A&D Medical

Rev.1.00

FCC Part 15 Antenna Gain

Test Report

(UA-1040TBLE)

Table of Contents

1. Overview

This test report presents the results of measuring the antenna gain for the Equipment Under Test (EUT) using the standard antenna method.

2. Test Objective

To measure the antenna gain of a specific EUT using the standard antenna method and evaluate its performance.

This test report demonstrates compliance with the antenna gain reporting requirements of FCC 2.1033(b)(4), 15.203, 15.212.

3. Test Equipment

The equipment used for this test is shown below.

・Equipment Under Test (EUT):

Model: UA-1040TBLE

Antenna Type: Pattern Antenna

Antenna Manufacturer: A&D Company, Limited

Operating frequency range: 2402-2480MHz (ISM)

・Antenna Measurement System:

Fully anechoic chamber with Double-Ridged Horn Antenna, mechanical positioners of Phi axes.

・Network Analyzer:

KEYSIGHT N9918A

Calibration Date: 28/09/2023 (Conducted once a year)

・Commercial Test Software:

MATEOS.NET sold by Microwave Factory Co.,Ltd.

4. Test Method

The standard antenna method, which is an industry standard measurement method, is used to measure the antenna gain and directivity of the EUT.

Prepare a transmit antenna and a reference antenna, and install them in the anechoic chamber at a certain distance. Measuring the received power of reference antenna *Prs* [dBm] in this state.

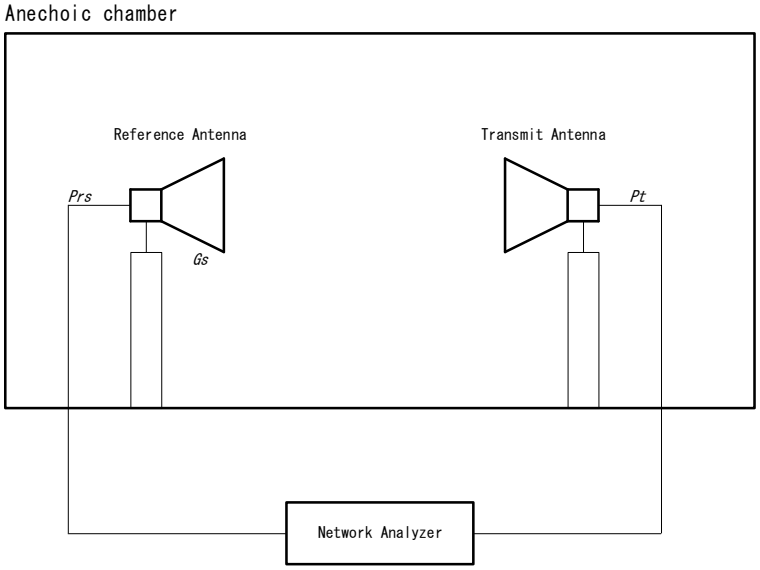


Fig.1 Measurement of Reference Antenna

Install the test antenna (EUT) in place of the reference antenna, and measuring the received power of EUT *Prt* [dBm].

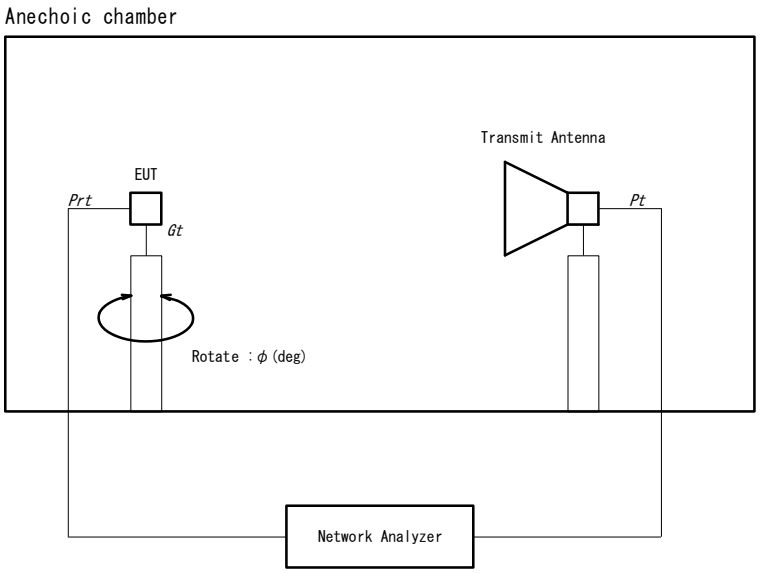


Fig.2 Measurement of EUT

EUT gain *Gt* [dBi] is calculated from the reference antenna gain *Gs* [dBi] and received power of reference antenna *Prs* [dBm] using the following formula.

$$Gt = Prt - Prs + Gs$$

Also, measurement of antenna directivity by rotating the EUT in the Phi axes direction.

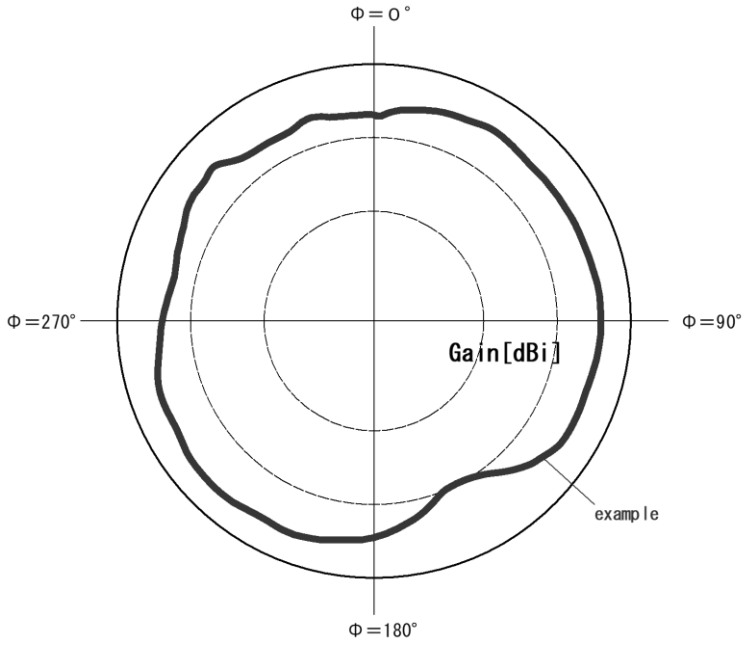


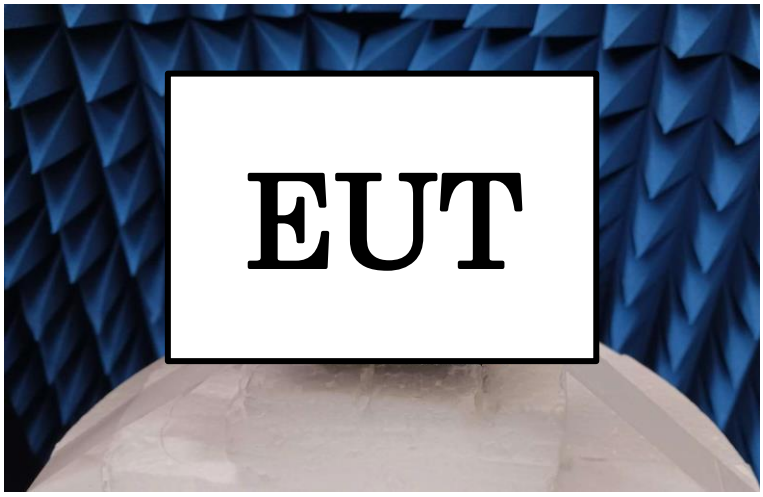
Fig.3 Antenna directivity diagram

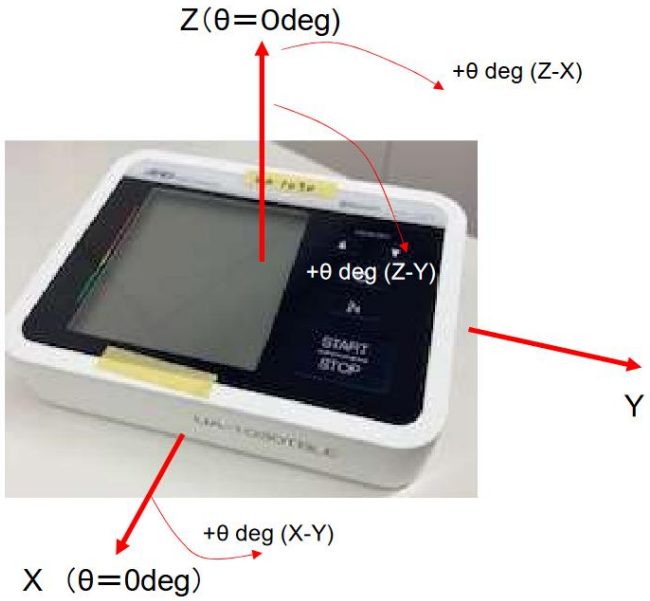
5. Test Information

Test Lab: SAKUMA ANTENNA Co.,Ltd.
Test Lab Address: 304 Kannai capital building, Bentendori, 2-25, Naka Ward,
Yokohama City, Kanagawa, Japan
Test Date: 5, Feb, 2024
Test Person: Hironori Okado

6. Test Setup Photos

The device containing the integral antenna is placed on the styrofoam pylon.



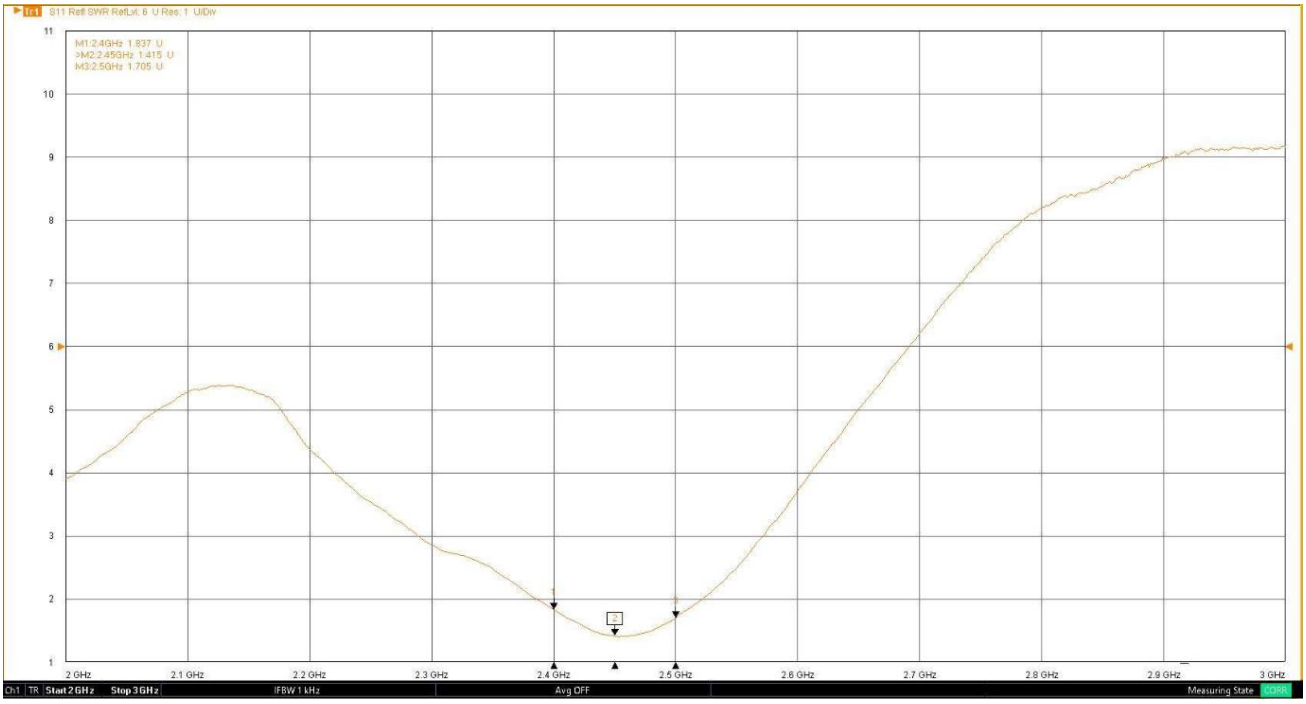


Definition of antenna measurement axis

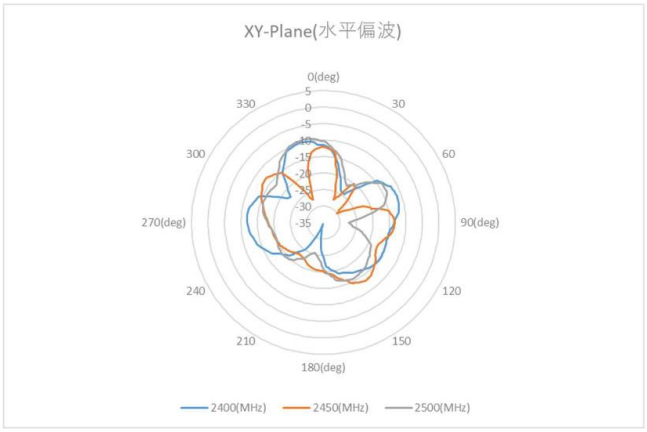
7. Test Result

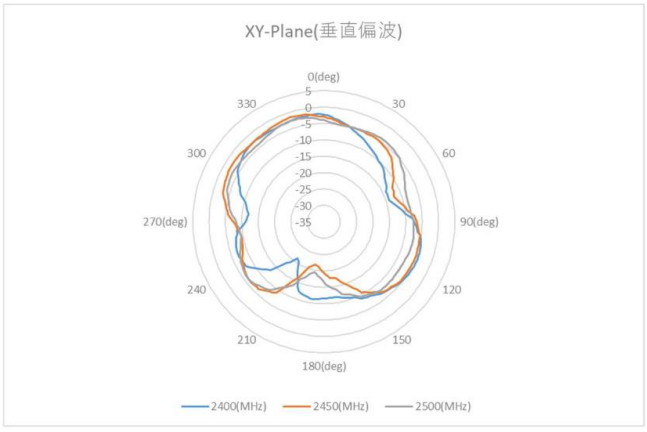
The following is the result of the antenna test.

(1) VSWR

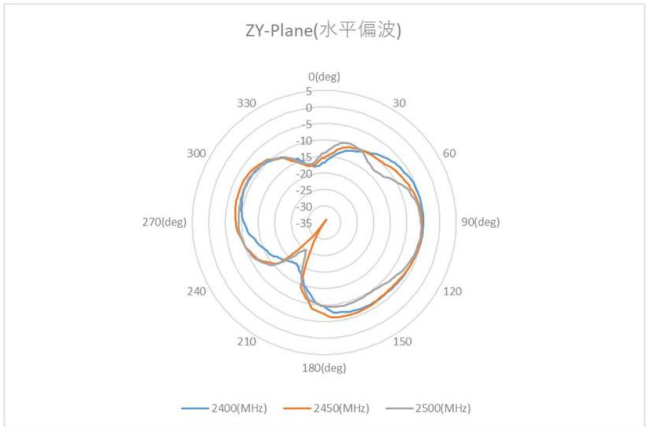


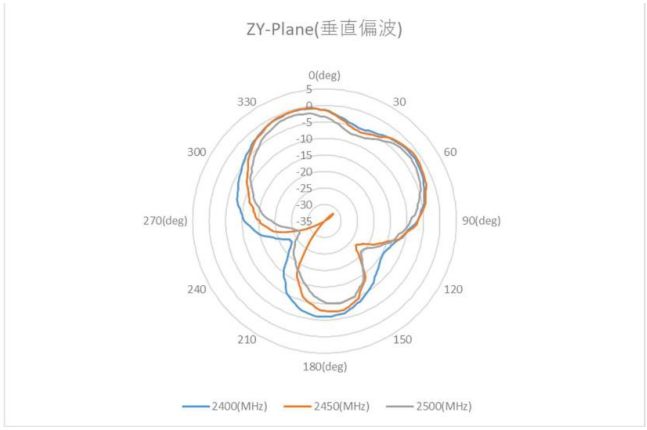
（2）Directivity



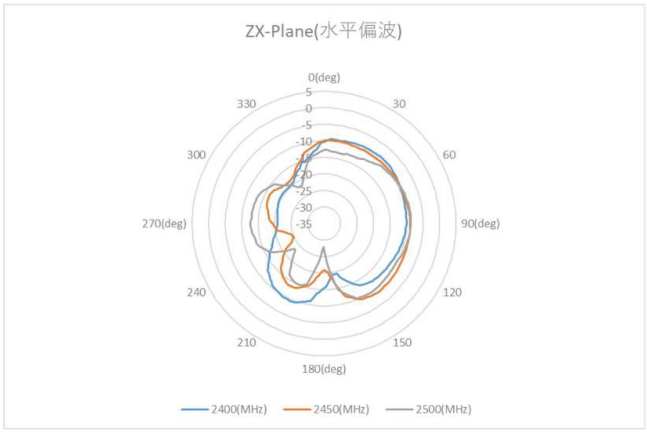


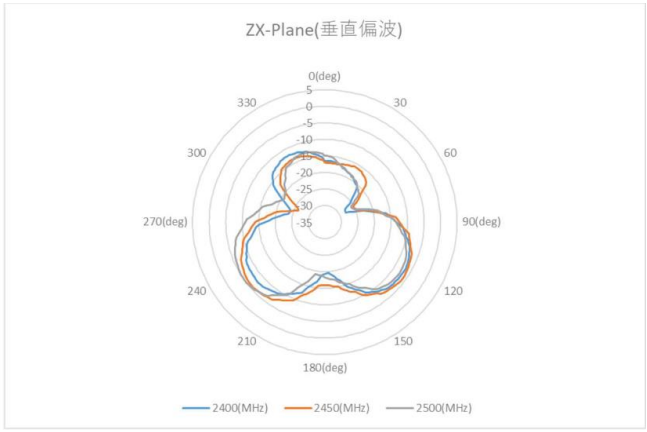
XY-Plane





ZY-Plane





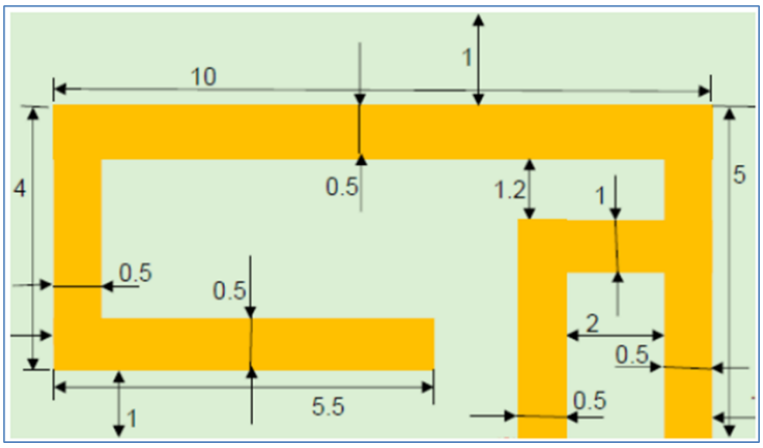
XZ-Plane

(3) Antenna Efficiency & Maximum Gain

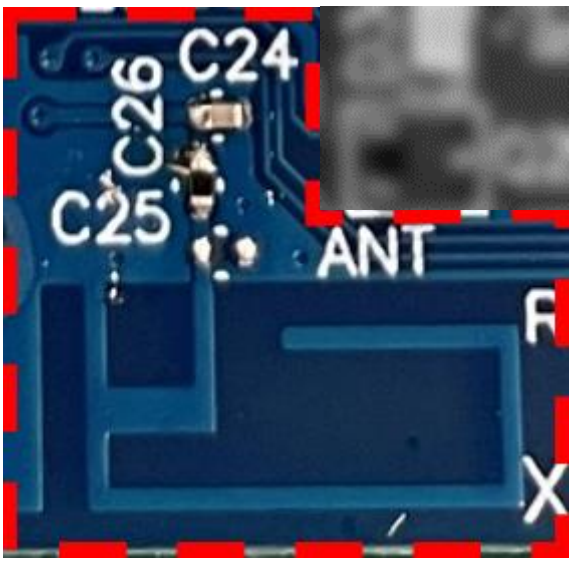
	2400MHz	2450MHz	2500MHz
Antenna Efficiency	-5.7dB	-5.5dB	-6.4dB

	XY-Plane	ZY-Plane	XZ-Plane
Maximum Gain	-1.5dBi	-0.4dBi	-5.0dBi

8. Antenna Photos or Drawings



Antenna Dimension



RF circuit

9. Revision History

Revision#	Date	Description of Change
1.00	07/05/2024	Original

END OF DOCUMENT

A&D Medical

A&D Company, Limited

1-243, Asahi, Kitamoto-shi,

Saitama-ken, 364-8585 Japan

TEL: 81-48-593-1627 FAX: 81-48-593-1684

WEB: www.aandd.jp