# S-Band Patch Antenna

## Applications

- **Telemetry and Payload Downlink**
- **Telecommand Uplink**
- **Earth Observation Missions**
- **Space Science Missions**

S-Band Patch Antenna

### Features

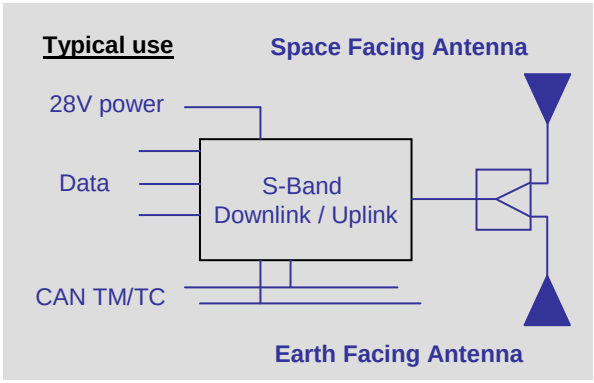
- Flight heritage
- Manufactured to ECSS standards
- Data rates up to 4 Mbps
- Hemispherical Gain Pattern
- Right or Left Hand Circular Polarisation available

### Interfaces

- 50 Ohm antenna interface (SMA)

### Key Specifications

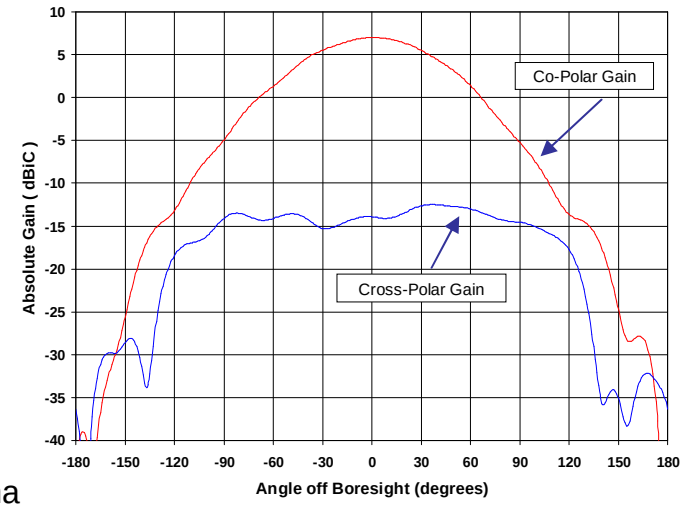
- Up to 10 W RF power
- Low Profile 82 x 82 x 20 mm
- Low Mass < 80 g




Typical Application within S-Band TM/TC

### Heritage (launch date)

- UK-DMC, ALSAT-1, NigeriaSat-1 (2003)
- Beijing-1 (2005)
- RapidEye (2008)
- Deimos-1, UK-DMC-2, NigeriaSat-2 (2009)
- TerraSAR (2007)
- TanDEM-X (2009)




Typical Measured Gain Pattern in free-space

### SSTL Associated Products

- S-Band Quadrifilar Helix Antenna
- X-Band Antenna Pointing Mechanism



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09403 v5.03 – July 2009

# S-Band Patch Antenna

The S-band Patch Antenna supports Telemetry and Telecommand data for Earth Observation and Space Science missions. The patch antenna produces a hemispherical pattern, with good gain along boresight. Gain drops to about 0 dBiC at approximately ±60º off boresight.

The antenna is matched to a 50 ohm system interfacing via a single coaxial SMA female connector

| | |
|---|---|
| Frequency range | Frequency Tunable in the range 2.0 to 2.5 GHz |
| RF Power Handling | Up to 10 W |
| Polarisation | Right or Left Hand Circular Polarisation |
| VSWR | < 1.3:1 |
| Half-Power Beamwidth | ~ ± 35 º |
| Axial Ratio | < 3dB within 3dB Beamwidth |
| Mass | < 80 g |
| Dimensions | 82 x 82 x 20 mm (inc. connector) |
| Connector | Coaxial SMA Female |
| Mounting Interface | 4 x M4 Through Hole |
| Operating Temperature | -20 to +50 ºC operating |
| Random Vibration | 15 $G_{rms}$ in all axis |
| Radiation tolerance | 10 kRad (Si) |

SSTL is ISO9000:2000 certified

- Manufacture and rework to
  - ECSS Q-70-80A
  - ESA PSS-01-738
  - ECSS Q-70-28A
  - Test to SSTL ISO9000:2000

Standard Delivery Service Includes

- Compliance Testing
- Vibration Test
- Thermal Cycling
- User Manual
- Test Results
- Export License and Shipping

- Thermal Vacuum Testing available
- Unit can be supplied prior to environmental testing

## Surrey Satellite Technology Limited

SSTL has launched over 30 satellites gaining almost 200 years in-orbit experience. SSTL draws on its world-class expertise in both small satellite platform technology and high and medium resolution optical instruments. SSTL provides complete turn-key system solutions; spacecraft, ground station, launch, operations and image processing.

SSTL is unique in the space industry; able to design, manufacture and integrate multiple satellites in-house.

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