JQA File No. : KL80230352
Issue Date : September 6, 2023

TEST REPORT

Applicant	:	OMRON HEALTHCARE Co.,Ltd.
Address	:	53, Kunotsubo, Terado-cho, Muko,Kyoto,617-0002 JAPAN
Products	:	HEM-MAIN-VGRAK4S
Model No.	:	HEM-7142T
Serial No.	:	--
Test Standard	:	Antenna gain measurements related to the Radio Law
Test Results	:	**Refer to Summary**
Date of Receipt	:	July 28, 2023
Date of Test	:	September 1, 2023

Kosei Shibata
Deputy Director
Japan Quality Assurance Organization
Kitakansai Testing Center
Saito EMC Branch
7-3-10, Saito-asagi, Ibaraki-shi, Osaka 567-0085, Japan

- The test results in this test report was made by using the measuring instruments which are traceable to national standards of measurement in accordance with ISO/IEC 17025.
- The applicable standard, testing condition and testing method which were used for the tests are based on the request of the applicant.
- The test results presented in this report relate only to the offered test sample.
- The contents for the equipment under test (EUT) such as identification information in clause 2 and 6 of this report were provided by the applicant. JQA is not responsible for the test results affected by the incorrect information.
- The contents of this test report cannot be used for the purposes, such as advertisement for consumers.
- This test report shall not be reproduced except in full without the written approval of JQA.

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REVISION HISTORY

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1 Summary of Test Results

Applied Standard : Antenna gain measurements related to the Radio Law

In the approval of test results,

- No deviations were employed from the applied standard.
- No modifications were conducted by JQA to achieve compliance to the limitations.

Reviewed by
Yasuhisa Sakai / Project Manager

Y. Sakai

Tested by
Yuji Shintaku / Assistant Manager

Y. Shintaku

2 Description of the Equipment Under Test (EUT)

Manufacturer	OMRON HEALTHCARE Co.,Ltd. 53, Kunotsubo, Terado-cho, Muko,Kyoto,617-0002 JAPAN
Products	HEM-MAIN-VGRAK4S
Model No.	HEM-7142T
Serial No.	--
Product Type	Prototype
Date of Manufacture	--
Power Rating	--
EUT Grounding	None

3 Test Location

Japan Quality Assurance Organization (JQA)
Kitakansai Testing Center Saito EMC Branch
7-3-10, Saito-asagi, Ibaraki-shi, Osaka 567-0085, Japan

4 Accreditation of Test Laboratory

JQA is accredited under ISO/IEC 17025 by following accreditation bodies and the test facility of Testing Division is registered by the following bodies .

Test Facility	Accreditation or Registration		Expiry Date
	Body	Code/Number	
Saito EMC Branch	VLAC	VLAC-001-2	April 30, 2024
	A2LA	5498.01	November 30, 2023
	VCCI	A-0002	April 30, 2024
	FCC	JP5008	April 30, 2024
	ISED	JP0014	November 30, 2023
	BSMI	SL2-IS-E-6006, SL2-IN-E-6006, SL2-R1/R2-E-6006, SL2-A1-E-6006	September 14, 2025
	Conformity assessment body for Japan electrical appliances and material by METI		February 22, 2025

5 Setup of EUT

5.1 Test Configuration

The EUT consists of :

Sign	Item	Manufacturer	Model No.	Serial No.
A	HEM-MAIN-VGRAK4S	OMRON HEALTHCARE Co.,Ltd.	HEM-7142T	--

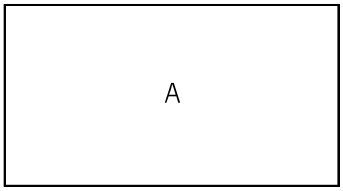
The AE used for testing :

None

Type of Cable:

None

5.2 Test Arrangement (Drawings)



5.3 Operating Condition

Operating Mode

Transmission status by CW signal input to antenna

6 Test Item

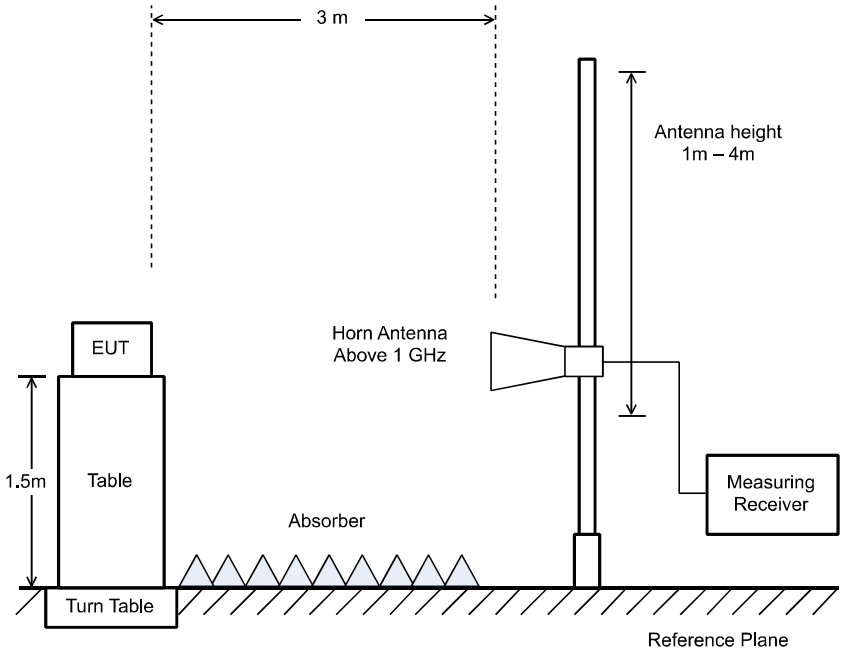
6.1 Antenna gain measurements

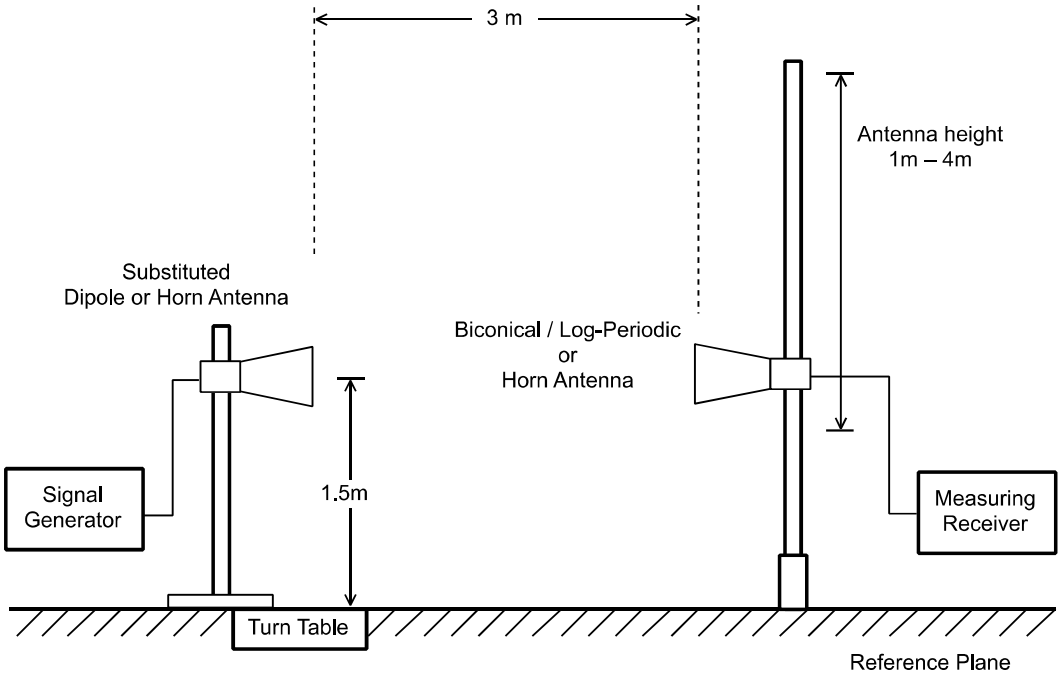
6.1.1 Test Site and Instruments

Test Site : Anechoic Chamber A4					
Type	**Model**	**Serial No. (ID)**	**Manufacturer**	**Last Cal.**	**Cal. Due**
Test Receiver	ESR 26	101690 (A-7)	Rohde & Schwarz	2022/09/27	2023/09/26
Horn Antenna	91889-2	560 (C-40-2)	EATON	2023/05/22	2024/05/21
RF Cable	SF102E	10055/2E (C-78)	HUBER+SUHNER	2023/02/03	2024/02/02
Double-Ridge Guide Horn Antenna	3115	00227684 (C-103)	ETS LINDGREN	2023/05/22	2024/05/21
Attenuator	54A-10	W5713 (D-29)	Weinschel	2022/10/17	2023/10/16
Signal Generator	SML03	102944 (B-66)	Rohde & Schwarz	2023/08/25	2024/08/24

6.1.2 Test Method and Test Setup (Diagrammatic illustration)

The EUT was placed on a non-conductive rotating platform at a height of 1.5 m and the field strength was measured at a distance of 3 m from the EUT. The height of the measuring antenna was varied from 1 m to 4 m until the maximum reading of the instrument was obtained.
The test table was then rotated 360 degrees and the angle was adjusted to maximize the reading of the instrument and the reading was recorded. The EUT was replaced with the reference antenna and the instrument reading was recorded. The antenna gain of the EUT was calculated from the instrument reading and the gain of the reference antenna. The orientation of the EUT was changed and the above measurements were repeated.




3 m
Antenna height
1m – 4m
Substituted
Dipole or Horn Antenna
Biconical / Log-Periodic
or
Horn Antenna
Signal
Generator
1.5m
Measuring
Receiver
Turn Table
Reference Plane

6.1.3 Test Data

Test frequency: 2402 MHz

EUT's axis	EUT's Reading value	Reference antenna value	Measurement polarization	EUT's cable loss	Input level for the antenna	Gain of the reference antenna	Maximum Gain
	[dBμV/m]	[dBμV/m]		[dB]	[dBm]	[dBi]	[dBi]
X	41.3	61.5	Horizontal	0.01	-15.0	16.33	-3.86
	29.0	61.7	Vertical	0.01	-15.0	16.33	-16.36
Y	40.8	61.5	Horizontal	0.01	-15.0	16.33	-4.36
	38.5	61.7	Vertical	0.01	-15.0	16.33	-6.86
Z	40.6	61.5	Horizontal	0.01	-15.0	16.33	-4.56
	42.1	61.7	Vertical	0.01	-15.0	16.33	-3.29

Test frequency: 2440 MHz

EUT's axis	EUT's Reading value	Reference antenna value	Measurement polarization	EUT's cable loss	Input level for the antenna	Gain of the reference antenna	Maximum Gain
	[dBμV/m]	[dBμV/m]		[dB]	[dBm]	[dBi]	[dBi]
X	42.1	61.5	Horizontal	0.01	-15.0	16.47	-2.92
	31.7	61.3	Vertical	0.01	-15.0	16.47	-13.12
Y	42.2	61.5	Horizontal	0.01	-15.0	16.47	-2.82
	38.7	61.3	Vertical	0.01	-15.0	16.47	-6.12
Z	39.6	61.5	Horizontal	0.01	-15.0	16.47	-5.42
	42.5	61.3	Vertical	0.01	-15.0	16.47	***-2.32***

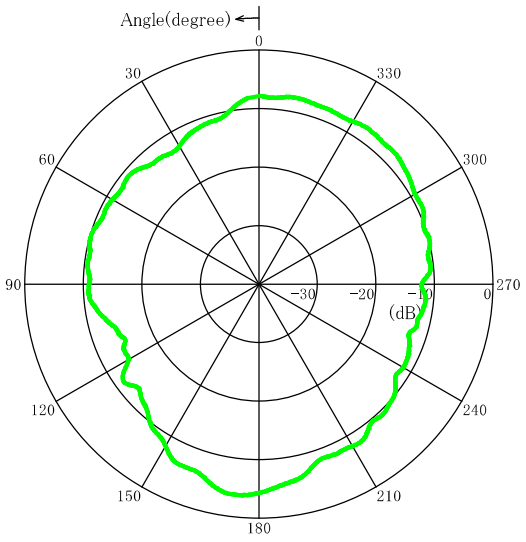
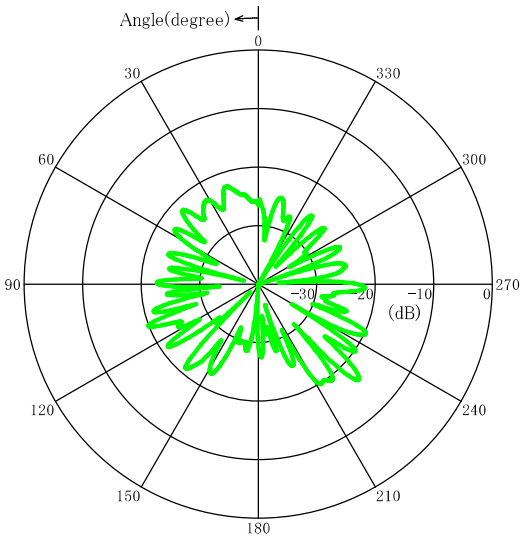
Test frequency: 2480 MHz

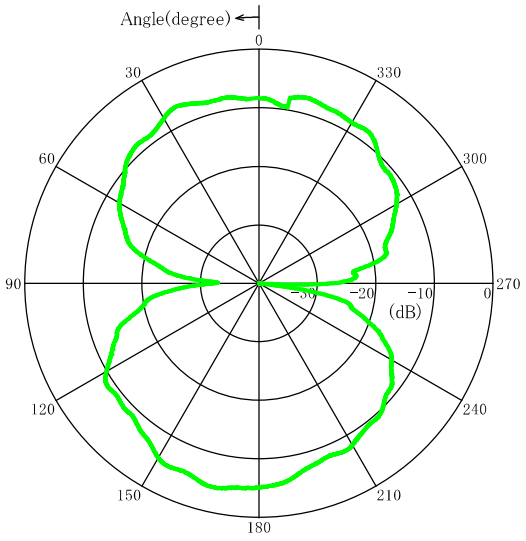
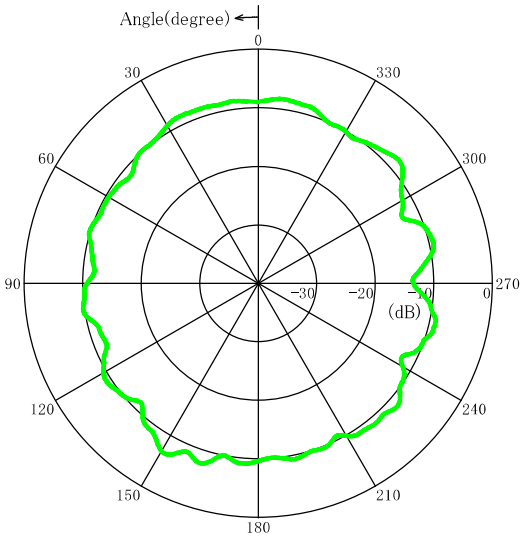
EUT's axis	EUT's Reading value	Reference antenna value	Measurement polarization	EUT's cable loss	Input level for the antenna	Gain of the reference antenna	Maximum Gain
	[dBμV/m]	[dBμV/m]		[dB]	[dBm]	[dBi]	[dBi]
X	41.7	61.7	Horizontal	0.01	-15.0	16.61	-3.38
	28.2	61.8	Vertical	0.01	-15.0	16.61	-16.98
Y	41.6	61.7	Horizontal	0.01	-15.0	16.61	-3.48
	38.3	61.8	Vertical	0.01	-15.0	16.61	-6.88
Z	39.6	61.7	Horizontal	0.01	-15.0	16.61	-5.48
	38.8	61.8	Vertical	0.01	-15.0	16.61	-6.38

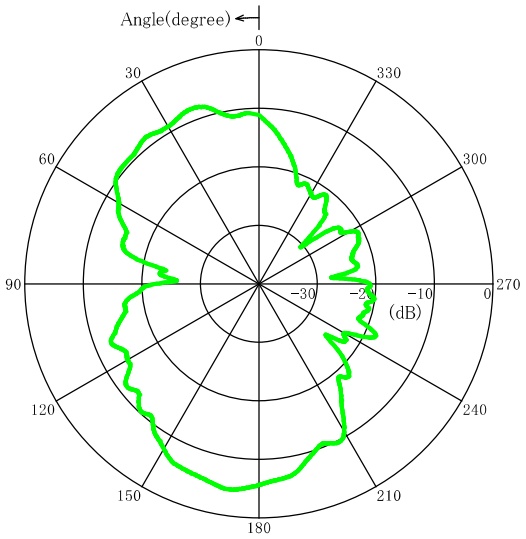
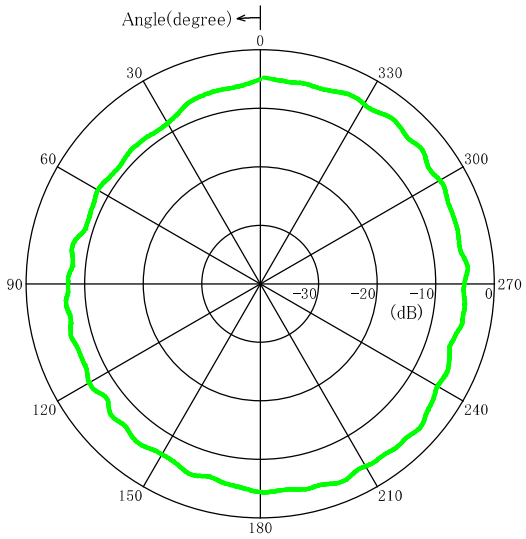
Calculation result: Z-axis
(Maximum gain of the tested antenna) =
(Readings of the tested antenna) - (Readings of the reference antenna) + (Cable loss of the tested antenna) + (Gain of the reference antenna) = 42.5 - 61.3 + 0.01 + 16.47 = **-2.32** (dBi)

Radiation pattern

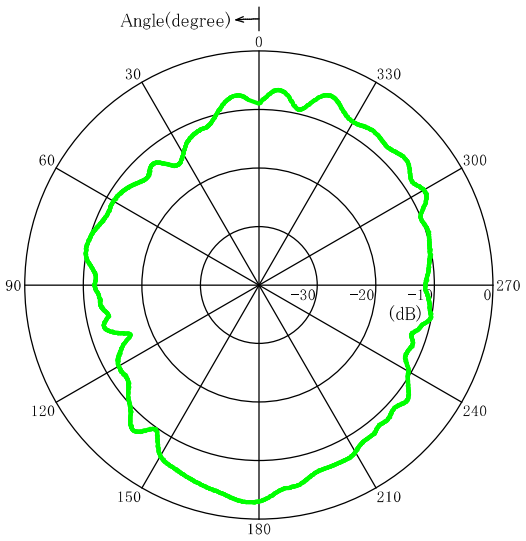
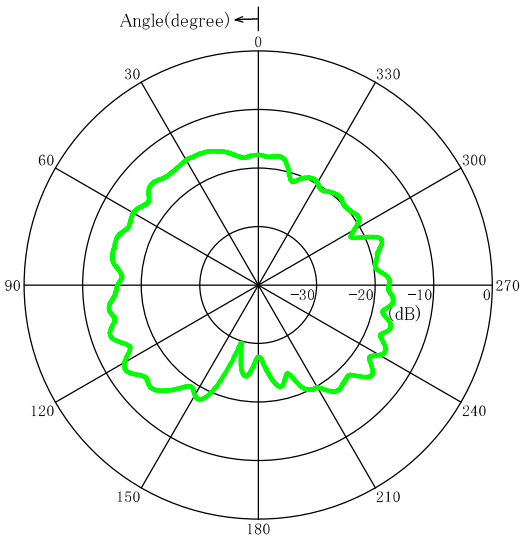
Test frequency : 2402 MHz

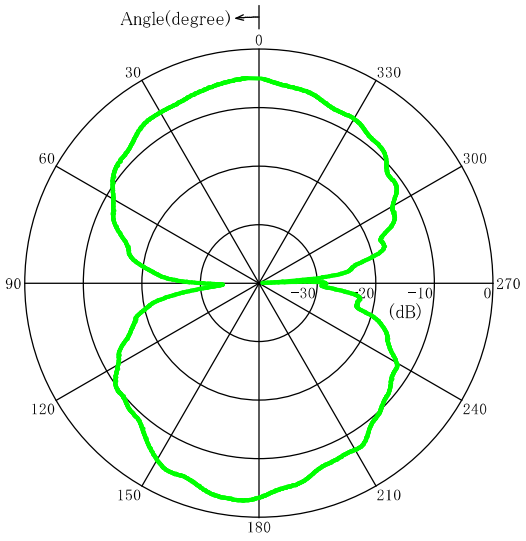
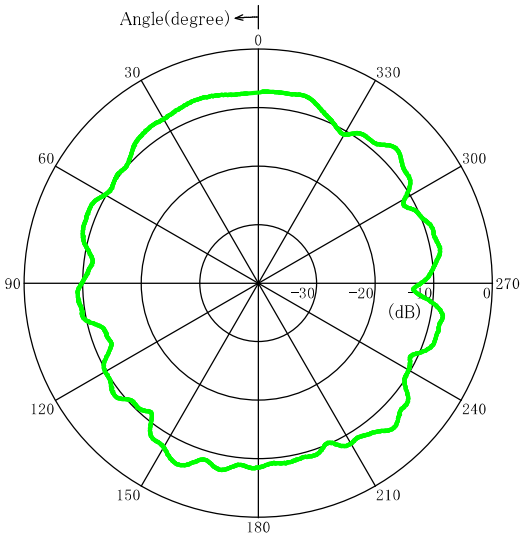
X axis - Horizontal	X axis - Vertical
 Antenna Radiation Pattern	 Antenna Radiation Pattern

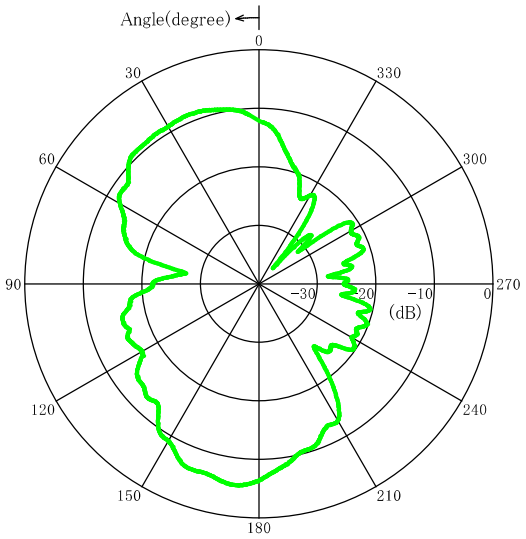
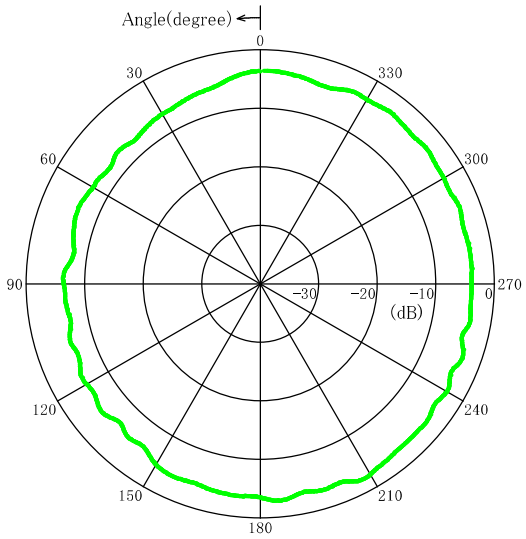
Y axis - Horizontal	Y axis - Vertical
 Antenna Radiation Pattern	 Antenna Radiation Pattern

Z axis - Horizontal	Z axis - Vertical
 Antenna Radiation Pattern	 Antenna Radiation Pattern

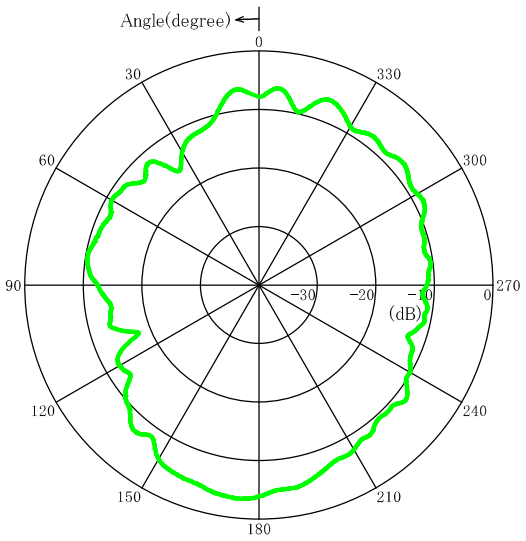
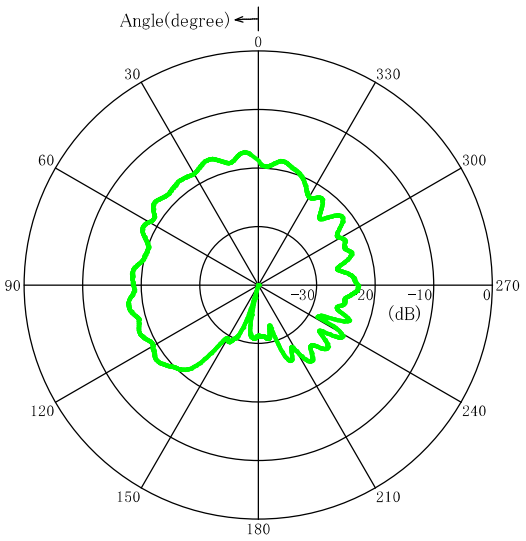
Test frequency : 2440 MHz

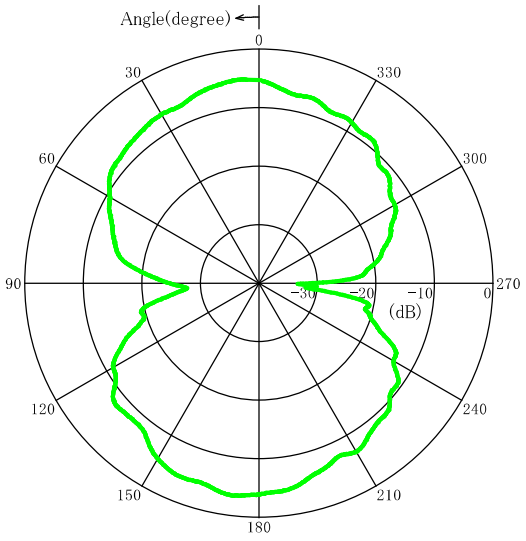
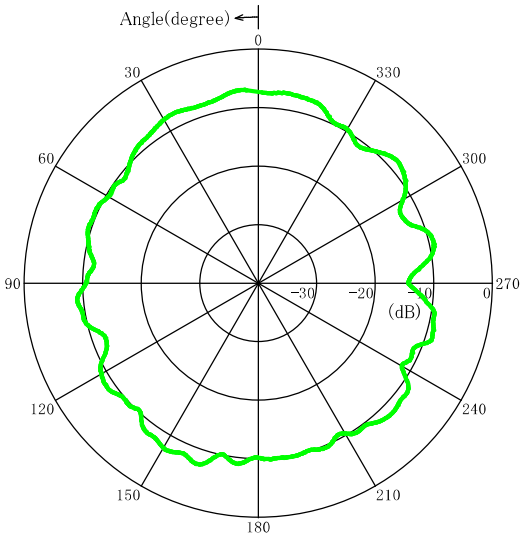
X axis - Horizontal	X axis - Vertical
 Antenna Radiation Pattern	 Antenna Radiation Pattern

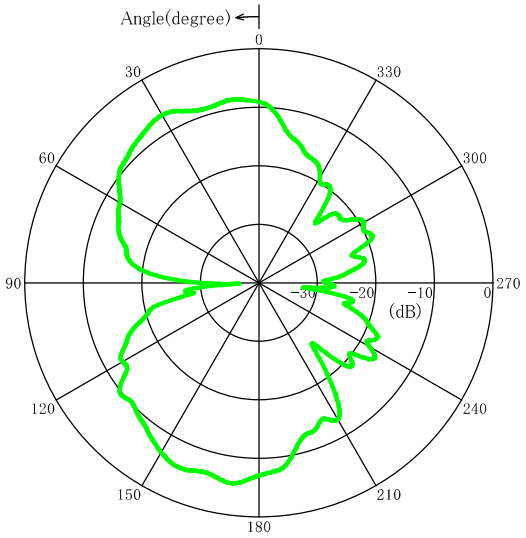
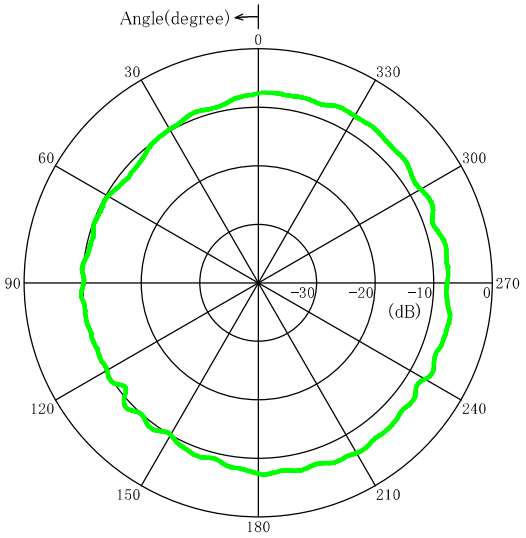
Y axis - Horizontal	Y axis - Vertical
 Antenna Radiation Pattern	 Antenna Radiation Pattern

Z axis - Horizontal	Z axis - Vertical
 Antenna Radiation Pattern	 Antenna Radiation Pattern

Test frequency : 2480 MHz

X axis - Horizontal	X axis - Vertical
 Antenna Radiation Pattern	 Antenna Radiation Pattern

Y axis - Horizontal	Y axis - Vertical
 Antenna Radiation Pattern	 Antenna Radiation Pattern

Z axis - Horizontal	Z axis - Vertical
 Antenna Radiation Pattern	 Antenna Radiation Pattern