Maintaining consistent UHF SatCOM communications on complex vehicle platforms can be challenging, particularly in hostile environments.

The ruggedized GD2110 has been designed to provide effective and robust communications in such arenas, even in circumstances where a vehicle groundplane is damaged, incomplete or missing.

The GD2110 is a passive UHF Quadrifilar Helix Antenna (QHA), designed to provide communications with the legacy UHF Follow-On (UFO) and Mobile User Objective System (MUOS) Satellite Communications (SatCOM) systems.

The GD2110 antenna consists of a quadrifilar helix radiating element design of a cylindrical geometry to provide the UHF SatCOM link. The antenna design configuration is optimised to provide omni-directional radiation coverage at very low elevation angles above the horizon.

The radiating element and feed network are built on a thick aluminium baseplate. The structure is environmentally sealed using a radome enclosure made from medium density polyethylene (MDPE) material.
Type GD2110
UFO and MUOS SatCOM Antenna

Electrical Specification

- Frequency Ranges:
  - 292 MHz - 318 MHz: UFO Uplink
  - 244 MHz - 270 MHz: UFO Downlink
  - 300 MHz - 320 MHz: MUOS Uplink
  - 360 MHz - 380 MHz: MUOS Downlink

- Impedance: 50 ohm (nominal)
- VSWR: ≤ 2.1 over the entire operational frequency bandwidth
- Radiation Pattern: Omni-directional radiation coverage in azimuth
- Polarity: Right Hand Circular Polarisation (RHCP)
- Field of View: +90° zenith to +10° elevation above horizon
- Gain:
  - 90° Zenith: -3 dBi (minimum) over the entire operating frequency bandwidth
  - 10° Elevation: 0 dBi (minimum) over the entire operating frequency bandwidth
- Axial Ratio: < 2.5 dB from +10° above horizon to zenith over the operating bandwidth
- Antenna Radiation Pattern Measurement Conditions:
  - 1.8 m diameter ground plane
  - Antenna mounted on 0.152 m metallic standoff above ground plane
- Power Rating: 200 W CW
- Connectors: N Type Bulkhead Female

Mechanical Specification

- Height: 405.0 mm (maximum)
- Diameter: 330.3 mm (maximum)
- Weight: 5.9 kg (maximum)
- Mounting: 4 holes fixed location

Environmental Specification

- High Temperature:
  - Operational: +70°C
  - Storage: +70°C
- Low Temperature:
  - Operational: -51°C
  - Storage: -51°C
- Low Pressure (Altitude):
  - Operational: -457.2 m to 4572 m
  - Storage: 15,240 m
- Vibration:
  - Composite wheeled vehicle vibration exposure
  - Cargo Vibration environment on jet aircraft
- Shock:
  - MIL-STD-810G, Method 516.6, Procedure IV (Transit Drop)
- Contamination by Fluids:
  - MIL-STD-810G, Method 504.1, Procedure I
- Solar Radiation (Sunshine):
  - MIL-STD-810G, Method 505.5, Procedure II (Steady State)
  - Radiant Energy: 1120 W/m²
  - Temperature: 50°C
  - Duration: 56 x 24 hr cycles
- Rain:
  - MIL-STD-810G, Method 506.5, Procedure I
- Humidity:
  - MIL-STD-810G, Method 507.5, Procedures I and II
- Fungus Resistance:
  - MIL-STD-810G, Method 508.6
- Salt Fog:
  - MIL-STD-810G, Method 509.5
- Sand and Dust:
  - MIL-STD-810G, Method 510.5, Procedures I and II
- Immersion:
  - MIL-STD-810G, Method 512.5, Procedure I
- Icing/Freezing Rain:
  - MIL-STD-810G, Method 521.3
  - Operational ice glaze thickness: 6 mm
  - Survival ice glaze thickness: 13 mm

For further information please contact:

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