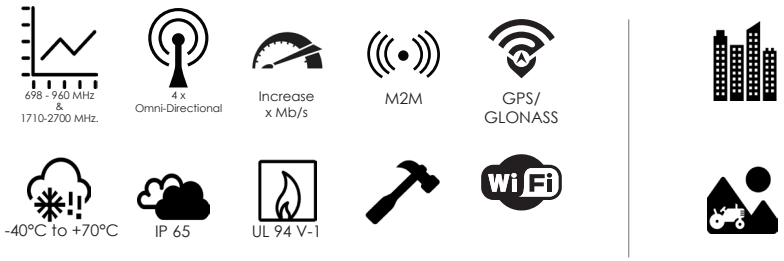
MIMO -1

5 - IN - 1 MIMO LTE/GPS/WI-FI ANTENNA



- **5 in 1 futureproof high performance multi frequency antenna**
- **Backwards compatible with 3G and 2G technologies**
- **2 x MiMo Wi-Fi dual band**
- **2 x MiMo LTE**
- **GPS & GLONASS**
- **Robust antenna**
- **Vandal and water resistant**
- **Increased connectivity stability**

Product Overview

The MIMO-1 incorporates 5 antennas in a single rugged low profile antenna housing. Two LTE/4G/3G antennas covering all cellular bands and also achieves MIMO data speed increases since the two antennas provide space and pattern diversity. Similarly two dual band Wi-Fi antennas give blistering speeds at both 2.4 and 5GHz and full MIMO advantage. The fifth antenna is a high performance active GPS/GLONASS module operating down to -40 degrees.

The antenna exceeds the performance of most competitors due to the care of attention to radiation patterns of all radiators. An excellent compromise between omnidirectionality, pattern diversity and good radiation at low (horizontal) angles is achieved. Main applications are for industrial vehicles, M2M and other IoT using a range of radio technologies.

Features

- Advanced antenna engineering with exceptional radiation pattern and gain
- Cleverly designed decorrelated antennas give superior MIMO performance in Wi-Fi and cellular bands
- Above features maintained from 698MHz to 5800MHz in relevant bands
- Careful mechanical design provides ruggedness, water and corrosion resistance

Application areas

- 4G to Wi-Fi internet on busses, trains etc
- Linking public vehicles to data networks
- Trucks, tractors and other industrial vehicles for control and communications
- M2M to ATMs, vending machines, modems, smart meters, industrial inclosures
- Asset tracking (containers etc)

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Regulatory Compliance: RoHS 2011/65/EU Compliant | ISO 9001:2008
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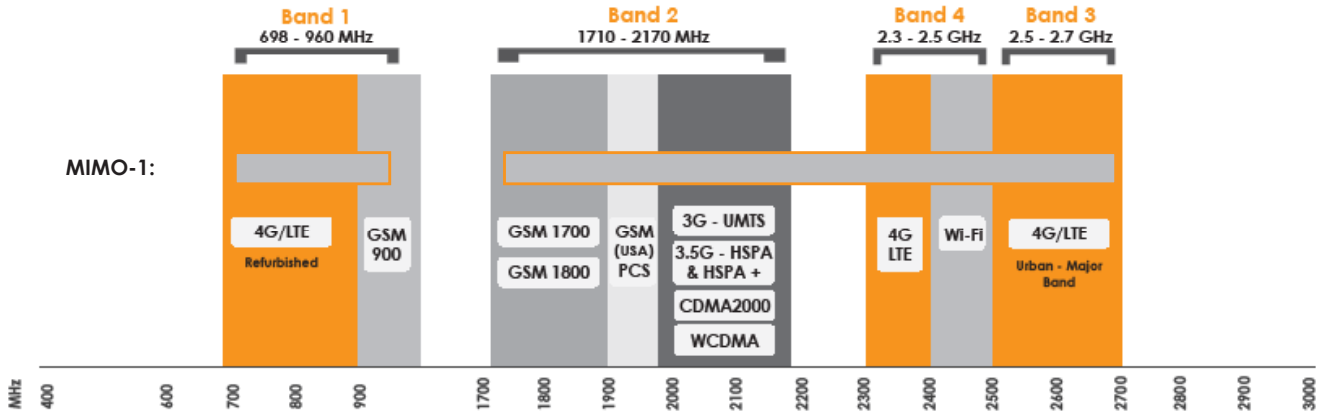
Frequency bands - Cellular

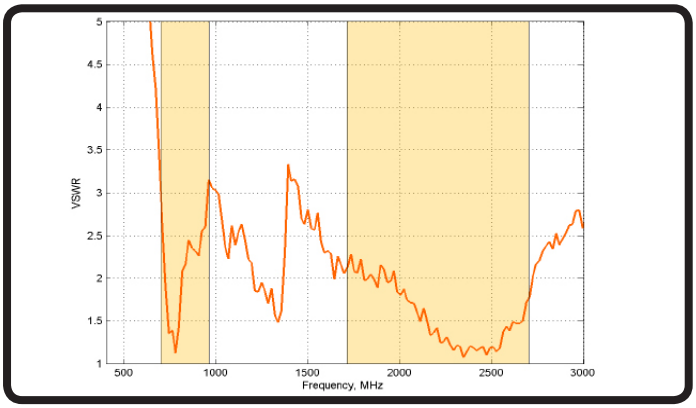
The MIMO-1 works on the 698 - 960 MHz, 1710 - 2700 MHz

Indicates the bands on which this antenna works

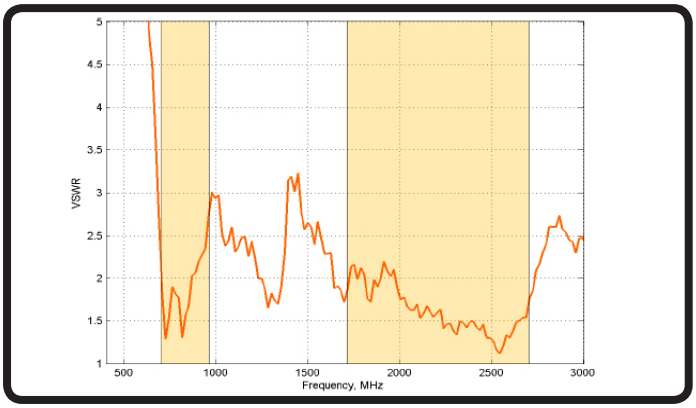


Antenna Performance Plots - Cellular

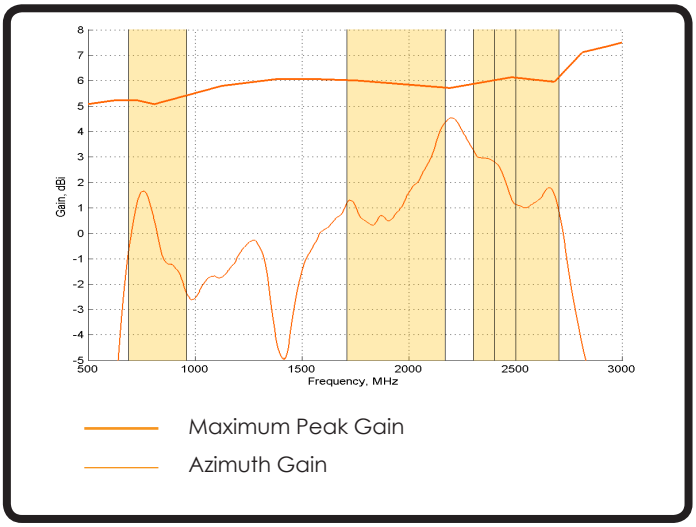
VSWR: PORT 1 - Cellular Antenna



VSWR: PORT 2 - Cellular Antenna



Gain : MIMO-1 Cellular Antenna (excluding cable loss)



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-1 delivers superior performance accross all bands with a VSWR of 3:1 or better.

Gain* in dBi

4.5 dBi is the peak gain across all bands from 698 - 2700 MHz

Gain @ different bands: Band 1	1.8dBi @ 690-960MHz
Gain @ different bands: Band 2	4.5dBi @1710-2700MHz

*Measured on a 40cm x 40cm ground plane

* Measured with 1m low loss cable
* Measured on a 40cm x 40cm ground plane

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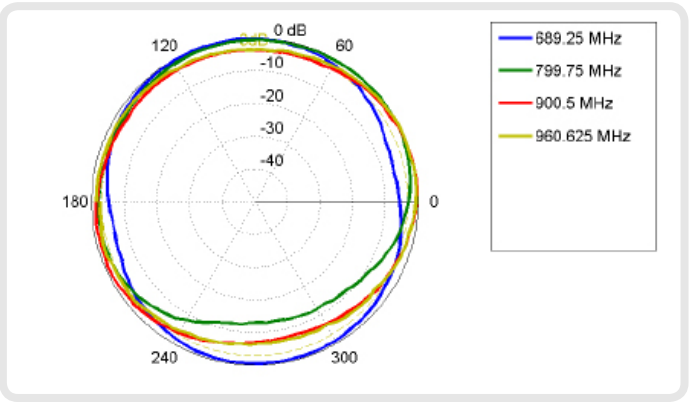
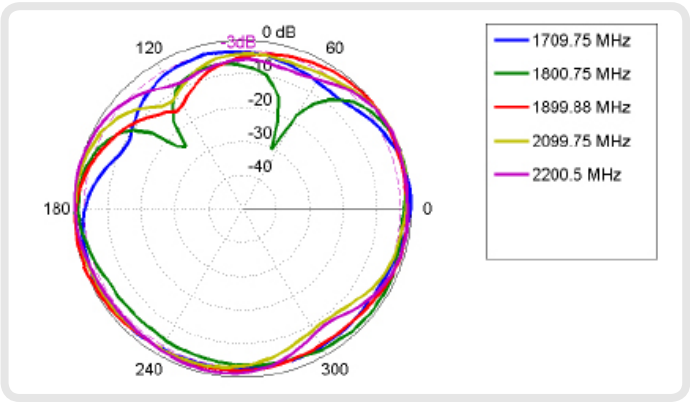
Radiation Patterns - Cellular

Port 1:

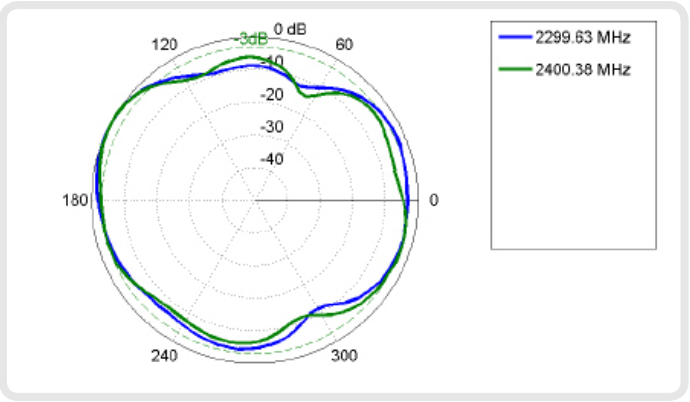
Azimuth 690 - 960:



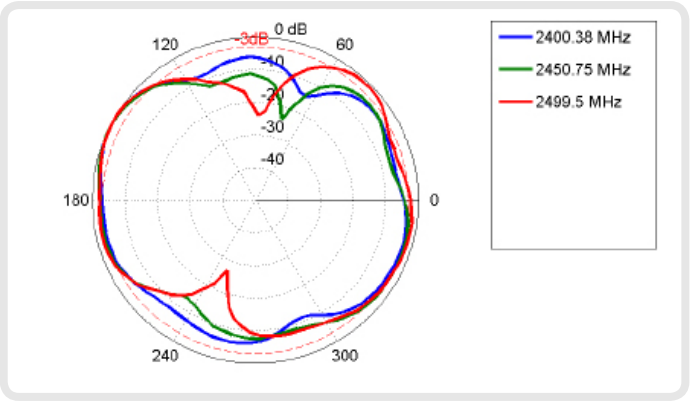
Azimuth 1710 - 2200:



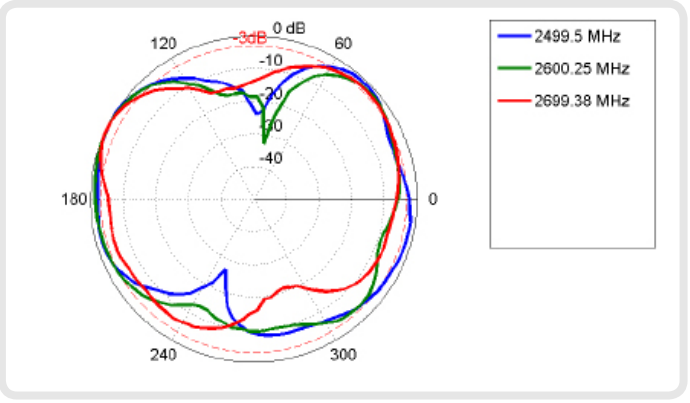
Azimuth 2300 - 2400:



Azimuth 2400 - 2500:



Azimuth 2500 - 2700:



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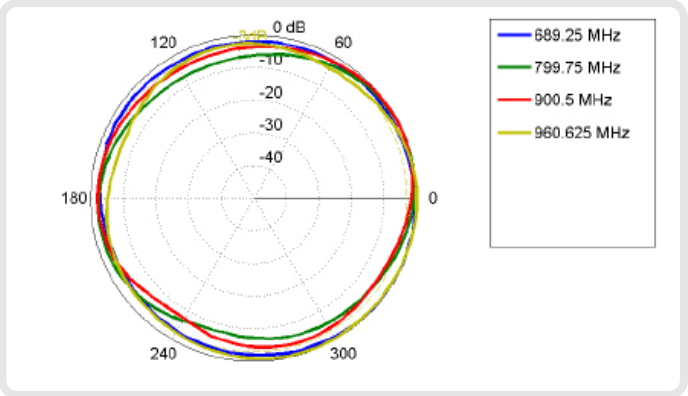
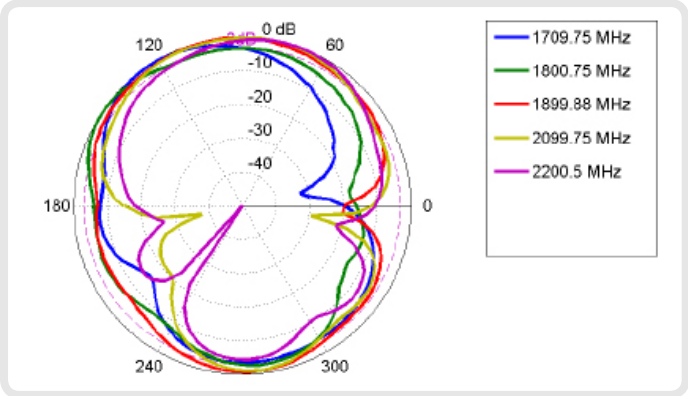
Radiation Patterns - Cellular

Port 2:

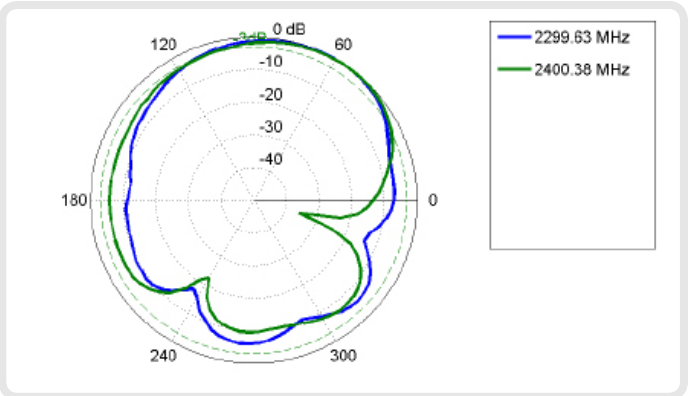
Azimuth 690 - 960:



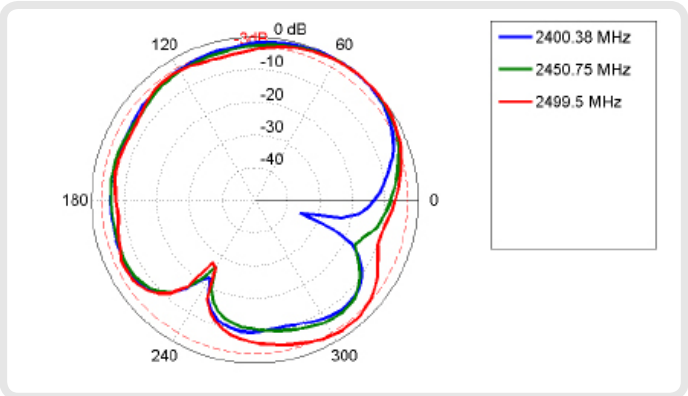
Azimuth 1710 - 2200:



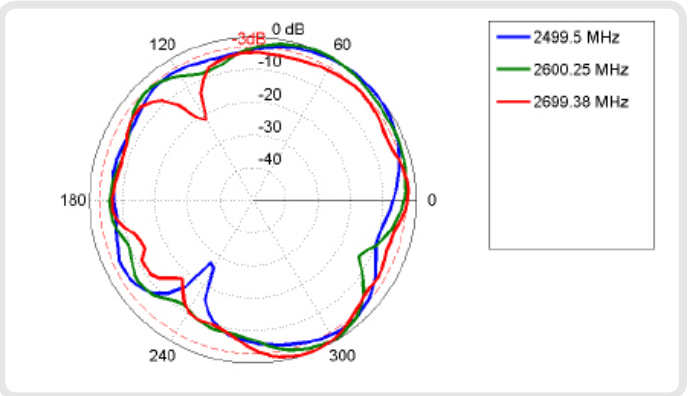
Azimuth 2300 - 2400:



Azimuth 2400 - 2500:



Azimuth 2500 - 2700:



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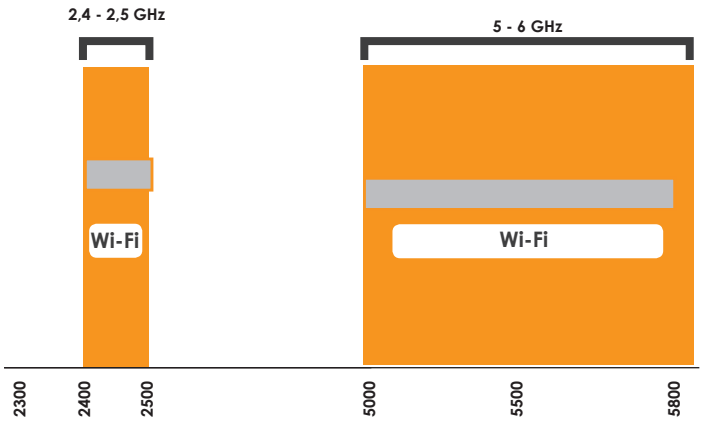
Frequency bands - Wi-Fi

The MIMO-1 works on the 2400 - 2500 MHz and 5000 - 5800 MHz

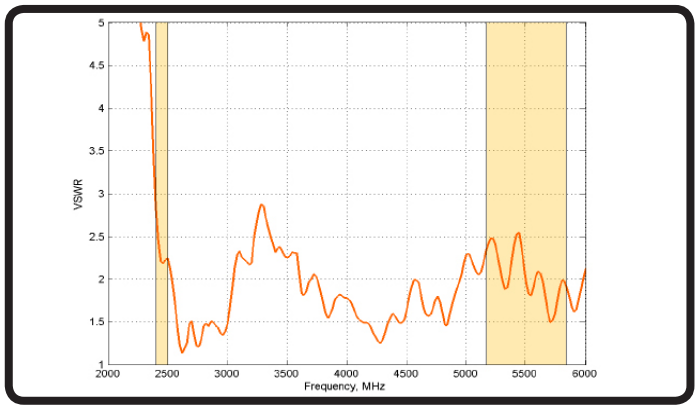
Indicates the bands on which this antenna works

MIMO-1:

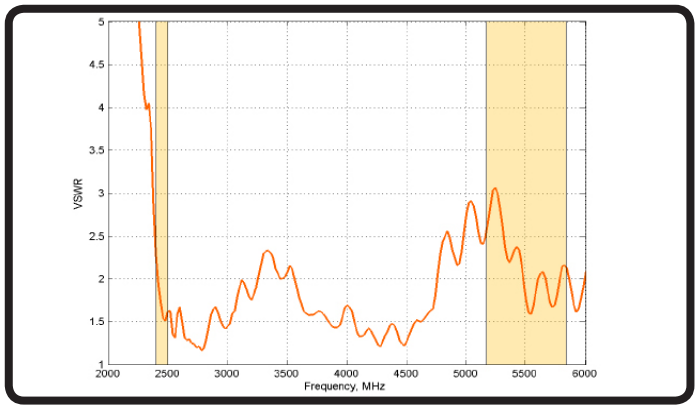


Antenna Performance Plots - Wi-Fi

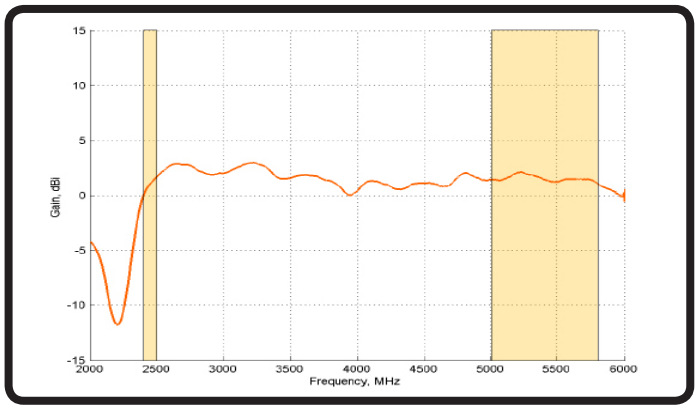
VSWR: PORT 1 - Wi-Fi Antenna



VSWR: PORT 2 - Wi-Fi Antenna



Gain : MIMO-1 Wi-Fi Antenna (excluding cable loss)



Gain* in dBi

3.3 dBi is the peak gain across band from 2400 - 2500 MHz
3.3 dBi is the peak gain across band from 5100 - 5800 MHz

* Measured on a 40cm x 40cm ground plane

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 3.0:1 or better.
The MIMO-1 delivers superior performance accross all bands:
< 1.5:1 @2400 - 2500 MHz
< 3:1 @5100 - 5800 MHz

* Measured with 1m low loss cable
* Measured on a 40cm x 40cm ground plane

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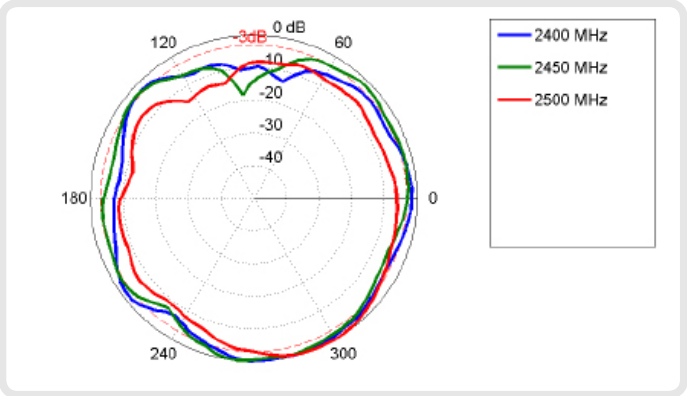
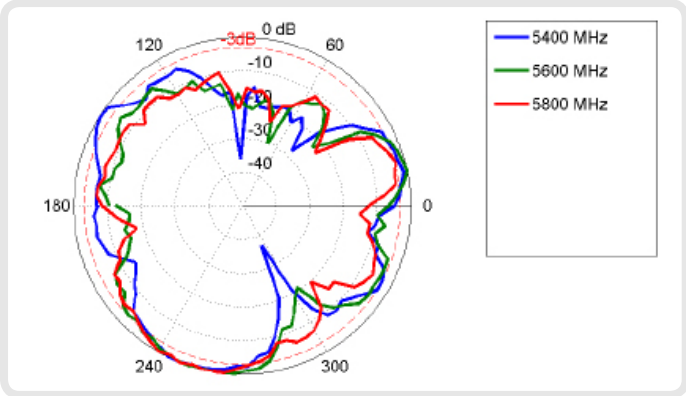
Radiation Patterns - Wi-Fi

Port 1:

Azimuth 2400 - 2500:

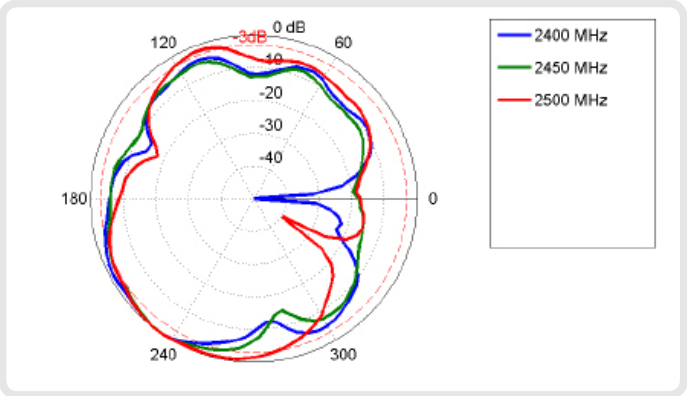


Azimuth 5400 - 5800:

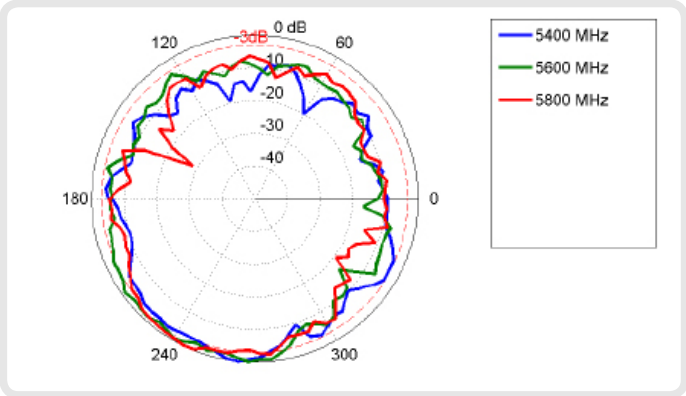


Port 2:

Azimuth 2400 - 2500:



Azimuth 5400 -5800:



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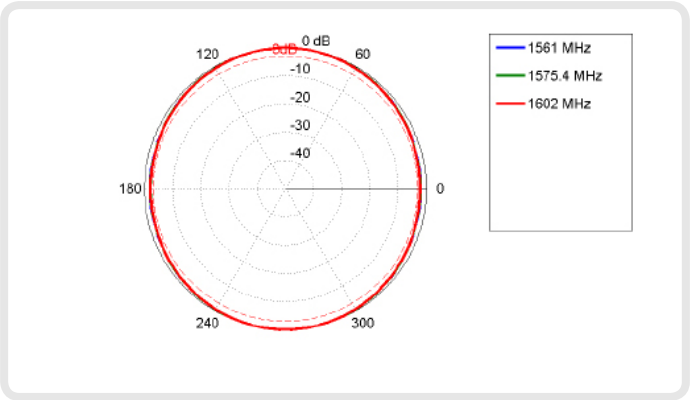
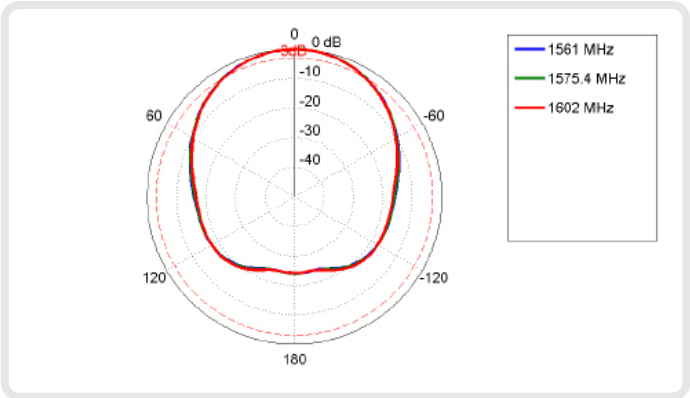
Radiation Patterns - GPS

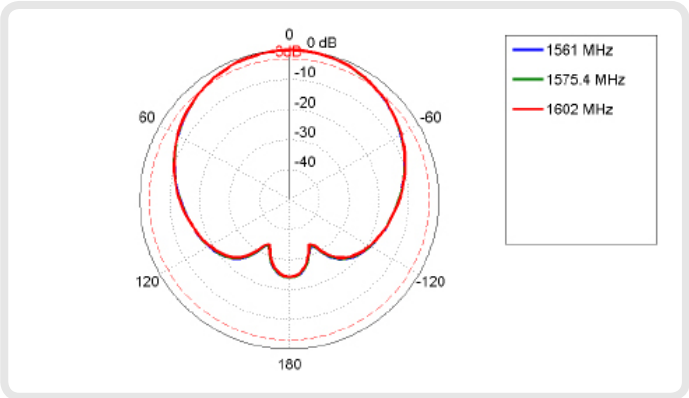
XY Plane:



XZ Plane:



YZ Plane:



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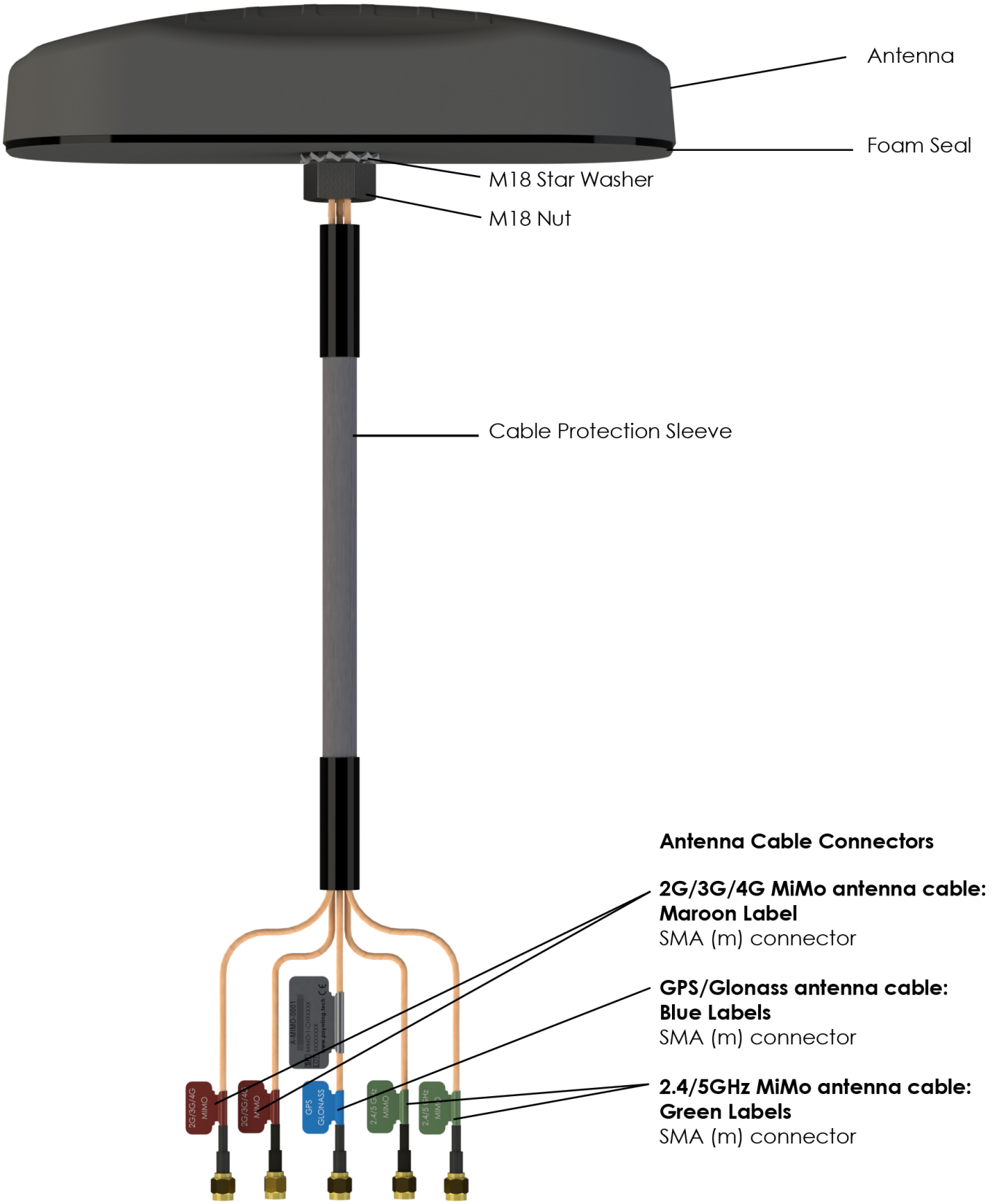
Cable Configuration



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Electrical Specifications

GSM/3G/LTE electrical specifications	
Frequency Band 1:	690 - 960MHz
Frequency Band 2:	1710 - 2700MHz
Gain (Max):	3 dBi
VSWR:	<2.5:1
Feed Power Handling:	10 W
Input impedance:	50 Ohm (nominal)
Polarisation:	Linear Vertical x 2
Cable loss:	1000MHz - 0.4dB/1/2m
	3000MHz - 0.8dB/1/2m
DC Short:	Yes

GPS/Glonas Antenna electrical specifications	
Frequency Range (GPS):	1575.42MHz/1600MHz
Gain (Max):	21+/-2dBi
VSWR:	≤1.5:1
DC Voltage:	2.7-3.3 V
DC Current:	5-15mA
Noise Figure:	≤1.5 dB
Nominal Impedance:	50 Ω
Polarization:	RHCP
Filter Out Band Attenuation:	12dB Min f0+50MHz, 16dBi Min f0-50MHz
Cable:	0.5m EF_316_D
Connector:	SMA (M)
Voltage:	2.7 - 3.3V
Max. Power-W:	50W

Wi-Fi electrical specifications	
Frequency:	2400-2500 MHz
	5000-5800 MHz
Gain (Max):	3.5 dBi (2dBi nominal)
VSWR:	< 2:1 @2.4-2.5GHz
	< 3:1 @ 5.1-5.8GHz
Feed power handling:	10 W
Nominal input impedance:	50 Ohms
Polarisation:	2 x Vertical linear

Mechanical Specifications

Product Dimensions (L x W x D):	252 mm x 127 mm x 55 mm
Packaged Dimensions:	TBC
Weight:	600 g
Packaged Weight:	TBC
Radome Material:	ABS (Halogen Free)
Base Material:	Passivated ADC12
Radome Colour:	Black
End Cap Colour:	Pantone - Black
	RAL - Black

Environmental Specifications

Wind Survival:	160 km/h
Temperature Range (Operating):	-40°C to +70°C
Environmental Conditions:	Outdoor/Indoor
Operating Relative Humidity:	Up to 98%
Storage Humidity:	5% to 95% - non condensing
Storage Temperature:	-40°C to +70°C

Certification Approvals and Standards

Cable Flammability rating:	UL 94 V1
	EN13823
Water Ingress Protection Ratio/ Standard:	IP 65 (NEMA 4X)
Impact resistance:	IK 10
Salt Spray:	MIL-STD 810F/ASTM B117
Product Safety:	Complies with UL, CE, EN, CSA and IEC

Product Box Contents

Antenna:	A-MIMO-0001
Mounting Bracket:	M18 threaded spigot with M18 nut
Cable Length:	5 x 300mm
Cable Type:	EF_316_D
Connector:	5 x SMA male

The conntector is factory mounted to the antenna

Ordering Information

Commercial name:	MIMO-1
Order Product Code:	A-MIMO-0001
EAN number:	0707273469052

For more detailed information and availability in your region, visit our web site: www.poynting.tech

Contact Poynting

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