HELI-5

ANTENNAS | HELI-5 SERIES

HELICAL MINE & TUNNEL ANTENNA

HIGH GAIN LTE MINE & TUNNEL 1710 – 2170 MHZ

1710 – 2170 MHz | 15 dBi | Increase x Mb/s | 4G LTE | IoT

Fire Resistant | - 40°C to +70°C | IP 65 | Directional | Machine to Machine

- **Circular polarised helical antenna**
- **LTE directional**
- **Ruggedised**

APPLICATION AREAS

MASC – Mining and Surface

Mining

Tunnel

Product Overview

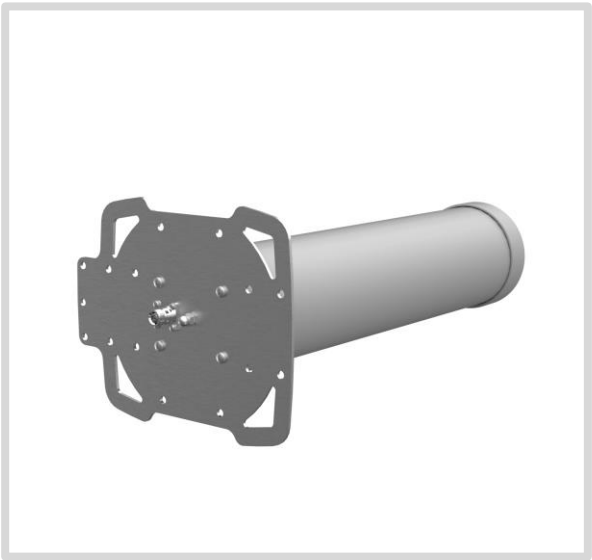
This high gain LTE directional antenna compliments our MinePoynt mine and tunnel antennas. The combination of MinePoynt beam antennas for long distance thru –tunnel links with this directional antenna, exploits Poynting's fifteen years' experience in designing and manufacturing antennas for underground mining communication and data networks. This antenna is also suitable for oil/gas chemical environments where IS equipment is required. In tests the data rate and range achieved with this antenna was greater than those obtained when using linear polarised panel antennas of the same gain. The hardy construction of the antenna makes it ideal for a mining environment. The HELI 5 operates from 1710 MHz – 2170 MHz while the HELI 6 operates from 690 MHz – 960 MHz.

Features

- Proven antenna performance giving maximum range
- Ideal where the polarisation of other devices used could change
- High gain over the 1710 -2170 Mhz range
- Intrinsically safe version available on request

Application Areas

- Supplementing fibre/cable network "Hotspots" to enhance mobility or extend networks to inaccessible areas such as mines and tunnels
- Underground telemetry
- Creation of complete underground in-tunnel wide data networks and internet/LTE connectivity
- Seamless connection to personnel using cellular phones, smart devices and tablets



Revised: January 2020

Regulatory Compliance: RoHS 2011/65/EU Compliant | ISO 9001:2015
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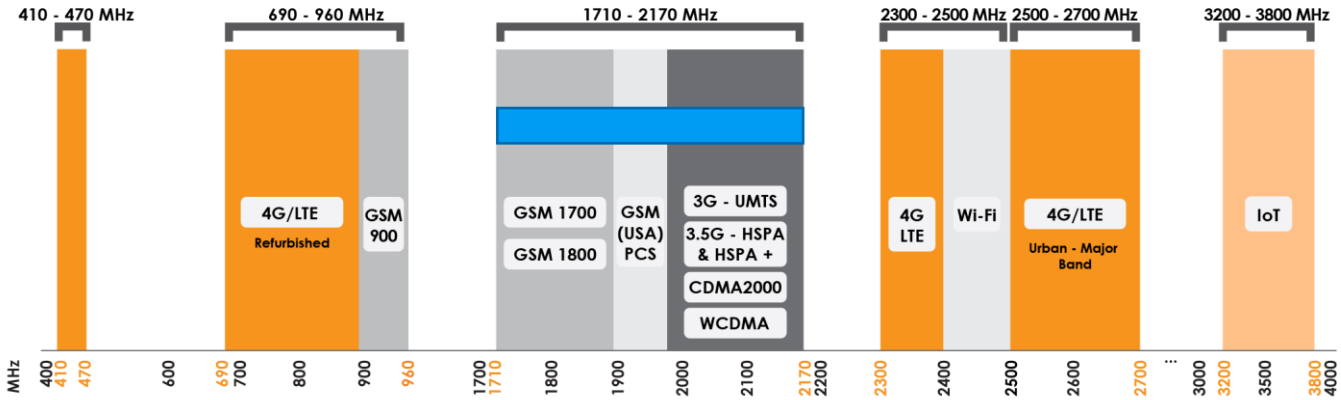
Frequency Bands

The HELI-5 is a wide-band antenna that works from 1710 – 2170 MHz.



Indicates the LTE bands on which HELI-5 works

Antenna Overview

	LTE
Ports	1
SISO / MIMO	1 x SISO
Frequency Bands	1710 MHz - 2170 MHz
Peak Gain	15 dBi
Coax Cable Type	Bulkhead connector
Coax Cable Length	Antenna cables available
Connector Type	N-Type Female

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Electrical Specifications

Frequency bands:	1710 MHz – 2170 MHz
Gain (max):	15 dBi
VSWR:	<1:5
Feed power handling:	30 W
Input impedance:	50 Ohm (nominal)
Polarisation:	Left Hand Circular Polarised
Coax cable loss:	N/A
DC short:	No

Coax Cable & Connector Type

Cable length:	N/A
Coax cable type:	N/A
Connector type:	N-Type (Female) Bulkhead

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

Product Box Contents

Antenna:	A-HELI-0005-V1-01
Mounting bracket:	12mm ID Eye Hook

Ordering Information

Commercial name:	HELI-5
Order product code:	A-HELI-0005-V1-01
EAN number:	6009880915446

Mechanical Specifications

Product dimensions	± Ø117 mm x 500 mm ± 200 mm x 250 mm x 500mm* *with ground plane
Packaged dimensions:	600mm x 160mm x 160mm
Weight:	1.50 kg
Packaged weight:	1. 8 kg
Radome material:	PVC
Radome colour:	Grey
Mounting Type:	12 mm ID Eye Hook

Environmental Specifications, Certification & Approvals

Temperature Range (Operating):	-40°C to +70°C
Environmental Conditions:	Outdoor/Indoor
Water ingress protection ratio/standard:	IP 65
Salt Spray:	MIL-STD 810F/ASTM B117
Operating Relative Humidity:	Up to 98%
Storage Humidity:	5% to 95% - non-condensing
Storage Temperature:	-40°C to +70°C
Enclosure Flammability Rating:	UL 94-HB
Impact resistance:	IK 08
Product Safety & Environmental:	Complies with CE and RoHS standards

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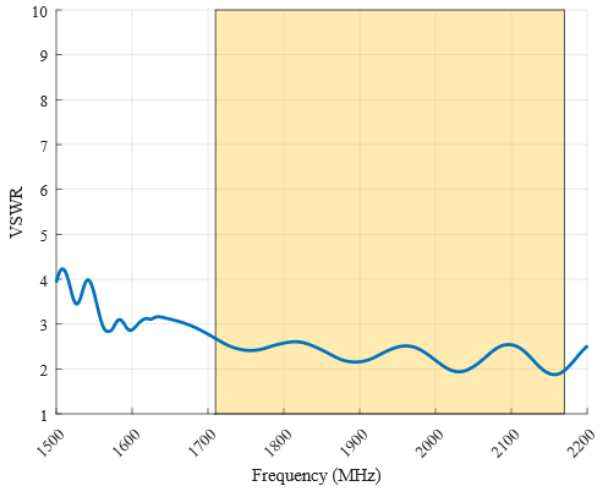
Antenna Performance Plots

VSWR

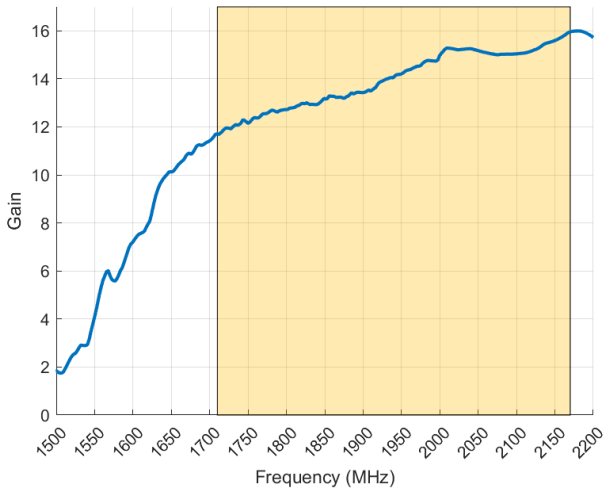


Voltage Standing Wave Ratio (VSWR)

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 HELI-5 delivers superior performance across all bands with a VSWR of 2.5:1 or better across 90% of the bands.

GAIN (EXCLUDING CABLE LOSS)



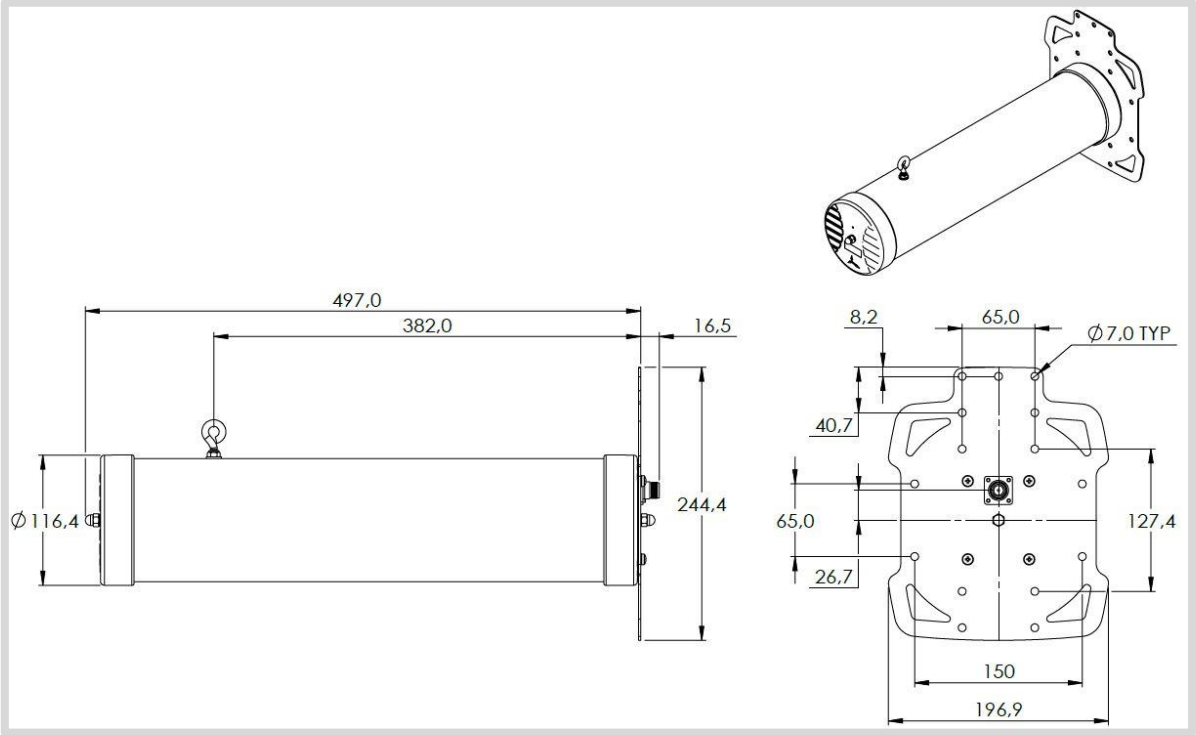
Gain* in dBi

15 dBi is the peak gain across all bands from 1710 – 2170 MHz.

Gain @ 1710 – 2170 MHz:	15 dBi

**Antenna gain measured with polarisation aligned standard antenna*

Technical Drawings



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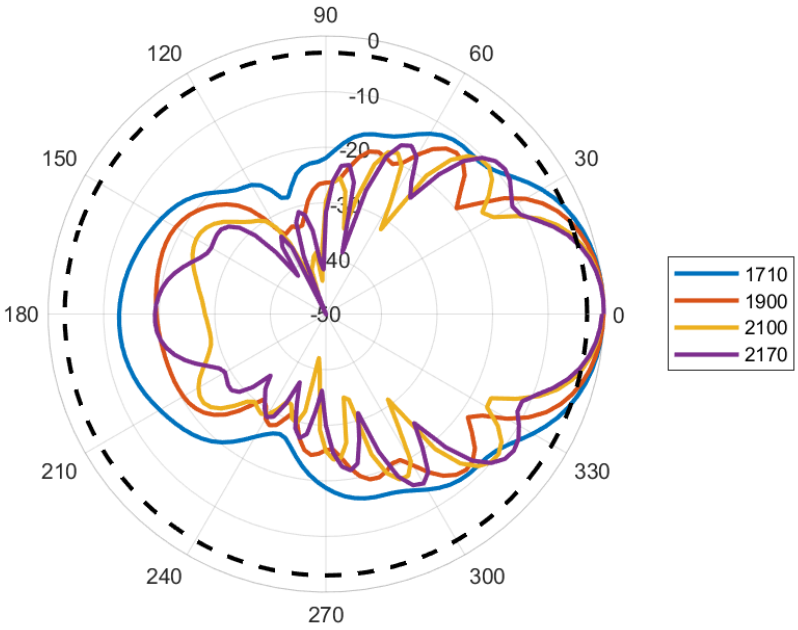
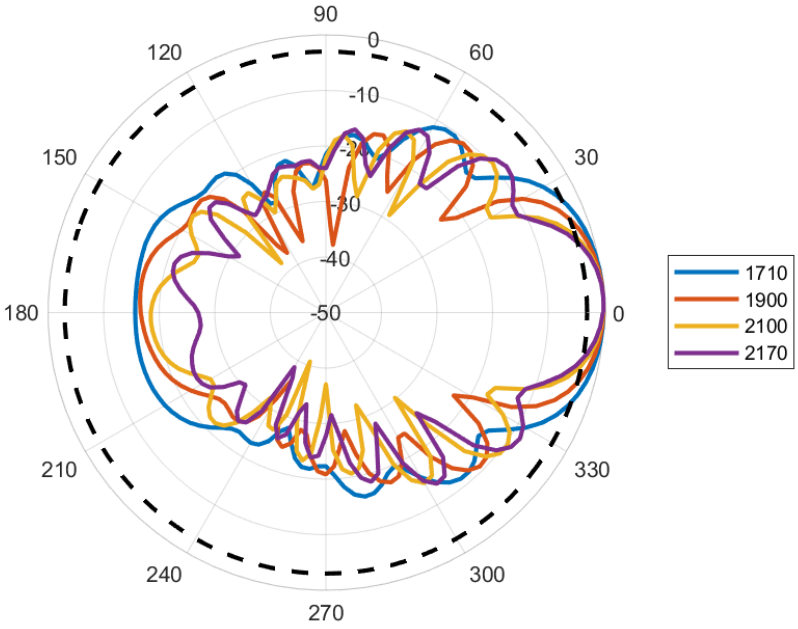
Radiation Patterns

Elevation:1 1710 MHz – 2170 MHz



Elevation:2 1710 MHz – 2170 MHz



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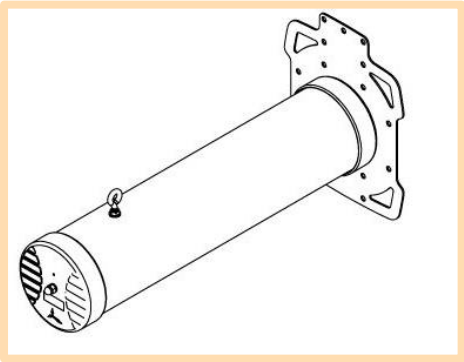
Mounting Options



Ceiling Mount

Suspend from ceiling using the eye-bolt and holes in the base/ground plane.

Contact Poynting

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