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TEST REPORT

of

FCC Part 15 Subpart C §15.209

FCC ID: V2R-PLATFORMDUO

Equipment Under Test	:	Super Fast Dual Wireless Charging Pad
Model Name	:	PLATFORM DUO
Variant Model Name(s)	:	-
Applicant	:	Cresyn Co., Ltd.
Manufacturer	:	Cresyn Co., Ltd.
Date of Receipt	:	2022.12.28
Date of Test(s)	:	2022.12.30 ~ 2023.02.01
Date of Issue	:	2023.02.02

In the configuration tested, the EUT complied with the standards specified above. 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.
3) This test report cannot be reproduced, except in full, without prior written permission of the Company.
4) The data marked ※ in this report was provided by the customer and may affect the validity of the test results.
We are responsible for all the information of this test report except for the data(※) provided by the customer.

Tested by: Taek Kim

Technical Manager: Jinhyoung Cho

SGS Korea Co., Ltd. Gunpo Laboratory

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1. General Information

1.1. Testing Laboratory

SGS Korea Co., Ltd. (Gunpo Laboratory)
- 10-2, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807
- 4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807
- Designation number: KR0150

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Phone No. : +82 31 688 0901
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1.2. Details of Applicant

Applicant : Cresyn Co., Ltd.
Address : 5 Gangnam-daero 107-gil, Seocho-gu, Seoul, South Korea, 06524
Contact Person : Lee, Ji-hyeon
Phone No. : +82 2 2041 2843

1.3. Details of Manufacturer

Company : Same as applicant
Address : Same as applicant

1.4. Description of EUT

Kind of Product	Super Fast Dual Wireless Charging Pad	
Model Name	PLATFORM DUO	
Serial Number	001	
Power Supply	DC 9 V	
Operation Mode	5 W, 7.5 W, 10 W, 15 W	
Frequency Range	5 W	Ant. 1 : 124.7 ~ 130.7 ㎑ Ant. 2 : 137.0 ~ 143.0 ㎑
	7.5 W	Ant. 1 : 124.7 ~ 130.7 ㎑
	10 W	Ant. 1 : 124.7 ~ 130.7 ㎑
	15 W	Ant. 1 : 124.7 ~ 130.7 ㎑
Antenna Type	Loop Coil Antenna	
Antenna Serial Number	C-001	
H/W Version	DP_Rev. 0.1	
S/W Version	TX IC : CDP_PV1_TEST_0110 MCU : DP_02_20230104_B682	
FVIN	N/A	

1.5. Declaration of Manufacturer

- The EUT can Support simultaneous charging of Two devices, But 15 W charging mode does not operate simultaneously.

1.6. Test Equipment List

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Interval	Cal. Due
Spectrum Analyzer	R&S	FSV30	103210	Dec. 07, 2022	Annual	Dec. 07, 2023
Signal Generator	R&S	SMBV100A	255834	May 25, 2022	Annual	May 25, 2023
DC Power Supply	R&S	HMP2020	020089489	May 17, 2022	Annual	May 17, 2023
Preamplifier	H.P.	8447F	2944A03909	Aug. 04, 2022	Annual	Aug. 04, 2023
Loop Antenna	Schwarzbeck Mess-Elektronik	FMZB 1519	1519-039	Aug. 23, 2021	Biennial	Aug. 23, 2023
Bilog Antenna	Schwarzbeck Mess-Elektronik	VULB 9163	01126	Feb. 07, 2022	Annual	Feb. 07, 2023
Turn Table	Innco systems GmbH	DS 1200 S	N/A	N.C.R.	N/A	N.C.R.
Controller	Innco systems GmbH	CONTROLLER CO3000-4P	CO3000/963/38 330516/L	N.C.R.	N/A	N.C.R.
Anechoic Chamber	SY Corporation	L × W × H (9.6 m × 6.4 m × 6.6 m)	N/A	N.C.R.	N/A	N.C.R.
Coaxial Cable	RFONE	PL360P-292M292M-1.5M-A	20200324002	Aug. 18, 2022	Semi-Annual	Feb. 18, 2023
Coaxial Cable	RFONE	MWX221-NMSNMS (4 m)	J1023142	Oct. 04, 2022	Semi-Annual	Apr. 04, 2023
Coaxial Cable	Qualwave Inc.	QA500-18-NN-10 (10 m)	22200114	Oct. 04, 2022	Semi-Annual	Apr. 04, 2023
Test Receiver	R&S	ESCI 7	100911	Feb. 23, 2022	Annual	Feb. 23, 2023
Two-Line V-Network	R&S	ENV216	100190	May 13, 2022	Annual	May 13, 2023
Shield Room	SY Corporation	L × W × H (6.5 m × 3.5 m × 3.5 m)	N/A	N.C.R.	N/A	N.C.R.

▶ Support Equipment

Description	Manufacturer	Model	FCC ID
C to C Cable	Shenzhen Hongyu Electronics Co., Ltd	CJG-0300ZDL-XA	-
SAMSUNG Mobile Phone	Samsung Electronics Co., Ltd.	SM-G930US	A3LSMG930US
Apple Mobile Phone	Apple Inc.	Iphone Xs Max	BCG-E3175A
SAMSUNG Mobile Phone	Samsung Electronics Co., Ltd.	SM-N960U	A3LSMN960U
SAMSUNG Mobile Phone	Samsung Electronics Co., Ltd.	SM-G986U	A3LSMG986U
TRAVEL ADAPTER	Samsung Electronics Co., Ltd.	EP-TA800	-

1.7. Summary of Test Results

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15 Subpart C		
Section	**Test Item(s)**	**Result**
15.209	Radiated Emission, Spurious Emission and Field Strength of Fundamental	Complied
2.1049	20 ㏈ Bandwidth	Complied
15.207	AC Power Line Conducted Emission	Complied

Note;

- Due to the frequency range of the device is less than 1 ㎒, so we perform Middle frequency according to 15.31 requirement.

1.8. Test Procedure(s)

The measurement procedures described in the American National Standard of Procedure for Compliance Testing of unlicensed Wireless Devices (ANSI C63.10-2013).

1.9. Sample Calculation

Where relevant, the following sample calculation is provided:
Field strength level (㏈㎶/m) = Measured level (㏈㎶) + Antenna factor (㏈) + Cable loss (㏈) + (AMP (㏈))

1.10. Test Report Revision

Revision	Report Number	Date of Issue	Description
0	F690501-RF-RTL003767	2023.02.02	Initial

1.11. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Parameter	Uncertainty	
20 dB Bandwidth	3.90 ㎑	
AC Conducted Emission	4.00 dB	
Radiated Emission, 9 ㎑ to 30 ㎒	H	3.40 dB
	V	3.40 dB
Radiated Emission, below 1 ㎓	H	4.50 dB
	V	5.10 dB

All measurement uncertainty values are shown with a coverage factor of *k*=2 to indicate a 95 % level of confidence.

1.12. EUT Operation Information

Mode	Frequency (㎑)			
	Ant. 1		Ant. 2	
	Single	Simultaneous	Single	Simultaneous
5 W	124.7 ~ 130.7	124.7 ~ 130.7	137.0 ~ 143.0	137.0 ~ 143.0
7.5 W	124.7 ~ 130.7	124.7 ~ 130.7	-	-
10 W	124.7 ~ 130.7	124.7 ~ 130.7	-	-
15 W	124.7 ~ 130.7	-	-	-

Note;

5 W + 5 W wireless charging is the worst case in simultaneous charging mode.

1.13. Worst Case of Test Configurations

- Ant. 1 (124.7 ㎑ ~ 130.7 ㎑)

Charging mode With client device		Mode		Description
Model	FCC ID			
SM-G930US	A3LSMG930US	5 W	Ant. 1: 127.7 ㎑	1 % of battery 50 % of battery 99 % of battery
Iphone Xs Max	BCG-E3175A	7.5 W	Ant. 1: 127.7 ㎑	
SM-N960U	A3LSMN960U	10 W	Ant. 1: 127.7 ㎑	
SM-G986U	A3LSMG986U	15 W	Ant. 1: 127.7 ㎑	

Mode	Battery	Frequency (㎑)	Detect Mode	Reading (dB㎶)
5 W	1 %	127.7	Average	**71.63**
	50 %			71.61
	99 %			71.34

Mode	Battery	Frequency (㎑)	Detect Mode	Reading (dB㎶)
7.5 W	1 %	127.7	Average	**61.60**
	50 %			61.52
	99 %			61.51

Mode	Battery	Frequency (㎑)	Detect Mode	Reading (dB㎶)
10 W	1 %	127.7	Average	**67.10**
	50 %			67.00
	99 %			66.80

Mode	Battery	Frequency (㎑)	Detect Mode	Reading (dB㎶)
15 W	1 %	127.7	Average	**68.80**
	50 %			68.80
	99 %			68.40

- Ant. 2 (137.0 ㎑ ~ 143.0 ㎑)

Charging mode With client device		Mode		Description
Model	FCC ID			
SM-G930US	A3LSMG930US	5 W	Ant. 2: 140 ㎑	1 % of battery 50 % of battery 99 % of battery

Mode	Battery	Frequency (㎑)	Detect Mode	Reading (dBμV)
5 W	1 %	140	Average	**65.60**
	50 %			65.30
	99 %			65.20

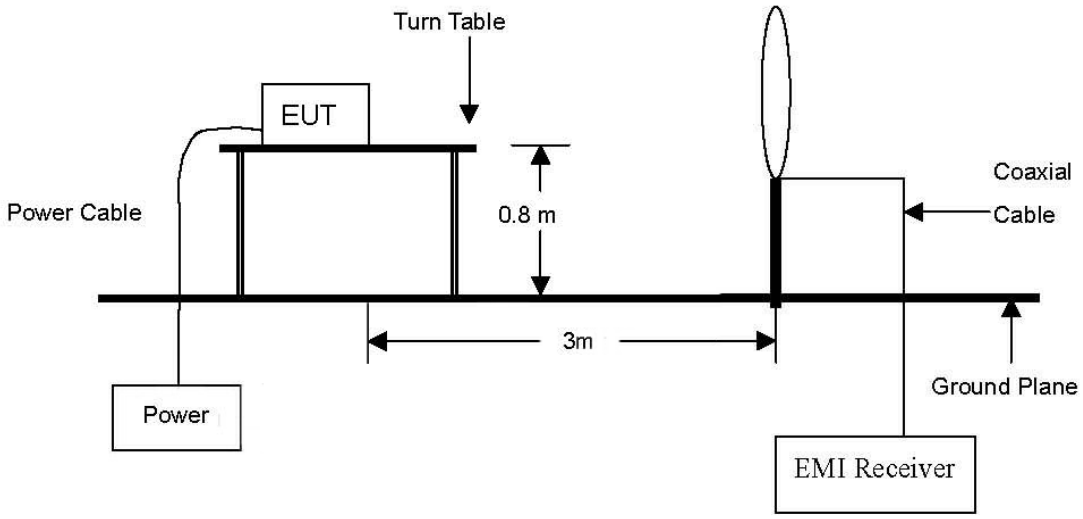
Note;

- EUT was investigated with client device under normal charging condition as above then worst value was only reported.

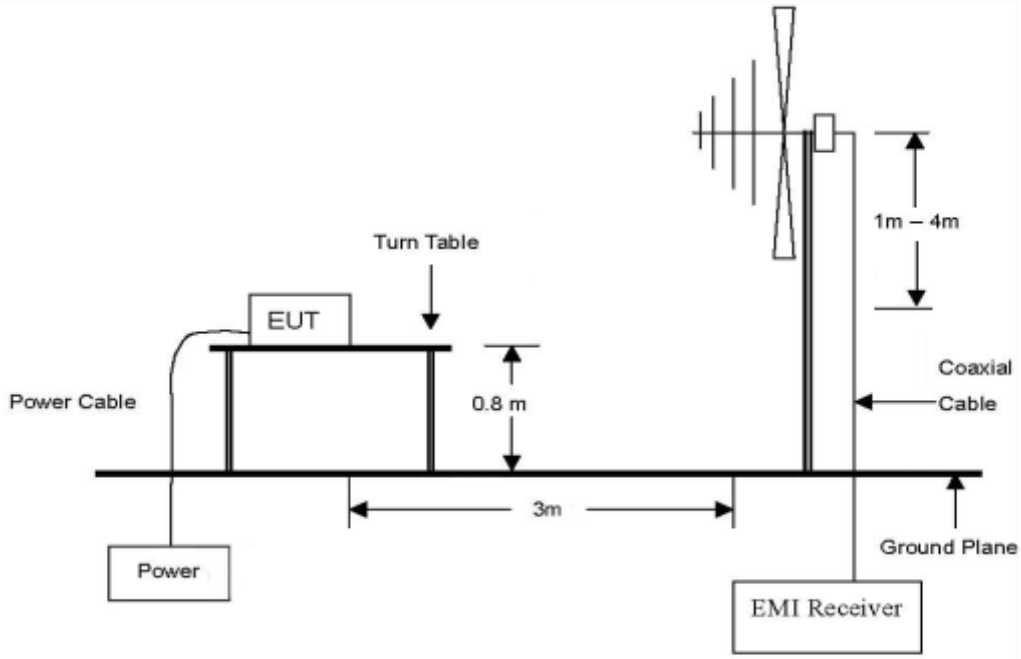
2. Field Strength of Fundamental and Spurious Emission

2.1. Test Setup

The diagram below shows the test setup that is utilized to make the measurements for emission from 9 ㎑ to 30 ㎒.



The diagram below shows the test setup that is utilized to make the measurements for emission from 30 ㎒ to 1 ㎓.



2.2. Limit

2.2.1. Radiated emission limits, general requirements

According to §15.209(a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (㎒)	Field Strength (microvolts/meter)	Measurement Distance (meter)
0.009-0.490	2 400/F(㎑)	300
0.490-1.705	24 000/F(㎑)	30
1.705-30.0	30	30
30-88	100**	3
88-216	150**	3
216-960	200**	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 ㎒, 76-88 ㎒, 174-216 ㎒ or 470-806 ㎒. however, operation within these frequency bands is permitted under other sections of this part, e.g., §§15.231 and 15.241

2.3. Test Procedures

Radiated emissions from the EUT were measured according to the dictates of ANSI C63.10:2013.

2.3.1. Test Procedures for emission from 9 ㎑ to 30 ㎒

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter anechoic chamber test site. The table was rotated 360 degrees to determine the position of the highest radiation.
b. Then antenna is a loop antenna is fixed at one meter above the ground to determine the maximum value of the field strength. Both parallel and perpendicular of the antenna are set to make the measurement.
c. For each suspected emission, the EUT was arranged to its worst case and then the table was turned from 0 degrees to 360 degrees to find the maximum reading.
d. The test-receiver system was set to Quasi Peak and Average Detect Function and Specified Bandwidth with Maximum Hold Mode.

2.3.2. Test Procedures for emission from 30 ㎒ to 1 000 ㎒

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter anechoic chamber test site. The table was rotated 360 degrees to determine the position of the highest radiation.
b. During performing radiated emission below 1 ㎓, the EUT was set 3 meters away from the interference receiving antenna, which was mounted on the top of a variable-height antenna tower. During performing radiated emission above 1 ㎓, the EUT was set 3 meter away from the interference-receiving antenna.
c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. For measurements below 1 ㎓ resolution bandwidth is set to 100 ㎑ for peak detection measurements or 120 ㎑ for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

2.4. Field Strength of Fundamental Test Result

Ambient temperature : (23 ± 1) ℃
Relative humidity : 47 % R.H.

The following table shows the highest levels of radiated emissions on between polarizations of horizontal and vertical.

- Ant. 1 (124.7 ㎑ ~ 130.7 ㎑)

Test Condition: 5 W Operating mode with client device

Radiated Emissions			Ant.	Correction Factors		Total		Limit	
Frequency (㎒)	Reading (dB㎶)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB㎶/m) at 3 m	Actual (dB㎶/m) at 300 m	Limit (dB㎶/m) at 300 m	Margin (dB)
Ant. 1 (124.7 ㎑ ~ 130.7 ㎑)									
0.128	71.63	Average	H	17.90	0.04	89.57	9.57	25.46	15.89

Test Condition: 7.5 W Operating mode with client device

Radiated Emissions			Ant.	Correction Factors		Total		Limit	
Frequency (㎒)	Reading (dB㎶)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB㎶/m) at 3 m	Actual (dB㎶/m) at 300 m	Limit (dB㎶/m) at 300 m	Margin (dB)
Ant. 1 (124.7 ㎑ ~ 130.7 ㎑)									
0.128	61.60	Average	H	17.90	0.04	79.54	-0.46	25.46	25.92

Test Condition: 10 W Operating mode with client device

Radiated Emissions			Ant.	Correction Factors		Total		Limit	
Frequency (㎒)	Reading (dB㎶)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB㎶/m) at 3 m	Actual (dB㎶/m) at 300 m	Limit (dB㎶/m) at 300 m	Margin (dB)
Ant. 1 (124.7 ㎑ ~ 130.7 ㎑)									
0.128	67.10	Average	H	17.90	0.04	85.04	5.04	25.46	20.42

Test Condition: 15 W Operating mode with client device

Radiated Emissions			Ant.	Correction Factors		Total		Limit	
Frequency (㎒)	Reading (dB㎶)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB㎶/m) at 3 m	Actual (dB㎶/m) at 300 m	Limit (dB㎶/m) at 300 m	Margin (dB)
Ant. 1 (124.7 ㎑ ~ 130.7 ㎑)									
0.128	68.80	Average	H	17.90	0.04	86.74	6.74	25.46	18.72

Test Condition: Idle mode

Radiated Emissions			Ant.	Correction Factors		Total		Limit	
Frequency (㎒)	Reading (dB㎶)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB㎶/m) at 3 m	Actual (dB㎶/m) at 300 m	Limit (dB㎶/m) at 300 m	Margin (dB)
Ant. 1 (124.7 ㎑ ~ 130.7 ㎑)									
0.128	67.30	Average	H	17.90	0.04	85.24	5.24	25.46	20.22

- Ant. 2 (137.0 ㎑ ~ 143.0 ㎑)

Test Condition: 5 W Operating mode with client device

Radiated Emissions			Ant.	Correction Factors		Total		Limit	
Frequency (㎒)	Reading (dB㎶)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB㎶/m) at 3 m	Actual (dB㎶/m) at 300 m	Limit (dB㎶/m) at 300 m	Margin (dB)
Ant. 2 (137.0 ㎑ ~ 143.0 ㎑)									
0.140	65.60	Average	H	17.90	0.04	83.54	3.54	24.68	21.14

Test Condition: Idle mode

Radiated Emissions			Ant.	Correction Factors		Total		Limit	
Frequency (㎒)	Reading (dB㎶)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB㎶/m) at 3 m	Actual (dB㎶/m) at 300 m	Limit (dB㎶/m) at 300 m	Margin (dB)
Ant. 2 (137.0 ㎑ ~ 143.0 ㎑)									
0.140	49.70	Average	H	17.90	0.04	67.64	-12.36	24.68	37.04

- Simultaneous operation of Ant. 1 (124.7 ㎑ ~ 130.7 ㎑) and Ant. 2 (137.0 ㎑ ~ 143.0 ㎑)

Test Condition: Ant. 1 (5 W) + Ant. 2 (5 W) Operating mode

Radiated Emissions			Ant.	Correction Factors		Total		Limit	
Frequency (㎒)	Reading (dB㎶)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB㎶/m) at 3 m	Actual (dB㎶/m) at 300 m	Limit (dB㎶/m) at 300 m	Margin (dB)
Ant. 1 (124.7 ㎑ ~ 130.7 ㎑)									
0.128	64.80	Average	H	17.90	0.04	82.74	2.74	25.46	22.72
Ant. 2 (137.0 ㎑ ~ 143.0 ㎑)									
0.140	60.80	Average	H	17.90	0.04	78.74	-1.26	24.68	25.94

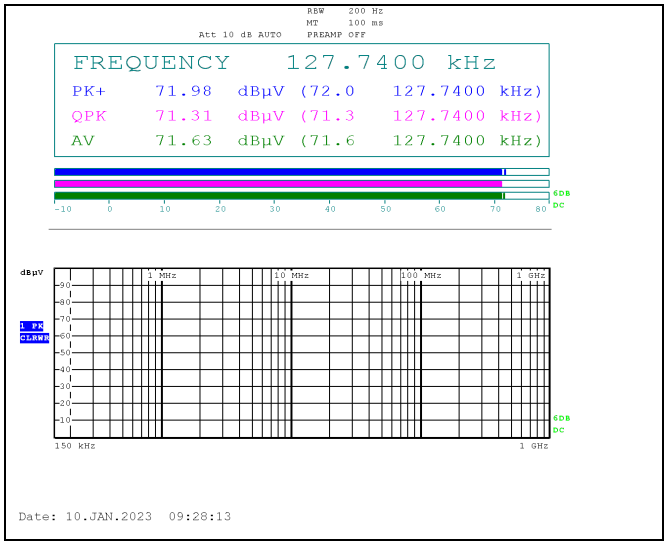
Remark;

1. According to §15.31(f)(2),
   - 300 m Result (dBμV/m) = 3 m Result (dBμV/m) - 40log (300/3) (dBμV/m).
2. According to field strength table of general requirement in §15.209(a), field strength limits below 1.705 ㎒ were calculated as below.
   - 9 ㎑ to 490 ㎑: 20log (2 400 / F (㎑)) at 300 m (dBμV/m)
   - 490 ㎑ to 1.705 ㎒: 20log (24 000/F (㎑)) at 30 m (dBμV/m)
3. According to §15.209(d), the measurements were tested by using Quasi peak detector except for the frequency bands 9-90 ㎑, 110-490 ㎑ and above 1 ㎓ in these three bands on measurements employing an average detector.
4. The limit above was calculated based on table of §15.209(a).

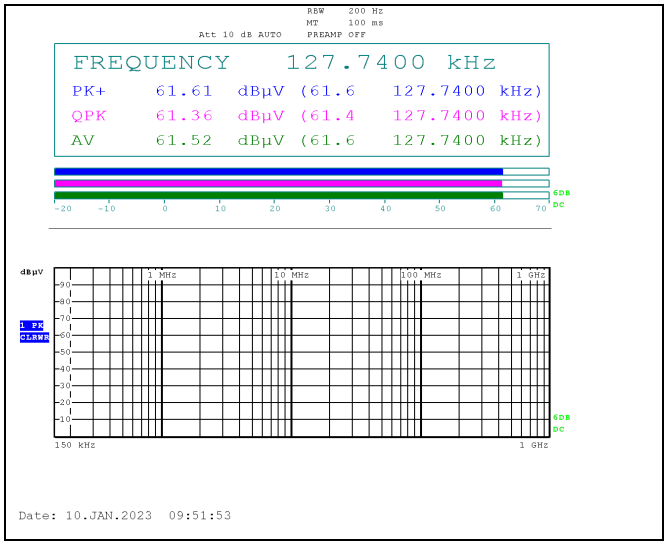
- Test plots

- Ant. 1 (124.7 ㎑ ~ 130.7 ㎑)

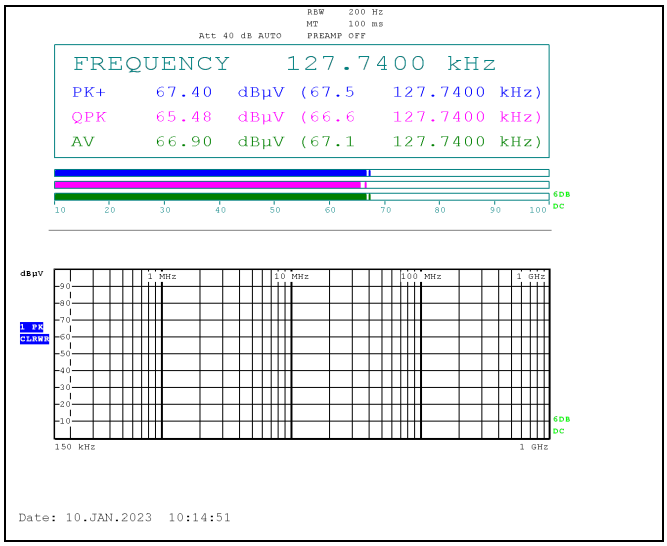
Test Condition: 5 W Operating mode with client device



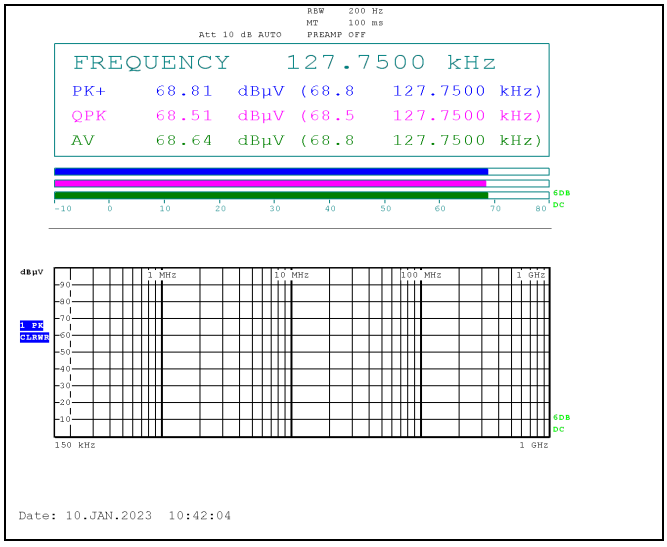
Test Condition: 7.5 W Operating mode with client device



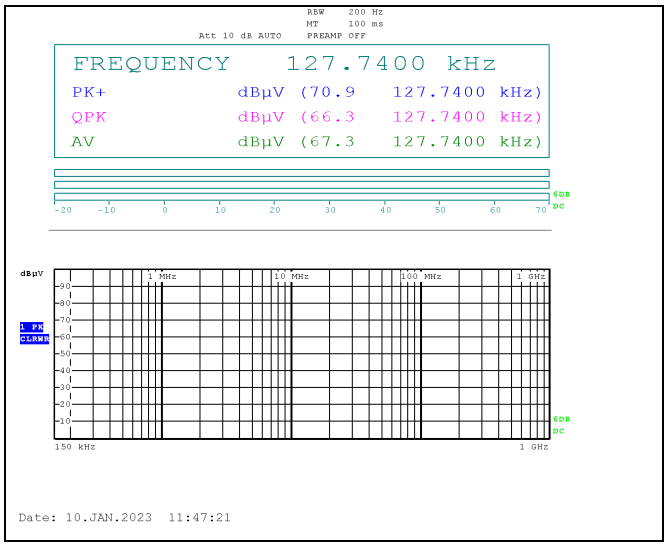
Test Condition: 10 W Operating mode with client device



Test Condition: 15 W Operating mode with client device

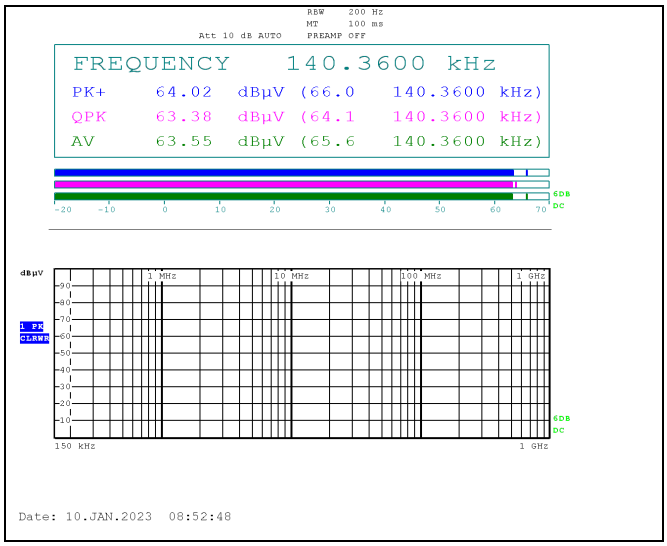


Test Condition: Idle mode

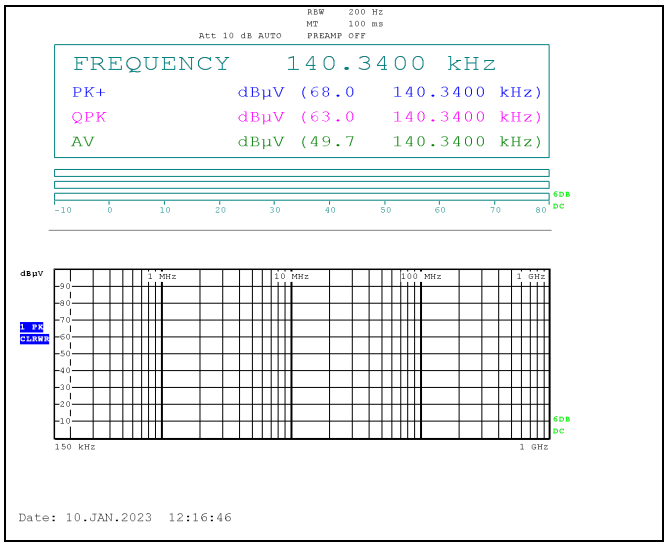


- Ant. 2 (137.0 ㎑ ~ 143.0 ㎑)

Test Condition: 5 W Operating mode with client device



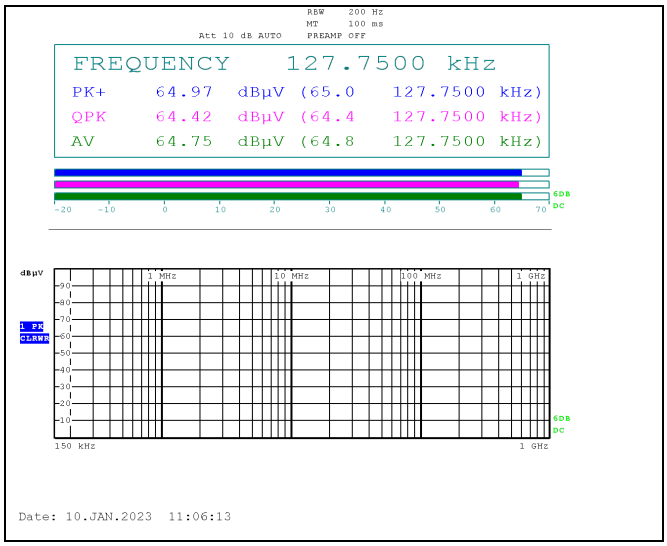
Test Condition: Idle mode



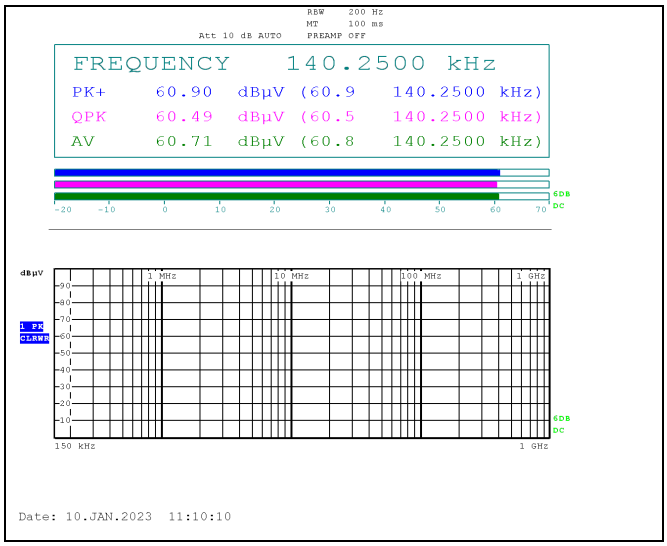
- Simultaneous operation of Ant. 1 (124.7 ㎑ ~ 130.7 ㎑) and Ant. 2 (137.0 ㎑ ~ 143.0 ㎑)

Test Condition: Ant. 1 (5 W) + Ant. 2 (5 W) Operating mode

Ant. 1 (124.7 ㎑ ~ 130.7 ㎑)



Ant. 2 (137.0 ㎑ ~ 143.0 ㎑)



2.5. Spurious Emission Test Result

Ambient temperature : (23 ± 1) ℃
Relative humidity : 47 % R.H.

The following table shows the highest levels of radiated emissions on between polarizations of horizontal and vertical.

- Ant. 1 (124.7 ㎑ ~ 130.7 ㎑)

Test Condition: 5 W Operating mode with client device

Below 30 ㎒

Radiated Emissions			Ant.	Correction Factors		Total		Limit	
Frequency (㎒)	Reading (dB㎶)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB㎶/m) at 3 m	Actual (dB㎶/m) at 300 m or 30 m	Limit (dB㎶/m) at 300 m or 30 m	Margin (dB)
0.022	27.20	Average	H	18.30	0.02	45.52	-34.48	40.76	75.24
0.067	31.20	Average	H	17.99	0.03	49.22	-30.78	31.08	61.86
0.382	48.80	Average	H	17.94	0.06	66.80	-13.20	15.96	29.16
2.397	15.70	Quasi Peak	H	18.48	0.19	34.37	-5.63	29.54	35.17
Above 3.000	Not detected	-	-	-	-	-	-	-	-

Above 30 ㎒

Radiated Emissions			Ant	Correction Factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detect Mode	Pol.	AF (dB/m)	AMP + CL (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
35.82	39.80	Peak	V	17.13	-27.74	29.19	40.00	10.81
47.95	38.00	Peak	V	19.70	-27.56	**30.14**	40.00	9.86
110.87	34.90	Peak	V	17.40	-26.84	25.46	43.50	18.04
216.97	40.80	Peak	V	16.98	-26.35	31.43	46.00	14.57
384.41	38.50	Peak	H	21.08	-25.25	34.33	46.00	11.67
640.01	30.40	Peak	H	25.10	-26.31	29.19	46.00	16.81
Above 700.00	Not detected	-	-	-	-	-	-	-

Test Condition: 7.5 W Operating mode with client device

Below 30 ㎒

Radiated Emissions			Ant.	Correction Factors		Total		Limit	
Frequency (㎒)	Reading (dB㎶)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB㎶/m) at 3 m	Actual (dB㎶/m) at 300 m or 30 m	Limit (dB㎶/m) at 300 m or 30 m	Margin (dB)
0.024	28.20	Average	H	18.25	0.02	46.47	-33.53	40.00	73.53
0.048	17.70	Average	H	18.05	0.03	35.78	-44.22	33.98	78.20
0.384	33.90	Average	H	17.94	0.06	51.90	-28.10	15.92	44.02
2.433	16.10	Quasi Peak	H	18.49	0.19	34.78	-5.22	29.54	34.76
Above 3.000	Not detected	-	-	-	-	-	-	-	-

Above 30 ㎒

Radiated Emissions			Ant	Correction Factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detect Mode	Pol.	AF (dB/m)	AMP + CL (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
46.85	37.90	Peak	V	19.69	-27.58	**30.01**	40.00	9.99
58.49	34.50	Peak	V	18.70	-27.31	25.89	40.00	14.11
111.97	36.30	Peak	V	17.30	-26.84	26.76	43.50	16.74
204.12	40.40	Peak	V	16.77	-26.29	30.88	43.50	12.62
381.38	38.10	Peak	H	20.96	-25.21	33.85	46.00	12.15
838.01	29.80	Peak	H	27.16	-25.81	31.15	46.00	14.85
Above 900.00	Not detected	-	-	-	-	-	-	-

Test Condition: 10 W Operating mode with client device

Below 30 ㎒

Radiated Emissions			Ant.	Correction Factors		Total		Limit	
Frequency (㎒)	Reading (dB㎶)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB㎶/m) at 3 m	Actual (dB㎶/m) at 300 m or 30 m	Limit (dB㎶/m) at 300 m or 30 m	Margin (dB)
0.033	27.50	Average	H	18.09	0.02	45.61	-34.39	37.23	71.62
0.069	23.20	Average	H	17.99	0.03	41.22	-38.78	30.83	69.61
0.383	46.40	Average	H	17.94	0.06	64.40	-15.60	15.94	31.54
Above 1.000	Not detected	-	-	-	-	-	-	-	-

Above 30 ㎒

Radiated Emissions			Ant	Correction Factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detect Mode	Pol.	AF (dB/m)	AMP + CL (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
32.43	39.70	Peak	V	16.40	-27.76	28.34	40.00	11.66
48.19	38.60	Peak	V	19.70	-27.55	**30.75**	40.00	9.25
111.48	35.10	Peak	V	17.35	-26.84	25.61	43.50	17.89
207.87	40.70	Peak	V	16.70	-26.30	31.10	43.50	12.40
382.35	38.00	Peak	H	20.99	-25.21	33.78	46.00	12.22
640.01	30.50	Peak	H	25.10	-26.31	29.29	46.00	16.71
Above 700.00	Not detected	-	-	-	-	-	-	-

Test Condition: 15 W Operating mode with client device

Below 30 ㎒

Radiated Emissions			Ant.	Correction Factors		Total		Limit	
Frequency (㎒)	Reading (dB㎶)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB㎶/m) at 3 m	Actual (dB㎶/m) at 300 m or 30 m	Limit (dB㎶/m) at 300 m or 30 m	Margin (dB)
0.019	25.90	Average	H	18.38	0.02	44.30	-35.70	42.03	77.73
0.053	24.60	Average	H	18.03	0.03	42.66	-37.34	33.12	70.46
0.383	46.00	Average	H	17.94	0.06	64.00	-16.00	15.94	31.94
2.427	18.20	Quasi Peak	H	18.49	0.19	36.88	-3.12	29.54	32.66
Above 3.000	Not detected	-	-	-	-	-	-	-	-

Above 30 ㎒

Radiated Emissions			Ant	Correction Factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detect Mode	Pol.	AF (dB/m)	AMP + CL (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
35.46	42.80	Peak	V	16.98	-27.74	**32.04**	40.00	7.96
47.22	38.60	Peak	V	19.70	-27.57	30.73	40.00	9.27
111.72	35.20	Peak	V	17.33	-26.84	25.69	43.50	17.81
203.27	40.80	Peak	V	16.84	-26.29	31.35	43.50	12.15
384.54	37.80	Peak	H	21.08	-25.25	33.63	46.00	12.37
843.71	30.10	Peak	H	27.20	-25.72	31.58	46.00	14.42
Above 900.00	Not detected	-	-	-	-	-	-	-

Test Condition: Idle mode

Below 30 ㎒

Radiated Emissions			Ant.	Correction Factors		Total		Limit	
Frequency (㎒)	Reading (dB㎶)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB㎶/m) at 3 m	Actual (dB㎶/m) at 300 m or 30 m	Limit (dB㎶/m) at 300 m or 30 m	Margin (dB)
0.021	27.10	Average	H	18.33	0.02	45.45	-34.55	41.16	75.71
0.090	14.60	Quasi Peak	H	17.93	0.03	32.56	-47.44	28.52	75.96
0.385	41.90	Average	H	17.94	0.06	59.90	-20.10	15.90	36.00
2.357	12.80	Quasi Peak	H	18.47	0.18	31.45	-8.55	29.54	38.09
Above 3.000	Not detected	-	-	-	-	-	-	-	-

Above 30 ㎒

Radiated Emissions			Ant	Correction Factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detect Mode	Pol.	AF (dB/m)	AMP + CL (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
52.63	38.70	Peak	V	19.54	-27.45	**30.79**	40.00	9.21
77.25	37.30	Peak	V	13.08	-27.17	23.21	40.00	16.79
114.71	37.50	Peak	H	16.93	-26.83	27.60	43.50	15.90
174.45	39.60	Peak	V	14.95	-26.59	27.96	43.50	15.54
392.66	33.80	Peak	H	21.41	-25.31	29.90	46.00	16.10
654.92	32.40	Peak	V	25.20	-26.24	31.36	46.00	14.64
Above 700.00	Not detected	-	-	-	-	-	-	-

- Ant. 2 (137.0 ㎑ ~ 143.0 ㎑)

Test Condition: 5 W Operating mode with client device

Below 30 ㎒

Radiated Emissions			Ant.	Correction Factors		Total		Limit	
Frequency (㎒)	Reading (dB㎶)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB㎶/m) at 3 m	Actual (dB㎶/m) at 300 m or 30 m	Limit (dB㎶/m) at 300 m or 30 m	Margin (dB)
0.026	27.50	Average	H	18.20	0.02	45.72	-34.28	39.30	73.58
0.047	23.70	Average	H	18.05	0.03	41.78	-38.22	34.16	72.38
0.421	42.20	Average	H	17.96	0.07	60.23	-19.77	15.12	34.89
2.464	15.80	Quasi Peak	H	18.49	0.19	34.48	-5.52	29.54	35.06
Above 3.000	Not detected	-	-	-	-	-	-	-	-

Above 30 ㎒

Radiated Emissions			Ant	Correction Factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detect Mode	Pol.	AF (dB/m)	AMP + CL (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
32.67	39.50	Peak	V	16.40	-27.76	28.14	40.00	11.86
47.95	37.50	Peak	V	19.70	-27.56	**29.64**	40.00	10.36
111.84	35.10	Peak	V	17.32	-26.84	25.58	43.50	17.92
167.86	41.80	Peak	V	14.80	-26.71	29.89	43.50	13.61
385.99	37.70	Peak	H	21.14	-25.27	33.57	46.00	12.43
746.59	29.20	Peak	H	26.73	-25.92	30.01	46.00	15.99
Above 800.00	Not detected	-	-	-	-	-	-	-

- Simultaneous operation of Ant. 1 (124.7 ㎑ ~ 130.7 ㎑) and Ant. 2 (137.0 ㎑ ~ 143.0 ㎑)

Test Condition: Ant. 1 (5 W) + Ant. 2 (5 W) Operating mode

Below 30 ㎒

Radiated Emissions			Ant.	Correction Factors		Total		Limit	
Frequency (㎒)	Reading (dB㎶)	Detect Mode	Pol.	AF (dB/m)	CL (dB)	Actual (dB㎶/m) at 3 m	Actual (dB㎶/m) at 300 m or 30 m	Limit (dB㎶/m) at 300 m or 30 m	Margin (dB)
0.031	25.50	Average	H	18.10	0.02	43.62	-36.38	37.78	74.16
0.062	18.20	Average	H	18.01	0.03	36.24	-43.76	31.76	75.52
0.420	39.80	Average	H	17.96	0.07	57.83	-22.17	15.14	37.31
2.427	16.70	Quasi Peak	H	18.49	0.19	35.38	-4.62	29.54	34.16
Above 3.000	Not detected	-	-	-	-	-	-	-	-

Above 30 ㎒

Radiated Emissions			Ant	Correction Factors		Total	Limit	
Frequency (㎒)	Reading (dB㎶)	Detect Mode	Pol.	AF (dB/m)	AMP + CL (dB)	Actual (dB㎶/m)	Limit (dB㎶/m)	Margin (dB)
32.55	39.60	Peak	V	16.40	-27.76	28.24	40.00	11.76
46.85	37.40	Peak	V	19.69	-27.58	**29.51**	40.00	10.49
111.72	34.80	Peak	V	17.33	-26.84	25.29	43.50	18.21
202.90	41.00	Peak	V	16.87	-26.29	31.58	43.50	11.92
386.60	39.20	Peak	H	21.16	-25.28	35.08	46.00	10.92
640.13	31.10	Peak	H	25.10	-26.31	29.89	46.00	16.11
Above 700.00	Not detected	-	-	-	-	-	-	-

Remark;

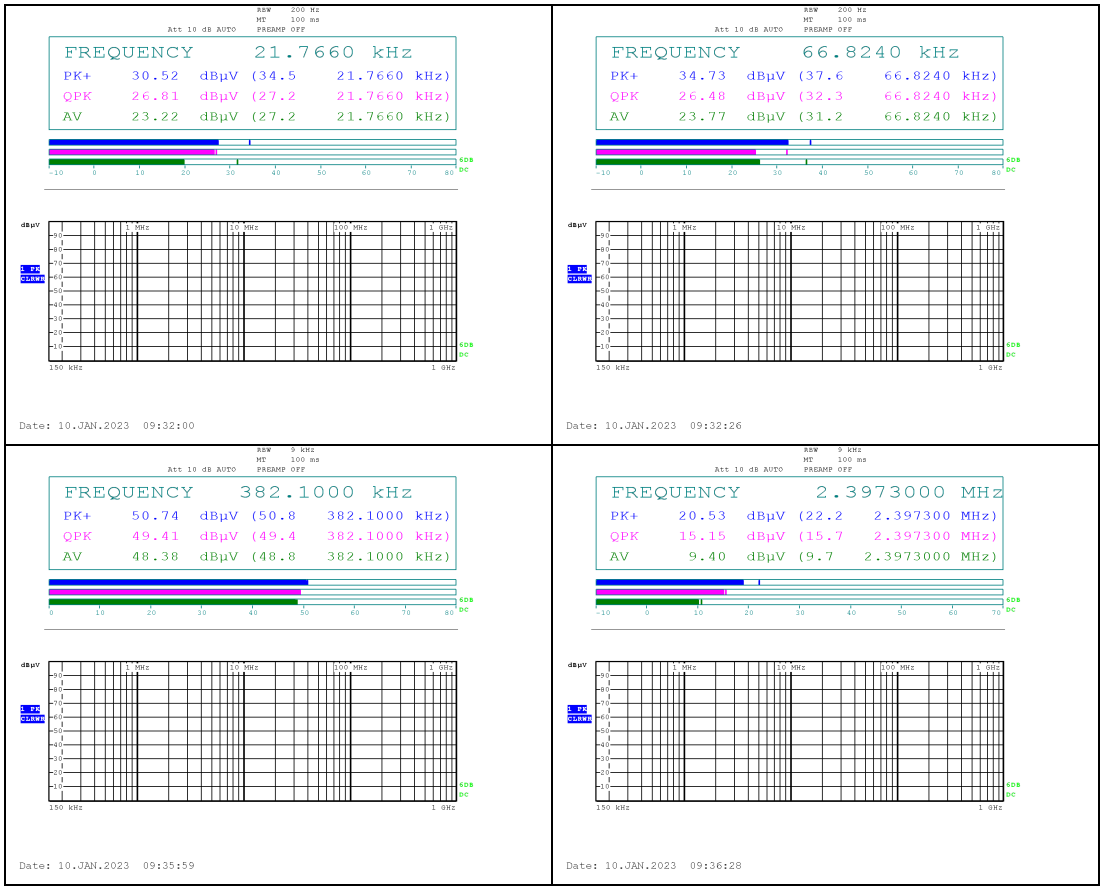
1. According to §15.31 (f)(2),
   - 300 m Result (dBμV/m) = 3 m Result (dBμV/m) - 40log (300/3) (dBμV/m)
   - 30 m Result (dBμV/m) = 3 m Result (dBμV/m) - 40log (30/3) (dBμV/m)
2. According to field strength table of general requirement in §15.209 (a), field strength limits below 1.705 ㎒ were calculated as below.
   - 9 ㎑ to 490 ㎑: 20log (2 400 / F (㎑)) at 300 m (dBμV/m)
   - 490 ㎑ to 1.705 ㎒: 20log (24 000 / F (㎑)) at 30 m (dBμV/m)
3. According to §15.209 (d), the measurements were tested by using Quasi peak detector except for the frequency bands 9-90 ㎑, 110-490 ㎑ and above 1 ㎓ in these three bands on measurements employing an average detector.
4. The limit above was calculated based on table of §15.209 (a).
5. Radiated spurious emission measurement as below 30 ㎒.
   (Actual (dBμA/m) at 3m = Reading (dBμV) + AF (dB/m) + CL (dB))
6. Radiated spurious emission measurement as above 30 ㎒.
   (Actual (dBμA/m) = Reading (dBμV) + AF (dB/m) + CL (dB) + AMP (dB))
7. According to §15.31(o), emission levels are not report much lower than the limits by over 20 dB.

- Test plots

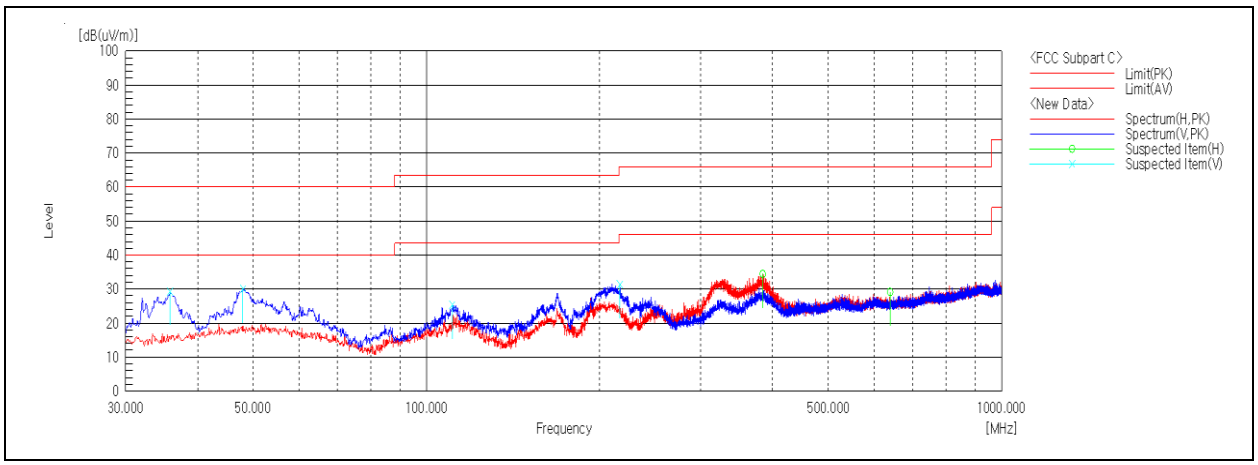
- Ant. 1 (124.7 ㎑ ~ 130.7 ㎑)

Test Condition: 5 W Operating mode with client device

Below 30 ㎒



Above 30 ㎒

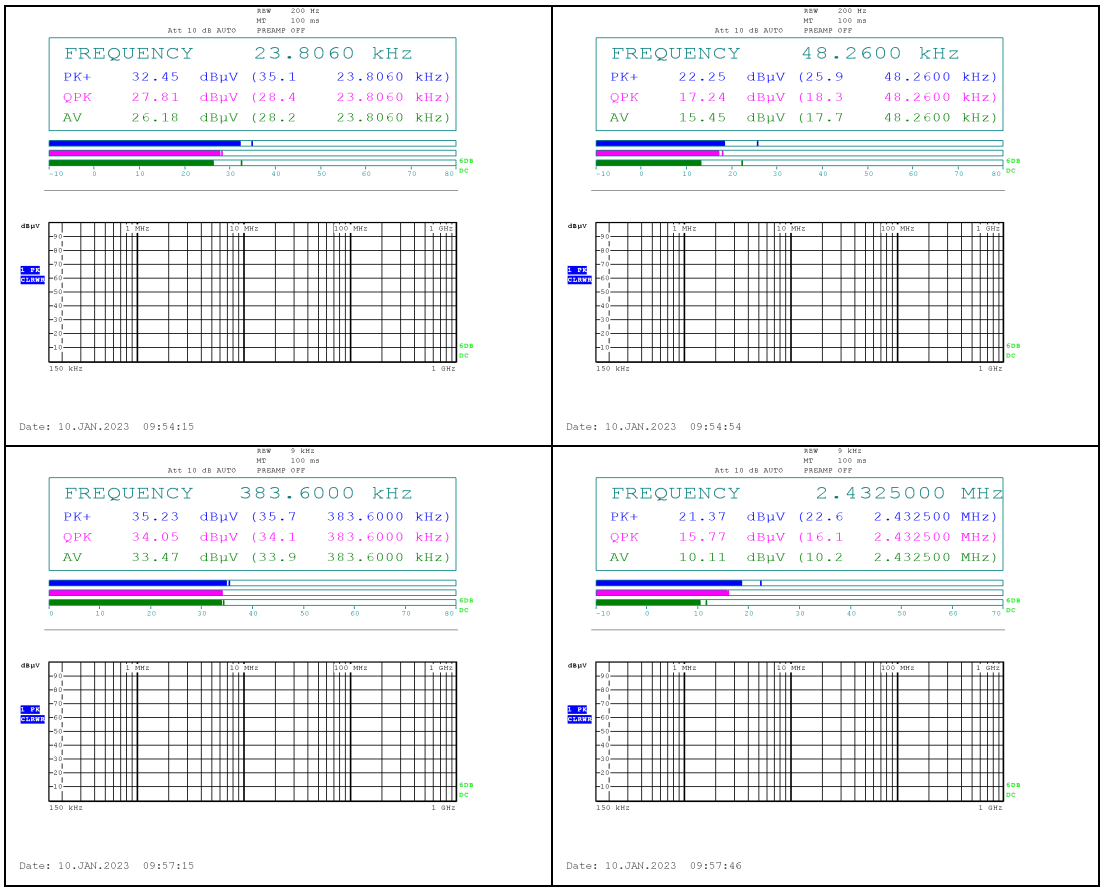


Remark;

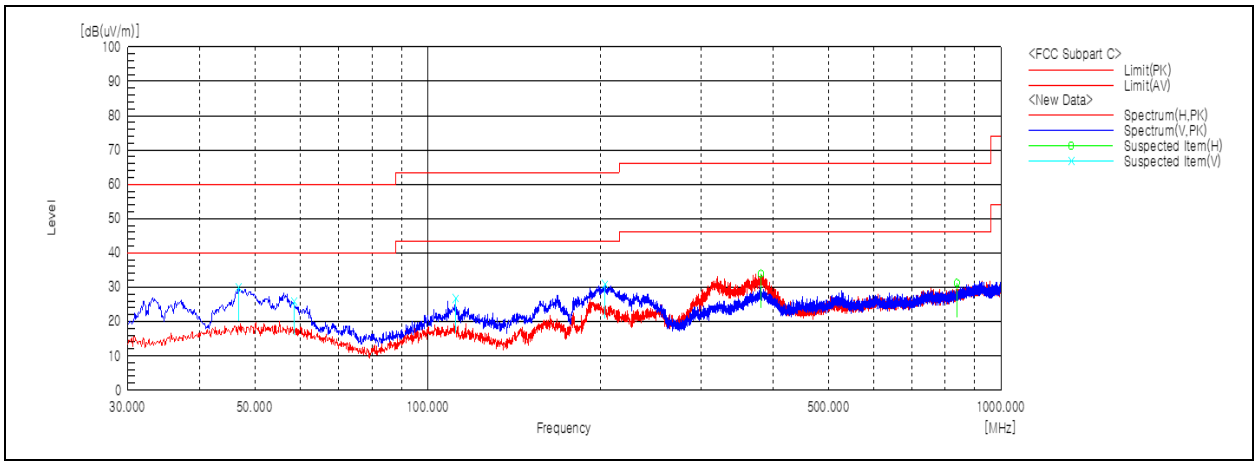
- Traces shown in the plot were made by using a peak detector.

Test Condition: 7.5 W Operating mode with client device

Below 30 ㎒



Above 30 ㎒

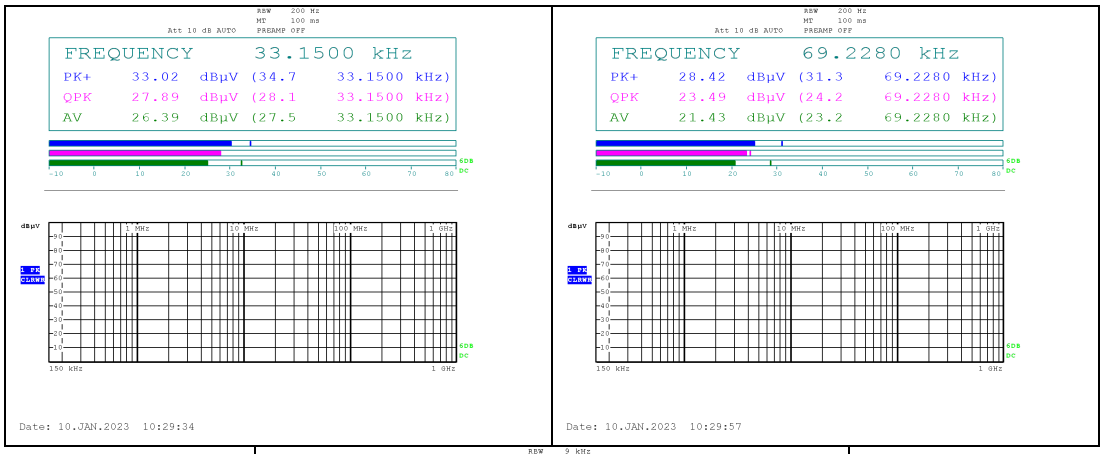


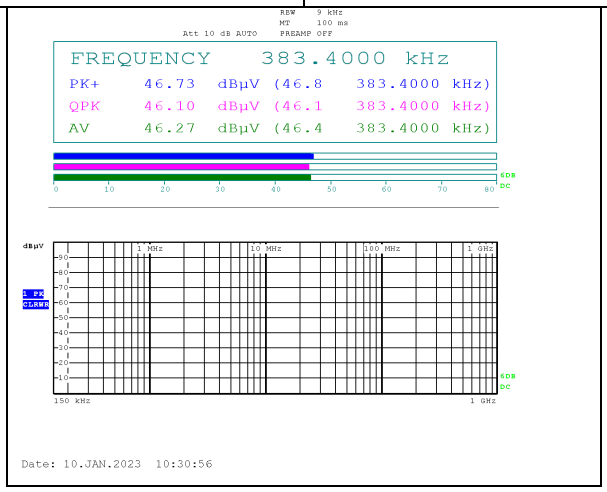
Remark;

- Traces shown in the plot were made by using a peak detector.

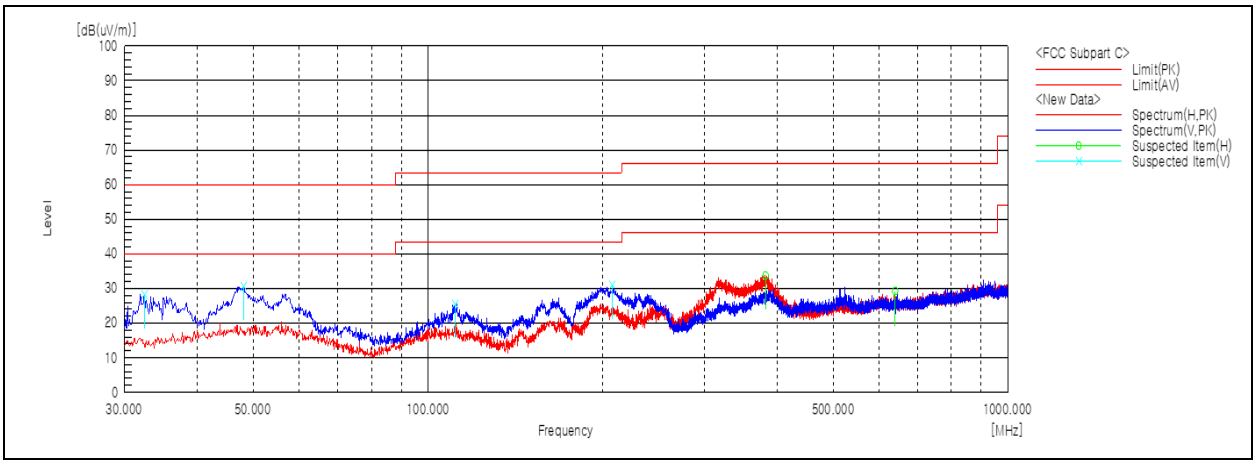
Test Condition: 10 W Operating mode with client device

Below 30 ㎒





Above 30 ㎒

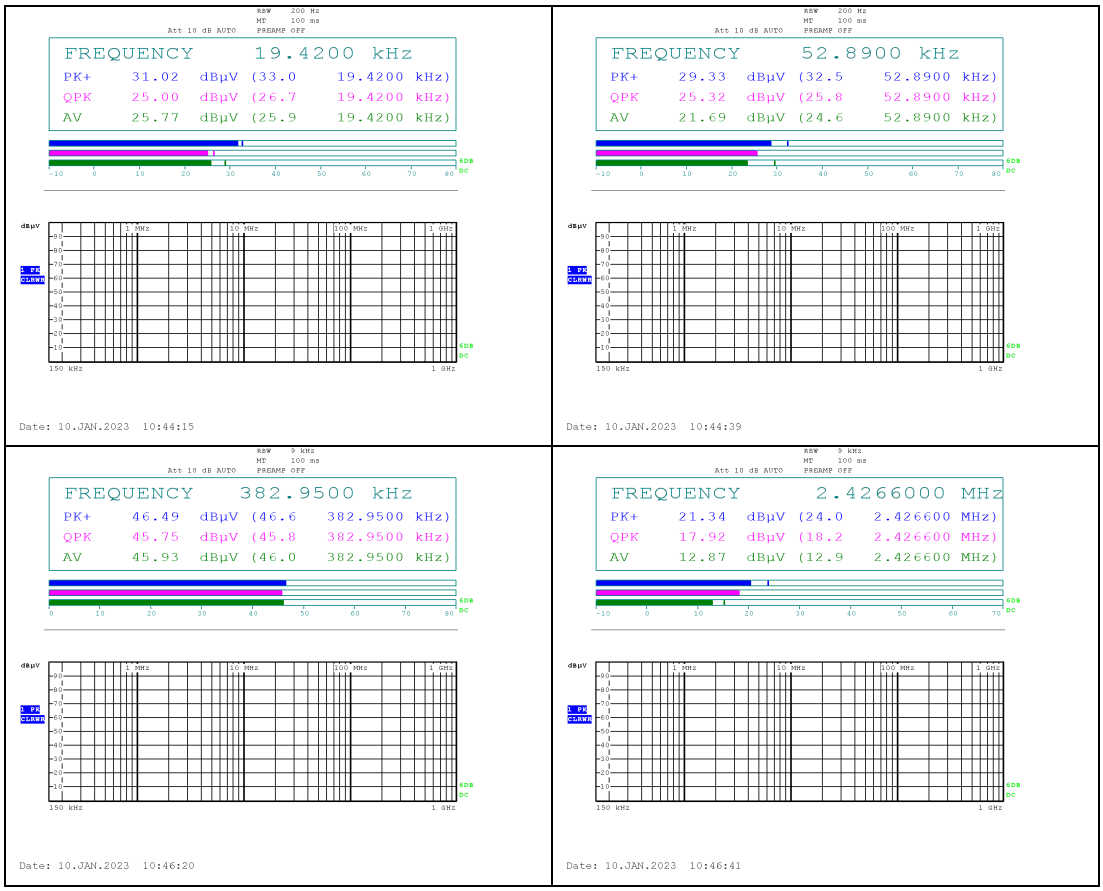


Remark;

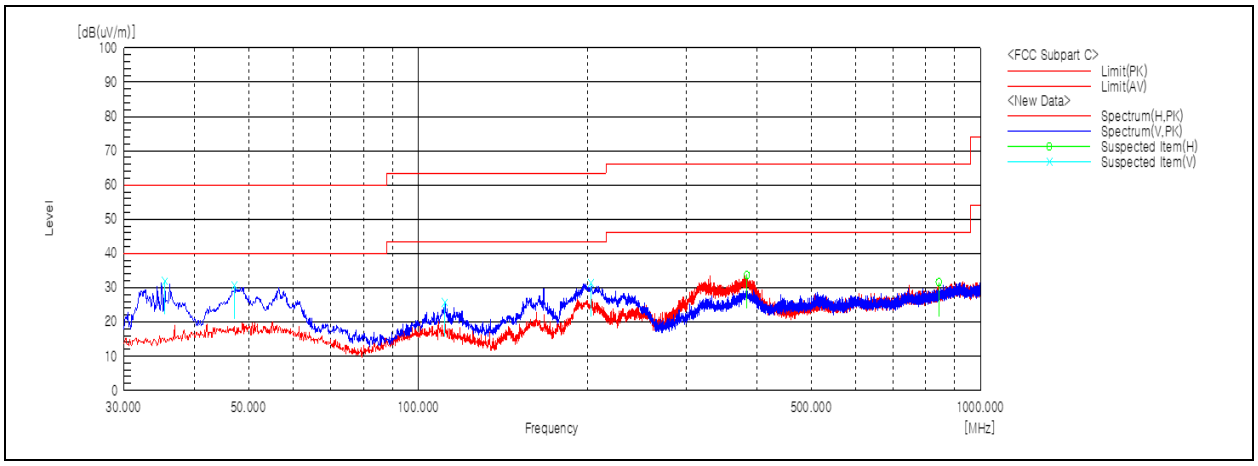
- Traces shown in the plot were made by using a peak detector.

Test Condition: 15 W Operating mode with client device

Below 30 ㎒



Above 30 ㎒

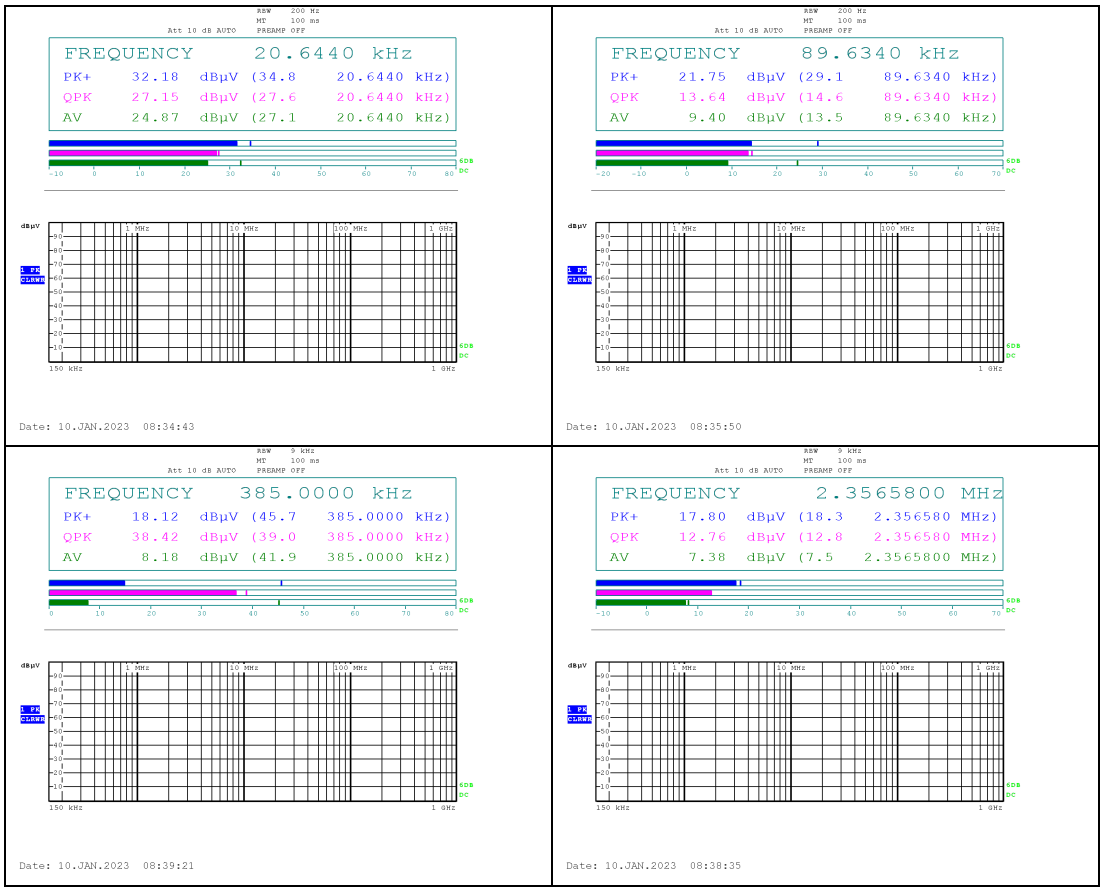


Remark;

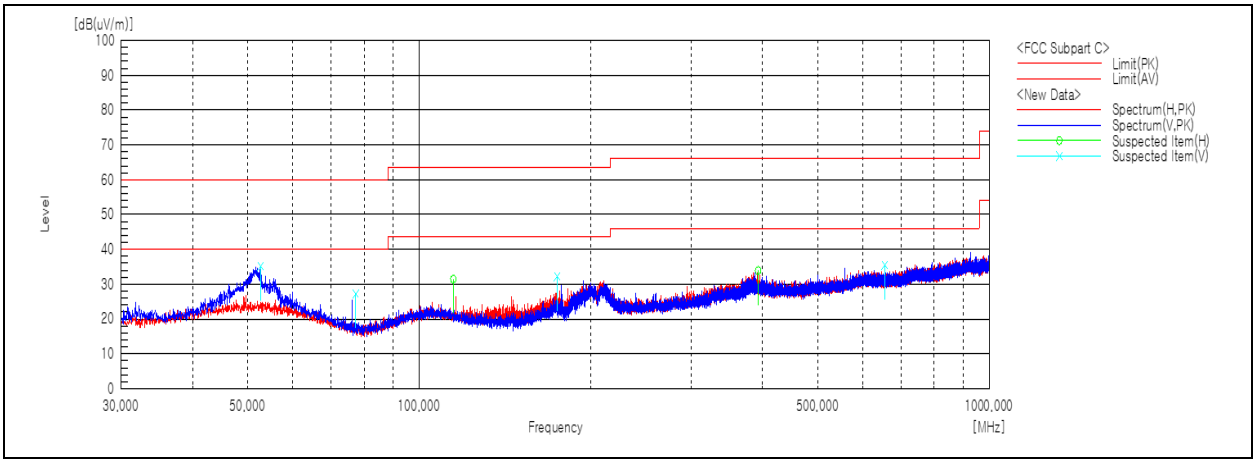
- Traces shown in the plot were made by using a peak detector.

Test Condition: Idle mode

Below 30 ㎒



Above 30 ㎒



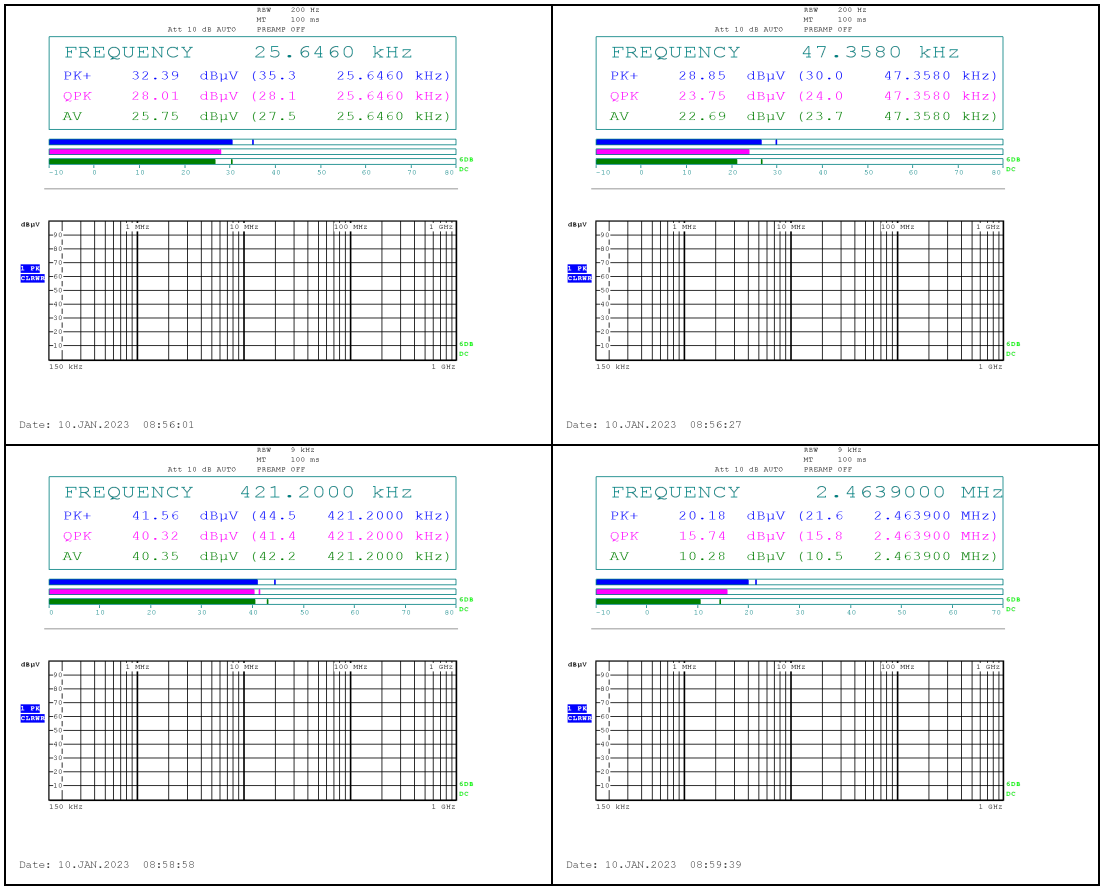
Remark;

- Traces shown in the plot were made by using a peak detector.

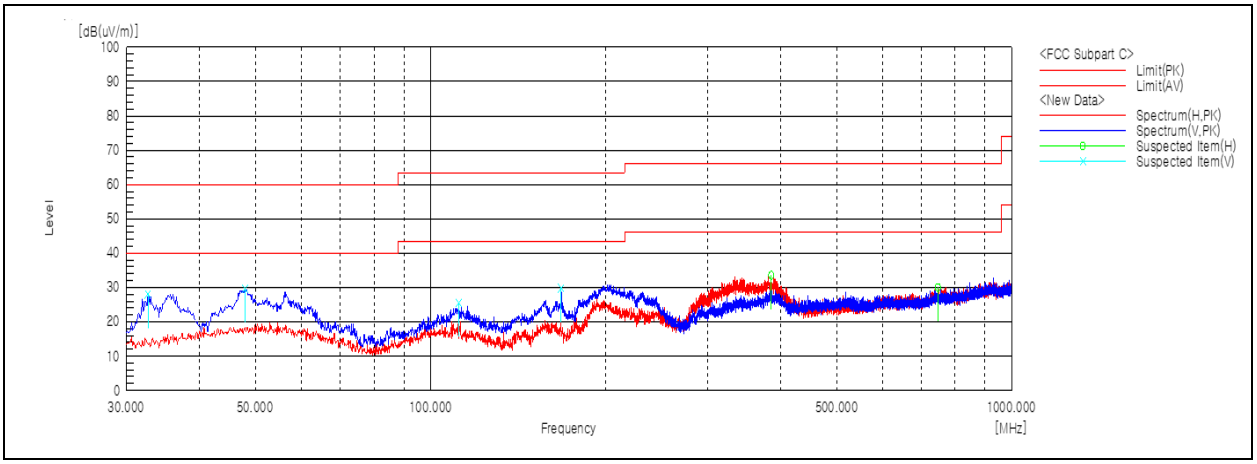
- **Ant. 2 (137.0 ㎑ ~ 143.0 ㎑)**

Test Condition: 5 W Operating mode with client device

Below 30 ㎒



Above 30 ㎒



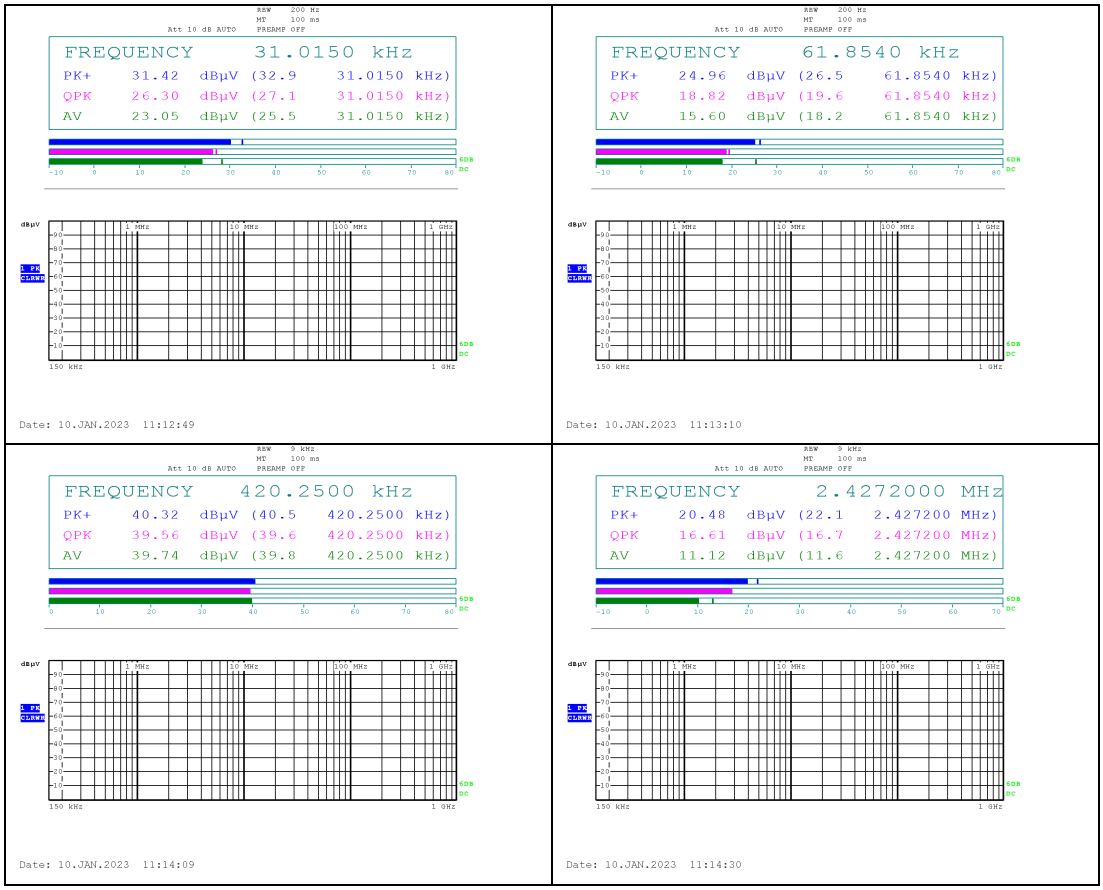
Remark;

- Traces shown in the plot were made by using a peak detector.

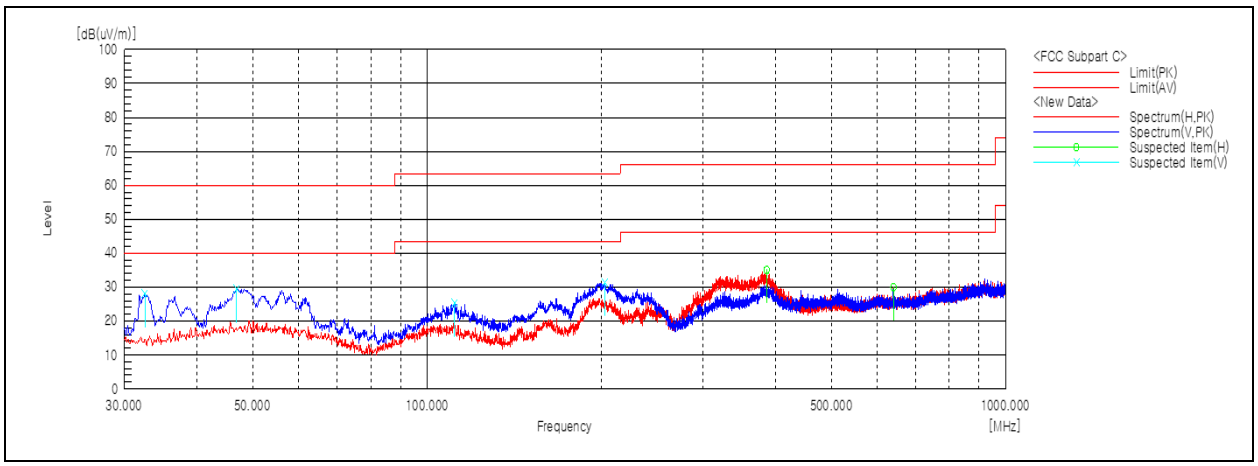
- Simultaneous operation of Ant. 1 (124.7 ㎑ ~ 130.7 ㎑) and Ant. 2 (137.0 ㎑ ~ 143.0 ㎑)

Test Condition: Ant. 1 (5 W) + Ant. 2 (5 W) Operating mode

Below 30 ㎒



Above 30 ㎒

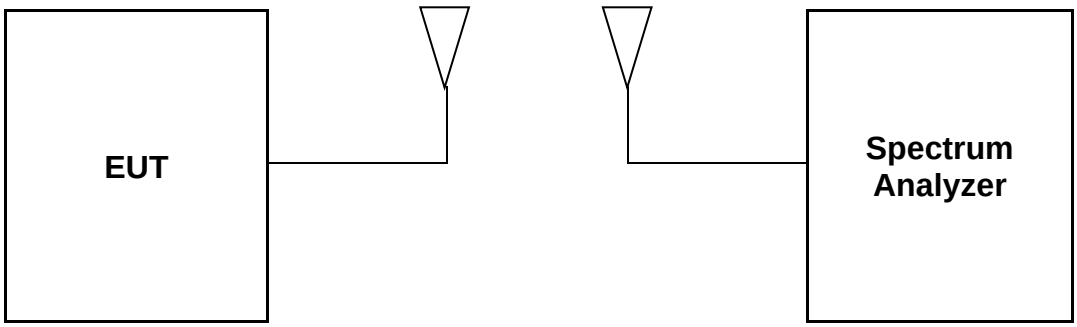


Remark;

- Traces shown in the plot were made by using a peak detector.

3. 20 ㏈ Bandwidth

3.1. Test Setup



3.2. Limit

None; for reporting purposed only

3.3. Test Procedure

a. Span = set to capture all products of the modulation process, including the emission skirts. RBW = 200 ㎐, VBW = 200 ㎐, Sweep = auto, Detector = peak, Trace = max hold.
b. The marker-to-peak function to set the mark to the peak of the emission. Use the marker-delta function to measure 20 ㏈ down one side of the emission. Reset the function, and move the marker to the other side of the emission, until it is (as close as possible to) even with the reference marker level. The marker-delta reading at this point is 20 ㏈ bandwidth of the emission.

3.4. Test Result

Ambient temperature : (23 ± 1) ℃
Relative humidity : 47 % R.H.

- Ant. 1 (124.7 ㎑ ~ 130.7 ㎑)

Antenna	Test Condition	Frequency (㎑)	EUT Status	20 ㏈ Bandwidth (㎑)	Limit
1	5 W	124.7 ~ 130.7	With client device (1 % battery status of client device)	0.528	Reporting proposed only
1	7.5 W	124.7 ~ 130.7		0.528	
1	10 W	124.7 ~ 130.7		0.528	
1	15 W	124.7 ~ 130.7		0.528	
1	Idle mode	124.7 ~ 130.7	Without client device	0.514	

- Ant. 2 (137.0 ㎑ ~ 143.0 ㎑)

Antenna	Test Condition	Frequency (㎑)	EUT Status	20 ㏈ Bandwidth (㎑)	Limit
2	5 W	137.0 ~ 143.0	With client device (1 % battery status of client device)	0.550	Reporting proposed only
2	Idle mode	137.0 ~ 143.0	Without client device	0.528	

- Simultaneous operation of Ant. 1 (124.7 ㎑ ~ 130.7 ㎑) and Ant. 2 (137.0 ㎑ ~ 143.0 ㎑)

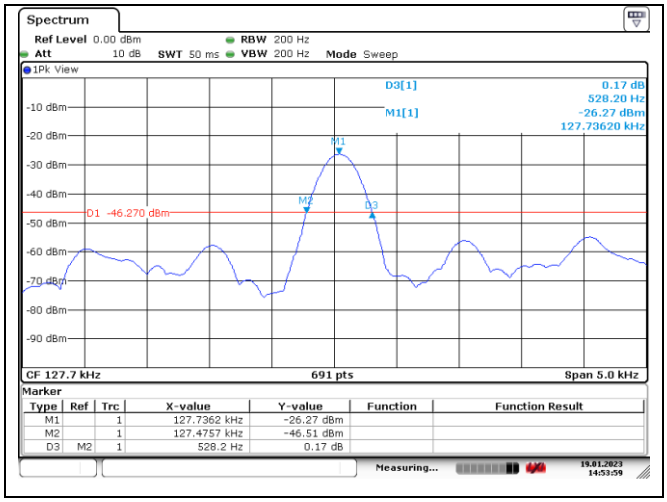
Test Condition: Ant. 1 (5 W) + Ant. 2 (5 W) Operating mode

Antenna	Frequency (㎑)	EUT Status	20 ㏈ Bandwidth (㎑)	Limit
1	124.7 ~ 130.7	With client device (1 % battery status of client device)	0.514	Reporting proposed only
2	137.0 ~ 143.0		0.550	

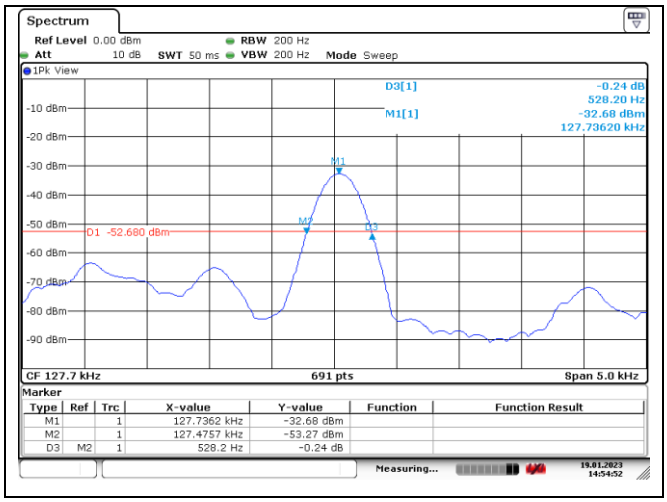
- Test plots

- Ant. 1 (124.7 ㎑ ~ 130.7 ㎑)

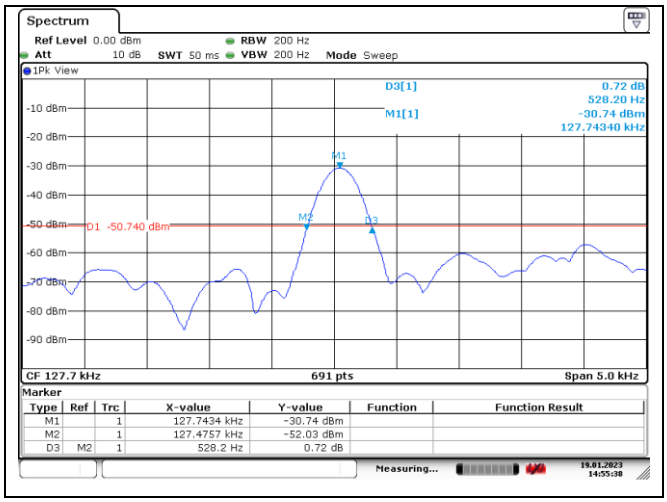
Test Condition: 5 W Operating mode with client device



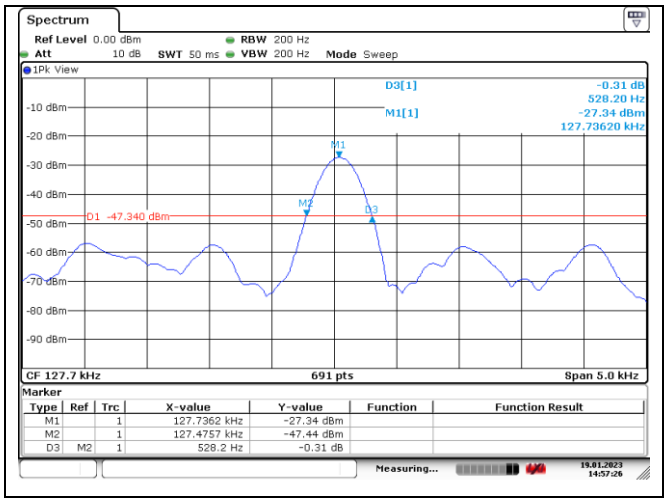
Test Condition: 7.5 W Operating mode with client device



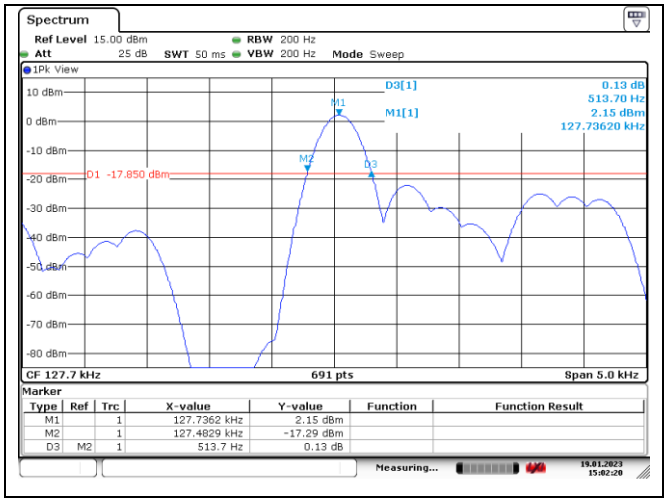
Test Condition: 10 W Operating mode with client device



Test Condition: 15 W Operating mode with client device

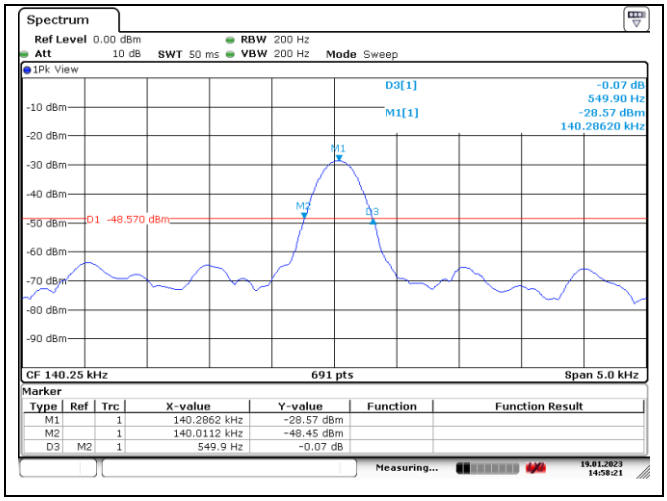


Test Condition: Idle mode

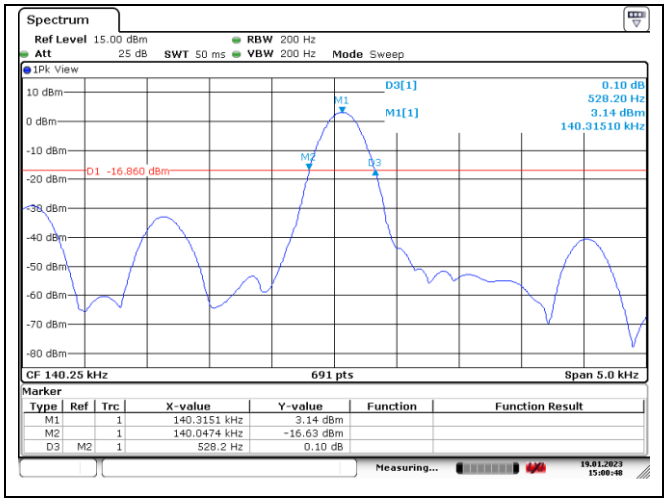


- Ant. 2 (137.0 ㎑ ~ 143.0 ㎑)

Test Condition: 5 W Operating mode with client device



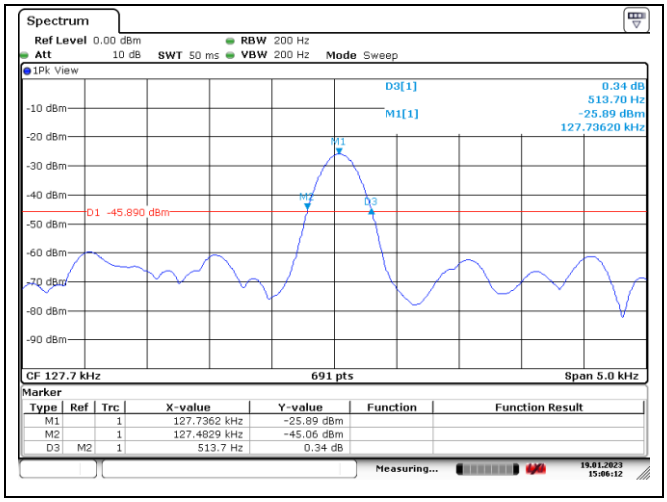
Test Condition: Idle mode



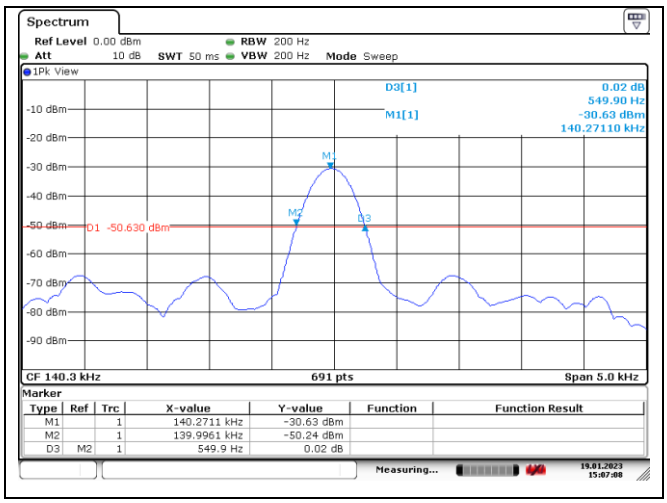
- Simultaneous operation of Ant. 1 (124.7 ㎑ ~ 130.7 ㎑) and Ant. 2 (137.0 ㎑ ~ 143.0 ㎑)

Test Condition: Ant. 1 (5 W) + Ant. 2 (5 W) Operating mode

- Ant. 1 (124.7 ㎑ ~ 130.7 ㎑)

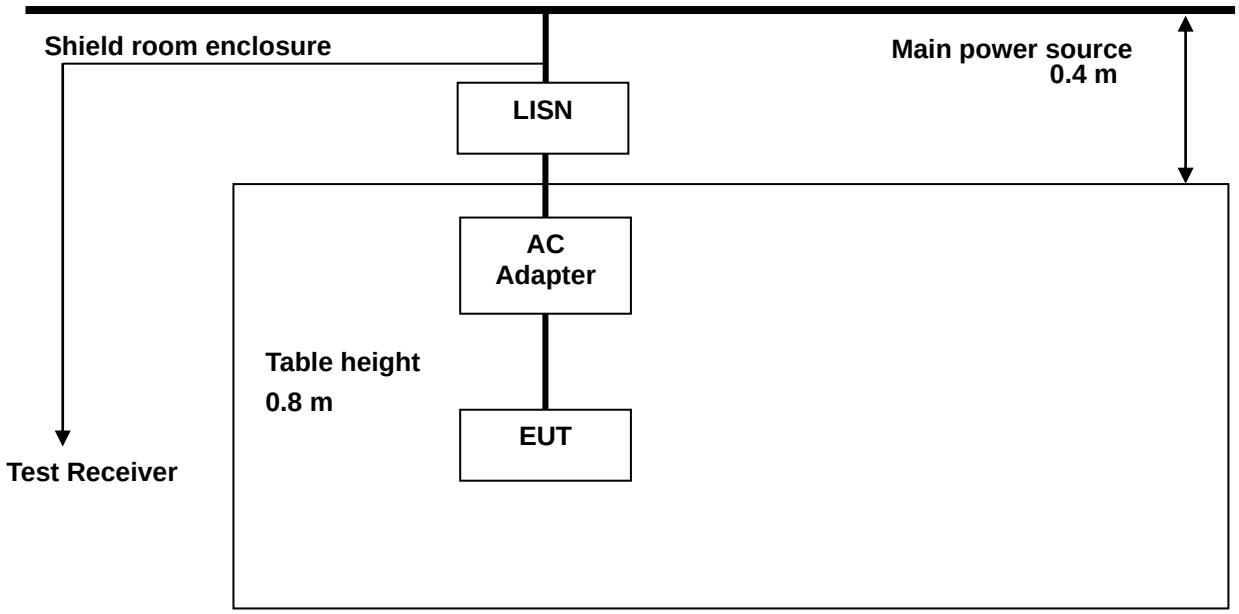


- Ant. 2 (137.0 ㎑ ~ 143.0 ㎑)



4. AC Power Line Conducted Emission

4.1. Test Setup



4.2. Limit

According to §15.207(a), for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 ㎑ to 30 ㎒, shall not exceed the limits in the following table, as measured using a 50 ㎛H /50 ohms line impedance stabilization network (LISN).
Compliance with the provision of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency of emission (㎒)	Conducted limit (㏈㎶)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

4.3. Test Procedures

AC conducted emissions from the EUT were measured according to the dictates of ANSI C63.10:2013

1. The test procedure is performed in a 6.5 m × 3.5 m × 3.5 m (L × W × H) shielded room. The EUT along with its peripherals were placed on a 1.0 m (W) × 1.5 m (L) and 0.8 m in height wooden table and the EUT was adjusted to maintain a 0.4 meter space from a vertical reference plane.
2. The EUT was connected to power mains through a line impedance stabilization network (LISN) which provides 50 ohm coupling impedance for measuring instrument and the chassis ground was bounded to the horizontal ground plane of shielded room.
3. All peripherals were connected to the second LISN and the chassis ground also bounded to the horizontal ground plane of shielded room.
4. The excess power cable between the EUT and the LISN was bundled. The power cables of peripherals were unbundled. All connecting cables of EUT and peripherals were moved to find the maximum emission.

4.4. Test Results

The following table shows the highest levels of conducted emissions on both phase of Hot and Neutral line.

Ambient temperature : (23 ± 1) ℃
Relative humidity : 47 % R.H.

Frequency range : 0.15 ㎒ - 30 ㎒
Measured Bandwidth : 9 ㎑

- Ant. 1 (124.7 ㎑ ~ 130.7 ㎑)

Test Condition: 5 W Operating mode with client device

FREQ.	LEVEL (dBμV)		LINE	LIMIT (dBμV)		MARGIN (dB)	
(㎒)	Q-Peak	Average		Q-Peak	Average	Q-Peak	Average
0.17	44.60	33.80	N	65.16	55.16	20.56	21.36
0.49	40.10	33.20	N	56.17	46.17	16.07	12.97
0.92	29.00	22.10	N	56.00	46.00	27.00	23.90
1.92	30.40	24.30	N	56.00	46.00	25.60	21.70
4.08	29.20	23.20	N	56.00	46.00	26.80	22.80
19.87	27.30	18.90	N	60.00	50.00	32.70	31.10
0.20	41.80	30.80	H	63.69	53.69	21.89	22.89
0.48	43.30	30.90	H	56.30	46.30	13.00	15.40
1.28	34.10	25.30	H	56.00	46.00	21.90	20.70
2.56	34.50	26.40	H	56.00	46.00	21.50	19.60
4.60	34.50	26.50	H	56.00	46.00	21.50	19.50
20.37	29.50	21.00	H	60.00	50.00	30.50	29.00

Remark;

1. Line (H): Hot, Line (N): Neutral
2. Each charging mode with client device (1 %, 50 % and 99 % of battery) was tested.
   As worst condition, charging mode with client device (1 %) is reported.
3. The limit for Class B device(s) from 150 ㎑ to 30 ㎒ are specified in section of the Title 47 CFR.
4. Traces shown in plot were made by using a quasi-peak detector and average detector.
5. Deviations to the Specifications: None.

Test Condition: 7.5 W Operating mode with client device

FREQ.	LEVEL (dBμV)		LINE	LIMIT (dBμV)		MARGIN (dB)	
(MHz)	Q-Peak	Average		Q-Peak	Average	Q-Peak	Average
0.21	39.00	26.80	N	63.37	53.37	24.37	26.57
0.47	38.40	29.90	N	56.51	46.51	18.11	16.61
1.40	30.10	22.80	N	56.00	46.00	25.90	23.20
2.69	29.00	22.80	N	56.00	46.00	27.00	23.20
6.51	29.00	23.10	N	60.00	50.00	31.00	26.90
19.42	25.90	19.10	N	60.00	50.00	34.10	30.90
0.18	40.40	27.00	H	64.39	54.39	23.99	27.39
0.48	42.20	27.60	H	56.37	46.37	14.17	18.77
1.28	29.80	19.20	H	56.00	46.00	26.20	26.80
2.17	34.50	25.90	H	56.00	46.00	21.50	20.10
6.64	33.70	25.60	H	60.00	50.00	26.30	24.40
20.69	27.80	21.30	H	60.00	50.00	32.20	28.70

Remark;

1. Line (H): Hot, Line (N): Neutral
2. Each charging mode with client device (1 %, 50 % and 99 % of battery) was tested.
   As worst condition, charging mode with client device (1 %) is reported.
3. The limit for Class B device(s) from 150 ㎑ to 30 ㎒ are specified in section of the Title 47 CFR.
4. Traces shown in plot were made by using a quasi-peak detector and average detector.
5. Deviations to the Specifications: None.

Test Condition: 10 W Operating mode with client device

FREQ.	LEVEL (dBμV)		LINE	LIMIT (dBμV)		MARGIN (dB)	
(MHz)	Q-Peak	Average		Q-Peak	Average	Q-Peak	Average
0.19	44.10	31.00	N	64.21	54.21	20.11	23.21
0.47	39.50	29.70	N	56.44	46.44	16.94	16.74
0.85	30.60	23.50	N	56.00	46.00	25.40	22.50
2.29	34.00	27.80	N	56.00	46.00	22.00	18.20
6.63	31.60	25.40	N	60.00	50.00	28.40	24.60
20.46	27.60	19.30	N	60.00	50.00	32.40	30.70
0.18	42.90	28.20	H	64.58	54.58	21.68	26.38
0.49	40.40	26.00	H	56.10	46.10	15.70	20.10
1.41	26.40	14.50	H	56.00	46.00	29.60	31.50
2.94	31.90	19.70	H	56.00	46.00	24.10	26.30
4.73	32.00	20.90	H	56.00	46.00	24.00	25.10
10.35	29.40	18.10	H	60.00	50.00	30.60	31.90

Remark;

1. Line (H): Hot, Line (N): Neutral
2. Each charging mode with client device (1 %, 50 % and 99 % of battery) was tested.
   As worst condition, charging mode with client device (1 %) is reported.
3. The limit for Class B device(s) from 150 ㎑ to 30 ㎒ are specified in section of the Title 47 CFR.
4. Traces shown in plot were made by using a quasi-peak detector and average detector.
5. Deviations to the Specifications: None.

Test Condition: 15 W Operating mode with client device

FREQ.	LEVEL (dBμV)		LINE	LIMIT (dBμV)		MARGIN (dB)	
(MHz)	Q-Peak	Average		Q-Peak	Average	Q-Peak	Average
0.18	44.60	30.20	N	64.39	54.39	19.79	24.19
0.48	40.40	31.50	N	56.30	46.30	15.90	14.80
1.53	31.20	25.00	N	56.00	46.00	24.80	21.00
3.32	33.20	27.20	N	56.00	46.00	22.80	18.80
7.15	32.50	26.40	N	60.00	50.00	27.50	23.60
19.67	32.10	24.00	N	60.00	50.00	27.90	26.00
0.17	44.10	30.30	H	64.77	54.77	20.67	24.47
0.47	41.70	24.90	H	56.44	46.44	14.74	21.54
1.53	35.00	26.00	H	56.00	46.00	21.00	20.00
2.55	38.00	30.70	H	56.00	46.00	18.00	15.30
6.90	38.10	30.50	H	60.00	50.00	21.90	19.50
20.44	34.20	26.30	H	60.00	50.00	25.80	23.70

Remark;

1. Line (H): Hot, Line (N): Neutral
2. Each charging mode with client device (1 %, 50 % and 99 % of battery) was tested.
   As worst condition, charging mode with client device (1 %) is reported.
3. The limit for Class B device(s) from 150 ㎑ to 30 ㎒ are specified in section of the Title 47 CFR.
4. Traces shown in plot were made by using a quasi-peak detector and average detector.
5. Deviations to the Specifications: None.

Test Condition: Idle mode

FREQ.	LEVEL (dBμV)		LINE	LIMIT (dBμV)		MARGIN (dB)	
(MHz)	Q-Peak	Average		Q-Peak	Average	Q-Peak	Average
0.16	39.10	28.30	N	65.36	55.36	26.26	27.06
0.48	38.60	31.00	N	56.30	46.30	17.70	15.30
1.39	28.80	22.20	N	56.00	46.00	27.20	23.80
2.08	26.40	16.20	N	56.00	46.00	29.60	29.80
5.64	17.50	11.70	N	60.00	50.00	42.50	38.30
16.05	16.10	10.70	N	60.00	50.00	43.90	39.30
0.19	32.70	23.80	H	64.04	54.04	31.34	30.24
0.48	42.70	30.20	H	56.37	46.37	13.67	16.17
1.15	28.70	13.00	H	56.00	46.00	27.30	33.00
2.49	30.40	17.90	H	56.00	46.00	25.60	28.10
8.95	23.00	13.30	H	60.00	50.00	37.00	36.70
21.72	17.90	14.70	H	60.00	50.00	42.10	35.30

Remark;

1. Line (H): Hot, Line (N): Neutral
2. The limit for Class B device(s) from 150 ㎑ to 30 ㎒ are specified in section of the Title 47 CFR.
3. Traces shown in plot were made by using a quasi-peak detector and average detector.
4. Deviations to the Specifications: None.

- Ant. 2 (137.0 ㎑ ~ 143.0 ㎑)

Test Condition: 5 W Operating mode with client device

FREQ.	LEVEL (dB㎶)		LINE	LIMIT (dB㎶)		MARGIN (dB)	
(㎒)	Q-Peak	Average		Q-Peak	Average	Q-Peak	Average
0.23	47.10	40.10	N	62.45	52.45	15.35	12.35
0.50	44.00	33.90	N	56.00	46.00	12.00	12.10
1.51	32.20	24.60	N	56.00	46.00	23.80	21.40
3.62	34.10	28.80	N	56.00	46.00	21.90	17.20
6.21	44.80	38.40	N	60.00	50.00	15.20	11.60
20.06	28.00	19.90	N	60.00	50.00	32.00	30.10
0.17	40.90	31.40	H	64.96	54.96	24.06	23.56
0.49	41.10	26.90	H	56.10	46.10	15.00	19.20
1.40	34.00	24.40	H	56.00	46.00	22.00	21.60
4.21	34.60	27.10	H	56.00	46.00	21.40	18.90
10.24	31.10	21.30	H	60.00	50.00	28.90	28.70
19.91	30.50	23.10	H	60.00	50.00	29.50	26.90

Remark;

1. Line (H): Hot, Line (N): Neutral
2. Each charging mode with client device (1 %, 50 % and 99 % of battery) was tested.
   As worst condition, charging mode with client device (1 %) is reported.
3. The limit for Class B device(s) from 150 ㎑ to 30 ㎒ are specified in section of the Title 47 CFR.
4. Traces shown in plot were made by using a quasi-peak detector and average detector.
5. Deviations to the Specifications: None.

- Simultaneous operation of Ant. 1 (124.7 ㎑ ~ 130.7 ㎑) and Ant. 2 (137.0 ㎑ ~ 143.0 ㎑)

Test Condition: Ant. 1 (5 W) + Ant. 2 (5 W) Operating mode

FREQ.	LEVEL (dB㎶)		LINE	LIMIT (dB㎶)		MARGIN (dB)	
(㎒)	Q-Peak	Average		Q-Peak	Average	Q-Peak	Average
0.17	51.80	38.20	N	65.16	55.16	13.36	16.96
0.53	38.90	28.40	N	56.00	46.00	17.10	17.60
1.57	30.60	22.80	N	56.00	46.00	25.40	23.20
3.32	32.20	25.70	N	56.00	46.00	23.80	20.30
11.50	28.50	21.40	N	60.00	50.00	31.50	28.60
20.14	31.40	21.90	N	60.00	50.00	28.60	28.10
0.16	48.30	35.50	H	65.36	55.36	17.06	19.86
0.48	42.50	26.30	H	56.37	46.37	13.87	20.07
1.53	34.90	24.80	H	56.00	46.00	21.10	21.20
3.19	34.40	24.40	H	56.00	46.00	21.60	21.60
7.15	35.40	26.00	H	60.00	50.00	24.60	24.00
19.67	32.80	24.10	H	60.00	50.00	27.20	25.90

Remark;

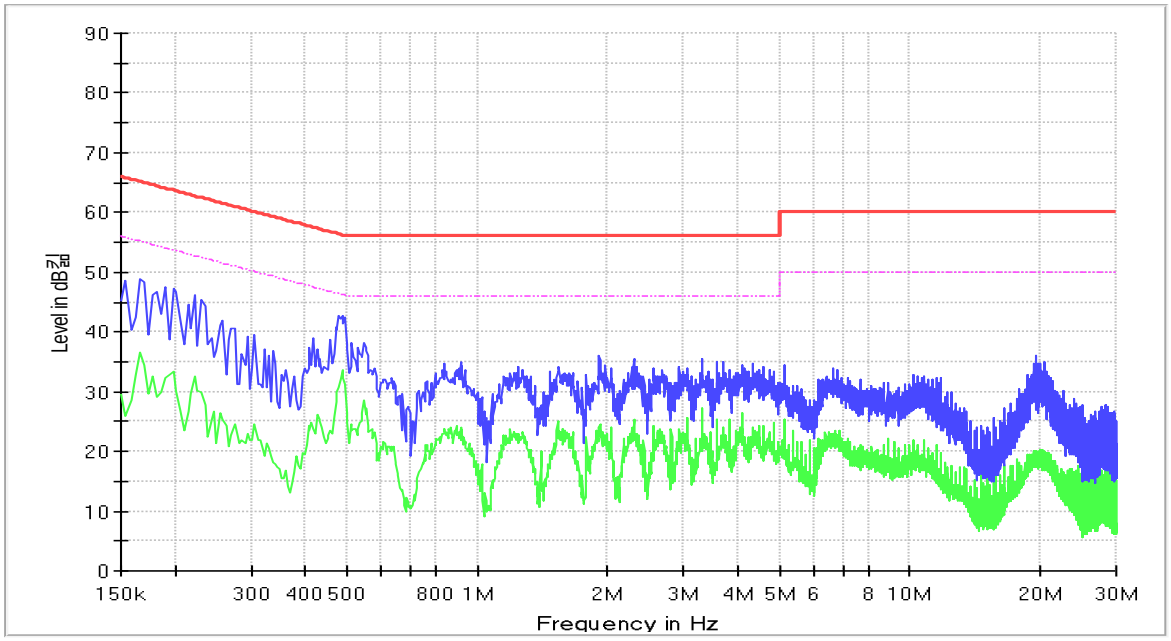
1. Line (H): Hot, Line (N): Neutral
2. The limit for Class B device(s) from 150 ㎑ to 30 ㎒ are specified in section of the Title 47 CFR.
3. Traces shown in plot were made by using a quasi-peak detector and average detector.
4. Deviations to the Specifications: None.

- Test plots

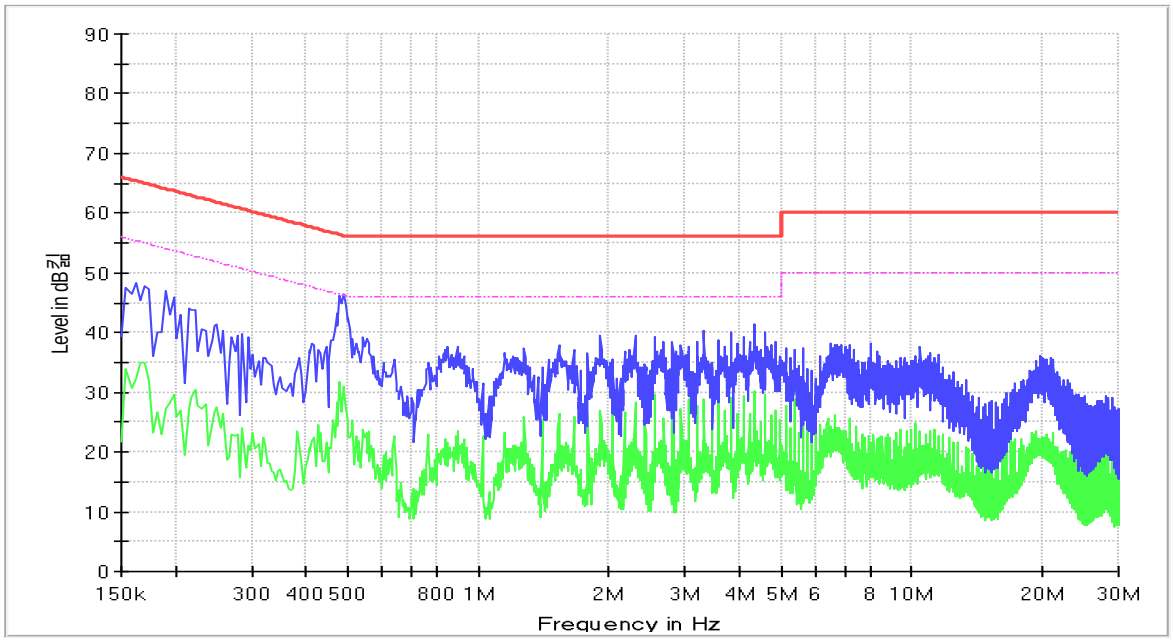
- Ant. 1 (124.7 ㎑ ~ 130.7 ㎑)

Test Condition: 5 W Operating mode with client device

Test mode: (Neutral)

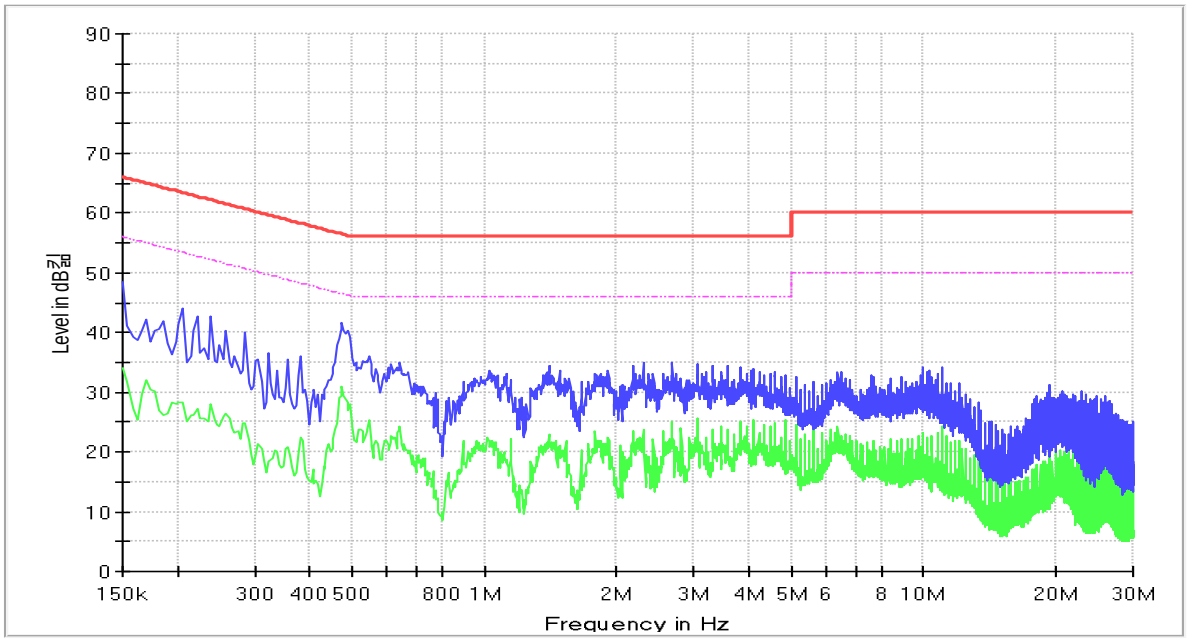


Test mode: (Hot)

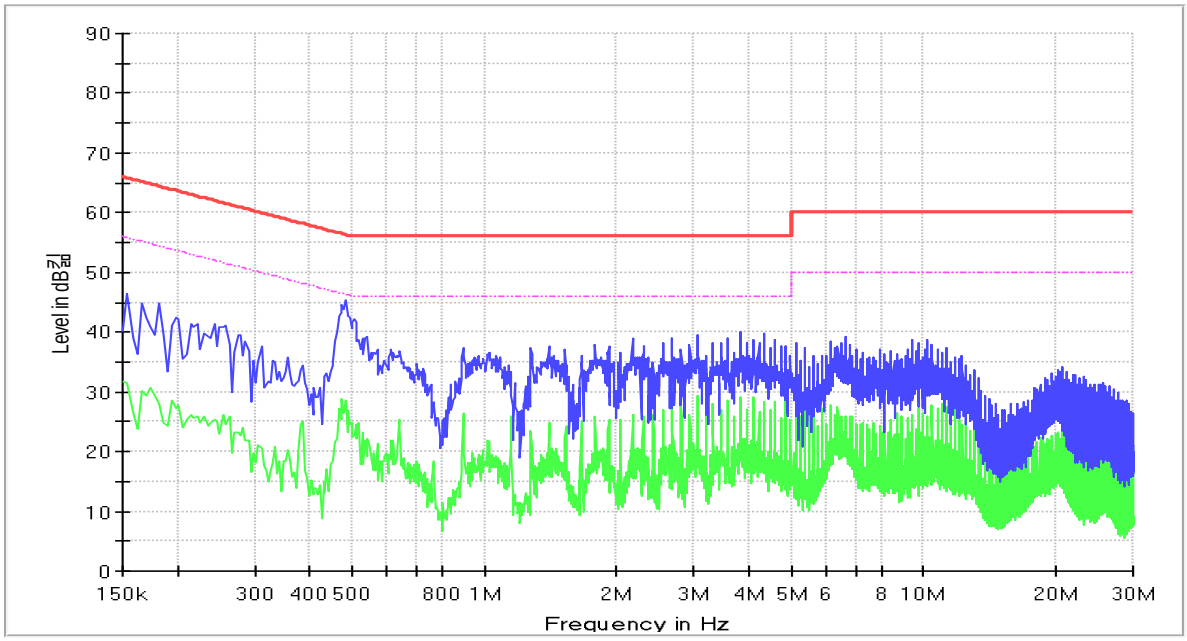


Test Condition: 7.5 W Operating mode with client device

Test mode: (Neutral)

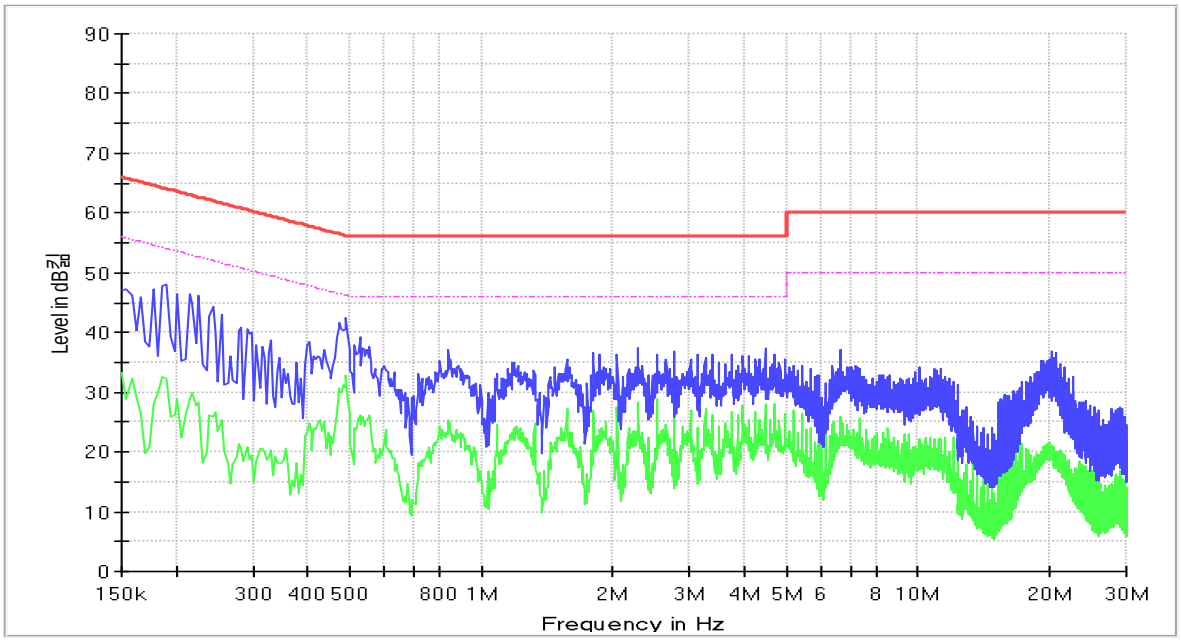


Test mode: (Hot)

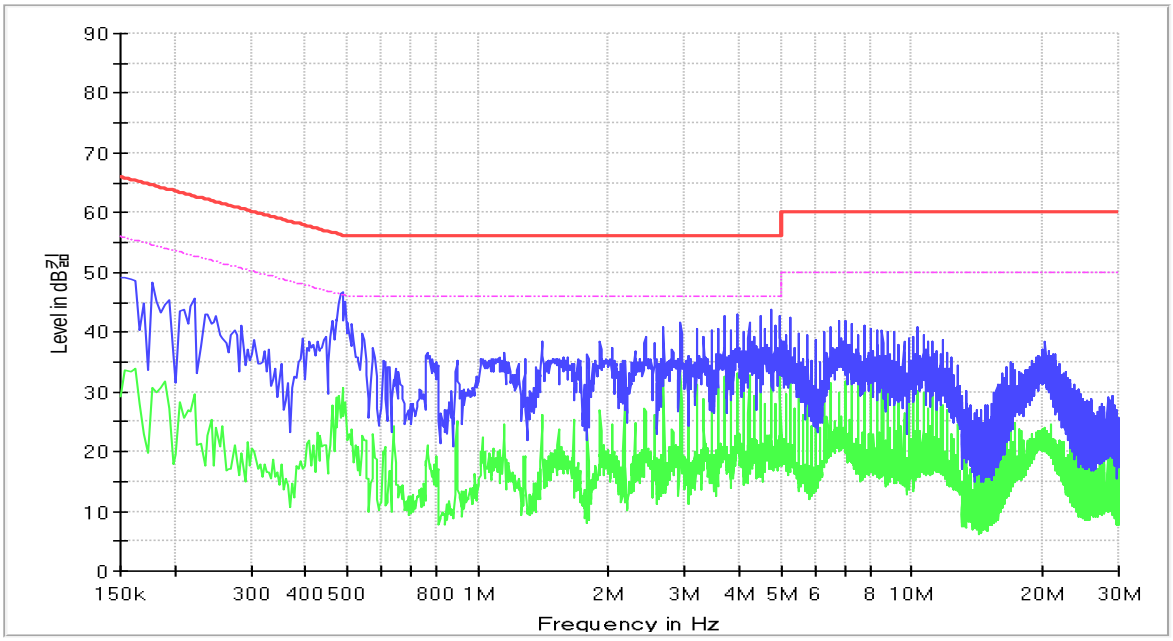


Test Condition: 10 W Operating mode with client device

Test mode: (Neutral)

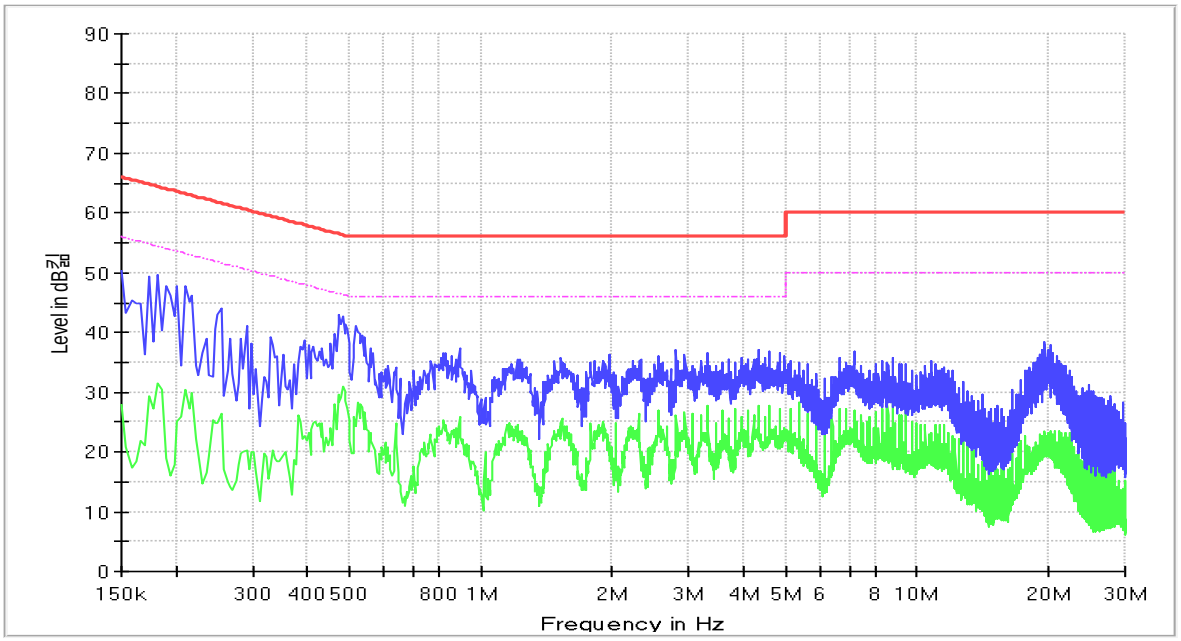


Test mode: (Hot)

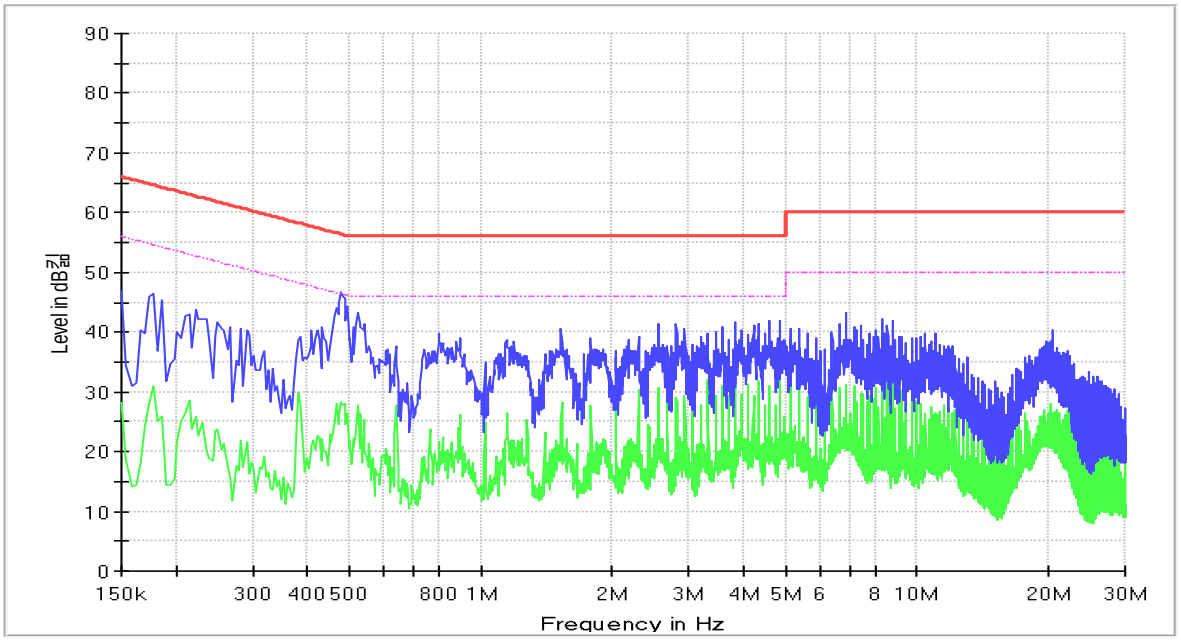


Test Condition: 15 W Operating mode with client device

Test mode: (Neutral)

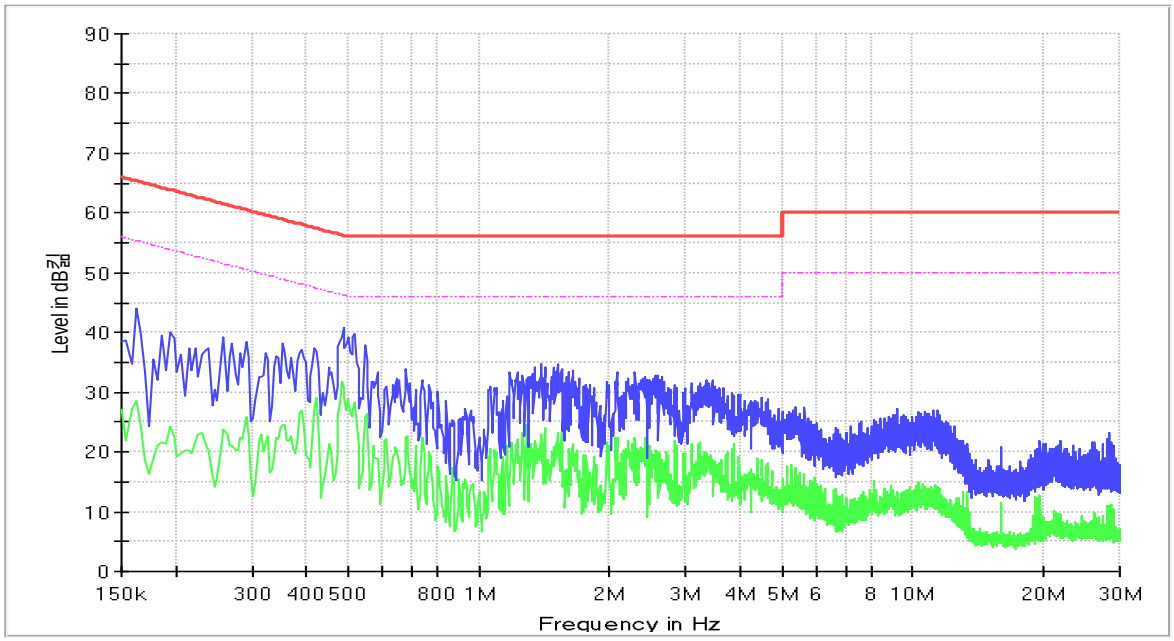


Test mode: (Hot)

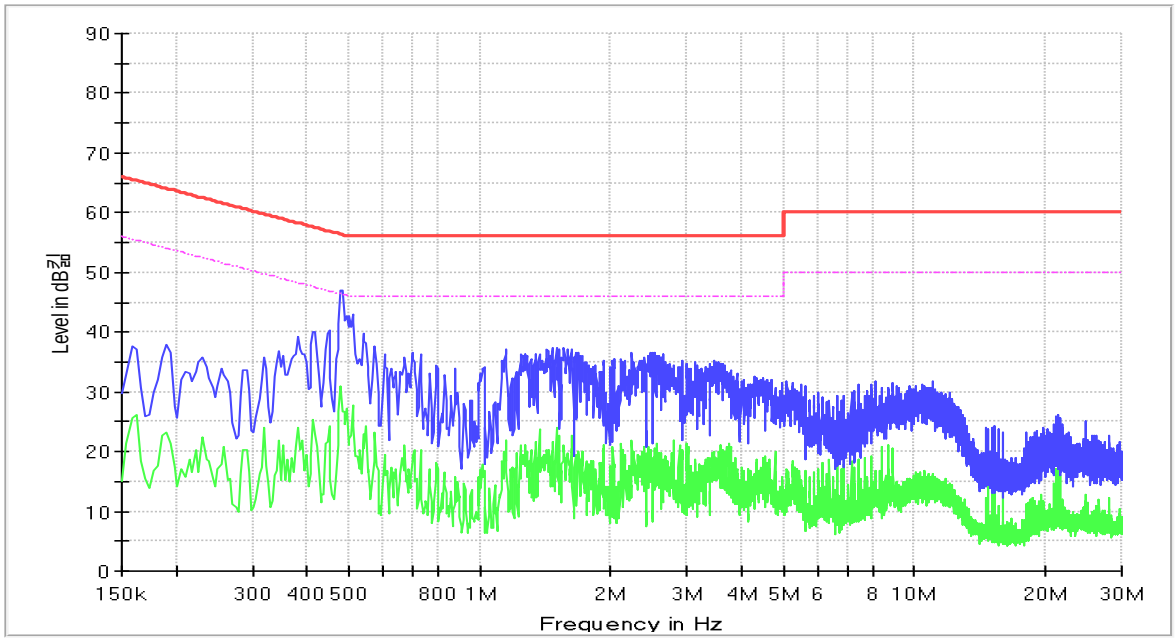


Test Condition: Idle mode

Test mode: (Neutral)



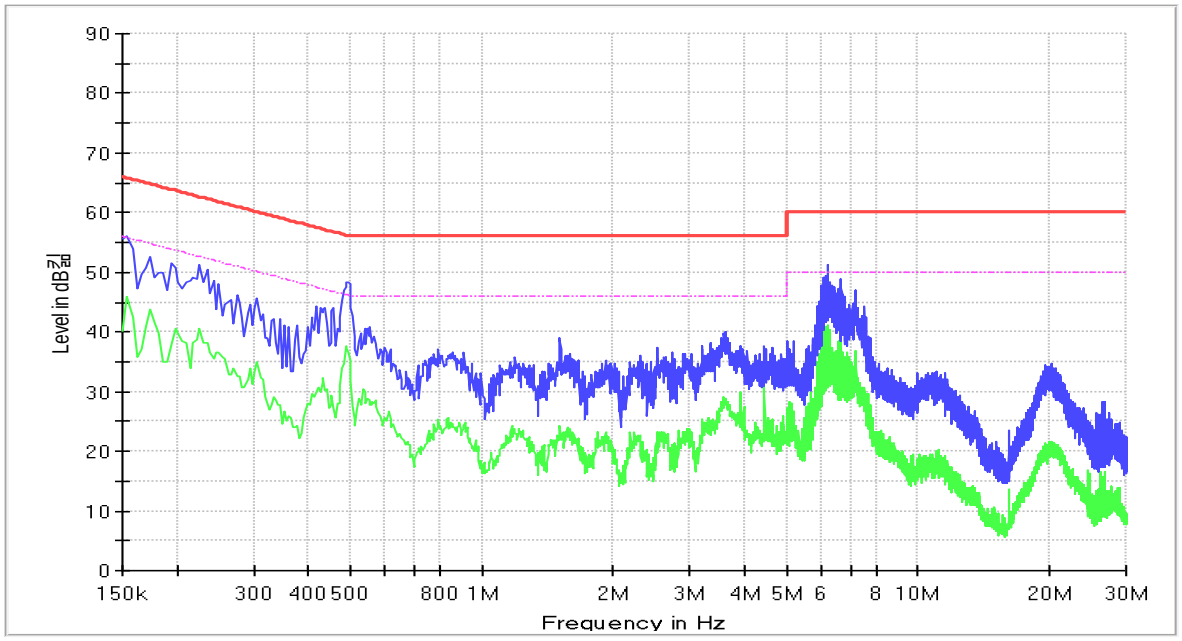
Test mode: (Hot)



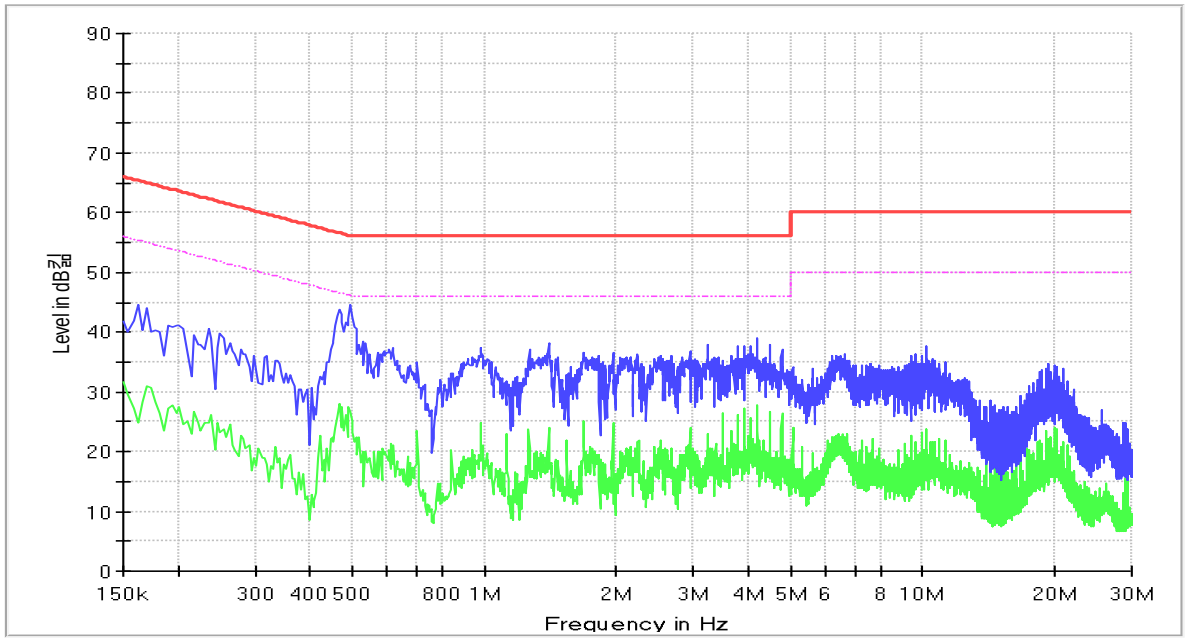
- Ant. 2 (137.0 ㎑ ~ 143.0 ㎑)

Test Condition: 5 W Operating mode with client device

Test mode: (Neutral)



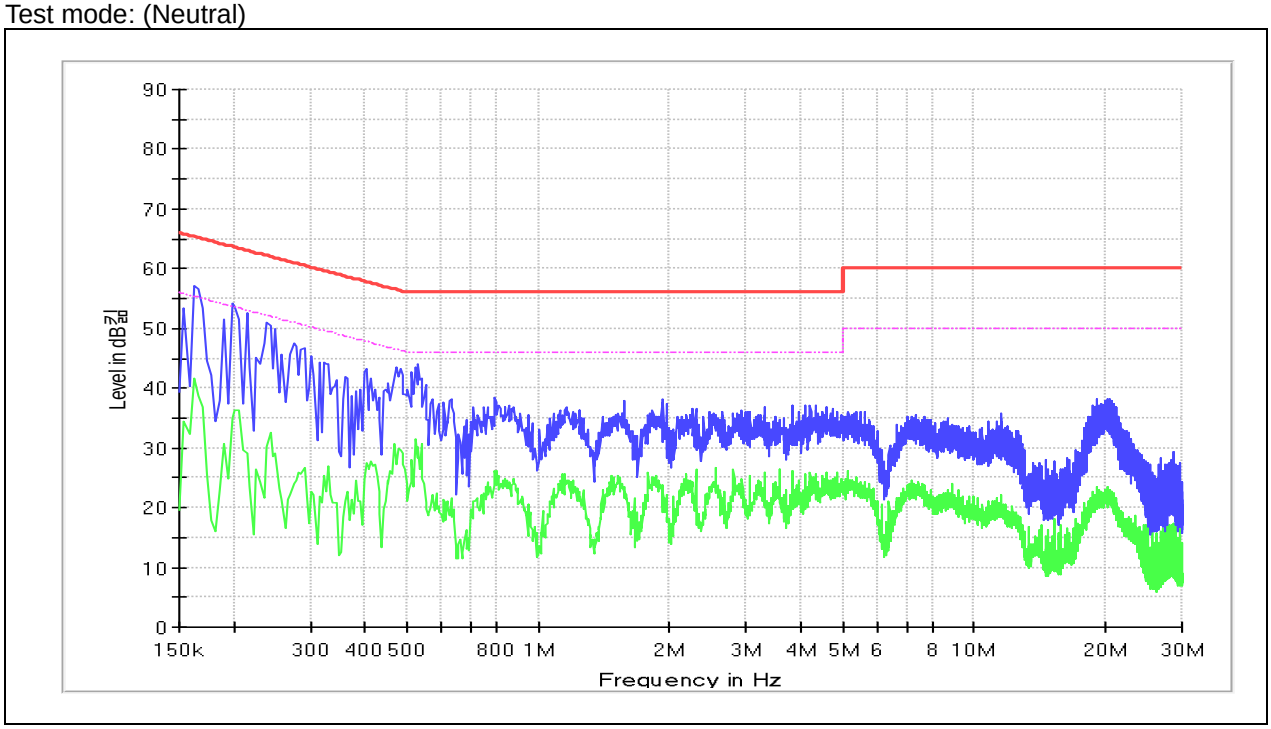
Test mode: (Hot)



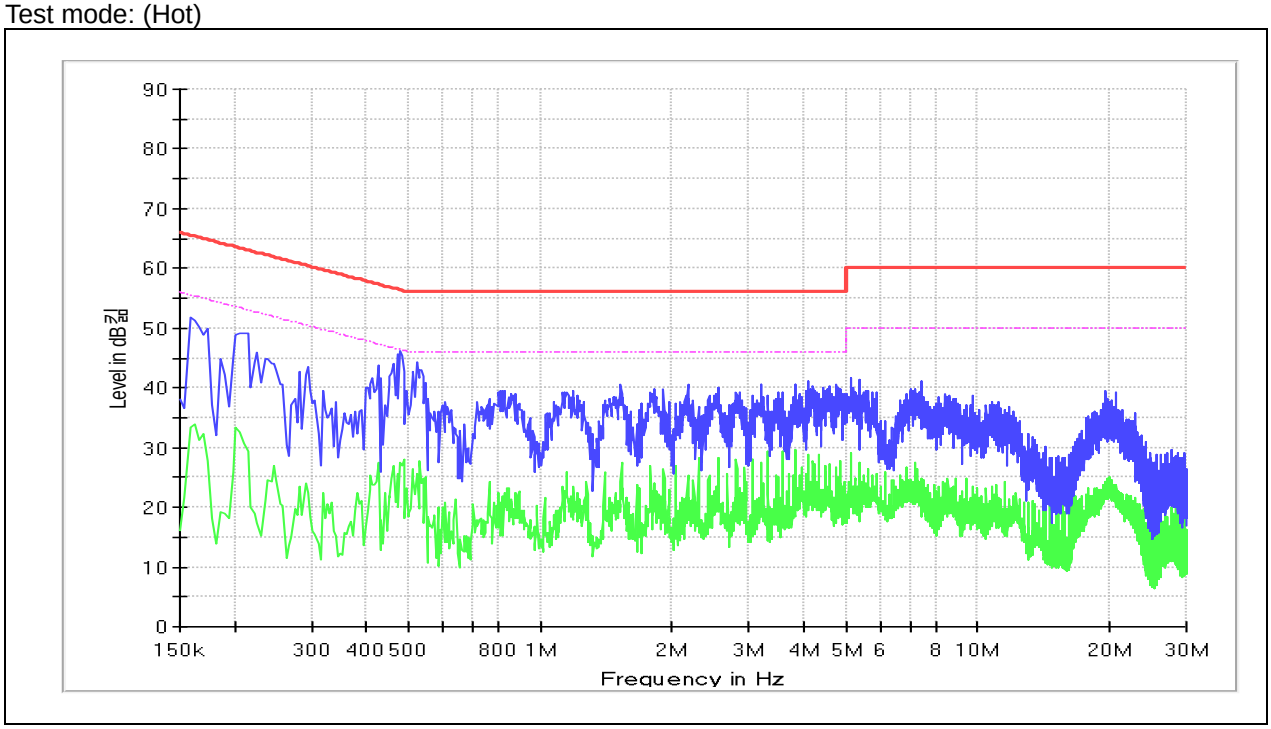
- Simultaneous operation of Ant. 1 (124.7 ㎑ ~ 130.7 ㎑) and Ant. 2 (137.0 ㎑ ~ 143.0 ㎑)

Test Condition: Ant. 1 (5 W) + Ant. 2 (5 W) Operating mode

Test mode: (Neutral)



Test mode: (Hot)



- End of the Test Report -