FCC/IC TEST REPORT

Job No.	**: GPEM2205000233EC**
Applicant	**: InBody Co., Ltd.**
Equipment Under Test (EUT) :	
Product Name	**: Body Composition Analyzer**
Model Name	**: InBodyFit**
FCC Authorization Type	**: Certification**
Applied Standards	**: FCC Part 15 Subpart B, Class B**
	ICES-003 Issue 7:2020
FCC ID	**: F6OINBODYFIT**
IC Certification	**: 22967-INBODYFIT**
Date of Receipt	**: May 3, 2022**
Date of Test	**: October 24, 2022**
Date of Issue	**: March 10, 2023**
Test Results	**: Complied**

Tested by : ----------
Jaehyeok Lee

Reviewed by : ----------
Julia Choi

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.

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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-EMC001000	Initial
1		

1. General Information

1.1 Client Information

Applicant	InBody Co., Ltd.
Applicant Address	06106, InBody Bldg., 625, Eonju-ro, Gangnam-gu, Seoul, Republic of Korea
Manufacturer	InBody Co., Ltd.
Manufacturer Address	06106, InBody Bldg., 625, Eonju-ro, Gangnam-gu, Seoul, Republic of Korea
Factory	InBody Co., Ltd.
Factory Address	15, Heugam-gil, Ipjang-myeon, Seobuk-gu, Cheonan-si, Chungcheongnam-do, Republic 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
IC Registration No.	7837B
Phone	+ 82 31 548 0710
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e-mail	julia.choi@sgs.com

1.3 General Information of E.U.T.

Classification	Specification
Product Name	Body Composition Analyzer
Model Name	InBodyFit
Serial No.	-
EMI Classification	Class B
Internal Clock Frequency	48 ㎒ (Wireless Frequency : 2.4 ㎓)
Test Voltage	DC 6 V (Battery Operation device)
Rated Power	DC 6 V (Battery Operation device)
H/W Version	1.0
S/W Version	1.0
Port	-
Components	-
Function	In-body measurement data transmission by Bluetooth communication connected to Mobile device

1.4 Operating Modes and Conditions

Operating mode	Operating Condition
1) Weight measurement	Automatic Weighing status

1.5 Peripheral Equipments

Description	Model	Serial No.	Manufacturer	Note.
-	-	-	-	-

1.6 Cable List

Start		END		Cable Spec.		Used core
Name	I/O Port	Name	I/O Port	Length (m)	Shield	
EUT	-	-	-	-	-	-

1.7 System Configurations

Description	Model	Serial No.	Manufacturer	Note
Main board	InBodyFit_MAIN_K0122	-	InBody Co., Ltd.	-
Handle board	InBodyFit_HANDLE_L1922	-	InBody Co., Ltd.	-

1.8 Test System Layout

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 15 : Subpart B ICES-003 Issue 7:2020 ANSI C63.4a:2017	Applicable	No Deviation

1.11 Summary of Test Results

Test Item	Standards	Results
Conducted Emission	FCC Part 15 Subpart B Section 15.107 ICES-003 Issue 7:2020 ANSI C63.4a:2017	N/A
Radiated Emission	FCC Part 15 Subpart B Section 15.109 ICES-003 Issue 7:2020 ANSI C63.4a:2017	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 15 Subpart B Section 15.107 ICES-003 Issue 7:2020 ANSI C63.4a:2017	N/A
Radiated Emission	FCC Part 15 Subpart B Section 15.109 ICES-003 Issue 7:2020 ANSI C63.4a:2017	Complied

2.2 Test Method and Limits

2.2.1 Test Method

Test Items	Measuring Frequency Range	RBW	Measuring Distance
Conducted Emission	0.15 ㎒ ~ 30 ㎒	9 ㎑	-
Radiated Emission	30 ㎒ ~ 1 ㎓	120 ㎑	10 m & 3 m
	Above 1 ㎓	1 ㎒	3 m

Note : 10 m method of radiated emission measurement is only applied to Class A equipment over the frequency range of 30 ㎒ ~ 1 ㎓. Except this, 3 m method is applied to Class B equipment over the frequency range of 30 ㎒ ~ 1 ㎓ and Class A and Class B equipment above 1 ㎓.

2.2.2 Test Limits

-Conducted Emission Limits

Frequency Range	Limits(dB μV)		Class
	Quasi-peak	Average	
0.15 ㎒ ~ 0.5 ㎒	79	66	Class A
0.5 ㎒ ~ 30 ㎒	73	60	
0.15 ㎒ ~ 0.5 ㎒	66 to 56	56 to 46	Class B
0.5 ㎒ ~ 5 ㎒	56	46	
5 ㎒ ~ 30 ㎒	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 0.15 ㎒ to 0.5 ㎒.

-Radiated Emission Limits below 1 ㎓

[FCC Part 15 Subpart B]

Frequency Range	Limits(dB μV/m)	Class
	Quasi-peak	
30 ㎒ ~ 88 ㎒	39.0	Class A (10 m method)
88 ㎒ ~ 216 ㎒	43.5	
216 ㎒ ~ 960 ㎒	46.4	
960 ㎒ ~ 1 ㎓	49.5	
30 ㎒ ~ 88 ㎒	40.0	Class B (3 m method)
88 ㎒ ~ 216 ㎒	43.5	
216 ㎒ ~ 960 ㎒	46.0	
960 ㎒ ~ 1 ㎓	54.0	

[ICES-003 Issue 7 : 2020]

Frequency Range	Limits(dB μV/m)	Class
	Quasi-peak	
30 ㎒ ~ 88 ㎒	40.0	Class A (10 m method)
88 ㎒ ~ 216 ㎒	43.5	
216 ㎒ ~ 230 ㎒	46.4	
230 ㎒ ~ 960 ㎒	47.0	
960 ㎒ ~ 1 ㎓	49.5	
30 ㎒ ~ 88 ㎒	50.0	Class A (3 m method)
88 ㎒ ~ 216 ㎒	54.0	
216 ㎒ ~ 230 ㎒	56.9	
230 ㎒ ~ 960 ㎒	57.0	
960 ㎒ ~ 1 ㎓	60.0	
30 ㎒ ~ 88 ㎒	30.0	Class B (10 m method)
88 ㎒ ~ 216 ㎒	33.1	
216 ㎒ ~ 230 ㎒	35.6	
230 ㎒ ~ 960 ㎒	37.0	
960 ㎒ ~ 1 ㎓	43.5	
30 ㎒ ~ 88 ㎒	40.0	Class B (3 m method)
88 ㎒ ~ 216 ㎒	43.5	
216 ㎒ ~ 230 ㎒	46.0	
230 ㎒ ~ 960 ㎒	47.0	
960 ㎒ ~ 1 ㎓	54.0	

-Radiated Emission Limits above 1 ㎓ (3 m method)

[FCC Part 15 Subpart B]

Frequency Range	Limits(dB μV/m)		Class
	Average	Peak	
Above 1 ㎓	59.5	79.5	Class A
Above 1 ㎓	54.0	74.0	Class B

Note : The limits of class A equipment is extrapolated using an extrapolation factor of 20 ㏈/decade because it was measured at 3 m distance not 10 m distance.

[ICES-003 Issue 7 : 2020]

Frequency Range	Limits(dB μV/m)		Class
	Average	Peak	
Above 1 ㎓	60.0	80.0	Class A
Above 1 ㎓	54.0	74.0	Class B

2.3 Radiated Emission

The initial preliminary exploratory scans were performed over the measuring frequency range (30 ㎒ to 13 ㎓) using a max hold mode incorporating a Peak detector by using the EMI measuring software. The final test data was measured using a Quasi-Peak detector below 1 ㎓, Peak and CISPR Average detector above 1 ㎓. 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(V10.40.10) from R&S

2.3.1 Test Equipments

Equipment	Model	Manufacturer	Serial No	Cal Due. Date
EMI TEST RECEIVER	ESU40	R&S	100075	2023.01.19
Hybrid ANTENNA	VULB 9163	SCHWARZBECK	9163-396	2023.03.24
Double Ridged Horn Antenna	HF907	R&S	102578	2023.05.02
PREAMPLIFIER	AM-1431	MITEQ	1336160	2023.05.23
AMPLIFIER	SCU 18	R&S	10070	2023.08.25

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

2.3.2 Test Site

10 m SEMI-ANECHOIC CHAMBER in Giheung Laboratory

2.3.3 Environment Conditions

Below 1 ㎓

Temperature	(Minimum 20.8, Maximum 21.2) ℃
Humidity	(Minimum 37.0, Maximum 40.0) % R.H.
Atmospheric Pressure	(Minimum 101.2, Maximum 101.2) ㎪
Test Date	October 24, 2022

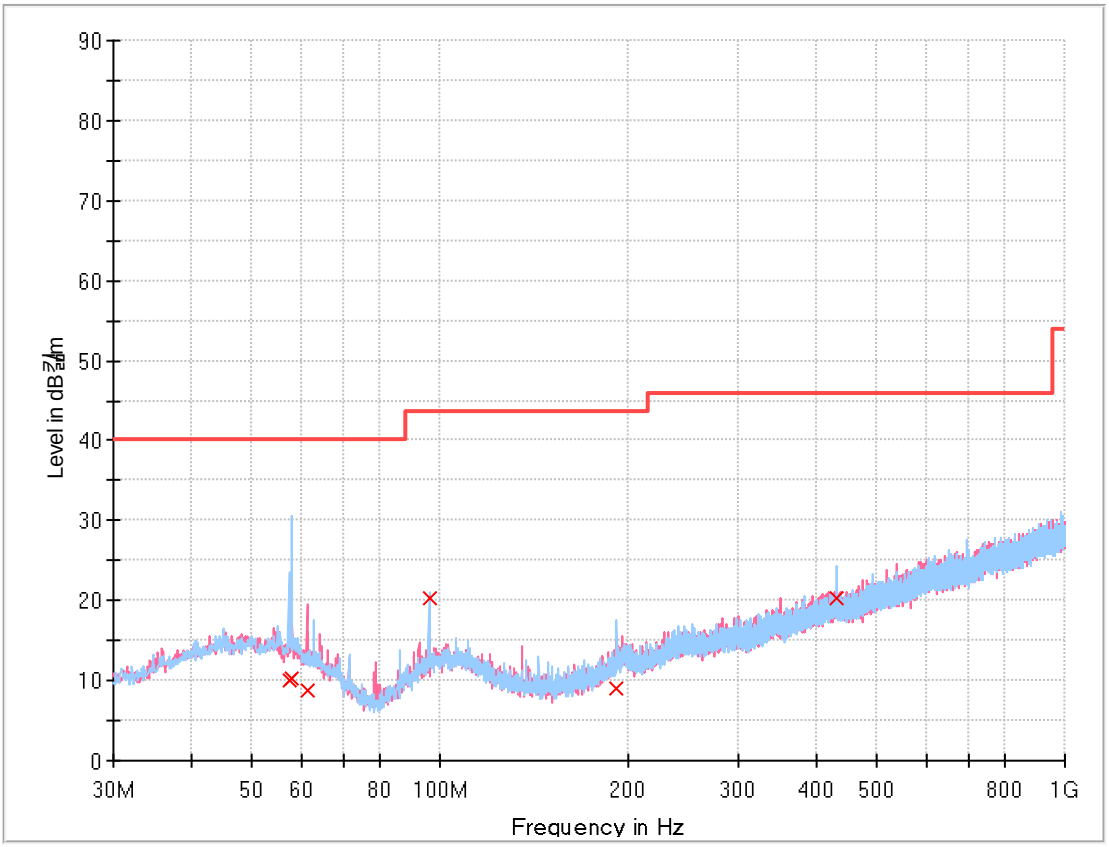
Above 1 ㎓

Temperature	(Minimum 22.4, Maximum 23.2) ℃
Humidity	(Minimum 41.0, Maximum 43.0) % R.H.
Atmospheric Pressure	(Minimum 101.2, Maximum 101.2) ㎪
Test Date	October 24, 2022

2.3.4 Test Results

Below 1 ㎓ (3 m method)

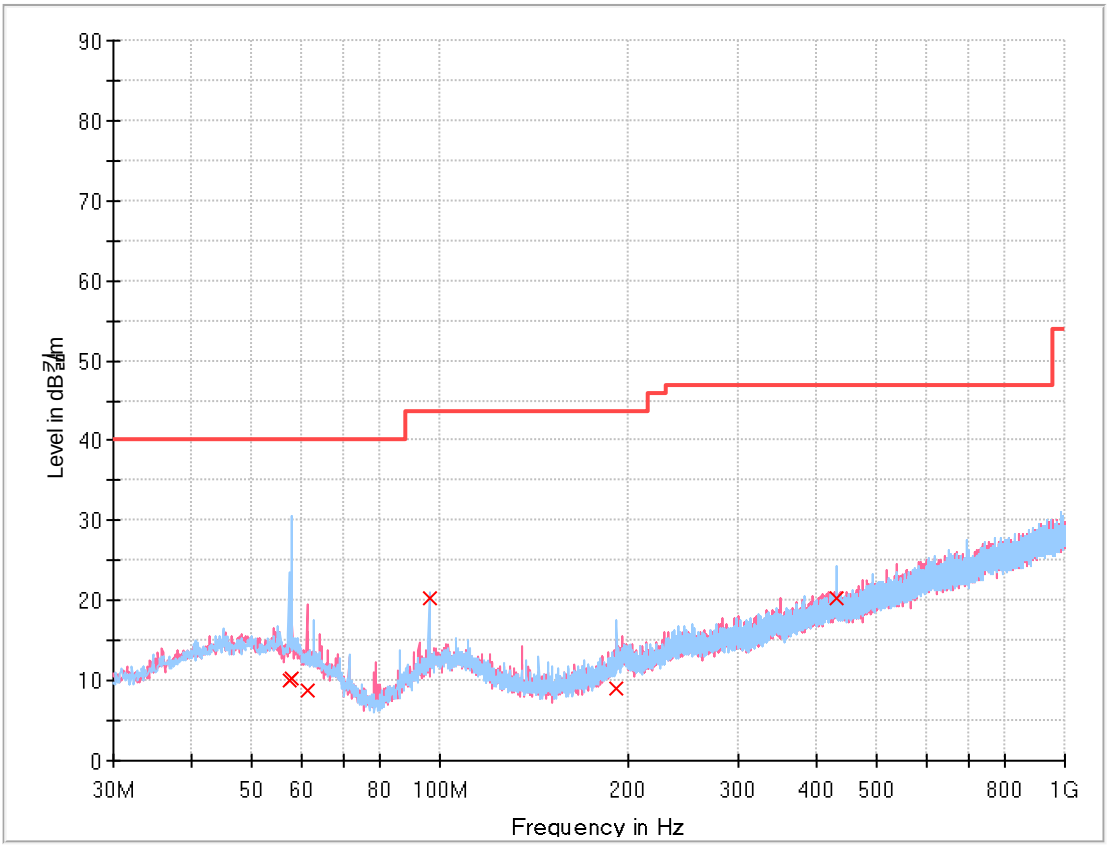
[FCC Part 15 Subpart B]



Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
57.257	10.06	40.00	29.94	15 000.0	120.000	325.0	H	0.0	-17.9
57.936	10.25	40.00	29.75	15 000.0	120.000	280.0	H	0.0	-17.9
61.234	8.85	40.00	31.15	15 000.0	120.000	210.0	V	326.0	-18.7
95.960	20.42	43.50	23.08	15 000.0	120.000	340.0	H	274.0	-19.2
191.893	9.13	43.50	34.37	15 000.0	120.000	210.0	H	359.0	-19.0
431.968	20.21	46.00	25.79	15 000.0	120.000	150.0	H	61.0	-11.8

[ICES-003 Issue 7: 2020]



Final_Result

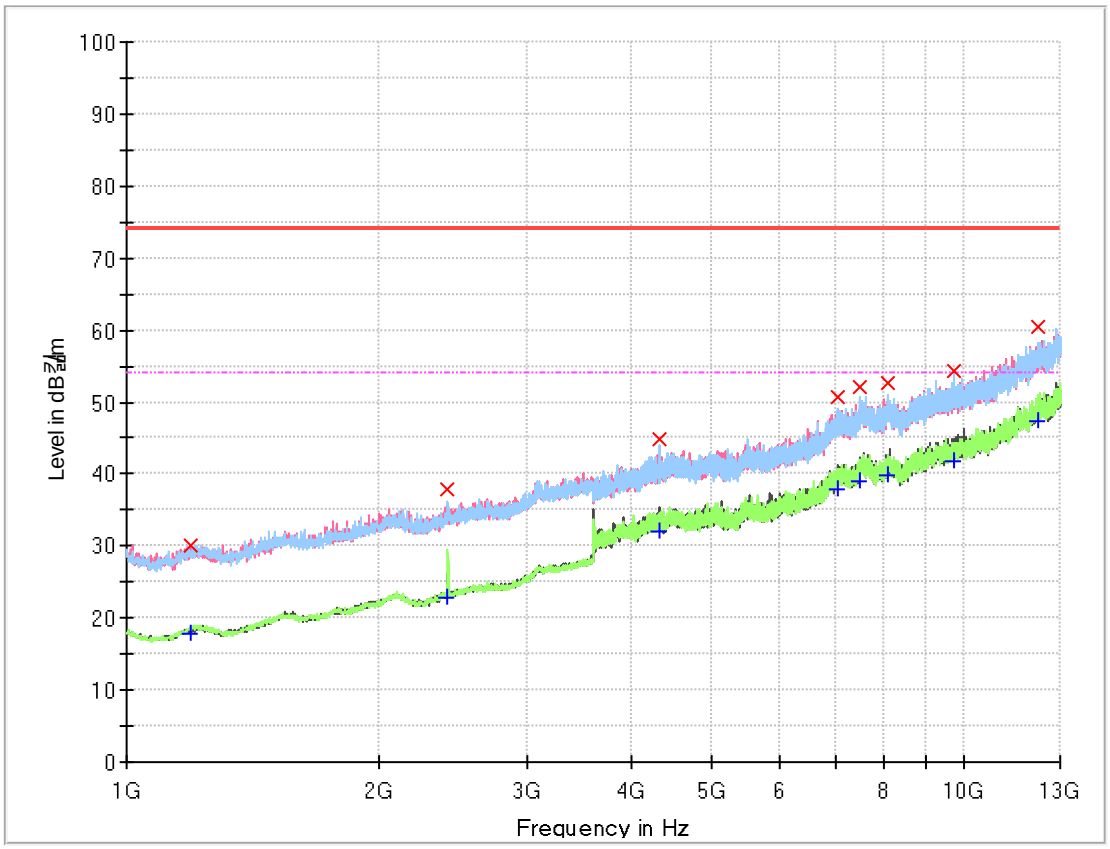
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
57.257	10.06	40.00	29.94	15 000.0	120.000	325.0	H	0.0	-17.9
57.936	10.25	40.00	29.75	15 000.0	120.000	280.0	H	0.0	-17.9
61.234	8.85	40.00	31.15	15 000.0	120.000	210.0	V	326.0	-18.7
95.960	20.42	43.50	23.08	15 000.0	120.000	340.0	H	274.0	-19.2
191.893	9.13	43.50	34.37	15 000.0	120.000	210.0	H	359.0	-19.0
431.968	20.21	47.00	26.79	15 000.0	120.000	150.0	H	61.0	-11.8

Measurement Uncertainty: See Appendix A

Note : • POL H = Horizontal • POL V = Vertical
• Margin = Limit – Quasi Peak • Corr. = Antenna Factor + Cable loss – Amplifier Gain

Above 1 GHz (3 m method)

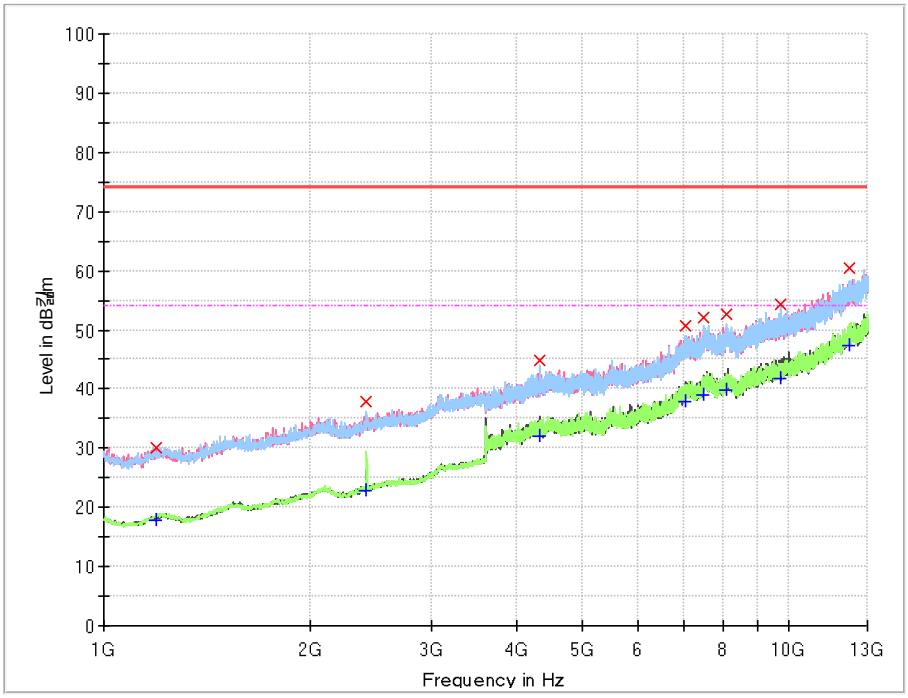
[FCC Part 15 Subpart B]



Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time(ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
1 195.600	30.22	---	74.00	43.78	15 000.0	1 000.000	200.0	V	0.0	-14.7
1 195.600	---	17.77	54.00	36.23	15 000.0	1 000.000	200.0	V	0.0	-14.7
2 418.400	---	22.91	54.00	31.09	15 000.0	1 000.000	200.0	H	286.0	-6.9
2 418.400	37.96	---	74.00	36.04	15 000.0	1 000.000	200.0	H	286.0	-6.9
4 318.000	---	32.10	54.00	21.90	15 000.0	1 000.000	100.0	H	179.0	3.2
4 318.000	44.92	---	74.00	29.08	15 000.0	1 000.000	100.0	H	179.0	3.2
7 066.000	50.61	---	74.00	23.39	15 000.0	1 000.000	200.0	H	0.0	9.2
7 066.000	---	37.95	54.00	16.05	15 000.0	1 000.000	200.0	H	0.0	9.2
7 488.400	51.98	---	74.00	22.02	15 000.0	1 000.000	200.0	H	73.0	10.2
7 488.400	---	38.98	54.00	15.02	15 000.0	1 000.000	200.0	H	73.0	10.2
8 104.000	---	39.81	54.00	14.19	15 000.0	1 000.000	100.0	V	351.0	10.8
8 104.000	52.63	---	74.00	21.37	15 000.0	1 000.000	100.0	V	351.0	10.8
9 721.600	54.19	---	74.00	19.81	15 000.0	1 000.000	200.0	H	231.0	13.2
9 721.600	---	41.79	54.00	12.21	15 000.0	1 000.000	200.0	H	231.0	13.2
12 260.800	---	47.48	54.00	6.52	15 000.0	1 000.000	200.0	V	7.0	18.9
12 260.800	60.32	---	74.00	13.68	15 000.0	1 000.000	200.0	V	7.0	18.9

[ICES-003 Issue 7: 2020]



Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time(ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
1 195.600	30.22	---	74.00	43.78	15 000.0	1 000.000	200.0	V	0.0	-14.7
1 195.600	---	17.77	54.00	36.23	15 000.0	1 000.000	200.0	V	0.0	-14.7
2 418.400	---	22.91	54.00	31.09	15 000.0	1 000.000	200.0	H	286.0	-6.9
2 418.400	37.96	---	74.00	36.04	15 000.0	1 000.000	200.0	H	286.0	-6.9
4 318.000	---	32.10	54.00	21.90	15 000.0	1 000.000	100.0	H	179.0	3.2
4 318.000	44.92	---	74.00	29.08	15 000.0	1 000.000	100.0	H	179.0	3.2
7 066.000	50.61	---	74.00	23.39	15 000.0	1 000.000	200.0	H	0.0	9.2
7 066.000	---	37.95	54.00	16.05	15 000.0	1 000.000	200.0	H	0.0	9.2
7 488.400	51.98	---	74.00	22.02	15 000.0	1 000.000	200.0	H	73.0	10.2
7 488.400	---	38.98	54.00	15.02	15 000.0	1 000.000	200.0	H	73.0	10.2
8 104.000	---	39.81	54.00	14.19	15 000.0	1 000.000	100.0	V	351.0	10.8
8 104.000	52.63	---	74.00	21.37	15 000.0	1 000.000	100.0	V	351.0	10.8
9 721.600	54.19	---	74.00	19.81	15 000.0	1 000.000	200.0	H	231.0	13.2
9 721.600	---	41.79	54.00	12.21	15 000.0	1 000.000	200.0	H	231.0	13.2
12 260.800	---	47.48	54.00	6.52	15 000.0	1 000.000	200.0	V	7.0	18.9
12 260.800	60.32	---	74.00	13.68	15 000.0	1 000.000	200.0	V	7.0	18.9

Measurement Uncertainty : See Appendix A

Note : • AF = Antenna Factor • CL = Cable Loss • AMP = Amplifier Gain
• POL H = Horizontal • POL V = Vertical • A = Angle
• H = Height • Margin = Limit – Result
• Corr. = AF + CL – AMP ** The value of 'Level' includes 'Corr.'.

Ex) In case

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

Result = Level + AF + CL – Amp
= 30 + 10 + 4 - 25
= 19

Margin = Limit – Result
= 43.5 – 19
= 24.5

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 -