

S280 RF Radiated data

Prepared by	Checked by	Approved by
 SJ KIM	 YS LEE	 TH KIM

2026.01.23.

Table of Contents

1. Frequency Band.....	3
1-1. Measurement Engineer	3
1-2. VSWR	3
1-3. Efficiency & Gain.....	4
1-4. 3D Radiated Pattern	5
2. TEST METHOD	6
2-1. Measurement information	6
2-2. Return Loss & VSWR Test.....	6

1. Frequency Band

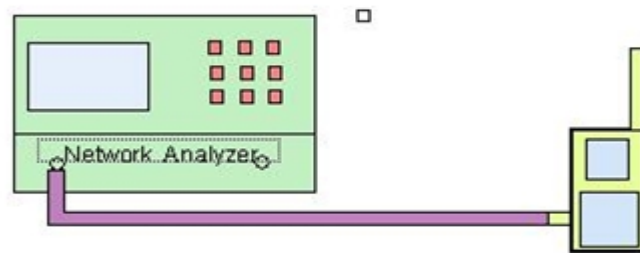
Mode	Frequency Band (MHz)
Zigbee	2,400 ~ 2,500

-

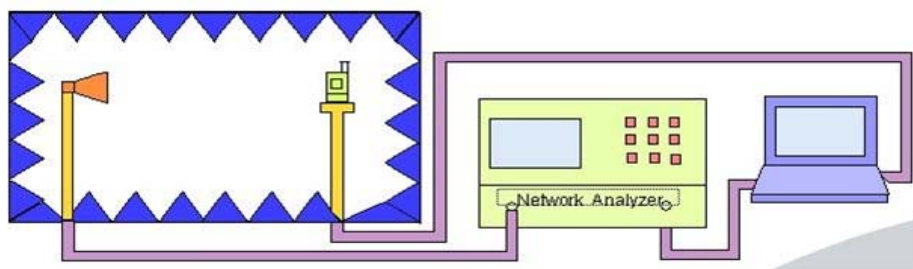
1-1. Measurement Engineer

- Connect the device under test and required test equipment (Network analyzer). Measuring VSWR and frequency. Measurements include the magnitude and phase of both the vertical and horizontal components of the 3-D antenna pattern of actual hardware in an anechoic chamber (Partron). all measurements are made with antennas installed.

- Frequency, VSWR measurement



- Gain measurement



- Co-Polarization, Cross-Polarization Meaning

- Co-Polarization : When Radiated Vertical and Horizontal Polarization in Source Ant.

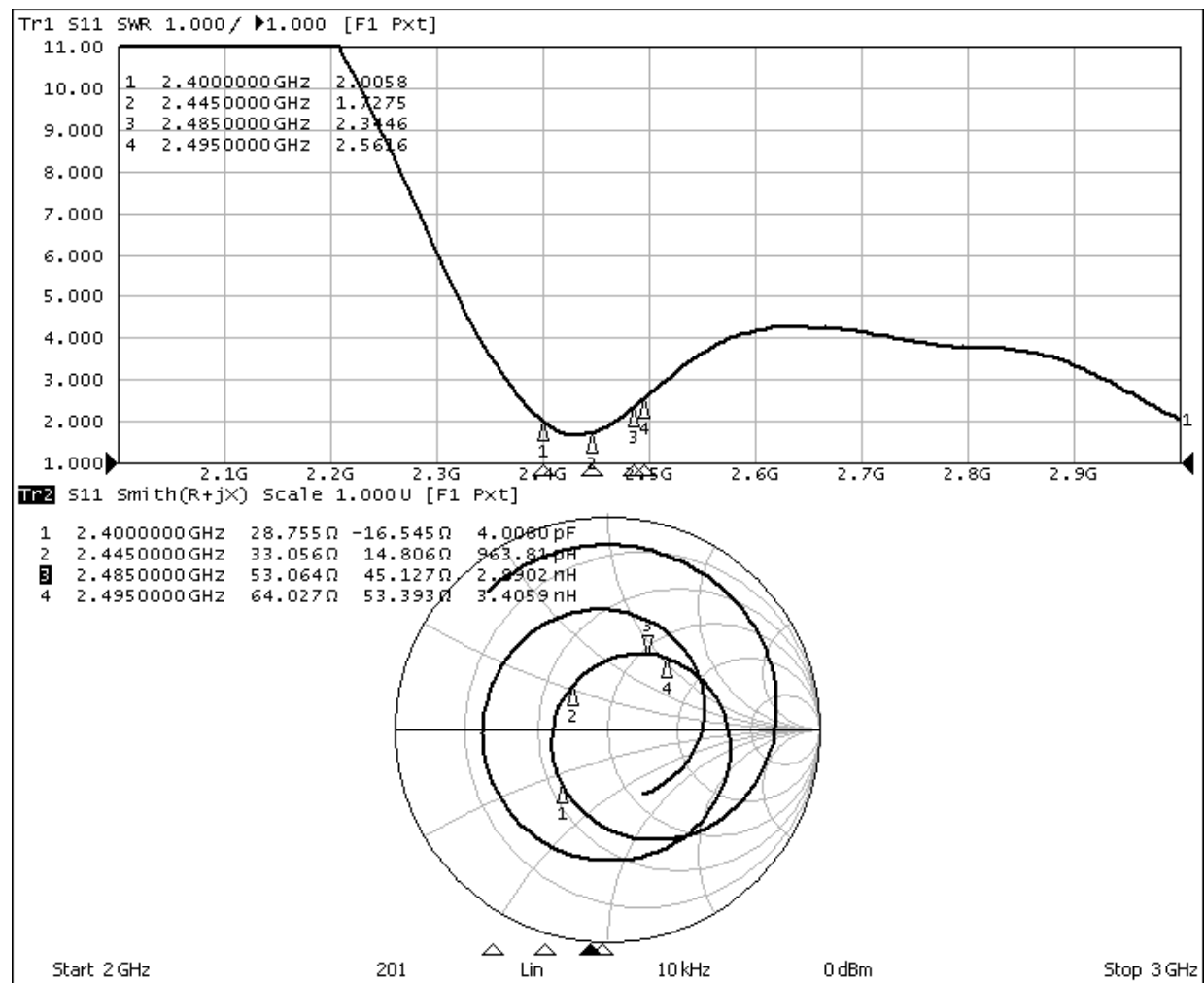
Co-Polarization is Higher Polarization that is Ave. Gain Value

- Cross-Polarization : When Radiated Vertical and Horizontal Polarization in Source Ant.

Co-Polarization is Lower Polarization that is Ave. Gain Value

Antenna gain measurements were performed in a full anechoic chamber. The EUT was placed on a turntable of the chamber. During the test, the EUT was rotated through 360° and the measurement antenna height and polarization were varied to maximize the received emission level. The chamber walls, ceiling, and floor were lined with RF absorbing material to minimize reflections and simulate free-space conditions.

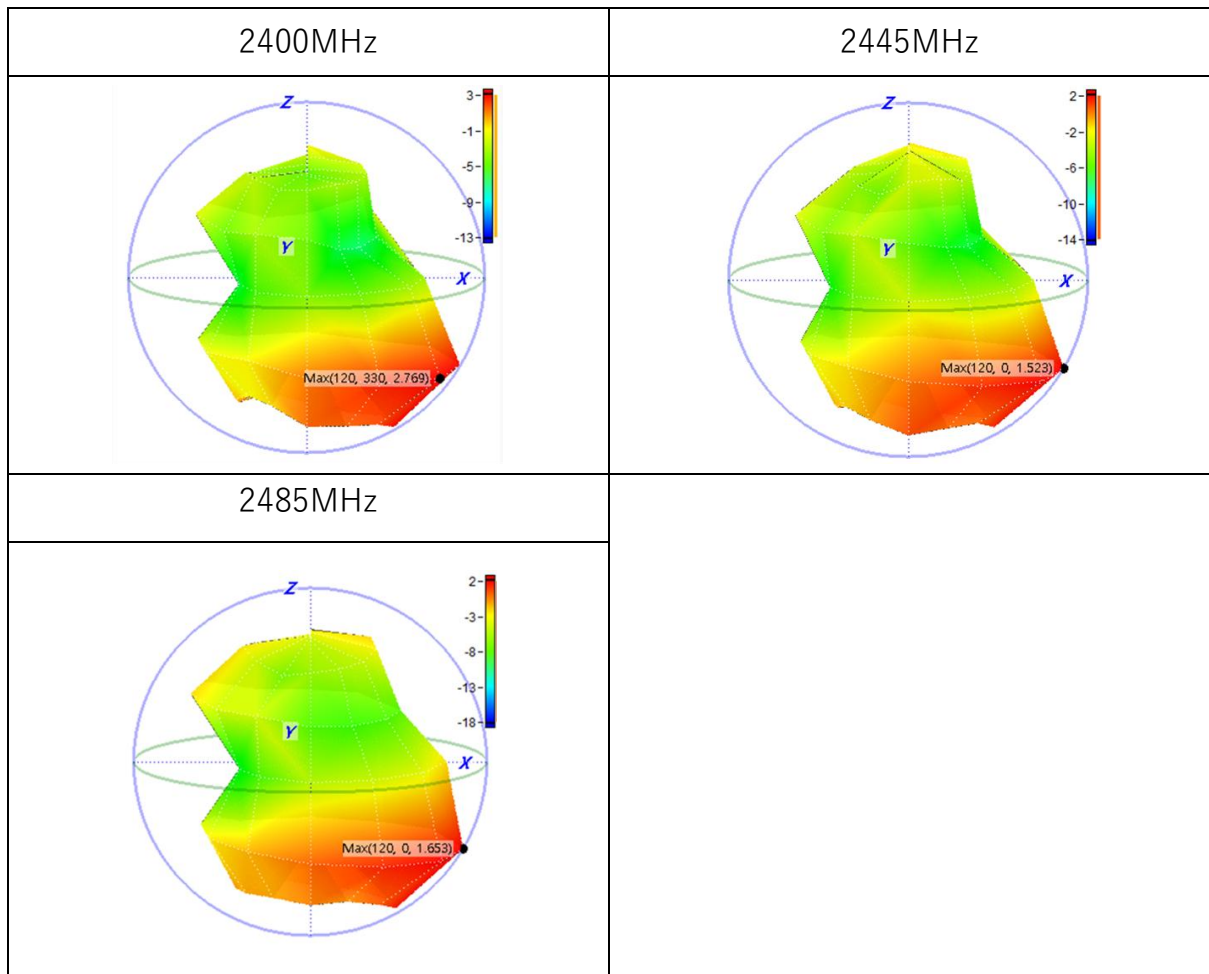
1-2. VSWR



1-3. Efficiency & Gain

Frequency	Peak Value		Minimum Value		Avg. Gain	Efficiency
[MHz]	Value[dBi]	Degree	Value[dBi]	Degree	[dBi]	[%]
2400.000	2.768858	120 / 330	-13.056106	90 / 150	-1.306924	74.012923
2415.000	1.019084	120 / 330	-14.751282	90 / 180	-3.156780	48.341708
2430.000	0.343084	120 / 0	-15.358189	90 / 180	-3.665746	42.995737
2445.000	1.523237	120 / 0	-14.368221	90 / 180	-2.422633	57.244891
2460.000	1.032254	120 / 0	-16.234965	90 / 180	-3.099110	48.987920
2465.000	-0.341714	120 / 0	-17.231940	90 / 180	-4.318626	36.994522
2480.000	1.013354	120 / 0	-17.806991	90 / 180	-3.231864	47.513126
2485.000	1.653208	120 / 0	-17.501123	90 / 180	-2.635683	54.504417
2490.000	0.849790	120 / 0	-19.359099	90 / 180	-3.618375	43.467281
2500.000	0.902359	120 / 0	-19.516745	90 / 180	-3.549901	44.158048

1-4. 3D Radiated Pattern



2. TEST METHOD

2-1. Measurement information

Description	Manufacturer	Model	Calibration date
Network Analyzer	Anritsu	ME7848A	25.09.20
Horn Antenna	SCHWARZBECK	BBHA 9120 LF	25.07.21

2-2. Return Loss & VSWR Test

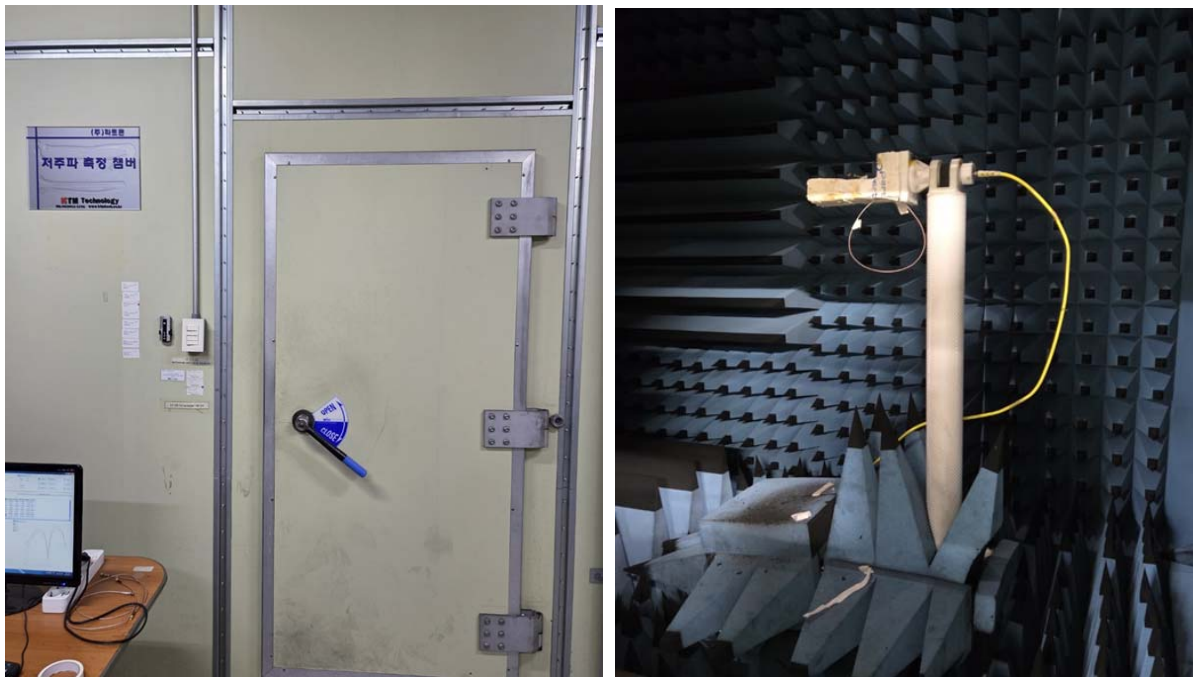
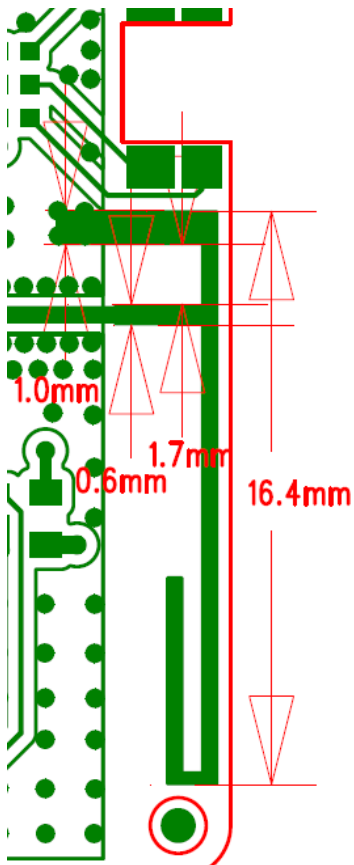


Figure 1: Testing with RF Chamber

Measurement facility: Partron, 3D Chamber

3. Antenna Dimension



Manufacturer: PartronESL Address :829-836,42,Changeop-ro,Sujeong-gu, Seongnam-si,Gyeonggi-do, SouthKorea