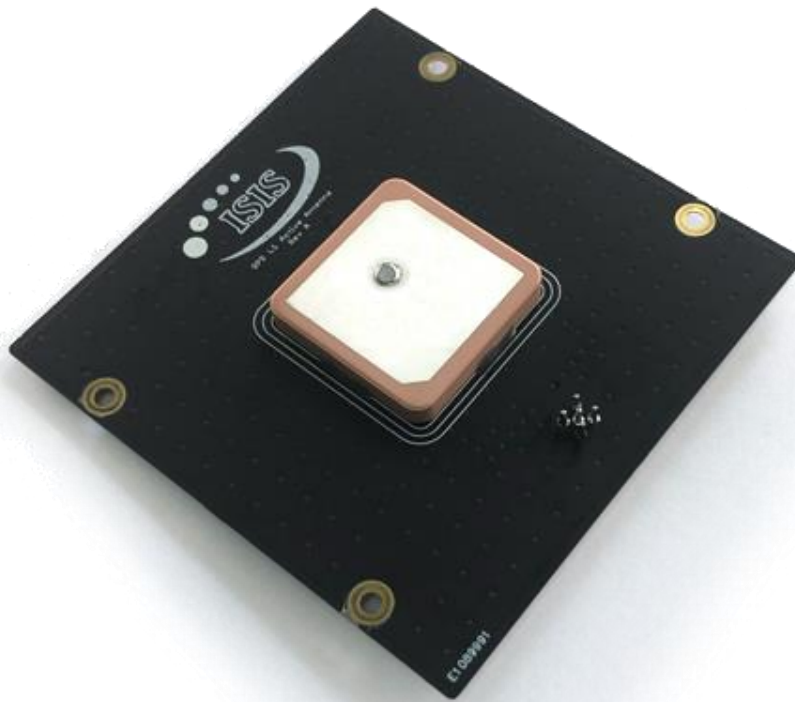




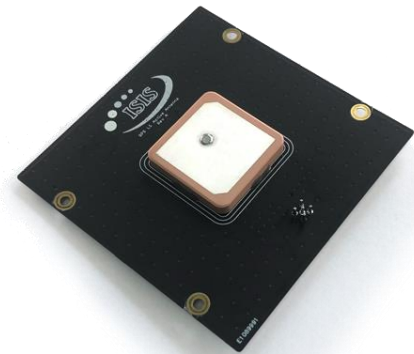
GNSS Antenna Datasheet

ISIS.GAPA.DS.00001, version 1.4

CubeSat standard active GNSS patch antenna

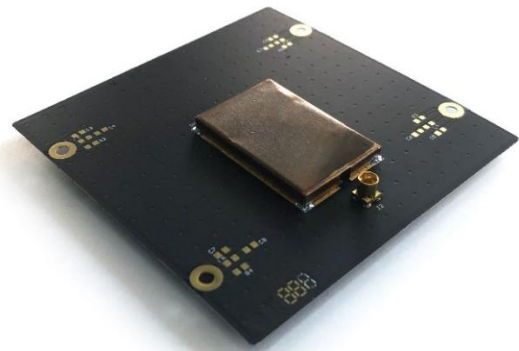
Applications

The ISIS GNSS patch antenna is a compact, low mass active antenna, designed for GPS-L1 / GALILEO-E1. This passive antenna is suitable for providing CubeSat platforms with precise positioning and is compatible with the ISIS structures.



Product Features

- Frequency range: 1572 - 1578 MHz (GPS-L1 / GALILEO-E1)
- Light weight solution <20g
- Supplied with CubeSat compatible mounting plate
- Antenna peak gain of 5.5 dBi
- Signal gain up to 32.5 dB
- SAW filters used in the active frontend
- Single straight MMCX connector for both power and RF lines
- Right Hand Circular Polarization
- Power supply between 3 - 5VDC
- Powered consumption 9.5 mA @ 5VDC



General Description

The ISIS GNSS antenna is part of a new generation of antennas designed for CubeSats and nanosatellites. It is an off the shelf compact active antenna used for receiving GPS L1 and GALILEO E1 signals.

Compatibility

- Compatible with ISIS CubeSat structures.

Flight heritage and quality assurance

- Qualification Thermal Testing, -30 to +70 °C.
- Qualification tested for quasi static acceleration up to 15g in three axes. Flight units thermally acceptance tested for workmanship.
- IPC-A-610 Class 3 PCB and assembly.

Ordering information

Please contact sales@isispace.nl for ordering information

Specifications

Parameter	Typical Value	Units
Environmental Characteristics		
Operational temperature	-30 to +70	°C
RF Characteristics		
Frequency Range:	1572- 1578(GPS L1 / GALILEO E1)	MHz
Signal gain (active circuitry)	32.5	dB
Antenna peak gain	5.2 (1575 MHz)	dBi
Axial ratio	< 3	dB
Return Loss	> 15	dB
Bandwidth	6	MHz
Polarization	RHCP	-
Physical Characteristics		
Mass	18	g
Dimensions (H x W x T)	70 x 70 x 15	mm
Connector type	MMCX (for both RF and power line-female)	-
Antenna material	Ceramic	-
Electrical Characteristics		
Supply voltage	3 - 5	VDC
Current consumption	9.5 (at 3.5 V)	mA

Radiation Pattern

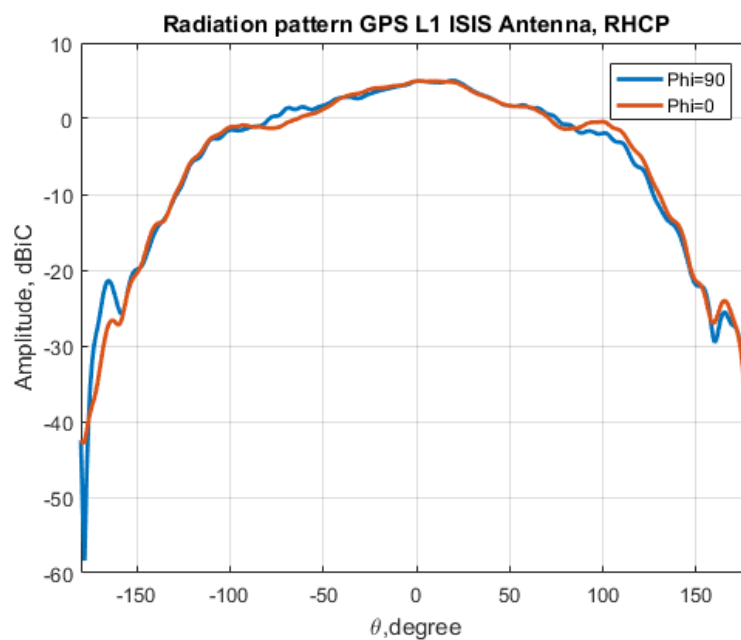
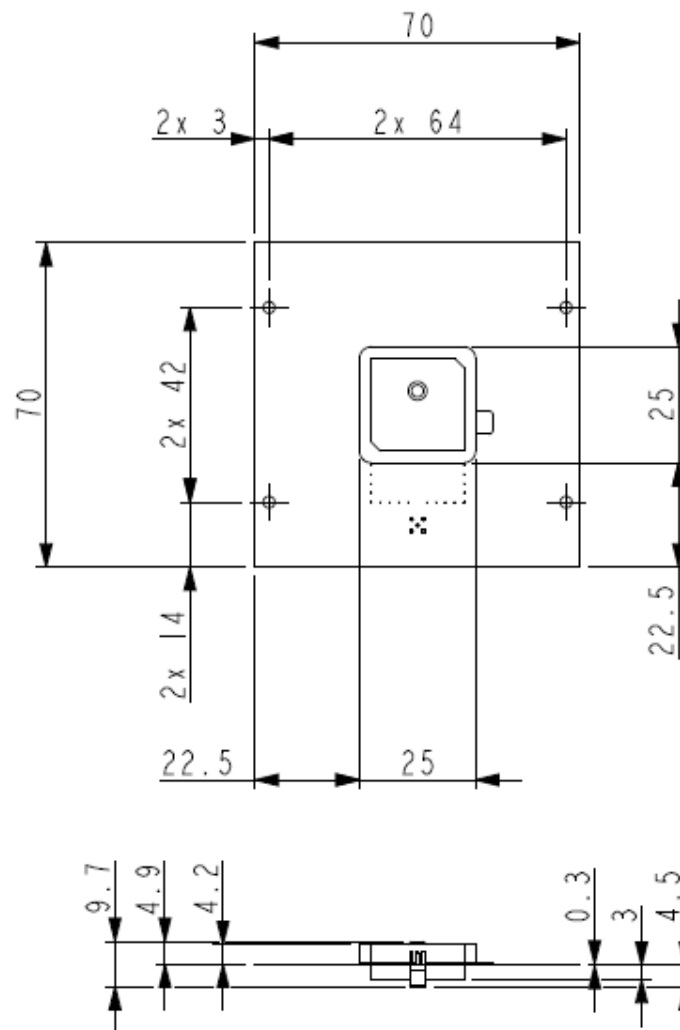


Figure 1 Typical co-polar radiation pattern at 1575 MHz

Mechanical Outline



Detailed interface information and CAD models of the entire GNSS Patch Antenna may be delivered on request.

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ISIS warrants that the product is supplied after relevant tests had shown the product is in good order and functioning, as far as these tests may indicate and predict product functionality.