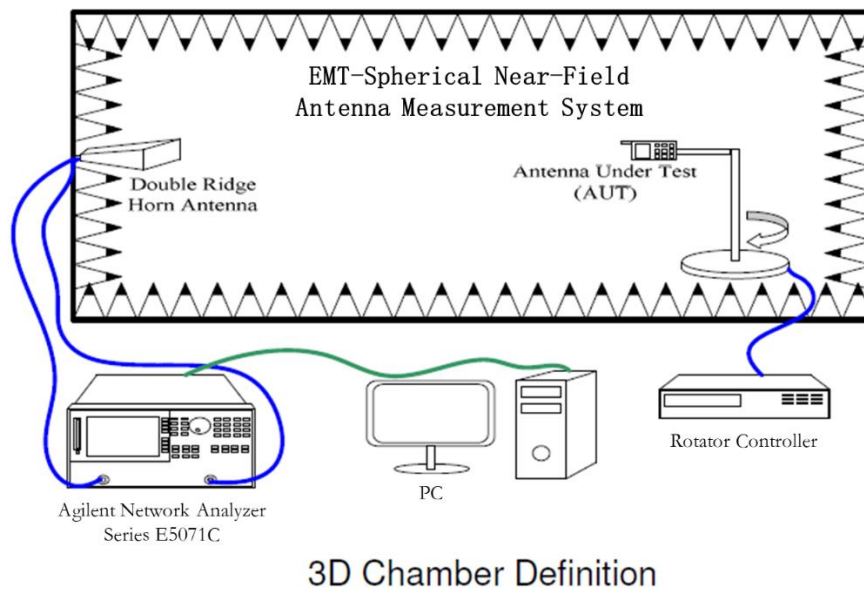


ANTENNA TEST REPORT

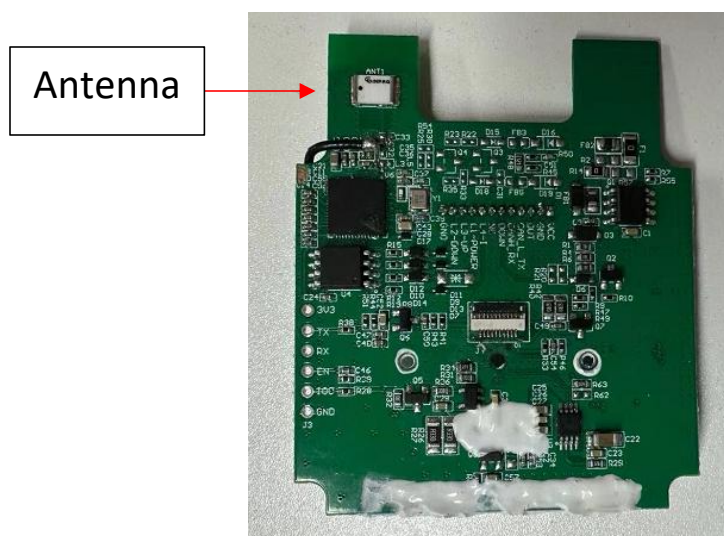
Test Laboratory	INPAQ TECHNOLOGY (VEG TECHNOLOGY VENTURE PARK) LABORATORY
Address	Room 411-2, Zone B, Building 3, VEG Technology Venture Park, No. 99 Suhong West Road, Suzhou City, Jiangsu Province, China
Supplier	INPAQ TECHNOLOGY (SUZHOU) CO., LTD.
Address	No.5, Chunqiu Road, Panyang Industrial Park, Huangdai Town, Xiangcheng Zone, Suzhou City, Jiangsu Province, China
Product	Antenna
Product No.	ACA-5036-A2-CC-S
Peak Gain	2.4-2.5GHz: 1.3dBi
Date of test	2024/03/11
Tester	Liu Hai

Antenna performance	Radiation efficiency	IEEE Standard Test Procedures for Antennas	ANSI/IEEE Std 149-2021
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1. MEASUREMENTS SETUP



2. PHOTOGRAPHS OF ANTENNA



Antenna installed on Customer's PCB

3. TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Cal. DATA
Antenna chamber	EM-TESTING	EMT24-S	N/A	2023/8/8
Signal Generator	Agilent	E5071C	MY46316072	2023/8/8
Test Software	EM-TESTING	EMT-Spherical Near-Field Antenna Measurement System	N/A	N/A

4. MEASUREMENTS DESCRIPTION

4.1 S Parameter Measurements

A testing method for evaluating the signal reflection performance of antennas. S Parameter measurements were done by using Network Analyzer –Agilent, the Return Loss of the antennas were obtained to ensure the efficiency over the operation frequency.

4.2 Antenna Radiation Pattern Measurements

The distribution of radiation power from antennas in different directions. Radiation Pattern Measurements were done in the EM-TESTING chamber through radiation, the product was set to continuous radiation and receive the RF power from 360 degree angles by using rotation of product.

4.3 Antenna Gain Calculation

Antenna gain is an important parameter for measuring antenna radiation. The antenna gains will be calculated by EMT software when radiation pattern tests are done.

5. TEST RESULTS

5.1 ANTENNA VSWR

Frequency (MHz)	2400	2450	2450
VSWR	2.3	1.3	1.9

5.2 ANTENNA AVERAGE EFFICIENCY

Frequency (MHz)	2400~2500
Avg. Efficiency (%)	46.8

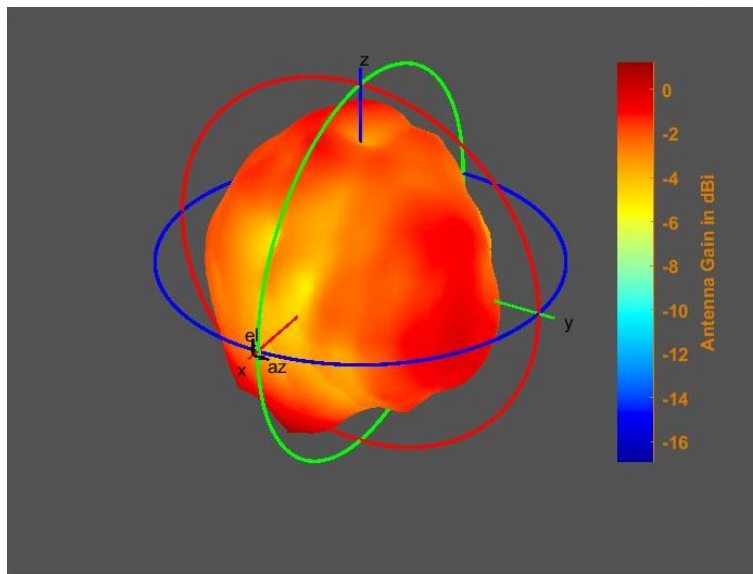
5.3 ANTENNA AVERAGE GAIN

Frequency (MHz)	2400~2500
Avg. Gain (dB)	-3.3

5.4 ANTENNA PEAK GAIN

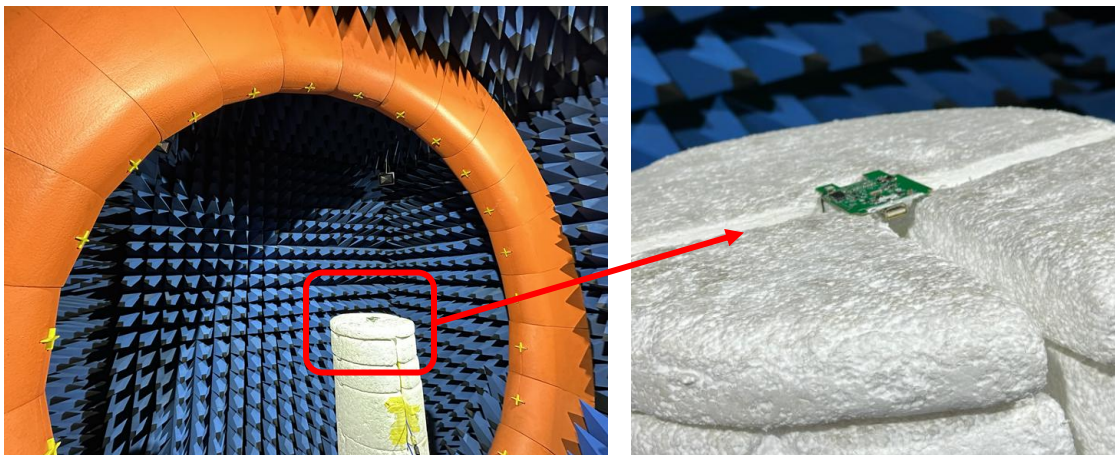
Frequency (MHz)	2400~2500
Peak Gain (dBi)	1.3

5.5 3D RADIATION PATTERN



3D Radiation Pattern of Antenna

6. TEST IMAGES



Antenna Test in EMT Chamber