Hardware User's Guide

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Preface

Thank you for purchasing the I-O Thin Client. This guide contains information to setup and use the thin client hardware.

The guide consists of the following chapters:

- **Introduction**: provides an overview of the product.

- **Installation**: contains the procedure to setup the hardware.

- **Specifications**: provides hardware, mechanical, electrical, interface and operating environment specifications.

- **Connectors and Cables**: provides detailed specifications for connectors and cables used with the product.

- **Troubleshooting**: provides solutions to problems that you may encounter while using the product.

The following symbols are used in the guide.

Caution: This symbol highlights procedures that, if not correctly performed or adhered to, could damage or corrupt the product or adversely affect the security and functionality of the product. Do not proceed beyond such points until the required conditions are fully understood and achieved.

Note: This symbol denotes useful additional information that is relevant to the procedure or feature being described.

Tip: This symbol denotes a hint, shortcut or alternate method to aid or supplement the procedure being described.

Consistent with our policy of continuous development, the product you received may have features different from to those described in this guide. Please visit our web-site www.iocorp.com for current information.

Warning

- Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

- Ensure that the screws provided with the D-type connectors (COM1, COM2, Video and Parallel ports) are fastened.

- This equipment should not be used in electro-medical applications.

- There are no user serviceable parts inside.
  DO NOT disassemble the equipment as this can nullify your warranty

- DO NOT operate this equipment in a corrosive or explosive atmosphere.

- DO NOT operate this equipment outside specified temperature limits.

- This equipment must be earthed.

Table of Contents

Introduction

This chapter provides a brief overview of Thin Clients and its features.

Overview

Thin Clients are essentially terminal devices that connect to multi-user application servers operating under Citrix MetaFrame/WinFrame and Windows NT/Windows 2000 operating systems.

On/Off switch

Power LED

Network LED

Smart Card LED

Smart Card slot

Figure 1: TC4000 Series

The I-O Thin Client is among the smartest and most robust solutions available for Thin Client computing. It are aesthetically and ergonomically designed ultra-thin 'bookend-model' desktops. It provides simultaneous full screen connectivity to Windows NT, Windows 2000 and UNIX application servers – a powerful business alternative to users migrating to Win32 applications while continuing access to legacy UNIX applications.

The I-O Thin Client communicates with application servers via the ICA protocol developed by Citrix Systems Inc., Remote Desktop Protocol from Microsoft or using Tarantella client. Please refer to the Software User's Guide for information about connection protocols.

The product is equipped with a 10/100Base-T Ethernet port that provides instant connection to a multi-user Windows NT or Windows 2000 application server. It also has serial, parallel, video display and PS/2 compatible keyboard/mouse ports, allowing quick setup and use.

Standard Features

- National Geode Processor

- 32MB RAM, on SO-DIMM module

- 100% ICA protocol compliant

- High-speed windows performance

- Secure access to network resources.

- Low administration costs.

- Support for high resolutions (*up to 1280x1024)* and 256 colors.

- 10/100Base-T Ethernet port

- Dual high-speed serial ports and a parallel port.

- 16-bit stereo output

- Microphone input

- Dual-port USB

- Support for type II Compact Flash Card

- Slot for Kensington lock

Optional Features

- Integrated Smart Card Reader.

- PC-Card Type I, II or III compatible slot with the following features:

    - Supports both 16-bit (5V or 3.3V) and CardBus (3.3V) PC Cards

    - Supports hot insertion and removal without external buffering

    - Supports PC Cards for Modem, Wireless LAN, Ethernet, ATA etc.

> **NOTE**: THE OPTIONAL FEATURES CANNOT BE UPGRADED ON THE FIELD. PLEASE CONTACT THE RESELLER OR DEALER FROM WHOM YOU PURCHASED THE PRODUCT FOR INFORMATION ABOUT OPTIONAL FEATURES.
>
> **NOTE**: THE SMART CARD UNIT ACCEPTS CONTACT-TYPE MEMORY CARDS. TO PURCHASE ADDITIONAL SMART CARDS, PLEASE CONTACT THE RESELLER OR DEALER FROM WHOM YOU PURCHASED THE PRODUCT.

Installation

This chapter describes the procedure to install the hardware of the product.

Step One: Unpack

The carton in which the product was shipped to you contains the following:

- TC4000 Series Thin Client
- Power Adapter
- Power Cord
- Mouse
- 122-Key 5250 Keyboard (optional)
- FCC declaration of conformity (*if applicable*)
- CD containing manuals *(Hardware user's guide which you are currently reading and software user's guides)* and inControl for Terminals.

When you open the carton, if you find any discrepancy between the contents of the carton and the above list, contact the dealer or reseller from whom you purchased the product immediately.

> **NOTE**: PLEASE RETAIN THE ORIGINAL CARTON AND PACKING MATERIAL. THEY WOULD BE REQUIRED TO AVOID DAMAGE DURING TRANSIT (IF REQUIRED IN FUTURE).

Step Two: Prepare

1. The site where you want to install the product must have the following
   - Two 100~240V AC, 5A, 50/60 Hz, 3-pin power outlets (*one each for the client and the display unit*).

> **NOTE**: ENSURE THAT THE POWER OUTLET IS PROPERLY REGULATED AND EARTHED. A FLOATING GROUND / CHASSIS COULD CAUSE AN ELECTRIC SHOCK.

   - Well ventilated, clean, dry and dust free atmosphere
   - Specified environmental conditions (*see page 13*)
   - Table or desk of suitable size.

2. Place the product on the table in a location that provides quick and easy access to the power outlet in emergencies.

> **NOTE**: RUBBER PADS ARE PROVIDED ON THE BASE OF THE CLIENT, TO ENSURE THAT IT IS STABLE WHEN PLACED ON THE DESK. THE PRODUCT CAN ALSO BE SECURED TO THE DESK. SEE **STEP FIVE: SECURE THE UNIT TO THE DESK OR TABLE** FOR INSTRUCTIONS.

3. Ensure a minimum space of 4 inches (*10cm*) on all sides of the unit for efficient convection cooling.

Step Three: Connect accessories and power

The connectors for devices supported by the product are located on the rear panel.

DC power inlet
Network port
Video port
USB ports
Stereo speaker port
PS/2 Keyboard port
Serial port (*COM1*)
Serial port (*COM2*)

Slot for PC-card
Slot for Kensington lock
Microphone input
PS/2 Mouse port
Parallel port (*printer*)
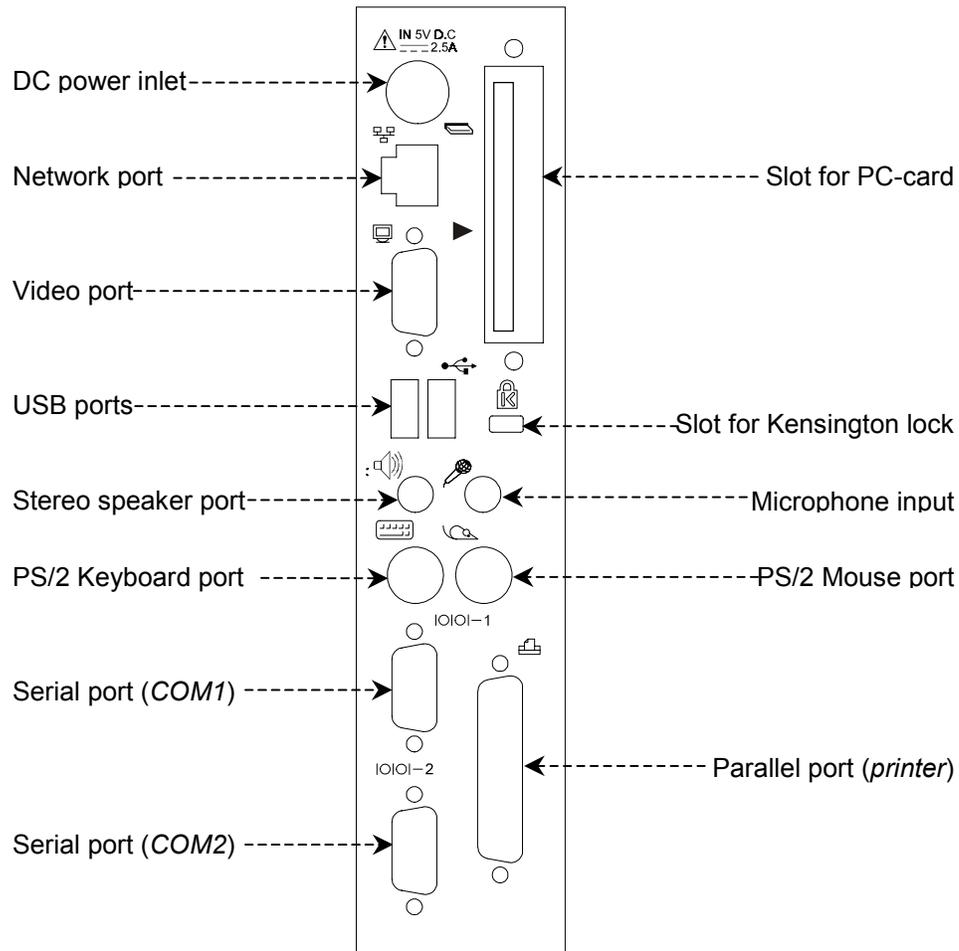
Figure 2: Rear panel of Winlinx / Netica

See page 15 for details about the connectors and cables.

⚠ **CAUTION**: BEFORE CONNECTING ANY CABLE, ENSURE THAT THE EXTERNAL POWER SUPPLY IS TURNED 'OFF'. THE POWER-CORD MUST BE CONNECTED ONLY **AFTER** ALL OTHER CONNECTIONS ARE MADE.

Follow the instructions below to connect various accessories	*Connector Symbol (see figure 2 – page 8 for the location of connectors on the rear panel)*
✓ Connect the video cable from your display unit to the video port	
✓ Connect USB devices to the USB ports	
✓ Connect external speakers to the 16-Bit stereo output port	
✓ Connect your microphone to the Microphone input port	
✓ Connect your keyboard to the PS/2 Keyboard port	
✓ Connect your mouse to the PS/2 Mouse port	
✓ Connect your serial devices (*E.g Modem*) to the COM ports	1 or 2
✓ Connect your printer to the parallel port	
✓ **Optional**: Insert the PC-Card (Type I, II or III) into the PC-Card slot as described below: 1. Align the arrow-mark on the PC Card with the arrow-mark adjacent to the PC-Card slot on the rear-panel of the client 2. Push the PC-Card into the slot until you feel the card latching on to the connector 3. Connect one end of a PC-Card cable / dongle to the connector on the PC-Card and the other end to the external source. The client is now ready to use the PC-Card	
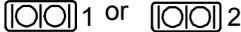
✓ Connect the output of the AC-DC Adapter to the inlet of the unit. There will be an audible click indicating that the plug is securely in place.

⚠️ CAUTION: ENSURE THAT THE SCREWS PROVIDED WITH D-TYPE CONNECTORS (COM1, COM2, VIDEO, AND PARALLEL PORTS) ARE FASTENED.

CAUTION: IF FOR ANY REASON, YOU WANT TO DISCONNECT THE POWER-CORD CONNECTED TO THE UNIT, HOLD ONLY THE **SPRING-LOADED SHROUD** (*SEE FIGURE 3*) WHILE PULLING OUT THE CONNECTOR; **DO NOT HOLD THE POWER-CORD ITSELF**.

Connector   *Spring-loaded shroud*

Cord

Hold here while disconnecting the power cord
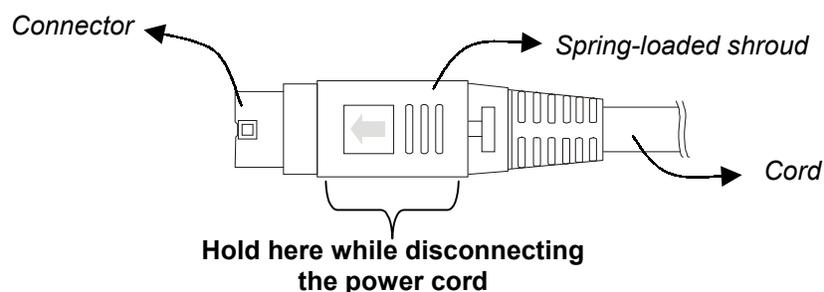
Figure 3

Step Four: Connect to the Server

The client can be physically connected to the server/network in three ways:

- LAN connection through TCP/IP
- Direct connection through RS232
- Dial-in remote connection through modem

✓ **NOTE**: BEFORE CONNECTING ANY CABLE, ENSURE THAT EXTERNAL POWER SUPPLY IS TURNED 'OFF'.

LAN connection through TCP/IP

Connect a 10/100Base-T cable from the network outlet - 🖧 - of the client to a hub.
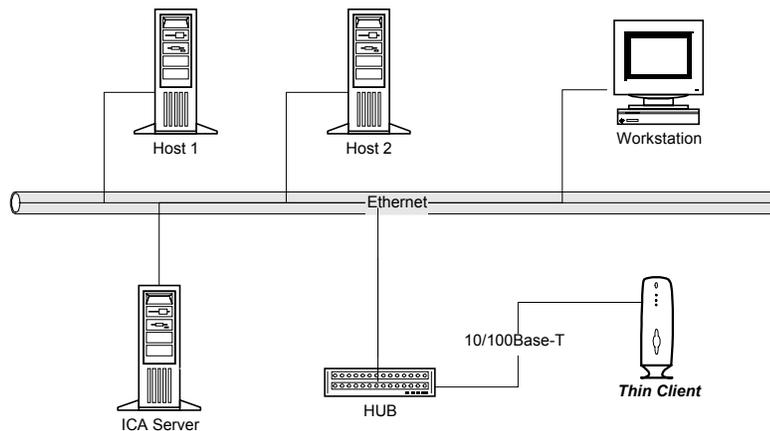
Figure 4: LAN Connection through TCP/IP

Direct connection through RS232

Connect an RS232 cross cable from a serial port - [O O] 1 or [O O] 2 - of the client to a serial port of the server.

Figure 5: Direct Connection through RS232

Dial-in remote connection through modem

Connect an RS232 straight cable from one of the serial ports of the client, to a modem that is in turn connected to a telephone line.
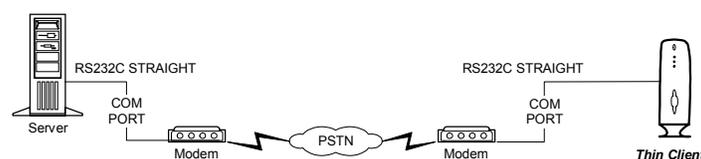
Figure 6: Dial-In Remote Connection through Modem

Step Five: Secure the unit to the desk or table

1. The following items are required to secure the client to the desk.

   - Equipment to drill holes (*of 8mm. diameter*) through your desktop or tabletop.

   - Two pan-head, metric-thread screws (*diameter=6 mm., length=T+14 mm., where T is the thickness of the surface of your desktop or table. E.g. if your desktop is 20mm thick, the screws should be 20+14=34mm. long*).

2. The base (*see Figure 7*) of the product has two tapped-holes for securing the unit. One of the holes has a Nylon plug to lock the metal plate inside the unit. Lift the unit, hold it upright, pull out the Nylon plug using a flat-head screwdriver and place the unit upright on a flat surface.

   ✅ NOTE: PLEASE RETAIN THE NYLON PLUG; IT WOULD BE REQUIRED IF YOU WANT TO MOVE THE UNIT.
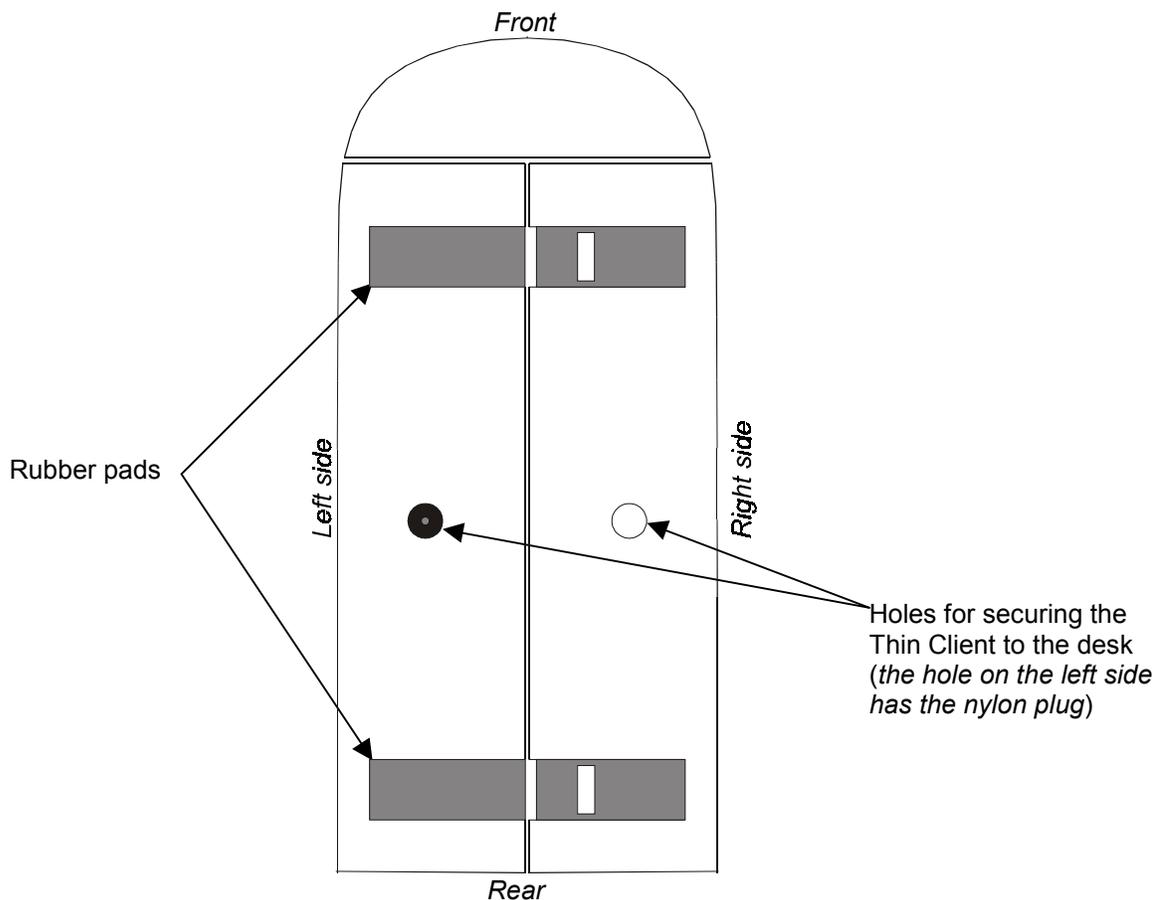
Figure 7: View of the base of Winlinx / Netica

3. Select the area on your table where you want to place the client.

4. Mark two points 44 mm. apart on the table, such that a line joining the two points would be perpendicular to the sides of the product when it is placed on the table.

5. At each of the two marked points, drill a hole of 8mm. diameter through the surface of your table.

6. Place the product such that the holes on the base of the client are aligned with the holes on the table. Insert the two M6 screws through the aligned holes from beneath the desktop and fasten them until the unit is secure.

NOTE: AFTER MOUNTING THE UNIT TO THE DESKTOP, CHECK THE CONNECTIONS ON THE REAR PANEL AGAIN AND ENSURE THAT THEY ARE FIRMLY IN PLACE.

NOTE: FOR SECURITY, YOU CAN LOCK THE CLIENT TO THE TABLE USING A KENSINGTON LOCK (*MODEL NO. 64068, MODEL NAME: NOTEBOOK MICROSAVER*). THE LOCK IS DESIGNED IN SUCH A WAY THAT REMOVING THE LOCK WITHOUT USING THE KEY WOULD DAMAGE THE CLIENT. THE PROCEDURE TO USE THE LOCK IS DESCRIBED BELOW:

1. SECURE THE LOOPED-END OF THE LOCK-CABLE TO A PERMANENT FIXTURE (SUCH AS THE TABLE ON WHICH THE CLIENT IS PLACED).

2. INSERT THE LOCK-END INTO THE SLOT MARKED 🔒 ON THE REAR PANEL OF THE CLIENT, AND TURN THE KEY COUNTER-CLOCKWISE TO ENGAGE THE LOCK.

3. WHEN YOU WANT TO MOVE THE CLIENT, TURN THE KEY CLOCKWISE TO DISENGAGE THE LOCK.

Step Six: Start the client

To start the client, switch-on the external power supply and press the On/Off switch provided on the front bezel. Refer to the *Software User's Guide* for instructions to setup the software.

NOTE: WHEN THERE IS AN INTERRUPTION IN EXTERNAL POWER SUPPLY, YOU MUST PRESS THE ON/OFF SWITCH ON THE FRONT BEZEL TO START THE UNIT. THE CLIENT WILL NOT AUTOMATICALLY RESTART WHEN POWER SUPPLY RESUMES.

Status of LEDs on the front bezel

The front bezel of the client has three LEDs as shown in the photograph on page 5.

- The Power-LED glows when the unit is switched on and remains on until the unit is switched off.

- The Network-LED blinks green when the client communicates at 100 Mbps and yellow when the client communicates at 10 Mbps.

- The Smart-Card-LED is functional only on units equipped with the optional smart-card reader. It glows when a smart card is inserted into the smart-card slot of the client.

Shutting down the client

To shut down the client, exit all active connections to servers and press the On/Off switch on the front bezel. The Power-LED stops glowing.

CAUTION: EVEN IF THE CLIENT IS SWITCHED OFF (*USING THE POWER SWITCH ON THE FRONT BEZEL*), AN AUXILIARY 5V DC POWER-SUPPLY IS AVAILABLE ON THE MOTHERBOARD OF THE CLIENT. TO COMPLETELY SWITCH OFF POWER SUPPLY TO THE UNIT, THE EXTERNAL POWER SUPPLY HAS TO BE SWITCHED OFF.

Specifications

This chapter contains hardware, mechanical, electrical, interface and operating environment specifications for the product.

> ✅ **NOTE**: CONSISTENT WITH OUR POLICY OF CONTINUOUS DEVELOPMENT, THE PRODUCT YOU RECEIVED MAY HAVE FEATURES IN ADDITION TO THOSE DESCRIBED IN THIS GUIDE. PLEASE VISIT OUR WEB-SITE WWW.IOCORP.COM FOR CURRENT INFORMATION.

Hardware

- Processor: National Geode GX1 200MHz
- VGA Memory: Unified Video Memory, up to 4MB display RAM
- Flash (DOC):   8MB / 16MB / 32MB / 48MB / 64MB on board flash
- RAM: 32MB SO-DIMM module, upgradable to 256MB
- Power Management: VESA display power management
- Compact Flash: 8MB - 256MB type II

Mechanical

- Height: 256 mm (*10.1 in.*)
- Width: 86 mm (*3.4 in.*)
- Depth: 215 mm (*8.5 in.*)
- Weight: Gross: 3.8 Kg (*8.37 lb*), Net: 2.7 Kg (*5.95 lb*)

  (*excluding PC-card*)

Operating Environment

- Operating Temperature: +5° to +40°C (*+41° to +104°F*)
- Storage Temperature: -20° to +65°C (*-4° to +149°F*)
- Humidity: 20% to 90% RH non condensing

Electrical

- **Power Adapter**

  Input voltage: 100 to 240V AC

  Input frequency: 47 to 63 Hz

  Input current: 0.7A

  Output voltage: 5V DC

  Output current: 4A

- **Client**

  Input voltage: 5V DC

  Input current: 2.5A (*maximum*)

External Interfaces

- **COM1/COM2 serial ports**:   RS232C compatible, operating at 115.2K baud maximum

- **10Base-T/100Base-T port**:   10/100 Mbps LAN interface

- **Printer port (parallel)**:   ECP/EPP compatible

- **Mouse port**:   PS/2 compatible

- **Keyboard port**:   PS/2 compatible

- **Video Port**:   SVGA compatible, supporting 1280x1024, 1024x768, 800x600 and 640x480 resolutions, 256 colors

- **Stereo output port**:   SB-16 compatible stereo sound, 7-48kHz sampling rate with 1Hz resolution, 16-bit output.

- **Microphone port**:   3.5mm mono phone jack, 16-bit input

- **USB ports**:   USB devices (USB standard: ver.1.1)

- **PC-card slot**:   PC-Card Type I, II or III compatible (*optional*)

- **Smart Card slot**:   Smart Card reader (*optional*) connected internally to COM2. Accepts contact-type memory cards.

✅ NOTE: WHEN THE SMART CARD READER IS CONNECTED, THE COM2 PORT IS NOT AVAILABLE FOR EXTERNAL USE.

Connectors and Cables

This chapter provides detailed specifications for Connectors and Cables used with the product.

Connectors

The following tables and figures provide details of pins for connectors. Refer to *Figure 2 (page 8)* for the location of connectors on the rear panel of the client.

Serial port (*COM1 / COM2*)

9-pin D-type male connector

Pin	Signal	Description
1	DCD	Data Carrier Detect
2	RxD	Receive Data
3	TxD	Transmit Data
4	DTR	Data Terminal Ready
5	GND	Signal Ground
6	DSR	Data Set Ready
7	RTS	Request To Send
8	CTS	Clear To Send
9	NC	Not Connected
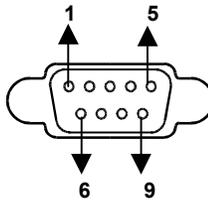
Parallel port (*printer*)

25-pin, D-type female connector.

Pin	Signal
1	Strobe
2 - 9	Data 0 – 7
10	Acknowledge
11	Busy
12	Paper end
15	Error
18 - 25	Ground
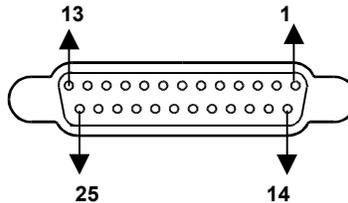
Network port

RJ-45 modular 8-pin jack

Pin	Signal
1	TxD+
2	TxD-
3	RxD+
6	RxD-
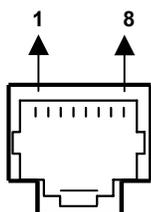
Video port

15-pin D-type female connector

Pin	Signal	Pin	Signal	Pin	Signal
1	Red	6	Red return GND	11	No Connection
2	Green	7	Green return GND	12	No Connection
3	Blue	8	Blue return GND	13	Horizontal Sync
4	No Connection	9	No Connection	14	Vertical Sync
5	GND	10	No Connection	15	No Connection
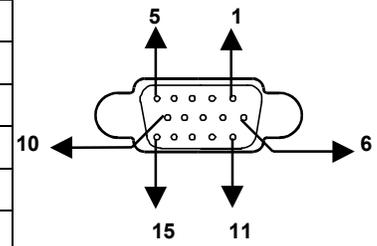
PS/2 ports (Mouse/Keyboard)

PS/2 Mouse / Keyboard connectors

Pin	Signal	Pin	Signal
1	Mouse / KBD data	4	VCC
2	No Connection	5	Mouse / KBD Clock
3	GND	6	No Connection
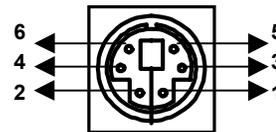
Audio/Microphone ports

Standard audio jacks (*Diameter: 3.5mm*)
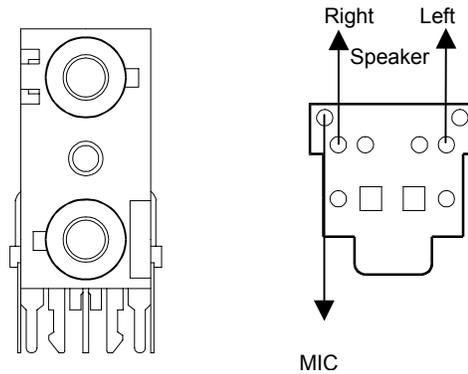
USB ports

4-pin series "A" receptacle

Pin	Signal
1	VCC
2	D-
3	D+
4	GND
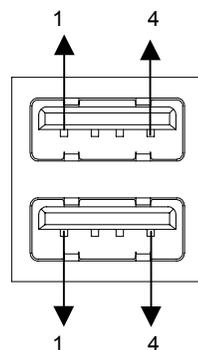
Cables

The following figures provide details of cables.

10Base-T/100Base-T cable

Cross Connection - (*Without Hub*)

RJ45 Pin			RJ45 Pin	
TXD+	1	————	3	RXD+
TXD-	2	————	6	RXD-
RXD+	3	————	1	TXD+
RXD-	6	————	2	TXD-
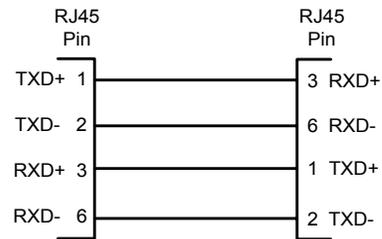
Straight Connection - (*With Hub*)

RJ45 Pin			RJ45 Pin	
TXD+	1	————	1	TXD+
TXD-	2	————	2	TXD-
RXD+	3	————	3	RXD+
RXD-	6	————	6	RXD-
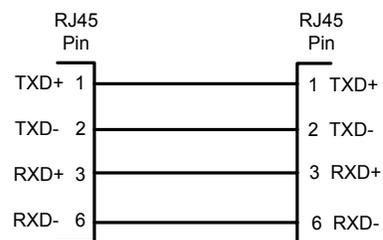
COM1/COM2 (*serial ports*) cables

Serial devices such as modems and printers use 25-pin D-type connectors for RS232 connections. In order to connect RS232 devices with 25-pin connectors, 9-pin connector signals have to be converted to 25-pin connector signals. The diagram below shows their respective connections.

9-pin to 25-pin Cross Connection

9 Pin Connector (Thin Client)   **25 Pin Connector**

9 Pin Signal	9 Pin	25 Pin	25 Pin Signal
TXD	3	3	RXD
RXD	2	2	TXD
RTS	7	5	CTS
CTS	8	4	RTS
DSR	6	6	DSR
SGND	5	7	SGND
DCD	1	8	DCD
DTR	4	20	DTR
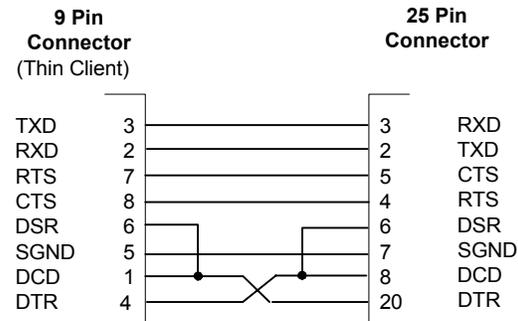
9-pin to 25-pin Straight Connection

9 Pin Connector (Thin Client)   **25 Pin Connector**

9 Pin Signal	9 Pin	25 Pin	25 Pin Signal
RTS	7	4	RTS
DTR	4	20	DTR
TXD	3	2	TXD
GND	5	7	GND
DCD	1	8	DCD
RXD	2	3	RXD
DSR	6	6	DSR
CTS	8	5	CTS
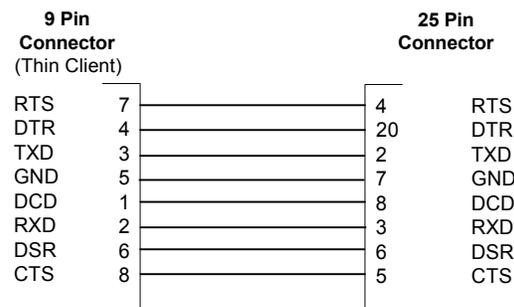
Printer (*parallel port*) cable

This figure provides details of pin-connections of the Standard Centronics parallel cable. Some manufacturers have changed pin-functions or polarity on their printers. For such printers, custom cables may be necessary. For details, refer to your printer manual.

PARALLEL PORT	Pin	Signal	PARALLEL DEVICE
	1	-Strobe	
	2-9	+ Data Bits 0 - 7	
	10	- Acknowledge	
	11	+ Busy	
	12	+ Paper End	
	13	+ Select In	
	14	- Auto Feed	
	15	- Error	
	16	- INIT	
	17	- Select	
	18-25	Ground	
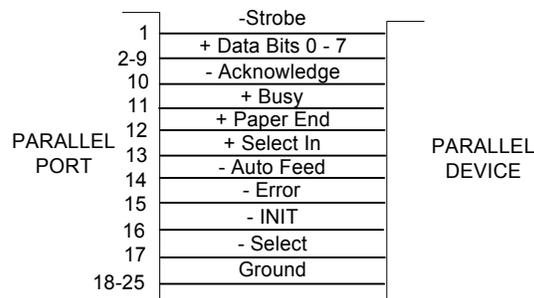
Troubleshooting

This chapter contains solutions for problems you may encounter while using the product. If a problem persists even after you implement the solutions provided here, or if you encounter a problem not listed here, please contact your in-house network administrator, your MCSE or CCA, your dealer, or I-O Corporation at 801-972-1446 or by email at support@iocorp.com.

Problem	*Solution*
• The Power-LED on front panel does not glow when the client is switched on.	✓ Ensure that the Adapter is connected to the DC inlet of the client. ✓ Ensure that the power cord is properly inserted into the AC power connector provided for the Adapter. ✓ Check the fuse in the power-plug, if available. ✓ Ensure that the power cord is plugged into an AC outlet.
• There is no display, though the power-indicating LED glows.	✓ Ensure that the power cord of the display unit is connected and that the power supply is switched on. ✓ Ensure that the video cable is properly connected.
• The mouse (*or keyboard*) does not work when the client is switched on.	✓ Ensure that the mouse is plugged into the PS/2 Mouse port on the rear panel. ✓ Ensure that you are using the mouse provided with the product.
• If there is an interruption in the external power supply, the client does not automatically restart when power supply resumes.	✓ You must press the On/Off switch on the front bezel to restart the client after an interruption in external power supply.

Manufacturer's Warranty & Repair Policy

Manufacturer's Three Year Limited Warranty
(United States)

The following warranty applies only to products purchased and operated within the United States.

I-O Corporation (I-O) warrants this product against defects in material and workmanship for a period of three years commencing from date of purchase by the original customer, when operated and maintained in accordance with I-O's published specifications. I-O's liability shall be limited, at its option and expense, to refund to buyer the actual amount paid by buyer or to repair or replace any defective or nonconforming product or part thereof, F.O.B. I-O's authorized repair depot. Buyer may obtain a replacement product by meeting the terms of the I-O Customer On-Site Exchange Repair Policy in effect at the time of the request.

THE EXPRESS WARRANTY SET FORTH ABOVE IS IN LIEU OF ALL OTHER EXPRESS OR IMPLIED WARRANTIES. OTHERWISE, THE PRODUCTS ARE SOLD AS IS WITHOUT FURTHER OBLIGATION OR LIABILITY ON THE PART OF I-O. I-O EXPRESSLY EXCLUDES ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

EXCEPT AS EXPRESSLY SET FORTH HEREIN, IN NO EVENT SHALL I-O BE LIABLE FOR ANY CLAIMS OR DAMAGE ARISING DIRECTLY OR INDIRECTLY FROM THE FURNISHING OR FAILURE TO FURNISH PRODUCTS, SPARE OR REPLACEMENT PARTS, INFORMATION OR SERVICES HEREUNDER. UNDER NO CIRCUMSTANCES SHALL I-O BE LIABLE IN ANY WAY FOR INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES, INCLUDING, BUT NOT LIMITED TO LOST BUSINESS OR PROFITS, WHETHER OR NOT FORESEEABLE AND WHETHER OR NOT BASED ON BREACH OF WARRANTY, CONTRACT, OR NEGLIGENCE.

I-O shall not be liable for non-performance or delays hereunder due to causes beyond its control. These shall include, but not be limited to, acts of God, wars, strikes, fires, flood, storm, earthquake, shortages of labor or materials, labor disputes, transportation embargoes, acts of any government or agency thereof.

MODIFICATIONS OR RECONFIGURATION OF THE HARDWARE BY ANYONE OTHER THAN I-O OR I-O'S AUTHORIZED REPAIR FACILITY WILL VOID THIS HARDWARE WARRANTY.

Customer On-Site Exchange Repair Policy

Terms, Conditions, and Limitations

Effective May 1, 1994[a]

For products covered by the I-O Corporation (I-O) Manufacturer's Limited Warranty (United States), I-O's Customer On-Site Exchange (COE) Repair Policy provides customers with a replacement unit for a defective product, subject to the following terms and conditions:

Call Customer Support

If a product fails, call I-O Customer Support for assistance at (801) 972-1446.

Verify Product Failure

I-O will verify the product serial number, warranty coverage and product failure.

You are responsible for assisting in verifying the product failure.

When I-O Customer Support verifies a product failure they will issue a Return Merchandise Authorization (RMA) number for the failed product.

Replacement Units

Replacement units are shipped from I-O's stock of refurbished units, subject to availability.

Replacement units carry the same warranty as remaining on the original product.

I-O's COE Repair Policy applies only to warranted product failures. Buyer guarantees payment

for non-warranted product repairs or replacement.

Return Your Failed Unit

When you return the failed product it must be shipped freight prepaid. Always note the RMA number on the outside of the package.

Install the Replacement Unit

You are responsible for installing the replacement unit.

After receiving the replacement unit please call I-O Customer Support if any assistance is required.

[a] I-O reserves the right to change the terms and conditions of this policy without notice.

Manufacturer's Three Year Limited Warranty
(International)

The following warranty applies only to products purchased or operated outside the United States.

I-O Corporation (I-O) warrants this product against defects in material and workmanship for a period of three years commencing from date of purchase by the original customer, when operated and maintained in accordance with I-O's published specifications. I-O's liability shall be limited, at its option and expense, to refund to buyer the actual amount paid by buyer or to repair or replace any defective or nonconforming product or part thereof, F.O.B. I-O's authorized repair depot. Buyer may obtain warranty service by meeting the terms of the I-O Return-to-Depot Repair Policy in effect at the time of the request.

THE EXPRESS WARRANTY SET FORTH ABOVE IS IN LIEU OF ALL OTHER EXPRESS OR IMPLIED WARRANTIES. OTHERWISE, THE PRODUCTS ARE SOLD AS IS WITHOUT FURTHER OBLIGATION OR LIABILITY ON THE PART OF I-O. I-O EXPRESSLY EXCLUDES ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

EXCEPT AS EXPRESSLY SET FORTH HEREIN, IN NO EVENT SHALL I-O BE LIABLE FOR ANY CLAIMS OR DAMAGE ARISING DIRECTLY OR INDIRECTLY FROM THE FURNISHING OR FAILURE TO FURNISH PRODUCTS, SPARE OR REPLACEMENT PARTS, INFORMATION OR SERVICES HEREUNDER. UNDER NO CIRCUMSTANCES SHALL I-O BE LIABLE IN ANY WAY FOR INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES, INCLUDING, BUT NOT LIMITED TO LOST BUSINESS OR PROFITS, WHETHER OR NOT FORESEEABLE AND WHETHER OR NOT BASED ON BREACH OF WARRANTY, CONTRACT, OR NEGLIGENCE.

I-O shall not be liable for non-performance or delays hereunder due to causes beyond its control. These shall include, but not be limited to, acts of God, wars, strikes, fires, flood, storm, earthquake, shortages of labor or materials, labor disputes, transportation embargoes, acts of any government or agency thereof.

MODIFICATIONS OR RECONFIGURATION OF THE HARDWARE BY ANYONE OTHER THAN I-O OR I-O'S AUTHORIZED REPAIR FACILITY WILL VOID THIS HARDWARE WARRANTY.

Return-to-Depot Repair Policy
Terms, Conditions, and Limitations
Effective May 1, 1994[a]

For products covered by the I-O Corporation (I-O) Manufacturer's Limited Warranty (International), I-O's Return-to-Depot (RTD) Repair Policy provides customers with warranty service for a defective product, subject to the following terms and conditions:

Call Customer Support

If a product fails, call I-O Customer Support for assistance at:

(801) 972-1446 for all locations outside the United States.

Verify Product Failure

I-O will verify the product serial number, warranty coverage and product failure.

You are responsible for assisting in verifying the product failure

When I-O Customer Support verifies a product failure they will issue a Return Merchandise Authorization (RMA) number to authorize return of the failed product.

Select Your Preferred Repair Location

I-O's Customer Support Representative will assist you in identifying the nearest I-O authorized repair depot.

I-O's Customer Support Representative will provide you with an RMA transmittal form referencing the assigned RMA number and the authorized repair depot address.

Return Your Failed Unit

Return the failed product to the I-O authorized repair depot previously identified, enclosing the RMA transmittal form. When you return the failed product it must be shipped freight prepaid.

I-O's RTD Repair Policy applies only to warranted product failures. Buyer guarantees payment for non-warranted product repairs.

Install Your Repaired Unit

I-O's authorized repair depot will service the faulty unit and return it to you, freight prepaid.

You are responsible for installing the returned unit.

After receiving the repaired unit please call I-O Customer Support if any assistance is required.

[a]I-O reserves the right to change the terms and conditions of this policy without notice.