MIMO-8-841

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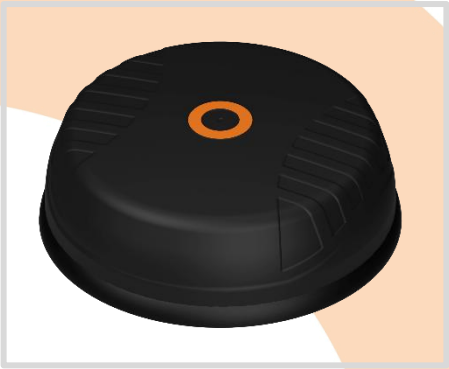
ANTENNAS | MIMO-8 SERIES

13-IN-1 TRANSPORTATION & AUTOMOTIVE ANTENNA

410 – 6000 MHz, 8.3 dBi; Cellular 8x8 MIMO, 9.3 dBi; Wi-Fi 4x4 MIMO, 1 x GNSS; 20dB



410 – 470 MHz
617 – 960 MHz
1427 – 1517 MHz
1710 – 2700 MHz
3300 – 4200 MHz
5000 – 6000 MHz

CELL: 8.3 dBi
Wi-Fi: 9.3 dBi
GNSS: 20 dB

Increase X Mb/s

Omni-Directional

5G Coverage

4G LTE

2.4 – 2.5 GHz
5.0 – 7.2 GHz

CBRS Band

8x8 MIMO

-40°C to +80°C

IP 69K

GNSS Included

APPLICATION AREAS

Vehicle

Marine

Urban

Internet of Things

- **13-in-1 High-performance multi-frequency automotive antenna**
- **Ultra-wideband coverage from 410 to 6000 MHz for cellular**
- **8x8 MIMO LTE/5G, 4x4 MIMO Wi-Fi & GNSS**
- **Antenna supports Private 5G/5G/4G/3G/2G/Wi-Fi-6e/Wi-Fi-7/LoRa/Bluetooth**
- **Robust and weather-resistant antenna with an IP 69K rating**
- **Ideal for transportation and marine implementation**
- **Multiple mounting options available for ease of installation**

Product Overview

The MIMO-8-841 is a high-performance 13-in-1 antenna system that integrates eight ultra-wideband cellular elements, four tri-band Wi-Fi antennas, and a dual-band GNSS antenna within a single rugged enclosure. Designed for high-bandwidth, data-intensive, and mission-critical applications, the MIMO-8-841 is purpose-built for modern multi-port 5G routers with four or more cellular ports, including devices with eight cellular ports, dual 4-port 5G modems, or two independent 4-port routers operating simultaneously.

The eight cellular elements provide an 8×8 MIMO configuration with wideband coverage from 410 to 6000 MHz, supporting all contemporary 4G/LTE and 5G bands for future-proof deployments. The ultra-wideband performance enables seamless operation across multiple network operators and technologies, making it ideal for carrier aggregation and high throughput 5G applications up to 6 GHz, as well as advanced Wi-Fi use cases from 5 to 7.2 GHz.

The four tri-band Wi-Fi antennas offer concurrent 2.4 GHz and 5 to 7.2 GHz operation, fully supporting Wi-Fi 6E and Wi-Fi 7 to deliver increased capacity, lower latency, and improved performance within the 6 GHz spectrum—particularly beneficial for applications requiring strong internal and external Wi-Fi coverage. The dual-band GNSS antenna enhances navigation performance by providing fast, accurate, and reliable location tracking even in challenging environments.

Designed for environments where maximum throughput, reliability, and continuous connectivity are non-negotiable, the MIMO-8-841 delivers a comprehensive, high-performance communication solution in a single, rugged enclosure.

Features

- Ultra-Wide Frequency Coverage: Cellular antennas (410 to 6000 MHz) and tri-band Wi-Fi (2.4 GHz, 5 GHz & 6 GHz)
- High Gain Performance: Peak gain of 8.3 dBi for strong signal strength and reliable connectivity
- Features 8 x cellular, 4 x Wi-Fi and 1 x GNSS antenna
- Durable Construction: IK10 and IP69K ratings for protection against impacts and environmental factors
- Ground plane independent: Ensures consistent performance on any surface
- Multiple mounting options available

Application Areas

- Mobility & Transportation: High-speed 5G, Wi-Fi, and GNSS for buses, trucks, public safety and fleet vehicles
- Broadcasting & Media: Reliable connectivity for broadcasting trucks and mobile production vans
- Marine Sector: Robust cellular, Wi-Fi, and GNSS for vessels and offshore platforms
- IoT, Industrial & Temporary Deployments: Supports high-throughput IoT, smart logistics, construction sites, events, and emergency setups

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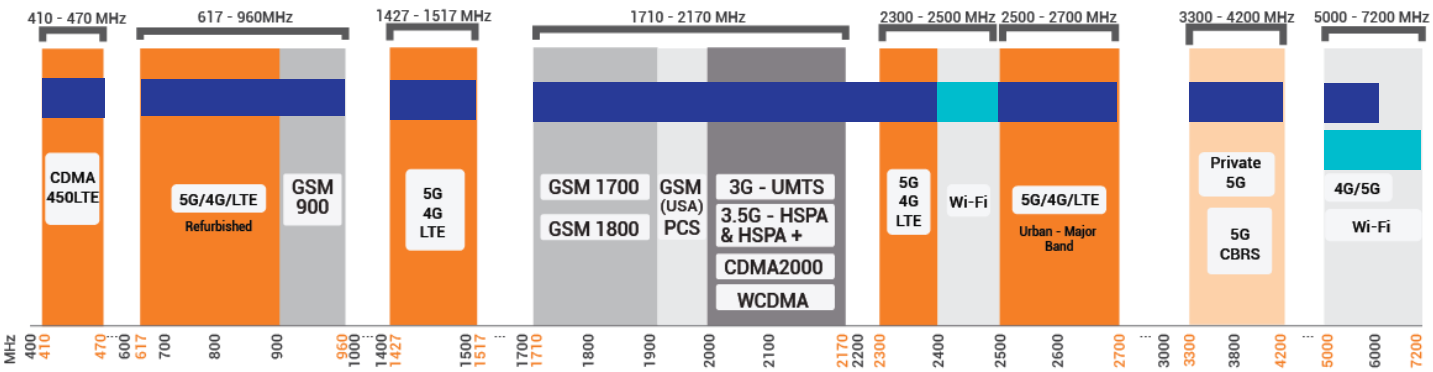
Frequency Bands

The MIMO-8-841 is an Omni-directional antenna that works from 410 – 470 MHz | 617 – 960 MHz | 1427 – 1517 MHz | 1710 – 2700 MHz | 3300 – 4200 MHz | 5000 – 6000 MHz | and the following Wi-Fi frequency bands | 2400 – 2500 MHz | and | 5000 – 7200 MHz |



Indicates the 5G/LTE bands on which MIMO-8-841 works Indicates the WI-FI bands on which MIMO-8-841 works

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Antenna Derivatives

Product Order Code (SKU)	A-MIMO-0008-V1-841-B	A-MIMO-0008-V1-841-W
Radome Colour	Black	White
Radome Material	PC+ABS (Halogen Free)	UV Stable ASA
Ports	13	13
SISO/MIMO	8x8 MIMO - 5G 4x4 MIMO - Wi-Fi SISO - GNSS	8x8 MIMO - 5G 4x4 MIMO - Wi-Fi SISO - GNSS
Coax Cable Type	RTK-031 – CELL, Wi-Fi & GNSS	RTK-031 – CELL, Wi-Fi & GNSS
Coax Cable Length	2m – CELL, Wi-Fi & GNSS	2m – CELL, Wi-Fi & GNSS
Connector Type	Cellular: SMA (M) Wi-Fi: RP-SMA (M) GNSS: SMA (M)	Cellular: SMA (M) Wi-Fi: RP-SMA (M) GNSS: SMA (M)
EAN	6009710929339	6009710929810
E-Mark Certification Number	E1*10R07/00*10901*00	E1*10R07/00*10901*00

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

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Electrical Specifications - Cellular

Frequency Bands:	410 – 470 MHz 617 – 960 MHz 1427 – 1517 MHz 1710 – 2700 MHz 3300 – 4200 MHz 5000 – 6000 MHz
Gain (Max):	-4 dBi @ 410 – 470 MHz -1 dBi @ 617 – 960 MHz 3 dBi @ 1427 – 1517 MHz 8 dBi @ 1710 – 2700 MHz 8.3 dBi @ 3300 – 4200 MHz 8 dBi @ 5000 – 6000 MHz
VSWR:	<2:1 across 95% of the bands
Feed Power Handling:	10 W
Input Impedance:	50 Ohm (nominal)
Polarisation:	Linear Vertical
Coax Cable Loss:	0.39 dB/m @ 400 MHz 0.54 dB/m @ 900 MHz 0.68 dB/m @ 1500 MHz 0.79 dB/m @ 1800 MHz 1.09 dB/m @ 3000 MHz 1.65 dB/m @ 5800 MHz
DC Short:	Yes

Electrical Specifications - GNSS

Frequency Range (GPS):	L1: 1575.42 MHz L5: 1176.45MHz
LNA Gain:	20±2 dB
VSWR:	<2:1
DC Voltage:	2.7-5 V
Operating Current:	<15mA
Nominal Impedance:	50 Ω
Polarisation:	RHCP
Out of Band Rejection:	1575 MHz ± 25 MHz: 40dBc min 1176 MHz ± 25 MHz: 40dBc min
Coax Cable Loss:	0.68 dB/m @ 1500 MHz

Electrical Specifications - Wi-Fi

Frequency:	2400 - 2500 MHz 5000 – 7200 MHz
Gain (Max):	6.6 dBi @ 2400 - 2500 MHz 9.3 dBi @ 5000 - 7200 MHz
VSWR:	< 2:1
Feed Power Handling:	10 W
Nominal Input Impedance:	50 Ohm (nominal)
Coax Cable Loss:	0.91 dB/m @ 2400 MHz 1.65 dB/m @ 5800 MHz
Path to Ground:	Yes

Product Box Contents

Antenna:	A-MIMO-0008-V1-841
Mounting Accessories:	M30 Threaded Spigots (60mm and 120mm), Wall/ Pole Mount foam insert, Adhesive Surface Mount Foam & Magnet Mount Foam
Fasteners:	4 x M6x12mm Cap Screws

Mechanical Specifications

Product Dimensions:	Ø268 mm x 84.8 mm (Incl. base seal)
Packaged Dimensions:	324 x 279 x 202 mm
Weight:	1.58 kg
Packaged Weight:	2.58 kg
Mounting Type*:	Spigot, Surface & Optional Pole/Wall and Magnet Mounting

Environmental Specifications, Certification & Approvals

Wind Survival:	≤220 km/h
Temperature Range (Operating):	-40°C to +80°C
Environmental Conditions:	Outdoor/Indoor
Water Ingress Protection Ratio/Standard:	IP 69K
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 RoHS standards

Pole/wall mount for non-mobility applications

****IK 08 for pole/wall mount options***

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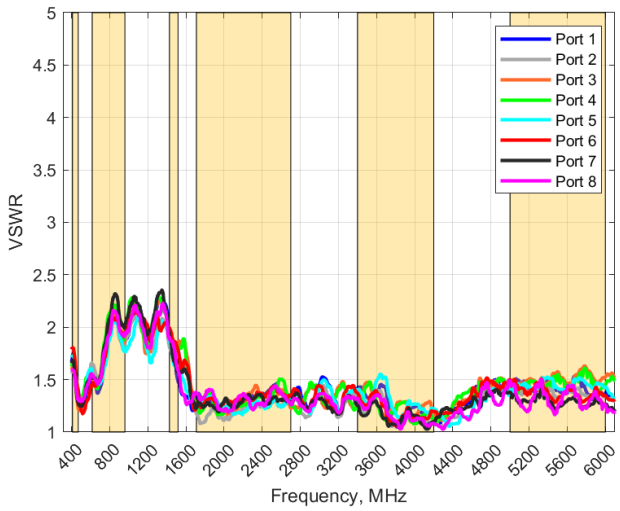
Antenna Performance Plots

VSWR: Cellular Antenna



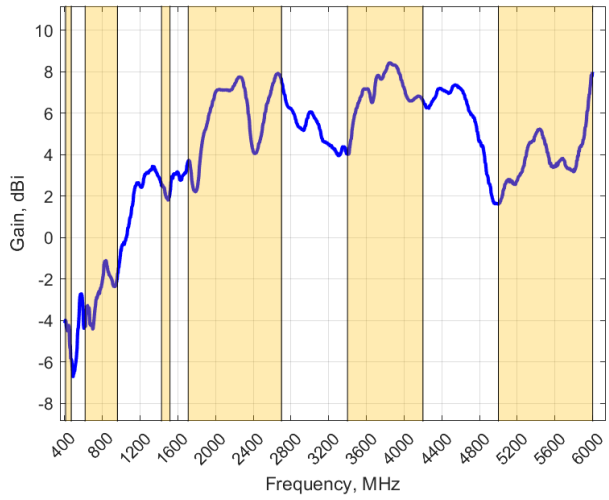
Voltage Standing Wave Ratio (VSWR)*

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 MIMO-8-841 delivers superior performance across all bands with a VSWR of <2:1 across 95% of the bands.

*VSWR measured with 2m low loss cable.

GAIN (EXCLUDING CABLE LOSS): Cellular Antenna



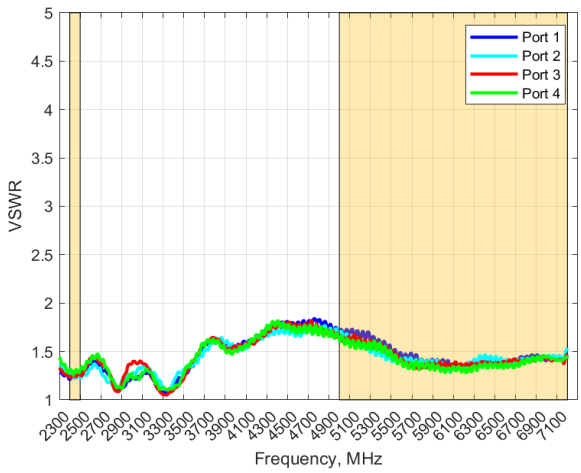
Gain+ in dBi

8.3 dBi is the peak gain across all bands from 410 – 6000 MHz

Gain @ 410 – 470 MHz:	-4 dBi
Gain @ 617 – 960 MHz:	-1 dBi
Gain @ 1427 – 1517 MHz:	3 dBi
Gain @ 1710 – 2700 MHz:	8 dBi
Gain @ 3300 – 4200 MHz:	8.3 dBi
Gain @ 5000 – 6000 MHz:	8 dBi

+Antenna gain measured with polarisation aligned standard antenna on a 600mm ground plane.

VSWR: Wi-Fi Antenna



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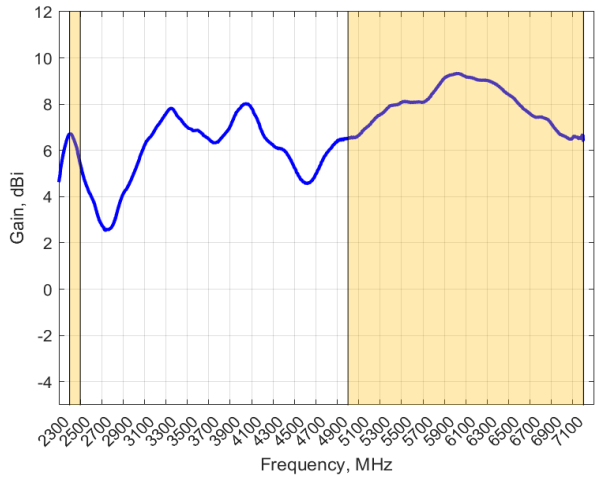
*VSWR measured with 2m low loss cable.

GAIN (EXCLUDING CABLE LOSS): Wi-Fi Antenna



Gain+ in dBi

9.3 dBi is the peak gain across all bands from 2400 – 2500 MHz and 5000 – 7200 MHz

Gain @ 2400 - 2500 MHz:	6.6 dBi
Gain @ 5000 – 7200 MHz:	9.3 dBi

+Antenna gain measured with polarisation aligned standard antenna on a 600mm ground plane.

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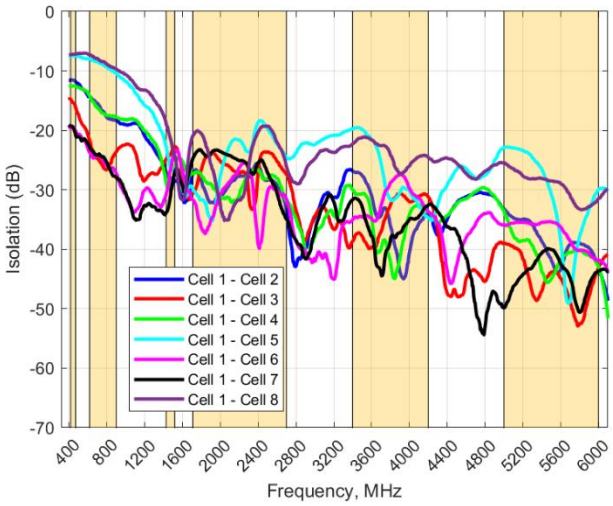
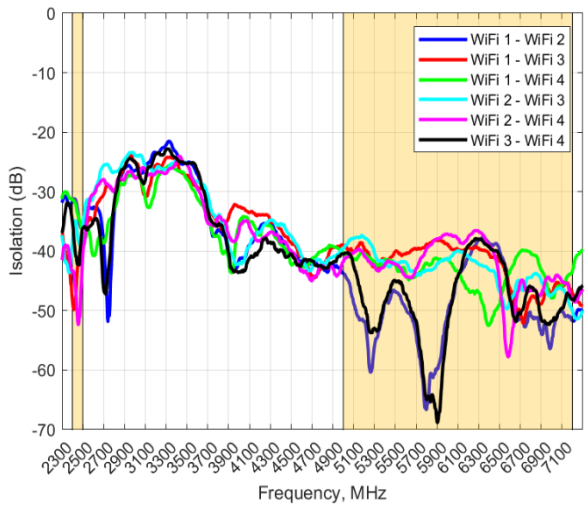
ISOLATION: Cellular Antenna



Isolation

Isolation is a measure of how much energy from one port leaks into another port undesirably. Isolation of 0 dB between 2 ports means that there are no isolation and the energy from 1 port excitation is visible on another port. Isolation of -30 dB or more means that <0.1% of 1 port's energy is leaked into another. A good isolation is under -10 dB.

ISOLATION: Wi-Fi Antenna



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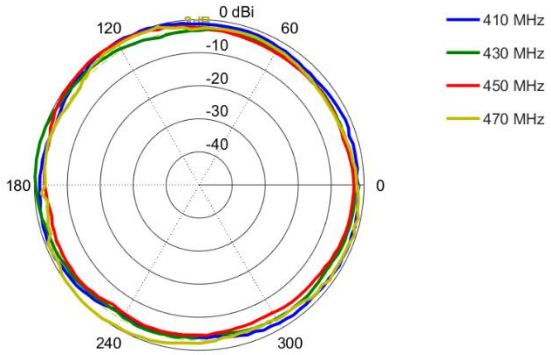
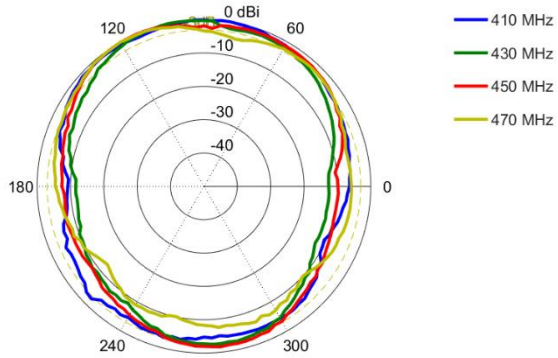
Radiation Patterns – Cellular

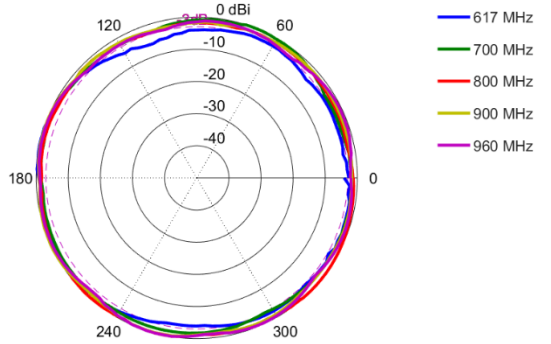
Azimuth: 410 – 470 MHz



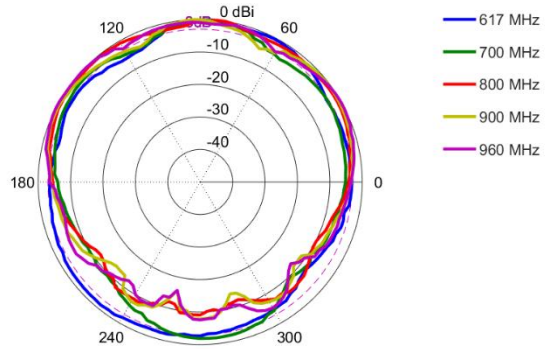
Elevation: 410 – 470 MHz



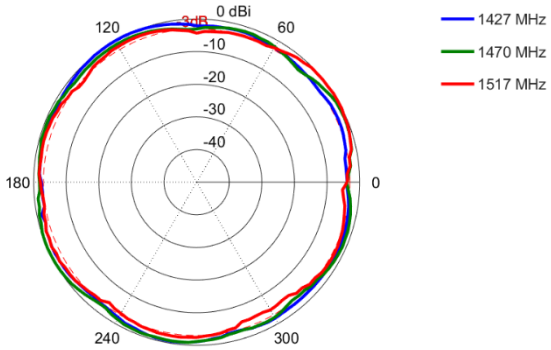
Azimuth: 617 – 960 MHz



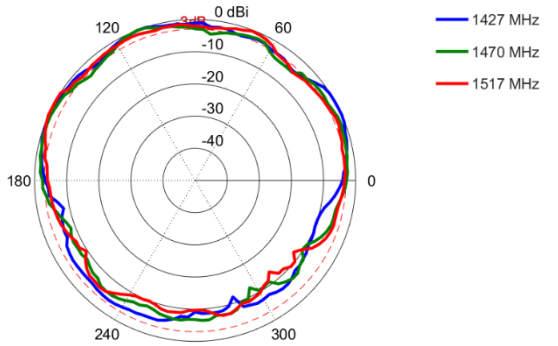
Elevation: 617 – 960 MHz



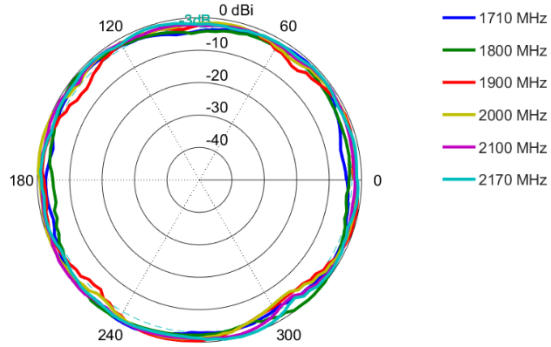
Azimuth: 1427 –1517 MHz



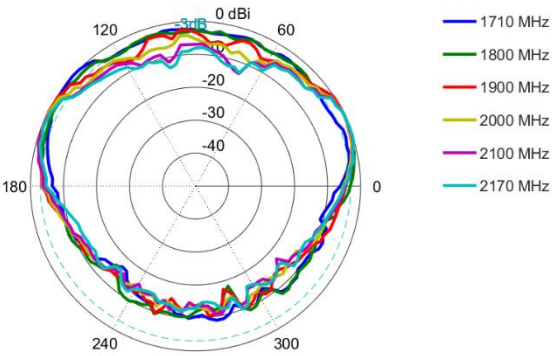
Elevation: 1427 – 1517 MHz



Azimuth: 1710 – 2170 MHz



Elevation: 1710 – 2170 MHz



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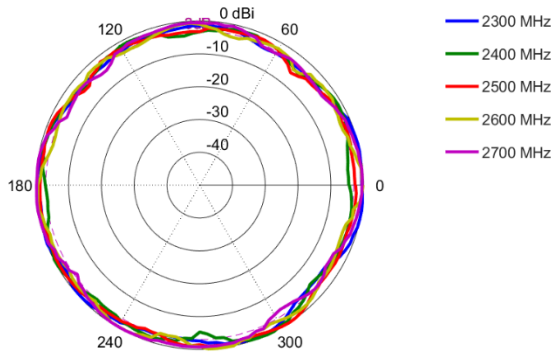
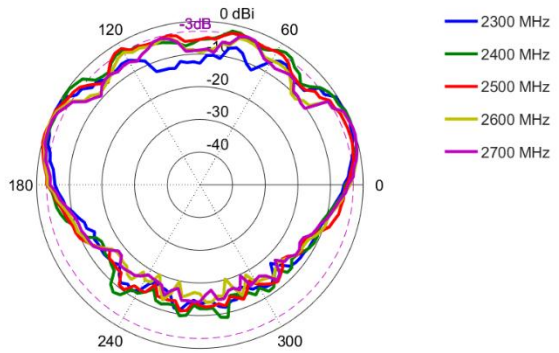
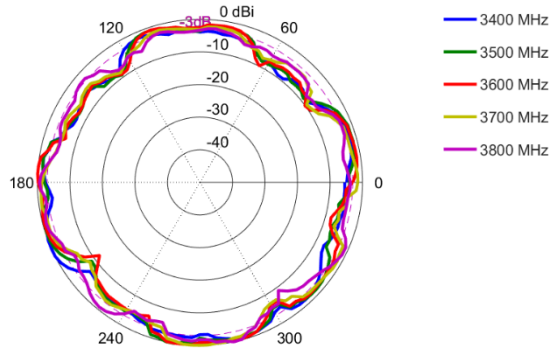
Azimuth: 2300 – 2700 MHz



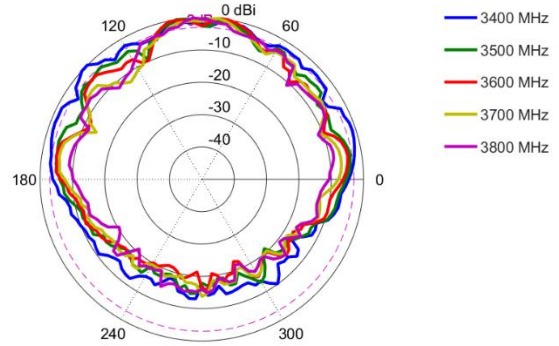
Elevation: 2300 – 2700 MHz



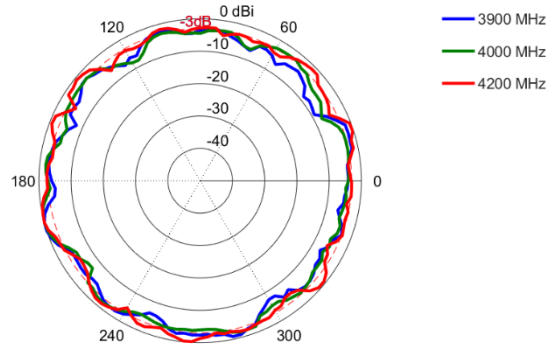
Azimuth: 3400 – 3800 MHz



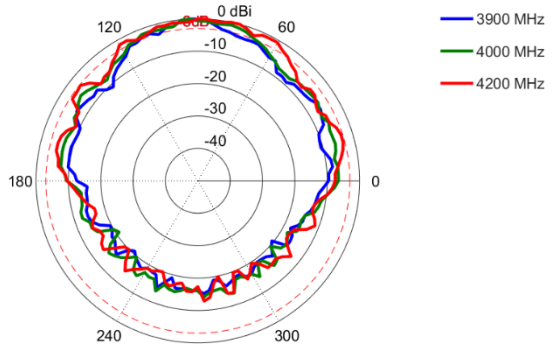
Elevation: 3400 – 3800 MHz



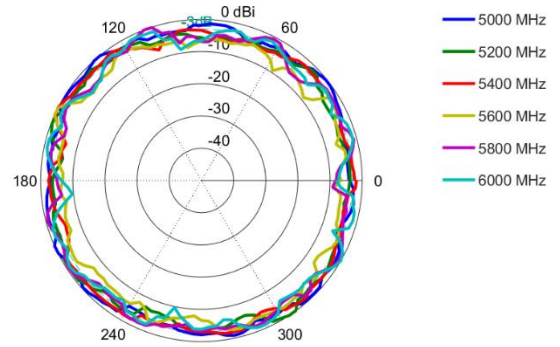
Azimuth: 3900 – 4200 MHz



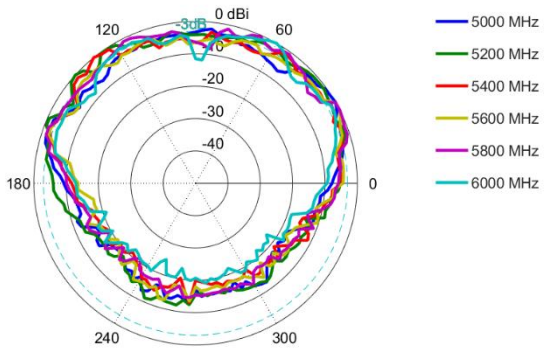
Elevation: 3900 – 4200 MHz



Azimuth: 5000 – 6000 MHz



Elevation: 5000 – 6000 MHz



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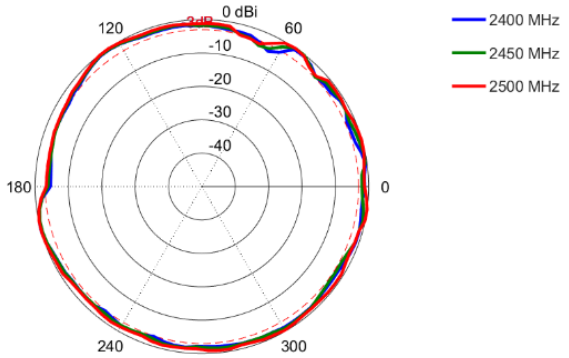
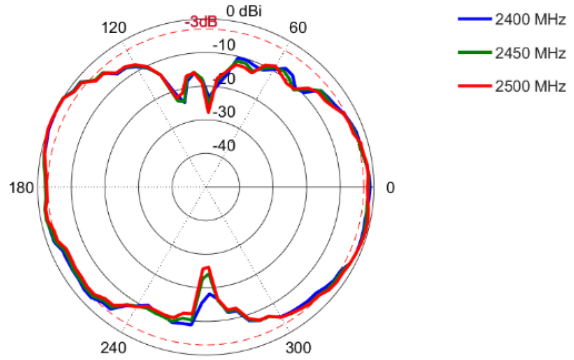
Radiation Patterns – Wi-Fi

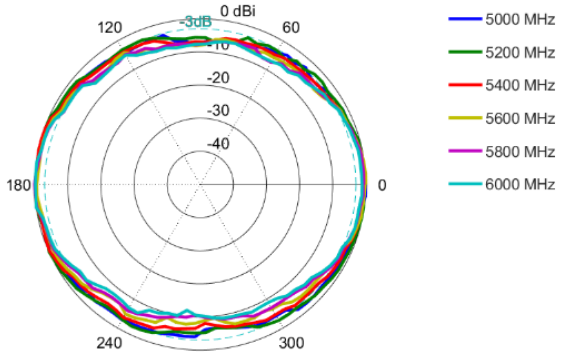
Azimuth: 2400 – 2500 MHz



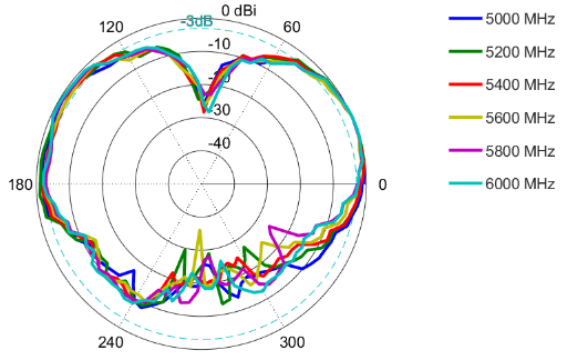
Elevation: 2400 – 2500 MHz



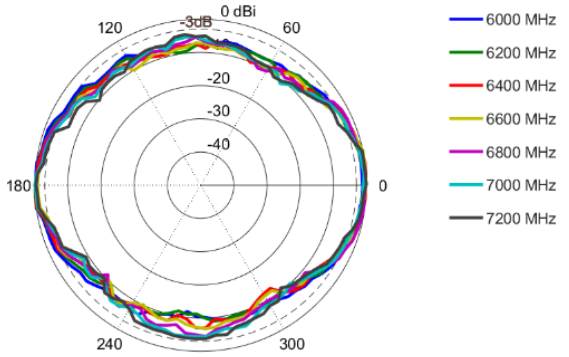
Azimuth: 5000 – 6000 MHz



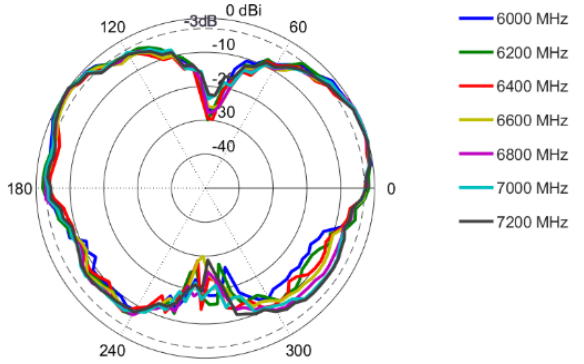
Elevation: 5000 – 6000 MHz



Azimuth: 6000 – 7200 MHz



Elevation: 6000 – 7200 MHz



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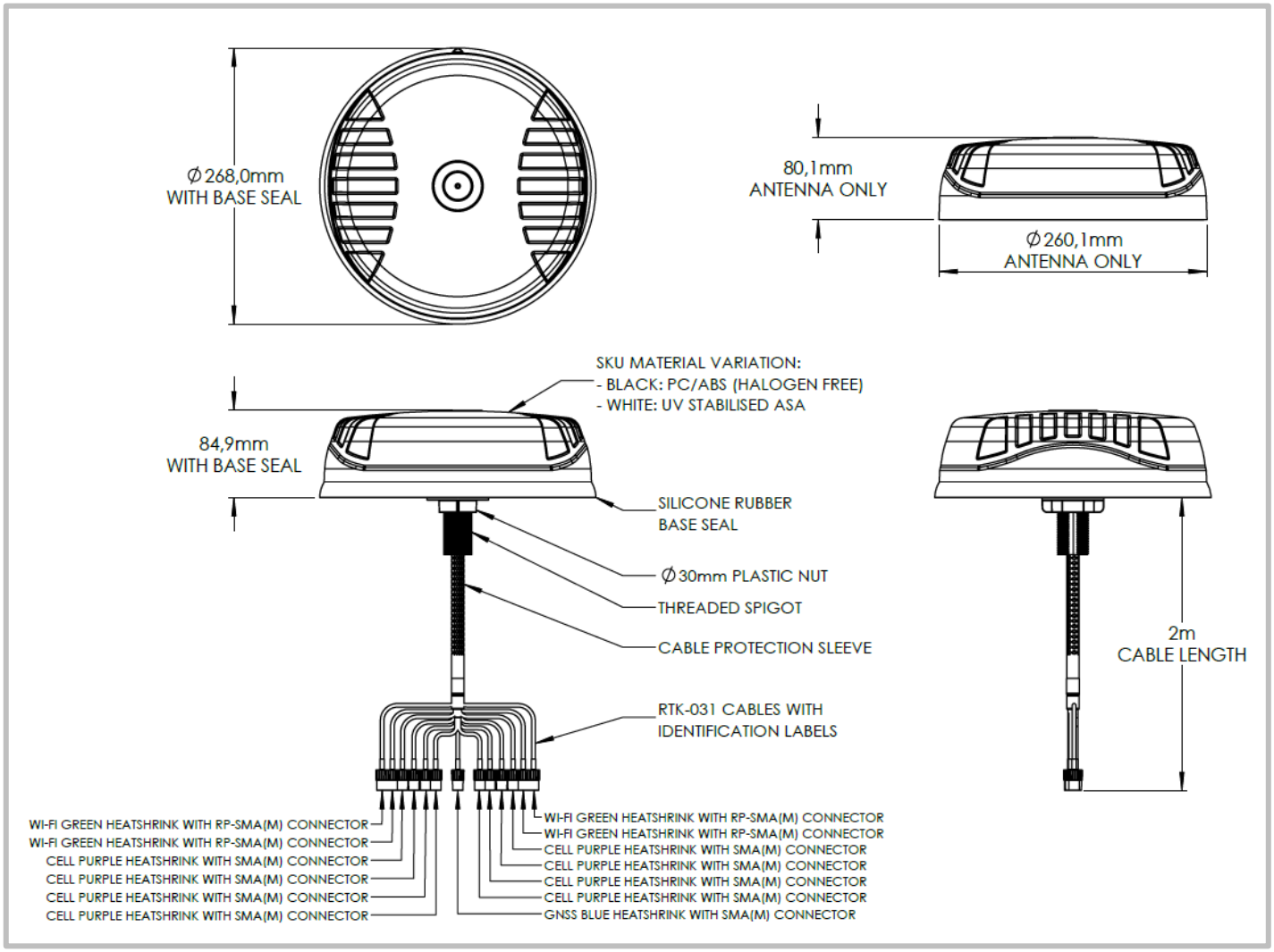
Technical Drawing



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Product Specifications may change without prior notice
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Regulatory Compliance: RoHS 2011/65/EU Compliant | ISO 9001:2015
Document version: TS-A-MIMO-0008-V1-841 REV 1.0
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Mounting Options

Surface Mount

Adhesive surface mount foam (included) to directly secure the antenna to a surface.

Spigot Mount

Long and Short Threaded Spigots and Ø30mm Plastic nut (included) to directly secure the antenna to a surface.

Long Spigot: M30 x 120mm

Short Spigot: M30 x 60mm

Magnet Mount (Optional)

Magnetic Base Kit (MBK-5 Not provided)

For temporary and low-mobility installations.

MBK-5 Description: Gripper Magnet M6 66 x 8.5 mm, M6 Thread Neodymium Magnet set.

Qty 4.

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Mounting Options

Pole Mount (Optional)

Vertical/ Horizontal Pole mounting using the bracket **A-BRKT-095-V1-01** (Not provided)

Wall Mount (Optional)

Wall mounting using the bracket **A-BRKT-095-V1-01** (Not provided)

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Additional Accessories

CAB-119-13-RP 3m Cable Assembly (Optional)

One end: 9 x SMA (Female)- for Cellular & GPS and 4 x RP-SMA (Female) - for Wi-Fi connectors

Other end: 9 x SMA (Male)- for Cellular & GPS and 4 x RP-SMA (Male) - for Wi-Fi connectors.

See accessories technical specifications on www.poynting.tech

CONTACT POYNTING

Poynting Antennas (Pty) Ltd - Head Office
Unit 4, N1 Industrial Park,
Landmarks Avenue,
Samrand, 0157, South Africa
Phone: +27 (0) 12 657 0050
E-mail: info@poynting.tech
International Email: sales-global@poynting.tech

Poynting Europe
Regus Business Center Neue Messe Riem
Kronstadter Straße 4
81677 München
Germany
Phone: +49 89 7453 9002
E-mail: sales-europe@poynting.tech

Poynting USA
1804 Owen Court, Suite 104,
Mansfield,
TX 76063
USA
Phone: +1 817 533-8130
E-mail: sales-us@poynting.tech