


# TEST REPORT

For FCC Part15B

**Report No.** .....: **CHTEW23110044** Report verification: 


**Project No.** .....: **SHT2307016302EW**

**FCC ID**.....: **2BDG9-697083172WF27**

**Applicant's name** .....: **Shenzhen Insighters Medical Technology Co.,Ltd**

**Address**.....: The 13th floor of Hengtemei Building, Ganli Road No.3,518000  
Shenzhen, Guangdong, PEOPLE'S REPUBLIC OF CHINA

**Product Name** .....: **Insight Workstation-- Wireless(NFC) module**

**Trade Mark** .....: 

**Model No.** .....: iS-WF1

**Listed Model(s)** .....: -

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

**Date of receipt of test sample**.....: Oct.24, 2023

**Date of testing**.....: Oct.24, 2023- Jan.10, 2024

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

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

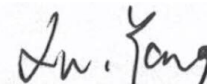
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Supervised by  
(position+printed name+signature)....: Project Engineer Kiki Kong



Approved by  
(position+printed name+signature)....: RF Manager Xu Yang



**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	2024-01-11	Original

## 2. TEST DESCRIPTION

Section	Test Item	Section in CFR 47	Result <sup>#1</sup>	Test Engineer
5.1	Conducted Emissions	15.107(a)	PASS	Junman Wan
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:	Shenzhen Insighters Medical Technology Co.,Ltd
Address:	The 13th floor of Hengtemei Building, Ganli Road No.3,518000 Shenzhen, Guangdong, PEOPLE'S REPUBLIC OF CHINA
Manufacturer:	Shenzhen Insighters Medical Technology Co.,Ltd
Address:	The 13th floor of Hengtemei Building, Ganli Road No.3,518000 Shenzhen, Guangdong, PEOPLE'S REPUBLIC OF CHINA

#### 3.2. Product Description

Main unit information:	
Product Name:	Insight Workstation-- Wireless(NFC) module
Trade Mark:	
Model No.:	iS-WF1
Listed Model(s):	-
Power supply:	DC 3.7V from Battery
Hardware version:	V04
Software version:	PF1V1.0.1.5
Accessory unit information:	
Battery information:	3.7V +2200mAh 8.14Wh

#### 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: <a href="mailto:cs@szhtw.com.cn">cs@szhtw.com.cn</a> <a href="http://www.szhtw.com.cn">http://www.szhtw.com.cn</a>	
Qualifications	Type	Accreditation Number
	FCC	762235

## 4. TEST CONFIGURATION

### 4.1. Descriptions of test mode

Test mode O1	Charging
Test mode O2	Working

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	Test mode O1
Radiated Emissions	Test mode O2

### 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?			
✓ 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 test item							
Used	Test Equipment	Manufacturer	Equipment No.	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	Spectrum Analyzer	Agilent	HTWE0286	N9020A	MY50510187	2022/08/25	2023/08/24
●	Radio communication tester	R&S	HTWE0287	CMW500	137688-Lv	2022/08/25	2023/08/24
●	Test software	Tonscend	N/A	JS1120	N/A	N/A	N/A
●	T-Cock	Weinschel	HTWE0289	1580	SC329	2022/08/25	2022/08/24

● Radiated Spurious Emission							
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
●	Loop Antenna	R&S	HTWE0546	HFH2-Z2E	101073	2021/05/25	2024/05/24
●	Horn Antenna	ETS	HTWE0548	3117	240120	2022/05/20	2025/05/19
●	Ultra-Broadband Antenna	SCHWARZBECK	HTWE0547	VULB9163	945	2022/05/23	2025/05/22
○	Horn Antenna	STEATITE	HTWE0549	QMS-00880	25661	2022/05/20	2025/05/19
●	Pre-amplifier	CD	HTWE0071	PAP-0102	12004	2022/11/04	2023/11/03
●	Broadband Preamplifier	SCHWARZBECK	HTWE0201	BBV 9718	9718-248	2023/02/27	2024/02/26
●	RF Connection Cable	HUBER+SUHNER	HTWE0120-01	6m 18GHz S Serisa	N/A	2023/02/24	2024/02/23
●	RF Connection Cable	HUBER+SUHNER	HTWE0120-02	6m 3GHz RG Serisa	N/A	2023/02/24	2024/02/23
●	RF Connection Cable	HUBER+SUHNER	HTWE0119-05	6m 3GHz RG Serisa	N/A	2023/02/24	2024/02/23
●	RF Connection Cable	HUBER+SUHNER	HTWE0120-04	6m 3GHz RG Serisa	N/A	2023/02/24	2024/02/23
●	EMI Test Software	Audix	N/A	E3	N/A	N/A	N/A

● Auxiliary Equipment							
Used	Test Equipment	Manufacturer	Equipment No.	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	Radio communication tester	R&S	HTWE0287	CMW500	137688-Lv	2022/08/25	2023/08/24
●	High pass filter	Wainwright	HTWE0297	WHKX3.0/18G-10SS	38	2022/05/16	2023/05/15
○	Band Stop filter	-	HTWE0039	N/A	N/A	2022/01/27	2023/01/26

## 5. TEST CONDITIONS AND RESULTS

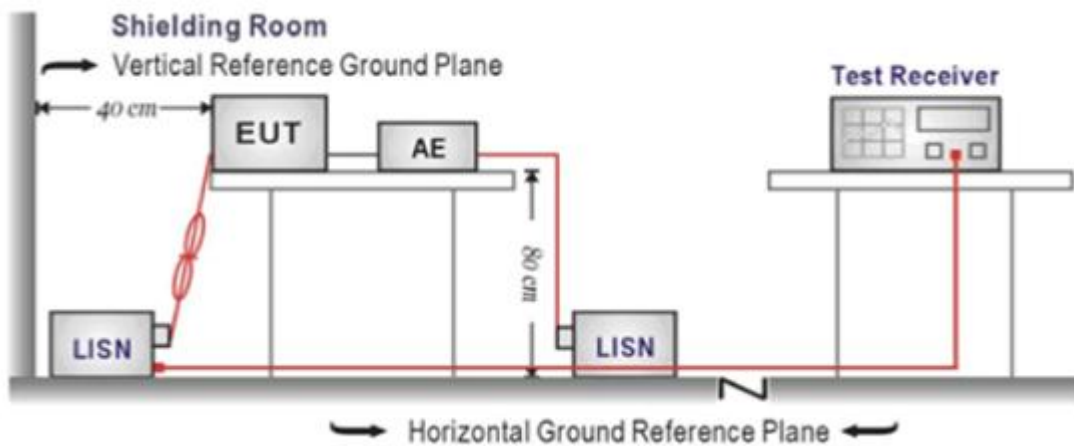
### 5.1. Conducted Emissions

#### LIMIT

FCC CFR Title 47 Part 15 Subpart B Section 15.107:

Frequency of emission (MHz)	Conducted limit (dB $\mu$ V)	
	Quasi-peak	Average
0.15-0.5	79	66
0.5-30	73	60

#### 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

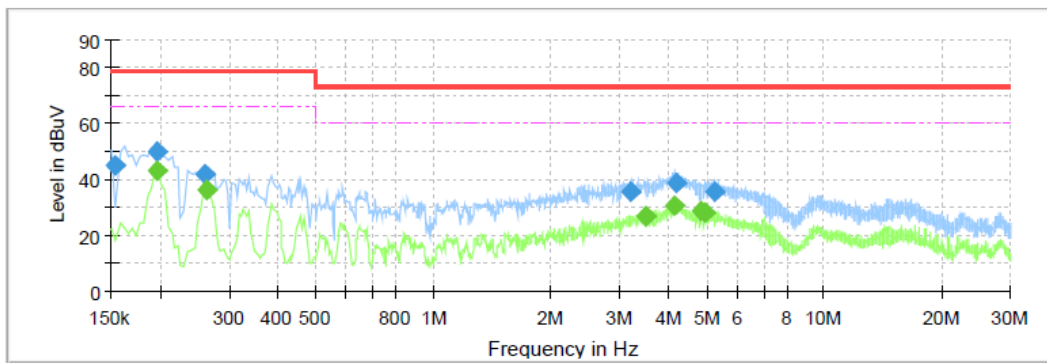
#### TEST RESULTS

☒ Passed ☐ Not Applicable



Test Line:

L

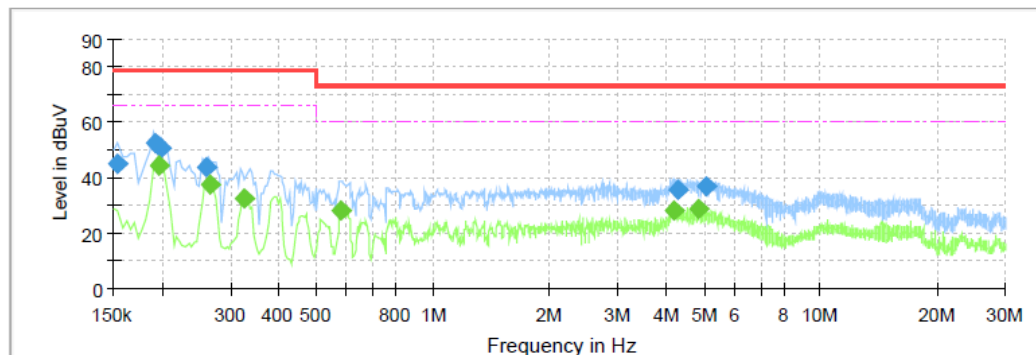


### Final Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Corr. (dB)
0.1540	45.26	---	79.00	33.74	L1	10.8
0.1955	49.99	---	79.00	29.01	L1	10.9
0.1955	---	42.84	66.00	23.16	L1	10.9
0.2595	41.84	---	79.00	37.16	L1	10.9
0.2635	---	35.96	66.00	30.04	L1	10.9
3.1915	35.66	---	73.00	37.34	L1	11.0
3.5075	---	27.05	60.00	32.95	L1	11.0
4.1275	---	30.88	60.00	29.12	L1	11.1
4.1675	38.72	---	73.00	34.28	L1	11.1
4.8515	---	28.81	60.00	31.19	L1	11.1
4.9645	---	28.17	60.00	31.83	L1	11.1
5.2755	35.71	---	73.00	37.29	L1	11.1

Test Line:

N



### Final Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Corr. (dB)
0.1540	45.28	---	79.00	33.72	N	10.7
0.1915	52.23	---	79.00	26.77	N	10.7
0.1955	---	44.61	66.00	21.39	N	10.7
0.1995	50.94	---	79.00	28.06	N	10.7
0.2595	43.79	---	79.00	35.21	N	10.7
0.2675	---	37.51	66.00	28.49	N	10.7
0.3275	---	32.41	66.00	33.59	N	10.7
0.5795	---	27.93	60.00	32.07	N	10.7
4.2115	---	27.90	60.00	32.10	N	10.8
4.2955	35.45	---	73.00	37.55	N	10.8
4.8515	---	28.58	60.00	31.42	N	10.8
5.0955	36.69	---	73.00	36.31	N	10.8

## 5.2. Radiated Emissions

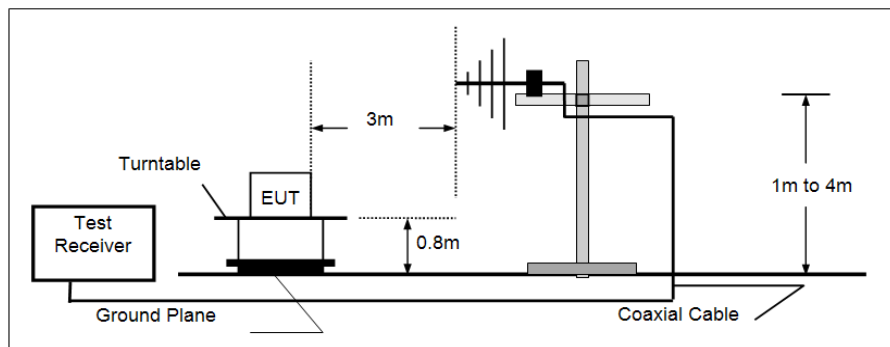
### LIMIT

#### FCC CFR Title 47 Part 15 Subpart B Section 15.109

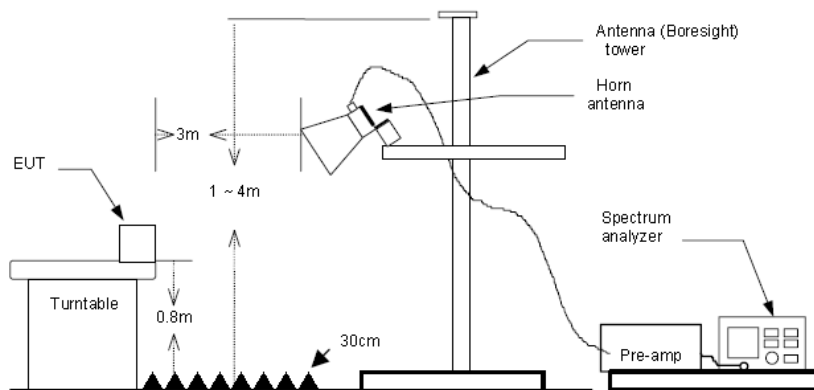
Frequency	Limit (dBuV/m @3m)	Value
30MHz-88MHz	49.00	Quasi-peak
88MHz-216MHz	53.50	Quasi-peak
216MHz-960MHz	56.40	Quasi-peak
960MHz-1GHz	59.50	Quasi-peak
Above 1GHz	59.5	Average
	79.5	Peak

### 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

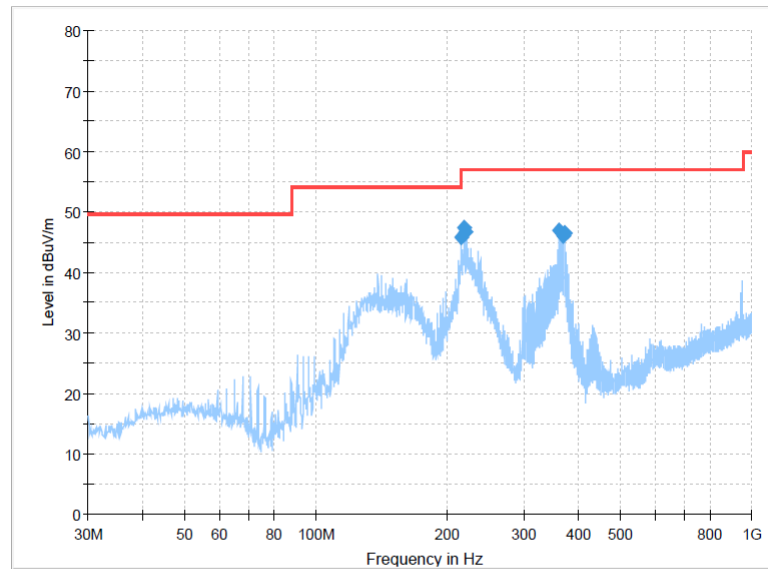
**TEST RESULTS**

☒ **Passed**      ☐ **Not Applicable**

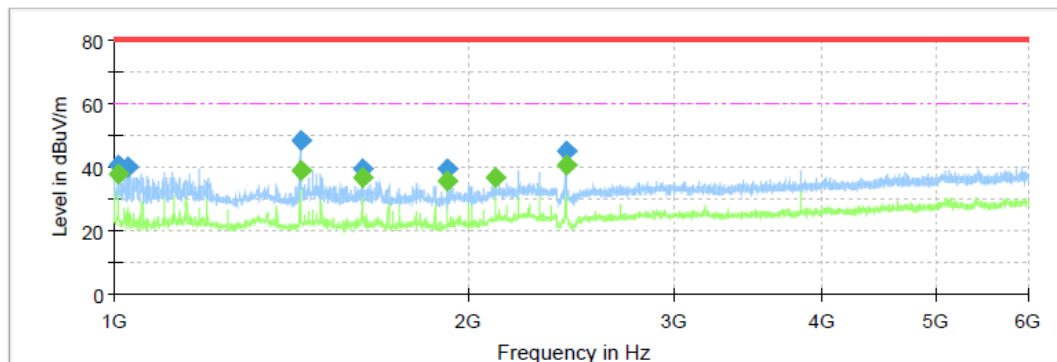
Note: Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor  
The emission levels of frequency above 6GHz are very lower than limit and not show in test report.

Polarization:

Horizontal

**Final Result**

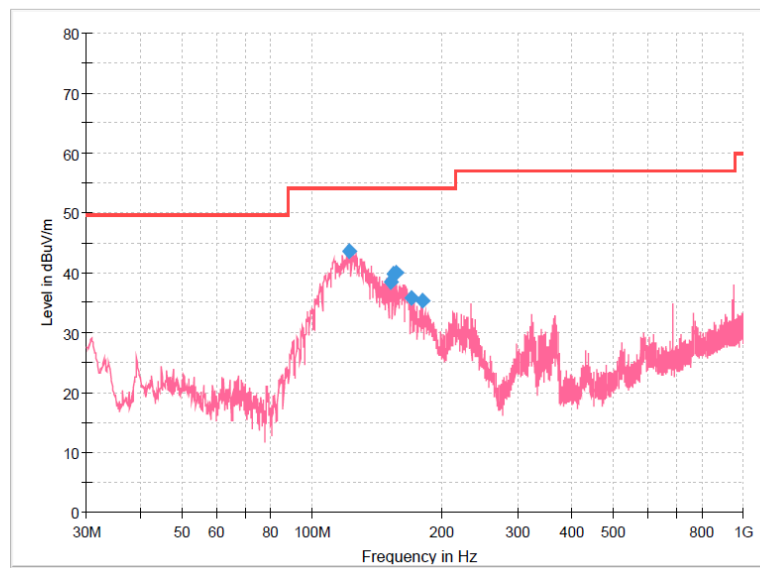
Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
215.1488	45.77	54.00	8.23	100.0	H	170.0	-10.7
218.0588	47.45	57.00	9.55	100.0	H	138.0	-10.6
220.8475	46.60	57.00	10.40	100.0	H	28.0	-10.5
362.3463	46.84	57.00	10.16	100.0	H	219.0	-6.0
368.4088	46.00	57.00	11.00	100.0	H	219.0	-5.7
371.0763	46.37	57.00	10.63	100.0	H	196.0	-5.5

**Final Result**

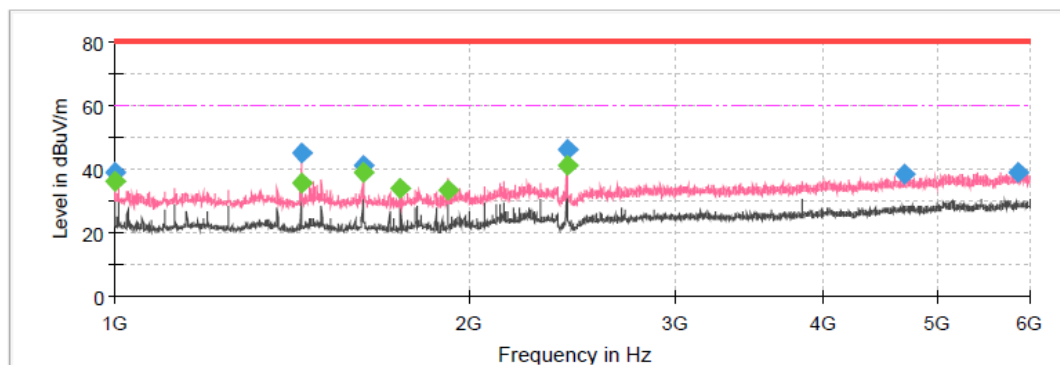
Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1008.1250	---	37.52	60.00	22.48	150.0	H	0.0	-14.8
1008.1250	40.47	---	80.00	39.53	150.0	H	0.0	-14.8
1025.0000	40.00	---	80.00	40.00	150.0	H	0.0	-14.8
1440.0000	---	38.72	60.00	21.28	150.0	H	27.0	-13.1
1440.0000	48.25	---	80.00	31.75	150.0	H	27.0	-13.1
1625.0000	39.61	---	80.00	40.39	150.0	H	91.0	-13.7
1625.0000	---	36.79	60.00	23.21	150.0	H	91.0	-13.7
1919.3750	39.44	---	80.00	40.56	150.0	H	207.0	-12.6
1920.0000	---	35.52	60.00	24.48	150.0	H	235.0	-12.6
2111.8750	---	36.87	60.00	23.13	150.0	H	109.0	-10.8
2423.1250	45.23	---	80.00	34.77	150.0	H	207.0	-10.2
2423.7500	---	40.31	60.00	19.69	150.0	H	207.0	-10.2

Polarization:

Vertical

**Final Result**

Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
122.3925	43.54	54.00	10.46	100.0	V	150.0	-13.1
151.7350	38.54	54.00	15.46	100.0	V	192.0	-14.1
154.4025	39.81	54.00	14.19	100.0	V	24.0	-14.0
157.1913	40.02	54.00	13.98	100.0	V	50.0	-13.8
169.4375	35.85	54.00	18.15	100.0	V	177.0	-13.4
179.7438	35.21	54.00	18.79	100.0	V	219.0	-12.4

**Final Result**

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1000.0000	---	35.99	60.00	24.01	150.0	V	217.0	-14.8
1000.0000	39.09	---	80.00	40.91	150.0	V	217.0	-14.8
1440.0000	---	35.58	60.00	24.42	150.0	V	359.0	-13.1
1440.0000	44.83	---	80.00	35.17	150.0	V	359.0	-13.1
1625.0000	---	39.09	60.00	20.91	150.0	V	154.0	-13.7
1625.0000	41.04	---	80.00	38.96	150.0	V	154.0	-13.7
1750.0000	---	33.92	60.00	26.08	150.0	V	217.0	-13.4
1920.0000	---	33.25	60.00	26.75	150.0	V	333.0	-12.6
2423.1250	45.85	---	80.00	34.15	150.0	V	44.0	-10.2
2423.1250	---	41.17	60.00	18.83	150.0	V	44.0	-10.2
4701.8750	38.22	---	80.00	41.78	150.0	V	163.0	-4.3
5862.5000	38.98	---	80.00	41.02	150.0	V	145.0	-1.7

## 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.: CHTEW23110043

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