

## SSA02 - WIDE BANDWIDTH AMPLIFIED S-BAND PATCH ANTENNA



# SSA02 – 34 dB WIDE BANDWIDTH AMPLIFIED S-BAND PATCH ANTENNA

## PRODUCT NAME

SSA02- 34dB WIDE BANDWIDTH AMPLIFIED S-BAND PATCH ANTENNA

## SUMMARY

The EXA SSA02 is the power-amplified version of the SSA01 wide bandwidth S-band antenna that can accommodate a bandwidth of up to 195 MHz for missions that need greater speed and/or bandwidth separation capabilities and great flexibility on the final frequencies selection. It will work between 2025 and 2120 MHz and 2200 and 2300 MHz without sacrificing gain, allowing your mission to not wait for the final bands and frequencies approval: By the time you get your approval papers from your telecommunications authority, you will be ready to fly, just request a frequency within SSA02's ample range and you save at least 6 months of red tape time.

SSA02 gives your mission's link budget a powerful boost thanks to its onboard amplifier tied directly to the antenna, working alongside a RF switch chip that allows safe transceiver capability to your radio; the total EIRP delivered by the SSA02 is a **powerful 34 dB** allowing the use of very low power radios, thus saving power without sacrificing link budget

**This also means that 2 radios can share the same antenna!**

## FEATURES

- Flight heritage since 2020
- Wide bandwidth: 2025 to 2120 MHz and 2200 to 2300 MHz
- Powerful 34 dB of EIRP
- Only 4.8mm thickness
- On board RF-switch allows safe transceiver capability
- Allows 2 radios to operate de same antenna
- **Allows the use of very low power radios**
- Custom configurable choice of connectors and/or cables
- Wide FOV of 120 degrees

- Designed for LEO missions and requirements
- Manufactured according to NASA and ESA space standards and materials
- Functional, performance, thermal bake out and vibration tests provided with documentation.
- Compatible and compliant with standard deployers and CubeSat Standard

## PERFORMANCE

- Band Range:
  - First range: 2025 to 2120MHz
  - Second range: 2200 to 2300MHz
- 34 dB Total Effective Irradiated Power
- 195 MHz total bandwidth
- FOV 120 degrees aperture:
  - Vertical beam: 60 degrees
  - Horizontal beam: 60 degrees
- Impedance: 50 Ohms
- Power Amplifier:
  - Power operation: 5V@0.5A , 2.5W
  - Power range: 4.5V min, 5.5V max
  - Frequency Range: 2.0 – 3.0GHz
  - Gain: 24dB
  - P1dB: +28.5dBm
  - IP3: +42dBm
  - Noise Figure: 6dB
  - Input/Output VSWR: 1.7:1/1.9:1
  - Max RF input power +15 dB
- Polarization: RHCP
- F/B ratio: > 20 dB
- RH/LH isolation: 14 dB typical
- VSWR:
  - < 1.2 for center band frequencies
  - < 1.8 for frequency range

## PRODUCT PROPERTIES

- Mass: 60 g
- Dimensions: 97 x 80 x 5.8 mm
- Operating Temperature: -40 to +85°C
- Radiation Tolerance: 4 years minimum in LEO

## MATERIALS

- Only TML and CVCM < 1% materials used, NASA and ESA approved
- Antenna Material: Rogers 4350
- Connector: SMA, MCX or Uf.I
- PTFE (Teflon) space grade cables, coax, custom choice

## TESTING

All antennas are provided with tests reports regarding:

Test	QT	AT
Functional	✓	✓
Vibration		✓
Thermal Cycling		✓
Thermal Vacuum		✓
Power amplifier test	✓	✓
Antenna network VSWR Test	✓	✓

- Thermal Bake out (10E-5 mbar @ 50C for 72 hours)
- Full vibration test for Falcon 9, Electron, Soyuz, Dnepr and Long March 2D

## CONFIGURATION and PRICES

- SSA02 34dB Wide Bandwidth Amplified S-Band Patch Antenna: 7500€

## AVAILABILITY:

- Immediately

