




TEST REPORT

Report No. : CHTEW20110167 Report Verification: 

Project No. : SHT2010072302EW

FCC ID : 2AX2N-LX-XG-R

Applicant's name : Shenzhen Zhongdianhexin Technology Co., Ltd.

Address : 2nd Floor, Zhongkong Building, Hengfeng Industrial Town,
No.739 Zhoushi Road, Bao'an District, Shenzhen

Test item description : Dog Training Collar - Receiver

Trade Mark : -

Model/Type reference : LX-XG-R

Listed Model(s) : -

Standard : FCC CFR Title 47 Part 15 Subpart C Section 15.231

Date of receipt of test sample : Oct.28, 2020

Date of testing : Oct.28, 2020- Nov.26, 2020

Date of issue : Nov.27, 2020

Result : PASS

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Testing Laboratory Name : Shenzhen Huatongwei International Inspection Co., Ltd.

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1. TEST STANDARDS AND REPORT VERSION

1.1. Test Standards

The tests were performed according to following standards:

- [FCC Rules Part 15.231\(a\)](#): Periodic operation in the band 40.66–40.70 MHz and above 70 MHz.
- [ANSI C63.10:2013](#): American National Standard for Testing Unlicensed Wireless Devices

1.2. Report version

Revision No.	Date of issue	Description
N/A	2020-11-27	Original

2. TEST DESCRIPTION

Report clause	Test Items	Standard Requirement	Result
5.1	Antenna Requirement	15.203	PASS
5.2	AC Conducted Emission	15.207	PASS
5.3	20dB Bandwidth	15.231(c)	PASS
5.4	99% Occupied Bandwidth	-	PASS*1
5.5	Transmission time	15.231(a)(1)	PASS
5.6	Duty cycle corrected factor	-	PASS*1
5.7	Field strength of the Fundamental signal	15.231(b)	PASS
5.8	Radiated Spurious Emission	15.231(b)/15.205/15.209	PASS

Note:

- The measurement uncertainty is not included in the test result.
- *1: No requirement on standard, only report these test data.

3. SUMMARY

3.1. Client Information

Applicant:	Shenzhen Zhongdianhexin Technology Co., Ltd.
Address:	2nd Floor, Zhongkong Building, Hengfeng Industrial Town, No.739 Zhoushi Road, Bao'an District, Shenzhen
Manufacturer:	Shenzhen Zhongdianhexin Technology Co., Ltd.
Address:	2nd Floor, Zhongkong Building, Hengfeng Industrial Town, No.739 Zhoushi Road, Bao'an District, Shenzhen

3.2. Product Description

Name of EUT:	Dog Training Collar - Receiver
Trade Mark:	-
Model No.:	LX-XG-R
Listed Model(s):	-
Power supply:	DC 3.7V
Battery Information:	3.7V 300mAh 1.11Wh
Hardware version:	V006
Software version:	V1.00

3.3. Radio Specification Description

Operation frequency:	433.301MHz
Modulation:	FSK
Channel number:	1
Antenna type:	Spring antenna
Antenna gain:	-1.5dBi

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. Test frequency list

According to section ANSI C63.10 section 5.6.1,

Measurements of unlicensed wireless devices shall be performed and, if required, reported for each band in which the EUT can be operated with the device operating at the number of frequencies in each band specified in Table 4

Table 4—Number of frequencies to be tested

Frequency range in which device operates	Number of frequencies	Location in frequency range of operation
1 MHz or less	1	Middle
1 MHz to 10 MHz	2	1 near top and 1 near bottom
More than 10 MHz	3	1 near top, 1 near middle, and 1 near bottom

So test frequency as follow:

Channel	Frequency (MHz)
CH_M	433.301MHz

4.2. Test mode

For RF test items
The engineering test program was provided and enabled to make EUT continuous transmit.
For AC power line conducted emissions:
The EUT was set to connect with large package sizes transmission.
For Radiated spurious emissions test item:
The engineering test program was provided and enabled to make EUT continuous transmit. The EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data Recorded in the report.

4.3. Support unit used in test configuration and system

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					

4.4. Testing environmental condition

Type	Requirement	Actual
Temperature:	15~35°C	25°C
Relative Humidity:	25~75%	50%
Air Pressure:	860~1060mbar	1000mbar

4.5. Measurement uncertainty

Test Item	Measurement Uncertainty
AC Conducted Emission (150kHz~30MHz)	3.02 dB
Radiated Emission (30MHz~1000MHz)	4.90 dB
Radiated Emissions (1GHz~25GHz)	4.96 dB
Peak Output Power	0.51 dB
Power Spectral Density	0.51 dB
Conducted Spurious Emission	0.51 dB
6dB Bandwidth	70 Hz

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=1.96$.

4.6. Equipment 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 X_142	N/A	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	N/A	2018/09/30	2021/09/29
●	EMI Test Receiver	R&S	HTWE0099	ESCI	100900	2020/10/19	2021/10/18
●	Loop Antenna	R&S	HTWE0170	HFH2-Z2	100020	2018/04/02	2021/04/01
●	Ultra-Broadband Antenna	SCHWARZBECK	HTWE0123	VULB9163	538	2018/04/04	2021/04/03
●	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	2020/05/27	2021/05/26
●	RF Connection Cable	HUBER+SUHNER	HTWE0062-02	SUCOFLEX 104	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 Horn Antenna	SCHWARZBECK	HTWE0103	BBHA9170	BBHA9170472	2018/10/11	2021/10/11
●	Pre-amplifier	CD	HTWE0071	PAP-0102	12004	2020/11/13	2021/11/12
●	Broadband Pre-amplifier	SCHWARZBECK	HTWE0201	BBV 9718	9718-248	2020/05/23	2021/05/22
●	RF Connection Cable	HUBER+SUHNER	HTWE0120-01	6m 18GHz S Serisa	N/A	2020/05/10	2021/05/09
●	RF Connection Cable	HUBER+SUHNER	HTWE0120-02	6m 3GHz RG Serisa	N/A	2020/05/10	2021/05/09
●	RF Connection Cable	HUBER+SUHNER	HTWE0120-03	6m 3GHz RG Serisa	N/A	2020/05/10	2021/05/09
●	RF Connection Cable	HUBER+SUHNER	HTWE0120-04	6m 3GHz RG Serisa	N/A	2020/05/10	2021/05/09
●	RF Connection Cable	HUBER+SUHNER	HTWE0121-01	6m 18GHz S Serisa	N/A	2020/05/10	2021/05/09
●	Test Software	Audix	N/A	E3	N/A	N/A	N/A

● RF Conducted Method						
Used	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	Signal and spectrum Analyzer	R&S	FSV40	100048	2020/10/19	2021/10/18
●	Spectrum Analyzer	Agilent	N9020A	MY50510187	2020/10/19	2021/10/18
●	Power Meter	Anritsu	ML249A	N/A	2020/10/19	2021/10/18
○	Radio communication tester	R&S	CMW500	137688-Lv	2020/10/19	2021/10/18

5. TEST CONDITIONS AND RESULTS

5.1. Antenna Requirement

Requirement

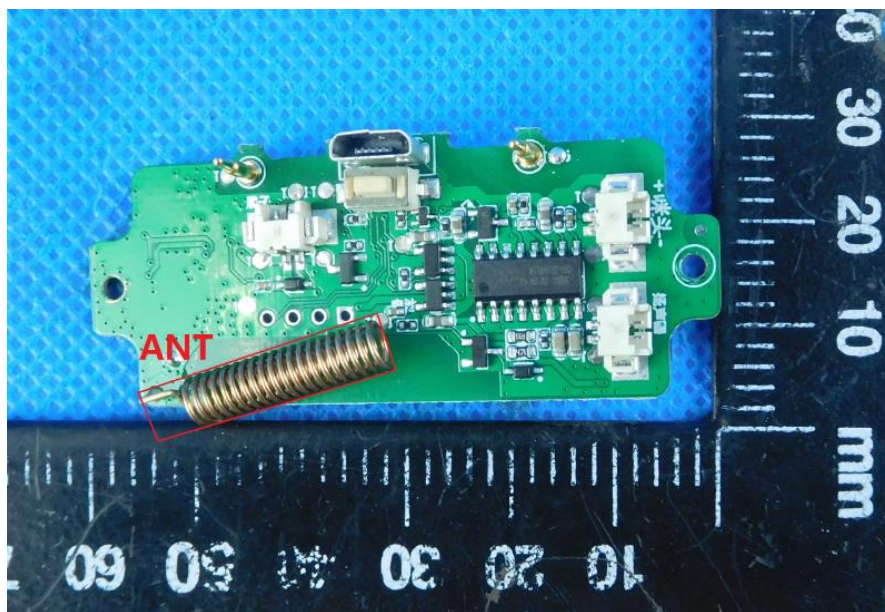
FCC CFR Title 47 Part 15 Subpart C Section 15.203:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

TEST RESULT

☒ **Passed** ☐ **Not Applicable**

The antenna type is a Spring antenna, the directional gain of the antenna less than 6 dBi, please refer to the below antenna photo.



5.2. AC Conducted Emission

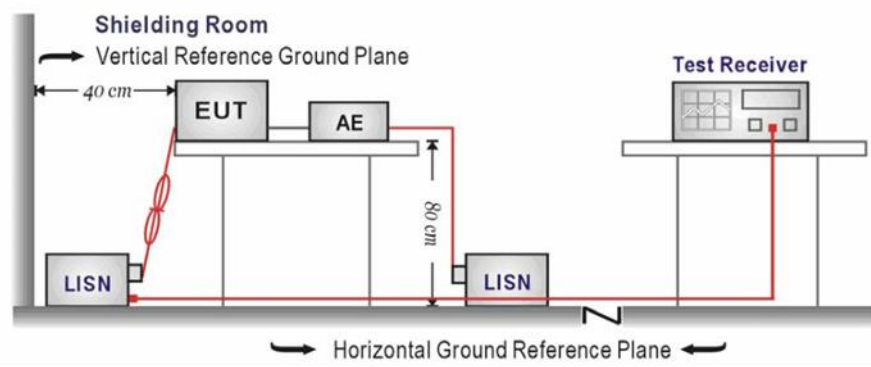
LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.207

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 C63.10 requirements.
2. The EUT was placed on a platform 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 impedances stabilization network (LISN). The LISN provides a 50 ohm /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:

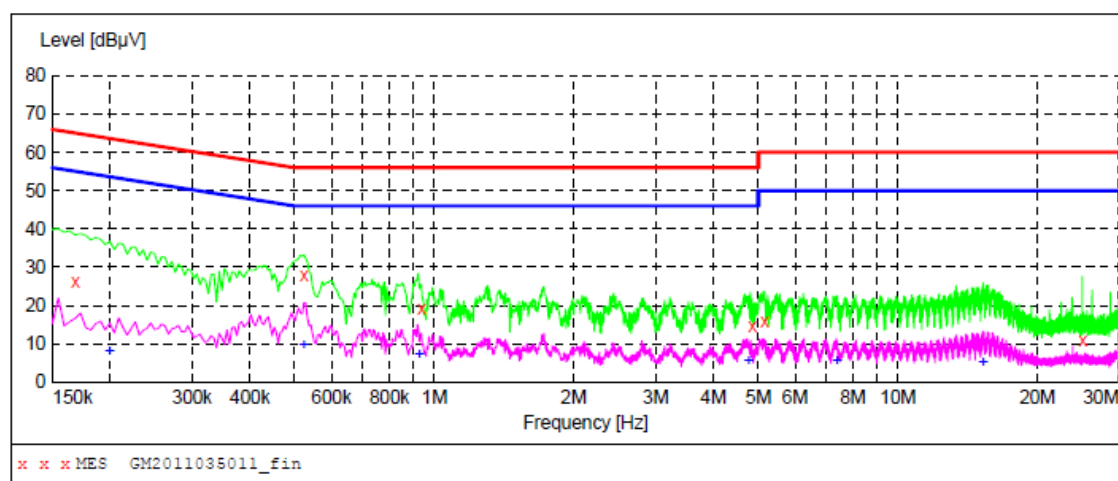
Please refer to the clause 4.2

TEST RESULT

☒ Passed ☐ Not Applicable

Test Line:

L

**MEASUREMENT RESULT: "GM2011035011_fin"**

11/3/2020 10:24AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.168000	26.20	10.0	65	38.9	QP	L1	GND
0.523500	27.70	10.1	56	28.3	QP	L1	GND
0.937500	19.10	10.1	56	36.9	QP	L1	GND
4.848000	14.70	10.2	56	41.3	QP	L1	GND
5.158500	15.90	10.2	60	44.1	QP	L1	GND
25.030500	10.70	10.6	60	49.3	QP	L1	GND

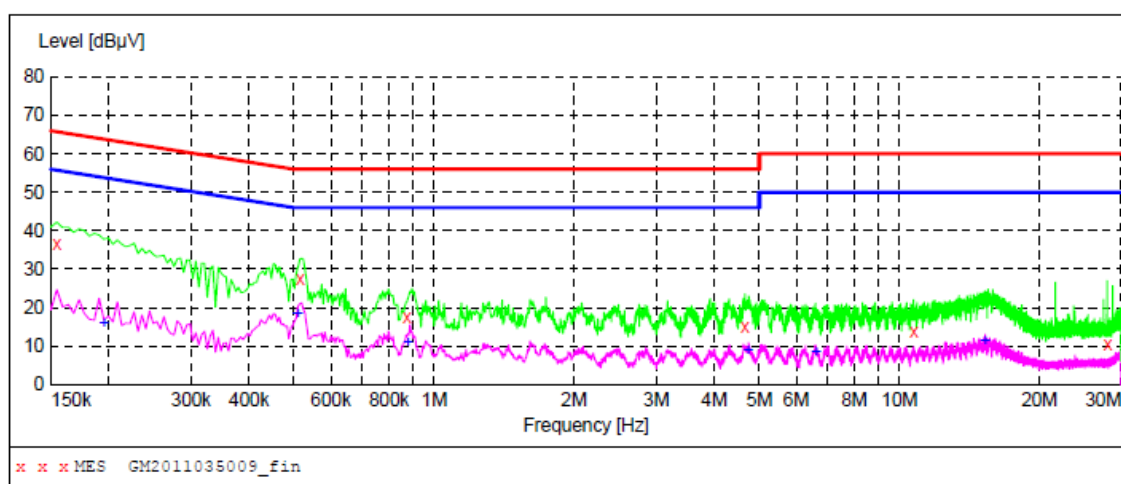
MEASUREMENT RESULT: "GM2011035011_fin2"

11/3/2020 10:24AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.199500	8.10	10.0	54	45.5	AV	L1	GND
0.523500	9.70	10.1	46	36.3	AV	L1	GND
0.928500	7.10	10.1	46	38.9	AV	L1	GND
4.762500	5.50	10.2	46	40.5	AV	L1	GND
7.390500	5.70	10.3	50	44.3	AV	L1	GND
15.256500	5.30	10.4	50	44.7	AV	L1	GND

Test Line:

N

**MEASUREMENT RESULT: "GM2011035009_fin"**

11/3/2020 10:18AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.154500	36.80	10.0	66	29.0	QP	N	GND
0.514500	27.30	10.1	56	28.7	QP	N	GND
0.874500	17.60	10.1	56	38.4	QP	N	GND
4.654500	15.20	10.2	56	40.8	QP	N	GND
10.747500	13.90	10.3	60	46.1	QP	N	GND
28.009500	10.30	10.6	60	49.7	QP	N	GND

MEASUREMENT RESULT: "GM2011035009_fin2"

11/3/2020 10:18AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.195000	15.90	10.0	54	37.9	AV	N	GND
0.510000	18.30	10.1	46	27.7	AV	N	GND
0.879000	10.90	10.1	46	35.1	AV	N	GND
4.722000	8.80	10.2	46	37.2	AV	N	GND
6.621000	8.30	10.2	50	41.7	AV	N	GND
15.279000	11.20	10.4	50	38.8	AV	N	GND

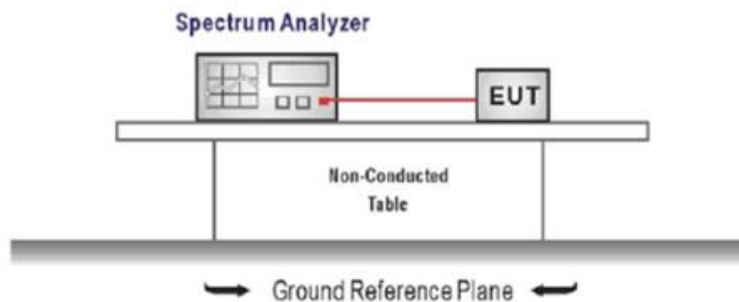
5.3. 20dB bandwidth

LIMIT

The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70MHz and below 900 MHz.

For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency.

TEST CONFIGURATION



TEST PROCEDURE

1. Connect the antenna port(s) to the spectrum analyzer input.
2. Configure the spectrum analyzer as shown below (enter all losses between the transmitter output and the spectrum analyzer).
Center Frequency = channel center frequency
Span= approximately 2 to 3 times the 20 dB bandwidth
RBW = 10 kHz, VBW $\geq 3 \times$ RBW
Sweep time= auto couple
Detector = Peak
Trace mode = max hold
3. Place the radio in continuous transmit mode, allow the trace to stabilize, view the transmitter waveform on the spectrum analyzer.
4. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 20 dB relative to the maximum level measured in the fundamental emission, and record the pertinent measurements.

TEST MODE:

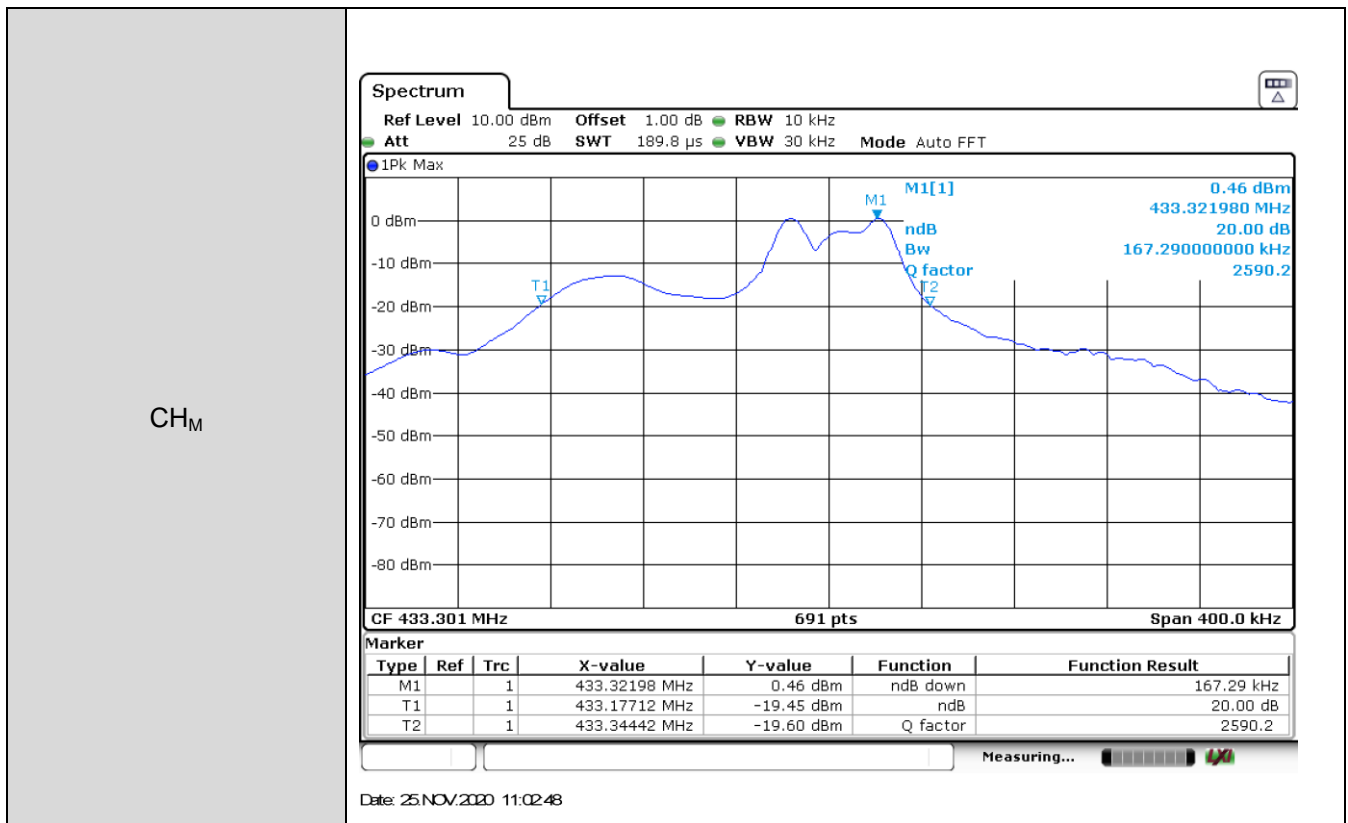
Please refer to the clause 4.2

TEST RESULT

☒ Passed ☐ Not Applicable

Test Channel	20dB Bandwidth (kHz)	Limit (kHz)	Result
CH _M	167.29	1083.2525	Pass

NOTE: Limit = $0.25\% \times \text{Center Frequency} - 0.25\% \times 433.301 \text{ MHz} = 1083.2525 \text{ KHz}$

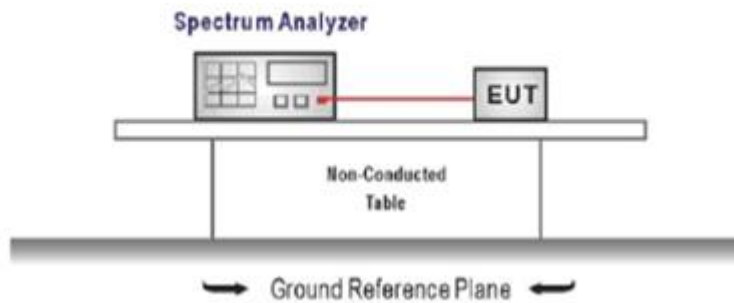


5.4. 99% Occupied Bandwidth

LIMIT

N/A

TEST CONFIGURATION



TEST PROCEDURE

1. Connect the antenna port(s) to the spectrum analyzer input.
2. Configure the spectrum analyzer as shown below (enter all losses between the transmitter output and the spectrum analyzer).
Center Frequency = channel center frequency
Span $\geq 1.5 \times \text{OBW}$
RBW = 1%~5%OBW
VBW $\geq 3 \times \text{RBW}$
Sweep time = auto couple
Detector = Peak
Trace mode = max hold
3. Place the radio in continuous transmit mode, allow the trace to stabilize, view the transmitter waveform on the spectrum analyzer.

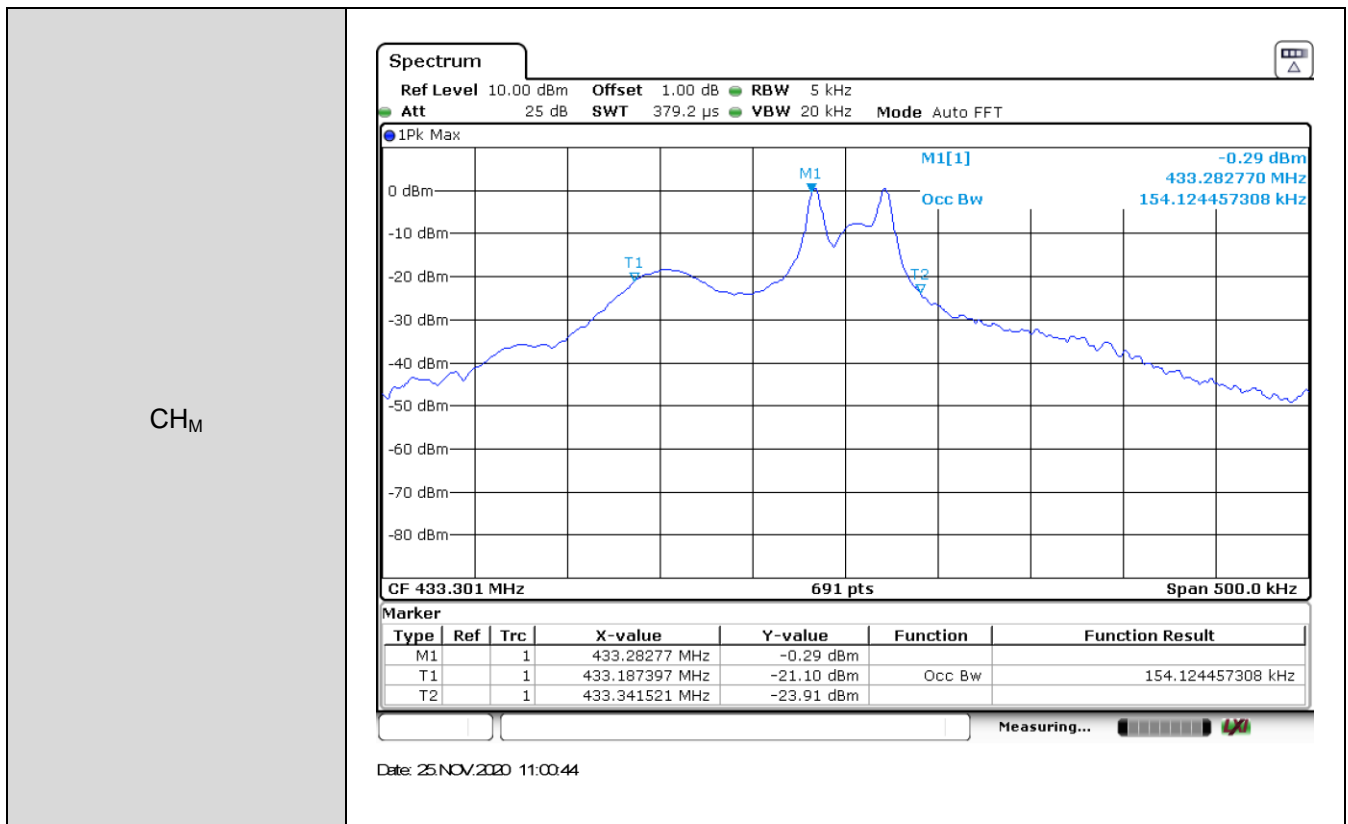
TEST MODE:

Please refer to the clause 4.2

TEST RESULT

☒ Passed ☐ Not Applicable

Test Channel	99% Occupied Bandwidth (kHz)	Limit (kHz)	Result
CH _M	154.1245	-	Pass

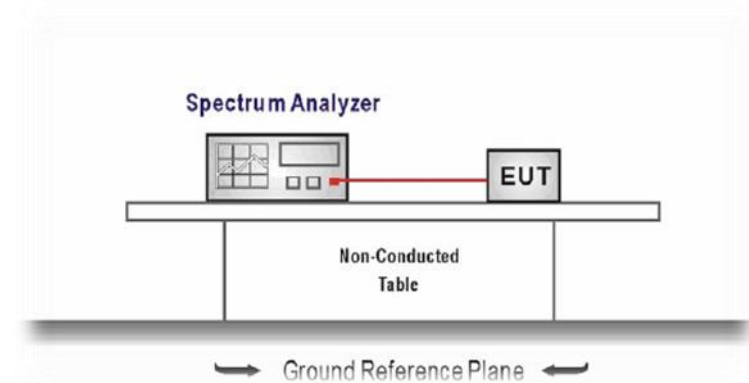


5.5. Transmission Time

LIMIT

A manually operated transmitter shall employ a switch that will auto-matically deactivate the transmitter within not more than 5 seconds of being released.

TEST CONFIGURATION



TEST PROCEDURE

1. The transmitter output was connected to the spectrum analyzer through an attenuator, the path loss was compensated to the results for each measurement.
2. Set to the maximum power setting and enable the EUT transmit continuously
3. Use the following spectrum analyzer settings:
Frequency=Center carrier frequency
RBW=100kHz, VBW=300kHz, Span= zero,
Sweep time= 10second, Detector function = peak, Trace = single
4. Measure and record the results in the test report.

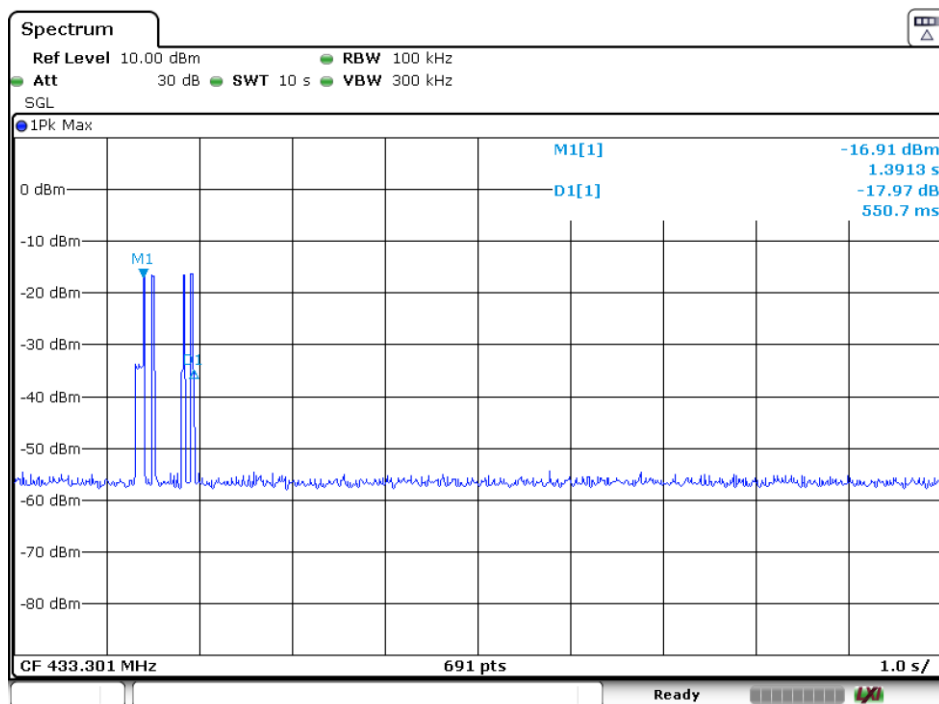
TEST MODE:

Please refer to the clause 4.2

TEST RESULTS

☒ Passed ☐ Not Applicable

Transmission time (second)	Limit (second)	Result
1.3913	5	Pass



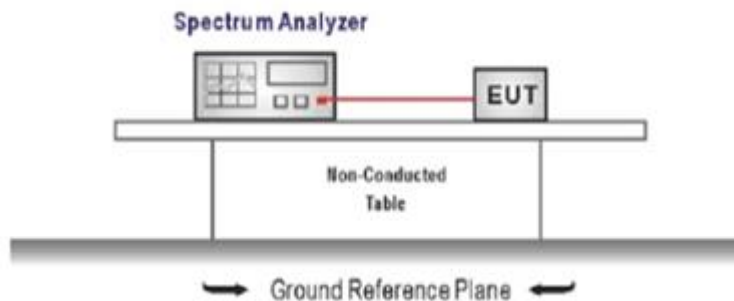
Date: 16 NOV. 2020 15:52:37

5.6. Duty Cycle Corrected Factor

LIMIT

N/A

TEST CONFIGURATION



TEST PROCEDURE

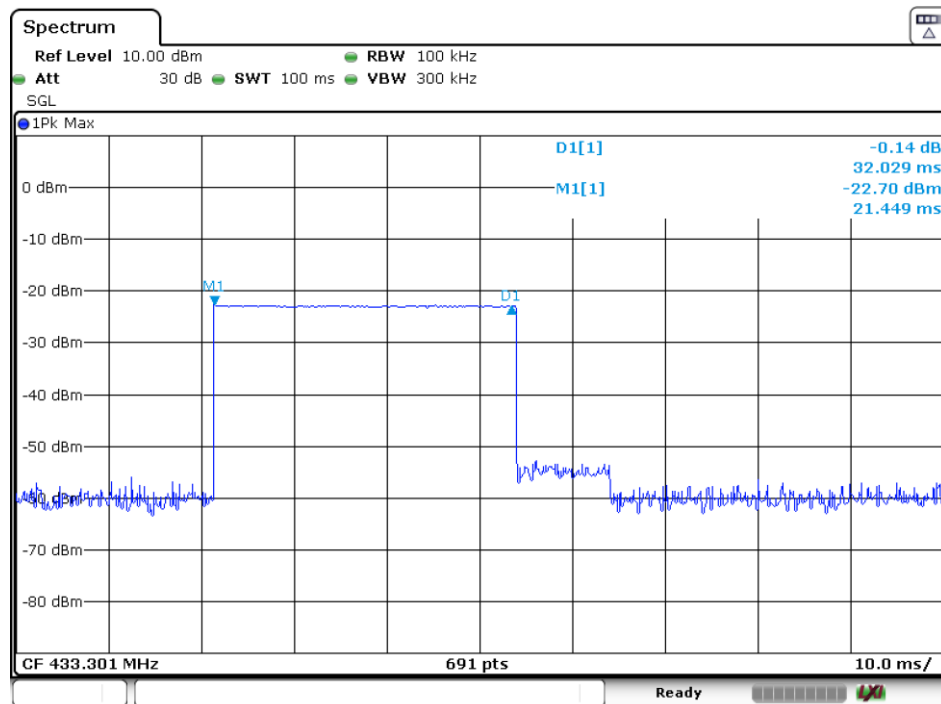
1. The transmitter output was connected to the spectrum analyzer through an attenuator, the path loss was compensated to the results for each measurement.
2. Set to the maximum power setting and enable the EUT transmit continuously
3. Use the following spectrum analyzer settings:
Span=zero span, Frequency=centered channel, RBW= 1MHz, VBW \geq RBW
Sweep time=as necessary to capture the entire dwell time,
Detector function = peak, Trigger mode
4. Measure and record the duty cycle data

TEST MODE:

Please refer to the clause 4.2

TEST DATA:Duty Cycle Corrected Factor/DCCF= $20 \cdot \log$ (Duty Cycle)

TON (ms) :	32.029
TON number	1
Period (ms) :	100
Duty Cycle :	$= (32.029 \cdot 1) / 100 = 0.32$
Duty Cycle Corrected Factor:	$= 20 \cdot \log(0.32) = -9.89$



Date: 17.NOV.2020 14:31:16

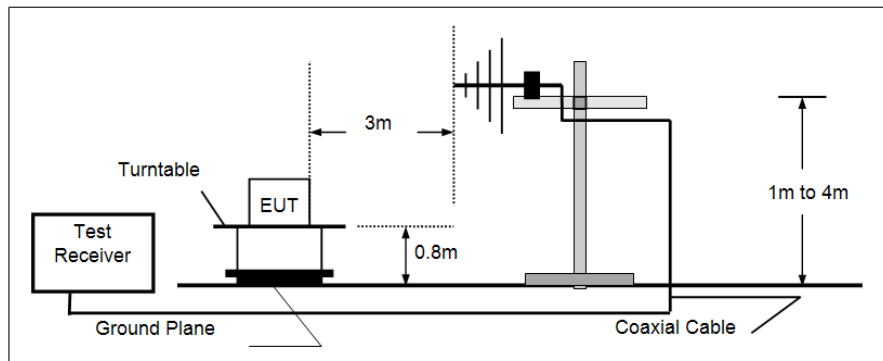
5.7. Radiated field strength of the fundamental signal

LIMIT

Fundamental frequency (MHz)	Field strength of fundamental (microvolts/meter)	Field strength of spurious emissions (microvolts/meter)
40.66-40.70	2,250	225
70-130	1,250	125
130-174	¹ 1,250 to 3,750	¹ 125 to 375
174-260	3,750	375
260-470	¹ 3,750 to 12,500	¹ 375 to 1,250
Above 470	12,500	1,250

¹Linear interpolations.

TEST CONFIGURATION



TEST PROCEDURE

1. The EUT was setup and tested according to ANSI C63.10.
2. The EUT is placed on a turn table which is 0.8 meter above ground for below 1GHz, The turn table is rotated 360 degrees to determine the position of the maximum emission level.
3. The EUT was set 3 meters from the receiving antenna, which was mounted on the top of a variable height antenna tower.
4. For each suspected emission, the EUT was arranged to its worst case and then tune the Antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines.
5. Set to the maximum power setting and enable the EUT transmit continuously.
6. Use the following spectrum analyzer settings
 - a) Span shall wide enough to fully capture the emission being measured;
 - b) RBW=120 kHz, VBW=300 kHz, 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.

TEST MODE:

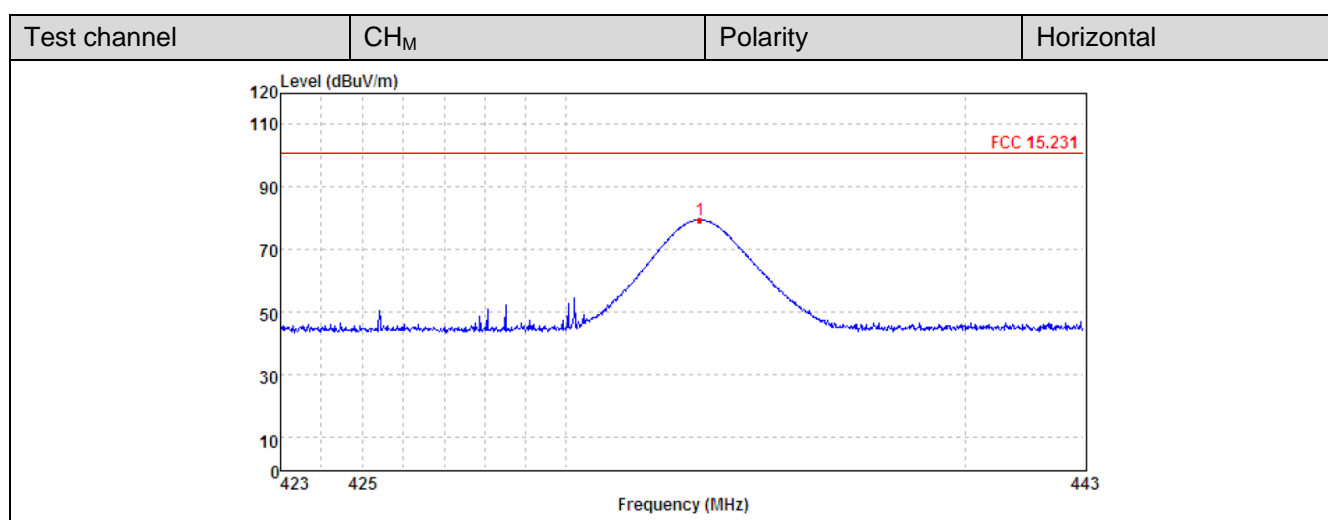
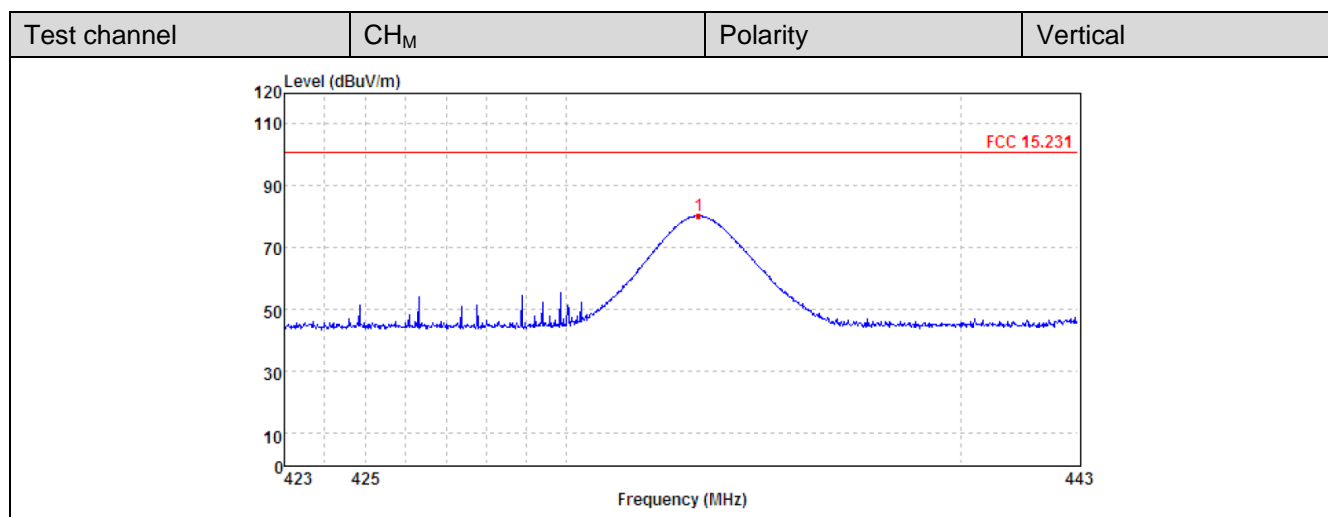
Please refer to the clause 4.2

TEST RESULTS

☒ Passed ☐ Not Applicable

Note:

- 1) Level= Reading + Factor; Factor =Antenna Factor+ Cable Loss- Preamp Factor
- 2) Margin = Limit – Level



Fundamental of Peak								
No.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity	Detector
1	433.301	55.89	24.29	80.18	100.80	20.62	Vertical	PK
2	433.301	55.19	24.29	79.48	100.80	21.32	Horizontal	PK

Fundamental of Average								
No.	Freq. [MHz]	PK level [dBμV/m]	DCCF [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity	Detector
1	433.301	80.18	-9.89	70.29	80.80	10.51	Vertical	AV
2	433.301	79.48	-9.89	69.59	80.80	11.21	Horizontal	AV

5.8. Radiated Spurious Emission

LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.231(b)

Fundamental frequency (MHz)	Field strength of fundamental (microvolts/meter)	Field strength of spurious emissions (microvolts/meter)
40.66-40.70	2,250	225
70-130	1,250	125
130-174	¹ 1,250 to 3,750	¹ 125 to 375
174-260	3,750	375
260-470	¹ 3,750 to 12,500	¹ 375 to 1,250
Above 470	12,500	1,250

FCC CFR Title 47 Part 15 Subpart C Section 15.209

Frequency	Limit (dBuV/m)	Value
0.009 MHz ~0.49 MHz	2400/F(kHz) @300m	Quasi-peak
0.49 MHz ~ 1.705 MHz	24000/F(kHz) @30m	Quasi-peak
1.705 MHz ~30 MHz	30 @30m	Quasi-peak

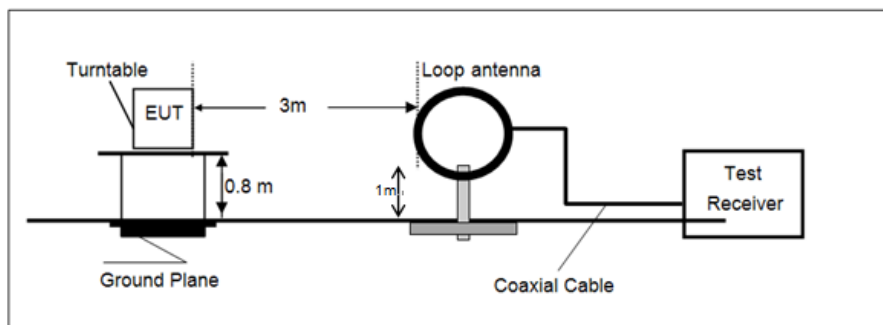
Note: Limit dBuV/m @3m = Limit dBuV/m @300m + 40*log(300/3)= Limit dBuV/m @300m +80,

Limit dBuV/m @3m = Limit dBuV/m @30m +40*log(30/3)= Limit dBuV/m @30m + 40.

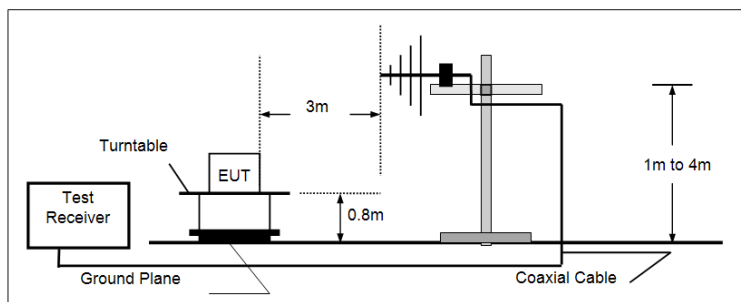
Frequency	Limit (dBuV/m @3m)	Value
30MHz~88MHz	40.00	Quasi-peak
88MHz~216MHz	43.50	Quasi-peak
216MHz~960MHz	46.00	Quasi-peak
960MHz~1GHz	54.00	Quasi-peak
Above 1GHz	54.00	Average
	74.00	Peak

TEST CONFIGURATION

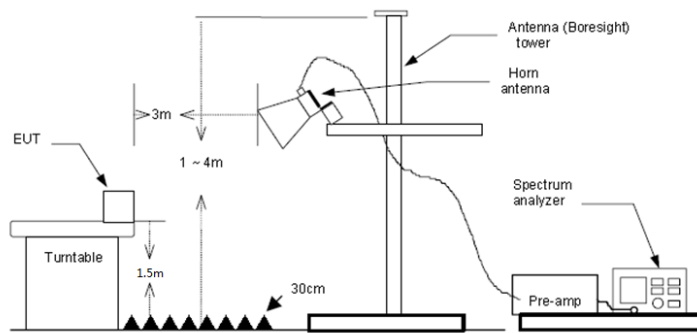
- 9 kHz ~ 30 MHz



- 30 MHz ~ 1 GHz



- Above 1 GHz



TEST PROCEDURE

1. The EUT was setup and tested according to ANSI C63.10.
2. The EUT is placed on a turn table which is 0.8 meter above ground for below 1 GHz, and 1.5 m for above 1 GHz. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
3. The EUT was set 3 meters from the receiving antenna, which was mounted on the top of a variable height antenna tower.
4. For each suspected emission, the EUT was arranged to its worst case and then tune the Antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines.
5. Set to the maximum power setting and enable the EUT transmit continuously.
6. Use the following spectrum analyzer settings
 - a) Span shall wide enough to fully capture the emission being measured;
 - b) Below 1 GHz:
 RBW=120 kHz, VBW=300 kHz, 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.
 - c) Set RBW=1MHz, VBW=3MHz for >1GHz, Sweep time=auto, Detector=peak, Trace=max hold for Peak measurement
 For average measurement:
 Average level = Peak level – DCCF

TEST MODE:

Please refer to the clause 4.2

TEST RESULT

☒ Passed ☐ Not Applicable

Note:

- 1) Level= Reading + Factor/Transd; Factor/Transd =Antenna Factor+ Cable Loss- Preamp Factor
- 2) Margin = Limit – Level
- 3) Average measurement was not performed if peak level is lower than average limit(54 dBuV/m) for above 1GHz.

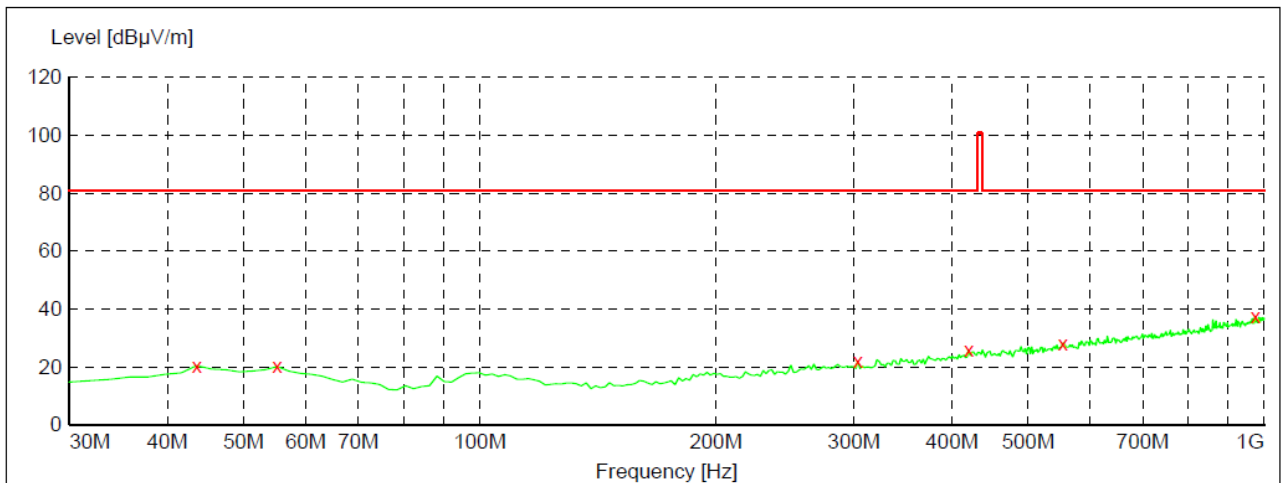
TEST DATA FOR 9 kHz ~ 30 MHz

The EUT was pre-scanned this frequency band, found the radiated level 20dB lower than the limit, so don't show data on this report.

TEST DATA FOR 30 MHz ~ 1000 MHz

Polarization:

Horizontal



x x MES GM2011026163_red

Spurious Emission of Peak

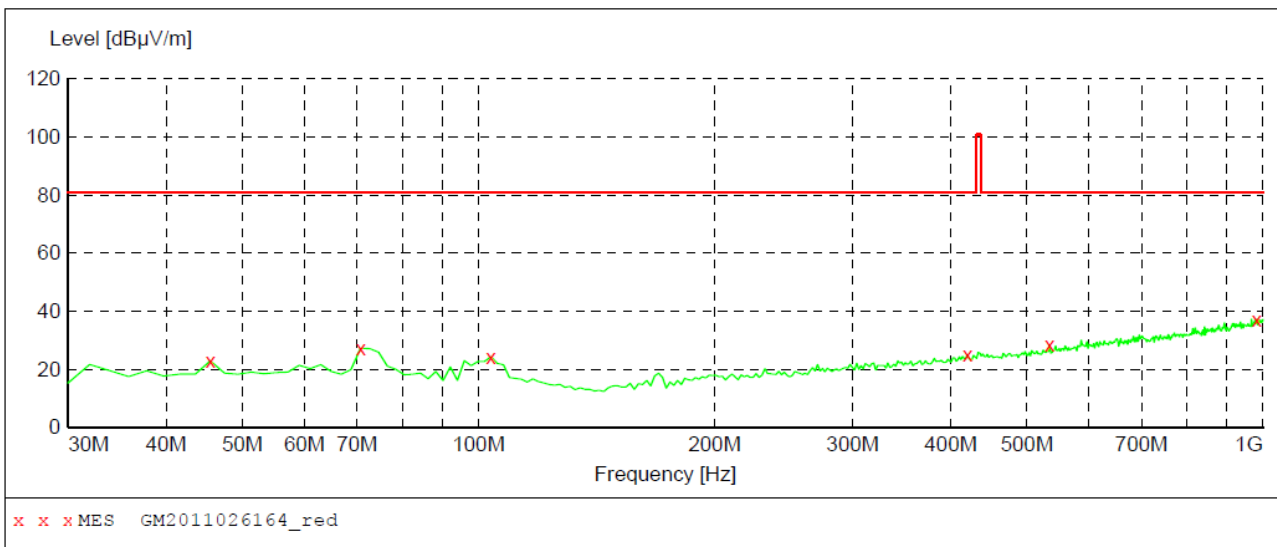
No.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Polarity	Detector
1	43.58	20.40	-8.6	80.8	60.4	Horizontal	PK
2	55.22	20.10	-8.1	80.8	60.7	Horizontal	PK
3	303.54	21.80	-6.2	80.8	59.0	Horizontal	PK
4	419.94	25.70	-2.5	80.8	55.1	Horizontal	PK
5	553.80	28.20	0.6	80.8	52.6	Horizontal	PK
6	974.78	37.40	9.4	80.8	43.4	Horizontal	PK

Spurious Emission of Average

No.	Freq. [MHz]	PK level [dBμV/m]	DCCF [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity	Detector
1	43.58	20.40	-9.89	10.51	60.80	50.29	Horizontal	AV
2	55.22	20.10	-9.89	10.21	60.80	50.59	Horizontal	AV
3	303.54	21.80	-9.89	11.91	60.80	48.89	Horizontal	AV
4	419.94	25.70	-9.89	15.81	60.80	44.99	Horizontal	AV
5	553.80	28.20	-9.89	18.31	60.80	42.49	Horizontal	AV
6	974.78	37.40	-9.89	27.51	60.80	33.29	Horizontal	AV

Polarization:

Vertical



Spurious Emission of Peak

No.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Polarity	Detector
1	45.52	22.80	-8.2	80.80	58.0	Vertical	PK
2	70.74	27.20	-12.9	80.80	53.6	Vertical	PK
3	103.72	24.30	-9.9	80.80	56.5	Vertical	PK
4	419.94	25.00	-2.5	80.80	55.8	Vertical	PK
5	534.40	28.30	-0.2	80.80	52.5	Vertical	PK
6	982.54	37.20	9.5	80.80	43.6	Vertical	PK

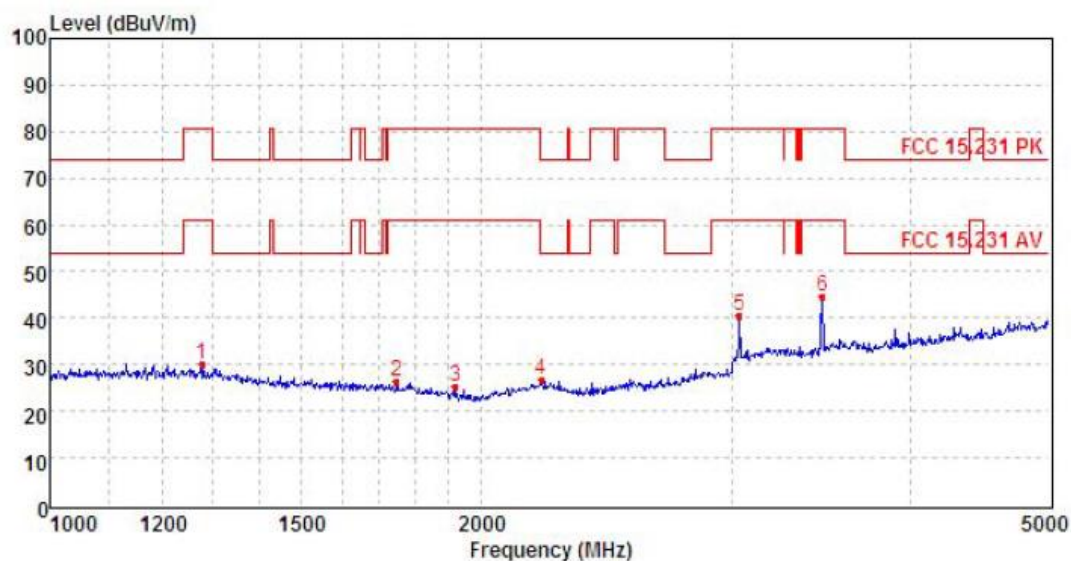
Spurious Emission of Average

No.	Freq. [MHz]	PK level [dBμV/m]	DCCF [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Polarity	Detector
1	45.52	22.80	-9.89	12.91	60.80	47.89	Vertical	AV
2	70.74	27.20	-9.89	17.31	60.80	43.49	Vertical	AV
3	103.72	24.30	-9.89	14.41	60.80	46.39	Vertical	AV
4	419.94	25.00	-9.89	15.11	60.80	45.69	Vertical	AV
5	534.40	28.30	-9.89	18.41	60.80	42.39	Vertical	AV
6	982.54	37.20	-9.89	27.31	60.80	33.49	Vertical	AV

TEST DATA FOR 1 GHz ~ 5 GHz

Polarization:

Horizontal



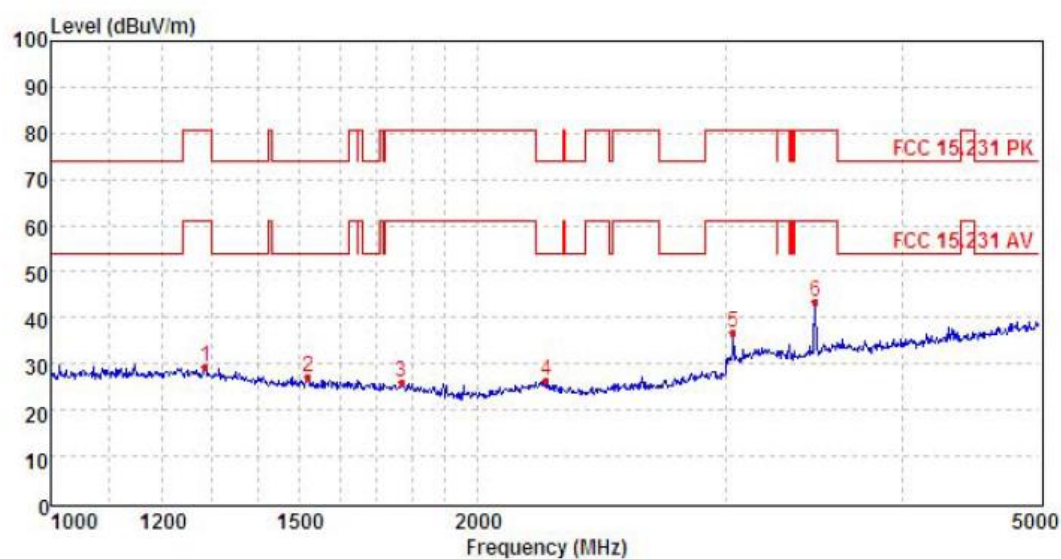
Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	1277.16	35.03	25.95	5.35	36.39	29.94	80.80	-50.86	Peak
2	1748.01	32.10	25.20	6.35	37.15	26.50	80.80	-54.30	Peak
3	1922.13	29.93	25.84	6.58	36.98	25.37	80.80	-55.43	Peak
4	2207.46	28.96	28.18	7.20	37.41	26.93	74.00	-47.07	Peak
5	3035.91	40.59	28.77	8.51	37.50	40.37	80.80	-40.43	Peak
6	3469.80	42.95	28.98	9.40	36.57	44.76	80.80	-36.04	Peak

Spurious Emission of Average

No.	Freq. [MHz]	PK level [dBuV/m]	DCCF [dB]	Level [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Polarity	Detector
1	1277.16	29.94	-9.89	20.05	60.80	40.75	Horizontal	AV
2	1748.01	26.50	-9.89	16.61	60.80	44.19	Horizontal	AV
3	1922.13	25.37	-9.89	15.48	60.80	45.32	Horizontal	AV
4	2207.46	26.93	-9.89	17.04	54.00	36.96	Horizontal	AV
5	3035.91	40.37	-9.89	30.48	60.80	30.32	Horizontal	AV
6	3469.80	44.76	-9.89	34.87	60.80	25.93	Horizontal	AV

Polarization:

Vertical

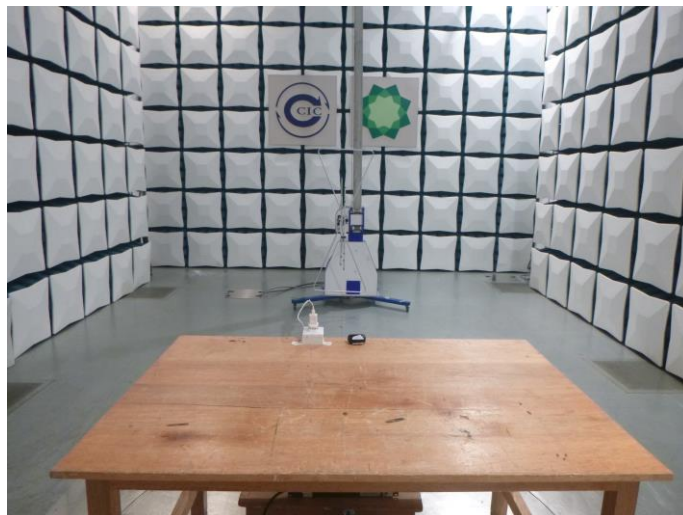


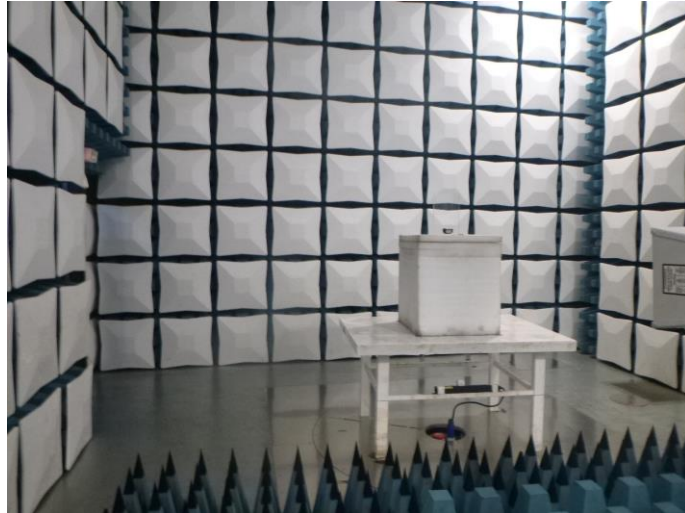
Mark	Frequency MHz	Reading dBuV/m	Antenna dB	Cable dB	Preamp dB	Level dBuV/m	Limit dBuV/m	Over limit	Remark
1	1285.40	34.54	25.97	5.37	36.35	29.53	80.80	-51.27	Peak
2	1519.61	32.54	25.74	5.81	36.89	27.20	74.00	-46.80	Peak
3	1770.66	31.22	25.28	6.46	37.09	25.87	80.80	-54.93	Peak
4	2239.67	28.64	28.12	7.22	37.41	26.57	74.00	-47.43	Peak
5	3035.91	37.06	28.77	8.51	37.50	36.84	80.80	-43.96	Peak
6	3469.80	41.61	28.98	9.40	36.57	43.42	80.80	-37.38	Peak

Spurious Emission of Average								
No.	Freq. [MHz]	PK level [dBuV/m]	DCCF [dB]	Level [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Polarity	Detector
1	1285.40	29.53	-9.89	19.64	60.80	41.16	Vertical	AV
2	1519.61	27.20	-9.89	17.31	54.00	36.69	Vertical	AV
3	1770.66	25.87	-9.89	15.98	60.80	44.82	Vertical	AV
4	2239.67	26.57	-9.89	16.68	54.00	37.32	Vertical	AV
5	3035.91	36.84	-9.89	26.95	60.80	33.85	Vertical	AV
6	3469.80	43.42	-9.89	33.53	60.80	27.27	Vertical	AV

6. TEST SETUP PHOTOS

Radiated Emission



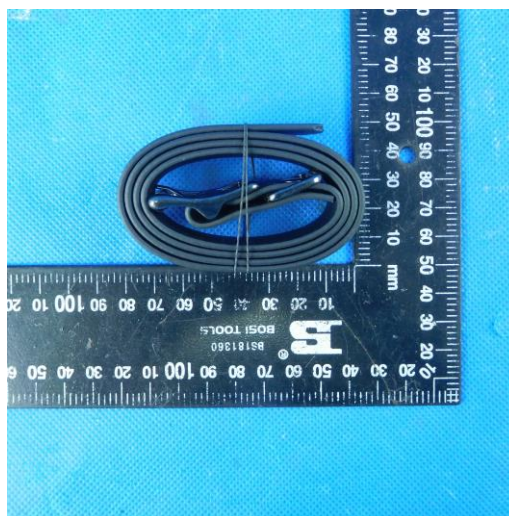
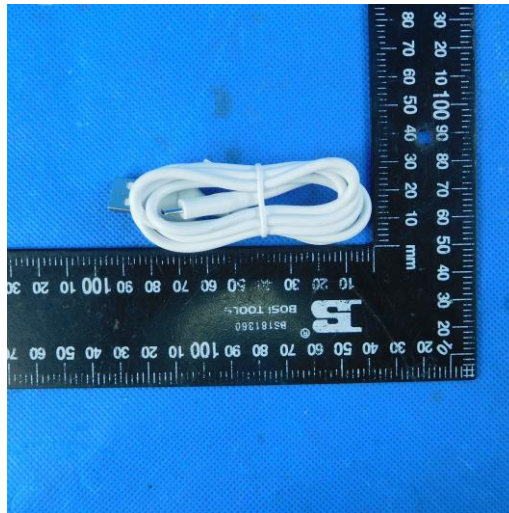


AC Conducted Emission

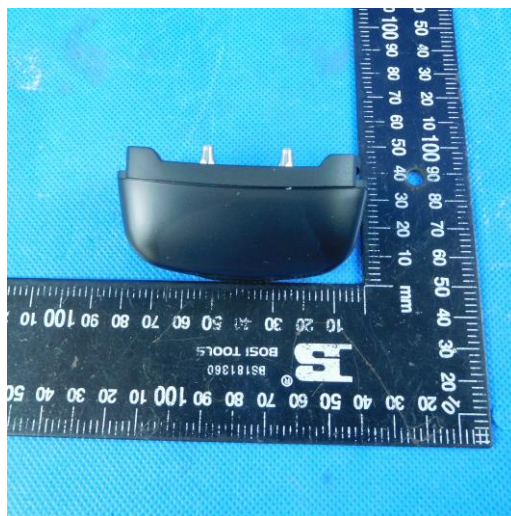
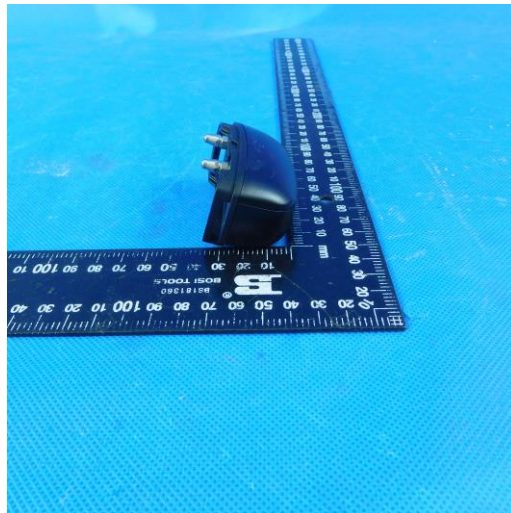


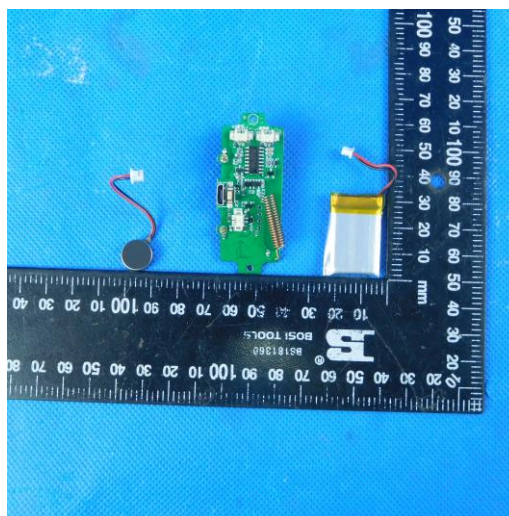
7. EXTERANAL AND INTERNAL PHOTOS

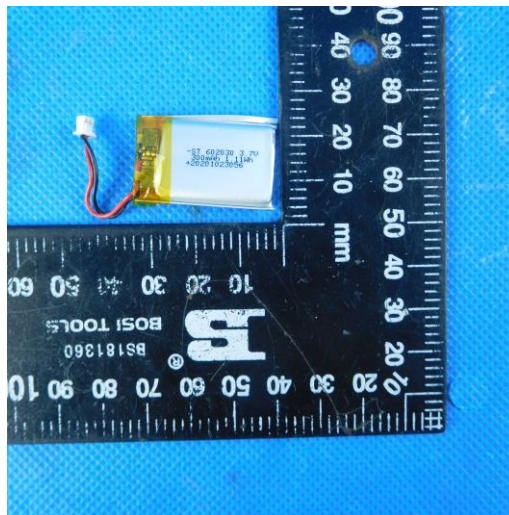
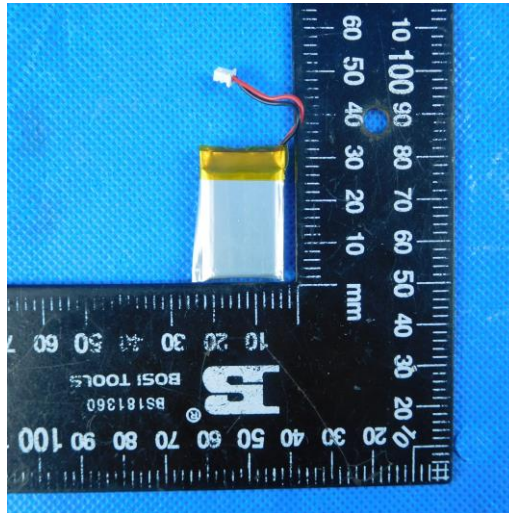
External Photos

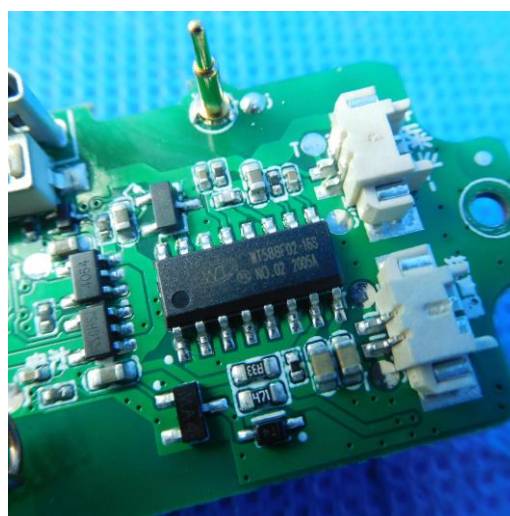
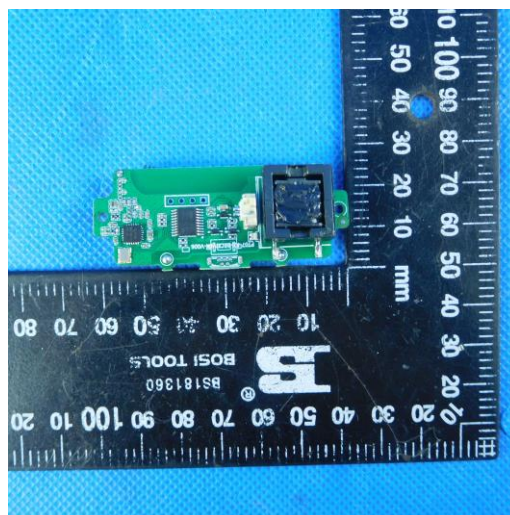
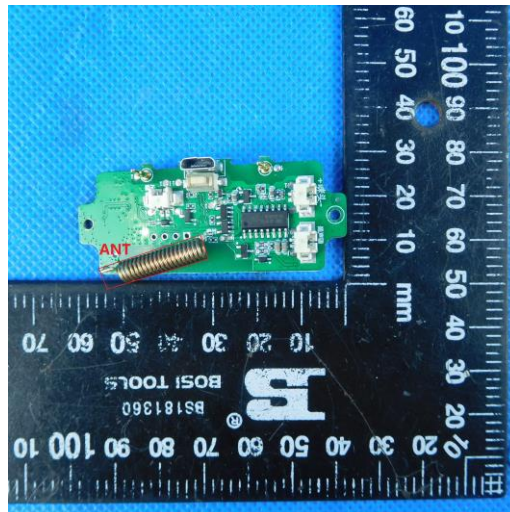






Internal Photos





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