



FCC TEST REPORT

Job No. : GPEM2012001386EH
Applicant Name : GolfzonDeca Inc
Equipment Under Test (EUT) :
 Product Name : GPS Golf Rangefinder
 Model Name : GOLFBUDDY aim W11 Premium
FCC Authorization Type : Certification
Applied Standards : FCC Part 15 Subpart B, Class B
 ANSI C63.4a:2017
Date of Receipt : November 25, 2020
Date of Test : November 25, 2020 ~ January 6, 2021
Date of Issue : January 7, 2021
Test Results : Complied

Tested by	:	 ----- Luther Choi
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.

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Revision History

Revision	Report number	Description
0	F690501-RF-EMH000960	Initial

1. General Information

1.1 Client Information

Applicant : GolfzonDeca Inc
 Address : 253, Pangyo-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, Republic of Korea

Manufacturer : Shenzhen huaxin communication co., Ltd
 Address : 5F, Building B5, Xujingchang Industrial Park, No.39, Haoye Road, Xin he Community, Fu hai Street, Baoan District, Shenzhen

1.2 Test Laboratory

Name and Address : SGS Korea Co., Ltd.
 Giheung 1 Lab : 35, Giheungdanji-ro 121beon-gil, Giheung-gu, Yongin-si, Gyeonggi-do, Republic of Korea, 17086
 Giheung 2 Lab : 23, Giheungdanji-ro 24beon-gil, Giheung-gu, Yongin-si, Gyeonggi-do, Republic of Korea, 17086

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	GPS Golf Rangefinder
Model Name	GOLFBUDDY aim W11 Premium
Alt. Model Name	GOLFBUDDY aim W11
Model Description	Alt Model have differences in appearance color and screen differences when booting S/W - Basic Model : Black Color - Alt. Model : Navy Color
FCC ID	2ALG4AIMW11P
Serial No.	W11CA1B00011S
Test Power	AC 120 V, 60 Hz
Rated Power	DC 3.7 V
Internal Clock Frequency	2.4 GHz
Port	Micro USB 5 pin
Function	Golf Field course wrist watch
Screen brightness	1 ~ 5 Step
Screen off time	(10~60) s

1.4 Operating Modes and Conditions

Operating mode	Operating Condition
1) Charge	The EUT is being charged through the AC-DC Adapter.
2) SD Card + Charge	The EUT and the laptop are sending and receiving data and the EUT is charging.

1.5 Peripheral Equipments

Description	Model	Serial No.	Manufacturer
AC-DC Adapter	EP-TA20EBE	R37MC9X0PC1SE3	Samsung Electronics Inc.
Laptop	NT740U5L	0MMN91GH900125T	Samsung Electronics Inc.

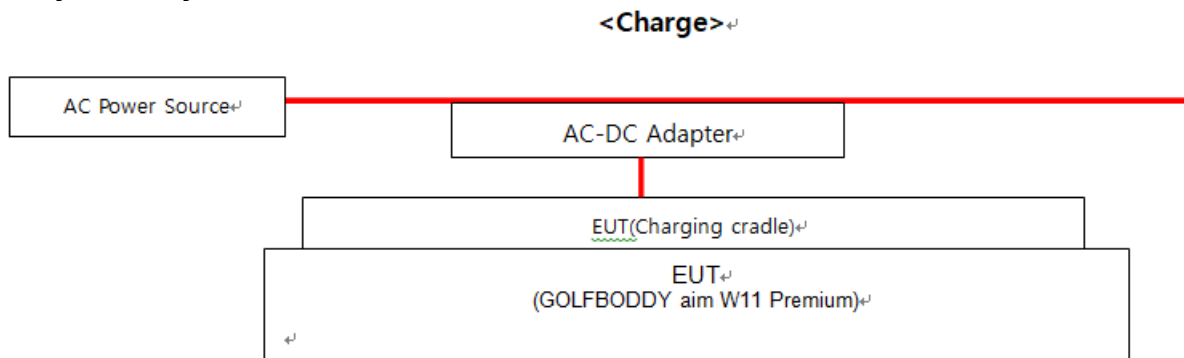
1.6 Cable List

Start		END		Cable Spec.		Used core
Name	I/O Port	Name	I/O Port	Length (m)	Shield	
<Test Mode 1>						
EUT(Charging cradle)	-	EUT (GOLFBODDY aim W11 Premium)	-	-	-	-
	Micro USB 5pin	AC-DC Adapter	USB A Type	0.5	Unshield	No
AC-DC Adapter	AC IN	AC Power Source	-	-	-	-
<Test Mode 2>						
EUT (GOLFBODDY aim W11 Premium)	-	EUT(Charging cradle)	-	-	-	-
Laptop	USB A Type		Micro USB 5pin	0.5	Unshield	No
AC Power Source	-	Laptop Adapter	AC IN	1.0	Unshield	No
Laptop	DC IN		DC OUT	0.8	Unshield	No

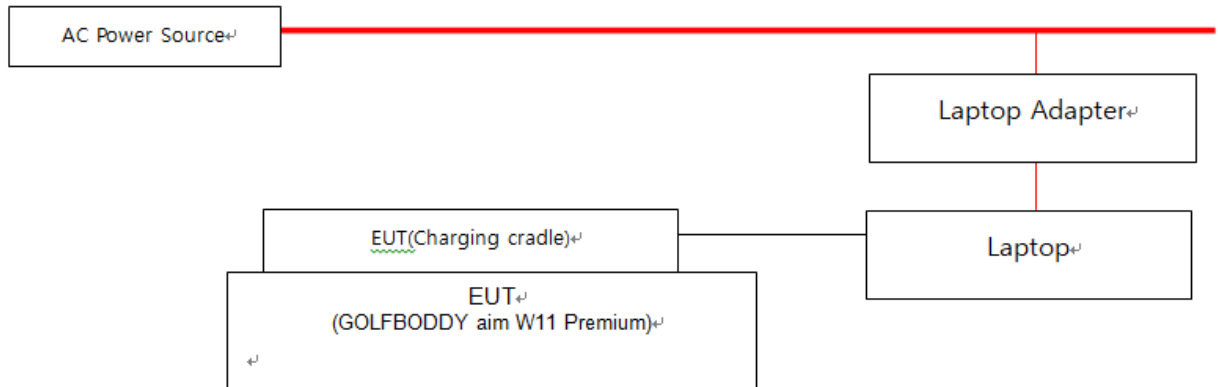
1.7 System Configurations

Description	Model	Serial No.	Manufacturer	Note
Main Board	W10_V_0_45_20201017	-	-	-
LCD	-	-	-	-
Cable	-	-	-	-
Charging cradle Main Board	W10_USB_CHG_V.10_20181110	-	-	-
Micro SD Card	SanDisk EDGE 16GB	-	-	FCC: BEJ-LCW004, IC: 2703N-LCW004
Antenna	DY09V7.04	-	-	-
Battery	I12Y20AZWDB	-	-	-

1.8 Test System Layout



<SD Card+Charge>



1.9 Modifications

- There was no modified item during the test.

1.10 Applicable Standards for Testing

Standards	Status	Deviation
FCC Part 15 : Subpart B	Applicable	No Deviation

1.11 Summary of Test Results

Test Item	Standards	Results
Conducted Emission	FCC Part 15 Subpart B Section 15.107	Complied
Radiated Emission	FCC Part 15 Subpart B Section 15.109	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	Complied
Radiated Emission	FCC Part 15 Subpart B Section 15.109	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

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		

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

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.

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 software of EMC32 (Version V10.40.10 from R&S). The final test data was measured using a Quasi-Peak detector and CISPR Average detector.

2.3.1 Test Equipments

Equipment	Model	Manufacturer	Serial No	Cal Due. Date
EMI TEST RECEIVER	ESU26	R&S	100493	2021.08.25
2-LINE V-NETWORK	ENV216	R&S	101180	2021.08.22
PULSE LIMITER	ESH3-Z2	R&S	100283	2021.08.22
Shield Room	-	SY CORPORATION	-	-

2.3.2 Test Site

Shield Room in Giheung 1 Laboratory

2.3.3 Environment Conditions

Temperature : (Minimum 20.3, Maximum 24.0) °C

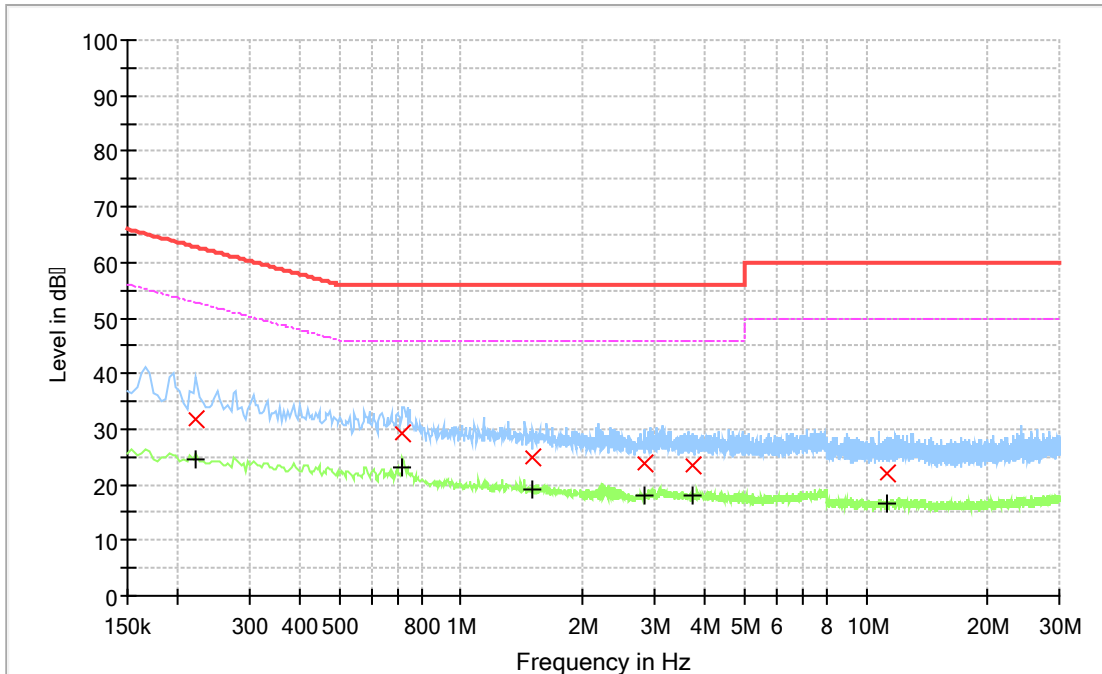
Humidity : (Minimum 30.0, Maximum 33.0) %R.H.

Atmospheric Pressure : (Minimum 102.0, Maximum 102.2) kPa

Test Date : November 25, 2020 & January 6, 2021

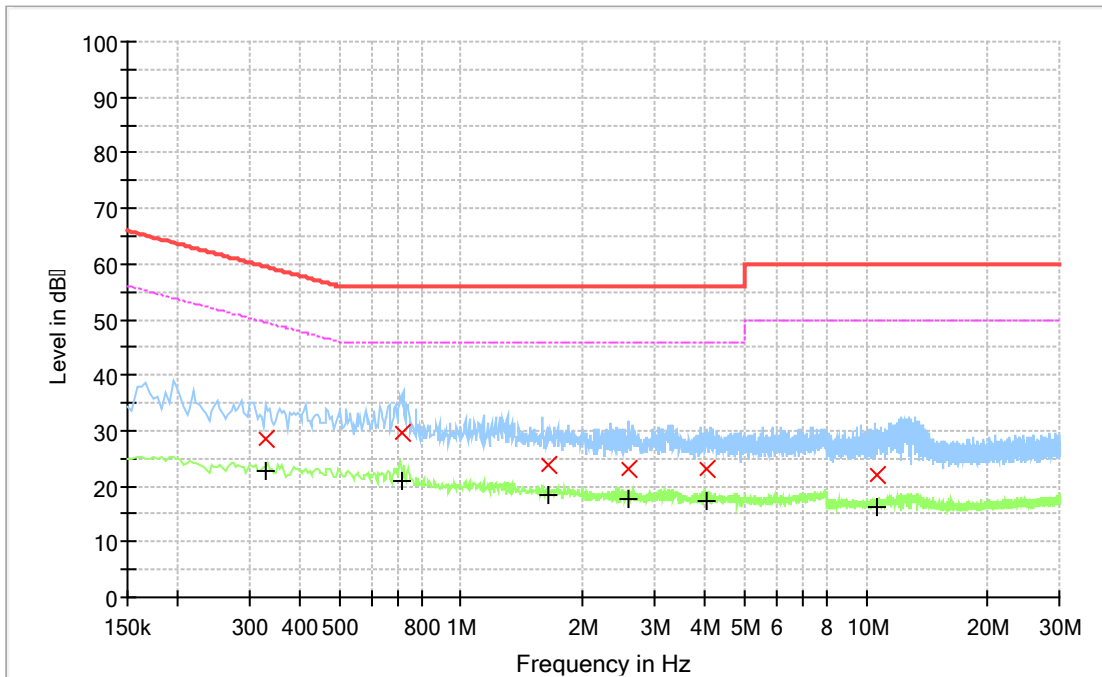
2.3.4 Test Results

- Test Mode: 1)



Final_Result

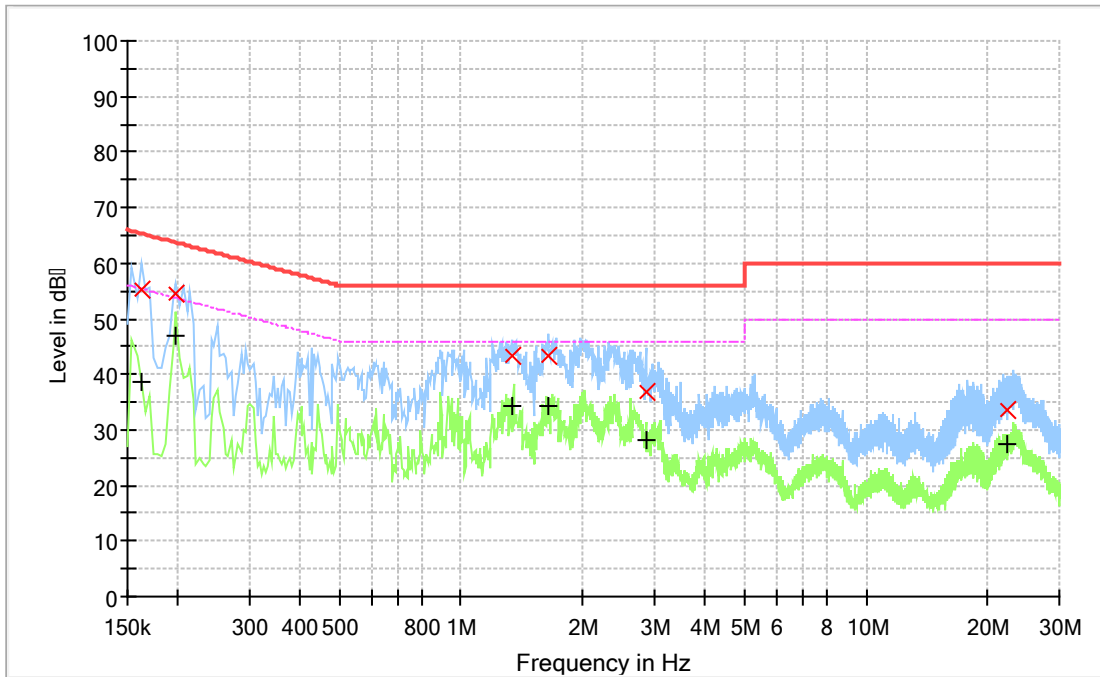
Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.222 000	---	24.64	52.74	28.10	15 000.0	9.000	L1	ON	19.7
0.222 000	31.82	---	62.74	30.92	15 000.0	9.000	L1	ON	19.7
0.718 000	---	22.95	46.00	23.05	15 000.0	9.000	L1	ON	19.9
0.718 000	29.30	---	56.00	26.70	15 000.0	9.000	L1	ON	19.9
1.506 000	---	19.15	46.00	26.85	15 000.0	9.000	L1	ON	19.8
1.506 000	24.81	---	56.00	31.19	15 000.0	9.000	L1	ON	19.8
2.834 000	---	17.98	46.00	28.02	15 000.0	9.000	L1	ON	19.9
2.834 000	23.65	---	56.00	32.35	15 000.0	9.000	L1	ON	19.9
3.726 000	---	17.88	46.00	28.12	15 000.0	9.000	L1	ON	20.0
3.726 000	23.45	---	56.00	32.55	15 000.0	9.000	L1	ON	20.0
11.230 000	---	16.52	50.00	33.48	15 000.0	9.000	L1	ON	20.2
11.230 000	22.17	---	60.00	37.83	15 000.0	9.000	L1	ON	20.2



Final_Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.330 000	---	22.83	49.45	26.62	15 000.0	9.000	N	ON	19.8
0.330 000	28.46	---	59.45	30.99	15 000.0	9.000	N	ON	19.8
0.718 000	---	21.03	46.00	24.97	15 000.0	9.000	N	ON	19.8
0.718 000	29.63	---	56.00	26.37	15 000.0	9.000	N	ON	19.8
1.650 000	---	18.46	46.00	27.54	15 000.0	9.000	N	ON	19.8
1.650 000	24.00	---	56.00	32.00	15 000.0	9.000	N	ON	19.8
2.586 000	---	17.59	46.00	28.41	15 000.0	9.000	N	ON	19.8
2.586 000	23.08	---	56.00	32.92	15 000.0	9.000	N	ON	19.8
4.030 000	---	17.45	46.00	28.55	15 000.0	9.000	N	ON	19.9
4.030 000	23.15	---	56.00	32.85	15 000.0	9.000	N	ON	19.9
10.666 000	---	16.13	50.00	33.87	15 000.0	9.000	N	ON	20.2
10.666 000	21.85	---	60.00	38.15	15 000.0	9.000	N	ON	20.2

- Test Mode: 2)



Final_Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.162 000	---	38.80	55.36	16.56	15 000.0	9.000	L1	ON	19.7
0.162 000	55.07	---	65.36	10.30	15 000.0	9.000	L1	ON	19.7
0.198 000	---	46.90	53.69	6.80	15 000.0	9.000	L1	ON	19.8
0.198 000	54.62	---	63.69	9.07	15 000.0	9.000	L1	ON	19.8
1.338 000	---	34.38	46.00	11.62	15 000.0	9.000	L1	ON	19.6
1.338 000	43.39	---	56.00	12.61	15 000.0	9.000	L1	ON	19.6
1.638 000	---	34.47	46.00	11.53	15 000.0	9.000	L1	ON	19.7
1.638 000	43.34	---	56.00	12.66	15 000.0	9.000	L1	ON	19.7
2.854 000	---	28.31	46.00	17.69	15 000.0	9.000	L1	ON	19.7
2.854 000	36.92	---	56.00	19.08	15 000.0	9.000	L1	ON	19.7
22.274 000	---	27.32	50.00	22.68	15 000.0	9.000	L1	ON	20.0
22.274 000	33.56	---	60.00	26.44	15 000.0	9.000	L1	ON	20.0

2.4 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 and using the software of EMC32 (Version V10.40.10 from R&S). The final test data was measured using a Quasi-Peak detector below 1 GHz and 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.

2.4.1 Test Equipments

Equipment	Model	Manufacturer	Serial No	Cal Due. Date
EMI TEST RECEIVER	ESU40	R&S	100075	2021.08.18
BILOG ANTENNA	VULB 9163	SCHWARZBECK	9163-390	2021.01.23
TRILOG ANTENNA	VULB 9162	SCHWARZBECK	186	2021.07.09
Double Ridged Horn Antenna	HF907	R&S	102578	2021.01.24
AMPLIFIER	8447D	HP	2727A05297	2021.07.10
Microwave Preamplifier	PAM-118A	Com-Power	551074	2021.10.13
3m SEMI-ANECHOIC CHAMBER	-	Will Tech	-	-

2.4.2 Test Site

3m SEMI-ANECHOIC CHAMBER in Giheung 2 Laboratory

2.4.3 Environment Conditions

① Below 1 GHz

Temperature : (minimum 21.0, maximum 25.0) °C

Humidity : (minimum 34.0, maximum 37.0) % R.H.

Atmospheric Pressure : (minimum 101.7, maximum 101.9) kPa

Test Date: November 27, 2020 & December 21, 2020

② Above 1 GHz

Temperature : (minimum 21.0, maximum 25.0) °C

Humidity : (minimum 34.0, maximum 37.0) % R.H.

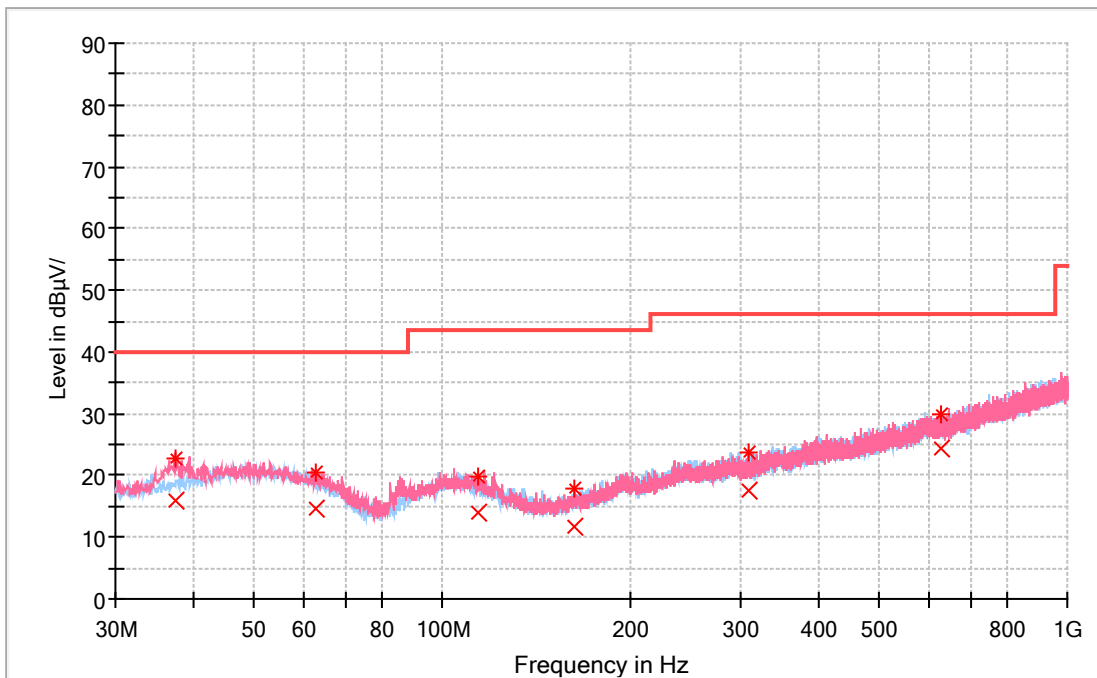
Atmospheric Pressure : (minimum 101.7, maximum 101.9) kPa

Test Date: November 27, 2020 & December 21, 2020

2.4.4 Test Results

① Below 1 GHz

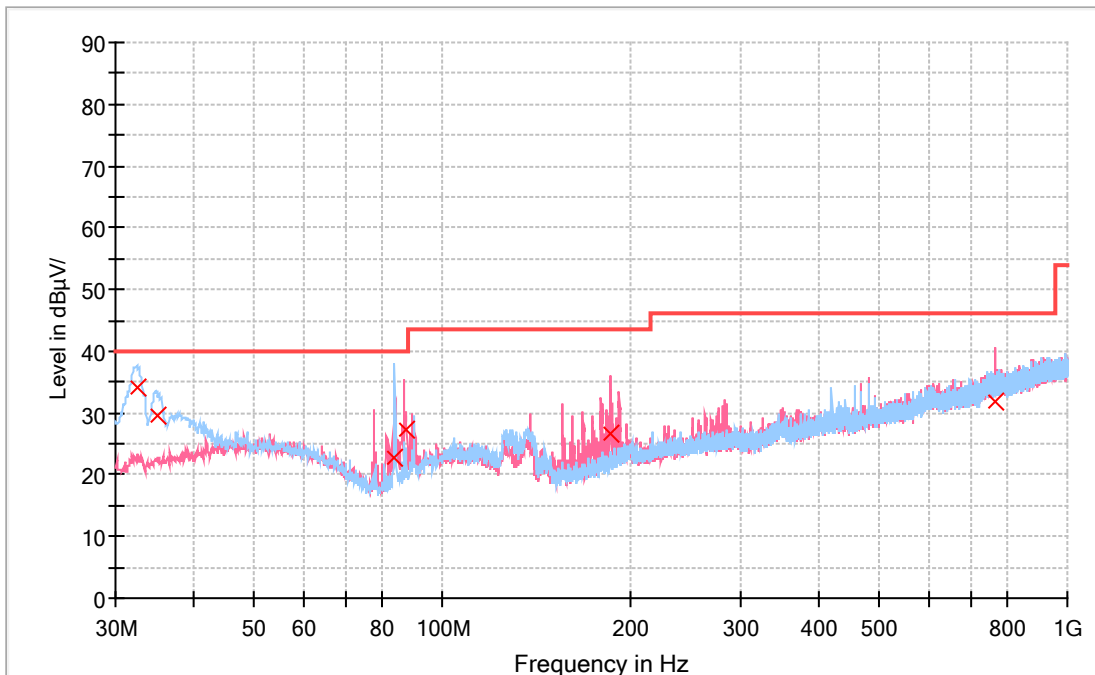
● Test Mode: 1)



Final Result

Frequency (MHz)	QuasiPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
37.469 000	15.77	40.00	24.23	15 000.0	120.000	100.0	V	146.0	-7.4
62.980 000	14.48	40.00	25.52	15 000.0	120.000	300.0	V	330.0	-7.4
114.099 000	13.95	43.50	29.55	15 000.0	120.000	100.0	H	41.0	-7.5
162.987 000	11.82	43.50	31.68	15 000.0	120.000	400.0	H	32.0	-9.5
309.360 000	17.62	46.00	28.38	15 000.0	120.000	200.0	V	104.0	-3.7
629.266 000	24.31	46.00	21.69	15 000.0	120.000	200.0	H	66.0	1.7

● Test Mode: 2)



□ Final Result

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
32.625 000	33.96	40.00	6.04	15 000.0	120.000	100.0	H	15.0	-5.1
34.959 000	29.65	40.00	10.35	15 000.0	120.000	105.0	H	0.0	-4.6
84.012 000	22.61	40.00	17.39	15 000.0	120.000	354.0	H	247.0	-6.8
87.476 000	27.32	40.00	12.68	15 000.0	120.000	359.0	V	152.0	-5.9
185.576 000	26.71	43.50	16.79	15 000.0	120.000	250.0	V	321.0	-3.5
767.976 000	31.82	46.00	14.18	15 000.0	120.000	105.0	V	186.0	8.2

Measurement Uncertainty (Horizontal) : 4.22 dB (The confidential level is about 95 %, k=2)

Measurement Uncertainty (Vertical) : 4.27 dB (The confidential level is about 95 %, k=2)

Note : ● POL H = Horizontal

● POL V = Vertical

● Margin = Limit – Quasi Peak

● Corr. = Antenna Factor + Cable loss – Amplifier Gain

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

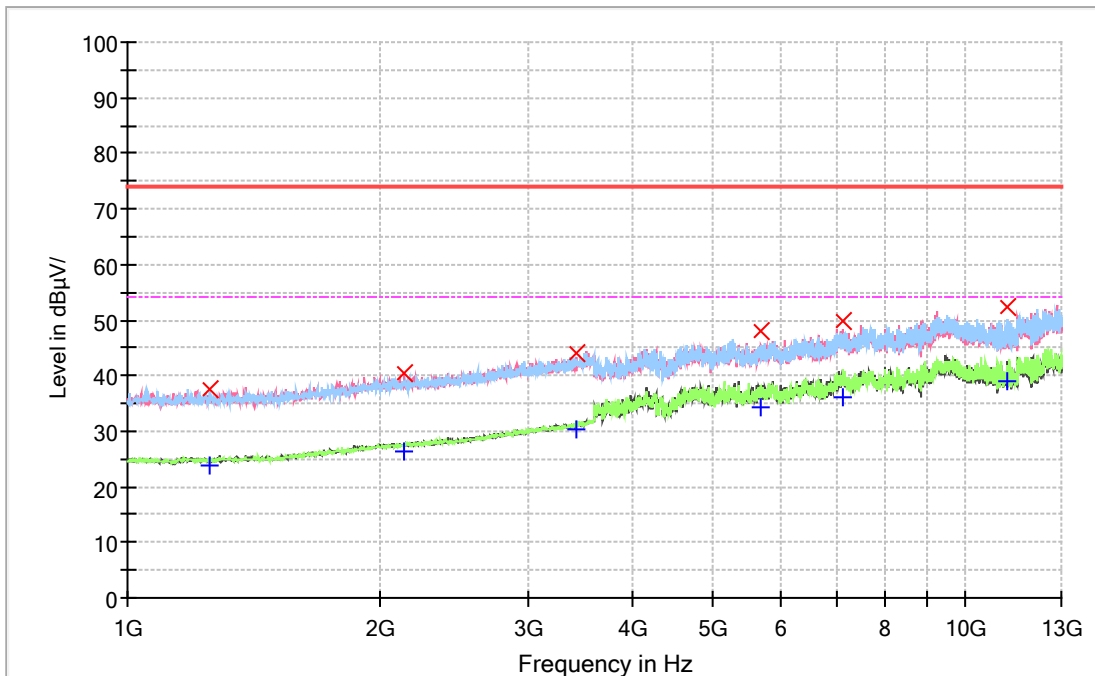
Margin = Limit – Result

= 43.5 – 19

= 24.5

② Above 1 GHz

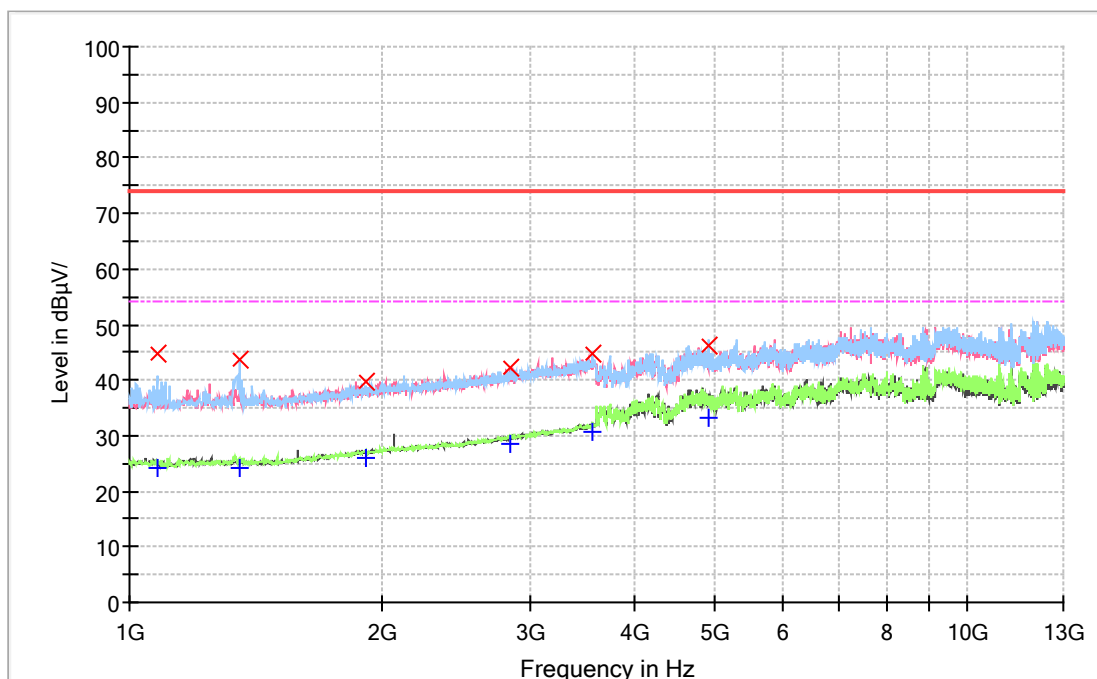
● Test Mode: 1)



Final Result

Frequency (MHz)	MaxPeak (dB μ V/m)	Coverage (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
1 251.600 000	37.54	---	74.00	36.46	15 000.0	1 000.000	300.0	H	2.0	-9.5
1 251.600 000	---	23.84	54.00	30.16	15 000.0	1 000.000	300.0	H	2.0	-9.5
2 135.600 000	---	26.46	54.00	27.54	15 000.0	1 000.000	300.0	V	230.0	-7.3
2 135.600 000	40.44	---	74.00	33.56	15 000.0	1 000.000	300.0	V	230.0	-7.3
3 437.800 000	43.97	---	74.00	30.03	15 000.0	1 000.000	200.0	V	105.0	-4.4
3 437.800 000	---	30.20	54.00	23.80	15 000.0	1 000.000	200.0	V	105.0	-4.4
5 690.300 000	---	34.25	54.00	19.75	15 000.0	1 000.000	300.0	V	153.0	1.6
5 690.300 000	47.98	---	74.00	26.02	15 000.0	1 000.000	300.0	V	153.0	1.6
7 125.100 000	49.71	---	74.00	24.29	15 000.0	1 000.000	100.0	V	357.0	3.3
7 125.100 000	---	36.27	54.00	17.73	15 000.0	1 000.000	100.0	V	357.0	3.3
1 1201.700 000	52.47	---	74.00	21.53	15 000.0	1 000.000	200.0	V	139.0	6.2
1 1201.700 000	---	38.95	54.00	15.05	15 000.0	1 000.000	200.0	V	139.0	6.2

● Test Mode: 2)



Final Result

Frequency (MHz)	MaxPeak (dB μ V/m)	Coverage (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	PoI	Azimuth (deg)	Corr. (dB)
1 079.900 000	---	24.23	54.00	29.77	15 000.0	1 000.000	100.0	H	310.0	-9.5
1 079.900 000	44.90	---	74.00	29.10	15 000.0	1 000.000	100.0	H	310.0	-9.5
1 350.200 000	43.74	---	74.00	30.26	15 000.0	1 000.000	200.0	H	206.0	-9.5
1 350.200 000	---	24.24	54.00	29.76	15 000.0	1 000.000	200.0	H	206.0	-9.5
1 916.300 000	39.59	---	74.00	34.41	15 000.0	1 000.000	200.0	H	0.0	-7.8
1 916.300 000	---	25.85	54.00	28.15	15 000.0	1 000.000	200.0	H	0.0	-7.8
2 851.300 000	42.09	---	74.00	31.91	15 000.0	1 000.000	100.0	V	16.0	-5.7
2 851.300 000	---	28.50	54.00	25.50	15 000.0	1 000.000	100.0	V	16.0	-5.7
3 561.900 000	---	30.77	54.00	23.23	15 000.0	1 000.000	300.0	H	301.0	-4.1
3 561.900 000	44.82	---	74.00	29.18	15 000.0	1 000.000	300.0	H	301.0	-4.1
4 904.900 000	46.34	---	74.00	27.66	15 000.0	1 000.000	300.0	H	65.0	0.1
4 904.900 000	---	33.31	54.00	20.69	15 000.0	1 000.000	300.0	H	65.0	0.1

Measurement Uncertainty (Horizontal) : 4.02 dB (The confidential level is about 95 %, $k=2$)

Measurement Uncertainty (Vertical) : 4.18 dB (The confidential level is about 95 %, $k=2$)

Note : ● POL H = Horizontal

● POL V = Vertical

● Margin = Limit – Quasi Peak

● Corr. = Antenna Factor + Cable loss – Amplifier Gain

Ex) In case

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

Result = Level + AF + CL – Amp

= 30 + 10 + 4 - 25

= 19

Margin = Limit – Result

= 43.5 – 19

= 24.5

- End of Test Report -