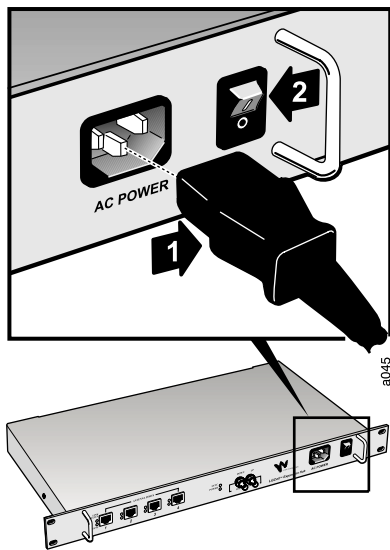## 1 Mount the Expansion Hubs

Mount the Expansion Hubs onto the rack in the assigned wiring closet location, using four screws per hub.

For air circulation, be sure to leave at least one inch (25 mm) space between all hubs and between any other equipment in the rack. If mounting a hub on the rack's bottom shelf, also leave at least one inch (25 mm) clearance from the bottom.
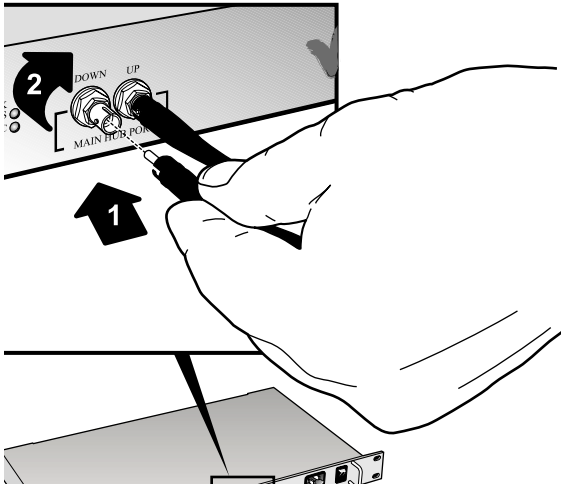
2 Connect Power and Power Up

Connect the AC power cord to the Expansion Hub. Plug the power cord into an outlet providing AC power (88-264 VAC). See 1 in graphic.

Power up the Expansion Hubs by flipping the power switch from position **0** to position **1**. See 2 in graphic.
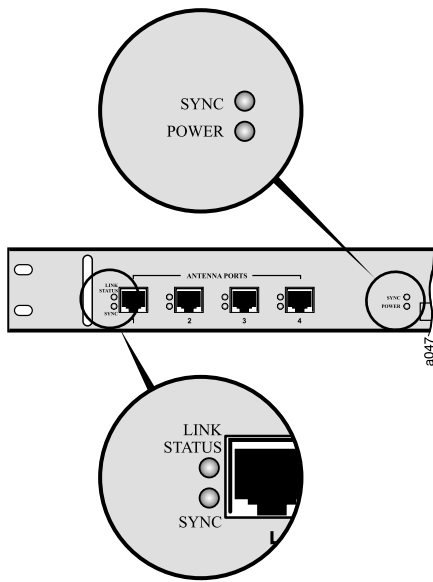
The **POWER** LED on the Expansion hub should be green (lit).

3 Connect the MMF cables

Connect all MMF cables from the Main Hub to the Expansion Hubs. The **SYNC** LED should be green.

For proper connection between the Main Hub ports and the Expansion Hub ports, refer to the numbering or color coding you recorded when installing the Main Hub.

4 Check Expansion Hub LEDs

Connect all MMF cables from the Main Hub to the Expansion Hubs.

The **LINK STATUS** and **SYNC** LEDs on each Expansion Hub port should be red when the UTP/STP cable is not yet connected to the RAUs.
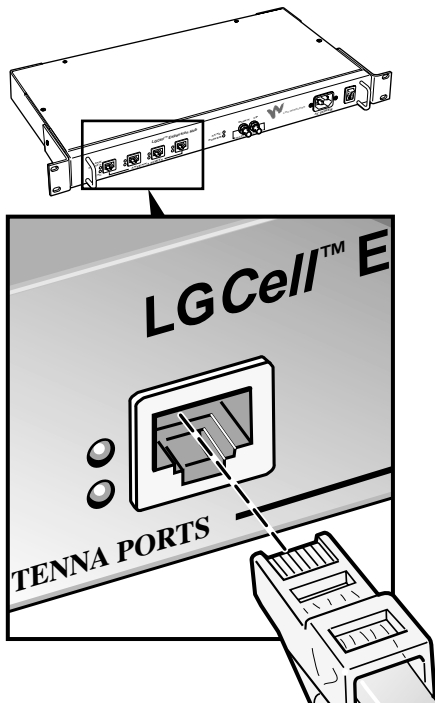
5 Connect UTP/STP cables from RAUs

Connect all UTP/STP cables coming from the RAUs to any available RJ-45 connector on the Expansion Hub.

The Expansion Hub fiber port **LINK STATUS** and **SYNC** LEDs should be green or off.

The **LINK STATUS** and **SYNC** LEDs on each Expansion Hub port should remain red until the RAU is connected on the other end.

Remote Antenna Unit (RAU) Installation
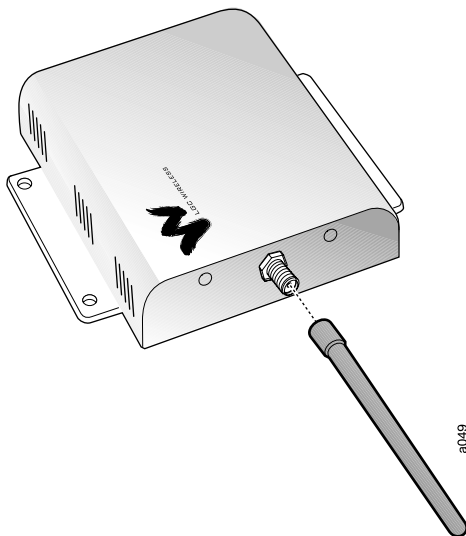
1 Connect Antennas

Connect an accessory antenna to each RAU SMA connector. (The illustration shows the RAU with an optional Rubber Duck antenna.)
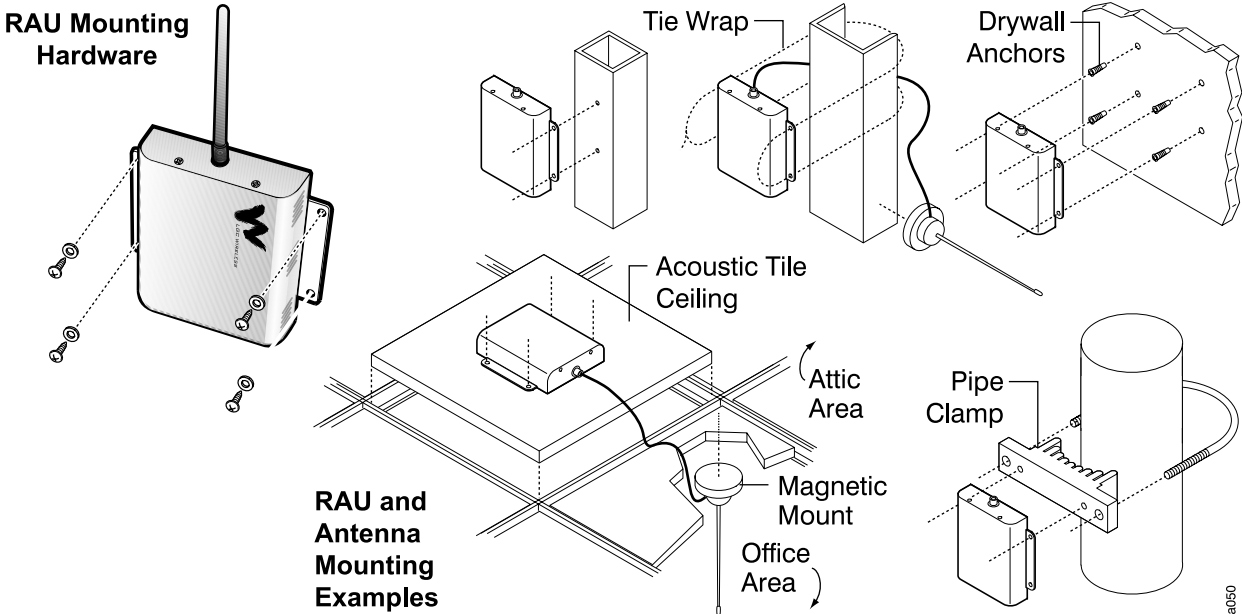

When connecting to the SMA connector on the antenna, **DO NOT** over-tighten the connector. Firmly hand-tightening the connector is adequate.
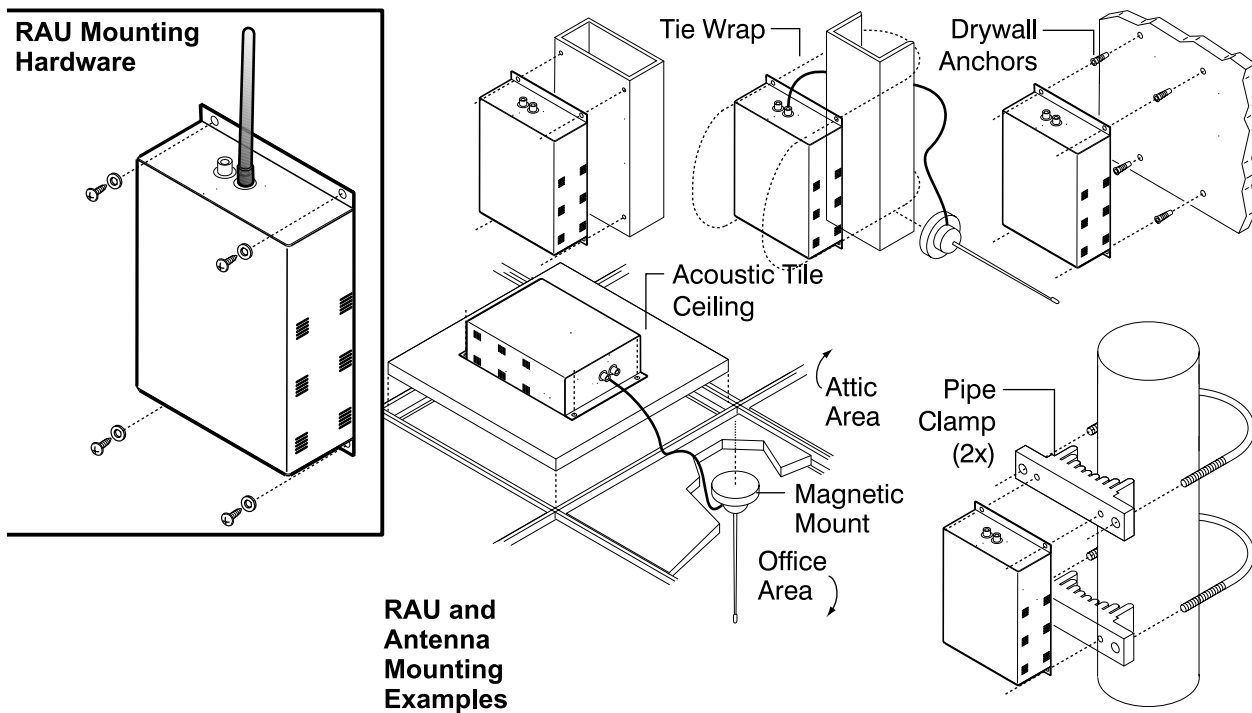
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2   Mount RAUs and Antennas

Mount all RAUs in their assigned locations, using the enclosed screws. The RAUs can mount above or below the ceiling, or to a wall.

For connecting and mounting an accessory directional antenna, refer to the instructions shipped with that antenna.

RAU Mounting Hardware

Tie Wrap

Drywall Anchors

Acoustic Tile Ceiling

Attic Area

RAU and Antenna Mounting Examples

Magnetic Mount

Office Area

Pipe Clamp

a050

The Dual Band RAU mounting is shown below.

RAU Mounting Hardware

Tie Wrap

Drywall Anchors

Acoustic Tile Ceiling

Attic Area

Pipe Clamp (2x)

Magnetic Mount
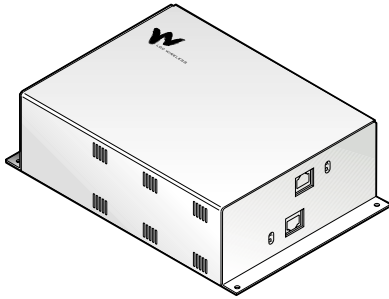
Office Area

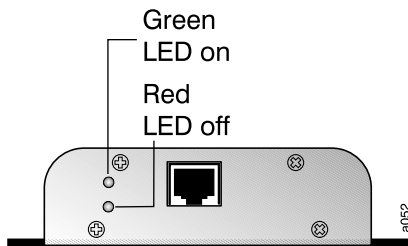**RAU and Antenna Mounting Examples**

a051

3   Connect UTP/STP Cable

Connect the UTP/STP cable coming from the Expansion Hub to the RJ-45 connector on the RAU.
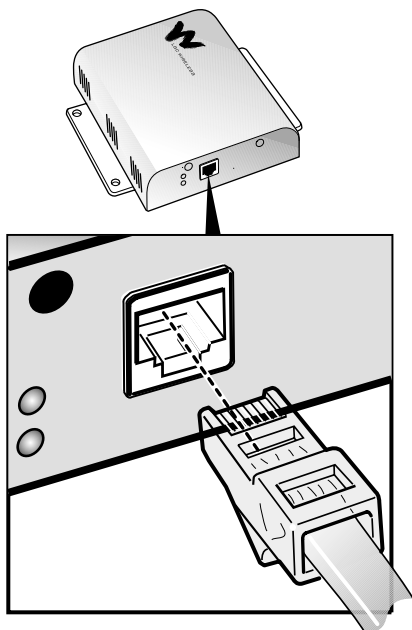
For the Dual Band RAU, connect the 900 MHz Expansion Hub cable to the top connector and the 1800 MHz cable to the bottom connector.

Green
LED on

Red
LED off

a052

4   Check LEDs

The green **POWER** LED should be on and the red **ALARM** LED should be off.

The green **LED** indicates that the RAU is receiving power from the Expansion Hub assigned to it.
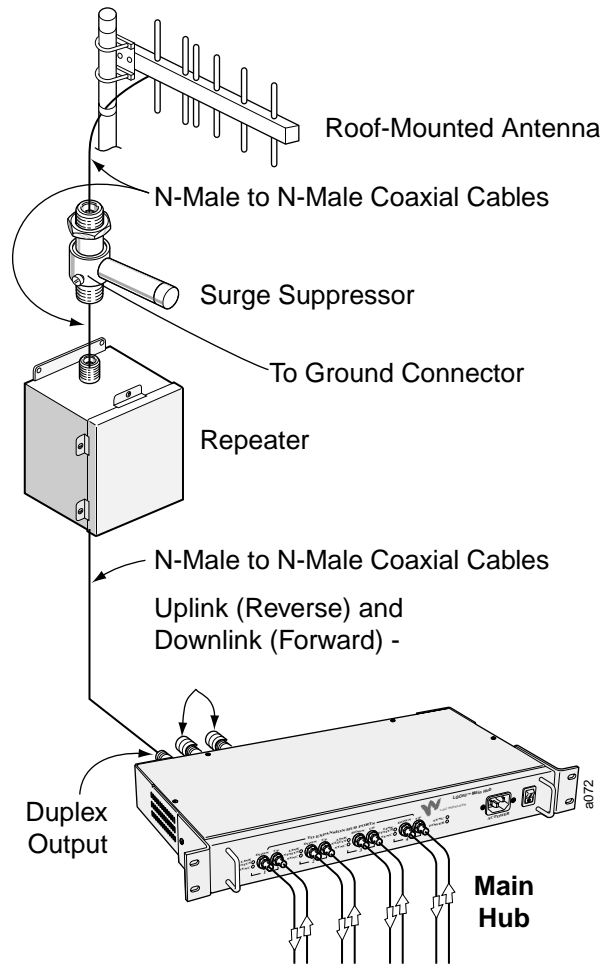
RF Cable Connection

Before connecting any cables to the Main Hub, be sure the RF power level does not exceed the input rating for the Main Hub. (See "LGCell System Specifications" on page 16 in *Section 2, LGCell Equipment*.)
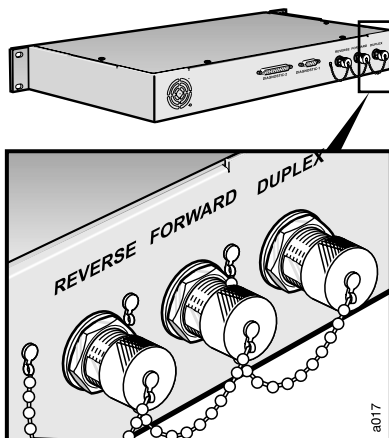
For coverage applications, LGC Wireless recommends that you insert a lightning arrestor or surge protector between a roof-mounted antenna and the Main Hub. If you use a repeater, insert the lightning arrestor or surge protector between the repeater and roof-mounted antenna.

The following illustration shows how to connect the LG*Cell* for coverage applications, with a repeater.

Roof-Mounted Antenna

N-Male to N-Male Coaxial Cables

Surge Suppressor

To Ground Connector

Repeater

N-Male to N-Male Coaxial Cables

Uplink (Reverse) and
Downlink (Forward) -

Duplex
Output

a072

**Main
Hub**

Duplex Connector

REVERSE FORWARD DUPLEX

a017

This N-type female connector is typically used to connect the LGC*ell* to a repeater, roof-mounted antenna, or MBS, as shown on the previous page.

Connect an N-type male RF coaxial cable to the duplex N-type female connector (labeled **DUPLEX**) on the Main Hub back panel. If an N-type male connectorized RF cable is not available, use an RF adaptor. Connect the other end of the coaxial cable to the roof-mounted antenna, MBS, or repeater.
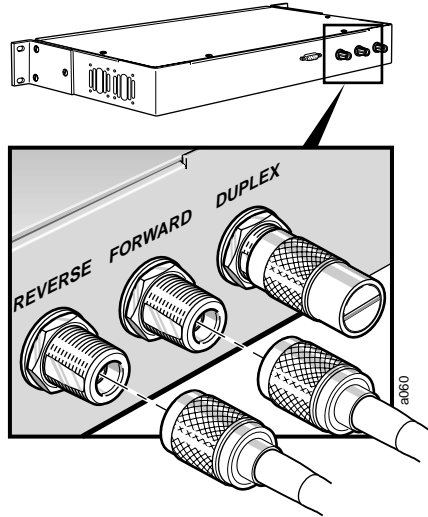
The duplex ports have a variable gain. Please see the table for system gain under "Maximum Input RF Power per Carrier vs. Number of Carriers" on page 17 in *Section 2, LGCell Equipment*.

Downlink (Forward) and Uplink (Reverse) Connectors

Connect an N-type male RF coaxial cable to the downlink N-type female connector (labeled **FORWARD**) and an N-type male RF coaxial cable to the uplink N-type female connector (labeled **REVERSE**) on the Main Hub back panel.

Connect the other ends of the coaxial cable to the MBS. For diagrams of connecting LG*Cell* to specific MBS equipment, see *Section 5, Connectivity*.

For simplex MBSs, **be sure** the MBS **downlink** coaxial cable connector plugs into the downlink connector, and the **uplink** coaxial cable connector plugs into the uplink connector on the Main Hub.

Alarm Report Monitor

A separately orderable option for use with LG*Cell*, the Alarm Report Monitor is an alarm monitoring, reporting, and remote control system. Up to 255 remote-ARM monitoring units can monitor up to 2,040 LG*Cell* systems. Each remote-ARM unit communicates with the ARM software through a dial-up modem connection, using an external or internal modem. A database of these devices is set up in a PC, with a unique address for each device.

The ARM supports multiple users and tracks responsibility through log-in and log-out procedures, using four security levels to protect critical system functions. It features a graphic color status display, remote system reset control, alarm history and control logs, security code management, and journal printer and paging options.

For ARM installation instructions, see *Appendix E – Alarm Report Monitor (ARM2000)*.