2639AN

Antenna test report

AzureWave Technologies, Inc.

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Antenna Field Test Report

Company: Azurewave

Project Name: 2639AN

Feature: Dual band

Application:

Date	Owner	Revision
2024/01/05	Dennis	1. Antenna sample test report
2024/05/07	Dennis	1. Antenna sample test report

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Antenna Placement

Antenna	Description	Frequency
Ant.1	Dual Band	2400 – 2500 MHz 5150 – 5850 MHz

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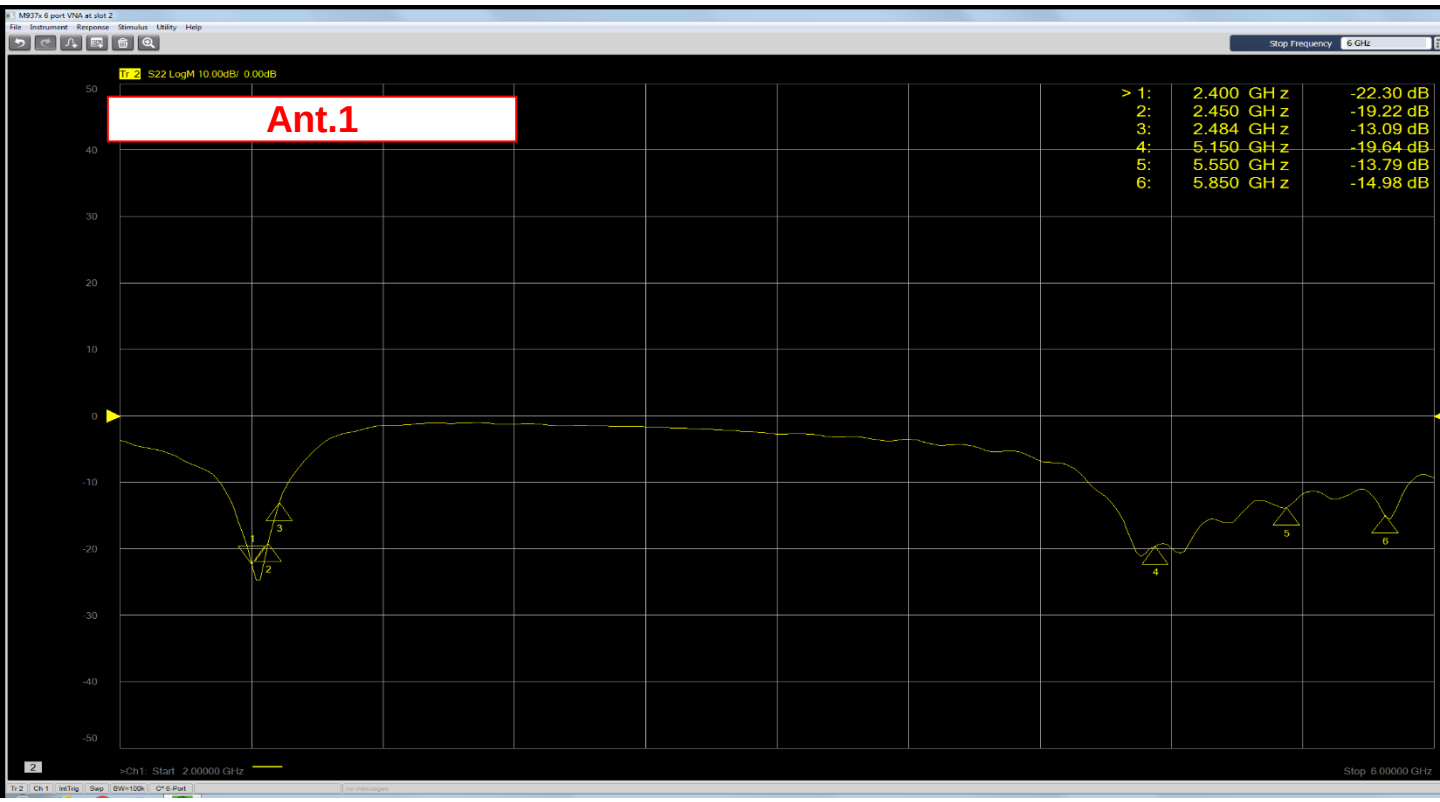
S-Parameters



Equipment :
Satimo

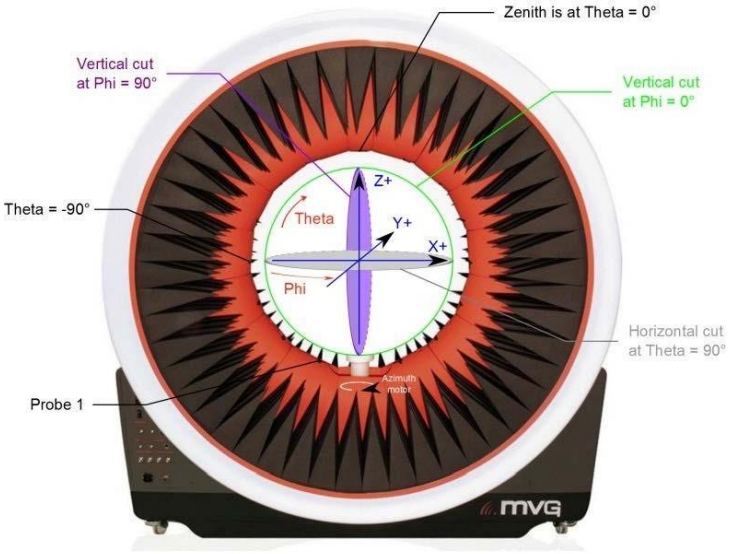
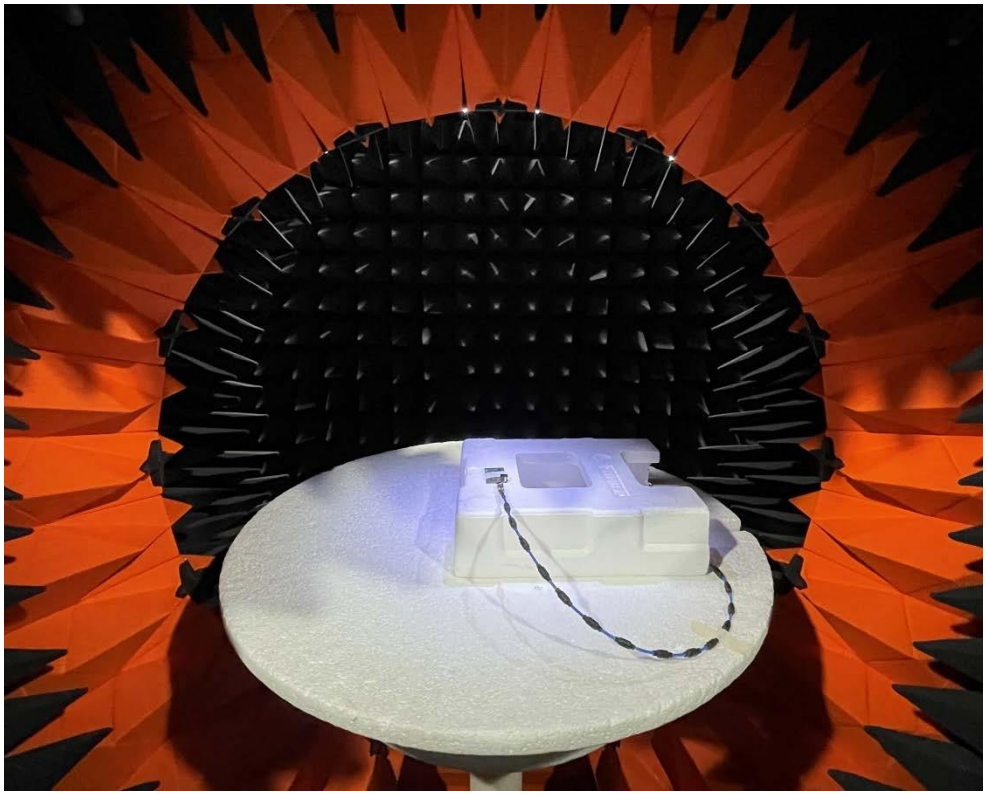
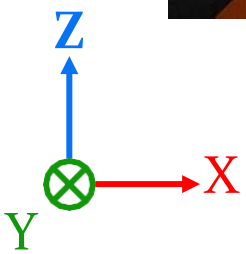


Figure 3.12: StarLab spherical coordinate system





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Gain Table

Ant.1	Frequency(MHz)	2400	2450	2500
	Peak Gain(dBi)	2.0	2.2	2.5
	Efficiency (%)	68	63	60
	Frequency(MHz)	5150	5550	5850
	Peak Gain(dBi)	3.7	5.2	4.2
	Efficiency (%)	74	71	70

Above Peak Gain= on Board antenna peak gain-path loss + Chamber's receiving RX peak gain

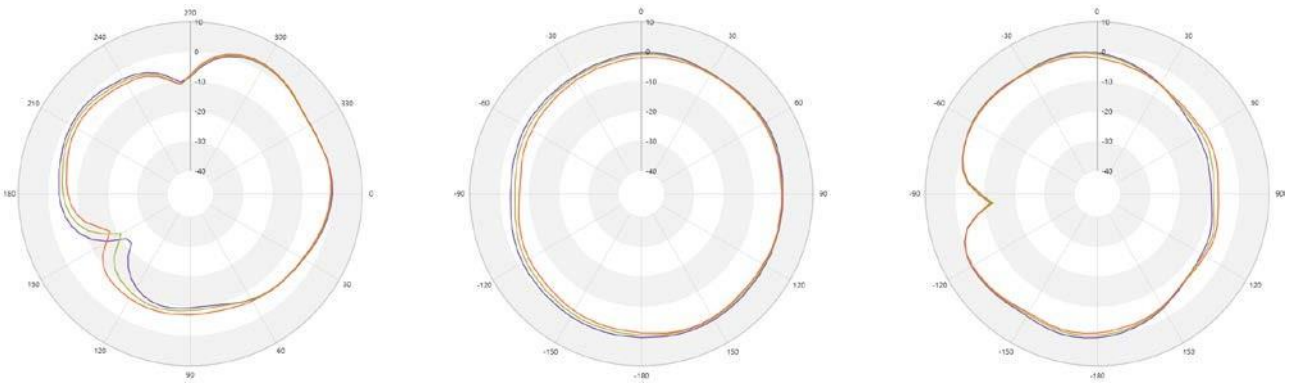
The antenna characteristics

- **Return loss**
  - All band < -10dB in operating band
- **Gain**
  - 2.4GHz Band : 2.0 ~ 2.5dBi
  - 5GHz Band : 4.2 ~ 5.2dBi
- **Efficiency**
  - 2.4GHz Band > 60%
  - 5GHz Band > 70%

Ant.1_2.4GHz 2D Radiation Pattern
Frequency(MHz) : 2400~2500

Radiation Pattern :

Azimuth Plane Theta = 90	Elevation Plane phi = 0	Elevation Plane phi = 90



2400.00 MHz

2450.00 MHz

2500.00 MHz

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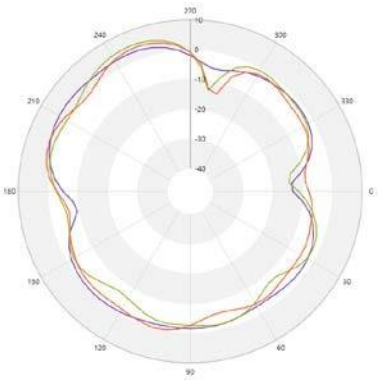
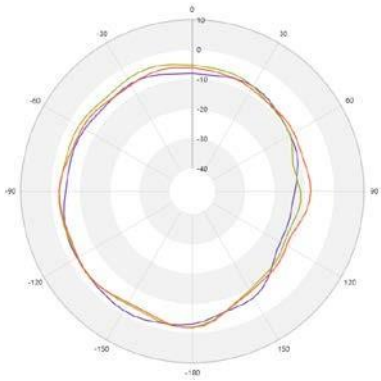
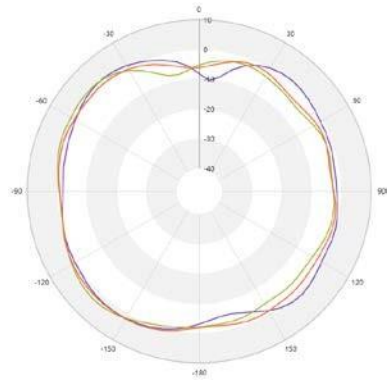
Ant.1_5GHz 2D Radiation Pattern
Frequency(MHz) : 5150~5850

Radiation Pattern :

Azimuth Plane Theta = 90	Elevation Plane phi = 0	Elevation Plane phi = 90







5150.00 MHz

5500.00 MHz

5850.00 MHz

Setup :

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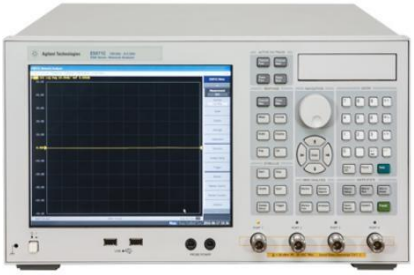
Test equipment

Agilent E5071C
100 kHz - 8.5 GHz
ENA Series Network Analyzer



StarLab 10GHz Passive & OTA Performance Test System

Frequency Bands: 600 MHz to 10GHz
Max. Size of DUT: 450mm for spherical set-up
Max. Weight of DUT: 10 kgs
Measurement Capabilities:

– Gain
– Directivity
– Beamwidth
– Cross polar discrimination
– Sidelobe levels
– 3D radiation pattern
– Radiation pattern in any polarization (linear or circular)
– Antenna efficiency test
– TRP, TIS, EIRP and RIS measurement

Measurement set up info

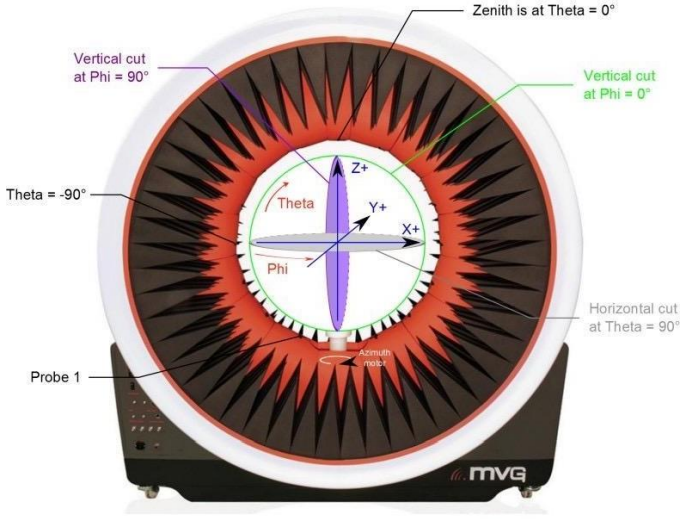
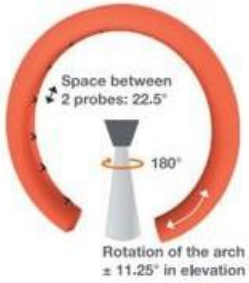


Figure 3.12: StarLab spherical coordinate system



Oversampling with StarLab

On a StarLab system, oversampling is performed by a mechanical rotation of the arch in elevation. Oversampling capability is integrated in the mechanical architecture of the system itself (no need for an extra goniometer).