



# SSA04

## DUAL S/C BAND PATCH ANTENNA

### PRODUCT NAME

SSA04- DUAL S/C BAND PATCH ANTENNA

### SUMMARY

The EXA SSA04 is a wide bandwidth, DUAL BAND S and C band antenna that can accommodate frequencies from 2 GHz to 7 GHz (5 GHz B/W) for missions that need greater speed and/or bandwidth separation capabilities and great flexibility on the final frequencies selection. It will work on the following bands:

Start Frequency (MHz)	Stop Frequency (MHz)	Bandwidth (MHz)	Avg. band Gain (dB)
2033	2340	307	6.7
3162	3257	95	5
4131	4204	73	4
4870	4961	91	8.5
6884	7045	161	2.6

## FEATURES

- Flight heritage since 2023
- Total bandwidth across: 727 MHz
- Only 8.4 mm thickness
- 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:

Start Frequency (MHz)	Stop Frequency (MHz)	Bandwidth (MHz)	Avg. band Gain (dB)
2033	2340	307	6.7
3162	3257	95	5
4131	4204	73	4
4870	4961	91	8.5
6884	7045	161	2.6

- 727 MHz total bandwidth
- FOV 120 degrees aperture:
  - Vertical beam: 60 degrees
  - Horizontal beam: 60 degrees
- Impedance: 50 Ohms
- Polarization: RHCP
- F/B ratio: > 20 dB
- VSWR:
  - < 1.2 Avg. for center band frequencies
  - < 2.05 for frequency range

## PRODUCT PROPERTIES

- Mass: 40 g
- Dimensions: 96.5 x 69.7 x 8.4 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
- Connector: SMA, MCX 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
- QT and AT is performed on the unit to be shipped

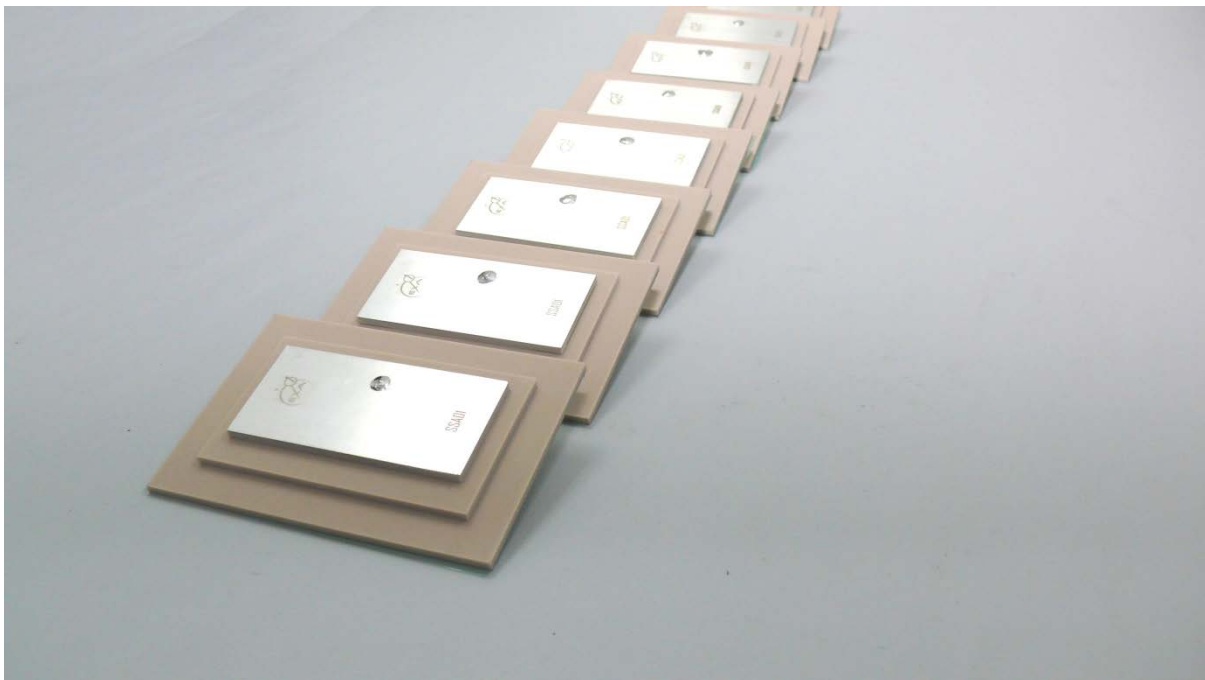
Test	QT	AT
Functional	✓	✓
Vibration		✓
Thermal Cycling		✓
Thermal Vacuum		✓
Antenna network VSWR Test	✓	✓

## CONFIGURATION and PRICES

- SSA01 Wide Bandwidth S-Band Patch Antenna: 2200€

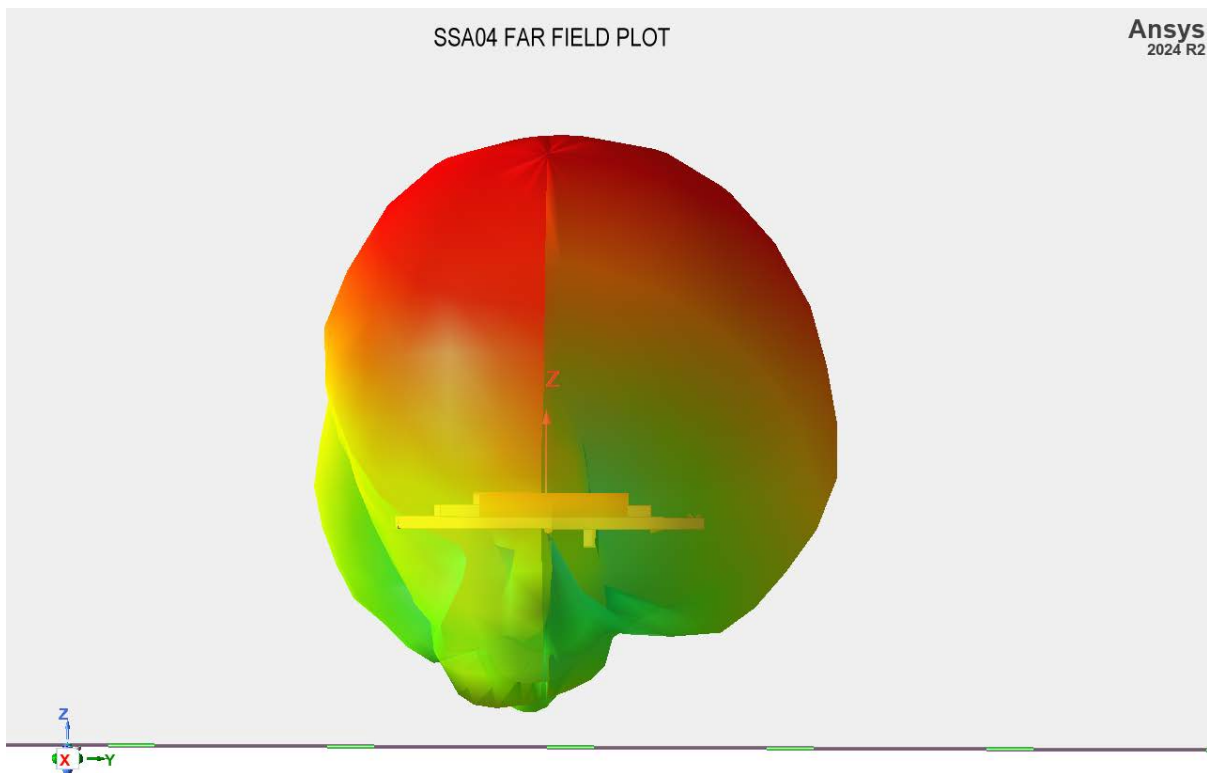
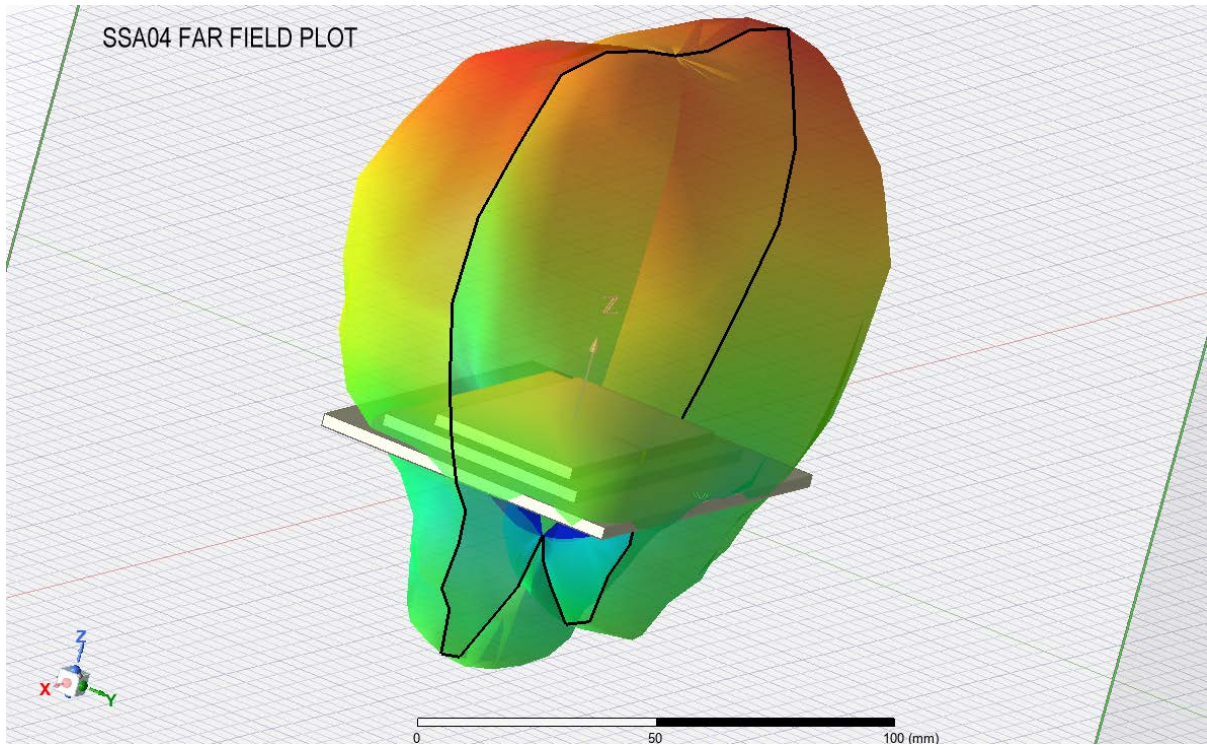
## AVAILABILITY:

- Immediately



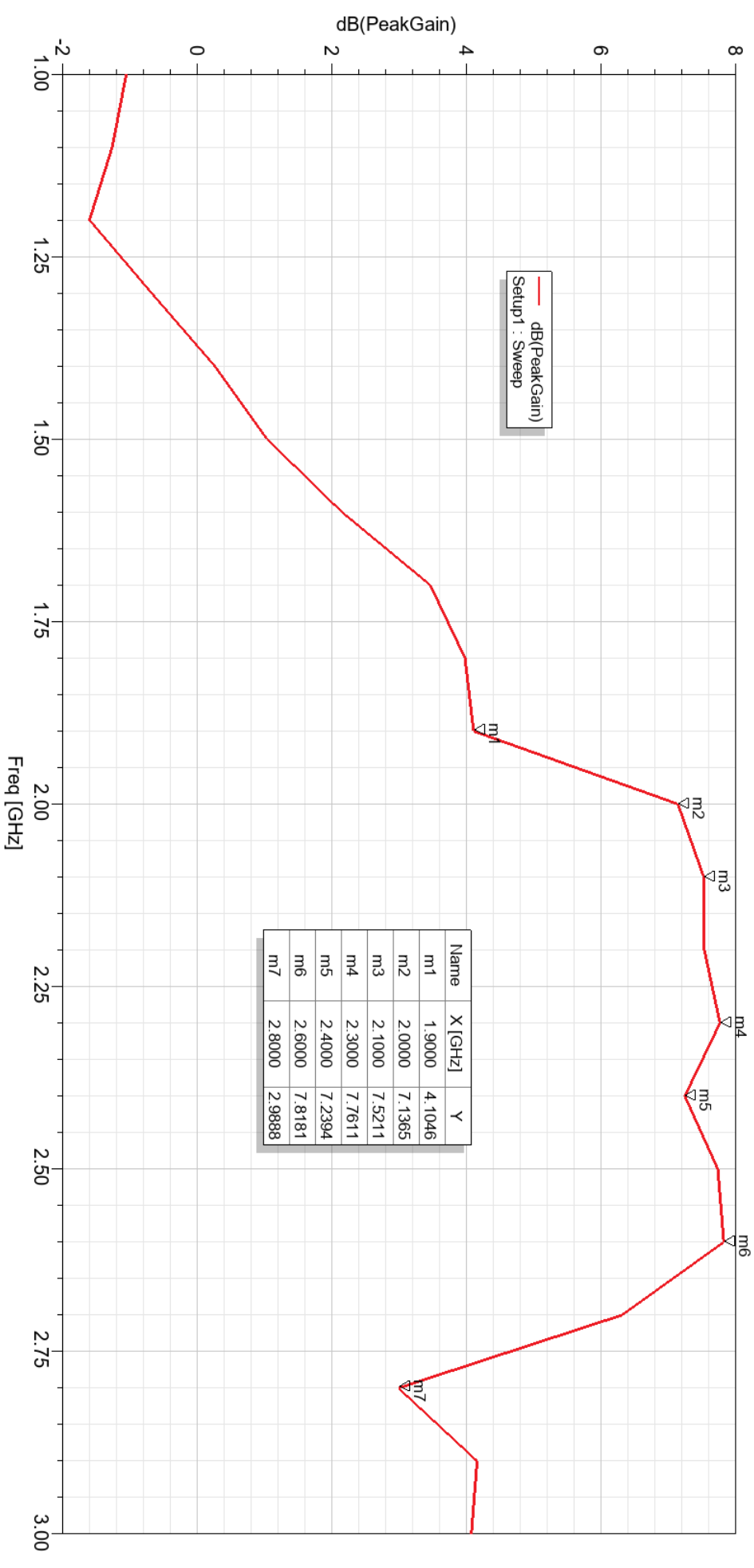


# RADIATION PATTERNS



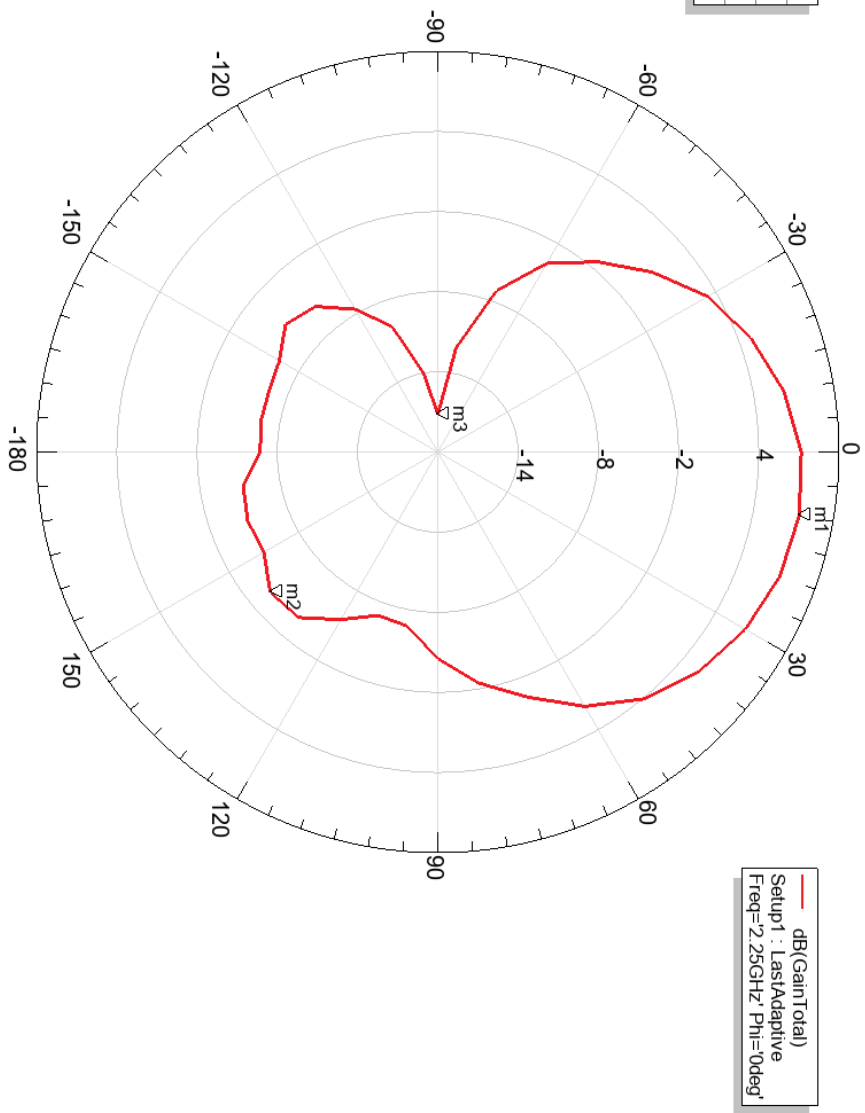
# SSA04 PEAK GAIN PLOT

Ansys  
2024 R2



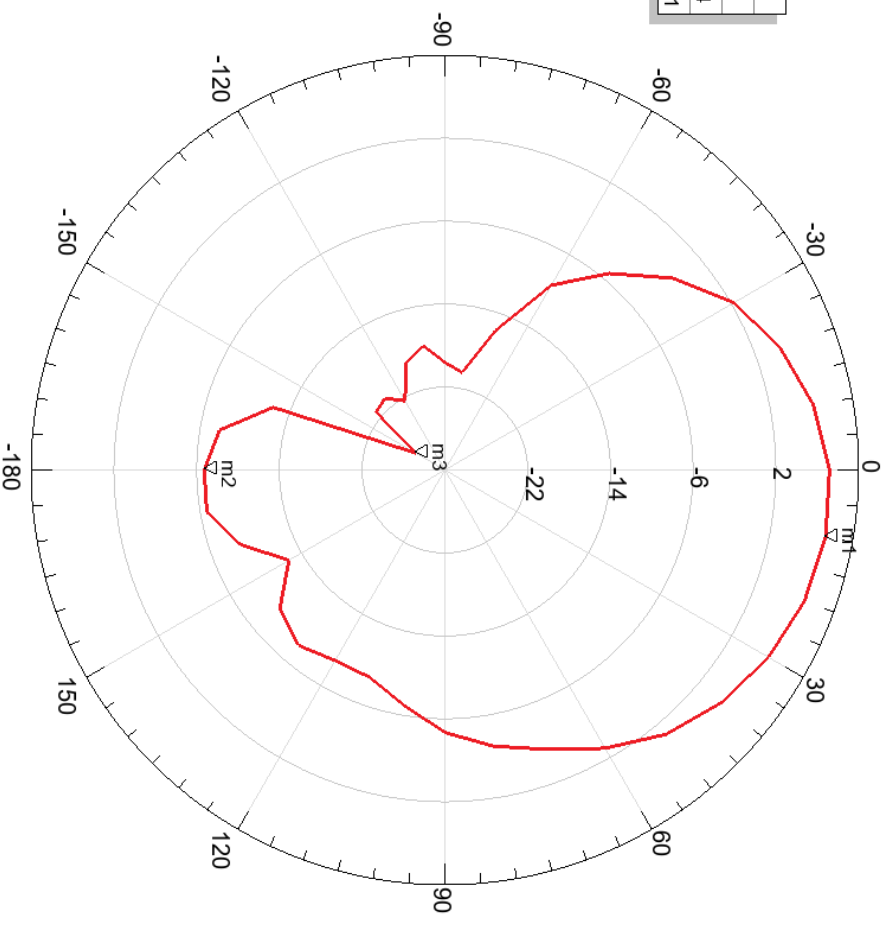
### SSA04 Total Gain Plot

Name	Theta [degmin]	Ang	Mag
m1	600	10.0000	7.4430
m2	8400	140.0000	-3.6503
m3	1.62E+04	-90.0000	-17.1855



### SSA04 Gain XY

Name	Theta [degmin]	Ang	Mag
m1	600	10.0000	7.3732
m2	1,08E+04	180.0000	-6.7354
m3	1,26E+04	-150.0000	-26.7361



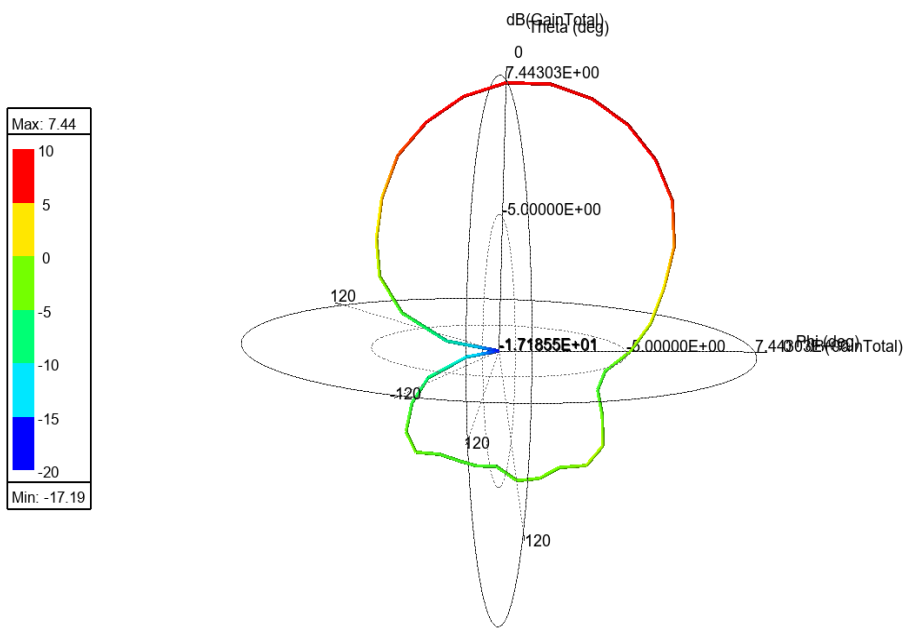
— dBc(GainY)  
 Setup1 : LastAdaptive  
 Freq='2.25GHz' Phi='0deg'



Ansys Inc.

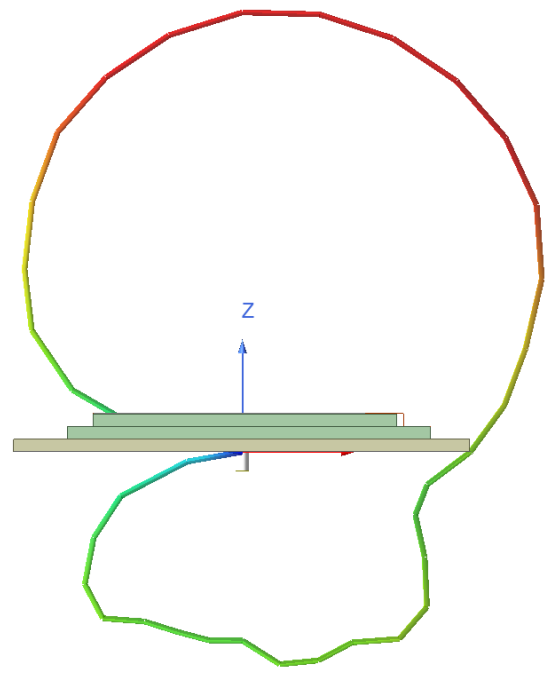
### SSA04 3D GAIN

Ansys  
2024 R2

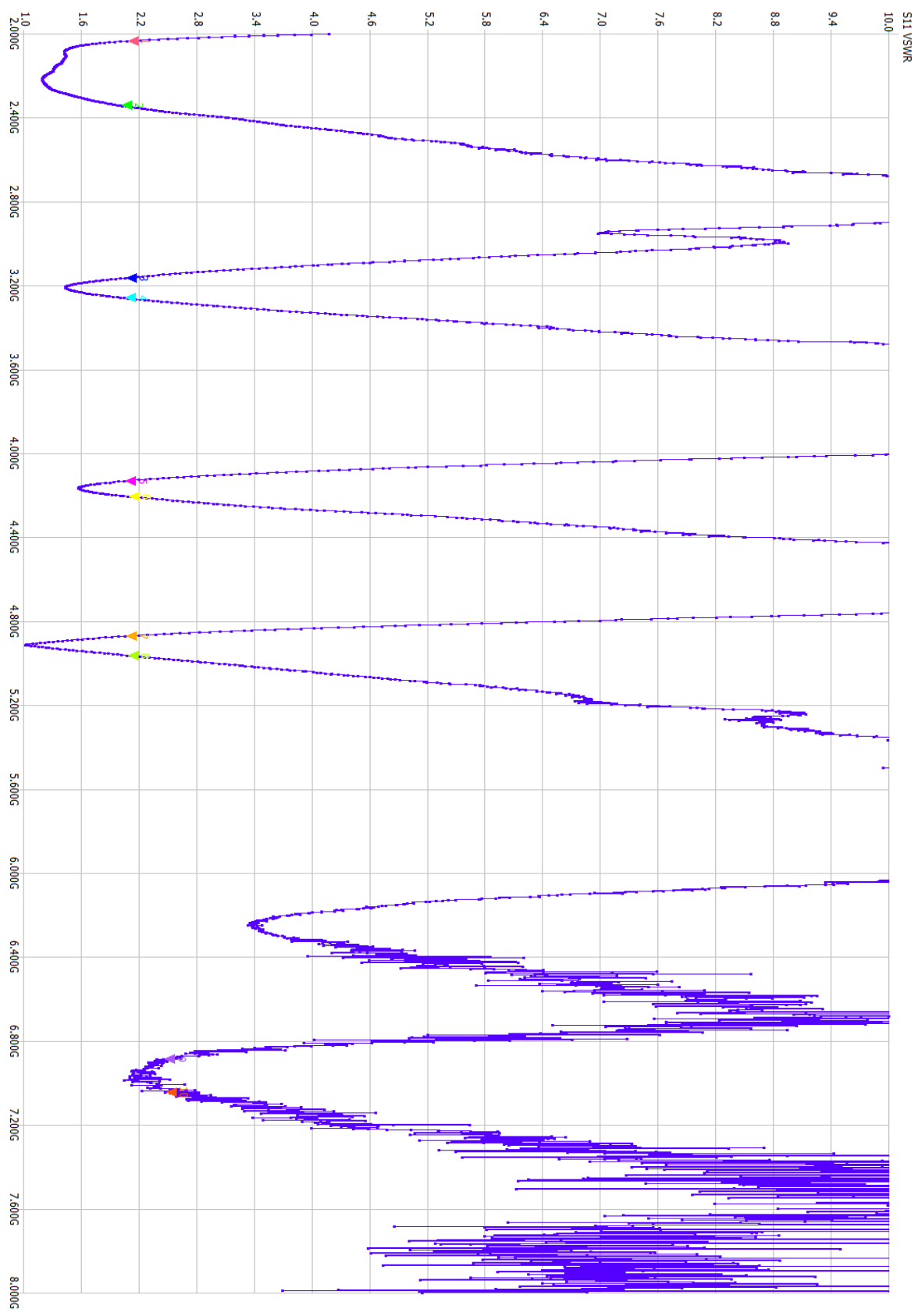


### SSA04 FAR FIELD PLOT

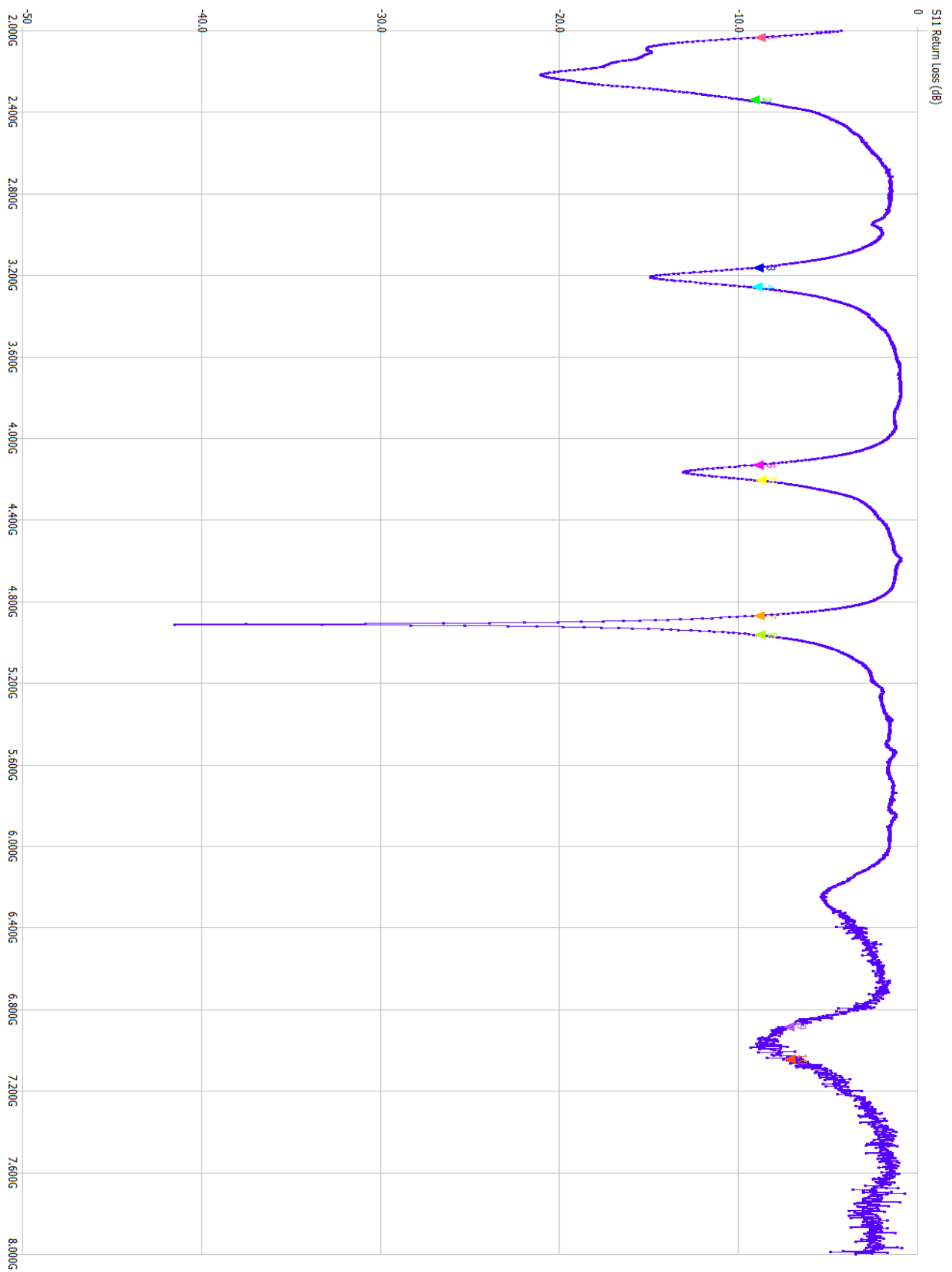
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2024 R2



# VSWR PLOT



# RETURN LOSS PLOT



# MECHANICAL DRAWING

