FCC 47 CFR Part 15 Subpart B, ICES-003 Issue 7

TEST REPORT

For

5000 Series

MODEL NUMBER: HX369LB, HX369W4

REPORT NUMBER: 4791566766-2

ISSUE DATE: November 28, 2024

Prepared for

Philips Oral Healthcare, Inc.（FCC）
22100 Bothell-Everett Highway Bothell Washington 98021 United States
Philips Oral Healthcare (ISED)
22100 Bothell-Everett Highway Bothell US 98021 United States Of America (Excluding The States Of Alaska)

Prepared by

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Revision History

Rev.	Issue Date	Revisions	Revised By
V0	November 28, 2024	Initial Issue	

Summary of Test Results

Emission			
Standard	**Test Item**	**Limit**	**Result**
FCC 47 CFR Part 15 Subpart B, ICES-003 Issue 7	Conducted emissions	FCC Part 15.107 ICES-003 Issue 7, Section 3.2.1	Pass
	Radiated emissions below 1GHz	FCC Part 15.109 ICES-003 Issue 7, Section 3.2.2	Pass
	Radiated emissions above 1GHz	FCC Part 15.109 ICES-003 Issue 7, Section 3.2.2	N/A (NOTE 1, 2)

Note:
1. N/A: In this whole report not applicable.
2. If the highest frequency of the internal sources of the EUT is less than 108 MHz, the measurement shall only be made up to 1 GHz; If the highest frequency of the internal sources of the EUT is between 108 MHz and 500 MHz, the measurement shall only be made up to 2 GHz; If the highest frequency of the internal sources of the EUT is between 500 MHz and 1 GHz, measurement shall only be made up to 5 GHz; If the highest frequency of the internal sources of the EUT is above 1 GHz, the measurement shall be made up to 5 times the highest frequency or 40 GHz, whichever is less.

*This test report is only published to and used by the applicant, and it is not for evidence purpose in China.
*The measurement result for the sample received is <Pass> according to <FCC 47 CFR Part 15 Subpart B, ICES-003 Issue 7> when <Simple Acceptance> decision rule is applied.

CONTENTS

1. ATTESTATION OF TEST RESULTS

FCC

Applicant Information

Company Name:	Philips Oral Healthcare, LLC.
Address:	22100 Bothell-Everett Highway Bothell Washington 98021 United States

Manufacturer Information

Company Name:	Philips Oral Healthcare, LLC.
Address:	22100 Bothell-Everett Highway Bothell Washington 98021 United States

ISED

Applicant Information

Company Name:	Philips Oral Healthcare
Address:	22100 Bothell-Everett Highway Bothell US 98021 United States Of America (Excluding The States Of Alaska)

Manufacturer Information

Company Name:	Philips Oral Healthcare
Address:	22100 Bothell-Everett Highway Bothell US 98021 United States Of America (Excluding The States Of Alaska)

EUT Information

EUT Name:	5000 Series
Model:	HX369LB
Series Model:	HX369W4
Brand:	Philips
Sample Received Date:	October 15, 2024
Sample ID:	7837255
Date of Tested:	October 23, 2024 to October 25, 2024

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC 47 CFR Part 15 Subpart B, ICES-003 Issue 7	**Pass**

Prepared By:

Karl Wu

Engineer Project Associate

Checked By:

Emen Li

Staff Engineering Associate

Approved By:

Stephen Guo

Operations Manager

2. TEST METHODOLOGY

All tests were performed in accordance with the standard FCC 47 CFR Part 15 Subpart B, ICES-003 Issue 7.

3. FACILITIES AND ACCREDITATION

Accreditation Certificate	**A2LA (Certificate No.: 4102.01)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA. **FCC (FCC Designation No.: CN1187)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules **ISED (Company No.: 21320)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with ISED. The Company Number is 21320 and the test lab Conformity Assessment Body Identifier (CABID) is CN0046. **VCCI (Registration No.: G-20192, C-20153, T-20155 and R-20202)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793. Facility Name: Chamber D, the VCCI registration No. is G-20192 and R-20202 Shielding Room B, the VCCI registration No. is C-20153 and T-20155

Note:
All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, No. 1, Li Bin Road, Song Shan Lake Hi-Tech Development Zone Dongguan, 523808, People's Republic of China.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations and is traceable to recognized national standards.

4.2. MEASUREMENT UNCERTAINTY

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

Test Item	Measurement Frequency Range	K	U(dB)
Conducted Emissions	0.009 MHz - 0.15 MHz	2	4.00
	0.15MHz - 30MHz	2	3.63
Radiated Emissions (9kHz~30MHz)	9kHz - 30MHz	2	2.20
Radiated Emissions (30MHz~1000MHz)	30MHz -1GHz	2	4.13
Note1: This uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level using a coverage factor of k=2.			
Note 2: According to the standard CISPR 16-4-2, the MU for the Conducted emissions from the AC mains power ports using AMN should not exceed 3.8 in range of 9kHz to 150kHz and 3.4 in range of 150kHz to 30MHz. We have considered the test results containing the value of Ulab (in dB) for the measurement instrumentation actually used for the measurements.			

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

EUT Name	5000 Series
Model	HX369LB
Series Model	HX369W4
Model Difference	HX369W4 has the same technical construction including circuit diagram, PCB Layout, components and component layout, all electrical construction and mechanical construction with HX369LB.The difference lies only the color, model number.
EUT Classification	Class B
Highest Internal Frequency	13.56MHz
Ratings	DC 3.6V (Built-in Li-ion battery)

5.2. TEST MODE

Test Mode	Description
M01	Running+clean(vibration)
M02	Running+sensitive(vibration)
M03	Powered on+Charging

5.3. EUT ACCESSORY

Item	Accessory	Brand Name	Model Name	Description
1	N/A	N/A	N/A	N/A

5.4. SUPPORT UNITS FOR SYSTEM TEST

Item	Accessory	Brand Name	Model Name	Description
1	Charging Dock	Philips	HX6110 ABA3	DC 4.75-5.25V ⎓ 0.3A 1.5W
2.	Adapter	Philips	WAA1001	Input: 100-240V~, 50/60Hz, 3.5W Output: 5Vdc, 2.5W

6. MEASURING EQUIPMENT AND SOFTWARE USED

Test Equipment of Conducted emissions from the AC mains power ports					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Due Date**
EMI Test Receiver	ROHDE & SCHWARZ	ESR3	101961	Sep. 28, 2024	Sep. 27, 2025
Two-Line V-Network	ROHDE & SCHWARZ	ENV216	101983	Sep. 28, 2024	Sep. 27, 2025
Test Software for Conducted Emission	Farad	EZ-EMC	Ver.UL-3A1	N/A	N/A

Test Equipment of Radiated emissions below 1GHz					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Due Date**
Hybrid Log Periodic Antenna	TDK	HLP-3003C	130960	Jun. 28, 2024	Jun. 27, 2027
EMI Measurement Receiver	ROHDE & SCHWARZ	ESR26	101377	Sep. 28, 2024	Sep. 27, 2025
Amplifier	HP	8447F	2944A03683	Sep. 28, 2024	Sep. 27, 2025
Test Software for Radiated Emission	Farad	EZ-EMC	Ver.UL-3A1	N/A	N/A

Other Instrument					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date
Temperature humidity probe	OMEGA	ITHX-SD-5	18470007	Oct. 8, 2024	Oct. 7, 2025
Barometer	Yiyi	Baro	N/A	Oct. 10, 2024	Oct. 9, 2025
Attenuator	Agilent	8495B	2814a12853	Sep. 28, 2024	Sep. 27, 2025

7. EMISSION TEST

7.1. CONDUCTED EMISSIONS

LIMITS

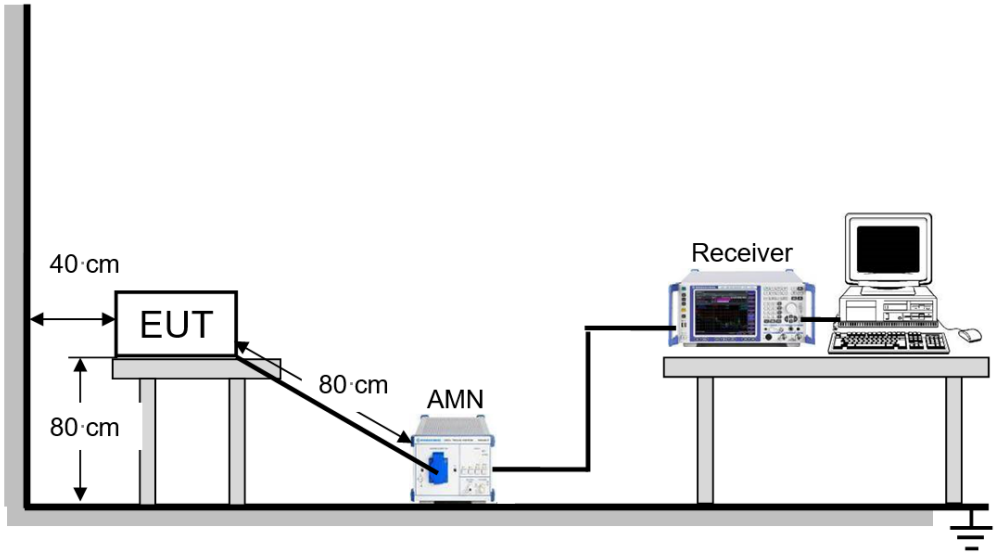
Frequency (MHz)	Class A (dBμV)		Class B (dBμV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 -0.5	79	66	66 - 56 *	56 - 46*
0.50 -5.0	73	60	56	46
5.0 -30.0	73	60	60	50

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.

TEST PROCEDURE

1) The testing follows the guideline in ANSI C63.4-2014.
2) The EUT was placed on the top of a rotating table 0.8 meters above the horizontal ground plane and 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.
3) 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.
4) 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.
5) Cables of hand-operated devices, such as keyboards and mice, shall be placed as for normal used.
6) LISN at least 80 cm from nearest part of EUT chassis.
7) Conducted emissions from the EUT measured in the frequency range between 0.15MHz and 30MHz using CISPR Quasi-Peak and average detector mode, resolution bandwidth set 9kHz.

TEST SETUP



TEST ENVIRONMENT

Temperature	20.5℃	Relative Humidity	51.7%
Atmosphere Pressure	101kPa		

TEST DATE / ENGINEER

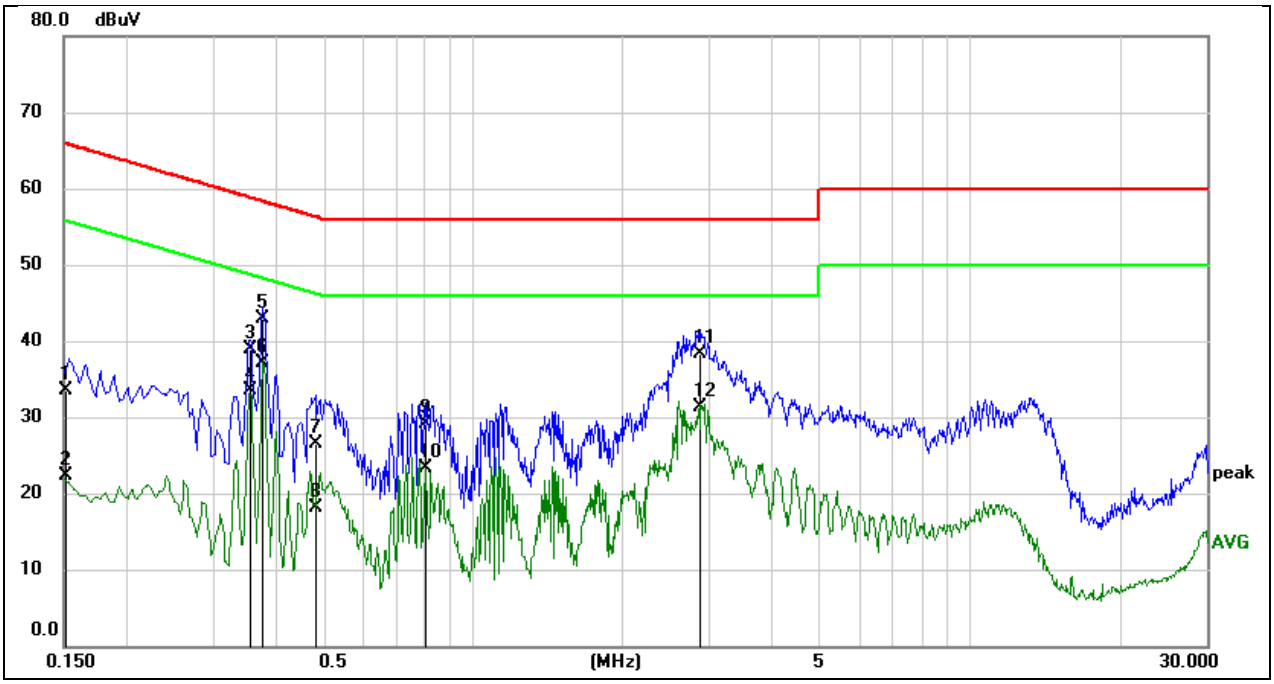
Test Date	October 23, 2024	Test By	Andy Xiong

TEST MODE

Pre-test Mode:	M03
Final Test Mode:	M03

TEST RESULTS

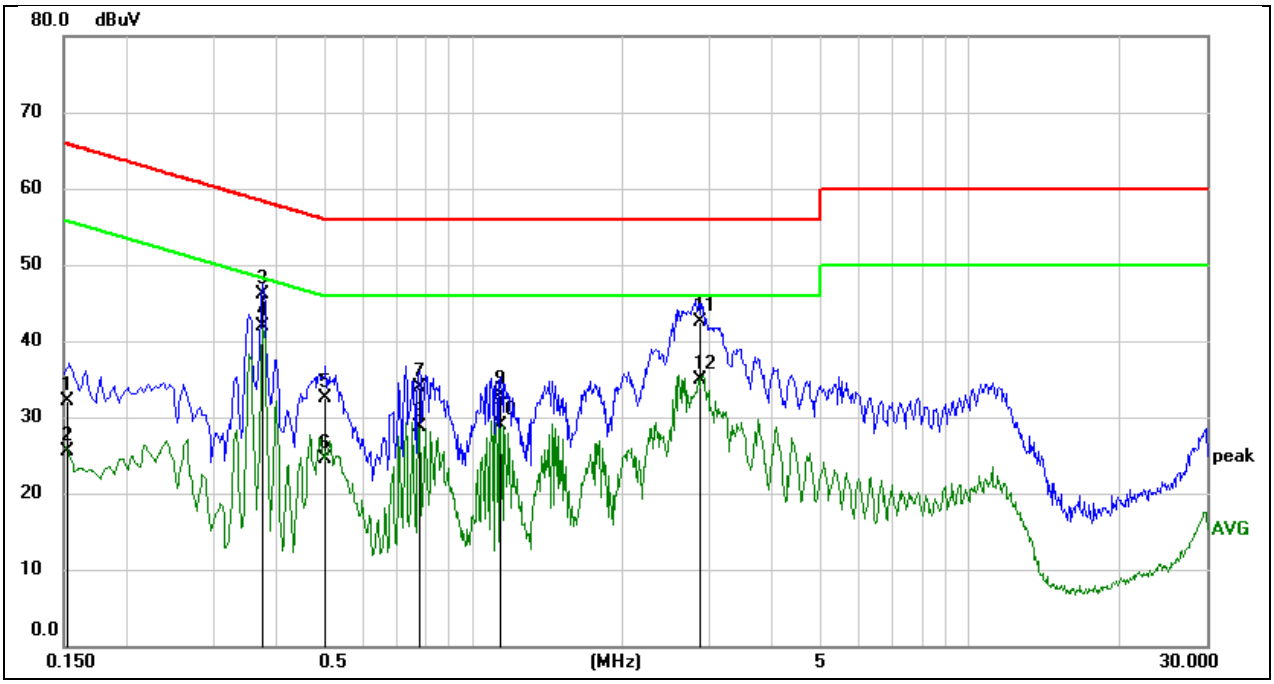
Test Mode:	M03	Line:	Line
Test Voltage:	AC 120V_60Hz (Adapter Input)		



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1508	23.10	10.34	33.44	65.96	-32.52	QP
2	0.1508	12.00	10.34	22.34	55.96	-33.62	AVG
3	0.3562	28.69	10.24	38.93	58.82	-19.89	QP
4	0.3562	23.26	10.24	33.50	48.82	-15.32	AVG
5	0.3787	32.64	10.24	42.88	58.31	-15.43	QP
6	0.3787	26.95	10.24	37.19	48.31	-11.12	AVG
7	0.4826	16.36	10.24	26.60	56.29	-29.69	QP
8	0.4826	7.93	10.24	18.17	46.29	-28.12	AVG
9	0.8022	18.96	10.16	29.12	56.00	-26.88	QP
10	0.8022	13.15	10.16	23.31	46.00	-22.69	AVG
11	2.8718	28.22	10.06	38.28	56.00	-17.72	QP
12	2.8718	21.15	10.06	31.21	46.00	-14.79	AVG

Remark:
1. Result = Reading +Correct (Insertion Loss + Cable Loss + Attenuator Factor)
2. Margin = Result - Limit

Test Mode:	M03	Line:	Neutral
Test Voltage:	AC 120V_60Hz (Adapter Input)		



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1520	21.93	10.24	32.17	65.89	-33.72	QP
2	0.1520	15.29	10.24	25.53	55.89	-30.36	AVG
3	0.3782	35.99	10.08	46.07	58.32	-12.25	QP
4	0.3782	31.90	10.08	41.98	48.32	-6.34	AVG
5	0.5044	22.44	10.04	32.48	56.00	-23.52	QP
6	0.5044	14.54	10.04	24.58	46.00	-21.42	AVG
7	0.7799	23.92	9.98	33.90	56.00	-22.10	QP
8	0.7799	18.76	9.98	28.74	46.00	-17.26	AVG
9	1.1360	23.08	9.86	32.94	56.00	-23.06	QP
10	1.1360	19.08	9.86	28.94	46.00	-17.06	AVG
11	2.8706	32.44	10.16	42.60	56.00	-13.40	QP
12	2.8706	24.83	10.16	34.99	46.00	-11.01	AVG

Remark:
1. Result = Reading +Correct (Insertion Loss + Cable Loss + Attenuator Factor)
2. Margin = Result - Limit

7.2. RADIATED EMISSIONS BELOW 1GHZ

LIMITS

CFR 47 FCC Part 15 Subpart B		
Frequency (MHz)	Field strength (dBuV/m@ 3 m)	
	Class A	Class B
30 - 88	49.5	40
88 - 216	53.9	43.5
216 - 960	56.9	46
Above 960	60	54

ICES-003 Issue 7		
Frequency (MHz)	Field strength (dBuV/m@ 3 m)	
	Class A	Class B
30 - 88	50	40
88 - 216	54	43.5
216 - 230	56.9	46
230 - 960	57	47
Above 960	60	54

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

(2). The different between FCC Part 15 Subpart B limit and ICES-003 Issue 7 limit is only in frequency band 230 MHz to 960 MHz, the limit of FCC Part 15 Subpart B is 1 dB smaller than the limit of ICES-003 Issue 7, if the test result complies with FCC Part 15 Subpart B limit, it deemed to comply with ICES-003 Issue 7 limit.

TEST PROCEDURE

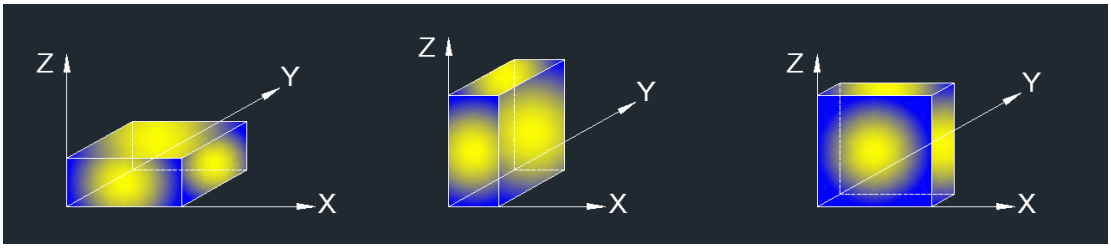
1) The testing follows the guidelines in ANSI C63.4-2014.
2) The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
3) The EUT was placed on a turntable with 80cm above ground.
4) The EUT was set 3 meters from the interference receiving antenna, test antenna mast is remotely controlled and can be varied in height form 1m to 4m.
5) 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.
6) 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.
7) Cables of hand-operated devices, such as keyboards and mice, shall be placed as for normal used.

8) For measurement below 1 GHz, the initial step in collecting radiated emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. The setting of the spectrum analyser

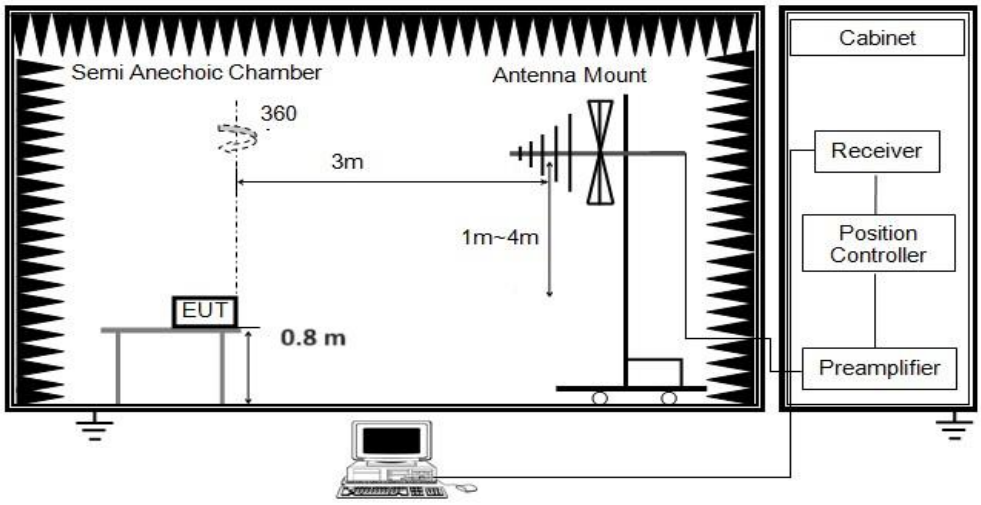
RBW	100kHz
VBW	300kHz
Detector	Peak / Quasi Peak#
Trace	Max hold

#: Peak for pre-scan, Quasi Peak for the final result.

X axis, Y axis, Z axis positions:



TEST SETUP



Below 1 GHz and above 30 MHz

TEST ENVIRONMENT

Temperature	24.8℃	Relative Humidity	60.1%
Atmosphere Pressure	101kPa		

TEST DATE / ENGINEER

Test Date	October 25, 2024	Test By	Deacon Tan

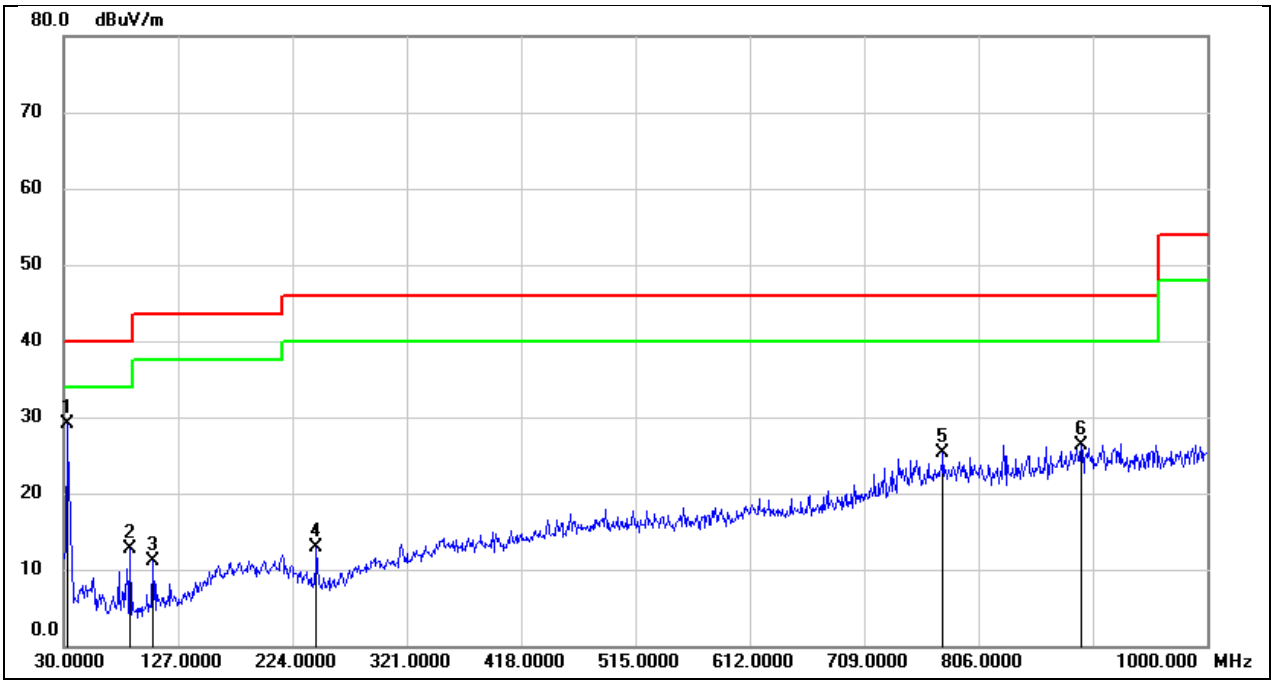
TEST MODE

Pre-test Mode:	M01 ~ M03
Final Test Mode:	M01

Note: 1. All test modes had been tested, but only the worst data recorded in the report.
2. For all radiated test, EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.

TEST RESULTS

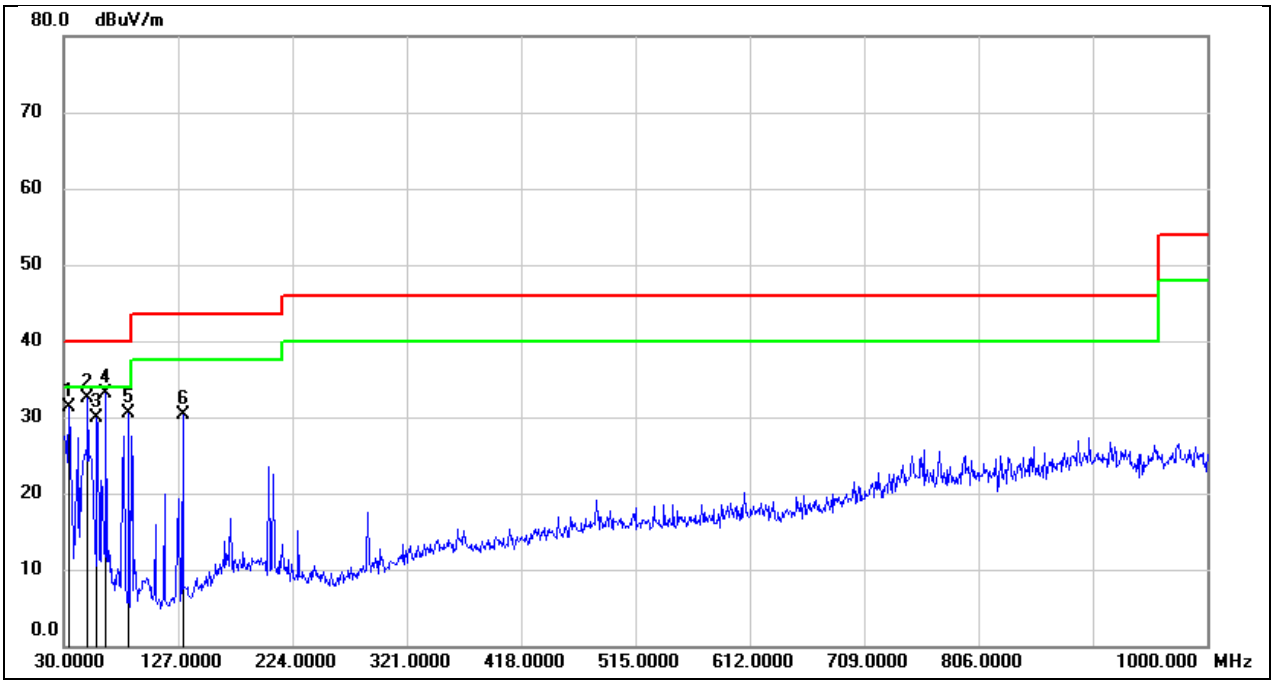
Test Mode:	M01	Polarity:	Horizontal
Test Voltage:	DC 3.6V	EUT Positions :	X axis



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	32.9100	43.63	-14.46	29.17	40.00	-10.83	QP
2	86.2600	29.24	-16.51	12.73	40.00	-27.27	QP
3	105.6600	27.05	-15.95	11.10	43.50	-32.40	QP
4	244.3700	26.94	-14.11	12.83	46.00	-33.17	QP
5	775.9300	27.55	-2.16	25.39	46.00	-20.61	QP
6	893.3000	27.33	-0.98	26.35	46.00	-19.65	QP

Remark:
1. Result = Reading +Correct (Amplifier Factor + Cable Loss + Antenna Factor)
2. Margin = Result - Limit

Test Mode:	M01	Polarity:	Vertical
Test Voltage:	DC 3.6V	EUT Positions :	X axis



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	33.8800	45.84	-14.52	31.32	40.00	-8.68	QP
2	50.3700	47.72	-15.31	32.41	40.00	-7.59	QP
3	58.1300	45.48	-15.52	29.96	40.00	-10.04	QP
4	65.8900	48.92	-15.88	33.04	40.00	-6.96	QP
5	85.2900	46.95	-16.53	30.42	40.00	-9.58	QP
6	130.8800	44.73	-14.50	30.23	43.50	-13.27	QP

Remark:
1. Result = Reading +Correct (Amplifier Factor + Cable Loss + Antenna Factor)
2. Margin = Result - Limit

END OF REPORT