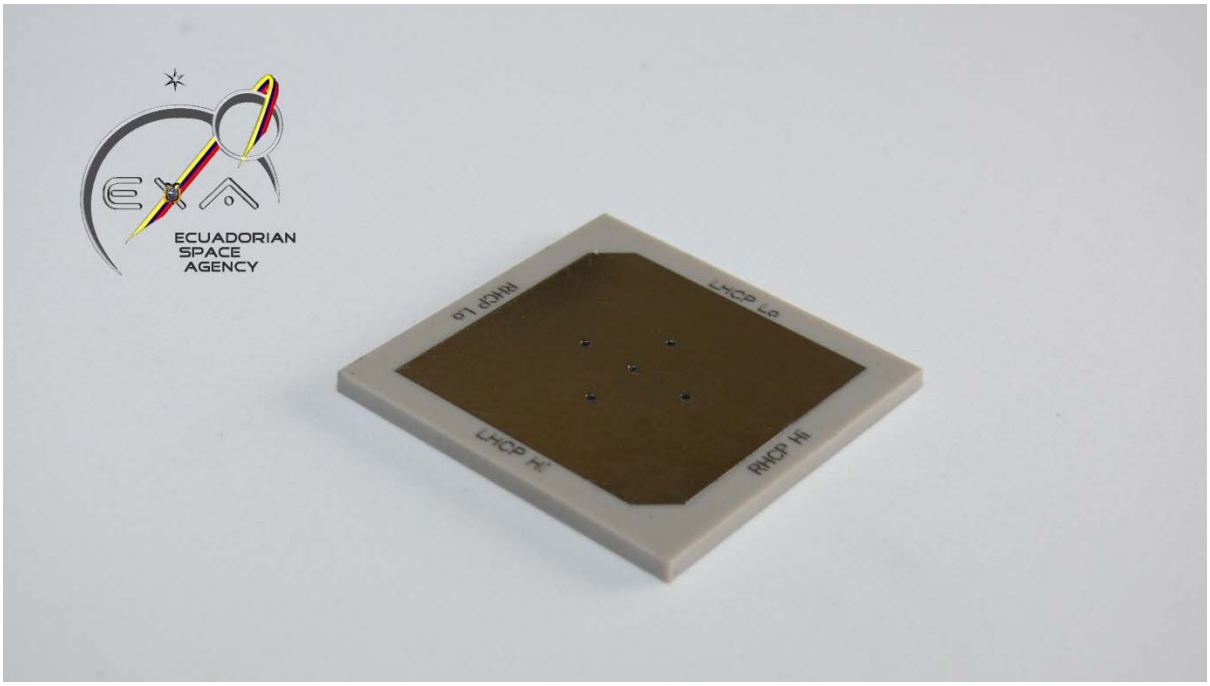


SSA03 – COMPACT HIGH GAIN S-BAND PATCH ANTENNA

PRODUCT NAME

SSA03- COMPACT HIGH GAIN S-BAND PATCH ANTENNA

SUMMARY

The EXA SSA03 is a very compact, high gain S-band antenna than can accommodate a bandwidth of up to 180 MHz for missions that need greater speed and/or bandwidth separation capabilities and great flexibility on the final frequencies selection. Integrated user selectable choice between LCHP and RHCP and center frequency choice between 2000 and 2540 MHz allows your mission to not wait for the final bands and frequencies approval and greater flexibility: By the time you get your approval papers from your telecommunications authority, you will be ready to fly, just request a frequency within SSA03's ample center frequency range and you save at least 6 months of red tape time.

FEATURES

- Flight heritage since 2021
- Wide choice of center frequencies: 2000 to 2540 MHz
- Bandwidth between 80 and 180 MHz
- Only 2.65mm thickness
- Custom configurable choice of LHCP/RHCP and connectors and/or cables
- 7.34 dB gain, 120 deg. FOV
- Designed for LEO missions and requirements
- AOA coating available on demand.

- Functional, performance, thermal bake out and vibration tests provided with documentation.
- Compatible and compliant with standard deployers and CubeSat Standard

PERFORMANCE

- Band Range:
  2000 to 2540MHz center frequencies available:
  2000 to 2080, 2080 to 2160, 2075 to 20175, 2160 to 2260, 2205 to 2260 and 2340 to 2440, 2300 to 2380 and 2440 to 2540
- 7.34 dB Gain typical
- 80 to 180 MHz total bandwidth
- FOV 120 degrees aperture:
  - Vertical beam: 60 degrees
  - Horizontal beam: 60 degrees
- Impedance: 50 Ohms, also 60 ~ 70 Ohms user selectable
- Polarization: RHCP or LHCP
- F/B ratio: > 19 dB
- RH/LH isolation: 21 dB typical
- VSWR:
  - < 1.01 for center band frequencies
  - < 2.80 for frequency range

PRODUCT PROPERTIES

- Mass: 9.75 g max
- Dimensions: [43 ~ 45]mm x [43 ~ 45]mm depending on the CF x 2.70 mm
- Operating Temperature: -80 to +140°C
- Radiation Tolerance: 4 years minimum in LEO

MATERIALS

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

TESTING

All antennas are provided with tests reports regarding:

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

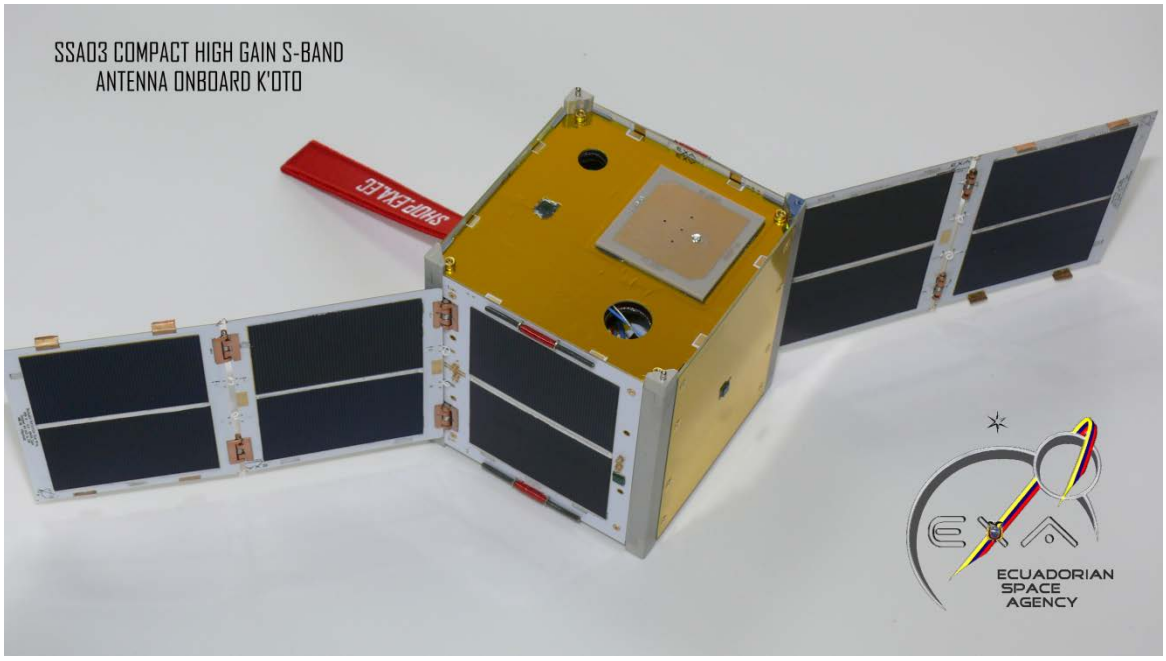
Test	QT	AT
Functional	✔	✔
Vibration		✔
Thermal Cycling		✔
Thermal Vacuum		✔
Antenna network VSWR Test	✔	✔

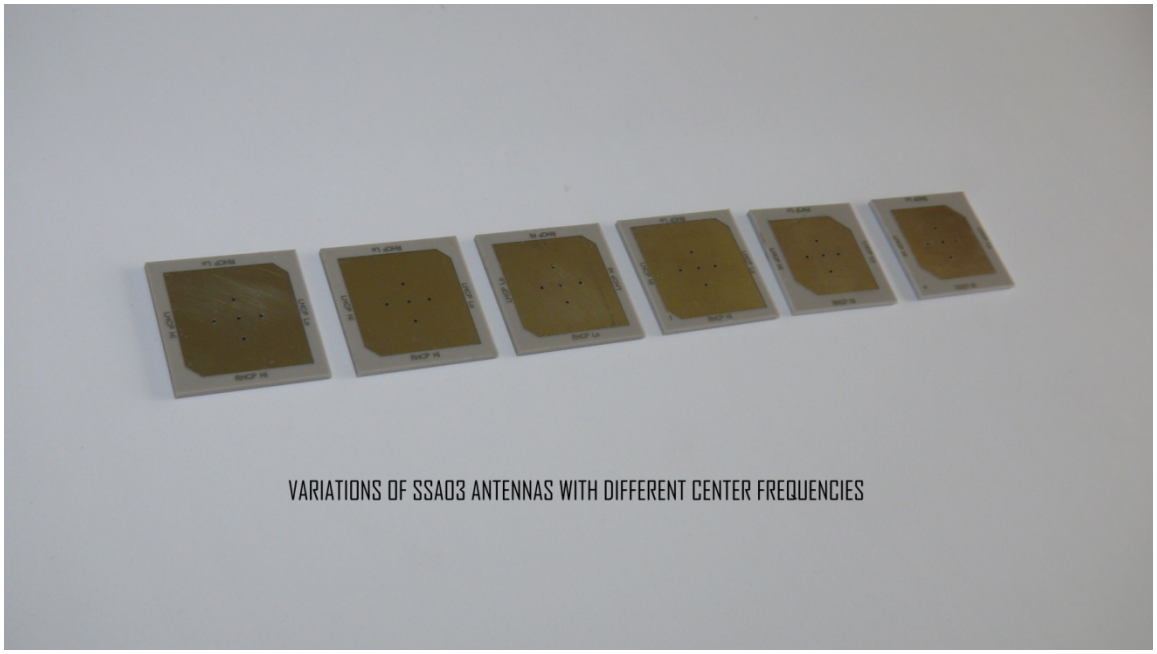
CONFIGURATION and PRICES

- SSA03 Compact High Gain S-Band Patch Antenna: 1600€

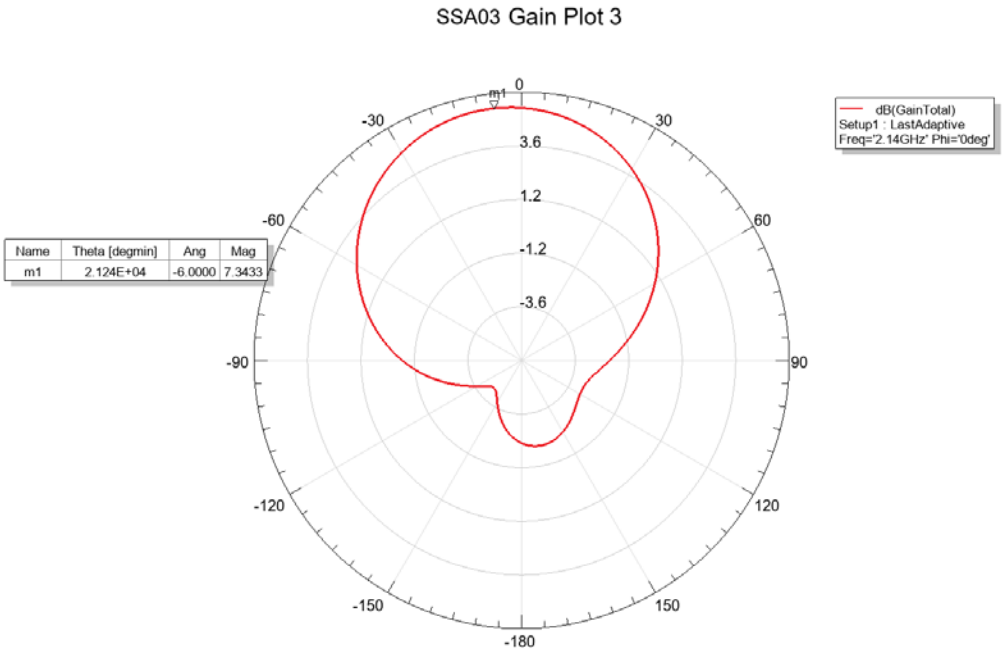
AVAILABILITY:

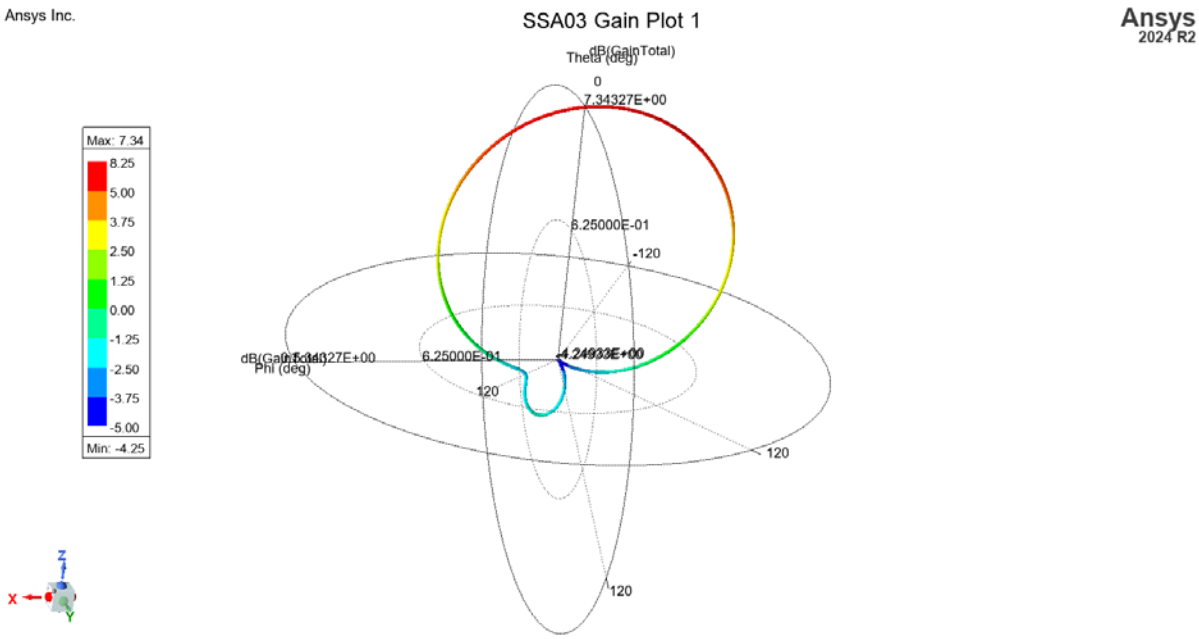
- Immediately

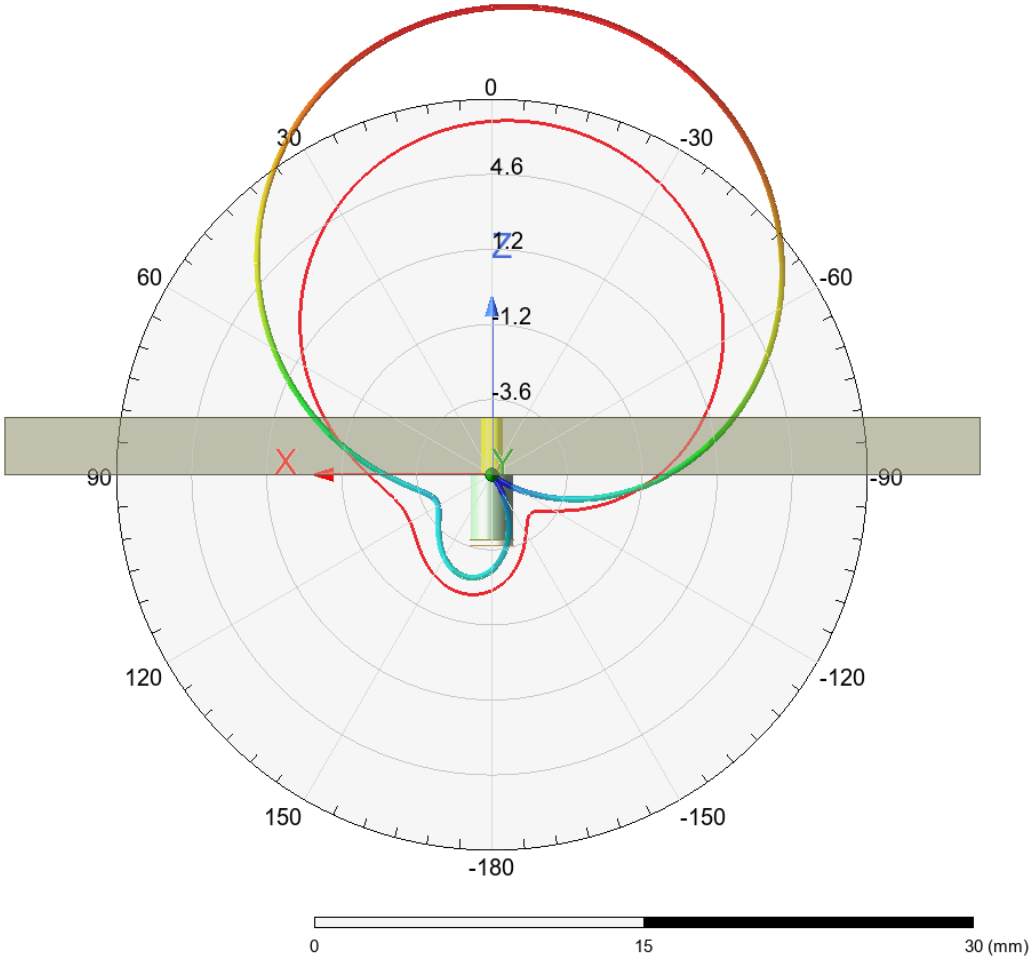




PLOTS AND PATTERNS







Ansys
2024 R2

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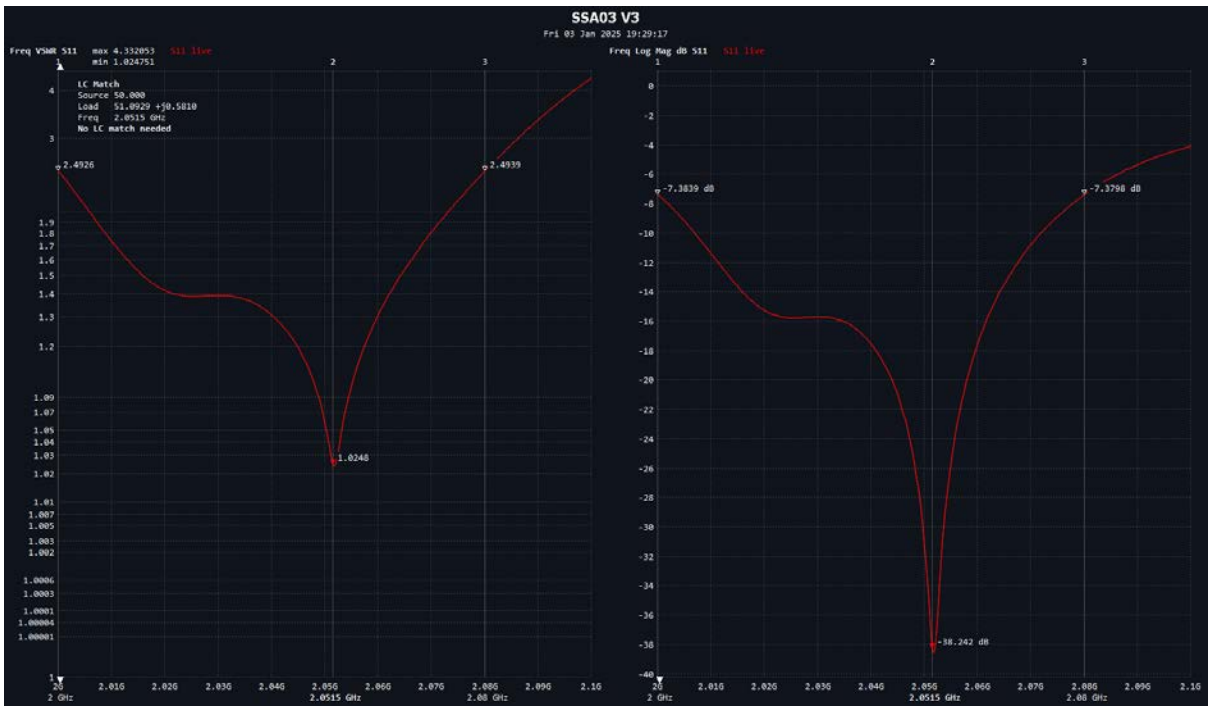
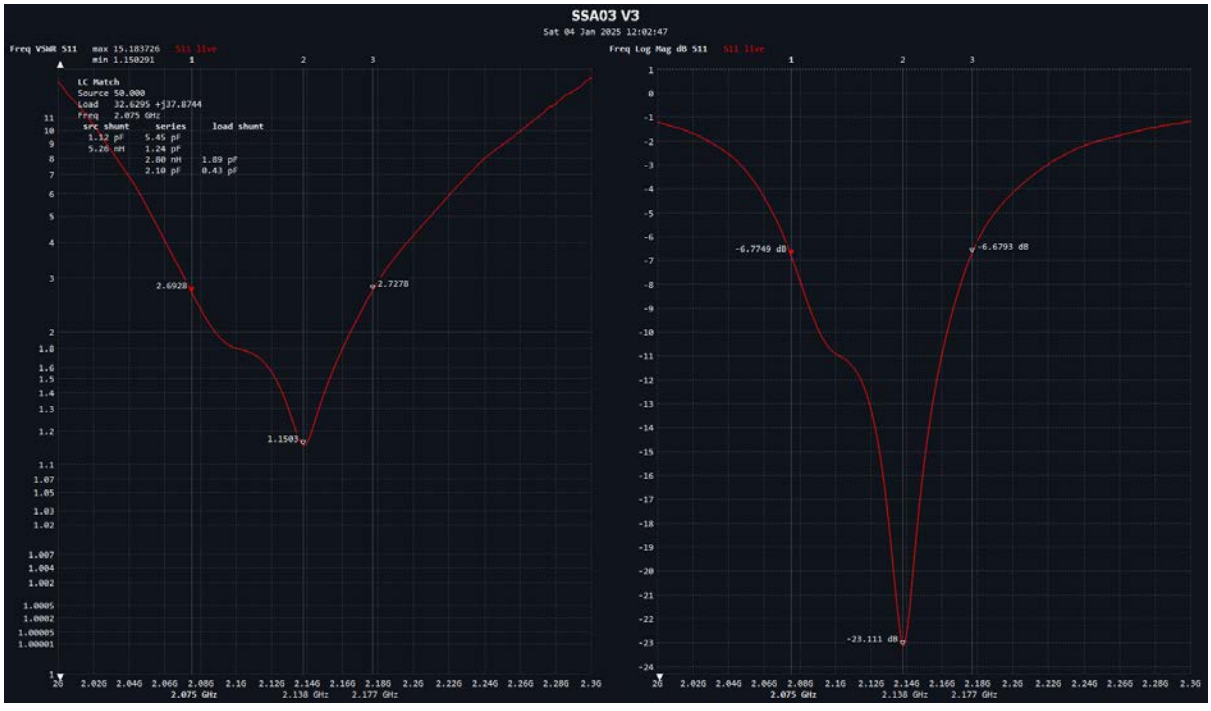
BANDWIDTH, VSWR AND RETURN LOSS



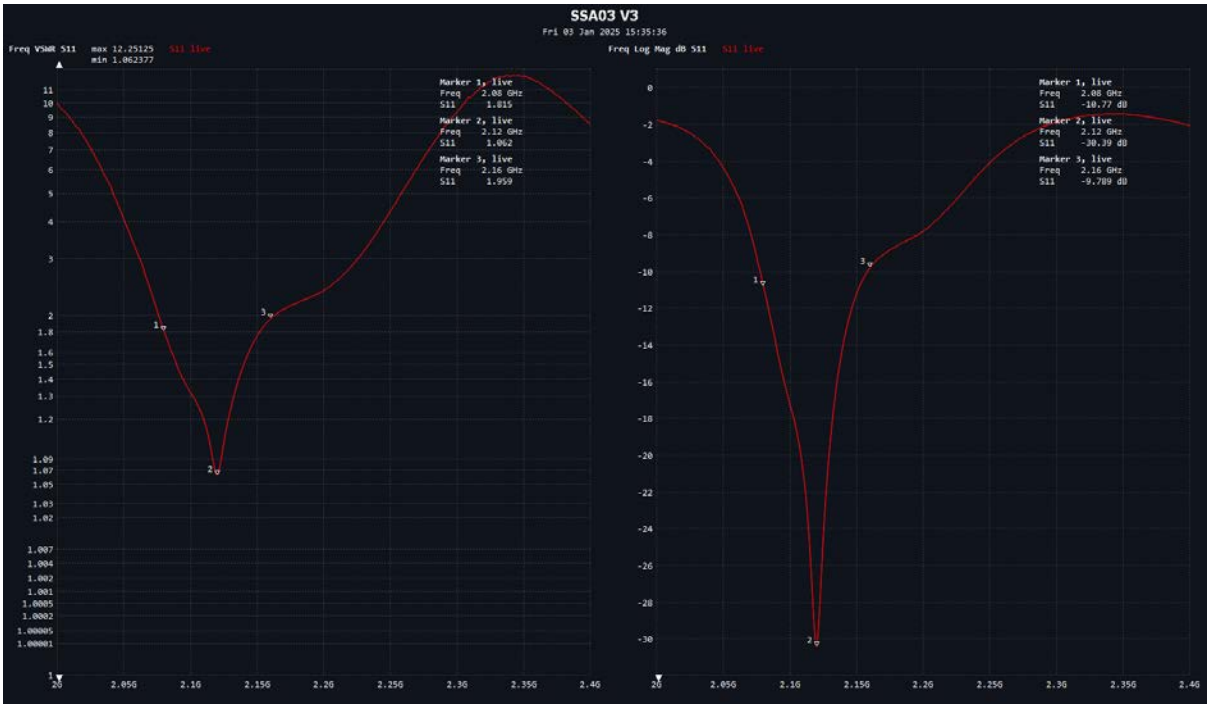
2000 ~ 2080 MHz

80 MHz total B/W



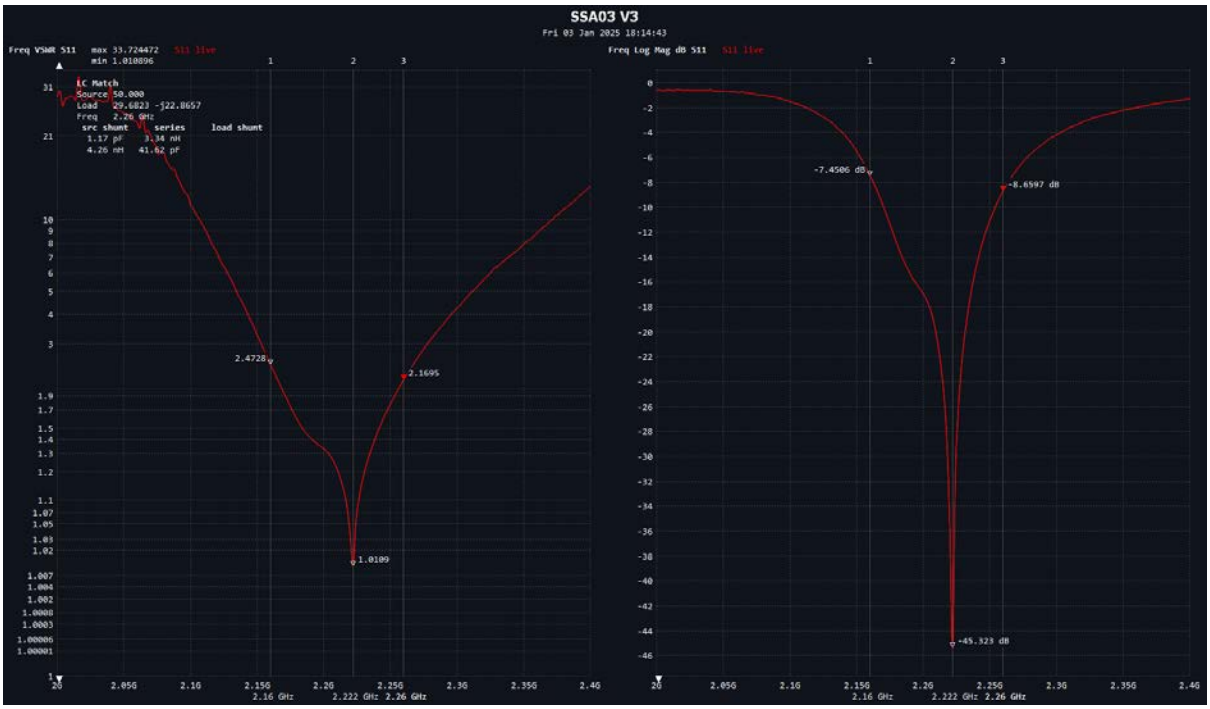
2075 ~ 2175 MHz

100 MHz total B/W



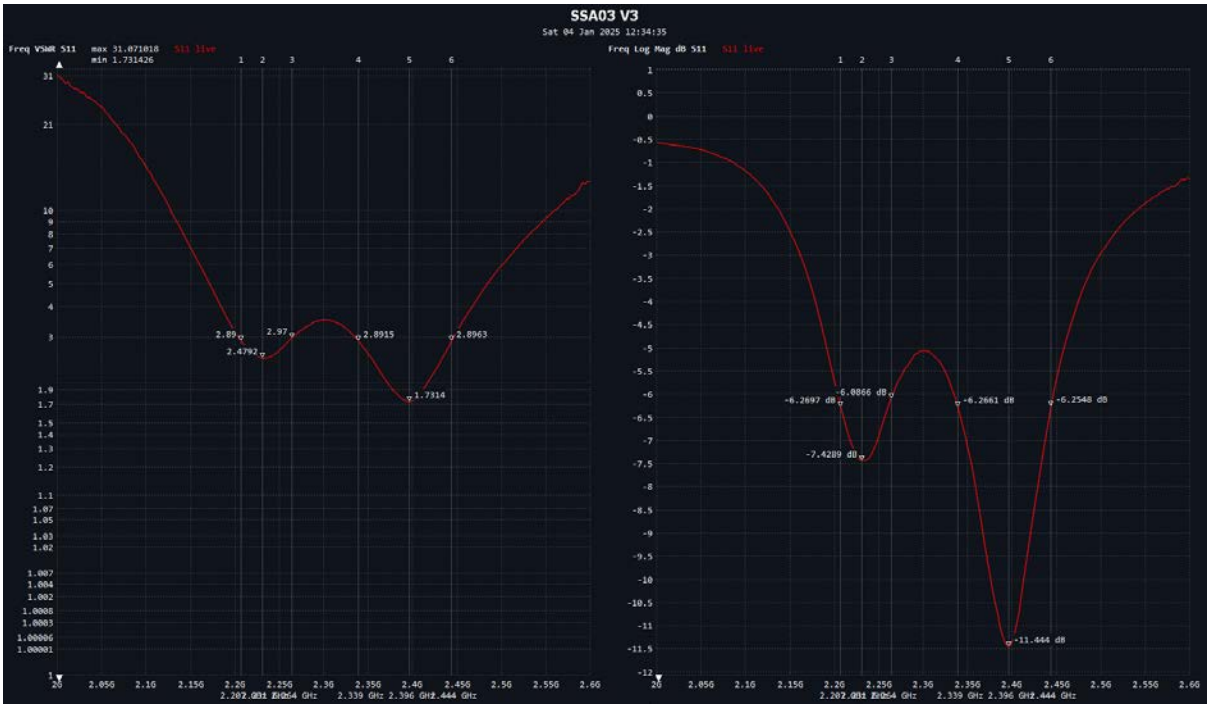
2080 ~ 2160 MHz

80 MHz total B/W



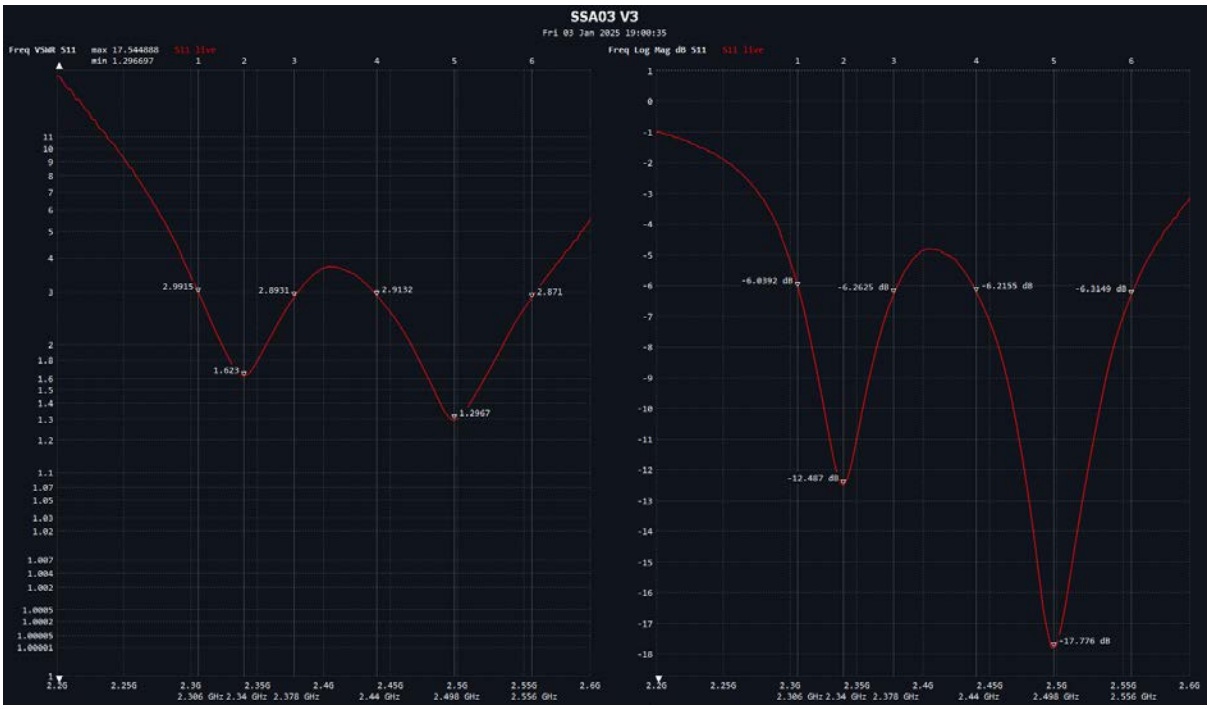
2160 ~ 2260 MHz

100 MHz total B/W



2205 ~ 2265 MHz and 2340 ~ 2440 MHz

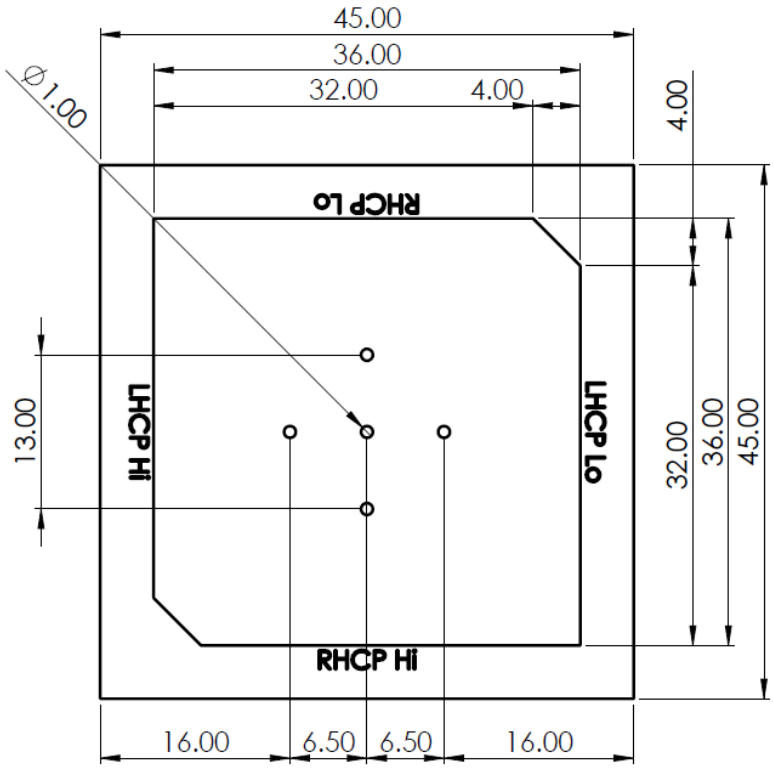
160 MHz total B/W



2300 ~ 2380 MHz and 2440 ~ 2540 MHz

180 MHz total B/W

MECHANICAL DRAWING



	NAME	SIGNATURE	DATE		TITLE: DIMENSIONS AND MEASUREMENTS	
DRAWN	JND			MATERIAL:	EXA SS03 ANTENNA	A4
CHK'D	RNB			ARLON 25N COPPER TIN		
APPV'D	RNB					
MFG	RNB					
Q.A	RNB			WEIGHT: 7.5 grams	SCALE: 2:1	SHEET 1 OF 1