



S-band TTC Antennas

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

We offer two main variants of S-band TTC antennas:

- Helix antennas, generation 3 (G3)
- Patch excited cup (PEC) antennas

The S-band helix antenna became well renowned already at its introduction in the late 1970's. Today, we have delivered more than two hundred helix antennas. This antenna type has served numerous scientific and telecommunication satellites in their crucial telemetry and command communication. The antennas have excellent performance combined with low mass.

The PEC antenna has been used as a fill in antenna in combination with the helix antenna. It has a low profile and can thus be used where the available accommodation and volume is restricted.



Heritage

- 250+ S-band antennas delivered
- All across the globe
- Serving European, North American and Asian missions

Key features

- Different edge of coverage (EOC) variants are available
- LHCP or RHCP variants are available
- Modular designs to keep qualification status
- Compact design, 65 mm diameter and < 289 mm total height (all helix variants)
- Compact design, 140 mm diameter and < 69 mm total height (PEC variant)
- Low mass design, < 235 g (all helix variants)
- Low mass design, < 280 g (PEC variant)
- Wide operational temperature range $\pm 150^{\circ}\text{C}$



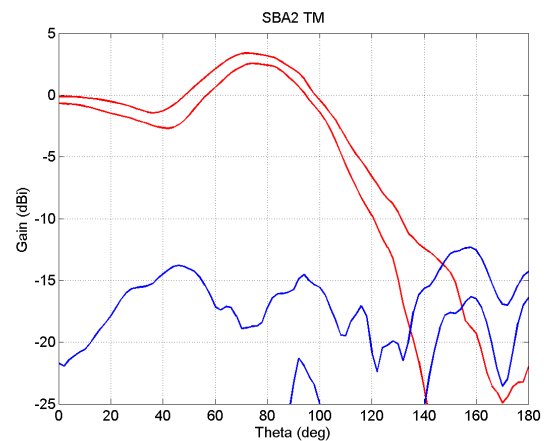
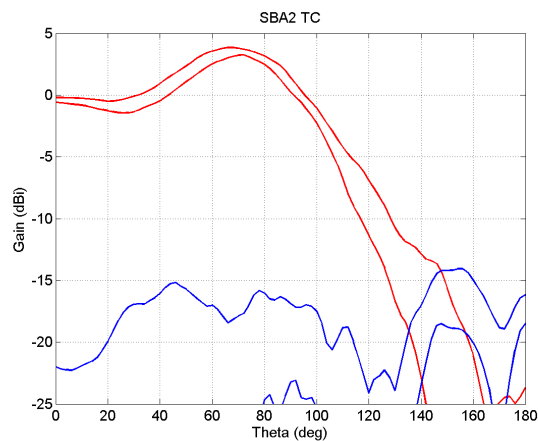
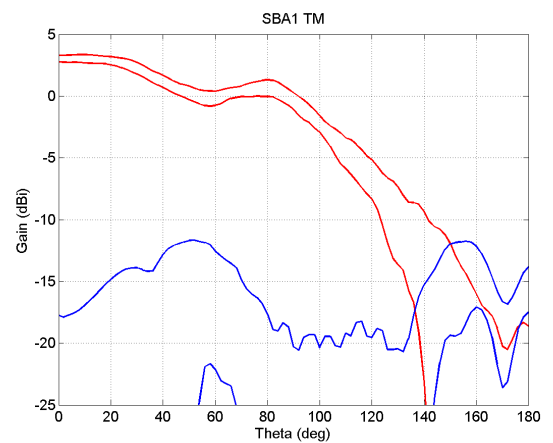
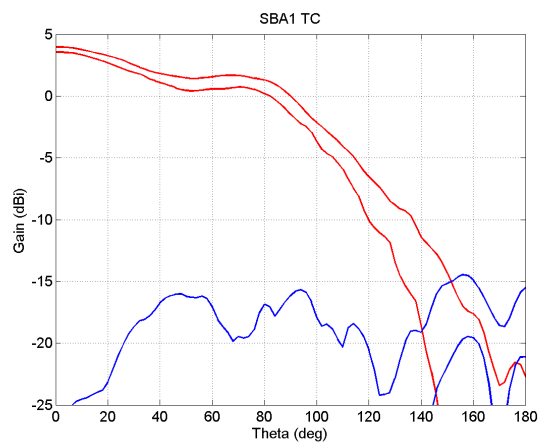
S-band helix TTC antennas

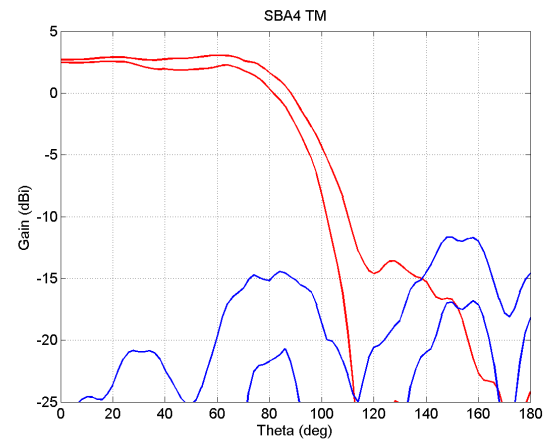
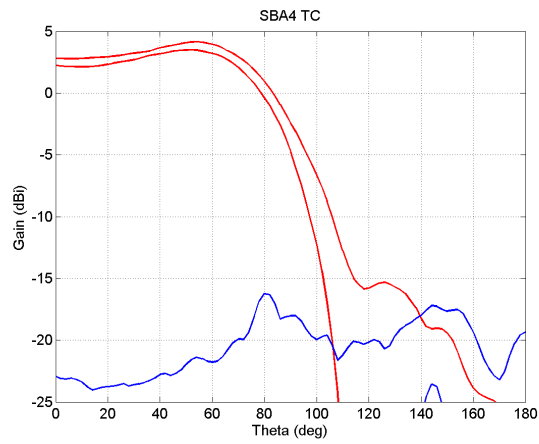
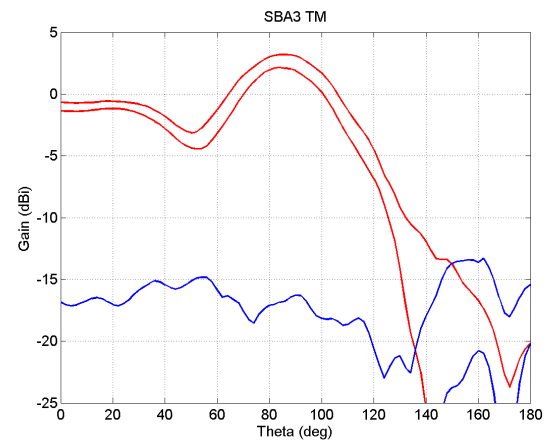
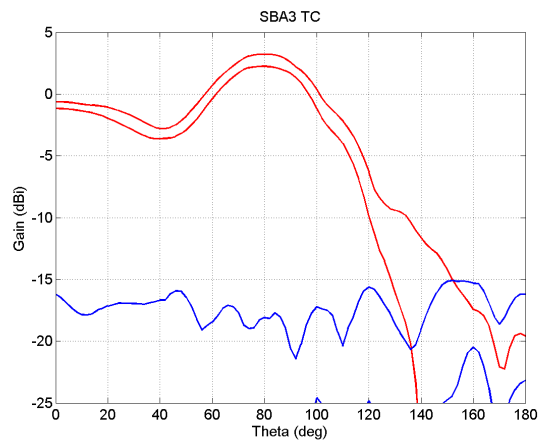
Technical data:

- EOC > 85° to > 115°
- Diameter 65 mm
- Total height < 289 mm
- Height over mounting I/F < 204 mm
- Mass < 235 g
- Frequency band 2000 MHz to 2300 MHz
- Random vibration 46.7 g RMS
- RF I/F SMA or TNC available



Typical measured antenna radiation patterns (min and max over frequency) are shown for the different EOC angles. At present four different versions, SBA1 to SBA4, of etched helix patterns exist (see measurement data below - TC and TM frequencies).





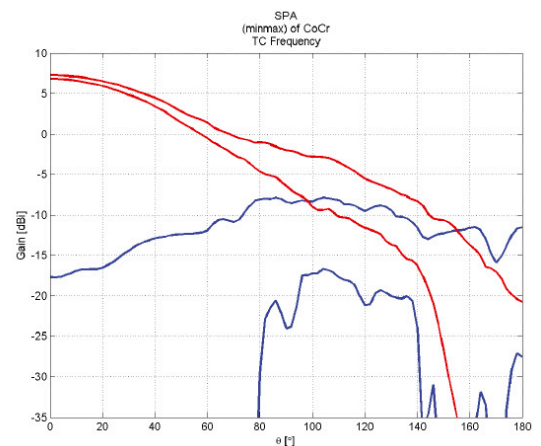
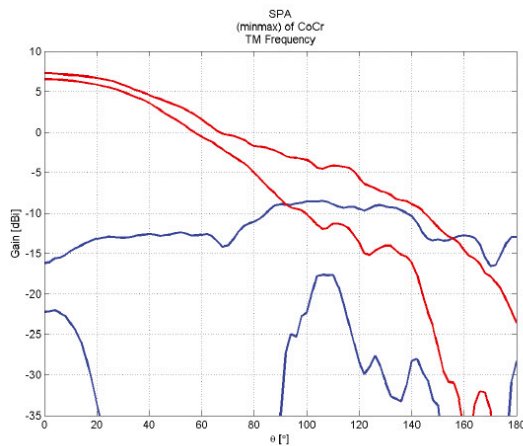
S-band patch excited cup (PEC) TTC antennas

Technical data:

- EOC 60°
- Diameter 140 mm (incl. SMA 147 mm)
- Total height < 69 mm
- Mass < 280 g
- Frequency band 2000 MHz to 2300 MHz
- Random vibration X,Y: 17,2 g RMS; Z: 30,8 g RMS
- RF I/F SMA



Typical measured antenna radiation patterns (min and max over frequency) are shown below:



Auxiliary items

- Test caps/hats are available to all S-band TTC antennas. The test caps/hats are absorptive with a set coupling value (e.g. 10, 15, 20 dB etc.).
- A 3 dB S-Band hybrid with X-band filter function is available (to be used in a co-located X-Band down link and S- Band TTC system). It has > 25 dB suppression at X-band data downlink frequencies.



Services

- Installed performance analysis offered

