FCC EMC Test Report

Project No.	:	2209C015
Equipment	:	Nearhub Interactive Collaboration Board, Interactive Collaboration Board, Smart Conference Board, Commercial Smart Board, Smart Education Board
Brand Name	:	N/A
Test Model	:	NearHub S55
Series Model	:	NearHub******("*" can be 0-9, A-Z, a-z or blank, denoting different enclosure color, sales area or customer).
Applicant	:	SUZHOU AUDITORYWORKS CO.,LTD.
Address	:	Unit 2-B504, Creative Industry Park, No.328, Xinghu St.,Suzhou Industrial Park, 215000 Suzhou, China
Date of Receipt	:	Sep. 06, 2022
Date of Test	:	Sep. 06, 2022 ~ Sep. 27, 2022
Issued Date	:	Oct. 04, 2022
Report Version	:	R01
Test Sample	:	Engineering Sample No.: DG2022090599
Standard(s)	:	FCC CFR Title 47,Part 15,Subpart B

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.

Derek . Tong

Prepared by : Derek Tong

Kang Zhang

Approved by : Kang Zhang

TESTING CERT #5123.02

BTL Inc.

No. 3 Jinshagang 1st Rd. Shixia, Dalang Town Dongguan City, Guangdong 523792 People's Republic of China.

Tel: +86-769-8318-3000 Web: www.newbtl.com Service mail: btl_qa@newbtl.com

Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

BTL's reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **BTL** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **BTL** issued reports.

The report must not be used by the client to claim product certification, approval, or endorsement by NIST, A2LA, or any agency of the U.S. Government.

This report is the confidential property of the client. As a mutual protection to the clients, the public and ourselves, the test report shall not be reproduced, except in full, without our written approval.

BTL's laboratory quality assurance procedures are in compliance with the **ISO/IEC 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

BTL is not responsible for the sampling stage, so the results only apply to the sample as received.

The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.
Please note that the measurement uncertainty is provided for informational purpose only and are not use in determining the Pass/Fail results.

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REPORT ISSUED HISTORY

Report No.	Version	Description	Issued Date	Note
BTL-FCCE-1-2209C015	R00	Original Report.	Sep. 30, 2022	Invalid
BTL-FCCE-1-2209C015	R01	1. Corrected the test model. 2. Added the series model. 3. Corrected the power rating. 4. Corrected the product name. 5. Added four product name.	Oct. 04, 2022	Valid

1. SUMMARY OF TEST RESULTS

Emission		
Ref Standard(s)	Test Item	Result
FCC CFR Title 47,Part 15,Subpart B ANSI C63.4-2014	AC Power Line Conducted Emissions	PASS
	Radiated Emissions 30 MHz to 1 GHz	PASS
	Radiated Emissions Above 1 GHz	PASS

1.1 TEST FACILITY

The test facilities used to collect the test data in this report at the location of No. 3 Jinshagang 1st Rd. Shixia, Dalang Town Dongguan City, Guangdong 523792 People's Republic of China.
BTL's Registration Number for FCC: 357015

BTL's Designation Number for FCC: CN1240

1.2 MEASUREMENT UNCERTAINTY

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))
The BTL measurement uncertainty as below table:

A. AC power line conducted emissions test:

Test Site	Method	Measurement Frequency Range	U,(dB)
DG-C01	CISPR	150kHz ~ 30MHz	2.86

B. Radiated emissions test:

Test Site	Method	Measurement Frequency Range	Ant. H / V	U,(dB)
DG-CB08 (10m)	CISPR	30MHz ~ 200MHz	V	4.72
		30MHz ~ 200MHz	H	4.40
		200MHz ~ 1,000MHz	V	4.58
		200MHz ~ 1,000MHz	H	3.70

Test Site	Method	Measurement Frequency Range	U,(dB)
DG-CB08 (3m)	CISPR	1GHz ~ 6GHz	3.94
		6GHz ~ 18GHz	4.94

Test Site	Method	Measurement Frequency Range	U,(dB)
DG-CB08 (1m)	CISPR	18 ~ 26.5 GHz	3.62
		26.5 ~ 40 GHz	4.00

Note: Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

1.3 TEST ENVIRONMENT CONDITIONS

Test Item	Temperature	Humidity	Tested By
AC Power Line Conducted Emissions	25°C	50%	Rock Liu
Radiated emissions 30 MHz to 1 GHz	26°C	60%	Jolly Su
Radiated emissions above 1 GHz	25-26°C	45-60%	Jolly Su

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Nearhub Interactive Collaboration Board, Interactive Collaboration Board, Smart Conference Board, Commercial Smart Board, Smart Education Board
Brand Name	N/A
Test Model	NearHub S55
Series Model	NearHub******("*" can be 0-9, A-Z, a-z or blank, denoting different enclosure color, sales area or customer).
Model Difference(s)	Only differ in model name due to marketing purpose.
Power Source	AC Mains.
Power Rating	100-240V ~ 50-60Hz 4A
Connecting I/O Port(s)	1* AC port 2* HDMI port 1* AUDIO port 4* USB port 1* LAN port 1* Type-C port 1* OPS port
Classification Of EUT	Class A
Highest Internal Frequency(Fx)	5850MHz

Cable Type	Shielded Type	Ferrite Core	Length(m)	Note
AC Power Cord	Non-shielded	NO	1.8/1.5	1.8m is worst case Detachable
HDMI	Shielded	NO	1.8/1.5/1.2	-
USB	Shielded	NO	1.8/1.5/1.2	-

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. Power cable 1.8m, 1.5m length, HDMI, USB cable 1.8m, 1.5m, 1.2m, worst case is HDMI+USB cable 1.8m with power cable testing and recording in test report.

2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	HDMI1 IN 3840*2160/144Hz+HDMI2 OUT 3840*2160/144Hz 2.4Gwifi+BT 1.8m
Mode 2	HDMI1 IN 3840*2160/144Hz+HDMI2 OUT 3840*2160/144Hz 5Gwifi+BT 1.8m
Mode 3	HDMI1 IN 3840*2160/144Hz+HDMI2 OUT 3840*2160/144Hz 5.8Gwifi+BT 1.8m
Mode 4	android+HDMI2 OUT 3840*2160/144Hz 2.4Gwifi+BT 1.8m
Mode 5	OPS
Mode 6	LAN play+HDMI2 OUT 3840*2160/144Hz 2.4Gwifi+BT 1.8m
Mode 7	HDM1 2160P+HDMI2 OUT 2160P 2.4Gwifi+BT 1.8m
Mode 8	HDMI1 2560*1440/60Hz+HDMI2 OUT 1920*1080/60Hz +2.4Gwifi+BT 1.8m
Mode 9	HDMI1 1920*1080/60Hz+HDMI2 OUT 1280*1024/60Hz +2.4Gwifi+BT 1.8m
Mode 10	HDMI1 IN 3840*2160/144Hz+HDMI2 OUT 3840*2160/144Hz 2.4Gwifi+BT 1.5m
Mode 11	HDMI1 IN 3840*2160/144Hz+HDMI2 OUT 3840*2160/144Hz 2.4Gwifi+BT 1.2m
Mode 12	HDM1 IN 3840*2160/144Hz+HDMI2 OUT 3840*2160/144Hz 2.4Gwifi+BT 1.8m (without earphone)

AC Power Line Conducted Emissions test	
Final Test Mode	Description
Mode 1	HDMI1 IN 3840*2160/144Hz+HDMI2 OUT 3840*2160/144Hz 2.4Gwifi+BT 1.8m
Mode 4	android+HDMI2 OUT 3840*2160/144Hz 2.4Gwifi+BT 1.8m
Mode 7	HDM1 2160P+HDMI2 OUT 2160P 2.4Gwifi+BT 1.8m

Radiated emissions 30 MHz to 1 GHz test	
Final Test Mode	Description
Mode 1	HDMI1 IN 3840*2160/144Hz+HDMI2 OUT 3840*2160/144Hz 2.4Gwifi+BT 1.8m
Mode 4	android+HDMI2 OUT 3840*2160/144Hz 2.4Gwifi+BT 1.8m
Mode 7	HDM1 2160P+HDMI2 OUT 2160P 2.4Gwifi+BT 1.8m
Mode 12	HDM1 IN 3840*2160/144Hz+HDMI2 OUT 3840*2160/144Hz 2.4Gwifi+BT 1.8m (without earphone)

Radiated emissions Above 1 GHz test	
Final Test Mode	Description
Mode 1	HDMI1 IN 3840*2160/144Hz+HDMI2 OUT 3840*2160/144Hz 2.4Gwifi+BT 1.8m
Mode 3	HDMI1 IN 3840*2160/144Hz+HDMI2 OUT 3840*2160/144Hz 5.8Gwifi+BT 1.8m
Mode 4	android+HDMI2 OUT 3840*2160/144Hz 2.4Gwifi+BT 1.8m
Mode 7	HDM1 2160P+HDMI2 OUT 2160P 2.4Gwifi+BT 1.8m
Mode 12	HDM1 IN 3840*2160/144Hz+HDMI2 OUT 3840*2160/144Hz 2.4Gwifi+BT 1.8m (without earphone)

Evaluation description:

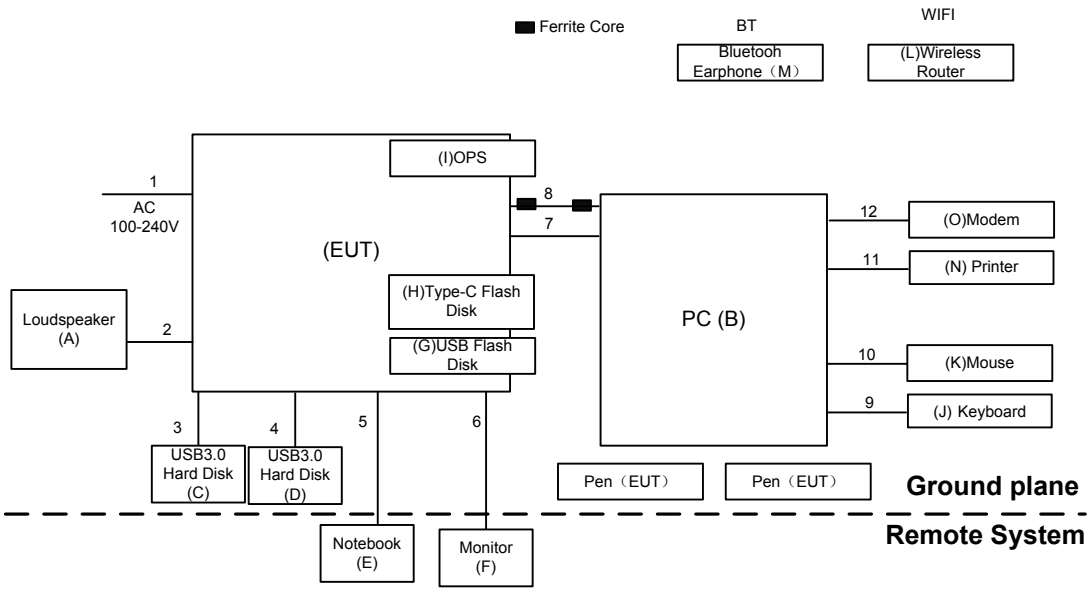
1. The maximum resolution is evaluated Mode 1-4, the worst case and evaluated mode 5-7, the worst case is mode 1 and evaluated the middle and low resolution Mode 8 and Mode 9. At last, evaluated the Mode 10 - Mode 12. According to the client's requirement, choose Mode 1, Mode 4, Mode 7 for conducted emissions, Mode 1, Mode 4, Mode 7, Mode 12 for radiated emissions 30 MHz to 1 GHz, Mode 1, Mode 3, Mode 4, Mode 7, Mode 12 for radiated emissions Above 1 GHz and recorded in test report.
2. The product supports BT&WIFI function.
   The frequency of BT&2.4G&5GWIFI exemptions are 2400-2483.5MHz, 5150-5250MHz, 5250-5350MHz, 5470-5725MHz, 5725-5850MHz.

2.3 EUT OPERATING CONDITIONS

The EUT exercise program used during radiated and/or conducted emission measurement was designed to exercise the various system components in a manner similar to a typical use. The standard test signals and output signal as following:

1. The Mouse and Keyboard connected to PC via USB cable.
2. EUT connected to Loudspeaker via AUIDO cable.
3. EUT connected to PC via HDMI&USB cable.
4. EUT connected to USB3.0 Hard Disk via USB cable.
5. EUT connected to Notebook via RJ45 cable.
6. EUT connected to Wireless Router via WIFI function.
7. EUT connected to Bluetooth Earphone via BT function.
8. OPS, Type-C Flash Disk and USB Flash Disk are plugged into the EUT.
9. EUT connected to Monitor via HDMI cable.
10. Modem connected to PC via RS232 cable.
11. Printer connected to PC via USB cable.

2.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



2.5 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.
A	Loudspeaker	Behringer Holdings	MS20	S1105384274
B	PC	DELL	T3600	24659659297
C	USB3.0 Hard Disk	LACIE	Lacie S.A	NL34BFER
D	USB3.0 Hard Disk	LACIE	Lacie S.A	NL34BJSM
E	Notebook	Lenovo	V310-14ISK	LR07GZNB
F	Monitor	PHILIPS	241P6V	UHBA1633026305
G	USB Flash Disk	Kingston	N/A	N/A
H	Type-c Flash Disk	Samsung	N/A	N/A
I	OPS	N/A	N/A	N/A
J	Keyboard	DELL	KB212-B	CN0HTXH97158125004DXA01
K	Mouse	DELL	MS111-P	CN011D3V71581279OLOT
L	Wireless Router	ASUS	RT-AC66U	E8ICGG000138
M	Bluetooh Earphone	MICROKIA	M9	N/A
N	Printer	Lenovo	M630	SP00335371
O	Modem	Lenovo	LEM56SP	4000137896

Item	Cable Type	Shielded Type	Ferrite Core	Length
1	AC Cable	NO	NO	1.8/1.5m
2	AUIDO Cable	NO	NO	1.2m
3	USB Cable	YES	NO	1.0m
4	USB Cable	YES	NO	1.0m
5	RJ45 Cable	NO	NO	10m
6	HDMI Cable	YES	NO	10m
7	HDMI Cable	YES	NO	1.8/1.5m
8	USB Cable	YES	YES	1.8/1.5/1.2m
9	USB Cable	YES	NO	1.2m
10	USB Cable	YES	NO	1.2m
11	USB Cable	YES	NO	1.2m
12	RS232 Cable	YES	NO	1.2m

3. EMC EMISSION TEST

3.1 AC POWER LINE CONDUCTED EMISSIONS TEST

3.1.1 LIMIT

Frequency of Emission (MHz)	Class A (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	79	66
0.5 - 5	73	60
5 - 30	73	60

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

(3) The test result calculated as following:
Measurement Value = Reading Level + Correct Factor
Correct Factor = Insertion Loss + Cable Loss + Attenuator Factor(if use)
Margin Level = Measurement Value - Limit Value

3.1.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	TWO-LINE V-NETWORK	R&S	ENV216	100526	Jul. 03, 2023
2	EMI Test Receiver	R&S	ESR3	101862	Jan. 22, 2023
3*	Artificial-Mains Network	SCHWARZBECK	NSLK 8127	8127685	Feb. 28, 2024
4	Cable	N/A	RG400	N/A(12m)	Mar. 08, 2023
5	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
6	50Ω Terminator	SHX	TF2-3G-A	8122901	Jan. 23, 2023

Remark: “N/A” denotes no model name, serial no. or calibration specified.
“*” calibration period of equipment list is three year.
Except * item, all calibration period of equipment list is one year.

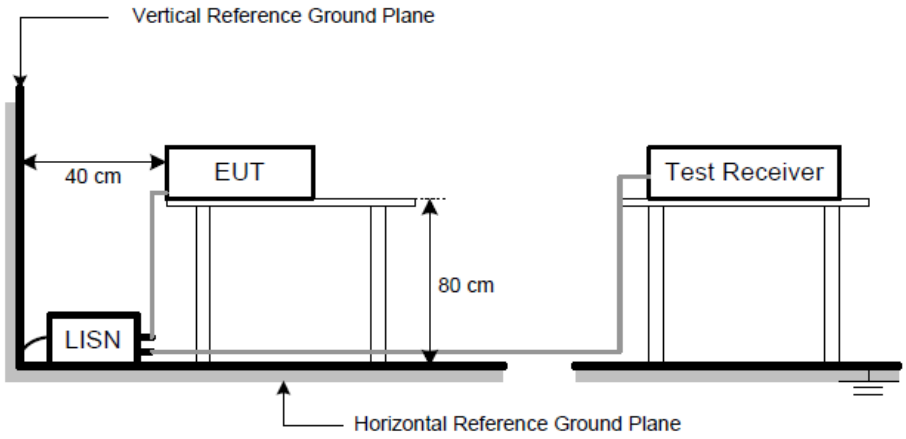
3.1.3 TEST PROCEDURE

a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. LISN at least 80 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.
f. Measuring frequency range from 150KHz to 30MHz.

3.1.4 DEVIATION FROM TEST STANDARD

No deviation

3.1.5 TEST SETUP

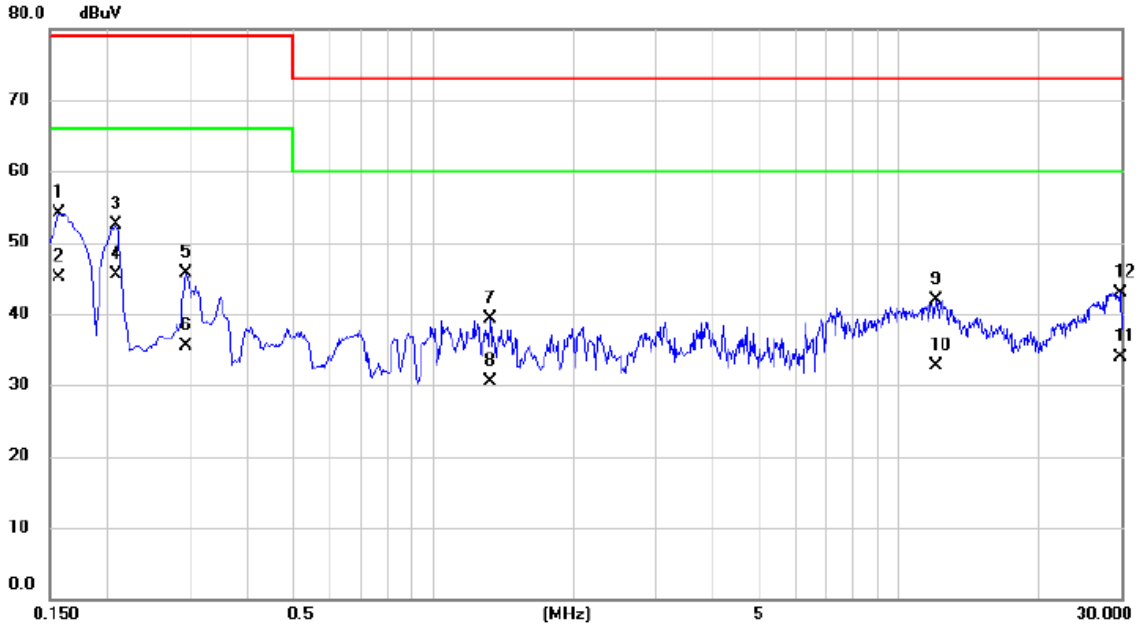


3.1.6 TEST RESULTS

Remark

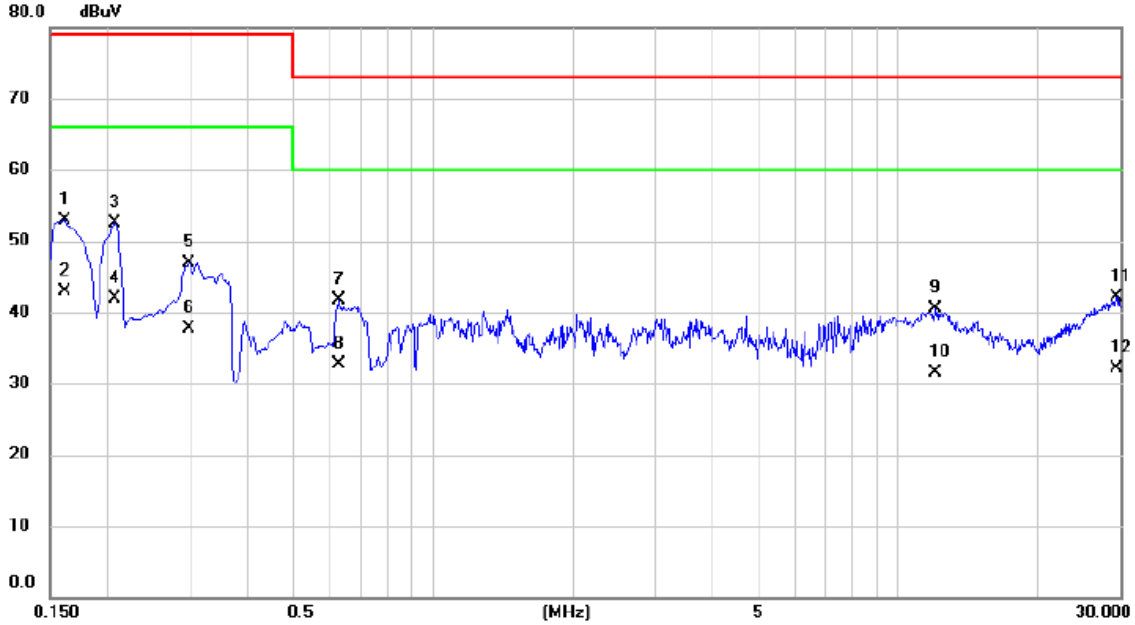
(1) Reading in which marked as QP means measurements by using are Quasi-Peak Mode with Detector BW=9 kHz; SPA setting in RBW=10 kHz, VBW =10 kHz, Swp. Time = 0.3 sec./MHz. Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW=10 kHz, VBW=10 kHz, Swp. Time =0.3 sec./MHz.
(2) All readings are QP Mode value unless otherwise stated AVG in column of 『Note』. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform. In this case, a " * " marked in AVG Mode column of Interference Voltage Measured.

Test Voltage	AC 120V/60Hz	Phase	Line
Test Mode	Mode 1		



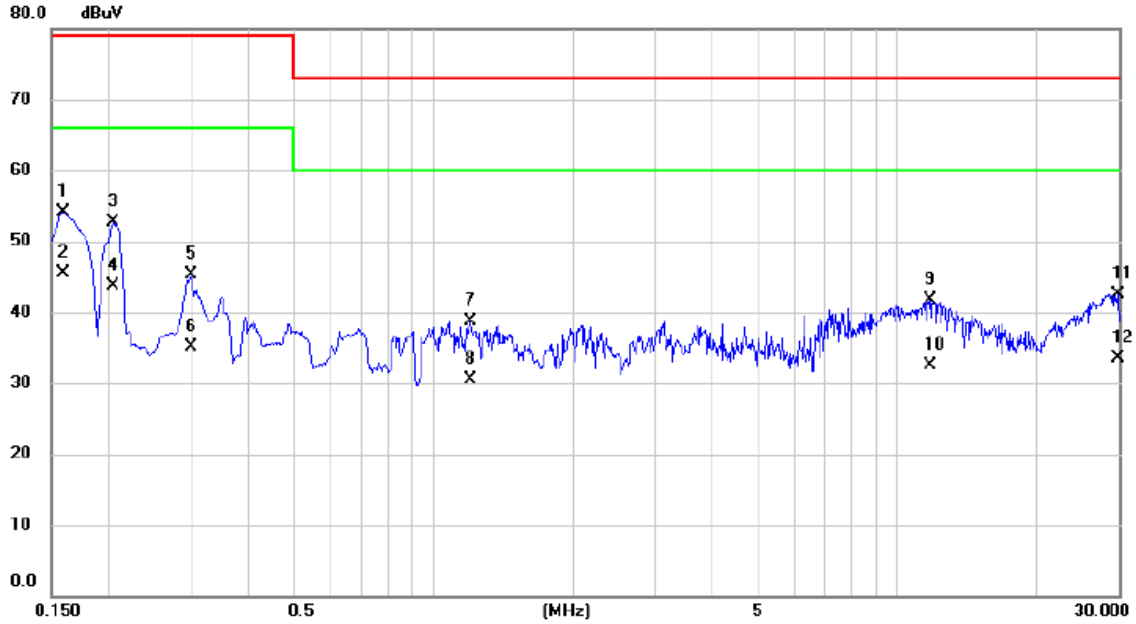
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1568	44.31	9.81	54.12	79.00	-24.88	QP	
2		0.1568	35.30	9.81	45.11	66.00	-20.89	AVG	
3		0.2085	42.70	9.83	52.53	79.00	-26.47	QP	
4	*	0.2085	35.70	9.83	45.53	66.00	-20.47	AVG	
5		0.2940	35.78	9.83	45.61	79.00	-33.39	QP	
6		0.2940	25.70	9.83	35.53	66.00	-30.47	AVG	
7		1.3290	29.37	9.94	39.31	73.00	-33.69	QP	
8		1.3290	20.60	9.94	30.54	60.00	-29.46	AVG	
9		12.0008	31.35	10.46	41.81	73.00	-31.19	QP	
10		12.0008	22.30	10.46	32.76	60.00	-27.24	AVG	
11		29.8725	22.90	10.92	33.82	73.00	-39.18	QP	
12		29.8725	31.94	10.92	42.86	73.00	-30.14	QP	

Test Voltage	AC 120V/60Hz	Phase	Neutral
Test Mode	Mode 1		



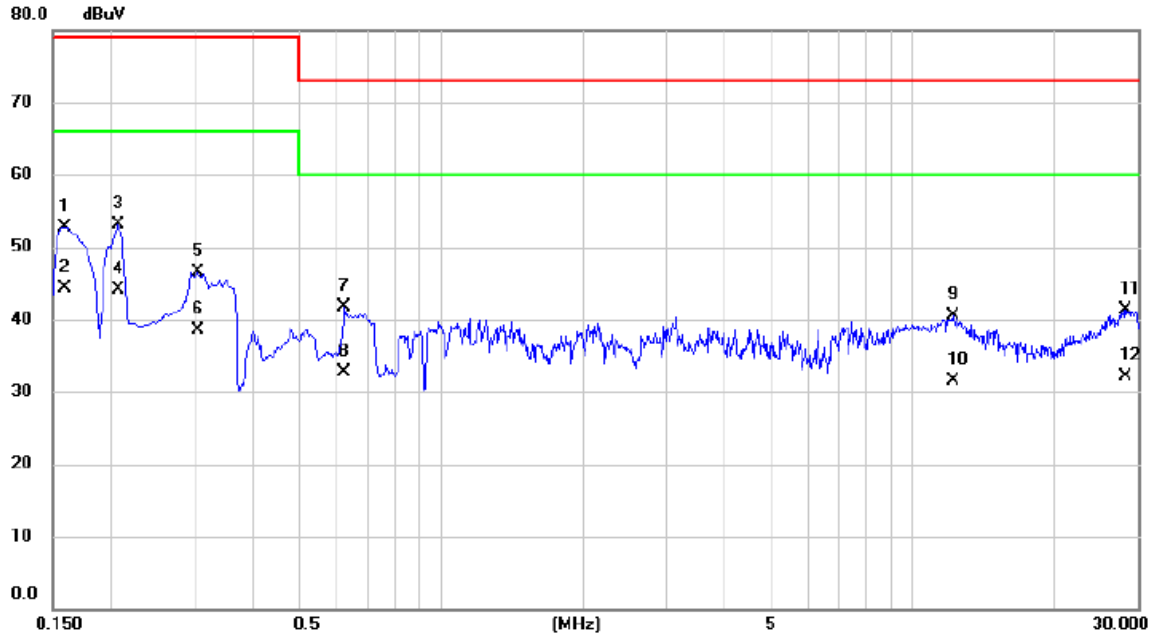
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1613	43.01	9.80	52.81	79.00	-26.19	QP	
2	*	0.1613	33.10	9.80	42.90	66.00	-23.10	AVG	
3		0.2063	42.67	9.81	52.48	79.00	-26.52	QP	
4		0.2063	32.00	9.81	41.81	66.00	-24.19	AVG	
5		0.2985	37.17	9.82	46.99	79.00	-32.01	QP	
6		0.2985	27.80	9.82	37.62	66.00	-28.38	AVG	
7		0.6270	31.81	9.87	41.68	73.00	-31.32	QP	
8		0.6270	22.80	9.87	32.67	60.00	-27.33	AVG	
9		12.0480	29.70	10.71	40.41	73.00	-32.59	QP	
10		12.0480	20.70	10.71	31.41	60.00	-28.59	AVG	
11		29.4135	30.71	11.37	42.08	73.00	-30.92	QP	
12		29.4135	20.80	11.37	32.17	60.00	-27.83	AVG	

Test Voltage	AC 120V/60Hz	Phase	Line
Test Mode	Mode 4		



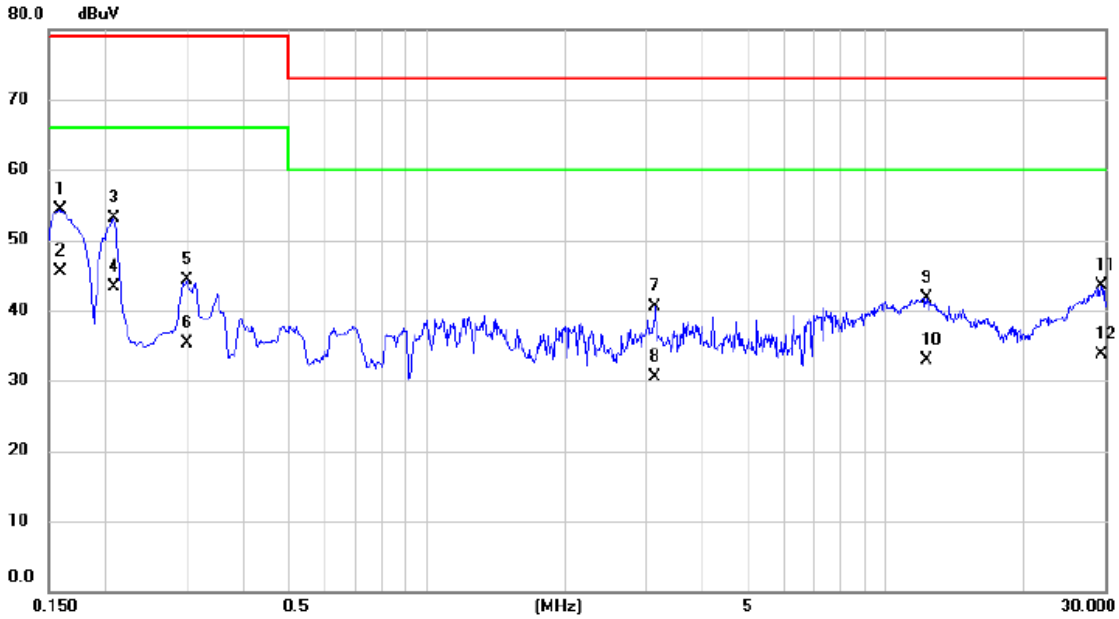
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1590	44.33	9.81	54.14	79.00	-24.86	QP	
2	*	0.1590	35.60	9.81	45.41	66.00	-20.59	AVG	
3		0.2040	42.81	9.83	52.64	79.00	-26.36	QP	
4		0.2040	33.80	9.83	43.63	66.00	-22.37	AVG	
5		0.3007	35.38	9.83	45.21	79.00	-33.79	QP	
6		0.3007	25.30	9.83	35.13	66.00	-30.87	AVG	
7		1.2007	28.68	9.93	38.61	73.00	-34.39	QP	
8		1.2007	20.60	9.93	30.53	60.00	-29.47	AVG	
9		11.7713	31.15	10.46	41.61	73.00	-31.39	QP	
10		11.7713	22.10	10.46	32.56	60.00	-27.44	AVG	
11		29.8343	31.53	10.92	42.45	73.00	-30.55	QP	
12		29.8343	22.50	10.92	33.42	60.00	-26.58	AVG	

Test Voltage	AC 120V/60Hz	Phase	Neutral
Test Mode	Mode 4		



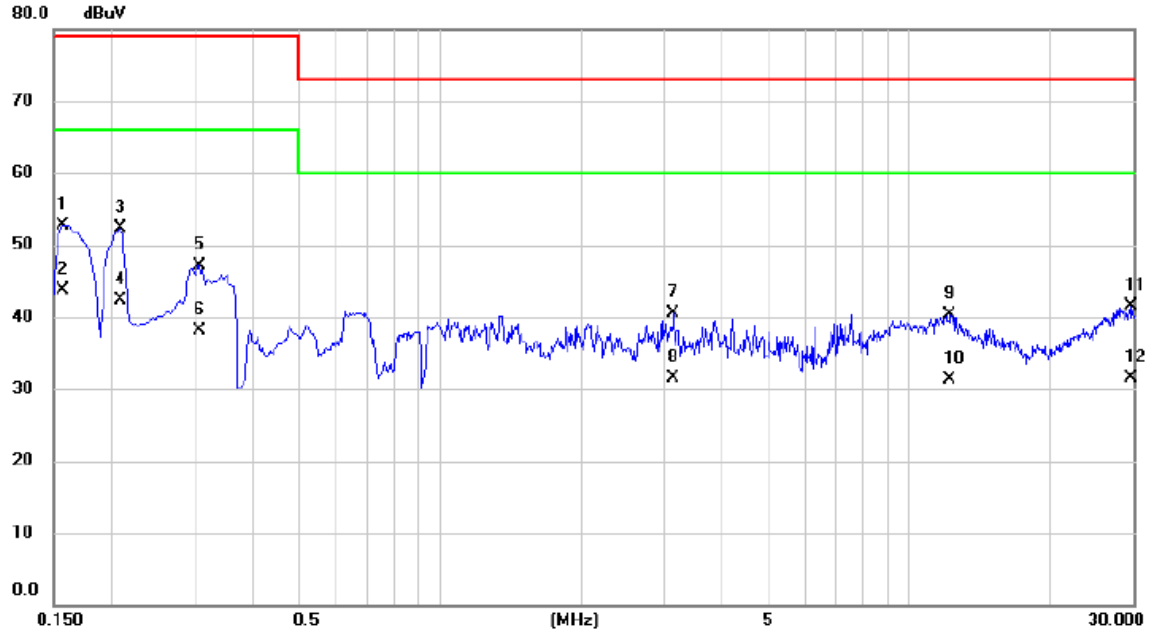
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1590	42.92	9.80	52.72	79.00	-26.28	QP	
2	*	0.1590	34.50	9.80	44.30	66.00	-21.70	AVG	
3		0.2063	43.32	9.81	53.13	79.00	-25.87	QP	
4		0.2063	34.30	9.81	44.11	66.00	-21.89	AVG	
5		0.3052	36.63	9.82	46.45	79.00	-32.55	QP	
6		0.3052	28.60	9.82	38.42	66.00	-27.58	AVG	
7		0.6247	31.83	9.86	41.69	73.00	-31.31	QP	
8		0.6247	22.80	9.86	32.66	60.00	-27.34	AVG	
9		12.2303	29.71	10.72	40.43	73.00	-32.57	QP	
10		12.2303	20.70	10.72	31.42	60.00	-28.58	AVG	
11		28.3043	29.86	11.37	41.23	73.00	-31.77	QP	
12		28.3043	20.80	11.37	32.17	60.00	-27.83	AVG	

Test Voltage	AC 120V/60Hz	Phase	Line
Test Mode	Mode 7		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1590	44.44	9.81	54.25	79.00	-24.75	QP	
2	*	0.1590	35.60	9.81	45.41	66.00	-20.59	AVG	
3		0.2085	43.18	9.83	53.01	79.00	-25.99	QP	
4		0.2085	33.50	9.83	43.33	66.00	-22.67	AVG	
5		0.3007	34.40	9.83	44.23	79.00	-34.77	QP	
6		0.3007	25.50	9.83	35.33	66.00	-30.67	AVG	
7		3.1425	30.48	10.08	40.56	73.00	-32.44	QP	
8		3.1425	20.50	10.08	30.58	60.00	-29.42	AVG	
9		12.2348	31.27	10.48	41.75	73.00	-31.25	QP	
10		12.2348	22.50	10.48	32.98	60.00	-27.02	AVG	
11		29.4450	32.54	10.91	43.45	73.00	-29.55	QP	
12		29.4450	22.70	10.91	33.61	60.00	-26.39	AVG	

Test Voltage	AC 120V/60Hz	Phase	Neutral
Test Mode	Mode 7		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1568	42.97	9.80	52.77	79.00	-26.23	QP	
2	*	0.1568	33.90	9.80	43.70	66.00	-22.30	AVG	
3		0.2085	42.54	9.81	52.35	79.00	-26.65	QP	
4		0.2085	32.50	9.81	42.31	66.00	-23.69	AVG	
5		0.3075	37.27	9.82	47.09	79.00	-31.91	QP	
6		0.3075	28.20	9.82	38.02	66.00	-27.98	AVG	
7		3.1425	30.49	10.09	40.58	73.00	-32.42	QP	
8		3.1425	21.50	10.09	31.59	60.00	-28.41	AVG	
9		12.1920	29.52	10.72	40.24	73.00	-32.76	QP	
10		12.1920	20.50	10.72	31.22	60.00	-28.78	AVG	
11		29.7308	30.20	11.37	41.57	73.00	-31.43	QP	
12		29.7308	20.20	11.37	31.57	60.00	-28.43	AVG	

3.2 RADIATED EMISSIONS 30 MHZ TO 1 GHZ

3.2.1 LIMIT

Limits For FCC CFR Title 47, Part 15, Subpart B (use alternative limits: CISPR 22 third edition)

Frequency (MHz)	Class A (at 10m)
	dBuV/m Quasi-peak
30 - 230	40
230 - 1000	47

NOTE:
(1) The tighter limit applies at the band edges.
(2) Emission level (dBuV/m) = 20log Emission level (uV/m).
3m Emission level = 10m Emission level + 20log(10m/3m).
(3) The test result calculated as following:
Measurement Value = Reading Level + Correct Factor
Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use)
Margin Level = Measurement Value - Limit Value

3.2.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Receiver	Keysight	N9038A	MY54450004	Jul. 03, 2023
2	MXE EMI Receiver	Agilent	N9038A	MY53220133	Jan. 22, 2023
3	Pre-Amplifier	EMC INSTRUMENT	EMC 9135	980284	Jul. 03, 2023
4	Pre-Amplifier	EMC INSTRUMENT	EMC 9135	980283	Jul. 03, 2023
5	Trilog-Broadband Antenna	Schwarzbeck	VULB9168	947	Oct. 19, 2022
6	Trilog-Broadband Antenna	Schwarzbeck	VULB9168	9168-806	Aug. 29, 2023
7	Cable	emci	LMR-400(5m+8m+8m)	N/A	Jan. 06, 2023
8	Cable	emci	LMR-400(5m+8m+8m)	N/A	Jan. 06, 2023
9	Measurement Software	Farad	EZ-EMC Ver.BTL-2ANT-1	N/A	N/A
10	Multi-Device Controller	ETS-Lindgren	2090	N/A	N/A
11	Controller	MF	MF-7802	MF780208159	N/A
12	Attenuator	EMCI	EMCI-N-6-06	N0657	Aug. 29, 2023
13	Attenuator	EMCI	EMCI-N-6-06	AT-N0670	Oct. 19, 2022

Remark: “N/A” denotes no model name, no serial no. or no calibration specified.
All calibration period of equipment list is one year.

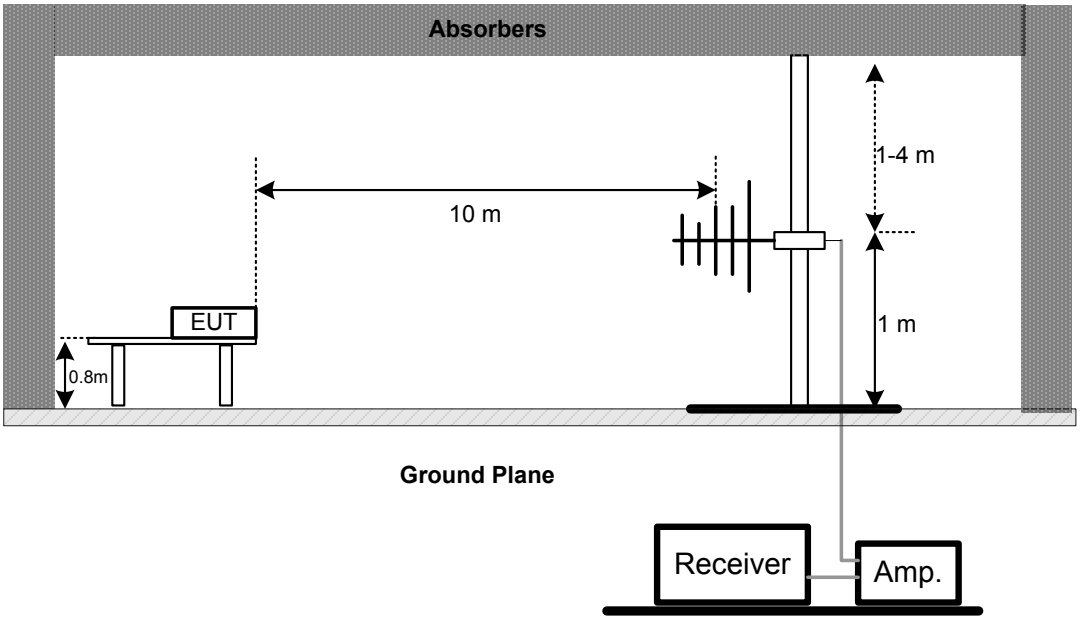
3.2.3 TEST PROCEDURE

a. The measuring distance of 10 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The height of the equipment or of the substitution antenna shall be 0.8 m, the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations 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 antenna was tuned to heights find the maximum reading (used Bore sight function).
d. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
e. All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn‘t perform.
f. For the actual test configuration, please refer to the related Item - Block Diagram of system tested.

3.2.4 DEVIATION FROM TEST STANDARD

No deviation

3.2.5 TEST SETUP

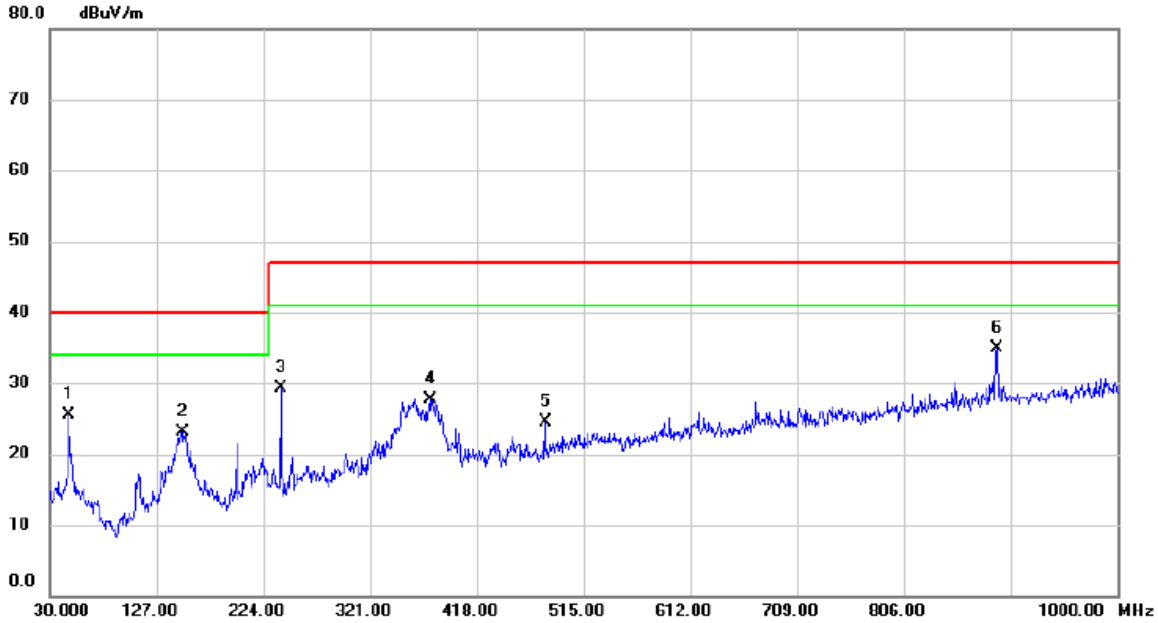


3.2.6 TEST RESULTS-BELOW 1 GHZ

Remark：

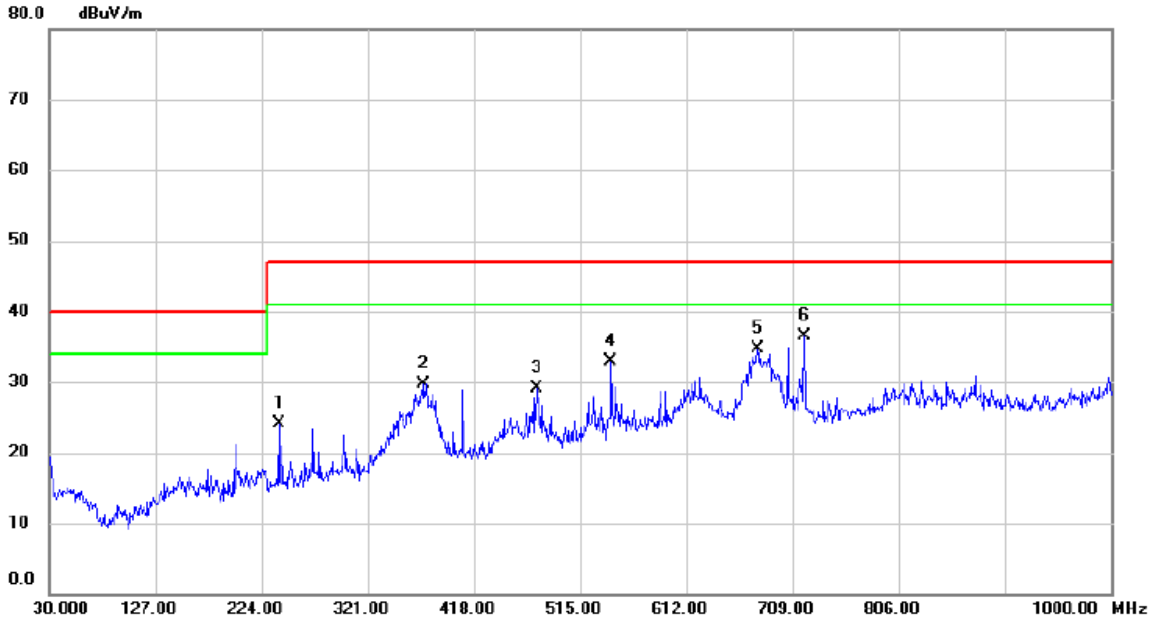
(1) Measuring frequency range from 30 MHz to 1000 MHz
(2) If the peak scan value lower limit more than 20 dB, then this signal data does not show in table.

Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 1		



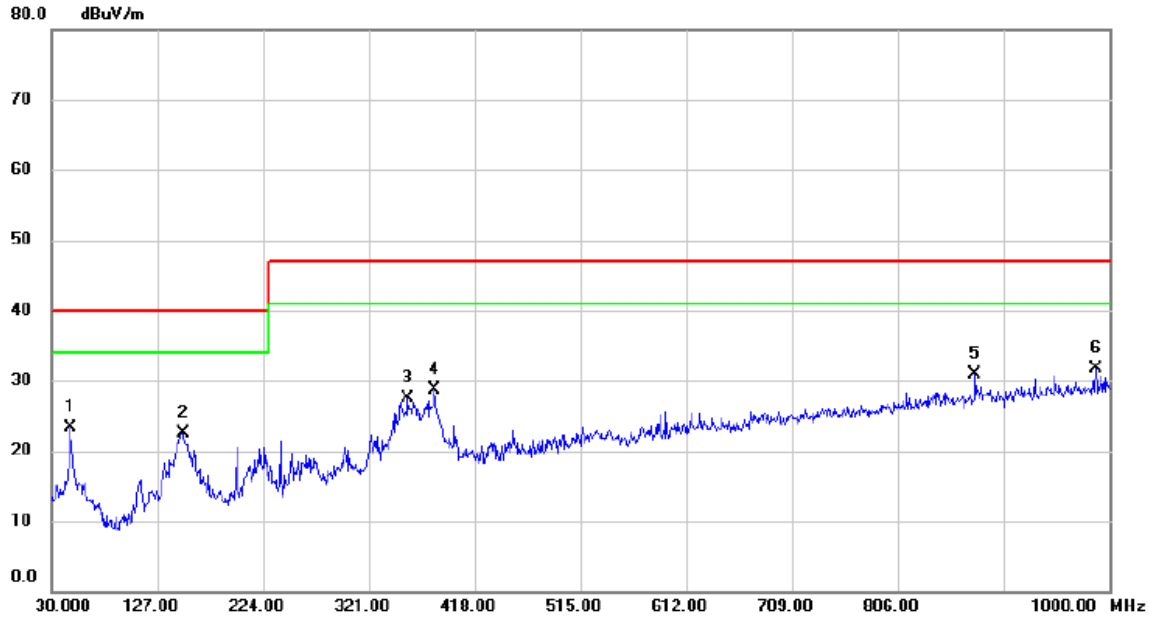
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		47.4600	43.27	-17.77	25.50	40.00	-14.50	QP	
2		150.2800	39.75	-16.56	23.19	40.00	-16.81	QP	
3		239.5200	46.84	-17.57	29.27	47.00	-17.73	QP	
4		376.2900	40.65	-12.89	27.76	47.00	-19.24	QP	
5		480.0800	34.62	-10.17	24.45	47.00	-22.55	QP	
6	*	890.3900	38.93	-4.08	34.85	47.00	-12.15	QP	

Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 1		



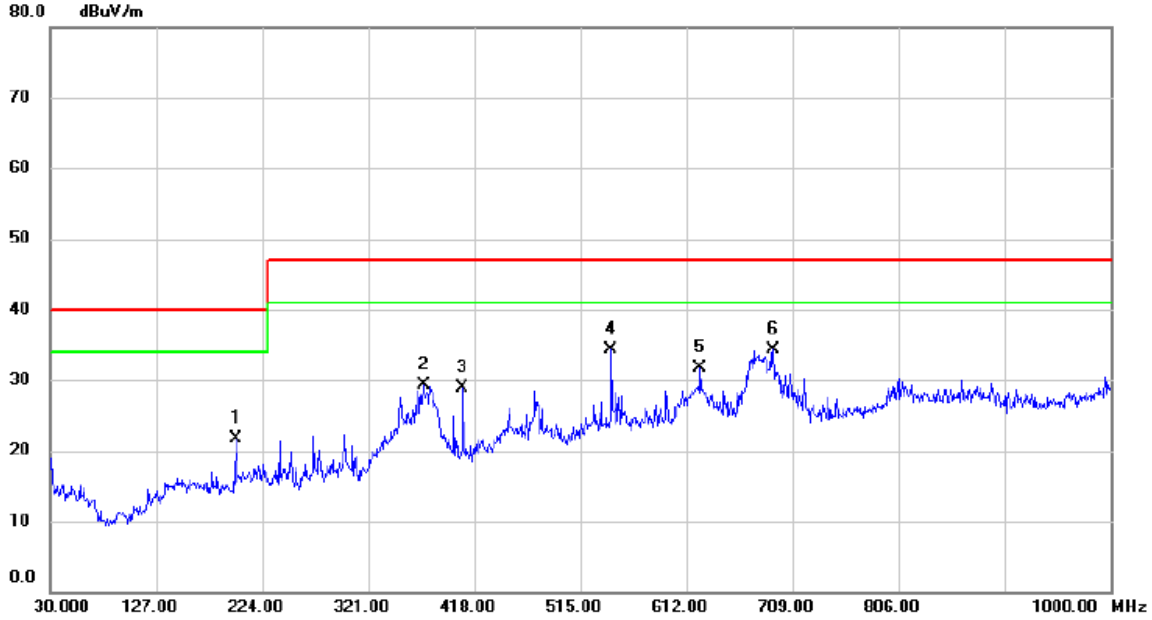
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		239.5200	40.59	-16.56	24.03	47.00	-22.97	QP	
2		372.4100	43.02	-13.34	29.68	47.00	-17.32	QP	
3		475.2300	40.27	-11.08	29.19	47.00	-17.81	QP	
4		543.1300	43.21	-10.31	32.90	47.00	-14.10	QP	
5		676.9900	42.68	-8.00	34.68	47.00	-12.32	QP	
6	*	719.6700	44.22	-7.63	36.59	47.00	-10.41	QP	

Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 4		



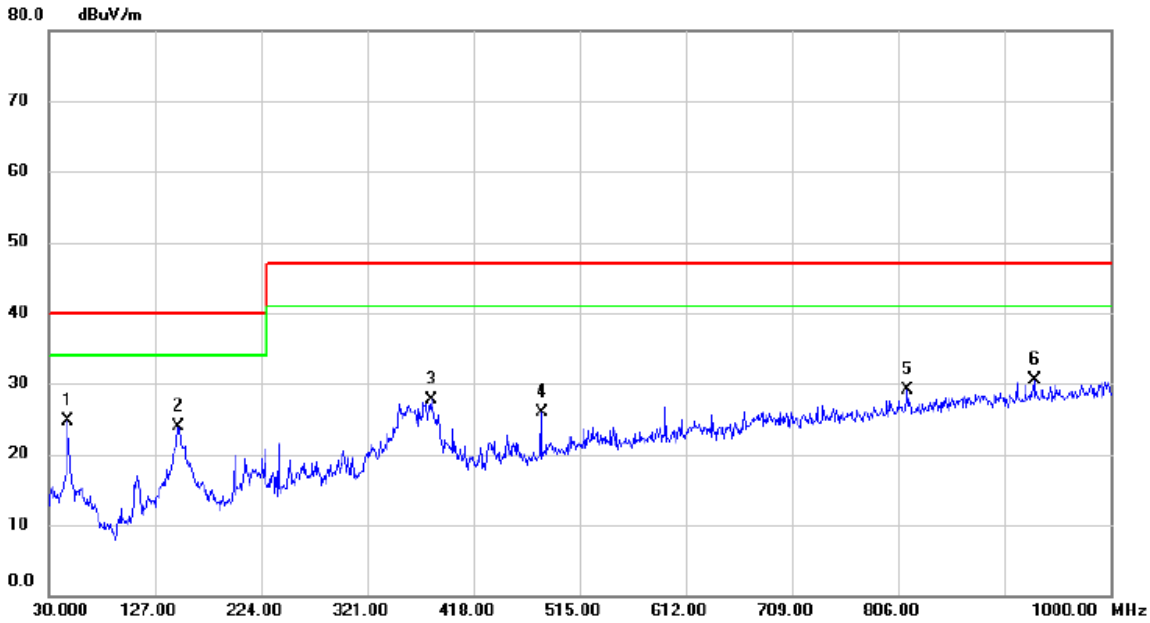
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		47.4600	41.03	-17.77	23.26	40.00	-16.74	QP	
2		150.2800	39.11	-16.56	22.55	40.00	-17.45	QP	
3		356.8900	41.02	-13.48	27.54	47.00	-19.46	QP	
4		381.1400	41.47	-12.75	28.72	47.00	-18.28	QP	
5		876.8100	35.12	-4.17	30.95	47.00	-16.05	QP	
6	*	987.3900	34.08	-2.33	31.75	47.00	-15.25	QP	

Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 4		



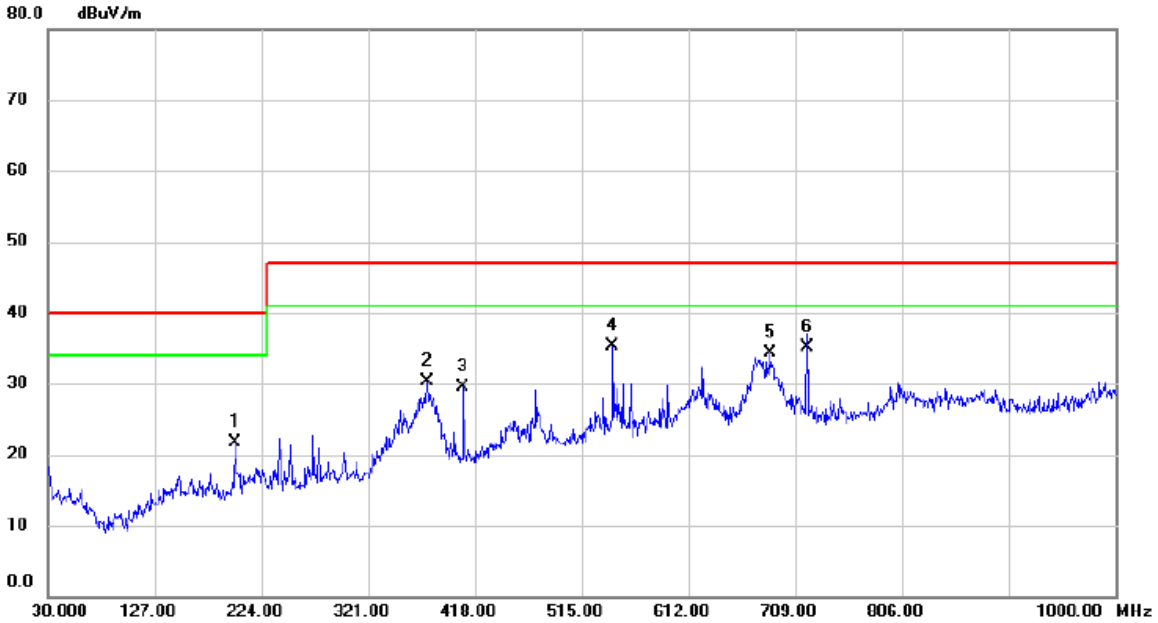
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		200.2350	40.49	-18.85	21.64	40.00	-18.36	QP	
2		371.4400	42.70	-13.39	29.31	47.00	-17.69	QP	
3		407.3300	41.56	-12.65	28.91	47.00	-18.09	QP	
4	*	543.1300	44.62	-10.31	34.31	47.00	-12.69	QP	
5		624.6100	40.07	-8.37	31.70	47.00	-15.30	QP	
6		691.5400	42.21	-7.99	34.22	47.00	-12.78	QP	

Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 7		



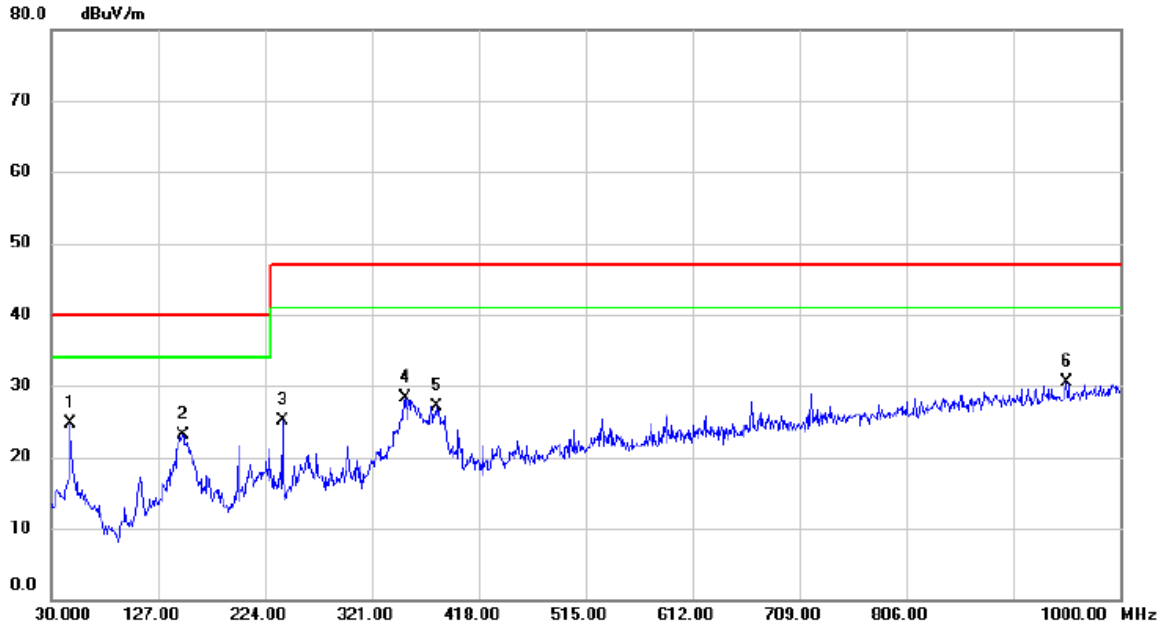
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	47.4600	42.43	-17.77	24.66	40.00	-15.34	QP	
2		148.3400	40.55	-16.67	23.88	40.00	-16.12	QP	
3		379.2000	40.56	-12.81	27.75	47.00	-19.25	QP	
4		480.0800	36.15	-10.17	25.98	47.00	-21.02	QP	
5		814.7300	34.22	-5.07	29.15	47.00	-17.85	QP	
6		930.1600	33.83	-3.40	30.43	47.00	-16.57	QP	

Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 7		



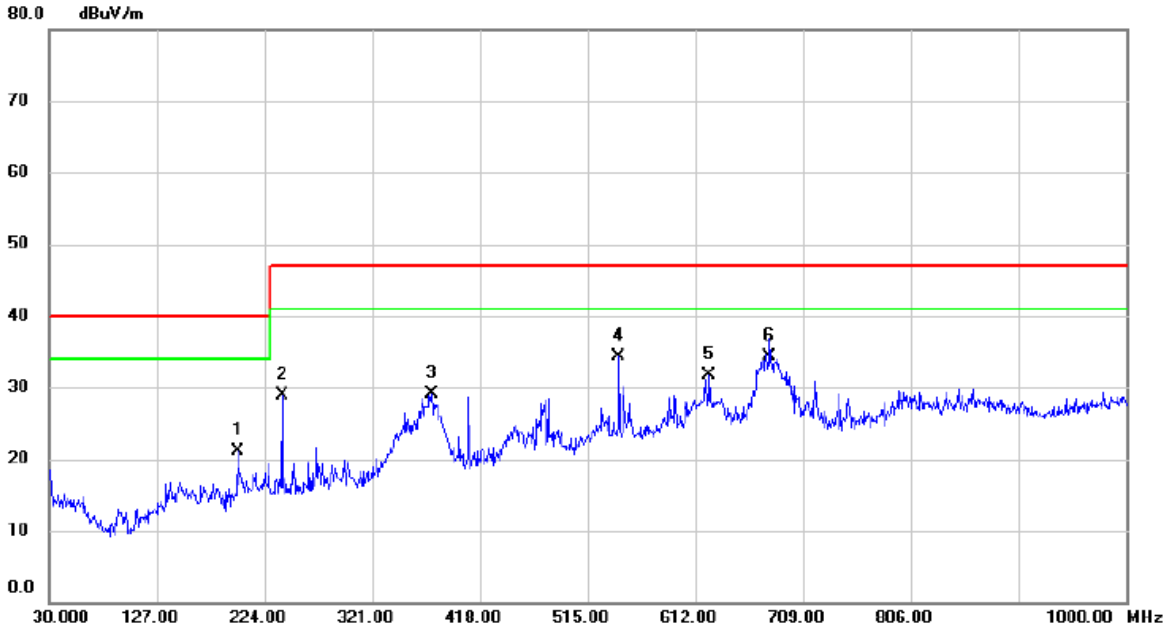
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		199.7500	40.56	-18.86	21.70	40.00	-18.30	QP	
2		374.3500	43.59	-13.25	30.34	47.00	-16.66	QP	
3		407.3300	42.21	-12.65	29.56	47.00	-17.44	QP	
4	*	543.1300	45.59	-10.31	35.28	47.00	-11.72	QP	
5		686.6900	42.24	-7.99	34.25	47.00	-12.75	QP	
6		719.6700	42.78	-7.63	35.15	47.00	-11.85	QP	

Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 12		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	47.4600	42.42	-17.77	24.65	40.00	-15.35	QP	
2		149.3100	39.68	-16.60	23.08	40.00	-16.92	QP	
3		239.5200	42.74	-17.57	25.17	47.00	-21.83	QP	
4		351.0700	41.90	-13.66	28.24	47.00	-18.76	QP	
5		379.2000	39.93	-12.81	27.12	47.00	-19.88	QP	
6		951.5000	33.42	-2.97	30.45	47.00	-16.55	QP	

Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 12		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		199.7500	39.95	-18.86	21.09	40.00	-18.91	QP	
2		239.5200	45.52	-16.56	28.96	47.00	-18.04	QP	
3		374.3500	42.44	-13.25	29.19	47.00	-17.81	QP	
4	*	543.1300	44.65	-10.31	34.34	47.00	-12.66	QP	
5		624.6100	40.14	-8.37	31.77	47.00	-15.23	QP	
6		678.9300	42.25	-8.00	34.25	47.00	-12.75	QP	

3.3 RADIATED EMISSIONS ABOVE 1 GHZ

3.3.1 LIMIT

Frequency (MHz)	Class A (dBuV/m) (at 3m)	
	Peak	Average
Above 1000	80	60

Frequency (MHz)	Class A (dBuV/m) (at 1m)	
	Peak	Average
Above 18000	89.5	69.5

FREQUENCY RANGE OF RADIATED MEASUREMENT (FOR UNINTENTIONAL RADIATORS)

Highest internal frequency (Fx)	Highest measurement frequency (F_M)
Fx ≤ 108 MHz	1 GHz
108 MHz < Fx ≤ 500 MHz	2 GHz
500 MHz < Fx ≤ 1 GHz	5 GHz
Fx > 1 GHz	5 x Fx up to a maximum of 40 GHz
Note: Fx is the highest fundamental frequency generated and/or used in the ITE or digital apparatus under test.	

NOTE:
(1) The tighter limit applies at the band edges.
(2) Emission level (dBuV/m) = 20log Emission level (uV/m).
3m Emission level = 10m Emission level + 20log(10m/3m).
(3) The test result calculated as following:
Measurement Value = Reading Level + Correct Factor
Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use)
Margin Level = Measurement Value - Limit Value

3.3.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Horn Antenna	EMCO	3115(3m)	9605-4803	Jun. 16, 2023
2	Amplifier	Agilent	8449B	3008A02333	Jan. 22, 2023
3	MXE EMI Receiver	Agilent	N9038A	MY53220133	Jan. 22, 2023
4	Measurement Software	Farad	EZ-EMC Ver.BTL-2ANT-1	N/A	N/A
5	Multi-Device Controller	ETS-Lindgren	2090	N/A	N/A
6	Controller	MF	MF-7802	MF780208159	N/A
7	Cable	Micable	RWLP50-4.0A-SMSM-12M-KJ	20191107 002	Mar. 04, 2023
8*	Band Reject Filter	Wairrwright Instruments Gmbh	WRCG 2400/2483-2375/2505-50/10SS	16	Feb. 28, 2024
9*	Band Reject Filter	Micro-Tronics	BRC50704-01	8	Feb. 27, 2024
10*	Band Reject Filter	Micro-Tronics	BRC50703-01	7	Feb. 27, 2024
11*	Band Reject Filter	Micro-Tronics	BRC50705-01	10	Feb. 27, 2024
12	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170(1m)	9170-319	Jun. 11, 2023
13	Microwave Preamplifier With Adaptor	EMC INSTRUMENT	EMC2654045	980039 & HA01	Jan. 23, 2023
14	Cable	emci	SUCOFLEX 102_8m(0.01GHz－40GHz)	N/A	Mar. 04, 2023

Remark: “N/A” denotes no model name, no serial no. or no calibration specified.

“*” calibration period of equipment list is three year.

Except * item, all calibration period of equipment list is one year.

3.3.3 TEST PROCEDURE

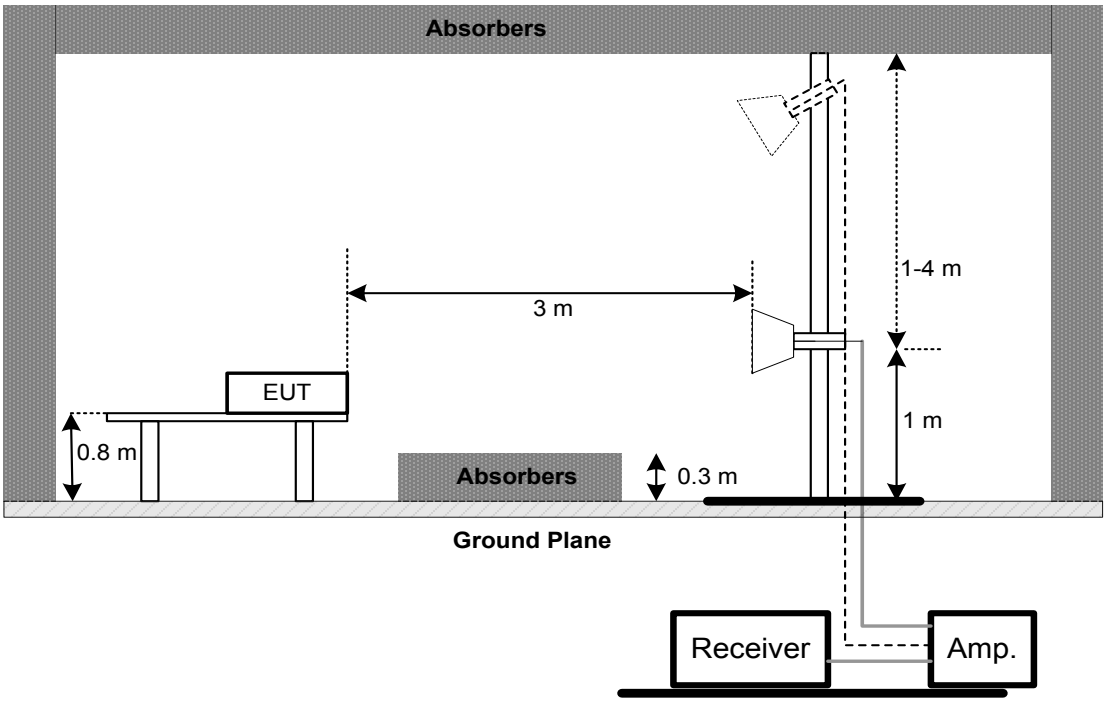
a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The height of the equipment or of the substitution antenna shall be 0.8 m, the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
   Note:
   For measurement of frequency 1GHz -18GHz, the EUT was set 3 meters away from the receiver antenna. For 18G - 40GHz, the EUT was set 1 meter.
   Emission level (dBuV/m)=20log Emission level (uV/m).
   The limits above 18GHz shall be extrapolated to the specified distance using an extrapolation factor of 20dB/decade from 3m to 1m
   Distance extrapolation factor = 20 log (3m/1m) dB ;
   Limit line = specific limits (dBuV) + 9.5 dB.
c. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
d. The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
e. The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz.
f. All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn‘t perform.
g. For the actual test configuration, please refer to the related Item - Block Diagram of system tested.

3.3.4 DEVIATION FROM TEST STANDARD

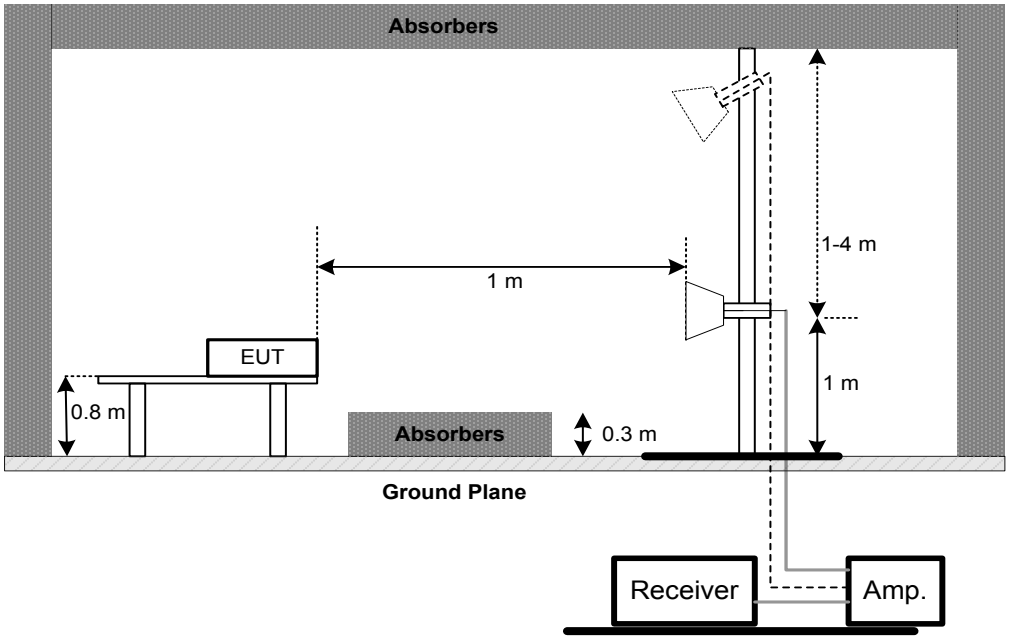
No deviation

3.3.5 TEST SETUP

1 GHz-18 GHz



18 GHz-40 GHz

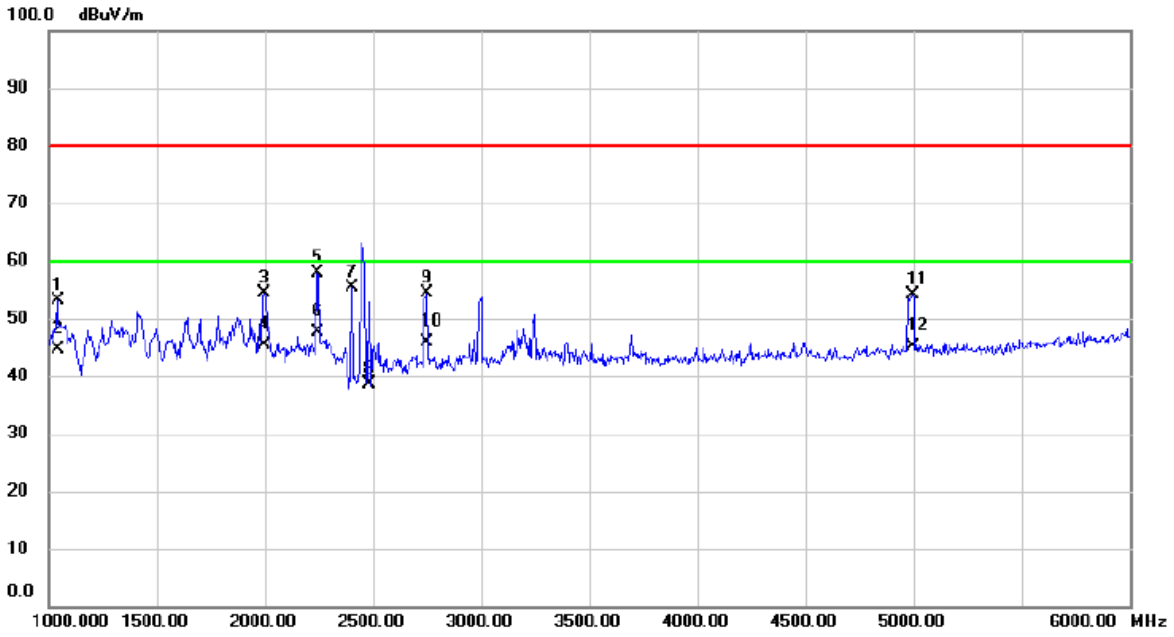


3.3.6 TEST RESULTS-ABOVE 1 GHZ

Remark：

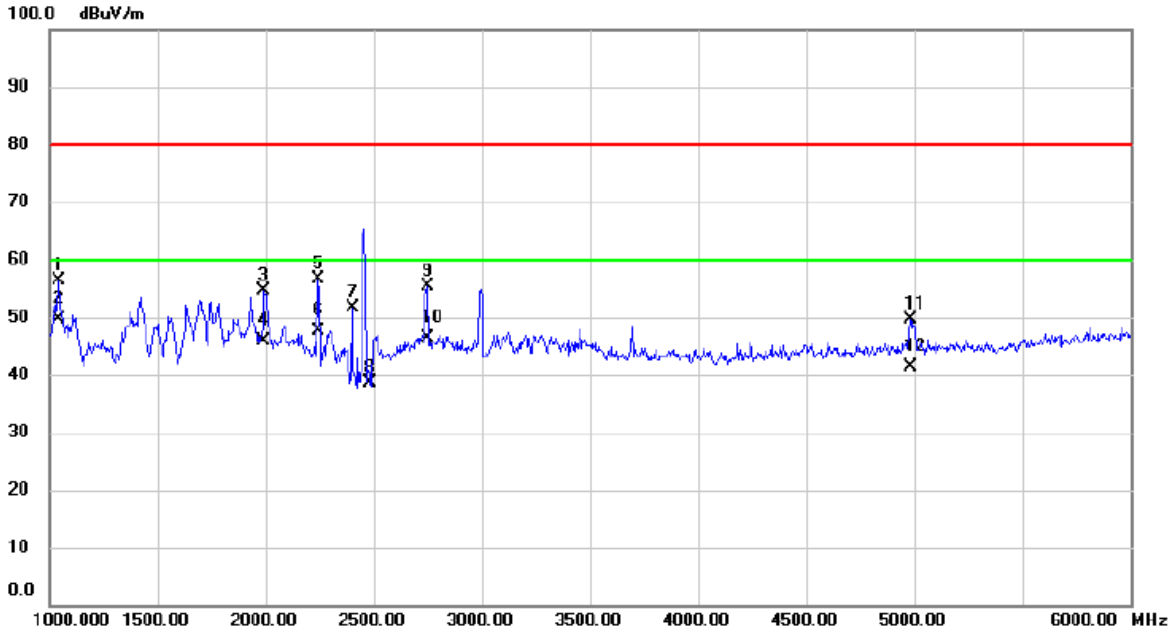
(1) Radiated emissions measured in frequency range above 1000 MHz were made with an instrument using Peak detector mode and AV detector mode of the emission.
(2) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20 dB below the permissible limits or the field strength is too small to be measured.
(3) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 1		
Note	BT&2.4G WIFI(2400-2483.5MHz) is intentional transmissions, which is not applicable to the radiation emission requirements in this standard.		



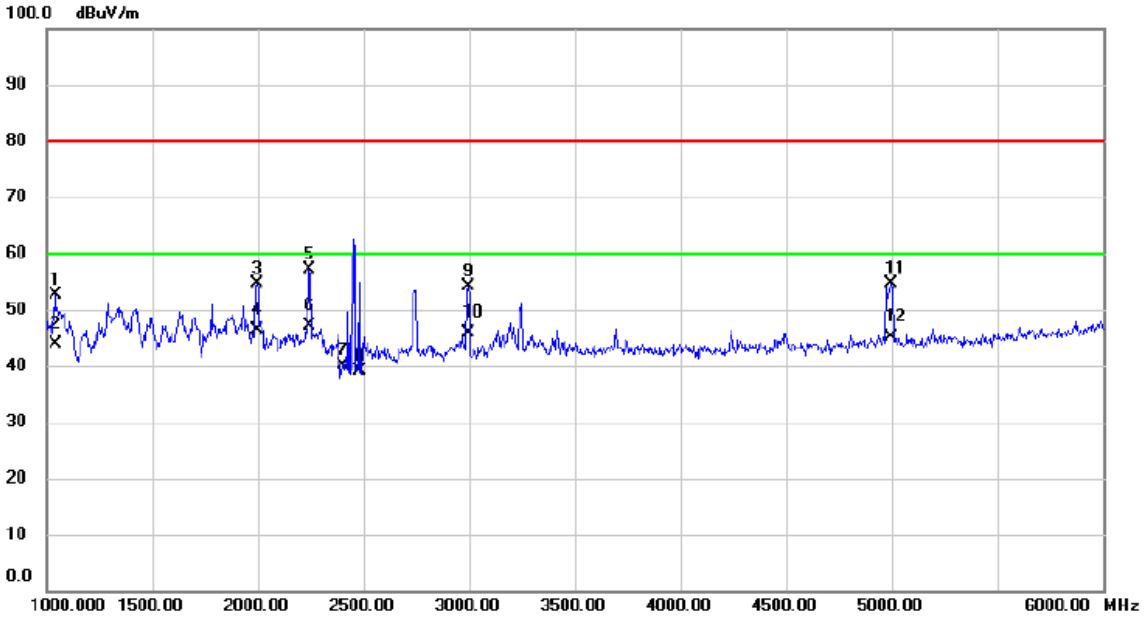
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1040.000	57.80	-4.70	53.10	80.00	-26.90	peak	
2		1040.000	49.28	-4.70	44.58	60.00	-15.42	AVG	
3		1997.500	52.12	2.24	54.36	80.00	-25.64	peak	
4		1997.500	43.04	2.24	45.28	60.00	-14.72	AVG	
5		2245.000	55.06	2.72	57.78	80.00	-22.22	peak	
6	*	2245.000	44.96	2.72	47.68	60.00	-12.32	AVG	
7		2400.000	52.44	3.02	55.46	80.00	-24.54	peak	
8		2483.500	35.50	3.17	38.67	80.00	-41.33	peak	
9		2750.000	50.14	4.19	54.33	80.00	-25.67	peak	
10		2750.000	41.75	4.19	45.94	60.00	-14.06	AVG	
11		4995.000	42.33	11.76	54.09	80.00	-25.91	peak	
12		4995.000	33.49	11.76	45.25	60.00	-14.75	AVG	

Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 1		
Note	BT&2.4G WIFI(2400-2483.5MHz) is intentional transmissions, which is not applicable to the radiation emission requirements in this standard.		



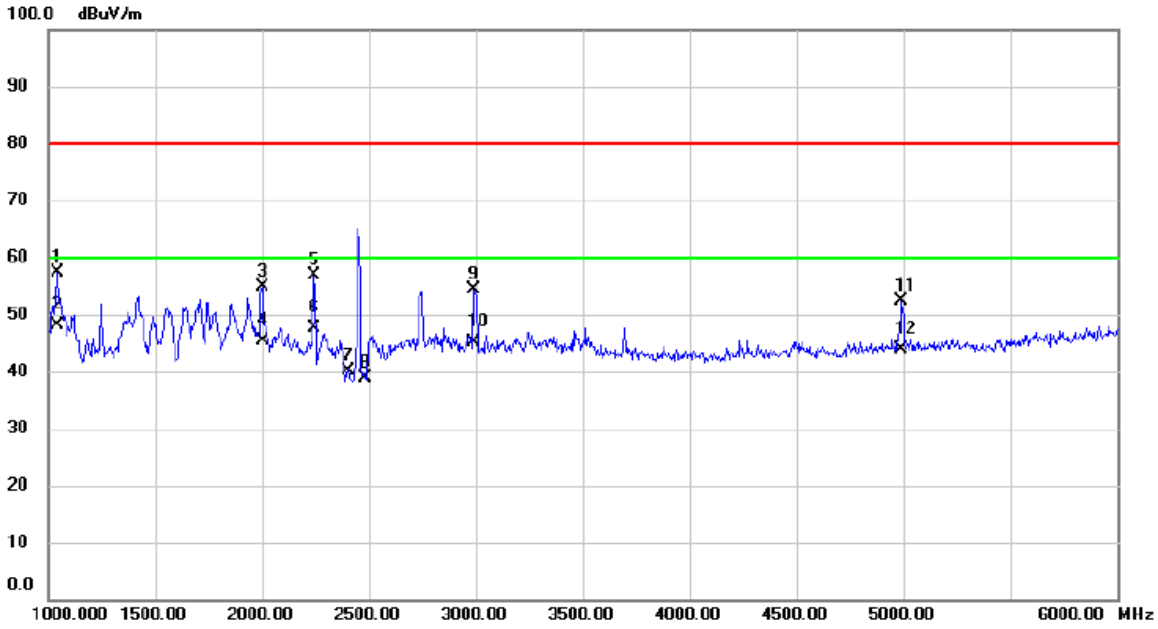
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1040.000	61.19	-4.70	56.49	80.00	-23.51	peak	
2	*	1040.000	54.36	-4.70	49.66	60.00	-10.34	AVG	
3		1992.500	52.50	2.19	54.69	80.00	-25.31	peak	
4		1992.500	43.76	2.19	45.95	60.00	-14.05	AVG	
5		2240.000	53.99	2.71	56.70	80.00	-23.30	peak	
6		2240.000	44.83	2.71	47.54	60.00	-12.46	AVG	
7		2400.000	48.70	3.02	51.72	80.00	-28.28	peak	
8		2483.500	35.46	3.17	38.63	80.00	-41.37	peak	
9		2750.000	51.18	4.19	55.37	80.00	-24.63	peak	
10		2750.000	42.16	4.19	46.35	60.00	-13.65	AVG	
11		4982.500	37.82	11.72	49.54	80.00	-30.46	peak	
12		4982.500	29.75	11.72	41.47	60.00	-18.53	AVG	

Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 4		
Note	BT&2.4G WIFI(2400-2483.5MHz) is intentional transmissions, which is not applicable to the radiation emission requirements in this standard.		



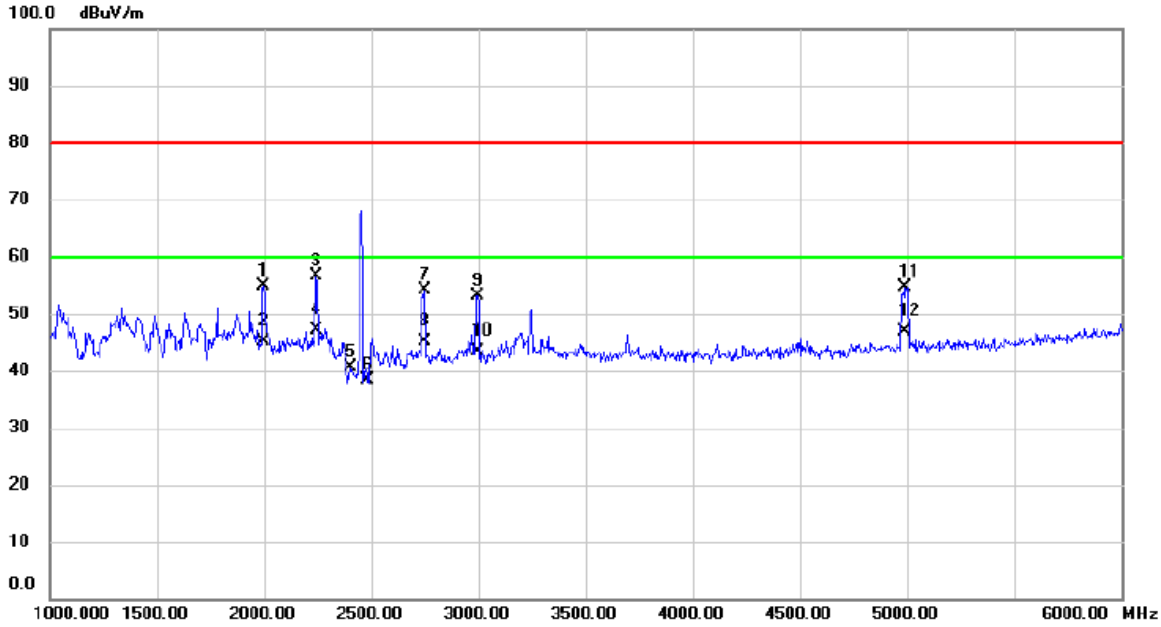
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1040.000	57.23	-4.70	52.53	80.00	-27.47	peak	
2		1040.000	48.55	-4.70	43.85	60.00	-16.15	AVG	
3		1995.000	52.38	2.22	54.60	80.00	-25.40	peak	
4		1995.000	44.16	2.22	46.38	60.00	-13.62	AVG	
5		2240.000	54.48	2.71	57.19	80.00	-22.81	peak	
6	*	2240.000	44.54	2.71	47.25	60.00	-12.75	AVG	
7		2400.000	37.20	3.02	40.22	80.00	-39.78	peak	
8		2483.500	36.05	3.17	39.22	80.00	-40.78	peak	
9		2995.000	48.92	5.17	54.09	80.00	-25.91	peak	
10		2995.000	40.67	5.17	45.84	60.00	-14.16	AVG	
11		4997.500	42.97	11.76	54.73	80.00	-25.27	peak	
12		4997.500	33.49	11.76	45.25	60.00	-14.75	AVG	

Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 4		
Note	BT&2.4G WIFI(2400-2483.5MHz) is intentional transmissions, which is not applicable to the radiation emission requirements in this standard.		



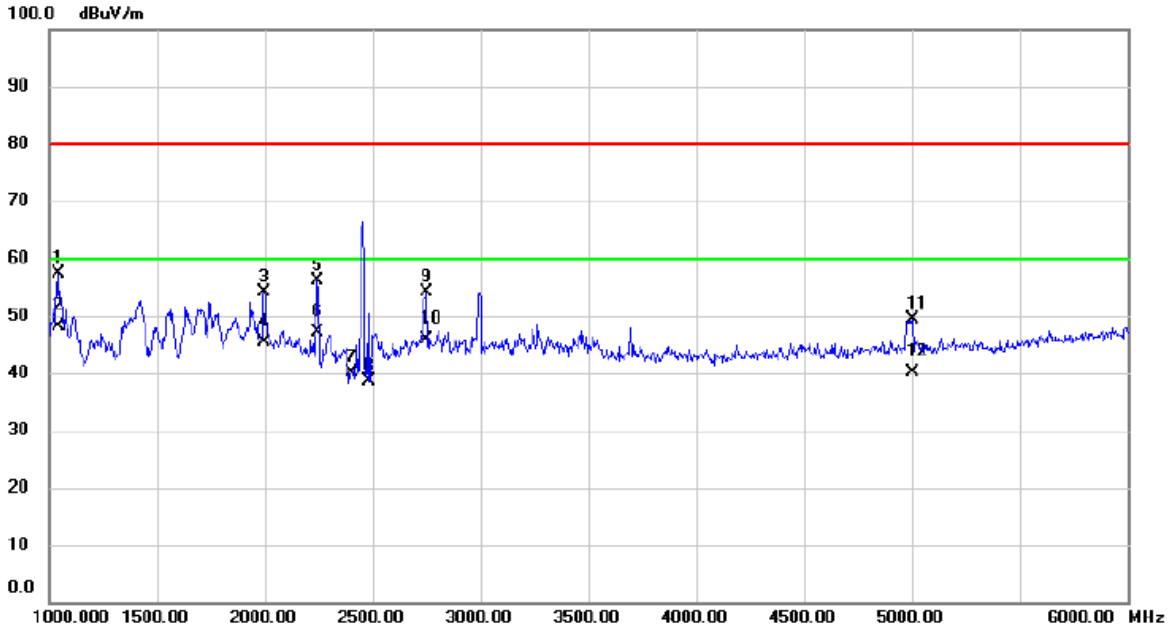
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1040.000	62.13	-4.70	57.43	80.00	-22.57	peak	
2	*	1040.000	52.95	-4.70	48.25	60.00	-11.75	AVG	
3		2000.000	52.61	2.26	54.87	80.00	-25.13	peak	
4		2000.000	43.13	2.26	45.39	60.00	-14.61	AVG	
5		2240.000	54.18	2.71	56.89	80.00	-23.11	peak	
6		2240.000	44.87	2.71	47.58	60.00	-12.42	AVG	
7		2400.000	37.05	3.02	40.07	80.00	-39.93	peak	
8		2483.500	35.72	3.17	38.89	80.00	-41.11	peak	
9		2987.500	49.16	5.14	54.30	80.00	-25.70	peak	
10		2987.500	40.10	5.14	45.24	60.00	-14.76	AVG	
11		4992.500	40.53	11.74	52.27	80.00	-27.73	peak	
12		4992.500	32.13	11.74	43.87	60.00	-16.13	AVG	

Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 7		
Note	BT&2.4G WIFI(2400-2483.5MHz) is intentional transmissions, which is not applicable to the radiation emission requirements in this standard.		



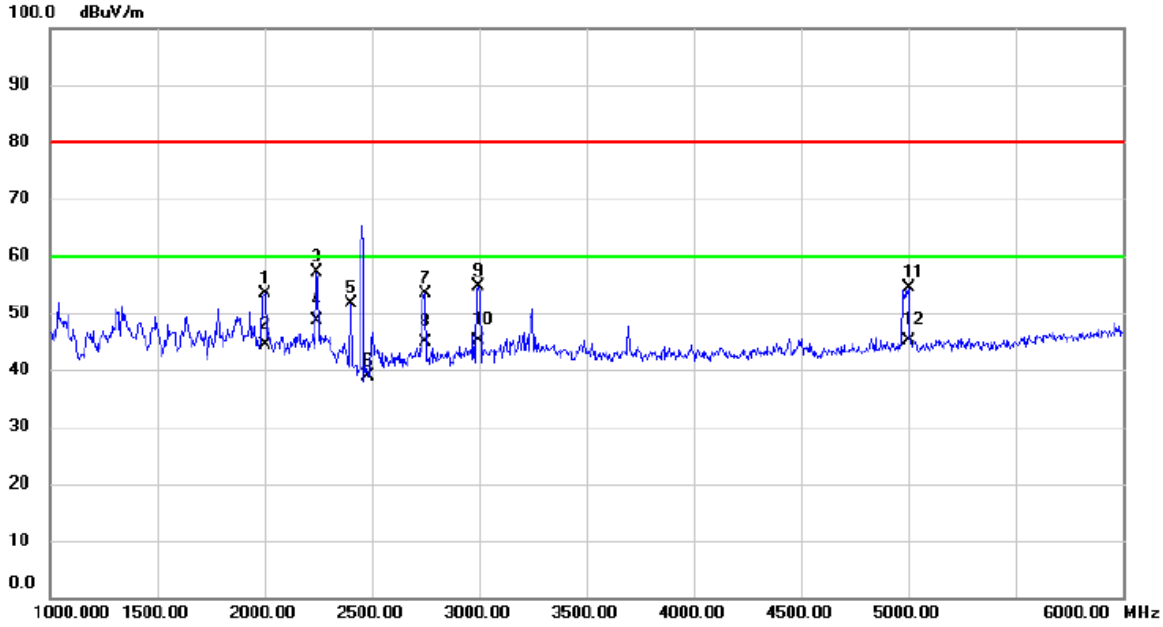
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1995.000	52.76	2.22	54.98	80.00	-25.02	peak	
2		1995.000	43.03	2.22	45.25	60.00	-14.75	AVG	
3		2245.000	53.92	2.72	56.64	80.00	-23.36	peak	
4	*	2245.000	44.53	2.72	47.25	60.00	-12.75	AVG	
5		2400.000	37.54	3.02	40.56	80.00	-39.44	peak	
6		2483.500	35.26	3.17	38.43	80.00	-41.57	peak	
7		2750.000	50.04	4.19	54.23	80.00	-25.77	peak	
8		2750.000	41.06	4.19	45.25	60.00	-14.75	AVG	
9		2997.500	48.02	5.18	53.20	80.00	-26.80	peak	
10		2997.500	38.10	5.18	43.28	60.00	-16.72	AVG	
11		4992.500	42.94	11.74	54.68	80.00	-25.32	peak	
12		4992.500	35.13	11.74	46.87	60.00	-13.13	AVG	

Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 7		
Note	BT&2.4G WIFI(2400-2483.5MHz) is intentional transmissions, which is not applicable to the radiation emission requirements in this standard.		



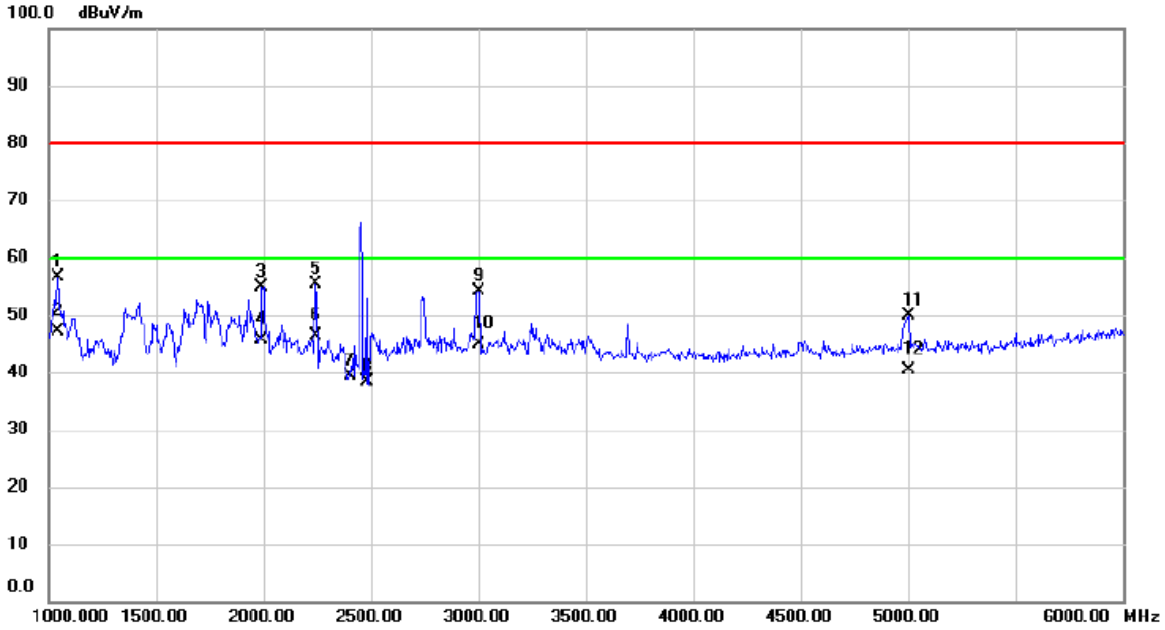
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1040.000	62.01	-4.70	57.31	80.00	-22.69	peak	
2	*	1040.000	52.95	-4.70	48.25	60.00	-11.75	AVG	
3		1995.000	51.97	2.22	54.19	80.00	-25.81	peak	
4		1995.000	43.14	2.22	45.36	60.00	-14.64	AVG	
5		2240.000	53.41	2.71	56.12	80.00	-23.88	peak	
6		2240.000	44.54	2.71	47.25	60.00	-12.75	AVG	
7		2400.000	37.21	3.02	40.23	80.00	-39.77	peak	
8		2483.500	35.36	3.17	38.53	80.00	-41.47	peak	
9		2750.000	49.96	4.19	54.15	80.00	-25.85	peak	
10		2750.000	41.65	4.19	45.84	60.00	-14.16	AVG	
11		5000.000	37.49	11.77	49.26	80.00	-30.74	peak	
12		5000.000	28.48	11.77	40.25	60.00	-19.75	AVG	

Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 12		
Note	BT&2.4G WIFI(2400-2483.5MHz) is intentional transmissions, which is not applicable to the radiation emission requirements in this standard.		



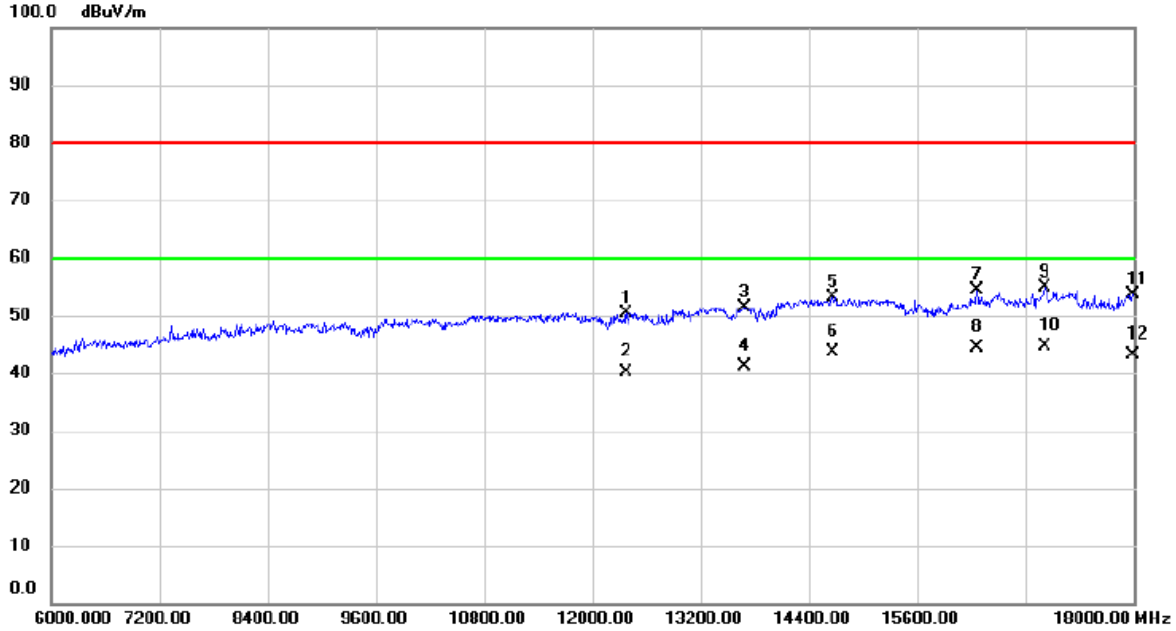
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2000.000	51.19	2.26	53.45	80.00	-26.55	peak	
2		2000.000	42.02	2.26	44.28	60.00	-15.72	AVG	
3		2245.000	54.41	2.72	57.13	80.00	-22.87	peak	
4	*	2245.000	45.82	2.72	48.54	60.00	-11.46	AVG	
5		2400.000	48.57	3.02	51.59	80.00	-28.41	peak	
6		2483.500	35.61	3.17	38.78	80.00	-41.22	peak	
7		2747.500	49.09	4.18	53.27	80.00	-26.73	peak	
8		2747.500	40.69	4.18	44.87	60.00	-15.13	AVG	
9		2995.000	49.44	5.17	54.61	80.00	-25.39	peak	
10		2995.000	39.89	5.17	45.06	60.00	-14.94	AVG	
11		5000.000	42.67	11.77	54.44	80.00	-25.56	peak	
12		5000.000	33.48	11.77	45.25	60.00	-14.75	AVG	

Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 12		
Note	BT&2.4G WIFI(2400-2483.5MHz) is intentional transmissions, which is not applicable to the radiation emission requirements in this standard.		



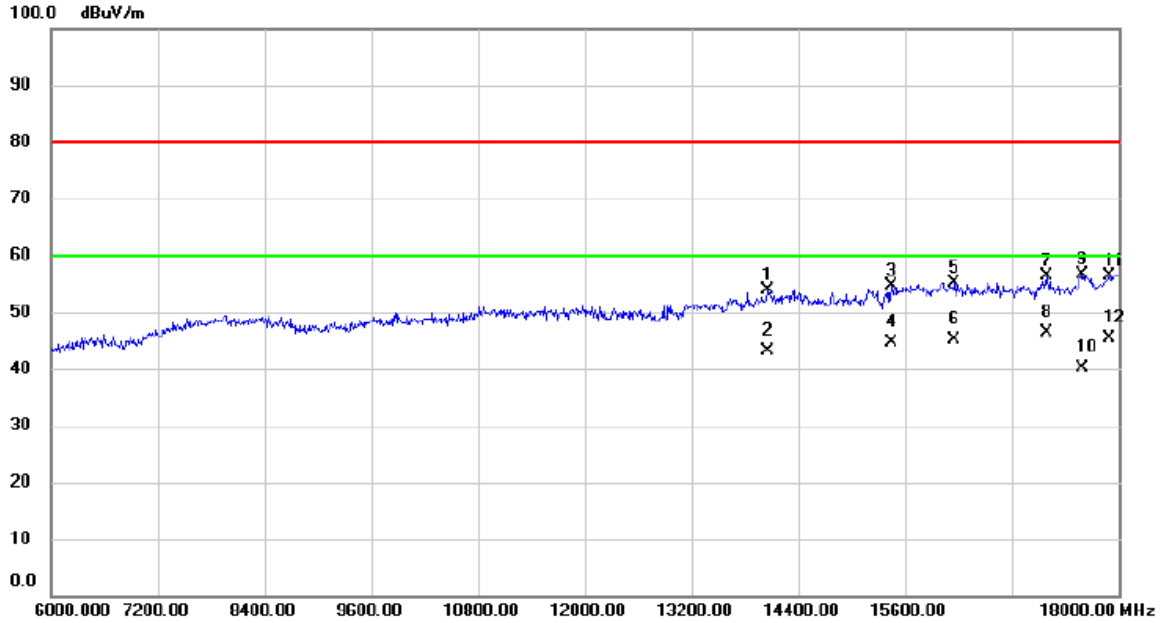
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1040.000	61.35	-4.70	56.65	80.00	-23.35	peak	
2	*	1040.000	51.95	-4.70	47.25	60.00	-12.75	AVG	
3		1992.500	52.70	2.19	54.89	80.00	-25.11	peak	
4		1992.500	43.46	2.19	45.65	60.00	-14.35	AVG	
5		2240.000	52.64	2.71	55.35	80.00	-24.65	peak	
6		2240.000	43.64	2.71	46.35	60.00	-13.65	AVG	
7		2400.000	36.47	3.02	39.49	80.00	-40.51	peak	
8		2483.500	35.16	3.17	38.33	80.00	-41.67	peak	
9		3000.000	48.96	5.18	54.14	80.00	-25.86	peak	
10		3000.000	39.69	5.18	44.87	60.00	-15.13	AVG	
11		5000.000	38.15	11.77	49.92	80.00	-30.08	peak	
12		5000.000	28.51	11.77	40.28	60.00	-19.72	AVG	

Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 1		



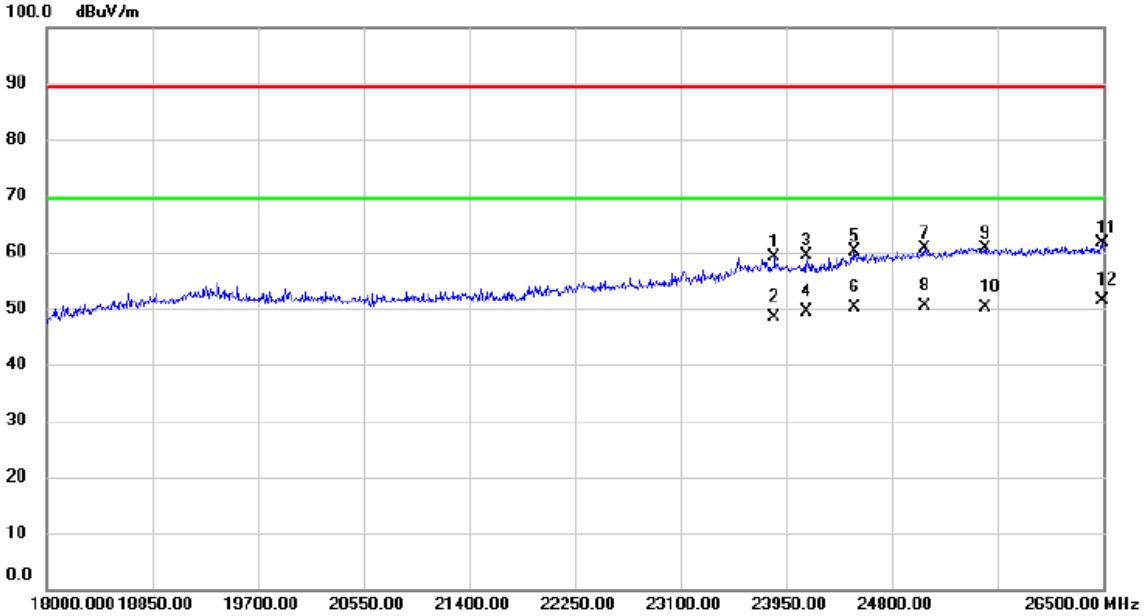
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		12372.00	28.98	21.48	50.46	80.00	-29.54	peak	
2		12372.00	18.67	21.48	40.15	60.00	-19.85	AVG	
3		13692.00	24.89	26.61	51.50	80.00	-28.50	peak	
4		13692.00	14.64	26.61	41.25	60.00	-18.75	AVG	
5		14670.00	25.07	28.05	53.12	80.00	-26.88	peak	
6		14670.00	15.47	28.05	43.52	60.00	-16.48	AVG	
7		16266.00	30.94	23.34	54.28	80.00	-25.72	peak	
8		16266.00	20.98	23.34	44.32	60.00	-15.68	AVG	
9		17022.00	27.62	27.23	54.85	80.00	-25.15	peak	
10	*	17022.00	17.29	27.23	44.52	60.00	-15.48	AVG	
11		17988.00	20.36	33.30	53.66	80.00	-26.34	peak	
12		17988.00	9.95	33.30	43.25	60.00	-16.75	AVG	

Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 1		



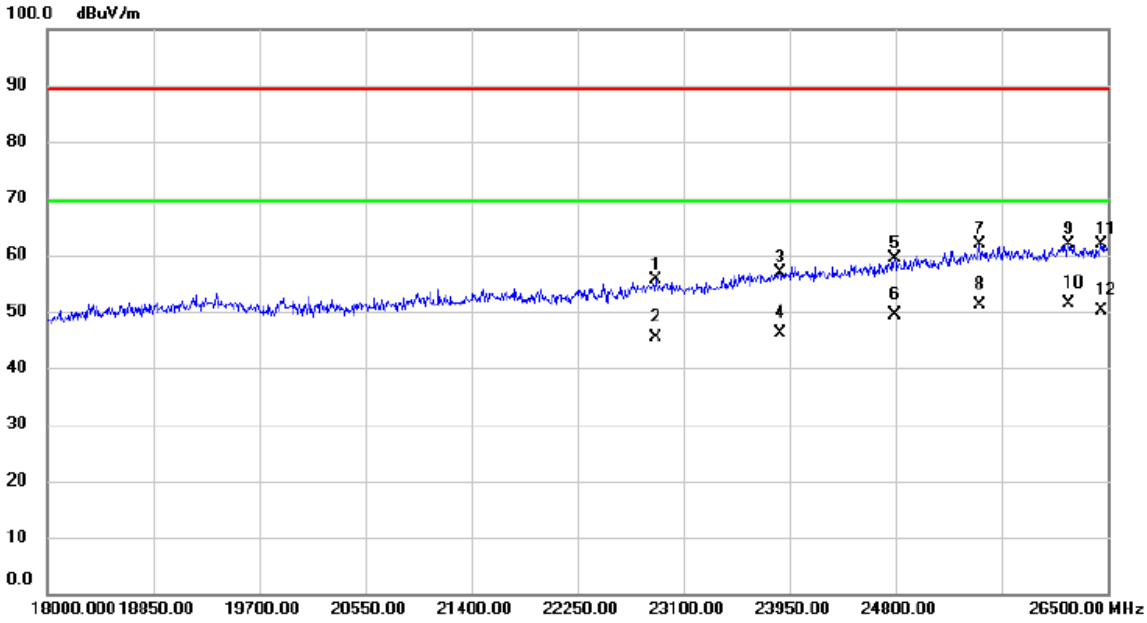
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		14058.00	25.16	28.80	53.96	80.00	-26.04	peak	
2		14058.00	14.45	28.80	43.25	60.00	-16.75	AVG	
3		15444.00	31.38	23.24	54.62	80.00	-25.38	peak	
4		15444.00	21.38	23.24	44.62	60.00	-15.38	AVG	
5		16158.00	32.13	23.08	55.21	80.00	-24.79	peak	
6		16158.00	22.07	23.08	45.15	60.00	-14.85	AVG	
7		17184.00	28.41	27.97	56.38	80.00	-23.62	peak	
8	*	17184.00	18.35	27.97	46.32	60.00	-13.68	AVG	
9		17586.00	26.48	30.09	56.57	80.00	-23.43	peak	
10		17586.00	10.16	30.09	40.25	60.00	-19.75	AVG	
11		17892.00	23.89	32.53	56.42	80.00	-23.58	peak	
12		17892.00	12.79	32.53	45.32	60.00	-14.68	AVG	

Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 3		



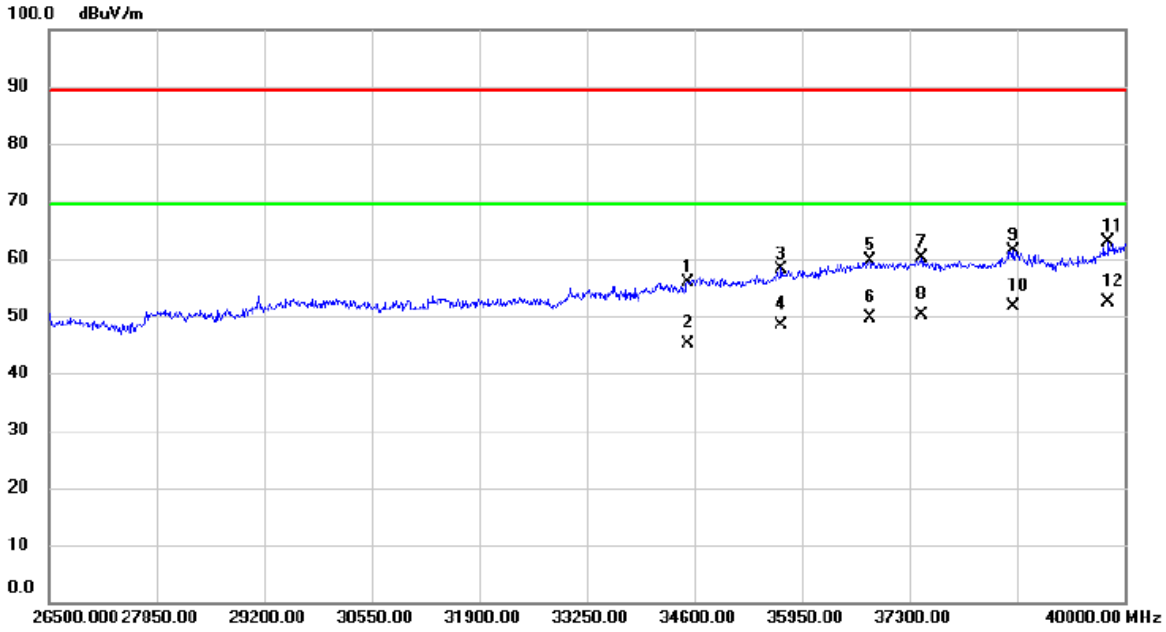
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		23856.50	34.80	24.43	59.23	89.50	-30.27	peak	
2		23856.50	23.89	24.43	48.32	69.50	-21.18	AVG	
3		24111.50	34.67	24.71	59.38	89.50	-30.12	peak	
4		24111.50	24.61	24.71	49.32	69.50	-20.18	AVG	
5		24494.00	34.60	25.41	60.01	89.50	-29.49	peak	
6		24494.00	24.74	25.41	50.15	69.50	-19.35	AVG	
7		25063.50	34.59	26.04	60.63	89.50	-28.87	peak	
8		25063.50	24.28	26.04	50.32	69.50	-19.18	AVG	
9		25548.00	33.89	26.82	60.71	89.50	-28.79	peak	
10		25548.00	23.43	26.82	50.25	69.50	-19.25	AVG	
11		26491.50	33.70	27.84	61.54	89.50	-27.96	peak	
12	*	26491.50	23.58	27.84	51.42	69.50	-18.08	AVG	

Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 3		



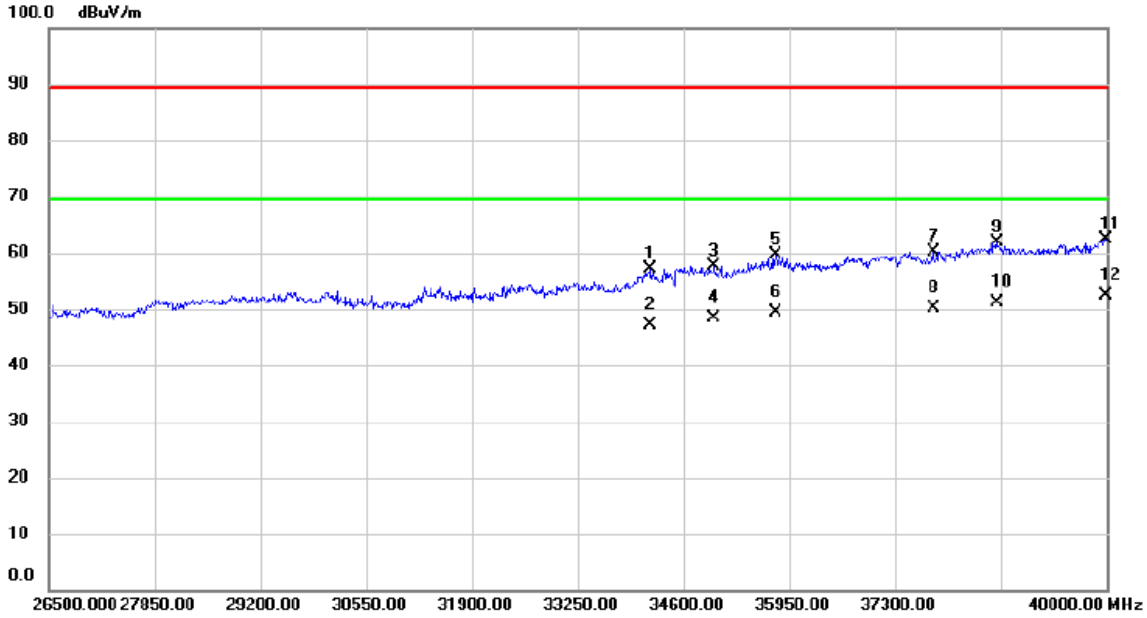
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		22879.00	32.40	23.23	55.63	89.50	-33.87	peak	
2		22879.00	22.09	23.23	45.32	69.50	-24.18	AVG	
3		23873.50	32.54	24.44	56.98	89.50	-32.52	peak	
4		23873.50	21.81	24.44	46.25	69.50	-23.25	AVG	
5		24791.50	33.75	25.72	59.47	89.50	-30.03	peak	
6		24791.50	23.60	25.72	49.32	69.50	-20.18	AVG	
7		25471.50	35.07	26.80	61.87	89.50	-27.63	peak	
8		25471.50	24.45	26.80	51.25	69.50	-18.25	AVG	
9		26185.50	34.67	27.11	61.78	89.50	-27.72	peak	
10	*	26185.50	24.31	27.11	51.42	69.50	-18.08	AVG	
11		26449.00	34.17	27.73	61.90	89.50	-27.60	peak	
12		26449.00	22.42	27.73	50.15	69.50	-19.35	AVG	

Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 3		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		34519.00	44.88	10.99	55.87	89.50	-33.63	peak	
2		34519.00	34.16	10.99	45.15	69.50	-24.35	AVG	
3		35693.50	47.05	11.20	58.25	89.50	-31.25	peak	
4		35693.50	37.12	11.20	48.32	69.50	-21.18	AVG	
5		36800.50	48.74	10.77	59.51	89.50	-29.99	peak	
6		36800.50	38.75	10.77	49.52	69.50	-19.98	AVG	
7		37448.50	49.23	10.95	60.18	89.50	-29.32	peak	
8		37448.50	39.16	10.95	50.11	69.50	-19.39	AVG	
9		38596.00	47.47	13.87	61.34	89.50	-28.16	peak	
10		38596.00	37.75	13.87	51.62	69.50	-17.88	AVG	
11		39797.50	45.83	17.11	62.94	89.50	-26.56	peak	
12	*	39797.50	35.21	17.11	52.32	69.50	-17.18	AVG	

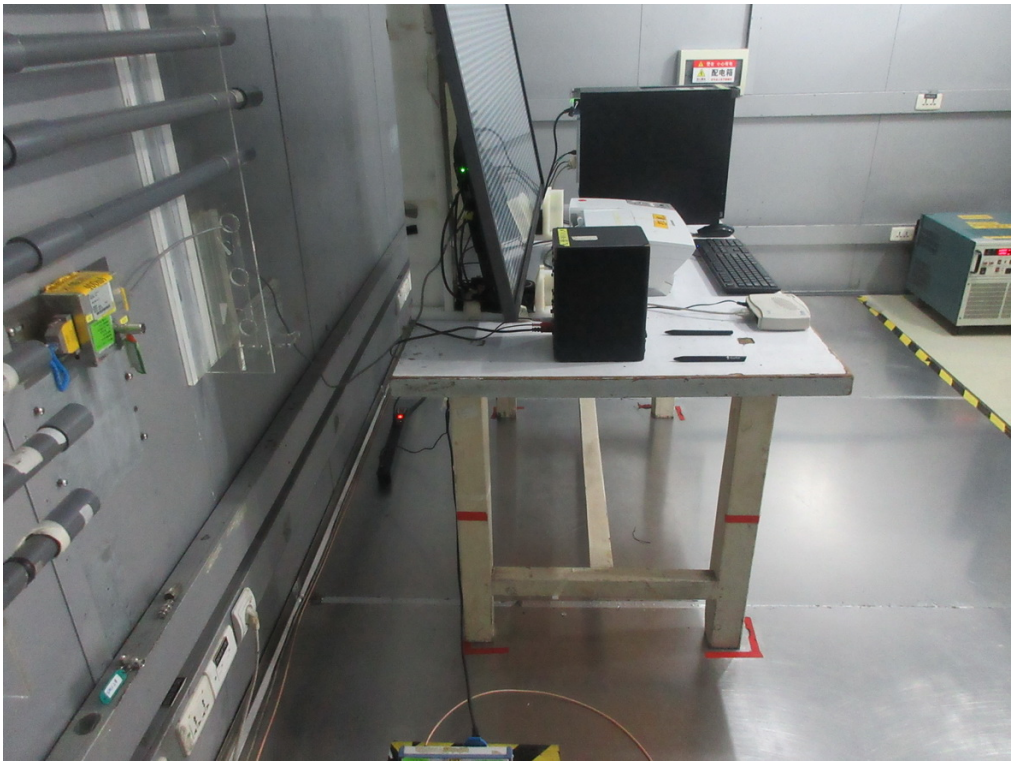
Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 3		



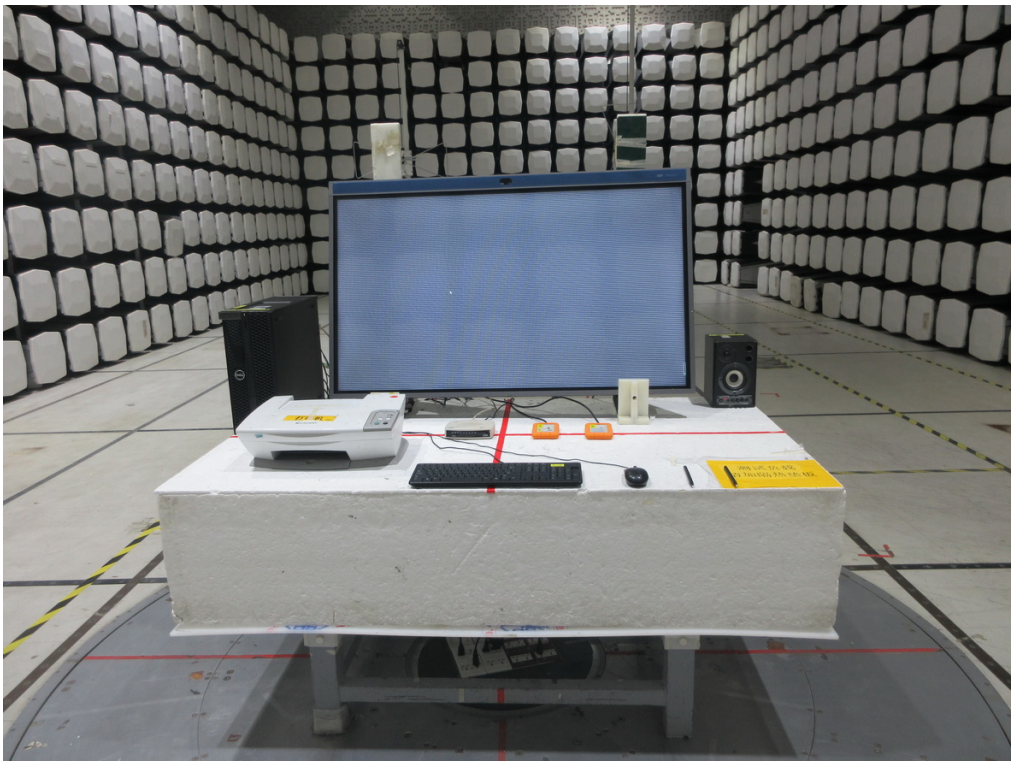
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		34168.00	46.86	10.22	57.08	89.50	-32.42	peak	
2		34168.00	37.03	10.22	47.25	69.50	-22.25	AVG	
3		34991.50	46.41	11.32	57.73	89.50	-31.77	peak	
4		34991.50	37.00	11.32	48.32	69.50	-21.18	AVG	
5		35774.50	48.35	11.18	59.53	89.50	-29.97	peak	
6		35774.50	38.14	11.18	49.32	69.50	-20.18	AVG	
7		37786.00	48.57	11.60	60.17	89.50	-29.33	peak	
8		37786.00	38.55	11.60	50.15	69.50	-19.35	AVG	
9		38596.00	48.07	13.87	61.94	89.50	-27.56	peak	
10		38596.00	37.18	13.87	51.05	69.50	-18.45	AVG	
11		39986.50	44.91	17.56	62.47	89.50	-27.03	peak	
12	*	39986.50	34.76	17.56	52.32	69.50	-17.18	AVG	

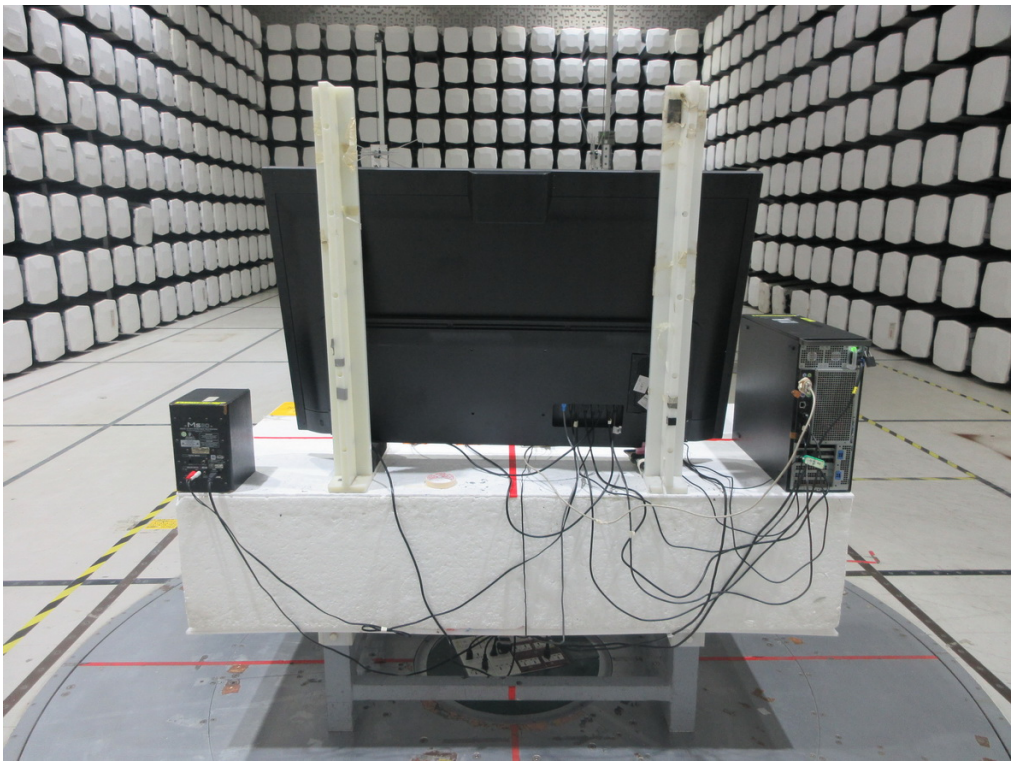
4. EUT TEST PHOTO

AC Power Line Conducted Emissions

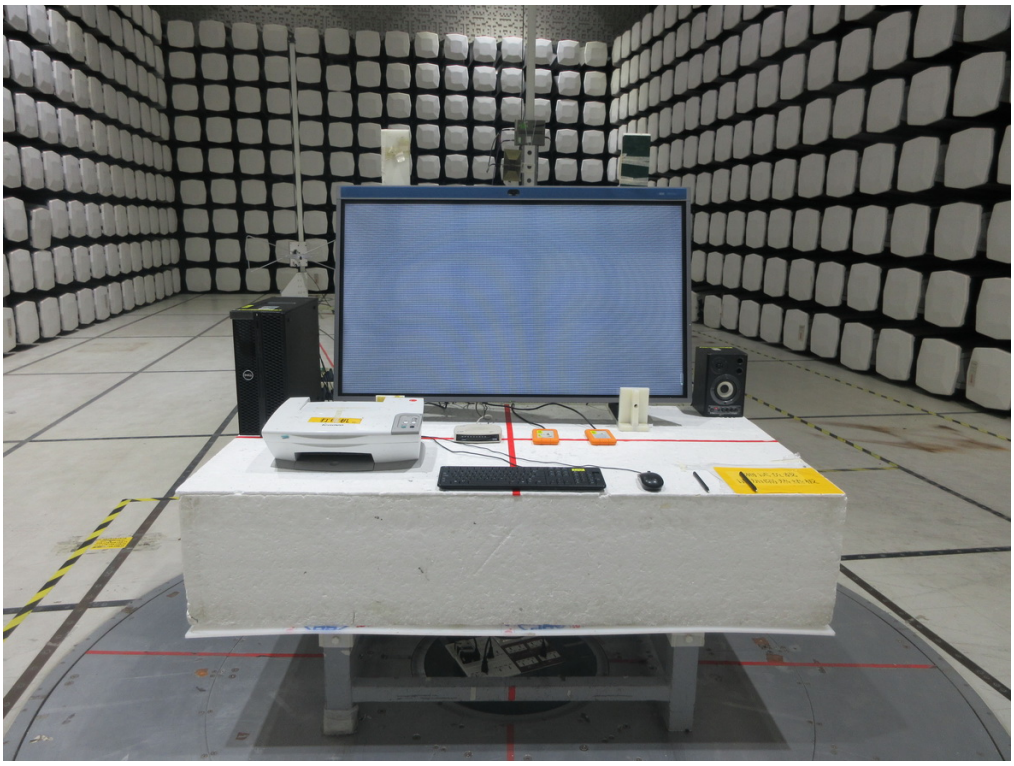


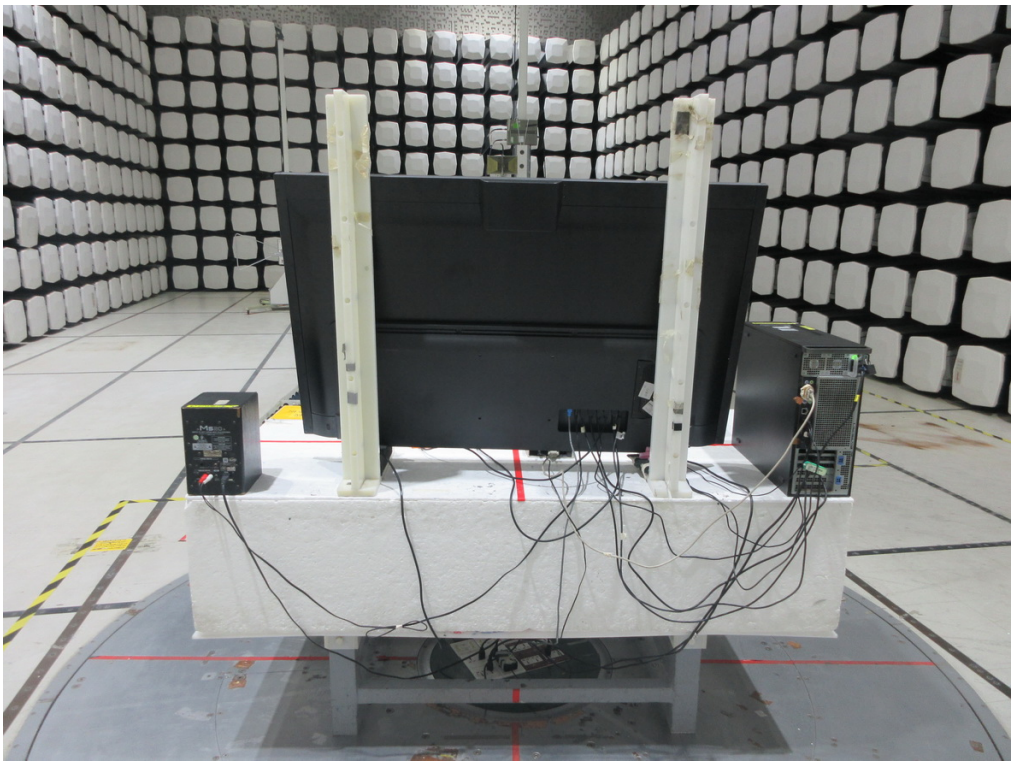
Radiated Emissions 30 MHz to 1 GHz





Radiated Emissions Above 1 GHz





End of Test Report