

## ANTENNAS | PUCK-1 SERIES

# SISO TRANSPORTATION & IOT/M2M ANTENNA

617 – 4200 MHz; LTE SISO, 8 dBi



|                                                                                                                                                             |                                                                                                |                                                                                                             |                                                                                                            |                                                                                                           |                                                                                                              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| <br>617 – 960 MHz<br>1427 – 1517 MHz<br>1710 – 2700 MHz<br>3400 – 4200 MHz | <br>8 dBi     | <br>Increase<br>X Mb/s     | <br>Omni-<br>Directional | <br>4G LTE             | <br>5G                    |
| <br>Machine to<br>Machine                                                  | <br>CBRS Band | <br>Chemical<br>Protection | <br>IP69K                | <br>-40°C to<br>+ 80°C | <br>Internet of<br>Things |

- LTE high performance multi frequency antenna
- 2G/3G/4G/LTE/5G antenna
- Wideband – covers wide frequency band, incl. 3.5 GHz CBRS band
- Robust, vandal resistant and waterproof (IP69K)
- Ideal for transportation, marine and IoT/M2M use
- Ultra-versatile mounting options for easy installation



APPLICATION AREAS

## Product Overview

Poynting's new PUCK range offers a small profile antenna for use in the IoT/M2M, smart meter, smart utilities, transportation, marine and the agricultural/farming markets. The PUCK-1 is a SISO antenna, covering the 617 to 4200 MHz band, which includes the most popular international LTE bands. The PUCK exceeds the performance of many competitors due to the attention to design of this high-performance antenna. The radiation patterns of all radiating elements provide an excellent balance between omnidirectionality, pattern diversity and good radiation abilities at the desired elevation, which is often overlooked in such a small size antenna. Despite its small size, this antenna provides excellent performance especially at the higher frequency bands, where performance is critical for LTE throughput and connection stability.

## Features

- Small & Low-profile (Ø100mm x 36mm (h))
- Careful mechanical design provides ruggedness, corrosion, water and dust resistance (IP69K)
- Fire Resistant
- UV Stable Enclosure
- 5G Ready – includes the 3.2 GHz to 3.8 GHz CBRS Band
- Easy installation; multi-implementation options available:
  - Spigot Mount
  - Magnetic Mount
  - Adhesive Tape Mount
  - Bracket Mount

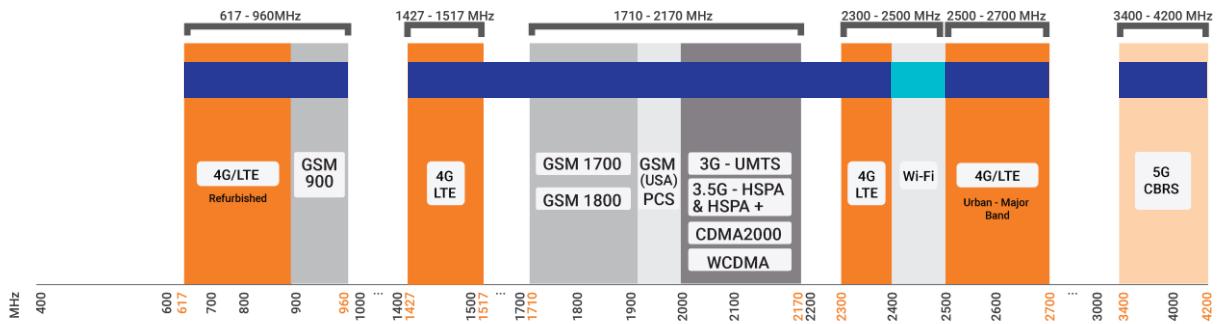
## Application Areas

- Smart utilities: Smart Power, Gas & Water Metering
- Smart Buildings: Climate control, access control, security, irrigation
- Industrial factory automation, robotic machinery and other M2M systems
- Digital Signage
- Warehouses & Logistic systems
- Transport (Busses, Utility & Public Safety)
- Mining Vehicles & Machinery communications, telemetry and automation (M2M & IoT)
- Agricultural machinery
- Marine: small boats, yachts near to coastlines or inner waters



### Frequency Bands

The PUCK-1 is an omni-directional antenna that works from 617 – 960 MHz | 1427 – 1517 MHz | 1710 – 2700 MHz | and | 3400 – 4200 MHz |



Indicates the LTE bands on which PUCK-1 works

Indicates the WI-FI bands on which PUCK-1 works

### Antenna Derivatives

| Product Order Code (SKU) | PUCK-1-V1-01          | PUCK-1-V1-01-W      |
|--------------------------|-----------------------|---------------------|
| Radome Colour            | Black                 | White               |
| Radome Material          | PC+ABS (Halogen free) | UV Stable ASA       |
| Ports                    | 1                     | 1                   |
| SISO/MIMO                | SISO                  | SISO                |
| Coax Cable Type          | RTK-031               | RTK-031             |
| Coax Cable Length        | 2m                    | 2m                  |
| Connector Type           | SMA (M)               | SMA (M)             |
| EAN                      | 6009880915262         | 6009710920435       |
| EU Homologation Number   | E1*10R06/01*9551*00   | E1*10R06/01*9551*00 |

*\*The coax cable & connector are factory mounted to the antenna*

## Electrical Specification

|                             |                                                                                                                     |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Frequency Bands:</b>     | 617 – 960 MHz<br>1427 – 1517 MHz<br>1710 – 2700 MHz<br>3400 – 4200 MHz                                              |
| <b>Gain (Max):</b>          | -1dBi @ 617-960 MHz<br>2 dBi @ 1427-1527 MHz<br>7 dBi @ 1710-2700 MHz<br>8 dBi @ 3400-4200 MHz                      |
| <b>VSWR:</b>                | ≤2.5:1<br>Across 90% of the bands                                                                                   |
| <b>Feed Power Handling:</b> | 10 W                                                                                                                |
| <b>Input Impedance:</b>     | 50 Ohm (nominal)                                                                                                    |
| <b>Polarisation:</b>        | Linear Vertical                                                                                                     |
| <b>Coax Cable Loss:</b>     | 0.56 dB/m @ 900 MHz<br>0.71 dB/m @ 1500 MHz<br>0.785 dB/m @ 1800 MHz<br>0.91 dB/m @ 2400 MHz<br>1.2 dB/m @ 3000 MHz |
| <b>DC short:</b>            | Yes                                                                                                                 |

## Product Box Contents

|                          |                                                                                                  |
|--------------------------|--------------------------------------------------------------------------------------------------|
| <b>Antenna:</b>          | A-PUCK-0001-V1-01                                                                                |
| <b>Mounting Bracket:</b> | Ø20 Threaded Spigots (Up to 60mm clamping thickness), Adhesive Surface Mounting & Magnetic Mount |

## Mechanical Specification

|                             |                                                             |
|-----------------------------|-------------------------------------------------------------|
| <b>Product Dimensions</b>   | Ø99.3 mm x 36 mm                                            |
| <b>Packaged Dimensions:</b> | 150 mm x 150mm x 120mm                                      |
| <b>Weight:</b>              | 0.312kg                                                     |
| <b>Packaged Weight:</b>     | 0.443kg                                                     |
| <b>Mounting Type:</b>       | Ø20 Threaded Spigot, Pole, Wall, Surface and Magnetic mount |

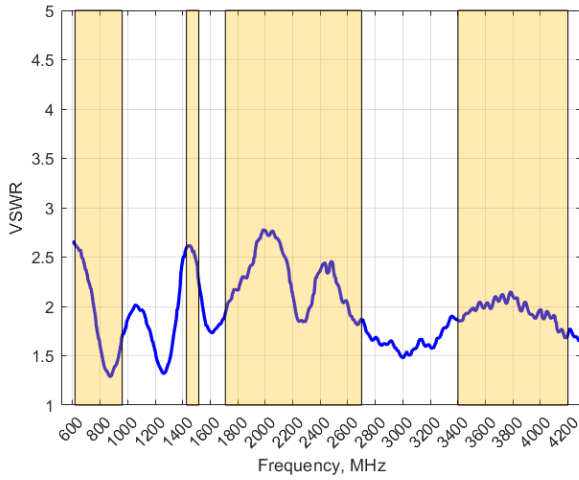
## Environmental Specifications, Certification & Approvals

|                                                 |                                     |
|-------------------------------------------------|-------------------------------------|
| <b>Wind Survival:</b>                           | ≤220 km/h                           |
| <b>Temperature Range (Operating):</b>           | -40°C to +80°C                      |
| <b>Environmental Conditions:</b>                | Outdoor/Indoor                      |
| <b>Water Ingress Protection Ratio/Standard:</b> | IP69K                               |
| <b>Salt Spray:</b>                              | MIL-STD 810G/ASTM B117              |
| <b>Operating Relative Humidity:</b>             | Up to 98%                           |
| <b>Storage Humidity:</b>                        | 5% to 95% - non-condensing          |
| <b>Storage Temperature:</b>                     | -40°C to +80°C                      |
| <b>Enclosure Flammability Rating:</b>           | UL 94-HB                            |
| <b>Impact Resistance:</b>                       | IK 10                               |
| <b>Product Safety &amp; Environmental:</b>      | Complies with CE and RoHS standards |

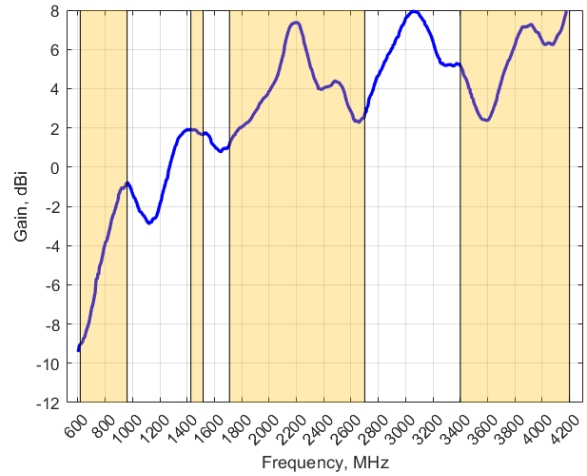


**Antenna Performance Plots**

**VSWR**



**GAIN (EXCLUDING CABLE LOSS)**



**Voltage Standing Wave Ratio (VSWR)\***

VSWR is a measure of how efficiently radio-frequency power is transmitted from a power source, through a transmission line, into a load. In an ideal system, 100% of the energy is transmitted which corresponds to a VSWR of 1:1.

The PUCK-1 delivers superior performance across all bands with a VSWR of  $\leq 2.5:1$  across 90% of the bands.

*\*Measured with 2m low loss cable, 650 x 650 mm ground plane, and unused ports terminated with 50Ω load.*

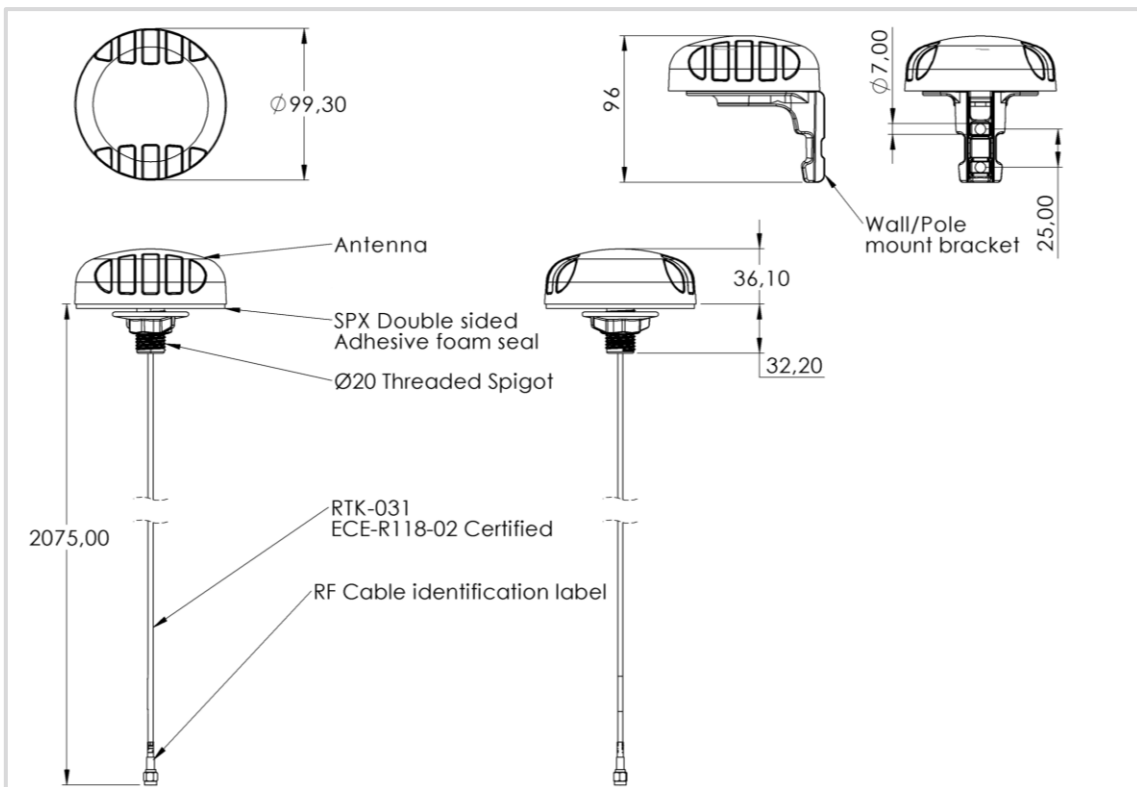
**Gain\* in dBi**

8 dBi is the peak gain across all bands from 617 – 4200 MHz

|                         |        |
|-------------------------|--------|
| Gain @ 617 – 960 MHz:   | -1 dBi |
| Gain @ 1427 – 1517 MHz: | 2 dBi  |
| Gain @ 1710 – 2700 MHz: | 7 dBi  |
| Gain @ 3400 – 4200 MHz: | 8 dBi  |

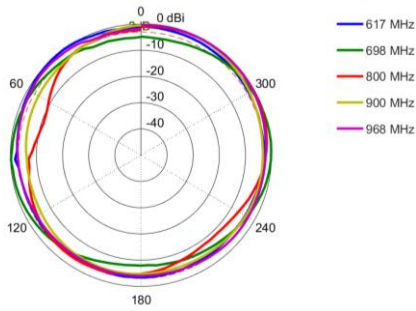
*\*Antenna gain measured with polarisation aligned standard antenna*

**Technical Drawings**

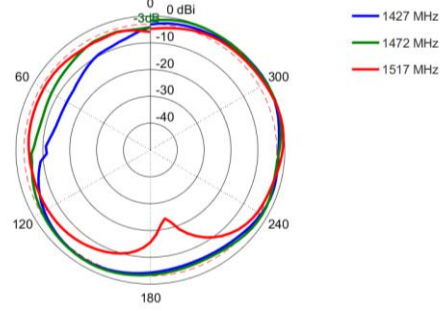


**Radiation Patterns**

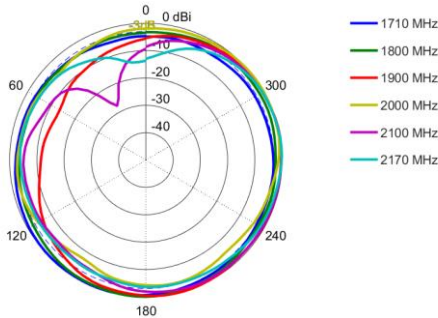
**Azimuth: 617 – 968 MHz**



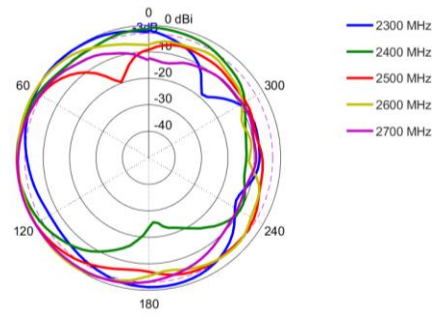
**Azimuth: 1427 – 1517 MHz**



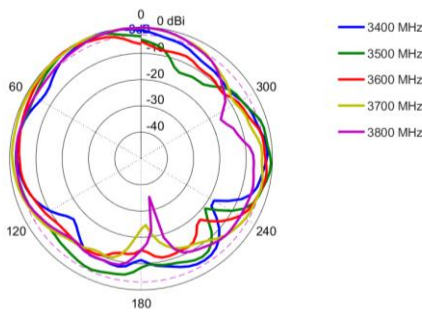
**Azimuth: 1710 – 2170 MHz**



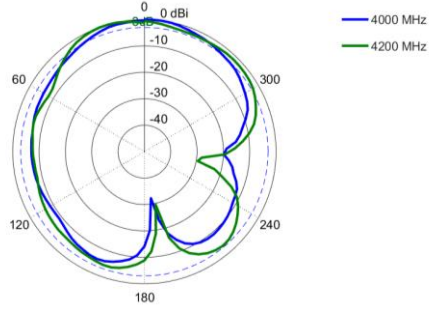
**Azimuth: 2300 – 2700 MHz**



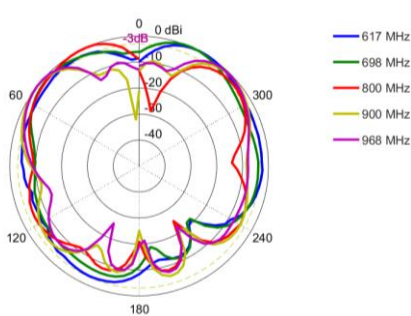
**Azimuth: 3400 – 3800 MHz**



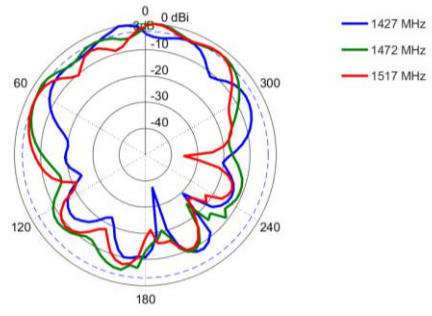
**Azimuth: 4000 – 4200 MHz**



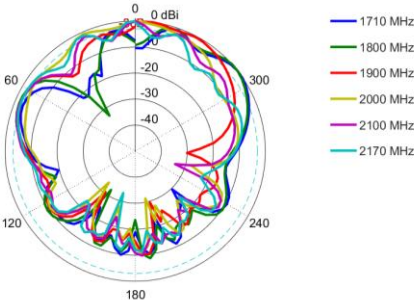
**Elevation: 617 – 968 MHz**



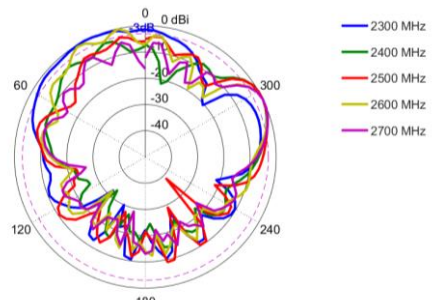
**Elevation: 1427 – 1517 MHz**



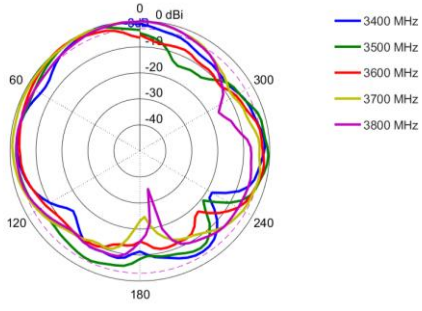
**Elevation: 1710 – 2100 MHz**



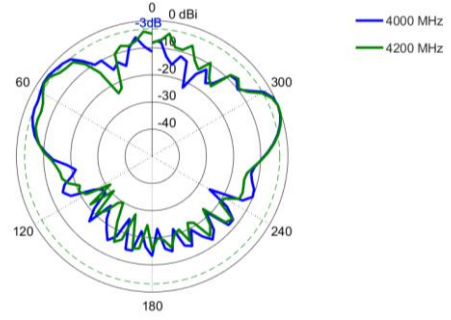
**Elevation: 2300 – 2700 MHz**



**Elevation: 3400 – 3800 MHz**



**Elevation: 4000 – 4200 MHz**

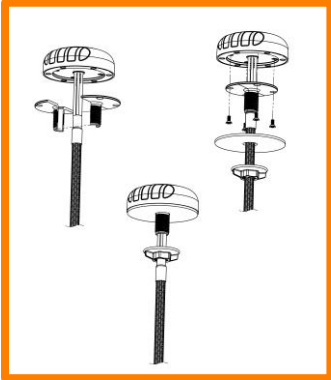


**Mounting Options**

**Many Mounting Possibilities – included as standard**

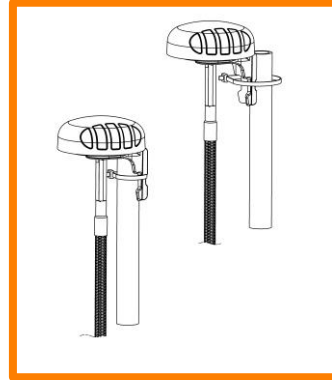
Poynting's new PUCK antenna range provides easy installation with the multiple mounting options. This includes as standard:

- Spigot Mount - two different lengths included (40mm & 80mm)
- Vertical Pole mount (inner & outer mounting for smaller and larger poles)
- Horizontal Pole Mount (e.g., marine rails)
- Magnetic Mount
- Surface Mount (Double Sided Tape)
- Wall Mount



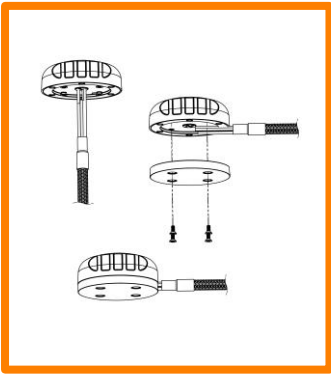
**Spigot Mount**

Removable 40mm & 80mm threaded spigot (included)



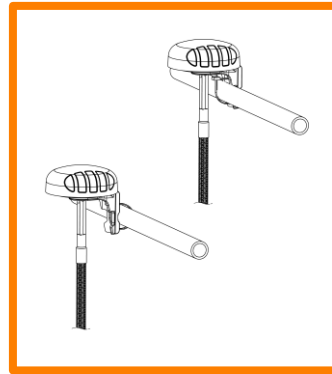
**Vertical Pole Mount**

Pole/Wall Mounting bracket (included)



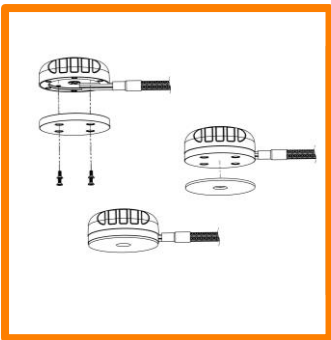
**Magnetic Mount**

Magnetic Base (included)  
For temporary and low mobility installations.



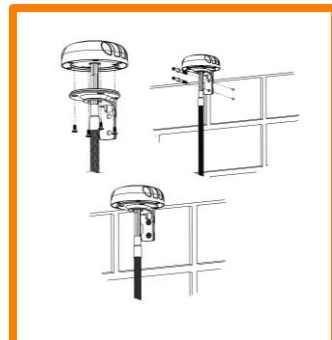
**Horizontal Pole Mount**

Pole/Wall Mounting bracket (included)



**Surface Mount**

Adhesive Surface Mounting (included) or can also be directly secured with longer M4 bolts (not included) to the female threaded inserts located in the antenna base




**Wall Mount**

Pole/Wall Mounting bracket (included)

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## Additional Accessories

See accessories technical specifications on [www.poynting.tech](http://www.poynting.tech)



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