Shenzhen Huatongwei International Inspection Co., Ltd.
1/F,Bldg 3,Hongfa Hi-tech Industrial Park,Genyu Road,Tianliao,Gongming,Shenzhen,China
Phone:86-755-26748019 Fax:86-755-26748089 http://www.szhtw.com.cn

TEST REPORT

Report No.....:	**CHTEW19060206**	Report verification **:**
Project No.....:	**SHT1905091604EW**	
FCC ID..... :	**SIP-5596-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	
Manufacturer.....:	MegaGain International Ltd.	
Address.....:	Rm 904-905, Greenfield Tower, Concordia Plaza,1 Science Museum Road, T.S.T. East. Kowloon. HongKong	
Test item description ..... :	**MICKEY RC CAR H20**	
Trade Mark .....:	Disney	
Model/Type reference.....:	5596-C	
Listed Model(s) .....:	-	
Standard ..... :	**FCC CFR Title 47 Part 15 Subpart C Section 15.249**	
Date of receipt of test sample.....:	May 27, 2019	
Date of testing.....:	May 27, 2019- Jun.26, 2019	
Date of issue.....:	Jun.27, 2019	
Result.....:	**PASS**	

Compiled by (position+printedname+signature)...:	File administrators Echo Wei	Echo Wei
Supervised by (position+printedname+signature)....:	Project Engineer Jerry Zhao	Jerry zhao
Approved by (position+printedname+signature)....:	RF Manager Hans Hu	Hans Hu

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

Contents

1. TEST STANDARDS AND REPORT VERSION

1.1. Test Standards

The tests were performed according to following standards:

FCC Rules Part 15.249: Operation within the bands 902-928 MHz, 2400-2483.5 MHz, 5725-5875 MHz, and 24.0-24.25 GHz.

ANSI C63.10-2013: American National Standard for Testing Unlicensed Wireless Devices.

1.2. Report version information

Revision No.	Date of issue	Description
N/A	2019-06-27	Original

2. TEST DESCRIPTION

Test Item	Section in CFR 47	Result	Test Engineer
Antenna requirement	15.203	PASS	Jiongsheng Feng
AC Power Line Conducted Emissions	15.207	N/A	N/A
20dB Occupied Bandwidth	15.215/15.249	PASS	Jiongsheng Feng
Field strength of the Fundamental signal	15.249(a)	PASS	Shower Dai
Spurious Emissions	15.209/15.249(a)	PASS	Shower Dai
Band edge Emissions	15.205/15.249(d)	PASS	Shower Dai

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

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

Name of EUT:	MICKEY RC CAR H20
Trade Mark:	Disney
Model No.:	5596-C
Listed Model(s):	-
Power supply:	DC 3V
RF Specification	
Operation frequency:	2411 MHz -2472 MHz
Channel number:	20
Modulation Type:	GFSK
Antenna type:	Integral antenna
Antenna gain:	0 dBi

3.3. EUT operation mode

- **Test frequency list**

  According to section 15.31(m), regards to the operating frequency range over 10 MHz, must select three channel which were tested. the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, please see the above gray bottom.

Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2411	10	2441
01	2413	11	2443
02	2420	12	2445
03	2422	13	2451
04	2424	14	2453
05	2426	15	2455
06	2428	16	2461
07	2435	17	2468
08	2437	18	2470
09	2439	19	2472

- **TEST MODE**

For RF test items
The engineering test program was provided and enabled to make EUT continuous transmit.
For Radiated suprious emissions test item:
The engineering test program was provided and enabled to make EUT continuous transmit(duty cycle>98%). The EUT in each of three orthogonal axis emissions had been tested ,but only the worst case (X axis) data Recorded in the report.

3.4. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

- ● - supplied by the manufacturer
- ○ - supplied by the lab

		Manufacturer :	/
		Model No. :	/
		Manufacturer :	/
		Model No. :	/

3.5. Modifications

No modifications were implemented to meet testing criteria.

4. TEST ENVIRONMENT

4.1. Address of the test laboratory

Laboratory: Shenzhen Huatongwei International Inspection Co., Ltd.
Address: 1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China
Phone: 86-755-26748019 Fax: 86-755-26748089

4.2. Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L1225

Shenzhen Huatongwei International Inspection Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories.

A2LA-Lab Cert. No. 3902.01

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC-Registration No.: 762235

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration 762235.

IC-Registration No.: 5377B-1

Two 3m Alternate Test Site of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 5377B-1.

ACA

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our A2LA accreditation.

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

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors in calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report according to TR-100028-01 “Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics;Part 1” and TR-100028-02 “Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurementof mobile radio equipment characteristics;Part 2” and is documented in the Shenzhen Huatongwei International Inspection Co., Ltd quality system according to ISO/IEC 17025. Further more, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Here after the best measurement capability for Shenzhen Huatongwei is reported:

Test Items	Measurement Uncertainty	Notes
Conducted Disturbance 150kHz~30MHz	3.02 dB	(1)
Radiated Emissions below 1GHz	4.90 dB	(1)
Radiated Emissions above 1GHz	4.96 dB	(1)
Occupied Bandwidth	70 Hz	(1)

(1) 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	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	Shielded Room	Albatross projects	N/A	N/A	2018/09/28	2023/09/27
●	EMI Test Receiver	R&S	ESCI	101247	2018/10/27	2019/10/26
●	Artificial Mains	SCHWARZBECK	NNLK 8121	573	2018/10/27	2019/10/26
●	Pulse Limiter	R&S	ESH3-Z2	100499	2018/10/27	2019/10/26
●	RF Connection Cable	HUBER+SUHNER	EF400	N/A	2018/11/15	2019/11/14
●	Test Software	R&S	ES-K1	N/A	N/A	N/A
○	Single Balanced Telecom Pair ISN	FCC	FCC-TLISN-T2-02	20371	2018/10/28	2019/10/27
○	Two Balanced Telecom Pairs ISN	FCC	FCC-TLISN-T4-02	20373	2018/10/28	2019/10/27
○	Four Balanced Telecom Pairs ISN	FCC	FCC-TLISN-T8-02	20375	2018/10/28	2019/10/27
○	V-Network	R&S	ESH3-Z6	100211	2018/10/27	2019/10/26
○	V-Network	R&S	ESH3-Z6	100210	2018/10/27	2019/10/26
○	2-Line V-Network	R&S	ESH3-Z5	100049	2018/10/27	2019/10/26

●	Radiated Emission-6th test site					
Used	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	Semi-Anechoic Chamber	Albatross projects	SAC-3m-02	N/A	2018/09/30	2021/09/29
●	EMI Test Receiver	R&S	ESCI	100900	2018/10/28	2019/10/27
●	Loop Antenna	R&S	HFH2-Z2	100020	2017/11/20	2020/11/19
●	Ultra-Broadband Antenna	SCHWARZBECK	VULB9163	546	2017/04/05	2020/04/04
●	Pre-Amplifer	SCHWARZBECK	BBV 9742	N/A	2018/11/15	2019/11/14
●	RF Connection Cable	HUBER+SUHNER	N/A	N/A	2018/09/28	2019/09/27
●	RF Connection Cable	HUBER+SUHNER	SUCOFLEX104	501184/4	2018/09/28	2019/09/27
●	Test Software	R&S	ES-K1	N/A	N/A	N/A
●	Turntable	Maturo Germany	TT2.0-1T	N/A	N/A	N/A
●	Antenna Mast	Maturo Germany	CAM-4.0-P-12	N/A	N/A	N/A

●	Radiated emission-7th test site					
Used	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	Semi-Anechoic Chamber	Albatross projects	SAC-3m-01	N/A	2018/09/30	2021/09/29
●	Spectrum Analyzer	R&S	FSP40	100597	2018/10/27	2019/10/26
●	Horn Antenna	SCHWARZBECK	9120D	1011	2017/03/27	2020/03/26
●	Pre-amplifier	BONN	BLWA0160-2M	1811887	2018/11/14	2019/11/13
●	Pre-amplifier	CD	PAP-0102	12004	2018/11/14	2019/11/13
●	Broadband Pre-amplifier	SCHWARZBECK	BBV 9718	9718-248	2019/04/26	2020/04/25
●	RF Connection Cable	HUBER+SUHNER	RE-7-FH	N/A	2018/11/15	2019/11/14
●	RF Connection Cable	HUBER+SUHNER	RE-7-FL	N/A	2018/11/15	2019/11/14
●	Test Software	Audix	E3	N/A	N/A	N/A
●	Turntable	Maturo Germany	TT2.0-1T	N/A	N/A	N/A
●	Antenna Mast	Maturo Germany	CAM-4.0-P-12	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	2018/10/28	2019/10/27
●	Spectrum Analyzer	Agilent	N9020A	MY50510187	2018/09/29	2019/09/28
○	OSP	R&S	OSP120	101317	N/A	N/A
○	Radio communication tester	R&S	CMW500	137688-Lv	2018/09/29	2019/09/28
○	Test software	Tonscend	JS1120-1(LTE)	N/A	N/A	N/A
○	Test software	Tonscend	JS1120-2(WIFI)	N/A	N/A	N/A
○	Test software	Tonscend	JS1120-3(WCDMA)	N/A	N/A	N/A
○	Test software	Tonscend	JS1120-4(GSM)	N/A	N/A	N/A

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 anantenna 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.

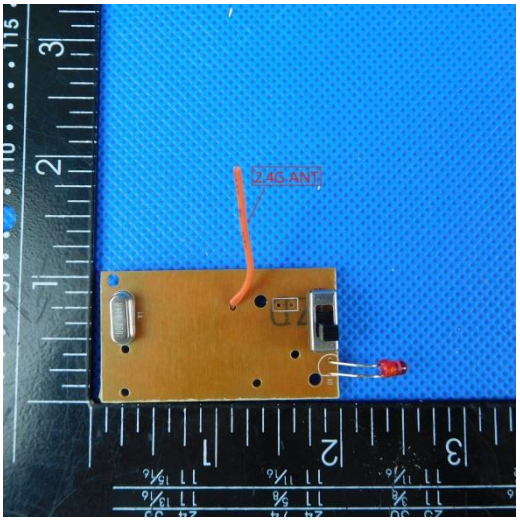
Refer to statement below for compliance.

The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

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



5.2. AC Power Conducted Emissions

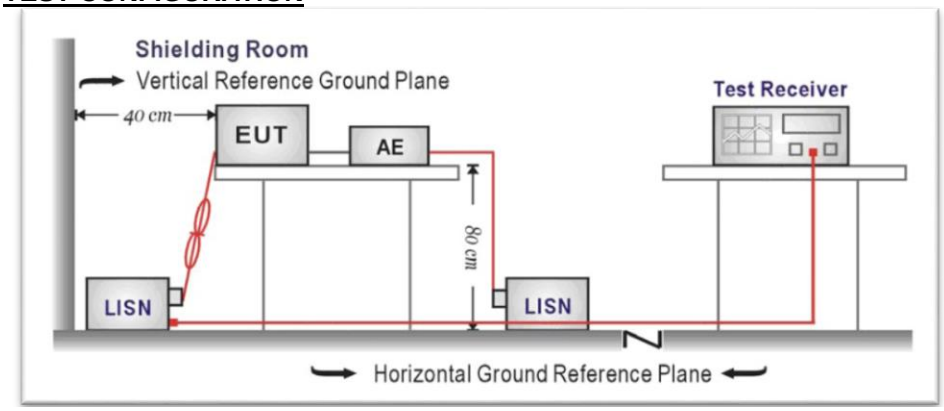
LIMIT

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 C63.10:2013
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 3.3

TEST RESULTS

☐ **Passed** ☒ **Not Applicable**

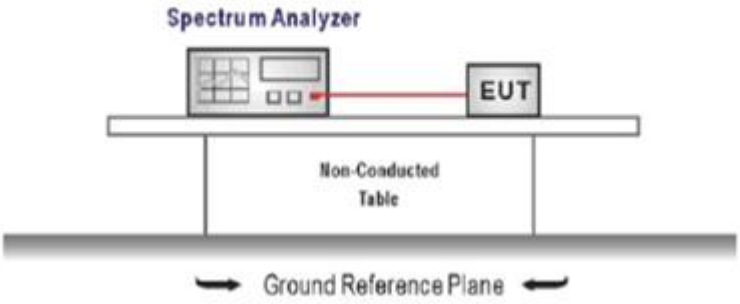
Note: The EUT is DC supply, so this item is not applicable.

5.3. 20 dB Occupied Bandwidth

Limit

Operation frequency range 2400MHz~2483.5MHz.

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 = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel
   RBW ≥ 1% of the 20 dB bandwidth, VBW ≥ RBW
   Sweep = auto, Detector function = peak, Trace = max hold
4. Measure and record the results in the test report.

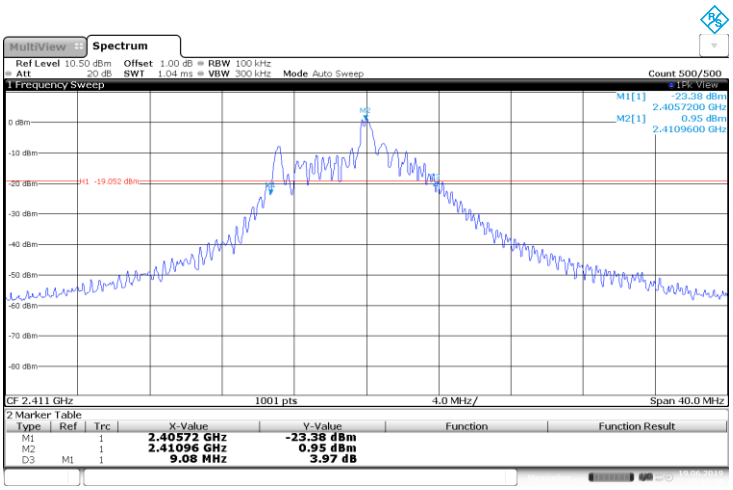
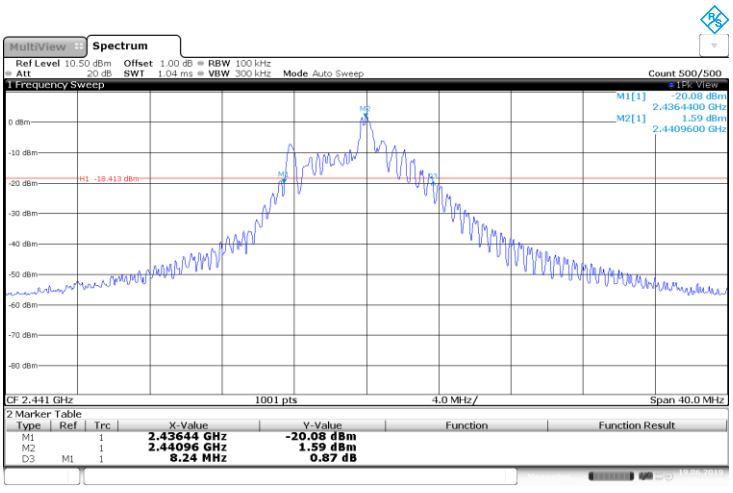
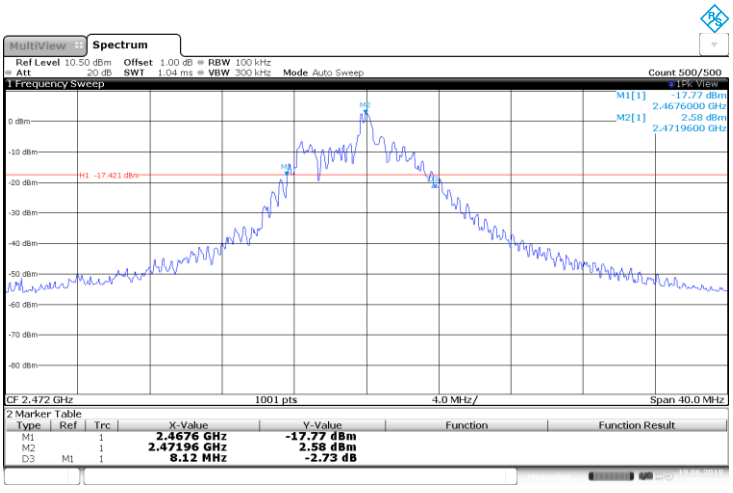
TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Test Channel	20dB Bandwidth (MHz)	Limit (MHz)	Result
CH_L	9.08	-	Pass
CH_M	8.24	-	Pass
CH_H	8.12	-	Pass

CH_L	 MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 100 kHz Att 20 dB SWT 1.04 ms VBW 300 kHz Mode Auto Sweep Count 500/500 1 Frequency Sweep 1Pk View M1[1] 23.38 dBm 2.4057200 GHz M2[1] 0.95 dBm 2.4109600 GHz CF 2.411 GHz 1001 pts 4.0 MHz/ Span 40.0 MHz 2 Marker Table Type Ref Trc X-Value Y-Value Function Function Result M1 1 2.40572 GHz -23.38 dBm M2 1 2.41096 GHz 0.95 dBm D3 M1 1 9.08 MHz 3.97 dB Date:19.JUN.2019 17:15:30
CH_M	 MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 100 kHz Att 20 dB SWT 1.04 ms VBW 300 kHz Mode Auto Sweep Count 500/500 1 Frequency Sweep 1Pk View M1[1] 20.08 dBm 2.4364400 GHz M2[1] 1.59 dBm 2.4409600 GHz CF 2.441 GHz 1001 pts 4.0 MHz/ Span 40.0 MHz 2 Marker Table Type Ref Trc X-Value Y-Value Function Function Result M1 1 2.43644 GHz -20.08 dBm M2 1 2.44096 GHz 1.59 dBm D3 M1 1 8.24 MHz 0.87 dB Date:19.JUN.2019 17:16:29
CH_H	 MultiView Spectrum Ref Level 10.50 dBm Offset 1.00 dB RBW 100 kHz Att 20 dB SWT 1.04 ms VBW 300 kHz Mode Auto Sweep Count 500/500 1 Frequency Sweep 1Pk View M1[1] 17.77 dBm 2.4676000 GHz M2[1] 2.58 dBm 2.4719600 GHz CF 2.472 GHz 1001 pts 4.0 MHz/ Span 40.0 MHz 2 Marker Table Type Ref Trc X-Value Y-Value Function Function Result M1 1 2.4676 GHz -17.77 dBm M2 1 2.47196 GHz 2.58 dBm D3 M1 1 8.12 MHz -2.73 dB Date:19.JUN.2019 17:28:31

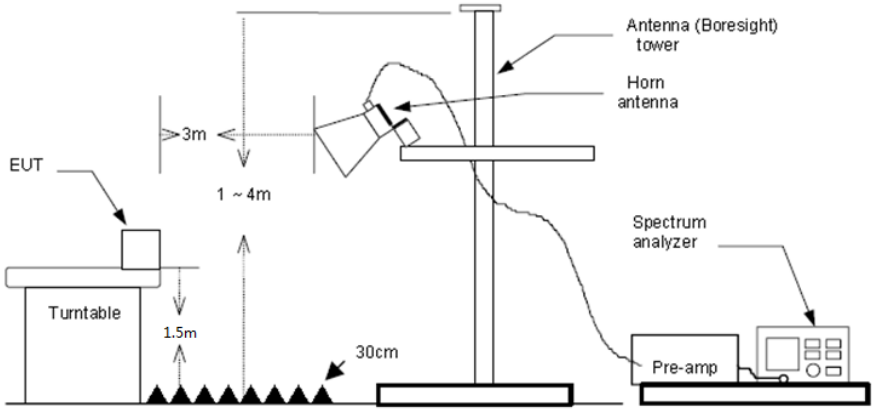
5.4. Radiated field strength of the fundamental signal

LIMIT

Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902-928 MHz	50 (94dBuV/m @3m)	500 (54dBuV/m @3m)
2400-2483.5 MHz	50 (94dBuV/m @3m)	500 (54dBuV/m @3m)
5725-5875 MHz	50 (94dBuV/m @3m)	500 (54dBuV/m @3m)
24.0-24.25 GHz	250 (108dBuV/m @3m)	2500 (68dBuV/m @3m)

Frequencies above 1000 MHz, the field strength limits are based on average limits

TEST CONFIGURATION



TEST PROCEDURE

1. The EUT was setup and tested according to ANSI C63.10:2013 requirements.
2. The EUT is placed on a turn table which is 1.5 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
3. The EUT waspositioned such that the distance from antenna to the EUT was 3 meters.
4. The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. Thisis repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10:2013 on radiated measurement.
5. The receiver set as follow:
   RBW=1MHz, VBW=3MHz Peak detector for Peak value.
   RBW=1MHz, VBW=3MHz RMS detector for Average value.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

CH_L									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
2411.04	48.15	32.03	13.13	0.00	93.31	114	-20.69	Vertical	Peak
2410.82	51.92	32.03	13.13	0.00	97.08	114	-16.92	Horizontal	Peak
2410.80	46.56	27.56	13.13	0.00	87.25	94	-6.75	Vertical	Average
2411.02	48.18	27.56	13.13	0.00	88.87	94	-5.13	Horizontal	Average

CH_M									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
2441.00	46.93	32.23	13.22	0.00	92.38	114	-21.62	Vertical	Peak
2440.98	51.85	32.23	13.22	0.00	97.30	114	-16.70	Horizontal	Peak
2440.74	46.09	27.44	13.22	0.00	86.75	94	-7.25	Vertical	Average
2440.76	48.05	27.43	13.22	0.00	88.70	94	-5.30	Horizontal	Average

CH_H									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
2472.12	48.36	32.51	13.32	0.00	94.19	114	-19.81	Vertical	Peak
2471.80	50.51	32.51	13.32	0.00	96.34	114	-17.66	Horizontal	Peak
2472.00	46.89	27.31	13.32	0.00	87.52	94	-6.48	Vertical	Average
2472.06	47.03	27.31	13.32	0.00	87.66	94	-6.34	Horizontal	Average

5.5. Radiated Spurious Emissions and Bandedge Emission

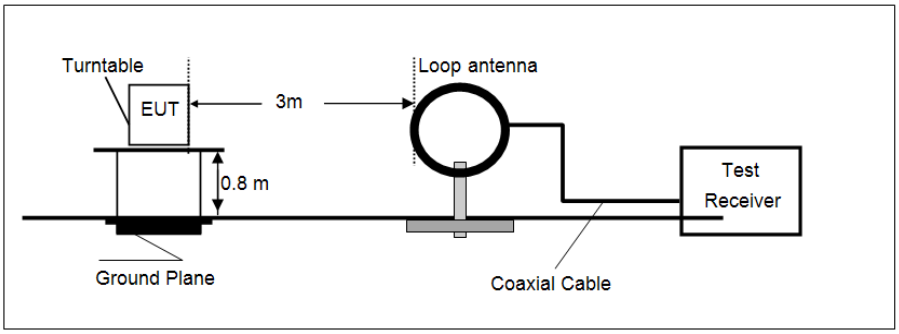
LIMIT

FCC CFR Title 47 Part 15 Subpart C Section 15.209

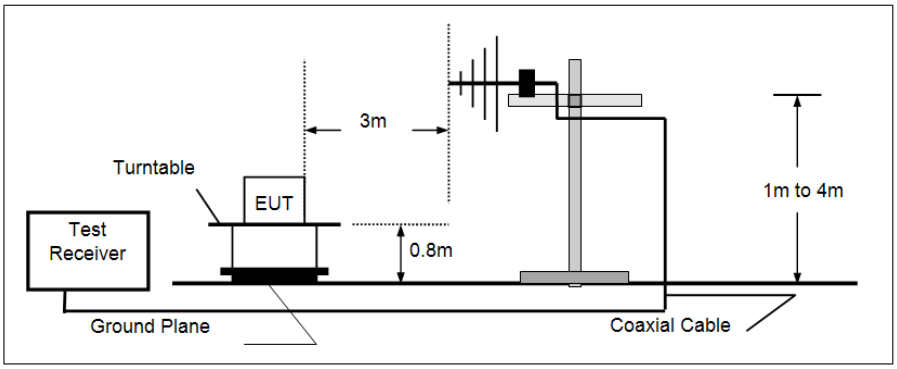
Frequency	Limit (dBuV/m @3m)	Value
30MHz~88MHz	40.00	Quasi-peak
88MHz~216MHz	43.50	Quasi-peak
216MHz~960MHz	46.00	Quasi-peak
960MHz~1GHz	54.00	Quasi-peak
Above 1GHz	54.00	Average
	74.00	Peak

TEST CONFIGURATION

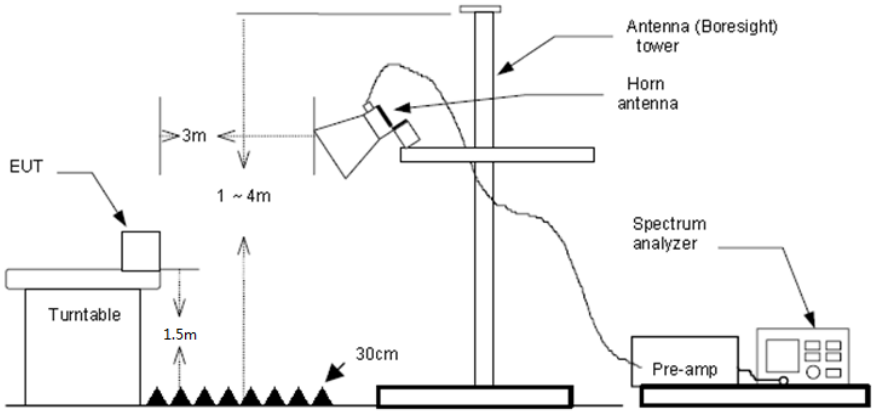
- 9 kHz ~ 30 MHz



- 30 MHz ~ 1 GHz



- Above 1 GHz



TEST PROCEDURE

1. The EUT was setup and tested according to ANSI C63.10:2013 requirements.
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
   (1) Span shall wide enough to fully capture the emission being measured;
   (2) 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.
   (3) From 1 GHz to 10^{th} harmonic:
   RBW=1MHz, VBW=3MHz Peak detector for Peak value.
   RBW=1MHz, VBW=3MHz RMS detector for Average value.

TEST MODE:

Please refer to the clause 3.3

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Note:

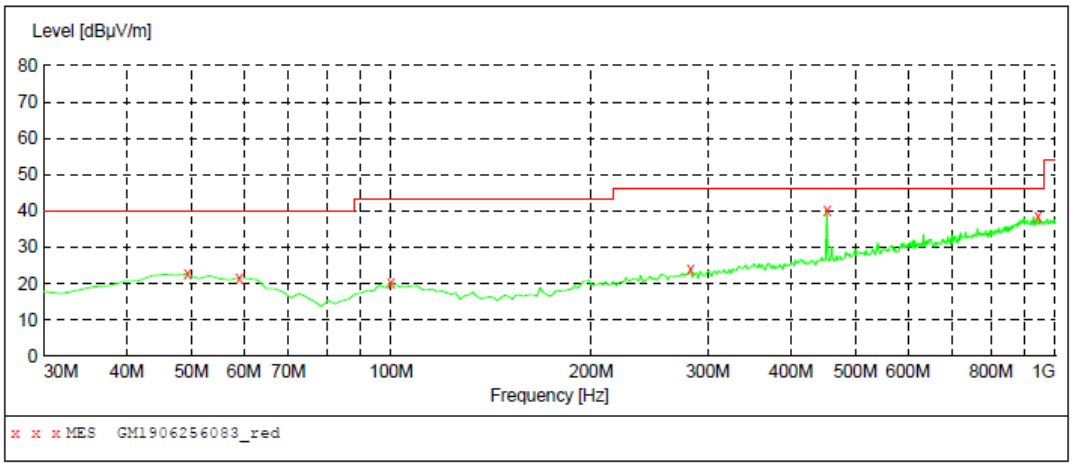
1) Above 1GHz Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2) The emission levels of other frequencies are very lower than the limit and not show in test report.

Radiated Spurious Emissions

- **9 kHz ~ 30 MHz**
  The EUT was pre-scanned the frequency band (9 kHz ~ 30 MHz), found the radiated level lower than the limit, so don't show on the report.

■ **30 MHz ~ 1 GHz**

Polarization:	Vertical

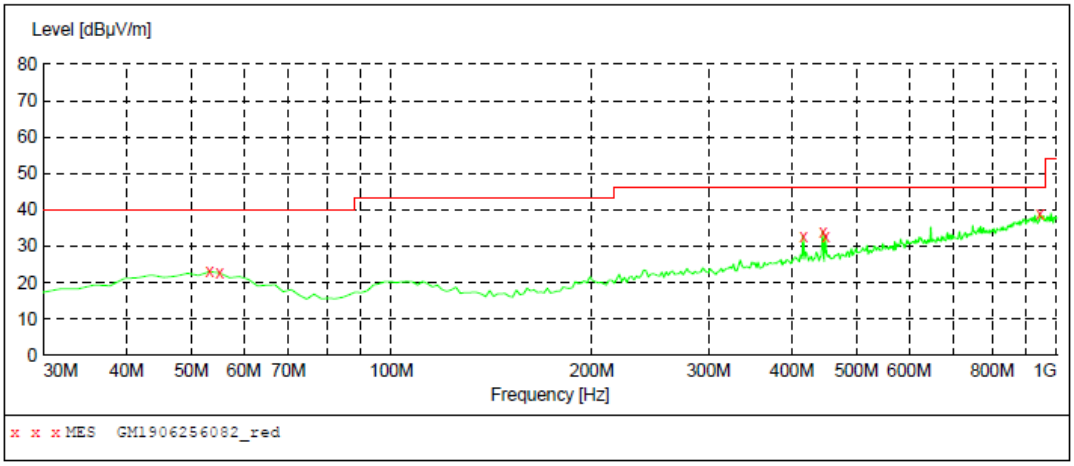


MEASUREMENT RESULT: "GM1906256083_red"

6/25/2019 5:49PM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
49.400000	22.60	-4.8	40.0	17.4	QP	100.0	155.00	VERTICAL
59.100000	21.70	-5.9	40.0	18.3	QP	100.0	184.00	VERTICAL
99.840000	20.10	-6.7	43.5	23.4	QP	100.0	210.00	VERTICAL
282.200000	23.90	-3.9	46.0	22.1	QP	100.0	325.00	VERTICAL
452.920000	40.30	0.5	46.0	5.7	QP	100.0	210.00	VERTICAL
941.800000	38.60	10.8	46.0	7.4	QP	100.0	114.00	VERTICAL

Polarization:	Horizontal



MEASUREMENT RESULT: "GM1906256082_red"

6/25/2019 5:47PM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
53.280000	23.10	-5.1	40.0	16.9	QP	300.0	354.00	HORIZONTAL
55.220000	22.70	-5.3	40.0	17.3	QP	100.0	253.00	HORIZONTAL
416.060000	32.80	-0.1	46.0	13.2	QP	100.0	225.00	HORIZONTAL
445.160000	34.10	0.4	46.0	11.9	QP	100.0	76.00	HORIZONTAL
449.040000	32.90	0.4	46.0	13.1	QP	100.0	191.00	HORIZONTAL
943.740000	38.90	10.8	46.0	7.1	QP	100.0	136.00	HORIZONTAL

■ **Above 1 GHz**

Test channel					CH_L				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
2775.30	32.92	28.10	8.86	34.78	35.10	74.00	-38.90	Vertical	Peak
3135.99	35.81	28.80	9.26	37.80	36.07	74.00	-37.93	Vertical	Peak
5099.49	31.46	31.90	12.03	35.13	40.26	74.00	-33.74	Vertical	Peak
8002.06	31.46	37.10	15.52	34.42	49.66	74.00	-24.34	Vertical	Peak
3176.16	35.16	28.80	9.37	37.56	35.77	74.00	-38.23	Horizontal	Peak
4821.76	38.94	31.56	11.73	36.25	45.98	74.00	-28.02	Horizontal	Peak
7880.77	31.66	36.59	15.18	34.46	48.97	74.00	-25.03	Horizontal	Peak
8615.13	31.37	37.39	15.93	34.48	50.21	74.00	-23.79	Horizontal	Peak

Test channel					CH_M				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
3534.54	34.64	29.10	9.96	37.79	35.91	74.00	-38.09	Vertical	Peak
4883.52	32.70	31.43	11.68	35.97	39.84	74.00	-34.16	Vertical	Peak
7527.83	30.98	36.13	14.89	34.48	47.52	74.00	-26.48	Vertical	Peak
8549.59	31.62	37.10	15.91	34.36	50.27	74.00	-23.73	Vertical	Peak
3516.59	34.11	29.05	9.92	37.81	35.27	74.00	-38.73	Horizontal	Peak
4883.52	39.89	31.43	11.68	35.97	47.03	74.00	-26.97	Horizontal	Peak
7451.57	30.68	36.20	14.84	34.62	47.10	74.00	-26.90	Horizontal	Peak
8527.85	31.03	37.01	15.91	34.32	49.63	74.00	-24.37	Horizontal	Peak

Test channel					CH_H				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
4149.35	32.82	29.95	10.71	37.16	36.32	74.00	-37.68	Vertical	Peak
4946.07	34.31	31.45	11.78	35.73	41.81	74.00	-32.19	Vertical	Peak
6662.01	31.16	34.20	14.14	35.00	44.50	74.00	-29.50	Vertical	Peak
8659.10	31.77	37.66	15.94	34.56	50.81	74.00	-23.19	Vertical	Peak
3192.37	33.91	28.80	9.41	37.45	34.67	74.00	-39.33	Horizontal	Peak
4946.07	42.49	31.45	11.78	35.73	49.99	74.00	-24.01	Horizontal	Peak
7394.88	30.64	36.30	14.73	34.68	46.99	74.00	-27.01	Horizontal	Peak
8571.38	31.71	37.19	15.92	34.40	50.42	74.00	-23.58	Horizontal	Peak

Remark:

1. Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The peak level is lower than average limit(54dBuV/m), this data is the too weak instrument of signal is unable to test.
3. The emission levels of other frequencies are very lower than the limit and not show in test report.

Bandedge Emission

CH00									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
2310.00	14.49	28.05	7.73	0.00	50.27	74.00	-23.73	Vertical	Peak
2480.02	14.07	27.65	7.84	0.00	49.56	74.00	-24.44	Vertical	Peak
2310.00	15.04	28.05	7.73	0.00	50.82	74.00	-23.18	Horizontal	Peak
2480.02	13.40	27.65	7.84	0.00	48.89	74.00	-25.11	Horizontal	Peak
2310.00	10.81	28.05	7.73	0.00	46.59	54.00	-7.41	Vertical	Average
2480.02	10.36	27.65	7.84	0.00	45.85	54.00	-8.15	Vertical	Average
2310.00	10.82	28.05	7.73	0.00	46.60	54.00	-7.40	Horizontal	Average
2480.02	10.58	27.65	7.84	0.00	46.07	54.00	-7.93	Horizontal	Average

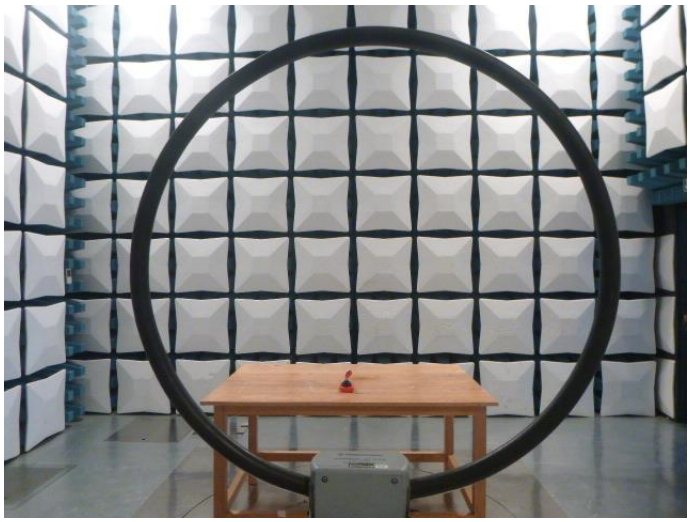
CH19									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	Test value
2483.51	14.80	27.26	8.04	0.00	50.10	74.00	-23.90	Vertical	Peak
2500.00	13.34	27.20	8.08	0.00	48.62	74.00	-25.38	Vertical	Peak
2483.51	13.36	27.26	8.04	0.00	48.66	74.00	-25.34	Horizontal	Peak
2500.00	14.16	27.20	8.08	0.00	49.44	74.00	-24.56	Horizontal	Peak
2483.51	10.28	27.26	8.04	0.00	45.58	54.00	-8.42	Vertical	Average
2500.00	10.31	27.20	8.08	0.00	45.59	54.00	-8.41	Vertical	Average
2483.51	10.31	27.26	8.04	0.00	45.61	54.00	-8.39	Horizontal	Average
2500.00	10.28	27.20	8.08	0.00	45.56	54.00	-8.44	Horizontal	Average

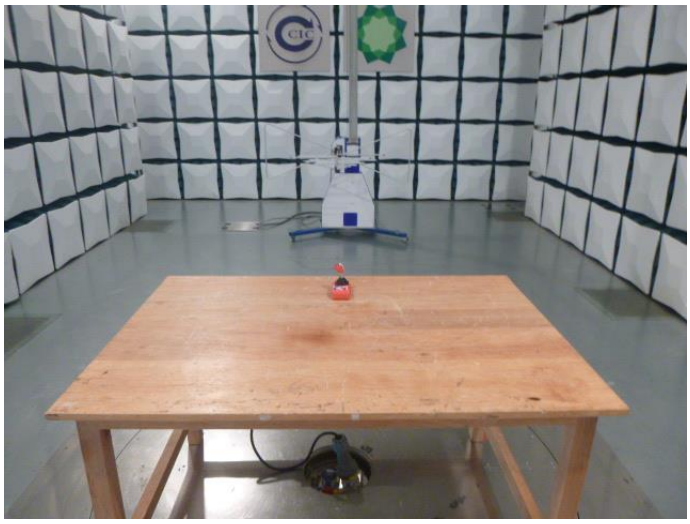
Remark:

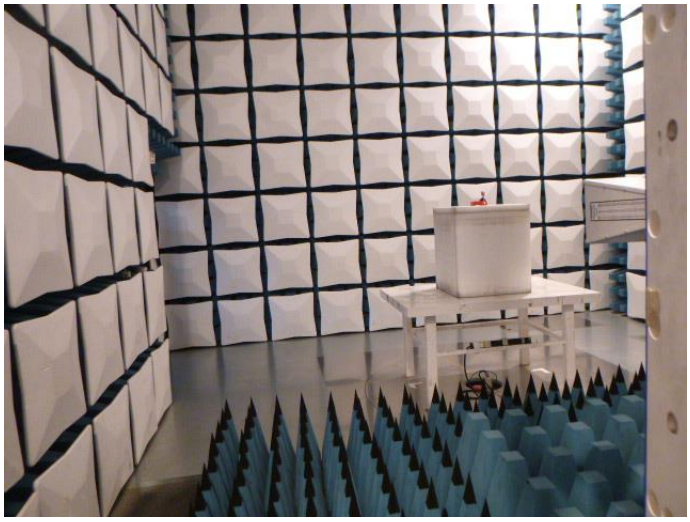
1. Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The peak level is lower than average limit(54dBuV/m), this data is the too weak instrument of signal is unable to test.
3. The emission levels of other frequencies are very lower than the limit and not show in test report.

6. TEST SETUP PHOTOS OF THE EUT

Radiated Emissions



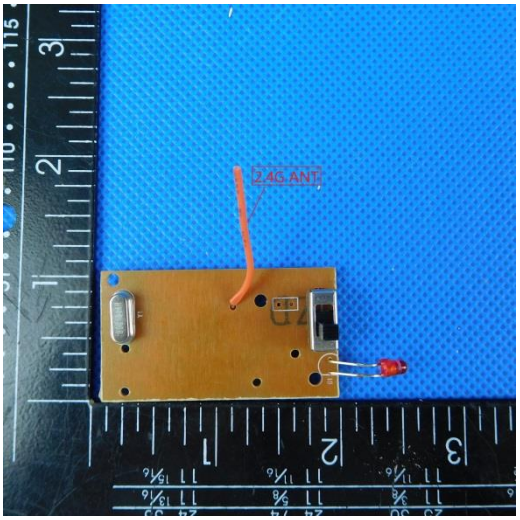


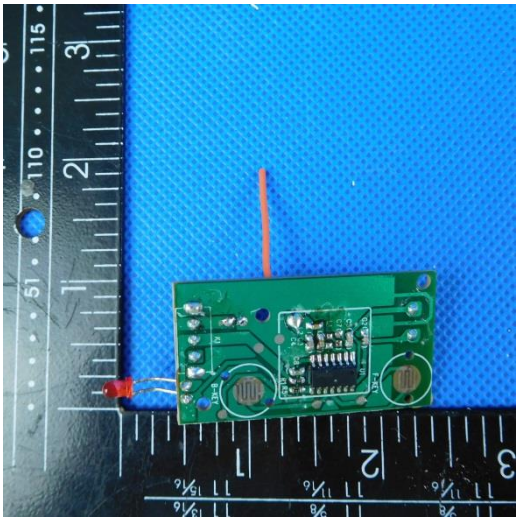


7. EXTERNAL AND INTERNAL PHOTOS OF THE EUT

External Photos

Internal Photos





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