

TEST REPORT

For FCC Part15B

Report No.: **CHTEW23060054** **Report verification:** 

Project No.: **SHT2304055302EW**

FCC ID.....: **2AM80-U211-3**

Applicant's name: **Alicn Medical Shenzhen, Inc**

Address.....: Room 410, Building A, 3rd Sub-park, Leibo Zhongcheng Life Science Park, No. 22 Jinxiu East Road, Pingshan District, 518118 Shenzhen, Guangdong, PEOPLE'S REPUBLIC OF CHINA

Product Name: **Arm Blood Pressure Monitor**

Trade Mark: -

Model No.: AES-U211

Listed Model(s): -

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

Date of receipt of test sample.....: May.04, 2023

Date of testing.....: May.04, 2023-Jun.27, 2023

Date of issue.....: Jun.28, 2023

Result.....: **Pass**

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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

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The test report merely corresponds to the test sample.

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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	2023-06-28	Original

2. TEST DESCRIPTION

Section	Test Item	Section in CFR 47	Result #1	Test Engineer
5.1	Conducted Emissions	15.107(a)	PASS	Yongjin Lin
5.2	Radiated Emissions	15.109(a)	PASS	Chuanfeng Li

Note:

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

3. SUMMARY

3.1. Client Information

Applicant:	Alicn Medical Shenzhen, Inc
Address:	Room 410, Building A, 3rd Sub-park, Leibo Zhongcheng Life Science Park, No. 22 Jinxiu East Road, Pingshan District, 518118 Shenzhen, Guangdong, PEOPLE'S REPUBLIC OF CHINA
Manufacturer:	Alicn Medical Shenzhen, Inc
Address:	Room 410, Building A, 3rd Sub-park, Leibo Zhongcheng Life Science Park, No. 22 Jinxiu East Road, Pingshan District, 518118 Shenzhen, Guangdong, PEOPLE'S REPUBLIC OF CHINA

3.2. Product Description

Main unit information:	
Product Name:	Arm Blood Pressure Monitor
Trade Mark:	-
Model No.:	AES-U211
Listed Model(s):	-
Power supply:	3.7V, 1100mAh Li-ion battery
Hardware version:	AES-066-4G-JV01
Software version:	A.01.00.00

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	
Contact 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

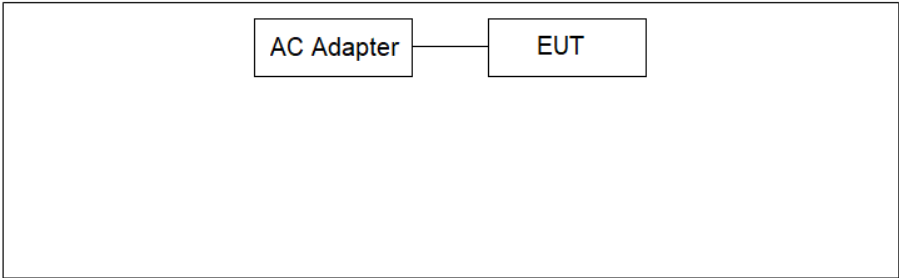
4.1. Descriptions of test mode

Test mode	Description
O1	EUT shuts down and charges.
O2	The EUT works properly when powered on.

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	O1
Radiated Emissions	O2

4.2. Configuration of Tested System

Test mode	Configuration
O1	 <pre> graph LR AC[AC Adapter] --- EUT[EUT] </pre>

4.3. 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?			
✓ No			
Item	Equipment	Trade Name	Model No.
1			
2			
3			

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)
●	EMI Test Receiver	R&S	HTWE0111	ESCI	101247	2022/8/30	2023/8/29
●	Artificial Mains	SCHWARZBECK	HTWE0113	NNLK 8121	573	2022/8/29	2023/8/28
●	Protection Network	SCHWARZBECK	HTWE0567	VTSD9561FN	00899	2022/8/29	2023/8/28
●	ISN	FCC	HTWE0148	FCC-TLISN-T2-02	20371	2022/8/29	2023/8/28
●	ISN	FCC	HTWE0150	FCC-TLISN-T8-02	20375	2022/8/29	2023/8/28
●	Test Software	R&S	N/A	EMC32	N/A	N/A	N/A

● Radiated Emission - 30MHz~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	HTWE0127	SAC-3m-02	C11121	2023/4/6	2026/4/5
●	EMI Test Receiver	R&S	HTWE0099	ESCI 7	100900	2022/8/30	2023/8/29
●	Ultra-Broadband Antenna	SCHWARZBECK	HTWE0119	VULB9163	546	2023/2/22	2026/2/21
●	Pre-Amplifier	SCHWARZBECK	HTWE0295	BBV 9742	/	2023/5/25	2024/5/24
●	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	2022/8/25	2023/8/24
●	Horn Antenna	SCHWARZBECK	HTWE0126	BBHA 9120D	1011	2023/2/14	2026/2/13
●	Horn Antenna	SCHWARZBECK	HTWE0103	BBHA9170	BBHA9170472	2023/2/20	2026/2/19
●	Broadband Pre-amplifier	SCHWARZBECK	HTWE0201	BBV 9718	9718-248	2023/5/25	2024/5/24
●	Test Software	R&S	N/A	EMC32	N/A	N/A	N/A

5. TEST CONDITIONS AND RESULTS

5.1. Conducted Emissions

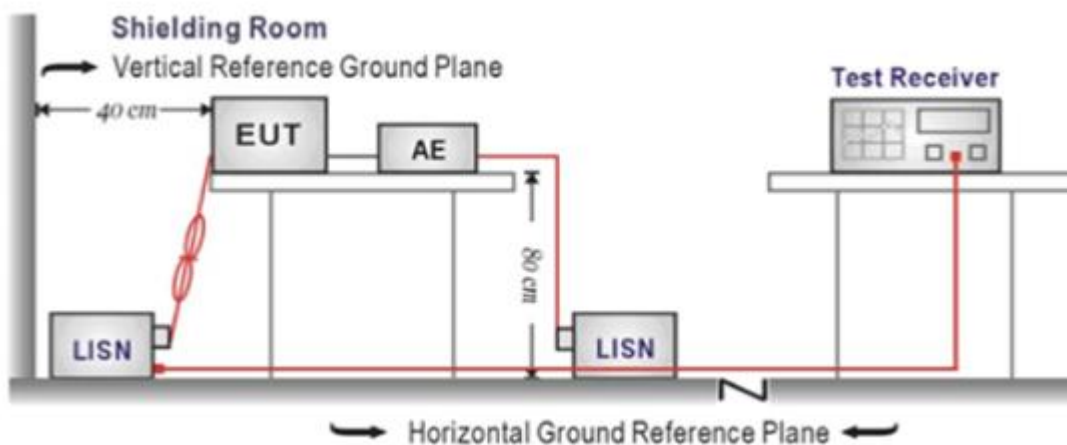
LIMIT

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:

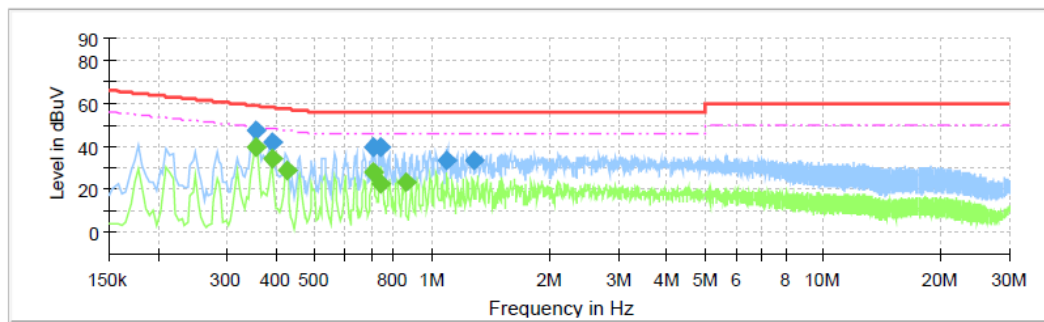
Please refer to the clause 3.3

TEST RESULTS

☒ Passed ☐ Not Applicable

Test Line:

L

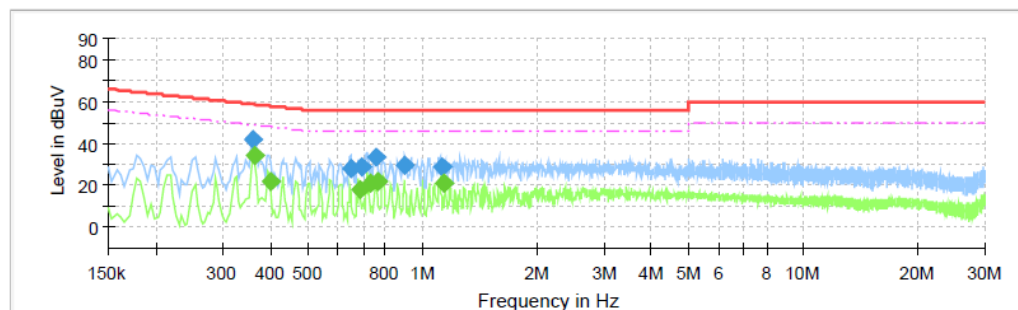


Final Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Corr. (dB)
0.355500	47.11	---	58.83	11.72	L1	10.2
0.355500	---	39.64	48.83	9.19	L1	10.2
0.391500	---	34.16	48.03	13.87	L1	10.2
0.391500	42.29	---	58.03	15.74	L1	10.2
0.427500	---	28.59	47.30	18.71	L1	10.2
0.711500	39.86	---	56.00	16.14	L1	10.3
0.711500	---	28.19	46.00	17.81	L1	10.3
0.743500	---	22.53	46.00	23.47	L1	10.3
0.743500	39.87	---	56.00	16.13	L1	10.3
0.859500	---	23.31	46.00	22.69	L1	10.3
1.095500	33.75	---	56.00	22.25	L1	10.3
1.279500	33.05	---	56.00	22.95	L1	10.3

Test Line:

N



Final Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Corr. (dB)
0.359500	42.08	---	58.74	16.67	N	10.2
0.363500	---	34.24	48.65	14.41	N	10.2
0.399500	---	21.64	47.86	26.22	N	10.2
0.651500	28.01	---	56.00	27.99	N	10.2
0.687500	---	18.20	46.00	27.80	N	10.2
0.695500	28.62	---	56.00	27.38	N	10.2
0.731500	---	21.35	46.00	24.65	N	10.2
0.755500	33.18	---	56.00	22.82	N	10.2
0.767500	---	21.84	46.00	24.16	N	10.2
0.903500	29.82	---	56.00	26.18	N	10.3
1.127500	28.95	---	56.00	27.05	N	10.3
1.136500	---	20.71	46.00	25.29	N	10.3

5.2. Radiated Emissions

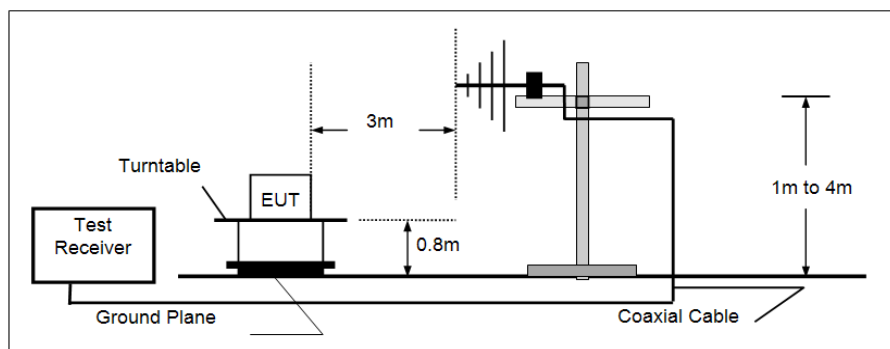
LIMIT

FCC CFR Title 47 Part 15 Subpart B Section 15.109

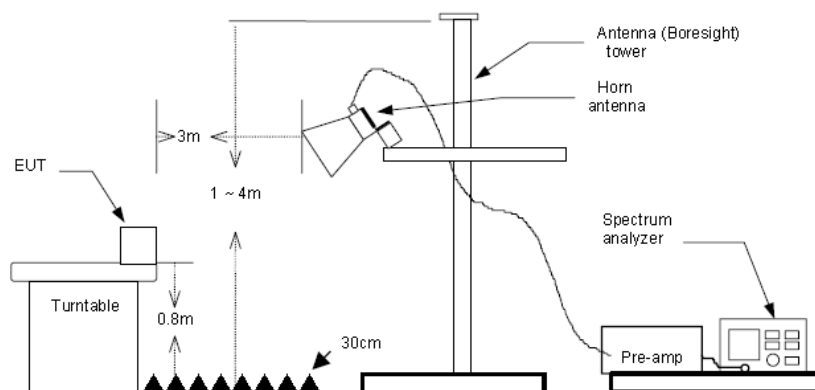
Frequency	Limit (dBuV/m @3m)	Value
30MHz-88MHz	40.00	Quasi-peak
88MHz-216MHz	43.50	Quasi-peak
216MHz-960MHz	46.00	Quasi-peak
960MHz-1GHz	54.00	Quasi-peak
Above 1GHz	54.00	Average
	74.00	Peak

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 was positioned 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. This is 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 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.
 - (3) From 1GHz to 5th harmonic, RBW=1MHz, VBW=3MHz

TEST MODE:

Please refer to the clause 3.3

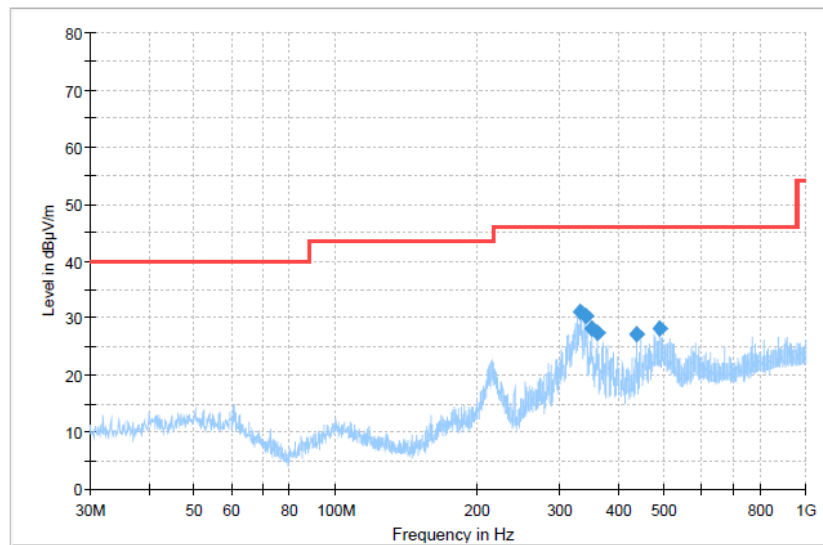
TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

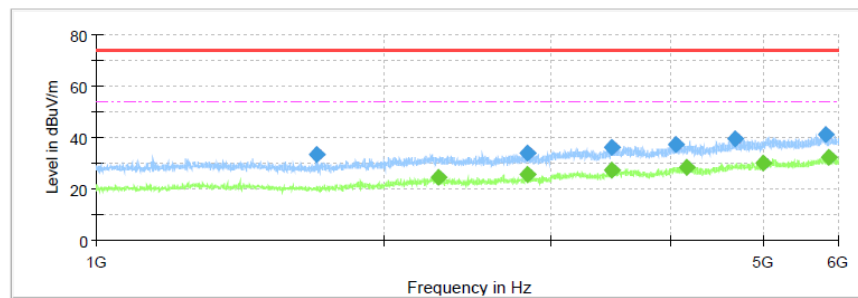
Note: Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
The emission levels of frequency above 6GHz are very lower than limit and not show in test report.

Polarization:

Horizontal

**Final Result**

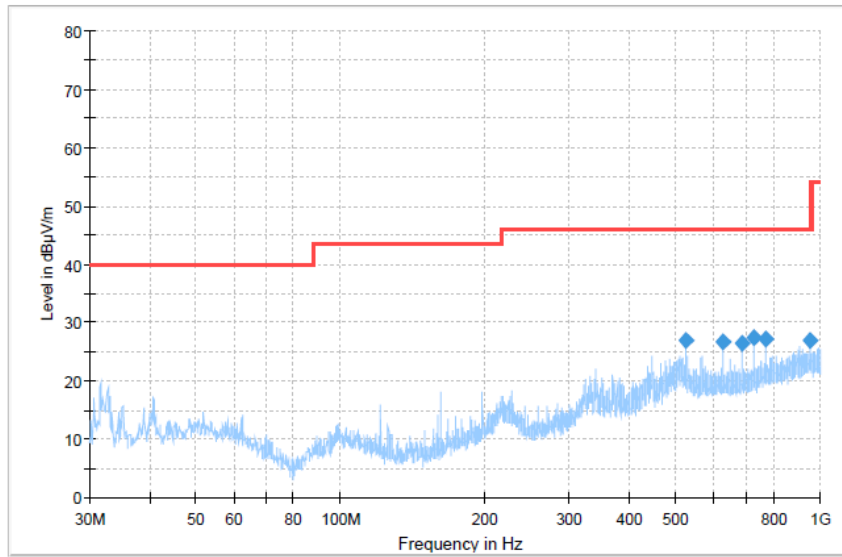
Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
331.306250	30.97	46.00	15.03	100.0	H	257.0	-5.4
340.763750	30.34	46.00	15.66	100.0	H	82.0	-5.3
350.342500	28.01	46.00	17.99	100.0	H	77.0	-4.8
360.163750	27.35	46.00	18.65	100.0	H	274.0	-4.4
436.915000	27.20	46.00	18.80	100.0	H	224.0	-2.5
490.265000	28.12	46.00	17.88	100.0	H	257.0	-1.6

**Final Result**

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1699.375000	33.28	---	74.00	40.72	150.0	H	338.0	-10.0
2280.625000	---	24.55	54.00	29.45	150.0	H	127.0	-6.7
2828.750000	---	25.39	54.00	28.61	150.0	H	3.0	-6.0
2831.875000	33.69	---	74.00	40.31	150.0	H	199.0	-6.0
3466.875000	---	27.29	54.00	26.71	150.0	H	58.0	-3.8
3473.750000	36.21	---	74.00	37.79	150.0	H	352.0	-3.8
4046.875000	37.38	---	74.00	36.62	150.0	H	213.0	-1.7
4160.000000	---	28.51	54.00	25.49	150.0	H	309.0	-1.2
4683.750000	39.42	---	74.00	34.58	150.0	H	16.0	1.0
5005.625000	---	30.18	54.00	23.82	150.0	H	240.0	2.5
5821.875000	41.27	---	74.00	32.73	150.0	H	141.0	5.1
5860.000000	---	32.08	54.00	21.92	150.0	H	352.0	5.3

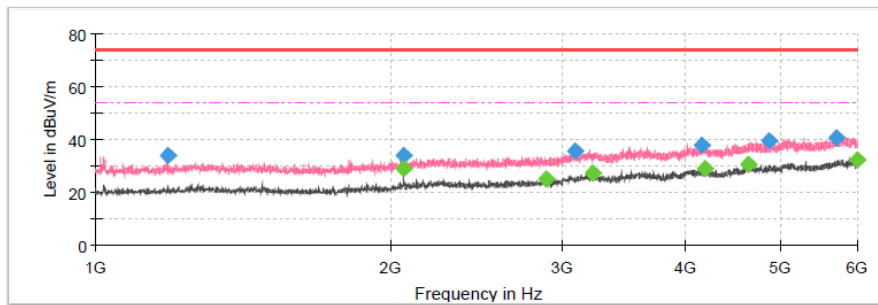
Polarization:

Vertical



Final Result

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
526.518750	26.94	46.00	19.06	100.0	V	17.0	-0.6
625.095000	26.58	46.00	19.42	100.0	V	76.0	1.0
688.508750	26.40	46.00	19.60	100.0	V	76.0	1.3
729.006250	27.36	46.00	18.64	100.0	V	55.0	1.9
769.503750	27.18	46.00	18.82	100.0	V	89.0	2.7
949.196250	26.99	46.00	19.01	100.0	V	239.0	4.5



Final Result

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1183.125000	33.73	---	74.00	40.27	150.0	V	290.0	-9.3
2062.500000	---	29.17	54.00	24.83	150.0	V	78.0	-7.6
2062.500000	33.85	---	74.00	40.15	150.0	V	78.0	-7.6
2881.250000	---	24.76	54.00	29.24	150.0	V	0.0	-5.8
3091.875000	35.80	---	74.00	38.20	150.0	V	262.0	-5.4
3220.000000	---	27.41	54.00	26.59	150.0	V	290.0	-4.5
4160.625000	37.71	---	74.00	36.29	150.0	V	356.0	-1.2
4186.250000	---	28.62	54.00	25.38	150.0	V	51.0	-1.1
4640.625000	---	30.42	54.00	23.58	150.0	V	207.0	0.8
4885.000000	39.71	---	74.00	34.29	150.0	V	148.0	2.3
5723.125000	40.69	---	74.00	33.31	150.0	V	356.0	4.6
5990.625000	---	32.49	54.00	21.51	150.0	V	92.0	5.4

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.: CHTEW23060051

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