



**Winlinx**  
Thin Client Family  
TC 4000 Series

## **Hardware User's Guide**

**VXL Instruments Ltd.**

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## Federal Communication Commission (FCC) statement

*FCC Certification awaited.*

## Warnings

- Only equipment certified to comply with Class B (computer input/output devices, terminals, printers etc.) should be attached to this equipment, and they must have shielded interface cables.
- Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
- 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.

## Preface

Thank you for purchasing the Winlinx Thin Client Terminal. This manual contains information to setup and use the hardware of Winlinx.

The manual consists of the following chapters:

- **Introduction:** provides an overview of Winlinx.
- **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 Winlinx.
- **Troubleshooting:** provides solutions to problems that you may encounter while using Winlinx.

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**NOTE:** CONSISTENT WITH OUR POLICY OF CONTINUOUS PRODUCT DEVELOPMENT, THE PRODUCT YOU RECEIVED MAY HAVE FEATURES IN ADDITION TO THOSE DESCRIBED IN THIS MANUAL. PLEASE VISIT OUR WEB-SITE [www.vxl.net](http://www.vxl.net) FOR CURRENT INFORMATION ON THE FEATURES AND FUNCTIONS OF WINLINX.

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# Introduction

This chapter provides a brief overview of Thin Clients and lists the features of Winlinx.

## Overview

Thin Clients are essentially terminal devices that connect to multi-user application servers operating under the Citrix MetaFrame, Citrix WinFrame and Windows NT operating system. They communicate with the application server via the ICA3 protocol developed by Citrix Systems Inc.



Figure 1: Winlinx

Winlinx is one of the smartest and most robust solutions available for Thin Client computing.

Winlinx is an aesthetically and ergonomically designed ultra-thin 'Bookend' desktop. It provides simultaneous full screen connectivity to Windows NT and UNIX application servers – a powerful business alternative to users migrating to Win32 applications while continuing access to legacy UNIX applications.

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

The Winlinx family has three models:

- Netica
- Winlinx Pro
- Winlinx Ultra Lite

## Standard Features

- 200MHz National Geode GXLV processor
- 32MB SO-DIMM memory (*expandable to 128MB*)
- 100% ICA3 protocol compliant
- High-speed windows performance
- Secure access to network resources.
- Low administration costs.
- Support for high resolutions (*up to 1280x1024*) and 256 colors.
- 10/100 Base-T Ethernet port
- Dual high-speed serial ports and a parallel port.
- 16-bit stereo output
- Microphone input
- Dual-port USB
- Kensington lock

## Optional Features

- Integrated Smart Card reader
- LCD port
- PC-Card slot in lieu of LCD port

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**NOTE:** THESE OPTIONS CANNOT BE UPGRADED ON THE FIELD. PLEASE CONSULT THE FACTORY FOR DETAILS OF THE OPTIONAL FEATURES. THE LCD PORT AND PC-CARD SLOT ARE MUTUALLY EXCLUSIVE OPTIONS.

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# Installation

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

## Step One: Unpack

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

- Winlinx
- Power Adapter
- Power Cord
- Mouse
- CD containing manuals

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

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## Step Two: Prepare the site

1. The site where you want to install Winlinx must have the following:
  - 100~240V AC, 5A, 50/60 Hz, 3-pin power outlet

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**NOTE: ENSURE THAT THE POWER OUTLET IS PROPERLY REGULATED AND EARTHED. A FLOATING CHASSIS IS A POTENTIAL SOURCE FOR ELECTRIC SHOCKS.**

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- Well ventilated, clean, dry and dust free atmosphere
- Proper operating temperature (*see page 8*)
- Table or desk of suitable size for placing Winlinx

2. Place Winlinx on the table or desk, in a location that can provide quick and easy access to the power outlet in emergencies.

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**NOTE: RUBBER PADS AFFIXED TO THE BASE OF WINLINX ENSURE THAT IT IS STABLE WHEN PLACED ON THE TABLE OR DESKTOP. WINLINX CAN ALSO BE SECURED TO THE TABLETOP OR DESK. SEE **STEP FIVE: SECURING THE UNIT TO THE DESK OR TABLE** FOR INSTRUCTIONS.**

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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 Winlinx are located on the rear panel.

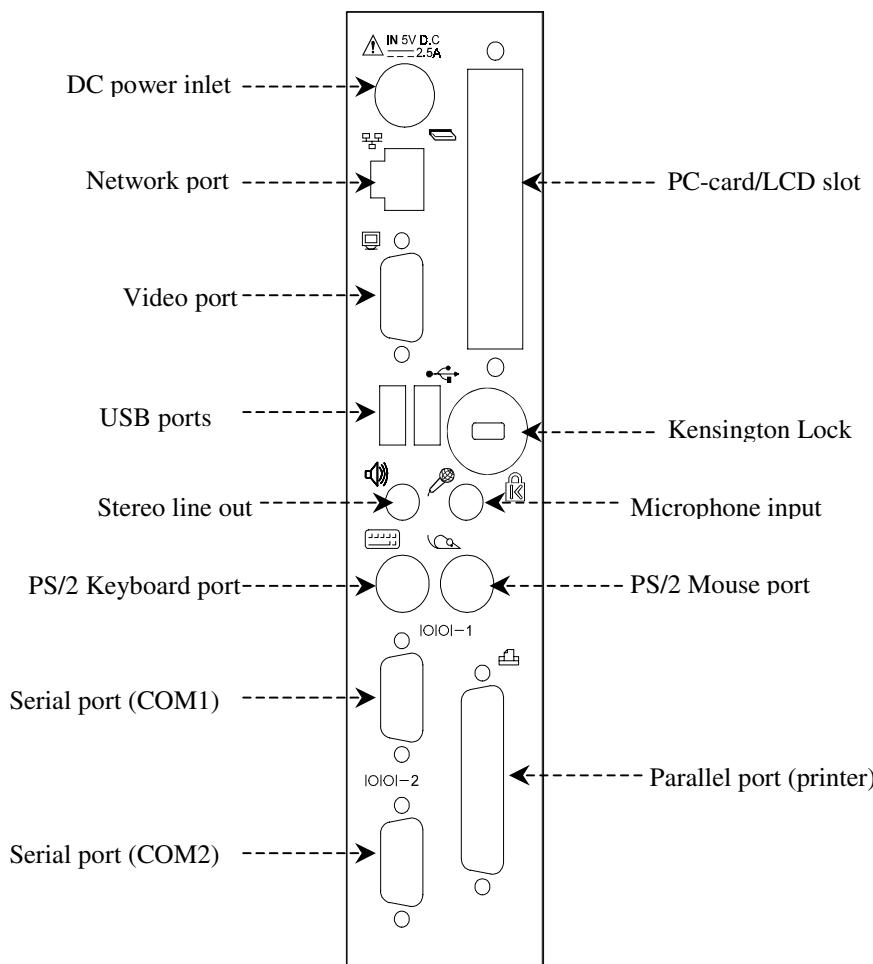


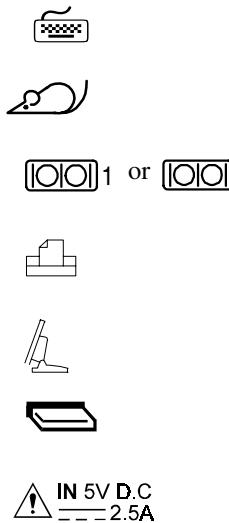
Figure 2: Rear panel of Winlinx

Refer to page 10 for details about the connectors and cables.

**NOTE:** 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.

<b><i>Follow the instructions below to connect various accessories</i></b>	<b><i>Connector Symbol (see figure 2)</i></b>
<ul style="list-style-type: none"> <li>✓ Connect the video cable from your display unit to the video port</li> <li>✓ Connect USB devices to the USB ports</li> <li>✓ Connect external speakers to the 16-Bit stereo output port</li> <li>✓ Connect your microphone to the Microphone input port</li> </ul>	

- ✓ 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
- ✓ Connect your printer to the parallel port
- ✓ **Optional:** Connect the LCD unit to the LCD port
- ✓ **Optional:** Insert the PC-Card into the PC-Card slot
- ✓ Connect the AC power cord to the power inlet.



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

## Step Four: Connect to the Server

Winlinx communicates with servers using the ICA3 protocol. It can be physically linked to the server 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:

Connect a 10/100Base-T cable from the network outlet -  - to a hub.

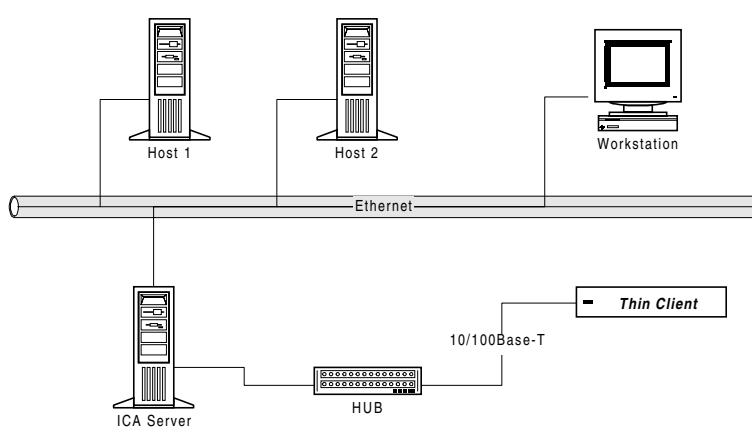


Figure 3: LAN Connection through TCP/IP

## Direct connection

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

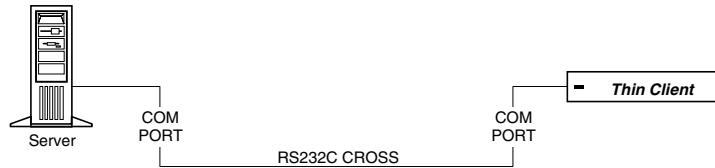


Figure 4: Direct Connection through RS232

## Dial-in remote connection

Connect an RS232 straight cable from one of the serial ports of Winlinx to a modem that is in turn connected to a telephone line.

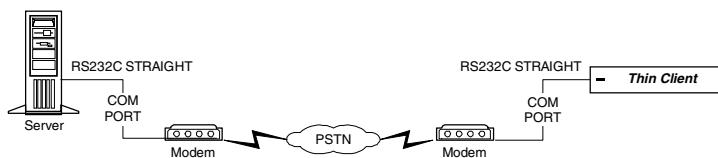


Figure 5: Dial-In Remote Connection through Modem

## Step Five: Secure the unit to the desk or table

1. The following items are required to secure Winlinx to the table or desk.
  - Equipment to drill holes (*of 8mm. diameter*) through your desktop or tabletop.
  - Two M6 pan-head screws (*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 panel (*see Figure 6*) of Winlinx has two tapped-holes for securing the unit. One of the holes is closed with a Nylon plug. Lift the unit, hold it upright, pull out the Nylon plug and carefully place the unit on a flat surface.

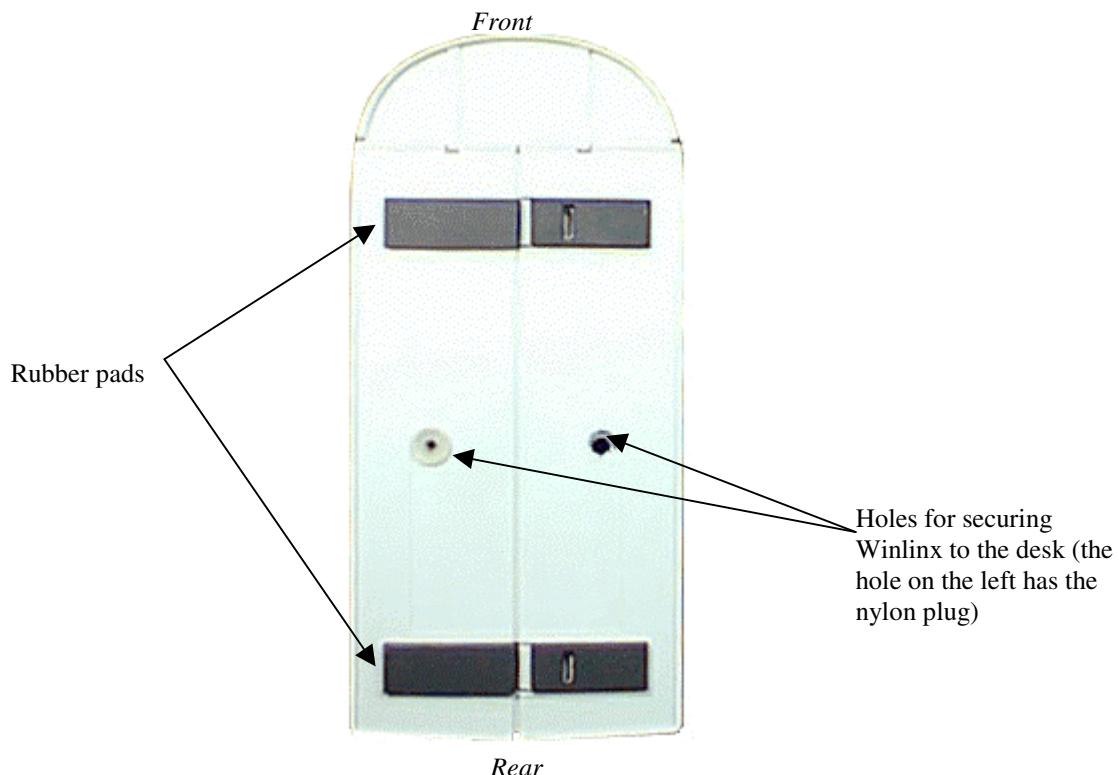


Figure 6: Base view of Winlinx

**NOTE: PLEASE RETAIN THE NYLON PLUG; IT WOULD BE REQUIRED IF YOU DECIDE TO MOVE THE UNIT AT A LATER DATE.**

3. Select the area on your desktop where you want to place Winlinx.
4. Within this area, mark two points at a distance of 44mm. from each other. The two points should be in a line that would be perpendicular to the sides of Winlinx when it is placed on the desktop.
5. At each of the two points, drill a hole of 8mm. Diameter through the surface of your desktop.
6. Place Winlinx such that the holes on the base panel are aligned with the holes on the desktop. Insert 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, ENSURE THAT THE CONNECTIONS ON THE REAR PANEL ARE FIRMLY IN PLACE.**

**NOTE: FOR SECURITY, YOU CAN LOCK WINLINX TO THE TABLE OR DESKTOP USING A KENSINGTON LOCK PROVIDED ON THE REAR PANEL. **

## Step Six: Start Winlinx

To start Winlinx, switch the external power supply ON and press the power-on switch provided on the front panel. Refer to the *Software User Manual* for instructions to setup the software.

**NOTE: EVEN IF WINLINX IS SWITCHED OFF, AN AUXILIARY 5V DC POWER SUPPLY IS AVAILABLE ON THE MOTHER-BOARD. TO COMPLETELY STOP POWER SUPPLY, THE EXTERNAL POWER SUPPLY HAS TO BE SWITCHED OFF.**

# Specifications

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

## Hardware

- Processor: National Geode GXLV 200MHz
- VGA Memory: Unified Video Memory, up to 4MB display RAM
- Flash: 8MB / 16MB / 32MB on board flash
- RAM: 32MB, expandable to 128MB
- Power Management: VESA display power management
- Internal Smart Card reader: *(optional)*

## Mechanical

- Height: 256 mm.
- Width: 86 mm.
- Depth: 215 mm.
- Weight: 3.5 Kg.

## Operating Environment

- Operating Temperature: + 5°C to +40°C
- Storage Temperature: - 20°C to +65°C
- 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

### • Winlinx

- Input voltage: 5V DC
- Power inlet: 2.5A (*max*)

## External Interfaces

- **COM1/COM2 serial ports:** RS232C compatible operating at 115.2K baud maximum
- **10Base-T/100Base-TX port:** 10/100 Mbps LAN interface
- **Printer port (parallel):** ECP/EPP compatible, 25-pin D-type female
- **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
- **Microphone port:** Mono phone jack
- **USB ports:** USB devices
- **LCD port:** TFT/LCD panel (*optional*)
- **PC-card slot:** PC-Card Type I / II / III (*optional and in lieu of LCD port*)

# Connectors and Cables

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

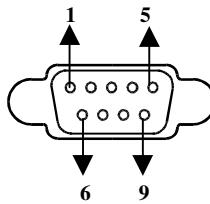
## Connectors

The following tables and figures provide details of pins for the connectors of Winlinx. Refer to *Figure 2* for the location of the connectors.

### COM1 / COM2 (*Serial ports*)

9-pin D-Type Male Connector

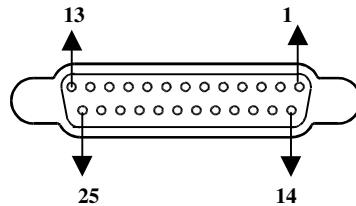
Pin	Signal	Description
1	DCD	Data Carrier Detect
2	RXD	Receive Data
3	TXD	Transmit Data
4	DTR	Data Terminal Ready
5	GND	Signal Ground
6	DSR	Data Set Ready
7	RTS	Request To Send
8	CTS	Clear To Send
9	NC	Not Connected



### Printer port (*Parallel port*)

25-pin D-type Female connector.

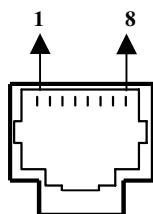
Pin	Signal
1	STROBE
2 - 9	DATA 0 - 7
10	ACKNOWLEDGE
11	BUSY
12	PAPER END
15	ERROR
18 - 25	GROUND



### 10/100BASE-T LAN interface

RJ-45 Modular 8-pin jack

Pin	Signal
1	TXD+
2	TXD-
3	RXD+
6	RXD-



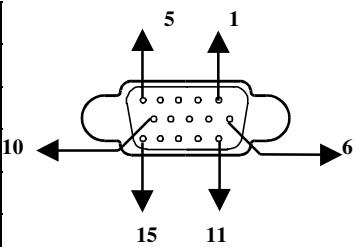
## Video port

15-pin D-type Female Connector

Pin	Signal
1	Red
2	Green
3	Blue
4	No Connection
5	GND

Pin	Signal
6	Red return GND
7	Green return GND
8	Blue return GND
9	No Connection
10	No Connection

Pin	Signal
11	No Connection
12	No Connection
13	Horizontal Sync
14	Vertical Sync
15	No Connection

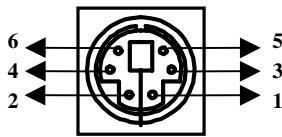


## Mouse/Keyboard port

PS/2 Mouse / Keyboard connector

Pin	Signal
1	Mouse / KBD data
2	NC
3	GND

Pin	Signal
4	VCC
5	Mouse / KBD Clock
6	NC



## Audio/Microphone port

Standard Audio jacks.

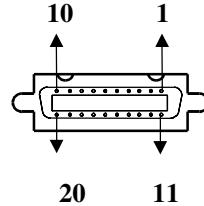
## LCD port

20-pin SCSI connector.

Pin	Signal
1	TX1+
2	TX1-
3,4	AGND
5	TXC+
6	TXC-

Pin	Signal
7	GND
8	VCC
11	TX2+
12	TX2-
13,14	AGND

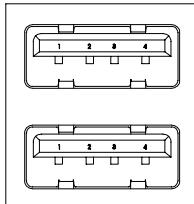
Pin	Signal
15	TX0+
16	TX0-
19	DATA
20	CLOCK



## USB port

4-pin Series "A" Receptacle.

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

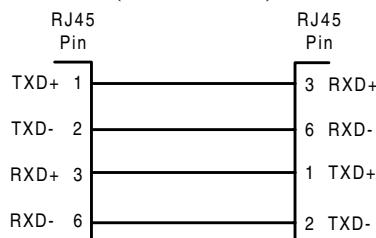


## Cables

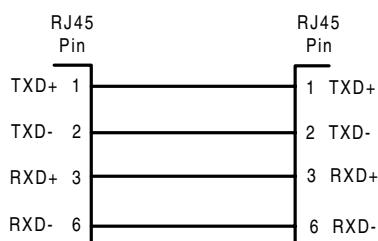
The following figures provide details of the cables used with Winlinx.

### 10Base-T/100Base-TX cable

#### Cross Connection - (*Without Hub*)



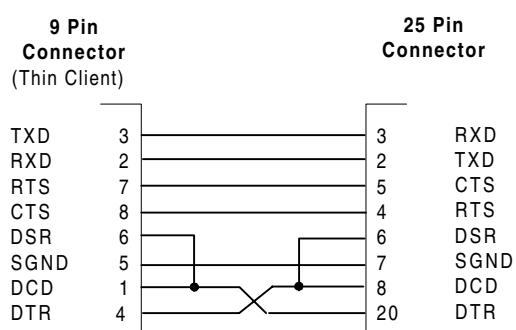
#### Straight Connection - (*With Hub*)



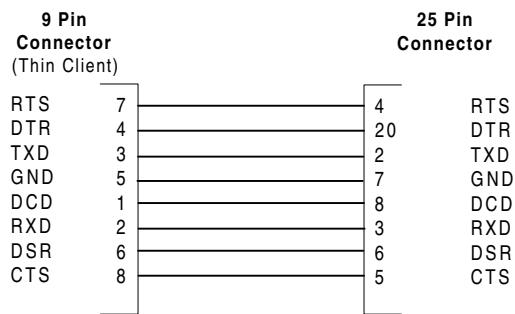
### COM1/COM2 (serial ports) cables

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

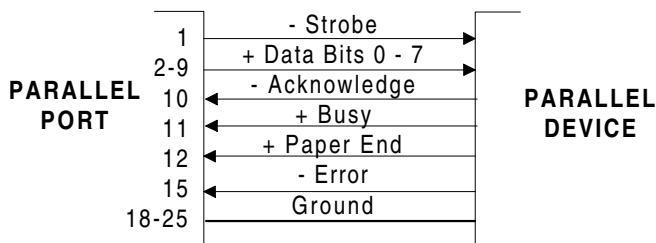


### 9-pin to 25-pin Straight Connection



### 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.



# Troubleshooting

This chapter contains solutions for problems you may encounter while using Winlinx. If a problem persists even after you implement the solutions provided here, or if you encounter a problem not listed here, please contact your nearest VXL Service Center or email [support@vxl.net](mailto:support@vxl.net). For more information on the product and for a list of authorized service centers please visit us on the web at [www.vxl.net](http://www.vxl.net).

<b><i>Problem</i></b>	<b><i>Solution</i></b>
• LED on front panel does not glow when Winlinx is switched on.	<ul style="list-style-type: none"> <li>✓ Ensure that the power cord is properly inserted into the AC power connector provided for the Adapter</li> <li>✓ Ensure that the Adapter is connected to the DC inlet of Winlinx</li> <li>✓ Ensure that the power cord is plugged into an AC outlet.</li> <li>✓ Check the fuse in the power-plug, if available</li> </ul>
• There is no display, though the power-indicating LED glows.	<ul style="list-style-type: none"> <li>✓ Ensure that the display is connected and powered on.</li> <li>✓ Ensure that the video cable is properly connected.</li> </ul>
• The mouse (or keyboard) does not work when Winlinx is switched on.	<ul style="list-style-type: none"> <li>✓ Ensure that the mouse is plugged into the PS/2 Mouse port on the rear panel of the terminal.</li> <li>✓ Ensure that you are using the mouse provided with the terminal. Winlinx supports only Logitech and Microsoft models.</li> </ul>