Connect® WAN 3G IA Utility

Installation Guide

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Safety Notices

1. Please read all instructions before installing and powering the unit. You should keep these instructions in a safe place for future reference. When installing and using this electrical equipment, always follow basic precautions.

2. If the power supply shows signs of damage or malfunction, stop using it immediately, turn off the power and disconnect the power supply before contacting your supplier for a repair or replacement.

3. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. Use only the accessories, attachments, and power supplies provided by the manufacturer – connecting non-approved antennas or power supplies may damage the unit, cause interference or create an electric shock hazard, and will void the warranty.

4. Do not attempt to repair the product. The unit contains no electronic components that can be serviced or replaced by the user. Any attempt to service or repair the unit by the user will void the product warranty.

5. Ports that are capable of connecting to other apparatus are defined as SELV ports. To ensure conformity with IEC60950 ensure that these ports are only connected to ports of the same type on other apparatus.

Note: A licensed electrician may be required to install or perform maintenance on this equipment. Always follow applicable local, state and federal codes and guidelines.

DANGER - RISK OF ELECTRIC SHOCK: Always disconnect the mains AC voltage prior to any work on this equipment.

WARNING - An appropriate external disconnect device must be installed and properly marked to ensure that an electrical hazard is not present.

WARNING - Bonding between conduit and Protected Earth (PE) is required and must be part of the installation.

WARNING - Conduit hub.

WARNING - Mounting the device in a vertical orientation will ensure proper orientation. Cover screws are required as part of the safety rating.

Special notes on safety for wireless routers

Digi International products are designed to the highest standards of safety and international standards compliance for the markets in which they are sold. However, cellular-based products contain radio devices which require specific consideration. Please take the time to read and understand the following guidance. Digi International assumes no liability for an end user's failure to comply with these precautions.

Wireless routers incorporate a wireless radio module. Users should ensure that the antenna(s) is (are) positioned at least 1 meter away from themselves and other persons in normal operation.

When in a hospital or other health care facility, observe the restrictions on the use of mobile phones. Do not use the unit in areas where guidelines posted in sensitive areas instruct users to switch off mobile phones. Medical equipment may be sensitive to RF energy.

The operation of cardiac pacemakers, other implanted medical equipment and hearing aids can be affected by interference from cellular terminals such as the wireless routers when places close to the device. If in doubt about potential danger, contact the physician or the manufacturer of the device to verify that the equipment is properly shielded. Pacemaker patients are advised to keep the wireless router away from the pacemaker while it is on.

Wireless routers must NOT be operated on aircraft. The operation of wireless appliances in an aircraft is forbidden to prevent interference with communications systems. Failure to observe these instructions may lead to the suspension or denial of cellular services to the offender, legal action, or both.

As with any electrical equipment, do not operate the unit in the presence of flammable gases, fumes or potentially explosive atmospheres. Radio devices should not be used anywhere that blasting operations are taking place.

Wireless routers receive and transmit radio frequency energy when power is on. Interference can occur if used close to TV sets, radios, computers or inadequately shielded equipment. Follow any special regulations and always power off your unit wherever forbidden or when it may cause interference or danger.

SOS IMPORTANT! - Wireless routers operate using radio signals and cellular networks cannot be guaranteed to connect in all possible conditions. Therefore, never rely solely upon any wireless device for life critical communications.

Product Disposal Instructions

The WEEE (Waste Electrical and Electronic Equipment: 2002/96/EC) directive has been introduced to ensure that electrical/ electronic products are recycled using the best available recovery techniques to minimize the impact on the environment.
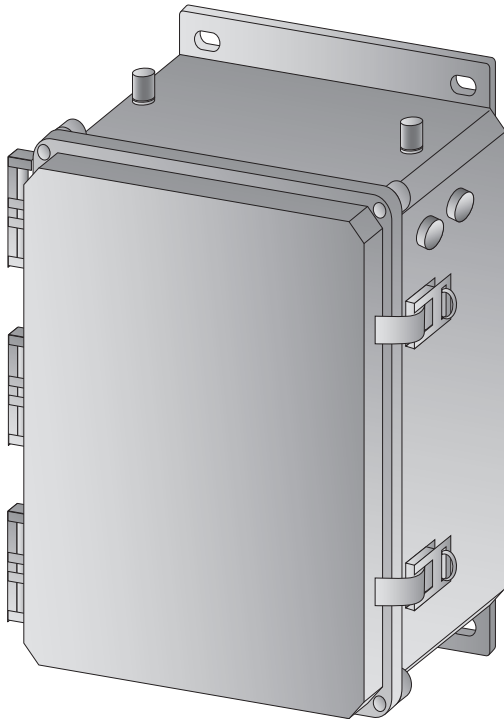
This product contains high quality materials and components which can be recycled. At the end of its life this product MUST NOT be mixed with other commercial waste for disposal. Check with the terms and conditions of your supplier for disposal information.

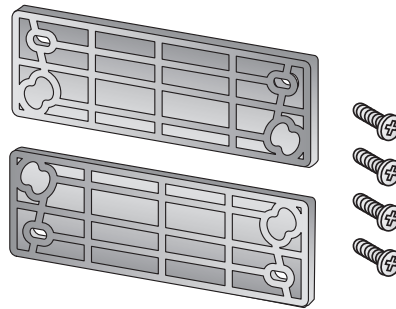Digi International Ltd WEEE Registration number: WEE/HF1515VU

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Cellular Antenna (x2)

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Installation Guide

Digi is Going Green!

To reduce paper and provide you with the latest
product information, the user's guide for this product
is available online at:

www.digi.com/cwan3gia

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Insert Card

Assembly

If any item is missing or damaged, please contact your supplier. Also, make a record of any damage that may have occurred during shipping and report it to the carrier.

Preface

This guide describes the installation procedure for the Connect WAN 3G Utility. It is intended to provide sufficient information to be able to connect the unit to terminal equipment and power-on the unit. A complete reference guide to the software features that are available on the product is available separately in PDF format and can be downloaded from the Digi International web site (*www.digi.com*).

2 Introduction

The Digi Utility Communications Hub offers utilities and energy management service providers a customizable remote command center. Each hub is built around one of Digi's three proven cellular routing platforms. The Digi Connect® WAN provides cellular/WiMAX connectivity to remote serial and IP devices. The Digi TransPort® offers advanced routing and security features such as VRRP, IPv6 and 256-bit AES. The ConnectPort® X offers dual radios to support a cellular and WLAN connection such as license-free RF and ZigBee Smart Energy.

The router options allow customers to design a hub to match their application requirements. Serial options include RS-232/422/485 and Modbus to Modbus TCP conversion. The hub can also include 1, 4 or 7 additional Ethernet ports and supports several ISM and proprietary RF protocols. Battery backup options are available.

The Digi Utility Communications Hub is NEMA 4x/IP66 rated and can accommodate additional customer hardware.
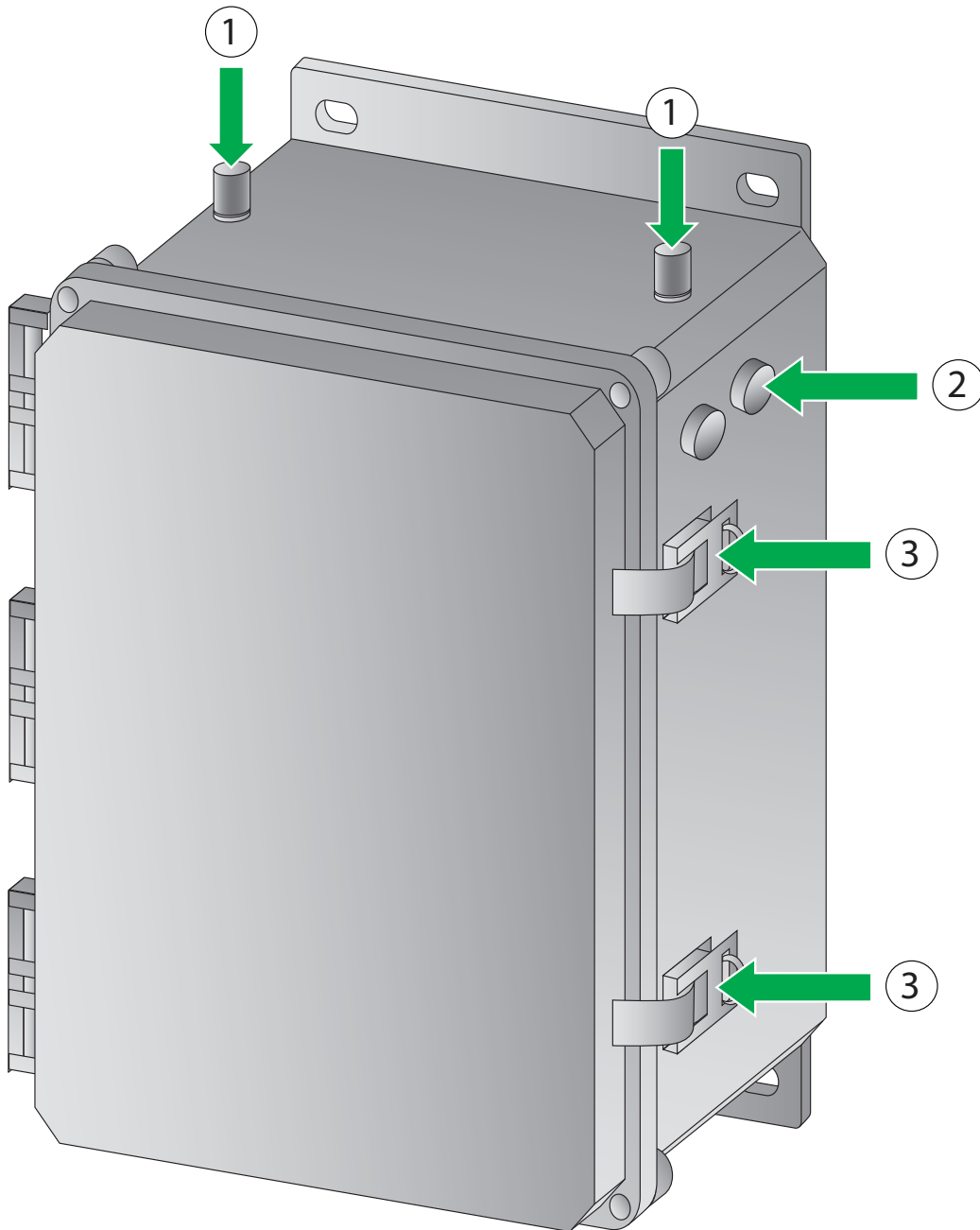
Note: There is not a battery or hub option for this variant.

3 Product Features

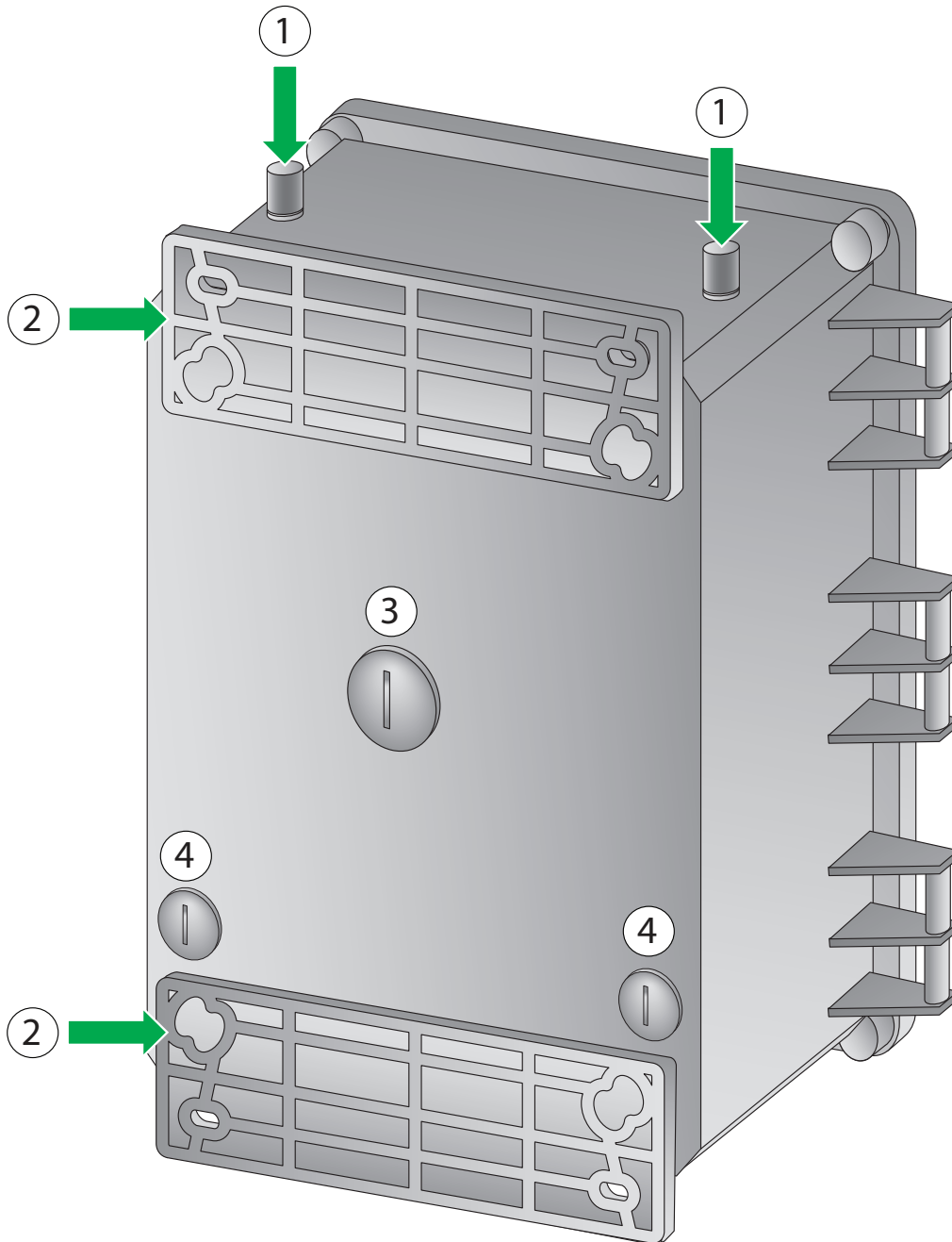## 3.1 Exterior Features

3.1.1 Front View

1. Cellular Antenna TNC Connector

2. Vent Plug

3. Locking Hasp

3.1.2   Back View

1. Cellular Antenna TNC Connector

2. Mounting Bracket

3. 1" Conduit Hole

4. 1/2" Conduit Hole

Note: Some of the conduit holes shown below may not be accessible.

3.2 Interior Features

1. Primary Cellular Antenna Cable

2. Secondary Cellular Antenna Cable

3. SIM Slot

4. Ethernet Port

5. USB Port

6. Sensor Port

7. RS232/RS485 Serial Port

8. Protected Bonding Ground

9. DC Source Terminal Block
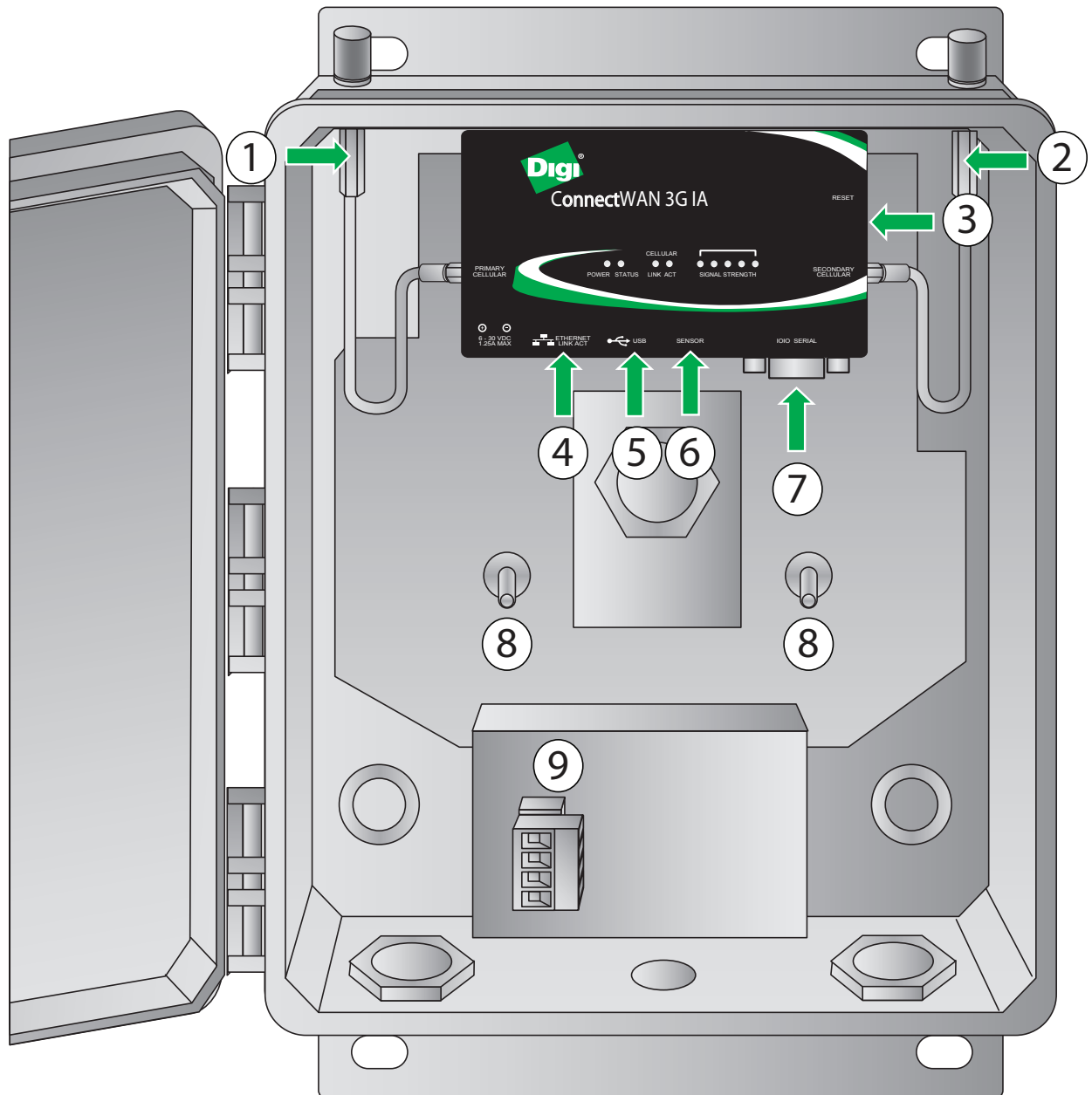
4   Mounting

A mounting kit is provided which includes:

- 2 x Mounting brackets

- 4 x Screws, 1/4" Phillips flat head

Step 1) Fasten the mounting brackets to the top and bottom of the rear side of the enclosure with the 1/4"-20 x .25" SS Phillips screws provided. Torque limit -20 in. lb.

Step 2) Select the location to mount the device.

Note: *The ConnectWAN 3G IA Utility should be mounted to a rigid vertical surface with the knockout holes facing down and the dual cellular antennas facing up. There are two mounting flanges on the base of the unit. Dimensions are approximately 10" x 12" x 6".*

Step 3) Remove the seal plugs, as needed, on either the bottom or rear surface of the device. Hole sizes are as follows:

- 3 holes at 1/2" NPT

- 3 holes at 1" NPT

Note: *Conduits or fittings are not provided. It is the responsibility of the installer to determine which hardware to use.*

Note: *Bonding between conduit is not automatic and must be provided as part of the installation.*

Step 4) Secure the device to the vertical surface with mounting hardware (not provided). The cover is secured by four corner screws. Torque limit -5 in. lb.

- Operating temperature: -15° C to +55° C (+5° F to +131° F)

- Storage temperature: -20° C to +60° C (-4° F to +140° F)

- Altitude maximum: 2000 meters (6561 ft.)

4.1   Cable Installation

The DB9 connector in the Connect WAN 3G Utility is pre-wired to be straight through to the RS232 connection.

| DB9 Serial Pinout			
DB9	**RS232**	**RS422/485 Full Duplex**	**RS485 Half Duplex**
1	DCD	CTS-	Not used
2	RxD	RxD+	RxD+
3	TxD	TxD+	TxD+
4	DTR	DTR	Not used
5	GND	GND	GND
6	DSR	RxD-	RxD-
7	RTS	RTS+	Not used
8	CTS	CTS+	Not used
9	RI	TxD-	TxD-

5 Installation

5.1 Install SIM Card(s)

When installing the SIM card (s) (GSM Models only), the primary SIM card should be installed in the upper SIM slot, and the contacts should be face down.

The secondary SIM card (if applicable) should be installed in the lower slot, and the contacts should be face up.

In both cases, the end of the SIM card with the chamfered corner should be inserted first.

Note: See "3.2 Interior Features" on page 9 for SIM slot location.
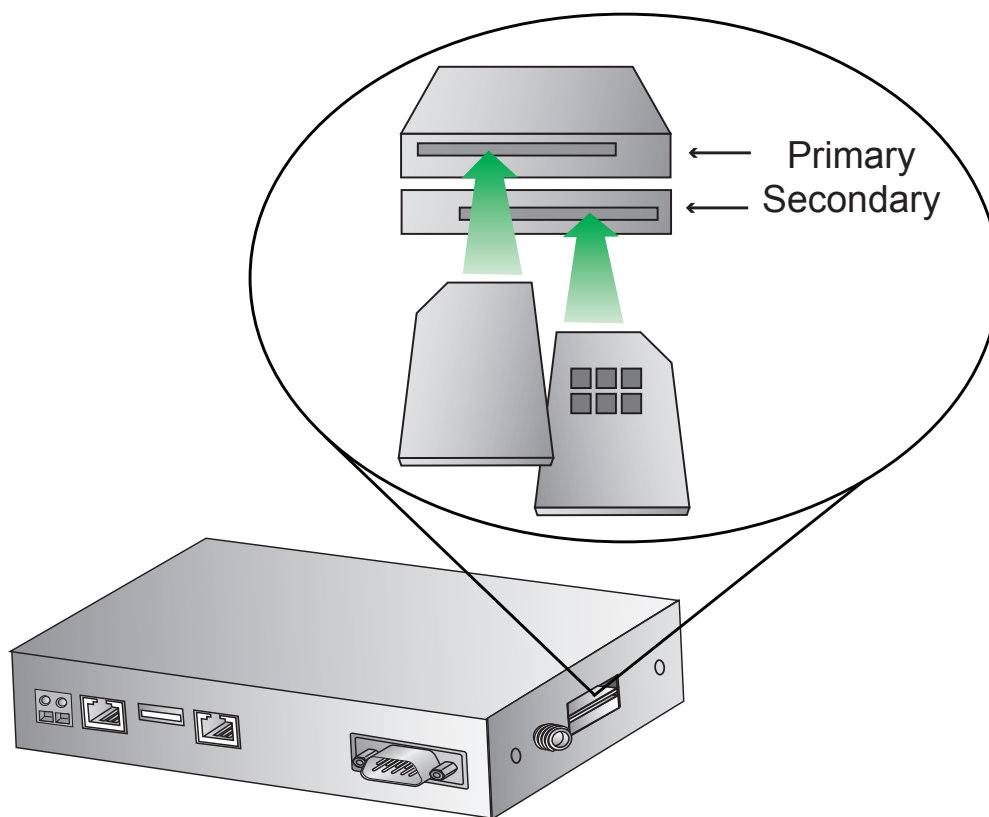
5.2   Connect Antenna(s)

Connect one cellular antenna to each of the cellular antenna TNC connectors. It is highly recommended to utilize an additional antenna for diversification. Dual antennas will provide improved signal strength resulting in better performance. The cellular antenna cables come pre-installed.

Note: For most applications, the antenna(s) included with the unit will provide suitable reception, but some circumstances/environments may require a higher quality antenna or one mounted in a different location. If this is the case, Digi has many antenna options to chose from -- please contact us or visit www.digi.com. If antennas other than the supplied antenna(s) are used, the separation between the two should be no less than eight inches (8").
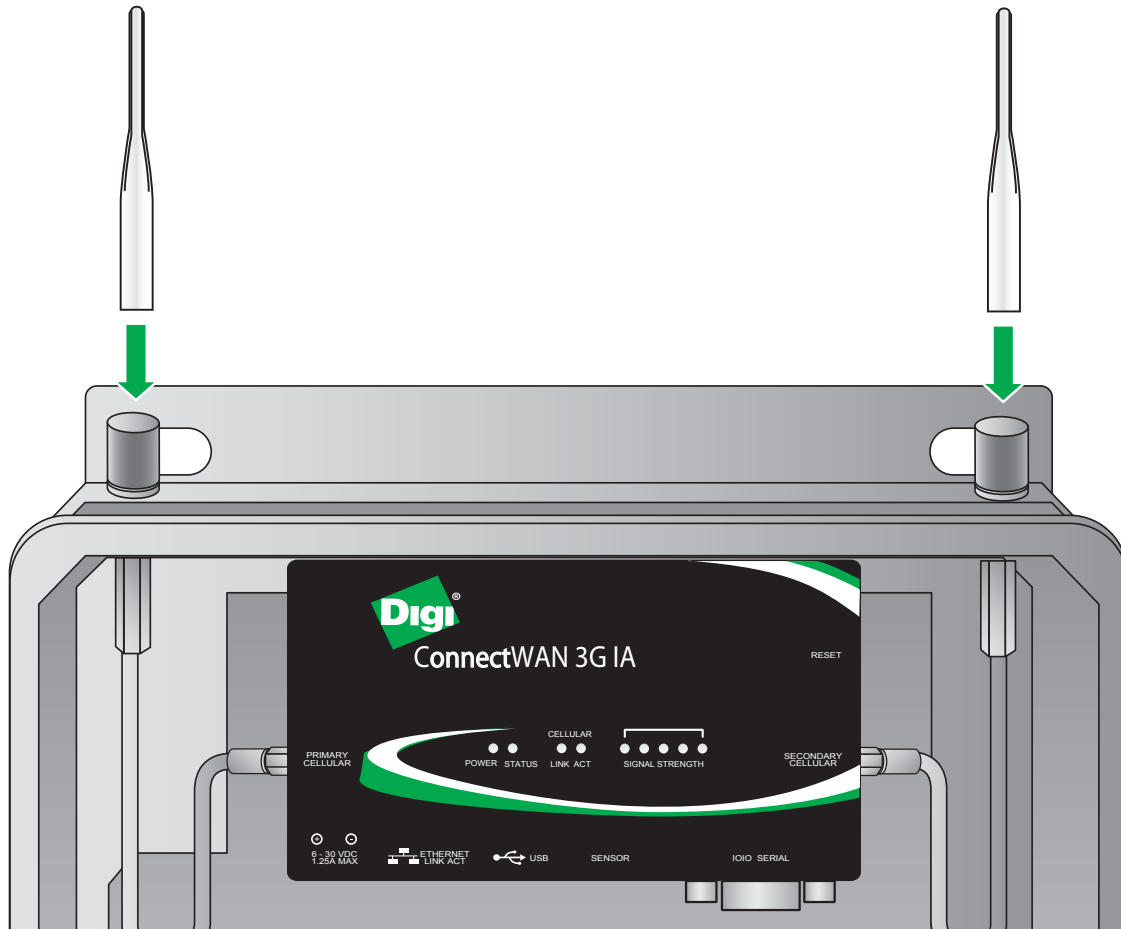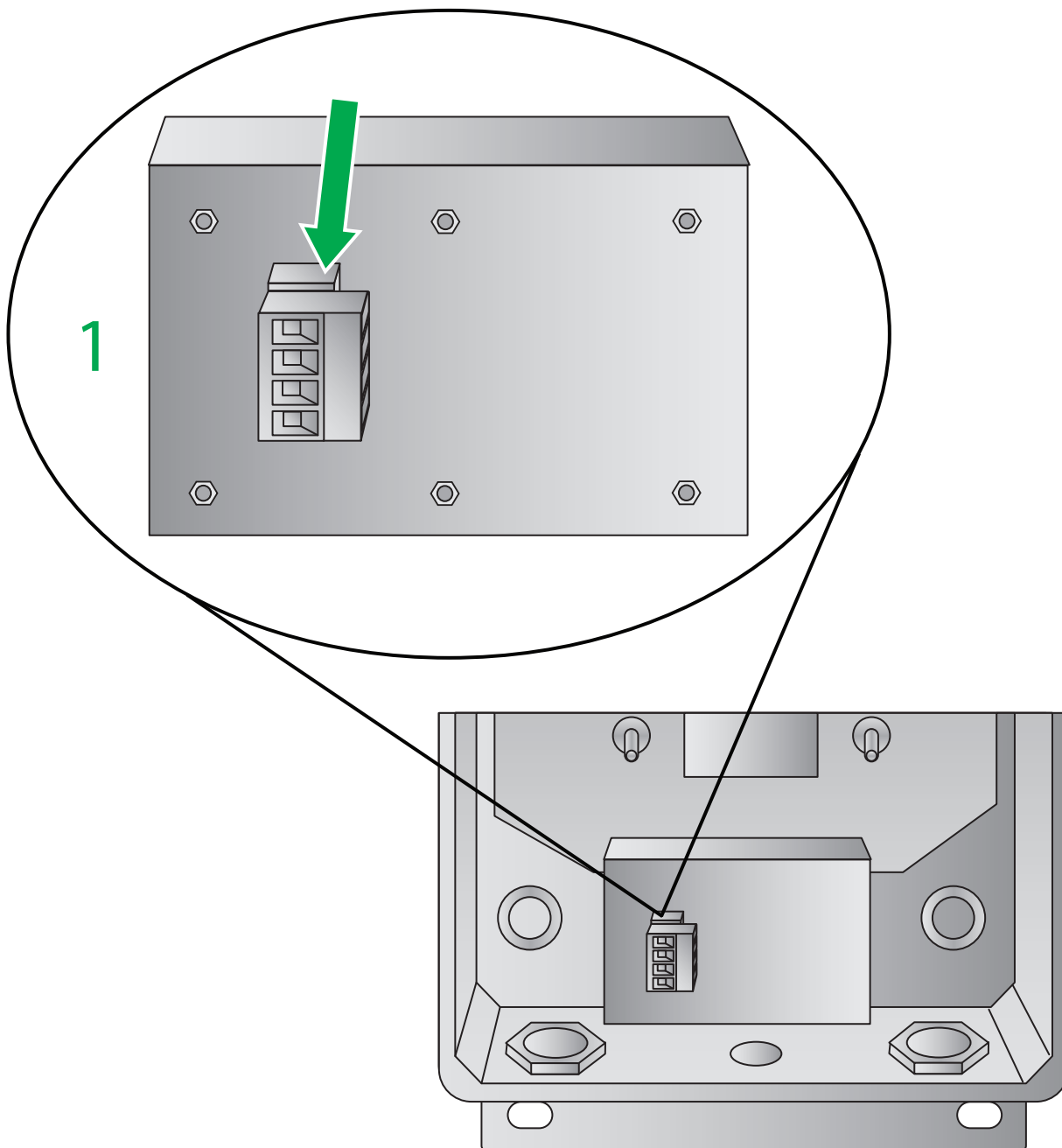
5.3   Connect Power to the Terminal Block

Note: The DC power source provided needs a UL Listed supply with a Class 2 or Limited Power Source (LPS) rating with at least 250 mA output current specification.

The device is rated for 24V DC (+ / - 10%). The installer will need to connect power to the device using the terminal block by performing the following steps:

Step 1) Gently remove the pluggable terminal block from the device.

Step 2) Connect your power source to the appropriate terminals on the pluggable terminal block.
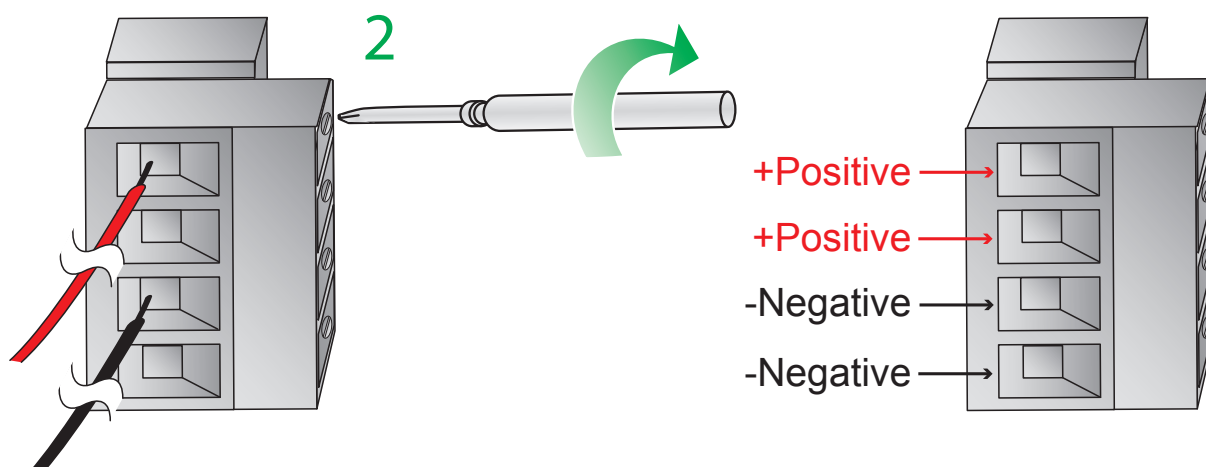
Notes:

- The device provides dual terminals (two "+" positive, two "-" negative) for the convenient connection of redundant power sources.

- The two upper terminals are "+" positive; the two lower terminals are "-" negative. Power sources can be connected to either of the terminals ("Primary" / "Backup" positions are not present).

- Input voltage/current: 24V DC (+ / - 10%), 250mA (max).

Recommendations:

- Use a wire size between 12 and 24 AWG.

- Wire length should not exceed 10 meters.

- Torque for the individual terminals on the pluggable terminal block is 0.5 Nm/0.368 Pd Ft.

Step 3) Reconnect the pluggable terminal block to the device.

6 Device Initialization

When the unit is powered-up, the POWER indicator will illuminate and the unit will initiate a series of diagnostic self-tests. During this process one or more of the other indicators will flash to show that the unit is busy. When the flashing stops, the unit has completed its self-test diagnostics and is ready to be configured.

7 Configuration

7.1 Configure Cellular Settings

To configure your device's cellular settings:

1. Open your web browser and enter the IP address 192.168.1.1 into the URL address bar.

2. From the web interface, navigate to **Configuration > Mobile > Mobile Settings**.

3. Within the Mobile Service Provider Settings section of the page, select "Verizon" from the service provider drop-down list and configure any necessary connection parameters, then click **Apply**.

   For CDMA carriers that support Over-the-Air provisioning, select **Click Here** to automatically provision the device, then click **Apply**"

Note: If you have difficulty discovering your device, make sure your host computer is set up to obtain IP addresses automatically (DHCP server is enabled by default on the device). Also ensure that any firewall software is temporarily disabled.

7.2 Validate Internet Connection

To verify your Internet connection, enter a website of your choice (e.g. www.digi.com) into the URL address bar of your browser and click **Enter**. Connecting to a website indicates the connection is working. For information on configuring your Connect WAN 3G Utility module see the Configuration section of the **Digi Cellular Family User's Guide** available at: *http://www.digi.com/support/*.

8 Troubleshooting

8.1 Troubleshooting Resources

There are several resources available to you for support of your Digi product or resolving configuration difficulties at Digi's Support site, *http://www.digi.com/support/*. Try the troubleshooting steps described within the Troubleshooting section of the **Digi Cellular Family User's Guide** to eliminate your problem. After working through those steps and your problem is not solved, try the resources listed below.

1. Digi's Support knowledge base: *http://www.digi.com/support/kbase*.

2. Digi TransPort support documents: *http://ftp1.digi.com/support/documentation/transport/technicalnotes.htm*.

3. If the knowledge base or support forums do not have the information you need, fill out an Online Support Request via: *http://www.digi.com/support/eservice/login.jsp?p=true*. You will need to create a user account if one is not already set up.

When submitting a support request, please include a copy of the debug.txt file from the unit's flash. This will greatly improve the quality of the initial response you receive. Without this file, it is often very difficult for the support team to provide accurate answers to your queries.

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