

FRAUNHOFER INSTITUTE FOR INTEGRATED CIRCUITS IIS

DATASHEET

SPACE USER GNSS ANTENNA

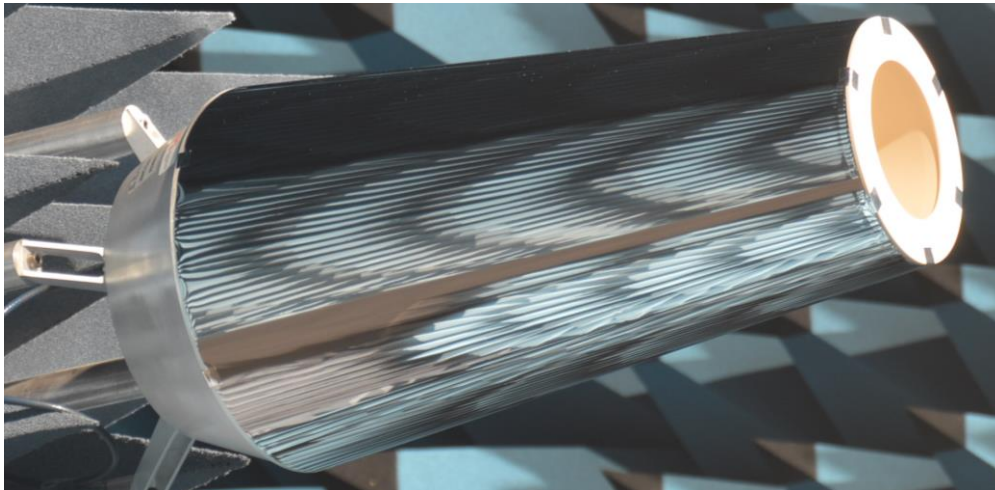


Figure 1.
Engineering model
with sunshield

GNSS Antenna for In-Orbit Positioning of Telecommunication Satellites in GEO

The solution represents a one-arm helical antenna with truncated-cone reflector optimized for the L5/E5a-band. The helix is wound on a novel support cone-shaped structure which exhibits a high mechanical stability and a low impact on the antenna efficiency. The antenna has been characterized by measurements on EM level.

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	1156.45–1196.45 MHz (L5/E5a)
Polarization	RHCP
Coverage	Elev. 10–21°, az. 0–360°
	Elev. 10–42°, az. 90 ± 66° & 270 ± 66°
Passive gain	>5 dBic
Axial ratio	<3 dB
Impedance	50 Ohms
VSWR	<1.1:1
Connector	SMA female
Diameter	250 mm
Height	500 mm
Mass (flight model)	<1 kg

Table 1.
Specifications

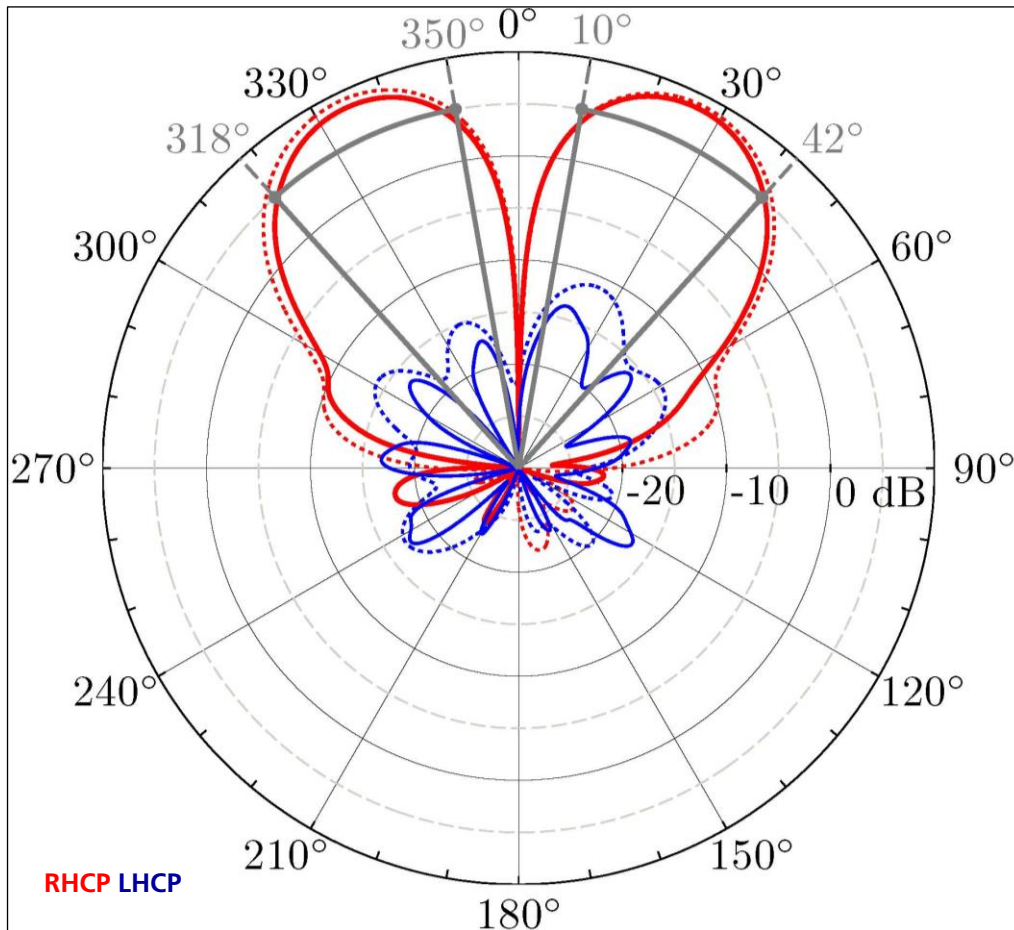


Figure 2.
Measured (solid line) and simulated (dashed line) radiation pattern at 1176.45 MHz (vertical cut)