FCC Test Report

Applicant	:	**Shenzhen ComXim Technologies Co.,Ltd.**
Address	:	**2F Block A and B, Donghaiwang IndustrialZone, No. 369 BulongRoad, Longgang District, Shenzhen**
Product Name	:	**Electric turntable**
Report Date	:	**Aug. 07, 2023**

Shenzhen Anbotek Compliance Laboratory Limited

Contents

TEST REPORT

Applicant	:	Shenzhen ComXim Technologies Co.,Ltd.
Manufacturer	:	2F Block A and B, Donghaiwang IndustrialZone, No. 369 BulongRoad, Longgang District, Shenzhen
Product Name	:	Electric turntable
Model No.	:	MT320RL40, MT200RL20H, MT200RL20FU-A, MT200RL20FU-AB, MT200RL20FU-B, MT200RL20FU-BA, MT320RL40, MT320RL40FU-B, MT320RL40FU-A, MT320RL40P-A, MT320RL40P-AB, MT320RL40P-B, MT320RL40P-BA, MT350RL40, MT350RL40FU-B, MT350RL40FU-A, MT350RL40P-A, MT350RL40P-AB, MT350RL40P-B, MT350RL40P-BA, NT400RL40FU-A, NT400RL40FU-B, MT400RL40P-A, MT400RL40P-AB, MT400RL40P-B, MT400RL40P-BA
Trade Mark	:	ComXim
Rating(s)	:	Input:100-240V~50/60Hz0.43A MaxOutput:15V ==1.2A
Test Standard(s)	:	**FCC 47 CFR Part 15 Subpart B: 2022**
Test Method(s)	:	**ANSI C63.4-2014**

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited To determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC 47 CFR Part 15 Subpart B limits both radiated and conducted emissions. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited Is assumed full responsibility for the accuracy and completeness of these measurements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited

Date of Receipt: July 06, 2023

Date of Test: July 06~Aug. 07, 2023

Prepared By: Ella Liang

(Ella Liang)

Approved & Authorized Signer: KingKongJin

(KingKong Jin)

1. General Information

1.1. Client Information

Applicant	:	Shenzhen ComXim Technologies Co.,Ltd.
Address	:	2F Block A and B, Donghaiwang IndustrialZone, No. 369 BulongRoad, Longgang District, Shenzhen
Manufacturer	:	Shenzhen ComXim Technologies Co.,Ltd.
Address	:	2F Block A and B, Donghaiwang IndustrialZone, No. 369 BulongRoad, Longgang District, Shenzhen
Factory	:	Shenzhen ComXim Technologies Co.,Ltd.
Address	:	2F Block A and B, Donghaiwang IndustrialZone, No. 369 BulongRoad, Longgang District, Shenzhen

1.2. Description of Device (EUT)

Product Name	:	Electric turntable
Model No.	:	MT320RL40, MT200RL20H, MT200RL20FU-A, MT200RL20FU-AB, MT200RL20FU-B, MT200RL20FU-BA, MT320RL40, MT320RL40FU-B, MT320RL40FU-A, MT320RL40P-A, MT320RL40P-AB, MT320RL40P-B, MT320RL40P-BA, MT350RL40, MT350RL40FU-B, MT350RL40FU-A, MT350RL40P-A, MT350RL40P-AB, MT350RL40P-B, MT350RL40P-BA, NT400RL40FU-A, NT400RL40FU-B, MT400RL40P-A, MT400RL40P-AB, MT400RL40P-B, MT400RL40P-BA (Note: Except for size, color, and model, all samples are the same, so we only prepare "MT320RL40" for testing.)
Trade Mark	:	ComXim
Test Power Supply	:	Input:100-240V~50/60Hz0.43A MaxOutput:15V ==1.2A
Test Sample No.	:	1-2-1(Normal Sample)
Adapter	:	Model:HN150120AUS3D
Remark: (1) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.		

1.3. Auxiliary Equipment Used During Test

Description	Manufacturer
Remote control	Shenzhen ComXim Technologies Co.,Ltd

1.4. Description of Test Mode

Pretest Mode	Description
Mode 1	On

For Mode 1 Block Diagram of Test Setup

1.5. Test Summary

Standard Section	Test Items	Test Mode	Status
§15.107	Power Line Conducted Emission Test	Mode 1	P
§15.109	Radiated Emission Test (Below 1 GHz)	Mode 1	P
§15.109	Radiated Emission Test (Above 1GHz)	Mode 1	P

P) Indicates “PASS”.
F) Indicates “Fail”.
N) Indicates “Not applicable”.

1.6. Test Equipment List

☒ Power Line Conducted Emission Measurement

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	L.I.S.N. Artificial Mains Network	Rohde & Schwarz	ENV216	100055	Oct. 23, 2022	1 Year
2.	Three Phase V-type Artificial Power Network	CYBERTEK	EM5040DT	E215040DT001	Jul. 05, 2023	1 Year
3.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Oct. 13, 2022	1 Year
4.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Oct. 22, 2022	1 Year
5.	Software Name EZ-EMC	Ferrari Technology	ANB-03A	N/A	N/A	N/A

☒ Radiated Emission Test (Below 1 GHz)

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Test Receiver	Rohde & Schwarz	ESR26	101481	Oct. 23, 2022	1 Year
2.	Pre-amplifier	SONOMA	310N	186860	Oct. 23, 2022	1 Year
3.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	345	Oct. 23, 2022	3 Year
4.	Software Name EZ-EMC	Ferrari Technology	ANB-03A	N/A	N/A	N/A
5.	Loop Antenna	Schwarzbeck	FMZB1519B	00053	Oct. 23, 2022	1 Year

☒ Radiated Emission Test (Above 1GHz)

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Test Receiver	Rohde & Schwarz	ESR26	101481	Oct. 23, 2022	1 Year
2.	Software Name EZ-EMC	Ferrari Technology	ANB-03A	N/A	N/A	N/A
3.	EMI Preamplifier	SKET Electronic	LNPA-0118G-45	SKET-PA-002	Oct. 13, 2022	1 Year
4.	Double Ridged Horn Antenna	SCHWARZBECK	BBHA 9120D	02555	Oct. 16, 2022	3 Year

1.7. Measurement Uncertainty

Radiation Uncertainty(30MHz-1GHz)	:	Ur = 4.46 dB (Horizontal)
	:	Ur = 5.04 dB (Vertical)
Radiation Uncertainty(1GHz-6GHz)	:	Ur = 4.92 dB (Horizontal)
	:	Ur = 4.92 dB (Vertical)
Conduction Uncertainty	:	Uc = 3.4 dB
Disturbance Uncertainty	:	Ud = 3.4 dB

1.8. Description of Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

FCC-Registration No.: 184111

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No. 184111.

ISED-Registration No.: 8058A

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (ISED) Innovation, Science and Economic Development Canada. The acceptance letter from the ISED is maintained in our files. Registration 8058A.

Test Location

Shenzhen Anbotek Compliance Laboratory Limited.
1/F, Building D, Sogood Science and Technology Park, Sanwei community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.518128

2. Power Line Conducted Emission Test

2.1. Test Standard and Limit

Test Standard:	FCC 47 CFR Part 15 Subpart B

☐ **Limits for conducted emission at the AC mains power ports of Class A equipment**

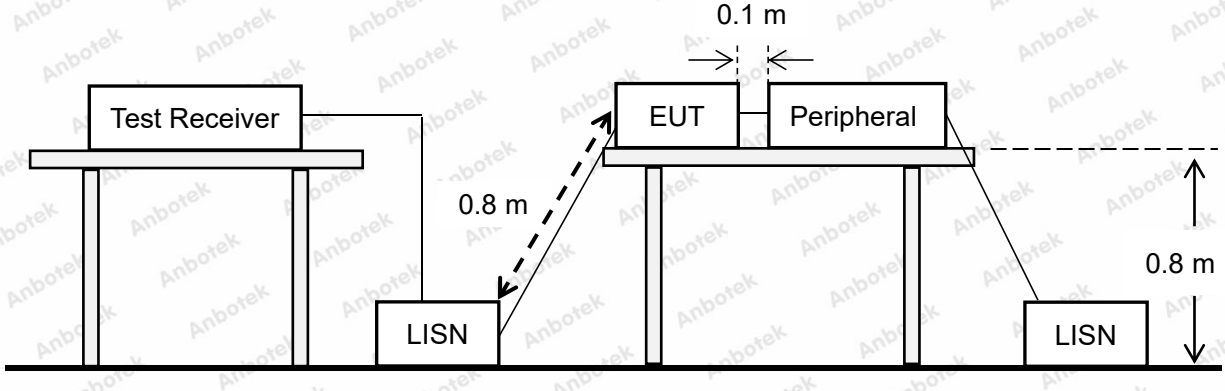
Frequency (MHz)	Limits (dBμV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	79.0	66.0
0.50 ~ 30.00	73.0	60.0
Remark: The lower limit shall apply at the transition frequencies.		

☒ **Limits for conducted emission at the AC mains power ports of Class B equipment**

Frequency (MHz)	Limits (dBμV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66.0 ~ 56.0 *	56.0 ~ 46.0 *
0.50 ~ 5.00	56.0	46.0
5.00 ~ 30.00	60.0	50.0

Remark:
(1) The lower limit shall apply at the transition frequencies.
(2) The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.

2.2. Test Setup



2.3. Test Procedure

The table-top EUT is placed on a non-conductive table 0.8 m above the horizontal ground reference plane, and the back of the EUT is 0.4 m away from the vertical ground reference plane, and at least 0.8 m from any other metal surface or ground plane. The floor-standing EUT is placed on an insulating support 0.1 m above the horizontal ground reference plate, at least 0.8 m away from other metal objects.

Connect EUT to the power mains through an LISN. Where the mains cable supplied by the manufacturer is longer than 1 m, the excess should be folded at the center into a bundle no longer than 0.4 m, so that its length is shortened to 1 m. All the peripherals are connecting to the other LISN.

The initial testing identified the frequency that has the highest disturbance relative to the limit while operating the EUT in typical modes of operation and cable positions in a test setup representative of typical system configuration.

The identification of the frequency of highest disturbance with respect to the limit was found by investigating disturbances at a number of significant frequencies. The probable frequency of maximum disturbance had been found and that the associated cable and EUT configuration and mode of operation had been identified.

Set the test-receiver to quasi peak detect function and average detect function, and to measure the conducted emissions values.

2.4. Test Results

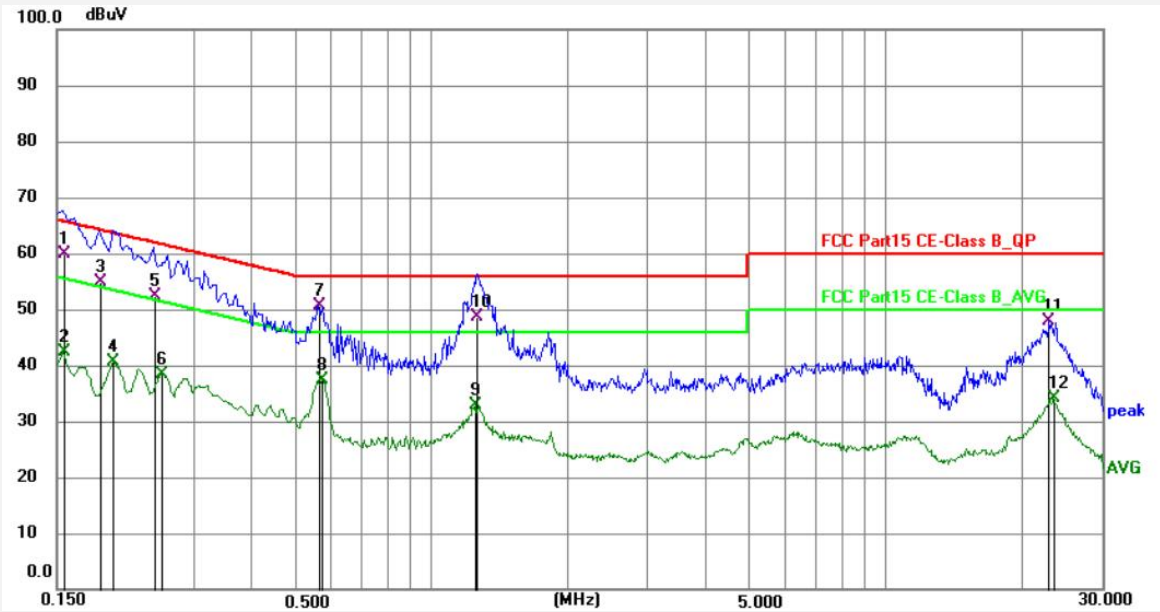
PASS

During the test, pre-scan all modes, only the worst case is recorded in the report.

The test curves are shown in the following pages.

Power Line Conducted Test Data

Test Site:	1# Shielded Room
Operating Condition:	Mode 1
Test Specification:	AC 120V, 60Hz
Comment:	Live Line
	Temp.: 22.7℃ Hum.: 56%

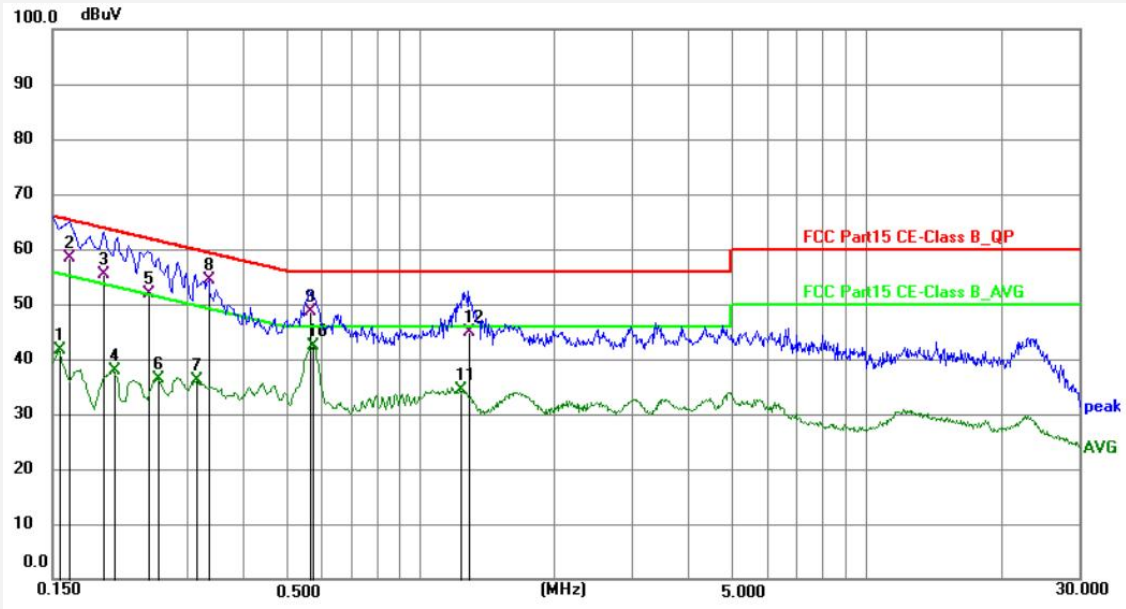


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1545	39.45	20.45	59.90	65.75	-5.85	QP	P
2	0.1545	22.04	20.45	42.49	55.75	-13.26	AVG	P
3	0.1860	34.39	20.41	54.80	64.21	-9.41	QP	P
4	0.1995	20.28	20.39	40.67	53.63	-12.96	AVG	P
5	0.2445	31.97	20.33	52.30	61.94	-9.64	QP	P
6	0.2535	17.98	20.32	38.30	51.64	-13.34	AVG	P
7 *	0.5639	30.38	20.13	50.51	56.00	-5.49	QP	P
8	0.5775	17.27	20.12	37.39	46.00	-8.61	AVG	P
9	1.2615	12.76	20.02	32.78	46.00	-13.22	AVG	P
10	1.2660	28.68	20.02	48.70	56.00	-7.30	QP	P
11	22.9375	27.73	20.11	47.84	60.00	-12.16	QP	P
12	23.4865	14.10	20.12	34.22	50.00	-15.78	AVG	P

Note: Result = Reading + Factor Over Limit = Result - Limit

Power Line Conducted Test Data

Test Site: 1# Shielded Room
Operating Condition: Mode 1
Test Specification: AC 120V, 60Hz
Comment: Neutral Line
Temp.: 22.7℃ Hum.: 56%



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1545	21.29	20.45	41.74	55.75	-14.01	AVG	P
2	0.1635	37.86	20.44	58.30	65.28	-6.98	QP	P
3	0.1949	35.00	20.40	55.40	63.83	-8.43	QP	P
4	0.2040	17.45	20.39	37.84	53.45	-15.61	AVG	P
5	0.2445	31.57	20.33	51.90	61.94	-10.04	QP	P
6	0.2580	16.09	20.31	36.40	51.50	-15.10	AVG	P
7	0.3165	15.84	20.25	36.09	49.80	-13.71	AVG	P
8	0.3345	34.19	20.24	54.43	59.34	-4.91	QP	P
9	0.5639	28.47	20.13	48.60	56.00	-7.40	QP	P
10 *	0.5775	22.33	20.12	42.45	46.00	-3.55	AVG	P
11	1.2345	14.31	20.03	34.34	46.00	-11.66	AVG	P
12	1.2885	24.78	20.02	44.80	56.00	-11.20	QP	P

Note: Result = Reading + Factor Over Limit = Result - Limit

3. Radiated Emission Test (Below 1 GHz)

3.1. Test Standard and Limit

Test Standard	FCC 47 CFR Part 15 Subpart B

☐ **Limit for radiated emissions at frequencies up to 1 GHz for class A equipment**

	Frequency (MHz)	DISTANCE (Meters)	FIELD STRENGTHS LIMIT	
			μV/m	(dBμV/m)
Test Limit	30 ~ 88	3	300	49.5
	88 ~ 216	3	500	54.0
	216 ~ 960	3	700	56.9
	Above 960	3	1000	60.0

Remark: (1) Emission level (dB)μV = 20 log Emission level μV/m
(2) The smaller limit shall apply at the cross point between two frequency bands.
(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

☒ **Limit for radiated emissions at frequencies up to 1 GHz for class B equipment**

	Frequency (MHz)	DISTANCE (Meters)	FIELD STRENGTHS LIMIT	
			μV/m	(dBμV/m)
Test Limit	30 ~ 88	3	100	40.0
	88 ~ 216	3	150	43.5
	216 ~ 960	3	200	46.0
	Above 960	3	501	54.0

Remark: (1) Emission level (dB)μV = 20 log Emission level μV/m
(2) The smaller limit shall apply at the cross point between two frequency bands.
(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.
(4) Radiated emission test from 9 KHz to 10th harmonic of fundamental was verified, and no emission foundexcept system noise foor in 9 KHz to 30MHz and not recorded in this report.

3.2. Test Setup

Figure 1. Below 30MHz

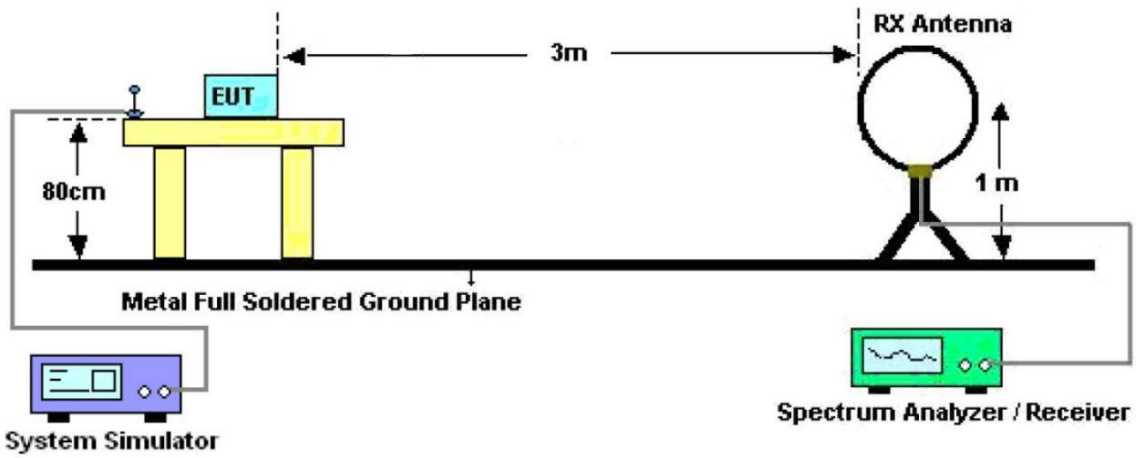
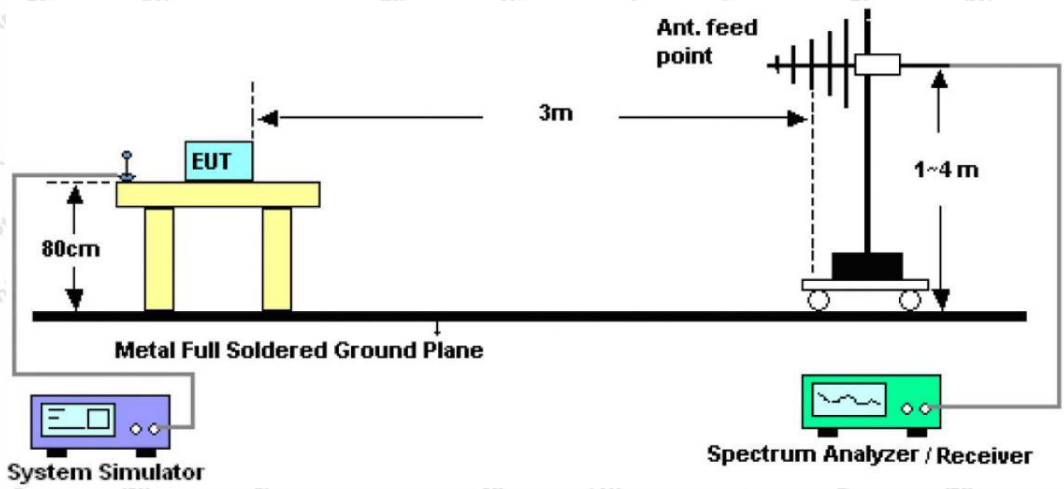


Figure 2. 30MHz to 1GHz



3.3. Test Procedure

The table-top EUT is placed on a non-conductive table 0.8 m above the horizontal ground reference plane. The floor-standing EUT is placed on an insulating support 0.1 m above the horizontal ground reference plane.

The EUT was set 3 m away from the receiving antenna that was mounted on a non-conductive mast. The antenna can move up and down between 1 to 4 m to find out the maximum emission level.

The turntable can rotate 360 degree to determine the position of the maximum emission level.

The initial testing identified the frequency that has the highest disturbance relative to the limit while operating the EUT in typical modes of operation and cable positions in a test setup representative of typical system configuration.

The identification of the frequency of highest emission with respect to the limit was found by investigating emissions at a number of significant frequencies. The probable frequency of maximum emission had been found and that the associated cable and EUT configuration and mode of operation had been identified.

The bandwidth of the Receiver is set at 120 kHz.

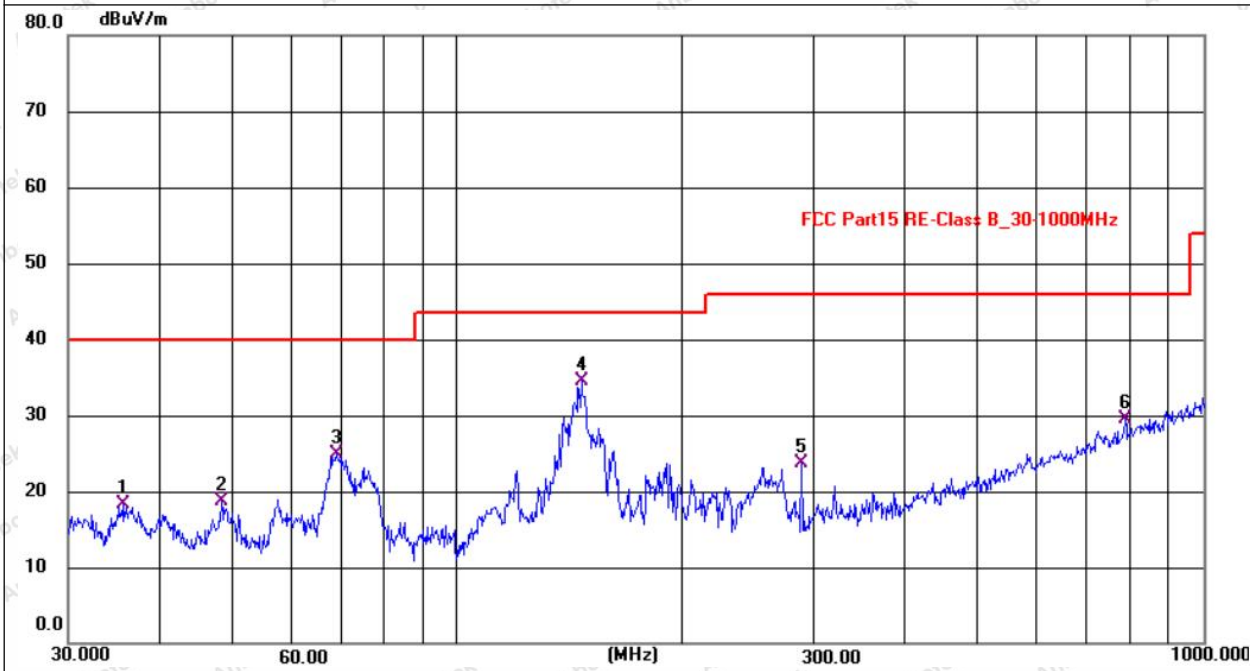
3.4. Test Results

PASS

During the test, pre-scan all modes, only the worst case is recorded in the report.

The test curves are shown in the following pages.

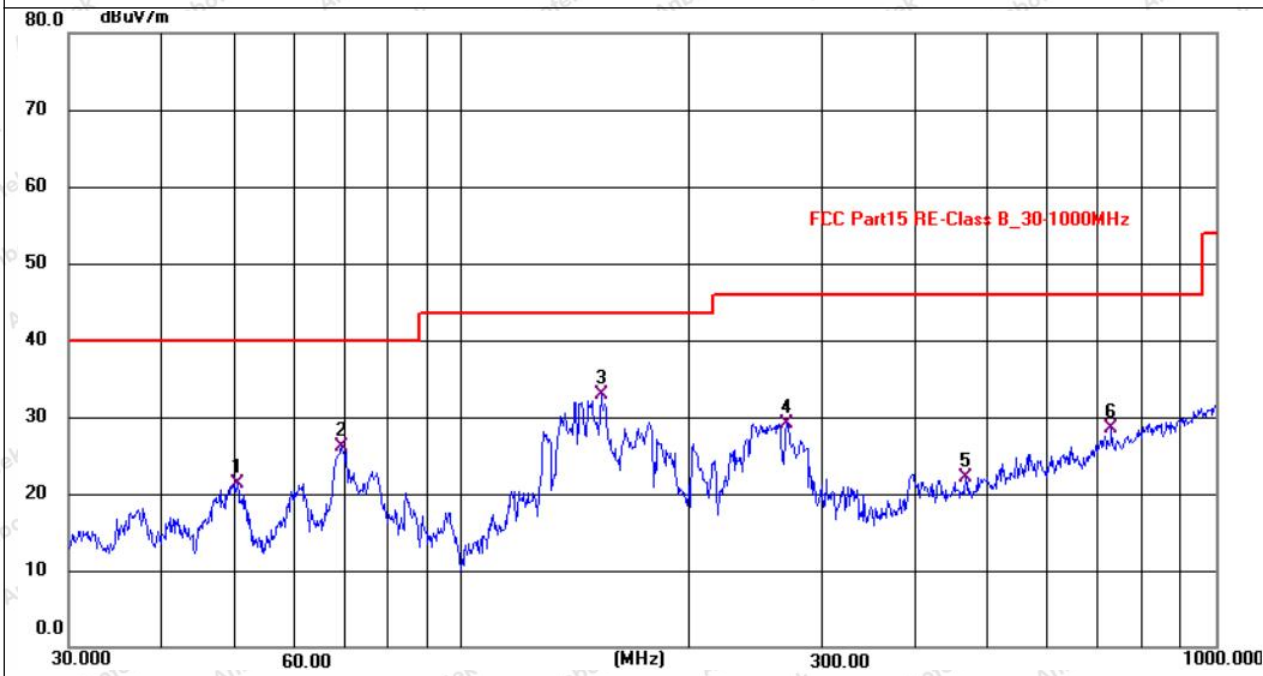
Test item:	Radiation Test	Polarization:	Horizontal
Standard:	(RE)FCC 47 CFR Part 15 Subpart B	Power Source:	AC 120V, 60Hz
Frequency Range:	30MHz ~ 1000MHz	Temp.(℃)/Hum.(%RH):	24.2(℃)/52%RH
Distance:	3m	Test Mode:	Mode 1



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	35.4992	33.18	-14.88	18.30	40.00	-21.70	QP
2	48.2471	33.78	-15.00	18.78	40.00	-21.22	QP
3	69.1141	42.49	-17.50	24.99	40.00	-15.01	QP
4 *	146.3735	49.62	-15.10	34.52	43.50	-8.98	QP
5	289.0021	38.87	-15.24	23.63	46.00	-22.37	QP
6	786.4711	32.41	-2.95	29.46	46.00	-16.54	QP

Note: Result= Reading + Factor Over Limit=Result-Limit

Test item:	Radiation Test	Polarization:	Vertical
Standard:	(RE)FCC 47 CFR Part 15 Subpart B	Power Source:	AC 120V, 60Hz
Frequency Range:	30MHz ~ 1000MHz	Temp.(℃)/Hum.(%RH):	24.2(℃)/52%RH
Distance:	3m	Test Mode:	Mode 1



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	50.3206	36.13	-14.81	21.32	40.00	-18.68	QP
2	69.3568	43.61	-17.50	26.11	40.00	-13.89	QP
3 *	153.2004	47.13	-14.27	32.86	43.50	-10.64	QP
4	269.9012	44.34	-15.19	29.15	46.00	-16.85	QP
5	467.2349	31.97	-9.90	22.07	46.00	-23.93	QP
6	726.8052	32.97	-4.38	28.59	46.00	-17.41	QP

Note: Result= Reading + Factor Over Limit=Result-Limit

4. Radiated Emission Test (Above 1GHz)

4.1. Test Standard and Limit

Test Standard	FCC 47 CFR Part 15 Subpart B

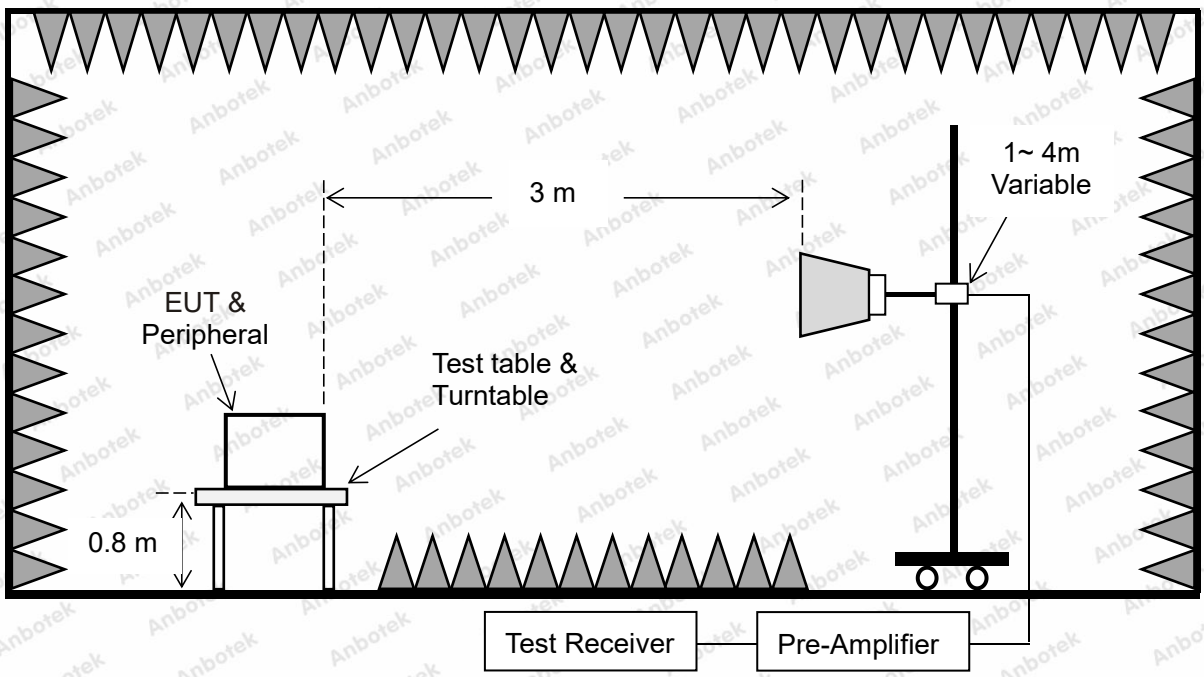
☐ **Limit for radiated emissions at frequencies above 1 GHz for class A equipment**

Frequency (MHz)	Distance (Meters)	Field Strengths Limit (dBμV/m)	
		Peak	Average
Above 960	3	80	60
Remark: N/A			

☒ **Limit for radiated emissions at frequencies above 1 GHz for class B equipment**

Frequency (MHz)	Distance (Meters)	Field Strengths Limit (dBμV/m)	
		Peak	Average
Above 960	3	74	54
Remark: N/A			

4.2. Test Setup



4.3. Test Procedure

The table-top EUT is placed on a non-conductive table 0.8 m above the horizontal ground reference plane. The floor-standing EUT is placed on an insulating support 0.1 m above the horizontal ground reference plane.

The EUT was set 3 m away from the receiving antenna that was mounted on a non-conductive mast. The antenna can move up and down between 1 to 4 m to find out the maximum emission level.

The turntable can rotate 360 degree to determine the position of the maximum emission level.

The initial testing identified the frequency that has the highest disturbance relative to the limit while operating the EUT in typical modes of operation and cable positions in a test setup representative of typical system configuration.

The identification of the frequency of highest emission with respect to the limit was found by investigating emissions at a number of significant frequencies. The probable frequency of maximum emission had been found and that the associated cable and EUT configuration and mode of operation had been identified.

The test receiver is set to peak and average detects function.

The bandwidth of the test receiver is set at 1MHz.

4.4. Test Results

PASS

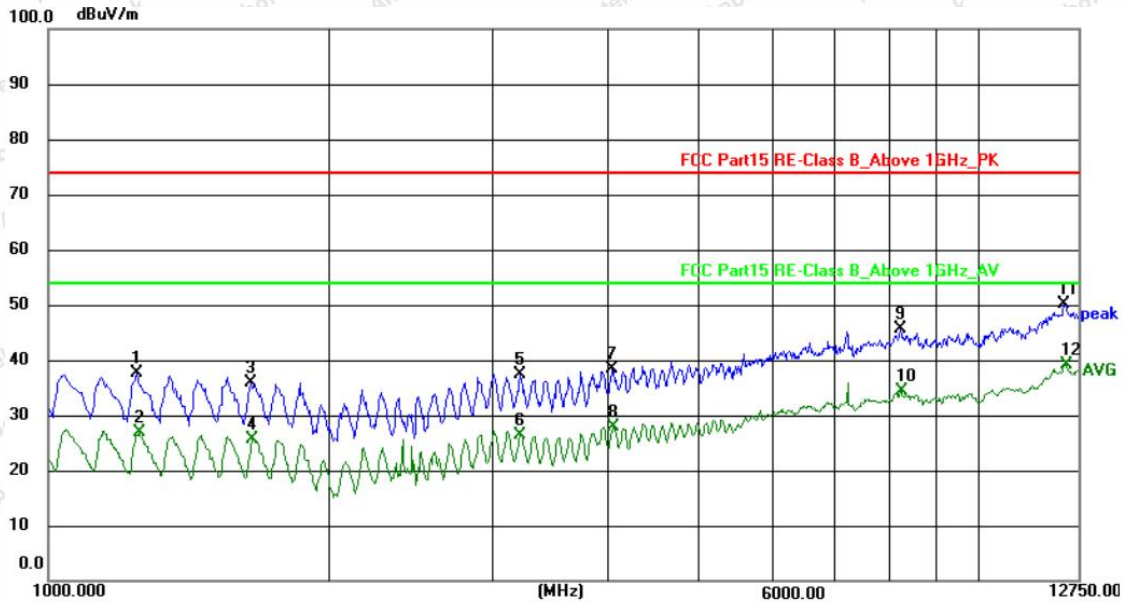
During the test, pre-scan all modes, only the worst case is recorded in the report.

The test curves are shown in the following pages.

Note:The maximum operating frequency inside the product is 22.1184

Test Results (1GHz-12.75GHz)

Test item:	Radiation Test	Polarization:	Horizontal
Standard:	(RE)FCC Part 15 Subpart B	Power Source:	AC 120V, 60Hz
Test Mode:	Mode 1	Temp.(℃)/Hum.(%RH):	22℃/45%RH

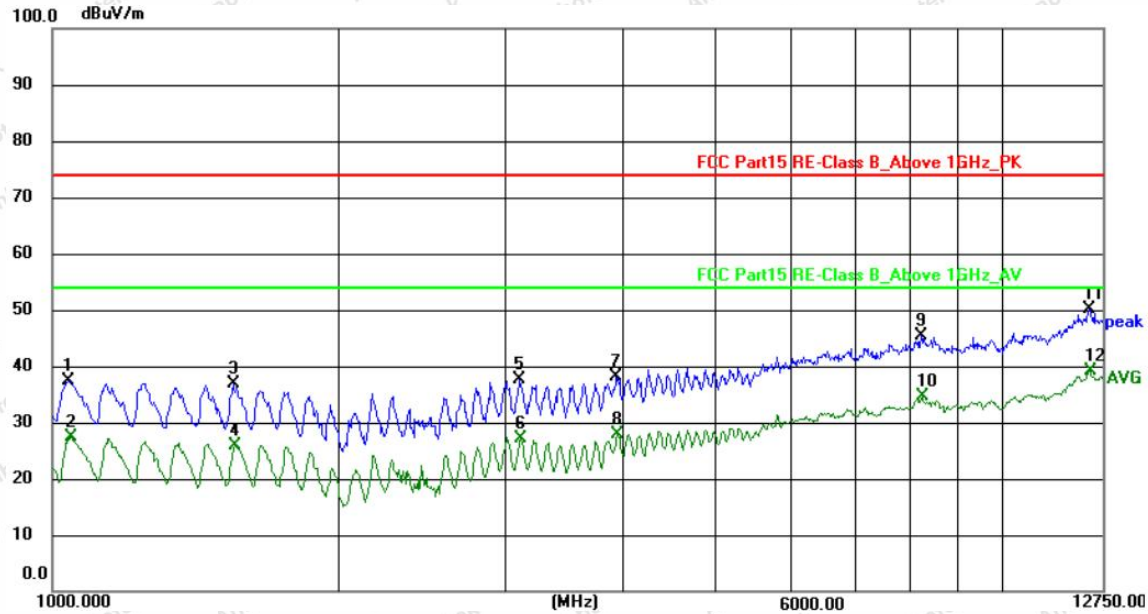


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1246.750	43.21	-5.65	37.56	74.00	-36.44	peak
2	1252.625	32.41	-5.64	26.77	54.00	-27.23	AVG
3	1652.125	40.54	-4.54	36.00	74.00	-38.00	peak
4	1658.000	30.26	-4.53	25.73	54.00	-28.27	AVG
5	3214.875	37.42	0.08	37.50	74.00	-36.50	peak
6	3214.875	26.38	0.08	26.46	54.00	-27.54	AVG
7	4031.500	34.97	3.39	38.36	74.00	-35.64	peak
8	4055.000	24.50	3.44	27.94	54.00	-26.06	AVG
9	8226.250	32.48	13.15	45.63	74.00	-28.37	peak
10	8238.000	21.27	13.15	34.42	54.00	-19.58	AVG
11	12327.000	32.56	17.67	50.23	74.00	-23.77	peak
12 *	12379.875	21.56	17.67	39.23	54.00	-14.77	AVG

Note: Result=Reading+Factor Over Limit=Result-Limit

Test Results (1GHz-12.75GHz)

Test item:	Radiation Test	Polarization:	Vertical
Standard:	(RE)FCC Part 15 Subpart B	Power Source:	AC 120V, 60Hz
Test Mode:	Mode 1	Temp.(℃)/Hum.(%RH):	22℃/45%RH



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1041.125	42.99	-5.73	37.26	74.00	-36.74	peak
2	1047.000	33.00	-5.71	27.29	54.00	-26.71	AVG
3	1552.250	41.14	-4.18	36.96	74.00	-37.04	peak
4	1558.125	30.11	-4.17	25.94	54.00	-28.06	AVG
5	3109.125	37.41	0.33	37.74	74.00	-36.26	peak
6	3115.000	26.78	0.32	27.10	54.00	-26.90	AVG
7	3931.625	35.03	3.07	38.10	74.00	-35.90	peak
8	3943.375	24.74	3.15	27.89	54.00	-26.11	AVG
9	8226.250	33.26	12.02	45.28	74.00	-28.72	peak
10	8238.000	22.50	12.01	34.51	54.00	-19.49	AVG
11	12350.500	32.52	17.62	50.14	74.00	-23.86	peak
12 *	12379.875	21.48	17.63	39.11	54.00	-14.89	AVG

Note: Result=Reading+Factor Over Limit=Result-Limit

APPENDIX I -- TEST SETUP PHOTOGRAPH

Please refer to separated files Appendix I -- Test Setup Photograph

APPENDIX II -- EXTERNAL PHOTOGRAPH

Please refer to separated files Appendix II -- External Photograph

APPENDIX III -- INTERNAL PHOTOGRAPH

Please refer to separated files Appendix III -- Internal Photograph

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