FCC AND ISED CERTIFICATION TEST REPORT

Applicant	:	Globe Electric Company Inc.
Address of Applicant	:	150 Oneida, Montreal, Quebec, Canada, H9R 1A8
Manufacturer	:	Zhongshan Fengrun Smart HomeTechnology Co., Ltd
Address of Manufacturer	:	NO.6 HONGJI ROAD, WESTDISTRICT ， ZHONGSHAN,GUANGDONG.
Equipment under Test	:	2.4G Remote Control
Model No.	:	GE27109TX
FCC ID	:	2AQUQGE27109TX
IC	:	8290A-GE27109TX
Test Standard(s)	:	FCC Rules and Regulations Part 15 Subpart C. RSS-210 Issue 11 June 2024 ANSI C63.10:2013. RSS-Gen Issue 5, Apr. 2018, Amendment 2 (February 2021)
Report No.	:	DDT-RE24121013-2E01
Issue Date	:	2024/12/25
Issue By	:	Guangdong Dongdian Testing Service Co., Ltd. Unit 2, Building 1, No. 17, Zongbu 2nd Road, Songshan Lake Park, Dongguan, Guangdong, China, 523808

REPORT

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Test Report Declare

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Test Standard Used:

FCC Rules and Regulations Part 15 Subpart C.
RSS-210 Issue 11 June 2024
ANSI C63.10:2013.
RSS-Gen Issue 5, Apr. 2018, Amendment 2 (February 2021)

We Declare:

The equipment described above is tested by Guangdong Dongdian Testing Service Co., Ltd. and in the configuration tested the equipment complied with the standards specified above. The test results are contained in this test report and Guangdong Dongdian Testing Service Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

Report No.:	DDT-RE24121013-2E01		
Date of Receipt:	2024/12/11	**Date of Test:**	2024/12/11~2024/12/25

Prepared By:

Tiger Mo

Tiger Mo/Engineer

Approved By:

Damon Hu

Certificate and Report Seal
检验检测专用章

Damon Hu/EMC Manager

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Guangdong Dongdian Testing Service Co., Ltd.

Revision History

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	2024/12/25	

1. Summary of Test Results

The EUT have been tested according to the applicable standards as referenced below.		
Description of Test Item	**Standard**	**Results**
20dB Bandwidth and 99% Bandwidth	FCC Part 15: 15.215 ANSI C63.10:2013 RSS-210 Issue 11 RSS-Gen Issue 5	Pass
Stop Transmitting Time Test	FCC Part 15C: 15.231(a) RSS-210 Issue 11	Pass
Radiated Emission	FCC Part 15: 15.205 FCC Part 15: 15.209 FCC Part 15: 15.249 ANSI C63.10:2013 RSS-210 Issue 11 RSS-Gen Issue 5	Pass
Power Line Conducted Emission	FCC Part 15: 15.207 ANSI C63.10:2013 RSS-210 Issue 11 RSS-Gen Issue 5	Pass
Antenna requirement	FCC Part 15: 15.203 RSS-210 Issue 11 RSS-Gen Issue 5	Pass
Note: N/A is an abbreviation for Not Applicable.		

2. General Test Information

2.1. Description of EUT

EUT Name	:	2.4G Remote Control
Model Number	:	GE27109TX
EUT Function Description	:	Please reference user manual of this device
Power Supply	:	DC 3V From CR2032 Button cell
Operation frequency	:	2402MHz, 2426MHz, 2480MHz
Modulation	:	FSK
Antenna Gain	:	PCB Antenna, Max peak gain 2.499dBi

Note 1: EUT is the abbreviation of equipment under test.
Note 2: "☒" means to be chosen or applicable; "☐" means don't to be chosen or not applicable; This note applies to entire report.

Note3: The above EUT information is declared by manufacturer and for more detailed features description please refer to the manufacturer's specifications or User's Manual. The above Antenna information is declared by manufacturer and for more detailed features description please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

2.2. Accessories of EUT

Accessories	Manufacturer	Model number	Description
N/A	N/A	N/A	N/A

2.3. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Serial No.	Other
N/A	N/A	N/A	N/A	N/A

2.4. Block diagram of EUT configuration for test

Configuration diagram


2.5. Deviations of test standard

No deviation.

2.6. Test environment conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature range:	+15℃ to +35 ℃
Humidity range:	20% to 75%
Pressure range:	86 kPa to106 kPa

Note: The specific temperature and humidity information of each test item refers to the temperature and humidity record in the corresponding test data.

2.7. Test laboratory

Guangdong Dongdian Testing Service Co., Ltd.

Add.: Unit 2, Building 1, No. 17, Zongbu 2nd Road, Songshan Lake Park, Dongguan, Guangdong, China, 523808.

Tel.: +86-0769-38826678, http://www.dgddt.com, Email: ddt@dgddt.com.

CNAS Accreditation No. L6451; A2LA Accreditation Number: 3870.01

FCC Designation Number: CN1182, Test Firm Registration Number: 540522

Innovation, Science and Economic Development Canada Site Registration Number: 10288A

Conformity Assessment Body identifier: CN0048

VCCI facility registration number: C-20087, T-20088, R-20123, R-20155, G-20118

2.8. Measurement uncertainty

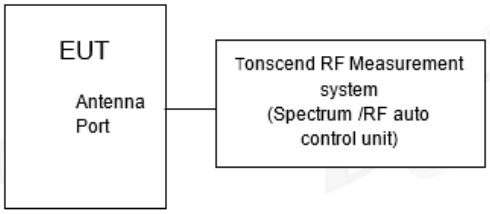
Test Item	Uncertainty
Bandwidth	1.1%
Peak Output Power (Conducted) (Spectrum analyzer)	0.86 dB (10 MHz ≤ f < 3.6 GHz);
	1.38 dB (3.6 GHz ≤ f < 8 GHz)
Peak Output Power (Conducted) (Power Sensor)	0.74 dB
Power Spectral Density	0.74 dB (10 MHz ≤ f < 3.6 GHz);
	1.38 dB (3.6 GHz ≤ f < 8 GHz)
Frequencies Stability	6.7×10^{-8} (Antenna couple method)
	5.5×10^{-8} (Conducted method)
Conducted spurious emissions	0.86 dB (10 MHz ≤ f < 3.6 GHz);
	1.40 dB (3.6 GHz ≤ f < 8 GHz)
	1.66 dB (8 GHz ≤ f < 26.5 GHz)
Uncertainty for radio frequency (RBW < 20 kHz)	3×10^{-8}
Temperature	0.4 ℃
Humidity	2 %
Uncertainty for Radiation Emission test (9 kHz – 30 MHz)	3.44 dB
Uncertainty for Radiation Emission test (30 MHz - 1 GHz)	4.70 dB (Antenna Polarize: V)
	4.84 dB (Antenna Polarize: H)
Uncertainty for Radiation Emission test (1 GHz - 40 GHz)	4.10 dB (1 - 6 GHz)
	4.40 dB (6 GHz - 18 GHz)
	3.54 dB (18 GHz - 26 GHz)
	4.30 dB (26 GHz - 40 GHz)
Uncertainty for Power line conduction emission test	3.34dB (150KHz-30MHz)
	3.72dB (9KHz-150KHz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

3. Equipment Used During Conductive Test

Equipment	Manufacturer	Model No.	Serial Number	Due Date
☒ RF Connected Test (RF Measurement System 2#)				
SPECTRUM ANALYZER	R&S	FSU26	201124	2025/07/08
Power Sensor	R&S	NRP-Z22	101254	2025/07/08
Test Software	Tonscend	JS1120-3	Ver.3.2.22	N/A

4. On Time and Duty Cycle

4.1. Block diagram of test setup



4.2. Limits

None: for reporting purposes only.

4.3. Test Procedure

Set the Centre frequency of the spectrum analyzer to the transmitting frequency;

Set the span=0 MHz, RBW=10 MHz, VBW=10 MHz, Sweep time=10 ms;

Trace mode = Single hold.

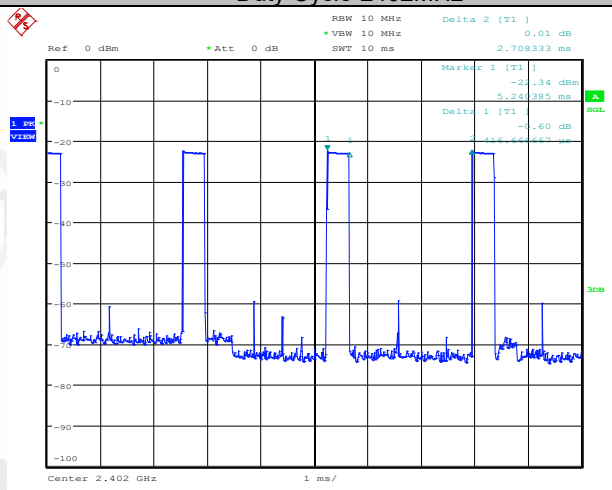
4.4. Test Result

Test Channel[MHz]	ON Time [ms]	Period [ms]	Duty Cycle[%]	20log(Δ) Factor[dB]
2402	0.417	2.708	15.40	-16.23
2426	0.417	2.692	15.49	-16.18
2480	0.433	2.708	15.99	-15.92

Note 1: The transmitter duty cycle was measured using a spectrum analyser in the time domain and calculated by below Equation:
Δ= ON Time/Period
δ(dB) = 20log(Δ)
δ is the duty cycle correction factor (dB)
Δ is the duty cycle (dimensionless)
Note 2: In cases where the pulse train exceeds 0.1 s, the measured field strength shall be determined during a 0.1 s interval

4.5. Original test data

Duty Cycle-2402MHz



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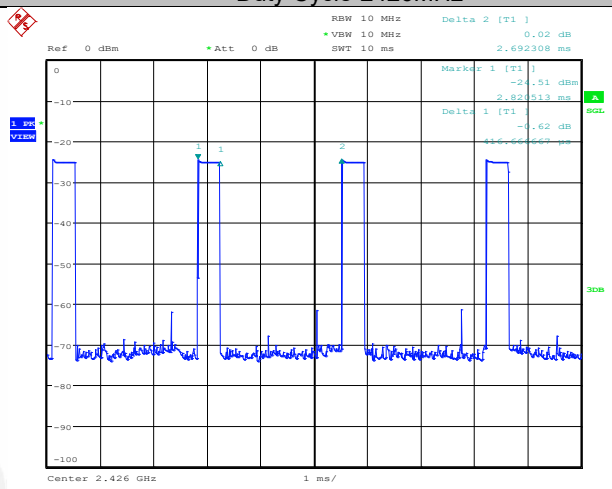
Duty Cycle-2426MHz



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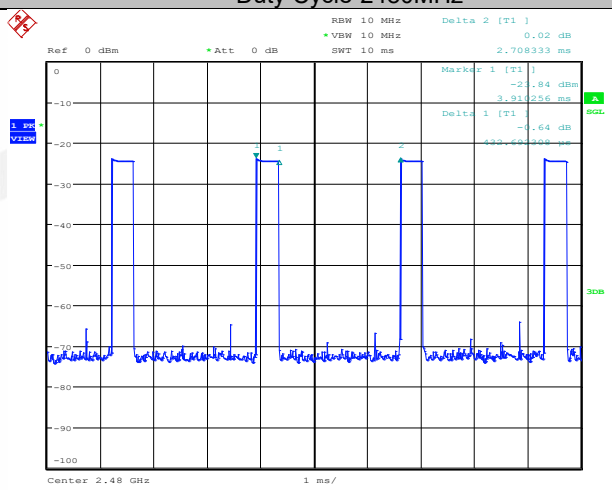
Duty Cycle-2480MHz



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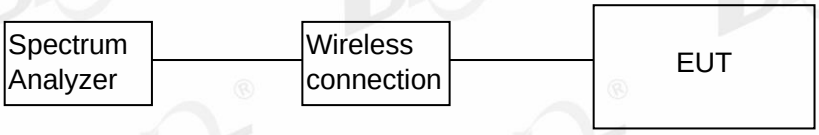
5. 20dB Bandwidth and 99% Bandwidth

5.1. Block diagram of test setup



5.2. Limits

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in § 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

§ 15.231(c) For devices operating above 900 MHz, the emission shall be no wider

than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.

5.3. Test procedure

(1) Connect EUT's antenna output to spectrum analyzer by RF cable.

(2) Set the spectrum analyzer as follows:

RBW:	1% to 5% of the OBW
VBW:	approximately three times RBW
Detector Mode:	Peak
Sweep time:	auto
Trace mode	Max hold

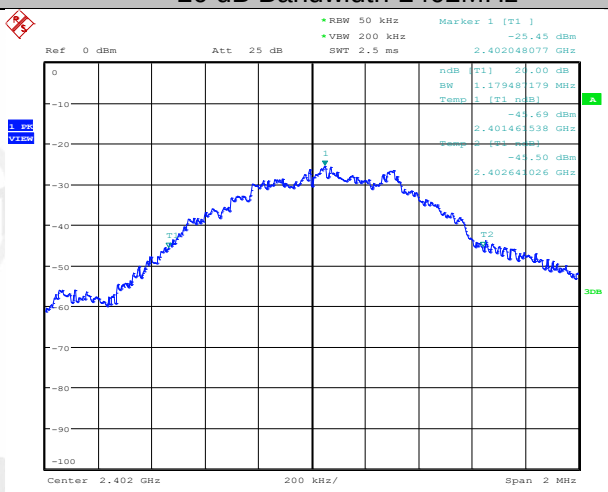
(3) Allow the trace to stabilize, measure the 20 dB bandwidth of signal.

5.4. Test result

Frequency (MHz)	20 dB Bandwidth (MHz)	99% Bandwidth (MHz)	Limit (MHz)	Conclusion
2402	1.179	1.131	0.5%*2402=12.01	PASS
2426	1.147	1.058	0.5%*2426=12.13	PASS
2480	1.231	1.151	0.5%*2480=12.40	PASS

5.5. Original test data

20 dB Bandwidth-2402MHz



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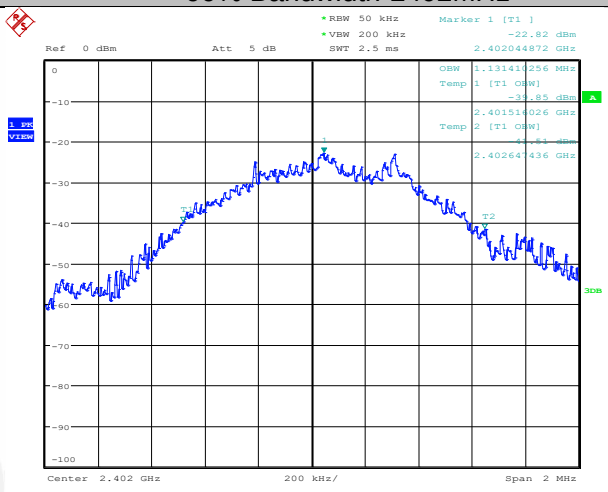
99% Bandwidth-2402MHz



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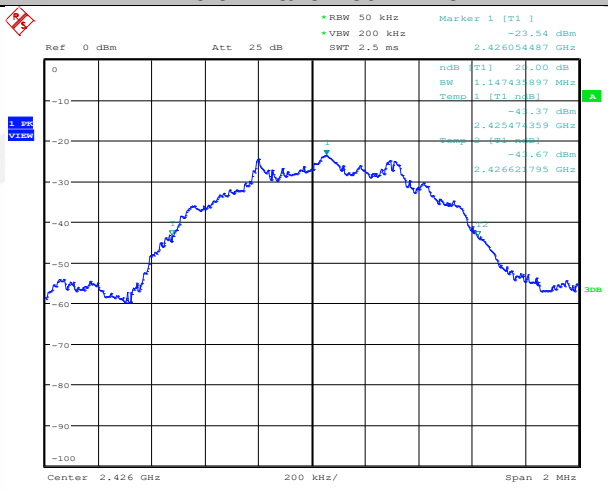
20 dB Bandwidth-2426MHz



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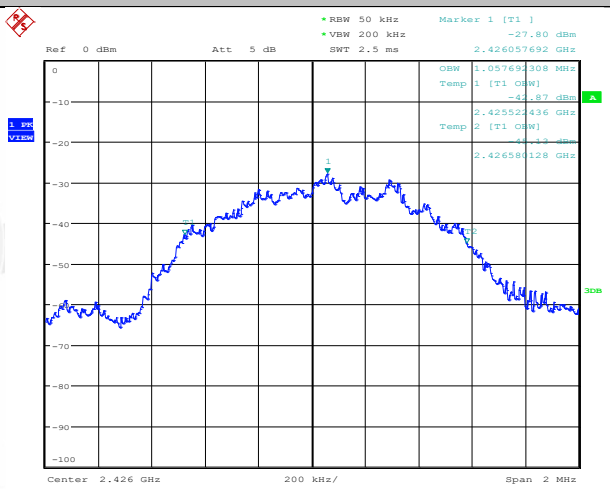
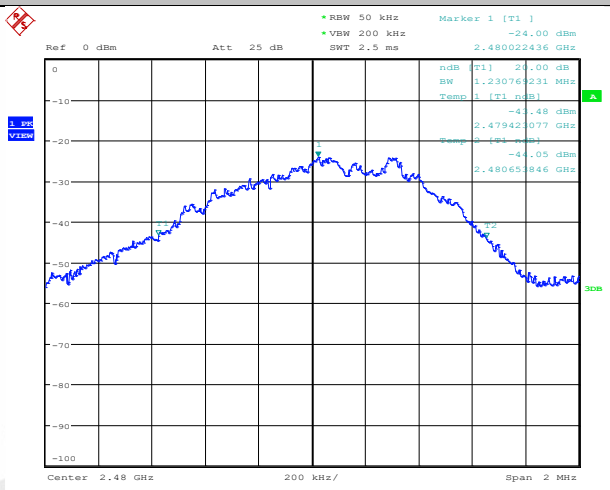
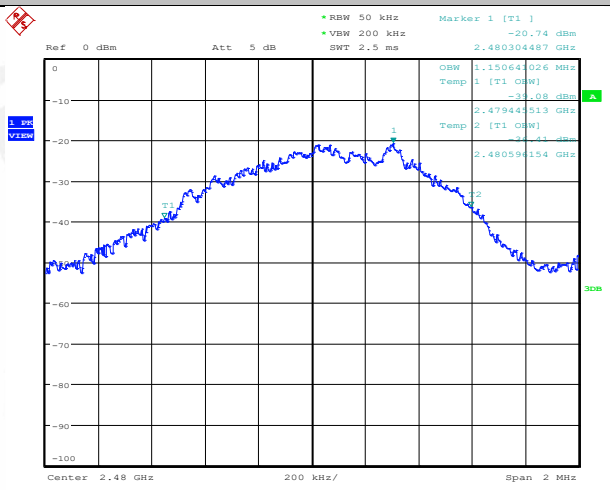
99% Bandwidth-2426MHz



20 dB Bandwidth-2480MHz

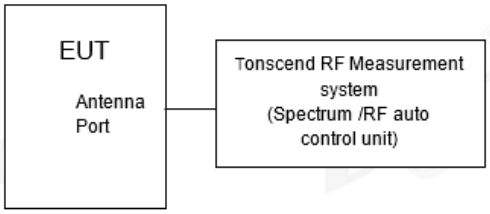


99% Bandwidth-2480MHz



6 Stop transmitting time test

6.1. Block diagram of test setup



6.2. Limits

15.231(a), A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

6.3. Test Procedure

(1) The EUT's RF signal was coupled to spectrum analyzer by antenna connected to spectrum analyzer.

(2) Set the spectrum to zero span mode, and centered of EUT frequency.

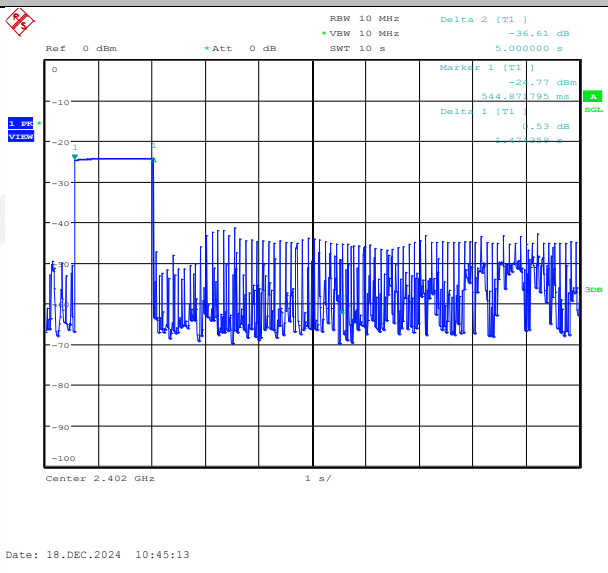
(3) Measure the stop transmitting time after release EUT button.

6.4. Test Result

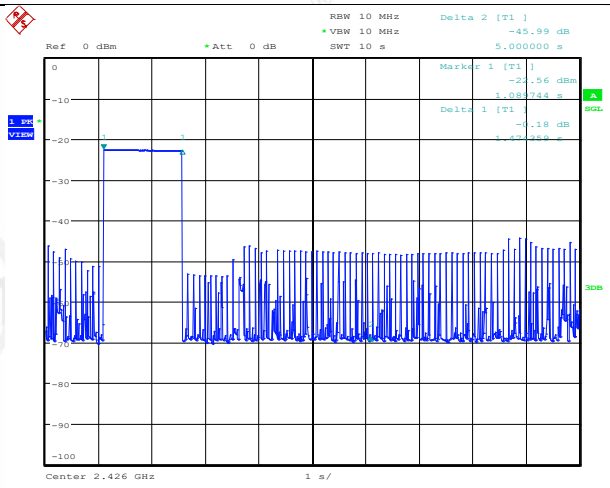
Frequency (MHz)	Burst Duration[s]	Limit [s]	Verdict
2402	1.474	≤5	PASS
2426	1.474	≤5	PASS
2480	1.474	≤5	PASS

6.5. Original test data

2402MHz



2426MHz



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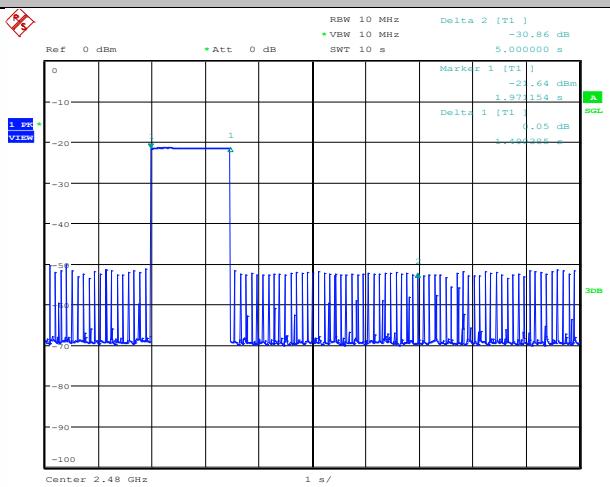
2480MHz



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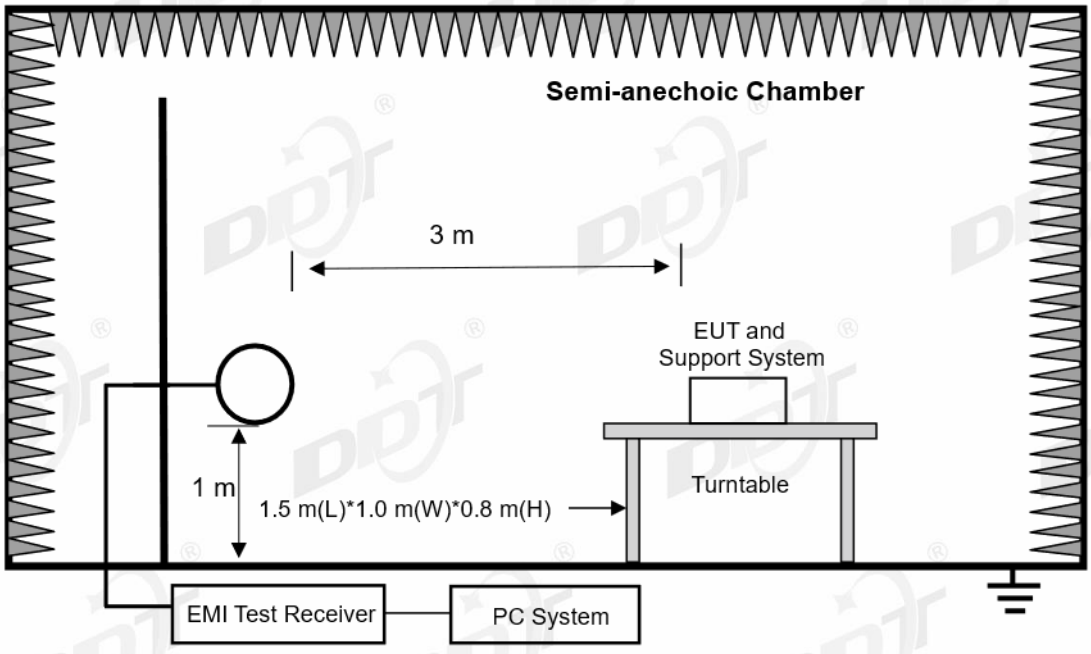
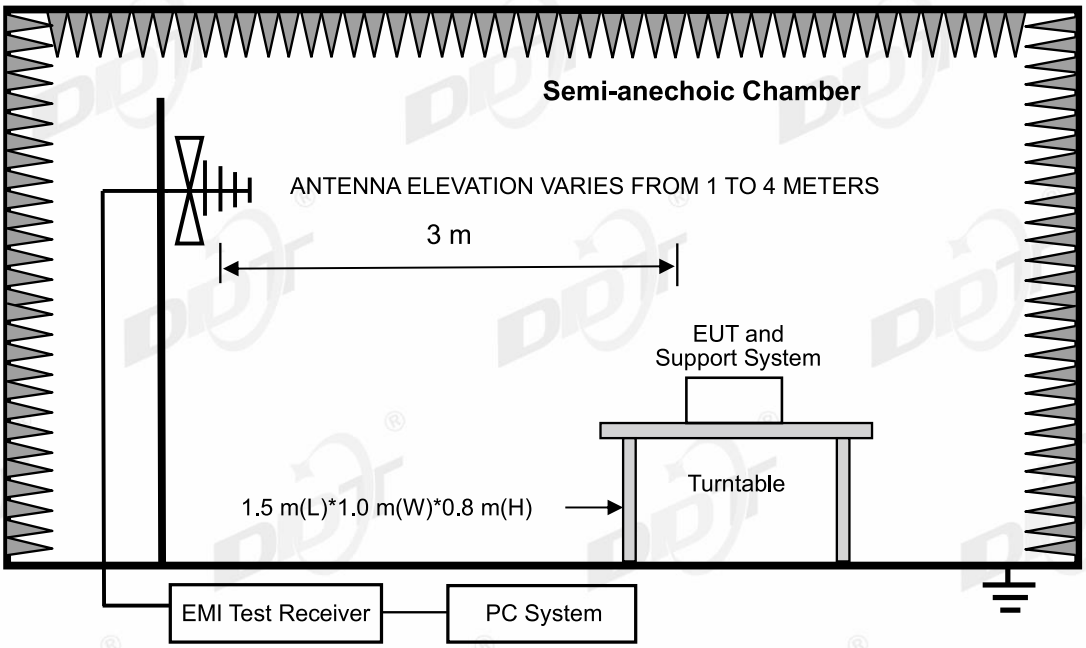
7. Radiated Emission

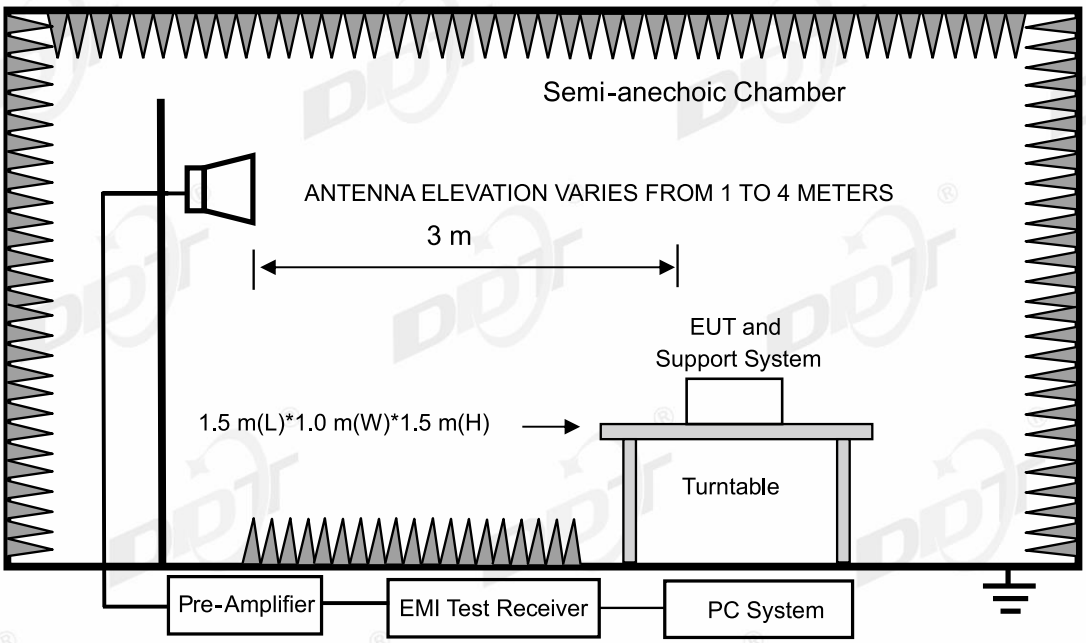
7.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Cal Due To
RF Cable	N/A	W13.02 AP1-X2	DDT-ZC04023	2025/03/31
Micro-Tronics filters	REBES	BRM50716	DDT-ZC03240	/
Trilog Broadband Antenna	Schwarzbeck	VULB 9163	DDT-ZC02050	2025/07/11
Pre-amplifier	COM-POWER	PAM-118A	DDT-ZC01293	2025/08/25
High Pass filter	Xi'an Xingbo	XBLBQ-GTA67	DDT-ZC02179	2025/04/22
RF cable	Yuhu Technology	JCTB810-NJ-NJ-9M	DDT-ZC02538	2025/03/31
Active Loop Antenna	Schwarzbeck	FMZB1519	DDT-ZC00524	2025/09/11
RF cable	Yuhu Technology	ZT26S-SMAJ-SMAJ-1M	DDT-ZC02037	2025/03/31
Micro-Tronics filters	REBES	BRM50702	DDT-ZC03242	/
PSA Series Spectrum Analyzer	Agilent	E4447A	DDT-ZC00517	2025/03/31
Hochgewinn-Hornantenne	SCHWARZBECK	BBHA 9120 D	DDT-ZC02129	2025/09/18
RF Cable	N/A	W24.02 HL-562	DDT-ZC04022	2025/03/31
EMI TEST RECEIVER	R&S	ESU26	DDT-ZC01909	2025/03/31
RF cable	Zhongke Junchuang	JCT26S-NJ-NJ-1.5M	DDT-ZC02762	2025/03/31
Pre-amplifier	COM-POWER	PAM-840A	DDT-ZC01693	2025/03/31
High pass filter	Micro-Tronics	HPM50102	DDT-ZC00561	2025/04/22
High pass filter	Micro-Tronics	HPM50108	DDT-ZC00560	2025/04/22
Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	DDT-ZC00506	2025/04/26

7.2. Block diagram of test setup







7.3. Limits

(1) FCC 15.205 Restricted frequency band

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
[1]0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.1772&4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.2072&4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4

6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(2)
13.36-13.41			

1Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz

2Above 38.6

RSS-Gen section 8.10 Restricted frequency bands*

MHz	**MHz**	**MHz**	**GHz**
0.090-0.110	12.51975-12.52025	240-285	3.5-4.4
0.495-0.505	12.57675-12.57725	322-335.4	4.5-5.15
2.1735-2.1905	13.36-13.41	399.9-410	5.35-5.46
3.020-3.026	16.42-16.423	608-614	7.25-7.75
4.125-4.128	16.69475-16.69525	960-1427	8.025-8.5
4.1772&4.17775	16.80425-16.80475	1435-1626.5	9.0-9.2
4.2072&4.20775	25.5-25.67	1645.5-1646.5	9.3-9.5
5.677-5.683	37.5-38.25	1660-1710	10.6-12.7
6.215-6.218	73-74.6	1718.8-1722.2	13.25-13.4
6.26775-6.26825	74.8-75.2	2200-2300	14.47-14.5
6.31175-6.31225	108-138	2310-2390	15.35-16.2
8.291-8.294	149.9-150.05	2483.5-2500	17.7-21.4
8.362-8.366	156.52475-156.52525	2655-2900	22.01-23.12
8.37625-8.38675	156.7-156.9	3260-3267	23.6-24.0
8.41425-8.41475	162.0125-167.17	3332-3339	31.2-31.8
12.29-12.293	167.72-173.2	3345.8-3358	36.43-36.5
			Above 38.6

* Certain frequency bands listed in table and in bands above 38.6 GHz are designated for licence-exempt applications. These frequency bands and the requirements that apply to related devices are set out in the 200 and 300 series of RSSs.

(2) FCC 15.209 Limit & RSS-Gen section 8.9 Limit

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/m
0.009 ~ 0.490	300	2400/F(kHz)	67.6-20log(F)
0.490 ~ 1.705	30	24000/F(kHz)	87.6-20log(F)

1.705 ~ 30.0	30	30	29.54
30~88	3	100	40.0
88~216	3	150	43.5
216~960	3	200	46.0
960~1000	3	500	54.0
Above 1000	3	74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	

Note:

(1) The emission limits shown in the above table are based on measurements employing a CISPR QP detector except for the frequency bands 9 - 90 kHz, 110 - 490 kHz and above 1000 MHz, radiated emissions limits in these three bands are based on measurements employing an average detector.

(2) At frequencies below 30 MHz, measurement may be performed at a distance closer than that specified, and the limit at closer measurement distance can be extrapolated by below formula:

$$Limit_{3m}(dBuV/m) = Limit_{30m}(dBuV/m) + 40Log(30m/3m)$$

(3) Limit for this EUT

The emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, and the emissions appearing within RSS-Gen section 8.10 Restricted frequency bands shall not exceed the limits shown in RSS-Gen section 8.9, all the other emissions shall be at least 20 dB below the fundamental emissions or comply with 15.209 limits and RSS-Gen section 8.9 limits.

7.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
/	/	/	/	/

7.5. Test procedure

(1) EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber for below 1G and 150 cm above the ground plane inside a fully-anechoic chamber for above 1G.

(2) Test antenna was located 3 m from the EUT on an adjustable mast, and the antenna used as below table.

Test frequency range	Test antenna used	Test antenna distance
9 kHz - 30 MHz	Active Loop antenna	3 m
30 MHz - 1 GHz	Trilog Broadband Antenna	3 m
1 GHz - 18 GHz	Double Ridged Horn Antenna(1 GHz-18 GHz)	3 m
18 GHz - 40 GHz	Horn Antenna(18 GHz-40 GHz)	1 m

According ANSI C63.10:2013 clause 6.4.6 and 6.5.3, for measurements below 30 MHz, Antenna was located 3 m from EUT, the loop antenna was positioned in three antenna orientations (parallel, perpendicular, and round-parallel), for each measurement antenna alignment, the EUT shall be rotated through 0° to 360° on a turntable, and the lowest height of the magnetic antenna shall be 1 m above the ground. For measurement above 30MHz, the trilog Broadband Antenna or Horn Antenna was located 3m from EUT, Measurements were made with the antenna positioned in both the

horizontal and vertical planes of Polarization, and the measurement antenna was varied from 1 m to 4 m. in height above the reference ground plane to obtain the maximum signal strength.

(3) Below pre-scan procedure was first performed in order to find prominent frequency spectrum radiated emissions from 9 kHz to 25 GHz:

(a) Scanning the peak frequency spectrum with the antenna specified in step (3), and the EUT was rotated 360 degree, the antenna height was varied from 1 m to 4 m (Except loop antenna, it's fixed 1 m above ground.)

(b) Change work frequency or channel of device if practicable.

(c) Change modulation type of device if practicable.

(d) Change power supply range from 85% to 115% of the rated supply voltage

(e) Rotated EUT though three orthogonal axes to determine the attitude of EUT arrangement produces highest emissions.

Spectrum frequency from 9 kHz to 25 GHz (tenth harmonic of fundamental frequency) was investigated, and no any obvious emission were detected from 18 GHz to 25 GHz, so below final test was performed with frequency range from 9 kHz to 18 GHz.

(4) For final emissions measurements at each frequency of interest, the EUT was rotated and the antenna height was varied between 1 m and 4 m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipment and all of the interface cables were changed according to ANSI C63.10:2013 on Radiated Emission test.

(5) The emissions from 9 kHz to 1 GHz were measured based on CISPR QP detector except for the frequency bands 9 - 90 kHz, 110 - 490 kHz, for emissions from 9 kHz - 90 kHz,110 kHz - 490 kHz and above 1 GHz were measured based on average detector, for emissions above 1 GHz, peak emissions also be measured and need comply with Peak limit.

(6) The emissions from 9 kHz to 1 GHz, QP or average values were measured with EMI receiver with below RBW.

Frequency band	RBW
9 kHz - 150 kHz	200 Hz
150 kHz - 30 MHz	9 kHz
30 MHz - 1 GHz	120 kHz

(7) For emissions above 1GHz, both Peak and Average level were measured with Spectrum Analyzer, and the RBW is set at 1 MHz, VBW is set at 3 MHz for Peak measure; According ANSI C63.10:2013 clause 4.1.4.2.2 procedure for average measure.

(8) For portable device, X axis, Y axis, Z axis are tested, and worse setup is reported.

(9) According exploratory test, the emission levels are 20 dB below the limit detected from 9 kHz to 30 MHz and 18 GHz to 40 GHz, so the final test was performed with frequency range from 30 MHz to 18 GHz and recorded in below.

(10) 30 MHz ~ 40 GHz: (Scan with all mode, the worst case is record and report)

(11) For emissions below 1 GHz, according exploratory explorer test, when change Tx mode and channel, have no distinct influence on emissions level, so for emissions below 1 GHz, the final test was only performed with the worst mode.

7.6. Test result

PASS. (See below detailed test result)

Field Strength of the Fundamental Signal

Freq. [MHz]	Reading [dBμV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Detector	Polarity
2402	51.06	27.30	3.58	0.00	81.94	101.9	19.96	PK	Horizontal
2402	51.06	27.30	3.58	0.00	65.71	81.9	16.19	AV	Horizontal
2402	47.11	27.30	3.58	0.00	77.99	101.9	23.91	PK	Vertical
2402	47.11	27.30	3.58	0.00	61.76	81.9	20.14	AV	Vertical
2426	50.38	27.35	3.59	0.00	81.32	101.9	20.58	PK	Horizontal
2426	50.38	27.35	3.59	0.00	65.14	81.9	16.76	AV	Horizontal
2426	47.90	27.35	3.59	0.00	78.84	101.9	23.06	PK	Vertical
2426	47.90	27.35	3.59	0.00	62.66	81.9	19.24	AV	Vertical
2480	53.51	27.52	3.62	0.00	84.65	101.9	17.25	PK	Horizontal
2480	53.51	27.52	3.62	0.00	68.73	81.9	13.17	AV	Horizontal
2480	50.17	27.52	3.62	0.00	81.31	101.9	20.59	PK	Vertical
2480	50.17	27.52	3.62	0.00	65.39	81.9	16.51	AV	Vertical
Result: Pass									

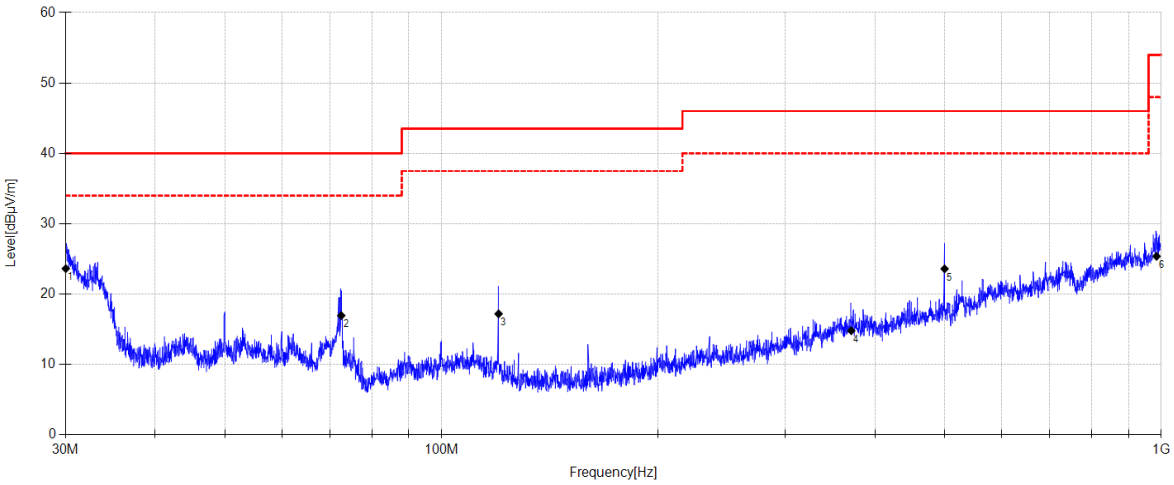
1.Note: All Freq. have been pretest, and only the worst case is shown in report.

2.AV=PK-20log(Δ) Factor[dB]

7.7. Test data

TR-4-E-009 Radiated Emission Test Result

Test Date:	2024-12-19	**Tested By**:	Gen Liu
EUT:	2.4G Remote Control	**Model Number**:	GE27109TX
Test Mode:	TX SRD	**Power Supply**:	Battery
Condition:	Temp:21.3°C;Humi:47.4%	**Test Site**:	DDT 3# Chamber
File Path:	d:\ts\2024 report data\Q24121013-2E\FCC Below1G\20241219-210936_H		
Memo:	Sample Number:S24121013 Power Setting:NA		



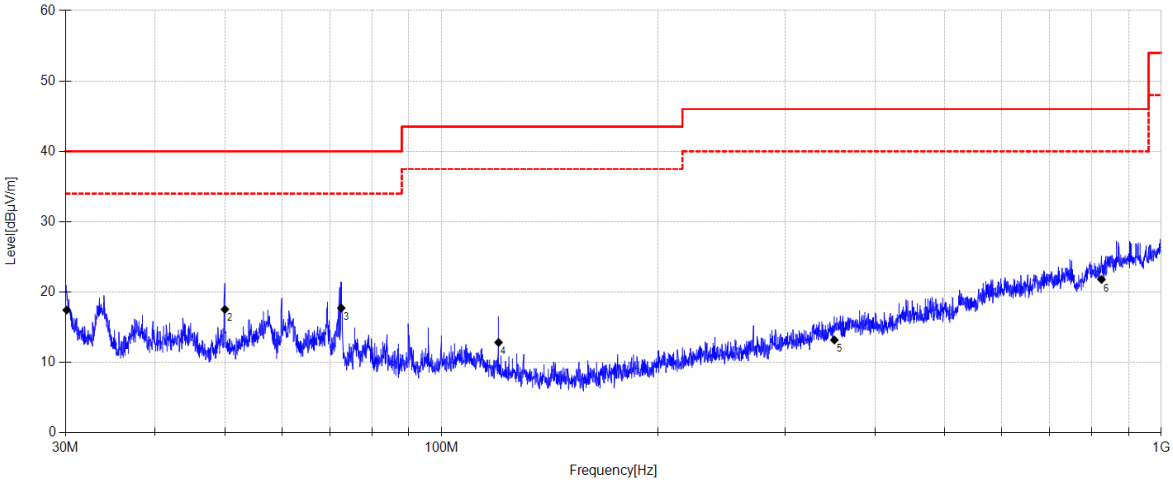
Data List

NO.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable Loss [dB]	Result [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	30.042	40.66	10.30	3.76	23.62	40.00	16.38	QP	Horizontal
2	72.528	34.62	9.39	4.04	16.95	40.00	23.05	QP	Horizontal
3	119.991	33.98	10.00	4.33	17.19	43.50	26.31	QP	Horizontal
4	370.776	24.99	15.74	5.50	14.79	46.00	31.21	QP	Horizontal
5	499.844	32.01	17.08	6.00	23.59	46.00	22.41	QP	Horizontal
6	984.693	26.21	21.91	7.42	25.37	54.00	28.63	QP	Horizontal

Note:
1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date:	2024-12-19	**Tested By**:	Gen Liu
EUT:	2.4G Remote Control	**Model Number**:	GE27109TX
Test Mode:	TX SRD	**Power Supply**:	Battery
Condition:	Temp:21.3°C;Humi:47.4%	**Test Site**:	DDT 3# Chamber
File Path:	d:\ts\2024 report data\Q24121013-2E\FCC Below1G\20241219-211020_V		
Memo:	Sample Number:S24121013 Power Setting:NA		



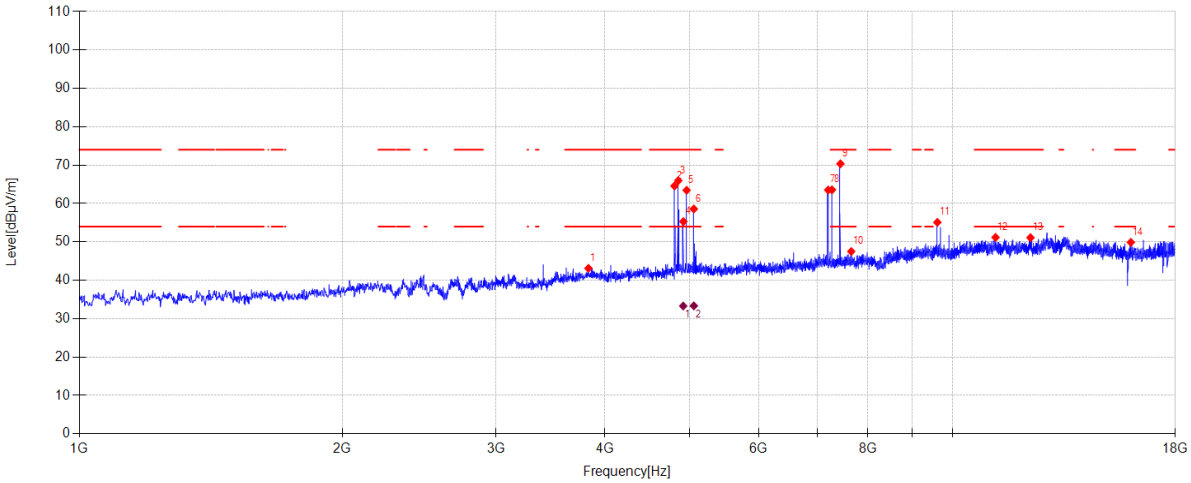
Data List									
NO.	**Freq. [MHz]**	**Reading [dBµV/m]**	**Antenna Factor [dB]**	**Cable Loss [dB]**	**Result [dBµV/m]**	**Limit [dBµV/m]**	**Margin [dB]**	**Detector**	**Polarity**
1	30.126	34.48	10.31	3.76	17.45	40.00	22.55	QP	Vertical
2	49.981	31.77	12.99	3.88	17.54	40.00	22.46	QP	Vertical
3	72.528	35.4	9.39	4.04	17.73	40.00	22.27	QP	Vertical
4	119.991	29.63	10.00	4.33	12.84	43.50	30.66	QP	Vertical
5	351.288	24.43	14.76	5.43	13.19	46.00	32.81	QP	Vertical
6	825.786	25.34	20.35	7.01	21.79	46.00	24.21	QP	Vertical

Note:
1. Result Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date:	2024-12-19	**Tested By**:	Gen Liu
EUT:	2.4G Remote Control	**Model Number**:	GE27109TX
Test Mode:	TX SRD	**Power Supply**:	Battery
Condition:	Temp:21.3°C;Humi:47.4%	**Test Site**:	DDT 3# Chamber
File Path:	d:\ts\2024 report data\Q24121013-2E\FCC Above 1G\1		
Memo:	Sample Number:S24121013 Power Setting:NA		

Test Graph



Data List										
NO.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	3828.800	46.86	30.82	5.08	-39.64	43.12	74.00	30.88	PK	Horizontal
4	4918.500	56.29	33.04	5.60	-39.61	55.32	74.00	18.68	PK	Horizontal
6	5056.200	59.20	33.31	5.68	-39.60	58.59	74.00	15.41	PK	Horizontal
10	7657.200	44.52	36.61	6.79	-40.41	47.51	74.00	26.49	PK	Horizontal
12	11203.400	42.93	39.20	8.26	-39.20	51.19	74.00	22.81	PK	Horizontal
13	12286.300	42.84	39.30	8.91	-39.94	51.11	74.00	22.89	PK	Horizontal
14	16005.900	41.16	37.99	10.15	-39.40	49.90	74.00	24.10	PK	Horizontal

Data List									
NO.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
1	4916.280	34.26	33.04	5.60	33.29	54.00	20.71	AV	Horizontal
2	5055.855	33.94	33.31	5.68	33.33	54.00	20.67	AV	Horizontal

Data List										
NO.	Freq. [MHz]	Reading [dBµV/m]	Antenna Factor [dB]	Cable loss [dB]	AMP [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Polarity
2	4804.600	66.04	32.62	5.53	-39.62	64.57	81.93	17.36	PK	Horizontal
2	4804.600	66.04	32.62	5.53	-39.62	48.34	61.93	13.59	AV	Horizontal
3	4852.200	66.24	33.76	5.56	-39.61	65.95	81.93	15.98	PK	Horizontal
3	4852.200	66.24	33.76	5.56	-39.61	49.77	61.93	12.16	AV	Horizontal
5	4961.000	64.32	33.12	5.63	-39.60	63.47	81.93	18.46	PK	Horizontal
5	4961.000	64.32	33.12	5.63	-39.60	47.55	61.93	14.38	AV	Horizontal
7	7205.000	61.00	36.80	6.55	-40.82	63.53	81.93	18.40	PK	Horizontal
7	7205.000	61.00	36.80	6.55	-40.82	47.3	61.93	14.63	AV	Horizontal

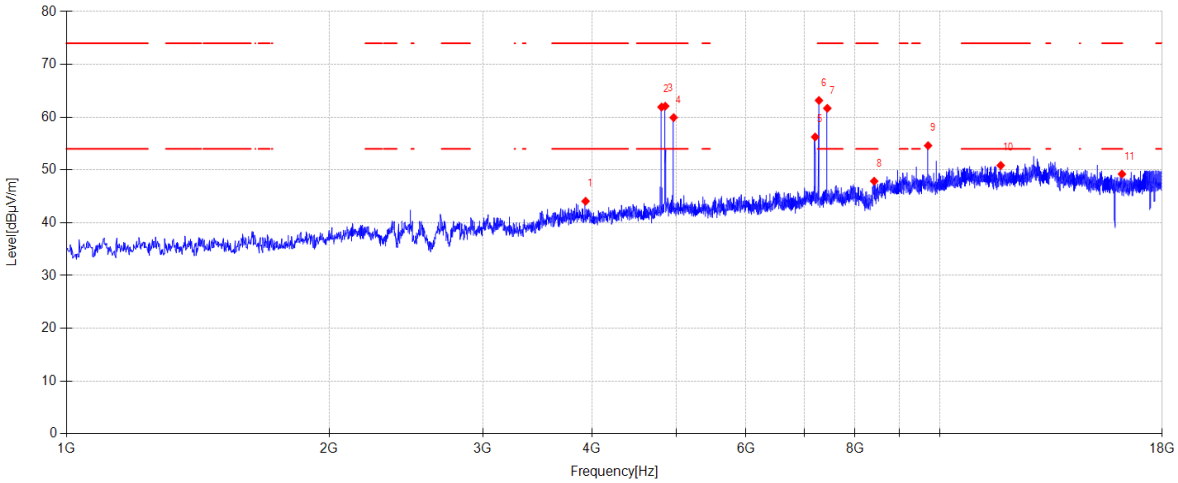
8	7278.100	60.87	36.86	6.59	-40.75	63.57	81.93	18.36	PK	Horizontal
8	7278.100	60.87	36.86	6.59	-40.75	47.39	61.93	14.54	AV	Horizontal
9	7441.300	67.66	36.62	6.67	-40.60	70.35	81.93	11.58	PK	Horizontal
9	7441.300	67.66	36.62	6.67	-40.60	54.43	61.93	7.50	AV	Horizontal
11	9608.800	48.31	38.58	7.50	-39.29	55.1	81.93	26.83	PK	Horizontal
11	9608.800	48.31	38.58	7.50	-39.29	38.87	61.93	23.06	AV	Horizontal

Note:
1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
4.AV=PK-20log(Δ) Factor[dB]

TR-4-E-009 Radiated Emission Test Result

Test Date:	2024-12-19	**Tested By**:	Gen Liu
EUT:	2.4G Remote Control	**Model Number**:	GE27109TX
Test Mode:	TX SRD	**Power Supply**:	Battery
Condition:	Temp:21.3°C;Humi:47.4%	**Test Site**:	DDT 3# Chamber
File Path:	d:\ts\2024 report data\Q24121013-2E\FCC Above 1G\2		
Memo:	Sample Number:S24121013 Power Setting:NA		

Test Graph



Data List										
NO.	**Freq. [MHz]**	**Reading [dBµV/m]**	**Antenna Factor [dB]**	**Cable loss [dB]**	**AMP [dB]**	**Level [dBµV/m]**	**Limit [dBµV/m]**	**Margin [dB]**	**Detector**	**Polarity**
1	3932.500	47.54	31.14	5.06	-39.66	44.08	74.00	29.92	PK	Vertical
8	8418.800	42.83	37.50	7.11	-39.56	47.88	74.00	26.12	PK	Vertical
10	11754.200	43.05	38.95	8.61	-39.75	50.86	74.00	23.14	PK	Vertical
11	16182.700	40.74	37.82	10.19	-39.53	49.22	74.00	24.78	PK	Vertical

Data List										
NO.	**Freq. [MHz]**	**Reading [dBµV/m]**	**Antenna Factor [dB]**	**Cable loss [dB]**	**AMP [dB]**	**Level [dBµV/m]**	**Limit [dBµV/m]**	**Margin [dB]**	**Detector**	**Polarity**
2	4804.600	63.39	32.62	5.53	-39.62	61.92	81.93	20.01	PK	Vertical
2	4804.600	63.39	32.62	5.53	-39.62	45.69	61.93	16.24	AV	Vertical
3	4852.200	62.38	33.76	5.56	-39.61	62.09	81.93	19.84	PK	Vertical
3	4852.200	62.38	33.76	5.56	-39.61	45.91	61.93	16.02	AV	Vertical
4	4961.000	60.78	33.12	5.63	-39.60	59.93	81.93	22.00	PK	Vertical
4	4961.000	60.78	33.12	5.63	-39.60	44.01	61.93	17.92	AV	Vertical
5	7205.000	53.72	36.80	6.55	-40.82	56.25	81.93	25.68	PK	Vertical
5	7205.000	53.72	36.80	6.55	-40.82	40.02	61.93	21.91	AV	Vertical
6	7278.100	60.47	36.86	6.59	-40.75	63.17	81.93	18.76	PK	Vertical
6	7278.100	60.47	36.86	6.59	-40.75	46.99	61.93	14.94	AV	Vertical
7	7439.600	59.00	36.62	6.67	-40.60	61.69	81.93	20.24	PK	Vertical
7	7439.600	59.00	36.62	6.67	-40.60	45.77	61.93	16.16	AV	Vertical
9	9704.000	48.04	38.40	7.53	-39.36	54.61	81.93	27.32	PK	Vertical
9	9704.000	48.04	38.40	7.53	-39.36	38.38	61.93	23.55	AV	Vertical

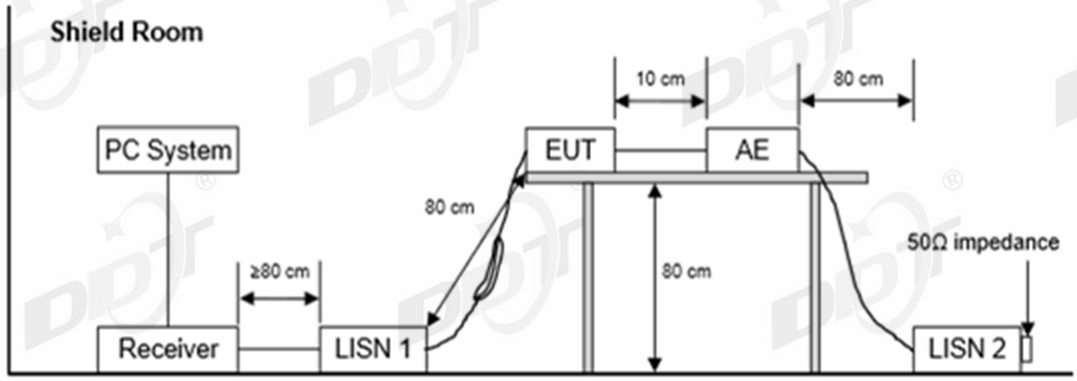
Note:
1. Level = Reading + Cable loss + Antenna Factor + AMP
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
4.AV=PK-20log(Δ) Factor[dB]

8. Power Line Conducted Emissions

8.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Cal Due To
Two Line V-Network	R&S	ENV216	DDT-ZC02056	2025/07/08
Two Line V-Network	R&S	ENV216	DDT-ZC02059	2025/07/08
Three-phase artificial power network	SCHWARZBECK	NSLK 8163	DDT-ZC01572	2025/07/08
RF Cable	Yuhu Technology	Z806-NJ-NJ-6M	DDT-ZC02004	2025/07/08
Condected Radiated Software	Audix	E3	DDT-ZC00562	/
EMI Test Receiver	R&S	ESCI/E3	DDT-ZC01297	2025/07/08
Δ-shaped artificial power network	SCHWARZBECK	PVDC 8301	DDT-ZC03939	2025/03/31
Pulse Limiter	SCHWARZBECK	VTSD 9561	DDT-ZC02128	2025/07/08

8.2. Block diagram of test setup



8.3. Limits

Frequency	Quasi-Peak Level dB(μV)	Average Level dB(μV)
150 kHz~500 kHz	66 ~ 56*	56 ~ 46*
500 kHz~5 MHz	56	46
5 MHz~30 MHz	60	50

Note 1: * Decreasing linearly with logarithm of frequency.

Note 2: The lower limit shall apply at the transition frequencies.

8.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
/	/	/	/	/

8.5. Test procedure

The EUT and Support equipment, if needed, were put placed on a non-metallic table, 80cm above the ground plane.

All support equipment power received from a second LISN.

Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver connected to the LISN powering the EUT.

The Receiver scanned from 150 kHz to 30 MHz for emissions in each of the test modes.

During the above scans, the emissions were maximized by cable manipulation.

The test mode(s) described in clause 2.4 were scanned during the preliminary test.

After the preliminary scan, we found the test mode producing the highest emission level.

The EUT configuration and worse cable configuration of the above highest emission levels were recorded for reference of the final test.

EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test.

A scan was taken on both power lines, Neutral and Line, recording at least the six highest emissions.

Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit.

The test data of the worst-case condition(s) was recorded.

The bandwidth of test receiver is set at 9 kHz.

8.6. Test result

N/A

Measurements to demonstrate compliance with the conducted limits are not required for devices which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines.

9. Antenna Requirements

9.1. Limit

For intentional device, according to FCC 47 CFR 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. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For intentional device, according to RSS-Gen issue 5 section 6.8.

The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.

9.2. Result

The antenna used for this product as Antenna information described in section 2.1 of the report, and there is no other antenna than that furnished by the responsible party shall be used with the device.

11. Photos of the EUT

Please refer to DDT-Q224121013-2E appendix I

----------End Report----------