AMB-551-D

15" Panel PC with 5-Slot Industrial Chassis

AMB-551-D Series User Manual V1.0

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Packing List

Before installing your Panel PC, please check if the package

contains the following items.

- AMB-551-D HT(T) series Panel PC

- CD-ROM

    Contains User's Manual, Drivers and Utilities

- Accessories

    - Keyboard/ Mouse cable

    - Screws bag

    - Mounting brackets

    - PCB fixing bracket (optional)

    - VGA Cable

    - CD-ROM iron cover (optional)

    - Power cord

    - Water-proof sponge

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 detergents 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

The AMB-551-D series Panel PC are PC-based industrial computers that are designed to serve as a Human Machine Interface. They are bare-bone PC-based system that could be configured with different levels of full size CPU cards with a 15" XGA (1024 x 768) color TFT high brightness, long-life time LCD displays. AMB-551-D are equipped with Analog VGA input 15" LCD monitor, customer can be easy to choose any type of CPU cards with on-board VGA function. A heavy-duty steel chassis and IP-65 certified aluminum alloy front panel is designed for any harsh environment of industrial standards. AMB-551-D rear side door is able to open for easy maintenance and disk drive housing for CD-ROM, FDD and HDD.

Features

- 15" XGA color TFT LCD display
- Analog VGA signal input
- OSD (On Screen Display) function for display adjustment
- Heavy-duty steel chassis and aluminum alloy front panel
- Water-proof front panel own IP-65 certification
- 5 slots ISA/PCI-bus passive backplane
- Anti-vibration disk drive bay for HDD
- Hold-down clamp to protect add-on cards from vibration
- Cooling fan filter is easy-disassembled
- 30 CFM cooling fan
- P3 (SBC-780) or P4 (SBC-860) level full-size CPU card (optional)
- Resistive Touchscreen (optional)

Specifications

- **Construction:** Heavy-duty steel chassis & IP-65 certified aluminum alloy front panel.
- **Display:** 15" XGA (1024 x 768) color TFT LCD
- **CPU:**
    - SBC-780: Supports Socket 370 based Intel Pentium III coppermine processor up to 1.4 GHz (FSB 66/100/133 MHz)
    - SBC-860: Supports Socket 478 based Intel Pentium 4 processor up to 3.06 GHz (FSB 400/533 MHz)
- **Memory:**
    - SBC-780: Supports up to 1 GB (SDRAM DIMM x 2)
    - SBC-860: Supports up to 2 GB (DDR SDRAM DIMM x 2)
- **Disk Drive Housing:** 3.5" anti-vibration HDD space, 3.5" FDD space and 5.25" CD-ROM space
- **Front panel color:** PMS-403C (military green)
- **Mounting**: Stand alone and Panel mount
- **Cutout Size**: 409 x 277 mm
- **Power supply**: AC ATX – 300W, AC-in 90~264V

    Input Current: 6A (AC in 110 V), 3A (AC in 220 V)

    Frequency: 47~63 Hz

    24V DC – 300W 24V DC-DC (optional)

    Input Range: 19~32VDC

    Maximum input current: 20A at +24VDC input

- **Dimension (W x H x D)**: 440 x 320 x 232mm (17.3" x 12.5" x 9.1")
- **Carton dimension (W x H x D):** 620 x 520 x 395mm
- **Gross Weight:** 20.6Kg (45.32 lbs)

LCD Specifications

Display type	15" color TFT LCD
Max. Resolution	1024 x 768
Max. Colors	256K
Dot size (mm)	0.297 x 0.297
Luminance (cd/m²)	250 cd/m²
Viewing angle	160°(H)
	150°(V)
Back Light MTBF (Hrs)	30,000

Environmental Specification

- **Operating temperature**: 0° to 45   (32~113   )

- **Storage temperature**: -20° to 60   (-4~140   )

- **Storage humidity**: 5 to 95% @ 40   , non-condensing

- **Vibration**: 1G／5~500Hz (Random)／operation

- **Shock**: 15G peak acceleration (11 msec. duration)／operation

- **EMC**: CE／FCC Class A

- **Waterproof／Dustproof**: Front Panel IP65 Certification

Touchscreen (optional)

Type: 8-wire, analog resistive

Interface: RS-232 interface
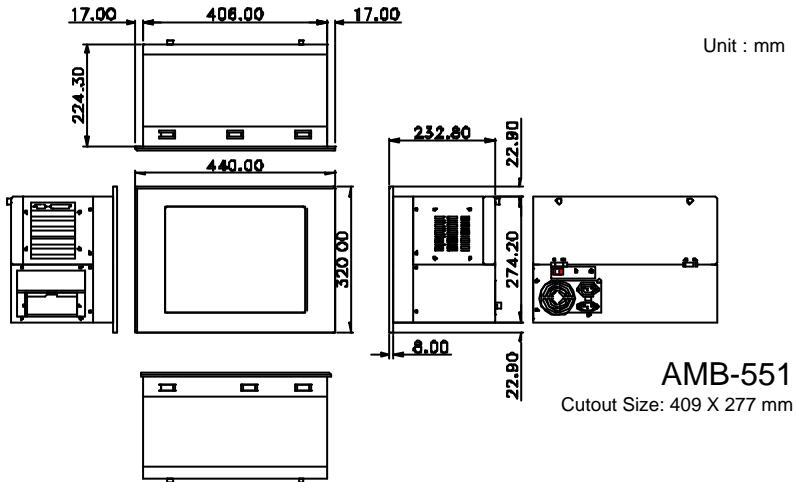
Resolution: 1024 x 1024

Light transmission > 75%

Lifetime: 1 million activations

OS support: MS DOS, Windows 98／SE, Windows NT4.0, Windows

2000, Windows XP

Dimensions

Unit : mm

AMB-551

Cutout Size: 409 X 277 mm

Panel Mounting

These display panels can be placed on a shelf or table, or mounted onto the wall. To mount them onto the wall, you need the mounting brackets, which you will find in the accessory box. Follow the steps described below:

1. Slide the display panel onto the wall
2. Tighten the brackets until the display panel is firmly secured to the wall
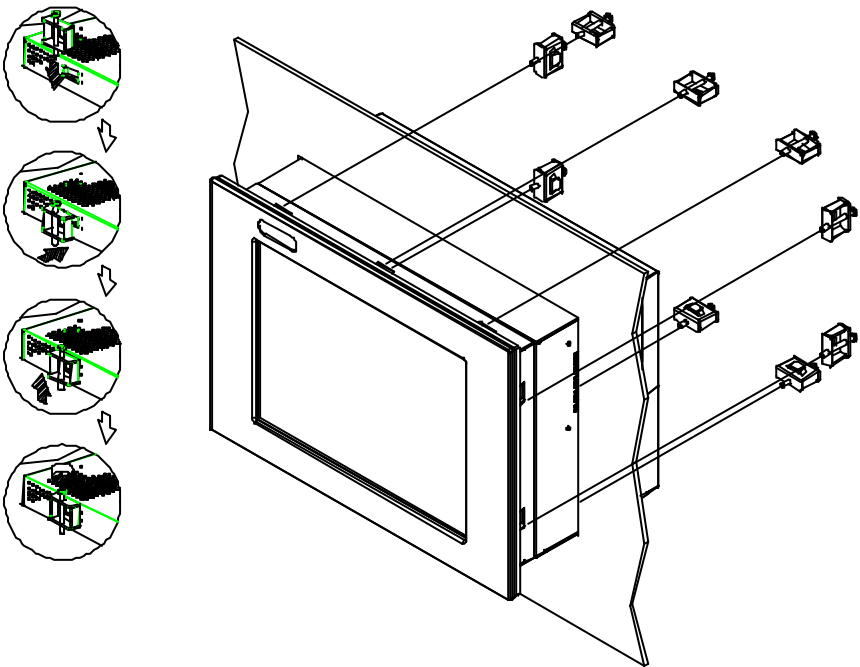
Chapter

2

Hardware Installation

Installing 3.5" HDD, FDD and CD-ROM

The panel PC is a PC-based industrial computer that is housed in aluminum alloy front panel and steel chassis. Any maintenance or hardware upgrades can be easily completed after removing the rear cover case.

1. Unscrew the bottom cover.
2. Take the disk drive module out by unscrewing two screws. See below diagram.
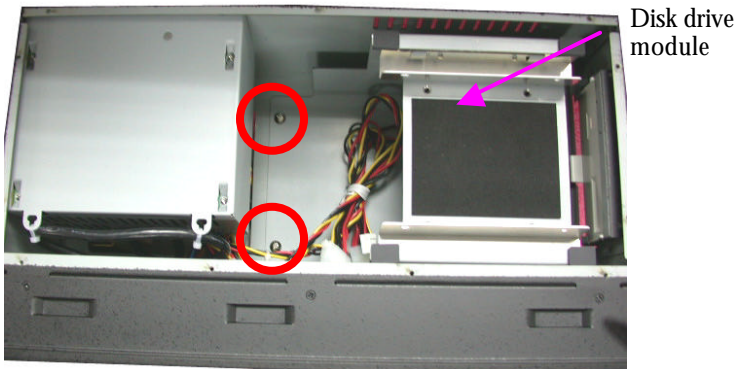
Disk drive module

3. Take off the CD-ROM cover.

CD-ROM cover
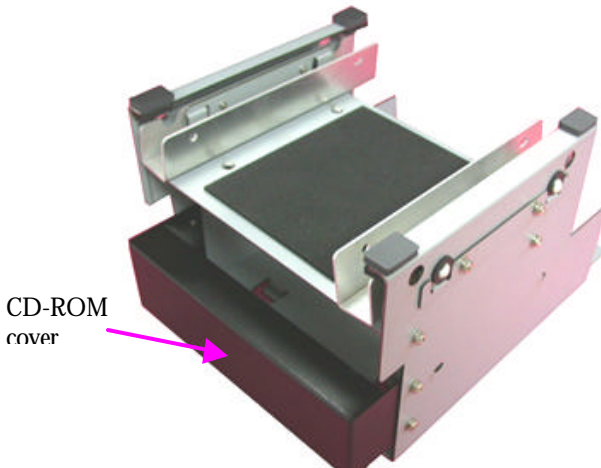
Tighten the FDD on the metal plate by four screws.
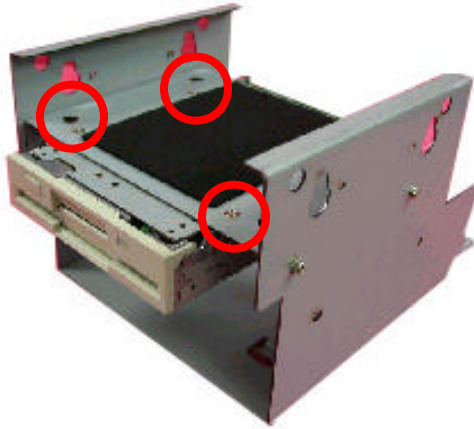
4. Slide the CD-ROM and tighten it. These are four screws separately on each side of metal plate.
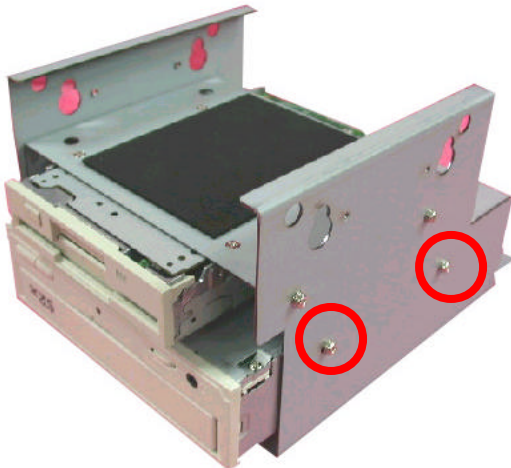
5. Screw 3.5" HDD in bracket.

6. Screw the disk drive module to steel chassis and connect the HDD, FDD and CD-ROM cable.
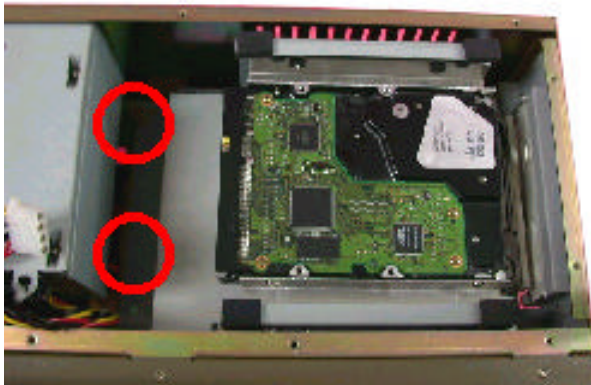
VGA Cable Installation

Make sure that the VGA cable is securely connected before turning on the power switch.

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Installing Touchscreen cable to CPU card

If you only order AMB-551 HTT-D bare bone, you need to install touchscreen cable to RS-232 pin header on CPU card.


```
9 X        10 X
7 X         8 X
5 Ground   6 X
3 white     4 X
1 X         2 red
```

The white end is Pin 1
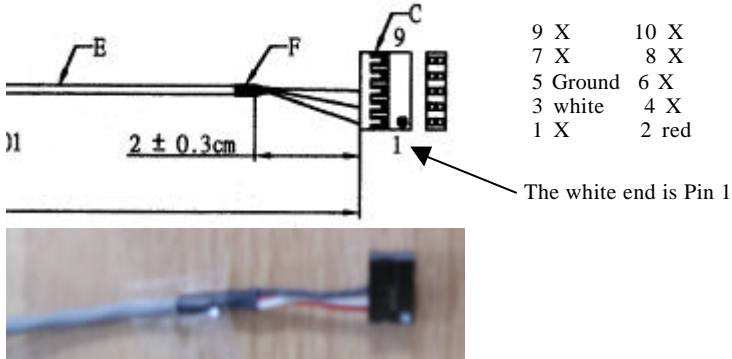
RS-232 Touchscreen Pin Assignment

Pin defined	Standard RS-232 Signal	Touchscreen cable
#1	DCDA	NC
#2	DXA	RXA
#3	TXA	TXA
#4	DTRA	NC
#5	GND	GND
#6	DSRA	NC
#7	RTSA	NC
#8	CTSA	NC
#9	RIA	NC
#10	NC	NC

Chapter

3

BIOS & Jumper Setting

The AMB-551-D provides two options:
1. Built in SBC-780 CPU card (Pentium III Level)
2. Built in SBC-860 CPU card (Pentium 4 Level)

In regard to Jumper setting and BIOS for each CPU card, please refer to User manual of SBC-780 or SBC-860.

(Manual:// CPU card/ SBC-780 or SBC-860)

Chapter

4

Drivers
Installation

The AMB-551-D comes with a CD that contains most of drives and utilities of your needs.

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

We recommend that the system driver installation procedure must be performed first.

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

As for the rest of Driver Installations of CPU cards, please refer to the individual manual for each CPU cards.

In regard to Touchscreen installation, please refer 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.

Note: AMB-551-D provides optional Dynapro Resistive Touch.

The AMB-551-D provides two options:
1. Built in SBC-780 CPU card (Pentium III Level)
2. Built in SBC-860 CPU card (Pentium 4 Level)

In regard to Drivers Installation for each CPU card, please refer to

User Manual of SBC-780 or SBC-860.

(Manual:// CPU card/ SBC-780 or SBC-860)

Chapter

5

On Screen
Display Control

On Screen Display (OSD) Controller

The LCD monitor is very easy and simple to operate. There are five controls below on the rear panel. You can see their respective indicators.

AUTO   To auto adjust image position, pixel clock and phase. Whenever there is flicker happens, always press the AUTO button first.
The setting value will be automatically adjusted correctly and saved.

Notice:
The AMB-551-D series were designed to provide the best quality in 60-75MHz VGA frequency range. We recommend keeping the screen refresh rate within the range in order to obtain the optimum quality.

MENU   **Menu**

To activate the OSD Menu, press the Button. When locating an item you like to adjust in the OSD Menu, press to bring up the corresponding sub-menu for options.

▲   **Increase / Moving UP Button**

To move the locating cursor forward in the OSD Menu, press UP button. To increase the value while adjusting a parameter, press the ▲ button.

▼   **Decrease / Moving DOWN Button**

To move the locating cursor backward in the OSD Menu, press the ▼ button. To decrease the value while adjusting a parameter, press ▼ button.

⏻   **Power Switch**

Push up the Power Switch to turn on/off the LCD monitor backlight and the power LED will light up Green/Red.

Display Menu

There are twelve options in the OSD Menu. Press the Menu button to choose the items you would like to adjust.

<**Main Menu**>

Auto Adjust
Monitor
OSD Control
BIOS Version
Graphic
Graph / Text
Exit

<**Auto Adjust**>

Auto Tune
Auto Gain
Exit

<**Monitor**>

H Position
V Position
Phase
Clock
Reset
Exit

<Graphic>

Contrast
Brightness
R Color
G Color
B Color
Exit

<Graph / Text>

Sharpness
Exit

<Exit>

Troubleshooting

To solve the following problems, you may need to refer to **Appendix A Standard Timing** for compatible display specifications.

1.   Problem: Unclear or Unsteady Display

Actions:

Activate the **AUTO** button. You might need to repeat to find balanced values for a good quality.

If the **AUTO** button cannot solve the problem, try to manual fine tune following steps below:

1.   If the image size does not fit the screen, adjust the **Clock** value under "**Monitor**" menu.

2.   If there is image pixel noise appears, adjust the **Phase** setting value under "**Monitor**" menu. Pull and adjust the value bar to find out what is the best clarity range for your LCD display.

3.   If the image is not centered after step 1 and 2, adjust **H Position** or **V Position** under **"Monitor"** menu to center the image.

4.   If you still have problem to fine-tune the image, call your local technical support for assistance.

2.   Problem: No Display is shown on the LCD monitor.

Actions:

1.   Make sure the Panel PC is powered on by checking if the Power LED is lit. Check if all the connections of the external VGA cable are secure and the system is running correctly.

2.   If the power LED lights up green, but there is still nothing displayed; connect your PC with another

external monitor. If your PC works properly with
that monitor, then it is possible that the VGA card
timing of the system may be outside the LCD
monitor's synchronous range. You may need a
qualified technician for help.

3.　　Problem:　The LCD monitor does not work properly

under Windows, but it functions all right in

DOS mode.

　　　Action:

Make sure the display mode you choose in Windows matches the

LCD monitor.