

**Broadband Antenna Experts**



Marine & Coastal  
**Industry Guide**

A summarised technical  
overview for various  
antennas & accessories



**Poynting**

Making wireless happen



## The Company

Poynting Antennas designs, manufactures and sells cellular antenna products and related equipment mainly to the telecommunications, broadcasting and related industries.

Established in 1990, Poynting has grown to become one of the leading antenna manufacturers in South Africa.

Poynting exists for advancing antenna applications: its name is derived from the Poynting vector, a directional measure of energy in an electromagnetic field.

Poynting was founded on the deep knowledge and understanding of the principles of electromagnetics, RF propagation, antenna design and development.

Poynting employees include graduate as well as professionally registered engineers with PhD doctorate level expert knowledge of the technology and the industry. Poynting has a legacy of innovative design and delivery with customers and partners worldwide.

## Footprint

Apart from South Africa, roughly 80% of total sales are International with the main markets being Europe, USA, Canada and Australia. International sales are fulfilled through long-standing distribution partners.

## Commitment to Quality

Poynting Antennas (Pty) Ltd is dedicated to ensure that its products and services fully meet the requirements of its customers at all times.

Poynting has a legacy of innovation, design and fulfilment, taking pride in its solid ethical approach. Innovation and creative independence, team spirit and continual learning ensures the organisation can respond to challenges with agility.

## Innovation

Poynting holds extensive Intellectual Property (IP) with over 50 registered designs, patents and trademarks filed to differentiate our products from competitive offerings.

Poynting R&D is constantly on the edge of novel innovation.

## Operations

With production facilities in Samrand, South Africa (for specialised and unique products), Poynting has established satellite manufacturing facilities in Shenzhen China (90% of all antenna productions) with strict quality and manufacturing metrics to ensure the integrity of product performance. International logistics and high volume supply are further streamlined from Shenzhen, China.

## International Sales and Business Development

Poynting has embarked on a long term strategy to expand its reach into the international arena. Poynting opened its office with full representation in Germany focusing on deepening the approach in Europe, Scandinavia and Eastern Europe.

In April 2021 we opened offices and a warehouse in the USA and with this expansion Poynting will be able to accelerate our growth and take on the huge demand for broadband antennas in the region.

Poynting is continuously improving – a careful and selective approach for growth in new markets and regions. We seek to promote our products and solutions worldwide and therefore seek distributors in regions where our market share is still small. Servicing new customers better, expanding the business in "undiscovered" regions with new and exciting products.

**"Making Wireless Happen", has become synonymous with Poynting.**

### Poynting - Marine & Coastal Solutions

Poynting offers a range of antennas that are designed specifically for marine environments where performance, quality, styling and weather protection is critical. This range of antennas is aimed at various types of marine applications, from; super yachts, commercial vessels, (river-) cruise ships, private yachts, towing-vessels and speed boats. These antennas can also be used in other applications with harsh environments such as harbour buildings, buoys, pontoons, and smaller boats. Other areas where these models of the Poynting Marine antenna solutions will be ideal, include anywhere along the coast-line, lake sides and other high humid areas.

The marine range of antennas are designed within Poynting's customary requirements of high performance, wide bandwidth and exceptional quality. This range is targeted at LTE and 5G reception at sea, as well as antennas to provide dual-band WiFi distribution at sea. Many of the marine antennas are 5G Ready, where they cover the 450MHz LTE/CDMA bands as well as the 3.5GHz LTE/CBRS bands which are starting to become available internationally. With these antennas, the yacht owner will not need to replace or upgrade their antennas to benefit from this new technology and frequency bands.

A Poynting marine antenna will help reduce on-board communication costs significantly, reduce latency and ensure a stable and reliable connection to carrier base stations. Join thousands of satisfied marine customers and do not compromise on this crucial part of your communication system.

**“Making Wireless Happen”, has become synonymous with Poynting.**



# CONTENTS



## 5

OMNI-291/OMNI-402/OMNI-403

## 6

OMNI-404/OMNI-493/OMNI-496

## 7

PUCK-2-W/PUCK-5-W/PUCK-12-W

## 8

MIMO-3- RANGE

## 9

WLAN-60/WLAN-61/XPOL-1-5G

## 10

XPOL-2-5G/ACCESSORIES

## 11

SELECTED GUIDELINES FOR  
INSTALLATION & MOUNTING



## OMNI-291

Primary Industry: **Marine & Coastal**  
 Secondary Industry: **Commercial & Industrial; Farming & Agricultural**

<b>Frequency:</b>	450-470; 698-960; 1710-2700 MHz
<b>Max Gain:</b>	7dBi
<b>Radiation Pattern:</b>	Omni-Directional
<b>MIMO:</b>	SISO
<b>Size (LxWxD):</b>	560mm x Ø75mm
<b>Connector Type:</b>	N-Type (F)



## OMNI-400

Primary Industry: **Marine & Coastal**  
 Secondary Industry: **Commercial & Industrial; IoT, M2M & Smart Meters; Farming & Agricultural**

<b>Frequency:</b>	698-960; 1710-2170; 2300-2700 MHz
<b>Max Gain:</b>	7.5dBi
<b>Radiation Pattern:</b>	Omni-Directional
<b>MIMO:</b>	SISO
<b>Size (LxWxD):</b>	555mm x Ø75mm



## OMNI-402

Primary Industry: **Marine & Coastal**  
 Secondary Industry: **Commercial & Industrial; IoT, M2M & Smart Meters; Farming & Agricultural**

<b>Frequency:</b>	410-470; 698-960; 1710-2700; 3400-3800 MHz
<b>Max Gain:</b>	6.2dBi
<b>Radiation Pattern:</b>	Omni-Directional
<b>MIMO:</b>	2X2 MIMO
<b>Size (LxWxD):</b>	750mm x Ø75mm





## OMNI-403

Primary Industry: **Marine & Coastal**  
 Secondary Industry: **Commercial & Industrial; IoT, M2M & Smart Meters; Farming & Agricultural**

<b>Frequency:</b>	698-960; 1710-2170; 2300-2700 MHz
<b>Max Gain:</b>	5dBi
<b>Radiation Pattern:</b>	Omni-Directional
<b>MIMO:</b>	SISO
<b>Size (LxWxD):</b>	252mm x Ø75mm



## OMNI-404

Primary Industry: **Marine & Coastal**  
 Secondary Industry: **Commercial & Industrial; IoT, M2M & Smart Meters; Farming & Agricultural**

<b>Frequency:</b>	698-960; 1710-2700; 3400-3800 MHz
<b>Max Gain:</b>	2dBi
<b>Radiation Pattern:</b>	Omni-Directional
<b>MIMO:</b>	SISO
<b>Size (LxWxD):</b>	252mm x Ø75mm



## OMNI-493

Primary Industry: **Marine & Coastal**  
 Secondary Industry: **Commercial & Industrial; IoT, M2M & Smart Meters; Farming & Agricultural**

<b>Frequency:</b>	617-960; 1427-1517; 1710 -2700; 3400-3800 MHz
<b>Max Gain:</b>	9dBi
<b>Radiation Pattern:</b>	Omni-Directional
<b>MIMO:</b>	SISO
<b>Size (LxWxD):</b>	646 mm x Ø75 mm (excl. BRKT-40)







## OMNI-496

Primary Industry: Marine & Coastal  
 Secondary Industry: Commercial & Industrial; IoT, M2M & Smart Meters; Farming & Agricultural

Frequency:	2400-2500; 3300-3800; 5000-6000 MHz
Max Gain:	7.5dBi
Radiation Pattern:	Omni-Directional
MIMO:	SISO
Size (LxWxD):	560mm x Ø75mm



## PUCK-2-W

Primary Industry: Transport & Mobility; Marine & Coastal; Commercial & Industrial; Mining & Tunnelling; IoT, M2M & Smart Meters; Farming & Agricultural

Frequency:	698-960; 1710-2700; 3200-3800 MHz
Max Gain:	6dBi
Radiation Pattern:	Omni-Directional
MIMO:	2X2 MIMO - 2-in-1 Antenna: 2 x LTE
Size (LxWxD):	Ø99.3mm x 36mm



## PUCK-5-W

Primary Industry: Transport & Mobility; Marine & Coastal; Commercial & Industrial; Mining & Tunnelling; IoT, M2M & Smart Meters; Farming & Agricultural

Frequency:	698-960; 1710-2700; 3200-3800; 5000-6000 MHz
Max Gain:	7.5dBi
Radiation Pattern:	Omni-Directional
MIMO:	2X2 MIMO - 5-in-1 Antenna: 2 x LTE, 2 x Wi-Fi, 1 x GPS
Size (LxWxD):	Ø99.3mm x 36mm





## PUCK-12-W

Primary Industry: Transport & Mobility; Marine & Coastal; Commercial & Industrial; Mining & Tunnelling; IoT, M2M & Smart Meters; Farming & Agricultural



Frequency:	2400-2500; 5000-6000 MHz
Max Gain:	7.5dBi Wi-Fi
Radiation Pattern:	Omni-Directional
MIMO:	2X2 MIMO - 2-in-1 Antenna: 2 x Wi-Fi
Size (LxWxD):	Ø99.3mm x 36mm



## MIMO-3

Primary Industry: Transport & Mobility; Marine & Coastal; Farming & Agricultural  
 Secondary Industry: Mining & Tunnelling; IoT, M2M & Smart Meters



Frequency:	410-470; 698-960; 1710-2700; 3400-3800; 5000-6000 MHz
Max Gain:	6dBi
Radiation Pattern:	Omni-Directional
MIMO:	2X2 MIMO; 4X4 MIMO
Size (LxWxD):	253mm x 144mm x 128mm

variants

MIMO-3-12	MIMO-3-13	MIMO-3-15 (Available in Black)
<b>2-in-1 Antenna</b> 2 x LTE;	<b>3-in-1 Antenna</b> 2 x LTE; 1 x GPS Glonass	<b>5-in-1 Antenna</b> 2 x LTE; 2 x Wi-Fi; 1 x GPS Glonass
410-470, 698-960, 1710-2700, 3400-3800, 5000-6000 MHz		
6.0dBi - Omni Directional (2x2 MIMO)		





## MIMO-3

Primary Industry: **Transport & Mobility; Marine & Coastal; Farming & Agricultural**  
 Secondary Industry: **Mining & Tunnelling; IoT, M2M & Smart Meters**



<b>Frequency:</b>	410-470; 698-960; 1710-2700; 3400-3800; 5000-6000 MHz
<b>Max Gain:</b>	6dBi
<b>Radiation Pattern:</b>	Omni-Directional
<b>MIMO:</b>	2X2 MIMO; 4X4 MIMO
<b>Size (LxWxD):</b>	253mm x 144mm x 128mm

variants

MIMO-3-14	MIMO-3-17 (Available in Black)
<b>5-in-1 Antenna</b> 4 x LTE; 1 x GPS Glonass	<b>7-in-1 Antenna</b> 4 x LTE; 2 x Wi-Fi; 1 x GPS Glonass
410-470, 698-960, 1710-2700, 3400-3800, 5000-6000 MHz	
6.0dBi - Omni Directional (4x4 MIMO)	



## WLAN-60

Primary Industry: **Commercial & Industrial**  
 Secondary Industry: **Marine & Coastal; Mining & Tunnelling; IoT, M2M & Smart Meters; Farming & Agricultural**



<b>Frequency:</b>	2400-2500; 3300-3800; 5000-6000 MHz
<b>Max Gain:</b>	18dBi
<b>Radiation Pattern:</b>	Uni-Directional
<b>MIMO:</b>	SISO
<b>Size (LxWxD):</b>	240mm x 240mm x 60mm



## WLAN-61

Primary Industry: **Commercial & Industrial**  
 Secondary Industry: **Marine & Coastal; Mining & Tunnelling; IoT, M2M & Smart Meters; Farming & Agricultural**



<b>Frequency:</b>	2400-2500; 5000-6000 MHz
<b>Max Gain:</b>	11dBi
<b>Radiation Pattern:</b>	Uni-Directional
<b>MIMO:</b>	4X4 MIMO
<b>Size (LxWxD):</b>	240mm x 240mm x 60mm



## XPOL-1-5G

Primary Industry: Commercial & Industrial; Urban & Rural  
 Secondary Industry: Mining & Tunnelling; IoT, M2M & Smart Meters; Farming & Agricultural

Frequency:	698-960; 1710-2700; 3400-3800 MHz
Max Gain:	3dBi
Radiation Pattern:	Omni-Directional
MIMO:	2X2 MIMO or 4X4 MIMO
Size (LxWxD):	247mm x 157mm x 88mm



## XPOL-2-5G

Primary Industry: Commercial & Industrial; Urban & Rural  
 Secondary Industry: Mining & Tunnelling; IoT, M2M & Smart Meters; Farming & Agricultural

Frequency:	698-960; 1710-2700; 3400-3800 MHz
Max Gain:	11dBi
Radiation Pattern:	Uni-Directional
MIMO:	2X2 MIMO
Size (LxWxD):	290mm x 265mm x 155mm (With Bracket)



## OPTIONAL ACCESSORIES

### BRKT - 37 -V2



Heavy Duty Stainless Steel Marine Flat Mount Antenna Bracket 1"-141  
 for OMNI 291, OMNI-400

### BRKT - 38



Heavy Duty Stainless Steel Marine Ratchet Rail Mount Antenna Bracket  
 for OMNI 291, OMNI-400

## BRKT - 39

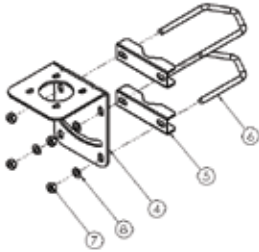


Heavy Duty Stainless Steel Marine Mount  
Antenna Bracket 1"-1.41  
for OMNI 291, OMNI-400

## ADAPTOR BASE & SEAL



## STAINLESS STEEL BRACKET ASSEMBLY



## ALLEN CAP SCREW, ALLEN KEY & LOCKING NUT



## CABLES

### CAB

CAB-47		CAB, 5m HDF-195 Low Loss cable N(m) to SMA(m)
CAB-49		CAB, 10m HDF-195 Low Loss cable N(m) to SMA(m)
CAB-92		5m twin HDF-195 Low Loss Cable SMA(m)-SMA(f)
CAB-109		10m twin HDF-195 Low Loss Cable SMA(m)-SMA(f)

### SELECTED GUIDELINES FOR INSTALLATION & MOUNTING

- Mount antennas as high as possible, but at the same time as close as possible to your cellular router
- When mounting 2 Single Input, Single Output antennas (e.g. OMNI-291), please ensure that the distance between antennas is 60cm or more. The more the better, however there is always a compromise.
- Please be aware that cables will have a loss. The longer the cable the more loss. We advise you to consider low loss cables when the distance is more than 10m to maximum 15m between the antenna and the cellular router.
- Please try to ensure there is quite some free space around our antenna.
- Please contact your Poynting antenna supplier for technical support and advice.



A ship rolls to  $10^\circ$  on moderate seas, either way, sometime more (vessel and sea conditions)

Antenna Gain of 9 dBi  $\Rightarrow$   $12^\circ$  Antenna elevation beam-width  $\Rightarrow$  allows for  $+6^\circ$  roll and  $-6^\circ$  roll either way.

Antenna gain of 4 to 7 dBi  $\Rightarrow$   $20^\circ$  to  $40^\circ$  elevation beam-width  $\Rightarrow$  allows for  $10^\circ$  to  $20^\circ$  roll either way.

Gain too high = overshooting the target base stations on shore  
Gain too low = inefficiency

**Antenna Gain is an important aspect when choosing an Antenna.**



## NOTES

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