

Chapter 3

Antenna Installation

3 Introduction

This chapter contains antenna installation and warning information for the LNKA Modules.

3.1 Antenna Installation

- All antenna installation to be performed by qualified technical personnel only.
- Antenna installation instructions and locations below are for the purpose of satisfying FCC RF Exposure Compliance requirements.

Note! If multiple LinkNet™ Modules are used, the Instructions below apply to the composite power output of all Modules when transmitting simultaneously.

- The *Roof Top Antenna or Antennae* for linking to the *Donor Site(s)* is/are directional (high gain) Antennae, fixed-mounted physically on the side or top of a building, or on a tower. The Antenna Gain must be no more than 20 dBi.

Note! If multiple LinkNet™ Modules are used with output combiners into any one Antenna, and/or multiple Antennae are used on one Roof Top, then the sum of composite powers into all Roof Top Antennae must not exceed 20 Watts maximum.

- The *Roof Top Antennae* location should be such that only qualified technical personnel can access it, and that under normal operating conditions no other person can touch the antenna, or approach within 10 meters of the antenna.
- For the **Cellular Uplink Band** (824-849 MHz) the *Roof Top Antenna or Antennae* for linking to the *Donor Site(s)* has the added restriction that the Effective Radiated Power (ERP) must not exceed 7 Watts (+38 dBm). Thus, if the AGC is set (as per the Carrier Derating Chart) to +28 dBm as an example, the maximum allowed antenna gain must be no more than 10 dBi.
- The *In-Building Antenna* connection is via a coaxial cable distribution system with signal taps at various points connected to the fixed-mounted *Indoor Antennae*. The *Indoor Antennae* are simple 1/4 wavelength (0 dB Gain) types. They are used with Powerwave Technologies' 12, 16, or 20 dB cable taps. As such the maximum EIRP will be at the first tapped antenna, which will be 12 dB below the maximum signal level of the LinkNet™ (+40 dBm); +28 dBm, or 0.63 Watts EIRP. These antennae are to be installed such that no person can touch the antenna, or approach within 0.2 Meters.

Note! If multiple LinkNet™ Modules are used with output combiners, then the composite power output of all Modules transmitting simultaneously must meet this maximum EIRP requirement.

Please consult Powerwave Technologies Inc. for assistance as required.



ANTENNA INSTALLATION CAUTION

ALL ANTENNA INSTALLATION IS TO BE PERFORMED BY QUALIFIED TECHNICAL PERSONNEL ONLY.

ANTENNA INSTALLATION INSTRUCTIONS AND LOCATIONS ARE FOR THE PURPOSE OF SATISFYING FCC RF EXPOSURE COMPLIANCE REQUIREMENTS, AND ARE NOT OPTIONAL.

ALL ROOF TOP ANTENNA INSTALLATION MUST BE SUCH THAT NO PERSON CAN TOUCH THE ANTENNA, OR APPROACH CLOSER THAN 10 METERS.

ALL IN-BUILDING ANTENNAE INSTALLATIONS MUST BE SUCH THAT NO PERSON CAN TOUCH THE ANTENNAE, OR APPROACH CLOSER THAN 0.2 METERS.

3.2 FCC Information to Users

- This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.



CAUTION

CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY POWERWAVE TECHNOLOGIES INC. COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.