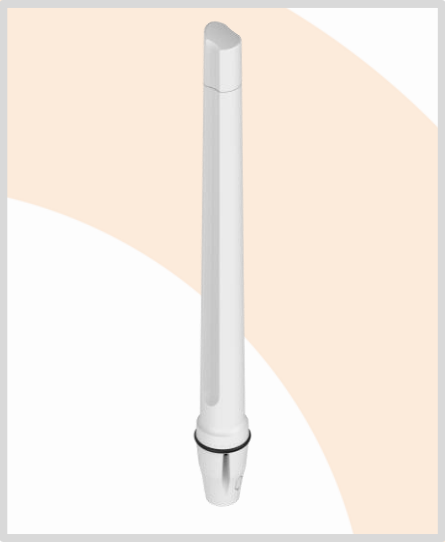
OMNI-494

POYNTING
BEYOND A CONNECTED LIFE

ANTENNAS | OMNI-494 SERIES

X-POLARISED, OMNI-DIRECTIONAL, 4X4 MIMO ANTENNA

Dual-Band Wi-Fi; 2400 – 2500 MHz, 3300 – 4200 MHz, 4900 – 7200 MHz; 9.8 dBi & 4.5 dBi



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

9.8 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

Salt Spray Protection

4X4 MIMO

6.0 – 7.2 GHz

IP 68

APPLICATION AREAS

Marine

Urban

Rural/Farm

Industrial

- **Dual-band Wi-Fi antenna for 2.4 GHz and 4.9 to 7.2 GHz**
- **4x4 MIMO capability for improved performance**
- **Cross-polarised antennas; vertical and horizontal polarisations**
- **Compliant with IEEE 802.11a/b/g/n/ac/ax wireless standards**
- **UV and saltwater protected for marine and coastal conditions**
- **Robust and all-weather proof for harsh conditions at sea (IP 68)**
- **Various 316-stainless steel mounting brackets available**

Product Overview

The OMNI-494 is a cross-polarised, dual-band Wi-Fi omni-directional antenna for marine & coastal deployments. The antenna provides dual-band Wi-Fi coverage in the 2.4 GHz and 4.9 to 7.2 GHz bands, making it ideal for any Wi-Fi access point, whether it is older Wi-Fi technology or new technology that goes up to Wi-Fi6E (7.2 GHz). The antenna offers 4x4 MIMO capability from its vertically separated radiating elements, allowing for true omni-directional coverage suitable for marine and coastal applications. To further add to the 4x4 MIMO performance, the antennas are cross-polarised, with high gain vertical antennas, with a peak gain of 9.8 dBi, and low gain horizontally polarised antennas, with a peak gain of 4.5 dBi, for improved performance.

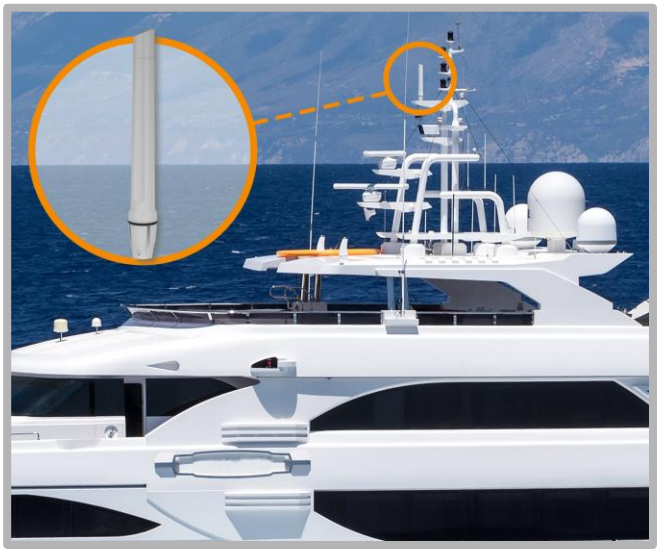
The OMNI-494 is purpose-built for harsh environments with an IP 68 protection rating against dust and water ingress, with the antenna being foam filled, making it ideal for the most severe storms at sea. The radome is fully saltwater protected, so it can be used in highly corrosive environments, thanks to the UV stable ASA radome material.

Features

- Dual-band Wi-Fi antenna for 2.4 GHz & 4.9 to 7.2 GHz
- 4x4 MIMO capability for improved performance
- Cross-polarised antennas (vertical & horizontal)
- Robust and weather-resistant enclosure with an IP 68 rating
- UV and saltwater-protected enclosure for marine applications

Application Areas

- Marine applications: Yachts / Boats / Ferries
- Increase system transmission reliability
- High-end industrial-grade router applications
- Ports and harbour Wi-Fi & WLAN deployments
- Industrial and commercial Wi-Fi deployment



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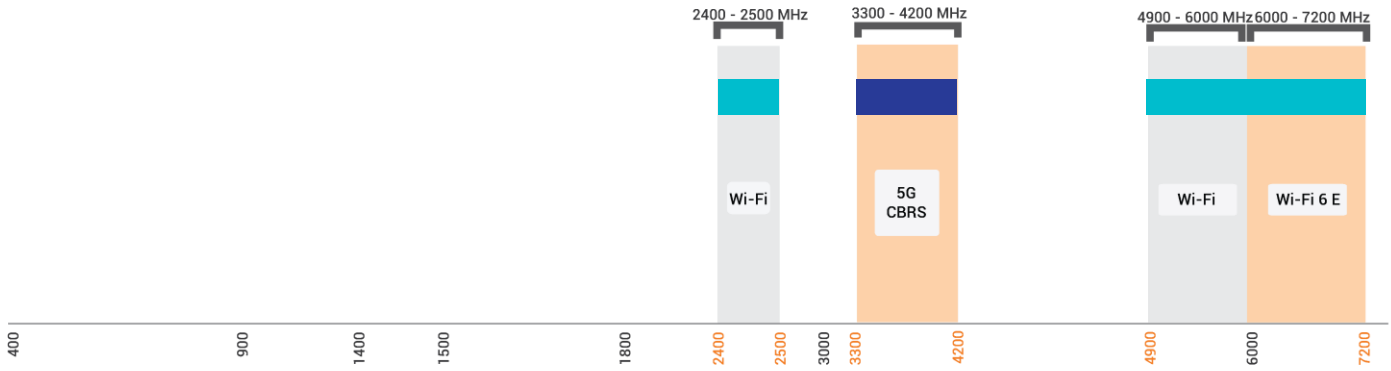
Frequency Bands

The OMNI-494 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-494 works

Indicates the WI-FI bands on which OMNI-494 works

Antenna Overview

	Wi Fi DUALBAND
Ports	4
SISO / MIMO	4x4 MIMO
Polarisation	Vertical & Horizontal
Peak Gain	9.8 dBi & 4.5 dBi
Coax Cable Type	2 x Twin HDF 195
Coax Cable Length	2m
Connector Type	SMA (M)

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

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Electrical Specifications

Frequency Bands:	2400 – 2500 MHz 3300 – 4200 MHz 4900 – 7200 MHz
Gain (Vertical):	7 dBi; 5.5 dBi @ 2400 – 2500 MHz 8 dBi; 7 dBi @ 3300 – 4200 MHz 9.8 dBi; 8 dBi @ 4900 – 7200 MHz
Gain (Horizontal):	-1 dBi; 0.5 dBi @ 2400 – 2500 MHz 1 dBi; 3 dBi @ 3300 – 4200 MHz 4.5 dBi; 4 dBi @ 4900 – 7200 MHz
VSWR:	<2:1 Across 90% of the bands
Feed Power Handling:	10 W
Input Impedance:	50 Ohm (nominal)
Polarisation:	Vertical & Horizontal
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-0494-V1-01
Mounting Bracket:	1" (14 TPI) Marine Adapter (BRKT-40) & L-bracket (Ø30-50mm Pole)
Adapters:	RPSMA(M) to SMA(F)

Ordering Information

Commercial Name:	OMNI-494
Order Product Code:	A-OMNI-0494-V1-01
EAN Number:	6009710927434

Mechanical Specifications

Product Dimensions	750 mm x Ø75 mm (Incl. BRKT-40)
Packaged Dimensions:	705 mm x 150 mm x 100 mm
Weight:	1.462 kg
Packaged Weight:	1.870 kg
Radome Material:	UV Stable Marine ASA
Radome Colour:	Brilliant White Pantone P 179-1C
Mounting Type:	Standard 1'' -14 TPI marine mount & Wall/pole mount

Environmental Specifications, Certification & Approvals

Wind Survival:	≤160 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 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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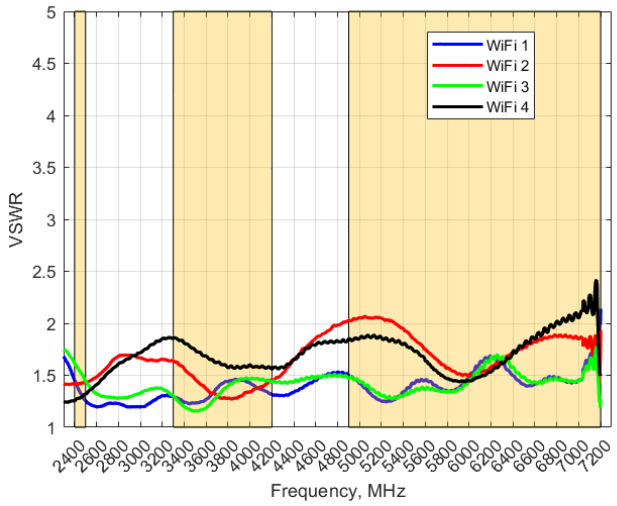
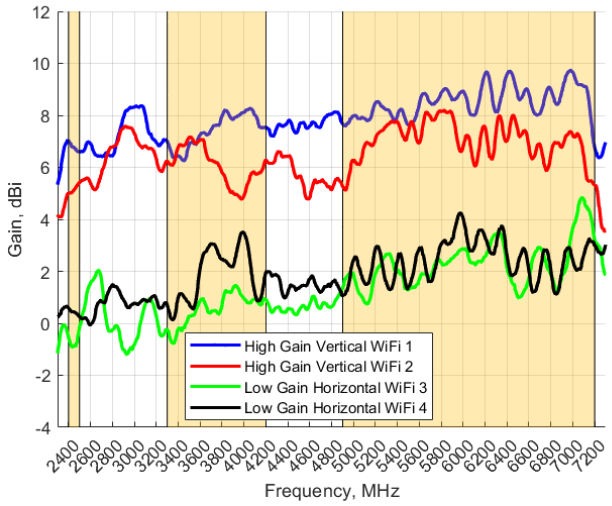
Antenna Performance Plots

VSWR: Antenna 1-4



GAIN (EXCLUDING CABLE LOSS): Antenna 1-4



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-494 delivers superior performance across all bands with a VSWR of 2:1 or better across 90% of the bands.

Gain⁺ in dBi

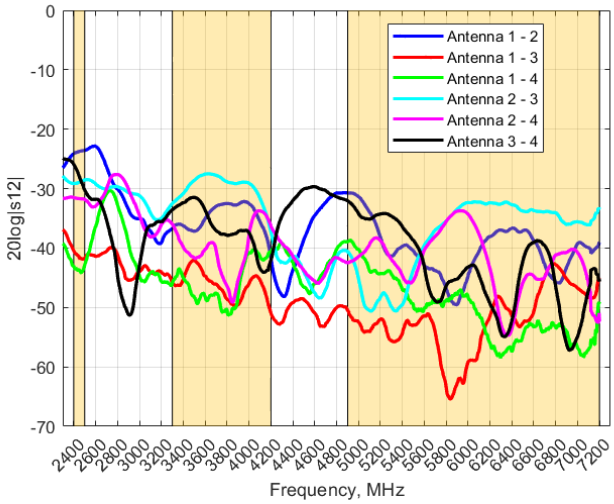
9.8 dBi is the peak gain across all bands from 2400 – 2500 MHz, 3300 – 4200 MHz and 4900 – 7200 MHz

Gain @ 2400 – 2500 MHz (Wi-Fi 1; Wi-Fi 2):	7 dBi; 5.5 dBi
Gain @ 2400 – 2500 MHz (Wi-Fi 3; Wi-Fi 4):	-1 dBi; 0.5 dBi
Gain @ 3300 – 4200 MHz (Wi-Fi 1; Wi-Fi 2):	8 dBi; 7 dBi
Gain @ 3300 – 4200 MHz (Wi-Fi 3; Wi-Fi 4):	1 dBi; 3 dBi
Gain @ 4900 – 7200 MHz (Wi-Fi 1; Wi-Fi 2):	9.8 dBi; 8 dBi
Gain @ 4900 – 7200 MHz (Wi-Fi 3; Wi-Fi 4):	4.5 dBi; 4 dBi

*VSWR measured with 2m low loss cable

⁺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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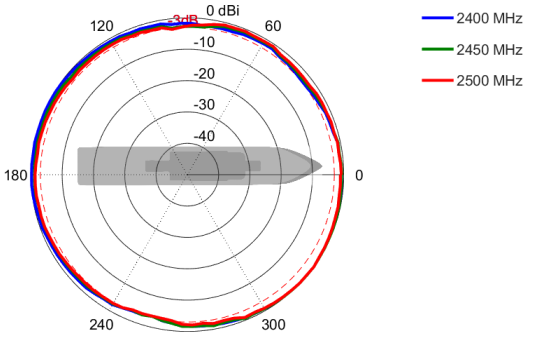
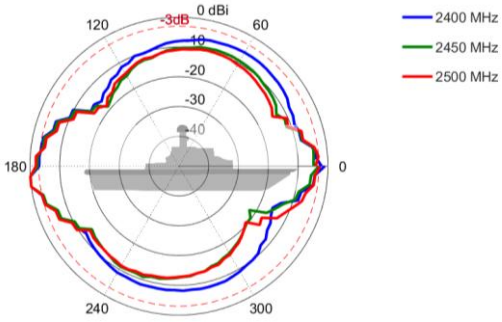
MIMO Radiation Patterns

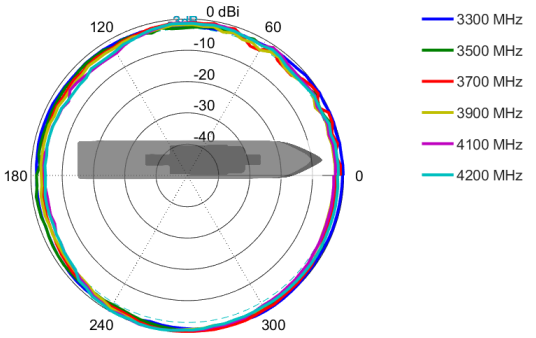
Azimuth: 2400 – 2500 MHz



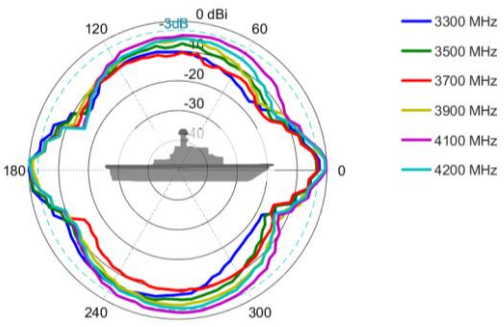
Elevation: 2400 – 2500 MHz



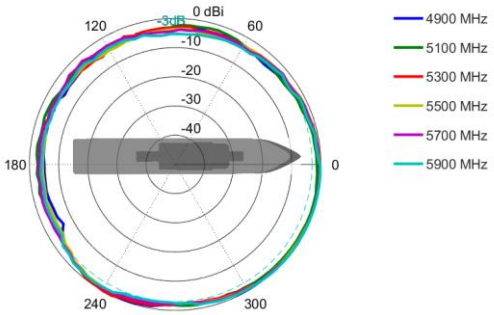
Azimuth: 3300 – 4200 MHz



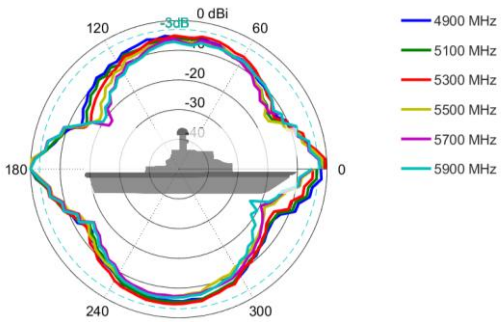
Elevation: 3300 – 4200 MHz



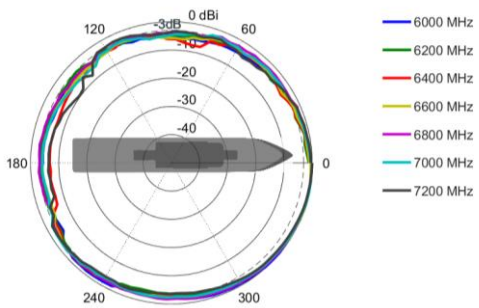
Azimuth: 4900 – 5900 MHz



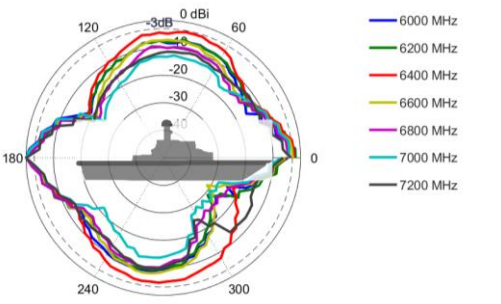
Elevation: 4900 – 5900 MHz



Azimuth: 6000 – 7200 MHz



Elevation: 6000 – 7200 MHz



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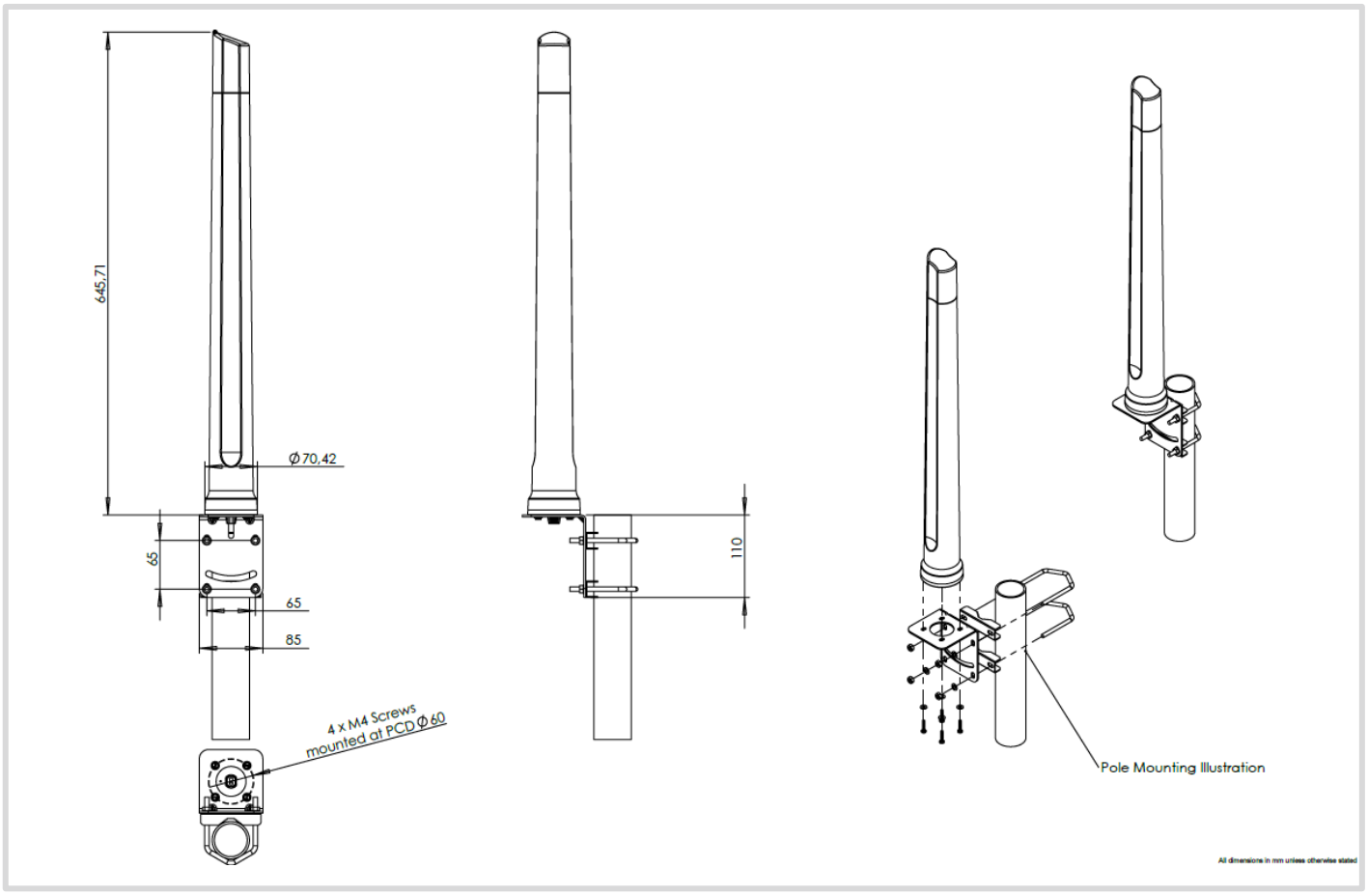
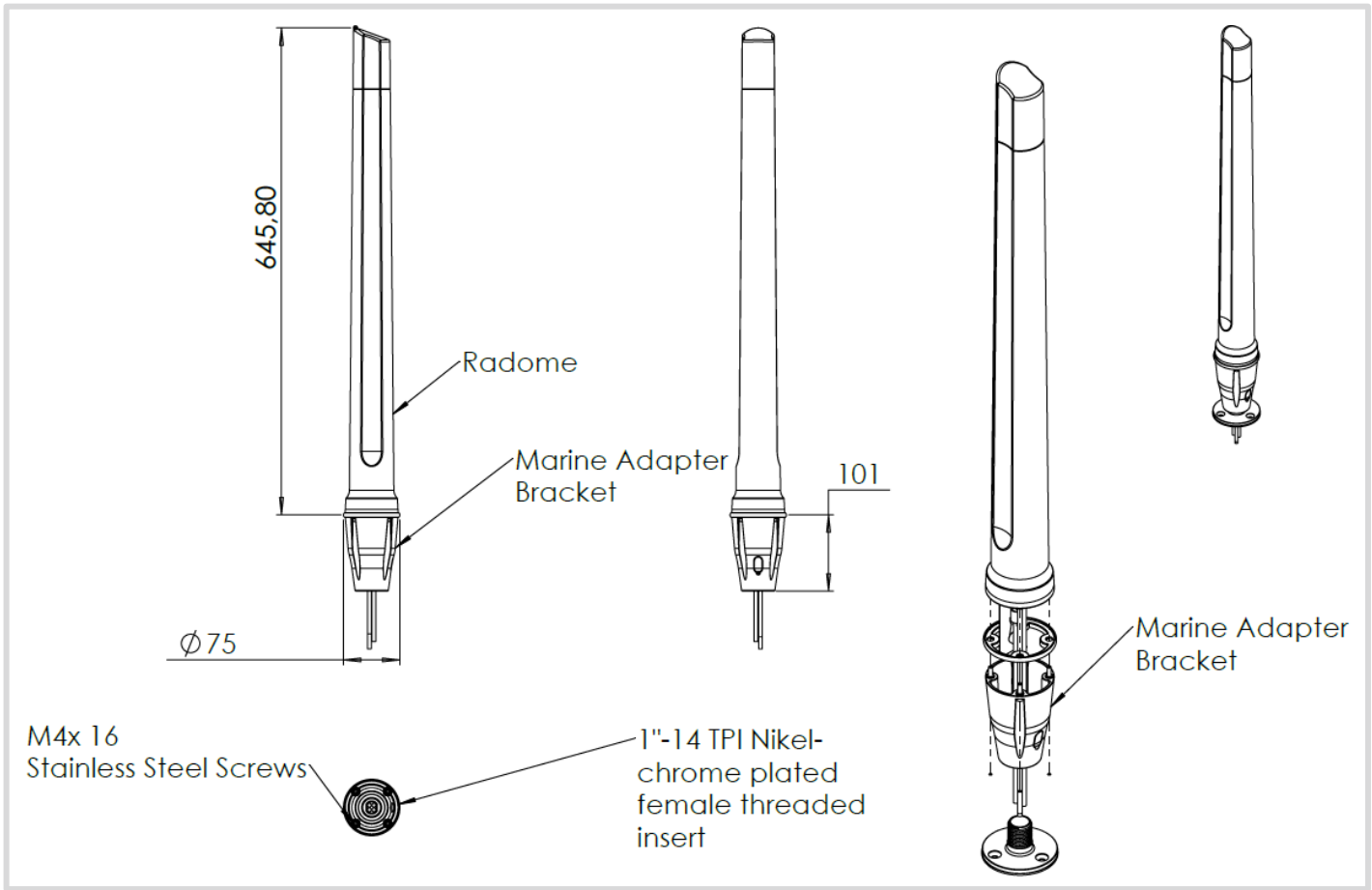
Technical Drawings





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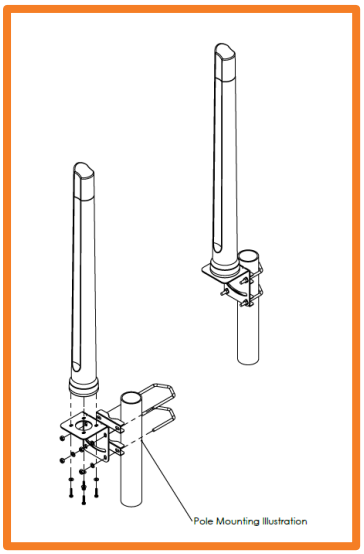
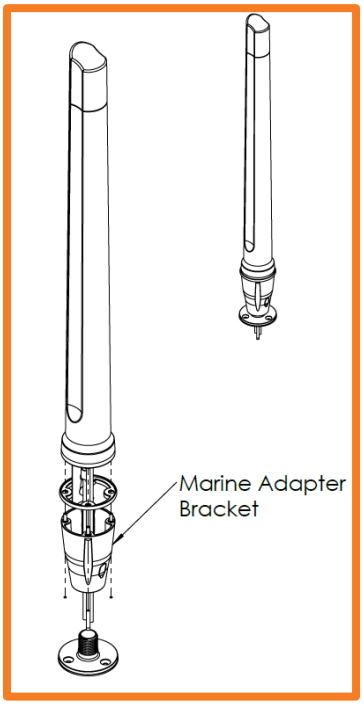
Mounting Options



Pole Mount

L-Bracket 316 Stainless Steel – included
(For Ø 30-50mm pole)



Marine Bracket Mount

1" -14 TPI female adapter – included
Mounts to standard marine brackets:
- BRKT-37: Flat Mount - Optional
- BRKT-38: Ratchet Mount - Optional
- BRKT-39: Rail Mount - Optional

See Optional Accessories below

Also available: BRKT-41 with 1.25" – 11TPI female adapter (Optional)

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Additional Accessories

BRKT-37

Marine flat mount antenna bracket 1"-14TPI 316 Stainless Steel

BRKT-38

Marine ratchet rail mount antenna bracket 1"-14TPI 316 Stainless Steel

BRKT-39

Heavy duty marine mount antenna bracket 1"-14TPI 316 Stainless Steel

See accessories technical specifications on www.poynting.tech

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