

# INSTALLATION INSTRUCTIONS-GREAT DANE SERIES ANTENNA

## A. INTRODUCTION

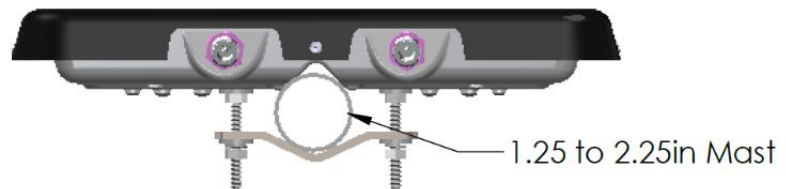
The Great Dane Series antenna is a pole mount MIMO LTE, Omnidirectional antenna optimized for easy pole mount installation. Parsec's PTA GD 2LTE is a high performance two-in-one, MIMO LTE external waterproof M2M antenna. This rugged omni-directional antenna works on the most common North American LTE bands with high efficiency.

The PTA GD 2LTE is optimized for pole mounting for easy rooftop installation for a wide variety of outdoor M2M applications. It is especially well suited to providing wireless internet access for businesses in rural areas. Parsec's unique design allows for near 360-degree coverage in every direction without the truck roll of pointing the antenna toward the towers. The Great Dane Series antenna operates on the LTE frequency bands of 698 – 894 MHz and 1695 – 2200 MHz



## B. MOUNTING REQUIREMENTS AND SELECTING LOCATIONS

The PTA GD 2LTE antenna is designed to be mounted on a vertical mast 1.25 to 2.25 in. diameter. It is an omnidirectional antenna design so there is no need to rotate the antenna on the mast.



For best performance it's important that the antenna be mounted at least 2 feet away from other objects with a clear view of the horizon in as many directions as possible. Non-penetrating roof mounts allow the antenna to be moved away from other objects and a mast height of about 6 ft. puts the mounting hardware and RF connections near eye level during installation. So, Select a mounting location away from air conditioning units and other large metal objects.

## C. MAST MOUNT

Choose a pole of diameter between 1.25 in to 2.25 in and cut it to the required length. Mount the pole vertically and confirm it with a level. Make sure the pole is firm before mounting the Parsec's PTA GD 2LTE antenna.

#### D. ATTACHING THE ANTENNA

Slide the antenna over the end of the mast and position the antenna so 0.5 in. of the mast extends above the top mounting clamp as shown in Figure. Tighten the 4 nuts with your fingers, making sure equal lengths of threads extend past the nuts. Use a 7/16 in. wrench to tighten each nut one full turn beyond finger tight to compress the lock washers.



Carefully screw the N male connectors of the coaxial cable onto the N female connectors on the antenna. If the connectors do not screw on easily using fingers, stop. The connector may be cross threaded. Unscrew the connector and try again. Tighten the N connector firmly to compress the water-tight gasket inside the connector and to keep the connector from working loose. Channellock 412 small V-Jaw pliers may be useful for getting a grip on the connector. The required torque is only 15 inch-pounds so be careful when using this or other tools to tighten the RF connectors.

#### E. SEALING THE CONNECTORS

While N connectors are supposed to be water-tight, it's fairly common to provide additional layers of weather protection. The traditional method is to clean the metal surfaces with Isopropyl alcohol and then start at the top and very tightly wrap a layer of butyl rubber tape clockwise over the connector with an overlap of at least half of the width of the tape for each turn. The butyl rubber tape sticks together if it is pulled tight enough. After wrapping the connection with butyl rubber tape to seal out water, the butyl rubber tape is tightly wrapped clockwise with a layer of vinyl electrical tape to provide UV protection. Other sealing methods may be easier, but they all involve a layer of water protection covered by a layer of UV protection.

#### F. ROUTING THE COAXIAL CABLE(S)

Attach the two RF cables to the mast roughly 1 ft. below the RF connectors to provide strain relief. Vinyl electrical tape works well for this without risk of deforming the RF cables. Black UV resistant zip-ties can also be used if used carefully, but tan Nylon zip ties rapidly deteriorate when exposed to the sun. Attach short N to SMA strain relief adapter cables at the opposite end of the cable run. Make sure the N connector interface is torqued to roughly 15 inch-pounds. Attach the SMA connector end of the wireless router. Use of a SMA torque wrench with a torque limit of 3 to 5 inch-pounds is recommended. If a torque wrench isn't available, it's possible to carefully tighten SMA connectors a 5/16 in. wrench if you use one finger no farther than 2 inches up the wrench to limit torque.

## G. COMMISSION AND TEST

Check coaxial cables

- Check each coaxial cable connector and confirm it can't be easily unscrewed with two fingers.
- visually inspect coaxial cable run for proper mechanical support.

Confirm connection to cellular network

- use cellular device built in diagnostics to confirm RSSI better than -75dB
- confirm cellular connection supporting communication at required data rates.
- Connect the GPS / GNSS cable to the GPS/ GNSS receiver and check for satellite acquisition.
- Connect Cellular/ LTE & WLAN cables or stow unused pigtails.

## H. NOTICES



### CAUTION

To comply with FCC RF Exposure requirements in section 1.1310 of the FCC Rules, antennas used with this device must be installed to provide a separation distance of at least 20 cm from all persons to satisfy RF exposure compliance.



### DO NOT

- Operate the transmitter when someone is within 20 cm of the antenna.
- Install antenna or mast assembly on a windy day



### WARNING

In order to ensure that the installation is properly sealed against the mounting surface care must be taken regarding curvature of the mounting panel. It is highly recommended to install the antenna on a clean, flat and level surface. After installation the compression of the rubber boot against the mounting panel should be checked and a small bead of neutral cure silicone sealant can be applied around the periphery of the mounting boot if required.



### WARNING

This document gives the detailed instructions to install an antenna to the best of our knowledge. This document is for general information only. It cannot be used as a warranty. Parsec Technologies, Inc. will not accept any liability for any damage caused by an antenna due to unknown variables.

## I. CONTACT US

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