data sheet
Iridium Block 1

Iridium Block 1 Antennas

The Iridium Block 1 series of DielectriX™ antennas from Helix Geospace are highly resilient, ruggedised Iridium band antennas designed for hand-held and other products where size and performance are critical.

These antennas have high discrimination against multi-path (reflected) signals and are resilient to RF and electrical noise. They are balanced and isolated from platform ground, ensuring resilience to common-mode noise, and are unaffected by nearfield object de-tuning. The antenna also supports Satelles STL (Satellite Time and Location) services, used for GPS back-up.

Dielectrix antennas deliver high performance that belies their small size, due to the patent-protected use of specialised dielectric core material. The antenna is available with an overmoulded protective radome, or as a bare antenna that customers can design their own radomes for or integrate directly into products.

iridium® connected

Key Features

Tuned to Iridium frequency: 1,616 - 1,626 MHz

- Intrinsic band-pass filter response, tightly tuned to Iridium frequency band – resilient to out of band interference
- Typical gain @ zenith: 2 dBic applications
- Smallest Iridium antenna - just L 37mm x ø 13.5mm (with UFL connector)
- RHCP polarization with up to 30dB co-to-cross polarization discrimination - exceptional rejection of multi-path (reflected) signals
- No de-tuning due to objects in the near-field – ideal for hand-held and vehicle-mounted applications
- Cardioid radiation pattern – optimal reception of signals from low elevation satellites: when antenna is in a dynamic application (e.g. maritime, airborne and vehicle applications where the platform has pitch and yaw movement)
- Balanced antenna – resilient to common-mode noise (e.g. vehicle chassis ground fluctuations due to in-car compute and electric drive-train noise)
- Over-moulded variants provide IP67 environmental protection ideal for external mount in harsh environments
- Robust – withstands shock and vibration
- Wide operating temperature range (-40 to +85 °C)
- SMA or U.FL connector option.

Applications

Helix Geospace Iridium Block 1 Antennas are ideally suited for Iridium Voice and SBD applications in which resilience and compact form factor are essential.

- Satelles STL service applications
- Defence/security/CNI/first responder
- Asset tracking and fleet vehicle tracking
- Internet of Things
- Personal safety devices
- handheld and wearable devices
- UAS and UAVs
- Industrial / oil and gas / mining
- AgTech.

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Electrical Specifications

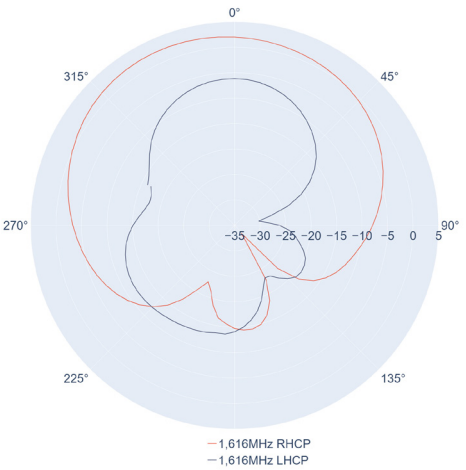
	Min	Typical	Max	Units
Frequency	1616	1621 (mid-band)	1627	Mhz
Polarisation	RHCP			
Antenna element peak gain		2		dBic
Efficiency		>50		Total Spherical %
Bandwidth (3db)	1616		1626	Mhz
Axial Ratio			>0.5	dB
Co-to-cross pole discrim @ zenith			>30	dBic
VSWR (max)		1.45:1		
Impedance		50		Ohms
Operating temp range	-40		+85	C

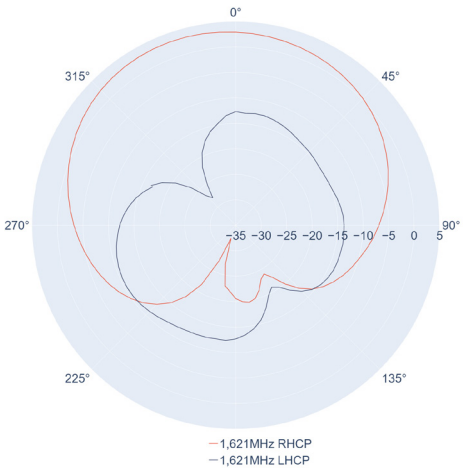
Mechanical Specifications

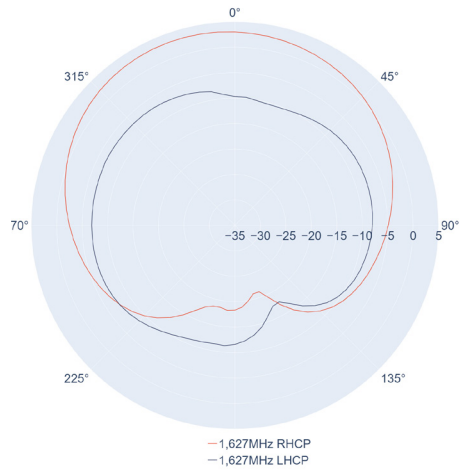
	Min	Typical	Max	Units
Dimensions SMA (non-overmould)	L 41.5 x ø 13.5			mm
Dimensions SMA (overmould)		L50.5 x ø 19		mm
Dimensions uFL			L 37 x ø 13.5	mm
Weight SMA (non-overmould)	25			grams
Weight SMA (overmould)		26		grams
Weight uFL			23	grams
IP Rating (overmould)		67		IP
Additional Sealing (overmould)				O-ring

Radiation Patterns

Realised Gain Plot (measured at centre frequency)







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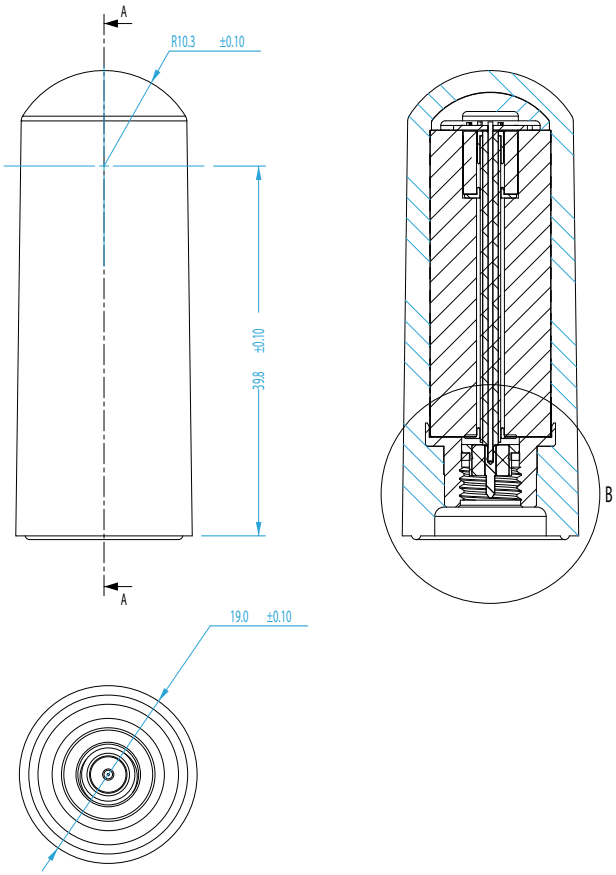
HDC-IRSBD - Iridium Block 1

Part number	Antenna	Connector	Dimensions mm	Weight g
DC2-11P1S2-0 	Passive Over-moulded plastic radome - Rated: IP67	SMA Male	L 50.5 x ø 19	26g
DC2-11P1S0-0 	Passive	SMA Male	L 41.5 x ø 13.5	25g
DC2-11P1U0-0 	Passive	U.FL	L 37 x ø 13.5	22g

DC2-11P1S2-0 dimensions



dielectrix™

Antenna technology provides unrivaled efficiency per unit volume.

Helix Geospace provides custom tuning services to optimise and tune antenna performance when integrated into customers enclosure.

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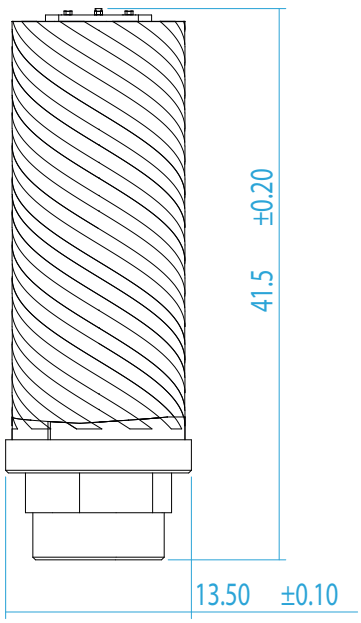
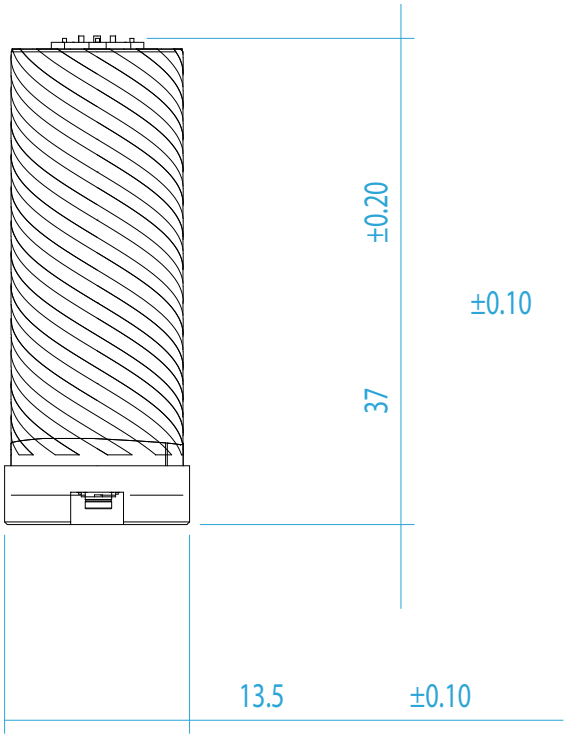
DC2-11P1S0-0 dimensions



DC2-11P1U0-0 dimensions



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