

---

# VSR-1200 and RDU Hardware Description

## 1<sup>st</sup> of 2 QuickStart Guides for the VSR-1200

This chapter provides information on the hardware for the VSR-1200™.

**Note:** For chassis and port specifications, see [VSR-1200 and RDU Hardware Specifications](#).

Encore Networks' VPN Satellite Router 1200™ (VSR-1200) is a high-end router designed to function as a gateway or a central-site hub. It supports legacy-to-IP applications and also supports virtual private networks; it can support up to 1200 IPsec VPN connections over ground-based or satellite networks. (In satellite networks, the VSR-1200 uses Selective Layer Encryption™, SLE™, to work with PEPs to enhance performance. For more information on SLE and satellite networks, see the [VPN Configuration](#) Module.) Like all BANDIT products, the VSR-1200 can be managed locally via direct connection or remotely via SNMP, Telnet, and similar applications. The VSR-1200 chassis is a rack-mounted model and uses two internal power supplies.

Like other BANDIT VPN devices, the VSR-1200's VPNs support DES and 3DES; in addition, the BANDIT II, the BANDIT III, and the VSR-1200 can also support AES. The VSR-1200 has a built-in encryption accelerator.

Like most BANDIT products, the VSR-1200 can support legacy protocols over IP. But the VSR-1200 chassis itself does not do so; instead, it uses a peripheral device—the Remote Data Unit™ (RDU™)—to support legacy protocols. Any Ethernet port on the VSR-1200's DMZ switch can connect to an RDU. Each VSR-1200 can use zero, one, or two RDUs.

See the following:

- [The VSR-1200 Chassis](#)
- [The Remote Data Unit](#)

## 1.1 The VSR-1200 Chassis

The VSR-1200 has two 100/1000BaseT Ethernet LAN and WAN ports, one modem port, one Supervisory port, and 128 Mbytes of DRAM/128 Mbytes of Flash, and uses two Hifn VPN chips to support up to 1200 VPN tunnels. It also holds a DMZ switch of eight 10/100BaseT Ethernet ports, and it can support one or two RDUs for serial connections.

The entire DMZ switch connects via one internal port to the VSR-1200's processor and supports a part of the LAN. You can assign the internal DMZ switch an IP address.

The Ethernet ports on the DMZ switch can support different hardware devices. (You use subnet masks to identify devices connected to the DMZ switch's ports.) If they are on the same subnet, devices named PC1, PC2, and PC3 can talk with each other. If a packet with a MAC address of a device connected to the DMZ switch comes in through an Ethernet port on the DMZ switch, the packet will be switched to an outgoing port on the DMZ switch without sending the packet through the processor. In effect, you can create a mini-LAN on the DMZ switch, and the VSR-1200 becomes a gateway for this mini-LAN to reach the LAN and the internet.

With its broadband internet access, support for Voice over IP (VOIP), and role as a VPN gateway, the VSR-1200 is typically placed as a hub solution for large enterprises. Spoofing and conversion of legacy data applications to IP provide host solutions for vertical markets—for example, in banking, travel, and financial networks.

Figure 1-1 shows the front of the VSR-1200 chassis. The front contains the Supervisory port; the front also holds status LEDs for power, for ports on the DMZ switch (in a bank of LEDs), for the LAN port, and for the WAN port. The rackmountable VSR-1200 chassis is 1U (1.75") in height by 19" in length.



Figure 1-1. VSR-1200 Chassis, Front

Figure 1-2 shows the back of the VSR-1200 chassis. It has a PCI expansion slot, a modem port, a WAN Ethernet port, a LAN Ethernet port, and a DMZ switch that contains eight 10/100BaseT Ethernet ports. The chassis also has two AC power connectors for its internal power supplies. In future releases, the PCI expansion slot can hold a PCI expansion card.

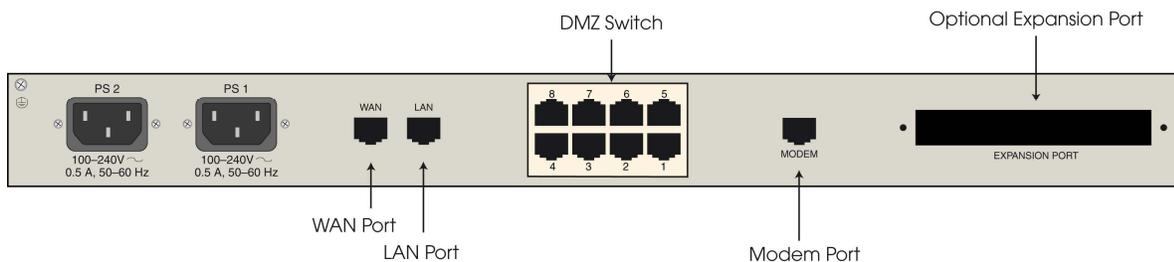


Figure 1-2. VSR-1200 Chassis, Rear

One or two Remote Data Units (RDUs), each providing 1 to 12 serial ports, can connect to Ethernet ports on the VSR-1200's DMZ switch. Each RDU has 12 serial ports and can support up to 240 remote locations or terminals (20 per port), enabling conversion and spoofing of legacy protocols such as SDLC, bisync, X.25, polled async, ALC, CDLC, and X.42. See [Section 1.2, The Remote Data Unit](#).

### 1.1.1 Power Supply

The VSR-1200 has two internal power supplies; these power supplies loadshare power distribution to the VSR-1200 chassis and components. (The RDU, a peripheral unit that supports a VSR-1200, also has an internal power supply.)

Each internal power supply in the VSR-1200 chassis has a separate plug for a power cable connection to an AC power source. (The single internal power supply in the RDU chassis has one plug for a power cable connection to an AC power source.)

The power supplies accept input power from an AC power source. Each BANDIT device's power supply for AC sources, whether internal or external, is autosensing to receive universal 100–240 VAC input at 47–63 Hz. Each power supply converts the AC input power to 5 VDC at 3 amps output for use by the BANDIT chassis.

**Note:** Cables for AC power supplies are included in shipments within North America. In other locations, check with the local or regional distributor for power cables that meet local, regional, and country specifications.

### 1.1.2 Supervisory Port

A Supervisory cable and an adapter connect the BANDIT product's Supervisory port to a control console (such as a PC).

### 1.1.3 Standard Network Ports

The following sections discuss the BANDIT products' port connections to network devices.

- [Section 1.1.3.1, Ethernet Ports](#)
- [Section 1.1.3.2, Modem Port](#)
- [Section 1.1.3.3, Serial Port](#)

**Note:** The BANDIT's data ports can be remotely configured in the software. The data rates for synchronous and asynchronous data ports are shown in [Table A-19](#) and [Table A-20](#).

#### 1.1.3.1 Ethernet Ports

Each 10/100-Base-T Ethernet connection is implemented over unshielded twisted-pair (UTP) wire, using a standard RJ45 connector. [Table A-17](#) lists the RJ45 pin configuration. [Figure A-4](#) shows the connector pins (looking into the connector).

See the following sections:

- [Section 1.1.3.1.1, The WAN Ethernet Port](#)
- [Section 1.1.3.1.2, The LAN Ethernet Port](#)

##### 1.1.3.1.1 The WAN Ethernet Port

[Table 1-1](#) lists the WAN port's interface options.

**Table 1-1. WAN Port Interface Options****Standard**

- VSR-1200: Ethernet 100/1000-Base-T, with an RJ45 connector
- BANDIT III: 10/100-Base-T, with an RJ45 connector

**1.1.3.1.2 The LAN Ethernet Port**

[Table 1-2](#) shows the interface options for the LAN port.

**Table 1-2. LAN Port Interface Options****Standard**

- VSR-1200: Ethernet 100/1000-Base-T, with an RJ45 connector
- BANDIT III: 10/100-Base-T, with an RJ45 connector

The LAN Port has the following IP features:

- Throughput: 512 kbps to 2 Mbps (depending on encryption type)
- Static routing
- RIP V1, V2 routing
- Prioritization on Layers 3, 4, 5
- Fragmentation (MTU) LAN
- 256–4096 and LAN 256–1500
- DHCP/Bootp; DHCP Agent
- RFC 1592
- ARP; Proxy ARP

**1.1.3.2 Modem Port**

An internal modem resides in the VSR-1200. Connect the modem port to a telephone jack.

**1.1.3.3 Serial Port**

The VSR-1200 can have one or two RDU peripheral devices, each with 12 DB-25 serial ports. (There is no DB-25 serial port on the VSR-1200 chassis itself.)

[Table 1-3](#) lists serial port interface options. [Table 1-4](#) lists serial port protocol options. For the serial port's pin configuration, see [Table A-3](#).

**Table 1-3. Serial Port Interface Options**

Standard
<ul style="list-style-type: none"> <li>• Serial with a V.35, EIA-530, RS-232, X.21/V.11, or RS-449 connector <ul style="list-style-type: none"> <li>- RS-232: serial</li> <li>- V.35: binary</li> <li>- X.21 following EIA-530 on DB25 with an optional adapter cable to M-34: asynchronous data</li> </ul> </li> </ul>
Optional
<ul style="list-style-type: none"> <li>• Serial: <ul style="list-style-type: none"> <li>- 2 Mbps (DCE)</li> <li>- V.35 (EIA-530)</li> <li>- RS-232 (128 kbps sync, 115.2 kbps async)</li> <li>- RS-449/422/423</li> </ul> </li> </ul>

**Table 1-4. Serial Port Protocols**

Protocol	Features Supported
<b>Frame Relay</b>	<ul style="list-style-type: none"> <li>• Link Management <ul style="list-style-type: none"> <li>- LMI, CCITT, Q.933 Annex A;</li> <li>- ANSI T1.617 Annex D</li> </ul> </li> <li>• IP over Frame Relay</li> <li>• CIR Enforcement</li> <li>• Fragmentation FRF12</li> <li>• Fast Connection</li> <li>• Prioritization</li> <li>• Unicasting</li> <li>• Multicasting</li> </ul>
<b>PPP, Multilink PPP</b>	<ul style="list-style-type: none"> <li>• Sync PPP</li> <li>• Async PPP</li> <li>• PAP</li> <li>• CHAP</li> <li>• IP over PPP</li> </ul>
<b>IP</b>	<ul style="list-style-type: none"> <li>• All standard IP features</li> </ul>
<b>X.25</b>	<ul style="list-style-type: none"> <li>• All standard X.25 features</li> </ul>

The cable for the serial port provides the proper V.35, RS-449, or RS-232 electrical interface. In addition, the cable provides the port's physical DCE or DTE interface. Make sure you have the correct cable for your network needs.

### 1.1.3.4 **Wireless Support**

**Note:** The VSR-1200 does not support access to wireless networks at this time.

## 1.1.4 **Status LEDs**

LEDs on the front of the BANDIT product indicate the status of connections. The following sections describe the LEDs.

### 1.1.4.1 **General Status**

The following general rules apply to the BANDIT products' LEDs:

- A lit green Power LED indicates that the unit is being supplied with power.
- A lit red Alarm LED indicates that the BANDIT has detected an alarm.
- A lit green Link LED indicates that there is a connection to another device.
- A flashing green Activity LED on an Ethernet WAN, LAN, or DMZ port indicates that data is being received.
- A flashing green Activity LED on a serial port, modem port, 56/64 kbps CSU/DSU port, or T1/E1 CSU/DSU port indicates that data is being exchanged.

Each RDU Link LED indicates that the connection is up or is active between that serial port and its connected device.

### 1.1.4.2 **Protocol Status**

In addition to indicating general status, each port's Activity LED indicates conditions for the protocol configured on that port.

## 1.2 **The Remote Data Unit**

The Remote Data Unit (RDU), an external module with 12 DB25 serial ports, is available for use with the VSR-1200. The VSR-1200 can support one or two RDUs. Each serial port on the RDU can support any protocol listed for serial ports in [Section 1.1.3.3, Serial Port](#).

The RDU's Ethernet port connects to an Ethernet port in the DMZ switch on the VSR-1200.

The RDU is 1U (1.75", 4.4 cm) high and 19" (48.3 cm) wide. Because it is a peripheral unit, the RDU can sit in any location. It is usually convenient to install the RDU in an equipment rack above or below its VSR-1200.

**Note:** The RDU has its own AC power connection. The RDU's power consumption is 10 watts AC; its power supply delivers 3.3 volts DC to the RDU.

[Figure 1-3](#) shows the front of the RDU; [Figure 1-4](#) shows the rear of the RDU.

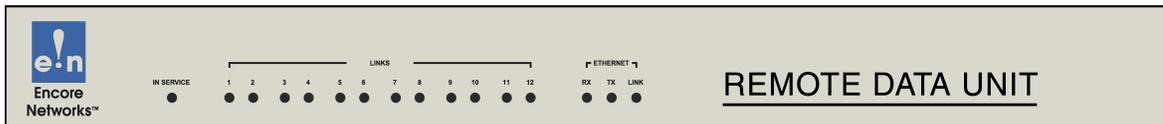


Figure 1-3. Remote Data Unit, Front

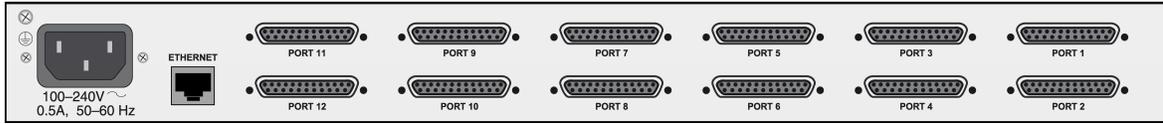


Figure 1-4. Remote Data Unit, Rear

Each serial port on the RDU is a DB25 female connector, physical DCE RS-232. If you want a port to be a physical DTE, use a DB25-to-DB25 crossover conversion cable.

The front of the RDU has 12 LEDs, one for each serial port. [Table 1-5](#) describes the LED states for the RDU's serial ports.

Table 1-5. Remote Data Unit's LEDs

LED	State	Description
In Service	On	RDU system is up and operational.
	Off	RDU system is not yet fully operational. (System is off or is starting up.)
Links 1-12	On	Link is up. (Cable is connected properly.) <sup>1</sup>
	Blinking	Activity on port. <sup>1</sup>
	Off	Link is not up. <sup>1</sup>
Ethernet	Rx	Blinking Activity
	Tx	Blinking Activity
	Link	On Link is up. (Cable is connected properly.) Off Link is not up.

1. The exact meaning of an LED state for Links 1-12 depends on the protocol the port carries.

