise for +12V is less than 120mV. The other outputs are less than 1% of each output voltage at rated load. Measurement is done by 20MHz-band width limited oscilloscope and terminated at each output with a 100uF capacitor.

Line Regulation: The output line regulation for outputs while measuring at rated load and +/-10% of input voltage changing.

Load regulation: The output voltage load regulation is less than the values in

the following table by changing each output load +/-40% from 60% rated load, and keep all other outputs at 60% rated load.

Output # +5V: +/-5%   +12V: +/-6%   +3.3V: +/- 5%

    -5V: +/-5%   -12V: +/-5%   5Vsb: +/- 5%

Hold-up Time: Hold-up Time is 16ms typical by measuring from the last AC line changing pulse to the point that +5V drop down to +4.75V

Output Protection: The built-in over voltage protection circuit will shut down the outputs to prevent damaging external circuits. The trip point of crowbar circuit is around 5.9V to 7.0V. The power supply will go into hiccup mode against short circuit or over load conditions, and will auto-recovery while faulty conditions are removed.

Efficiency: The efficiency is higher than 68% by measuring at normal line and rated load.

   Operating Temperature: 0   to 55
   Storage Temperature: -40   to 75

Trouble Shooting

1. **Problem: No Display is shown on the LCD monitor.**

Actions:

If AMB-655 is configured with PCI VGA card, make sure "Init Display Slot" of BIOS setting is set as PCI Slot.