











ANTENNAS | OMNI-510 SERIES

ULTRA LOW PROFILE, SMART METER LTE ANTENNA

698 - 2700 MHz; 2 dBi



 698 – 960 MHz 1710 – 2700 MHz	 2 dBi	 Increase X Mb/s	 Omni- Directional	 4G LTE	 Machine to Machine
 IoT	 Fire Resistant	 IP 68	 -40°C to +80°C		

- Omni-directional 4G/LTE antenna
- Backwards compatible with 2G and 3G technologies
- Smart Meter, M2M, IoT antenna
- Ultra-low-profile design
- Weather resistant enclosure (IP 68)

APPLICATION AREAS

-  Urban
-  Rural/Farm
-  Meter

Product Overview

The OMNI-510 antenna is purposefully designed for ultra-low-profile requirements such as Smart Meters. The antenna has an omni-directional radiation pattern, making it suitable for indoor and outdoor applications. The antenna will typically be mounted on the top or side of smart meter boxes. The OMNI-510 antenna is designed with installation simplicity in mind, while covering the popular 4G/LTE frequency bands from 698 to 2700 MHz.

Features

- Omni-directional antenna
- Wideband – covering 4G/LTE bands
- Easy installation, double sided tape or screw-on
- Stylish and robust design
- Weather and dust proof (IP 68)

Application Areas

- Smart Utilities: Smart Power Metering, Gas & Water Metering
- Smart Buildings: Climate control, access control, security, irrigation
- Digital Signage
- Smart Environmental & Water Systems
- Warehouses & Logistics systems
- Industrial factory automation and M2M systems
- Farming & Agricultural M2M IoT

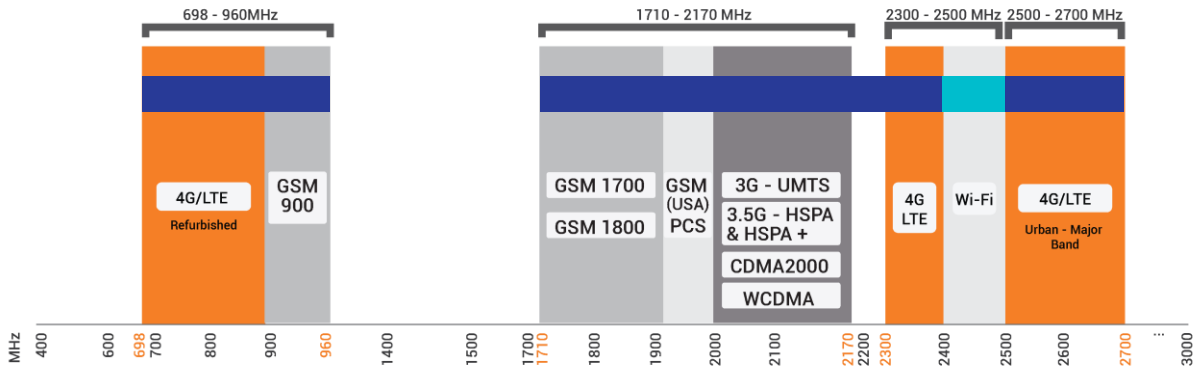
Can be used with the following IoT technologies:

- | | |
|-----------|------------------------------|
| • Zigbee | • Wi-Fi |
| • Z-Wave | • Wi-Fi HaLow |
| • LoRaWAN | • Cellular Bands (LTE/3G/2G) |
| • Sigfox | • Bluetooth |




Frequency Bands

The OMNI-510 is an omni-directional antenna that works from | 698 – 960 MHz | and | 1710 – 2700 MHz |



Indicates the LTE bands on which OMNI-510 works Indicates the WI-FI bands on which OMNI-510 works

Antenna Overview

	
Ports	1
SISO / MIMO	SISO
Frequency Bands	698 – 960 MHz 1710 – 2700 MHz
Polarisation	Linear Vertical / Horizontal
Peak Gain	2 dBi
Coax Cable Type	RTK-031
Coax Cable Length	1m
Connector Type	SMA (M)

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

Electrical Specifications

Frequency Bands:	698 – 960 MHz 1710 – 2700 MHz
Gain (Max):	1.8 dBi @ 698 – 960 MHz 2 dBi @ 1710 – 2700 MHz
VSWR:	< 2.5:1 Across 85% of the band
Feed Power Handling:	10 W
Input Impedance:	50 Ohm (nominal)
Coax Cable Loss:	0.43 dB/m @ 600 MHz 0.56 dB/m @ 900 MHz 0.785 dB/m @ 1800 MHz 0.91 dB/m @ 2400 MHz
Polarisation:	Linear Vertical/ Horizontal
DC Short:	Yes

Product Box Contents

Antenna:	A-OMNI-0510
Mounting Bracket:	N/A

Ordering Information

Commercial name:	OMNI-510
Order product code:	A-OMNI-0510-V1-02
EAN number:	6009880915699

Mechanical Specifications

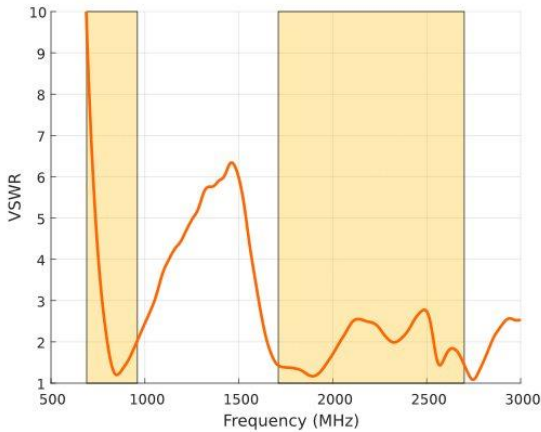
Product Dimensions	135 mm x 20 mm x 10 mm
Packaged Dimensions:	200 mm x 180 mm x 15mm
Weight:	0.046 kg
Packaged Weight:	0.052 kg
Radome Material:	TPE (Thermoplastic Elastomer)
Radome Colour:	Pantone Black 6C
Mounting Type:	Adhesive backing or 2 x Ø3 holes for Screw mount

Environmental Specifications, Certification & Approvals

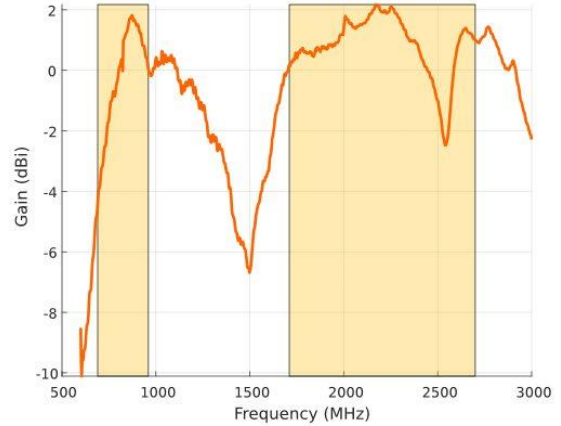
Antenna Wind Survival:	≤160 km/h
Temperature Range (Operating):	-40°C to +80°C
Environmental Conditions:	Outdoor/Indoor
Ingress Protection:	IP 68 (Excluding connector)
Salt Spray:	MIL-STD 810G/ASTM B117
Operating Relative Humidity:	Up to 98%
Storage Humidity:	5% to 95% - non-condensing
Storage Temperature:	-40°C to +80°C
Enclosure Flammability Rating:	UL 94-HB
Impact Resistance:	IK 10
Product Safety & Environmental:	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 OMNI-510 delivers superior performance across all bands with a VSWR of <2.5:1 across 85% of the band.

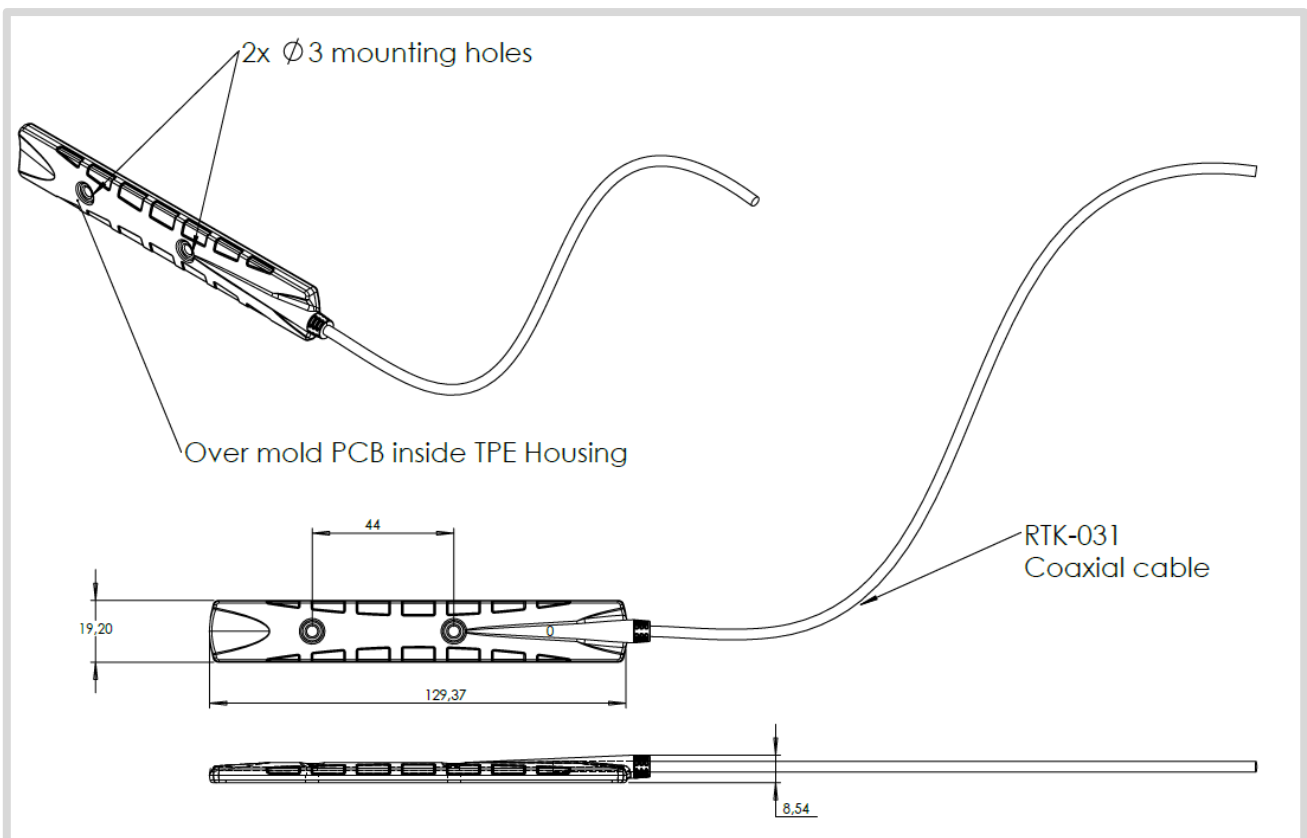
Gain* in dBi

2 dBi is the peak gain across all bands from 698 – 2700 MHz

Gain @ 698 – 960 MHz:	1.8 dBi
Gain @ 1710 – 2700 MHz:	2 dBi

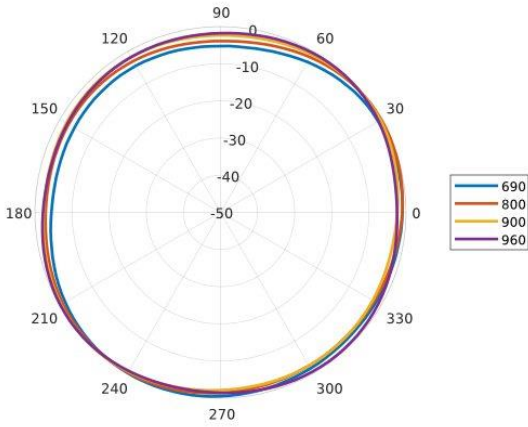
**Antenna gain measured with polarisation aligned standard antenna*

Technical Drawings

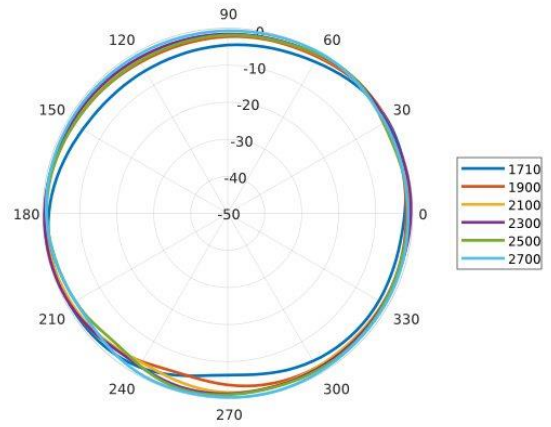


Radiation Patterns

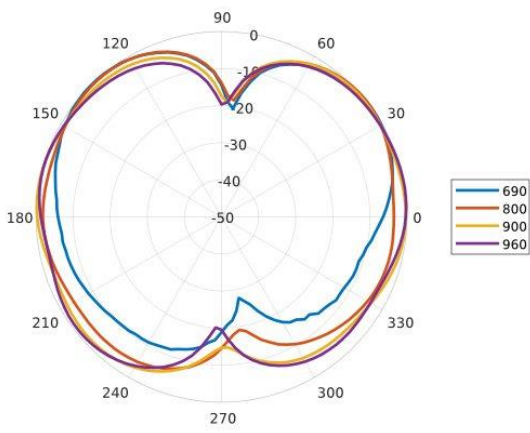
Azimuth: 698 - 960 MHz



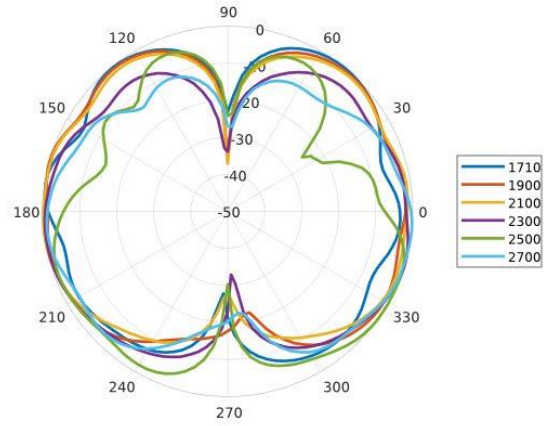
Azimuth: 1710 - 2700 MHz



Elevation: 698 - 960 MHz



Elevation: 1710 - 2700 MHz



Mounting Options




Surface Mount

Adhesive backing with 2 x Ø3 holes for Screw mount

Additional Accessories

See accessories technical specifications on www.poynting.tech



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