

GD2110

CHELTON

UFO and MUOS SATCOM Antenna

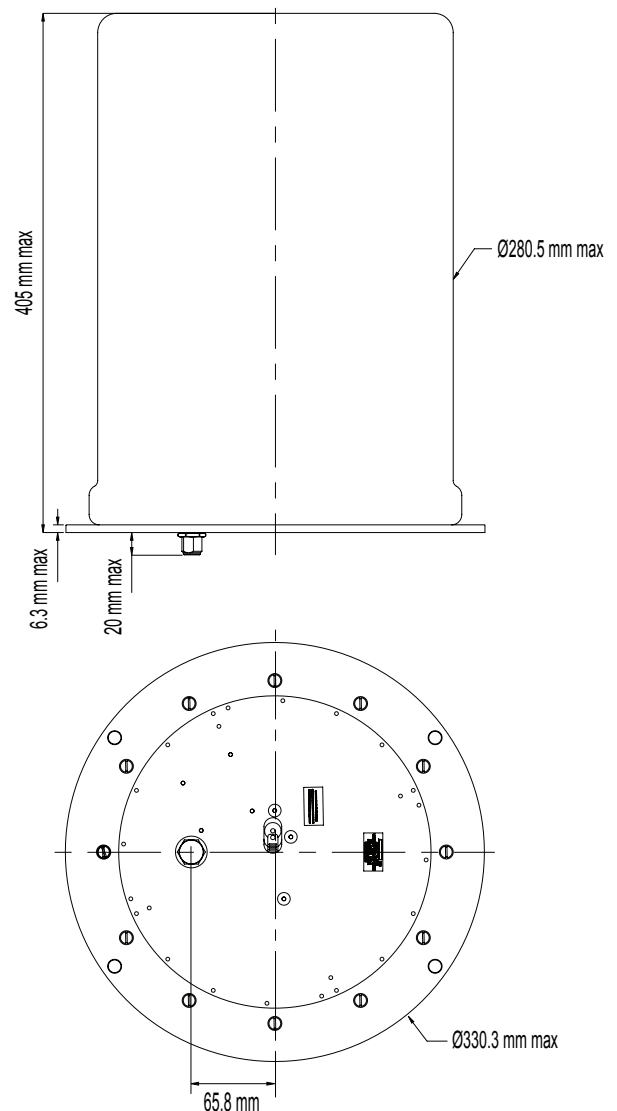
Maintaining consistent UHF SATCOM communications on complex vehicle platforms can be challenging, particularly in hostile environments.

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 omnidirectional 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.



UFO and MUOS SatCOM Antenna

ELECTRICAL

Frequency	292 MHz - 318 MHz UFO Uplink 244 MHz - 270 MHz UFO Downlink 300 MHz - 320 MHz MUOS Uplink 360 MHz - 380 MHz MUOS Downlink
Gain	90° Zenith: -3 dBic (minimum) over the entire operating frequency bandwidth 10° Elevation: 0 dBic (minimum) over the entire operating frequency bandwidth
Polarisation	Right Hand Circular Polarisation (RHCP)
Axial Ratio	< 2.5 dB from +10° above horizon to zenith over the operating bandwidth
Radiation Pattern	Omni-directional radiation coverage in azimuth
Power Rating	200 W CW
Impedance	50 ohm nominal
VSWR	≤ 2:1 over the entire operational frequency bandwidth
Field of View	+90° zenith to +10° elevation above horizon
Antenna Radiation	1.8 m diameter ground plane
Pattern Measurement Conditions	Antenna mounted on 0.152 m metallic standoff above ground plane
Connectors	N Type Bulkhead Female

MECHANICAL

Dimensions	405.0 mm max
Diameter	330.3 mm max
Weight	5.9 kg max
Mounting Configuration	4 holes fixed location

ENVIRONMENTAL

High Temperature	MIL-STD-810G, Method 500.5, Procedures I and II Operational: +70°C Storage: +70°C
Low Temperature	MIL-STD-810G, Method 502.5, Procedures I and II Operational: -51°C Storage: -51°C
Low Pressure (Altitude)	MIL-STD-810810G, Method 500.5, Procedures I and II Operational: -457.2 m to 4572 m Storage: 15,240 m
Vibration	MIL-STD-810G, Method 514.6, Procedure I Composite wheeled vehicle vibration exposure Duration 120 minutes test (corresponds to 500 miles worst case) Cargo Vibration environment on jet aircraft Table 514.6C-VII, Category 7 Takeoff and landing vibration exposure
Shock	MIL-STD-810G, Method 516.6, Procedure IV (Transit Drop)
Contamination by Fluids	MIL-STD-810G, Method 504.1, Procedure I Contaminant fluids listed without igniting the environment
Solar Radiation (Sunshine)	MIL-STD-810G, Method 505.5, Procedure II (Steady State) Radiant Energy: 1120 W/m ² Temperature: 50°C f 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 Induced cyclic high humidity (Cycle B2) and aggravated
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

