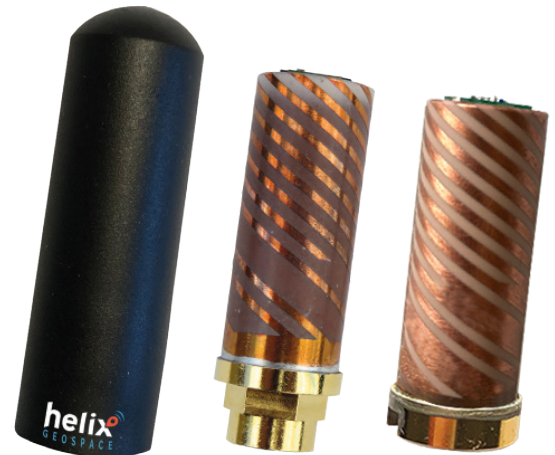


HXGL0100 Series GPS L1/L2 - Active Antenna

The HXGL0100 series of DielectriX™ antennas from Helix Geospace are highly resilient, ruggedised GPS L1/L2 band solutions 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 unique resilience to common-mode noise, and reduced effects to near-field object de-tuning. The antenna the GPS L1 and L2 frequency bands.

HXGL0100 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 integrate directly into products.



Key Features

- Tuned to GPS L1 and L2 frequencies: (L2) 1,226 MHz (1,217.6-1,237.6) and (L1) 1,565.42-1,585.42 MHz
- Intrinsic band-pass filter response, tightly tuned to L1 and L2 frequency bands – Immune to out of band interference
- Typical gain at zenith: 43 dBic at L2 and 37dBic at L1
- RHCP polarization with 30dB co- to cross-polarization discrimination - Exceptional rejection of multi-path (reflected) signals
- Low 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 – 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 IP-67 environmental protection – ideal for external mount in harsh environments
- Robust – withstands shock and vibration
- Wide operating temperature range (-40 to +85 degC)
- SMA/U.FL connector.

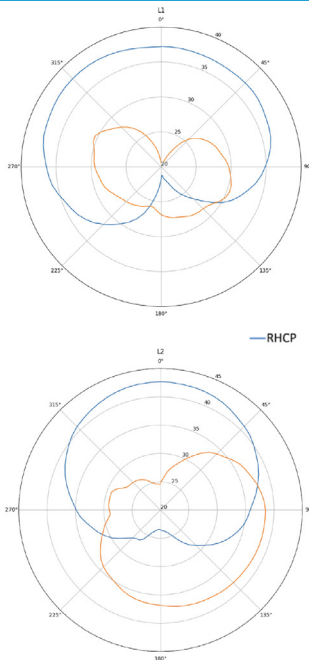
Applications

Helix Geospace HXGL0100 series antennas are ideally suited for PNT (Position, Navigation and Timing) applications in which resilience, position accuracy and compact form factor are essential:

- Precision location and navigation
- Precision Timing for network sync and crypto
- Defence/security/CNI/first responder
- Autonomous vehicles and drones
- Asset tracking and fleet vehicle tracking
- Internet of Things
- Personal safety devices
- Hand-held and wearable location devices
- Industrial/Oil & gas/Mining.

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Radiation pattern (no ground plane)



Parameter	Specification
Frequency	1,217.6-1,237.6 MHz (L2) 1,565.42-1,585.42 MHz (L1)
Polarisation	RHCP
Peak gain @ zenith	L2: 43 dBic and L1: 37dBic (typical)
Out-of-band rejection	>50dB
Axial ratio @ zenith	1dB (max)
VSWR	2.3:1
Noise figure	1.5dB (typical)
Current drain	9mA (typical)
Impedance	50 ohm
Operating temp.	-40 to +85 degC

Part number	Antenna	Connector	Dimensions	Weight
HXGL0104-SAA	Active	U.FL	(L) 37mm x (D)13.5mm	22g
HXGL0104-SAA	Active	SMA	(L) 48mm x (D)13.5mm	25g
HXGL0114-SAA	Active Over-moulded plastic radome - Rated: IP67	SMA	(L) 56mm x (D)19mm	29g

Antenna technology

Helix has developed and patent-protected a completely novel approach to creating the smallest antennas capable of delivering world-beating performance for GNSS and terrestrial or satellite data communications.

It combines material science, RF innovation, and Industry 4.0 precision manufacturing, and we call it

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

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