



FCC/IC TEST REPORT

Job No. : GPEM2304000245EC
Applicant : iRevo-ASSA ABLOY Korea
Equipment Under Test (EUT) :
 Product Name : Digital Door Lock
 Model Name : YRD450 FP
 Alt. Model Name : YRD420 FP
FCC Authorization Type : Certification
Applied Standards : FCC Part 15 Subpart B, Class B
 ICES-003 Issue 7:2020
FCC ID : 2ABFG-YRD450-F
IC Certification : 11626A-YRD450F
Date of Receipt : April 18, 2023
Date of Test : April 20, 2023 ~ April 27, 2023
Date of Issue : May 26, 2023
Test Results : Complied

Tested by	:	 ----- DoHyeon Lee
Reviewed by	:	 ----- Paul Kang

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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Contents

1. General Information.....	4
1.1 Client Information.....	4
1.2 Test Laboratory.....	4
1.3 General Information of E.U.T.	4
1.4 Operating Modes and Conditions.....	4
1.5 Peripheral Equipments.....	4
1.6 Cable List.....	5
1.7 System Configurations.....	5
1.8 Test System Layout	5
1.9 Modifications/Notes.....	5
1.10 Applicable Standards for Testing	5
1.11 Summary of Test Results.....	5
2. Emission Test.....	6
2.1 Test Results.....	6
2.2 Test Method and Limits.....	6
2.2.1 Test Method	6
2.2.2 Test Limits.....	6
2.3 Radiated Emission	8
2.3.1 Test Equipments	8
2.3.2 Test Site.....	8
2.3.3 Environment Conditions	8
2.3.4 Test Results	9
Appendix A : Measurement Uncertainty	21

Revision History

Revision	Report number	Description
0	F690501-RF-EMC001354	Initial
1		

1. General Information

1.1 Client Information

Applicant	iRevo-ASSA ABLOY Korea
Applicant Address	10f of JEI PLATZ Bldg., 186, Gasandigital 1-ro, Geumcheon-gu, Seoul, 08502, Republic of Korea
Manufacturer	iRevo-ASSA ABLOY Korea
Manufacturer Address	10f of JEI PLATZ Bldg., 186, Gasandigital 1-ro, Geumcheon-gu, Seoul, 08502, 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 31 428 5719
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e-mail	paul.kang@sgs.com

1.3 General Information of E.U.T.

Classification	Specification
Product Name	Digital Door Lock
Model Name	YRD450 FP
Alt. Model Name	YRD420 FP
Model Differences	Variation model is different from the authentication method that opens the door. No any other difference related to RF function. YRD450 FP : touch type YRD420 FP : push & key type
Serial No.	-
EMI Classification	Class B
Internal Clock Frequency	2 480 MHz
Rated Power	6 Vd.c.(Battery)
Test Voltage	6 Vd.c.(Battery)
H/W Version	PV01
S/W Version	V1.2.29
Port	-
Components	-
Function	Digital Door Lock

1.4 Operating Modes and Conditions

Operating mode	Operating Condition
1) Fingerprint	Unlock to touch a Yale button.
2) Dial	Unlock to press a number.

1.5 Peripheral Equipments

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

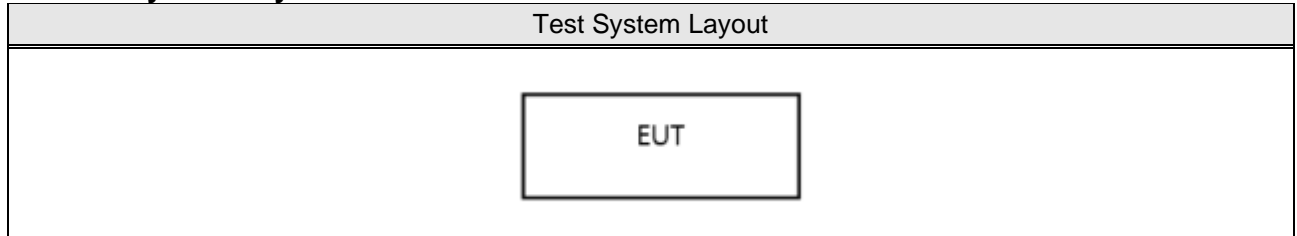
1.6 Cable List

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
Basic Model : YRD450 FP				
Main Board	YRD450 FP MAIN PV01	PC4M-D300S-E1	-	-
Front Board	YRD450 FP TS KEYLESS FRONT PV01	PC4F-D300S-E1	-	-
Speaker	-	-	-	-
Motor	-	-	-	-
Fingerprint Module	-	-	-	-
Alt. Model : YRD420 FP				
Main Board	YRD450 FP MAIN PV01	PC4M-D300S-E1	-	-
Front Board	YRD420 FP TS KEYED FRONT PV01	PC4F-D320S-E1	-	-
Speaker	-	-	-	-
Motor	-	-	-	-
Fingerprint Module	-	-	-	-

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 15 : Subpart B ICES-003 Issue 7:2020	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 MHz ~ 30 MHz	9 kHz	-
Radiated Emission	30 MHz ~ 1 GHz	120 kHz	10 m & 3 m
	Above 1 GHz	1 MHz	3 m

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

2.2.2 Test Limits

-Conducted Emission Limits

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

-Radiated Emission Limits below 1 GHz

[FCC Part 15 Subpart B]

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

[ICES-003 Issue 7 : 2020]

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

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

[FCC Part 15 Subpart B]

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

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

[ICES-003 Issue 7 : 2020]

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

2.3 Radiated Emission

The initial preliminary exploratory scans were performed over the measuring frequency range (30 MHz to 13 GHz) 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 GHz, Peak and CISPR Average detector above 1 GHz. 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
Horn Antenna	HF906	R & S	100326	2024.02.18
Signal Conditioning Unit	SCU 18	R & S	10117	2023.06.13
Test Receiver	ESU26	R & S	100109	2024.01.18
Hybrid Antenna	VULB9163	SCHWARZBECK	01126	2024.02.09
Amplifier	8447F	HP	2944A03909	2023.08.04
RF Cable(CA-04)	-	-	-	2023.10.04
RF Cable(CA-05)	-	-	-	2023.10.04
RF Cable(CA-06)	MWX221-NMSNMS (4m)	RF ONE	J023142	2023.10.04
RF Cable(CA-07)	PL520-NMNM-10M (10m)	RF ONE	0200324001	2023.10.04

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

2.3.2 Test Site

3 m SEMI-ANECHOIC CHAMBER in Gunpo Laboratory

2.3.3 Environment Conditions

Below 1 GHz

Temperature	(Minimum 20.5, Maximum 21.2) °C
Humidity	(Minimum 32.0, Maximum 43.0) % R.H.
Atmospheric Pressure	(Minimum 100.1, Maximum 100.5) kPa
Test Date	April 20, 2023 & April 27, 2023

Above 1 GHz

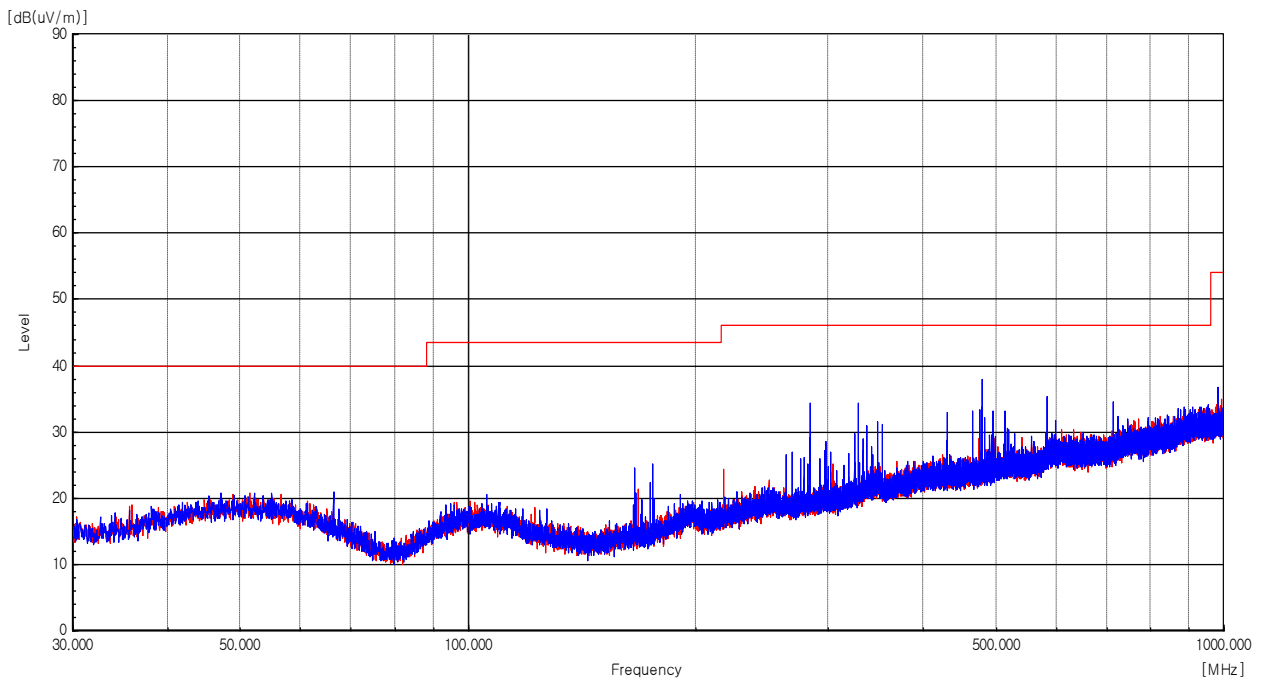
Temperature	(Minimum 20.0, Maximum 21.2) °C
Humidity	(Minimum 30.0, Maximum 33.0) % R.H.
Atmospheric Pressure	(Minimum 100.5, Maximum 101.3) kPa
Test Date	April 24, 2023 & April 27, 2023

2.3.4 Test Results

Below 1 GHz (3 m method)

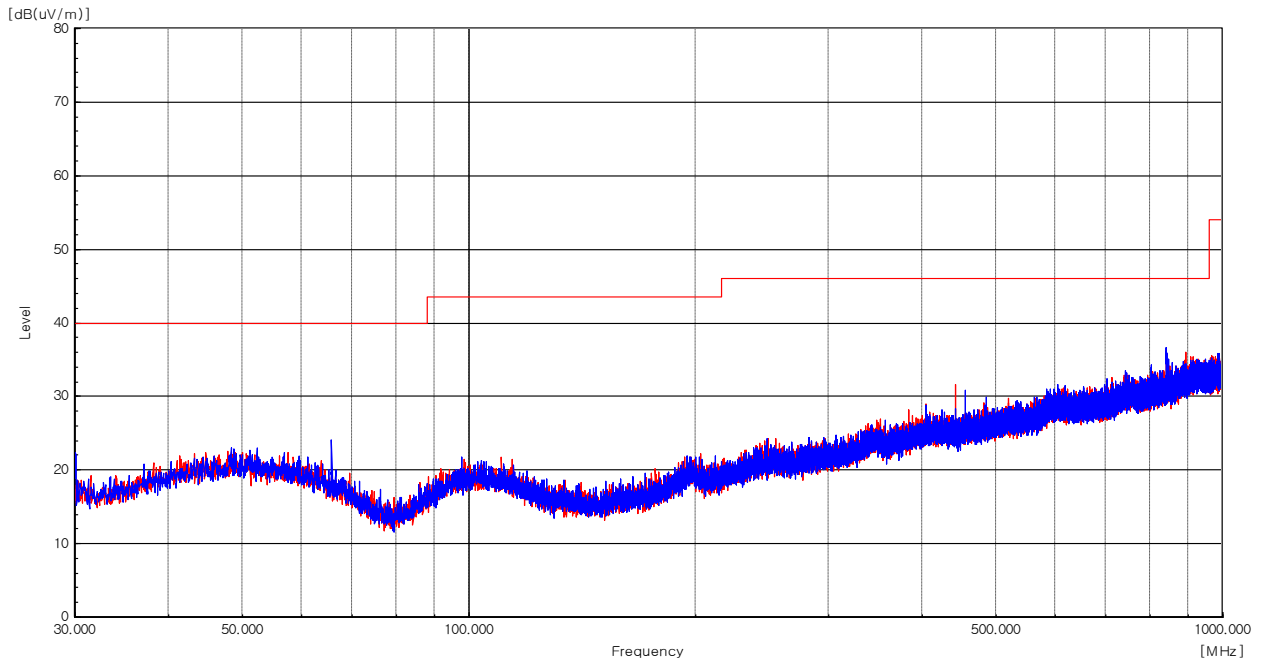
[FCC Part 15 Subpart B]

1) Fingerprint Mode [Basic Model : YRD450 FP]



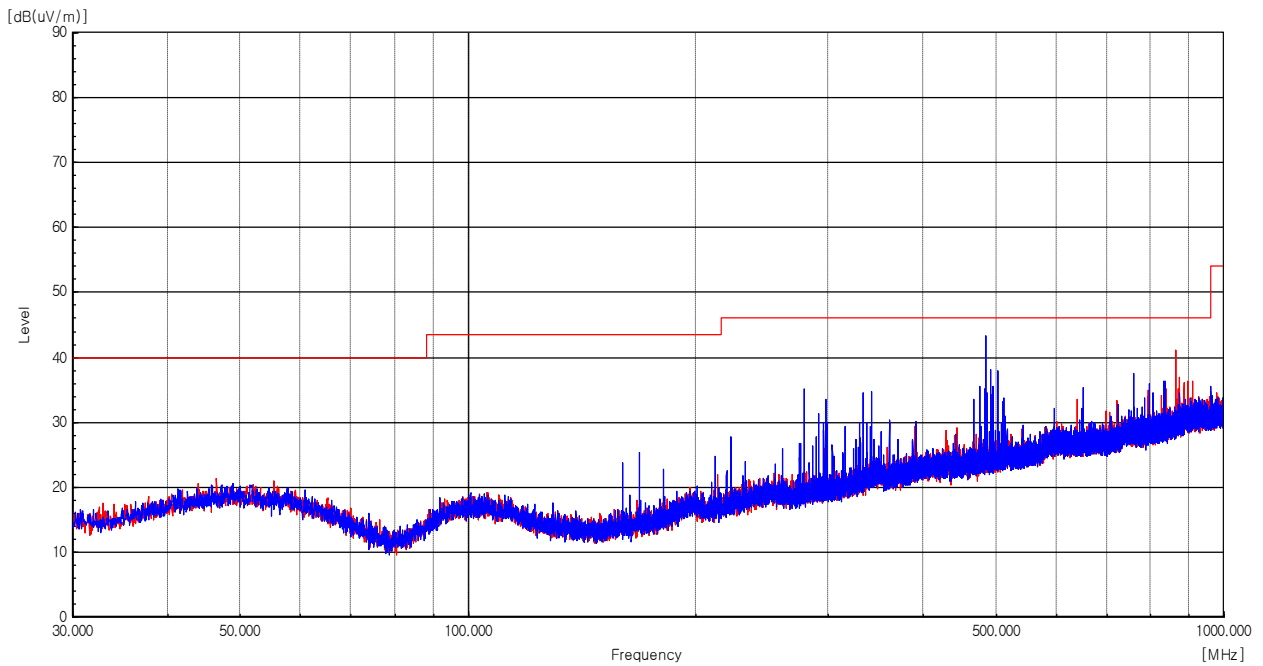
Freq. (MHz)	Reading (dB μ V/m)	Pol. (H/V)	A ($^{\circ}$)	H (cm)	AF (dB/m)	CL (dB)	Amp. (dB)	F/R (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
175.50	23.40	V	90	105	14.80	1.73	28.00	11.93	43.50	31.57
217.61	24.50	H	25	195	16.88	1.95	27.85	15.48	46.00	30.52
283.78	24.70	V	350	107	18.79	2.14	27.65	17.98	46.00	28.02
478.34	25.00	V	320	100	22.52	2.75	28.37	21.90	46.00	24.10
584.15	24.50	V	300	109	24.32	3.40	28.67	23.55	46.00	22.45
981.33	24.10	V	285	110	28.10	4.48	28.54	28.14	54.00	25.86

2) Dial Mode [Basic Model : YRD450 FP]



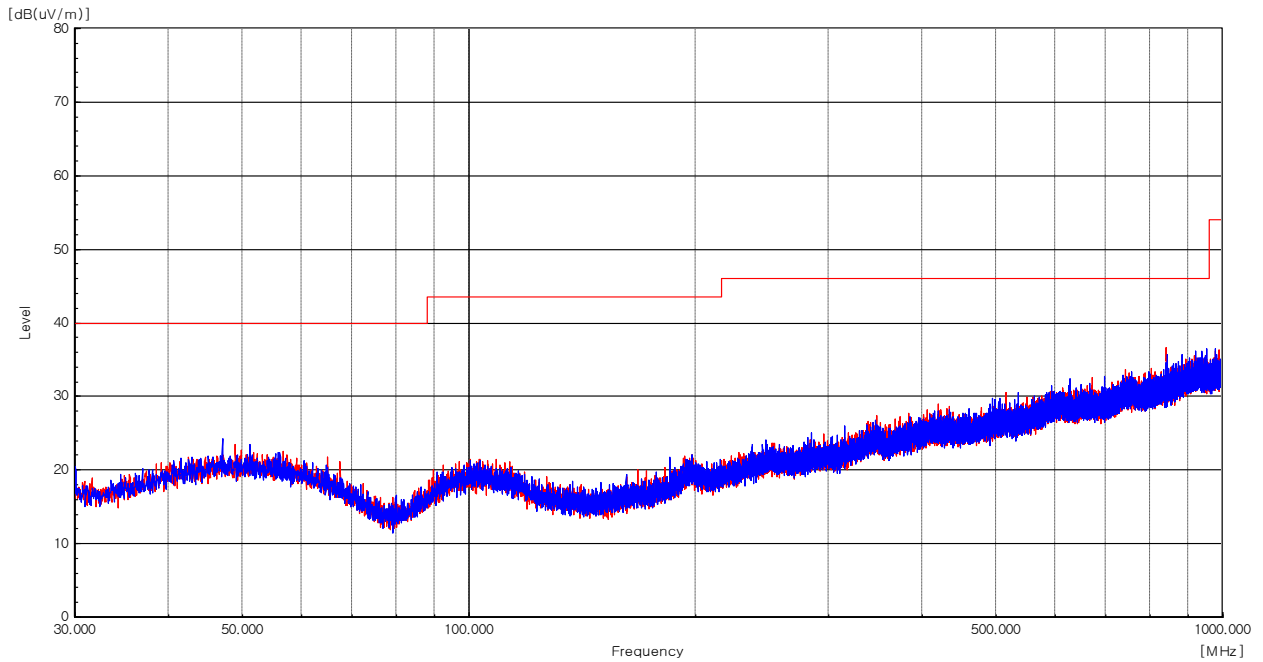
Freq. (MHz)	Reading (dB μ V/m)	Pol. (H/V)	A ($^{\circ}$)	H (cm)	AF (dB/m)	CL (dB)	Amp. (dB)	F/R (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
30.04	22.10	V	20	205	16.29	0.66	28.20	10.85	40.00	29.15
65.73	23.50	V	350	100	16.65	1.09	28.20	13.04	40.00	26.96
110.47	22.00	H	145	112	17.15	1.41	28.18	12.38	43.50	31.12
441.64	23.50	H	160	102	21.92	2.55	28.13	19.84	46.00	26.16
455.39	23.70	V	145	100	21.97	2.95	28.23	20.39	46.00	25.61
842.54	24.00	V	10	195	27.00	3.66	28.73	25.93	46.00	20.07

1) Fingerprint Mode [Alt. Model : YRD420 FP]



Freq. (MHz)	Reading (dB μ V/m)	Pol. (H/V)	A ($^{\circ}$)	H (cm)	AF (dB/m)	CL (dB)	Amp. (dB)	F/R (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
222.46	24.20	V	40	105	17.15	1.96	27.83	15.48	46.00	30.52
278.16	23.20	V	30	100	18.60	2.14	27.67	16.27	46.00	29.73
342.02	23.50	V	35	109	20.50	2.38	27.52	18.86	46.00	27.14
484.81	22.90	V	260	201	22.70	2.71	28.41	19.90	46.00	26.10
760.57	23.00	V	240	100	26.60	3.78	28.94	24.44	46.00	21.56
862.71	22.50	H	280	100	27.24	3.70	28.70	24.74	46.00	21.26

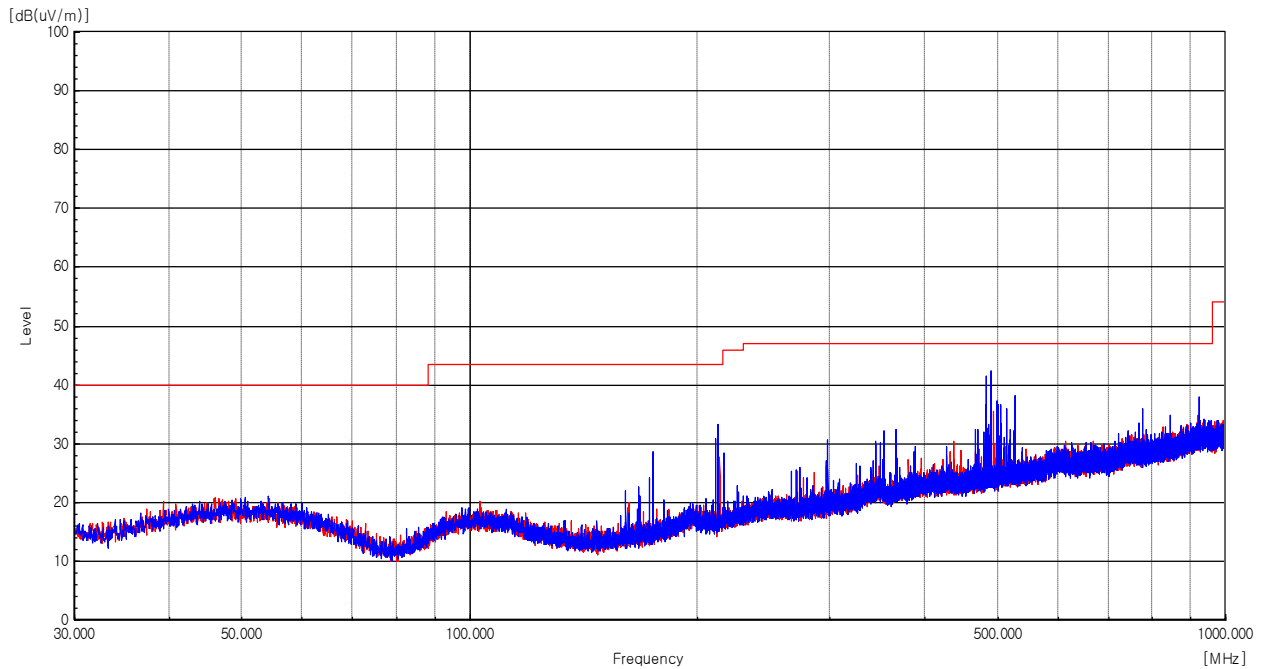
2) Dial Mode [Alt. Model : YRD420 FP]



Freq. (MHz)	Reading (dB μ V/m)	Pol. (H/V)	A ($^{\circ}$)	H (cm)	AF (dB/m)	CL (dB)	Amp. (dB)	F/R (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
47.06	22.20	V	345	100	19.61	0.83	28.20	14.44	40.00	25.56
48.96	22.30	H	90	204	19.70	0.86	28.20	14.66	40.00	25.34
515.93	23.40	H	20	198	23.20	3.06	28.53	21.13	46.00	24.87
626.35	23.80	V	255	200	25.08	3.08	28.78	23.18	46.00	22.82
842.54	24.00	H	355	210	27.00	3.66	28.73	25.93	46.00	20.07
843.99	23.80	V	350	100	27.00	3.67	28.72	25.75	46.00	20.25

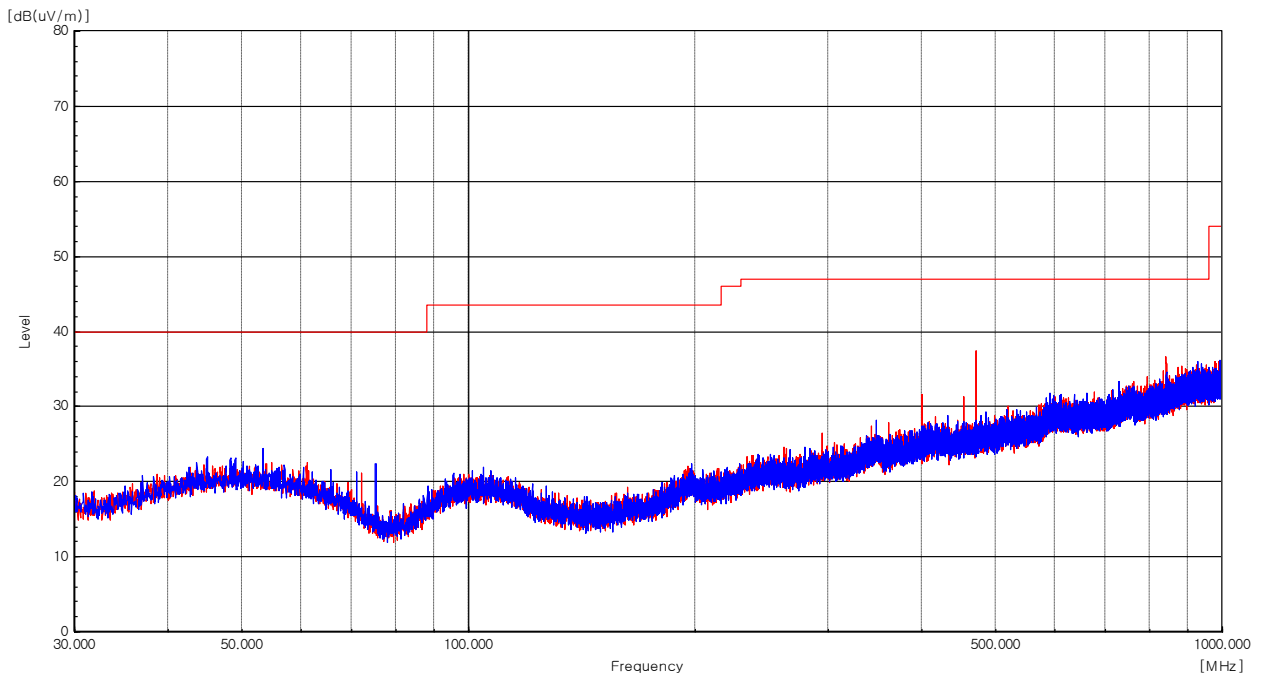
[ICES-003 Issue 7: 2020]

1) Fingerprint Mode [Basic Model : YRD450 FP]



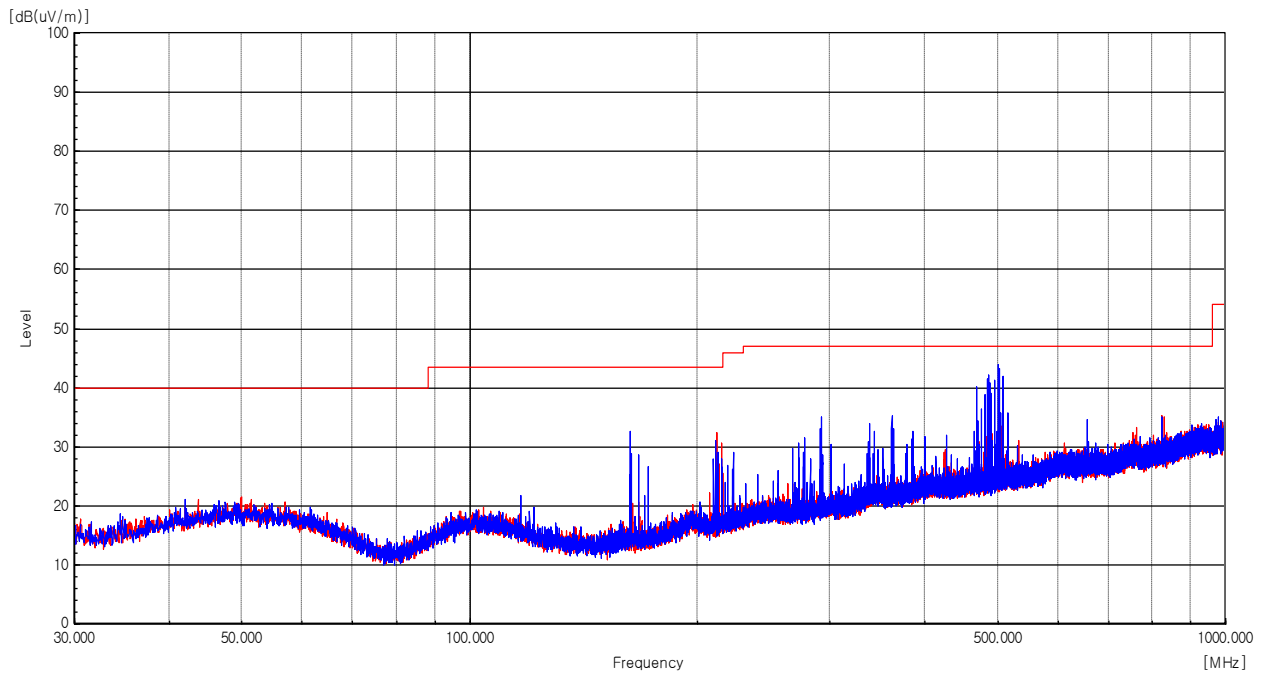
Freq. (MHz)	Reading (dB μ V/m)	Pol. (H/V)	A (°)	H (cm)	AF (dB/m)	CL (dB)	Amp. (dB)	F/R (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
174.77	23.20	V	35	105	14.78	1.71	28.00	11.69	43.50	31.81
213.21	24.50	V	20	215	16.66	1.89	27.86	15.19	43.50	28.31
366.43	24.20	V	30	102	20.50	2.43	27.60	19.53	46.00	26.47
436.19	25.10	H	20	200	22.00	2.56	28.09	21.57	46.00	24.43
489.13	25.20	V	300	103	22.80	2.70	28.43	22.27	46.00	23.73
923.86	24.30	V	330	110	28.20	4.09	28.65	27.94	46.00	18.06

2) Dial Mode [Basic Model : YRD450 FP]



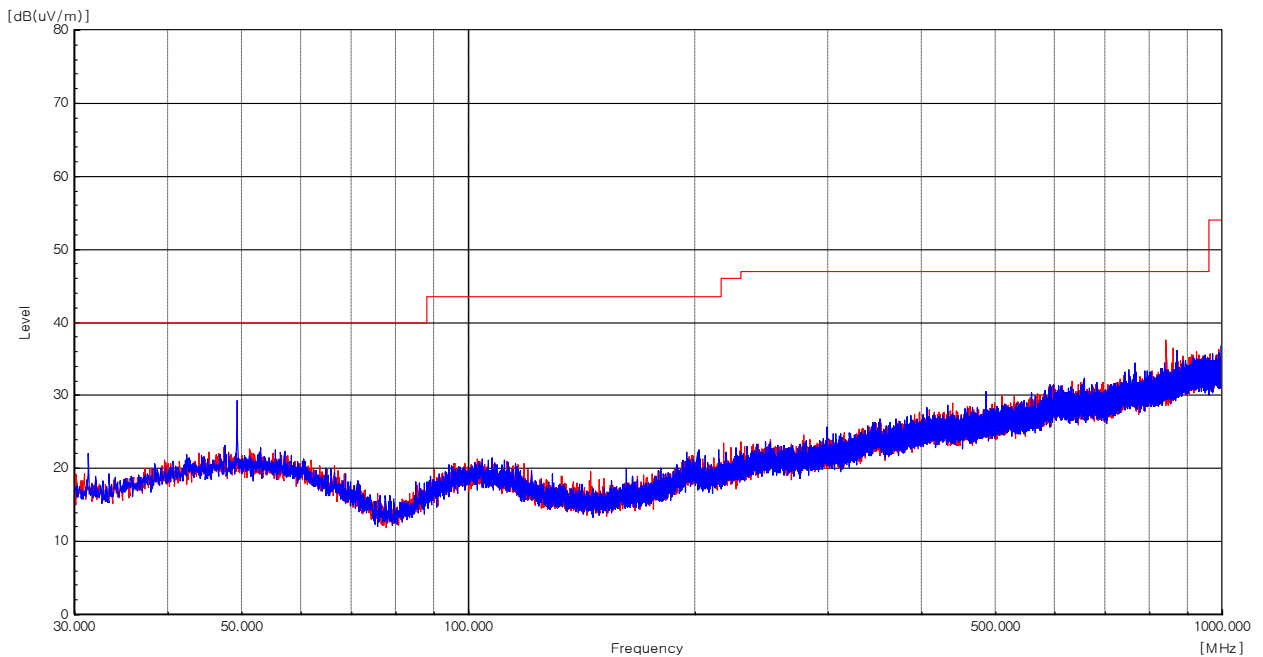
Freq. (MHz)	Reading (dB μ V/m)	Pol. (H/V)	A ($^{\circ}$)	H (cm)	AF (dB/m)	CL (dB)	Amp. (dB)	F/R (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
53.36	22.30	V	350	102	19.40	0.93	28.20	14.43	40.00	25.57
75.31	23.40	V	320	185	13.14	1.16	28.20	9.50	40.00	30.50
347.35	23.20	V	0	204	20.70	2.42	27.51	18.81	46.00	27.19
398.88	24.20	H	255	210	21.34	2.72	27.79	20.47	46.00	25.53
471.47	26.20	H	240	195	22.17	2.85	28.33	22.89	46.00	23.11
842.62	24.20	H	120	200	27.00	3.66	28.73	26.13	46.00	19.87

1) Fingerprint Mode [Alt. Model : YRD420 FP]



Freq. (MHz)	Reading (dB μ V/m)	Pol. (H/V)	A ($^{\circ}$)	H (cm)	AF (dB/m)	CL (dB)	Amp. (dB)	F/R (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
162.97	23.70	V	45	109	14.50	1.59	28.05	11.74	43.50	31.76
212.12	24.20	H	0	110	16.61	1.88	27.86	14.83	43.50	28.67
291.82	23.40	V	40	105	18.90	2.13	27.62	16.81	46.00	29.19
361.78	23.40	V	95	100	20.28	2.32	27.57	18.43	46.00	27.57
499.52	23.00	V	60	200	22.90	2.78	28.50	20.18	46.00	25.82
823.58	22.30	H	210	102	26.70	3.83	28.81	24.02	46.00	21.98

2) Dial Mode [Alt. Model : YRD420 FP]



Freq. (MHz)	Reading (dB μ V/m)	Pol. (H/V)	A ($^{\circ}$)	H (cm)	AF (dB/m)	CL (dB)	Amp. (dB)	F/R (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
31.29	22.50	V	48	200	16.07	0.67	28.20	11.04	40.00	28.96
49.32	23.00	V	37	200	19.67	0.86	28.20	15.33	40.00	24.67
217.82	22.50	H	156	100	16.89	1.96	27.85	13.50	46.00	32.50
437.89	23.30	H	358	200	22.00	2.53	28.10	19.73	46.00	26.27
485.86	23.40	V	212	200	22.70	2.71	28.42	20.39	46.00	25.61
842.54	23.20	H	359	200	27.00	3.66	28.73	25.13	46.00	20.87

Measurement Uncertainty: See the Appendix A

Note: • AF = Antenna Factor

- Pol.(H) = Horizontal
- Margin = Limit – F/R
- A: Angle

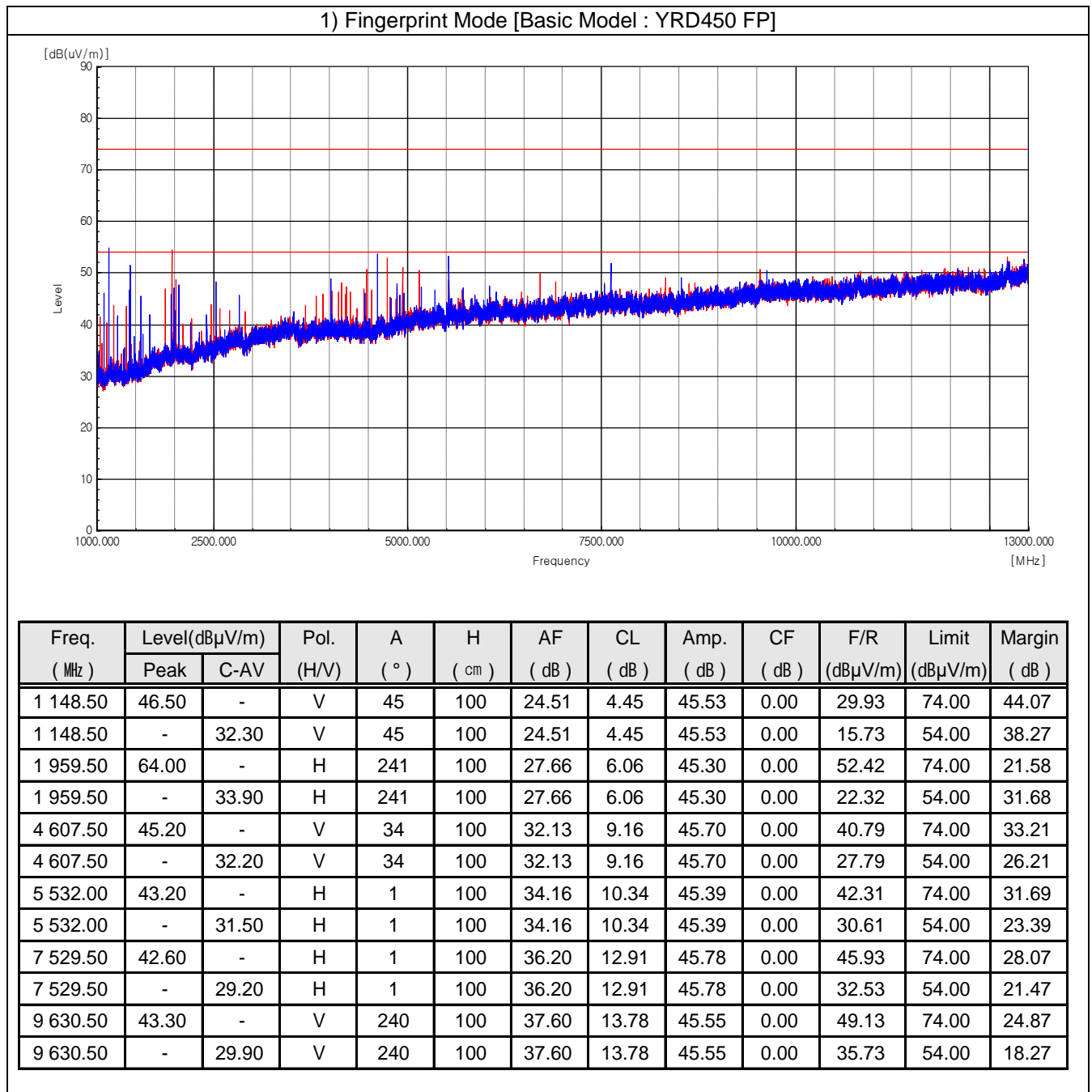
• CL = Cable Loss

- Pol.(V) = Vertical
- F/R = Reading + AF + CL – Amp.
- H: Height

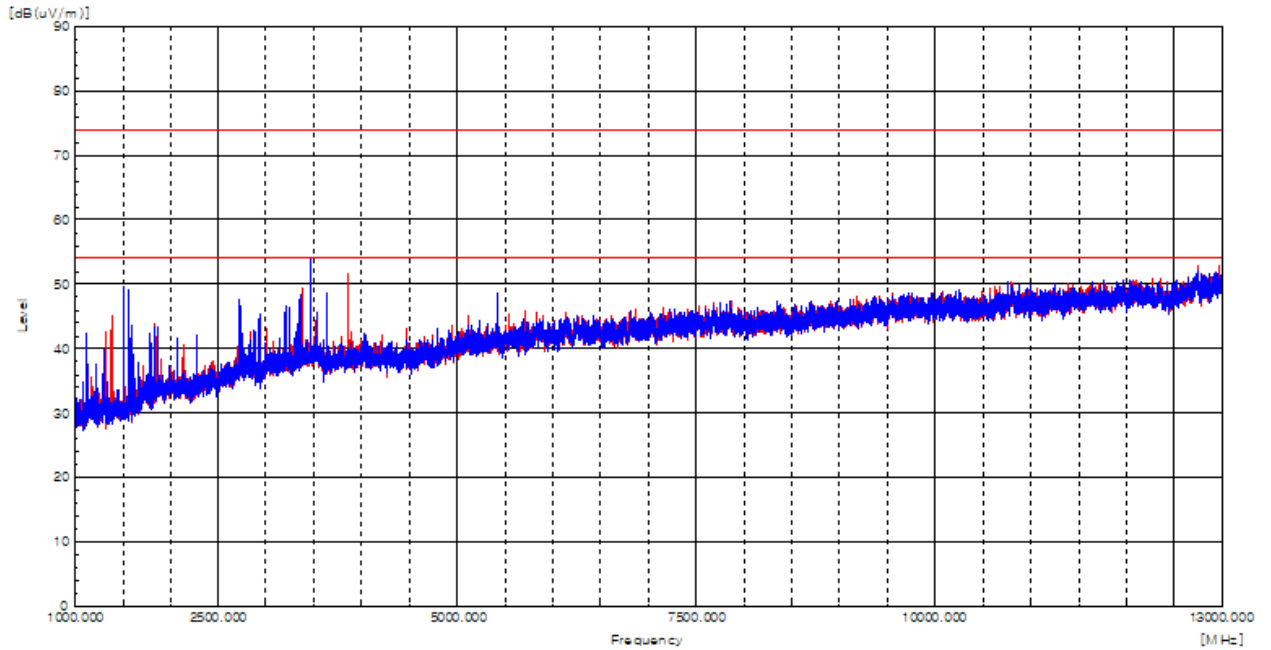
• F/R = Final Result

• Amp. = Amplifier Gain

Above 1 GHz (3 m method)

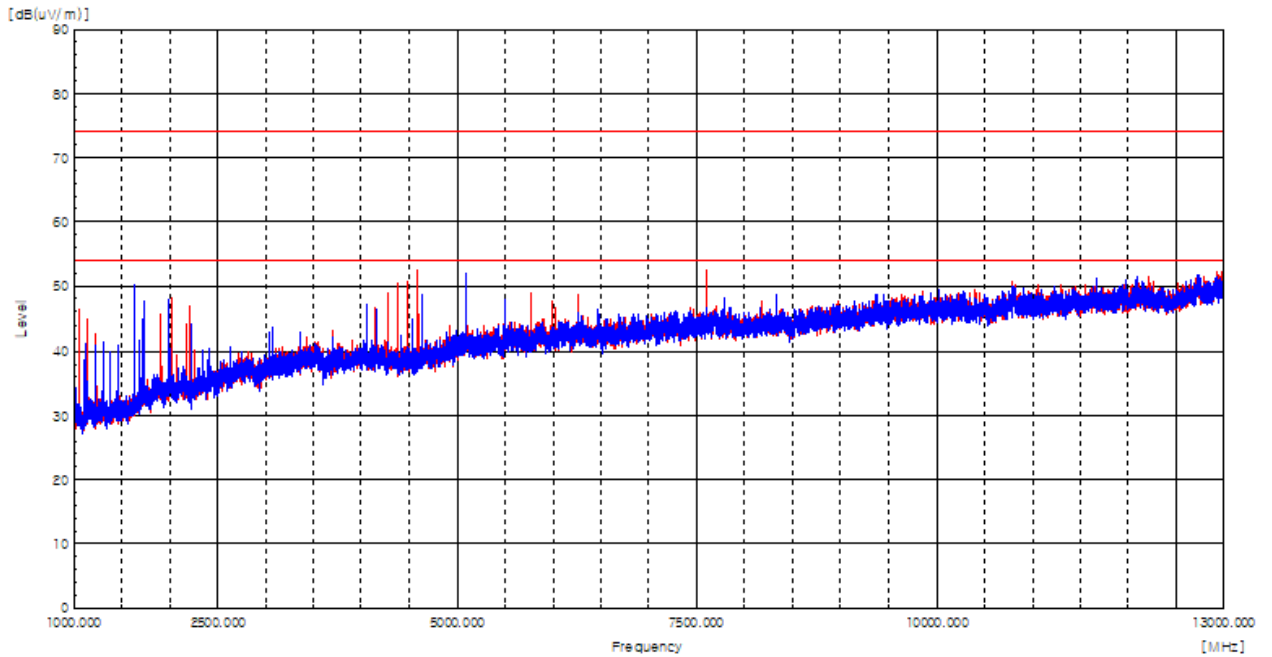


2) Dial Mode [Basic Model : YRD450 FP]



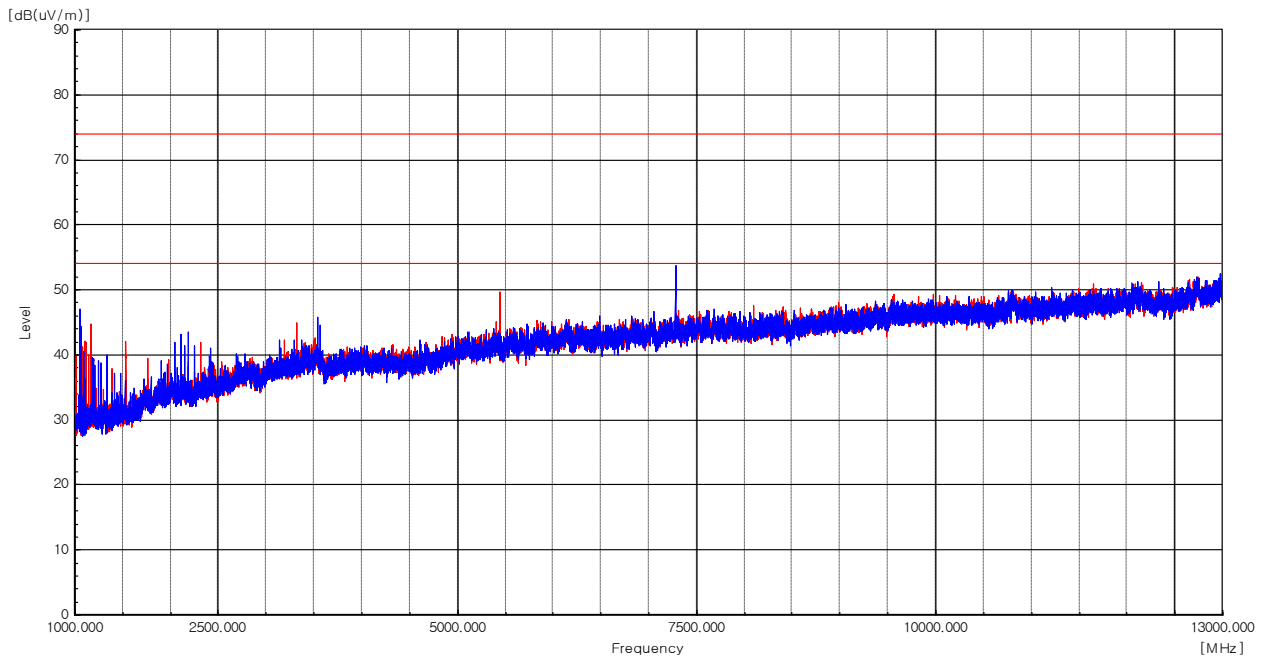
Freq. (MHz)	Level(dBμV/m)		Pol. (H/V)	A (°)	H (cm)	AF (dB)	CL (dB)	Amp. (dB)	CF (dB)	F/R (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Peak	C-AV										
1 391.50	46.30	-	H	105	105	25.02	5.40	45.40	0.00	31.32	74.00	42.68
1 391.50	-	32.40	H	105	105	25.02	5.40	45.40	0.00	17.42	54.00	36.58
1 519.00	64.00	-	V	200	111	25.12	5.71	45.40	0.00	49.43	74.00	24.57
1 519.00	-	33.90	V	200	111	25.12	5.71	45.40	0.00	19.33	54.00	34.67
3 455.00	45.40	-	V	5	101	31.20	7.89	45.43	0.00	39.06	74.00	34.94
3 455.00	-	31.60	V	5	101	31.20	7.89	45.43	0.00	25.26	54.00	28.74
3 857.50	45.60	-	H	240	120	32.33	8.34	45.40	0.00	40.87	74.00	33.13
3 857.50	-	32.00	H	240	120	32.33	8.34	45.40	0.00	27.27	54.00	26.73
5 423.00	42.60	-	V	10	125	34.15	10.08	45.40	0.00	41.43	74.00	32.57
5 423.00	-	29.20	V	10	125	34.15	10.08	45.40	0.00	28.03	54.00	25.97
12 283.50	43.30	-	H	350	110	38.67	15.25	45.07	0.00	52.15	74.00	21.85
12 283.50	-	29.90	H	350	110	38.67	15.25	45.07	0.00	38.75	54.00	15.25

1) Ingerprint Mode [Alt. Model : YRD420 FP]



Freq. (MHz)	Level(dBµV/m)		Pol. (H/V)	A (°)	H (cm)	AF (dB)	CL (dB)	Amp. (dB)	CF (dB)	F/R (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Peak	C-AV										
1 644.50	49.50	-	V	125	100	26.11	5.74	45.38	0.00	35.97	74.00	38.03
1 644.50	-	34.50	V	125	100	26.11	5.74	45.38	0.00	20.97	54.00	33.03
2 020.00	64.00	-	H	85	100	28.14	5.96	45.30	0.00	52.80	74.00	21.20
2 020.00	-	33.90	H	85	100	28.14	5.96	45.30	0.00	22.70	54.00	31.30
4 063.50	45.40	-	V	42	100	32.20	8.58	45.37	0.00	40.81	74.00	33.19
4 063.50	-	32.20	V	42	100	32.20	8.58	45.37	0.00	27.61	54.00	26.39
4 584.50	45.60	-	H	327	100	31.83	9.16	45.68	0.00	40.91	74.00	33.09
4 584.50	-	31.40	H	327	100	31.83	9.16	45.68	0.00	26.71	54.00	27.29
5 084.00	42.60	-	V	261	100	33.54	10.12	45.40	0.00	40.86	74.00	33.14
5 084.00	-	29.20	V	261	100	33.54	10.12	45.40	0.00	27.46	54.00	26.54
7 607.00	43.30	-	H	257	100	36.00	13.45	45.74	0.00	47.01	74.00	26.99
7 607.00	-	29.90	H	257	100	36.00	13.45	45.74	0.00	33.61	54.00	20.39

2) Dial Mode [Alt. Model : YRD420 FP]



Freq. (MHz)	Level(dBμV/m)		Pol. (H/V)	A (°)	H (cm)	AF (dB)	CL (dB)	Amp. (dB)	CF (dB)	F/R (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Peak	C-AV										
1 057.00	48.30	-	V	145	102	24.43	4.26	45.57	0.00	31.42	74.00	42.58
1 057.00	-	34.50	V	145	102	24.43	4.26	45.57	0.00	17.62	54.00	36.38
1 167.00	64.00	-	H	120	100	25.24	4.53	45.52	0.00	48.25	74.00	25.75
1 167.00	-	33.90	H	120	100	25.24	4.53	45.52	0.00	18.15	54.00	35.85
2 184.00	46.50	-	V	230	110	27.53	6.15	45.30	0.00	34.88	74.00	39.12
2 184.00	-	33.10	V	230	110	27.53	6.15	45.30	0.00	21.48	54.00	32.52
3 323.00	44.40	-	H	260	100	30.70	8.27	45.32	0.00	38.05	74.00	35.95
3 323.00	-	31.00	H	260	100	30.70	8.27	45.32	0.00	24.65	54.00	29.35
3 566.00	42.60	-	V	355	108	31.36	7.88	45.48	0.00	36.36	74.00	37.64
3 566.00	-	29.20	V	355	108	31.36	7.88	45.48	0.00	22.96	54.00	31.04
5 438.50	43.30	-	H	125	105	34.12	10.25	45.40	0.00	42.27	74.00	31.73
5 438.50	-	29.90	H	125	105	34.12	10.25	45.40	0.00	28.87	54.00	25.13
12 335.50	42.80	-	V	300	100	38.60	15.65	45.03	0.00	52.02	74.00	21.98
12 335.50	-	29.10	V	300	100	38.60	15.65	45.03	0.00	38.32	54.00	15.68

Measurement Uncertainty : See Appendix A

- Note:
- AF = Antenna Factor
 - CL = Cable Loss
 - F/R = Final Result
 - Pol.(H) = Horizontal
 - Pol.(V) = Vertical
 - Amp. = Amplifier Gain
 - Margin = Limit – F/R
 - F/R = Level + AF + CL – Amp.
 - A: Angle
 - H: Height

Ex) In case

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

$$\begin{aligned} \text{Result} &= \text{Level} + \text{AF} + \text{CL} - \text{Amp} \\ &= 30 + 10 + 4 - 25 \\ &= 19 \end{aligned}$$

$$\begin{aligned} \text{Margin} &= \text{Limit} - \text{Result} \\ &= 43.5 - 19 \\ &= 24.5 \end{aligned}$$

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	4.0 dB (The confidential level is 95 %, k=2)
		ESH2-Z5	3.6 dB (The confidential level is 95 %, k=2)
		ESH3-Z6	3.8 dB (The confidential level is 95 %, k=2)
Conducted Emission - Signal		ISN T800	5.8 dB (The confidential level is 95 %, k=2)
		ISNT8-Cat6	5.8 dB (The confidential level is 95 %, k=2)
		ISN S751	7.5 dB (The confidential level is 95 %, k=2)
Disturbance Voltage at Antenna Terminal		2.9 dB (The confidential level is 95 %, k=2)	
Radiated Emission	9 kHz ~30 MHz	Horizontal	3.4 dB (The confidential level is 95 %, k=2)
		Vertical	3.4 dB (The confidential level is 95 %, k=2)
	30 MHz ~ 1 000 MHz	Horizontal	4.5 dB (The confidential level is 95 %, k=2)
		Vertical	5.1 dB (The confidential level is 95 %, k=2)
	1 GHz ~ 18 GHz	Horizontal	3.7 dB (The confidential level is 95 %, k=2)
		Vertical	3.9 dB (The confidential level is 95 %, k=2)

- Dongtan Laboratory

Test Method		Measurement Uncertainty	
Conducted Emission	ENV216	3.5 dB (The confidential level is 95 %, $k=2$)	
	ESH2-Z5	3.3 dB (The confidential level is 95 %, $k=2$)	
	ESH3-Z6	3.3 dB (The confidential level is 95 %, $k=2$)	
	NNLK8129	3.4 dB (The confidential level is 95 %, $k=2$)	
Conducted Emission - Signal	ISN T800	5.7 dB (The confidential level is 95 %, $k=2$)	
	ISN ST08	5.5 dB (The confidential level is 95 %, $k=2$)	
Discontinuous		2.9 dB (The confidential level is 95 %, $k=2$)	
disturbance Power		3.9 dB (The confidential level is 95 %, $k=2$)	
Radiated Emission	9 kHz ~30 MHz (Triple Loop Ant.)	3.4 dB (The confidential level is 95 %, $k=2$)	
	9 kHz ~30 MHz (Loop Ant.)	Horizontal	3.8 dB (The confidential level is 95 %, $k=2$)
		Vertical	3.8 dB (The confidential level is 95 %, $k=2$)
	30 MHz ~ 1 000 MHz	Horizontal	4.8 dB (The confidential level is 95 %, $k=2$)
		Vertical	5.4 dB (The confidential level is 95 %, $k=2$)
	1 GHz ~ 18 GHz	Horizontal	4.1 dB (The confidential level is 95 %, $k=2$)
Vertical		4.2 dB (The confidential level is 95 %, $k=2$)	

- End of Test Report -