

## HXDC1600 Series Iridium Antennas

The HXDC1600 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 immune to RF and electrical noise. They are balanced and isolated from platform ground, ensuring immunity to common-mode noise, and are unaffected by near-field object de-tuning. The antenna also supports Satelles STL (Satellite Time and Location) services, used for GPS back-up.

HXDC1600 DielectriX antennas deliver high performance that belies their small size, due to the patent-protected use of specialized dielectric core material. The antenna is available with an over-moulded protective radome, or as a bare antenna that customers can design their own radomes for, or integrate directly into products.



### Key Features

- Tuned to Iridium frequency: 1,616 - 1,626 MHz
- Intrinsic band-pass filter response, tightly tuned to Iridium frequency band – Immune to out of band interference
- Typical gain at zenith: 2 dBic
- Smallest Iridium antenna - just 37mm long x 13.5mm dia. (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, and when antenna is in a dynamic application (e.g. maritime, airborne and vehicle applications)
- Balanced antenna – immune 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 degC)
- SMA or U.FL connector options.

### Applications

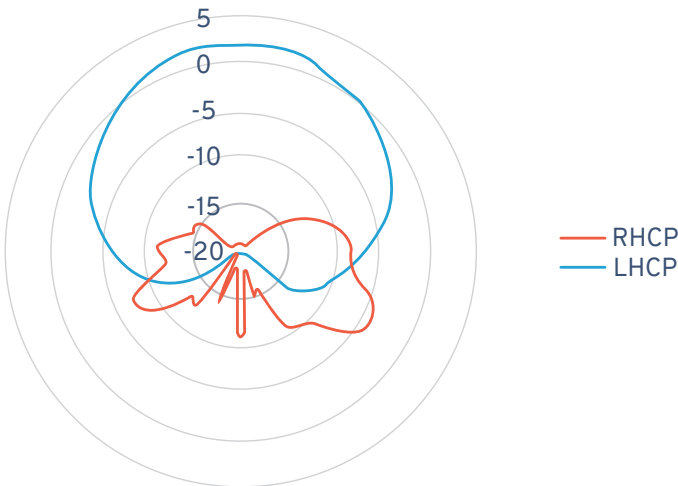
Helix Geospace HXDC1600 series antennas are ideally suited for Iridium applications in which resilience and compact form factor are essential:

- All Iridium voice and SBD (Short Burst Data) applications – satphones and terminals
- Satelles STL service applications
- Defence/security/CNI/first responder
- Asset tracking and fleet vehicle tracking
- Internet of Things
- Personal safety devices
- Hand-held and wearable devices
- Autonomous vehicles and drones
- Industrial/Oil & gas/Mining

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### Radiation pattern (no ground plane)

Vertical Cut (phi = 0 degrees @ 1620MHz)



Parameter	Specification
Frequency	1,616-1,626 MHz
Polarisation	RHCP
Peak gain	2 dBic (typical)
Efficiency	>50%
Axial ratio @ zenith	>0.5dB
Co to cross pol discrimination @ zenith	>30dB
VSWR	1.5dB (max)
Impedance	50 ohm
Operating temp. range	-40 to +85 degC

Part number	Antenna	Connector	Dimensions	Weight
HXDC1600-UAA	Passive	U.FL	(L) 37mm x (D)13.5mm	22g
HXDC1600-SAA	Passive	SMA	(L) 41.5mm x (D)13.5mm	25g
HXDC1610-SAA	Passive Over-moulded plastic radome - Rated: IP67	SMA	(L) 50.5mm x (D)19mm	26g

**dielectrix**<sup>TM</sup>

Antenna technology  
Provides unrivaled efficiency per unit volume

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

For quotation, samples and to place orders please contact Helix Geospace sales manager on:

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