TEST REPORT

For FCC Part15B

Report No. .....:	**CHTEW22120093**	Report verification:
Project No. .....:	**SHT2210059201EW**	
FCC ID ..... :	**A4C91008A**	
Applicant's name ..... :	**RM Acquisition LLC.**	
Address.....:	8770 W. Bryn Mawr Avenue Chicago Illinois 60631 United States	
Product Name ..... :	**Bluetooth ANC Headset**	
Trade Mark .....:	Rand McNally	
Model No. .....:	ClearDryve 220a	
Listed Model(s) .....:	CD100a, CD180a, CD210a, CD300	
Standard ..... :	**47 CFR FCC Part 15 Subpart B**	
Date of receipt of test sample.....:	Nov.30, 2022	
Date of testing.....:	Nov.30, 2022-Dec.15, 2022	
Date of issue.....:	Dec.16, 2022	
Result.....:	**Pass**	

Compiled by (Position+Printed name+Signature):	File administrator Fanghui Zhu	Fanghui Zhu
Supervised by (Position+Printed name+Signature):	Project Engineer Weiyang.Xiang	Weiyang.Xiang
Approved by (position+printed name+signature)..:	RF Manager Hans Hu	Hans Hu

Testing Laboratory Name ..... :	**Shenzhen Huatongwei International Inspection Co., Ltd.**
Address.....:	1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China

Contents

1. TEST STANDARDS AND REPORT VERSION

1.1. Test Standards

The tests were performed according to following standards:

47 CFR FCC 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	2022-12-16	Original

2. TEST DESCRIPTION

Section	Test Item	Section in CFR 47	Result #1	Test Engineer
5.1	Conducted Emissions	15.107(a)	PASS	Dongyang Wu
5.2	Radiated Emissions	15.109(a)	PASS	Jianquan Wu

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

3. SUMMARY

3.1. Client Information

Applicant:	RM Acquisition LLC.
Address:	8770 W. Bryn Mawr Avenue Chicago Illinois 60631 United States
Manufacturer:	RM Acquisition LLC.
Address:	8770 W. Bryn Mawr Avenue Chicago Illinois 60631 United States

3.2. Product Description

Main unit information:	
Product Name:	Bluetooth ANC Headset
Trade Mark:	Rand McNally
Model No.:	ClearDryve 220a
Listed Model(s):	CD100a, CD180a, CD210a, CD300
Power supply:	DC 1.85V from Battery
Hardware version:	V02
Software version:	V07

3.3. Testing Laboratory Information

Laboratory Name	Shenzhen Huatongwei International Inspection Co., Ltd.	
Laboratory Location	1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China	
Connect information:	Tel: 86-755-26715499 E-mail: cs@szhtw.com.cn http://www.szhtw.com.cn	
Qualifications	Type	Accreditation Number
	FCC	762235

4. TEST CONFIGURATION

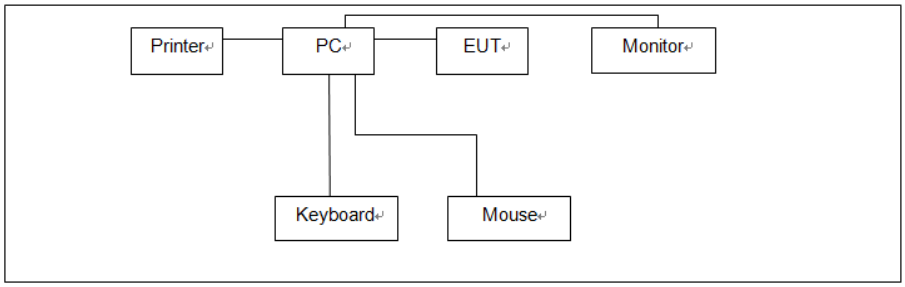
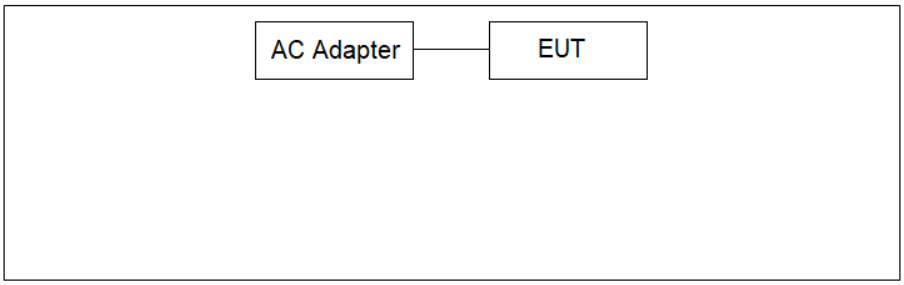
4.1. Descriptions of test mode

Test mode	Description
Working mode	Keep the EUT in working status
Data exchange mode	Keep the EUT in Data exchange with PC status

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	Working mode
Radiated Emissions	Data exchange mode

4.2. Configuration of Tested System

Test mode	Configuration
Data exchange mode	
Working modes	

4.3. Support unit used in test configuration and system

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

Item	Equipment	Manufacturer	Model No.	FCC ID / FCC SDoC	Data Cable	Power Cord
1	PC	DELL	OptiPlex 3020 MT	FCC SDoC	N/A	Unshielded 1.8m
2	Monitor	DELL	E1912Hf	FCC SDoC	N/A	Unshielded 1.8m
3	Keyboard	DELL	SK8115	FCC SDoC	Unshielded, 1.5m	N/A
4	Mouse	DELL	MS111-T	FCC SDoC	Unshielded, 1.5m	N/A
5	Printer	EPSON	L101	FCC SDoC	N/A	Unshielded 1.8m

4.4. 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

4.5. 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.

4.6. 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)
●	Shielded Room	Albatross projects	HTWE0114	N/A	N/A	2018/09/28	2023/09/27
●	EMI Test Receiver	R&S	HTWE0111	ESCI	101247	2022/08/30	2023/08/29
●	Artificial Mains	SCHWARZBECK	HTWE0113	NNLK 8121	573	2022/08/29	2023/08/28
●	Pulse Limiter	R&S	HTWE0193	ESH3-Z2	101447	2022/08/29	2023/08/28
●	RF Connection Cable	HUBER+SUHNER	HTWE0113-02	ENVIROFLEX_142	EF-NM-BNCM-2M	2022/09/17	2023/09/16
●	Test Software	R&S	N/A	ES-K1	N/A	N/A	N/A

● Radiated Emission-6th test site							
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	2018/09/30	2023/09/29
●	EMI Test Receiver	R&S	HTWE0099	ESCI	100900	2022/08/30	2023/08/29
●	Ultra-Broadband Antenna	SCHWARZBECK	HTWE0547	VULB9163	945	2022/05/23	2025/05/22
●	Pre-Amplifer	SCHWARZBECK	HTWE0295	BBV 9742	N/A	2022/11/04	2023/11/03
●	RF Connection Cable	HUBER+SUHNER	HTWE0062-01	N/A	N/A	2022/02/25	2023/02/24
●	RF Connection Cable	HUBER+SUHNER	HTWE0062-02	SUCOFLEX104	501184/4	2022/02/25	2023/02/24
●	Test Software	R&S	N/A	ES-K1	N/A	N/A	N/A

● Radiated emission-7th test site							
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	2018/09/27	2023/09/26
●	Spectrum Analyzer	R&S	HTWE0098	FSP40	100597	2022/08/25	2023/08/24
●	Horn Antenna	ETS	HTWE0548	3117	240120	2022/05/20	2025/05/19
●	Broadband Pre-amplifier	SCHWARZBECK	HTWE0201	BBV 9718	9718-248	2022/02/28	2023/02/27
●	RF Connection Cable	HUBER+SUHNER	HTWE0126-01	RE-7-FH	N/A	2022/03/04	2023/03/03
●	Test Software	Audix	N/A	E3	N/A	N/A	N/A

5. TEST CONDITIONS AND RESULTS

5.1. Conducted Emissions

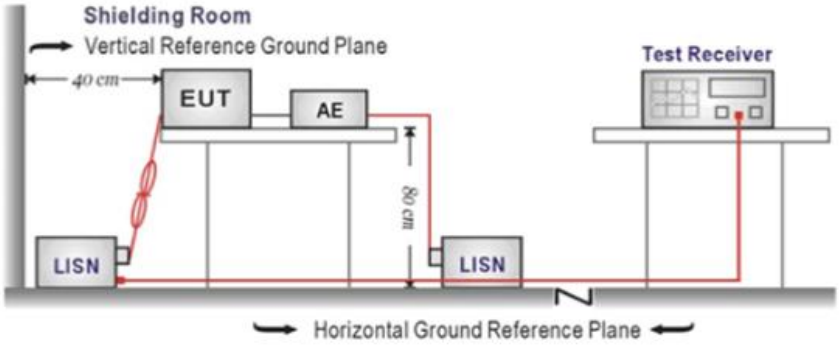
LIMIT

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.

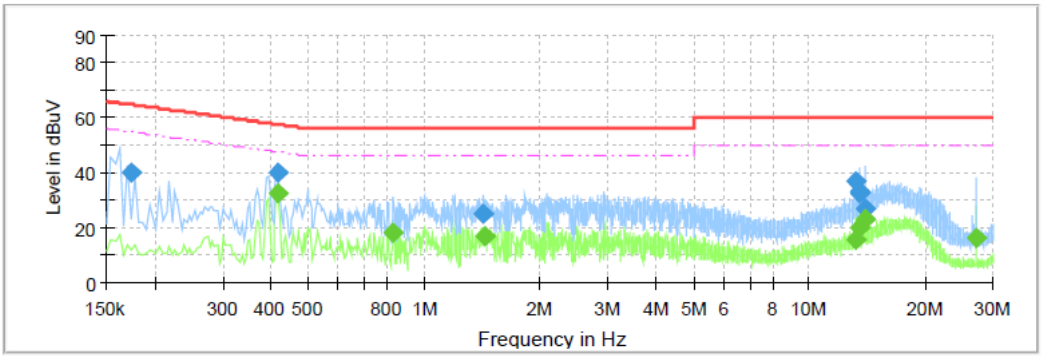
TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

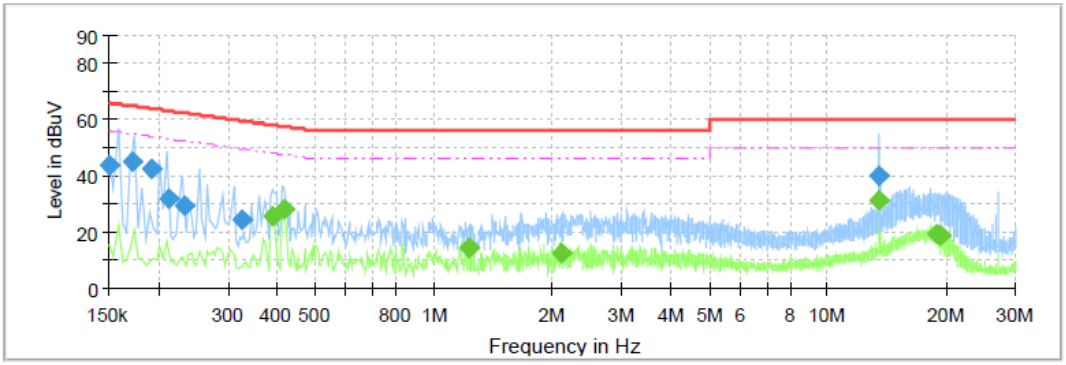
Test Line:	L



Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Corr. (dB)
0.174000	40.11	---	64.77	24.66	L1	10.0
0.415500	39.88	---	57.54	17.66	L1	10.0
0.415500	---	32.49	47.54	15.04	L1	10.0
0.827500	---	18.08	46.00	27.92	L1	10.0
1.423500	25.28	---	56.00	30.72	L1	10.0
1.443500	---	17.17	46.00	28.83	L1	10.0
13.143500	36.72	---	60.00	23.28	L1	10.4
13.151500	---	15.85	50.00	34.15	L1	10.4
13.471500	33.17	---	60.00	26.84	L1	10.4
13.499500	---	19.93	50.00	30.07	L1	10.4
13.572500	32.79	---	60.00	27.21	L1	10.4
13.975500	---	23.13	50.00	26.87	L1	10.4
13.995500	26.92	---	60.00	33.08	L1	10.4
27.115500	---	16.15	50.00	33.85	L1	10.7

Test Line:	N



Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Corr. (dB)
0.150000	43.88	---	66.00	22.12	N	10.0
0.171500	44.72	---	64.89	20.16	N	10.0
0.191500	42.56	---	63.97	21.41	N	10.0
0.211500	31.99	---	63.15	31.16	N	10.0
0.231500	29.43	---	62.40	32.97	N	10.0
0.327500	24.11	---	59.51	35.41	N	10.0
0.391500	---	25.42	48.03	22.61	N	10.0
0.415500	---	27.92	47.54	19.62	N	10.0
1.223500	---	14.52	46.00	31.48	N	10.0
2.099500	---	12.79	46.00	33.21	N	10.0
13.551500	39.75	---	60.00	20.25	N	10.3
13.567500	---	31.50	50.00	18.50	N	10.3
18.887500	---	19.31	50.00	30.69	N	10.5
19.271500	---	18.80	50.00	31.20	N	10.5

5.2. Radiated Emissions

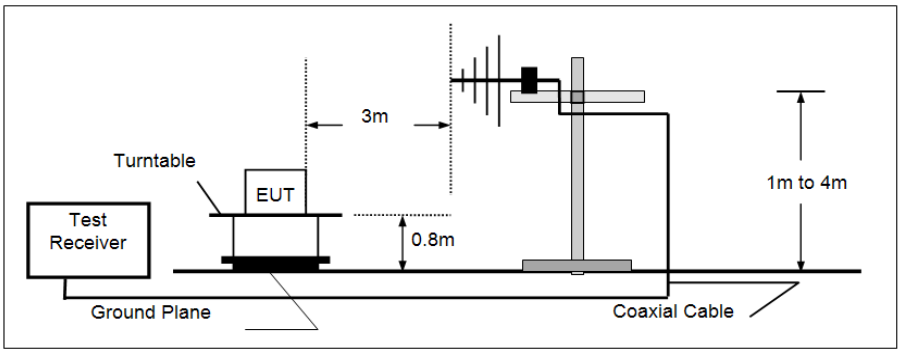
LIMIT

FCC CFR Title 47 Part 15 Subpart B Section 15.109

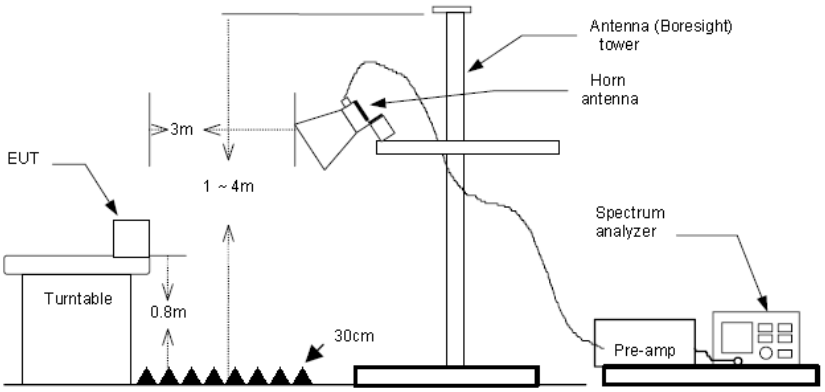
Frequency	Limit (dBuV/m @3m)	Value
30MHz-88MHz	40.00	Quasi-peak
88MHz-216MHz	43.50	Quasi-peak
216MHz-960MHz	46.00	Quasi-peak
960MHz-1GHz	54.00	Quasi-peak
Above 1GHz	54.00	Average
	74.00	Peak

TEST CONFIGURATION

- 30MHz ~ 1GHz



- Above 1GHz



TEST PROCEDURE

1. The EUT was tested according to ANSI C63.4:2014.
2. The EUT is placed on a turn table which is 0.8 meter above ground.
3. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
4. The EUT waspositioned such that the distance from antenna to the EUT was 3 meters.
5. The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. Thisis repeated for both horizontal and vertical polarization of the antenna.
6. Use the following spectrum analyzer settings
   (1) Span shall wide enough to fully capture the emission being measured;
   (2) 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 detectoris 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, theemission measurement will be repeated using the quasi-peak detector and reported.
   (3) From 1GHz to 5th harmonic, RBW=1MHz, VBW=3MHz

TEST MODE:

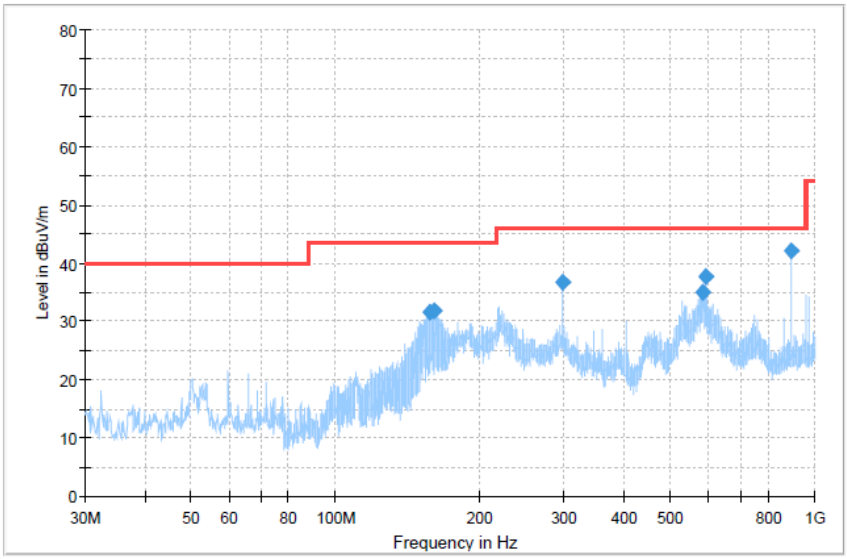
Please refer to the clause 3.3

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

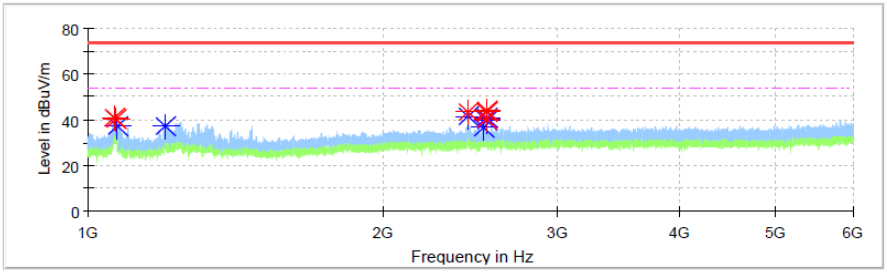
Note: Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
The emission levels of frequency above 6GHz are very lower than limit and not show in test report.

Polarization:	Horizontal



Final_Result

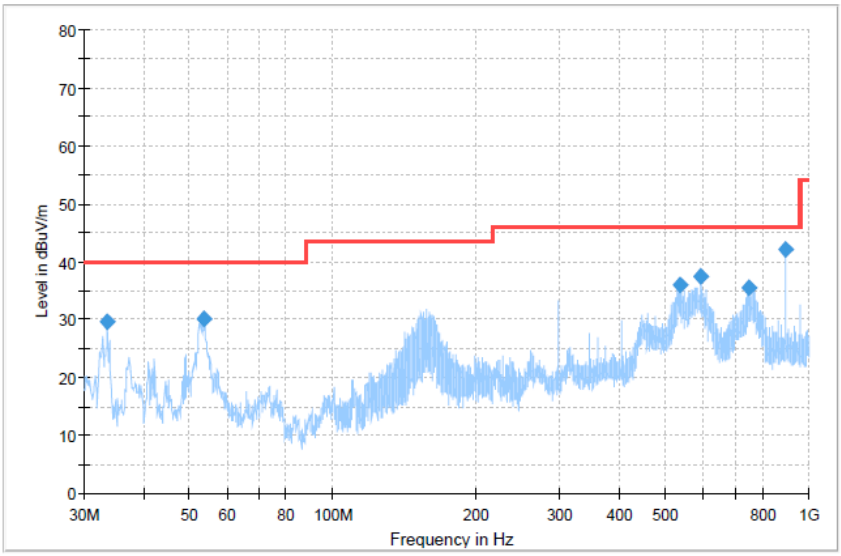
Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
157.555000	31.62	43.50	11.88	300.0	H	111.0	-13.0
161.192500	31.81	43.50	11.69	300.0	H	126.0	-12.7
296.992500	36.77	46.00	9.23	100.0	H	135.0	-6.8
585.688750	34.91	46.00	11.09	100.0	H	45.0	0.5
594.055000	37.63	46.00	8.37	100.0	H	52.0	0.7
891.117500	42.17	46.00	3.83	100.0	H	64.0	4.2



Critical_Freqs

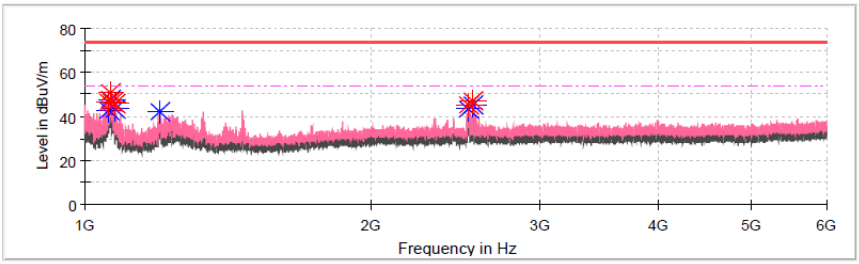
Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1064.843750	40.82	---	74.00	33.18	150.0	H	19.0	-12.2
1066.250000	40.38	---	74.00	33.62	150.0	H	19.0	-12.2
2435.625000	---	41.62	54.00	12.38	150.0	H	150.0	-5.6
2525.312500	---	36.86	54.00	17.14	150.0	H	176.0	-5.5
1198.593750	---	37.39	54.00	16.61	150.0	H	186.0	-11.1
1070.312500	---	37.10	54.00	16.90	150.0	H	224.0	-12.2
2436.093750	43.46	---	74.00	30.54	150.0	H	305.0	-5.6
2541.250000	40.45	---	74.00	33.55	150.0	H	317.0	-5.4
2542.500000	43.92	---	74.00	30.08	150.0	H	317.0	-5.4
2542.500000	---	39.85	54.00	14.15	150.0	H	317.0	-5.4
2543.437500	---	40.91	54.00	13.09	150.0	H	317.0	-5.4
2543.437500	43.37	---	74.00	30.63	150.0	H	317.0	-5.4

Polarization:	Vertical



Final_Result

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
33.637500	29.57	40.00	10.43	100.0	V	162.0	-10.6
53.765000	30.11	40.00	9.89	100.0	V	198.0	-8.4
535.976250	35.91	46.00	10.09	100.0	V	36.0	-0.3
594.055000	37.52	46.00	8.48	100.0	V	79.0	0.7
746.830000	35.40	46.00	10.60	100.0	V	65.0	2.3
891.117500	42.14	46.00	3.86	100.0	V	0.0	4.2

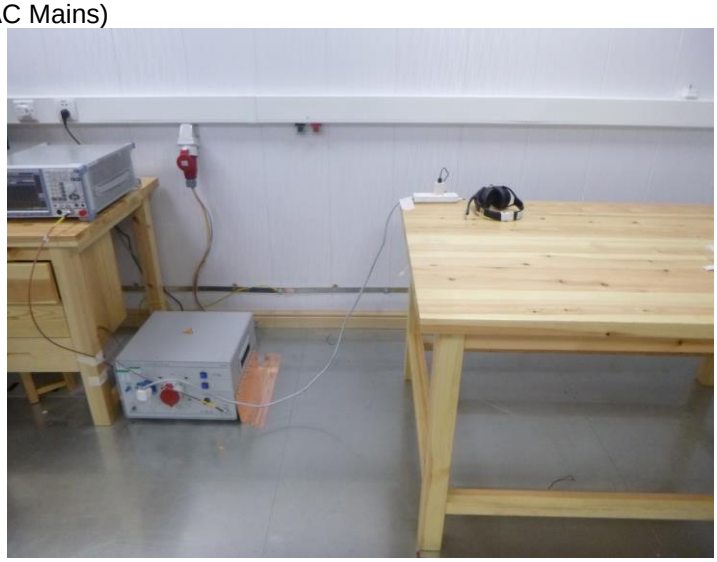


Critical_Freqs

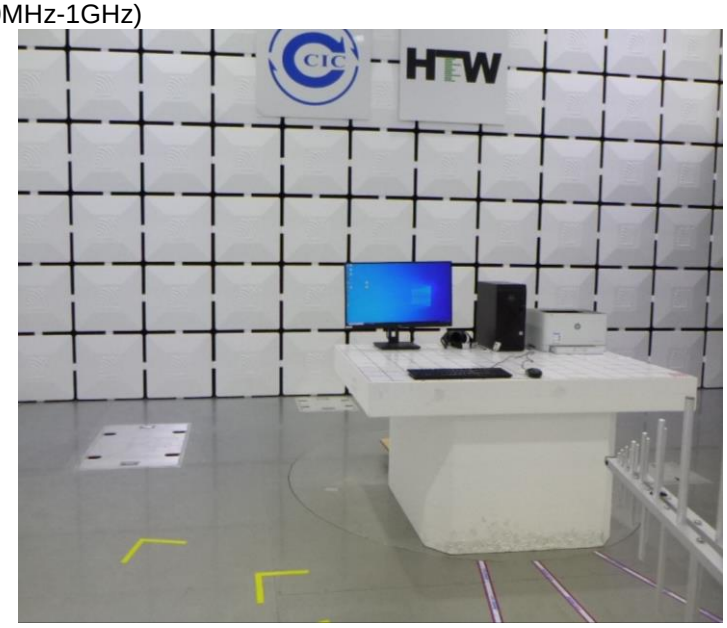
Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1067.968750	46.31	---	74.00	27.69	150.0	V	0.0	-12.2
1074.062500	46.01	---	74.00	27.99	150.0	V	0.0	-12.2
1074.062500	---	43.63	54.00	10.37	150.0	V	0.0	-12.2
1059.687500	46.65	---	74.00	27.35	150.0	V	6.0	-12.2
1059.843750	---	42.75	54.00	11.25	150.0	V	6.0	-12.2
1063.906250	---	47.78	54.00	6.22	150.0	V	14.0	-12.2
1063.906250	50.95	---	74.00	23.05	150.0	V	14.0	-12.2
1198.906250	---	42.20	54.00	11.80	150.0	V	35.0	-11.1
2557.656250	---	45.31	54.00	8.69	150.0	V	171.0	-5.4
2528.750000	45.49	---	74.00	28.51	150.0	V	241.0	-5.5
2558.125000	47.18	---	74.00	26.82	150.0	V	241.0	-5.4
2527.656250	---	43.42	54.00	10.58	150.0	V	291.0	-5.5

6. TEST SETUP PHOTOS

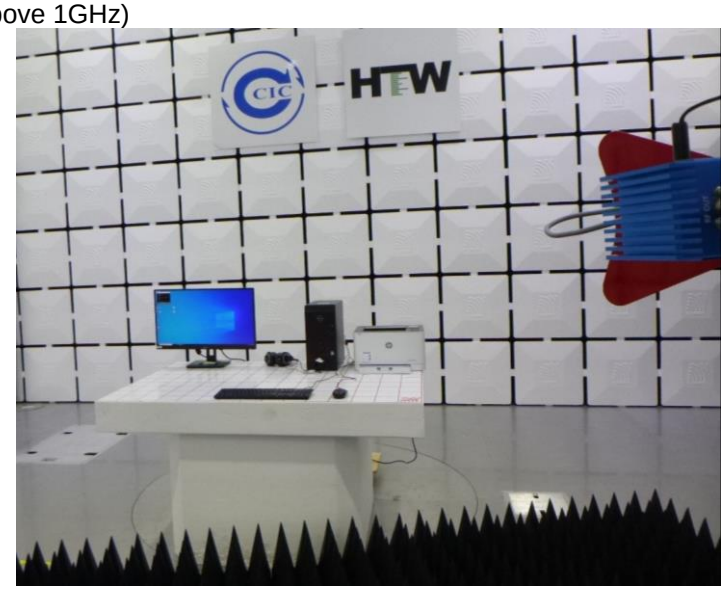
Conducted Emissions (AC Mains)



Radiated Emissions (30MHz-1GHz)



Radiated Emissions (Above 1GHz)



7. EXTERNAL AND INTERNAL PHOTOS

Refer to the test report No.: CHTEW22120091

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