Single, Dual and Quad Patch Antennas for S and X Band
X Band Antenna

- patch antenna 60 x 40 mm²
- 7.145 – 7.250 GHz
- 8.025 – 8.400 GHz

Highlights
- Circular polarization (RHCP)
- High gain
- Ultra-small shape
- Low mass
- Compatible to 1U CubeSat
- Robust design

This COTS antenna is designed for pico and nano satellite applications to realize satellite-to-ground links. The mechanical dimensions fit a 1U CubeSat as well as larger satellites.

With circular polarization, the antenna provides a robust solution regarding the steering accuracy to the ground station antenna.

Due to the four combined patches, a high antenna gain can be achieved, considering small form factor requirements.

As RF interface, a robust SMA (female) connector is used. Four screws provide a proper mounting of the antenna.

The antenna backside shall be grounded properly to the satellite chassis. As dielectric, ROGERS™ laminate for space applications is used. Patches and conductors are Cu with NiAu surface finish.

With the basic design in S band, TRL 9 has been achieved with various successful LEO missions. Equivalent design for X band uplink frequency is available, too.

Features
- Flight grade tested design
- Patch antenna design
- Cost effective
- Short delivery time

Key Specifications
- Operation frequency: 7.145-7.250 GHz
- 8.025-8.400 GHz
- Maximum gain (main direction): 11 dBi
- Half power beam width: 40°
- RF power input: < 2 W
- VSWR: < 1.4 typ.
- < 1.8 @ full BW
- Impedance: 50 Ω
- Polarization: RHCP (opt. LHCP)
- Temperature range: -30°C ... +60°C
- Mass: 20 grams
- Type: Patch
- Connector type: SMA (f)
- Outer dimensions (x/y/z, w/o connector): 60 x 40 x 1.8 mm³

Product specification may be subject to change without notification.
S Band Antenna

⇒ single patch antenna
⇒ dual patch antenna for Tx and Rx
⇒ 2.025 – 2.500 GHz

**Highlights**
- Circular polarization (RHCP and LHCP)
- High gain
- Small shape
- Single or dual patch antenna
- Compatible to 1U CubeSat
- Robust design

This COTS antenna is designed for pico and nano satellite applications to realize satellite-to-ground links. The mechanical dimensions fit a 1U CubeSat as well as larger satellites. Various designs of different frequencies are available and customer specific solutions can be provided.

With circular polarization, the antenna provides a robust solution regarding the steering accuracy to the ground station antenna.

The design could be either single patch antennas or dual patch antennas for separate Tx and Rx ports. Thereby the duplex filter requirements are minimized.

As RF interface a robust SMA (female) or an UMP connector is used. Four screws provide a proper mounting of the antenna.

The antenna backside shall be grounded properly to the satellite chassis. As dielectric, ROGERS™ laminate for space applications is used. Patches and conductors are Cu with NiAu surface finish.

With the basic design in S band, TRL 9 has been achieved with various successful LEO missions.

**Features**
- Flight grade tested design
- Patch antenna design
- Various designs available
- Cost effective
- Short delivery time

**Key Specifications**
- Operation frequency: 2.025-2.500 GHz
- Bandwidth: 50 MHz (within frequency band)
- Gain: 6 dBi (typ.)
- Vertical beam: ± 40°
- Horizontal beam: ± 40°
- F/B ratio: > 20 dB
- VSWR: < 1.25 @ typ.
- < 1.8 @ full BW
- Impedance: 50 Ω
- Polarization: RHCP (opt. LHCP)
- Mass:
  - Single patch: 49 grams
  - Dual patch: 62 grams
- Type: Patch
- Connector type: SMA (f), UMP
- Outer dimensions (x/y/z, w/o connector):
  - Single patch: 70 x 70 x 3.4 mm³
  - Dual patch: 80 x 100 x 3.4 mm³
- TRL: 9

Product specification may be subject to change without notification.