



Antenna Test Report

Model: BLE Antenna - by GEOSPACE



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Revision History: Rev PA1, September 23, 2025 – Original Draft

Rev A, Internal, Photo update and technical information added – October 17, 2025

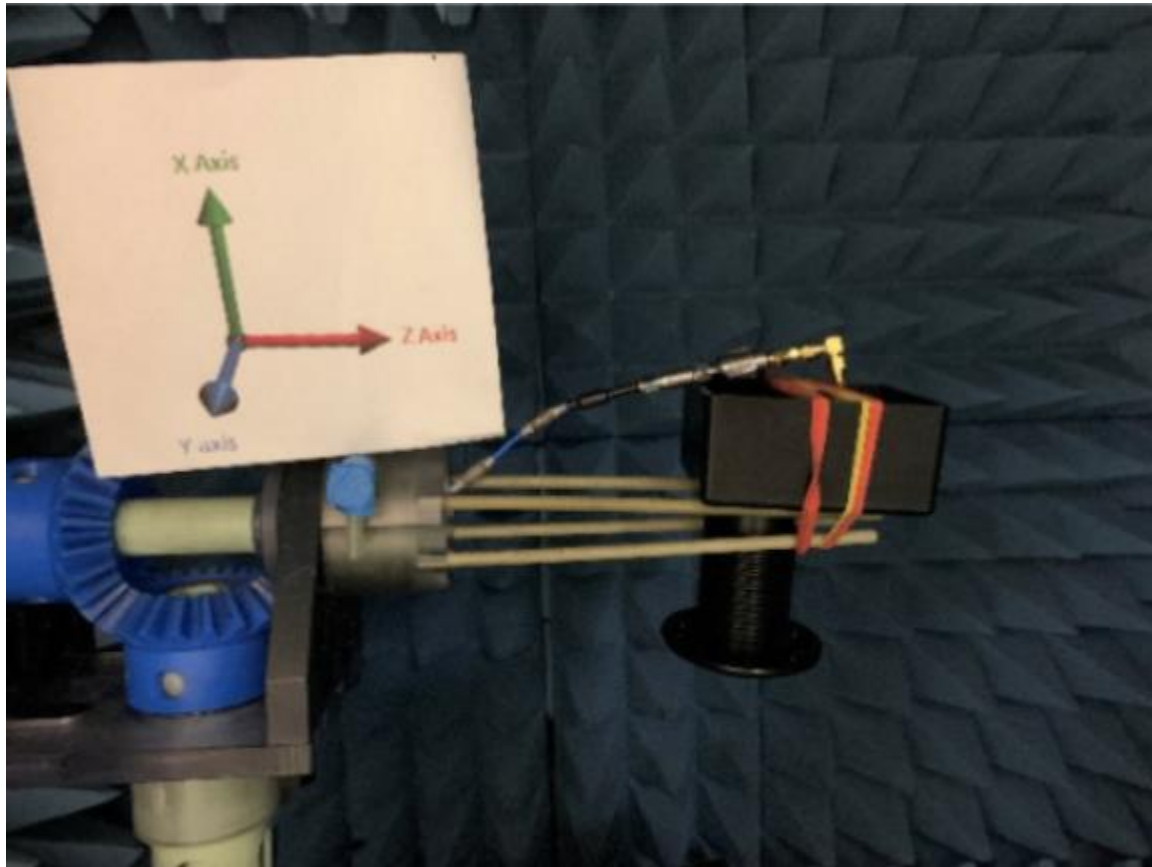
Rev A, Edit of antenna dimensions – October 20, 2025

Rev B, Edit of photo – January 19, 2026

This test report represents passive antenna testing results for the Geospace BLE antenna installed in the End Point device.

1. PHOTOS OF DEVICE UNDER TEST

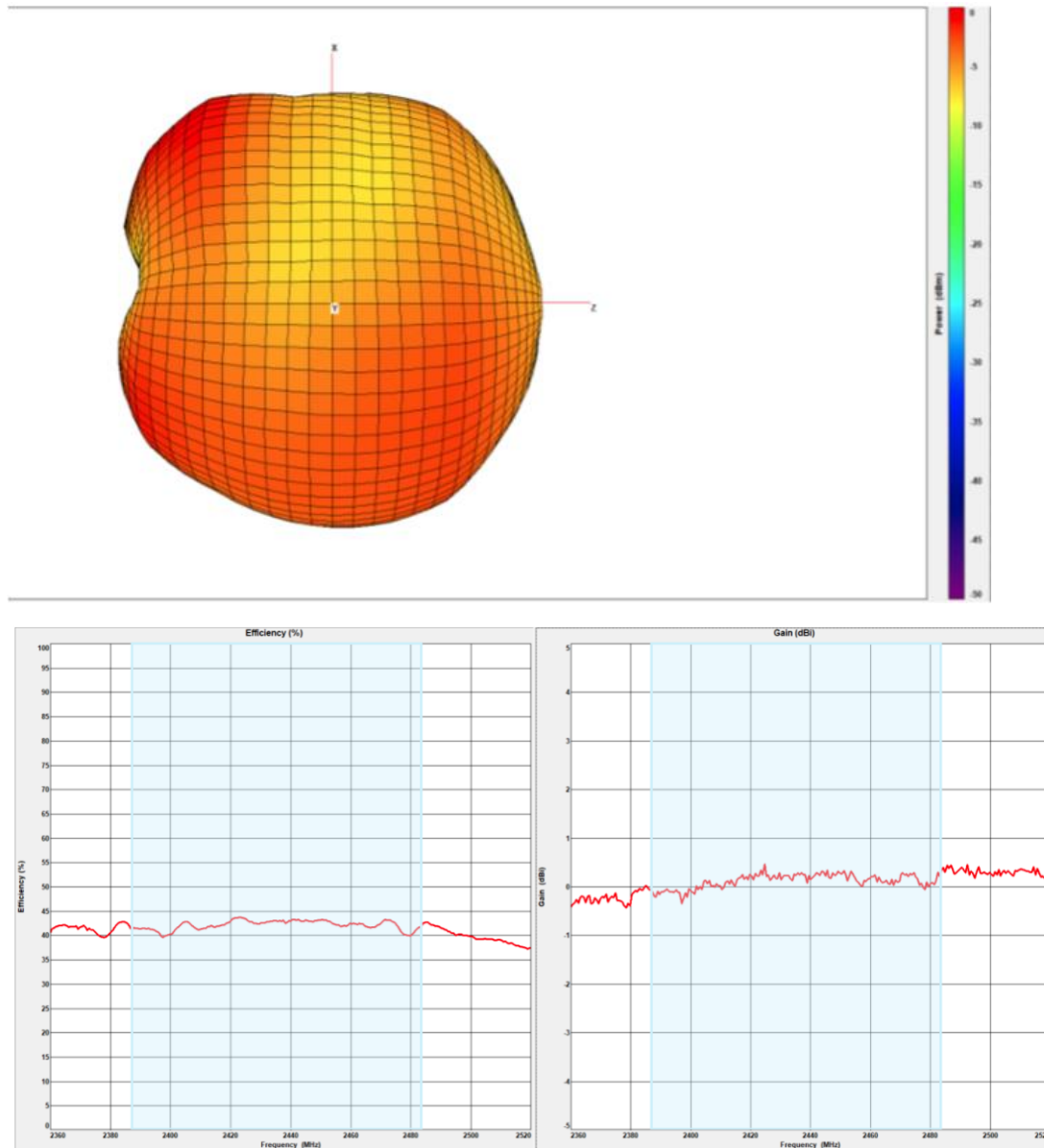
In the photos below the device is in the test chamber for passive antenna testing.



2. TEST DATA

The following data represents the results from passive antenna testing.

2.1 2360 – 2520 MHz



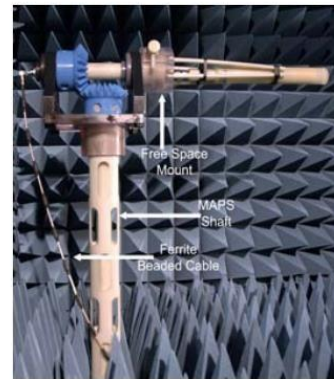
Peak efficiency is 44 %, peak gain is 0.48 dBi

3. SUMMARY

The antenna testing shows that the antenna is omnidirectional.
Peak antenna gain in host device is 0.48 dBi in the 2.4 GHz supported frequency.

4. TEST DESCRIPTION AND METHOD

The test system used for testing in this report is the ETS Lindgren AMS-8050 fully anechoic RF enclosure chamber. The test system is automated with ETS-Lindgrens EMQuest Data Acquisition and Analysis EMQ-100 Antenna Pattern Measurement Software. This system and software create 2D and 3D antenna pattern measurements. The measuring antenna is model 8050 Dual Polarized Antenna. The reference antennas are from ETS-Lindgren 3126 Series Dipole, for system measuring and storing for AUT (Antenna Under Test) testing for pathloss.



*Multi-Axis Positioner Installed in
AMS-8050*

TEST EQUIPMENT LIST FOR ANTENNA TESTING.

The test equipment is not calibrated on a schedule or traceable. The method used for testing is a substitution method. The pathloss calibration was performed in October 2022. The chamber is calibrated for pathloss and uses the reference antennas from ETS-Lindgren to provide the substitute antenna data to compare to the AUT antenna.:

Chamber	ETS Lindgren 8050 Fully Anechoic
Measuring antenna	ETS Lindgren 8050 Dual Polarized Antenna
Reference Antennas	ETS-Lindgren 3126 Series Dipole (3126-800, 3126-900, 3126-1850, 31262150, 3126-2500)
Network Analyzer	R&S ZVL Network Analyzer 9kHz to 6GHz
Computer automation	Dell Computer Precision Tower 5820 with EMQuest EMQ-100 automation
RF Switch/amplifiers/filters	ETS Lindgren EMCenter

5. ANTENNA DESCRIPTION TECHNICAL INFORMATION

- Operating Frequency: 2.4 GHz
- Antenna material: FR-4 PCB
- Antenna type: Printed PIFA antenna
- Antenna Dimensions: 88.9mm x 76.2 mm
- Input impedance: 50 ohms
- Return Loss(S11): >-30 dB
- Standing Wave Ratio (SWR): 1.05:1
- Peak gain measured in host device: 0.48 dBi
- Polarization: Linear

