



Ka-band TTC Antennas

Our Ka-Band TTC antennas are developed to give the customer reliable control and monitoring for all types of satellites.

We have delivered more than hundred pipe antennas for different frequency bands (C- to Ka-band). The pipe antenna type has served numerous satellites in their crucial telemetry and command communication. The antennas have excellent performance combined with low mass.

We offer three main variants of Ka-band TTC antennas:

- Pipe antennas with 0.2 GHz bandwidth within TM/TX 17.7 GHz to 20.2 GHz band or TC/RX 27.5 GHz to 30.0 GHz band, single polarization
- Helix antennas with 1,2 GHz bandwidth within TM/TX 17.7 GHz to 20.2 GHz band or TC/RX 27.5 GHz to 30.0 GHz band, single polarization
- Pipe antennas with full 3 GHz bandwidth within TM/TX 17.3 GHz to 20.2 GHz band or TC/RX 27.0 to 30.0 GHz band, dual polarization (single polarization can be provided)

They have different EOC angles and are then well suited to different system layouts.

We are now introducing a breakthrough design, a full 3 GHz bandwidth dual polarization antenna for each of TM/TX and TC/RX bands.

Key features

- Compact and low mass designs
- LHCP and/or RHCP, single or dual polarization variants are available
- 0.2 GHz to 3 GHz bandwidths available
- Modular designs to keep qualification status
- Test hats/caps are available

Heritage

- More than 115 C- to Ka-band antennas delivered
- > Serving European and North American missions

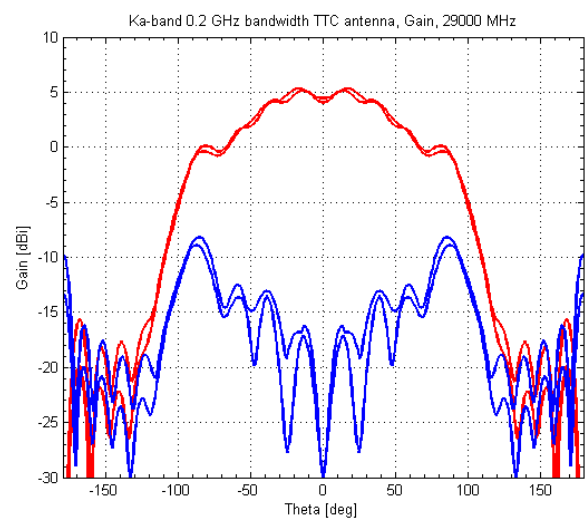
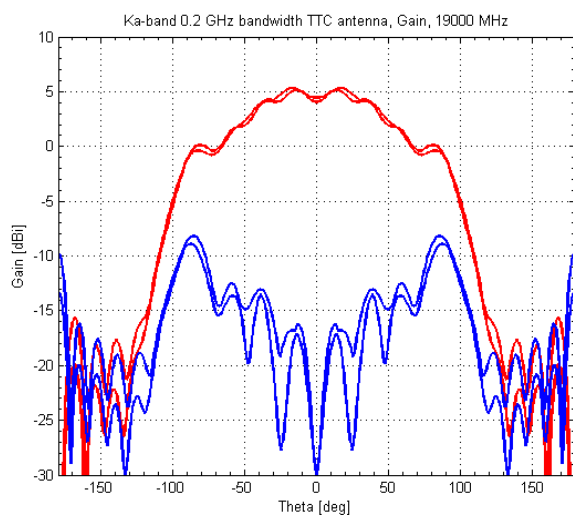
Ka-band 0.2 GHz bandwidth TTC Antennas



Technical data TM/TX or TC/RX Antenna

- EOC > 90°
- Diameter < 80 mm (TM/TX) < 60 mm (TC/RX)
- Height < 65 mm (TM/TX) < 45 mm (TC/RX)
- Mass < 130 g (TM/TX) < 50 g (TC/RX)
- Polarization - single RHCP or LHCP
- Frequency band TM/TX 17.7 GHz to 20.2 GHz band or TC/RX 27.5 GHz to 30.0 GHz
- Bandwidth - 0.2 GHz
- RF I/F - waveguide or coaxial possible
- Random vibration 46.7 g RMS
- Wide operational temperature range $\pm 150^{\circ}\text{C}$

Typical antenna radiation patterns (min and max gain over frequency) for a 0.2 GHz bandwidth antenna (TM/TX and TC/RX) are shown below.



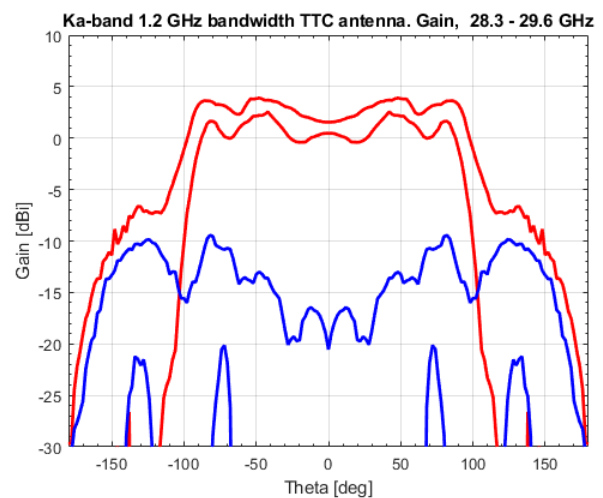
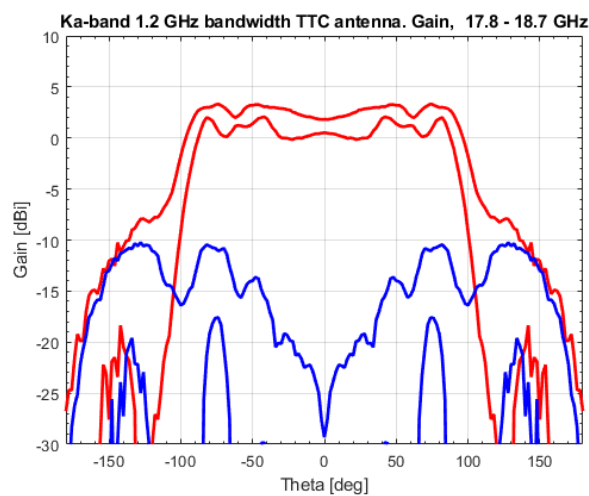
Ka-band 1.2 GHz bandwidth TTC Antennas

Technical data TM/TX or TC/RX antenna:

- EOC > 90°
- Diameter < 55 mm (TM/TX) < 40 mm (TC/RX)
- Height < 90 mm (TM/TX) < 60 mm (TC/RX)
- Mass < 95 g (TM/TX < 40 g (TC/RX)
- Polarization - single RHCP or LHCP
- Frequency band TM/TX 17.7 GHz to 20.2 GHz band or TC/RX 27.5 GHz to 30.0 GHz
- Bandwidth - 1.2 GHz band
- RF I/F - waveguide or coaxial possible
- Random vibration 46.7 g RMS
- Wide operational temperature range $\pm 150^{\circ}\text{C}$



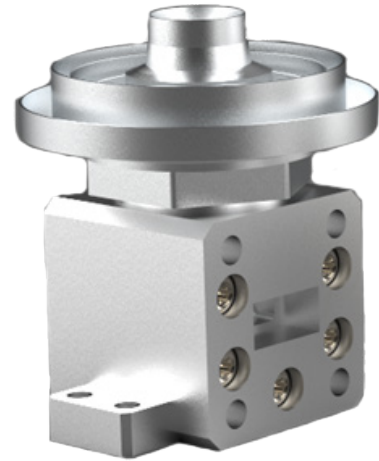
Typical antenna radiation patterns (min and max gain over frequency) for a 1.2 GHz bandwidth antenna (TM/TX and TC/RX) are shown below.



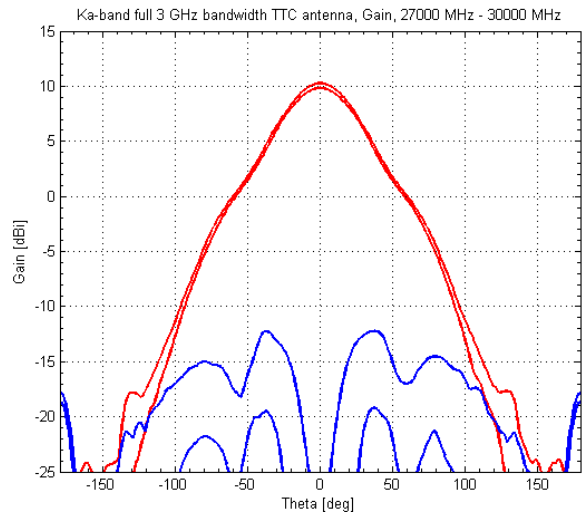
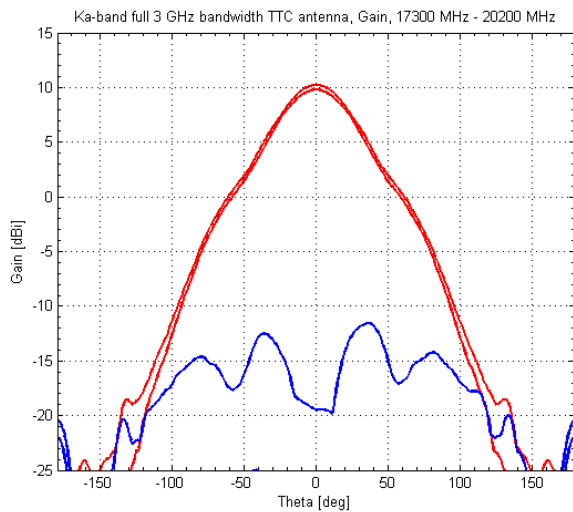
Ka-band full 3 GHz bandwidth TTC antennas

Technical data TM/TX or TC/RX antenna:

- EOC > 75°
- Diameter < 55 mm (TM/TX) < 40 mm (TC/RX)
- Height < 65 mm (TM/TX) < 45 mm (TC/RX)
- Mass < 100 g (TM/TX) < 120 g (TC/RX)
- Polarization - single or double RHCP and/or LHCP
- Frequency band TM/TX 17.3 GHz to 20.2 GHz band or TC/RX 27.0 GHz to 30.0 GHz
- Bandwidth - full 3 GHz band
- RF I/F - waveguide or coaxial possible
- Random vibration 46.7 g RMS
- Wide operational temperature range $\pm 150^{\circ}\text{C}$



Typical measured antenna radiation pattern (min and max gain over frequency) for a full bandwidth antenna (TM/TX) is shown below.



Auxiliary items

Test caps/hats are available to all Ku-band TTC antennas. The test caps/hats are absorptive with a set coupling value (e.g. 10, 15, 20 dB etc.) or non-absorptive with a 0 dB coupling.

