FCC EMC Test Report

Project No.	:	2412C174A
Equipment	:	LCD Monitor
Brand Name	:	N/A
Test Model	:	27G4H
Series Model	:	**27G4********, **27G4H********(*=0-9, A-Z, a-z, +, -, /, \ or blank)
Applicant	:	TPV Electronics (Fujian) Co., Ltd.
Address	:	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R. China
Date of Receipt	:	Dec. 30, 2024
Date of Test	:	Dec. 30, 2024 ~ Jan. 15, 2025
Issued Date	:	Jan. 23, 2025
Report Version	:	R00
Test Sample	:	Engineering Sample No.: DG202412309
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.

Prepared by : Derek Tong

Approved by : Kang Zhang

Room 108-116, 309-310, Building 2, No.1, Yile Road, Songshan Lake Zone, Dongguan City, Guangdong, 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 assumes no responsibility for the data provided by the customer, any statements, inferences or generalizations drawn by the customer or others from the reports issued by BTL.

The report must not be used by the client to claim product certification, approval, or endorsement by 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: 2017 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.

Table of Contents Page

REPORT ISSUED HISTORY

Report No.	Version	Description	Issued Date	Note
BTL-FCCE-1-2412C174A	R00	This is a supplementary report to the original test report (BTL-FCCE-1-2412C174). 1. Added a new base. 2. Added a mainboard. Based on above described changes, all the test items have been re-evaluated and recorded. In this report only recorded the new test results. The original test results please refer to original report.	Jan. 23, 2025	Valid

1. SUMMARY OF TEST RESULTS

Emission		
Standard(s)	Test Item	Result
FCC CFR Title 47,Part 15,Subpart B ANSI C63.4-2014 ANSI C63.4-2014 amended as per ANSI C63.4a-2017	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 is at the location of 1-2/F, 4/F, Building A, 1-2/F, Building B, 3/F, Building C, No.3, Jinshagang 1st Road, Dalang Town, Dongguan City, Guangdong People's Republic of China.

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	2.98

B. Radiated emissions test:

Test Site	Method	Measurement Frequency Range	Ant. H / V	*U*,(dB)
DG-CB08 (10m)	CISPR	30MHz ~ 200MHz	V	4.48
		30MHz ~ 200MHz	H	4.50
		200MHz ~ 1,000MHz	V	4.60
		200MHz ~ 1,000MHz	H	4.84

Test Site	Method	Measurement Frequency Range	*U*,(dB)
DG-CB08 (3m)	CISPR	1GHz ~ 6GHz	4.24

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	Test Date
AC Power Line Conducted Emissions	20°C	51%	Lance Chen	Jan. 08, 2025
Radiated emissions 30 MHz to 1 GHz	21°C	40%	Zinco Chen	Jan. 15, 2025
Radiated emissions above 1 GHz	21°C	42%	Zinco Chen	Jan. 15, 2025

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	LCD Monitor
Brand Name	N/A
Test Model	27G4H
Series Model	**27G4********, **27G4H********(*=0-9, A-Z, a-z, +, -, /, \ or blank)
Model Difference(s)	Only differ in model name and sales market.
Identification No. of EUT(S/N)	N/A
Component unit of EUT	☒Single unit ☐Multiple unit
Sample Status	☒Engineering sample ☐Final shipment prototype
Power Source	AC Mains.
Power Rating	100-240V ~, 50/60Hz, 1.5A
Connecting I/O Port(s)	1* AC port 1* DP port 2* HDMI port 1* Earphone port
Classification of EUT	Class B
Highest Internal Frequency(Fx)	445MHz

Cable Type	Shielded Type	Ferrite Core	Length(m)	Note
AC Power Cord	Non-shielded	NO	1.8/1.5/1.2	-
HDMI	Shielded	NO	1.8/1.5/1.2	-
DP	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.

2.2 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	HDMI 1 1920*1080/200Hz PC 1.8m H
Mode 2	HDMI 2 1920*1080/200Hz PC 1.8m H
Mode 3	DP 1920*1080/200Hz PC 1.8m H
Mode 4	HDMI 1 1920*1080/60Hz PC 1.8m H
Mode 5	HDMI 1 1080P DVD 1.8m H
Mode 6	HDMI 1 800*600/60Hz PC 1.8m H
Mode 7	HDMI 1 640*480/60Hz PC 1.8m H
Mode 8	HDMI 1 1920*1080/200Hz PC 1.5m H
Mode 9	HDMI 2 1920*1080/200Hz PC 1.5m H
Mode 10	DP 1920*1080/200Hz PC 1.5m H
Mode 11	HDMI 1 1920*1080/200Hz PC 1.2m H
Mode 12	HDMI 2 1920*1080/200Hz PC 1.2m H
Mode 13	DP 1920*1080/200Hz PC 1.2m H
Mode 14	HDMI 1 1920*1080/240Hz PC 1.8m V
Mode 15	HDMI 1 1920*1080/240Hz PC 1.8m H(Without Earphone)

AC Power Line Conducted Emissions Test	
Final Test Mode	Description
Mode 1	HDMI 1 1920*1080/200Hz PC 1.8m H
Mode 2	HDMI 2 1920*1080/200Hz PC 1.8m H
Mode 5	HDMI 1 1080P DVD 1.8m H

Radiated Emissions 30 MHz to 1 GHz Test	
Final Test Mode	Description
Mode 1	HDMI 1 1920*1080/200Hz PC 1.8m H
Mode 2	HDMI 2 1920*1080/200Hz PC 1.8m H
Mode 5	HDMI 1 1080P DVD 1.8m H
Mode 15	HDMI 1 1920*1080/240Hz PC 1.8m H(Without Earphone)

Radiated emissions above 1 GHz Test	
Final Test Mode	Description
Mode 1	HDMI 1 1920*1080/200Hz PC 1.8m H
Mode 2	HDMI 2 1920*1080/200Hz PC 1.8m H
Mode 5	HDMI 1 1080P DVD 1.8m H
Mode 15	HDMI 1 1920*1080/240Hz PC 1.8m H(Without Earphone)

Note:

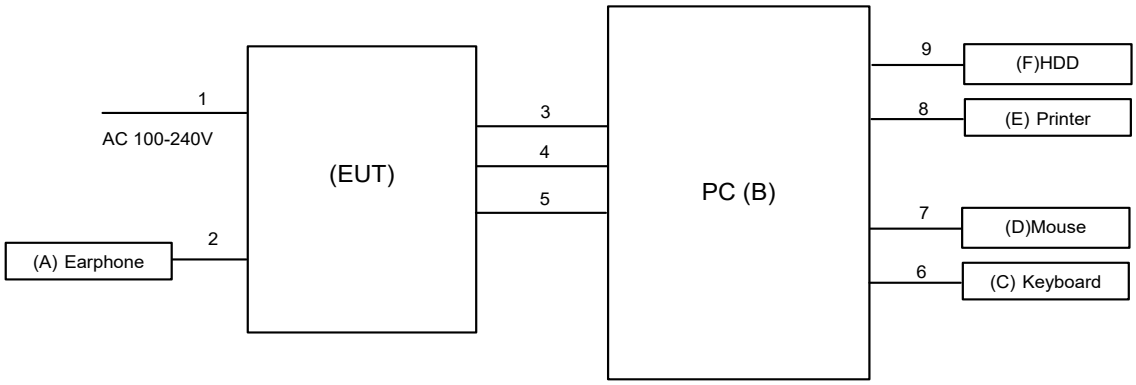
1. For Radiated emissions: Evaluated the mode 1-15. The worst case is mode 1. According to the client's requirement, choose mode 1, mode 2, mode 5, mode 15 and recorded in test report.
2. For Conducted emissions: Evaluated the mode 1-13. The worst case is mode 1. According to the client's requirement, choose mode 1, mode 2, mode 5 and recorded in test report.

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. EUT connected to PC via HDMI & DP Cable.
2. Mouse and Keyboard connected to PC via USB Cable.
3. EUT connected to Earphone via Earphone Cable.
4. HDD connected to PC via USB Cable.
5. 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	Earphone	Apple	N/A	N/A
B	PC	DELL	8920-D16N8S	GZS91L2
C	Keyboard	DELL	KB212-B	CN0HTXH97158125004DXA01
D	Mouse	DELL	MS111-P	CN011D3V71581279OLOT
E	Printer	HP	VCVRA-2201-01	S88N4-80012
F	HDD	WD	WDBYVG0010BBK-CESN	WX12A931ESJ2

Item	Cable Type	Shielded Type	Ferrite Core	Length
1	AC Cable	NO	NO	1.8/1.5/1.2m
2	Earphone Cable	NO	NO	1.2m
3	HDMI Cable	YES	NO	1.8/1.5/1.2m
4	HDMI Cable	YES	NO	1.8/1.5/1.2m
5	DP Cable	YES	NO	1.8/1.5/1.2m
6	USB Cable	YES	NO	1.8m
7	USB Cable	YES	NO	1.8m
8	USB Cable	YES	NO	1.8m
9	USB Cable	YES	NO	1.8m

3. EMC EMISSION TEST

3.1 AC POWER LINE CONDUCTED EMISSIONS TEST

3.1.1 LIMIT

Frequency of Emission (MHz)	Class B (dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56 *	56 - 46 *
0.5 - 5	56	46
5 - 30	60	50

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	May 31, 2025
2	EMI Test Receiver	R&S	ESR3	103027	Jun. 01, 2025
3	Cable	N/A	RWLP50-4.0A-KJ-SMSM-6M	6M	Jan. 06, 2026
4	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
5	Artificial-Mains Network	Schwarzbeck	NSLK 8127	8127685	Dec. 06, 2025

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

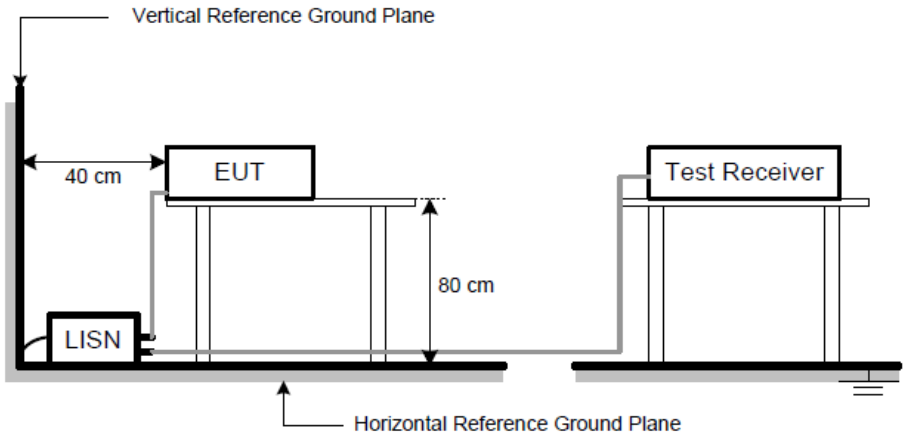
3.1.3 TEST PROCEDURE

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



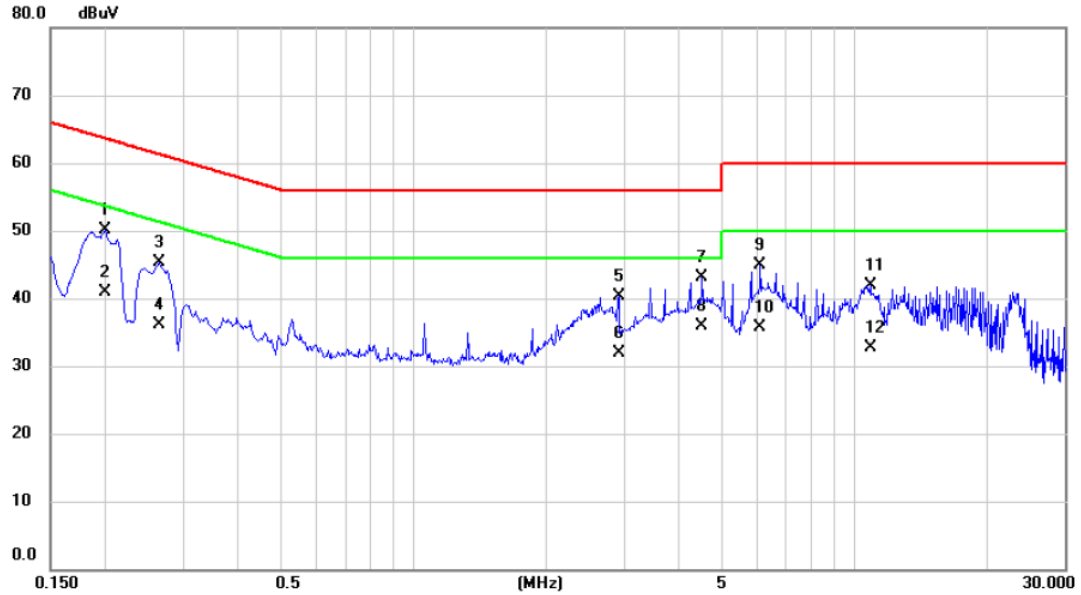
3.1.6 TEST RESULTS

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.

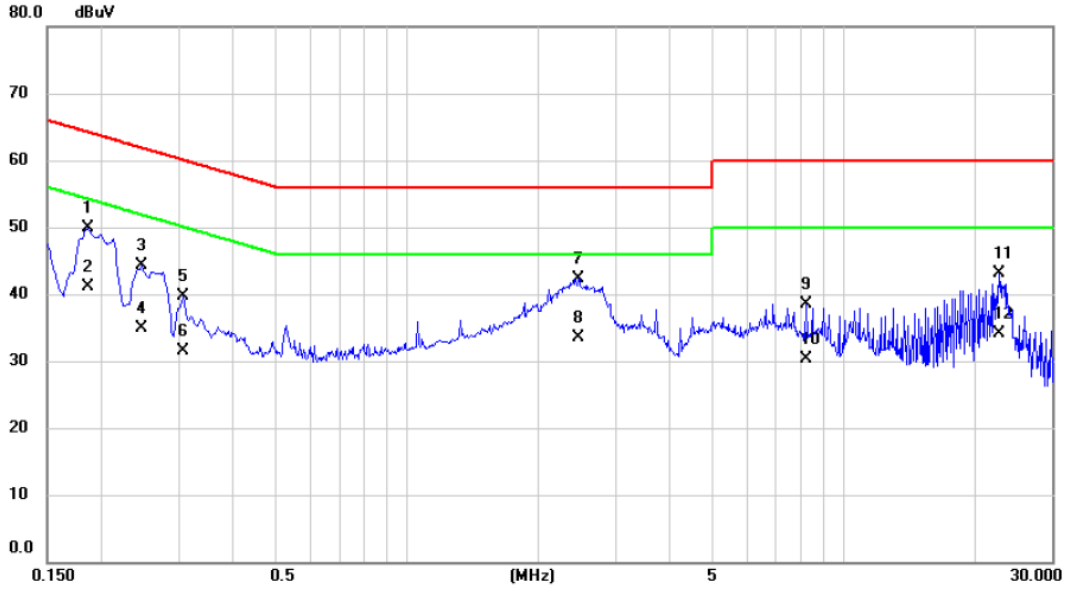
(2) All readings are QP Mode value unless otherwise stated AVG in column of『Note』. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform. In this case, a " * " marked in AVG Mode column of Interference Voltage Measured.

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



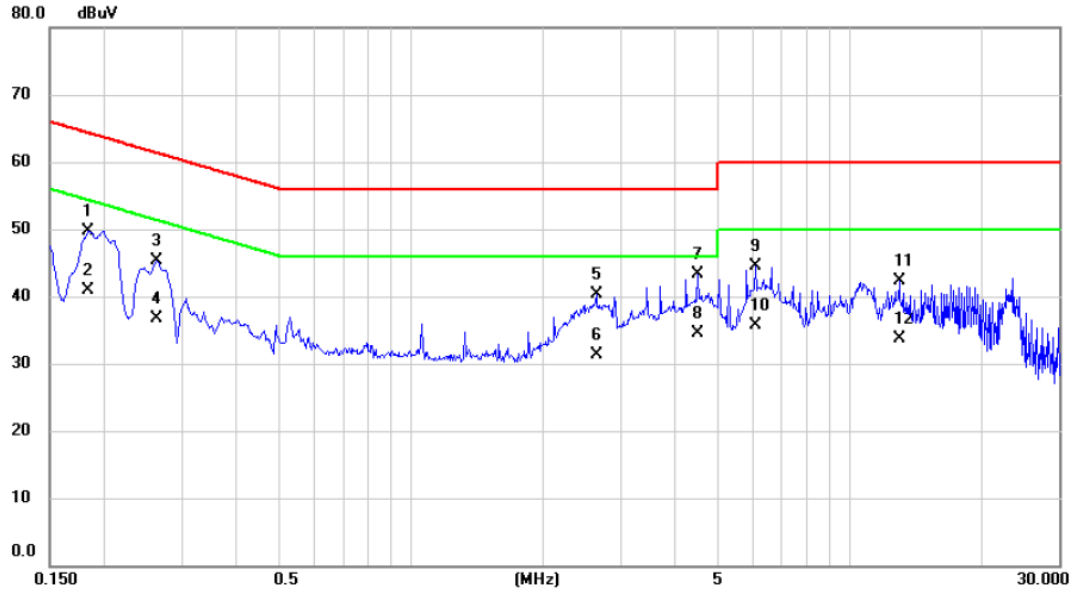
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1995	40.44	9.64	50.08	63.63	-13.55	QP	
2		0.1995	31.30	9.64	40.94	53.63	-12.69	AVG	
3		0.2647	35.65	9.66	45.31	61.28	-15.97	QP	
4		0.2647	26.40	9.66	36.06	51.28	-15.22	AVG	
5		2.9152	30.55	9.79	40.34	56.00	-15.66	QP	
6		2.9152	22.10	9.79	31.89	46.00	-14.11	AVG	
7		4.5037	33.26	9.88	43.14	56.00	-12.86	QP	
8	*	4.5037	26.04	9.88	35.92	46.00	-10.08	AVG	
9		6.0944	34.90	9.93	44.83	60.00	-15.17	QP	
10		6.0944	25.70	9.93	35.63	50.00	-14.37	AVG	
11		10.8622	31.71	10.15	41.86	60.00	-18.14	QP	
12		10.8622	22.60	10.15	32.75	50.00	-17.25	AVG	

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



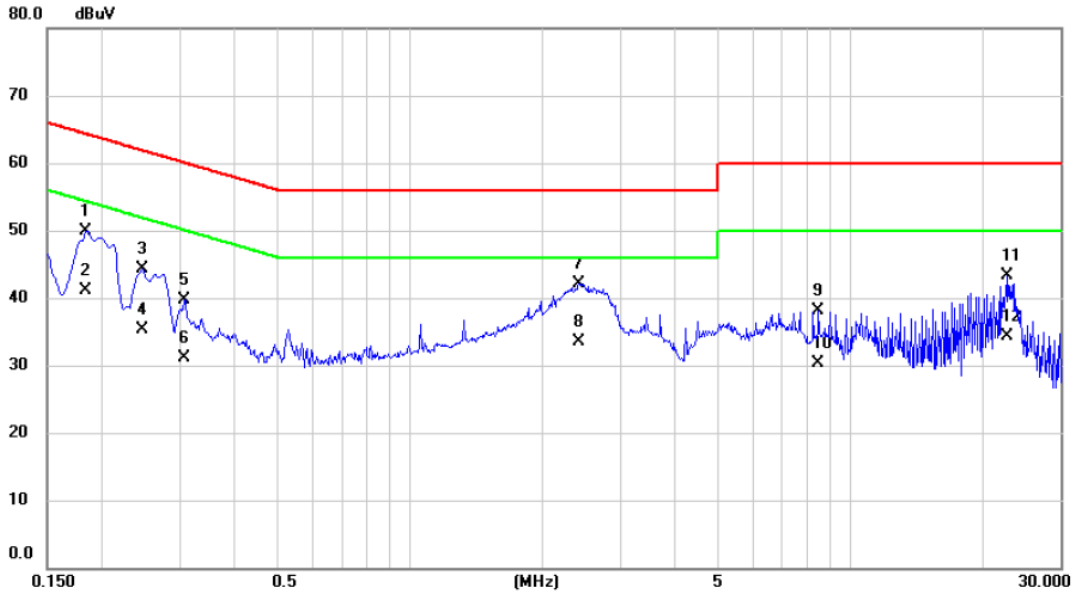
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1860	40.19	9.63	49.82	64.21	-14.39	QP	
2		0.1860	31.40	9.63	41.03	54.21	-13.18	AVG	
3		0.2467	34.72	9.64	44.36	61.87	-17.51	QP	
4		0.2467	25.30	9.64	34.94	51.87	-16.93	AVG	
5		0.3074	30.07	9.66	39.73	60.04	-20.31	QP	
6		0.3074	21.80	9.66	31.46	50.04	-18.58	AVG	
7		2.4697	32.58	9.77	42.35	56.00	-13.65	QP	
8	*	2.4697	23.70	9.77	33.47	46.00	-12.53	AVG	
9		8.2071	28.49	10.07	38.56	60.00	-21.44	QP	
10		8.2071	20.20	10.07	30.27	50.00	-19.73	AVG	
11		22.7692	32.46	10.66	43.12	60.00	-16.88	QP	
12		22.7692	23.50	10.66	34.16	50.00	-15.84	AVG	

Test Voltage	AC 120V/60Hz	Phase	Line
Test Mode	Mode 2		



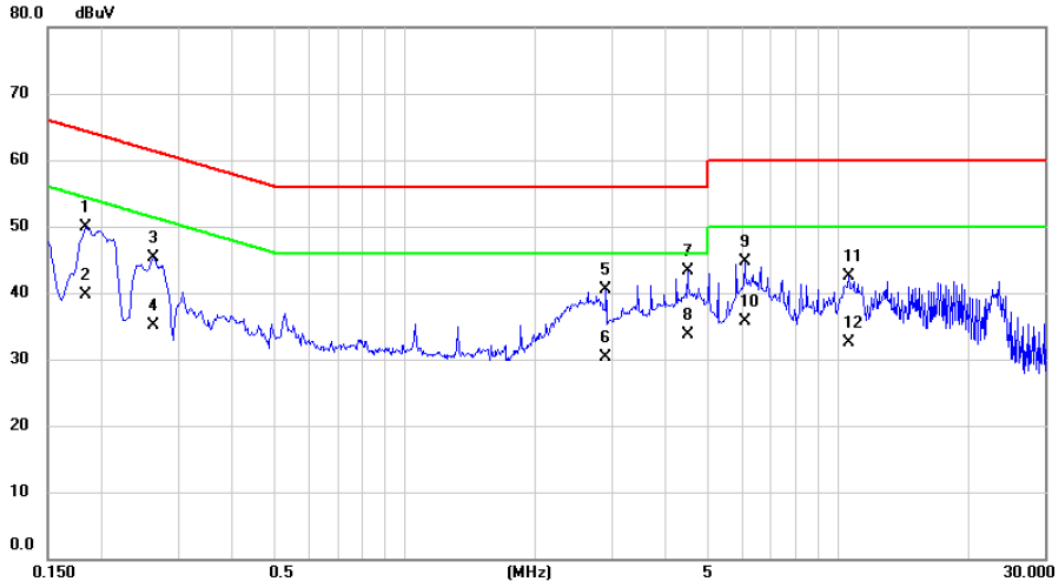
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1838	40.08	9.63	49.71	64.31	-14.60	QP	
2		0.1838	31.30	9.63	40.93	54.31	-13.38	AVG	
3		0.2625	35.66	9.66	45.32	61.35	-16.03	QP	
4		0.2625	27.10	9.66	36.76	51.35	-14.59	AVG	
5		2.6475	30.55	9.77	40.32	56.00	-15.68	QP	
6		2.6475	21.50	9.77	31.27	46.00	-14.73	AVG	
7		4.4993	33.33	9.88	43.21	56.00	-12.79	QP	
8	*	4.4993	24.60	9.88	34.48	46.00	-11.52	AVG	
9		6.0855	34.52	9.93	44.45	60.00	-15.55	QP	
10		6.0855	25.80	9.93	35.73	50.00	-14.27	AVG	
11		12.9705	32.17	10.22	42.39	60.00	-17.61	QP	
12		12.9705	23.50	10.22	33.72	50.00	-16.28	AVG	

Test Voltage	AC 120V/60Hz	Phase	Neutral
Test Mode	Mode 2		



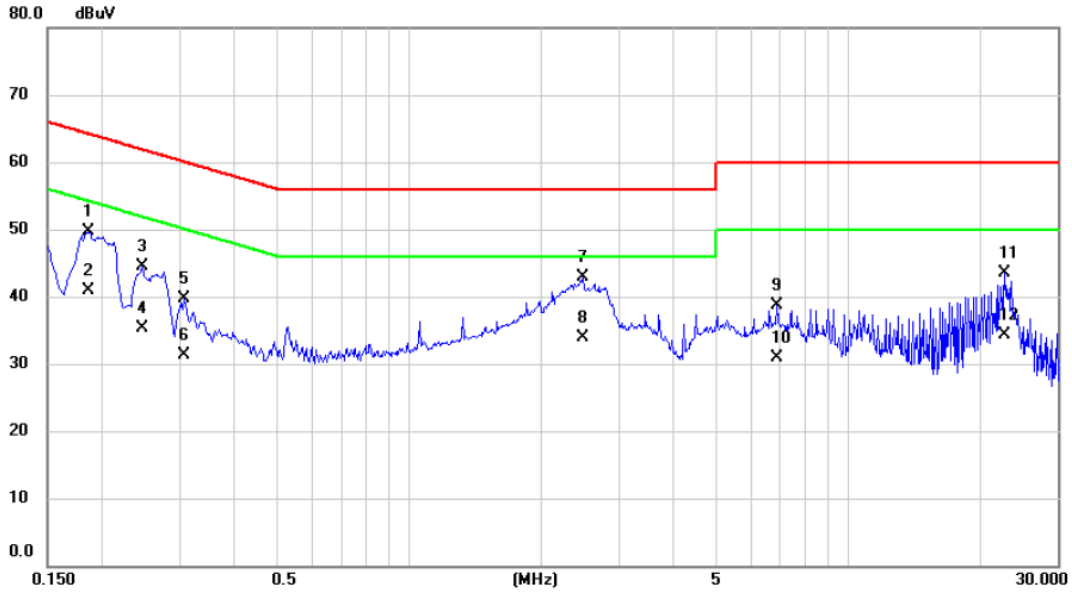
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1838	40.29	9.62	49.91	64.31	-14.40	QP	
2		0.1838	31.50	9.62	41.12	54.31	-13.19	AVG	
3		0.2468	34.66	9.64	44.30	61.86	-17.56	QP	
4		0.2468	25.60	9.64	35.24	51.86	-16.62	AVG	
5		0.3075	30.11	9.66	39.77	60.04	-20.27	QP	
6		0.3075	21.40	9.66	31.06	50.04	-18.98	AVG	
7		2.4090	32.39	9.77	42.16	56.00	-13.84	QP	
8	*	2.4090	23.80	9.77	33.57	46.00	-12.43	AVG	
9		8.4705	28.03	10.08	38.11	60.00	-21.89	QP	
10		8.4705	20.20	10.08	30.28	50.00	-19.72	AVG	
11		22.7670	32.55	10.66	43.21	60.00	-16.79	QP	
12		22.7670	23.70	10.66	34.36	50.00	-15.64	AVG	

Test Voltage	AC 120V/60Hz	Phase	Line
Test Mode	Mode 5		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1838	40.31	9.63	49.94	64.31	-14.37	QP	
2		0.1838	29.99	9.63	39.62	54.31	-14.69	AVG	
3		0.2625	35.64	9.66	45.30	61.35	-16.05	QP	
4		0.2625	25.49	9.66	35.15	51.35	-16.20	AVG	
5		2.9108	30.64	9.79	40.43	56.00	-15.57	QP	
6		2.9108	20.46	9.79	30.25	46.00	-15.75	AVG	
7		4.4970	33.49	9.88	43.37	56.00	-12.63	QP	
8	*	4.4970	23.74	9.88	33.62	46.00	-12.38	AVG	
9		6.0855	34.71	9.93	44.64	60.00	-15.36	QP	
10		6.0855	25.69	9.93	35.62	50.00	-14.38	AVG	
11		10.5854	32.28	10.13	42.41	60.00	-17.59	QP	
12		10.5854	22.29	10.13	32.42	50.00	-17.58	AVG	

Test Voltage	AC 120V/60Hz	Phase	Neutral
Test Mode	Mode 5		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1860	40.03	9.63	49.66	64.21	-14.55	QP	
2		0.1860	31.30	9.63	40.93	54.21	-13.28	AVG	
3		0.2468	34.94	9.64	44.58	61.86	-17.28	QP	
4		0.2468	25.60	9.64	35.24	51.86	-16.62	AVG	
5		0.3075	30.11	9.66	39.77	60.04	-20.27	QP	
6		0.3075	21.70	9.66	31.36	50.04	-18.68	AVG	
7		2.4833	33.23	9.77	43.00	56.00	-13.00	QP	
8	*	2.4833	24.20	9.77	33.97	46.00	-12.03	AVG	
9		6.8798	28.76	9.93	38.69	60.00	-21.31	QP	
10		6.8798	20.90	9.93	30.83	50.00	-19.17	AVG	
11		22.7558	32.86	10.66	43.52	60.00	-16.48	QP	
12		22.7558	23.70	10.66	34.36	50.00	-15.64	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 B (at 10m)
	dBμV/m Quasi-peak
30 - 230	30
230 - 1000	37

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	Jun. 01, 2025
2	MXE EMI Receiver	Agilent	N9038A	MY53220133	Jun. 01, 2025
3	Pre-Amplifier	EMC INSTRUMENT	EMC 9135	980284	May 31, 2025
4	Pre-Amplifier	EMC INSTRUMENT	EMC 9135	980283	May 31, 2025
5	Trilog-Broadband Antenna	Schwarzbeck	VULB9168	947	Nov. 06, 2025
6	Attenuator	EMCI	EMCI-N-6-06	AT-N0670	Nov. 06, 2025
7	Trilog-Broadband Antenna	Schwarzbeck	VULB9168	1461	Nov. 27, 2025
8	Attenuator	EMC INSTRUMENT	EMCI-N-6-06	AT-06010	Nov. 27, 2025
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	Cable	RW	LMR400-NMNM-10M	N/A	Dec. 01, 2025
13	Cable	RW	LMR400-NMNM-7M	N/A	Dec. 01, 2025
14	Cable	RW	LMR400-NMNM-3.5M	N/A	Dec. 01, 2025
15	Cable	RW	LMR400-NMNM-8M	N/A	Sep. 04, 2025
16	Cable	RW	LMR400-NMNM-3.5M	N/A	Sep. 04, 2025
17	Cable	RW	LMR400-NMNM-14M	N/A	Sep. 04, 2025

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

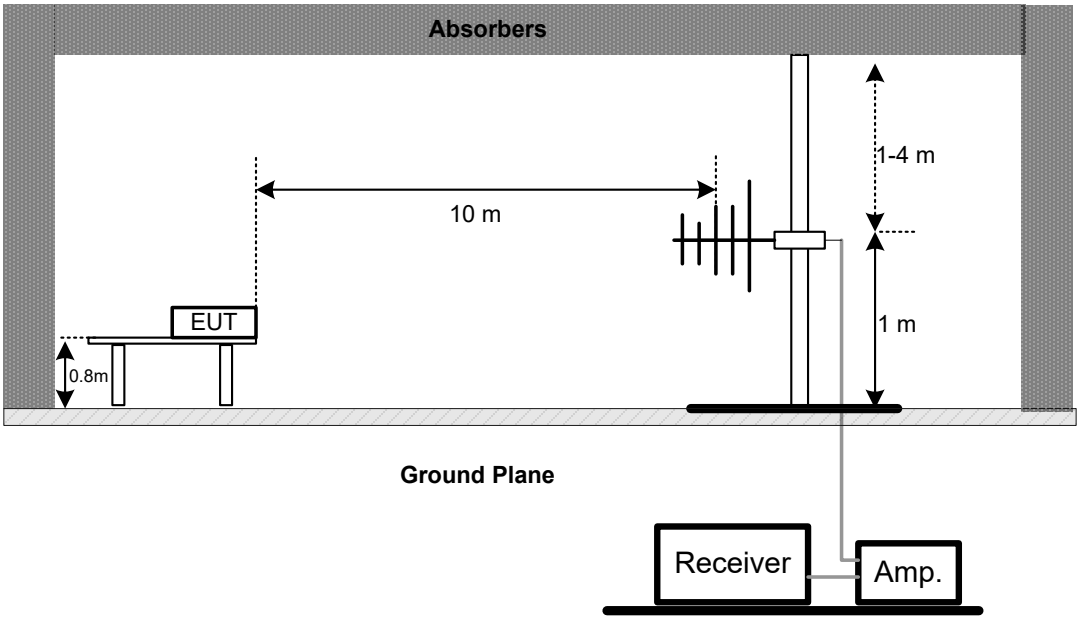
a. The measuring distance of 10 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The height of the equipment or of 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 - EUT Test Photos.

3.2.4 DEVIATION FROM TEST STANDARD

No deviation

3.2.5 TEST SETUP

30 MHz to 1 GHz

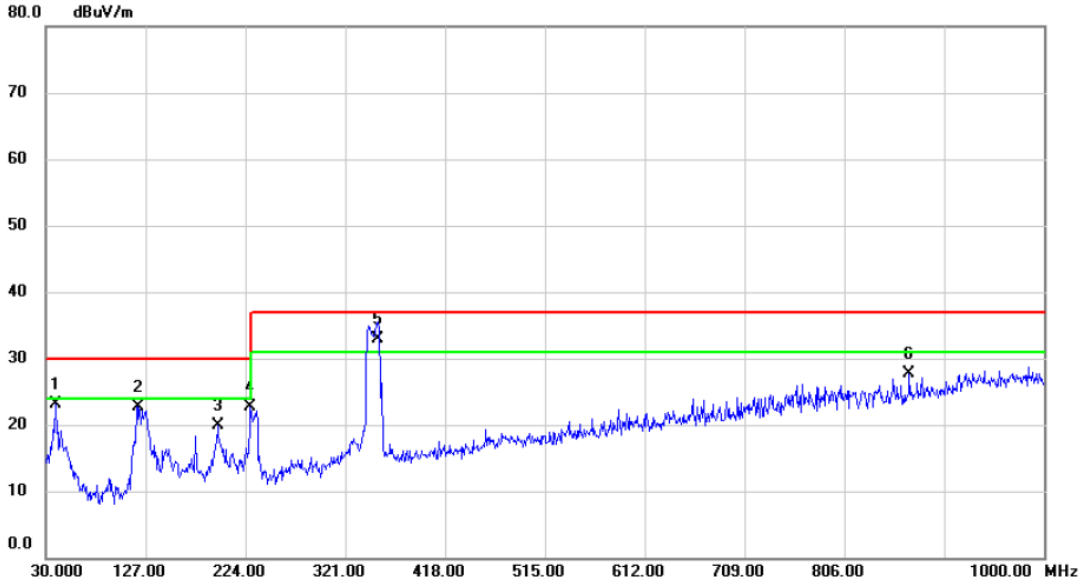


3.2.6 TEST RESULTS

Remark:

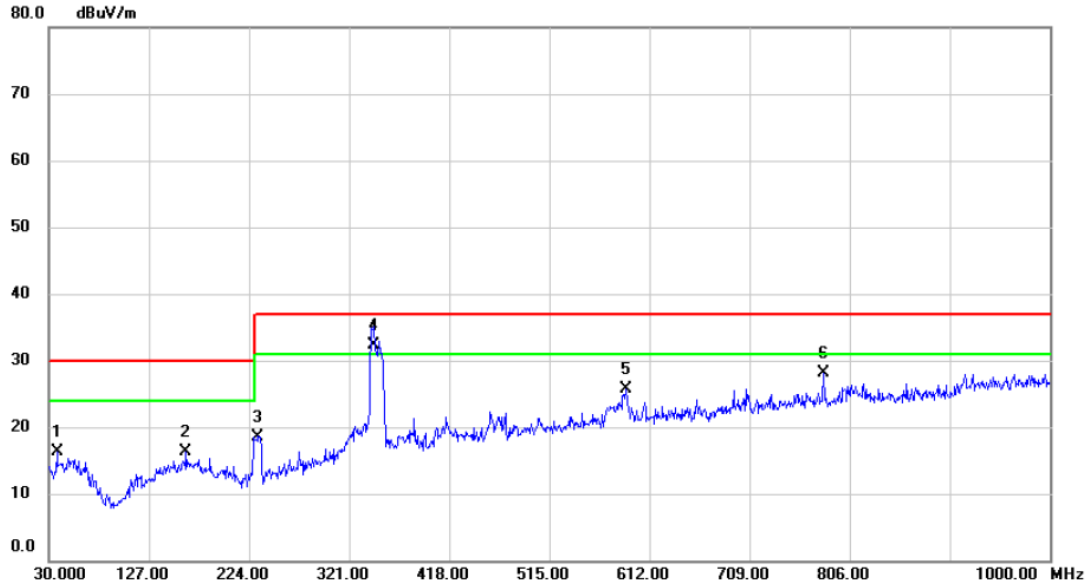
(1) Measuring frequency range from 30 MHz to 1000 MHz
(2) If the peak scan value lower limit more than 20 dB, then this signal data does not show in table.

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



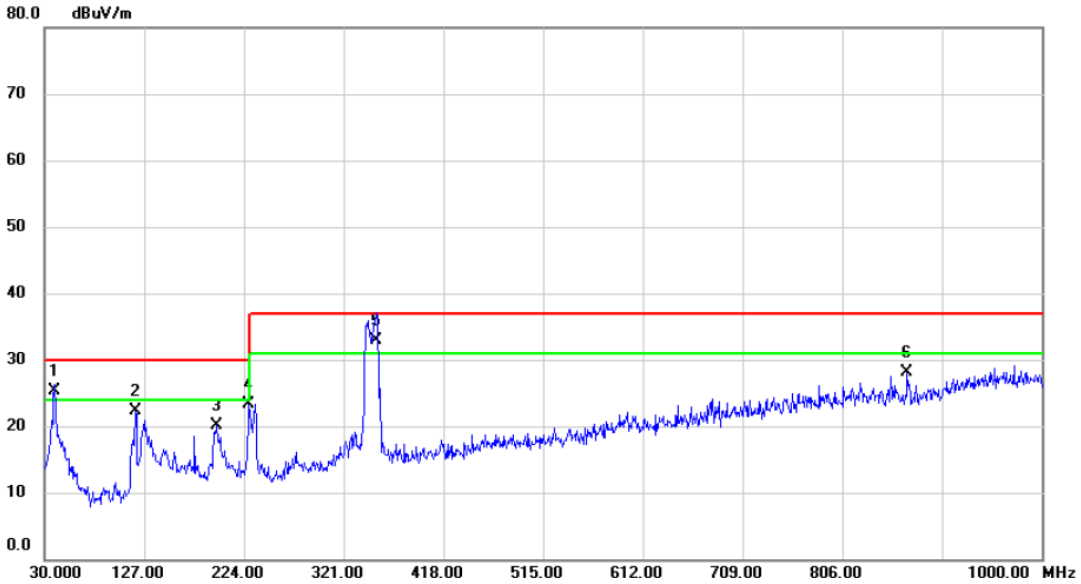
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		39.7000	41.51	-18.42	23.09	30.00	-6.91	QP	
2		119.2400	41.64	-18.96	22.68	30.00	-7.32	QP	
3		196.8400	38.53	-18.62	19.91	30.00	-10.09	QP	
4		228.8500	40.64	-17.87	22.77	30.00	-7.23	QP	
5	*	352.0400	46.09	-13.11	32.98	37.00	-4.02	QP	
6		869.0500	34.26	-6.49	27.77	37.00	-9.23	QP	

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



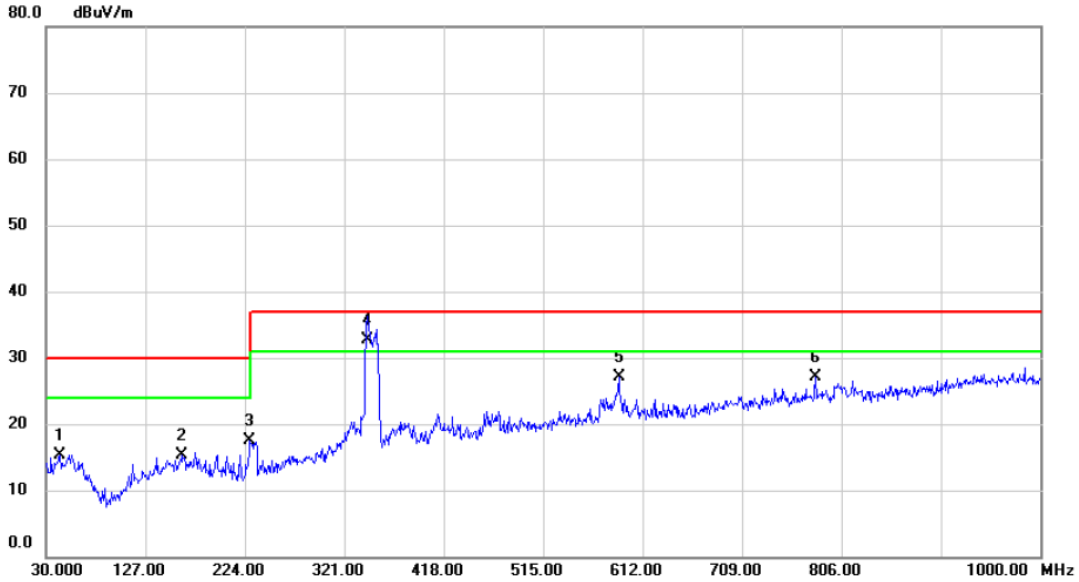
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		37.7600	34.91	-18.59	16.32	30.00	-13.68	QP	
2		162.8900	33.48	-17.10	16.38	30.00	-13.62	QP	
3		232.7300	37.69	-19.09	18.60	37.00	-18.40	QP	
4	*	345.2500	47.01	-14.70	32.31	37.00	-4.69	QP	
5		589.6900	35.16	-9.54	25.62	37.00	-11.38	QP	
6		780.7800	35.73	-7.58	28.15	37.00	-8.85	QP	

Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 2		



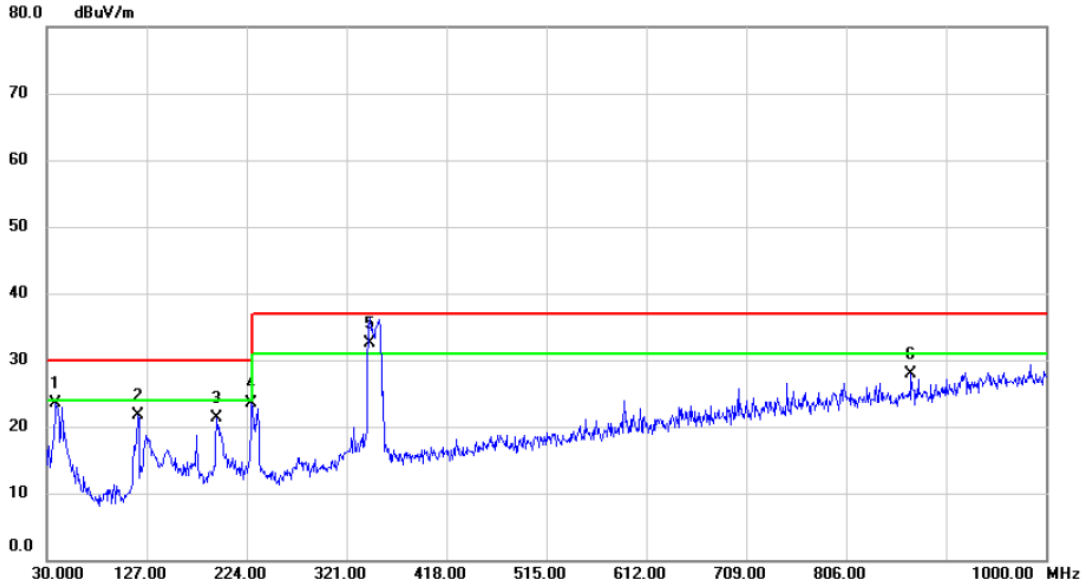
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	!	39.7000	43.74	-18.42	25.32	30.00	-4.68	QP	
2		118.2700	41.36	-19.07	22.29	30.00	-7.71	QP	
3		197.8100	38.79	-18.69	20.10	30.00	-9.90	QP	
4		228.8500	41.19	-17.87	23.32	30.00	-6.68	QP	
5	*	353.0100	45.95	-13.10	32.85	37.00	-4.15	QP	
6		869.0500	34.56	-6.49	28.07	37.00	-8.93	QP	

Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 2		



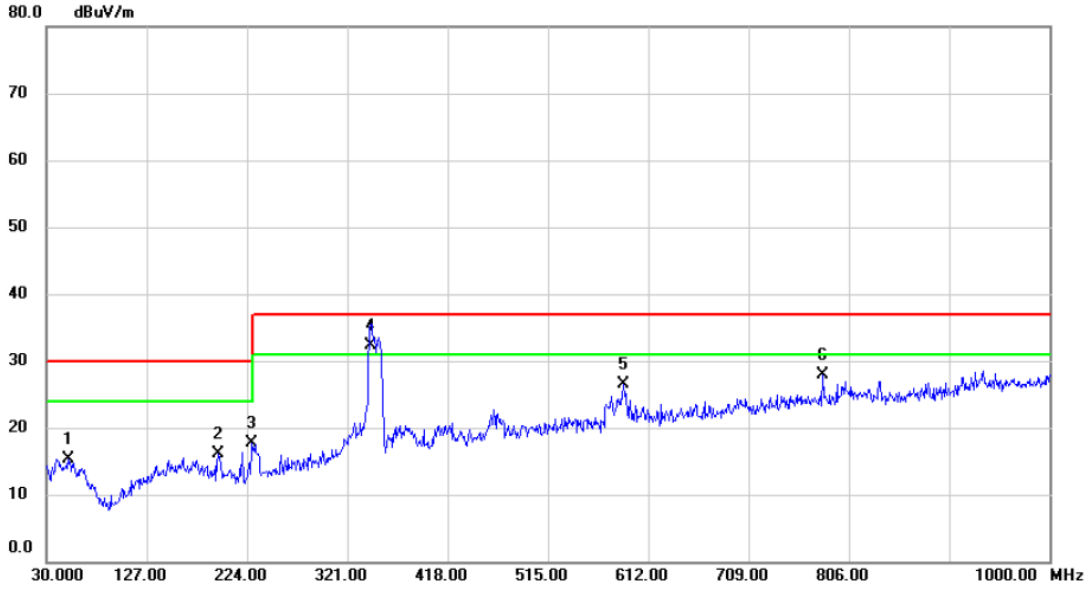
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		43.5800	33.42	-18.07	15.35	30.00	-14.65	QP	
2		162.8900	32.47	-17.10	15.37	30.00	-14.63	QP	
3		228.8500	37.07	-19.50	17.57	30.00	-12.43	QP	
4	*	343.3100	47.38	-14.74	32.64	37.00	-4.36	QP	
5		588.7200	36.69	-9.55	27.14	37.00	-9.86	QP	
6		780.7800	34.59	-7.58	27.01	37.00	-9.99	QP	

Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 5		



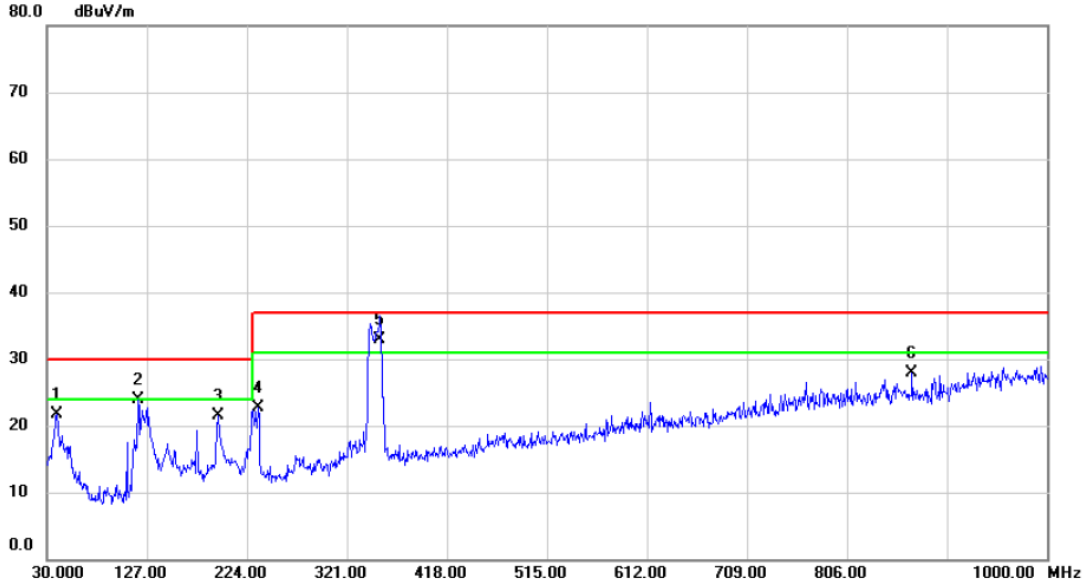
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		38.7300	41.97	-18.56	23.41	30.00	-6.59	QP	
2		118.2700	40.68	-19.07	21.61	30.00	-8.39	QP	
3		194.9000	39.88	-18.52	21.36	30.00	-8.64	QP	
4		228.8500	41.35	-17.87	23.48	30.00	-6.52	QP	
5	*	343.3100	45.78	-13.23	32.55	37.00	-4.45	QP	
6		869.0500	34.40	-6.49	27.91	37.00	-9.09	QP	

Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 5		



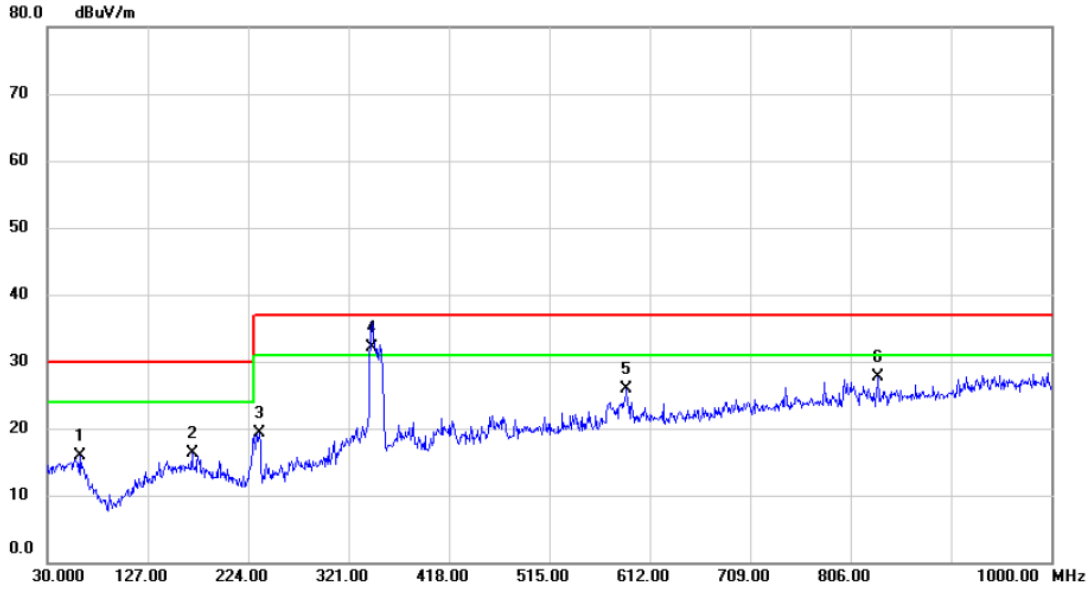
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		51.3400	33.16	-17.78	15.38	30.00	-14.62	QP	
2		195.8700	35.94	-19.93	16.01	30.00	-13.99	QP	
3		228.8500	37.16	-19.50	17.66	30.00	-12.34	QP	
4	*	343.3100	47.04	-14.74	32.30	37.00	-4.70	QP	
5		587.7500	36.16	-9.59	26.57	37.00	-10.43	QP	
6		780.7800	35.53	-7.58	27.95	37.00	-9.05	QP	

Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 15		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		39.7000	40.13	-18.42	21.71	30.00	-8.29	QP	
2		118.2700	43.02	-19.07	23.95	30.00	-6.05	QP	
3		195.8700	40.11	-18.57	21.54	30.00	-8.46	QP	
4		234.6700	40.15	-17.40	22.75	37.00	-14.25	QP	
5	*	353.0100	45.95	-13.10	32.85	37.00	-4.15	QP	
6		869.0500	34.40	-6.49	27.91	37.00	-9.09	QP	

Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 15		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		61.0400	34.38	-18.41	15.97	30.00	-14.03	QP	
2		169.6800	33.78	-17.39	16.39	30.00	-13.61	QP	
3		234.6700	38.13	-18.87	19.26	37.00	-17.74	QP	
4	*	343.3100	46.91	-14.74	32.17	37.00	-4.83	QP	
5		589.6900	35.49	-9.54	25.95	37.00	-11.05	QP	
6		832.1900	35.04	-7.43	27.61	37.00	-9.39	QP	

3.3 RADIATED EMISSIONS ABOVE 1 GHZ

3.3.1 LIMIT

Frequency (MHz)	Class B (dBμV/m) (at 3m)	
	Peak	Average
Above 1000	74	54

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).
1m Emission level = 3m Emission level + 20log(3m/1m).
(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	ETS	3115	9605-4803	Jul. 07, 2025
2	MXE EMI Receiver	Agilent	N9038A	MY53220133	Jun. 01, 2025
3	Preamplifier	EMC INSTRUMENT	EMC118A45SE	981003	Oct. 29, 2025
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	RegalWay	RWLP50-4.0A-SMSM-9M	N/A	Sep. 02, 2025
8	Cable	RW	RWLP50-4.0A-NMRASM-1M	N/A	Sep. 02, 2025
9	Cable	RW	RWLP50-4.0A-NMRASM-4M	N/A	Sep. 02, 2025

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

3.3.3 TEST PROCEDURE

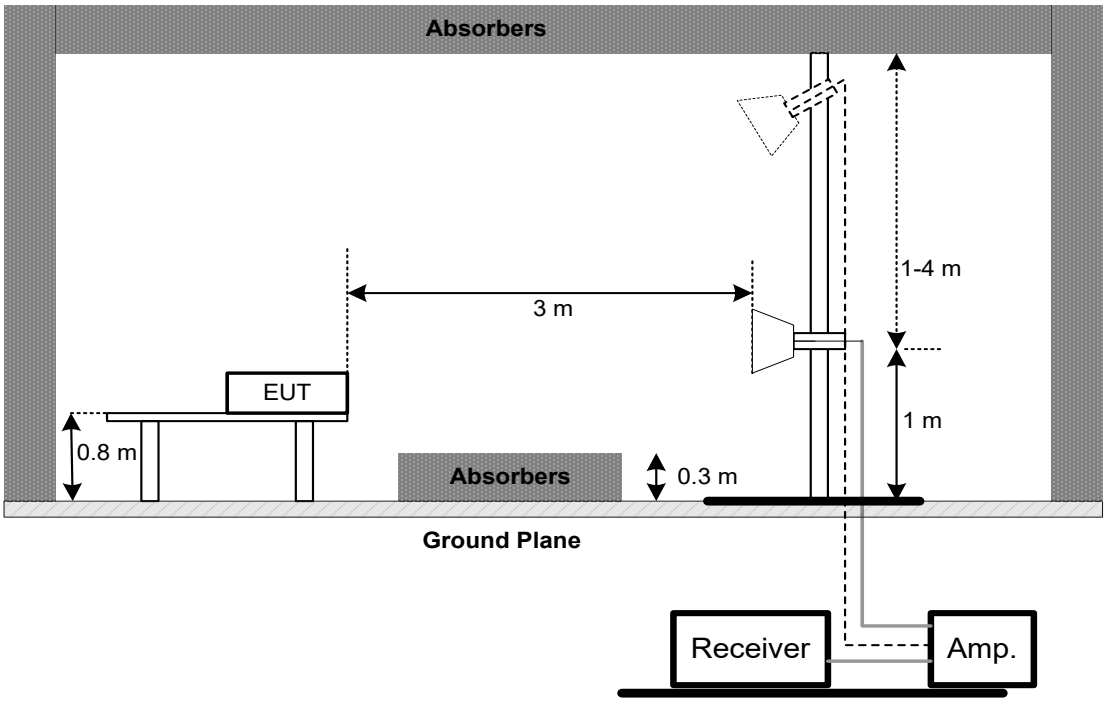
a. The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The height of the equipment or of 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.
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 AVG 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 - EUT Test Photos.

3.3.4 DEVIATION FROM TEST STANDARD

No deviation

3.3.5 TEST SETUP

Above 1 GHz

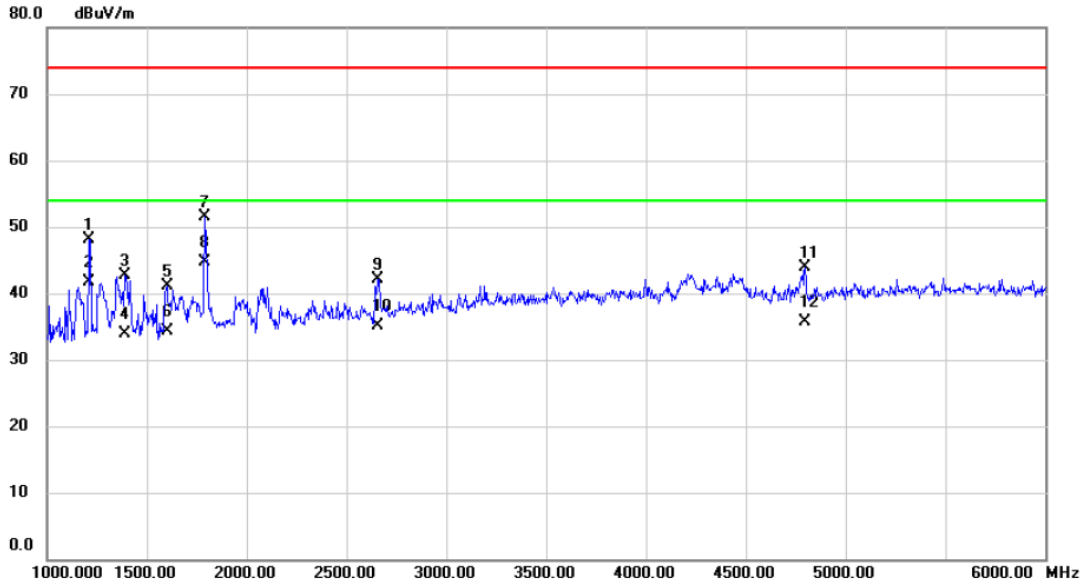


3.3.6 TEST RESULTS

Remark:

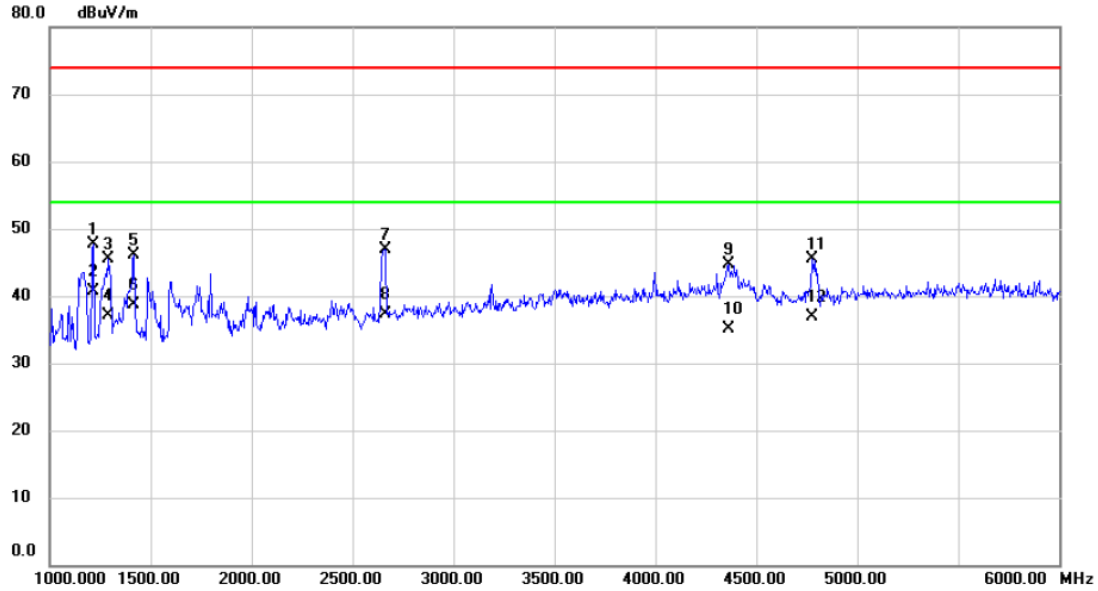
(1) Radiated emissions measured in frequency range above 1000 MHz were made with an instrument using Peak detector mode and AV detector mode of the emission.
(2) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20 dB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

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



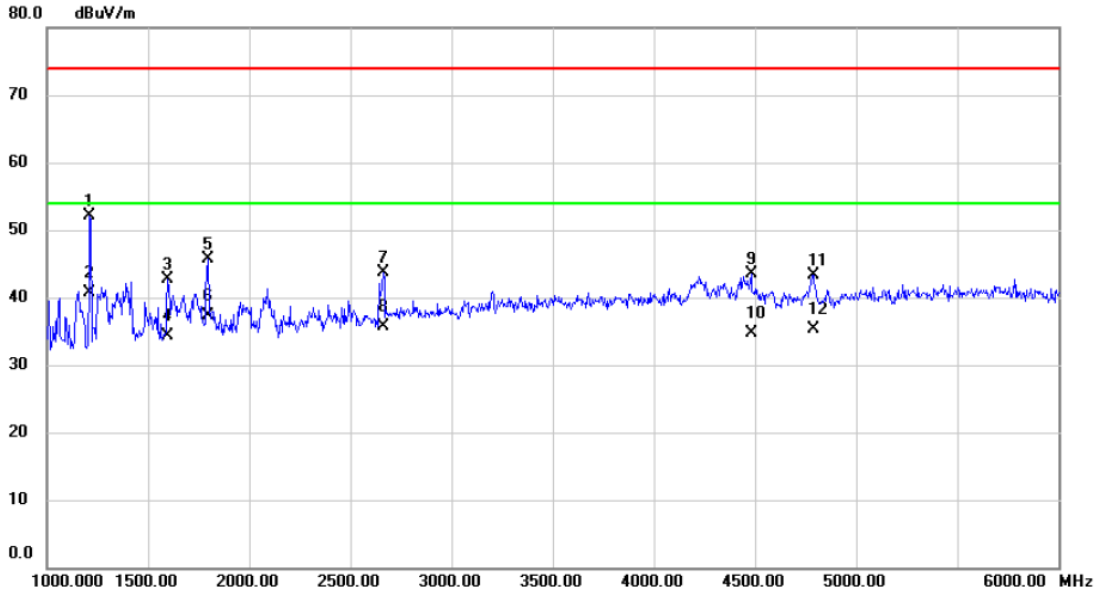
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1212.500	53.49	-5.33	48.16	74.00	-25.84	peak	
2		1212.500	47.01	-5.33	41.68	54.00	-12.32	AVG	
3		1387.500	47.65	-4.86	42.79	74.00	-31.21	peak	
4		1387.500	38.67	-4.86	33.81	54.00	-20.19	AVG	
5		1600.000	45.31	-4.16	41.15	74.00	-32.85	peak	
6		1600.000	38.53	-4.16	34.37	54.00	-19.63	AVG	
7		1792.500	54.83	-3.39	51.44	74.00	-22.56	peak	
8	*	1792.500	48.01	-3.39	44.62	54.00	-9.38	AVG	
9		2657.500	42.97	-0.78	42.19	74.00	-31.81	peak	
10		2657.500	35.91	-0.78	35.13	54.00	-18.87	AVG	
11		4797.500	40.70	3.15	43.85	74.00	-30.15	peak	
12		4797.500	32.54	3.15	35.69	54.00	-18.31	AVG	

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



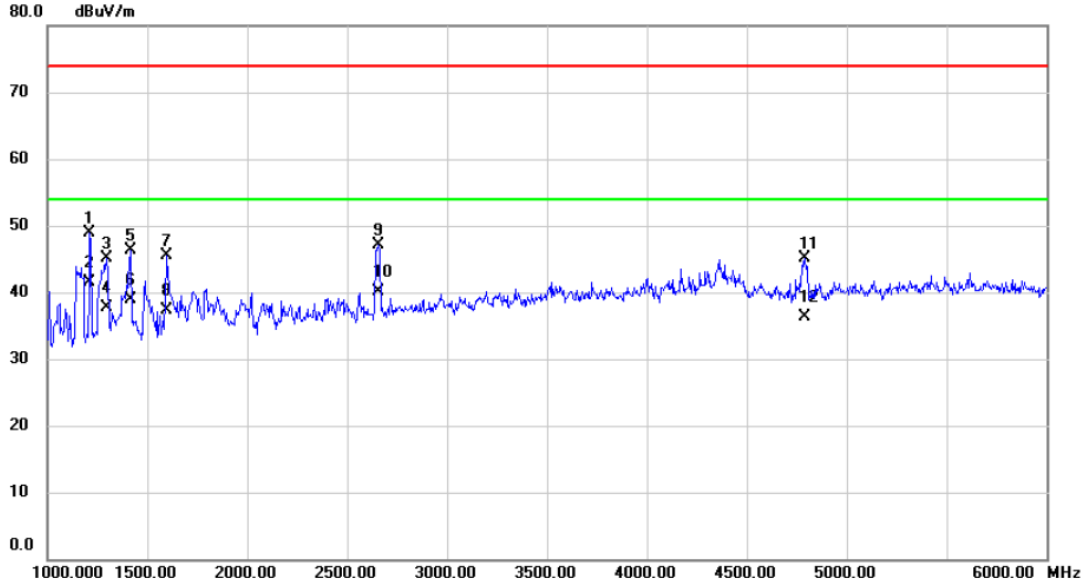
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1215.000	53.09	-5.32	47.77	74.00	-26.23	peak	
2	*	1215.000	46.00	-5.32	40.68	54.00	-13.32	AVG	
3		1287.500	50.56	-5.13	45.43	74.00	-28.57	peak	
4		1287.500	42.29	-5.13	37.16	54.00	-16.84	AVG	
5		1417.500	50.90	-4.78	46.12	74.00	-27.88	peak	
6		1417.500	43.47	-4.78	38.69	54.00	-15.31	AVG	
7		2662.500	47.75	-0.76	46.99	74.00	-27.01	peak	
8		2662.500	38.05	-0.76	37.29	54.00	-16.71	AVG	
9		4360.000	41.98	2.72	44.70	74.00	-29.30	peak	
10		4360.000	32.47	2.72	35.19	54.00	-18.81	AVG	
11		4777.500	42.44	3.11	45.55	74.00	-28.45	peak	
12		4777.500	33.75	3.11	36.86	54.00	-17.14	AVG	

Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 2		



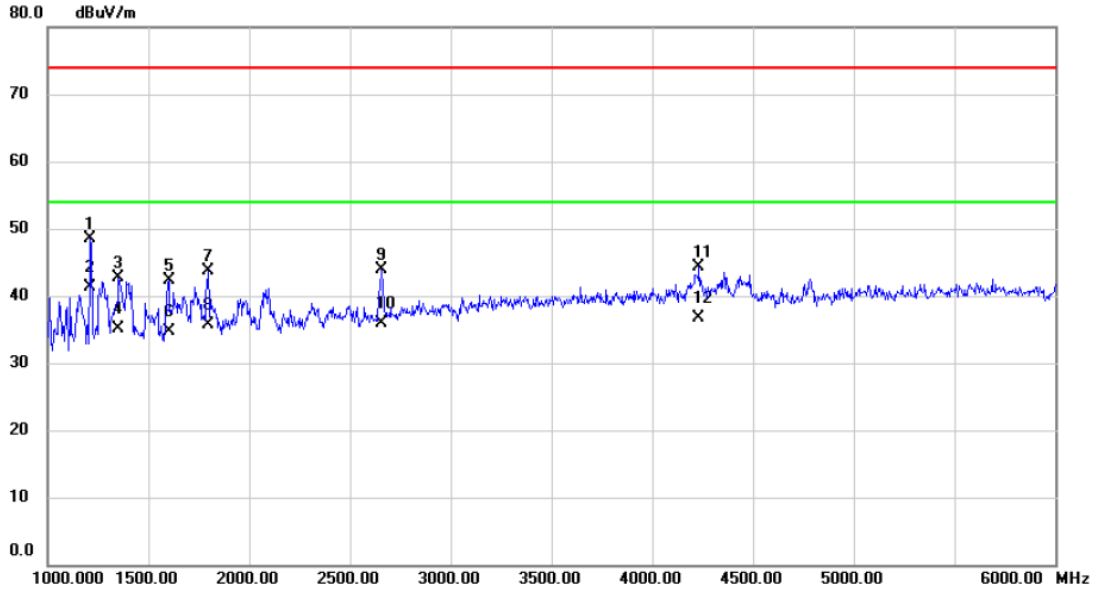
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1210.000	57.50	-5.34	52.16	74.00	-21.84	peak	
2	*	1210.000	46.02	-5.34	40.68	54.00	-13.32	AVG	
3		1595.000	46.95	-4.18	42.77	74.00	-31.23	peak	
4		1595.000	38.45	-4.18	34.27	54.00	-19.73	AVG	
5		1795.000	49.07	-3.38	45.69	74.00	-28.31	peak	
6		1795.000	40.66	-3.38	37.28	54.00	-16.72	AVG	
7		2662.500	44.49	-0.76	43.73	74.00	-30.27	peak	
8		2662.500	36.44	-0.76	35.68	54.00	-18.32	AVG	
9		4480.000	40.77	2.65	43.42	74.00	-30.58	peak	
10		4480.000	32.03	2.65	34.68	54.00	-19.32	AVG	
11		4787.500	40.26	3.13	43.39	74.00	-30.61	peak	
12		4787.500	32.14	3.13	35.27	54.00	-18.73	AVG	

Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 2		



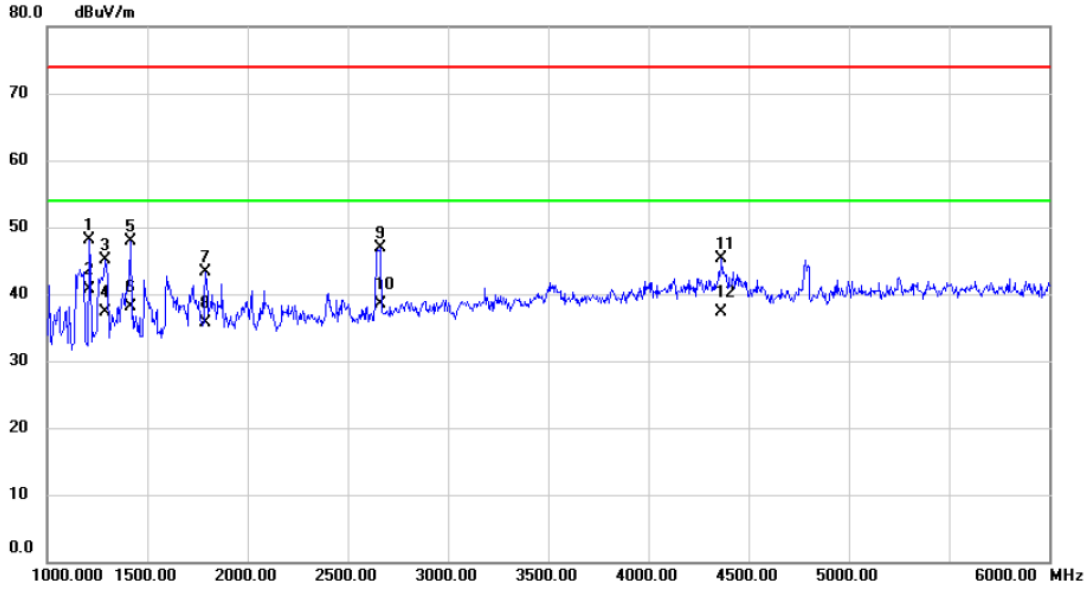
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1212.500	54.16	-5.33	48.83	74.00	-25.17	peak	
2	*	1212.500	46.90	-5.33	41.57	54.00	-12.43	AVG	
3		1297.500	50.26	-5.11	45.15	74.00	-28.85	peak	
4		1297.500	42.79	-5.11	37.68	54.00	-16.32	AVG	
5		1415.000	51.11	-4.78	46.33	74.00	-27.67	peak	
6		1415.000	43.63	-4.78	38.85	54.00	-15.15	AVG	
7		1597.500	49.67	-4.17	45.50	74.00	-28.50	peak	
8		1597.500	41.45	-4.17	37.28	54.00	-16.72	AVG	
9		2655.000	47.81	-0.79	47.02	74.00	-26.98	peak	
10		2655.000	40.98	-0.79	40.19	54.00	-13.81	AVG	
11		4790.000	41.87	3.14	45.01	74.00	-28.99	peak	
12		4790.000	33.13	3.14	36.27	54.00	-17.73	AVG	

Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 5		



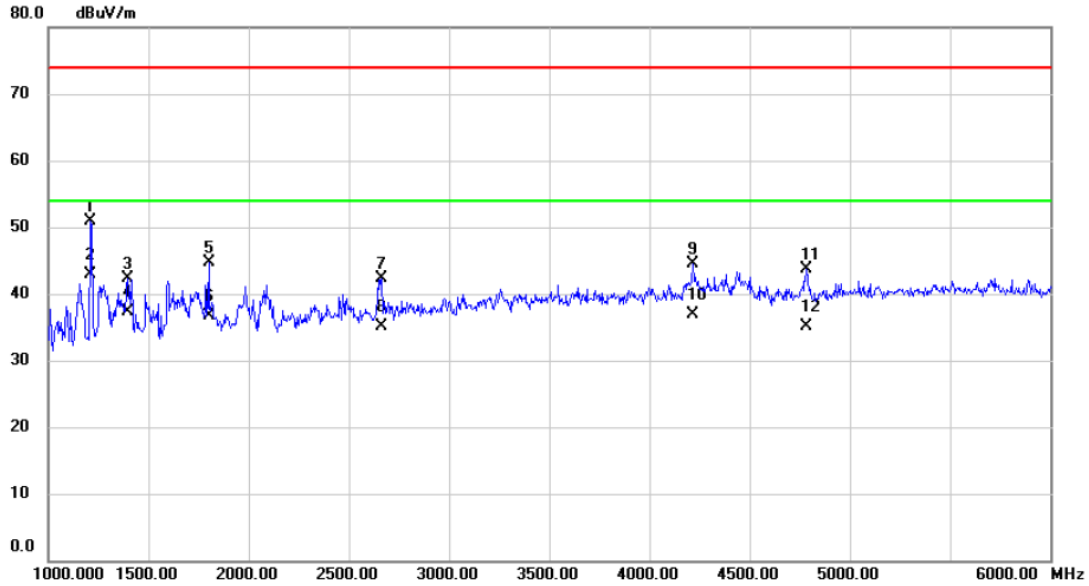
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1212.500	53.83	-5.33	48.50	74.00	-25.50	peak	
2	*	1212.500	46.70	-5.33	41.37	54.00	-12.63	AVG	
3		1350.000	47.59	-4.96	42.63	74.00	-31.37	peak	
4		1350.000	40.13	-4.96	35.17	54.00	-18.83	AVG	
5		1600.000	46.48	-4.16	42.32	74.00	-31.68	peak	
6		1600.000	38.83	-4.16	34.67	54.00	-19.33	AVG	
7		1797.500	47.10	-3.37	43.73	74.00	-30.27	peak	
8		1797.500	39.06	-3.37	35.69	54.00	-18.31	AVG	
9		2657.500	44.61	-0.78	43.83	74.00	-30.17	peak	
10		2657.500	36.62	-0.78	35.84	54.00	-18.16	AVG	
11		4230.000	41.51	2.77	44.28	74.00	-29.72	peak	
12		4230.000	33.92	2.77	36.69	54.00	-17.31	AVG	

Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 5		



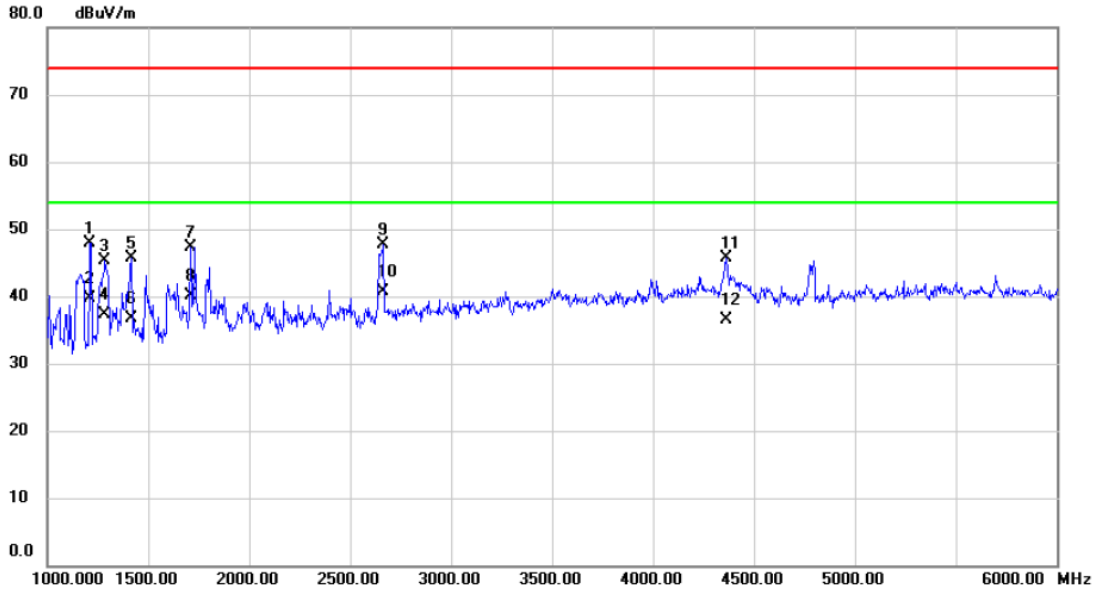
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1210.000	53.38	-5.34	48.04	74.00	-25.96	peak	
2	*	1210.000	46.03	-5.34	40.69	54.00	-13.31	AVG	
3		1287.500	50.27	-5.13	45.14	74.00	-28.86	peak	
4		1287.500	42.42	-5.13	37.29	54.00	-16.71	AVG	
5		1415.000	52.69	-4.78	47.91	74.00	-26.09	peak	
6		1415.000	42.94	-4.78	38.16	54.00	-15.84	AVG	
7		1792.500	46.69	-3.39	43.30	74.00	-30.70	peak	
8		1792.500	39.07	-3.39	35.68	54.00	-18.32	AVG	
9		2665.000	47.64	-0.76	46.88	74.00	-27.12	peak	
10		2665.000	39.32	-0.76	38.56	54.00	-15.44	AVG	
11		4365.000	42.63	2.70	45.33	74.00	-28.67	peak	
12		4365.000	34.52	2.70	37.22	54.00	-16.78	AVG	

Test Voltage	AC 120V/60Hz	Polarization	Vertical
Test Mode	Mode 15		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1210.000	56.23	-5.34	50.89	74.00	-23.11	peak	
2	*	1210.000	48.18	-5.34	42.84	54.00	-11.16	AVG	
3		1395.000	47.10	-4.84	42.26	74.00	-31.74	peak	
4		1395.000	42.11	-4.84	37.27	54.00	-16.73	AVG	
5		1800.000	48.00	-3.35	44.65	74.00	-29.35	peak	
6		1800.000	40.15	-3.35	36.80	54.00	-17.20	AVG	
7		2660.000	42.99	-0.77	42.22	74.00	-31.78	peak	
8		2660.000	35.95	-0.77	35.18	54.00	-18.82	AVG	
9		4215.000	41.67	2.78	44.45	74.00	-29.55	peak	
10		4215.000	34.06	2.78	36.84	54.00	-17.16	AVG	
11		4780.000	40.54	3.13	43.67	74.00	-30.33	peak	
12		4780.000	32.03	3.13	35.16	54.00	-18.84	AVG	

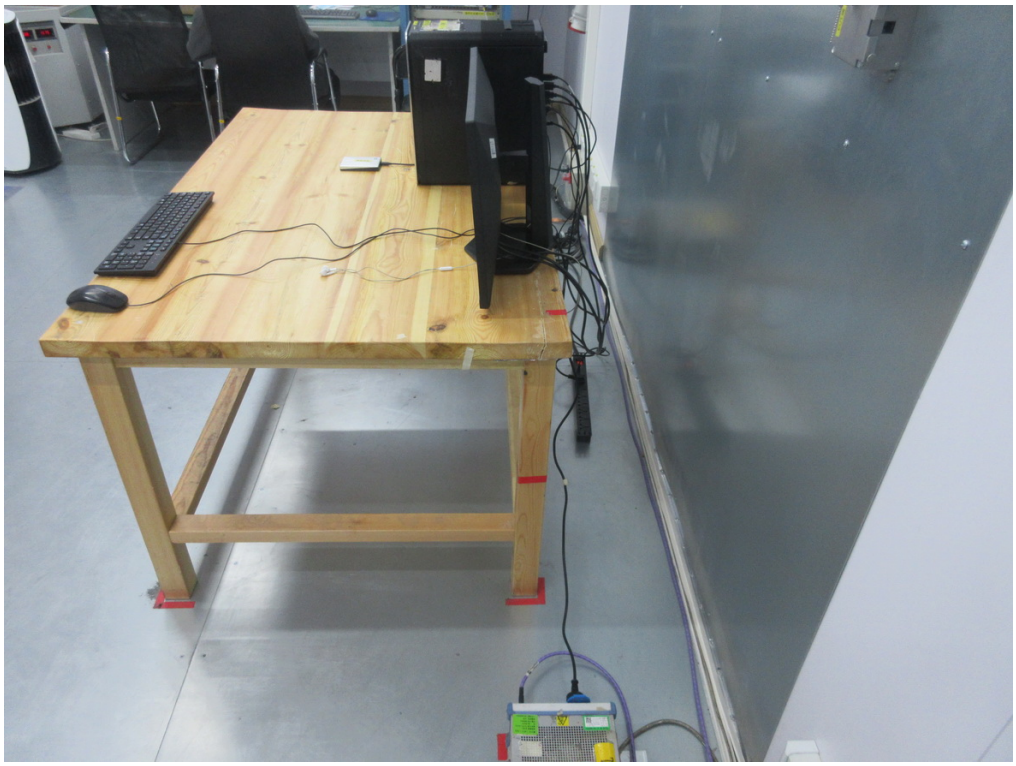
Test Voltage	AC 120V/60Hz	Polarization	Horizontal
Test Mode	Mode 15		



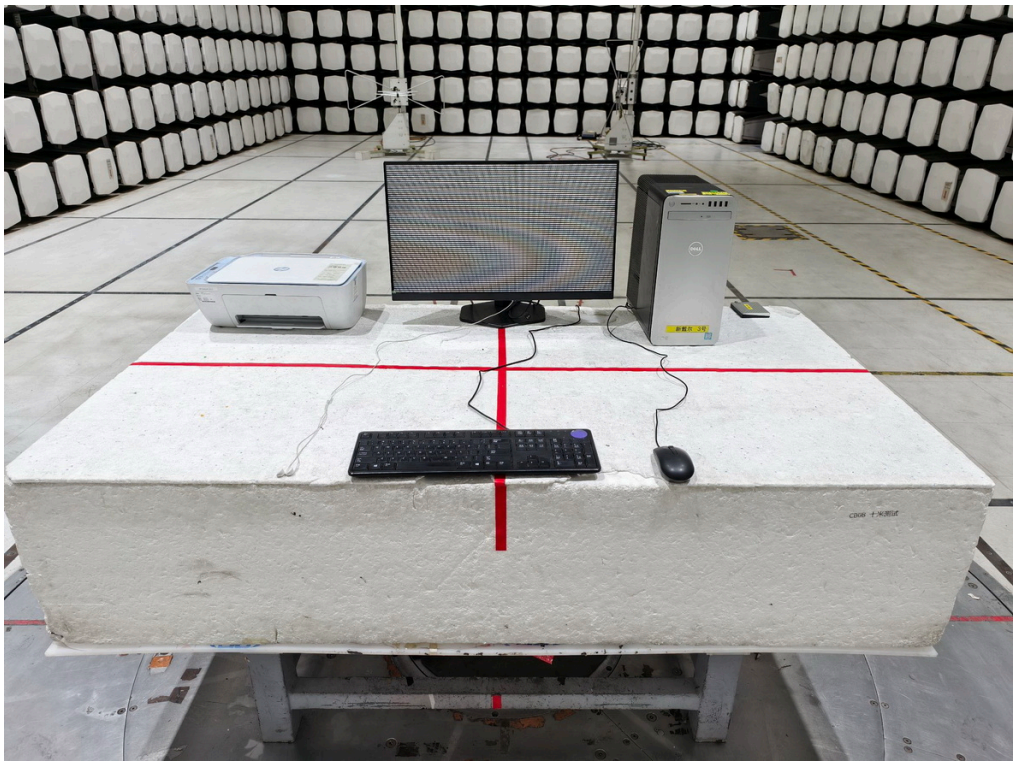
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		1210.000	53.17	-5.34	47.83	74.00	-26.17	peak	
2		1210.000	44.98	-5.34	39.64	54.00	-14.36	AVG	
3		1285.000	50.42	-5.14	45.28	74.00	-28.72	peak	
4		1285.000	42.40	-5.14	37.26	54.00	-16.74	AVG	
5		1417.500	50.56	-4.78	45.78	74.00	-28.22	peak	
6		1417.500	41.46	-4.78	36.68	54.00	-17.32	AVG	
7		1710.000	51.12	-3.72	47.40	74.00	-26.60	peak	
8		1710.000	43.89	-3.72	40.17	54.00	-13.83	AVG	
9		2665.000	48.48	-0.76	47.72	74.00	-26.28	peak	
10	*	2665.000	41.43	-0.76	40.67	54.00	-13.33	AVG	
11		4360.000	43.02	2.72	45.74	74.00	-28.26	peak	
12		4360.000	33.85	2.72	36.57	54.00	-17.43	AVG	

4. EUT TEST PHOTO

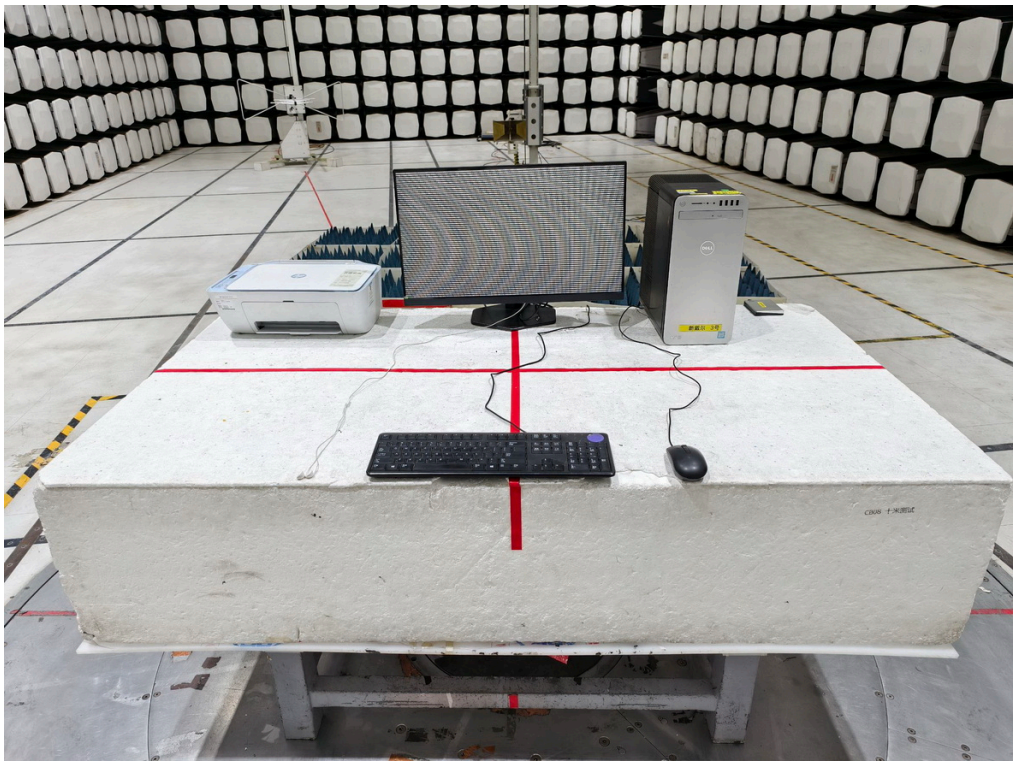
AC Power Line Conducted Emissions

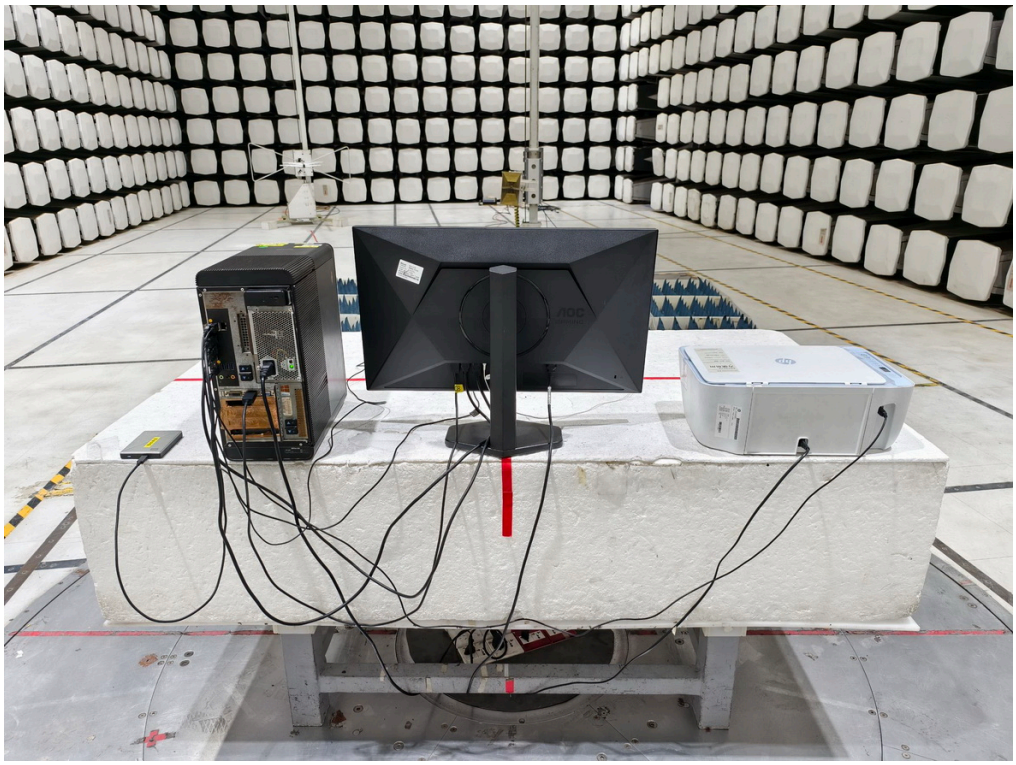


Radiated Emissions 30 MHz to 1 GHz



Radiated Emissions Above 1 GHz





End of Test Report