











**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
 UL 94 HB	 - 40°C to +70°C	 IP 65	 Directional	 Machine to Machine

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

**MASC**  
Mining and Surface

**Mining**

**Tunnel**

**APPLICATION AREAS**

**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 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 other devices used polarisation could change.
- High gain over the 1710 -2170Mhz range.
- Intrinsically safe version available

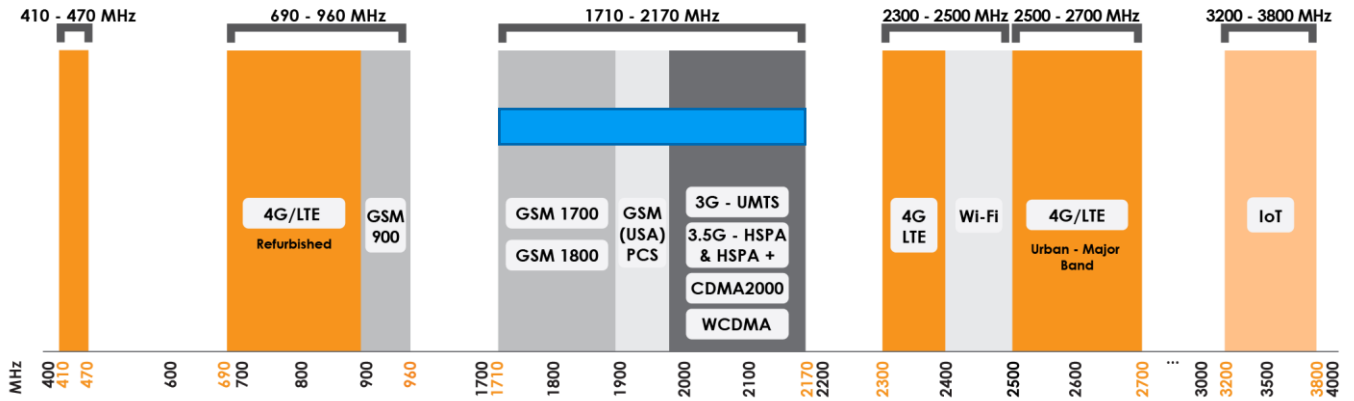
**Application Areas**

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



## 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

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

## 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:	Right 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-V1-05
Mounting bracket:	12mm ID Eye Hook

## Ordering Information

Commercial name:	HELI-5
Order product code:	A-HELI-0005-V1-05
EAN number:	6009880915446

## Mechanical Specifications

Product dimensions	± 500 mm x 110 mm
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

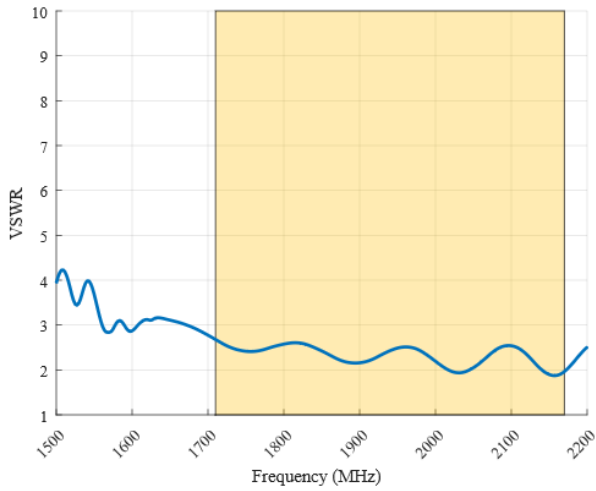
Temperature Range (Operating):	-40°C to +70°C
Environmental Conditions:	Outdoor/Indoor
Water ingress protection ratio/standard:	IP 65
Salt Spray:	MIL-STD 810F/ASTM B117
Operating Relative Humidity:	Up to 98%
Storage Humidity:	5% to 95% - non-condensing
Storage Temperature:	-40°C to +70°C
Flammability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

**Product Safety & Environmental:** Complies with CE, EN, CSA, RoHS and IEC standards

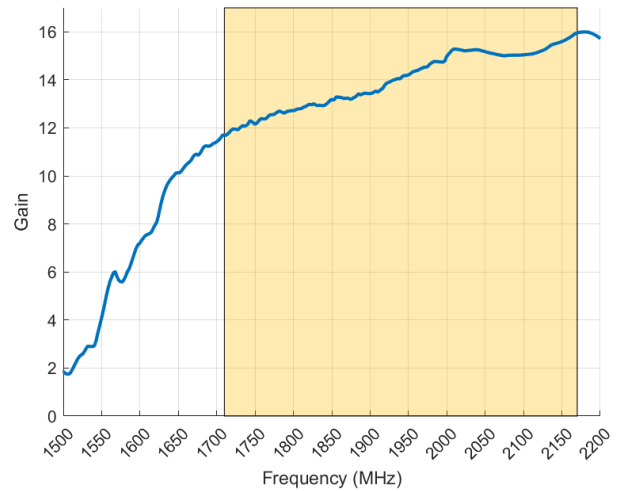


Antenna Performance Plots

VSWR



GAIN (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 HELI-5 delivers superior performance across all bands with a VSWR of 2:1 or better across 90% of the bands.

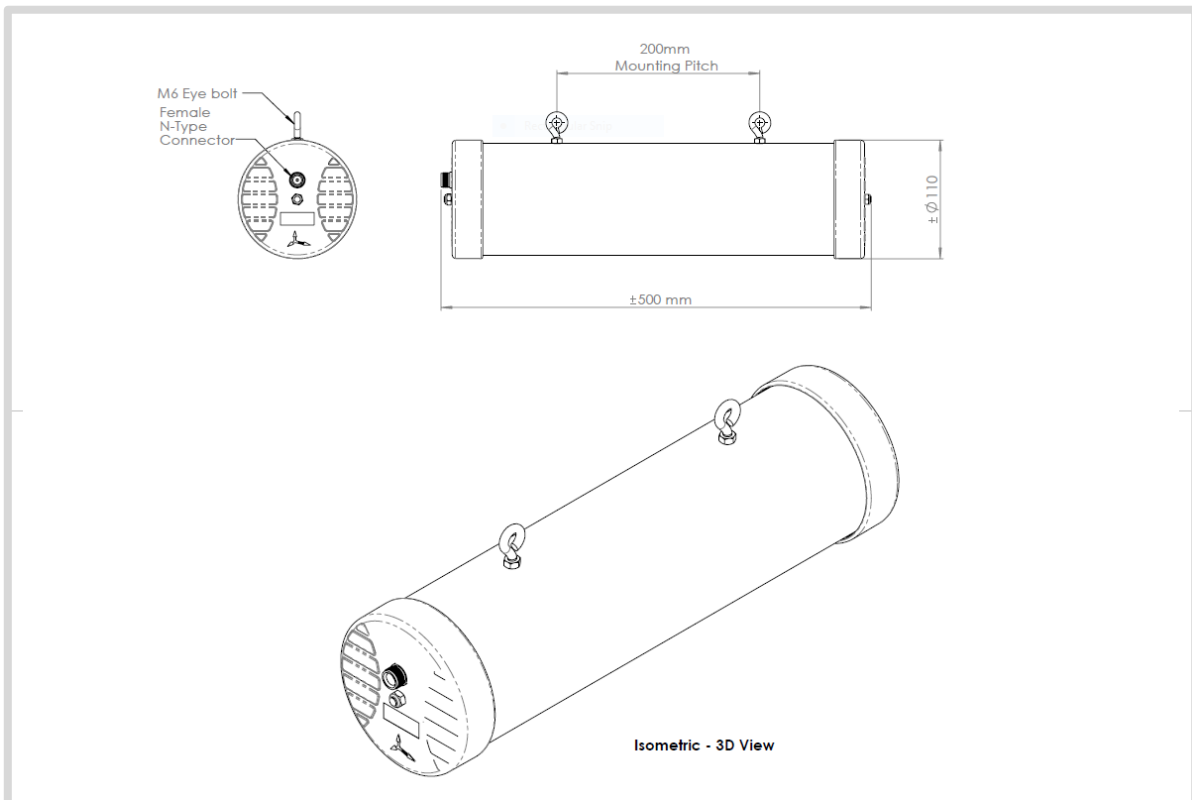
Gain\* in dBi

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

Gain @ 1710 – 2170 MHz: 15 dBi

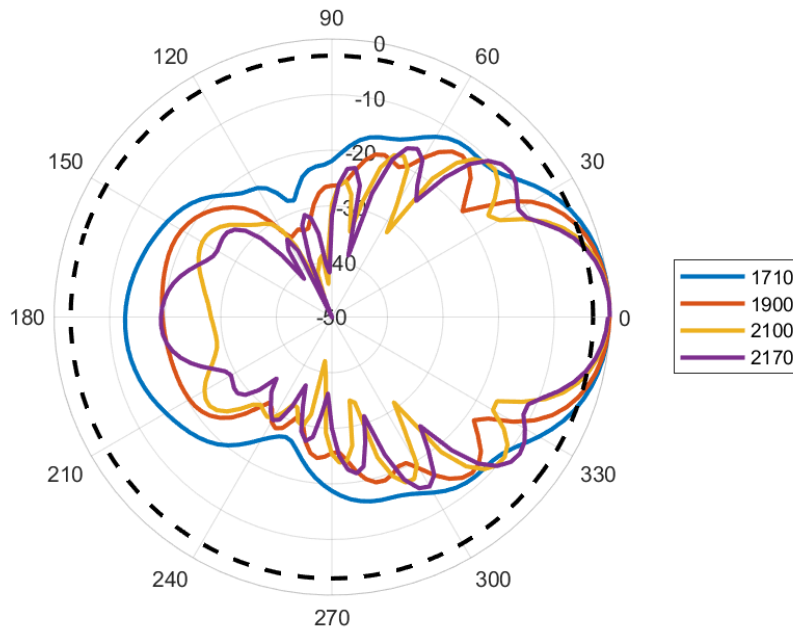
\*Antenna gain measured with polarisation aligned standard antenna

Technical Drawings

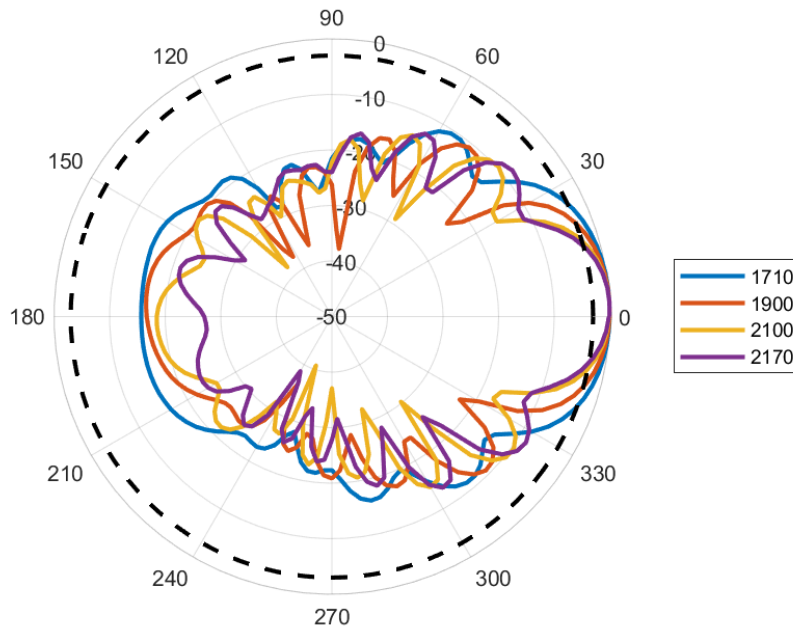


Radiation Patterns

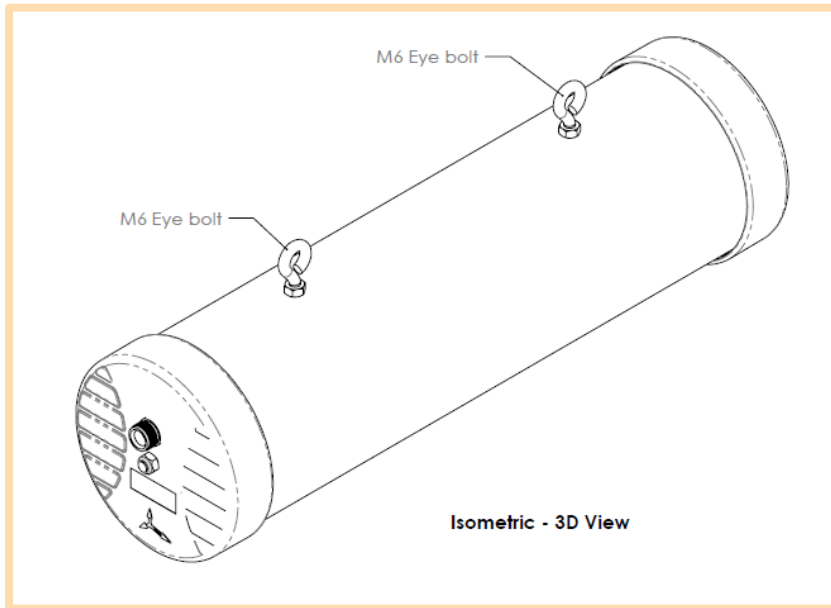
Elevation:1 1710 MHz – 2170 MHz



Elevation:2 1710 MHz – 2170 MHz



## Mounting Options



### Ceiling Mount

Hang from ceiling to desired height with cable attached to M6 Eye bolts.