

# TEST REPORT

For FCC Part15B



**Report No.** .....: **CHTW25040039** Report verification:

**Project No.** .....: **SHT2503044805W**

**FCC ID**.....: **SIP-8082-C**

**Applicant's name**.....: **MegaGain International Ltd.**

**Address**.....: Rm 904-905, Greenfield Tower, Concordia Plaza,1 Science Museum Road, T.S.T. East. Kowloon. HongKong

**Product Name** .....: **TS RC BZ WD AF SET**

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

**Model No.** .....: 2501-TDS01555(8082-W)

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

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

**Date of receipt of test sample**.....: Mar.25, 2025

**Date of testing**.....: Mar.25, 2025- Apr.17, 2025

**Date of issue**.....: Apr.18, 2025

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

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*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

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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	2025-04-18	Original

## 2. TEST DESCRIPTION

Section	Test Item	Section in CFR 47	Result <sup>#1</sup>	Test Engineer
5.1	Conducted Emissions	15.107(a)	N/A	N/A
5.2	Radiated Emissions	15.109(a)	PASS	Yifan Wang

Note:

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

N/A: This product is battery powered

### 3. SUMMARY

#### 3.1. Client Information

Applicant:	MegaGain International Ltd.
Address:	Rm 904-905, Greenfield Tower, Concordia Plaza,1 Science Museum Road, T.S.T. East. Kowloon. HongKong
Manufacturer:	MegaGain International Ltd.
Address:	Rm 904-905, Greenfield Tower, Concordia Plaza,1 Science Museum Road, T.S.T. East. Kowloon. HongKong

#### 3.2. Product Description

Main unit information:	
Product Name:	TS RC BZ WD AF SET
Trade Mark:	-
Model No.:	2501-TDS01555(8082-W)
Listed Model(s):	-
Power supply:	DC 3.0V from dry Battery
Hardware version:	V1
Software version:	V1

#### 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: <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 Registration Number	762235
	FCC Designation Number	CN1181

## 4. TEST CONFIGURATION

### 4.1. Descriptions of test mode

Test mode O1	Control auxiliary equipment to work together with the car
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Test Item	Test mode for worse case
Conducted Emissions	-
Radiated Emissions	Test mode O1

### 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?			
✓ Yes			
Item	Equipment	Trade Name	Model No.
1	Car	-	2501-TDS01555(8082-W)
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

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	2023/04/06	2026/04/05
●	EMI Test Receiver	R&S	HTWE0099	ESCI 7	100900	2024/08/12	2025/08/11
●	Ultra-Broadband Antenna	SCHWARZBECK	HTWE0119	VULB9163	546	2023/02/22	2026/02/21
●	Pre-Amplifier	SCHWARZBECK	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	2023/04/17	2026/04/16
●	Spectrum Analyzer	R&S	HTWE0098	FSP40	100597	2024/08/12	2025/08/11
●	Spectrum Analyzer	R&S	HTWE0385	N9020A	MY54486658	2024/08/12	2025/08/11
●	Horn Antenna	SCHWARZBECK	HTWE0126	BBHA 9120D	1011	2023/02/14	2026/02/13
●	Pre-Amplifier	CD	HTWE0071	PAP-0102	12004	2024/06/06	2025/06/05
●	Broadband Pre-amplifier	SCHWARZBECK	HTWE0551	SCU18F	100855	2024/06/06	2025/06/05
●	Test Software	Audix	N/A	E3	N/A	N/A	N/A

## 5. TEST CONDITIONS AND RESULTS

### 5.1. Conducted Emissions

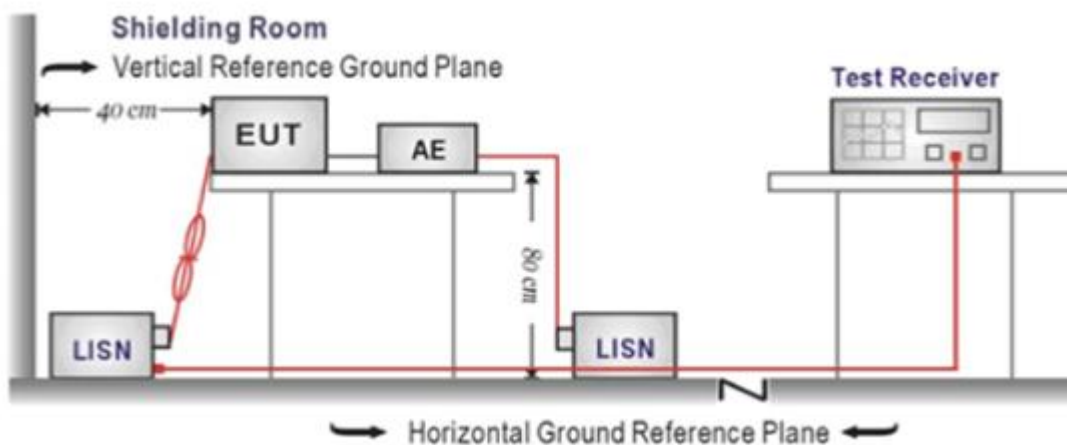
#### LIMIT

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



## 5.2. Radiated Emissions

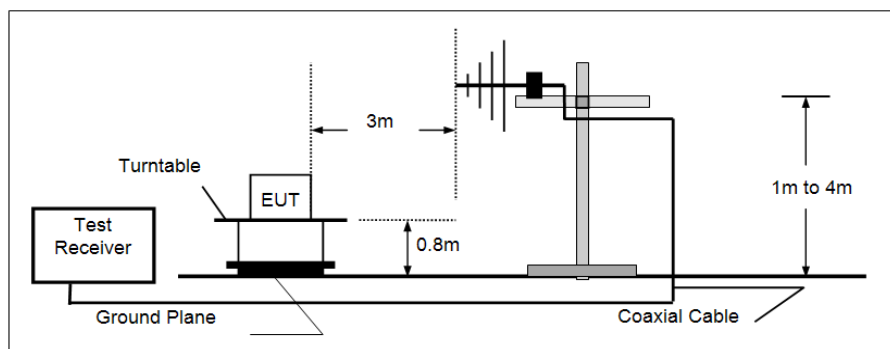
### LIMIT

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

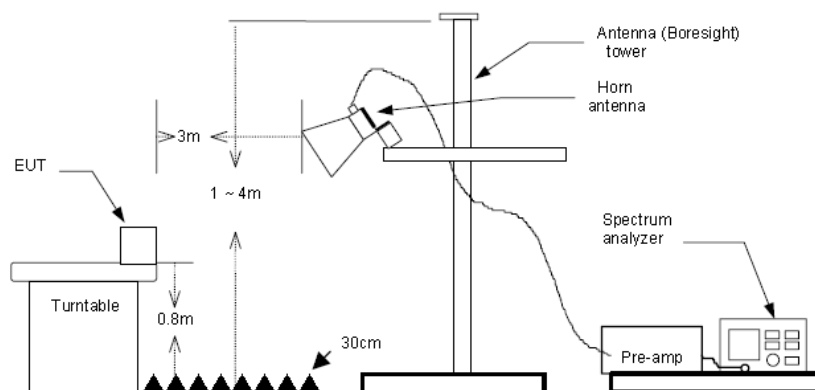
Frequency	Limit (dBuV/m @3m)	Value
30MHz-88MHz	40.00	Quasi-peak
88MHz-216MHz	43.50	Quasi-peak
216MHz-960MHz	46.00	Quasi-peak
960MHz-1GHz	54.00	Quasi-peak
Above 1GHz	54.00	Average
	74.00	Peak

### 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

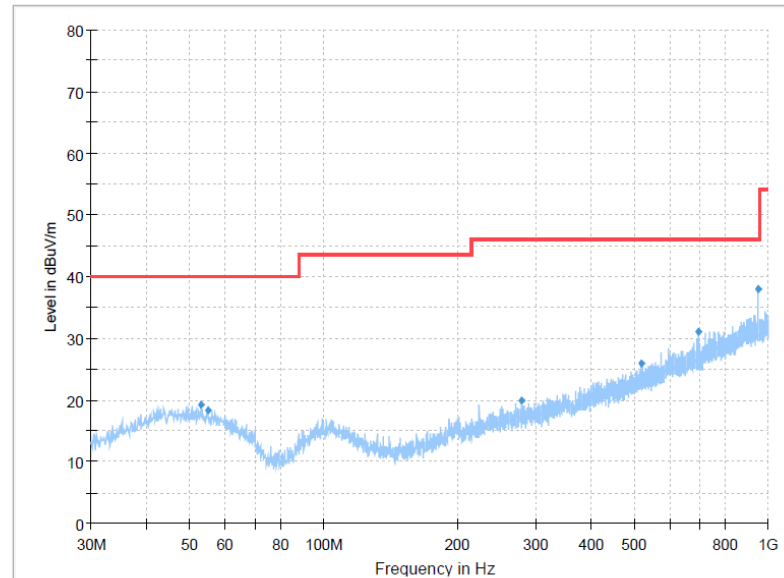
**TEST RESULTS**

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

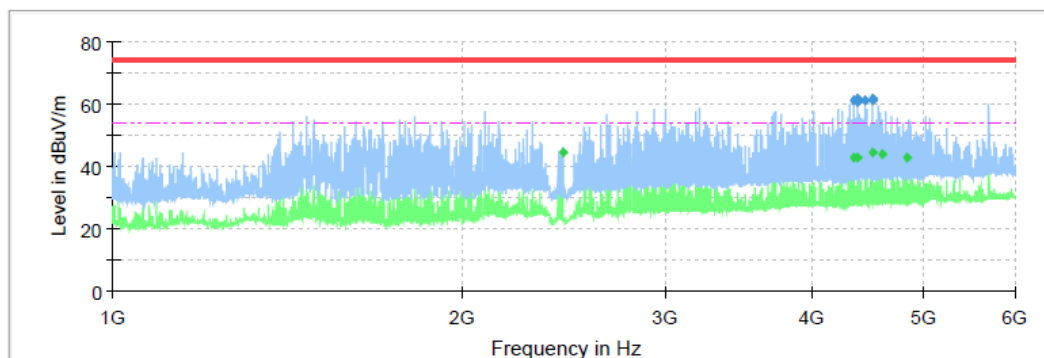
Note: Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor  
The emission levels of frequency above 6GHz are very lower than limit and not show in test report.

Polarization:

Horizontal

**Final Result**

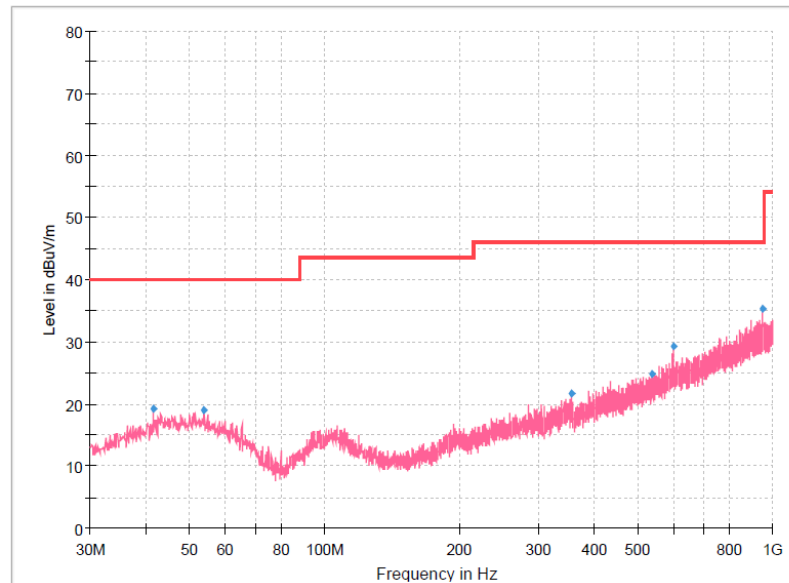
Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
53.0375	19.12	40.00	20.88	300.0	H	0.0	-8.6
54.8563	18.34	40.00	21.66	200.0	H	152.0	-8.8
279.5325	19.89	46.00	26.11	300.0	H	182.0	-7.6
516.9400	26.00	46.00	20.00	200.0	H	338.0	-1.2
696.2688	31.08	46.00	14.92	100.0	H	37.0	2.7
948.4688	38.07	46.00	7.93	100.0	H	63.0	7.5

**Final Result**

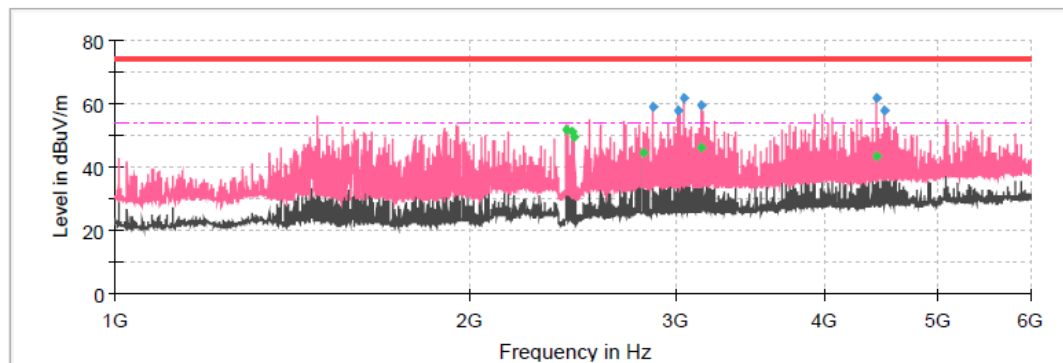
Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2445.6250	---	44.32	54.00	9.68	100.0	H	0.0	-9.5
4355.6250	---	42.66	54.00	11.34	150.0	H	0.0	-4.3
4355.6250	60.85	---	74.00	13.15	150.0	H	0.0	-4.3
4387.5000	61.44	---	74.00	12.56	150.0	H	3.0	-4.3
4387.5000	---	42.95	54.00	11.05	150.0	H	3.0	-4.3
4394.3750	60.73	---	74.00	13.27	150.0	H	0.0	-4.2
4446.2500	60.93	---	74.00	13.07	150.0	H	0.0	-4.1
4518.7500	---	44.46	54.00	9.54	150.0	H	0.0	-3.9
4518.7500	61.48	---	74.00	12.52	150.0	H	0.0	-3.9
4523.7500	61.00	---	74.00	13.00	150.0	H	270.0	-3.9
4606.8750	---	43.80	54.00	10.20	150.0	H	235.0	-3.6
4842.5000	---	42.63	54.00	11.37	150.0	H	235.0	-3.1

Polarization:

Vertical

**Final Result**

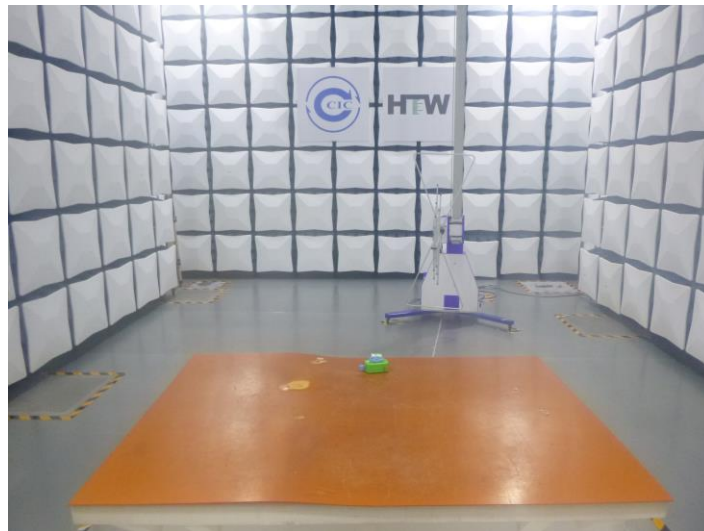
Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
41.5188	19.31	40.00	20.69	100.0	V	24.0	-9.0
53.8863	18.89	40.00	21.11	100.0	V	289.0	-8.7
356.1625	21.59	46.00	24.41	100.0	V	173.0	-5.1
536.4613	24.84	46.00	21.16	100.0	V	351.0	-0.8
600.2388	29.17	46.00	16.83	100.0	V	133.0	1.4
948.4688	35.24	46.00	10.76	100.0	V	229.0	7.5

**Final Result**

Frequency (MHz)	MaxPeak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2420.6250	---	51.73	54.00	2.27	150.0	V	120.0	-9.5
2446.2500	---	51.03	54.00	2.97	100.0	V	205.0	-9.5
2456.8750	---	49.32	54.00	4.68	100.0	V	148.0	-9.5
2810.0000	---	44.47	54.00	9.53	100.0	V	251.0	-8.4
2866.2500	59.11	---	74.00	14.89	150.0	V	281.0	-8.2
3010.6250	57.66	---	74.00	16.34	150.0	V	293.0	-7.9
3040.6250	61.40	---	74.00	12.60	150.0	V	270.0	-7.8
3144.3750	59.30	---	74.00	14.70	150.0	V	293.0	-7.3
3144.3750	---	46.02	54.00	7.98	150.0	V	293.0	-7.3
4431.2500	61.86	---	74.00	12.14	150.0	V	352.0	-4.2
4431.2500	---	43.43	54.00	10.57	150.0	V	352.0	-4.2
4505.6250	58.00	---	74.00	16.00	150.0	V	352.0	-3.9

## 6. TEST SETUP PHOTOS OF THE EUT

Radiated Emissions (30MHz-1GHz)



Radiated Emissions (Above 1GHz)



## 7. **EXTERNAL AND INTERNAL PHOTOS OF THE EUT**

Refer to the test report No.: CHTW25040038

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