iPanel

CONTROL TECHNOLOGY CORPORATION

iPanel™ Installation Guide and Specifications

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Specifications are accurate as of the time of printing and are subject to change without notice.

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CHAPTER 1

Introduction

An introduction to the iPanel.

First of all, we wish to thank you for purchasing an iPanel.

Our state-of-the-art industrial-automation hardware and software products incorporate a variety of powerful features, yet they are at the same time cost-effective solutions.

We believe that we can provide not only the best and most advanced technology, but also at the lowest cost compared to other similar competitive offerings.

This product manual contains technical information to help you to use and install your iPanel. This manual details the product's technical specifications and connector (port) pin-out information as well.

Although the information contained within this document applies to most iPanel configurations, not all features and capabilities are necessarily available. Please contact us if further information or clarification is required.

CHAPTER 2

Operating System Software

The iPanel is capable of using standard, off-the-shelf operating system software.

Unlike some HMI hardware designs which utilize very specialized embedded software, our hardware is based on standard X86 compatible processors from Intel, National Semiconductor, AMD, VIA and others.

This means that our hardware is very easy to use as well as compatible with a wide variety of operating systems.

Depending on the configuration you have ordered, your iPanel was probably shipped with one of the following operating systems:

- Microsoft Windows XP; designed for desktop and industrial-automation application software
- Microsoft Windows Embedded XP; designed for OEM applications and used by our powerful CT HMI application software
- Linux

The iPanel itself is also compatible with other, older operating systems such as Microsoft Windows 2000 and Microsoft Windows 98SE.

CHAPTER 3

Mounting the iPanel

There are many ways to mount an iPanel to a wall, or to attach it to an enclosure.

Depending on what options have been ordered, the iPanel is capable of being mounted to a wall or other fixture, or it can be permanently attached to an enclosure or cabinet.

Using the VESA LCD mounting holes, an iPanel can also be attached to commonly available LCD mounting arms which allow the iPanel to be moved and positioned for operator use.

VESA-75 mounting

The VESA-75 mounting standard utilizes the 4 inner, tapped screw holes at the rear of the iPanel. These holes are tapped for a 4mm metric screw, with the distance between adjacent holes being 75mm.

Various mounting arms (and other mounting solutions) are available from third-party vendors which utilize the VESA-75 standard. Please contact CTC for more information.

See the VESA-100 section below.

VESA-100 mounting

The VESA-100 mounting standard utilizes the 4 outer, tapped screw holes at the rear of the iPanel. These holes are tapped for a 4mm metric screw, with the distance between adjacent holes being 100mm.

Various mounting arms (and other mounting solutions) are available from third-party vendors which utilize the VESA-100 standard. Please contact CTC for more information.

A couple of styles of available 3rd-party mounts are shown below.

Hook holes

There are 4 hook holes for use as a quick-mount method to a wall or other fixture. These are typically used when a temporary mount is required.

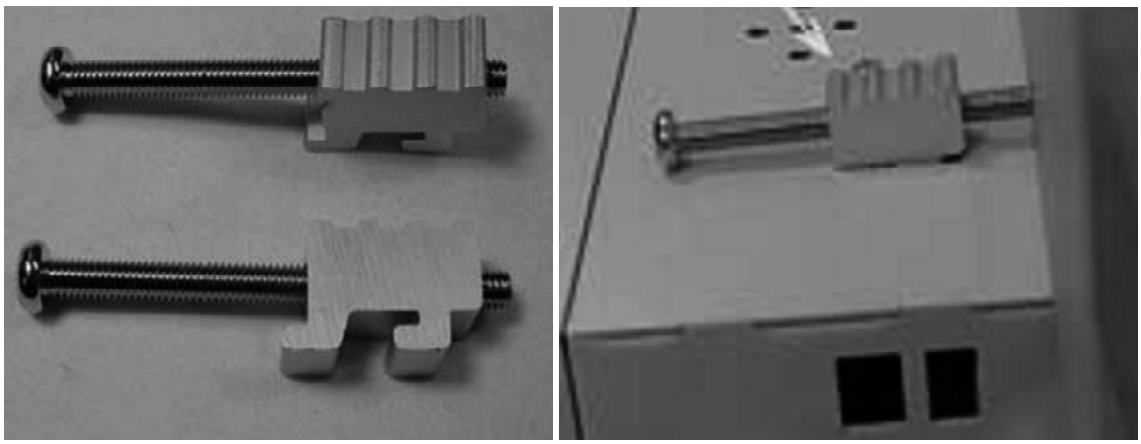
Tapped Screw Holes

There are 8 (or more) tapped screw holes around the bezel of the iPanel suitable for mounting the panel to a cabinet or other enclosure.

Fastener Mount

There are (as an option) 8 (or more) sets of punched holes around the four sides of the iPanel housing. Each mounting kit comes with custom fastener clamps for mounting the unit to an enclosure.

A picture of the clamp and an example of mounting the unit is shown below.



CHAPTER 4

Connections

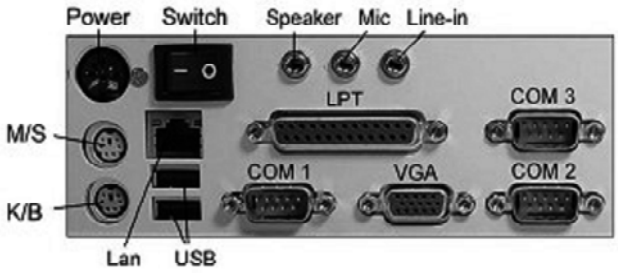
The iPanel uses standard PC-style connections and pin-outs for connectors such as a PS/2 mouse and keyboard as well as serial and parallel connectors.

This chapter details each of the connections available on an iPanel. The location and availability of certain connections vary by iPanel configuration.

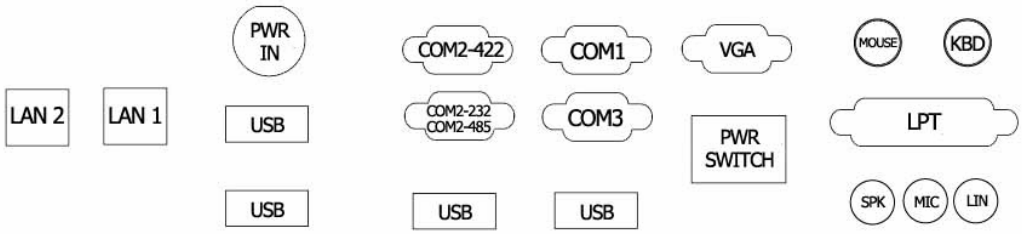
Please contact CTC for more information on available configurations and options.

EXTERNAL CONNECTOR LAYOUT

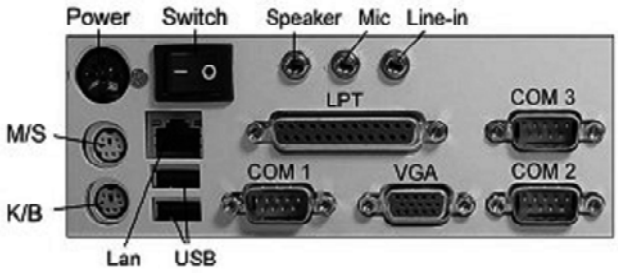
Model 1201



Model 1205



Model 1501



EXTERNAL CONNECTIONS

Power Supply

The iPanel uses a compact, powerful, external switching power supply to minimize heat within the enclosure.

The supply can operate from 90VAC to 264VAC, 47-63Hz.

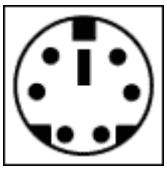
This supply requires 2A (maximum) at 115VAC input (1A at 230VAC).

The supply has a 16ms hold-up time at full-load at 115VAC input, and features short-circuit and over-voltage protection on its primary output.

The supply is designed to operate at 0°C to +45°C ambient temperature (storage temperature -20°C to +70°C).

The power supply utilizes a round DIN-style connector.

PS/2 connections



The iPanel allows an external mouse and/or keyboard to be connected to an iPanel for use instead of or along with the integrated touch-panel. These mouse and keyboard connections utilize PC-standard round-DIN connectors (an example is shown at left).

It is recommended that a Microsoft-compatible mouse is utilized. Other standards (such as Logitech) may not function properly, and are not supported.

Serial connections

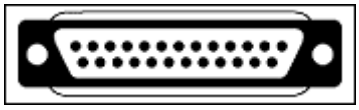
Depending on configuration, from 1 to 4 external serial connections are available which utilize a standard 9-pin D-subminiature connector.

One or more of the serial ports can be configured to support RS-422 and/or RS-485 connections. By default, the serial ports support the RS-232 standard.

Note: switching the interface from RS-232 to RS-422 or RS-485 is not supported in the field – please specify the configuration desired when the iPanel is ordered. The unit must be returned to the factory for reconfiguration after purchase.

DB-9 Serial	Signal Direction	Signal Name RS-232
		Protective Ground
3	DTE-to-DCE	Transmitted Data
2	DCE-to-DTE	Received Data
7	DTE-to-DCE	Request To Send
8	DCE-to-DTE	Clear To Send
6	DCE-to-DTE	Data Set Ready
5		Signal Ground
1	DCE-to-DTE	Carrier Detect
4	DTE-to-DCE	Data Terminal Ready
9	DCE-to-DTE	Ring Indicator

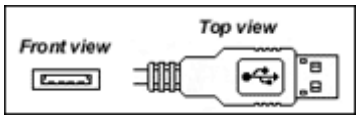
Parallel connector



A standard printer may be connector and used in conjunction with the 25-pin D-subminiature connector on the back of the iPanel (shown at left).

Note: only certain printers are capable of being used as an external printer with the CT HMI software. Contact CTC for further information.

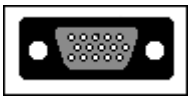
USB connections



From 1 to 4 external USB connectors are available for use on the iPanel. These connections support the USB 1.1 standard. The required mating connector which is to be plugged into the iPanel is shown at the left.

Off-the-shelf USB cameras, when used with CTC's CT HMI software product, allow inexpensive, local and remote monitoring of a process or machine.

VGA connector



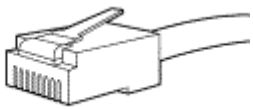
The iPanel features a high-density, 15-pin VGA connector to display text and graphics on an external monitor as well as on the internal LCD.

Depending on the configuration of the iPanel, the following resolutions are available for external use:

Resolution and Color-depth	8MB VRAM	16 or 32 MB VRAM
640x480 x 8/16/32	X	X
800x600 x 8/16/32	X	X
1024x768 x 8/16/32	X	X
1280x1024 x 8	X	X
1280x1024 x 16	-	X
1280x1024 x 32	-	X

LAN connections

RJ-45 connector



1 or 2 10/100 Mbps Ethernet connectors are available for use with the iPanel to connect the unit to a LAN.

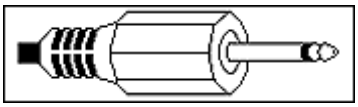
The iPanel LAN interfaces conform to 802.3 Ethernet standards.

Note: if more than one Ethernet connector is available on an iPanel, then one of these connectors is designated as the *primary* connector. This connector should be used *first* before the other. Failure to utilize the primary connector can cause the network connection not to be recognized.

Twisted-Pair Number	Pin Number	Signal Description
1	1 2	TD+ TD-
2	3 6	RD+ RD-

Note: on the 1205 iPanel, the primary connector is located away from the edge of the unit.

Audio connections



Stereo audio input and output connections are available on an iPanel. A monophonic microphone connection is also available. These connections utilize 3.5mm mini plugs.

A mono 3.5mm mini plug connector is shown above, at left.

Note: support for audio is not presently available on pre-configured, Windows Embedded XP units.

CHAPTER 5

Specifications

Specifications for various iPanel models.

Specifications are accurate at time of printing and are subject to change without notice.

System, CPU, Memory and Mass-storage

The iPanel was designed to the following system specifications (model and configuration dependent):

- 667 to 1000 MHz Pentium-III class, low-power processor
- Integrated processor and system cooling subsystem
- 133/100/66 MHz front-side bus (FSB)
- DRAM interface with support for synchronous PC133/PC100 DRAM
- Support for 1 or 2, 168-pin DIMM DRAM modules with support for memory up to 512MB (1 socket) or 1024MB (2 sockets); 256Mb standard
- 3.3V DRAM interface
- Dual-channel, Ultra-DMA, enhanced IDE interface
- Flash-memory support (internal)
- Internal (optional) and external (through USB) CD-ROM support
- Real-time clock support with battery-backup
- Hardware system monitoring
- Integrated hardware watchdog

Keyboard, Mouse, Parallel and Serial Interfaces

The iPanel supports the following or similar keyboard, mouse, parallel and serial interfaces (model and configuration dependent):

- PS/2 mouse (Microsoft-compatible) and keyboard support
- DB-25 parallel interface suitable for connection to a printer or other supported parallel device
- Up to 4 serial connections supported RS-232, RS-422 and RS-485 interfaces through a DB-9 connector
- Up to 4 USB connectors compliant to the USB 1.1 specification

Network Interfaces

The iPanel supports one or more network interfaces (model and configuration dependent):

- 10/100 Mbps LAN adapter with RJ-45 industry standard connector

LCD and Touch-panel Specifications

The iPanel supports the following or similar LCD touch-panel specifications (model and configuration dependent):

- TFT LCD panel
- 150 or greater cd/m^2 brightness
- Aluminum alloy anodized bezel
- IP65 (EIA) water resistance
- Long-life (>5,000,000 hits), 4-to-6 wire resistive touch-screen interface
- 150g (5 oz) operating force
- Operation with polyester-type pen or finger

Other Specifications

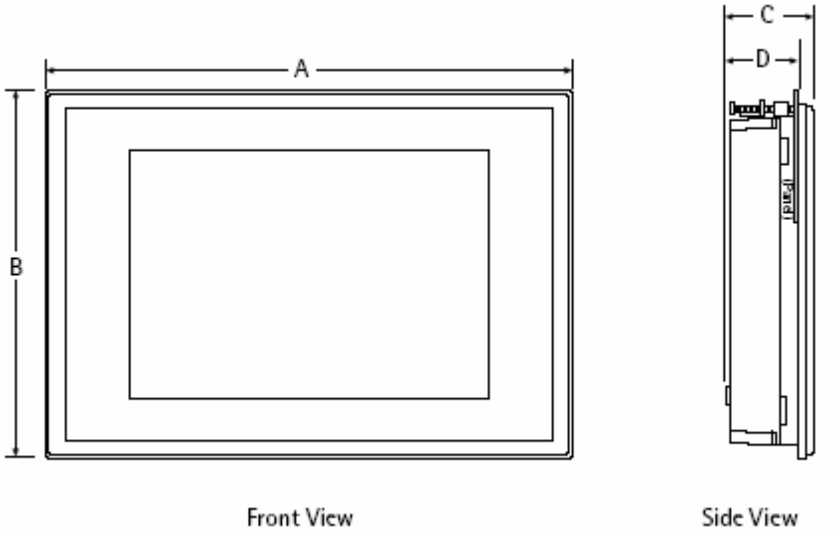
The iPanel was designed to meet the following specifications (model and configuration dependent):

- A high-speed, integrated, accelerated AGP 1.0 graphics adapter utilizing 8MB (and higher) frame buffer memory
- Video resolutions up to 1280x1024 (external monitor)

- 32-bit color-depth support (more than 16 million colors)
- DirectX support (Microsoft-based operating systems only)
- Advanced Power Management
- LCD and CRT Power Management
- BIOS shadow
- AC-97 compliant audio

CHAPTER 6

Dimensions



Front View

Side View

iPanel Model #	Width A	Height B	Depth C	Depth D	Cutout width	Cutout height
701	9.3 (236)	6.8 (172)	3.0 (75)	2.6 (65)	8.1 (205)	5.7 (145)
1001	10.9 (278)	8.5 (216)	3.3 (85)	3.0 (75)	12.2 (310)	9.4 (240)
1201	12.8 (325)	10.4 (265)	3.3 (85)	3.0 (75)	11.6 (295)	9.3 (235)
1205	13.2 (335)	10.7 (272)	3.1 (80)	2.8 (70)	11.9 (303)	9.4 (240)
1501	16.1 (410)	13.4 (340)	3.3 (85)	3.0 (75)	14.8 (375)	12.0 (305)

Dimensions are in inches (mm).

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