OMNI-510

ANTENNAS | OMNI-510 SERIES

ULTRA LOW PROFILE, SMART METER LTE ANTENNA

698 - 960 MHz, 1710 - 2700 MHz, 2 dBi

698 – 960 MHz ; 1710 - 2700 MHz | 2 dBi | Increase x Mb/s | Omni-Directional | 4G LTE | Machine to Machine

IoT | -40°C to +75°C | Fire Resistant | IP 68

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

Revised: August 2020

Regulatory Compliance: RoHS 2011/65/EU Compliant | ISO 9001:2015
Document version: TS-A-OMNI-0510-V1-02 REV 4
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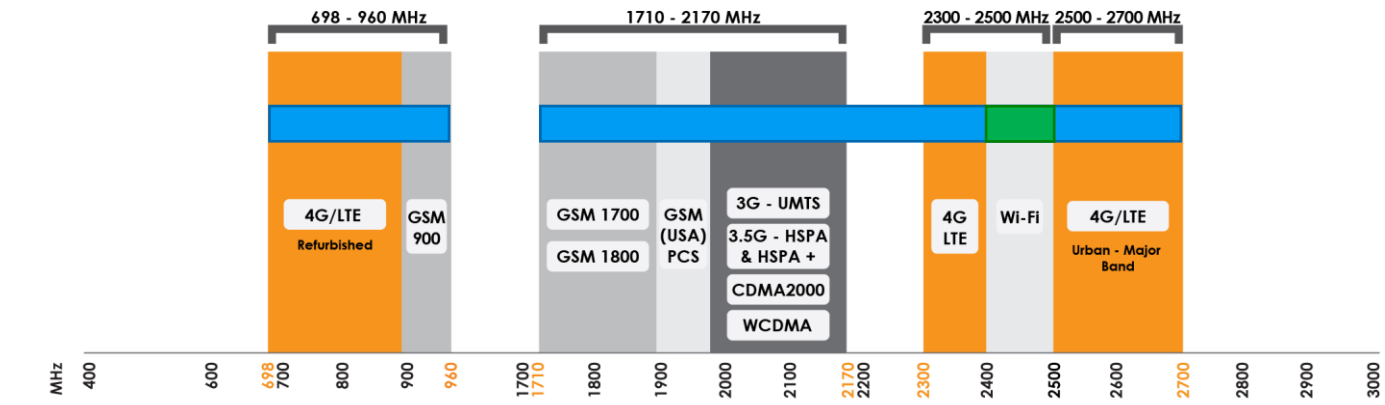
Frequency Bands

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



Indicates the LTE bands on which **OMNI-510** works

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

Antenna Overview

	LTE
Ports	1
SISO / MIMO	SISO
Frequency Bands	698 – 960 MHz 1710 - 2700 MHz
Polarisation	Linear Horizontal / Vertical
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*

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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 over 85% of the band
Feed power handling:	10 W
Input impedance:	50 Ohm (nominal)
Polarisation:	Linear Horizontal / Vertical
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
DC short:	Yes

Product Box Contents

Antenna:	A-OMNI-0510-V1-02
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	135mm x 20mm x 10mm
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

Wind Survival:	≤ 160 km/h
Temperature Range (Operating):	-40°C to +70°C
Environmental Conditions:	Outdoor/Indoor
Water ingress protection ratio/standard:	IP 68 (Excluding connector)
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 +70°C
Enclosure Flammability Rating:	UL 94-HB
Impact resistance:	IK 10
Product Safety & Environmental:	Complies with CE and RoHS standards

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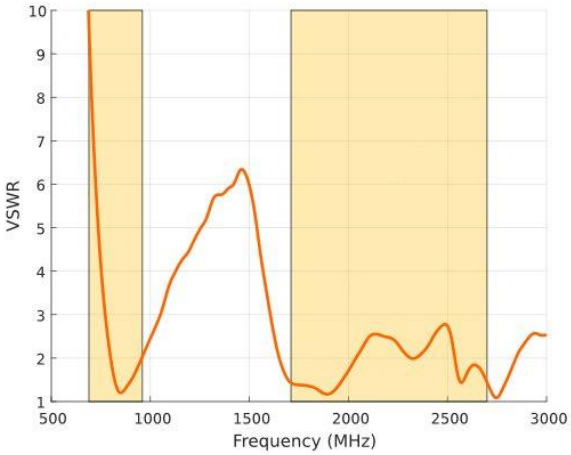
Antenna Performance Plots

VSWR

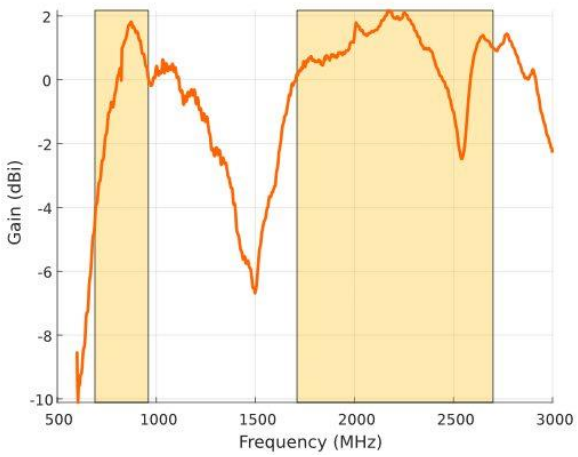


Voltage Standing Wave Ratio (VSWR)

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 or better across 85% of the bands.

GAIN (EXCLUDING CABLE LOSS)



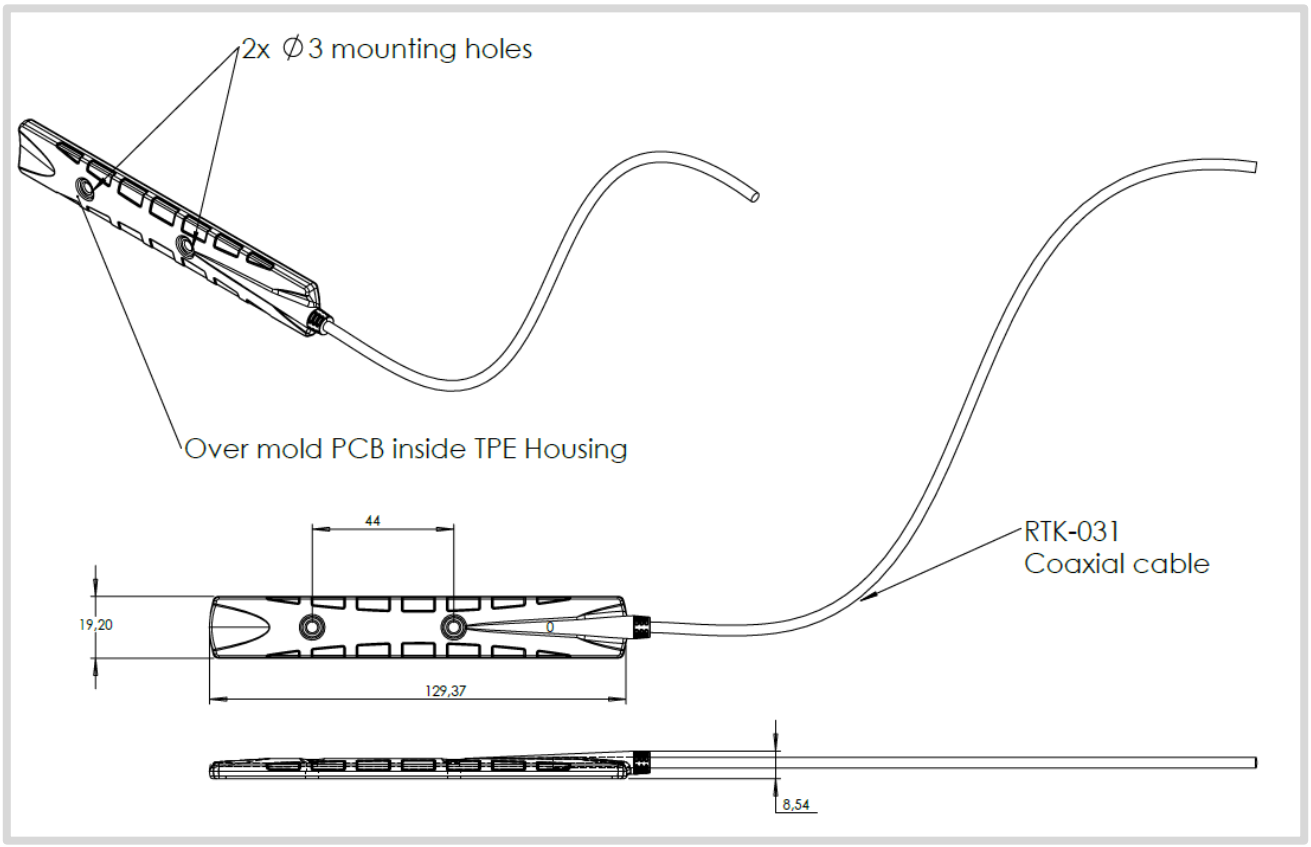
Gain* in dBi

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



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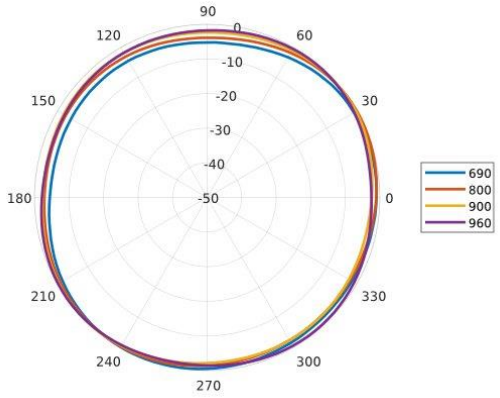
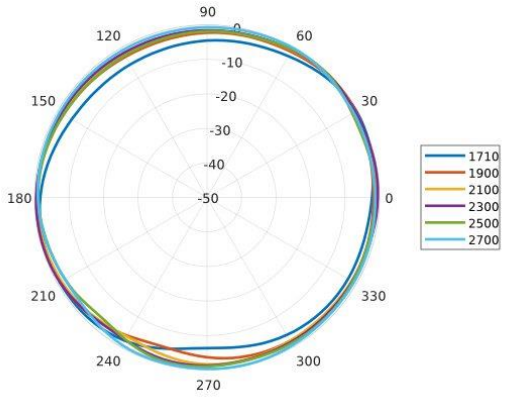
Radiation Patterns

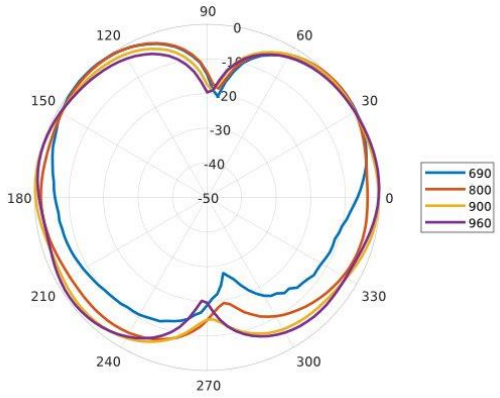
Azimuth: 698 – 960 MHz



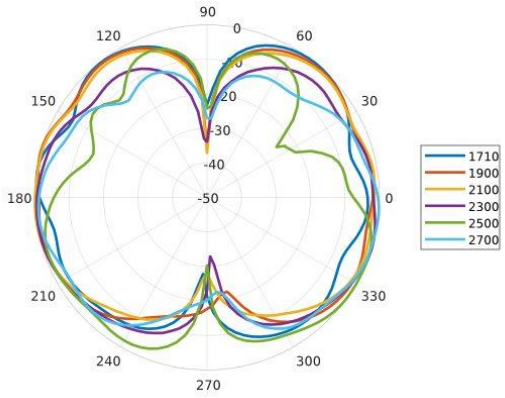
Azimuth: 1710 – 2700 MHz



Elevation: 698 – 960 MHz



Elevation: 1710 – 2700 MHz



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Mounting Options

Surface Mount

Adhesive backing with 2 x Ø3 holes for Screw mount

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Additional Accessories

For more information, visit www.poynting.tech

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