

DATASHEET

GNSS ANTENNA FOR CUBESATS

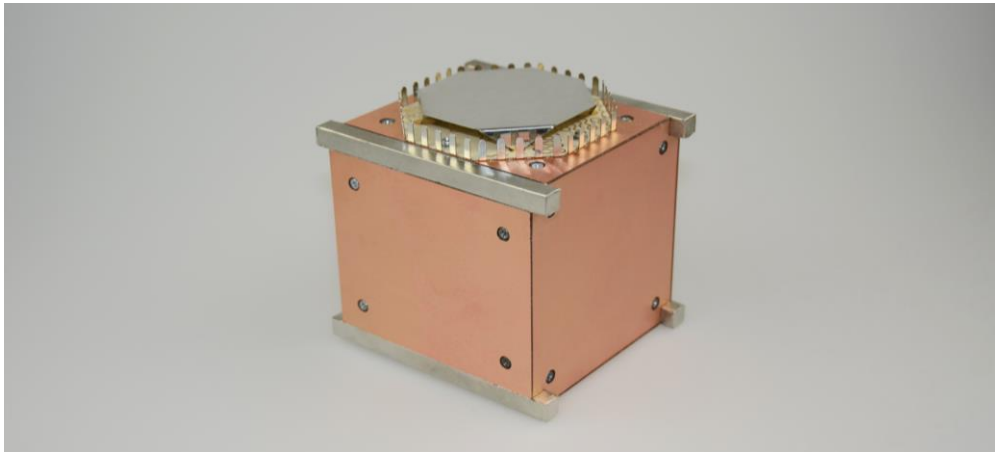


Figure 1.
Prototype
(Mounted on a 1U Mockup)

High-Performance GNSS Antenna for In-Orbit Positioning of CubeSats

The antenna is constructed to receive all GNSS signals in L band and enables robust positioning and timing. It consists of a number of lightweight self-supporting sheet metal parts and a thin two-sided printed circuit board and hence can be manufactured at low cost. The dimensions are in accordance with the antenna specifications for all CubeSat sizes incl. 1U (max $100 \times 83 \times 10 \text{ mm}^3$). The mass is only 20 g. There are no such products on the market at the present time.

Fraunhofer Institute for Integrated Circuits IIS
Am Wolfsmantel 33
91058 Erlangen, Germany

Contact
Dr. Alexander Popugaev
Chief Scientist
alexander.popugaev@iis.fraunhofer.de

www.iis.fraunhofer.de

Technical Data

| Parameter | Value |
|------------------------------------|---------------------------------------|
| Passband | 1160–1300 MHz and 1525–1610 MHz |
| Polarization | RHCP |
| Passive zenith gain | L1, E1, G1 (1.52–1.61 GHz): >1.5 dBic |
| | L5, L2, E6 (1.16–1.30 GHz): >0 dBic |
| Passive horizon gain | >-7 dBic |
| Axial ratio | <3 dB @ zenith |
| Impedance | 50 Ohms |
| VSWR output connector | <2:1 |
| Connector | SMA female |
| Internal diameter (octagon-shaped) | 82 mm |
| Height (w/o SMA) | 9.5 mm |
| Mass | 20 g |

Table 1.
Specifications

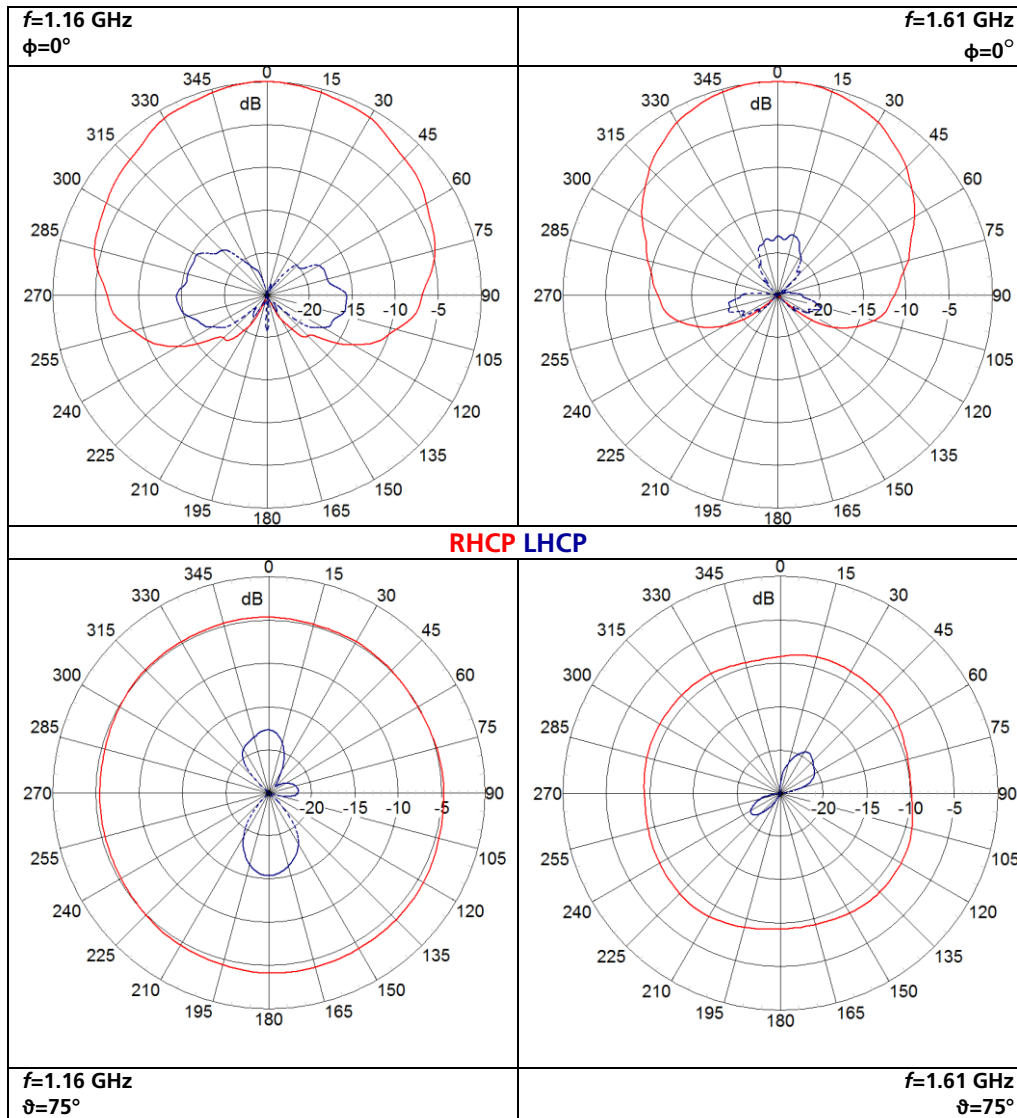


Figure 2.
Measured Radiation Pattern
(Normalized)