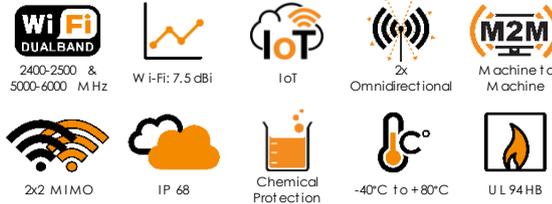


## ANTENNAS | PUCK-12

# 2-IN-1 IOT/M2M ANTENNA

## 2X2 DUALBAND WI-FI (MIMO)



- **2-in-1 high performance multi frequency**
- **Dual-band Wi-Fi (2 x MIMO)**
- **Ground plane independent**
- **Robust, vandal resistant and water proof (IP68) antenna**
- **Ideal for IoT/M2M use**
- **Ultra-versatile mounting options for easy installation**



## Product Overview

Poynting's new PUCK range offers a small profile antenna which can be used in the IoT/M2M, Smart Meter, Smart Utilities, Transportation, Marine and the Agricultural/Farming markets. The PUCK-12 consists of a 2-in-1 antenna system within a single housing, featuring 2x2 MIMO Wi-Fi (Dual-band 2.4GHz & 5GHz). The antenna provides two separate dual-band Wi-Fi antennas offering concurrent 2.4GHz and 5GHz bands, capable of 802.11n and 802.11ac/ax with 2x2 MIMO. 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 Wi-Fi throughput and connection stability.

## Features

- Small & Low-Profile (100mm x h 36mm)
- Careful mechanical design provides ruggedness, corrosion, water and dust resistance (IP68)
- Fire Resistant (complies with ECE-R 118.02)
- UV Stable Enclosure
- Ground plane independent – performs consistently with and without a ground plane
- Easy installation; multi implementation options (as standard)
  - 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
- Digital Signage
- Warehouses & Logistic systems
- Industrial factory automation, robotic machinery and other M2M 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 – Wi-Fi

The PUCK-12 is suitable for the following Wi-Fi frequency bands | 2400-2500 MHz | | 5000-6000 MHz |



### Antenna Overview

Ports	1 & 2
SISO / MIMO	2x2 MIMO
Frequency Bands	2.4 - 2.5 & 5-6 GHz,
Peak Gain	7.5 dBi
Coax Cable Type	RTK-031
Coax Cable Length	2m
Connector Type	SMA Male (RP-SMA Adapter included)

## Wi-Fi Electrical Specifications

Frequency:	2400-2500 MHz 5000-6000 MHz
Gain (Max):	7 dBi
VSWR:	≤2.5:1 over 95% of the band
Feed power handling:	10 W
Nominal input impedance:	50 Ohm (nominal)
Polarisation:	Linear Vertical
Coax cable loss:	0.45 dB/m @ 900 MHz 0.71 dB/m @ 2000 MHz 0.79 dB/m @ 2500 MHz 0.9 dB/m @ 3000 MHz
Path to Ground:	Yes

## Coax Cable & Connector Type - Wi-Fi

Cable length:	2m ±5%
Coax cable type:	RTK-031
Connector type:	SMA (Male)

## Coax Cable & Connector Type -

Cable length:	2m ±5%
Coax cable type:	RTK-031
Connector type:	SMA (Male)
Adapters:	2x RPSMA(m) To SMA (f)

\*The coax cables & connectors are factory mounted to the antenna

## Product Box Contents

Antenna:	A-PUCK-0012-V1-01
Mounting bracket:	Ø20 Threaded Spigots (Up to 60mm clamping thickness), Adhesive Surface Mounting & Optional Magnetic Mount
Adapters:	2x RPSMA(m) To SMA (f)

## Ordering Information

Commercial name:	PUCK-12
Order product code:	A-PUCK-00012-V1-01
EAN number:	6009880915248

## Mechanical Specifications

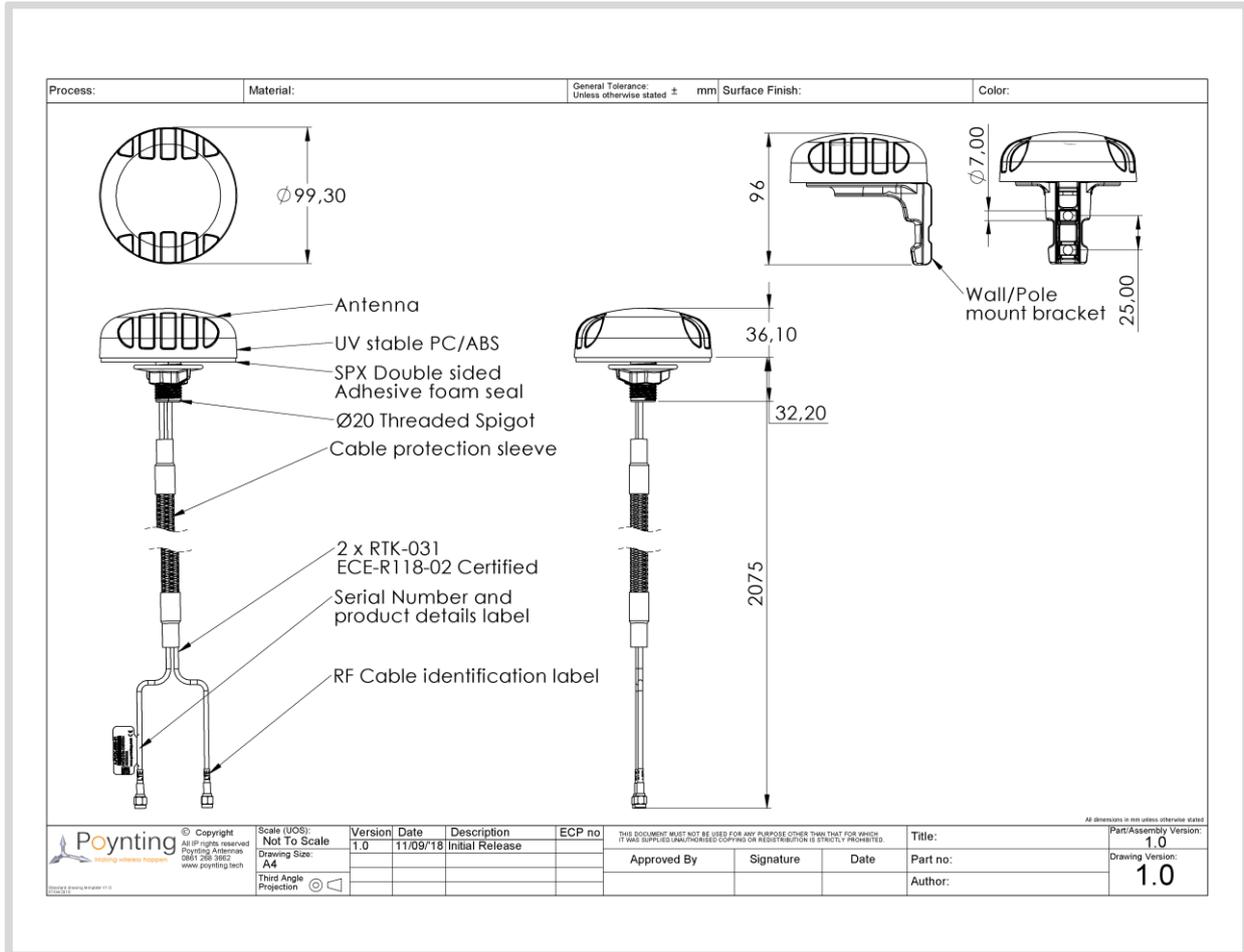
Product dimensions	Ø99.3 mm x 36 mm
Packaged dimensions:	150 mm x 150mm x 120mm
Weight:	0.376kg
Packaged weight:	0.507kg
Radome material:	PC+ABS (Halogen free)
Radome colour:	Pantone Black
Mounting Type:	Ø20 Threaded Spigot, Pole, Wall, Surface and Magnetic mount

## Environmental Specifications, Certification & Approvals

Wind Survival:	<220 km/h
Temperature Range (Operating):	-40°C to +80°C
Environmental Conditions:	Outdoor/Indoor
Water ingress protection ratio/standard:	IP 68
Salt Spray:	MIL-STD 810F/ASTM B117
Operating Relative Humidity:	Up to 98%
Storage Humidity:	5% to 95% - non-condensing
Storage Temperature:	-40°C to +80°C
Flammability Rating:	UL 94-HB, ECE-R118.02 Certified cables
Impact resistance:	IK 10
Product Safety & Environmental:	Complies with CE, EN, CSA, RoHS and IEC standards, E-mark certified

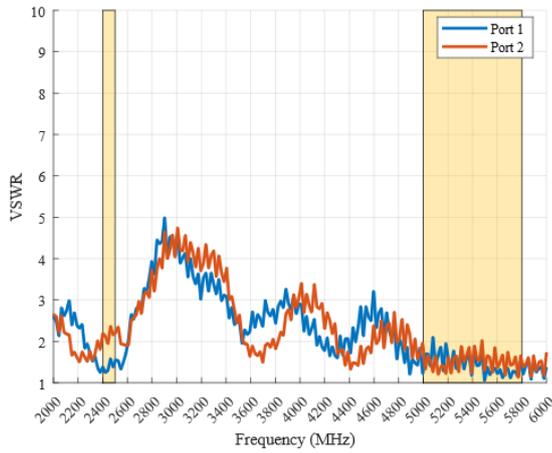


Technical Drawings

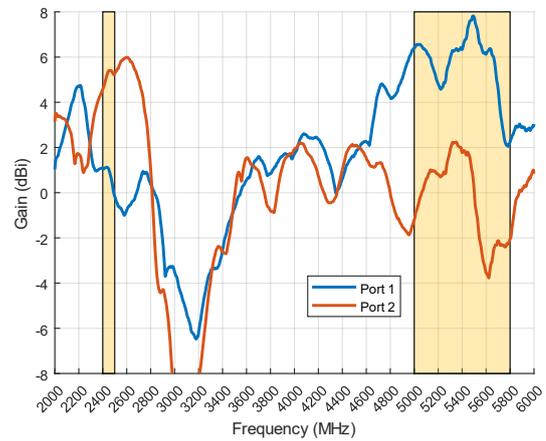


**Antenna Performance Plots**

**VSWR: Wi-Fi Antenna**



**Gain: Wi-Fi Antenna**



**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-12 delivers superior performance across all bands with a VSWR of  $\leq 2.5:1$  over 95% of the band

\*Measured with 2m low loss cable

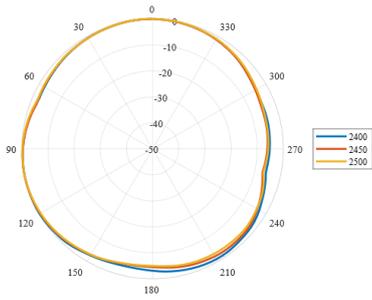
**Gain in dBi**

7.5 dBi is the peak gain across all bands from 2400-2500 & 5000 – 5800 MHz

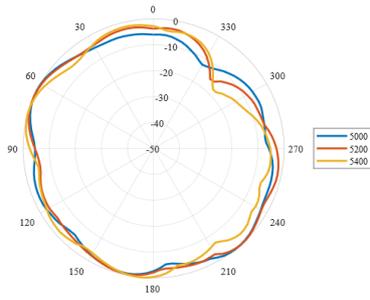
Peak Gain @ different bands:	5.0 dBi @2400-2500 MHz
Peak Gain @ different bands:	7.5 dBi @ 5000-5800 MHz

**Radiation Patterns – Wi-Fi**

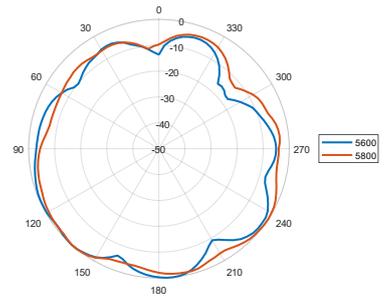
**Azimuth (Top View): 2400–2500 MHz**



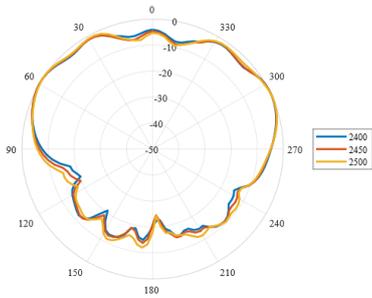
**Azimuth (Top View): 5000–5400 MHz**



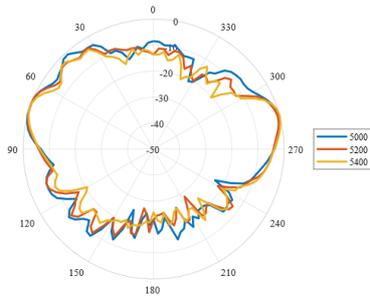
**Azimuth (Top View): 5600–5800 MHz**



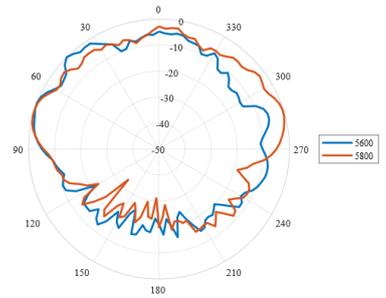
**Elevation1 (Side View): 2400–2500 MHz**



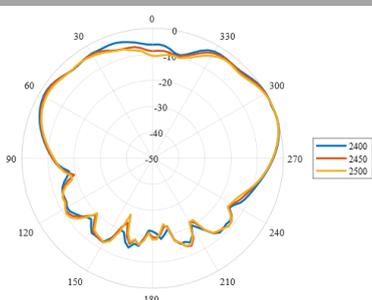
**Elevation1 (Side View): 5000–5400 MHz**



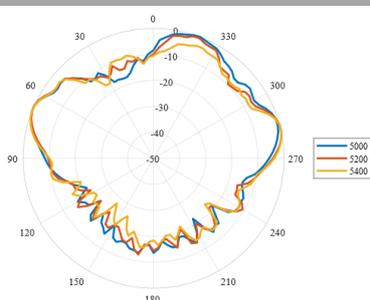
**Elevation (Side View): 5600–5800 MHz**



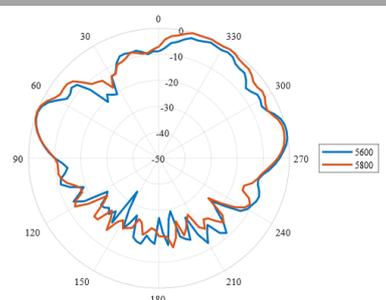
**Elevation2 (Side View): 2400–2500 MHz**



**Elevation2 (Side View): 5000–5400 MHz**



**Elevation2 (Side View): 5600–5800 MHz**

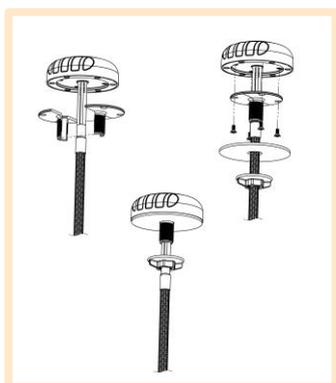


## Mounting Options

### Many Mounting Possibilities – included as standard

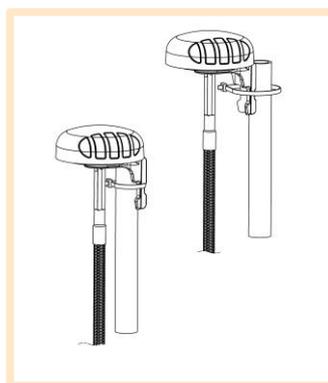
Poynting's new PUCK antenna range provides easy installation with the multiple mounting options. This includes as standard:

- 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



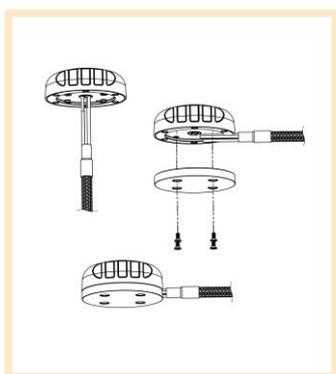
#### Spigot Mount

Removable 40mm & 80mm threaded spigot (included)



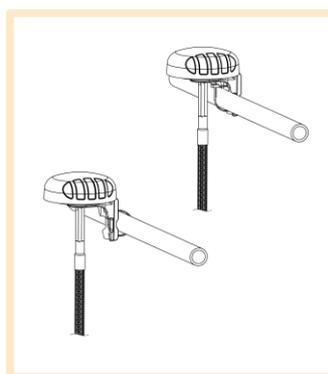
#### Vertical Pole Mount

Pole/Wall Mounting bracket (included)



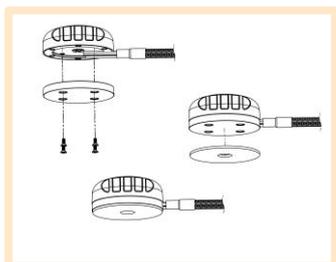
#### Magnetic Mount

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



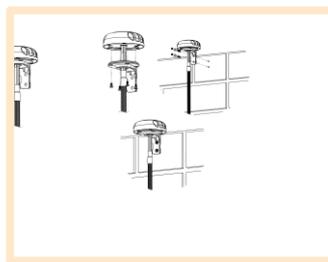
#### Horizontal Pole Mount

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)

### **Additional Accessories**

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

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### **Contact Poynting**

#### **Poynting Antennas (Pty) Ltd - Head Office**

Unit 4, N1 Industrial Park  
Landmarks Avenue,  
Samrand, 0157  
South Africa

**Phone:** +27 (0) 12 657 0050

**E-mail:** [sales@poynting.co.za](mailto:sales@poynting.co.za)

#### **Poynting Europe**

Regus Business Center Neue Messe Riem  
Kronstadter Straße 4  
81677 München  
Germany

**Phone:** +49 89 208026538

**E-mail:** [sales-europe@poynting.tech](mailto:sales-europe@poynting.tech)