



# Itona LQ, LQ+ Series

Hardware User Guide

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# Federal Communication Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment Off and On, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

Each Thin Client is equipped with a FCC compliance label that shows only the FCC identification number. The full information of the associated label is as follows:

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

## Battery Information

Batteries, battery packs, and accumulators should not be disposed together with the general household waste. In order to forward them to recycling or proper disposal, please use the public collection system for electronic waste in your country.

## Product Safety

Improper connecting or mounting of the product could result in product failure or damage. Refer to the LQ Series Installation Guide for more information about setting up the thin client.

## VXL Technical Support

To access VXL hardware and software documentation, visit:

<http://www.vxl.net/Independent/product-manuals.aspx>

For online support or reporting a problem, visit:

<http://www.vxl.net/Support/Online-support.aspx>

For more details about Product Warranty, visit:

<http://www.vxl.net/Support/Product-Warranty-Terms.aspx>

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# ENERGY STAR Compliant Product



ENERGY STAR is a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy helping us all save money and protect the environment through energy efficient products practices.

Please visit <http://www.energystar.gov> for detail information on the ENERGY STAR joint program.

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# Regulatory Certifications



RoHS



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# 1 Introduction

Thin Clients are terminal devices that connect to multi-user application servers operating under Citrix XenDesktop, XenApp, VMware View connection server and Windows 2003/2008 terminal servers.

This guide covers installation procedure and hardware details of Itona LQ/LQ+ series.

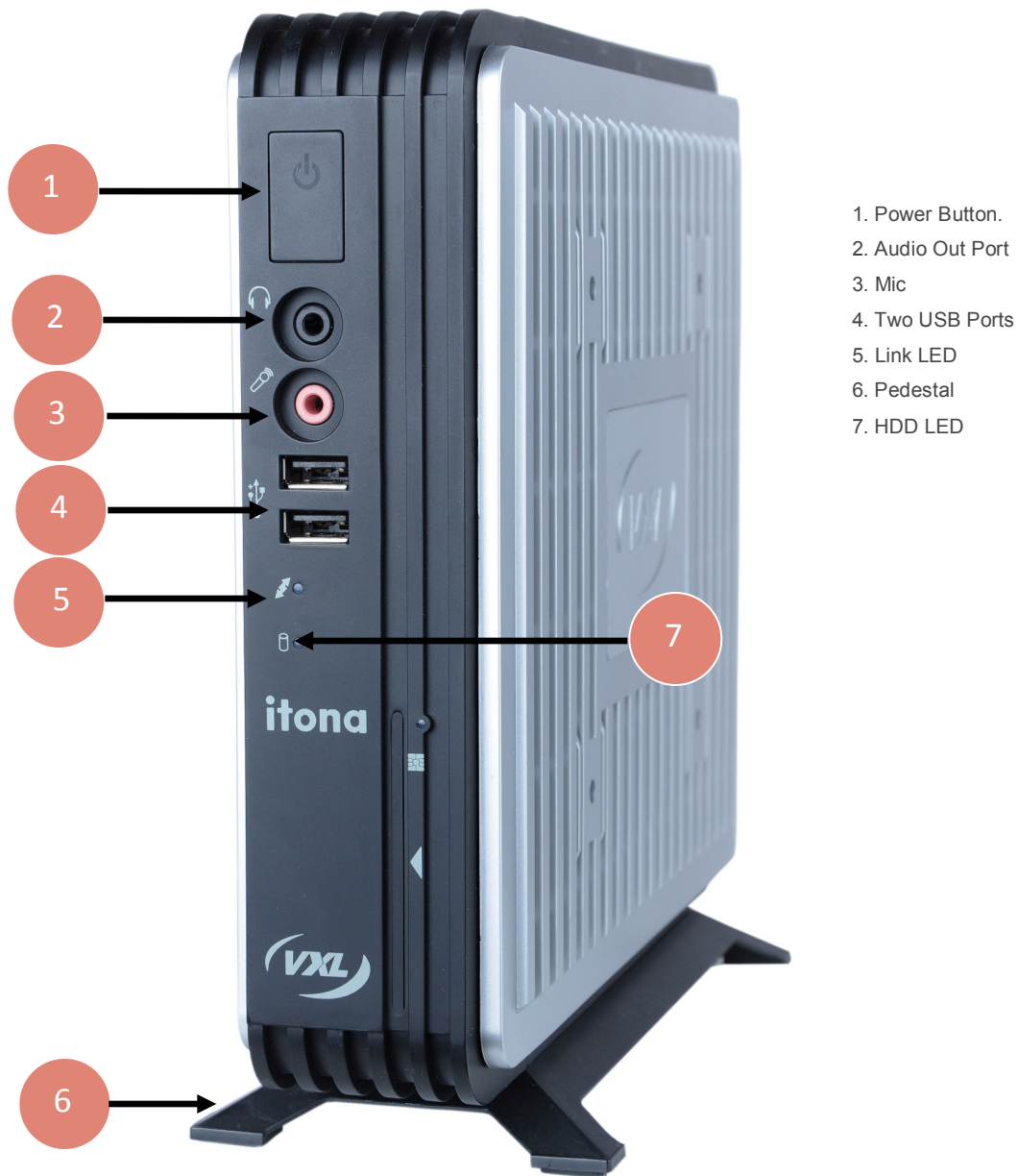


Figure 1-1: Itona LQ/LQ+ Series Front View

Itona LQ/LQ+ series delivers smart and robust solutions for thin client computing. It is an aesthetically and ergonomically designed compact desktop, providing simultaneous full screen connectivity to Windows and UNIX application servers. Itona LQ/LQ+ series is a powerful business alternative to users using Win32 applications while continuing access to legacy UNIX applications.

This thin client communicates with application servers via the ICA protocol developed by Citrix Systems Inc., Remote Desktop Protocol from Microsoft and a host of other popular connectivity protocols.


## Features

This thin client is equipped with a Gigabit Ethernet port that provides instant connection to multi-user Windows NT application servers. Display Port, USB and HDMI ports are available for quick set up and use.

## Optional Features

Following are the optional features available:

- 1 x Parallel Port
- Internal USB WLAN through internal USB compartment
- mPCIe WLAN
- Display Port to DVI, HDMI, VGA converter cables

 **Note:** Please contact the reseller or dealer from whom you purchased the product for information about the optional features.

## About the User Guide

This User Guide provides step-by-step instructions to install Itona LQ/LQ+ series thin client. The specifications and troubleshooting steps are also included.

## Abbreviations and Acronyms

Abbreviation	Expansion
AC	Alternating Current
DC	Direct Current
DP	Display Port
LAN	Local Area Network
LED	Light Emitting Diode
TCP/IP	Transmission Control Protocol/Internet Protocol
USB	Universal Serial Bus
VESA	Video Electronics Standards Association
HDMI	High-Definition Multimedia Interface

## User Manual Organization

Chapter No	Chapter Name	Description
------------	--------------	-------------

1	Introduction	This chapter contains an overview of the product, information about this guide and abbreviations used in this guide.
2	Installation	This chapter contains the procedure to set up the hardware.
3	Specifications	This chapter contains hardware, mechanical, electrical, interface and operating environment specifications
4	Troubleshooting	This chapter contains solutions to problems that you may encounter while using the product.
—	Appendix	This chapter contains detailed specifications for connectors and cables used with the product.

 **Warning**

- Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
- There are no user serviceable parts inside. Do not open enclosure, hazardous voltages present in the equipment's components. Do not disassemble the equipment as this can nullify your warranty.
- Connect the equipment to an earthed three-pin socket to avoid electrical shocks.
- As a precaution, the AC socket outlet should be near the equipment and should be easily accessible.
- Excessive sound from earphones and headphones can cause hearing damage or loss. Avoid setting the volume setting to maximum.

 **Caution**

- Only equipment certified to comply with Class B (computer input/output devices, terminals, printers etc.) should be connected to this equipment, and must have shielded interface cables.
- This equipment should not be used in electro-medical applications.
- Do not operate this equipment in corrosive or explosive atmosphere.
- Replace the battery only with the same or equivalent type recommended by the manufacturer.
- Do not operate this equipment beyond temperature limits provided in the 'Operating Environment' section.

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# 2 Installation

Perform the following steps to successfully install and set up LQ/LQ+ series.

1. Unpack the unit.
2. Prepare to connect.
3. Connect the secure USB shell devices.
4. Install the pedestal.
5. Fix the external antenna (Optional).
6. Install the VESA Dock (Optional).
7. Connect the cables and power supply.
8. Connect to the server.

The installation sequence is explained in the following sections of this chapter.

## Unpacking the Unit

Unpack the unit from its carton; handle safely to avoid damage to the thin client.

The carton shipped to you contains the following:

- Itona LQ / LQ+ series thin client
- Power adapter 19 V
- Power cord country specific (Optional)
- Mouse (Optional)
- HDMI to DVI converter cable
- Pedestal
- Hardware Installation Guide


 **Note:** Please retain the original carton and packing material for future use.


## Preparing to Connect

Before you connect and start using the thin client, ensure that the following are available.

- Appropriate country specific power cord.
- A well ventilated, clean, dry and dust-free place to install this thin client.
- A minimum space of 2 inches (5 cm) on the sides of the unit for efficient convection cooling.
- Specified environmental conditions. For more information, see section 'Operating Environment'.

## Accessing the Secure USB Shell

 **Note:** No user serviceable parts inside the thin client. Please contact a VXL authorized service professional to remove the casing and access the secure USB shell.

 **Warning:** Hot temperatures inside the thin client. Switch off and unplug the device, leave it idle for at least 30 minutes before removing the top and the bottom strips of the thin client.

Two USB ports are provided in the secure USB Shell. These ports are used in banking and other secure IT implementations. The secure USB shell prevents wrongful use of these USB ports. To use the secure USB ports:

1. Remove the screws from the top and bottom strips of the thin client.

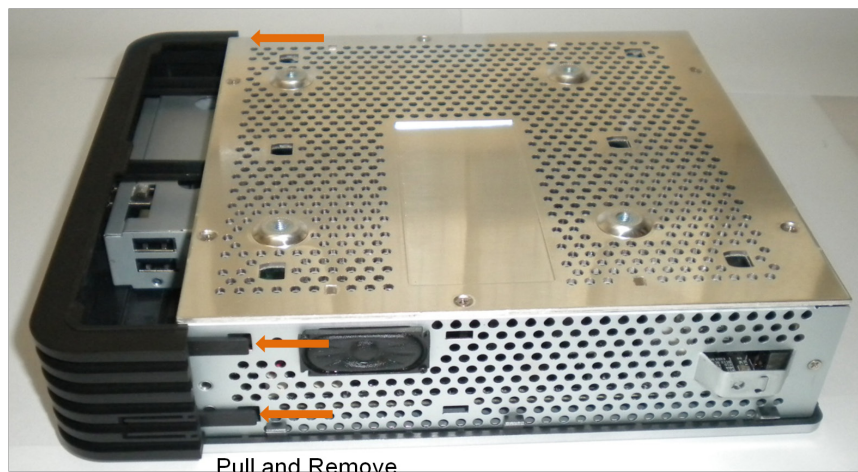


*Figure 2-1: Bottom Strip Screw*

2. Slide and remove the side panels.

 **Warning:** Do not remove the screws of the aluminum metal enclosure.

3. Gently pull the bezel tabs outward on both the top and bottom strips simultaneously as shown in the following figure.




*Figure 2-2: Removing the Front Bezel*

 **Caution:** Pull out the tabs gently out of its groove.

4. Break open the secure shell USB wire seal in the front bezel using a screwdriver as shown in the following figure.



*Figure 2-3: Opening the Secure Shell USB Wire Seal*

 **Note:** A gentle clockwise rotation of the screwdriver will break the wire seal. Do not apply weight on the seal.

5. Connect the USB devices to the two secure USB device ports.
6. Fix the front bezel and allow the USB cables through the Secure USB shell opening.
7. Replace the top and the bottom strips and fasten the screws.

## Installing the Pedestal

Fix the pedestal to the bottom of the thin client before you place it on a flat surface. Do not fix the pedestal if you are mounting this thin client using the VESA bracket. For more information about mounting using a VESA bracket, see section 'Mounting using VESA Dock'.

To install the pedestal:

1. Turn the Thin Client upside down.
2. Locate the slots at the bottom of the Thin Client into which the tabs on the pedestal fit.



*Figure 2-4: Installing the Pedestal*

3. Insert the pedestal tabs into the slots on the Thin Client and then slide the pedestal. You will hear a snap sound indicating that the pedestal is fixed in place.

To remove the pedestal:

1. Turn the thin client upside down.



*Figure 2-5: Removing the Pedestal*

2. Press the tab and then slide the stand outwards and lift the pedestal off the thin client.

## Fixing the External Antenna

An external antenna is used to receive wireless LAN signals. To fix an external antenna:

1. Connect the antenna to the WLAN port in the back panel of the thin client.

### New Image to be inserted

*Figure 2-6: Fixing the External Antenna*

2. Fasten the antenna by rotating it clockwise as shown in Figure 2-6

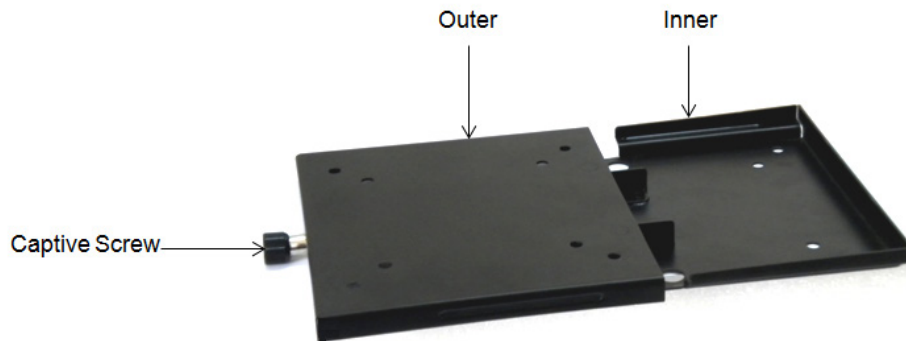
## Mounting using VESA Dock

VESA is an industry standard for interfaces used to mount flat panel monitors, flat panel television and thin clients. Four screw slots in the side panels of this thin client allow you to install the VESA dock.



**Note:** The VESA dock is an optional feature and has to be purchased separately. You will receive the VESA dock in a separate carton.

The VESA Dock consists of two parts – VESA Inner and VESA Outer. These parts are made of rugged 1.2 mm Mild Steel sheets. The dock can be used for 75x75 mm as well as 100x100 mm VESA holes. The VESA Outer slides over the VESA Inner as shown in the following figure.



*Figure 2-7: VESA Outer and Inner*

To install the VESA Dock:

1. Using the screws provided, attach the VESA Outer to the thin client.
2. Using the screws provided, attach the VESA Inner to the surface where you want to mount the thin client.
3. Slide the VESA Outer over the VESA Inner. A metallic clunk sound indicates that the two parts are securely fixed as shown in the following figure.



*Figure 2-8: Mounting the Thin Client using a VESA*

4. Use a screwdriver to fasten the captive screw at the top of the dock.

Following are the various VESA Dock mounting options:



*Figure 2-9 Wall Mounted Client*



*Figure 2-10: Wall Mounted Client and Monitor*



Figure 2-11: Under the Counter Left



Figure 2-12: Behind the Monitor

## Mounting using the Pedestal

You can mount the thin client under the counter top using the pedestal. To mount the thin client under the counter top:



Figure 2-13: Mounting under the Counter Top

1. Place the pedestal under the counter top.
2. Using the two screws provided, attach the pedestal under the counter top.
3. Slide fit the thin client to the pedestal. A snap sound indicates that your thin client is securely fixed.

To remove the thin client and the pedestal:

1. Using a screwdriver, unlock the pedestal lock as shown in the following figure.

 **Note:** Hold the thin client in place while unlocking the pedestal.



Figure 2-14: Removing the Client

2. Slide the thin client to remove it from the pedestal.
3. Using a screwdriver, remove the two screws used to attach the pedestal.
4. Remove the pedestal.

## Connecting the Cables and Power Supply

The various connectors available on the rear panel of the client are shown in Figure 2-15.

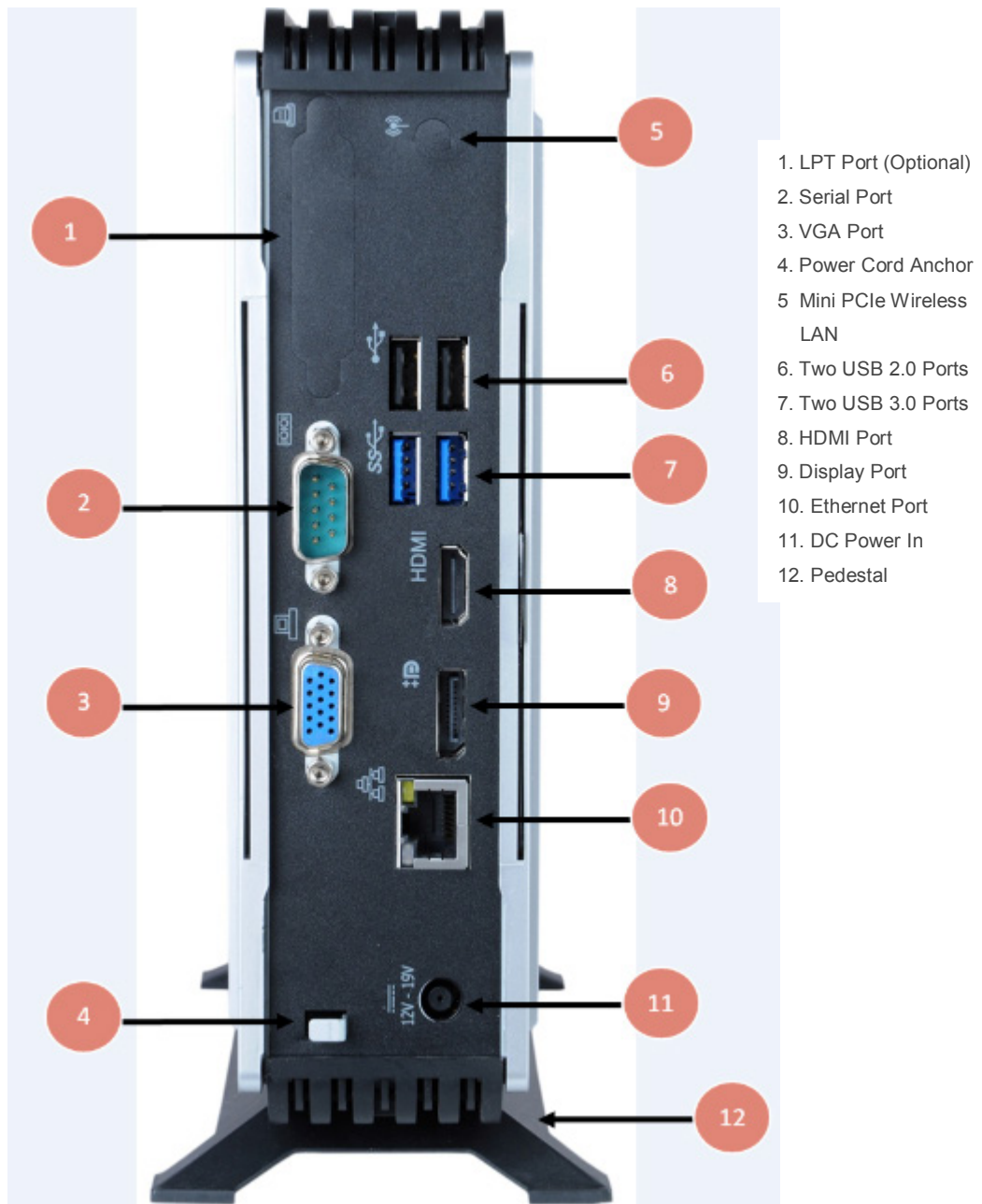
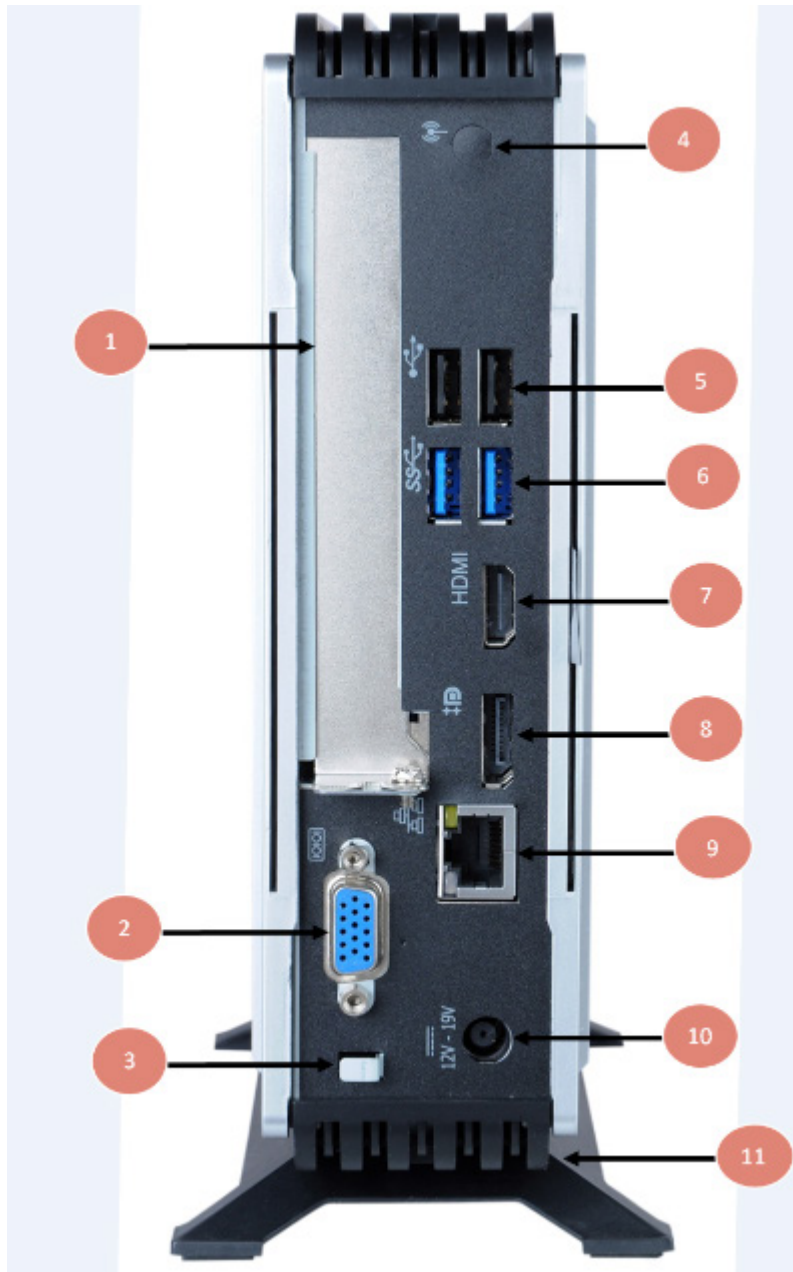


Figure 2-15: Itona LQ Series Rear View



1. Graphics Card  
(Optional)
2. Serial Port
3. Power Cord Anchor
4. Mini PCIe Wireless  
LAN (Optional)
5. Two USB 2.0 Ports
6. Two USB 3.0 Ports
7. HDMI Port
8. Display Port
9. Ethernet Port
10. DC Power In
11. Pedestal

Figure 2-16: Itona LQ+ Series Rear View

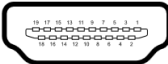








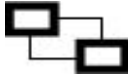


Connectors	Connector Symbol
HDMI Port	
USB 2.0 Port	
USB 3.0 Port	
Audio Out Port	
Mic Port	
Display Port	
COM Port	
VGA Port	
Display Port	
Ethernet Port (RJ45)	
Mini PCIe Wireless LAN Antenna	

Table 1: Connector Symbols

 **Note:** Before connecting any cable, ensure that the power cable is unplugged from the unit.

Refer to the connector symbols provided in 'Table 1: Connector Symbols' to connect the cables to their respective ports. Connect the cables and power supply to the unit in the following order:

1. Connect the USB devices to the **USB Ports**.
2. Connect the external powered speakers to the **Audio Out Port**.
3. Connect the microphone to the **Mic Port**.
4. Connect serial devices to the **COM Port**.
5. Connect the monitor(s) to the **VGA, HDMI and Display Port**.
6. Connect the LAN cable to the RJ45 **Ethernet** port.
7. Connect the power adapter to the **DC Power In**.

**⚠ Caution:** Ensure that the **COM** port is adequately fastened with the captive screws provided along with the cables.

## Using the Kensington Lock

Kensington Lock secures your thin client from unauthorized removal and theft. There are two Kensington Lock slots provided at the top and bottom strips of this thin client. Purchase a compatible Kensington lock to use with these slots.



*Figure 2-17: Kensington Lock Slot on the Top Strip*



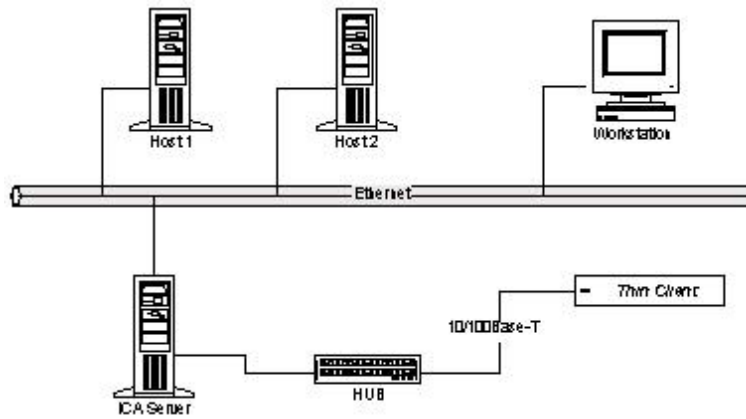
*Figure 2-18: Kensington Lock Slot on the Bottom Strip*

## Connecting to the Server

The thin client can be connected to the server/network by using a LAN connection through TCP/IP.

To connect the client to a Local Area Network through TCP/IP.

1. Connect one end of an Ethernet cable to the **Ethernet Port** in the client.
2. Connect the other end to a LAN hub as shown in Figure 2-24.



*Figure 2-19: LAN Connection through TCP/IP*

3. Press the power button to switch on the thin client. The front panel LED lights up and you will hear a beep. Subsequently, the operating system start-up screen appears.

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# 3 Specifications

## Hardware\*

Processor	LQ/LQ+ AMD Kabini A4-5000 Quad Core 1.5 GHz SoC
Flash	SSD 22 Pin
RAM	Up to 8 GB DDR3 1600/1333 MHz SO- DIMM
Graphic Processor	Built-in Radeon™ HD 8330 graphics processor
Maximum Display resolution	Display Port: 2560 x 1600, @32bpp HDMI: 1920 x 1200 @32bpp VGA: 1920 x 1200 @32bpp
Front Panel	Power Button Link LED HDD LED 2 x USB 2.0 ports Mic port Headphone port
Rear Panel	1 x Serial Port 2 x USB 3.0 2 x USB 2.0 1 x Display Port 1 x HDMI (HDMI to DVI converter cable included) 1 x VGA Port Kensington Slot External Antenna (Optional)
Secure Shell	2 x USB 2.0
Networking	Gigabit LAN Wake-on-LAN

Internal Features	<p>Mono speaker</p> <p>1 x PCIe slot</p> <p>1 x mPCIe slot</p> <p>1 x PCIe Riser Card slot</p>
Optional Features	<p>1 x Parallel Port</p> <p>Internal USB WLAN through secure USB compartment</p> <p>Mini PCIe WLAN Card with external antenna</p> <p>Display Port to DVI, Display Port to HDMI and Display Port to VGA converter cables</p> <p>VESA Dock (100 x 100 or 75 x 75 mm mounting holes)</p>

## Mechanical

Height	201 mm
Width	56 mm
Depth	222 mm
Weight	1.40 Kg Approx

## Operating Environment

Operating temperature	0° C to 40° C
Storage temperature	- 20° C to +60° C
Humidity	20% to 80% RH non-condensing

## Power

Power Consumption	Idle State: < 10 Watts
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## External Power Adapter

Line Voltage	100 V to 240 V AC (+6,-10%)
DC Output	19 V 3.42 A

Efficiency

>85%

\*Specifications may vary based on LQ or LQ+ series. Please check the relevant product datasheet for more information.

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# 4 Troubleshooting

This chapter contains solutions for problems you may encounter while using this product.

## Locating Serial Number

A unique serial number for this thin client is provided in an inlay card. Quote this serial number when requesting for after-sales service.

**New Picture to be inserted**

*Figure 4-1: Locating the Serial Number*

## Recommended Orientation

We recommend that you place or install this thin client vertically; this allows natural heat dissipation. We do not recommend placing the device horizontally. Do not block the air vents on the sides.

## Replacing the Battery

Contact a VXL authorized professional technician to replace the battery in your thin client.


## General Troubleshooting

Following are solutions to some of the commonly encountered issues because of the system set up:

Problem	Solution
The power-LED on the front panel does not glow when the client is switched on.	<ul style="list-style-type: none"><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 on the monitor, though the power-indicating LED glows.	<ul style="list-style-type: none"><li>✓ Ensure that the video cable is properly connected.</li></ul>
The mouse (or keyboard) does not work when the client is switched on.	<ul style="list-style-type: none"><li>✓ Ensure that the mouse (or keyboard) is plugged in the correct PS/2 port.</li></ul>

## Reporting a Problem

You can report a specific problem to the VXL after-sales service. To report a problem or check the status of your issue go to <http://www.vxl.net/Support/Online-support.aspx>.

 **Note:** For more information about reporting a problem and checking its status, refer to the Itona LQ/LQ+ series Installation Guide document shipped with your product.

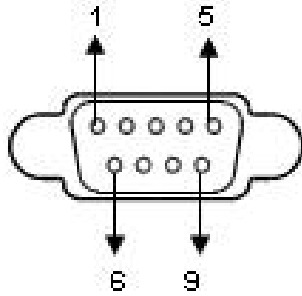
# Appendix

## Connectors

The following section provides pin details for various connectors on the rear panel of the client.

### COM Port

9-pin D-type male connector, RS232C compatible, operating at 115.2 K baud maximum.

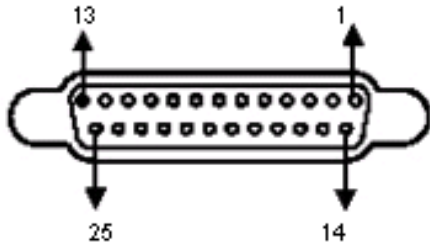


Pin	Signal	Description
1	DCD	Data Carrier Detect
2	RxD	Receive Data
3	TxD	Transmit Data
4	DTR	Data Terminal Ready
5	GND	Signal Ground
6	DSR	Data Set Ready
7	RTS	Request To Send
8	CTS	Clear To Send
9	NC	Not Connected

---

## Printer Port (Parallel)

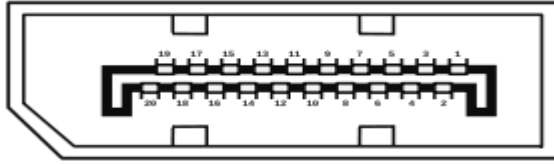
25-pin D-type female connector. ECP/EPP compatible.



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

## Display Port

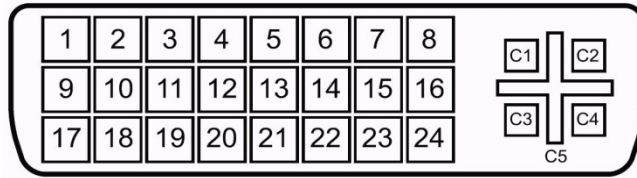
20 pin port with 1.62, 2.7, or 5.4 Gbit/s data rate per lane; 1, 2, or 4 lanes; 1 Mbit/s or 720 Mbit/s for the auxiliary channel.



Pin	Signal	Pin	Signal
1	Lane 0 (positive)	11	Ground
2	Ground	12	Lane 3 (negative)
3	Lane 0 (negative)	13	Connected to Ground
4	Lane 1 (positive)	14	Connected to Ground
5	Ground	15	Auxiliary Channel (positive)
6	Lane 1 (negative)	16	Ground
7	Lane 2 (positive)	17	Auxiliary Channel (negative)
8	Ground	18	Hot Plug Detect
9	Lane 2 (negative)	19	Return for Power
10	Lane 3 (positive)	20	Power for connector (3.3 V 500 mA)

## DVI-I Port

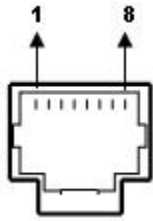
Pin C1 to C5 carry the analogue signal. 24+5 pin DVI Connector.



Pin	Signal	Pin	Signal	Pin	Signal
1	TMDS Data 2-	11	TMDS Data 1/3 Shield	21	TMDS Data 5+
2	TMDS Data 2+	12	TMDS Data 3-	22	TMDS Clock Shield
3	TMDS Data 2/4 Shield	13	TMDS Data 3+	23	TMDS Clock +
4	TMDS Data 4-	14	+5 V Power	24	TMDS Clock -
5	TMDS Data 4+	15	Ground(for+5V)	C1	Analog Red
6	DDC Clock	16	Hot Plug Detect	C2	Analog Green
7	DDC Data	17	TMDS Data 0-	C3	Analog Blue
8	Analog Vertical Sync	18	TMDS Data 0+	C4	Analog Horizontal Sync
9	TMDS Data 1-	19	TMDS Data 0/5 Shield	C5	Analog Ground (analog R, G & B return)
10	TMDS Data 1+	20	TMDS Data 5-		

## Gigabit Ethernet LAN Port

RJ-45 modular 8-pin jack. 10/100/1000 Mbps.



Pin	Signal
-----	--------

1	TxD+
2	TxD-
3	RxD+
6	RxD-

## PS/2 Mouse/Keyboard Port

Mouse/Keyboard connector



Pin	Signal
-----	--------

1	Mouse / KBD data
2	NC
3	GND

Pin	Signal
-----	--------

4	VCC
5	Mouse / KBD Clock
6	NC

## Audio Port

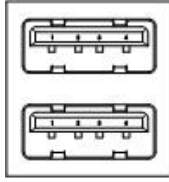
Line Out/Mic ports.

Standard audio jacks.

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## USB Port 2.0/USB Port 3.0

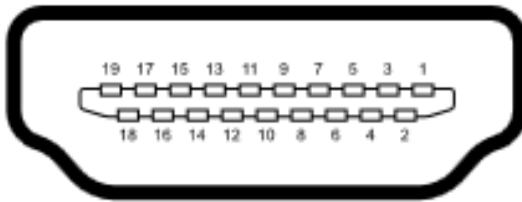
4-pin series-A receptacle. 6 ports.



Pin	Signal
-----	--------

1	VCC
2	D-
3	D+
4	GND

## HDMI Port



Pin	Signal
-----	--------

1	TMDS Data2+
2	TMDS Data2 Shield
3	TMDS Data2-
4	TMDS Data1+
5	TMDS Data1 Shield
6	TMDS Data1-
7	TMDS Data0+
8	TMDS Data0 Shield
9	TMDS Data0 Shield

Pin	Signal
-----	--------

11	TMDS Clock Shield
12	TMDS Clock-
13	CEC
14	Reserved (HDMI 1.0–1.3c), HEC Data (Optional, HDMI 1.4+ with Ethernet)
15	SCL (I <sup>2</sup> C Serial Clock for DDC)
16	SDA (I <sup>2</sup> C Serial Data Line for DDC)
17	DDC/CEC/HEC Ground
18	+5 V (Max 0.05 Amp)
19	Return for Power

10 TMD5 Clock+

20 Hot Plug detect (all versions) and  
HEC Data+ (optional, HDMI  
1.4+ with Ethernet)