


TEST REPORT

Report No.....: **CHTEW21080033** Report Verification: 

Project No.....: **SHT2106071401EW**

FCC ID.....: **2ASNSRB17A**

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

Address.....: Room 700, 7/F, 13-C, Zhonghaixin Science&Technology Park,
No.12 Ganli 6th Road, Jihua Street, Longgang District, Shenzhen,
China

Test item description: **Two Way Radio**

Trade Mark: RETEVIS

Model/Type reference.....: RB17A

Listed Model(s): -

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

Date of receipt of test sample.....: Jun.25, 2021

Date of testing.....: Jun.26, 2021- Aug.03,2021

Date of issue.....: Aug.04,2021

Result.....: **PASS**

Compiled by
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Supervised by
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Approved by
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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

Revision No.	Date of issue	Description
N/A	2021-08-04	Original

2. TEST DESCRIPTION

Test Item	Section in CFR 47	Result	Test Engineer
Conducted Emissions	15.107(a)	Pass	Quanhai Deng
Radiated Emissions	15.109(a)	Pass	Haoxin Luo

Note: The measurement uncertainty is not included in the test result.

3. SUMMARY

3.1. Client Information

Applicant:	Shenzhen Retevis Technology Co., Ltd.
Address:	Room 700, 7/F, 13-C, Zhonghaixin Science&Technology Park, No.12 Ganli 6th Road, Jihua Street, Longgang District, Shenzhen, China
Manufacturer:	Shenzhen Retevis Technology Co., Ltd.
Address:	Room 700, 7/F, 13-C, Zhonghaixin Science&Technology Park, No.12 Ganli 6th Road, Jihua Street, Longgang District, Shenzhen, China

3.2. Product Description

Main unit	
Name of EUT:	Two Way Radio
Trade Mark:	RETEVIS
Model/Type reference:	RB17A
Listed Model(s)	-
Power supply:	DC 7.4V from battery
Hardware version:	V1.2
Software version:	V1.3
Ancillary unit	
Battery information:	Model: BL17A Voltage: 7.4V Capacity: 2200mAh Power: 16.28Wh
Charger information:	Model: DC17A Input: DC 5.0V, 1000mA Output: DC 8.4V, 400mA
Adapter information:	Model: DSA-5PF07-05 FUS 050100 Input: 100-240V, 50/60Hz, 0.2A Output: 5V, 1A

3.3. Radio Specification Description

Operation Frequency Range: (Transmit unit) ^{#1}	Main channel: (462MHz)	462.5500, 462.5750, 462.6000, 462.6250, 462.6500, 462.6750, 462.7000, 462.7250MHz
	Interstitial channel: (462MHz)	462.5625, 462.5875, 462.6125, 462.6375, 462.6625, 462.6875, 462.7125 MHz
	Main channel: (467MHz)	467.5500, 467.5750, 467.6000, 467.6250, 467.6500, 467.6750, 467.7000, 467.7250MHz
	Interstitial channel: (467MHz)	467.5625, 467.5875, 467.6125, 467.6375, 467.6625, 467.6875, 467.7125MHz
Operation Frequency Range: (Receive unit) ^{#2}	Main channel: (462MHz)	462.5500, 462.5750, 462.6000, 462.6250, 462.6500, 462.6750, 462.7000, 462.7250MHz
	Interstitial channel: (462MHz)	462.5625, 462.5875, 462.6125, 462.6375, 462.6625, 462.6875, 462.7125 MHz
	Main channel: (467MHz)	467.5500, 467.5750, 467.6000, 467.6250, 467.6500, 467.6750, 467.7000, 467.7250MHz
	Interstitial channel: (467MHz)	467.5625, 467.5875, 467.6125, 467.6375, 467.6625, 467.6875, 467.7125MHz
Modulation Type:	FM	
Antenna Type:	Integral	

Note:

#1: Transmit unit of this two way radio, please refer to the FCC Part95 report.

#2: This report only evaluate the receive function of this two way radio.

3.4. 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. EUT operation mode

Test mode	Describe
Charging mode	Keep the EUT in charging mode, but the EUT shut down.
Receive mode	Keep the EUT in receiving mode, but don't charging.

Receive frequency: 462.6500MHz.

Test item	Pretest mode	Worse case mode
Conducted emissions	Charging mode, receive mode	Charging mode
Radiated emissions	Charging mode, receive mode	Charging mode

Only show the test data for worse case mode on the test report.

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.	FCC ID	Power cord
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

Test	Frequency range	Measurement uncertainty
Radiated Emission	30~1000MHz	4.90 dB
Radiated Emission	1~18GHz	4.96 dB
Conducted Disturbance	0.15~30MHz	3.02 dB

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)
●	Shielded Room	Albatross projects	HTWE0114	N/A	N/A	2018/09/28	2023/09/27
●	EMI Test Receiver	R&S	HTWE0111	ESCI	101247	2020/10/19	2021/10/18
●	Artificial Mains	SCHWARZBECK	HTWE0113	NNLK 8121	573	2020/10/15	2021/10/14
●	Pulse Limiter	R&S	HTWE0033	ESH3-Z2	100499	2020/10/15	2021/10/14
●	RF Connection Cable	HUBER+SUHNER	HTWE0113-02	ENVIROFLEX_142	EF-NM-BNCM-2M	2020/10/15	2021/10/14
●	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	2021/09/29
●	EMI Test Receiver	R&S	HTWE0099	ESCI	100900	2020/10/19	2021/10/18
●	Ultra-Broadband Antenna	SCHWARZBECK	HTWE0119	VULB9163	546	2020/04/28	2023/04/27
●	Pre-Amplifier	SCHWARZBECK	HTWE0295	BBV 9742	N/A	2020/11/13	2021/11/12
●	RF Connection Cable	HUBER+SUHNER	HTWE0062-01	N/A	N/A	2021/02/26	2022/02/25
●	RF Connection Cable	HUBER+SUHNER	HTWE0062-02	SUCOFLEX104	501184/4	2021/02/26	2022/02/25
●	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	N/A	2018/09/27	2021/09/26
●	Spectrum Analyzer	R&S	HTWE0098	FSP40	100597	2020/10/20	2021/10/19
●	Horn Antenna	SCHWARZBECK	HTWE0126	9120D	1011	2020/04/01	2023/03/31
●	Broadband Pre-amplifier	SCHWARZBECK	HTWE0201	BBV 9718	9718-248	2021/03/05	2022/03/04
●	RF Connection Cable	HUBER+SUHNER	HTWE0121-01	RE-7-FH	N/A	2021/03/05	2022/03/04
●	Test Software	Audix	N/A	E3	N/A	N/A	N/A

5. TEST CONDITIONS AND RESULTS

5.1. Conducted Emissions

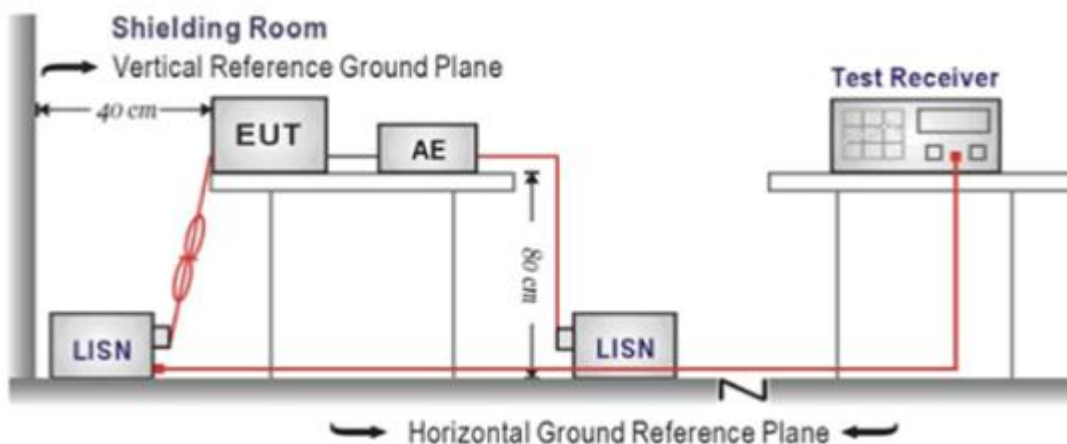
LIMIT

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 10 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 10 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:

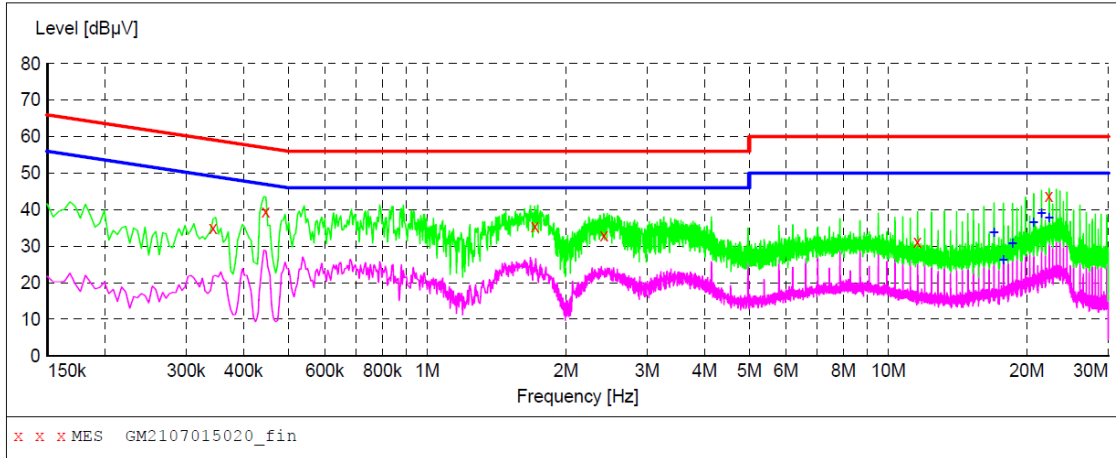
Please refer to the clause 4.1

TEST RESULTS

Passed Not Applicable

Test Line:

L



MEASUREMENT RESULT: "GM2107015020_fin"

7/1/2021 3:48PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.343500	35.10	10.2	59	24.0	QP	L1	GND
0.447000	39.50	10.2	57	17.4	QP	L1	GND
1.716000	35.60	10.2	56	20.4	QP	L1	GND
2.422500	33.00	10.2	56	23.0	QP	L1	GND
11.584500	31.20	10.5	60	28.8	QP	L1	GND
22.335000	43.90	10.5	60	16.1	QP	L1	GND

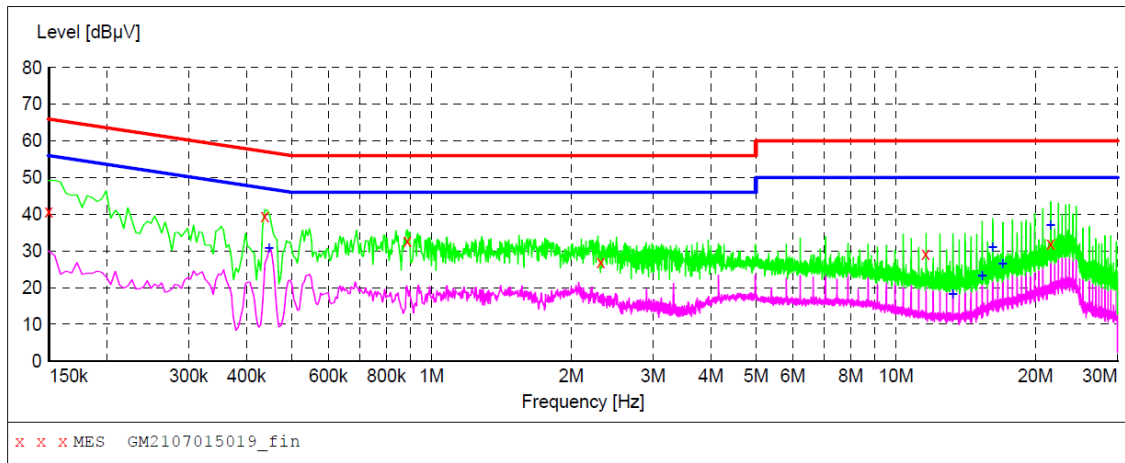
MEASUREMENT RESULT: "GM2107015020_fin2"

7/1/2021 3:48PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
16.957500	33.70	10.4	50	16.3	AV	L1	GND
17.790000	26.20	10.4	50	23.8	AV	L1	GND
18.613500	30.80	10.5	50	19.2	AV	L1	GND
20.674500	36.60	10.5	50	13.4	AV	L1	GND
21.507000	38.90	10.5	50	11.1	AV	L1	GND
22.335000	37.90	10.5	50	12.1	AV	L1	GND

Test Line:

N



MEASUREMENT RESULT: "GM2107015019_fin"

7/1/2021 3:45PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150000	40.70	10.2	66	25.3	QP	N	GND
0.438000	39.40	10.2	57	17.7	QP	N	GND
0.888000	32.70	10.2	56	23.3	QP	N	GND
2.319000	26.90	10.2	56	29.1	QP	N	GND
11.602500	29.20	10.5	60	30.8	QP	N	GND
21.552000	32.10	10.5	60	27.9	QP	N	GND

MEASUREMENT RESULT: "GM2107015019_fin2"

7/1/2021 3:45PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.447000	30.80	10.2	47	16.1	AV	N	GND
13.263000	18.10	10.4	50	31.9	AV	N	GND
15.333000	23.20	10.4	50	26.8	AV	N	GND
16.156500	31.10	10.4	50	18.9	AV	N	GND
16.989000	26.40	10.4	50	23.6	AV	N	GND
21.538500	37.10	10.5	50	12.9	AV	N	GND

5.2. Radiated Emissions

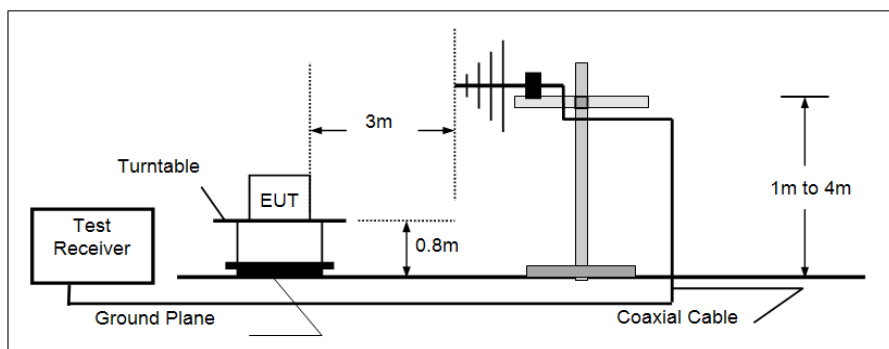
LIMIT

FCC CFR Title 47 Part 15 Subpart B Section 15.109

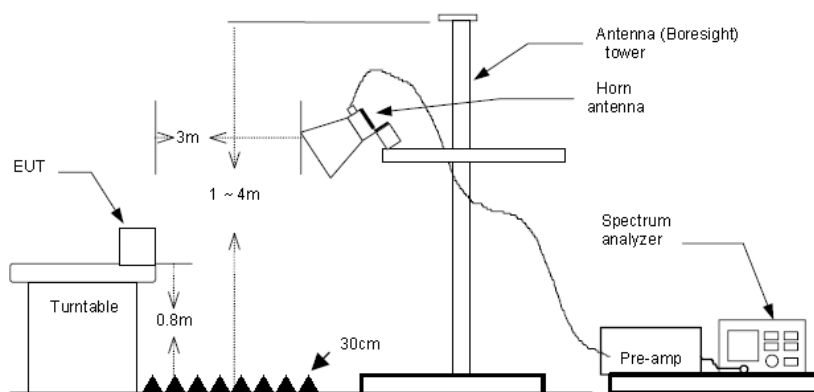
Frequency	Limit (dBuV/m @3m)	Value
30MHz-88MHz	40.00	Quasi-peak
88MHz-216MHz	43.50	Quasi-peak
216MHz-960MHz	46.00	Quasi-peak
960MHz-1GHz	54.00	Quasi-peak
Above 1GHz	54.00	Average
	74.00	Peak

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:

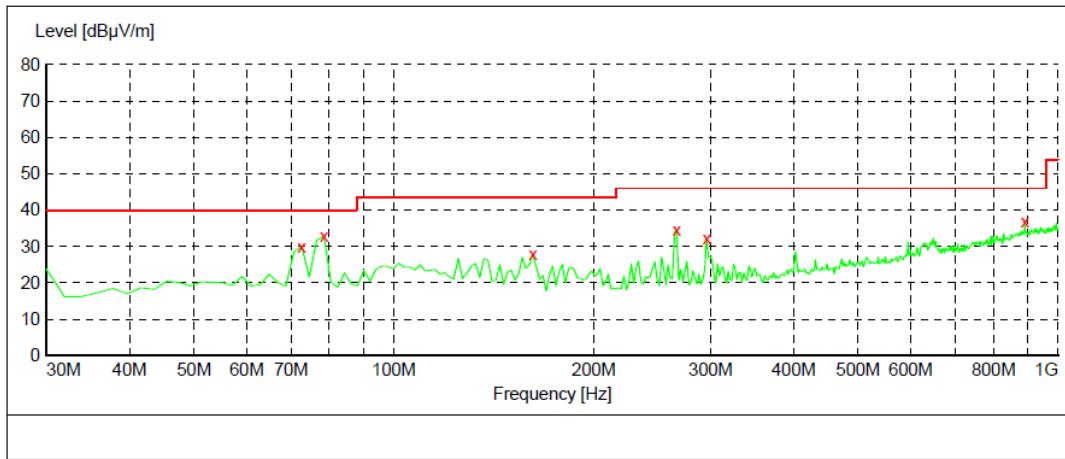
Please refer to the clause 4.1

TEST RESULTS

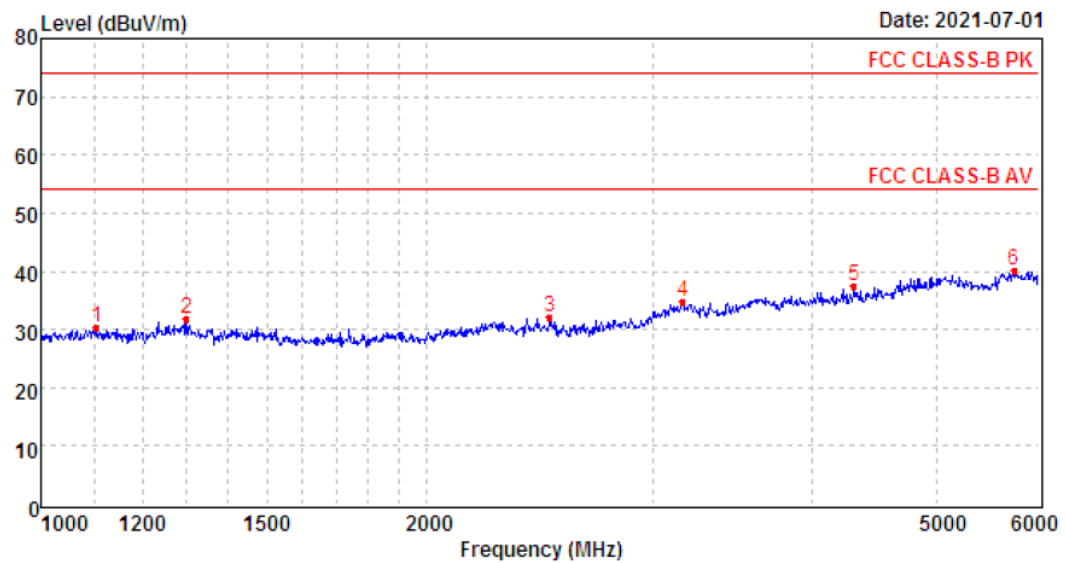
Passed **Not Applicable**

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

Polarization: Horizontal

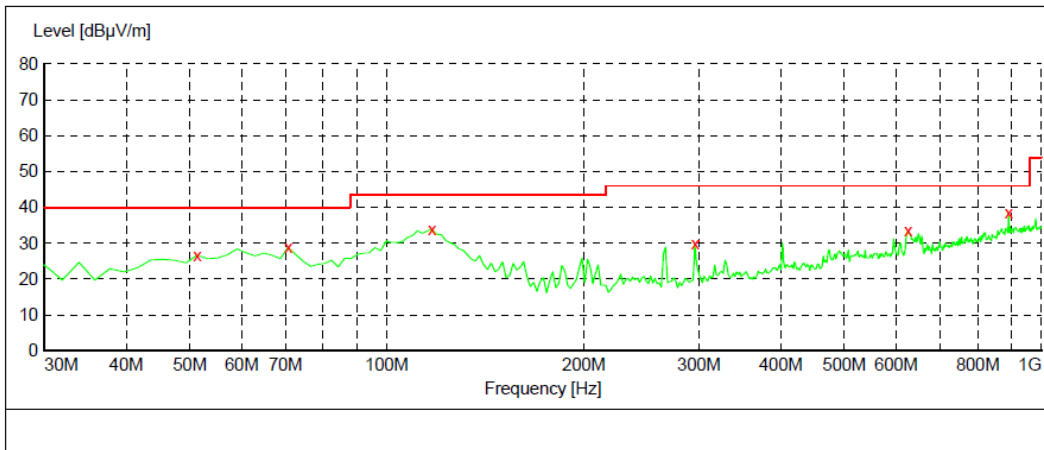


Frequency MHz	Level dBuV/m	Transd dB	Limit dBuV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
72.680000	30.00	-14.0	40.0	10.0	QP	300.0	274.00	HORIZONTAL
78.500000	32.80	-15.7	40.0	7.2	QP	300.0	94.00	HORIZONTAL
161.920000	27.90	-13.3	43.5	15.6	QP	100.0	244.00	HORIZONTAL
266.680000	34.50	-8.0	46.0	11.5	QP	100.0	207.00	HORIZONTAL
295.780000	32.20	-7.2	46.0	13.8	QP	100.0	302.00	HORIZONTAL
891.360000	37.00	7.0	46.0	9.0	QP	300.0	239.00	HORIZONTAL

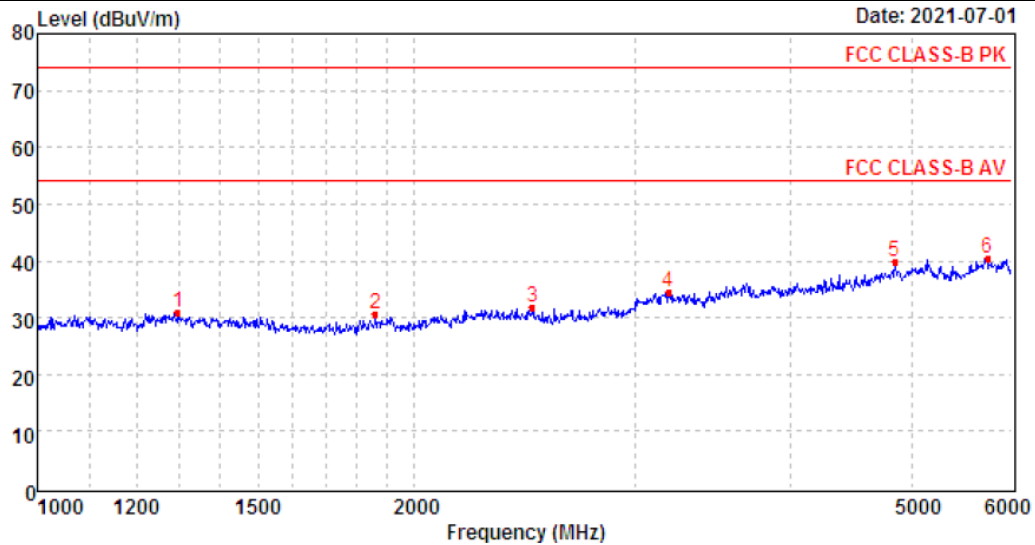


Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	1105.55	36.94	25.40	4.98	36.88	30.44	74.00	-43.56	Peak
2	1299.00	36.64	26.00	5.42	36.29	31.77	74.00	-42.23	Peak
3	2493.77	34.02	27.41	7.81	37.26	31.98	74.00	-42.02	Peak
4	3164.84	34.26	28.97	8.69	37.13	34.79	74.00	-39.21	Peak
5	4307.18	32.39	30.33	10.74	36.11	37.35	74.00	-36.65	Peak
6	5737.17	30.55	31.90	12.40	34.84	40.01	74.00	-33.99	Peak

Polarization: Vertical



Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
51.340000	26.70	-8.8	40.0	13.3	QP	100.0	0.00	VERTICAL
70.740000	28.90	-13.3	40.0	11.1	QP	100.0	6.00	VERTICAL
117.300000	34.00	-12.1	43.5	9.5	QP	100.0	268.00	VERTICAL
295.780000	30.00	-7.2	46.0	16.0	QP	100.0	234.00	VERTICAL
625.580000	33.40	1.6	46.0	12.6	QP	100.0	207.00	VERTICAL
891.360000	38.50	7.0	46.0	7.5	QP	100.0	207.00	VERTICAL



Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	1294.36	35.88	25.99	5.40	36.31	30.96	74.00	-43.04	Peak
2	1862.17	35.42	25.65	6.55	36.97	30.65	74.00	-43.35	Peak
3	2484.85	33.89	27.43	7.80	37.26	31.86	74.00	-42.14	Peak
4	3193.32	33.74	28.91	8.72	37.01	34.36	74.00	-39.64	Peak
5	4839.20	31.99	31.40	11.51	35.19	39.71	74.00	-34.29	Peak
6	5737.17	31.00	31.90	12.40	34.84	40.46	74.00	-33.54	Peak

6. TEST SETUP PHOTOS OF THE EUT

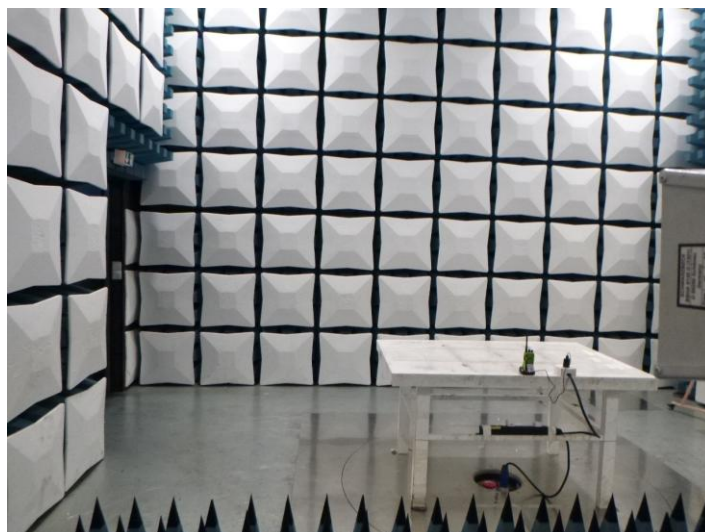
Conducted Emissions (AC Mains)



Radiated Emissions (30MHz-1GHz)



Radiated Emissions (Above 1GHz)



7. EXTERNAL AND INTERNAL PHOTOS OF THE EUT

Reference to the test report No.: CHTEW21080032

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