

USER'S MANUAL

AMB-517 Series

*Industrial
MMI Workstation*

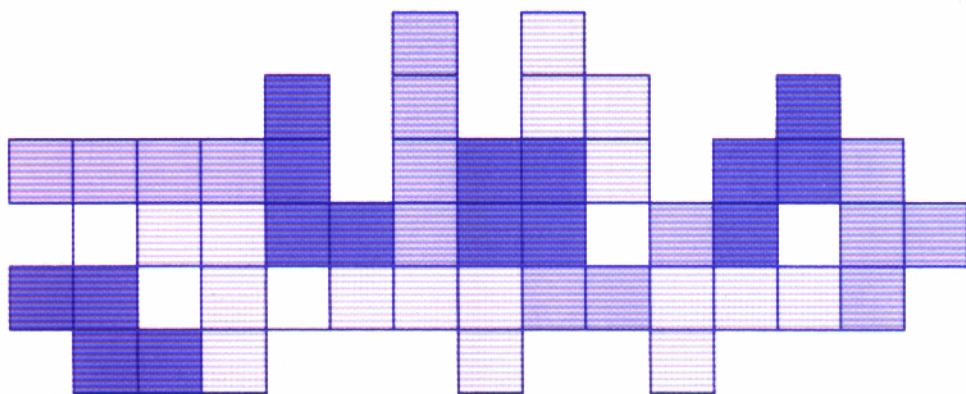


Table of Contents

About This Manual	1
Important Safety Instructions	1
Packing List	2
Chapter 1 Overview	3
1.1 General	3
1.1.1 The Single Board Computers (SBC)	3
1.1.2 Optional SBCs	4
1.2 Features	5
1.3 Specifications	6
1.3.1 General Specification of AMB-517	6
1.3.2 Display Option and Specification	7
1.4 Dimensions	8
1.5 External FDD – AS-40 (Option)	9
Chapter 2 System Setup And Operating	10
2.1 General	10
2.2 Opening The rear Cover	11
2.3 The Hard Disk Drive	12
2.4 PC/104 Module	13
2.5 Cleaning and Changing the Fan	14
2.6 Panel Mounting	15
2.7 Connectors On the Rear Panel	16
2.7.1 External VGA Monitor Connector	17
2.7.2 Keyboard Connector	17
2.7.3 PS/2 Mouse Connector	17
2.7.4 Floppy Drive Connector	17
2.7.5 Printer Port Connector	18

2.7.6 Serial Ports Connector	18
2.7.7 10 BASE-T Connector	18
2.7.8 Power Inlet and Power Switch	18
2.8 Operating	19
2.8.1 Touchscreen (option)	20
Appendix A: Power Supply Specification	21
Appendix B: Exploded diagram	23

About This Manual

Welcome to the AMB-517 series of industrial Man Machine Interface (MMI) workstation. This manual will introduce the AMB-517 series to you in very detail. In addition, it will help you understand how to set up and use AMB-517 industrial workstation.

This manual contents two chapters and two appendixes.

- | | |
|------------|---|
| Chapter 1 | Gives you an overview of the industrial workstation. |
| Chapter 2 | Tell you how they are basically constructed and what procedures you should take for system setup. |
| Appendix A | Gives detailed specifications of power supply. |
| Appendix B | gives a picture of exploded diagram on them. |

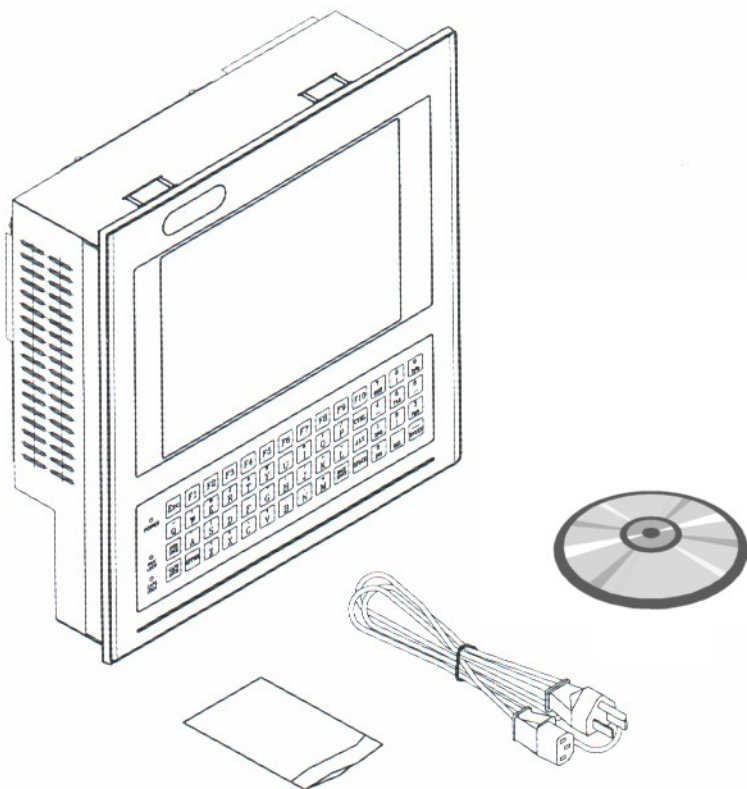
Important safety Instructions

- Please read this manual completely before operating the unit and retain it for future reference.
- Before you start any of the actions, make sure that you have the correct version of the unit. So far the series have AMB-517C, AMB-517T, AMB-5171T, AMB-5172T, and AMB-517/5171□T- □(Your selected display)
 - T(Optional touchscreen)
- Please unplug this product from the wall outlet before cleaning. If the surface of the LCD cells needs to be cleaned, wipe it swiftly with cotton or other soft cloth. If the product is still not completely clear, blow on its surface and wipe it.
- Please pay attention not to scratch on the surface of the front panel polarizer, because it is easily damage.
- Do not use this product close to water. And avoid exposing this product to the direct sunlight, strong ultraviolet light, etc. for a long time.
- This product must be operated from the type of power source specified. If you are not sure which type of power source is available, please refer to appendix A.

Packing List

The following items will be contained in the package. If any of these items are missing or damaged you should contact your dealer immediately.

- One AMB-517 industrial workstation with flat panel display and 56-key membrane keypad
- One power cord
- A pack of accessory
- One CD-Title



Chapter 1 Overview

1.1 General

To fulfill customer satisfaction, AMB-517 series are concerned about quality, reliability, and cost. They are specially designed to keep normal operation under harsh environment which meet all the requirements for an industrial man-machine interface. Furthermore, they are very tiny, thin, light, and convenient to install.

They come equipped with a flat panel display which is 10.4" color DSTN or high brightness(200cd/m^2) /long life-time (25,000 Hrs) 10.4" color TFT LCD display, a 56-key membrane keypad, an analog resistive or capacitive touchscreen (option), an all-in-one SBC, a universal 55W switching power supply (refer to appendix A for options), a space for a 3.5" HDD. All of them are enclosed with a heavy-duty steel chassis and a high-quality aluminum front panel which meet the NEMA 4/12 industrial and environmental protection standards.

All the controls and connectors are placed on the rear panel, users can connect the industrial workstation to other devices via them.

NOTE Touchscreen or DC power supply is optional as users' order and to ask for additional price table.

1.1.1 The Single Board Computers (SBC)

The SBC contents a 486 CPU with an on-board Ethernet interface, local-bus SVGA controller. Its features include four serial ports, one parallel port, an enhanced IDE hard disk interface, a floppy disk interface, two 72-pin SIMM DRAM sockets, watchdog timer, and a keyboard/PS/2 mouse interface. Please refer to inside SBC user's manual for more details about the SBC.

1.1.2 Optional SBCs

There are four SBCs types and one external 3.5" FDD can be chosen by users for AMB-517 series.

- AMB-517C:
With 10.4" DSTN LCD display
Includes: An all-in-one SBC with 486DX4-100 CPU, 8MB DRAM, a universal 55W switching power supply & space for a 3.5" HDD.
- AMB-517T:
With 10.4" high brightness/long life-time color TFT LCD display
Includes: same as AMB-517C
- AMB-5171T:
An all-in-one Pentium SBC with P-133 CPU, 16MB DRAM,
Others same as AMB-517T
- AMB-5172T:
An all-in-one Pentium SBC with P-200MMX CPU, 32MB DRAM,
Others same as AMB-5171T
- AMB-517/5171□T:
□ - Your selected display
T - Optional touchscreen
- AS-40:
External 3.5" FDD for AMB-517 series

1.2 Features

- * Motherboard:
 - CHIPS F65545 LCD/CRT display controller
 - 3 serial ports of RS-232 and one selective RS-232/422/485
 - 16-bit NE2000 compatible Ethernet interface
 - All-in-one 486 SBC (486DX4-100 CPU & 8MB DRAM), or Pentium-133, 16MB DRAM (option), or Pentium-200 CPU, 32MB DRAM (option)
- * Compact size 10.4" color DSTN or high brightness(200cd/m²) /long life-time (25,000 Hrs) 10.4" color TFT LCD display (option)
- * Universal 55 W switching power supply (or other options)
- * Analog resistive or capacitive touchscreen (option)
- * Heavy-duty steel chassis and NEMA 4/12 aluminum front panel
- * Panel mount
- * 80mm deep only
- * 30CFM cooling fan
- * Space for a 3.5" HDD
- * LED power indicator on the front panel
- * Controls and connectors on the rear panel: Power switch, Brightness VR, Keyboard, COM1, Printer port, 10 BASE-T, Contrast, PS/2 mouse, External FDD, COM2, COM3 and VGA.

1.3 Specifications

1.3.1 General Specification of AMB-517

Case Material	Heavy-duty steel chassis & NEMA 4/12 aluminum front panel
Operating Voltage	85-265 VAC, 47-440Hz
Power Supply	55 Watts
Front Panel	LED power indicator
Disk Bay	One 3.5" HDD
Inner Cooling	One 30-CFM fan
Operating Temperature	0°C to 50°C
Storage Temperature	-20°C to 60°C
Relative Humidity	5 to 95%, non-condensing
Altitude	10,000ft (3000 meters)
Vibration	5 to 17 Hz, 0.1" double-amplitude displacement 17 to 500Hz, 1.5G peak to peak
Shock	10G-peak acceleration (11-msec. duration)
Safety	meets UL/CSA/TUV
EMI	meets FCC/VDE Class A
Dimensions	320 (W) x 342 (H) x 85.7 (D) mm
Net Weight	6.5Kgs

NOTE

1. Model Number System

Product Names	AMB-517C: Standard model AMB-517T: High brightness/long life-time color TFT LCD display AMB-5171T: Pentium133 CPU, 16MB DRAM AMB-5172T: Pentium 200MMX CPU, 32MB DRAM
---------------	--

2. The colors of display are 16 in AMB-517series.

1.3.2 Display Option and Specification

Item	Color DSTN	Color TFT
Diagonal	10.4"	10.4"
Display area	211.2(H)x158.4(V)	211.2(H)x158.4(V)
Resolution	640x480	640x480
Color or gray scale	256 colors	64k colors
Dot size (H x V(mm))	0.085x0.305	0.330x0.330
Contrast ratio	30:1	100
Luminance (cd/m ²)	70	200
View angle(Horizontal)	60°	120°
Operating Temperature	0-40°	0-50°
Backlight Life-time (Hrs)	10,000	25,000

1.4 Dimensions

Unit: mm

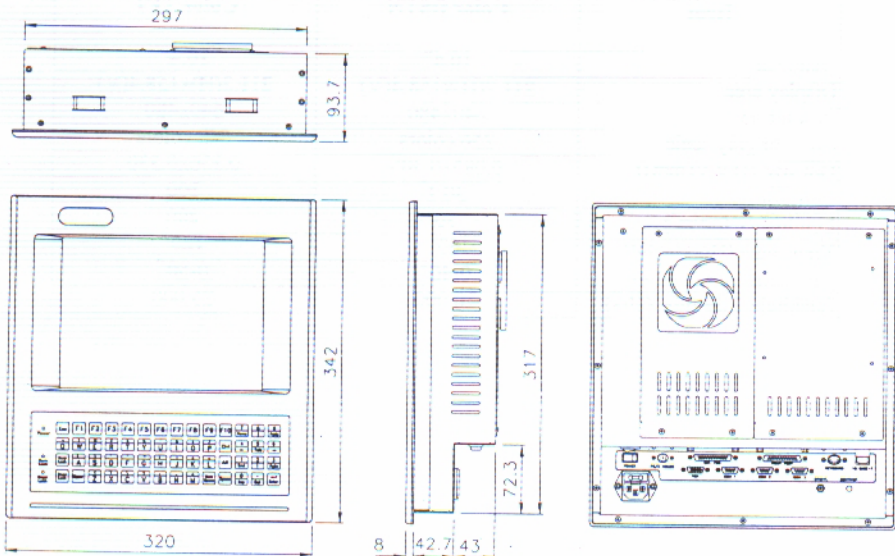
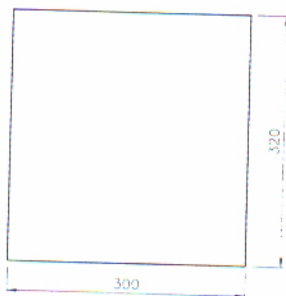


Figure 1-1

The mounting hole size must be bigger than the rear side of AMB-517. It can be seen from figure 1-2: (length:279mm increase to 300mm, width: 317mm increase to 320mm), and fix the AMB-517 on the wall with four brackets.



Mounting Hole size

Figure 1-2

1.5 External FDD – AS-40 (Option)

We have developed an external 3.5" FDD for AMB-517. AS-40 can be connected by using DB-25 cable and selected among all third party FDDs.

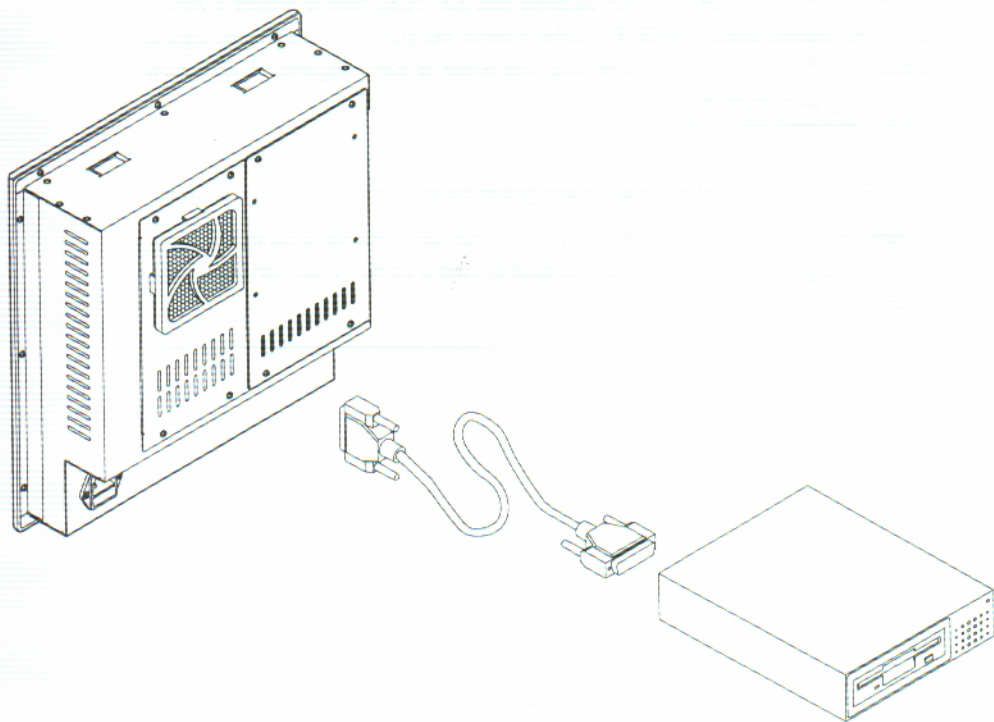


Figure 1-3

Chapter 2 System Setup And Operating

2.1 General

In order to let users realize the AMB-517 series in constructions, this chapter will illustrate the step of sequence for users. Users will learn how to set up this system and apply it step by step. If users need a PC/104 daughter, the following steps will present in each section to install a PC/104 daughter and 3.5" HDD how to mount it onto a panel. As regards quality, AMB-517 series warrant the quality for customers. This is because, AMB-517series have been setup and tested at R&D Department of Astech before they were shipped.

IMPORTANT Do not plug in any power source when you start to setup the system. Also remember whenever you want to open the industrial workstation again for either upgrading or maintenance you have to switch all the power off and unplug them.

2.2 Opening The Rear Cover

The rear cover is fastened to the chassis with four screws on the right (see fig. 2-1).

NOTE Notice that the hard disk drive housing and the PC/104 module are occupying the same place.

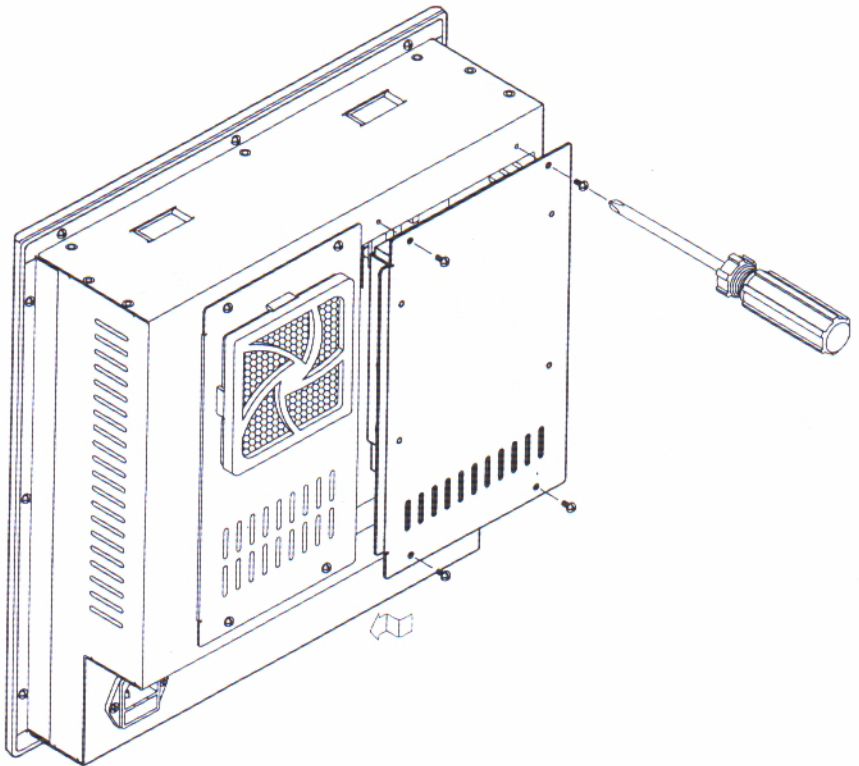


Figure 2-1

2.3 The Hard Disk Drive

When you open the rear cover, you will see a plate is standing on four standoffs from the SBC (see fig. 2-2).

To install a 3.5" HDD

1. Take off the plate by unfastening four screws around it. Notice that you do not need to take off the four standoffs.
2. Fix your HDD by four screws on the plate (as shown in the following figure).
3. Connect the HDD and SBC with a cable which is attached in the accessory.
4. Mount the plate and disk onto SBC.

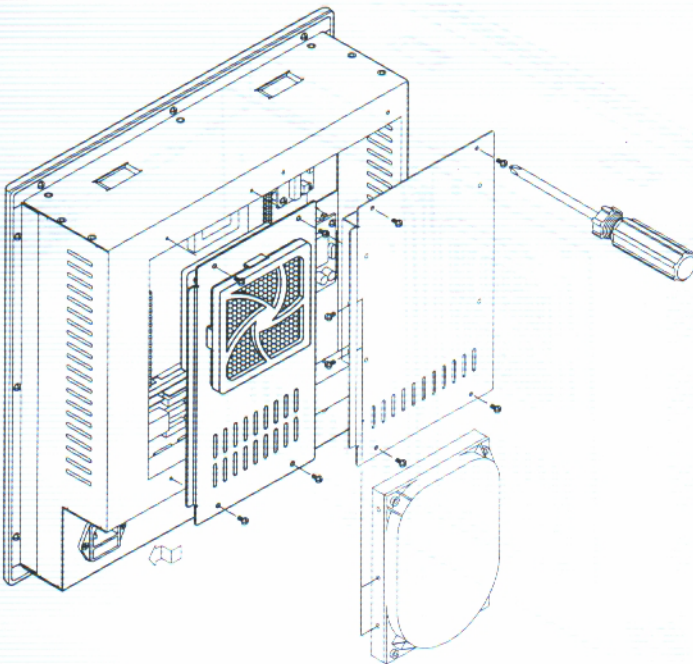


Figure 2-2

2.4 PC/104 Module

As mentioned in section 2.2, you need to take off the HDD when you would like to install a PC/104 module on the SBC (see fig. 2-3).

To install a PC/104 module

1. Take off the HDD if it had installed a HDD.
2. Mount your PC/104 module onto SBC by fasten four screws.

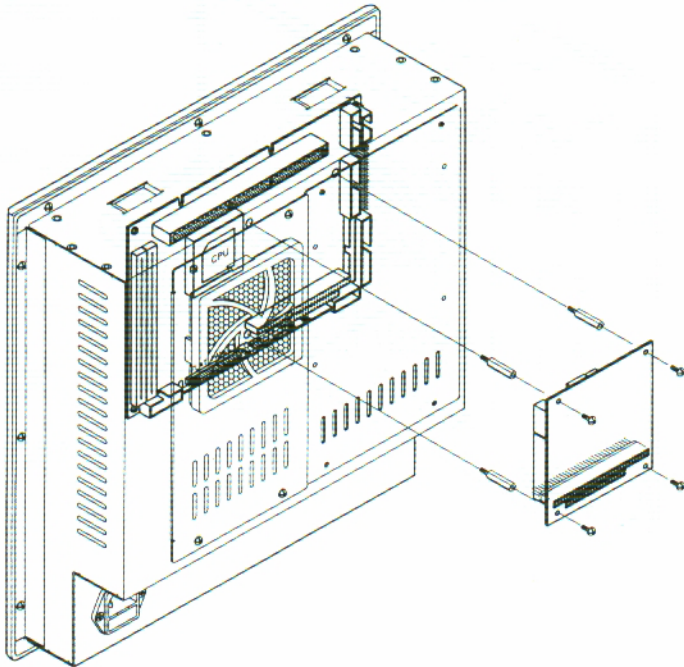


Figure 2-3

2.5 Cleaning and Changing the Fan

Open the cover on the fan of the rear cover to clean the filter net. The fan is fixed by four screws on the left side of rear cover. Therefore users must unfasten the four screws to change the fan. It can be seen from fig 2-4.

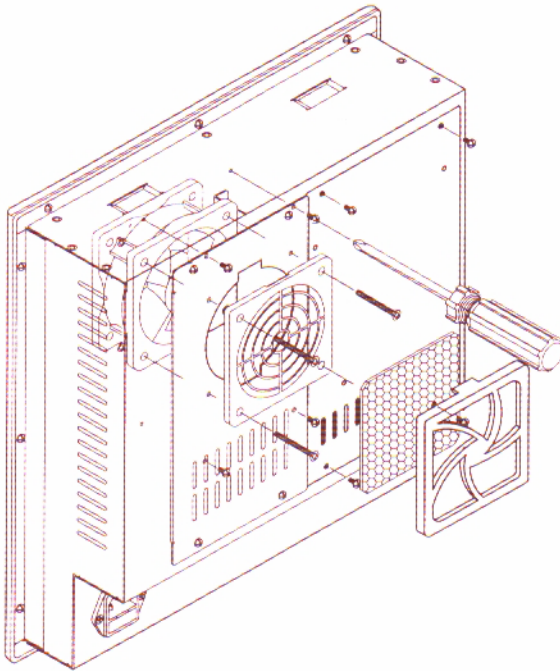


Figure 2-4

2.5 Panel Mounting

The panel PCs can be mounted onto a control panel within an aperture (refer to the dimensions in section 1.4 and see fig. 2-5).

To mount the panel PC

1. Set the chassis within the aperture.
2. Slide the mounting kits into the slots on the top and bottom of the chassis.
3. Drive the screws on the kits tight against the control panel until a hooklike click on the kits firmly stuck.

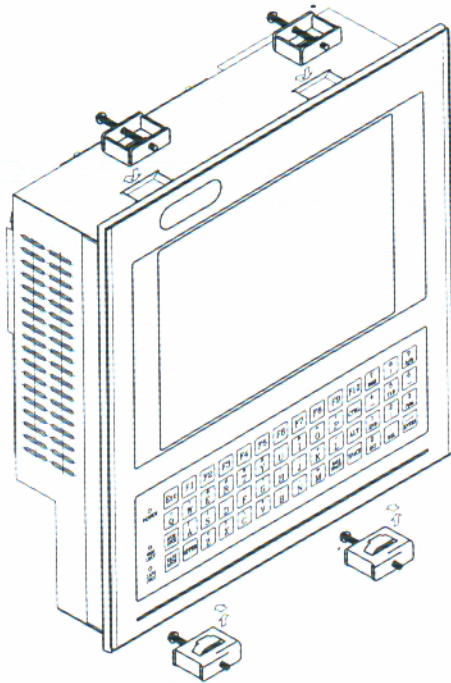


Figure 2-5

2.7 Connectors On The Rear Panel

The panel PCs have various connectors placed on rear panel, you can connect them to various devices such as monitor, keyboard, mouse, floppy disk drive, printer etc (see fig. 2-6).

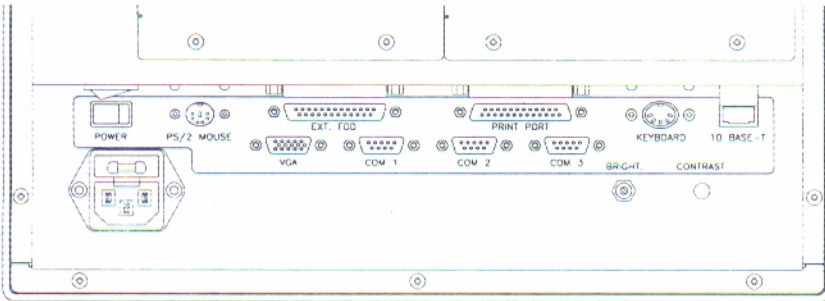


Figure 2-6

2.7.1 External VGA Monitor Connector

Uses a 15 pins female miniature D-SUB connector for connecting an external CRT color monitor to the unit as a simultaneously display function. The external monitor is software controlled, and can be displayed at 640 x 480 resolution with 16 colors.

2.7.2 Keyboard Connector

It is a rounded DIN connector (the mark "KEYBOARD" on the rear panel). Align your keyboard DIN connector to the receptacle and gently plug into the unit.

The SBC's BIOS standard setup menu allow you to select "All, But Keyboard" under the "Halt On" selection. This allows no-keyboard operation in embedded system applications without the system halting under POST (power-on-self-test).

2.7.3 PS/2 Mouse Connector

One PS/2 standard mouse port (the mark "PS/2 MOUSE" on the rear panel) with the proper software driver installed will allow the operation of the PS/2 standard mouse.

2.7.4 Floppy Drive Connector

You can attach one 3.5" FDD to the unit on the D-SUB 25 pins connector (the mark "EXT. FDD" on the rear panel).

2.7.5 Printer Port Connector

One PC standard parallel port with a DB-25 female connector (the mark “PRINTER PORT” on the rear panel) is available on the unit. Normally, the parallel port of SBC is used to connect a printer. The default setting of the parallel port is LPT1, IRQ7, and it also can be disabled in the system BIOS setup or settings changed by rearranging the jumper block on the SBC.

2.7.6 Serial Ports Connector

The other three serial ports (the mark “COM1”, “COM2”, “COM3” on the rear panel) let you connect to serial devices (i.e. mouse, serial printer, modem, scanner, etc.) or a communication network.

2.7.7 10 BASE-T Connector

10 BASE-T (the mark “10 BASE-T” on the rear panel) connects to the SBC via an adapter cable to a 10-pin polarized header.

2.7.8 Power Inlet And Power Switch

This Product is designed to accept the worldwide AC power source from 85VAC to 265VAC at 47Hz to 440Hz. The power inlet provides an easy connection to the AC power outlet via power cord, and the power switch controls the system ON and OFF status.

To turn the system power ON or OFF

- Depress the power switch’s “0” end to make the system in the OFF status.
- Depress the power switch’s “1” end to make the system in the ON status.

To connect the power cord to the power inlet

1. Depress the power switch to the “0” position.
2. Check the line voltage if its range is within specifications.
3. The system is ready to work now.

2.3 Operating

Before the system operating, please check all of the connections are correct. The following connection chart is an example for application (see fig. 2-7).

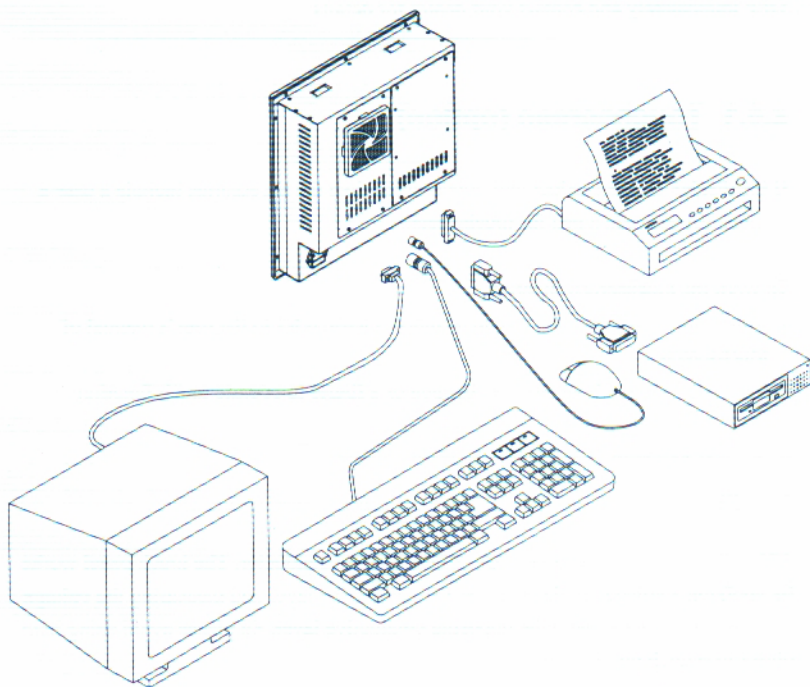


Figure 2-7

When system is power ON

1. Check if the LED power indicator is in green color.
 2. Check if the cooling fan is turning and absorb the air from outside.
 3. Check if the LCD display is normal and adjust brightness VR (the mark “BRIGHT”, “CONTRAST” on the rear panel) to make the best viewing of video.
 4. Check individually if the installed devices are operation correctly.
-

IMPORTANT If the system can not work normally, please turn the power OFF immediately and contact your dealer for details.

2.8.1 Touchscreen (option)

If the display of this product with touchscreen then the accessories include a user's manual, drivers, and a pen for touchscreen.

To work the touchscreen function

1. You should setup the software in advance. Please refer to the user's manual of touchscreen.
 2. Use the pen to calibrate and use the pen or a finger to operate touch function.
-

NOTE

The surface of touch panel is a layer of transparent conductor. The touch panel works by applying a voltage gradient across the conductive layer and measuring the voltage at the point of contact with the opposing conductive layer. So please avoid using hard object to scratch on its face.

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 55W AC switching power supply (default).

Industrial Features:

- 47-440Hz input frequency
- 100% equipped "NIPPON CHEMI-CON" super high reliability aluminum electrolytic capacitors
- 60KHz switching frequency control IC inside
- -20°C to 70°C operating temperature
- High precision and stable DC outputs for long term operation

General Specifications

Ripple and Noise: The peak to peak ripple and noise for each output is less than 1% at rated load. Measuring is done by 15MHz band width limited oscilloscope and terminated at each output with a 0.47 uF capacitor.

Line Regulation: The line regulation for each output is less than +/-1% while measuring at 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: +/-3% +12V: +/-5%

Hold-up Time: Hold-up time is longer then 16ms 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 latch off against short circuit or over load conditions, and will have to OFF and ON the input line to restart the power supply.

Efficiency: The efficiency is higher than 70% by measuring at normal line and rated load.

Safety: Designed to meet the following standards

UL 478, 1012, 1950 D3

TUV EN60 950

CSA 22.2 No.234

EMI: Designed to meet the following standards

FCC docket 20780 curve "B"

EN50081-2: CISPP22 "B"

Operating Temperature: -20°C to 70°C

Storage Temperature: -30°C to 85°C

Power Supply Selection Table

Output spec. at 50°C

Model	Input Voltage	Max. Output Current	
		+5V	+12V
Universal/55W	85-265VAC	8A	1.2A
24VDC/55W	16-32VDC	8A	1.2A
12VDC/45W	9.5-18VDC	6A	1.1A

Appendix B: Exploded diagram

