




TEST REPORT

Report No......: **CHTEW20110052** Report Verification: 
Project No......: **SHT2011031401EW**
FCC ID.....: **2ASNSH777**
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.....: H777
Listed Model(s).....: -
Standard: **FCC CFR Title 47 Part 15 Subpart B**
Date of receipt of test sample.....: Nov.09, 2020
Date of testing.....: Nov.09, 2020- Nov.12, 2020
Date of issue.....: Nov.12, 2020
Result.....: **PASS**

Compiled 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,
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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	2020-11-12	Original

2. TEST DESCRIPTION

Test Item	Section in CFR 47	Result	Test Engineer
Conducted Emissions	15.107(a)	Pass	Jianquan Wu
Radiated Emissions	15.109(a)	Pass	Quanhai Deng
Antenna conducted power for reciver	15.111	Pass	Zijian Li
Scanning receivers and frequency converters used with scanning receivers	15.121(b)	N/A #1	-

Note:

1. The measurement uncertainty is not included in the test result.
2. #1, The scanning receive frequency range of this EUT is from 462.5500MHz to 462.7250MHz, not in the cellular radiotelephone service frequency bands, so this item is not applicable.

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:	H777
Listed Model(s)	-
Power supply:	DC 3.7 V from Battery
Hardware version:	BF-889-A21_V1.3
Software version:	1.0.1
Ancillary unit	
Adapter information:	Model: DSA-5PF07-05 FUS 0500100 Input: 100-240Va.c., 50/60Hz 0.2A Output: 5VD.C., 1A

3.3. Radio Specification Description

Transmit frequency:#2	462.5625, 462.5875, 462.6125, 462.6375, 462.6625, 462.6875, 462.7125 MHz 462.5500, 462.5750, 462.6000, 462.6250, 462.6500, 462.6750, 462.7000, 462.7250MHz
Receive Frequency Range:#3	462.5500MHz ~ 462.7250MHz
Modulation Type:	FM
Antenna Type:	Integral
Antenna Gain:	2.3dBi

Note:

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

#3: 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	
Qualifications	Type	Accreditation Number
	CNAS	L1225
	A2LA	3902.01
	FCC	762235
	Canada	5377A

4. TEST CONFIGURATION

4.1. EUT operation mode

Test mode	Describe
Charging mode	Keep the EUT in charging mode, but the EUT shut down.
Scan receive mode	Scanning stopped, receiving signal at 462.6375MHz

Test item	Test mode
Conducted emissions	Charging mode
Radiated emissions	Charging mode, scan receive mode
Antenna conducted power for receiver	scan receive mode
Scanning receivers and frequency converters used with scanning receivers	scan receive mode

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	2019/11/14	2020/11/13
●	RF Connection Cable	HUBER+SUHNER	HTWE0062-01	N/A	N/A	2020/05/27	2021/05/26
●	RF Connection Cable	HUBER+SUHNER	HTWE0062-02	SUCOFLEX104	501184/4	2020/05/27	2021/05/26
●	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	2018/09/30	2021/09/29
●	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	2020/05/23	2021/05/22
●	RF Connection Cable	HUBER+SUHNER	HTWE0121-01	RE-7-FH	N/A	2020/05/10	2021/05/09
●	Test Software	Audix	N/A	E3	N/A	N/A	N/A

5. TEST CONDITIONS AND RESULTS

5.1. Conducted Emissions

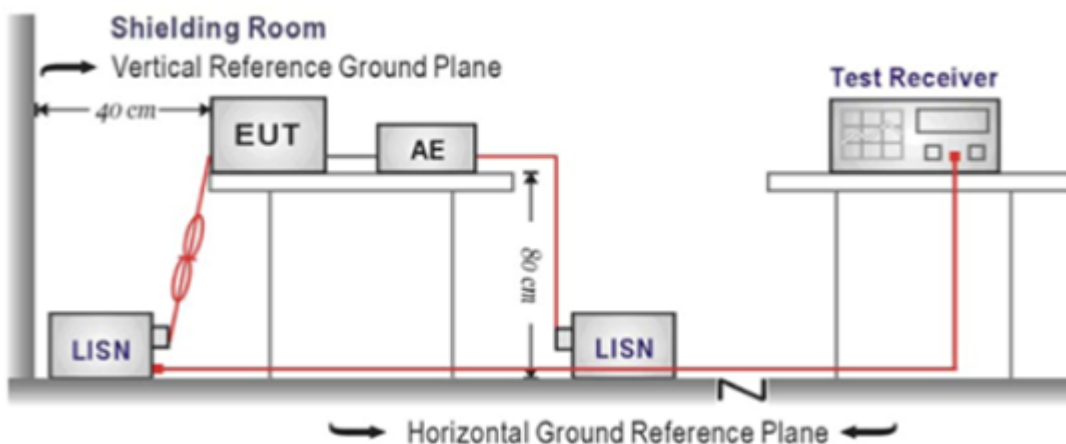
LIMIT

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:

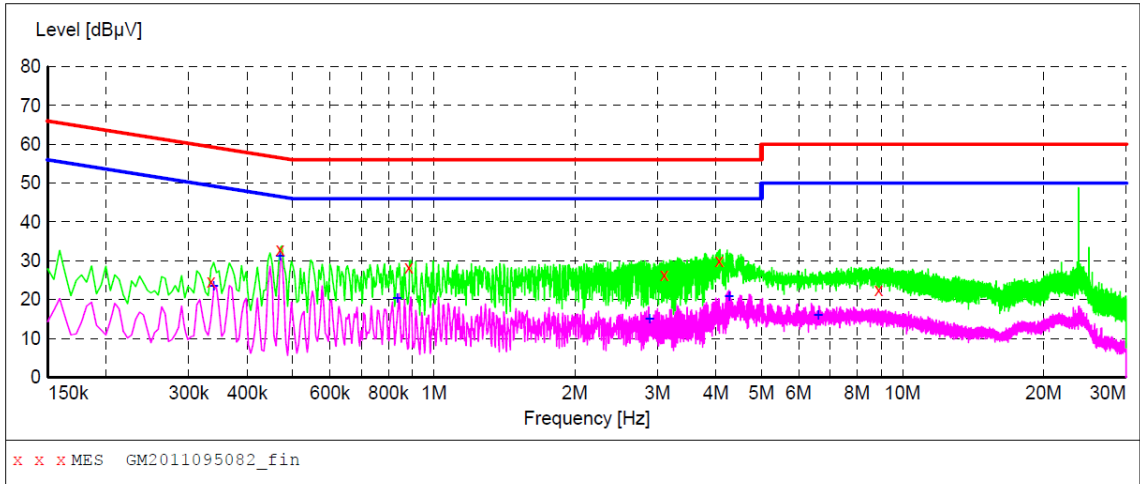
Please refer to the clause 4.1

TEST RESULTS

Passed Not Applicable

Test Line:

L



MEASUREMENT RESULT: "GM2011095082_fin"

11/9/2020 7:04PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.334500	24.70	10.1	59	34.6	QP	L1	GND
0.469500	32.80	10.1	57	23.7	QP	L1	GND
0.883500	28.40	10.1	56	27.6	QP	L1	GND
3.097500	26.30	10.2	56	29.7	QP	L1	GND
4.056000	29.90	10.2	56	26.1	QP	L1	GND
8.884500	22.60	10.3	60	37.4	QP	L1	GND

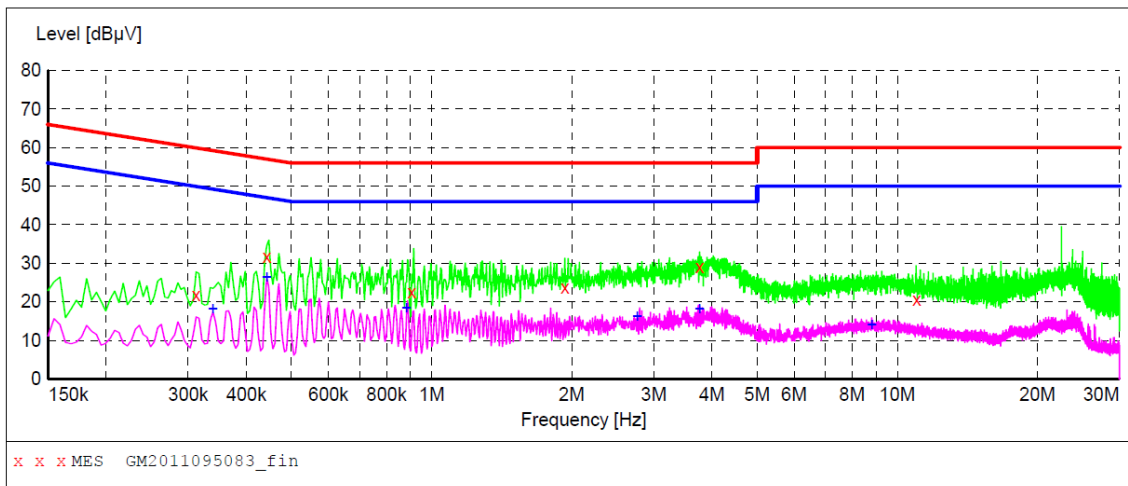
MEASUREMENT RESULT: "GM2011095082_fin2"

11/9/2020 7:04PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.339000	23.40	10.1	49	25.8	AV	L1	GND
0.469500	31.30	10.1	47	15.2	AV	L1	GND
0.834000	20.30	10.1	46	25.7	AV	L1	GND
2.886000	15.10	10.2	46	30.9	AV	L1	GND
4.263000	20.80	10.2	46	25.2	AV	L1	GND
6.607500	16.00	10.2	50	34.0	AV	L1	GND

Test Line:

N



MEASUREMENT RESULT: "GM2011095083_fin"

11/9/2020 7:07PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.312000	21.80	10.1	60	38.1	QP	N	GND
0.442500	31.80	10.1	57	25.2	QP	N	GND
0.906000	22.50	10.1	56	33.5	QP	N	GND
1.932000	23.70	10.1	56	32.3	QP	N	GND
3.759000	29.00	10.2	56	27.0	QP	N	GND
10.995000	20.50	10.4	60	39.5	QP	N	GND

MEASUREMENT RESULT: "GM2011095083_fin2"

11/9/2020 7:07PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.339000	18.20	10.1	49	31.0	AV	N	GND
0.442500	26.40	10.1	47	20.6	AV	N	GND
0.883500	18.50	10.1	46	27.5	AV	N	GND
2.764500	16.30	10.2	46	29.7	AV	N	GND
3.759000	18.10	10.2	46	27.9	AV	N	GND
8.803500	14.00	10.3	50	36.0	AV	N	GND

5.2. Radiated Emissions

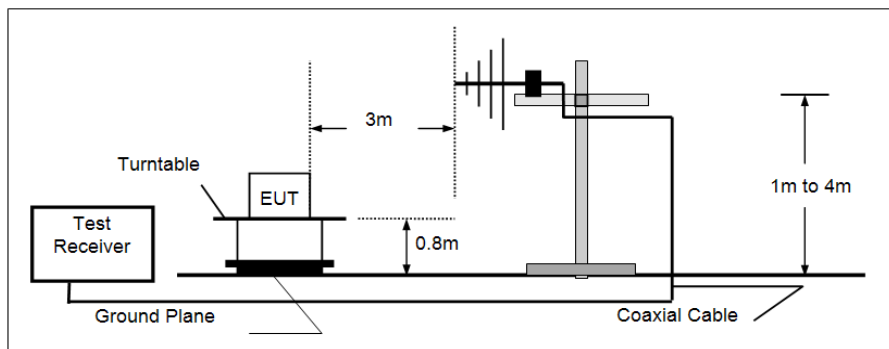
LIMIT

FCC CFR Title 47 Part 15 Subpart B Section 15.109

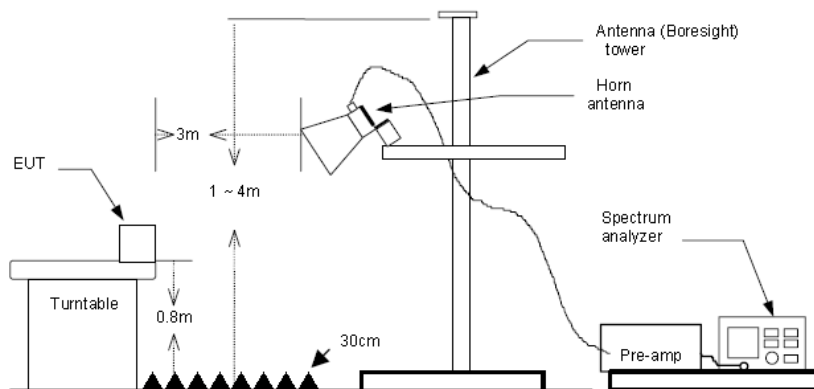
Frequency	Limit (dBuV/m @3m)	Value
30MHz-88MHz	40.00	Quasi-peak
88MHz-216MHz	43.50	Quasi-peak
216MHz-960MHz	46.00	Quasi-peak
960MHz-1GHz	54.00	Quasi-peak
Above 1GHz	54.00	Average
	74.00	Peak

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

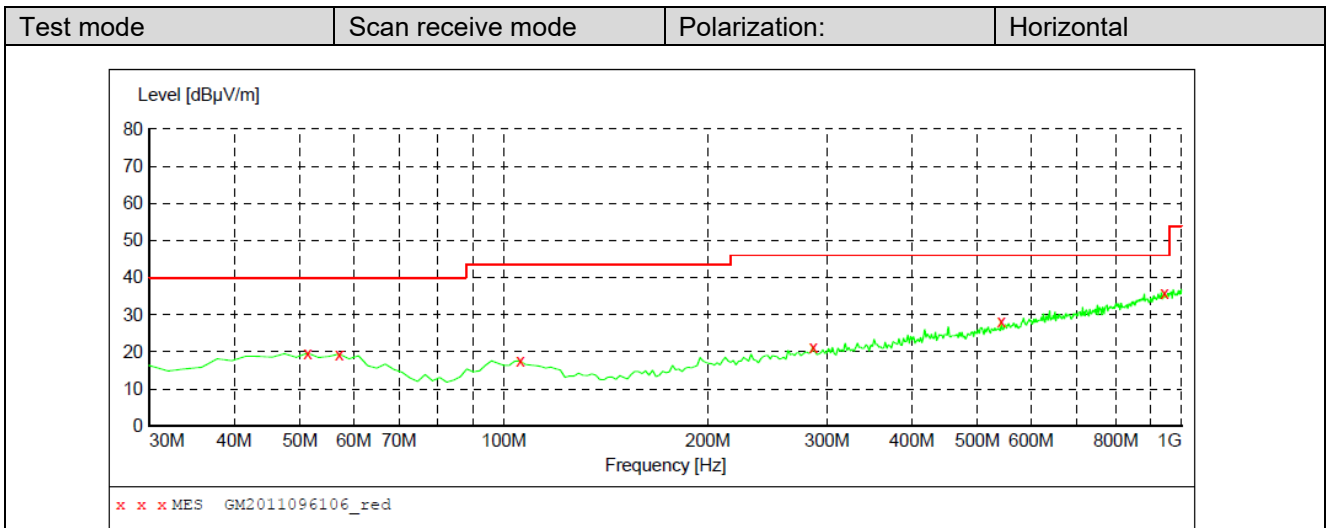
TEST MODE:

Please refer to the clause 4.1

TEST RESULTS

Passed **Not Applicable**

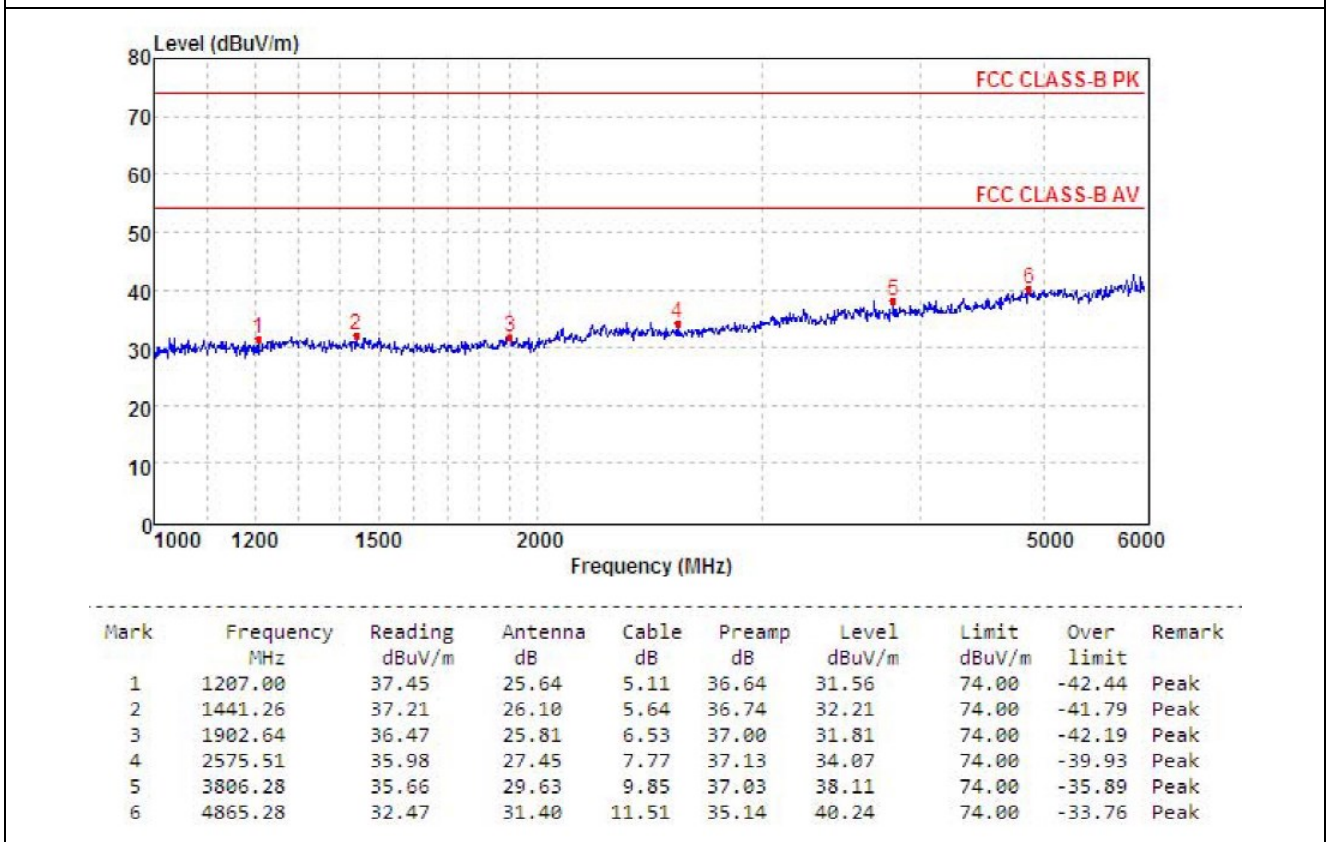
Note: Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor
The emission levels of frequency above 6GHz are very lower than limit and not show in test report.

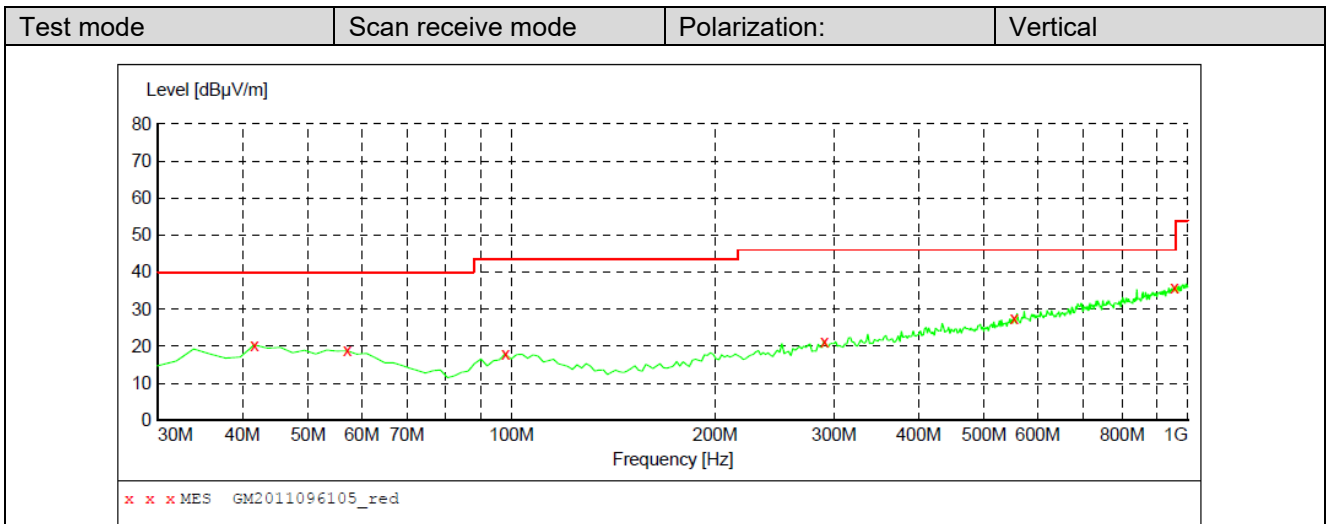


MEASUREMENT RESULT: "GM2011096106_red"

11/9/2020 10:41PM

Frequency MHz	Level dBuV/m	Transd dB	Limit dBuV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
51.340000	19.70	-8.6	40.0	20.3	QP	100.0	255.00	HORIZONTAL
57.160000	19.40	-8.5	40.0	20.6	QP	100.0	0.00	HORIZONTAL
105.660000	17.60	-10.1	43.5	25.9	QP	100.0	39.00	HORIZONTAL
286.080000	21.40	-6.7	46.0	24.6	QP	100.0	291.00	HORIZONTAL
542.160000	28.20	0.1	46.0	17.8	QP	100.0	28.00	HORIZONTAL
943.740000	36.00	8.6	46.0	10.0	QP	100.0	303.00	HORIZONTAL

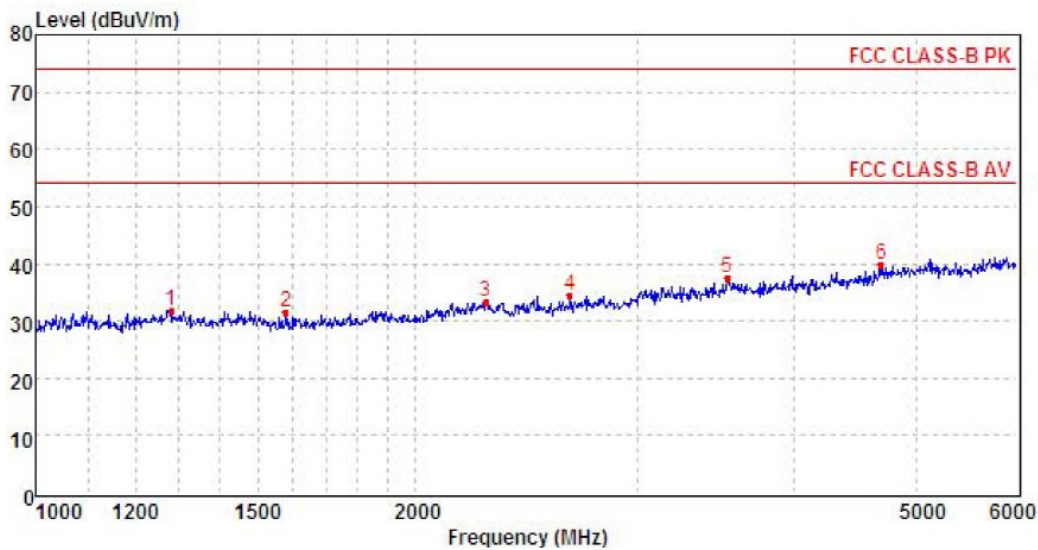




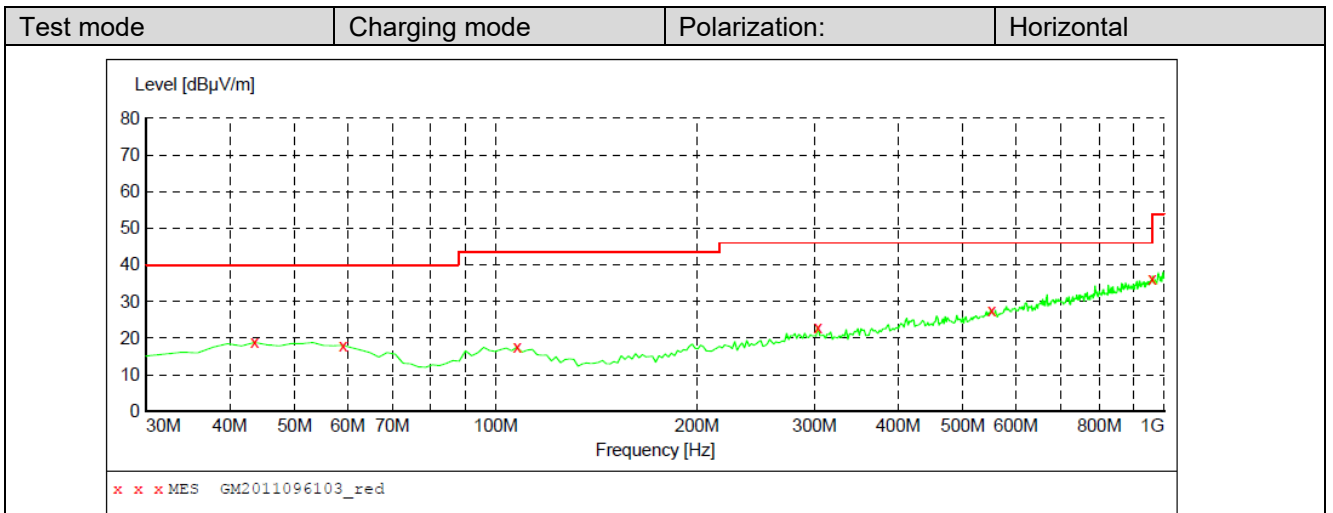
MEASUREMENT RESULT: "GM2011096105_red"

11/9/2020 10:39PM

Frequency MHz	Level dBuV/m	Transd dB	Limit dBuV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
41.640000	20.40	-9.0	40.0	19.6	QP	100.0	247.00	VERTICAL
57.160000	18.80	-8.5	40.0	21.2	QP	100.0	274.00	VERTICAL
97.900000	17.90	-10.2	43.5	25.6	QP	100.0	139.00	VERTICAL
289.960000	21.40	-6.5	46.0	24.6	QP	100.0	212.00	VERTICAL
553.800000	27.60	0.6	46.0	18.4	QP	100.0	236.00	VERTICAL
955.380000	35.80	8.8	46.0	10.2	QP	100.0	332.00	VERTICAL



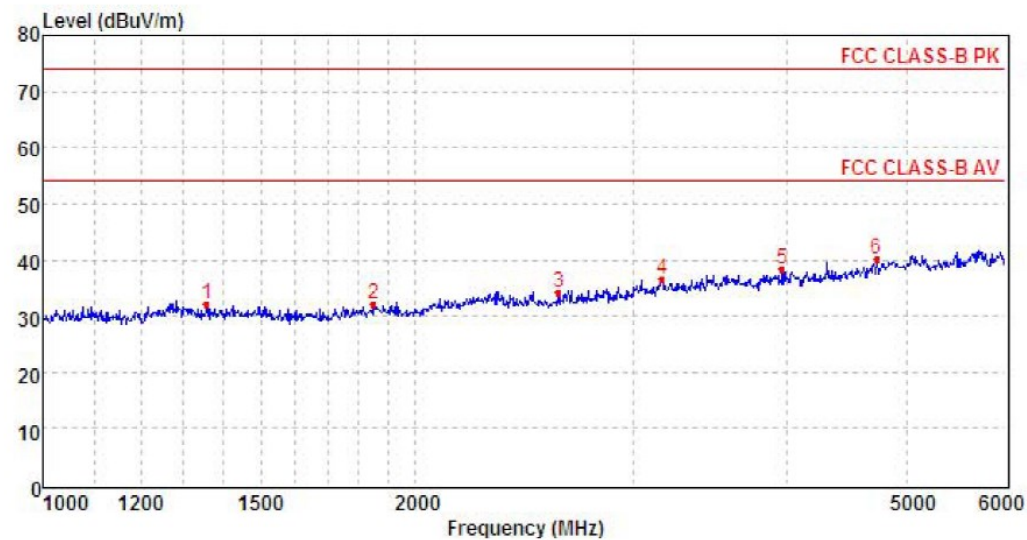
Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	1280.52	37.00	25.96	5.36	36.37	31.95	74.00	-42.05	Peak
2	1579.17	37.13	25.44	5.91	37.07	31.41	74.00	-42.59	Peak
3	2276.00	35.39	28.05	7.24	37.48	33.20	74.00	-40.80	Peak
4	2655.17	35.85	27.73	7.93	37.01	34.50	74.00	-39.50	Peak
5	3536.69	35.11	29.25	9.72	36.76	37.32	74.00	-36.68	Peak
6	4685.61	33.27	31.34	11.08	35.82	39.87	74.00	-34.13	Peak



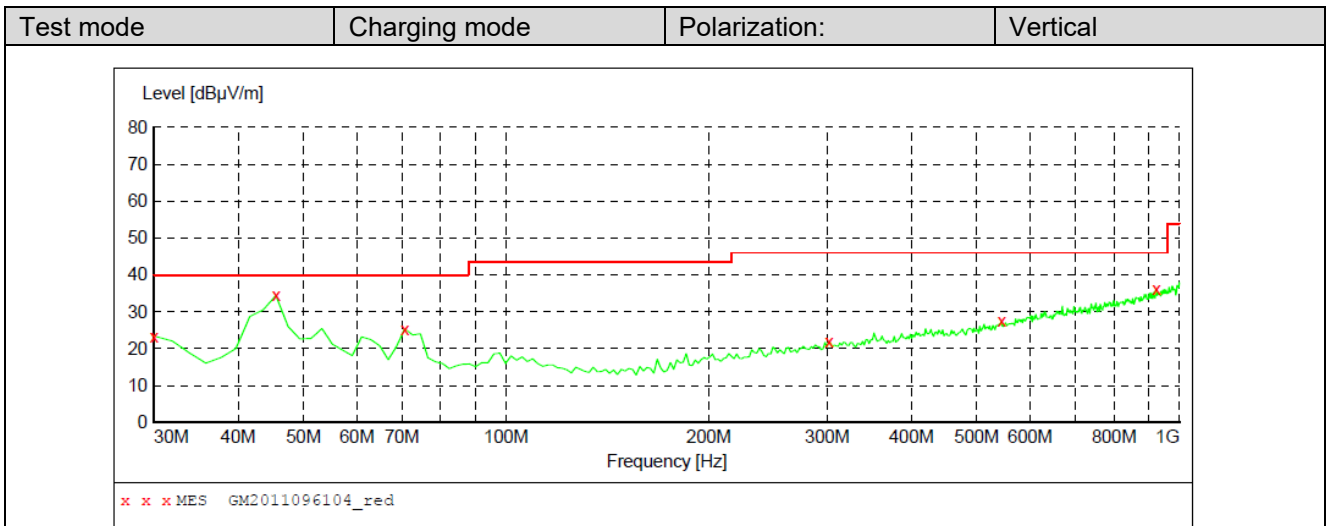
MEASUREMENT RESULT: "GM2011096103_red"

11/9/2020 10:31PM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
43.580000	18.80	-8.6	40.0	21.2	QP	100.0	355.00	HORIZONTAL
59.100000	18.00	-8.9	40.0	22.0	QP	100.0	114.00	HORIZONTAL
107.600000	17.60	-10.3	43.5	25.9	QP	100.0	0.00	HORIZONTAL
303.540000	23.00	-6.2	46.0	23.0	QP	100.0	151.00	HORIZONTAL
551.860000	27.60	0.5	46.0	18.4	QP	100.0	78.00	HORIZONTAL
959.260000	36.10	8.9	46.0	9.9	QP	100.0	320.00	HORIZONTAL



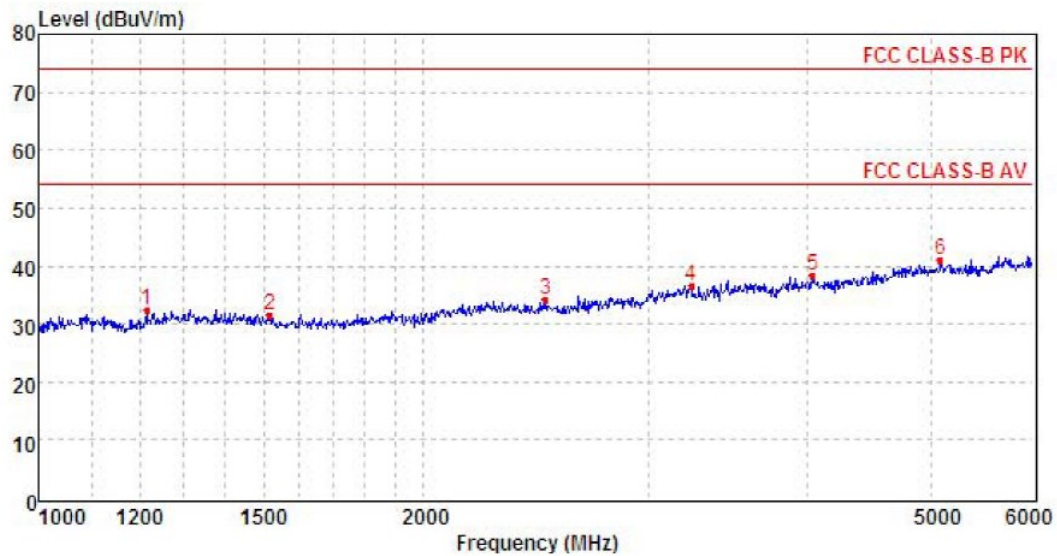
Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	1356.08	36.86	26.28	5.49	36.44	32.19	74.00	-41.81	Peak
2	1852.18	37.02	25.61	6.56	36.99	32.20	74.00	-41.80	Peak
3	2612.70	35.97	27.55	7.80	37.05	34.27	74.00	-39.73	Peak
4	3164.84	35.93	28.97	8.69	37.13	36.46	74.00	-37.54	Peak
5	3959.32	34.80	29.90	10.09	36.48	38.31	74.00	-35.69	Peak
6	4719.32	33.12	31.40	11.20	35.65	40.07	74.00	-33.93	Peak



MEASUREMENT RESULT: "GM2011096104_red"

11/9/2020 10:34PM

Frequency MHz	Level dBuV/m	Transd dB	Limit dBuV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
30.000000	23.40	-11.8	40.0	16.6	QP	100.0	321.00	VERTICAL
45.520000	34.40	-8.2	40.0	5.6	QP	100.0	0.00	VERTICAL
70.740000	25.40	-12.9	40.0	14.6	QP	100.0	174.00	VERTICAL
301.600000	21.80	-6.2	46.0	24.2	QP	100.0	89.00	VERTICAL
544.100000	27.40	0.2	46.0	18.6	QP	100.0	220.00	VERTICAL
924.340000	36.30	8.3	46.0	9.7	QP	100.0	331.00	VERTICAL



Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	1215.68	38.26	25.70	5.14	36.63	32.47	74.00	-41.53	Peak
2	1518.13	36.81	25.75	5.80	36.89	31.47	74.00	-42.53	Peak
3	2493.77	36.26	27.41	7.81	37.26	34.22	74.00	-39.78	Peak
4	3239.42	35.97	28.74	8.85	36.88	36.68	74.00	-37.32	Peak
5	4038.13	34.56	29.98	10.19	36.30	38.43	74.00	-35.57	Peak
6	5079.06	32.97	32.20	11.46	35.44	41.19	74.00	-32.81	Peak

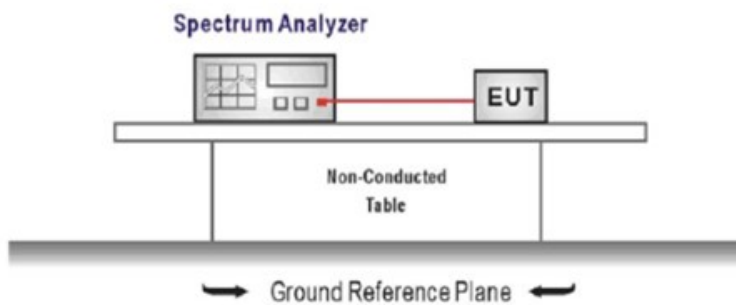
5.3. Antenna conducted power for receiver

LIMIT

FCC CFR Title 47 Part 15 Subpart B Section 15.111:

Frequency range	Limit
9KHz to 3GHz	2.0 nW (-57dBm)

TEST CONFIGURATION



TEST PROCEDURE

1. The receiver antenna terminal connected to a spectrum analyzer.
2. Receiver set as follow:

Frequency range	RBW (kHz)	VBW (kHz)
9 kHz ~ 150 kHz	1	3
150 kHz ~ 30 MHz	10	30
30 MHz ~ 1000 MHz	100	300
1000 MHz ~ 3000 MHz	1000	3000

TEST MODE:

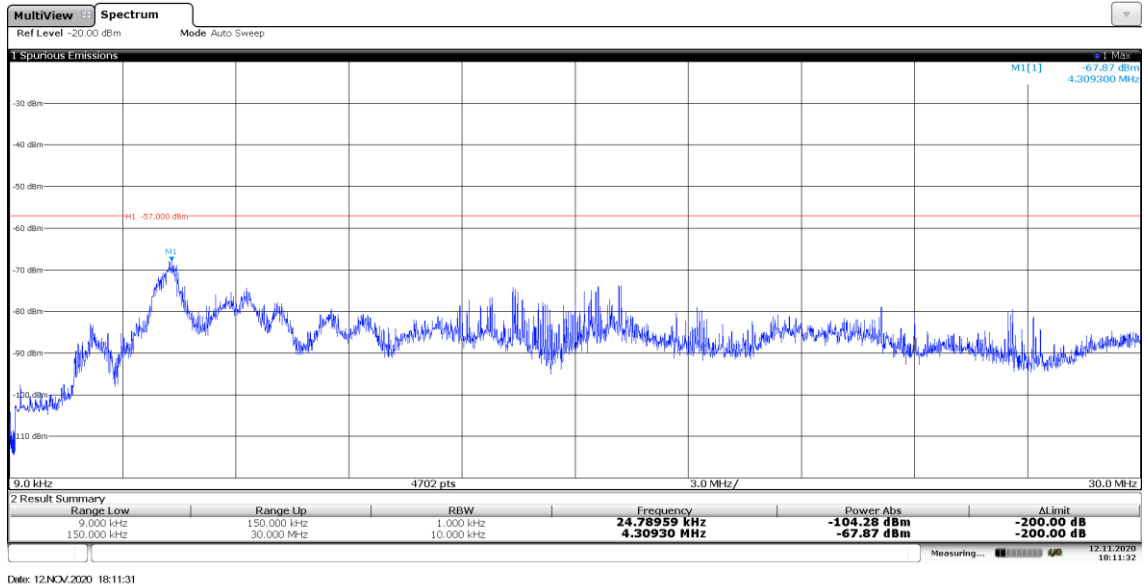
Please refer to the clause 4.1

TEST RESULTS

Passed Not Applicable

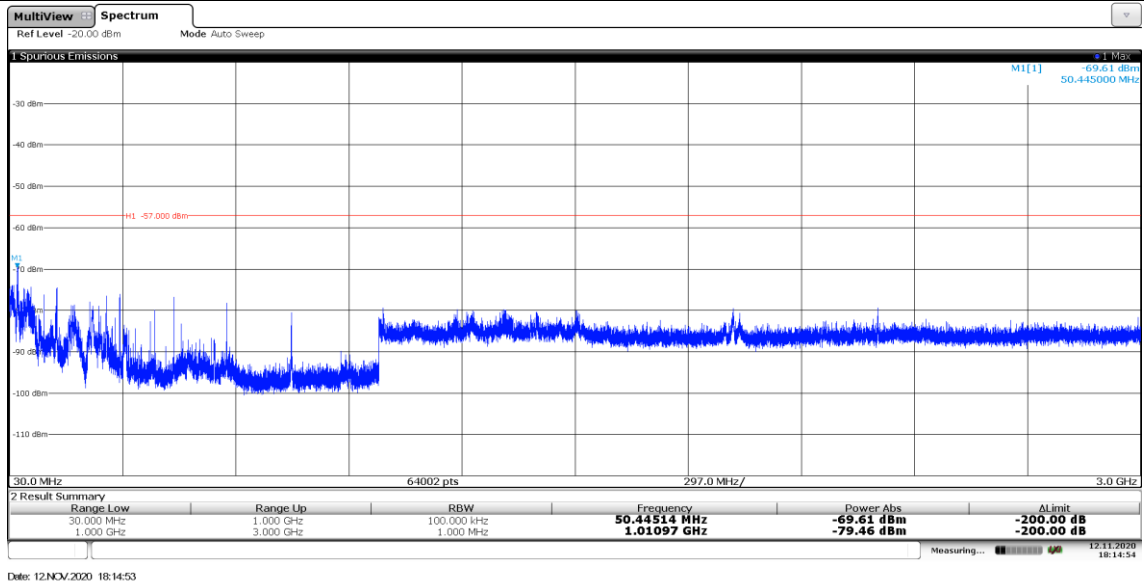
Frequency range

9 kHz ~ 30 MHz



Frequency range

30 MHz ~ 3000 MHz

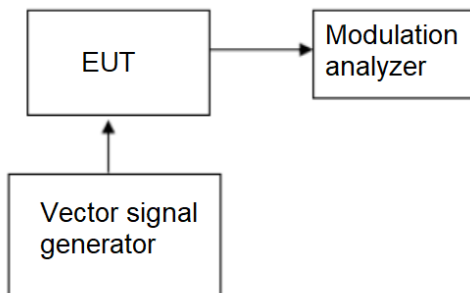


5.4. Sanning receivers and frequency converters used with sanning receivers

LIMIT

scanning receivers shall reject any signals from the Cellular Radiotelephone Service frequency bands that are 38 dB or lower based upon a 12 dB SINAD measurement, which is considered the threshold where a signal can be clearly discerned from any interference that may be present

TEST CONFIGURATION



TEST PROCEDURE

The RF level of vector signal generator will be adjusted to produce GSM signals at the receiver antenna port of the EUT.

TEST MODE:

Please refer to clause 4.1

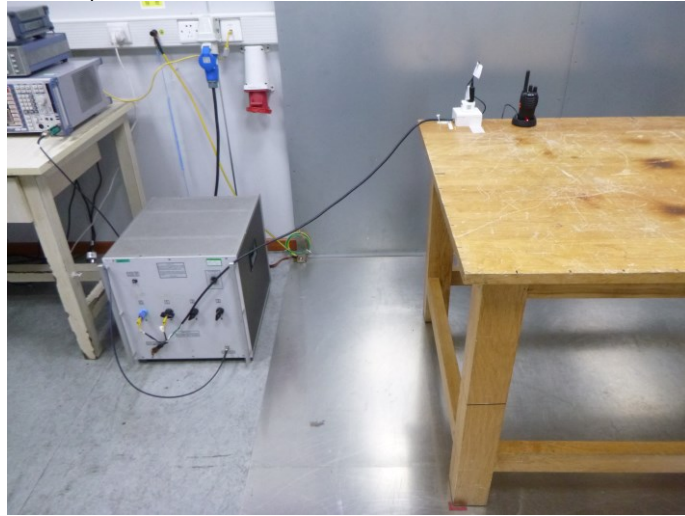
TEST RESULTS

Passed Not Applicable

The scanning receive frequency range of this EUT is from 462.5500MHz to 462.7250MHz, not in the cellular radiotelephone service frequency bands, so this item is not applicable.

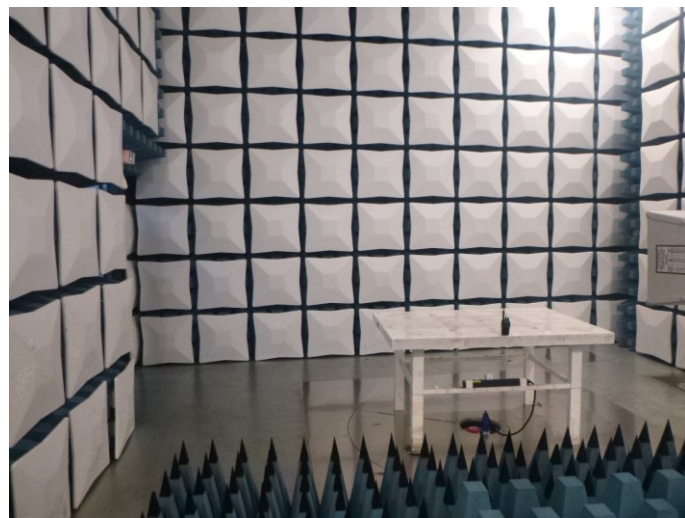
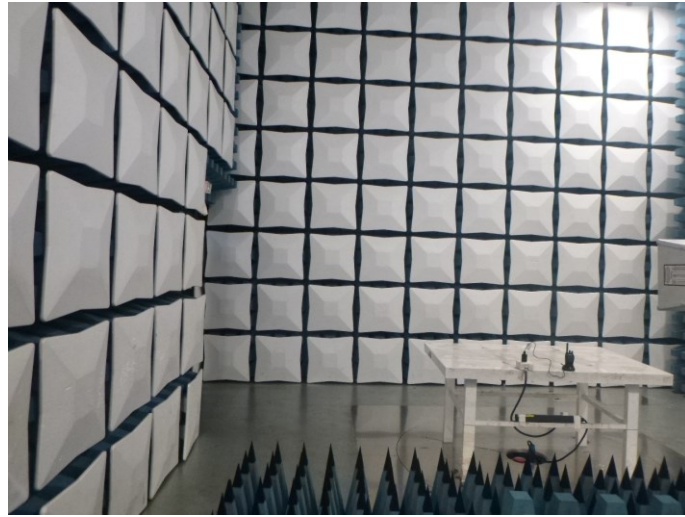
6. TEST SETUP PHOTOS OF THE EUT

Conducted Emissions (AC Mains)



Radiated Emissions





7. EXTERNAL AND INTERNAL PHOTOS OF THE EUT

Reference to the test report No.: CHTEW20110051

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