

TEST REPORT

For FCC Part15B



Report No.: **CHTW24120012** Report verification:

Project No.: **SHT2409005202W**

FCC ID: **XAK-425HD**

Applicant's name.....: **AudioCodes Ltd.**

Address.....: 6 Ofra Haza St., Naimi Park, 6032303, Israel

Product Name: **IP Phone**

Trade Mark: 

Model No.: **425HD**

Listed Model(s): **-**

Standard: **FCC CFR Title 47 Part 15 Subpart B**

Date of receipt of test sample.....: **Oct.14, 2024**

Date of testing.....: **Oct.14, 2024 - Nov.10, 2024**

Date of issue.....: **Dec.11, 2024**

Result.....: Pass

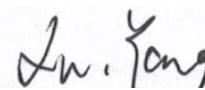
Compiled by
(position+printed name+signature)....: File administrators Kiki Kong



Supervised by
(position+printed name+signature)....: Project Engineer Kiki Kong



Approved by
(position+printed name+signature)....: RF Manager Hans Hu



Testing Laboratory Name: Shenzhen Huatongwei International Inspection Co., Ltd.

Address.....: Building 7, Baiwang Idea Factory, No.1051, Songbai Road,
Yangguang Community, Xili Subdistrict, Nanshan District,
Shenzhen, Guangdong, China

Shenzhen Huatongwei International Inspection Co., Ltd. All rights reserved.

This publication may be reproduced in whole or in part for non-commercial purposes as long as the Shenzhen Huatongwei International Inspection Co., Ltd. is acknowledged as copyright owner and source of the material. Shenzhen Huatongwei International Inspection Co., Ltd. takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

The test report merely corresponds to the test sample.

Contents

<u>1.</u>	<u>TEST STANDARDS AND REPORT VERSION</u>	3
1.1.	Test Standards	3
1.2.	Report version information	3
<u>2.</u>	<u>TEST DESCRIPTION</u>	4
<u>3.</u>	<u>SUMMARY</u>	5
3.1.	Client Information	5
3.2.	Product Description	5
3.3.	Testing Laboratory Information	5
<u>4.</u>	<u>TEST CONFIGURATION</u>	6
4.1.	Descriptions of test mode	6
4.2.	Support unit used in test configuration	6
4.3.	Environmental conditions	6
4.4.	Statement of the measurement uncertainty	6
4.5.	Equipments Used during the Test	7
<u>5.</u>	<u>TEST CONDITIONS AND RESULTS</u>	8
5.1.	Conducted Emissions	8
5.2.	Radiated Emissions	11
<u>6.</u>	<u>TEST SETUP PHOTOS OF THE EUT</u>	17
<u>7.</u>	<u>EXTERNAL AND INTERNAL PHOTOS OF THE EUT</u>	18

1. **TEST STANDARDS AND REPORT VERSION**

1.1. Test Standards

The tests were performed according to following standards:

[FCC CFR Title 47 Part 15 Subpart B](#) - Unintentional Radiators

[ANSI C63.4: 2014](#) – American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40GHz

1.2. Report version information

Revision No.	Date of issue	Description
N/A	2024-12-11	Original

2. TEST DESCRIPTION

Section	Test Item	Section in CFR 47	Result ^{#1}	Test Engineer
5.1	Conducted Emissions	15.107(a)	PASS	YATING.CHEN
5.2	Radiated Emissions	15.109(a)	PASS	Yifan Wang

Note:

#1: The test result does not include measurement uncertainty value

3. SUMMARY

3.1. Client Information

Applicant:	AudioCodes Ltd.
Address:	6 Ofra Haza St., Naimi Park, 6032303, Israel
Manufacturer:	AudioCodes Ltd.
Address:	6 Ofra Haza St., Naimi Park, 6032303, Israel
Factory:	Fujian Star-net Communication Co., Ltd.
Address:	No. 9 Gaoxin Avenue, Minhou County Shangjie Town, Fuzhou City, 350100 Fujian, CN

3.2. Product Description

Main unit information:	
Product Name:	IP Phone
Trade Mark:	
Model No.:	425HD
Listed Model(s):	-
Power supply:	DC 12.0V from adapter or 48V POE
Hardware version:	GGWV00809
Software version:	UC425HD_3.5.0.89
Accessory unit information:	
Adapter information:	Model: RD1201000-C55-26MG Input: 100-240V a.c., 50/60Hz 0.6MAX Output: 12.0V d.c., 1.0A

3.3. Testing Laboratory Information

Laboratory Name	Shenzhen Huatongwei International Inspection Co., Ltd.	
Laboratory Location	Building 7, Baiwang Idea Factory, No.1051, Songbai Road, Yangguang Community, Xili Subdistrict, Nanshan District, Shenzhen, Guangdong, China	
Connect information:	Tel: 86-755-26715499 E-mail: cs@szhtw.com.cn http://www.szhtw.com.cn	
Qualifications	Type	Accreditation Number
	FCC Registration Number	762235
	FCC Designation Number	CN1181

4. TEST CONFIGURATION

4.1. Descriptions of test mode

Test mode O1	Working, Adapter power supply(120V/60Hz)
Test mode O2	Working, POE power supply(120V/60Hz)

1) * is represent the following meaning in the test report

O*: O1, O2

Pre-scan above all test mode, found below test mode which it was worse case mode, so only show the test data for worse case mode on the test report

Test Item	Test mode for worse case
Conducted Emissions	O*
Radiated Emissions	O*

4.2. Support unit used in test configuration

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

The following peripheral devices and interface cables were connected during the measurement:

Whether support unit is used?			
<input checked="" type="checkbox"/> No			
Item	Equipment	Trade Name	Model No.
1			
2			

4.3. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15~35°C
Relative Humidity:	30~60 %
Air Pressure:	950~1050mba

4.4. Statement of the measurement uncertainty

No.	Test Items	Measurement Uncertainty
1	AC Conducted Emission	3.21dB
2	Radiated Emission	4.54dB for 30MHz-1GHz 5.10dB for above 1GHz

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

4.5. Equipments Used during the Test

● Conducted Emission							
Used	Test Equipment	Manufacturer	Equipment No.	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	EMI Test Receiver	R&S	HTWE0111	ESCI	101247	2024/08/12	2025/08/11
●	Artificial Mains	SCHWARZBECK	HTWE0113	NNLK 8121	573	2024/08/12	2025/08/11
●	Protection Network	SCHWARZBECK	HTWE0567	VTSD9561FN	00899	2024/08/12	2025/08/11
●	ISN	FCC	HTWE0148	FCC-TLISN-T2-02	20371	2024/08/12	2025/08/11
●	ISN	FCC	HTWE0150	FCC-TLISN-T8-02	20375	2024/08/12	2025/08/11
●	Test Software	R&S	N/A	EMC32	N/A	N/A	N/A

● Radiated Emission-30MHz~1GHz 3M							
Used	Test Equipment	Manufacturer	Equipment No.	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	Semi-Anechoic Chamber	Albatross projects	HTWE0127	SAC-3m-02	C11121	2023/4/6	2026/4/5
●	EMI Test Receiver	R&S	HTWE0099	ESCI 7	100900	2024/08/12	2025/08/11
●	Ultra-Broadband Antenna	SCHWARZBEC K	HTWE0119	VULB9163	546	2023/2/22	2026/2/21
●	Pre-Amplifier	SCHWARZBEC K	HTWE0295	BBV 9742	/	2024/05/24	2025/05/23
●	Test Software	R&S	N/A	EMC32	N/A	N/A	N/A

● Radiated emission-Above 1GHz							
Used	Test Equipment	Manufacturer	Equipment No.	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	Semi-Anechoic Chamber	Albatross projects	HTWE0122	SAC-3m-01	C11121	2023/4/17	2026/4/16
●	Spectrum Analyzer	R&S	HTWE0098	FSP40	100597	2024/08/12	2025/08/11
●	Horn Antenna	SCHWARZBEC K	HTWE0126	BBHA 9120D	1011	2023/02/14	2026/02/13
●	Horn Antenna	SCHWARZBEC K	HTWE0103	BBHA9170	BBHA9170472	2023/02/20	2026/02/19
●	Broadband Pre-amplifier	SCHWARZBEC K	HTWE0201	BBV 9718	9718-248	2024/06/06	2025/06/05
●	Test Software	R&S	N/A	EMC32	N/A	N/A	N/A

5. TEST CONDITIONS AND RESULTS

5.1. Conducted Emissions

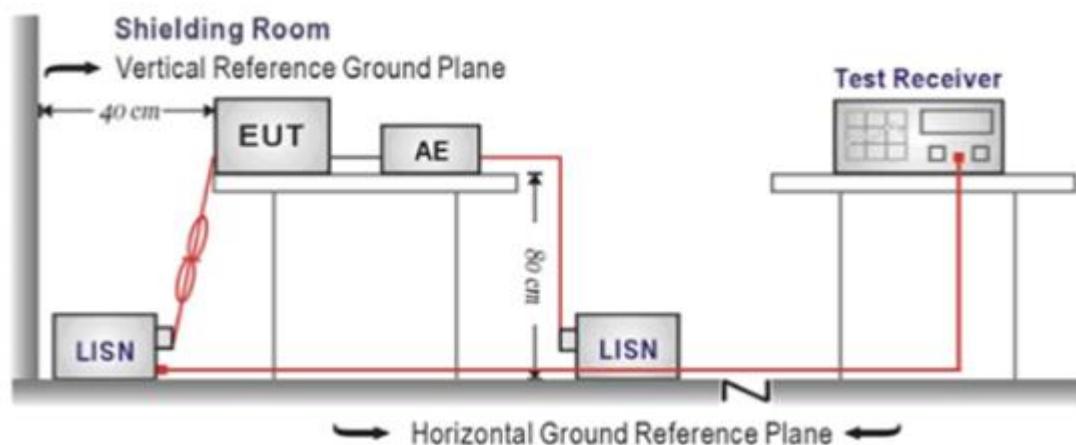
LIMIT

FCC CFR Title 47 Part 15 Subpart B Section 15.107:

Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

TEST CONFIGURATION



TEST PROCEDURE

1. The EUT was setup according to ANSI C63.4:2014
2. The EUT was placed on a plat form of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface.
3. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50ohm / 50uH coupling impedance for the measuring equipment.
4. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs)
5. Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.
6. The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.
7. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.
8. During the above scans, the emissions were maximized by cable manipulation.

TEST MODE:

Please refer to the clause 3.3

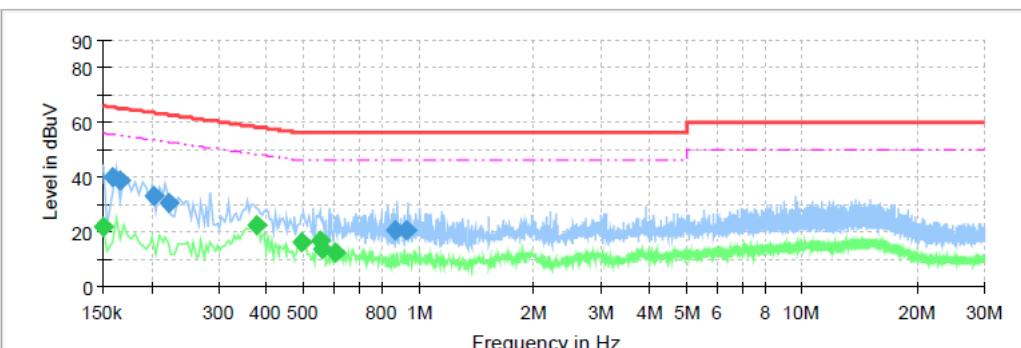
TEST RESULTS

Passed Not Applicable

Test mode O1

Test Line:

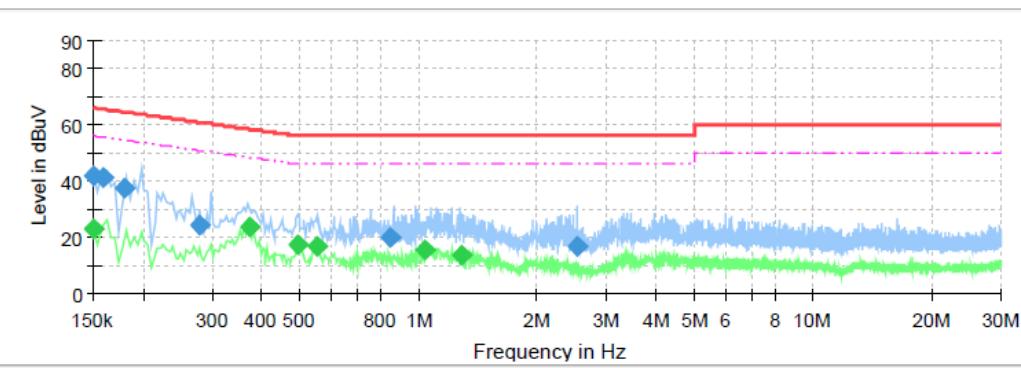
L

**Final Result**

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Corr. (dB)
0.150000	---	22.16	56.00	33.84	L1	10.1
0.158000	40.27	---	65.57	25.29	L1	10.1
0.166000	39.03	---	65.16	26.13	L1	10.2
0.203500	32.87	---	63.47	30.60	L1	10.2
0.223500	30.57	---	62.69	32.12	L1	10.2
0.375500	---	22.34	48.38	26.04	L1	10.3
0.491500	---	16.45	46.14	29.69	L1	10.4
0.551500	---	16.71	46.00	29.29	L1	10.4
0.559500	---	13.92	46.00	32.08	L1	10.4
0.603500	---	12.38	46.00	33.62	L1	10.4
0.867500	20.70	---	56.00	35.30	L1	10.5
0.923500	20.63	---	56.00	35.37	L1	10.5

Test Line:

N

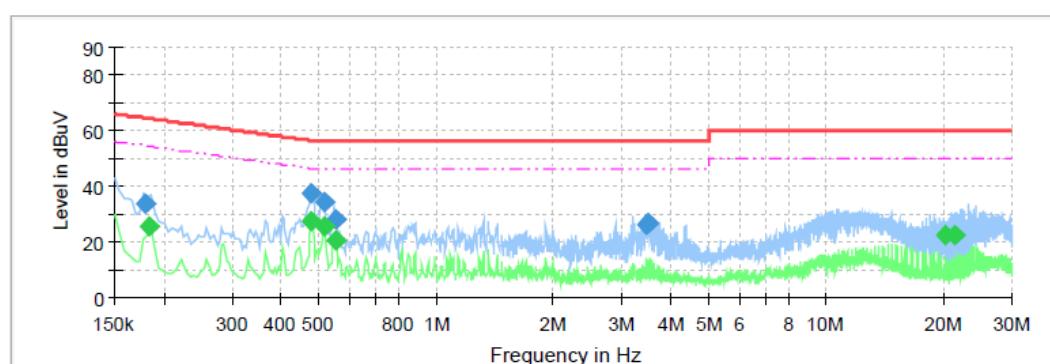
**Final Result**

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Corr. (dB)
0.150000	---	23.05	56.00	32.95	N	10.1
0.150000	42.17	---	66.00	23.83	N	10.1
0.159500	41.24	---	65.49	24.25	N	10.1
0.179500	37.31	---	64.51	27.20	N	10.1
0.279500	24.51	---	60.83	36.32	N	10.2
0.371500	---	23.99	48.47	24.48	N	10.2
0.495500	---	17.20	46.08	28.88	N	10.2
0.551500	---	17.17	46.00	28.83	N	10.2
0.851500	20.17	---	56.00	35.83	N	10.2
1.039500	---	15.46	46.00	30.54	N	10.2
1.283500	---	14.05	46.00	31.95	N	10.2
2.515500	17.01	---	56.00	38.99	N	10.2

Test mode O2

Test Line:

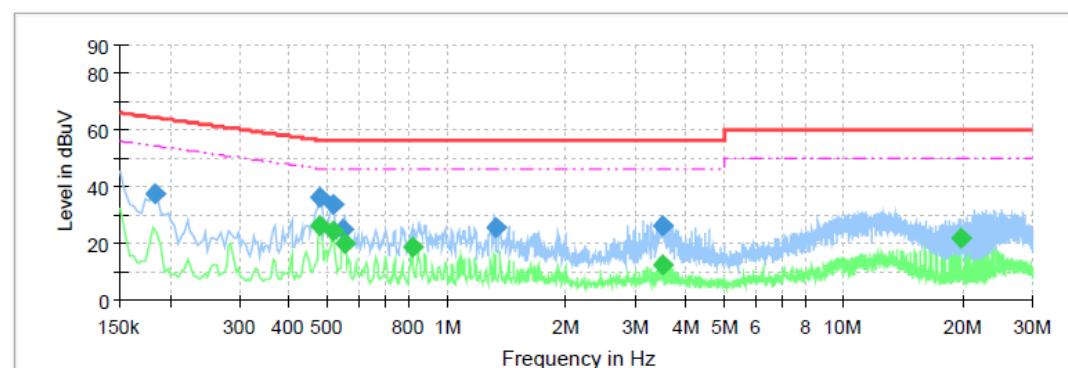
L

**Final Result**

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Corr. (dB)
0.179500	34.00	---	64.51	30.51	L1	10.2
0.183500	---	25.52	54.33	28.81	L1	10.2
0.479500	37.28	---	56.35	19.07	L1	10.4
0.479500	---	27.48	46.35	18.87	L1	10.4
0.515500	34.58	---	56.00	21.42	L1	10.4
0.515500	---	25.51	46.00	20.49	L1	10.4
0.551500	28.41	---	56.00	27.59	L1	10.4
0.551500	---	20.59	46.00	25.41	L1	10.4
3.455500	26.21	---	56.00	29.79	L1	10.6
3.503500	26.65	---	56.00	29.35	L1	10.6
20.155500	---	22.76	50.00	27.24	L1	10.8
21.291500	---	22.69	50.00	27.31	L1	10.8

Test Line:

N

**Final Result**

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Corr. (dB)
0.183500	37.30	---	64.33	27.03	N	10.2
0.479500	36.15	---	56.35	20.20	N	10.2
0.479500	---	26.25	46.35	20.10	N	10.2
0.515500	33.54	---	56.00	22.46	N	10.2
0.515500	---	24.31	46.00	21.69	N	10.2
0.547500	24.77	---	56.00	31.23	N	10.2
0.551500	---	20.23	46.00	25.77	N	10.2
0.816500	---	18.56	46.00	27.44	N	10.2
1.327500	25.78	---	56.00	30.22	N	10.2
3.495500	---	12.71	46.00	33.29	N	10.3
3.495500	26.15	---	56.00	29.85	N	10.3
19.879500	---	21.68	50.00	28.32	N	10.5

5.2. Radiated Emissions

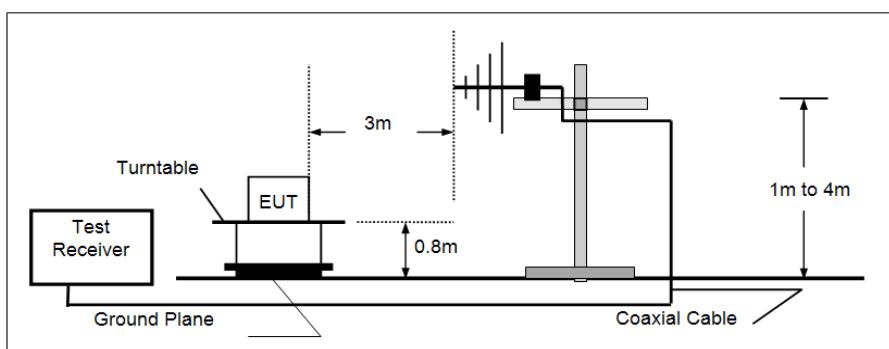
LIMIT

FCC CFR Title 47 Part 15 Subpart B Section 15.109

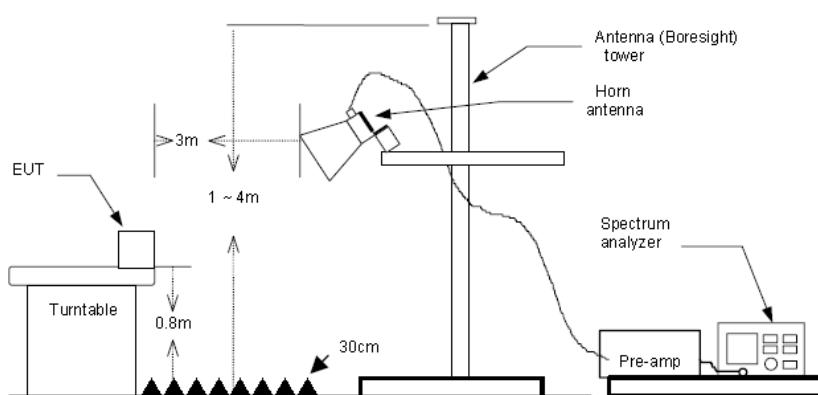
Frequency	Limit (dBuV/m @3m)	Value
30MHz-88MHz	40.00	Quasi-peak
88MHz-216MHz	43.50	Quasi-peak
216MHz-960MHz	46.00	Quasi-peak
960MHz-1GHz	54.00	Quasi-peak
Above 1GHz	54.00	Average
	74.00	Peak

TEST CONFIGURATION

- 30MHz ~ 1GHz



- Above 1GHz



TEST PROCEDURE

- The EUT was tested according to ANSI C63.4:2014.
- The EUT is placed on a turn table which is 0.8 meter above ground.
- The turn table is rotated 360 degrees to determine the position of the maximum emission level.
- The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
- The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna.
- Use the following spectrum analyzer settings
 - Span shall wide enough to fully capture the emission being measured;
 - Below 1GHz, RBW=120KHz, VBW=300KHz, Sweep=auto, Detector function=peak, Trace=max hold; If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
 - From 1GHz to 5th harmonic, RBW=1MHz, VBW=3MHz

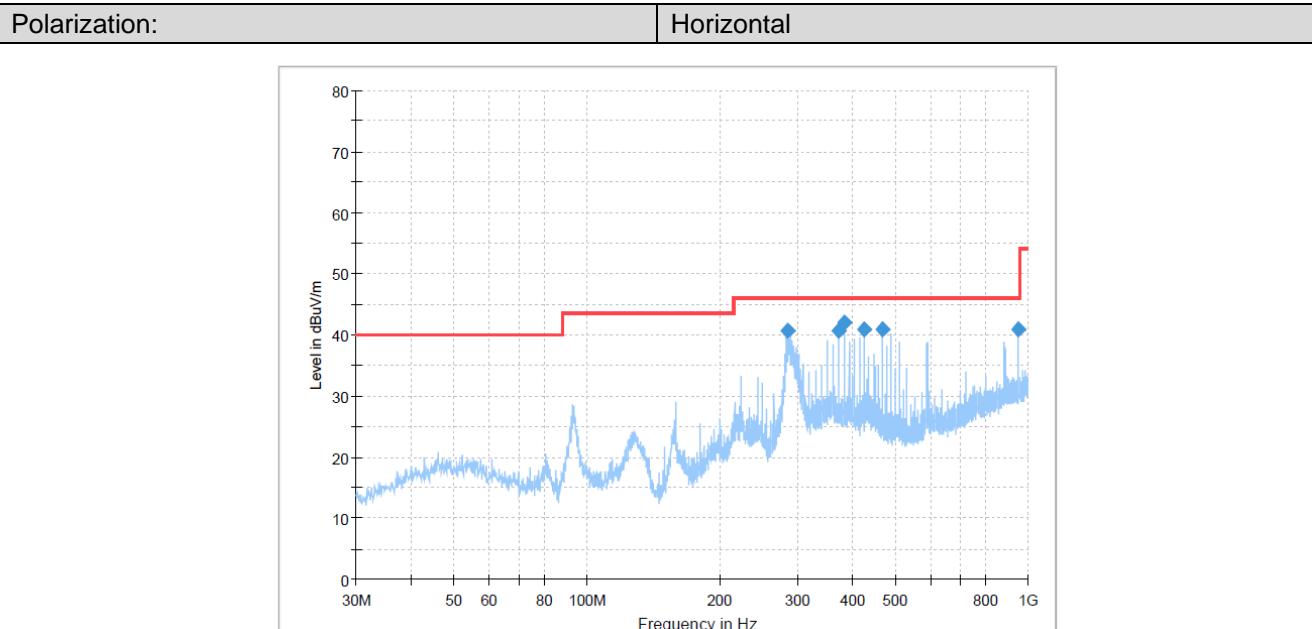
TEST MODE:

Please refer to the clause 3.3

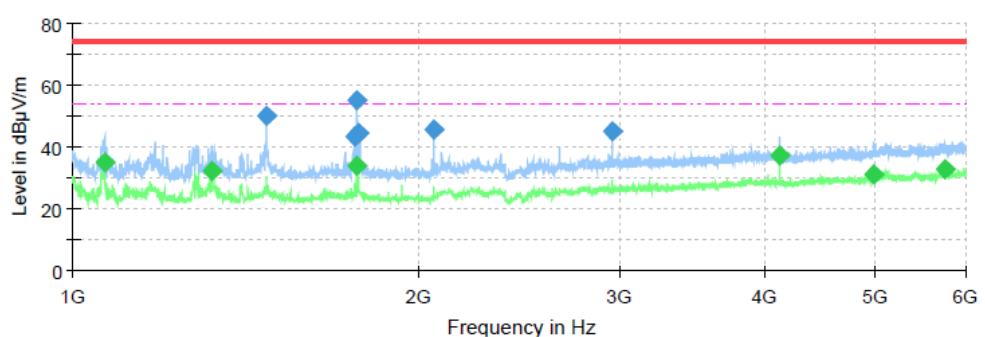
TEST RESULTS

Passed **Not Applicable**

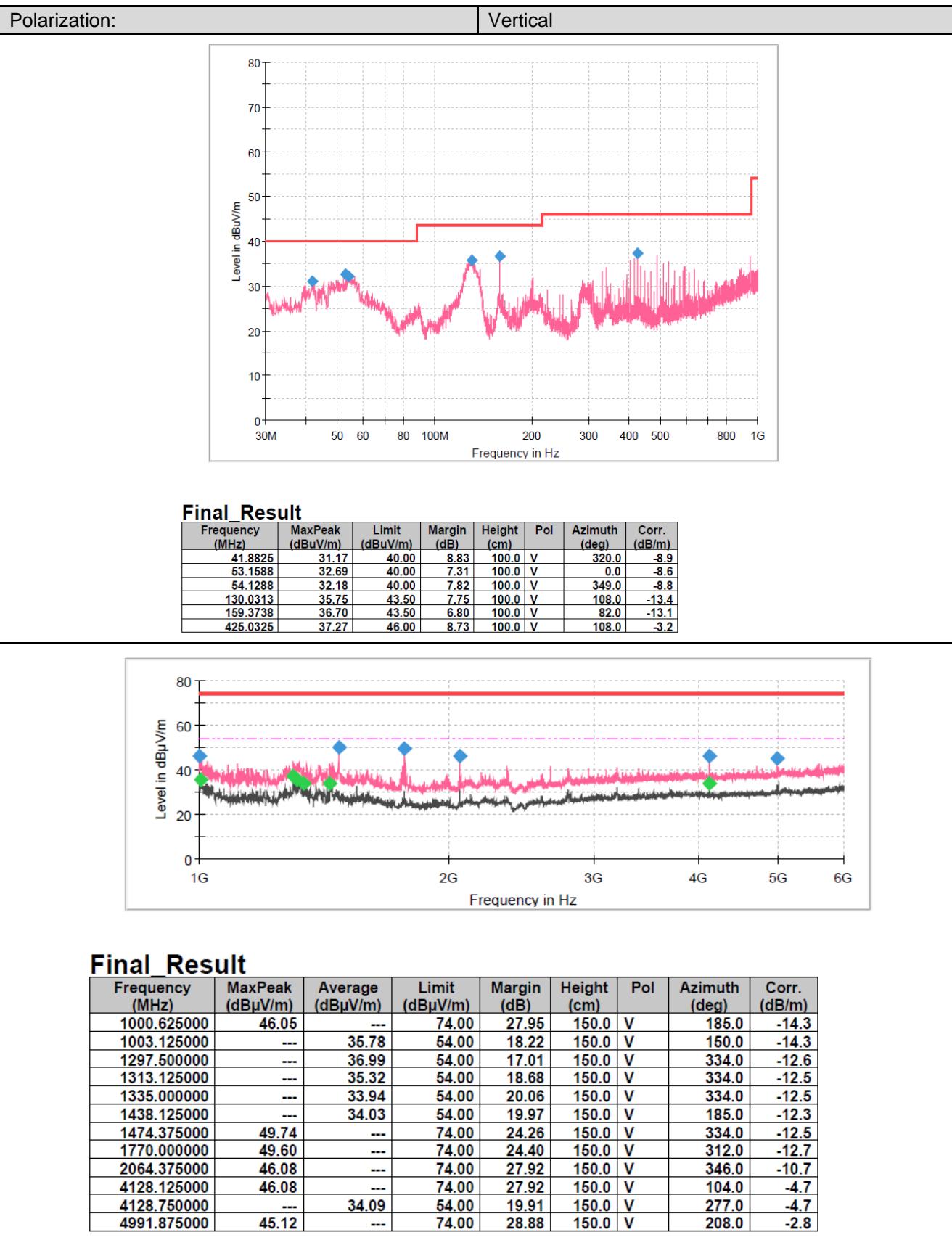
Note: Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
The emission levels of frequency above 6GHz are very lower than limit and not show in test report.

Test mode O1**Final Result**

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
284.9888	40.76	46.00	5.24	100.0	H	171.0	-7.4
371.9250	40.74	46.00	5.26	100.0	H	94.0	-5.0
382.4738	41.94	46.00	4.06	100.0	H	83.0	-4.6
425.0325	40.90	46.00	5.10	100.0	H	356.0	-3.2
467.5913	40.80	46.00	5.20	100.0	H	281.0	-2.8
948.4688	40.92	46.00	5.08	100.0	H	5.0	7.5

**Final Result**

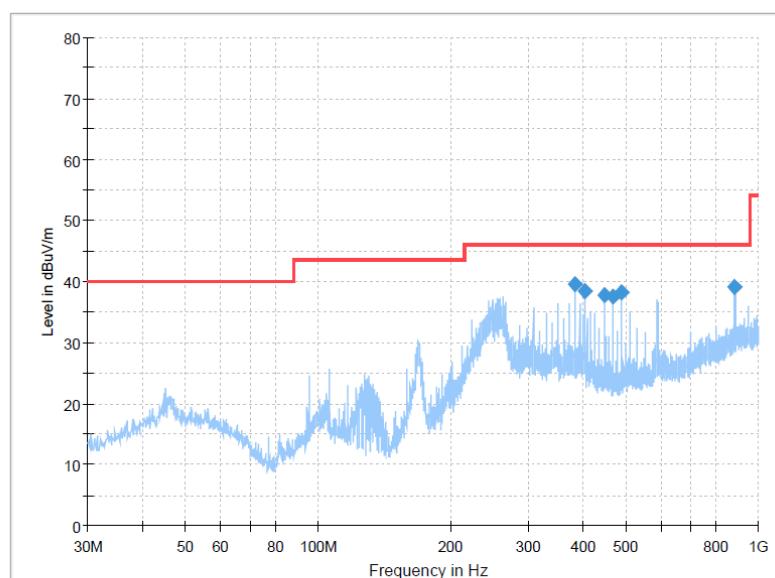
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1065.625000	---	35.20	54.00	18.80	150.0	H	304.0	-14.3
1321.250000	---	32.12	54.00	21.88	150.0	H	292.0	-12.5
1474.375000	49.97	---	74.00	24.03	150.0	H	83.0	-12.5
1763.750000	43.29	---	74.00	30.71	150.0	H	107.0	-12.7
1769.375000	55.13	---	74.00	18.87	150.0	H	188.0	-12.7
1769.375000	---	34.01	54.00	19.99	150.0	H	188.0	-12.7
1775.625000	44.21	---	74.00	29.79	150.0	H	211.0	-12.7
2065.000000	45.33	---	74.00	28.67	150.0	H	177.0	-10.7
2950.000000	44.89	---	74.00	29.11	150.0	H	177.0	-8.0
4128.750000	---	37.34	54.00	16.66	150.0	H	107.0	-4.7
4990.625000	---	31.17	54.00	22.83	150.0	H	269.0	-2.8
5765.625000	---	32.57	54.00	21.43	150.0	H	0.0	-0.7



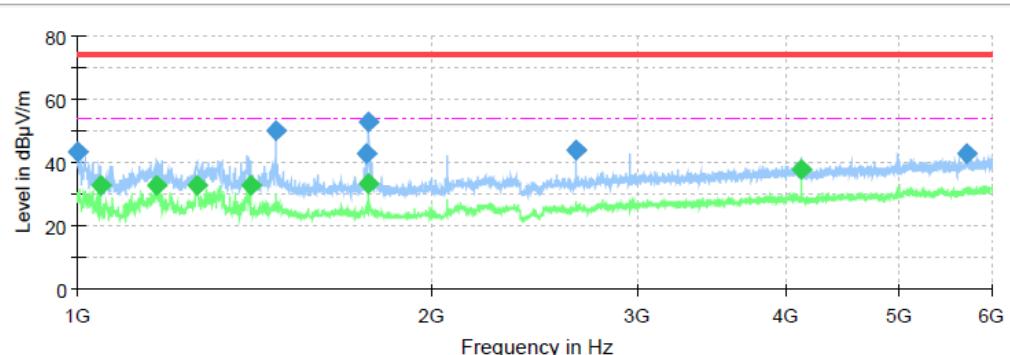
Test mode O2

Polarization:

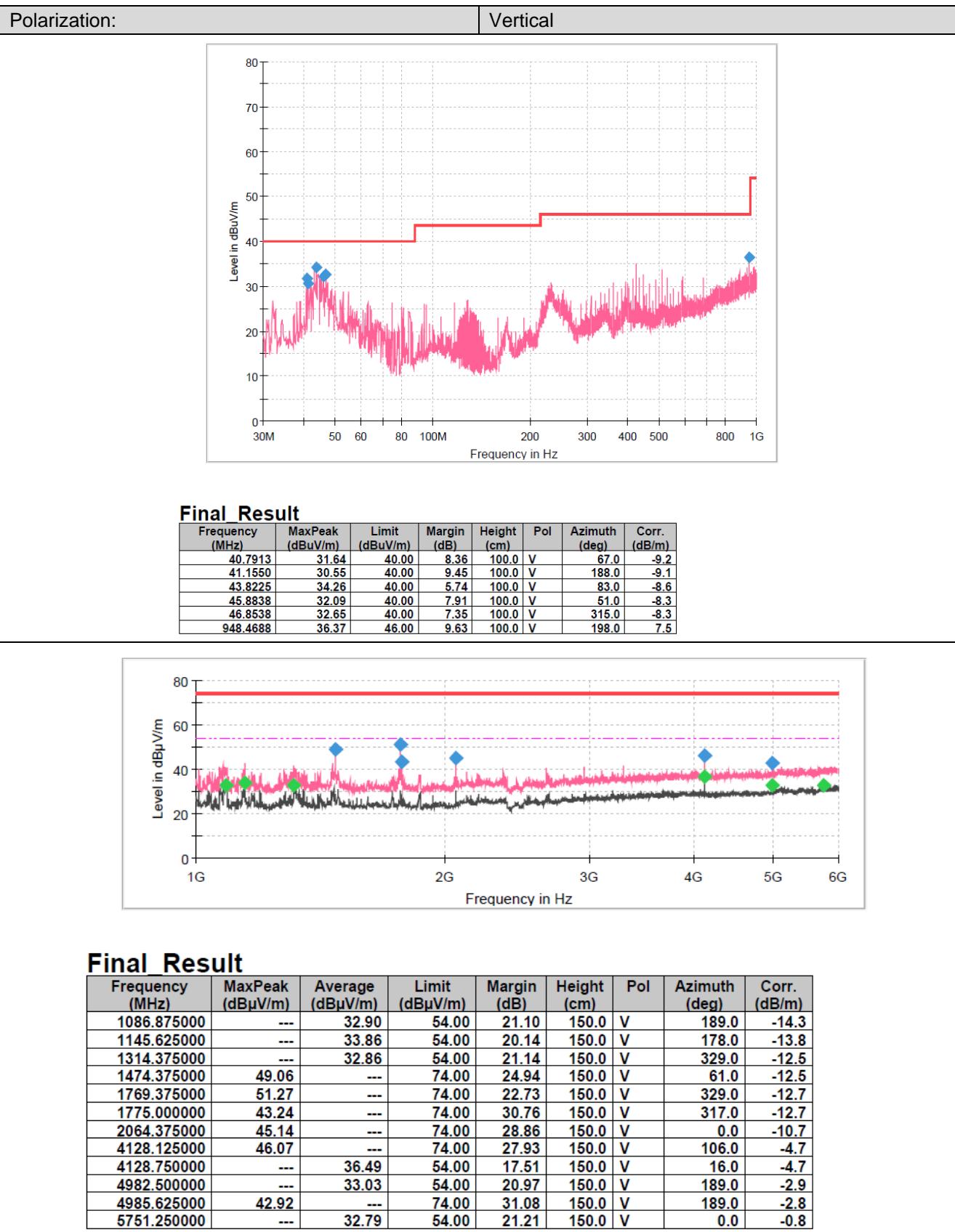
Horizontal

**Final Result**

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
382.4738	39.65	46.00	6.35	100.0	H	120.0	-4.6
403.8138	38.45	46.00	7.55	100.0	H	178.0	-3.9
446.2513	37.83	46.00	8.17	100.0	H	94.0	-2.9
467.5913	37.58	46.00	8.42	100.0	H	62.0	-2.8
488.8100	38.13	46.00	7.87	100.0	H	94.0	-1.8
885.2975	39.11	46.00	6.90	100.0	H	120.0	6.7

**Final Result**

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1000.625000	43.21	---	74.00	30.79	150.0	H	311.0	-14.3
1046.250000	---	32.69	54.00	21.31	150.0	H	288.0	-14.4
1168.750000	---	32.80	54.00	21.20	150.0	H	254.0	-13.7
1262.500000	---	32.64	54.00	21.36	150.0	H	265.0	-12.9
1402.500000	---	32.70	54.00	21.30	150.0	H	196.0	-12.3
1474.375000	50.07	---	74.00	23.93	150.0	H	90.0	-12.5
1759.375000	42.66	---	74.00	31.34	150.0	H	184.0	-12.7
1769.375000	---	33.18	54.00	20.82	150.0	H	101.0	-12.7
1770.000000	52.60	---	74.00	21.40	150.0	H	196.0	-12.7
2653.750000	43.86	---	74.00	30.15	150.0	H	170.0	-9.2
4128.750000	---	37.65	54.00	16.35	150.0	H	67.0	-4.7
5710.000000	42.65	---	74.00	31.35	150.0	H	101.0	-1.0

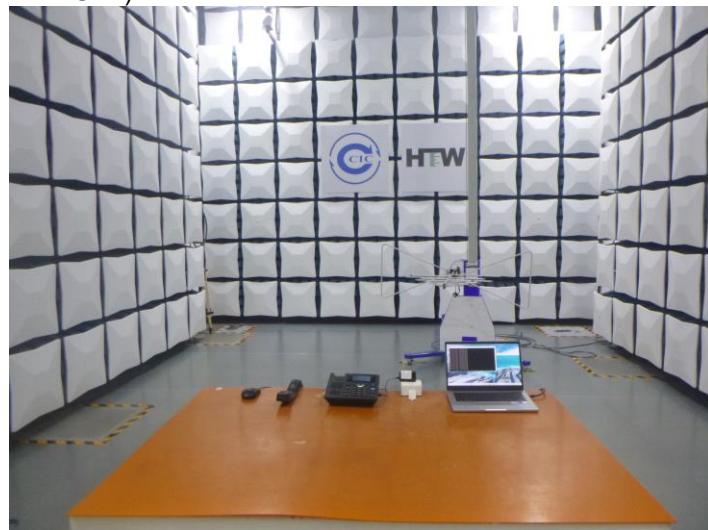


6. TEST SETUP PHOTOS OF THE EUT

Conducted Emissions (AC Mains)



Radiated Emissions (30MHz-1GHz)



Radiated Emissions (Above 1GHz)



7. EXTERNAL AND INTERNAL PHOTOS OF THE EUT

Refer to the test report No.: CHTW24120010

-----End of Report-----