

FCC Test Report

(Class II Permissive Change)

Product	Wireless Charger Module
Machine Type / Model No.	LPS-15WP B
FCC ID.	2APYS-LPS-15WPB

Applicant	Lanto Electronic Ltd
Address	No 399, Baisheng Road, Jinxi Town, Kunshan City, Jiangsu , China 215234

Date of Receipt	Nov. 19, 2020
Issued Date	Mar. 19, 2021
Report No.	20B0670R-E3032110103
Report Version	V1.0



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.

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Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Test Report

Issued Date: Mar. 19, 2021

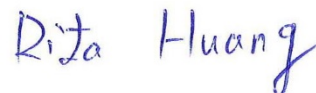
Report No.: 20B0670R-E3032110103



Product	Wireless Charger Module
Applicant	Lanto Electronic Ltd
Address	No 399, Baisheng Road, Jinxi Town, Kunshan City, Jiangsu , China 215234
Manufacturer	Lanto Electronic Ltd
Machine Type / Model No.	LPS-15WP B
FCC ID.	2APYS-LPS-15WPB
EUT Rated Voltage	DC 12V
EUT Test Voltage	AC 120 V / 60 Hz
Trade Name	LUXSHAREICT
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C ANSI C63.4: 2014, ANSI C63.10: 2013
Test Result	Complied

Documented By

:



(Senior Adm. Specialist / Rita Huang)

Tested By

:



(Senior Engineer / Ivan Chuang)

Approved By

:



(Director / Vincent Lin)

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Revision History

Report No.	Version	Description	Issued Date
20B0670R-E3032110103	V1.0	Initial issue of report.	Mar. 19, 2021

1. GENERAL INFORMATION

1.1. EUT Description

Product	Wireless Charger Module
Trade Name	LUXSHAREICT
Machine Type / Model No.	LPS-15WP B
FCC ID.	2APYS-LPS-15WPB
Frequency Range	110~145kHz
Antenna Type	Coil Antenna
Test Platform	Product: Personal Computer Brand: Lenovo Product Name: IdeaCentre AIO 5 24ALC6 IdeaCentre AIO 5 24IOB6 IdeaCentre AIO 5 27IOB6 Model number: F0G2*****, F0G3*****, F0G4***** (Where * may be 0-9, a-z, A-Z, any alphanumeric character ,hyphen or blank)
Power Adapter (For IdeaCentre AIO 5 24ALC6)	MFR: LITEON, M/N: ADL135NLC3A Input: AC 100-240V~50/60Hz 2.5A Output: DC 20V, 6.75A Cable Out: Non-Shielded, 1.8m
Power Adapter (For IdeaCentre AIO 5 24IOB6)	MFR: LITEON, M/N: PA-1151-15 Input: AC 100-240V~50/60Hz 2.0A Output: DC 20V, 7.5A Cable Out: Non-Shielded, 1.8m
Power Adapter (For IdeaCentre AIO 5 27IOB06)	MFR: DELTA, M/N: ADP-170CB B Input: AC 100-240V~50/60Hz 2.5A Output: DC 20V, 8.5A Cable Out: Non-Shielded, 1.8m

Frequency of Channel:

Channel	Frequency
Channel 1:	126kHz

Note:

1. The EUT is a Wireless Charger Module with a built-in 110~145kHz transceiver.
2. This is to request a Class II permissive change for FCC ID: 2APYS-LPS-15WPB.

The major change filed under this application is:

Change #1: Additional Chassis added, Brand: Lenovo, Model number: IdeaCentre AIO 5 24ALC6, IdeaCentre AIO 5 24IOB6, IdeaCentre AIO 5 27IOB6

Brand	Model	Difference
Lenovo	IdeaCentre AIO 5 24ALC6	Different platform model names are for marketing purpose.
	IdeaCentre AIO 5 24IOB6	
	IdeaCentre AIO 5 27IOB6	

3. These tests were radiated on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart C Paragraph 15.209.
4. This module is “Limited Modular Approval” (LMA).

Test Mode	Mode 1: Transmit - IdeaCentre AIO 5 24ALC6 Mode 2: Transmit - IdeaCentre AIO 5 24IOB6 Mode 3: Transmit - IdeaCentre AIO 5 27IOB6
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Test Mode	Mode 1: Transmit - IdeaCentre AIO 5 24ALC6	
Items to be covered	Answer from applicant	
Power transfer frequency is less than 1 MHz.	Operation frequency range is 110~145kHz	
Output power from each primary coil is less than or equal to 15 watts.	15W (Max)	
The transfer system includes only single primary and secondary coils. This includes charging systems that may have multiple primary coils and clients that are able to detect and allow coupling only between individual pairs of coils.	Yes, allow coupling only between individual pairs of coils.	
Client device is placed directly in contact with the transmitter.	Yes, meet the requirements.	
Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).	Yes, meet the requirements.	
The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.	*Electric Field Strength (V/m) @20cm = 1.21V/m (< 307 V/m) MPE Limit (614 V/m) *50% =307 V/m *Magnetic Field Strength (A/m) @20cm =0.04A/m (< 0.815 A/m) MPE Limit (1.63 A/m) *50%= 0.815 A/m	

Test Mode	Mode 2: Transmit - IdeaCentre AIO 5 24IOB6	
Items to be covered	Answer from applicant	
Power transfer frequency is less than 1 MHz.	Operation frequency range is 110~145kHz	
Output power from each primary coil is less than or equal to 15 watts.	15W (Max)	
The transfer system includes only single primary and secondary coils. This includes charging systems that may have multiple primary coils and clients that are able to detect and allow coupling only between individual pairs of coils.	Yes, allow coupling only between individual pairs of coils.	
Client device is placed directly in contact with the transmitter.	Yes, meet the requirements.	
Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).	Yes, meet the requirements.	
The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.	*Electric Field Strength (V/m) @20cm = 1.17V/m (< 307 V/m) MPE Limit (614 V/m) *50% =307 V/m *Magnetic Field Strength (A/m) @20cm =0.04A/m (< 0.815 A/m) MPE Limit (1.63 A/m) *50%= 0.815 A/m	

Test Mode	Mode 3: Transmit - IdeaCentre AIO 5 27IOB6	
Items to be covered	Answer from applicant	
Power transfer frequency is less than 1 MHz.	Operation frequency range is 110~145kHz	
Output power from each primary coil is less than or equal to 15 watts.	15W (Max)	
The transfer system includes only single primary and secondary coils. This includes charging systems that may have multiple primary coils and clients that are able to detect and allow coupling only between individual pairs of coils.	Yes, allow coupling only between individual pairs of coils.	
Client device is placed directly in contact with the transmitter.	Yes, meet the requirements.	
Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).	Yes, meet the requirements.	
The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.	*Electric Field Strength (V/m) @20cm = 1.23V/m (< 307 V/m) MPE Limit (614 V/m) *50% =307 V/m *Magnetic Field Strength (A/m) @20cm =0.05A/m (< 0.815 A/m) MPE Limit (1.63 A/m) *50%= 0.815 A/m	

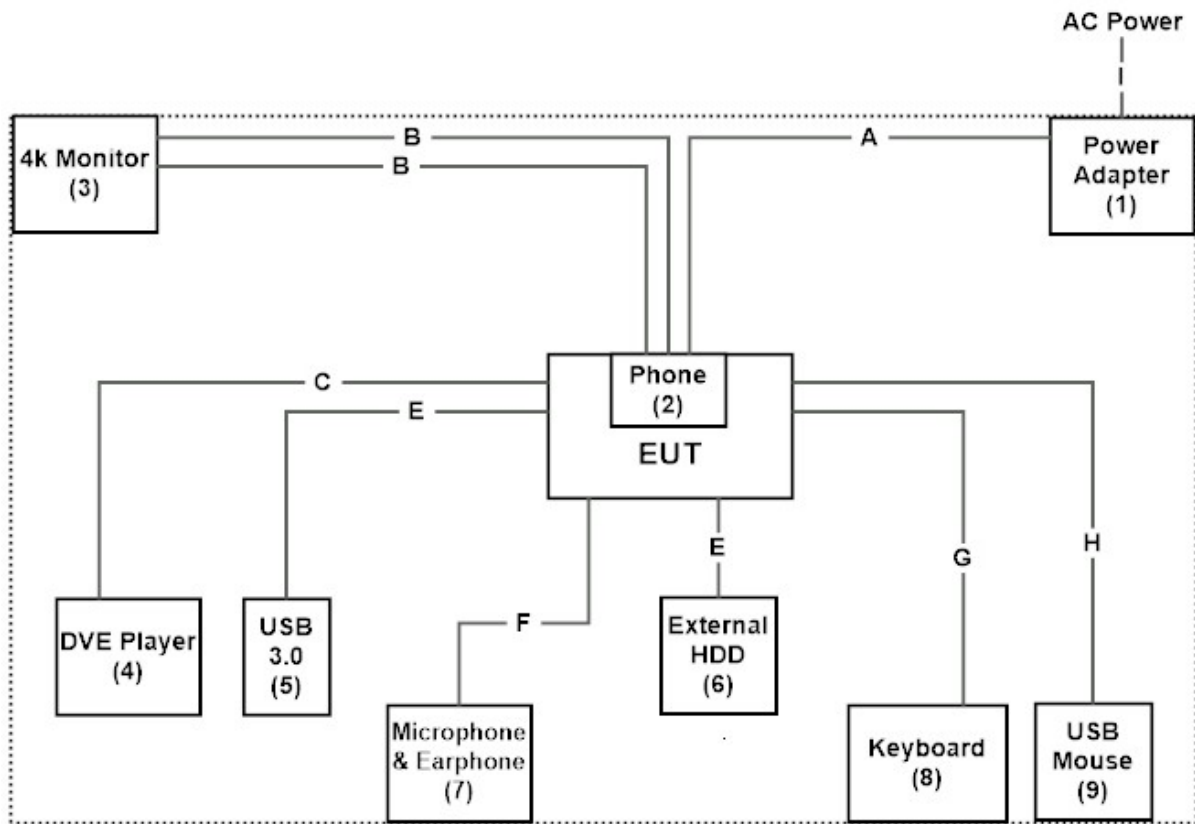
1.2. Test System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model No.	Serial No.	Power Cord
1	Power Adapter	LITEON LITEON DELTA	ADL135NLC3A PA-1151-15 ADP-170CB B	N/A	Non-Shielded, 1.8m
2	Phone	SONY	H8296	43027566	N/A
3	4k Monitor	Lenovo	P27u	V302ZGXT	Non-Shielded, 1.8m
4	DVE Player	Lenovo	DVDWriter WOB	N/A	N/A
5	USB 3.0	Transcend	TS1TSJ25M3	D468623815	N/A
6	External HDD	DonKen	GK-HDD-01	N/A	N/A
7	Microphone & Earphone	PCHOME	N/A	N/A	N/A
8	Keyboard	BTC	5200U	N/A	N/A
9	USB Mouse	Logitech	M-BE58	HCA30102934	N/A

Signal Cable Type		Manufacturer	Model No.	Signal cable Description
A	Power Cable	LITEON LITEON DELTA	ADL135NLC3A PA-1151-15 ADP-170CB B	Non-Shielded, 1.8m
B	HDMI Cable	DEKRA	HDMI-01	Shielded, 1.8m, two PCS.
C	USB Cable	Lenovo	USB2.0 A to Mini B type Cable	Shielded, 0.5m
D	USB Cable	TS1TSJ25M3	D468623815	Shielded 0.4m
E	USB Cable	Transcend	TS1TSJ25M3	Shielded 0.4m
F	Audio Cable	PCHOME	N/A	Non-Shielded, 2m
G	Keyboard Cable	BTC	5200U	Shielded, 1.8m
H	Mouse Cable	Logitech	M-BE58	Shielded, 1.8m
I	Power Cable	DEKRA	Power-01	Non-Shielded, 1.8m

1.3. Configuration of Test System



1.4. EUT Exercise Software

- (1) Setup the EUT as shown in Section 1.3.
- (2) Turn on the power of all equipment.
- (3) Start the continuous transmitter.
- (4) Verify that the EUT works properly.

1.5. Test Facility

Ambient conditions in the laboratory:

Performed Item	Items	Required	Actual
Conducted Emission	Temperature (°C)	10~40 °C	23.1 °C
	Humidity (%RH)	10~90 %	70.8 %
Radiated Emission	Temperature (°C)	10~40 °C	19.8 °C
	Humidity (%RH)	10~90 %	68.2 %

USA : FCC Registration Number: TW0023

Canada : IC Registration Number: 25880

Site Description : Accredited by TAF
Accredited Number: 3023

Test Laboratory : DEKRA Testing and Certification Co., Ltd
Address : No.159, Sec. 2, Wenhua 1st Rd., Linkou Dist.,
New Taipei City 24457, Taiwan, R.O.C.

Phone number : 886-2-2602-7968
Fax number : 866-2-2602-3286
Email address : info.tw@dekra.com
Website : <http://www.dekra.com.tw>

1.6. List of Test Equipment

For Conduction measurements /ASR1

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Data	Due. Data
X	EMI Test Receiver	R&S	ESR7	101601	2020.05.28	2021.05.27
X	Two-Line V-Network	R&S	ENV216	101306	2020.03.25	2021.03.24
X	Two-Line V-Network	R&S	ENV216	101307	2020.04.17	2021.04.16
X	Coaxial Cable	Quietek	RG400_BNC	RF001	2020.05.24	2021.05.23

Note:

1. All equipments are calibrated every one year.
2. The test instruments marked with “X” are used to measure the final test results.
3. Test Software version : DEKRA Testing System V2.0.

For Conducted measurements /ASR2

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Data	Due. Data
X	Spectrum Analyzer	R&S	FSV30	103464	2021.02.11	2022.02.10
	Power Meter	Anritsu	ML2496A	1548003	2020.12.17	2021.12.16
	Power Sensor	Anritsu	MA2411B	1531024	2020.12.17	2021.12.16
	Power Sensor	Anritsu	MA2411B	1531025	2020.12.17	2021.12.16

Note:

1. All equipments are calibrated every one year.
2. The test instruments marked with “X” are used to measure the final test results.
3. Test Software version : DEKRA Conduction Test System V9.0.5.

For Radiated measurements /ACB1

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Data	Due. Data
X	Loop Antenna	AMETEK	HLA6121	56736	2020.03.19	2021.03.18
X	Bi-Log Antenna	SCHWARZBECK	VULB9168	9168-678	2020.09.04	2021.09.03
	Horn Antenna	ETS-Lindgren	3117	00203761	2020.10.31	2021.10.30
	Horn Antenna	Com-Power	AH-840	101087	2020.06.08	2021.06.07
X	Pre-Amplifier	EMCI	EMC001330	980316	2020.06.23	2021.06.22
	Pre-Amplifier	EMCI	EMC051835SE	980312	2020.06.10	2021.06.09
	Pre-Amplifier	EMCI	EMC05820SE	980309	2020.09.17	2021.09.16
	Pre-Amplifier	EMCI	EMC184045SE	980314	2020.06.10	2021.06.09
	Filter	MICRO TRONICS	BRM50702	G251	2020.09.17	2021.09.16
	Filter	MICRO TRONICS	BRM50716	G188	2020.09.17	2021.09.16
X	EMI Test Receiver	R&S	ESR7	101602	2020.12.16	2021.12.15
X	Spectrum Analyzer	R&S	FSV40	101148	2020.03.16	2021.03.15
X	Coaxial Cable	SUHNER	SUCOFLEX 106	RF002	2020.07.03	2021.07.02
X	Mircoflex Cable	HUBER SUHNER	SUCOFLEX 102	MY3381/2	2020.06.10	2021.06.09

Note:

1. All equipments are calibrated every one year.
2. The test instruments marked with “X” are used to measure the final test results.
3. Test Software version : DEKRA Testing System V2.0.

1.7. Uncertainty

Uncertainties have been calculated according to the DEKRA internal document, and is described in each test chapter of this report.

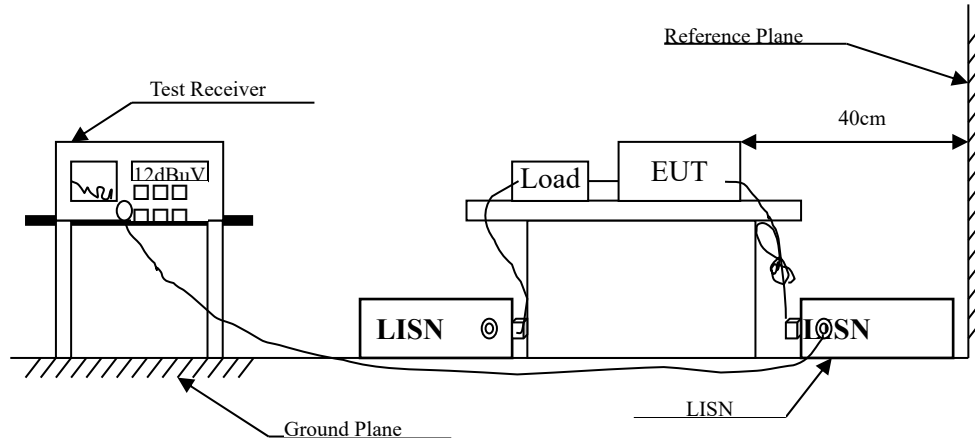
The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95%.

Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

Test item	Uncertainty	
Conducted Emission	± 3.42 dB	
Radiated Emission	Under 1GHz ± 4.06 dB	Above 1GHz ± 3.73 dB

2. Conducted Emission

2.1. Test Setup



2.2. Limits

FCC Part 15 Subpart C Paragraph 15.207 (dBuV) Limit		
Frequency MHz	Limits	
	QP	AV
0.15 - 0.50	66-56 _(註)	56-46 _(註)
0.50-5.0	56	46
5.0 - 30	60	50

2.3. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)

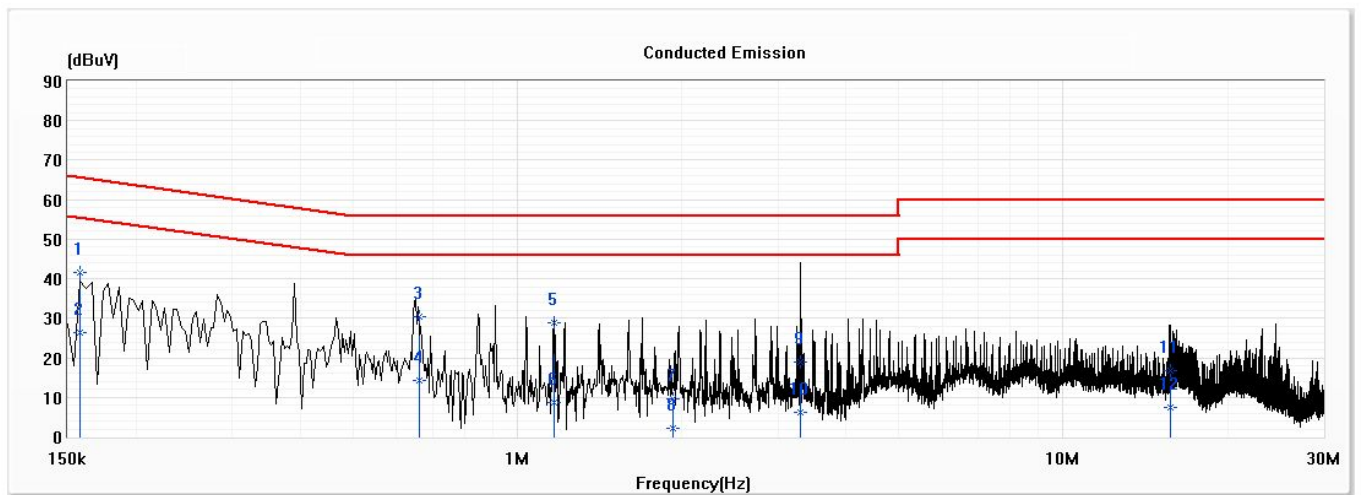
Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2014 on conducted measurement.

Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

2.4. Test Result of Conducted Emission

Product : Wireless Charger Module
 Test Item : Conducted Emission Test
 Test Site : ASR1-1
 Test Date : 2021/03/18
 Test Mode : Mode 1: Transmit - IdeaCentre AIO 5 24ALC6

L1



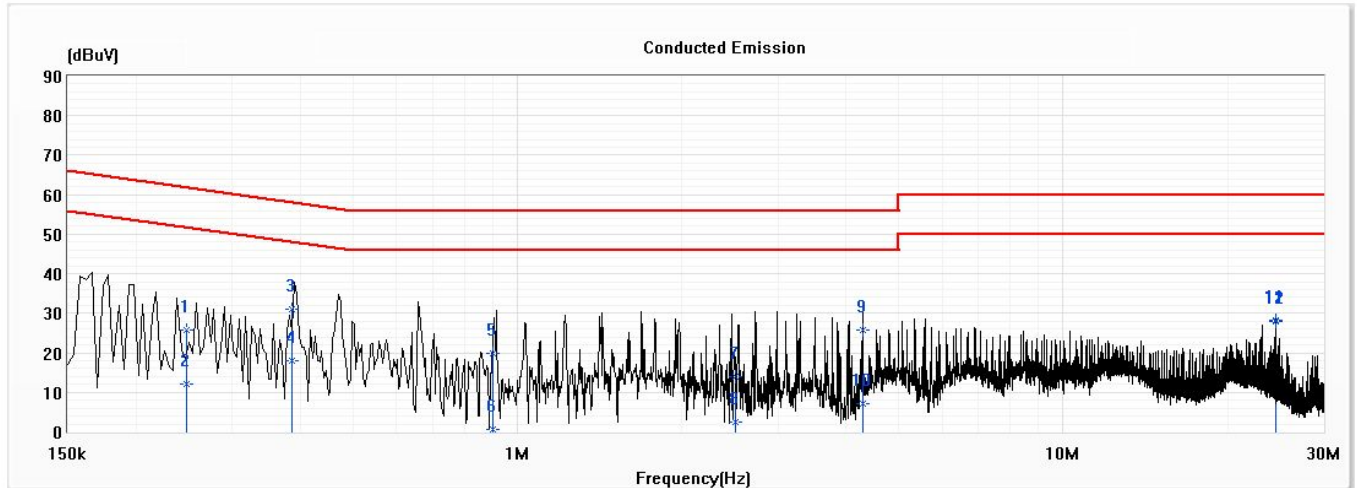
No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
*1	0.158	41.44	65.57	-24.13	31.78	9.66	QP
2	0.158	26.29	55.57	-29.27	16.64	9.66	AV
3	0.661	30.51	56.00	-25.49	20.84	9.67	QP
4	0.661	14.33	46.00	-31.67	4.66	9.67	AV
5	1.169	28.75	56.00	-27.25	19.06	9.70	QP
6	1.169	8.68	46.00	-37.32	-1.01	9.70	AV
7	1.927	9.55	56.00	-46.45	-0.16	9.72	QP
8	1.927	2.13	46.00	-43.87	-7.59	9.72	AV
9	3.302	19.03	56.00	-36.97	9.28	9.76	QP
10	3.302	6.14	46.00	-39.86	-3.61	9.76	AV
11	15.739	16.90	60.00	-43.10	6.95	9.94	QP
12	15.739	7.45	50.00	-42.55	-2.50	9.94	AV

Note:

1. "*" means this data is the worst emission level; "!" means this data is over limit.
2. Emission Level=Reading Level + Correct Factor(Correct Factor=LISN Factor+Cable Loss).
3. Margin=Limit -Emission Level.

Product : Wireless Charger Module
 Test Item : Conducted Emission Test
 Test Site : ASR1-1
 Test Date : 2021/03/18
 Test Mode : Mode 1: Transmit - IdeaCentre AIO 5 24ALC6

N



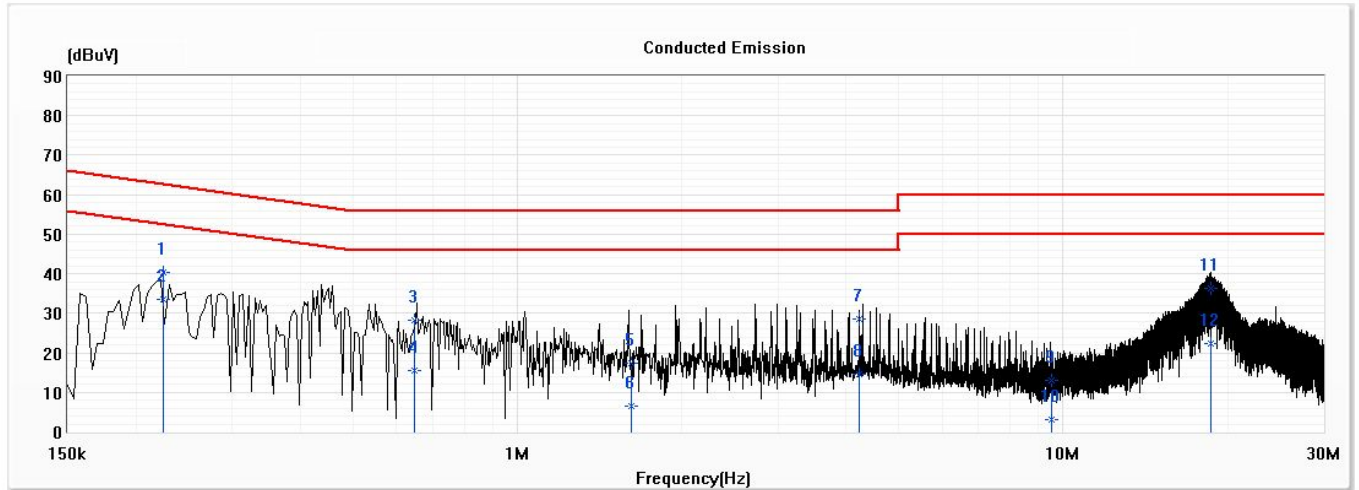
No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.248	25.89	61.82	-35.93	16.22	9.67	QP
2	0.248	12.15	51.82	-39.68	2.48	9.67	AV
3	0.386	31.04	58.15	-27.11	21.37	9.67	QP
4	0.386	17.90	48.15	-30.25	8.24	9.67	AV
5	0.900	19.75	56.00	-36.25	10.06	9.69	QP
6	0.900	0.72	46.00	-45.28	-8.97	9.69	AV
7	2.505	13.90	56.00	-42.10	4.16	9.74	QP
8	2.505	2.43	46.00	-43.57	-7.31	9.74	AV
9	4.288	25.67	56.00	-30.33	15.88	9.79	QP
10	4.288	7.13	46.00	-38.87	-2.66	9.79	AV
11	24.577	28.27	60.00	-31.73	18.19	10.08	QP
*12	24.577	27.78	50.00	-22.22	17.71	10.08	AV

Note:

1. "*" means this data is the worst emission level; "!" means this data is over limit.
2. Emission Level=Reading Level + Correct Factor(Correct Factor=LISN Factor+Cable Loss).
3. Margin=Limit -Emission Level.

Product : Wireless Charger Module
 Test Item : Conducted Emission Test
 Test Site : ASR1-1
 Test Date : 2021/03/18
 Test Mode : Mode 2: Transmit - IdeaCentre AIO 5 24IOB6

L1



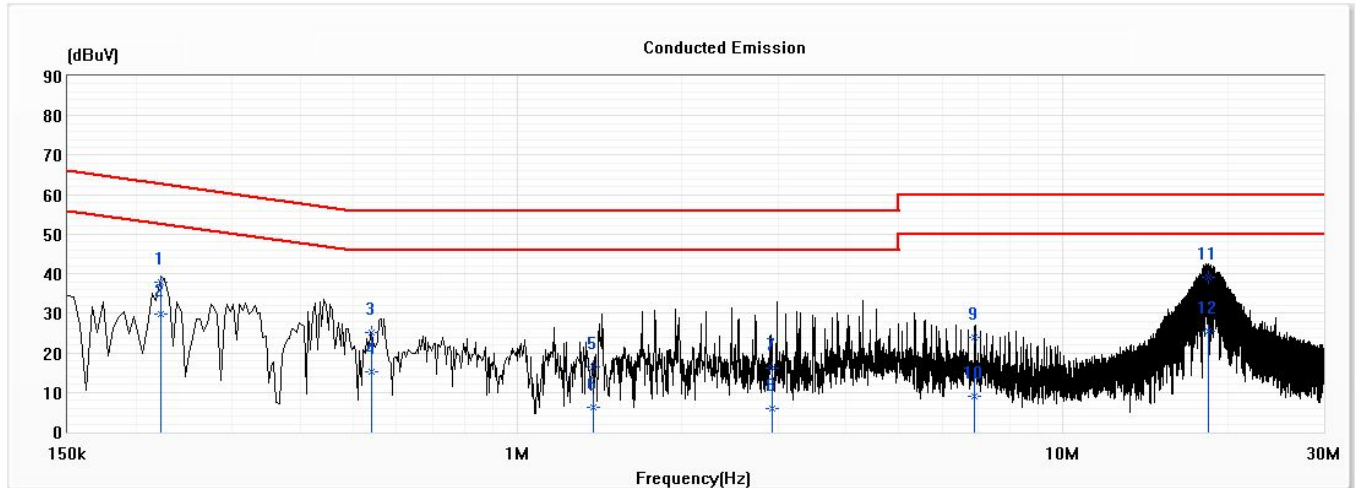
No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.224	40.23	62.66	-22.43	30.58	9.65	QP
*2	0.224	33.41	52.66	-19.26	23.75	9.65	AV
3	0.647	28.38	56.00	-27.62	18.71	9.67	QP
4	0.647	15.52	46.00	-30.48	5.85	9.67	AV
5	1.618	17.52	56.00	-38.48	7.81	9.71	QP
6	1.618	6.54	46.00	-39.46	-3.16	9.71	AV
7	4.235	28.54	56.00	-27.46	18.77	9.77	QP
8	4.235	14.64	46.00	-31.36	4.86	9.77	AV
9	9.525	13.08	60.00	-46.92	3.20	9.89	QP
10	9.525	2.95	50.00	-47.05	-6.93	9.89	AV
11	18.601	36.16	60.00	-23.84	26.20	9.96	QP
12	18.601	22.37	50.00	-27.63	12.41	9.96	AV

Note:

1. "*" means this data is the worst emission level; "!" means this data is over limit.
2. Emission Level=Reading Level + Correct Factor(Correct Factor=LISN Factor+Cable Loss).
3. Margin=Limit -Emission Level.

Product : Wireless Charger Module
 Test Item : Conducted Emission Test
 Test Site : ASR1-1
 Test Date : 2021/03/18
 Test Mode : Mode 2: Transmit - IdeaCentre AIO 5 24IOB6

N



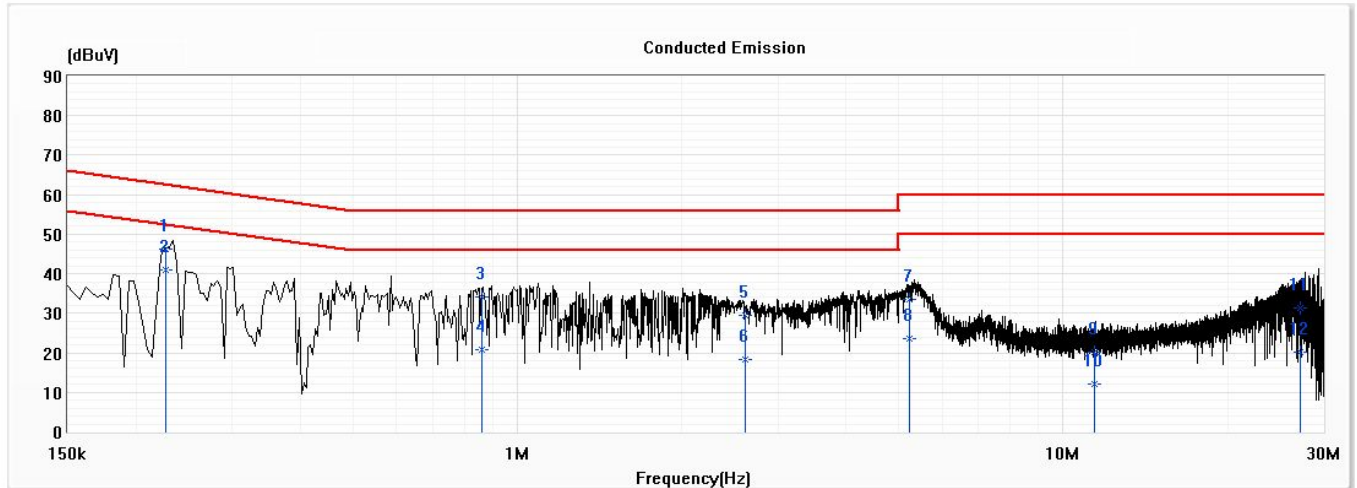
No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.222	38.00	62.75	-24.76	28.33	9.67	QP
2	0.222	29.66	52.75	-23.09	19.99	9.67	AV
3	0.541	25.14	56.00	-30.86	15.47	9.67	QP
4	0.541	15.12	46.00	-30.88	5.44	9.67	AV
5	1.380	16.49	56.00	-39.51	6.78	9.70	QP
6	1.380	6.27	46.00	-39.73	-3.44	9.70	AV
7	2.927	16.25	56.00	-39.75	6.49	9.75	QP
8	2.927	5.85	46.00	-40.15	-3.91	9.75	AV
9	6.890	23.86	60.00	-36.14	14.01	9.85	QP
10	6.890	8.93	50.00	-41.07	-0.91	9.85	AV
*11	18.482	39.22	60.00	-20.78	29.19	10.03	QP
12	18.482	25.60	50.00	-24.40	15.57	10.03	AV

Note:

1. "*" means this data is the worst emission level; "!" means this data is over limit.
2. Emission Level=Reading Level + Correct Factor(Correct Factor=LISN Factor+Cable Loss).
3. Margin=Limit -Emission Level.

Product : Wireless Charger Module
 Test Item : Conducted Emission Test
 Test Site : ASR1-1
 Test Date : 2021/03/10
 Test Mode : Mode 3: Transmit - IdeaCentre AIO 5 27IOB6

L1



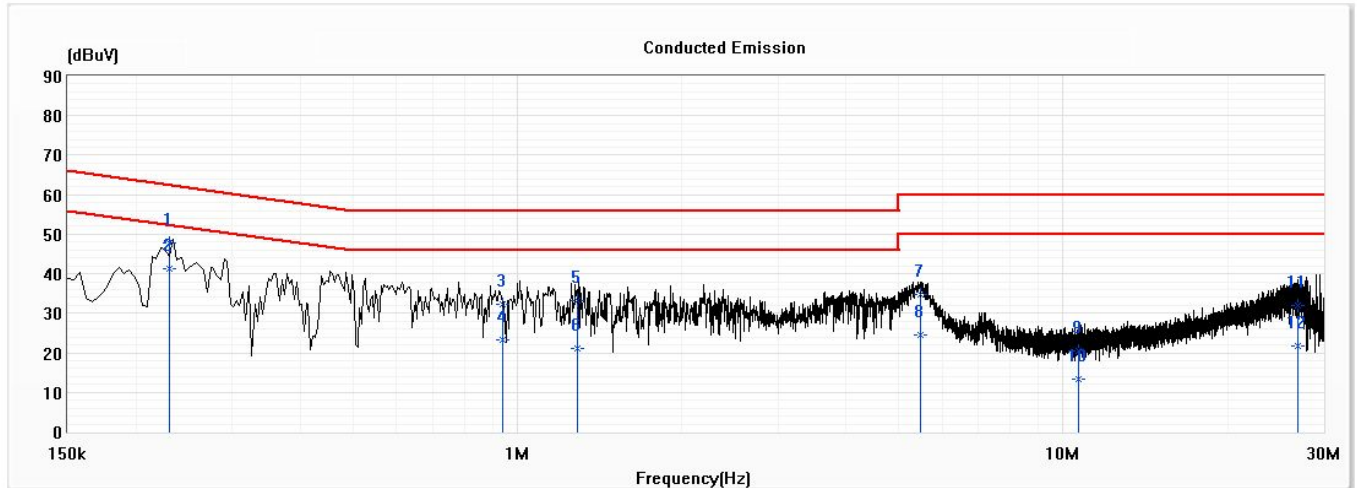
No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.227	46.26	62.57	-16.32	36.61	9.65	QP
*2	0.227	40.86	52.57	-11.71	31.21	9.65	AV
3	0.863	34.12	56.00	-21.88	24.44	9.68	QP
4	0.863	20.92	46.00	-25.08	11.24	9.68	AV
5	2.615	29.45	56.00	-26.55	19.71	9.73	QP
6	2.615	18.34	46.00	-27.66	8.61	9.73	AV
7	5.231	33.56	60.00	-26.44	23.75	9.80	QP
8	5.231	23.55	50.00	-26.45	13.75	9.80	AV
9	11.421	20.24	60.00	-39.76	10.33	9.91	QP
10	11.421	12.16	50.00	-37.84	2.25	9.91	AV
11	27.133	31.24	60.00	-28.76	21.28	9.95	QP
12	27.133	20.26	50.00	-29.74	10.31	9.95	AV

Note:

1. "*" means this data is the worst emission level; "!" means this data is over limit.
2. Emission Level=Reading Level + Correct Factor(Correct Factor=LISN Factor+Cable Loss).
3. Margin=Limit -Emission Level.

Product : Wireless Charger Module
 Test Item : Conducted Emission Test
 Test Site : ASR1-1
 Test Date : 2021/03/10
 Test Mode : Mode 3: Transmit - IdeaCentre AIO 5 27IOB6

N



No	Frequency (MHz)	Emission Level (dBuV)	Limit (dBuV)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.231	47.81	62.43	-14.61	38.14	9.67	QP
*2	0.231	41.39	52.43	-11.03	31.72	9.67	AV
3	0.938	32.33	56.00	-23.67	22.64	9.69	QP
4	0.938	23.24	46.00	-22.76	13.55	9.69	AV
5	1.287	33.14	56.00	-22.86	23.44	9.70	QP
6	1.287	20.97	46.00	-25.03	11.27	9.70	AV
7	5.473	34.65	60.00	-25.35	24.83	9.81	QP
8	5.473	24.42	50.00	-25.58	14.60	9.81	AV
9	10.661	20.40	60.00	-39.60	10.48	9.92	QP
10	10.661	13.23	50.00	-36.77	3.31	9.92	AV
11	26.871	31.86	60.00	-28.14	21.77	10.08	QP
12	26.871	21.71	50.00	-28.29	11.63	10.08	AV

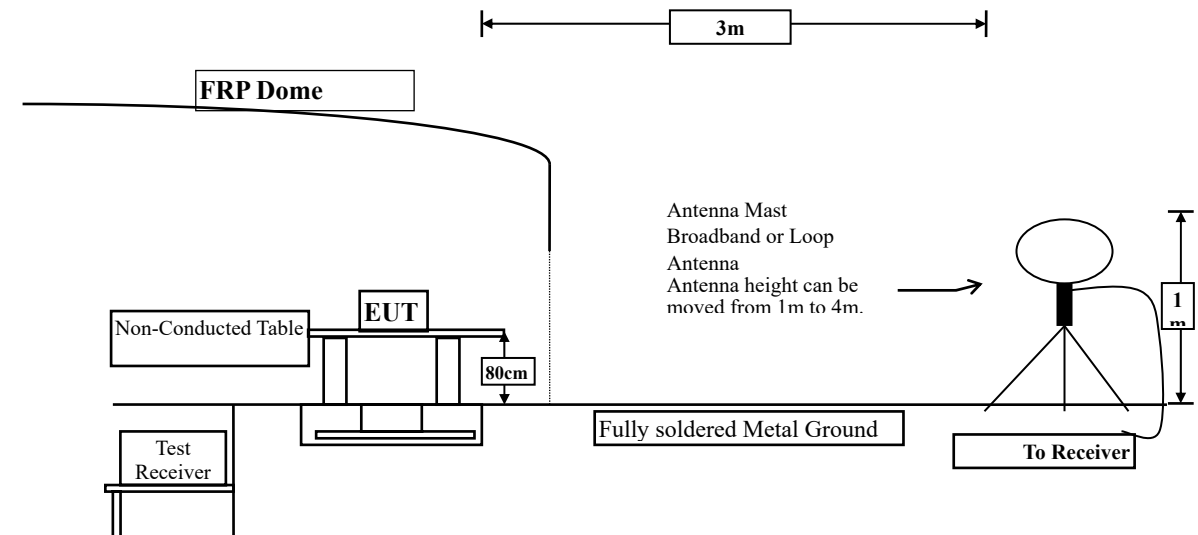
Note:

1. "*" means this data is the worst emission level; "!" means this data is over limit.
2. Emission Level=Reading Level + Correct Factor(Correct Factor=LISN Factor+Cable Loss).
3. Margin=Limit -Emission Level.

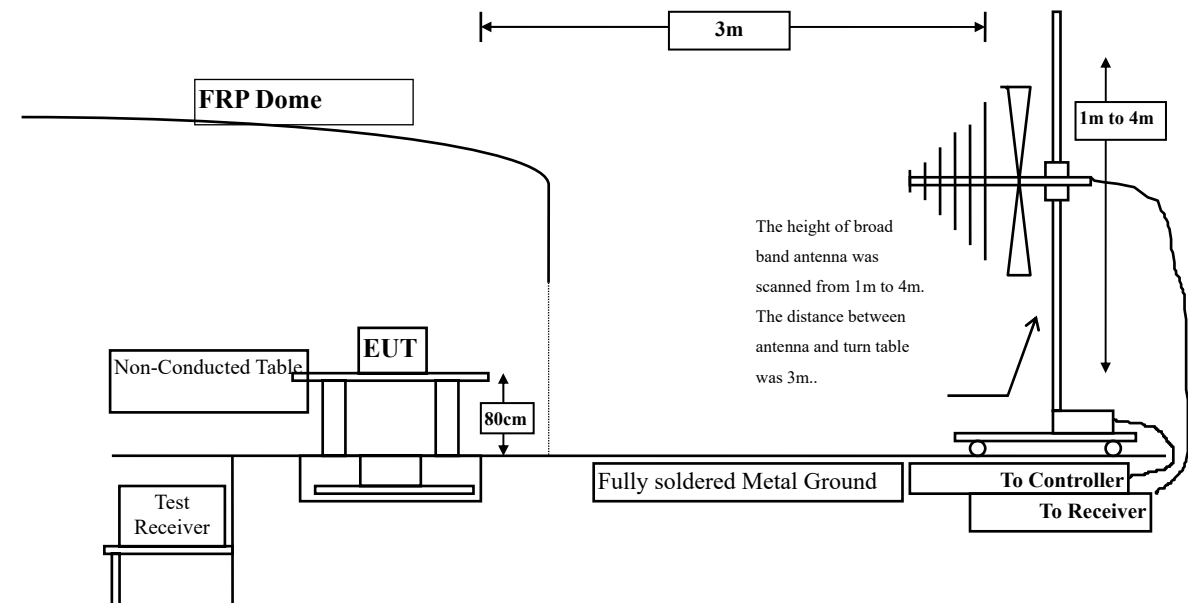
3. Radiated Emission

3.1. Test Setup

Under 30MHz Test Setup



Radiated Emission Below 1GHz



3.2. Limits

FCC Part 15 Subpart B Paragraph 15.209 Limits		
Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 - 0.490	2,400/F(kHz)	300
0.490– 1.705	24,000/F(kHz)	30
1.705 – 30	30	30
30 – 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

Remarks : 1. RF Voltage (dBuV) = 20 log RF Voltage (uV)
2. In the Above Table, the tighter limit applies at the band edges.
3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

3.3. Test Procedure

The EUT was setup according to ANSI C63.10, 2013 and tested compliance to FCC 47CFR 15.209 requirements.

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10: 2013 on radiated measurement.

The resolution bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz. Radiated emission measurements below 1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.

The worst radiated emission is measured on the Final Measurement.

The measurement frequency range from 9kHz - 10th Harmonic of fundamental was investigated.

3.4. Test Result of Radiated Emission

Product	Wireless Charger Module
Test Item	Fundamental Radiated Emission
Test Site	ACB1
Date of Test	2021/03/17
Test Mode	Mode 1: Transmit - IdeaCentre AIO 5 24ALC6

Horizontal

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
* 1	0.126	68.51	105.59	-37.08	48.39	20.12	AV

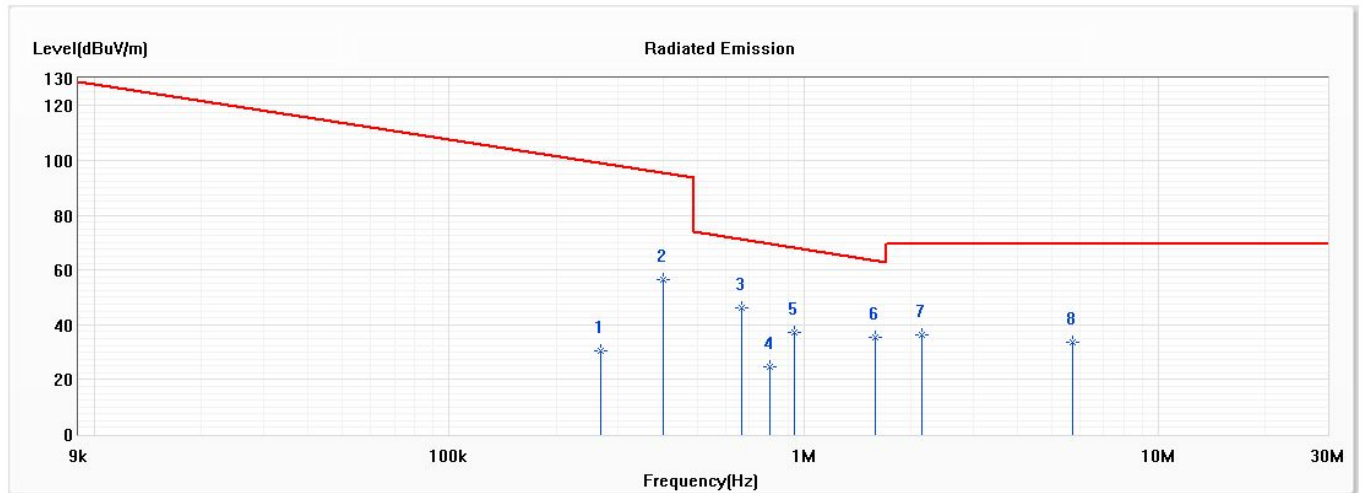
Vertical

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
* 1	0.126	57.68	105.59	-47.91	37.56	20.12	AV

Note:

1. Limit=25.528 dBuV/300m + 40*Log (300(m)/3(m))= 105.59dBuV/3m (Average).
2. Emission Level = Reading Level + Correct Factor.

Product	Wireless Charger Module
Test Item	General Radiated Emission
Test Site	ACB1
Date of Test	2021/03/17
Test Mode	Mode 1: Transmit - IdeaCentre AIO 5 24ALC6 (9k-30M)

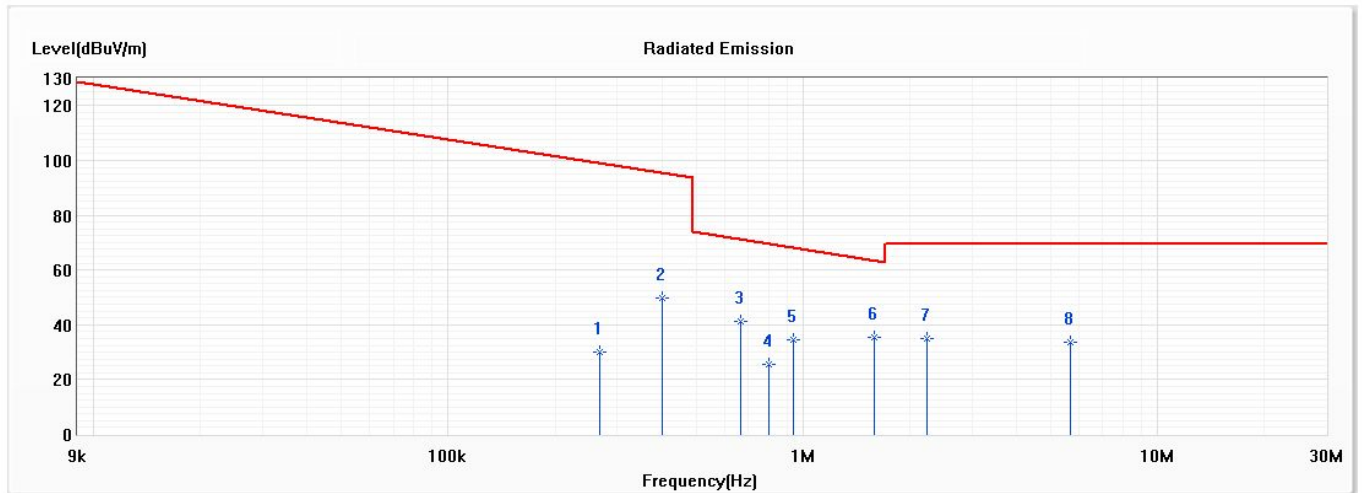
9kHz~30MHz**Horizontal**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.268	30.48	99.04	-68.56	10.39	20.09	QP
2	0.402	56.48	95.52	-39.04	36.41	20.07	QP
* 3	0.670	46.38	71.09	-24.71	26.31	20.07	QP
4	0.804	24.67	69.51	-44.84	4.59	20.08	QP
5	0.938	37.35	68.17	-30.82	17.27	20.08	QP
6	1.589	35.44	63.61	-28.17	15.35	20.09	QP
7	2.154	36.29	69.54	-33.25	16.20	20.09	QP
8	5.741	33.64	69.54	-35.90	13.53	20.11	QP

Note:

1. All Readings below 1GHz are Quasi-Peak.
2. Emission Level = Reading Level + Correct Factor.

Product	Wireless Charger Module
Test Item	General Radiated Emission
Test Site	ACB1
Date of Test	2021/03/17
Test Mode	Mode 1: Transmit - IdeaCentre AIO 5 24ALC6 (9k-30M)

9kHz~30MHz**Vertical**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.268	30.14	99.04	-68.90	10.05	20.09	QP
2	0.402	49.59	95.52	-45.93	29.52	20.07	QP
3	0.670	41.09	71.09	-30.00	21.02	20.07	QP
4	0.804	25.69	69.51	-43.82	5.61	20.08	QP
5	0.938	34.47	68.17	-33.70	14.39	20.08	QP
* 6	1.589	35.26	63.61	-28.35	15.17	20.09	QP
7	2.242	34.76	69.54	-34.78	14.67	20.09	QP
8	5.694	33.59	69.54	-35.95	13.48	20.11	QP

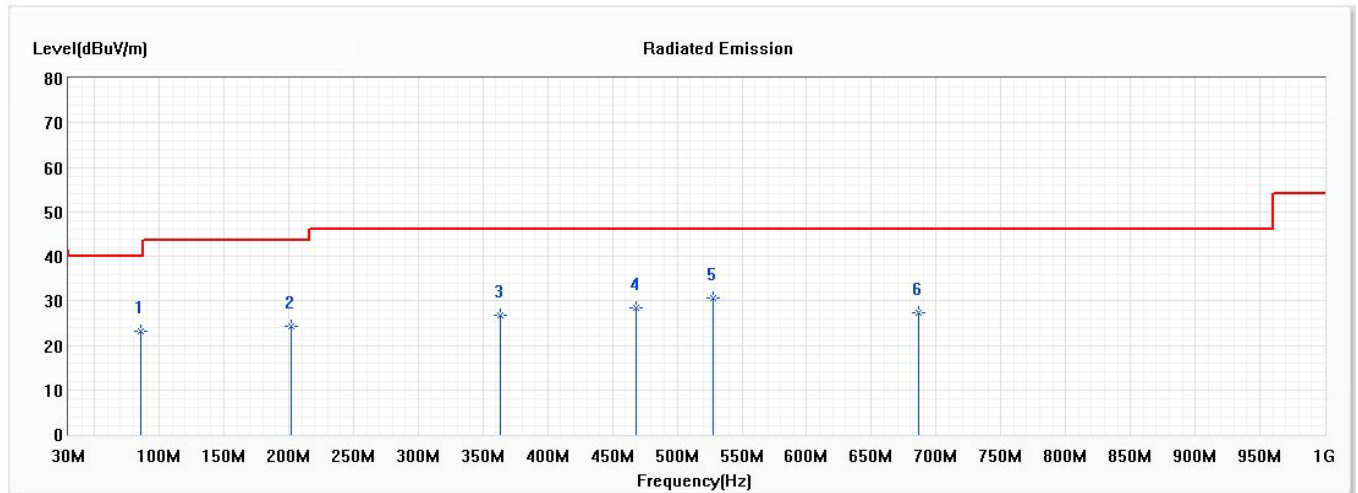
Note:

1. All Readings below 1GHz are Quasi-Peak.
2. Emission Level = Reading Level + Correct Factor.

Product	Wireless Charger Module
Test Item	General Radiated Emission
Test Site	ACB1
Date of Test	2021/03/15
Test Mode	Mode 1: Transmit - IdeaCentre AIO 5 24ALC6 (30M-1G)

30MHz~1GHz

Horizontal

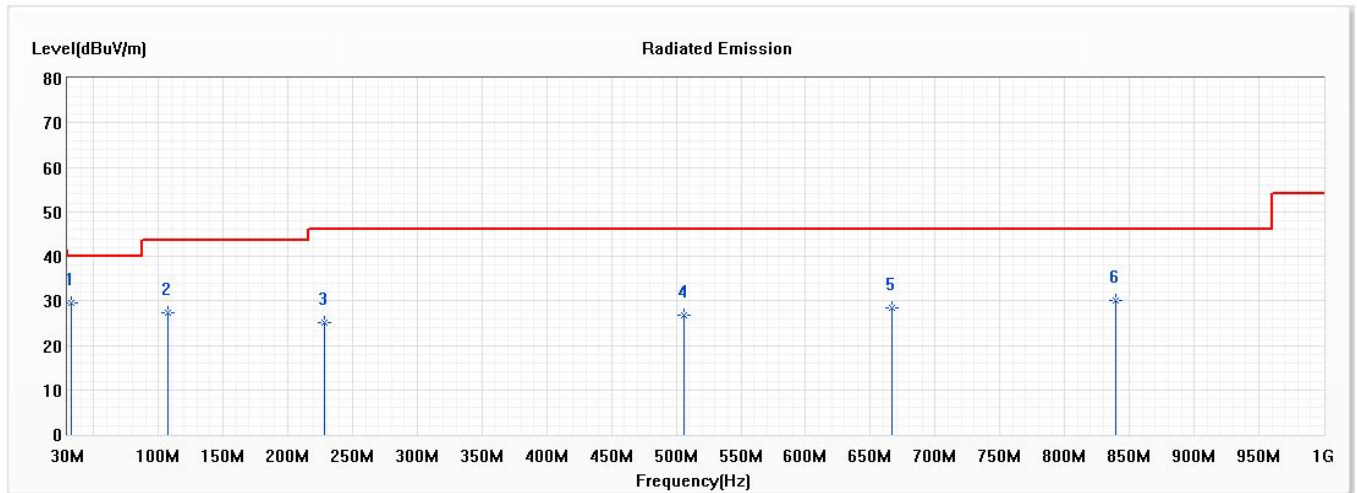


No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	85.290	23.24	40.00	-16.76	39.83	-16.59	QP
2	201.690	24.25	43.50	-19.25	37.96	-13.71	QP
3	363.680	26.71	46.00	-19.29	35.37	-8.66	QP
4	468.440	28.35	46.00	-17.65	34.81	-6.46	QP
* 5	527.610	30.56	46.00	-15.44	35.87	-5.31	QP
6	686.690	27.32	46.00	-18.68	30.14	-2.82	QP

Note:

1. The reading levels below 1GHz are quasi-peak values.
2. Emission Level = Reading Level + Correct Factor.

Product	Wireless Charger Module
Test Item	General Radiated Emission
Test Site	ACB1
Date of Test	2021/03/15
Test Mode	Mode 1: Transmit - IdeaCentre AIO 5 24ALC6 (30M-1G)

30MHz~1GHz**Vertical**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
* 1	32.910	29.49	40.00	-10.51	41.11	-11.62	QP
2	107.600	27.34	43.50	-16.16	41.73	-14.39	QP
3	227.880	25.22	46.00	-20.78	37.67	-12.45	QP
4	506.270	26.80	46.00	-19.20	32.63	-5.83	QP
5	666.320	28.36	46.00	-17.64	31.57	-3.21	QP
6	838.980	30.10	46.00	-15.90	30.82	-0.72	QP

Note:

1. The reading levels below 1GHz are quasi-peak values.
2. Emission Level = Reading Level + Correct Factor.

Product	Wireless Charger Module
Test Item	Fundamental Radiated Emission
Test Site	ACB1
Date of Test	2021/03/17
Test Mode	Mode 2: Transmit - IdeaCentre AIO 5 24IOB6

Horizontal

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
* 1	0.126	68.49	105.59	-37.10	48.37	20.12	AV

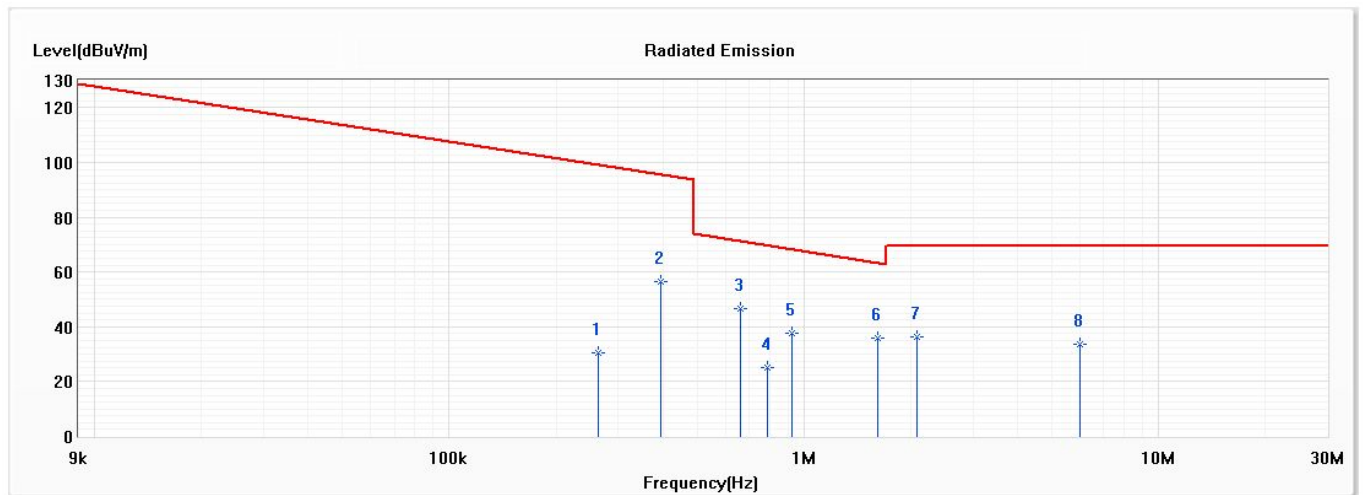
Vertical

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
* 1	0.126	57.58	105.59	-48.01	37.46	20.12	AV

Note:

1. Limit=25.528 dBuV/300m + 40*Log (300(m)/3(m))= 105.59dBuV/3m (Average).
2. Emission Level = Reading Level + Correct Factor.

Product	Wireless Charger Module
Test Item	General Radiated Emission
Test Site	ACB1
Date of Test	2021/03/17
Test Mode	Mode 2: Transmit - IdeaCentre AIO 5 24IOB6 (9k-30M)

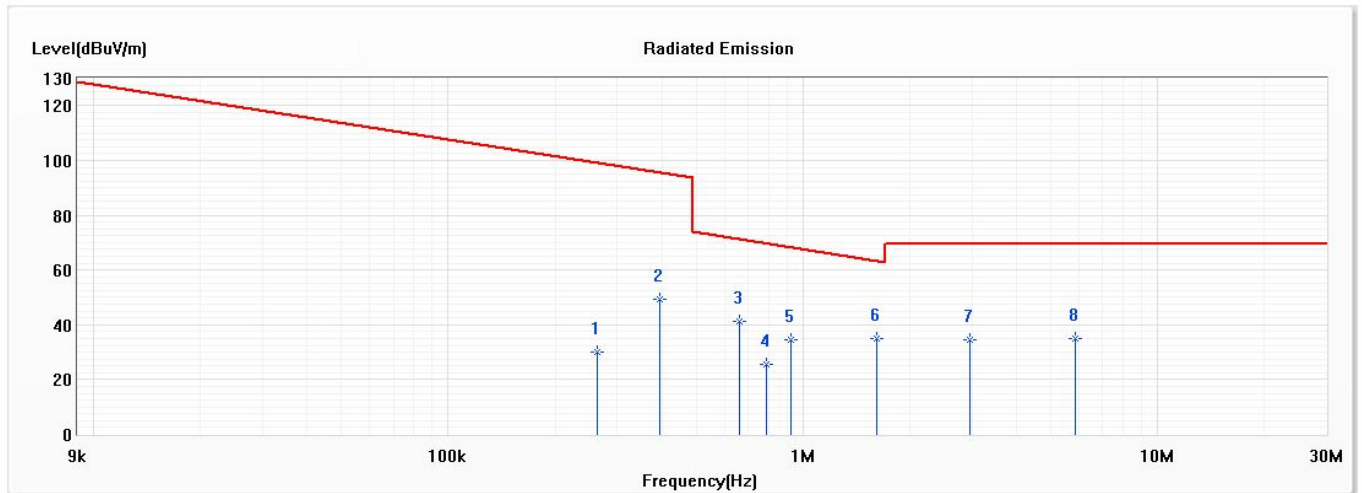
9kHz~30MHz**Horizontal**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.264	30.61	99.17	-68.56	10.52	20.09	QP
2	0.396	56.56	95.65	-39.09	36.49	20.07	QP
* 3	0.660	46.49	71.22	-24.73	26.42	20.07	QP
4	0.792	24.88	69.64	-44.76	4.80	20.08	QP
5	0.924	37.71	68.30	-30.59	17.63	20.08	QP
6	1.614	35.84	63.47	-27.63	15.75	20.09	QP
7	2.088	36.43	69.54	-33.11	16.34	20.09	QP
8	5.985	33.79	69.54	-35.75	13.67	20.12	QP

Note:

1. All Readings below 1GHz are Quasi-Peak.
2. Emission Level = Reading Level + Correct Factor.

Product	Wireless Charger Module
Test Item	General Radiated Emission
Test Site	ACB1
Date of Test	2021/03/17
Test Mode	Mode 2: Transmit - IdeaCentre AIO 5 24IOB6 (9k-30M)

9kHz~30MHz**Vertical**

	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.264	30.09	99.17	-69.08	10.00	20.09	QP
2	0.396	49.46	95.65	-46.19	29.39	20.07	QP
3	0.660	41.14	71.22	-30.08	21.07	20.07	QP
4	0.792	25.75	69.64	-43.89	5.67	20.08	QP
5	0.924	34.56	68.30	-33.74	14.48	20.08	QP
* 6	1.614	34.89	63.47	-28.58	14.80	20.09	QP
7	2.961	34.66	69.54	-34.88	14.55	20.11	QP
8	5.872	34.89	69.54	-34.65	14.77	20.12	QP

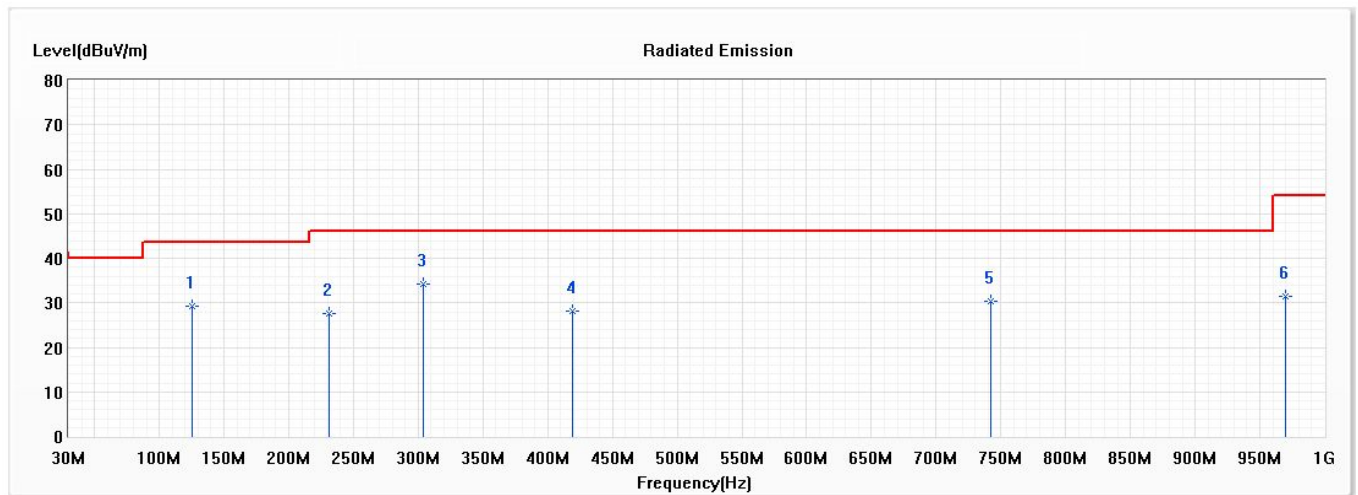
Note:

1. All Readings below 1GHz are Quasi-Peak.
2. Emission Level = Reading Level + Correct Factor.

Product	Wireless Charger Module
Test Item	General Radiated Emission
Test Site	ACB1
Date of Test	2021/03/15
Test Mode	Mode 2: Transmit - IdeaCentre AIO 5 24IOB6 (30M-1G)

30MHz~1GHz

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	125.060	29.32	43.50	-14.18	42.14	-12.82	QP
2	230.790	27.62	46.00	-18.38	39.82	-12.20	QP
* 3	303.540	34.26	46.00	-11.74	44.34	-10.08	QP
4	418.970	28.11	46.00	-17.89	35.40	-7.29	QP
5	741.980	30.33	46.00	-15.67	32.08	-1.75	QP
6	969.930	31.51	54.00	-22.49	30.56	0.95	QP

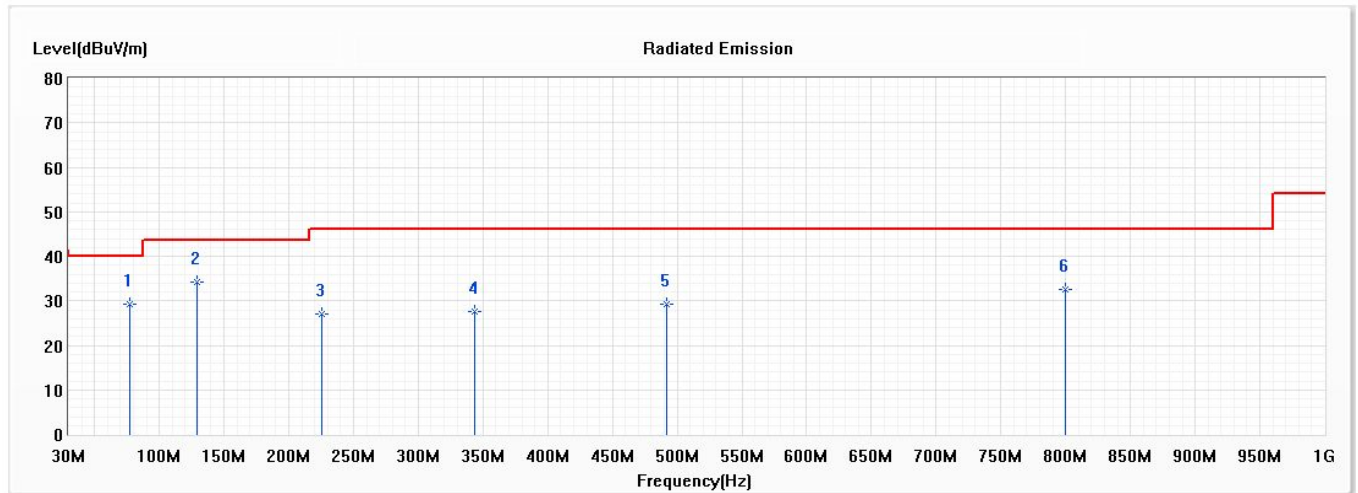
Note:

1. The reading levels below 1GHz are quasi-peak values.
2. Emission Level = Reading Level + Correct Factor.

Product	Wireless Charger Module
Test Item	General Radiated Emission
Test Site	ACB1
Date of Test	2021/03/15
Test Mode	Mode 2: Transmit - IdeaCentre AIO 5 24IOB6 (30M-1G)

30MHz~1GHz

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	77.530	29.27	40.00	-10.73	44.37	-15.10	QP
* 2	128.940	34.16	43.50	-9.34	46.49	-12.33	QP
3	225.940	27.09	46.00	-18.91	39.74	-12.65	QP
4	343.310	27.54	46.00	-18.46	36.64	-9.10	QP
5	491.720	29.18	46.00	-16.82	35.31	-6.13	QP
6	800.180	32.65	46.00	-13.35	33.72	-1.07	QP

Note:

1. The reading levels below 1GHz are quasi-peak values.
2. Emission Level = Reading Level + Correct Factor.

Product	Wireless Charger Module
Test Item	Fundamental Radiated Emission
Test Site	ACB1
Date of Test	2021/03/09
Test Mode	Mode 3: Transmit - IdeaCentre AIO 5 27IOB6

Horizontal

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
* 1	0.126	68.33	105.59	-37.26	48.21	20.12	AV

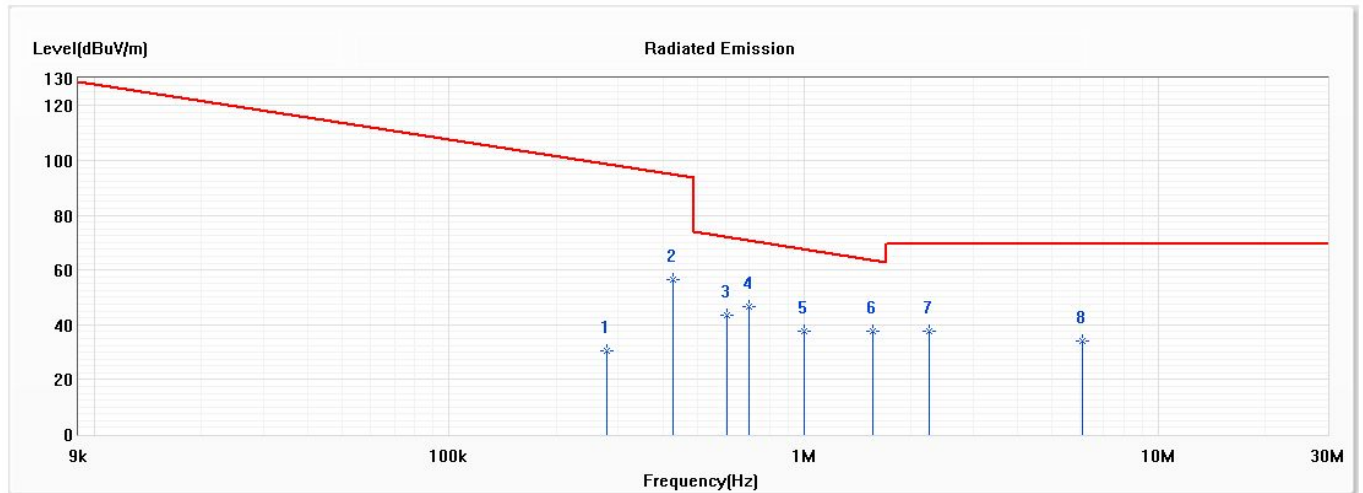
Vertical

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
* 1	0.126	57.42	105.59	-48.17	37.30	20.12	AV

Note:

1. $\text{Limit} = 25.528 \text{ dBuV/300m} + 40 * \text{Log} (300(\text{m})/3(\text{m})) = 105.59 \text{ dBuV/3m}$ (Average).
2. $\text{Emission Level} = \text{Reading Level} + \text{Correct Factor}$.

Product	Wireless Charger Module
Test Item	General Radiated Emission
Test Site	ACB1
Date of Test	2021/03/17
Test Mode	Mode 3: Transmit - IdeaCentre AIO 5 27IOB6 (9k-30M)

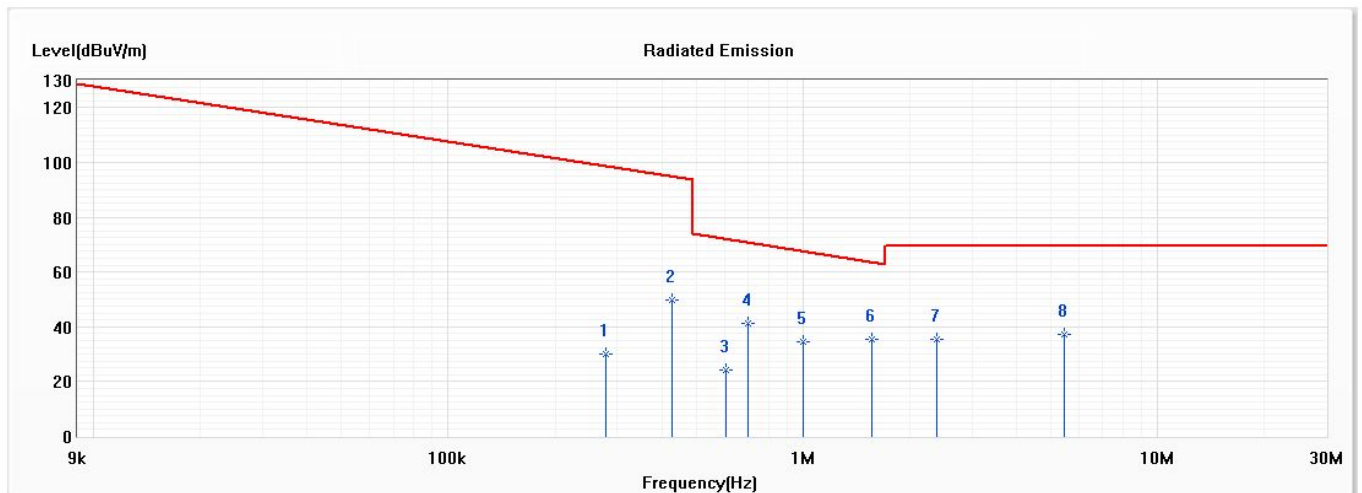
9kHz~30MHz**Horizontal**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.279	30.59	98.69	-68.10	10.51	20.08	QP
2	0.429	56.43	94.96	-38.53	36.36	20.07	QP
3	0.609	43.28	71.92	-28.64	23.21	20.07	QP
* 4	0.699	46.74	70.72	-23.98	26.67	20.07	QP
5	0.999	37.85	67.63	-29.78	17.77	20.08	QP
6	1.569	37.83	63.72	-25.89	17.74	20.09	QP
7	2.258	37.52	69.54	-32.02	17.42	20.10	QP
8	6.127	33.97	69.54	-35.57	13.85	20.12	QP

Note:

1. All Readings below 1GHz are Quasi-Peak.
2. Emission Level = Reading Level + Correct Factor.

Product	Wireless Charger Module
Test Item	General Radiated Emission
Test Site	ACB1
Date of Test	2021/03/17
Test Mode	Mode 3: Transmit - IdeaCentre AIO 5 27IOB6 (9k-30M)

9kHz~30MHz**Vertical**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
1	0.279	30.15	98.69	-68.54	10.07	20.08	QP
2	0.429	49.56	94.96	-45.40	29.49	20.07	QP
3	0.609	24.38	71.92	-47.54	4.31	20.07	QP
4	0.699	41.06	70.72	-29.66	20.99	20.07	QP
5	0.999	34.48	67.63	-33.15	14.40	20.08	QP
* 6	1.569	35.54	63.72	-28.18	15.45	20.09	QP
7	2.378	35.22	69.54	-34.32	15.12	20.10	QP
8	5.467	37.11	69.54	-32.43	17.01	20.10	QP

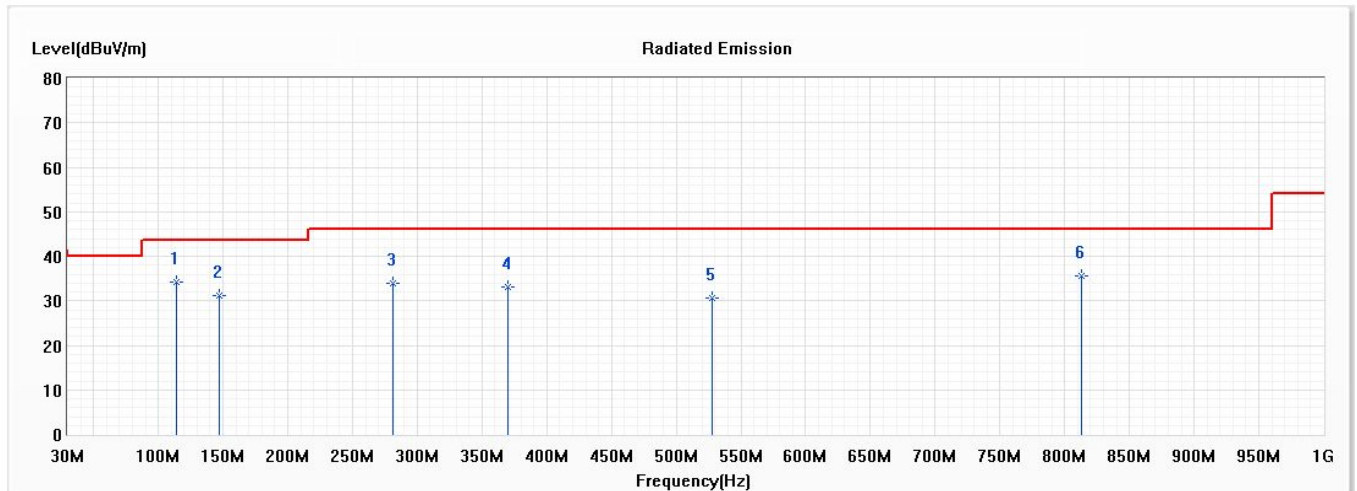
Note:

1. All Readings below 1GHz are Quasi-Peak.
2. Emission Level = Reading Level + Correct Factor.

Product	Wireless Charger Module
Test Item	General Radiated Emission
Test Site	ACB1
Date of Test	2021/01/29
Test Mode	Mode 3: Transmit - IdeaCentre AIO 5 27IOB6 (30M-1G)

30MHz~1GHz

Horizontal



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
* 1	114.390	34.30	43.50	-9.20	47.81	-13.51	QP
2	147.370	31.13	43.50	-12.37	41.87	-10.74	QP
3	281.230	33.88	46.00	-12.12	44.37	-10.49	QP
4	370.470	33.12	46.00	-12.88	41.54	-8.42	QP
5	527.610	30.51	46.00	-15.49	35.87	-5.36	QP
6	812.790	35.48	46.00	-10.52	36.81	-1.33	QP

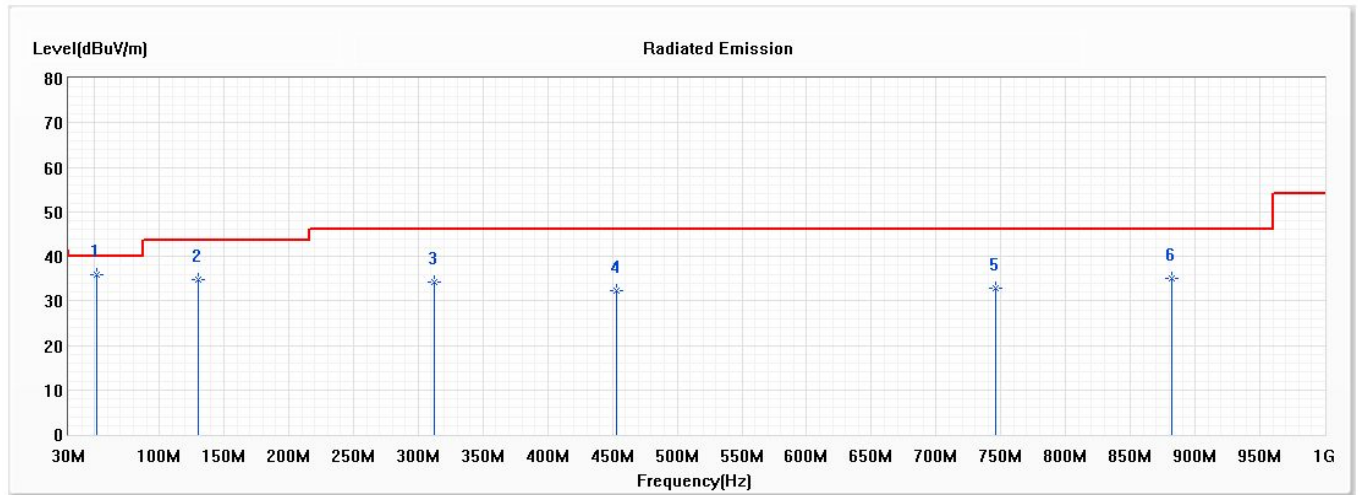
Note:

1. The reading levels below 1GHz are quasi-peak values.
2. Emission Level = Reading Level + Correct Factor.

Product	Wireless Charger Module
Test Item	General Radiated Emission
Test Site	ACB1
Date of Test	2021/01/29
Test Mode	Mode 3: Transmit - IdeaCentre AIO 5 27IOB6 (30M-1G)

30MHz~1GHz

Vertical



No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Reading Level (dBuV)	Correct Factor (dB)	Detector Type
* 1	51.340	35.76	40.00	-4.24	46.19	-10.43	QP
2	129.910	34.88	43.50	-8.62	46.61	-11.73	QP
3	312.270	34.27	46.00	-11.73	44.01	-9.74	QP
4	452.920	32.35	46.00	-13.65	39.15	-6.80	QP
5	745.860	32.86	46.00	-13.14	34.88	-2.02	QP
6	881.660	34.94	46.00	-11.06	35.42	-0.48	QP

Note:

1. The reading levels below 1GHz are quasi-peak values.
2. Emission Level = Reading Level + Correct Factor.

4. EMI Reduction Method During Compliance Testing

No modification was made during testing.