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RDU[™] Installation Guide

This guide presents procedures for a standard installation of the Remote Data UnitTM (RDUTM), a peripheral device for use with the BANDIT PlusTM or the VSR-1200TM.

The RDU is used to augment the throughput and productivity of its controlling device—a BANDIT Plus or a VSR-1200. The RDU has 12 DB25 serial ports; each of these ports can carry 20 logical connections to a network device. The RDU's connections are especially useful for VPN tunnels or for legacy protocols used in financial or utility networks.

Gather all required information. Before you start these procedures, make sure you have all the information required to set up the RDU and its VSR-1200 or BANDIT Plus for use in your network—for example:

- Information on physical connections for the RDU and for its controlling device (a BANDIT Plus or a VSR-1200)
- Interface requirements for the RDU ports and the controlling device's ports
- Interface types for the ports—for example, DTE or DCE
- Interface protocols for the ports
- The controlling device's IP address
- The controlling device's passwords
- The controlling device's VPN configuration, if any
- Network and routing functions that the controlling device and its RDU(s) will perform
- Other pertinent network information

Use the site planning worksheets in the *BANDIT Products Software Configuration and Maintenance Guide* as checklists for this information.

If you have questions or concerns after you have followed these procedures, contact Encore Networks, Inc., at *support@encorenetworks.com*, 703-787-4625 (fax), or 703-318-4350 (voice).

Broadband Access Network Device for Intelligent Termination (BANDIT), BANDIT Plus, Encore Legacy-to-IP Operating System (ELIOS), Remote Data Unit (RDU), Selective Layer Encryption (SLE), VPN Satellite Router (VSR), and VSR-1200 are trademarks of Encore Networks, Inc. All other trademarks are the properties of their respective owners.

See the BANDIT Products Software Configuration and Maintenance Guide for statements on Product Warranties and on Limitation of Liability.

A Setting Up the Hardware

The RDU supports a BANDIT Plus or a VSR-1200. (For information on the BANDIT Plus or the VSR-1200, see the *BANDIT Products Hardware Reference Guide*.)

- 1 Unpack the RDU, the BANDIT Plus or VSR-1200, and components from the shipping box. Make sure you have all the parts:
 - A paper copy of this *Installation Guide*
 - One or two RDUs (Figure 1)
 - A BANDIT Plus or VSR-1200 chassis (Figure 2 or Figure 3)
 - An RJ-45 Supervisory cable
 - An adapter for the Supervisory cable (described in the Note in Step 8)
 - An RJ-11 modem cable (only for the BANDIT Plus)
 - Any additional accessories that you ordered

Note: Shipments within North America include a power cable for an AC outlet with each RDU and with each BANDIT Plus or VSR-1200. For shipments outside North America, contact your distributor for a cable that meets local requirements to connect the BANDIT's power supply to a power outlet.

Note: If you wish to view or download Encore Networks' customer documentation, including the documentation for the BANDIT products, visit the following site:

http://www.encorenetworks.com/znm_spt_doccatalog.htm

Contact your Encore Networks sales representative if you wish to order a CD containing BANDIT documentation.



Figure 1. Remote Data Unit, Front



Figure 2. BANDIT Plus Chassis, Front



Figure 3. VSR-1200 Chassis, Front

- 2 Mount the BANDIT Plus or VSR-1200 chassis in an equipment rack.
- **3** Mount each RDU above or below its BANDIT Plus or VSR-1200 in the equipment rack.
- 4 Connect an earth ground wire to each RDU, BANDIT Plus, and VSR-1200 chassis, as follows: Attach a (minimum) 12 AWG wire to the earth ground screw (next to the safety ground symbol), on the extreme right rear or extreme left rear of the chassis (Figure 4 through Figure 6). Use a ring terminal, such as an AMP (part number 36160), for this connection.

Warning: An earth ground must connect to the chassis so that the device remains grounded even when it is not receiving power.

Earth Grounding Bolt						
	• PORT 11	• PORT 9	• PORT 7	• PORT 5	• PORT 3	• PORT 1
100–240V ~ 0.5A, 50–60 Hz	PORT 12	PORT 10	PORT 8	• PORT 6	• PORT 4	PORT 2

Figure 4. Remote Data Unit, Rear



Figure 5. BANDIT Plus Chassis, Rear



Figure 6. VSR-1200 Chassis, Rear

- **5** Do one of the following:
 - **a** Connect the Remote Data Unit's Ethernet port (Figure 4) to the BANDIT Plus's Ethernet LAN port (Figure 5).
 - **b** Connect each RDU's Ethernet port (Figure 4) to a separate Ethernet port on the VSR-1200's DMZ switch (Figure 6).

- **6** Connect the ports to their network devices. For example:
 - **a** On the BANDIT Plus or VSR-1200, connect the WAN port, modem port, serial port (if any), and expansion port (if any) to the network devices.
 - **b** Connect the serial ports on each RDU to their network devices.
- **7** Connect each power supply on the RDU, BANDIT Plus, and VSR-1200 chassis to an outlet supplying 100–240 VAC at 47–63 Hz.
- 8 Connect your PC's COM port to the Supervisory port on the front of the BANDIT Plus (Figure 2) or VSR-1200 (Figure 3). Use the Supervisory cable and adapter supplied with your shipment.

Note: An eight-pin modular (RJ-45) to DB-9 adapter is the standard adapter to connect the Supervisory cable to a PC. This adapter is shipped with the unit. The following alternate adapters are also available. (Contact your sales representative at Encore Networks, Inc., if you need either of these adapters.)

- An RJ-45 to DB-25 adapter for connection to most asynchronous terminals
- An RJ-45 to DB-25 modem adapter to connect a modem, for out-of-band management or remote configuration

B Wireless Support

If you ordered a CDMA or GSM wireless card with the BANDIT Plus, you need to set up the card for use in the carrier network. And, if you wish to change the default settings for wireless access, you need to reconfigure the wireless port.

In addition, a GSM wireless card must hold the appropriate Subscriber Identity Module (SIM) for access to the carrier's GSM wireless network.

To configure the BANDIT Plus for wireless use, see the *BANDIT Products Wireless Access Guide*.

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

C Logging In

The RDU is an extension of its controlling device (a BANDIT Plus or a VSR-1200). It is part of the controlling device's configuration, so configuration of the RDU ports is done through its controlling device's menus.

1 On the PC (connected to the BANDIT Plus or the VSR-1200), open a terminal-emulation session, such as HyperTerminal. Use the settings in Table 1 to establish communication between the terminal console and the BANDIT Plus or VSR-1200.

Parameter	Value
Bits per second	9600
Data bits	8
Parity	None
Stop bit	1
Flow control	Hardware

Table 1. Supervisory Port Communication Settings

2 On the terminal console, press **Enter** to connect to the attached device.

After successful log-in, the Main Menu appears.

D Using the Main Menu

Note: The menus shown in this document are examples; the choices shown on the menus depend on the features in the BANDIT Plus or VSR-1200 chassis and on the software version installed in the device. (For figures, tables, and configurations not addressed in this *Installation Guide*, see the *RDU Hardware Reference Guide* or the *BANDIT Products Software Configuration and Maintenance Guide*.)

The Main Menu is displayed when you log onto the BANDIT Plus or VSR-1200. From the Main Menu, you can configure and operate the BANDIT device and its RDU(s).

```
Main Menu
------
1) QuickStart Config Builder
2) Typical Configurations
3) Advanced Configurations
4) Tools
V) View Current Unit Status
L) Load Factory Defaults
P) Load Plug and Play Defaults
W) Write Configuration
R) Reset Unit
X) eXit Session
S) Statistics
Y) sYstem Administration
Enter Choice :
```

Note: Whenever you wish to return to a higher level in the menus, press **Escape**.

- Caution: The Supervisory connection to the device will time out after five (5) minutes of console inactivity. If you have changed the device's configuration and wish to use the new configuration, save (write) the configuration before you leave the console. (See Section F, *Saving (Writing) the Device's Configuration.*)
- **1** On the Main Menu, do one of the following:
- **a** To set up a basic configuration of the BANDIT Plus or VSR-1200 and its RDU(s) for your network, select **QuickStart Config Builders**.

The Startup Config Options menu is displayed. (On the next menu—the Startup Configuration Scenarios menu—you can enter basic information; the BANDIT Plus or VSR-1200 will use this information to build a standard configuration.) The **Banking** configuration is used for financial networks. Select **Satellite** if most of the transmissions will travel over satellite networks. For other networks, use **Generic**. Go to Section E.1, *Startup Configuration*.

```
Startup Config Options

1) GENERIC

2) BANKING

Enter Choice :
```

Startup Config Options
1) SATELLITE
Enter Choice :

b To configure specific features, select Advanced Configurations.

◆ The Advanced Configurations menu is displayed. You configure most parameters of the BANDIT Plus or VSR-1200 and its RDUs from this menu. Go to Section E, *Configuring the Software*.

```
Advanced Configurations

1) Physical Configurations

2) Data Configurations

3) Local Address

4) Routing

5) Global Paths

Enter Choice :
```

E Configuring the Software

For a standard, basic configuration of the BANDIT Plus or VSR-1200 and its RDUs for your network, see Section E.1, *Startup Configuration*. For configuration of specific features, see the following sections.

- Section E.2, Device Addresses
- Section E.3, Ports
- Section E.4, Simple Network Management Protocol

For VPN configuration or for other aspects of software configuration, see the *BANDIT Installation Guide* (for the BANDIT Plus) or the *VSR Installation Guide* (for the VSR-1200).

E.1 Startup Configuration

The menu provides several templates for configurations that your network may use. You can select a template (also known as a startup scenario), change the scenario's IP addresses and

related information to reflect the values in your network, and load the scenario into the BANDIT Plus or VSR-1200.

Note: If you want the device to keep the configured scenario, be sure to write (save) the configuration and reset the device.

To configure a basic setup for this device in your network, do the following:

- 1 On the Main Menu, select **QuickStart Config Builders**.
- 2 On the Startup Config Options menu, select the **Generic** set of configuration templates.
 - The menu for Startup Configuration Scenarios appears.

```
BANDIT
Startup Configuration Scenarios
-----
1) PPPoE WAN Router
2) PPPoE WAN VPN Gateway(Initiator)
3) PPPoE WAN VPN Gateway(Initiator) With Dial Backup
4) PPPoE WAN VPN Gateway(Terminator)
5) PPPoE WAN VPN Gateway(Terminator) With Dial Backup
6) Ethernet WAN Router
7) Ethernet WAN VPN Gateway(Initiator)
8) Ethernet WAN VPN Gateway(Initiator)
9) Ethernet WAN VPN Gateway(Terminator)
A) Ethernet WAN VPN Gateway(Terminator) With Dial Backup
Enter Choice :
```

3 Select one of the listed set-ups.

The menu for the selected set-up (scenario) is displayed. (The menu shown is for a PPPoE WAN VPN Gateway, Initiator.)

```
Startup Configuration Parameters
_____
1) System Name :

      1) System Name

      2) LAN Interface IP
      : 0.0.0.0
      /0.0.0.0

      3) LAN Private NAT IP
      : 0.0.0.0
      /0.0.0.0

4) WAN Interface IP : Dynamic
5) PPPoE User Name
                        :
6) PPPoE Password
                         :
7) Primary DNS Server : 0.0.0.0
8) VPN Gateway
                         :
9) VPN User ID
A) VPN Pre-Shared Key :
B) Remote Subnet : 0.0.0.0/0.0.0.0
L) Load Above Config
R) Reset (Load, Write and Reset)
Z) Clear All Fields
Enter Choice :
```

Note: At this point, all IP addresses, etc., have null values. Before you can load the configuration into the device, you must enter values that reflect your network's settings.

- **4** For each item (parameter) in the menu, do the following:
 - a Select the item (for example, WAN Interface IP).



- **b** Type a value for the item, and press **Enter**.
- **c** If the item requests additional information, enter that information.
 - ♦ When the item has been configured, the scenario's menu is displayed again.
- **5** After you have performed Step 4 for each item (parameter) in the menu, do one of the following:
 - a Select Load Above Config.
 - The following prompt asks for confirmation. Go to Step 6.

```
Caution: Existing configurations will be over written
Do you want to Continue?(Y/N)[N]:
```

- **b** Select **Reset (Load, Write and Reset)**.
 - The following prompt asks for confirmation. Go to Step 6.

Caution: Existing configurations will be over written Do you want to Continue?(Y/N)[N]:

- c Select Clear All Fields.
 - The following prompt asks for confirmation.

This Clears All the above Fields, Continue?(Y/N)[N]:

- Do one of the following:
 - If you wish to reconfigure, enter **Y**.
- All fields in the menu are reset to null values. Return to Step 4.

• If you do not wish to reconfigure, press **Escape** to return to the Startup Configuration Scenarios menu.

The configuration retains the settings you have entered, but they are not yet in use. Return to Step 4.

6 To load the new configuration, enter **y**.

The configuration is loaded into the BANDIT Plus or VSR-1200.

Note: When you write (save) a configuration entered on the Quickstart menu, other required settings are updated automatically. For example, when you enter the device's IP address, a path is automatically set up in the IP routing table to direct this IP address to the device's LAN port.

If you selected Reset (Load, Write, and Reset), the configuration is also saved. This makes the configuration permanent (unless you change it again). Then the device resets.

- 7 When the configuration has finished loading, press **Escape** until you return to the Main Menu. (Go to Section D, *Using the Main Menu*.)
- **8** To save and use the configured scenario (if it has not already been saved), do the following:
 - a Write the configuration. (See Section F, Saving (Writing) the Device's Configuration.)
 - **b Reset** the device. (Section G, *Restarting* (*Resetting*) *the Device*.)

E.2 Device Addresses

To configure the device's addresses, do the following:

1 On the Advanced Configurations menu, select Local Addresses.

```
BANDIT Plus
Configure Local Addresses
------
1) IP Address : 192.168.169.1
2) BANDIT Name : BANDIT Plus
Enter Choice :
```

- 2 On the Configure Local Addresses menu, select IP Address.
- **3** Enter the device's IP address and press **Enter**. (Get the device's IP address from your network administrator.)
- 4 Select BANDIT Name.
- **5** Enter a unique name to identify this device in your network, and press **Enter**.

E.3 Ports

To configure software for the device's ports, do the following:

- 1 On the Advanced Configurations menu, select **Data Configuration**.
 - The Logical Port Protocol menu is displayed. (Table 2 lists the Line IDs for the ports.)

Table 2. Port Identifiers

C COM/Supervisor port Comm/Supervisor ^a	ion
M Modem port Point to Point	
L Ethernet LAN port Ethernet (DHCP Server	
192.168.101.1)	
WEthernet WAN portEthernet (DHCP Client 0.0.0.0))
S Serial port Frame Relay	
E Expansion port Frame Relay	
B RDU ports (See Step 2.)	
P More ports ^b (See Step 2.)	

a. Do not modify the configuration for the Comm/Supervisor port.

b. These are virtual Logical Ports. A protocol configured on a Logical Port can be associated with a global path, which is turn is associated with a physical port. (See Section E.3.1, *Protocols*. For information on global paths, see the *BANDIT Products Software Configuration and Maintenance Guide*.)

- **2** On the Logical Port Protocol menu, select the physical port whose software configuration you wish to modify.
 - One of the following occurs:
 - If you are configuring a physical port on the chassis, the Logical Port Attribute menu appears. Go to Step 4.
 - If you are configuring a physical port on an RDU, the RDU Logical Port Menu is displayed. Continue to Step 3.

BANDIT Plus Logical Port Protocol	Attached To	Port Interfaces
1) UNDEFINED	RDU Port 1	
2) UNDEFINED	RDU Port 2	
3) UNDEFINED	RDU Port 3	
4) UNDEFINED	RDU Port 4	
5) UNDEFINED	RDU Port 5	
6) UNDEFINED	RDU Port 6	
7) UNDEFINED	RDU Port 7	
8) UNDEFINED	RDU Port 8	
9) UNDEFINED	RDU Port 9	
A) UNDEFINED	RDU Port 10	
B) UNDEFINED	RDU Port 11	
C) UNDEFINED	RDU Port 12	
Enter Port :		

• If you are configuring a virtual Logical Port, the Virtual Logical Port menu is displayed. Continue to Step 3.

Logical Port Protocol	Mapped To	Port Interfaces
1) UNDEFINED		
2) UNDEFINED		
3) UNDEFINED		
4) UNDEFINED		
5) UNDEFINED		
6) UNDEFINED		
7) UNDEFINED		
8) UNDEFINED		
9) UNDEFINED		
10) UNDEFINED		
11) UNDEFINED		
12) UNDEFINED		
13) UNDEFINED		
14) UNDEFINED		
15) UNDEFINED		
16) UNDEFINED		
17) UNDEFINED		
P) More Ports		

3 On the RDU Port menu or the Virtual Logical Port menu, select the port to configure.

The Logical Port Attribute menu appears.

- **4** To modify the port's default settings, see the following:
 - Section E.3.1, *Protocols*
 - Section E.3.2, *DHCP Settings* (only for the WAN and LAN ports)
 - Section E.3.3, Dial Backup Settings

E.3.1 Protocols

To change the protocol that a port uses, or to modify attributes of a port's protocol, do the following on the Logical Port Attribute menu (see Section E.3, *Ports*):

1 If you wish to change the protocol the port uses, do all of the following:

a Select Undefine Current Logical Port.

Note: The menu for the Modem port does not offer this selection.

- **b** Select **Protocol**.
- **c** On the Logical Port Protocol Selection menu, select the protocol you want this port to use. Go to Step 2a.
- **2** To modify parameters in the port's protocol, select **Protocol**.

◆ The protocols available for the port are displayed. (This example shows protocols for a serial port. A serial port is available in models that support legacy protocols.)

```
Logical Port Protocol Selection Menu
------
1) Frame Relay
2) Point-to-Point (PPP)
3) MultiLink PPP
4) X.25+
5) SDLC Routing
6) SDLC 1490 Configuration
7) Bit Sync Encapsulation
8) Asynchronous Encapsulation
9) Serial Line IP (SLIP)
A) Async Burroughs Poll/Select
B) Sync Burroughs Poll/Select
C) Bisync
D) Telnet Terminal
E) XXX PAD
Enter Choice :
```

- **a** On the protocol configuration menu, select and change parameters to work in your network.
- **b** When you have finished configuring the protocol, press **Escape** to return to the Logical Port Attribute menu.

E.3.2 DHCP Settings

To review settings that the WAN or LAN port uses for DHCP, or to modify or disable DHCP on a port, do the following on the port's Logical Port Attribute menu (see Section E.3, *Ports*).

Note: The WAN and LAN ports use different settings. Typically, a BANDIT device is a DHCP client on the WAN port and is a DHCP server on the LAN port. You may enable, modify, or disable use of DHCP on one port or on both ports.

- 1 Select DHCP Type.
 - The DHCP Type menu appears.

DHCP Type	
 Server Client None 	
Enter Choice :	

2 Select the option you want this port to use.

♦ If you select **None**, the device does not use this port for DHCP. Press **Escape** until you return to the port's Logical Port Attribute menu. Go to Step 5.

◆ If you select **Client**, the device uses this port to request its IP address. (On the WAN port, the device requests its *public* IP address.) No further configuration is required for the DHCP client role. Press **Escape** until you return to the port's Logical Port Attribute menu. Go to Step 5.

◆ If you select **Server**, the device uses this port to assign IP addresses. (On the LAN port, the device assigns *private* IP addresses.) The Logical Port Attribute menu is redisplayed, with a menu item for configuring the DHCP server.

3 Select **DHCP Server Parameters**.

The DHCP Server Parameters menu appears.

- **4** Select and configure each parameter the device will use as the local (intranet) DHCP server. When you have finished configuring the DHCP server, press **Escape** until you return to the port's Logical Port Attribute menu.
- **5** When you have finished configuring the port, press **Escape** until you return to the Main Menu.
- **6** Save the configuration and reset the device. See Section F, *Saving* (*Writing*) *the Device's Configuration*, and Section G, *Restarting* (*Resetting*) *the Device*.

E.3.3 Dial Backup Settings

1 To configure a port for dial backup, select **Dialup Configuration** on the Logical Port Attribute menu (see Section E.3, *Ports*).

Note: A port can be configured for dial backup only if its protocol supports dial backup. The port's Logical Port Attribute menu will not allow this option unless the protocol supports it. To select a protocol that supports dial backup, see Section E.3.1, *Protocols*.

2 Configure the parameters for the dialup. When you have finished, press **Escape** to return to the Logical Port Attribute menu.

E.4 Simple Network Management Protocol

Note: For a discussion of the Simple Network Management Protocol (SNMP) or for detailed procedures for SNMP, see the document *SNMP in the BANDIT Products*.

If you wish to use SNMP with the VSR-1200 or the BANDIT Plus, do the following to configure the device's built-in SNMP agent:

- 1 On the Main Menu, select **System Administration**.
- **2** When the system asks for your password, enter the default password and press **Enter**.

Note: Contact your network administrator for the password.

- **3** On the System Administration menu, select **SNMP Configuration**.
- **4** On the SNMP Configuration menu, do the following:
 - a Configure the SNMP Get Community String.
 - **b** Configure the **SNMP Set Community String**.
 - c Configure the SNMP Trap Default Address.
 - d Configure IP addresses for the SNMP Trap Table.
- **5** Now you can configure an SNMP manager on your control terminal. (Encore Networks does not furnish SNMP manager software.)

F Saving (Writing) the Device's Configuration

Note: If you do not save the configuration before you reset or exit the VSR BANDIT (or before the connection times out), the configuration will be lost.

After the unit has been configured, save (write) the configuration. Do the following:

- 1 On the Main Menu, select Write Configuration.
- 2 Select Yes.
 - The device will notify you when it has saved the configuration.

Note: If the device's software detects an error in the configuration, it will not save it. Review the configuration. After you have revised the configuration to your satisfaction, save it.

3 Press Enter.

G Restarting (Resetting) the Device

To use the saved configuration, you must reset the VSR BANDIT. Do the following:

Note: If you want to use your new configuration, you must save (write) the configuration before resetting the unit. Otherwise, the new configuration will be lost.

- 1 On the Main Menu, select **Reset Unit**.
- 2 Select Yes.

Note: If you have not yet saved the new configuration, the system asks whether to save it. Answer **yes** or **no**.

- ✤ The device resets.
- **3** Regardless of screen instructions, do not type anything until you see the banner: *BANDIT, ENCORE NETWORKS INC.* Then press **Enter**.

✤ The Main Menu is displayed.

H Exiting a Session

After the software has been configured, save (write) the configuration. Then exit the session before disconnecting the PC, so that communication is not disrupted.

Caution: Before you exit, make sure you save (write) the configuration. Otherwise, the changes you configured will be lost. See Section F, *Saving (Writing) the Device's Configuration*.

To exit the session, do the following:

- 1 On the Main Menu, select Exit Session.
 - ✤ The following prompt is displayed.

Are You Sure? :

2 Select Yes.

Note: If the configuration has not been saved, the device asks you whether it should save the new configuration. Answer **Yes** (or **No**, if you prefer not to save the configuration).

The system notifies you that it is ending the session.

Ending Session...

Note: To reconnect to the device and start a new session, press Enter.

The terminal's connection to the BANDIT starts up, and the BANDIT's Main Menu is displayed.