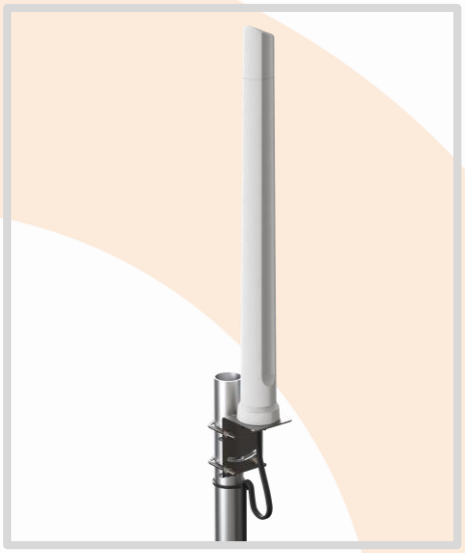
OMNI-298

POYNTING
BEYOND A CONNECTED LIFE

ANTENNAS | OMNI-298 SERIES

OMNI-DIRECTIONAL, 2X2 MIMO DUAL-BAND WI-FI ANTENNA

Dual-Band Wi-Fi; 2400 – 2500 MHz, 3300 – 4200 MHz, 4900 – 7200 MHz; 10 dBi



2400 – 2500 MHz
3300 – 4200 MHz
4900 – 7200 MHz

2.4 GHz: 6.5 dBi
5 GHz: 10 dBi

Increase X Mb/s

Omni-Directional

2.4-2.5 GHz
4.9-7.2 GHz

Machine to Machine

Internet of Things

-40°C to +80°C

2x2 MIMO

CBRS Band

6.0 – 7.2 GHz

IP 65

- **Dual-band Wi-Fi antenna for 2.4 GHz and 4.9 to 7.2 GHz**
- **2x2 MIMO capability for improved performance**
- **Compliant with IEEE 802.11a/b/g/n/ac/ax wireless standards**
- **Covers the 3.5 GHz CBRS band for future 5G applications.**
- **Robust and all-weather proof for harsh conditions (IP 65)**

APPLICATION AREAS

Urban

Rural/Farm

Industrial

Product Overview

The OMNI-298 is a high-performance, dual-band Wi-Fi omni-directional antenna designed specifically for fixed wireless access (FWA) deployments. This antenna operates across the 2.4 GHz and 4.9 to 7.2 GHz frequency bands, providing compatibility with both legacy Wi-Fi technologies and the latest advancements, including Wi-Fi 7.

The OMNI-298 is engineered with 2x2 MIMO technology, utilizing vertically polarized radiating elements to deliver reliable omni-directional coverage. The antenna's design focuses on optimizing performance in FWA applications by removing the horizontal elements present in other models, simplifying installation, and ensuring efficient coverage.

In addition to its Wi-Fi capabilities, the OMNI-298 supports the 3.3 to 4.2 GHz band, commonly used for Citizens Broadband Radio Service (CBRS) in 5G applications, with a peak gain of 7.8 dBi. This feature enhances the antenna's versatility, making it an excellent choice for both Wi-Fi and 5G connectivity.

With high-gain vertical antennas providing a peak gain of 10 dBi, the OMNI-298 ensures robust wireless performance across multiple frequency bands, making it ideal for a wide range of Wi-Fi access points in both residential and commercial settings.

Features

- Dual-band Wi-Fi antenna for 2.4 GHz & 4.9 to 7.2 GHz
- 2x2 MIMO capability for improved performance
- High gain omnidirectional antenna for Wi-Fi deployments
- Covers 3.5 GHz CBRS band for future 5G applications
- Robust and weather-resistant enclosure with an IP 65 rating

Application Areas

- Industrial and commercial Wi-Fi deployment
- Small businesses
- Building sites and open-cast mines
- Production facilities and factories
- M2M and IoT applications
- Areas with large amounts of machinery (cluttered environments)
- Increase system transmission reliability
- High-end industrial-grade router applications

Revised: January 2025

Regulatory Compliance: RoHS 2011/65/EU Compliant | ISO 9001:2015
Document version: TS-OMNI-0298-V1-01 REV 0.5
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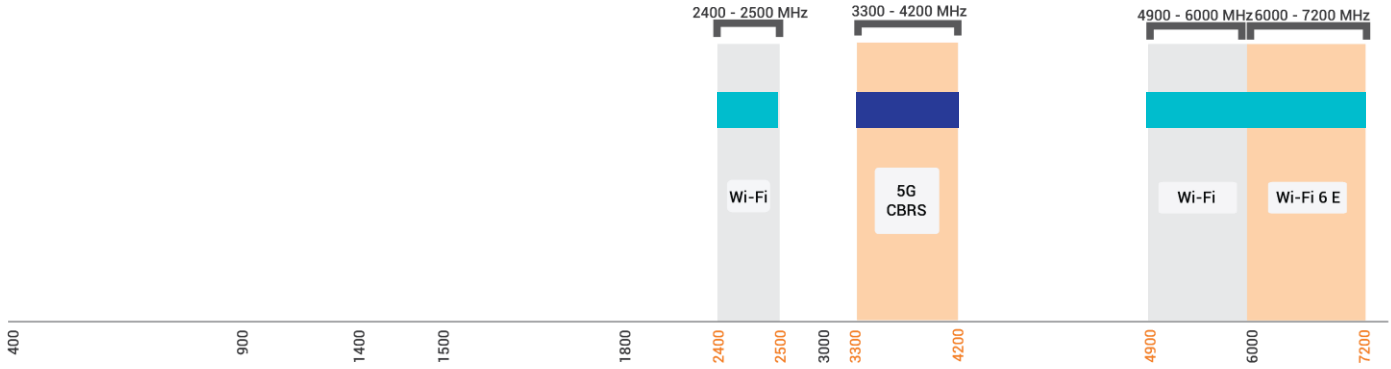
Frequency Bands

The OMNI-298 is an omni-directional antenna that works from | 2400 – 2500 MHz | 3300 – 4200 MHz | and | 4900 – 7200 MHz |



Indicates the 5G/CBRS bands on which OMNI-298 works

Indicates the WI-FI bands on which OMNI-298 works

Antenna Overview

	Wi Fi DUALBAND
Ports	2
SISO / MIMO	2x2 MIMO
Polarisation	Linear Vertical
Peak Gain	10 dBi
Coax Cable Type	Twin HDF 195
Coax Cable Length	2m
Connector Type	SMA (M)

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

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Electrical Specifications

Frequency Bands:	2400 – 2500 MHz 3300 – 4200 MHz 4900 – 7200 MHz
Gain (Max):	6.5 dBi @ 2400 – 2500 MHz 7.8 dBi @ 3300 – 4200 MHz 10 dBi @ 4900 – 7200 MHz
VSWR:	<2:1
Feed Power Handling:	10 W
Input Impedance:	50 Ohm (nominal)
Polarisation:	Linear Vertical
Coax Cable Loss:	0.666 dB/m @ 2400 MHz 0.788 dB/m @ 3000 MHz 1.15 dB/m @ 5800 MHz
DC Short:	Yes

Product Box Contents

Antenna:	A-OMNI-0298-V1-01
Mounting Bracket:	L-bracket (Ø30-50mm Pole)
Adapters:	RPSMA(M) to SMA(F)

Ordering Information

Commercial Name:	OMNI-298
Order Product Code:	A-OMNI-0298-V1-01
EAN Number:	6009710928172

Mechanical Specifications

Product Dimensions	646 mm x Ø71 mm
Packaged Dimensions:	710 mm x 150 mm x 100 mm
Weight:	0.58 KG
Packaged Weight:	1.48 KG
Radome Material:	UV Stable ASA
Radome Colour:	Brilliant White Pantone P 179-1C
Mounting Type:	Wall/Pole mount

Environmental Specifications, Certification & Approvals

Wind Survival:	≤190 km/h
Temperature Range (Operating):	-40°C to +80°C
Environmental Conditions:	Outdoor/Indoor
Water Ingress Protection Ratio/Standard:	IP 65
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 08
Product Safety & Environmental:	Complies with CE and RoHS standards

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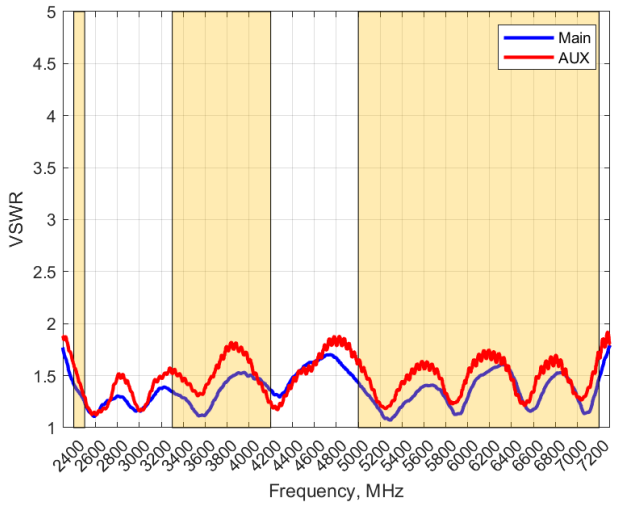
Antenna Performance Plots

VSWR



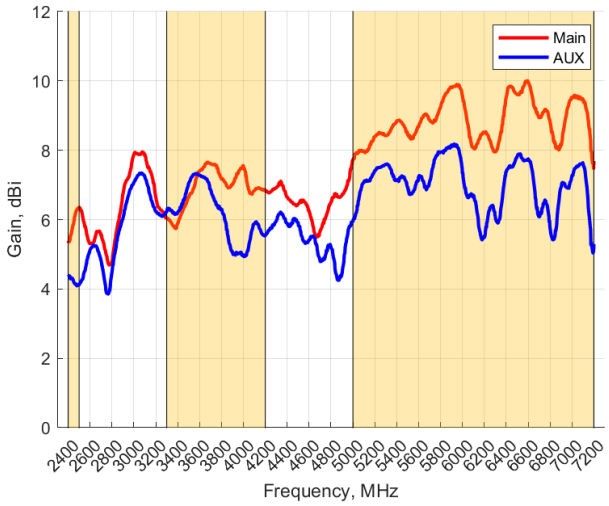
Voltage Standing Wave Ratio (VSWR)*

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-298 delivers superior performance across all bands with a VSWR of <2:1.

*VSWR measured with 2m low loss cable.

GAIN (EXCLUDING CABLE LOSS)



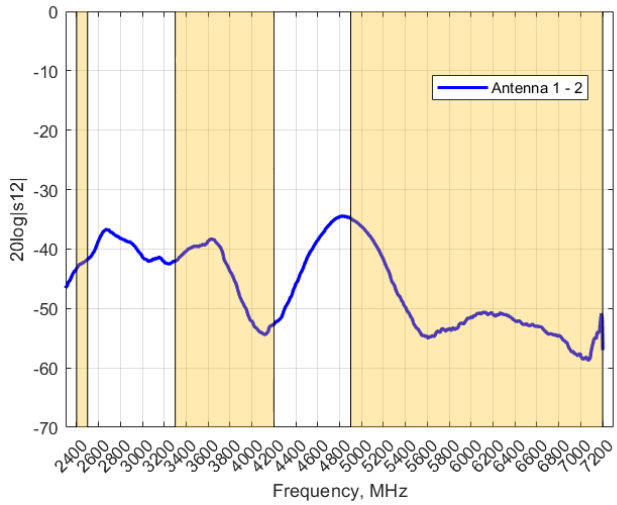
Gain+ in dBi

9.8 dBi is the peak gain across all bands from 2400 to 7200 MHz

Gain @ 2400 – 2500 MHz:	6.5 dBi
Gain @ 3300 – 4200 MHz:	7.8 dBi
Gain @ 4900 – 7200 MHz:	10 dBi

+Antenna gain measured with polarisation aligned standard antenna

Isolation



Isolation

Isolation is a measurement of the amount of energy leaked from one port to another. A good isolation is under -20 dB.

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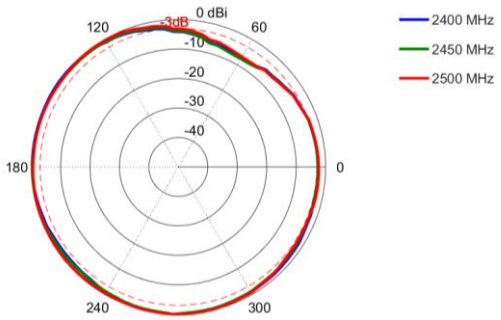
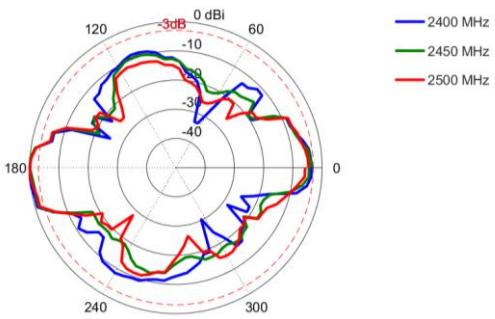
MIMO Radiation Patterns

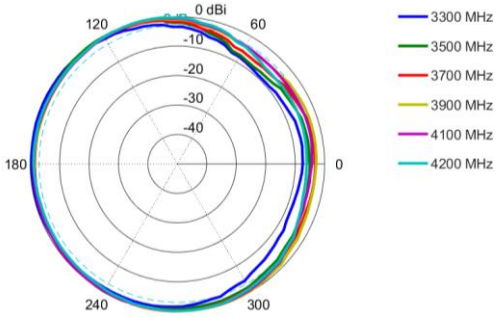
Azimuth: 2400 – 2500 MHz



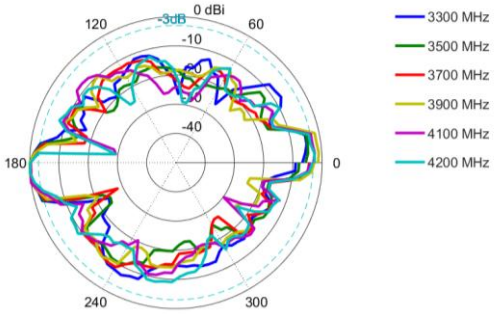
Elevation: 2400 – 2500 MHz



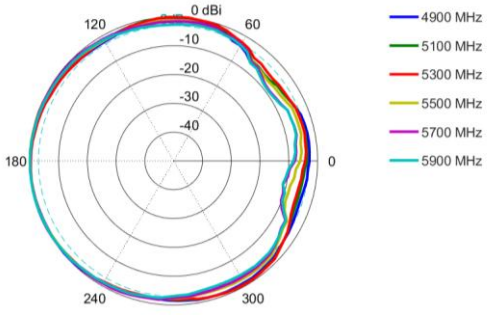
Azimuth: 3300 – 4200 MHz



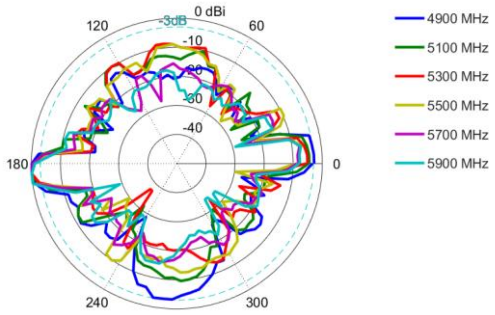
Elevation: 3300 – 4200 MHz



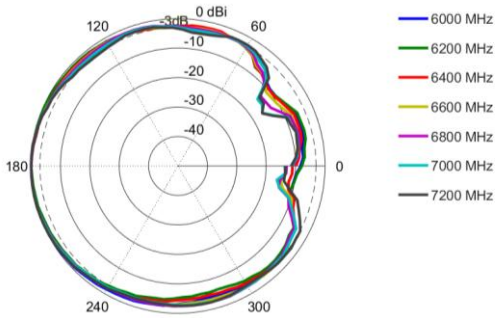
Azimuth: 4900 – 5900 MHz



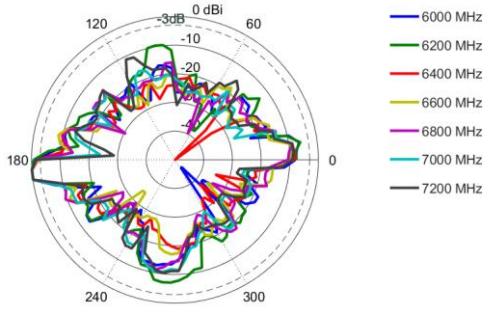
Elevation: 4900 – 5900 MHz



Azimuth: 6000 – 7200 MHz



Elevation: 6000 – 7200 MHz



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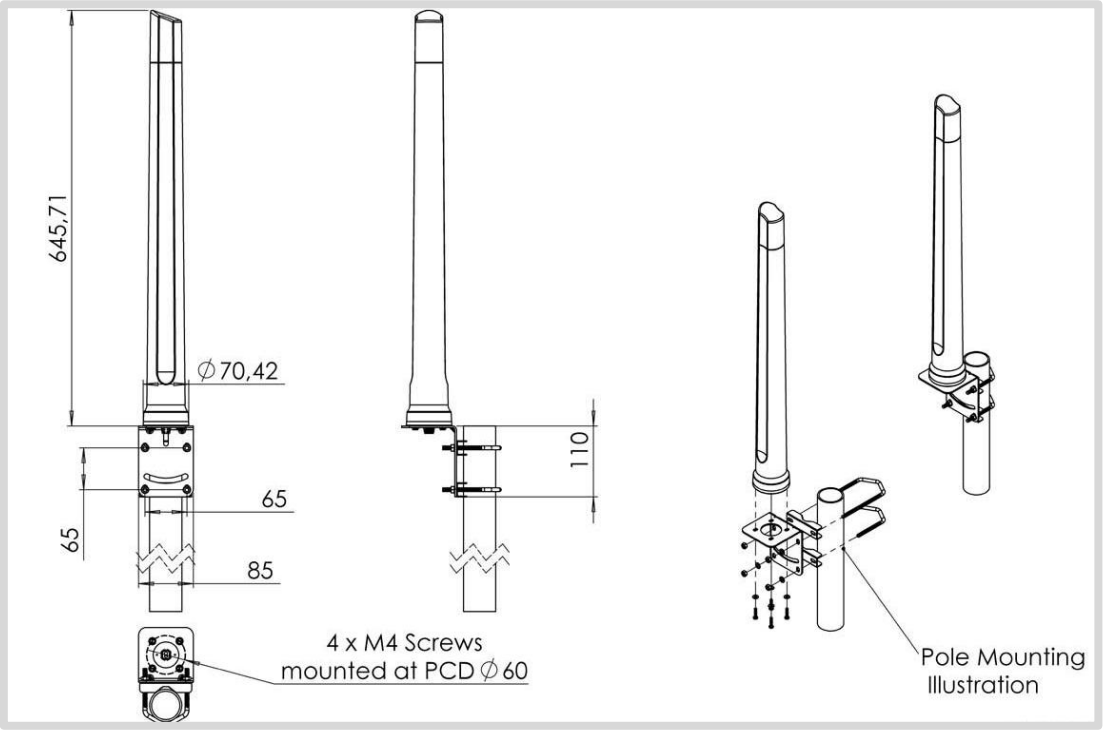
Technical Drawings



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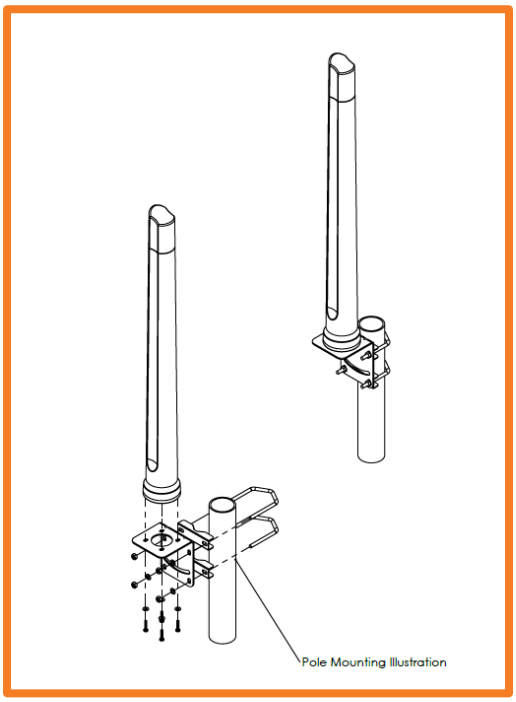
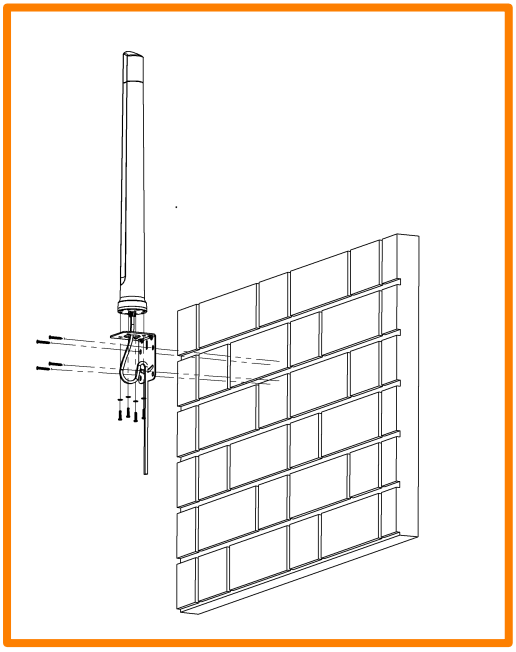
Mounting Options



Pole Mount

Pole/Wall Mounting bracket (included))



Wall Mount

Wall/pole mounting bracket (included)

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Additional Accessories

Extension Cables: Up to 15m HDF 195
Various connectors available
Installation poles and brackets available

See accessories technical specifications on www.poynting.tech

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