

FCC TEST REPORT

Job No. : GPWE2211000167EC

Applicant : LG Electronics USA

Equipment Under Test (EUT) :

Product Name : Household Electric Oven

Model Name : WCEP6427F

FCC Authorization Type : Certification

Applied Standards : FCC Part 18

FCC ID : BEJD1724NAD

Date of Receipt : November 28, 2022

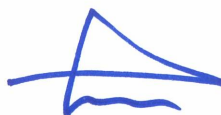
Date of Test : November 30, 2022 ~ December 1, 2022

Date of Issue : January 13, 2023

Test Results : Complied

Tested by

:



Youngsik Na

Reviewed by

:



Sean hur

This test report does not assure KOLAS accreditation.

- 1) The results of this test report are effective only to the items tested.
- 2) The SGS Korea is not responsible for the sampling, the results of this test report apply to the sample as received.

Remarks :

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The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This Test Report cannot be reproduced, except in full.

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Revision History

Revision	Report number	Description
0	F690501-RF-EMC001022	Initial
1	F690501-RF-EMC001022_1	- Added limit formula to Radiated Emission Limits on page 7. - 2th, 3rd Harmonic Frequency marked on the graph of Radiated Emission(1 ~ 18 GHz). - Added description of the amount of water(1 000 ml) used in the test. - Added Radio Frequency Exposure Requirements on page 17.
2	F690501-RF-EMC001022_2	Modified the radiated emission limit on page 7 and the test result limit in section 2.4.4.

1. General Information

1.1 Client Information

Applicant	LG Electronics USA
Applicant Address	111 Sylvan Avenue North Building Englewood Cliffs, NJ 07632
Manufacturer	LG Electronics Inc.
Manufacturer Address	170, Seongsanpaechong-Ro, Seongsan-Gu, Changwon-si, Gyeongsangnam-do, 51553, Rep. of Korea

1.2 Test Laboratory

Name and Address	SGS Korea Co., Ltd.
- Giheung Laboratory	35, Giheungdanji-ro 121beon-gil, Giheung-gu, Yongin-si, Gyeonggi-do, Republic of Korea
- Gunpo Laboratory	4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, 15807, Republic of Korea
- Dongtan Laboratory	12, Dongtansandan 10-gil, Hwaseong-si, Gyeonggi-do, 18487, Republic of Korea
FCC Registration No.	KR0150
Phone	+ 82 31 548 0710
Fax	+ 82 31 548 0719
e-mail	sean.hur@sgs.com

1.3 General Information of E.U.T.

Classification	Specification
Product Name	Household Electric Oven
Model Name	WCEP6427F
Serial No.	-
Clock Frequency	2.45 GHz $\pm$ 0.5 GHz
Test Voltage	AC 120 V, 60 Hz
Rated Power	AC (120 - 240) V, AC (120 - 208) V, 60 Hz 1 650 W(Input Power), 975 W(Output Power)
H/W Version	1.0
S/W Version	1.0
Port	AC IN
Function	A microwave oven that heats food using the properties of microwaves

1.4 Operating Modes and Conditions

Operating mode	Operating Condition
1) Operating mode	EUT is supplied with power, and the water-filled container is heated and EUT is connect with mobile phone through WIFI communication

1.5 Peripheral Equipments

Description	Model	Serial No.	Manufacturer	Note.
Mobile Phone	SM-G975N	-	Samsung Electronics Co.,Ltd.	-

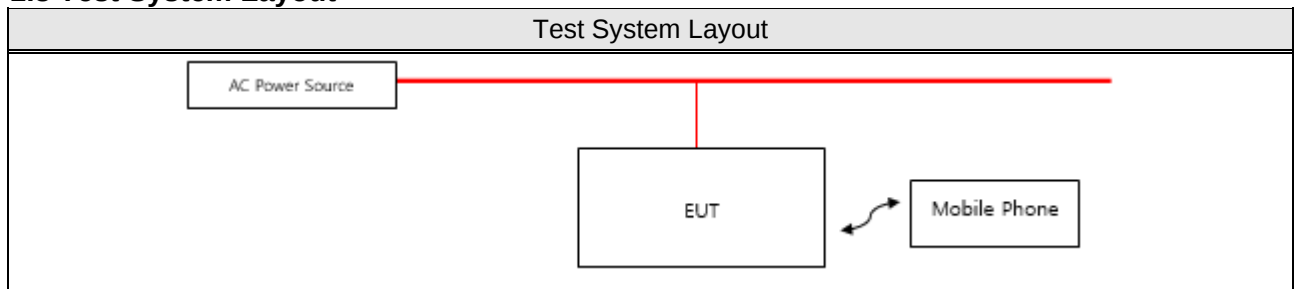
1.6 Cable List

Start		END		Cable Spec.		Used core
Name	I/O Port	Name	I/O Port	Length (m)	Shield	
EUT	AC IN	AC Power Source	-	1.8	Unshield	-
	-	Mobile Phone	-	-	-	-

1.7 System Configurations

Description	Model	Serial No.	Manufacturer	Note
7 Segment	JP-PF-M092AB-E	-	-	-
BT&WIFI Combo Module	LCWB-001	2028BCBB13EE	LG	VIETNAM
Buzzer Board	EAX61768202 VER.1	EBR76332902	-	-
Capacitor	CH85-21100-2100V-AC	-	BiCai	CHINA
Cooling Fan Motor	OEB-2501X1	-	OH SUNG	-
Display Board	CORE WALL OVEN REV:0.4	-	-	-
Display	-	-	-	-
Fan Motor	OEM-1554X1	2B72066Y	OH SUNG	-
Fuse Board	EAX67569302	-	-	-
Magnetron	2M246	-	LG	CHINA
Main Board	EAX67927206-A	-	LG	-
Power Board	EBR301627	-	ILSAN-Electronics K.M.W	-
Sub Board	EAX67927401-F	-	LG	-
Transformer	OBJY2	B0708BA	DIGITAL POWER COMMUNICATIONS CO., LTD.	-

1.8 Test System Layout



1.9 Modifications/Notes

- There was no modified item during the test.

1.10 Applicable Standards for Testing

Standards	Status	Deviation
FCC Part 18, MP-5	Applicable	No Deviation

1.11 Summary of Test Results

Test Item	Standards	Results
Conducted Emission	FCC Part 18 Subpart C Section 18.307 MP-5	Complied
Radiated Emission	FCC Part 18 Subpart C Section 18.305 MP-5	Complied
Power Input Measurement	MP-5, Section 4.3	Complied
Power Output Measurement	MP-5, Section 4.3	Complied
Frequency Measurement	MP-5, Section 4.5	Complied

Note: Test methods of all test items are performed according to the basic standards in this table.

EMISSION

2.1 Test Results

Test Items	Standards	Test Results
Conducted Emission	FCC Part 18 Subpart C Section 18.307 MP-5	Complied
Radiated Emission	FCC Part 18 Subpart C Section 18.305 MP-5	Complied

2.2 Test Method and Limits

2.2.1 Test Method

Test Items	Measuring Frequency Range	RBW	Measuring Distance
Conducted Emission	0.15 MHz ~ 30 MHz	9 kHz	-
Radiated Emission	9 kHz ~ 150 kHz	200 Hz	3 m
	150 kHz ~ 30 MHz	9 kHz	3 m
	30 MHz ~ 1 GHz	120 kHz	3 m
	Above 1 GHz	1 MHz	3 m

2.2.2 Test Limits

-Conducted Emission Limits

Frequency Range	Limits(dBμV)	
	Quasi-peak	Average
0.15 MHz ~ 0.5 MHz	66 to 56 ^{Note}	56 to 46
0.5 MHz ~ 5 MHz	56	46
5 MHz ~ 30 MHz	60	50

Note : The lower limit shall apply at the transition frequencies. The limit decreases linearly with the logarithm of the frequency in the range 0.05 MHz to 0.5 MHz.

-Radiated Emission Limits

[Any ISM Frequency] - (3 m method)

Frequency Range	Limits(dBμV/m)
	Average
9 kHz ~ 25 GHz	69.74

* It was tested from 9 kHz to 25 GHz since the highest operating frequency is 2.5 GHz.

* Power Generated by equipment = 753.66 W

$$Limit(at\ 3m) = 20LOG(25 * \sqrt{\frac{POWER}{500}}) + 20LOG(\frac{300}{3})$$

2.3 Conducted Disturbance

The initial preliminary exploratory scans were performed over the measuring frequency range(0.15 MHz to 30 MHz) using a max hold mode incorporating a Peak detector and Average detector and using the EMI measuring software. The final test data was measured using a Quasi-Peak detector and Average detector.

Note. Measuring software

- Giheung Lab.: EMC32(V10.40.10) from R&S
- Gunpo Lab.: EMC32(V10.60.20) from R&S
- Dongtan Lab.: EMC32(V10.40.00) from R&S

2.3.1 Test Equipments

Equipment	Model	Manufacturer	Serial No	Cal Due. Date
EMI TEST RECEIVER	ESW8	R&S	101318	2023.01.10
PULSE LIMITER	ESH3-Z2	R&S	100850	2023.04.13
4 Path V-LISN	NNLK 8129	SCHWARZBECK	8129-468	2023.04.13
EMD-CE-01	W21.09	-	-	2023.01.14

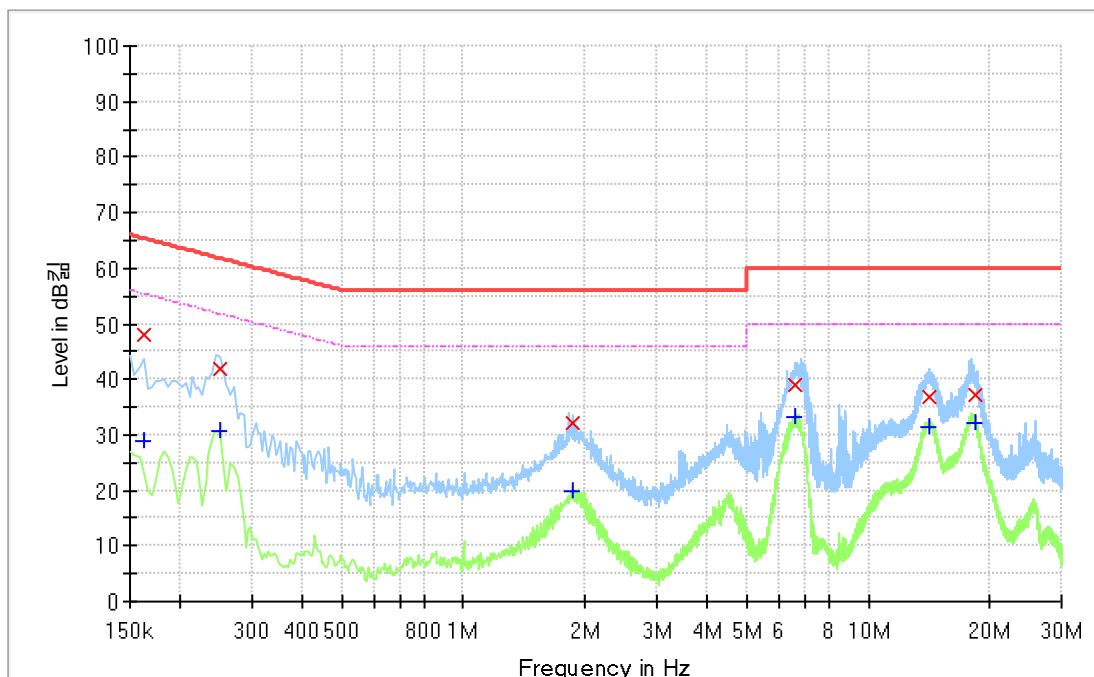
2.3.2 Test Site

Shield Room in Dongtan Laboratory

2.3.3 Environment Conditions

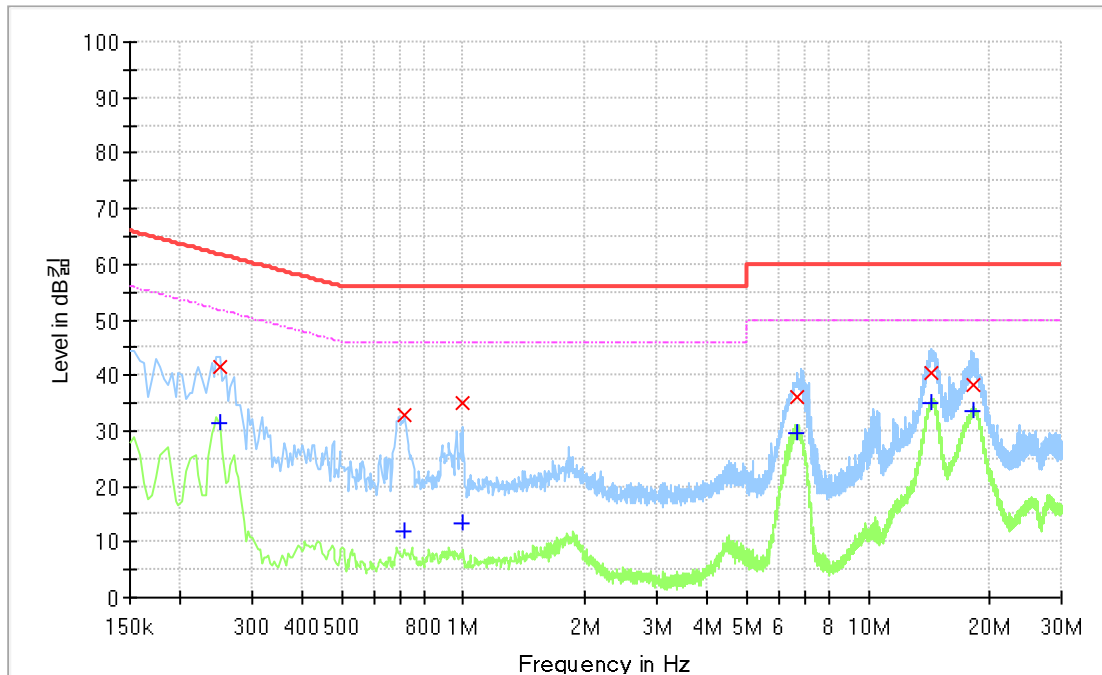
Temperature	(Minimum 22.7, Maximum 23.2) °C
Humidity	(Minimum 34.0, Maximum 35.0) % R.H.
Atmospheric Pressure	(Minimum 101.5, Maximum 101.5) kPa
Test Date	December 1, 2022

2.3.4 Test Results



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	PE	Corr. (dB)
0.162	---	28.97	55.36	26.39	15 000.0	9.000	L1	GND	9.9
0.162	48.17	---	65.36	17.19	15 000.0	9.000	L1	GND	9.9
0.250	---	30.55	51.76	21.21	15 000.0	9.000	L1	GND	9.9
0.250	41.81	---	61.76	19.94	15 000.0	9.000	L1	GND	9.9
1.870	---	20.03	46.00	25.97	15 000.0	9.000	L1	GND	10.0
1.870	32.17	---	56.00	23.83	15 000.0	9.000	L1	GND	10.0
6.610	---	33.14	50.00	16.86	15 000.0	9.000	L1	GND	10.1
6.610	38.95	---	60.00	21.05	15 000.0	9.000	L1	GND	10.1
14.102	---	31.41	50.00	18.59	15 000.0	9.000	L1	GND	10.3
14.102	36.93	---	60.00	23.07	15 000.0	9.000	L1	GND	10.3
18.294	---	32.26	50.00	17.74	15 000.0	9.000	L1	GND	10.4
18.294	37.06	---	60.00	22.94	15 000.0	9.000	L1	GND	10.4



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	PE	Corr. (dB)
0.250	---	31.28	51.76	20.47	15 000.0	9.000	N	GND	9.9
0.250	41.66	---	61.76	20.10	15 000.0	9.000	N	GND	9.9
0.718	---	11.77	46.00	34.23	15 000.0	9.000	N	GND	9.9
0.718	32.85	---	56.00	23.15	15 000.0	9.000	N	GND	9.9
0.994	---	13.38	46.00	32.62	15 000.0	9.000	N	GND	9.9
0.994	35.09	---	56.00	20.91	15 000.0	9.000	N	GND	9.9
6.686	---	29.61	50.00	20.39	15 000.0	9.000	N	GND	10.1
6.686	36.16	---	60.00	23.84	15 000.0	9.000	N	GND	10.1
14.302	---	35.09	50.00	14.91	15 000.0	9.000	N	GND	10.3
14.302	40.54	---	60.00	19.46	15 000.0	9.000	N	GND	10.3
18.258	---	33.44	50.00	16.56	15 000.0	9.000	N	GND	10.4
18.258	38.30	---	60.00	21.70	15 000.0	9.000	N	GND	10.4

Measurement Uncertainty: See Appendix A

Note: • Line (L1) : Hot • Line (N) : Neutral

• Corr. : LISN Factor + Pulse Limiter Factor + Cable Loss

• Margin = Limit – QuasiPeak or Average

Ex) In case

Freq ; 0.5 MHz, level ; 30 dB(μV), CL ; 0.2 dB, LISN ; 9.5 dB, P/L: 9.8 dB

Result = Level + CL + LISN + P/L

= 30 + 0.2 + 9.5 + 9.8

= 49.5

Margin = Limit – Result

= 56 - 49.5

= 6.5

2.4 Radiated Emission

The initial preliminary exploratory scans were performed over the measuring frequency range (9 kHz to 25 GHz) using a max hold mode incorporating a Average detector by using the EMI measuring software. The final test data was measured using a Average detector.

Measurements were made with the antenna positioned in both the horizontal and vertical planes of polarization. The antenna height was varied from 1 m to 4 m and the EUT was rotated 360° to find the maximum emitting point for each frequency.

Note. Measuring software

- Giheung Lab.: EMC32(V10.40.10) from R&S
- Gunpo Lab.: EP5RE(V5.3.70) from TOYO
- Dongtan Lab.: EMC32(V10.60.20) from R&S

2.4.1 Test Equipments

Equipment	Model	Manufacturer	Serial No	Cal Due. Date
EMI TEST RECEIVER	ESW44	R&S	101830	2023.01.10
Hybrid ANTENNA	VULB 9162	SCHWARZBECK	186	2023.07.29
Double Ridged Horn Antenna	HF907	R&S	100208	2023.03.10
Double Ridged Horn Antenna	BBHA9170	SCHWARZBECK	BBHA9170454	2023.07.07
LOOP ANTENNA	HFH2-Z2	R&S	827525/002	2023.03.02
Low Noise Amplifier	TK-PA01S	TESTEK	200110-L	2023.06.22
Pre-Amplifier	SCU18	R&S	102244	2023.07.06
Low Noise Amplifier	TK-PA1840H	TESTEK	110006	2023.02.03
EMD-RE-01	PM800-NMNM-7M	-	-	2023.01.14
EMD-RE-03	PM800-NMNM-3M	-	-	2023.01.14
EMD-RE-04	60637	SEMFLEX INC.	0005	2023.01.14
EMD-RE-05	-	-	-	2023.01.14
EMD-RE-06	SUCOFLEX 102	HUBER + SUHNER	803076/2	2023.01.14

Note: The calibration period of every equipment is 1 year.

2.4.2 Test Site

10 m SEMI-ANECHOIC CHAMBER in Dongtan Laboratory

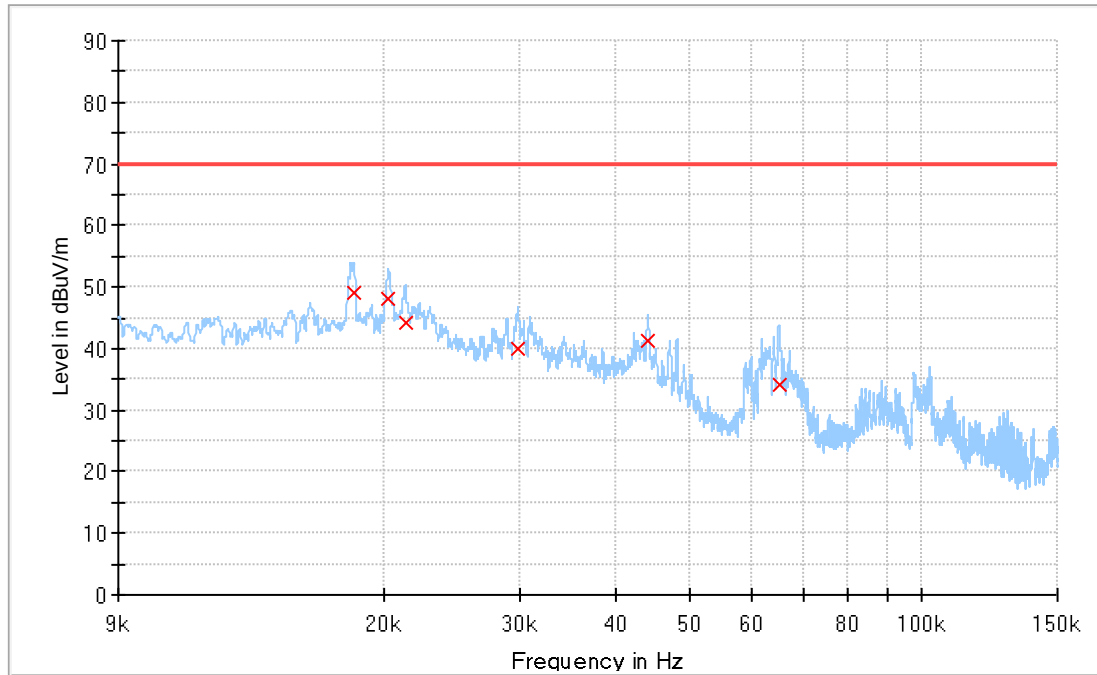
2.4.3 Environment Conditions

9 kHz ~ 25 GHz

Temperature	(Minimum 18.0, Maximum 21.5) °C
Humidity	(Minimum 24.0, Maximum 30.0) % R.H.
Atmospheric Pressure	(Minimum 101.2, Maximum 101.2) kPa
Test Date	November 30, 2022

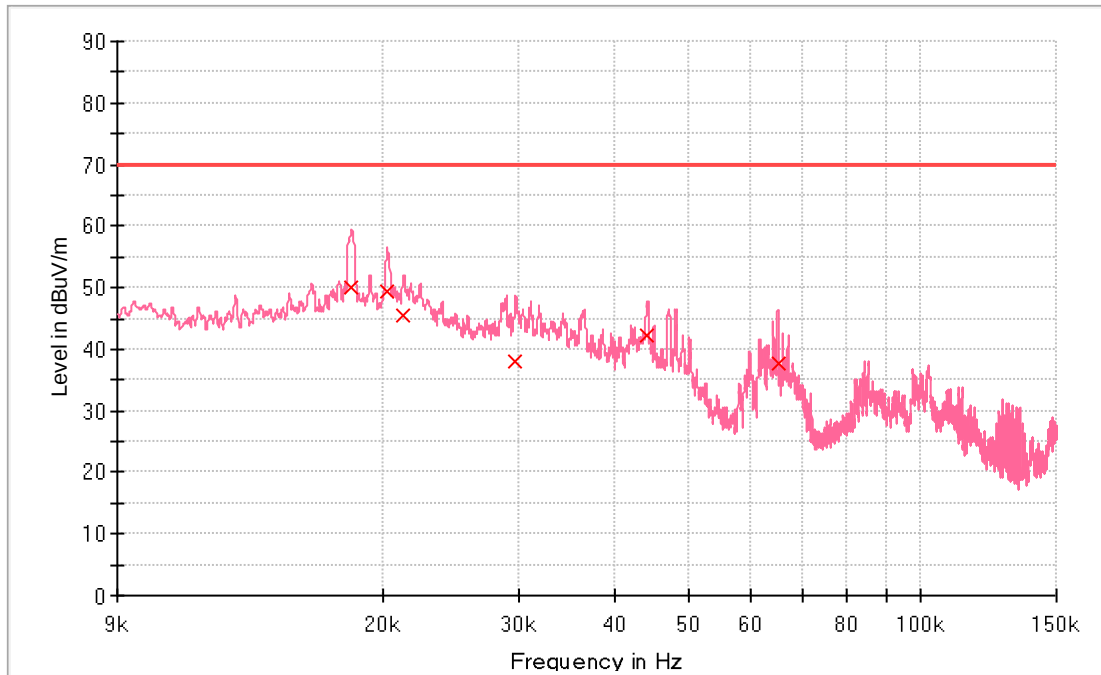
2.4.4 Test Results (3 m method)

● 9 kHz ~ 150 kHz



Final_Result

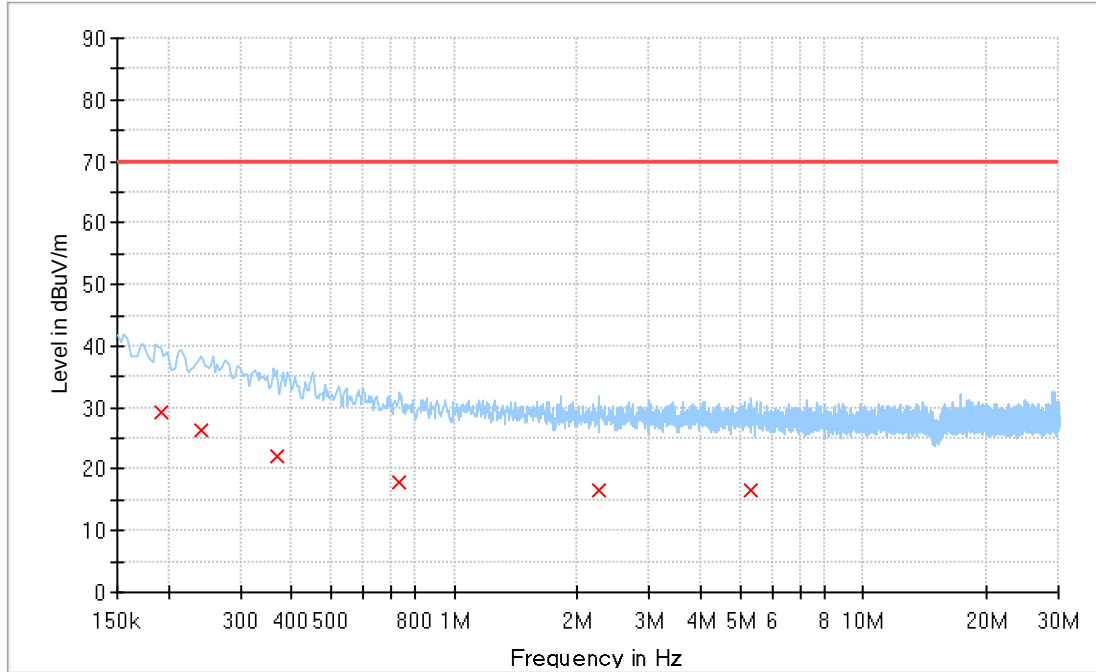
Frequency (MHz)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Corr. (dB)
0.018	48.90	69.74	20.84	15 000.0	0.200	H	85.0	19.4
0.020	48.00	69.74	21.74	15 000.0	0.200	H	158.0	19.5
0.021	44.22	69.74	25.52	15 000.0	0.200	H	351.0	19.5
0.030	40.04	69.74	29.70	15 000.0	0.200	H	328.0	19.5
0.044	41.30	69.74	28.44	15 000.0	0.200	H	326.0	19.5
0.065	34.17	69.74	35.57	15 000.0	0.200	H	255.0	19.5



Final Result

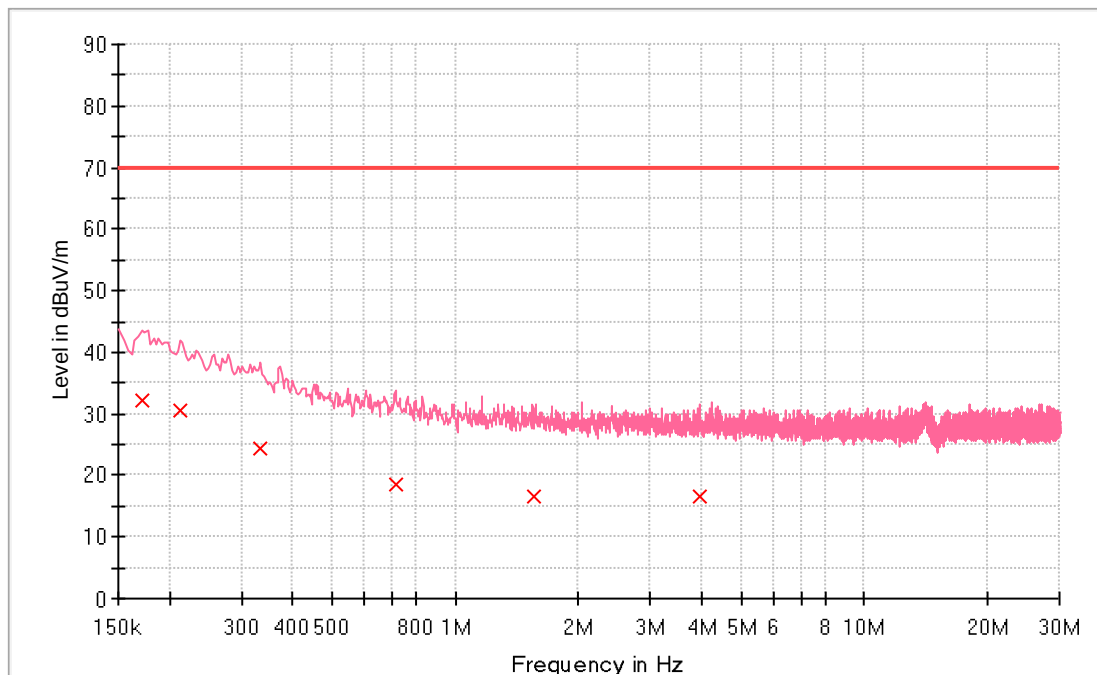
Frequency (MHz)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Corr. (dB)
0.018	50.12	69.74	19.62	15 000.0	0.200	V	274.0	19.4
0.020	49.47	69.74	20.27	15 000.0	0.200	V	101.0	19.5
0.021	45.47	69.74	24.27	15 000.0	0.200	V	194.0	19.5
0.030	38.02	69.74	31.72	15 000.0	0.200	V	353.0	19.5
0.044	42.11	69.74	27.63	15 000.0	0.200	V	0.0	19.5
0.065	37.78	69.74	31.96	15 000.0	0.200	V	164.0	19.5

● 150 kHz ~ 30 MHz



Final Result

Frequency (MHz)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Corr. (dB)
0.192	29.11	69.74	40.63	15 000.0	9.000	H	45.0	19.5
0.240	26.35	69.74	43.39	15 000.0	9.000	H	105.0	19.5
0.368	21.99	69.74	47.75	15 000.0	9.000	H	0.0	19.5
0.735	17.78	69.74	51.96	15 000.0	9.000	H	260.0	19.5
2.248	16.67	69.74	53.07	15 000.0	9.000	H	305.0	19.6
5.332	16.55	69.74	53.19	15 000.0	9.000	H	6.0	19.7



Final Result

Frequency (MHz)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Corr. (dB)
0.171	32.20	69.74	37.54	15 000.0	9.000	V	326.0	19.5
0.213	30.46	69.74	39.28	15 000.0	9.000	V	224.0	19.5
0.335	24.31	69.74	45.43	15 000.0	9.000	V	25.0	19.5
0.714	18.52	69.74	51.22	15 000.0	9.000	V	148.0	19.5
1.550	16.73	69.74	53.01	15 000.0	9.000	V	0.0	19.5
3.944	16.71	69.74	53.03	15 000.0	9.000	V	261.0	19.7

Measurement Uncertainty: See Appendix A

Note: • POL H = Horizontal

• POL V = Vertical

• Margin = Limit – Average

• Corr. = Antenna Factor + Cable loss

Ex) In case

Freq ; 500 kHz, level ; 32 dB(μV/m), AF ; 10 dB/m, CL ; 4 dB

Result = Level + AF + CL

= 32 + 10 + 4

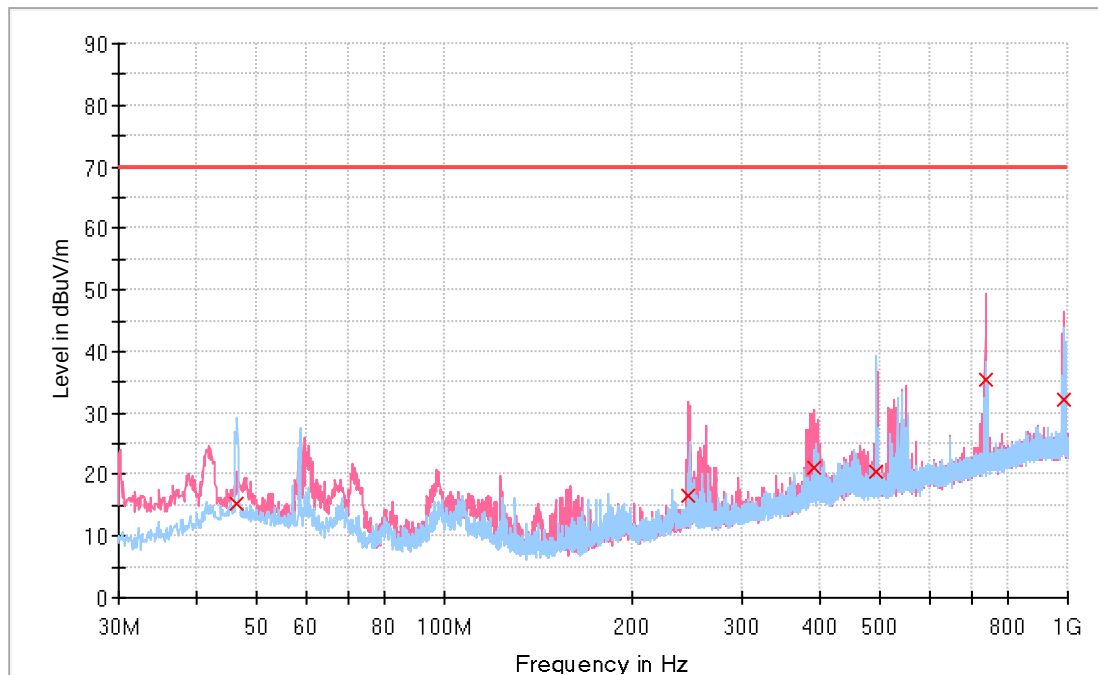
= 46

Margin = Limit – Result

= 73.14 – 46

= 27.14

● 30 MHz ~ 1 GHz



Final Result

Frequency (MHz)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
46.490	15.26	69.74	54.48	15 000.0	120.000	215.0	H	72.0	-21.4
245.437	16.71	69.74	53.03	15 000.0	120.000	250.0	V	0.0	-22.0
391.034	21.22	69.74	48.52	15 000.0	120.000	141.0	V	0.0	-18.6
493.563	20.37	69.74	49.37	15 000.0	120.000	333.0	H	157.0	-16.4
739.846	35.33	69.74	34.41	15 000.0	120.000	121.0	V	358.0	-11.7
982.152	32.16	69.74	37.58	15 000.0	120.000	107.0	V	0.0	-9.0

Measurement Uncertainty: See Appendix A

Note: ● AF = Antenna Factor

● POL H = Horizontal

● Margin = Limit – Average

● CL = Cable Loss

● POL V = Vertical

● AMP = Amplifier Gain

● H = Height

Ex) In case

Freq ; 100 MHz, level ; 30 dB(μV/m), AF ; 10 dB/m, CL ; 4 dB, Amp ; 25 dB

Result = Level + AF + CL – Amp

= 30 + 10 + 4 - 25

= 19

Margin = Limit – Result

= 73.14 – 19

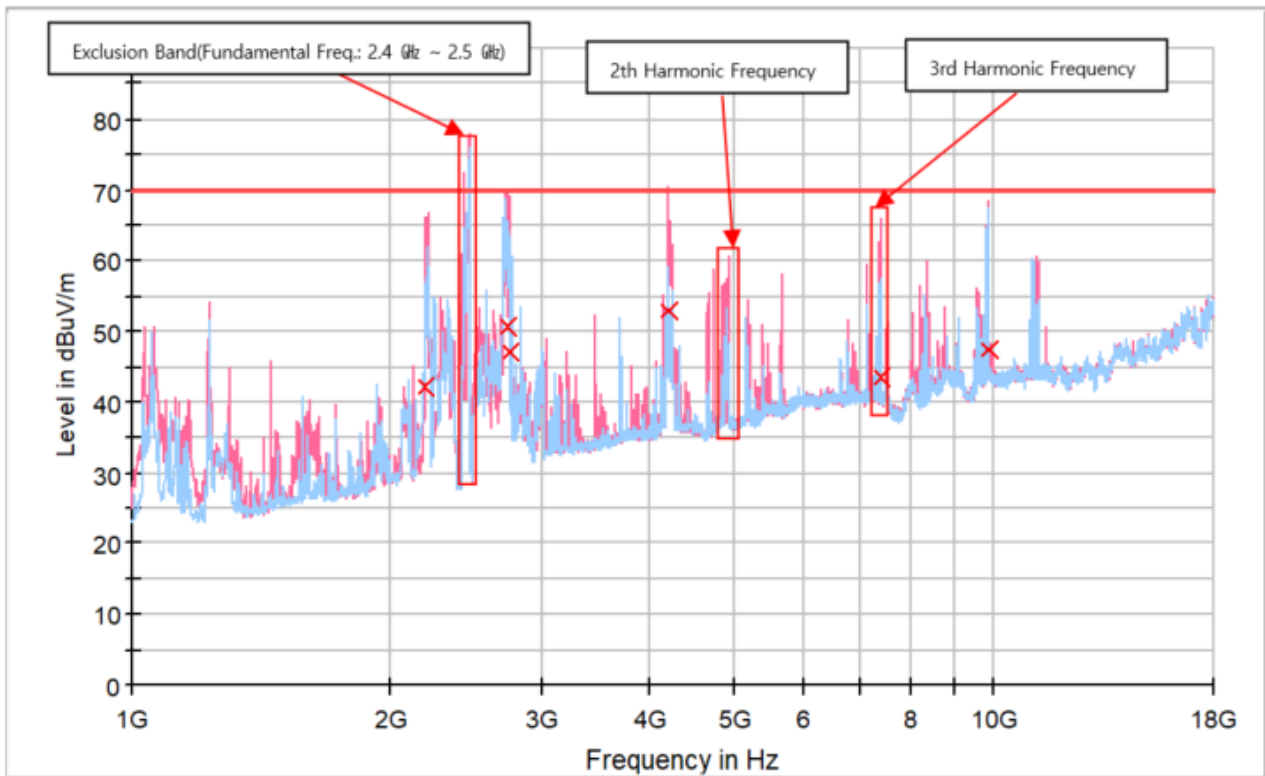
= 54.14

● Radio Frequency Exposure Requirements.

Frequency (MHz)	Max Value (dBμV/m)	Detector	Distance (m)
2 473.9	80.75	Peak	3

* It is the maximum value for the fundamentals of product frequency band

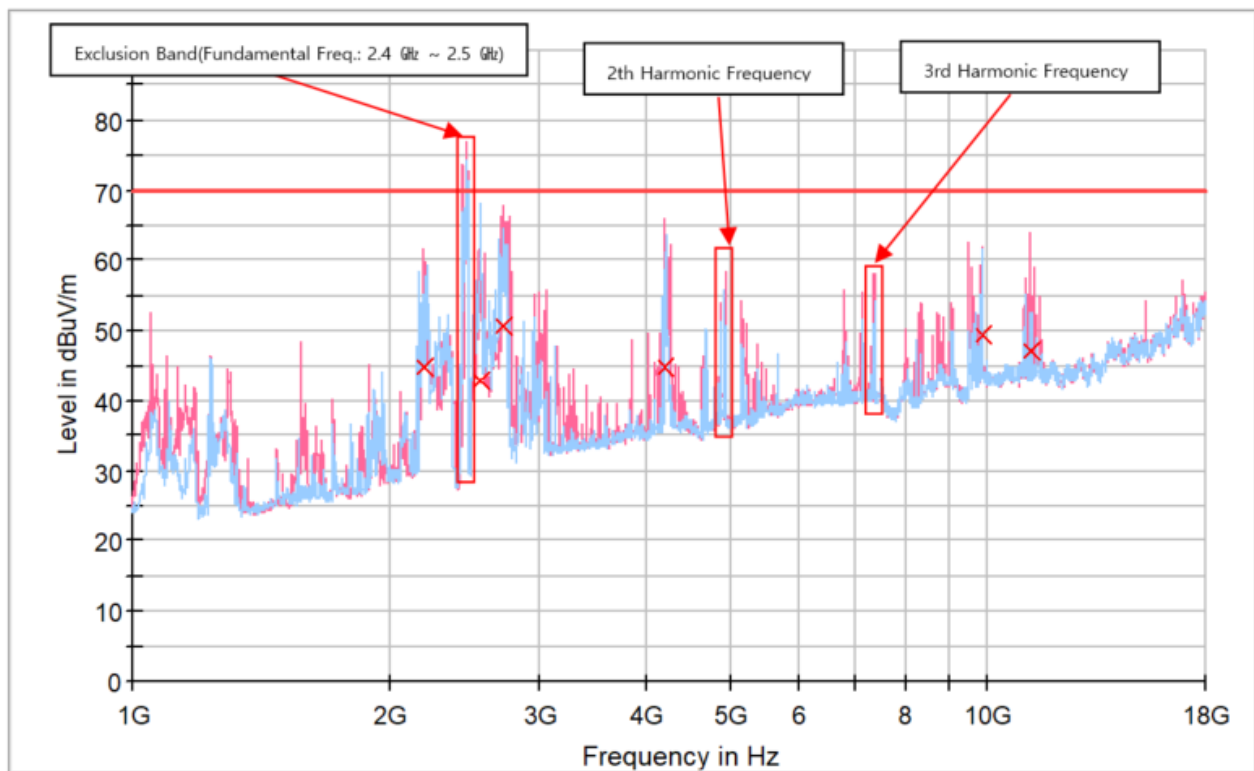
● 1 GHz ~ 18 GHz _ water 300 ml



Final Result

Frequency (MHz)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
2 195.100	42.08	69.74	27.66	15 000.0	1 000.000	312.0	V	27.0	-12.3
2 732.300	50.69	69.74	19.05	15 000.0	1 000.000	378.0	V	2.0	-10.5
2 745.900	47.24	69.74	22.50	15 000.0	1 000.000	111.0	V	14.0	-10.5
4 192.600	52.87	69.74	16.87	15 000.0	1 000.000	242.0	V	0.0	-5.5
7 414.100	43.64	69.74	26.10	15 000.0	1 000.000	350.0	V	0.0	-1.8
9 877.400	47.55	69.74	22.19	15 000.0	1 000.000	215.0	V	7.0	0.7

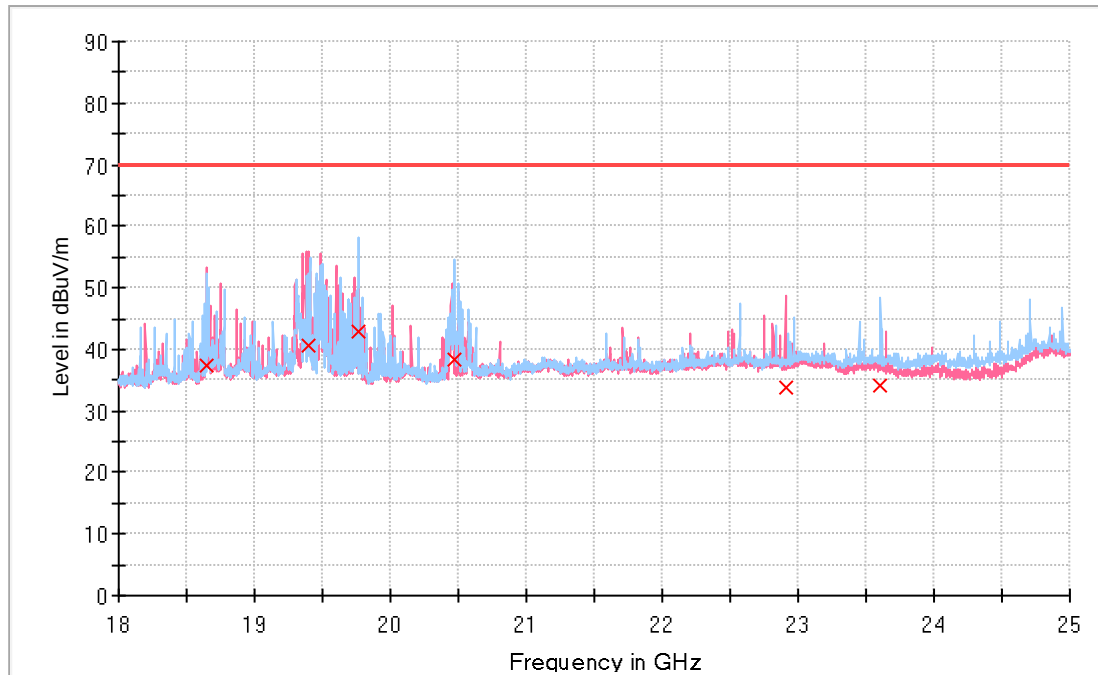
● 1 GHz ~ 18 GHz _ water 700 ml



Final Result

Frequency (MHz)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
2 190.000	44.89	69.74	24.85	15 000.0	1 000.000	215.0	V	33.0	-12.3
2 548.700	42.88	69.74	26.86	15 000.0	1 000.000	224.0	H	320.0	-10.8
2 715.300	50.76	69.74	18.98	15 000.0	1 000.000	331.0	V	342.0	-10.5
4 196.000	44.68	69.74	25.06	15 000.0	1 000.000	150.0	V	358.0	-5.5
9 868.900	49.37	69.74	20.37	15 000.0	1 000.000	397.0	V	310.0	0.7
11 262.900	47.07	69.74	22.67	15 000.0	1 000.000	200.0	V	343.0	2.1

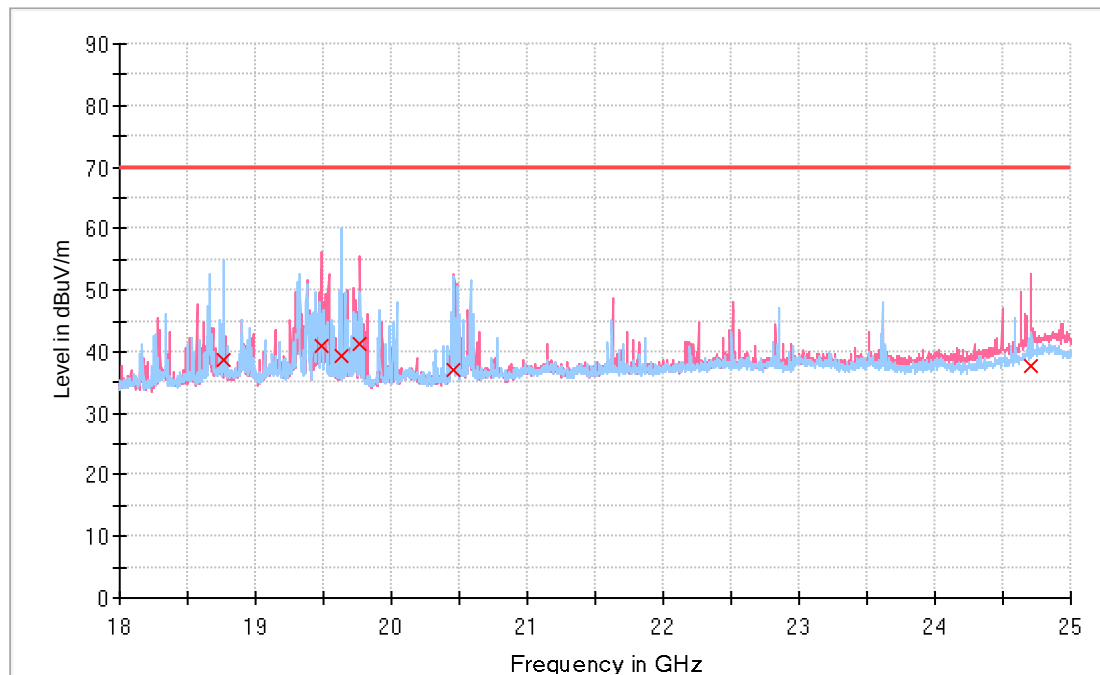
● 18 GHz ~ 25 GHz _ water 300 ml



Final_Result

Frequency (MHz)	Average (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
18 644.600	37.32	69.74	32.42	15 000.0	1 000.000	315.0	V	335.0	-3.6
19 397.000	40.74	69.74	29.00	15 000.0	1 000.000	222.0	V	0.0	-3.3
19 760.000	42.76	69.74	26.98	15 000.0	1 000.000	109.0	H	354.0	-3.2
20 466.200	38.22	69.74	31.52	15 000.0	1 000.000	314.0	H	359.0	-2.8
22 906.000	33.90	69.74	35.84	15 000.0	1 000.000	215.0	V	0.0	0.5
23 610.000	34.11	69.74	35.63	15 000.0	1 000.000	109.0	H	3.0	0.6

● 18 GHz ~ 25 GHz _ water 700 ml



Final Result

Frequency (MHz)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
18 761.200	38.68	69.74	31.06	15 000.0	1 000.000	400.0	H	356.0	-3.5
19 485.000	40.96	69.74	28.78	15 000.0	1 000.000	109.0	V	10.0	-3.3
19 634.600	39.45	69.74	30.29	15 000.0	1 000.000	102.0	H	5.0	-3.2
19 771.000	41.39	69.74	28.35	15 000.0	1 000.000	314.0	V	339.0	-3.2
20 461.800	36.88	69.74	32.86	15 000.0	1 000.000	150.0	V	335.0	-2.8
24 705.600	37.57	69.74	32.17	15 000.0	1 000.000	143.0	V	7.0	2.3

Measurement Uncertainty: See Appendix A

Note: ● AF = Antenna Factor

● POL H = Horizontal

● Margin = Limit – Average

● CL = Cable Loss

● POL V = Vertical

● AMP = Amplifier Gain

● H = Height

Ex) In case

Freq ; 1.5 GHz, level ; 30 dB(μV/m), AF ; 10 dB/m, CL ; 4 dB, Amp ; 25 dB

Result = Level + AF + CL – Amp

= 30 + 10 + 4 - 25

= 19

Margin = Limit – Result

= 73.14 – 19

= 54.14

3. Power Input Measurement

Input power and current were measured using a Digital Power Meter.

A 700 mℓ water load was placed in the center of the oven and the oven set to maximum power.

A 700 mℓ water load was chosen for its compatibility.

Manufacturers to determine their input ratings commonly use the procedure.

The test method was described in MP-5

3.1 Test Equipments

Equipment	Model	Manufacturer	Serial No	Cal Due. Date
Digital Power Meter	WT310E	Yokogawa	C3XL08036E	2023.01.20

Note: The calibration period of every equipment is 1 year.

3.2 Test Site

10 m SEMI-ANECHOIC CHAMBER in Dongtan Laboratory

3.3 Environment Conditions

Temperature	(Minimum 22.0, Maximum 22.2) °C
Humidity	(Minimum 26.0, Maximum 26.0) % R.H.
Atmospheric Pressure	(Minimum 101.2, Maximum 101.2) kPa
Test Date	November 30, 2022

3.4 Test Data for Input Power

Mode	Input Voltage	Current [A]	Power Consumption [W]	Manufacturer Rating [A]
Operating Mode	AC 120 V, 60 Hz	16.317	1 958.04	14.0

4. Power Output Measurement

The Calorimetric Method was used to determine maximum output power.

A 1 000 mℓ water load was placed in the center of the oven.

A Thermo-Hygrometer was used to measure temperature rise.

The test method was described in MP-5

4.1 Test Equipments

Equipment	Model	Manufacturer	Serial No	Cal Due. Date
Thermo-Hygrometer	303C	Bluetec	180718885	2023.05.02

Note: The calibration period of every equipment is 1 year.

4.2 Test Site

10 m SEMI-ANECHOIC CHAMBER in Dongtan Laboratory

4.3 Environment Conditions

Temperature	(Minimum 20.2, Maximum 20.5) °C
Humidity	(Minimum 25.0, Maximum 25.0) % R.H.
Atmospheric Pressure	(Minimum 101.2, Maximum 101.2) kPa
Test Date	November 30, 2022

4.4 Test Data for Output Power

Quantity of Water	Stating Temperature	Final Temperature	Elapsed Time
1 000 mℓ	14.2 °C	35.8 °C	120 s

$$Power[W] = \frac{(4.187 \text{ Joules/Cal}) \times (\text{Volume in mL}) \times (\text{Temperature Rise})}{\text{Time in Seconds}}$$

$$Power[W] = \frac{4.187 \times 1000 \times 21.6}{120}$$

$$Power[W] = 753.66$$

5. Frequency Measurement

5.1 Test Equipments

Equipment	Model	Manufacturer	Serial No	Cal Due. Date
EMI TEST RECEIVER	ESW44	R&S	101830	2023.01.10
Double Ridged Horn Antenna	HF907	R&S	100208	2023.03.10

Note: The calibration period of every equipment is 1 year.

5.2 Test Site

10 m SEMI-ANECHOIC CHAMBER in Dongtan Laboratory

5.3 Environment Conditions

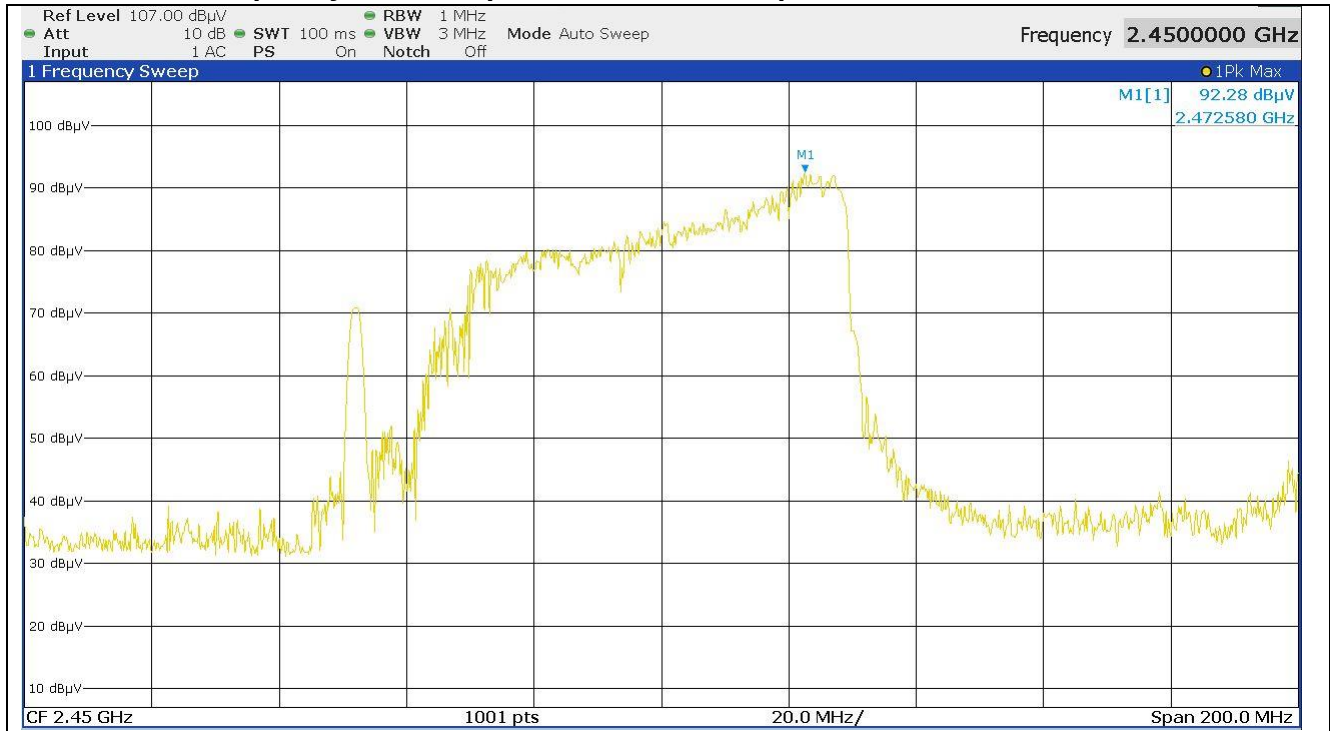
Temperature	(Minimum 23.0, Maximum 24.0) °C
Humidity	(Minimum 25.0, Maximum 26.0) % R.H.
Atmospheric Pressure	(Minimum 101.2, Maximum 101.2) kPa
Test Date	November 30, 2022

5.4 Test Data for Frequency (Line Voltage Variation Test)

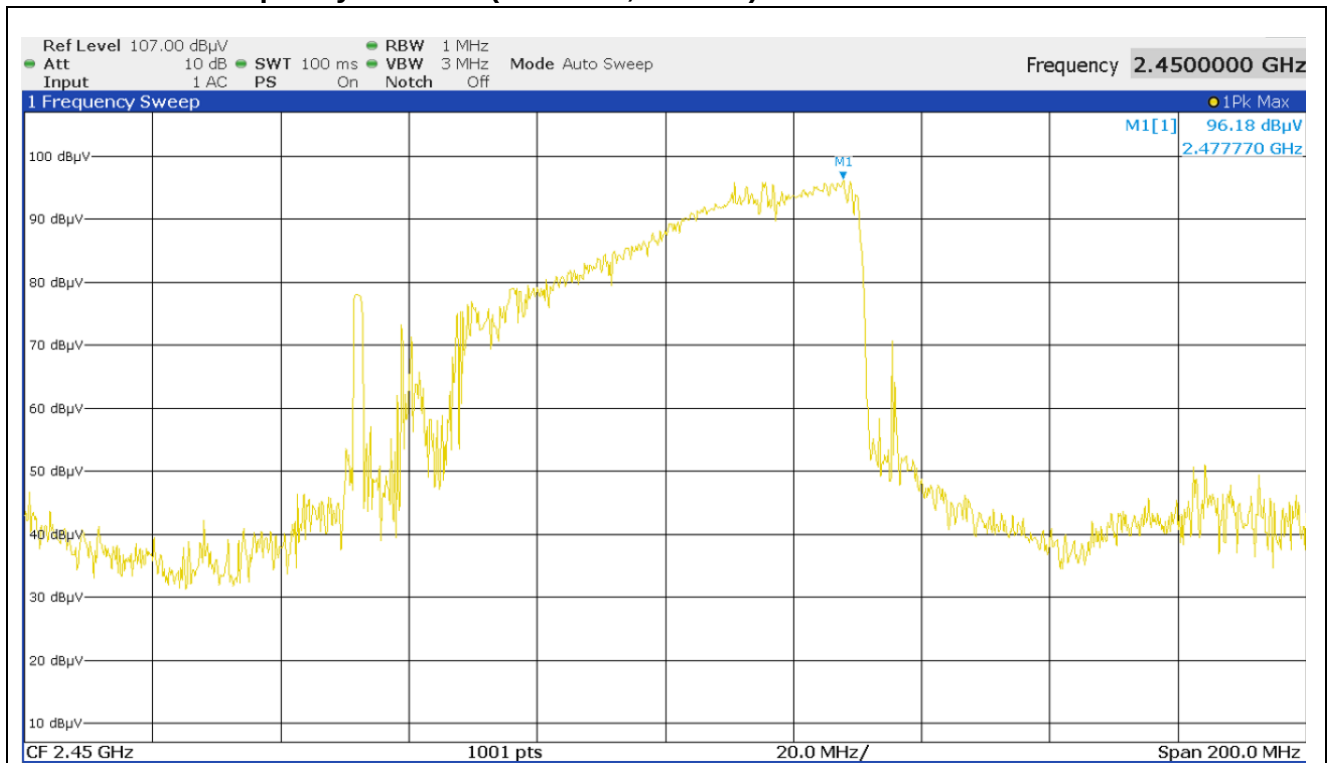
A 1 000 mℓ water load was placed in the center of the oven.

Voltage Variation(AC)	Pol	Frequency (GHz)	Allowed Tolerance for the ISM Band
96	H	2.477	Lower: 2.4 GHz Upper: 2.5 GHz
	V	2.475	
108	H	2.476	
	V	2.475	
120	H	2.472	
	V	2.475	
132	H	2.472	
	V	2.474	
150	H	2.474	
	V	2.477	

● Minimum Frequency: 2.472 GHz (AC 120 V, Horizontal)



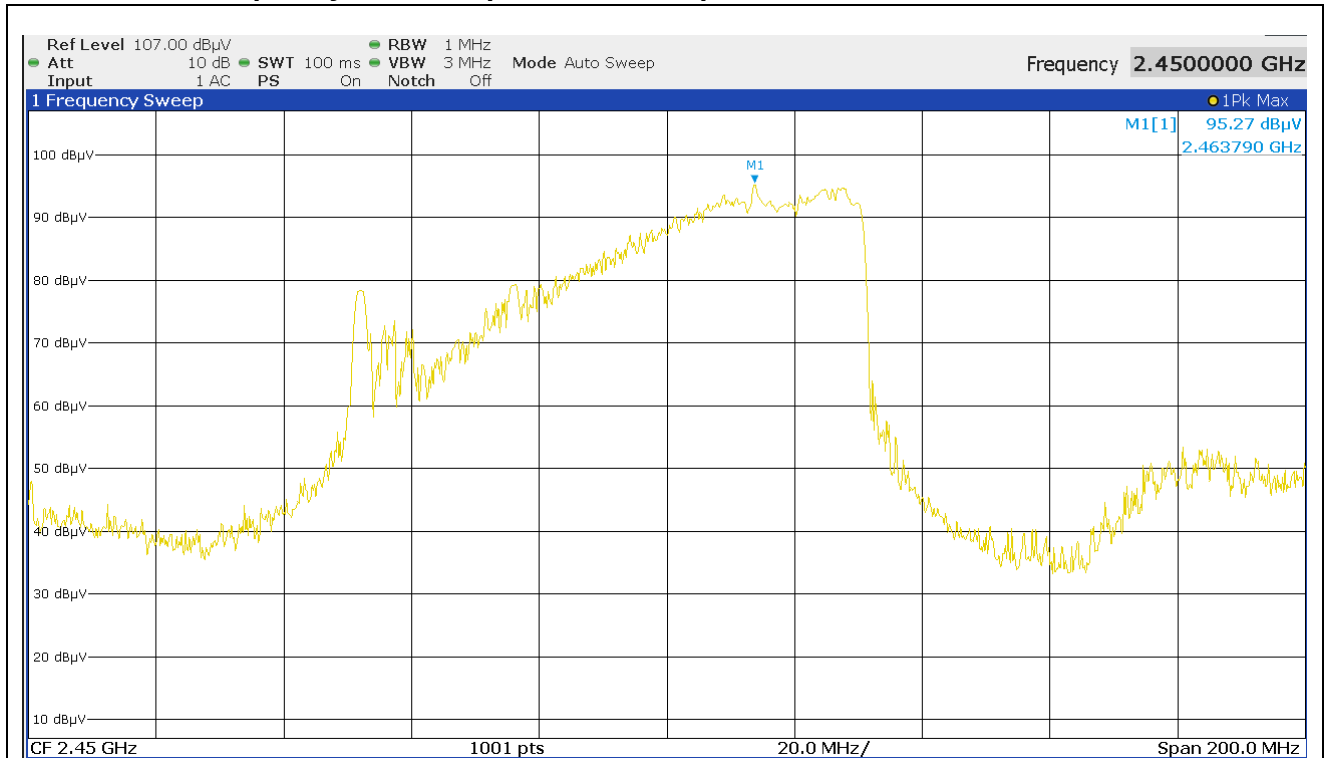
● Maximum Frequency: 2.477 GHz (AC 150 V, Vertical)



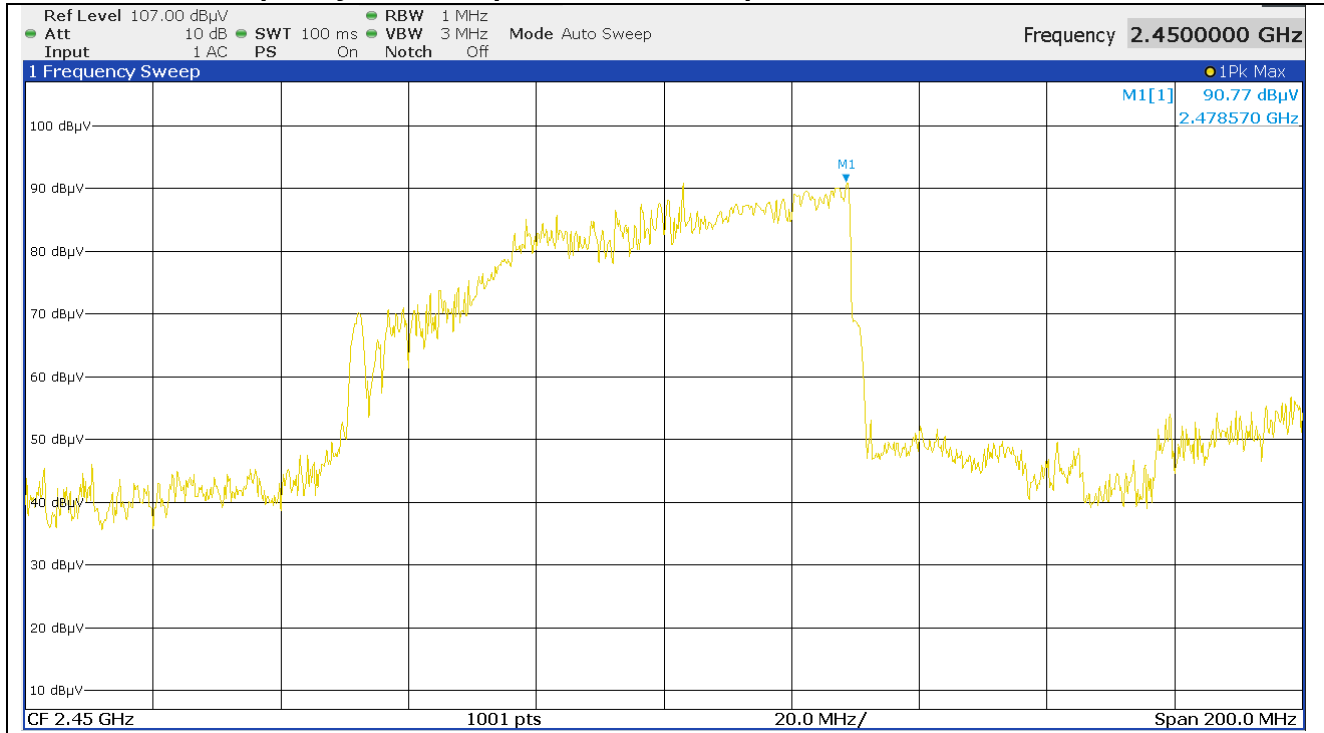
5.5 Test Data for Frequency (Load Variation Test)

Volume of Water(ml)	Pol	Frequency (GHz)	Allowed Tolerance for the ISM Band
200	H	2.467	Lower: 2.4 GHz Upper: 2.5 GHz
	V	2.472	
400	H	2.467	
	V	2.476	
600	H	2.471	
	V	2.473	
800	H	2.478	
	V	2.463	
1 000	H	2.477	
	V	2.477	

● Minimum Frequency: 2.463 GHz (800 mℓ, Vertical)



● Maximum Frequency: 2.478 GHz (800 mℓ, Horizontal)



Appendix A : Measurement Uncertainty

- Giheung Laboratory

Test Method		Measurement Uncertainty	
Conducted Emission		ENV216	3.7 dB (The confidential level is 95 %, k=2)
		ESH2-Z5	3.2 dB (The confidential level is 95 %, k=2)
		ESH3-Z6	3.2 dB (The confidential level is 95 %, k=2)
		NNLK8129	3.1 dB (The confidential level is 95 %, k=2)
Conducted Emission - Signal		ISN T800	5.4 dB (The confidential level is 95 %, k=2)
		ISN ST08	6.6 dB (The confidential level is 95 %, k=2)
Discontinuous		2.7 dB (The confidential level is 95 %, k=2)	
Radiated Emission	9 kHz ~30 MHz	Horizontal	3.3 dB (The confidential level is 95 %, k=2)
		Vertical	3.3 dB (The confidential level is 95 %, k=2)
	30 MHz ~ 1 000 MHz	Horizontal	4.3 dB (The confidential level is 95 %, k=2)
		Vertical	4.6 dB (The confidential level is 95 %, k=2)
	1 GHz ~ 18 GHz	Horizontal	3.9 dB (The confidential level is 95 %, k=2)
		Vertical	4.0 dB (The confidential level is 95 %, k=2)

- Gunpo Laboratory

Test Method		Measurement Uncertainty	
Conducted Emission		ENV216	3.4 dB (The confidential level is 95 %, k=2)
		ESH2-Z5	3.2 dB (The confidential level is 95 %, k=2)
		ESH3-Z6	3.4 dB (The confidential level is 95 %, k=2)
Conducted Emission - Signal		ISN T800	5.6 dB (The confidential level is 95 %, k=2)
		ISNT8-Cat6	5.6 dB (The confidential level is 95 %, k=2)
		ISN S751	7.3 dB (The confidential level is 95 %, k=2)
Disturbance Voltage at Antenna Terminal		2.4 dB (The confidential level is 95 %, k=2)	
Radiated Emission	9 kHz ~30 MHz (3 m chamber)	Horizontal	3.3 dB (The confidential level is 95 %, k=2)
		Vertical	3.3 dB (The confidential level is 95 %, k=2)
	30 MHz ~ 1 000 MHz (3 m chamber)	Horizontal	4.8 dB (The confidential level is 95 %, k=2)
		Vertical	5.2 dB (The confidential level is 95 %, k=2)
	1 GHz ~ 18 GHz (3 m chamber)	Horizontal	3.9 dB (The confidential level is 95 %, k=2)
		Vertical	4.0 dB (The confidential level is 95 %, k=2)

- Dongtan Laboratory

Test Method		Measurement Uncertainty	
Conducted Emission	ENV216	3.4 dB (The confidential level is 95 %, $k=2$)	
	ESH2-Z5	3.1 dB (The confidential level is 95 %, $k=2$)	
	ESH3-Z6	3.1 dB (The confidential level is 95 %, $k=2$)	
	NNLK8129	3.1 dB (The confidential level is 95 %, $k=2$)	
Conducted Emission - Signal	ISN T800	5.4 dB (The confidential level is 95 %, $k=2$)	
	ISN ST08	5.4 dB (The confidential level is 95 %, $k=2$)	
	ISN S751	5.6 dB (The confidential level is 95 %, $k=2$)	
Discontinuous		3.1 dB (The confidential level is 95 %, $k=2$)	
disturbance Power		3.0 dB (The confidential level is 95 %, $k=2$)	
Radiated Emission	9 kHz ~30 MHz (Triple Loop Ant)	2.7 dB (The confidential level is 95 %, $k=2$)	
	9 kHz ~30 MHz	Horizontal	3.3 dB (The confidential level is 95 %, $k=2$)
		Vertical	3.3 dB (The confidential level is 95 %, $k=2$)
	30 MHz ~ 1 000 MHz	Horizontal	4.7 dB (The confidential level is 95 %, $k=2$)
		Vertical	4.7 dB (The confidential level is 95 %, $k=2$)
	1 GHz ~ 18 GHz	Horizontal	4.0 dB (The confidential level is 95 %, $k=2$)
		Vertical	4.0 dB (The confidential level is 95 %, $k=2$)

- End of Test Report -