



Test report issue 2 of FCC ID: 2BKQT-RC01

Customer:

Applicant name :	Dongguan Co-lighting Optoelectronics Technology Co., Ltd.
Applicant address:	F7, No.5 Lianzihu Road, Qishi Town, DONGGUAN CITY, Guangdong 523500 China
Brand name:	Co-lighting
Manufacturer:	Dongguan Co-lighting Optoelectronics Technology Co., Ltd.
Manufacture address:	F7, No.5 Lianzihu Road, Qishi Town, DONGGUAN CITY, Guangdong 523500 China
Product name:	2.4G remote control
Model number:	RC01

Regulation

FCC Part 15 subpart C clause 15.249 Operation within the bands 902-928 MHz, 2400-2483.5 MHz, 5725-5875 MHz, and 24.0-24.25 GHz.

Laboratory information

Laboratory name:	BEST VERIFICATION LLC.
Laboratory address:	1 st FLR, 7# BLD, ERIX Industrial Park, Huihuan, Huizhou, 516106, P.R.C
Telephone:	+86-189-2746-5912
Email:	service@bestcert.cn
Test duration:	05/12/2026~05/22/2026
Tested by (printed name and signature):	Leo Tang Test Engineer <i>Leo Tang</i>
Reviewed and approved by (printed name and signature):	Smart Tseng Authorized Signature <i>Smart Tseng</i>
Report ID#:	BTR66.02.01.0331
Date of Issue:	08/26/2026

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Information supplied by the customer			
Product name:	2.4G remote control		
Model number:	RC01		
Rated input:	DC 3V	Lowest frequency used in products (MHz)	2400
Channel quantity	1	Highest frequency used in products (MHz)	2400
RF power	/	Modulation Type	GFSK
Antenna direction gain(dBi)	1.8dBi	Antenna Type	PCB antenna
The date of receiving the samples:	05/11/2026	Sample method:	Provide by applicant
Hardware version of EUT:	NS-12J-2.4G-8	Firm version of EUT:	G03
Firmware used to operate EUT for testing purposes:	/	Software used to operate EUT for testing purposes:	/
Disclaimer: the information is supplied by the customer and can affect the validity of results.			
EUT cable(s) description			
Cable	Length (m)	Shielded	Ferrite core
/	/	/	/
Support apparatus description			
Apparatus Name	Brand	Model	S/N:
/	/	/	/
Test method(s)			
ANSI C63.10-2020.American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices			
Operating mode description			
The EUT transmits RF continuously when the button is pushed during testing, the EUT is tested in three(LIE/STAND/SIDE) orientations separately, the worst orientation data is reported.			
Deviations or modifications (if any) to the test methods			
No			
Any special measure taken to ensure compliance or any modifies to EUT performed by laboratory			
No			
Facility accreditation			
FCC – Registration No.536808			

List of test equipment			
Apparatus#	Apparatus description	Brand	Calibration due. Date
B225	EMI Test Receiver	ROHDE& SCHWARZ	12/3/2026
B203	LISN	ROHDE& SCHWARZ	12/3/2026
B337	Amplifier	COMPOWER	7/25/2026
B591	Broadband Antenna	SCHWAZBECK	11/16/2027
B163	EMI Test Receiver	ROHDE& SCHWARZ	12/3/2026
B316	MXA Signal Analyzer	KEYSIGHT	12/3/2026
B230	Temperature & Humidity Meter	TESTO	12/7/2026
B017	AC Source	HUAYUAN	N/A
B351	LISN	ROHDE& SCHWARZ	N/A
B485	Shielded Room	SKET	5/25/2027
B217	AC Source	HUAYUAN	N/A
B482	SAC	SKET	5/25/2027
B141	Turntable/Antenna controller	SKET	N/A
B593	Pre-amplifier	SHW	7/25/2026
B595	MXG ANALOG SIGNAL GENERATOR	AGILENT	7/25/2026
B681	EZ_EMC Software	FARARD	N/A
B052	Disturbance Voltage measurement software	ROHDE& SCHWARZ	N/A
B018	AC Source	HUAYUAN	N/A
B590	60 CM LOOP ANTENNA	SCHWAZBECK	10/31/2027
B592	HORN ANTENNA	SCHWAZBECK	10/31/2027
Uncertainty			
Conducted emission	9-150 kHz ± 2.06 dB	0.15-30 MHz ± 2.87 dB	/
Radiated emission	0.009MHz-30MHz ± 2.87 dB	30-1000 MHz ± 3.52 dB	1 GHz - 18 GHz ± 3.84 dB
Occupied Bandwidth	$\pm 1.5\%$	/	/
Temperature	$\pm 0.7^{\circ}\text{C}$	Humidity	$\pm 1.9\%$

Summary of Results		
Clause of FCC Regulations	Description	Result
§ 15.203	Antenna Requirement	Compliant
§ 15.207	Conducted Emission	NA
§ 15.205 §15.209(a) §15.249(a) (c)	Radiated emission	Compliant
Disclaimer: the observations and test results in this report are relevant only to the sample(s) as received and items tested, classification and result are corresponded to information provided by applicant. Determining compliance is based on the results of the compliance measurement and the decision rule is inherent in the requested specification, not taking into account measurement instrumentation uncertainty.		
Antenna requirement		
§ 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 shall be considered sufficient to comply with the provisions of this section. 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. This requirement does not apply to carrier current devices or to devices operated under the provisions of § 15.211, 15.213, 15.217, 15.219, 15.221, or § 15.236. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with § 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.		
Test result: The antenna is a PCB trace antenna, it is permanently attached, refer to internal photos of EUT		

20dB Bandwidth

§ 15.215 Additional provisions to the general radiated emission limitations.
(a) The regulations in §§ 15.217 through 15.257 provide alternatives to the general radiated emission limits for intentional radiators operating in specified frequency bands. Unless otherwise stated, there are no restrictions as to the types of operation permitted under these sections.
(c) 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.

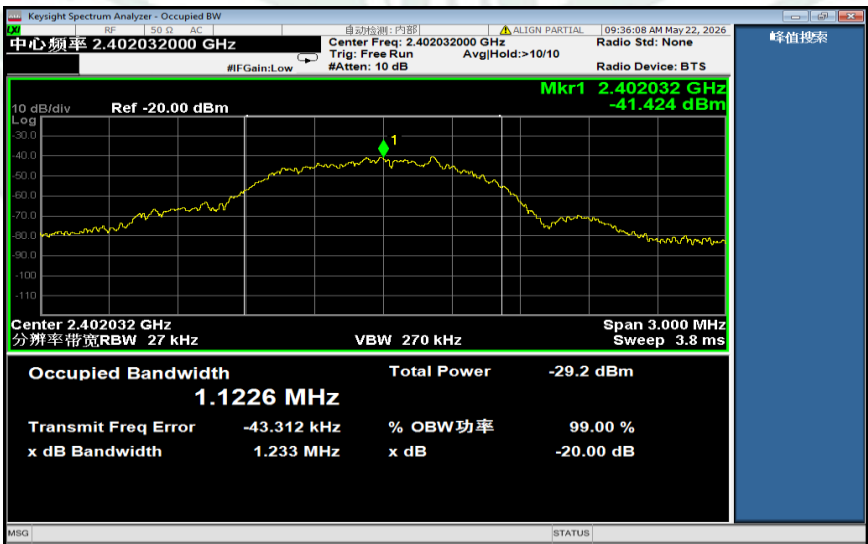
20dB Bandwidth test setup



20dB Bandwidth test procedure

- a) The spectrum analyzer center frequency=EUT channel center frequency. SPAN= between two times and five times the OBW.
- b) The RBW is in the range of 1% to 5% of the OBW and VBW=3* RBW.
- c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation, the peak of the spectral envelope is more than [10 log (OBW/RBW)] below the reference level.
- d) Steps a) through c) might require iteration to adjust within the specified tolerances.
- e) The instrument noise floor at the selected RBW is at least 30 dB below the reference value.
- f) Set detection mode to peak and trace mode to max-hold.
- g) Determine the reference value: Set the EUT to transmit an unmodulated carrier or modulated signal, as applicable. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value).
- h) Determine the “-20 dB down amplitude” using [(reference value) - 20].
- i) If the reference value is determined by an unmodulated carrier, then turn the EUT modulation ON, and start a new trace on the spectrum analyzer and allow the new trace to stabilize. Otherwise, the trace from step g) will be used for step j).
- j) Place two markers, one at the lowest frequency and the other at the highest frequency of the envelope of the spectral display, such that each marker is at or slightly below the “-20 dB down amplitude” determined in step h). If a marker is below this “-20 dB down amplitude” value, then it will be as close as possible to this value. The dBc bandwidth is the frequency difference between the two markers. Alternatively, set a marker at the lowest frequency of the envelope of the spectral display, such that the marker is at or slightly below the “-xx dB down amplitude” determined in step h). Reset the marker-delta function and move the marker to the other side of the emission until the delta marker amplitude is at the same level as the reference marker amplitude. The marker-delta frequency reading at this point is the specified emission bandwidth.

OBW&20dB bandwidth test data and plots

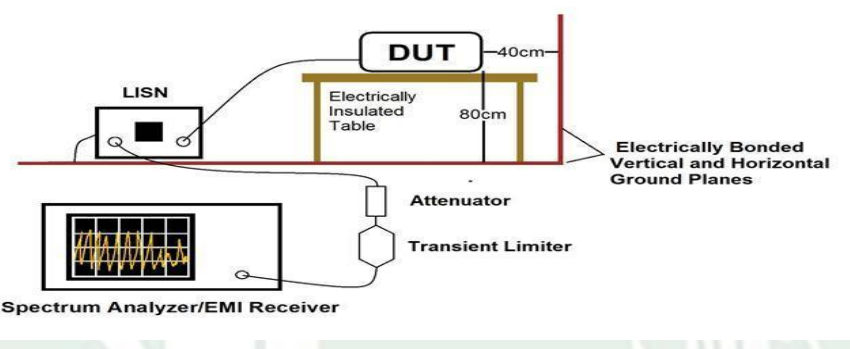


Conducted Emissions

§ 15.207 For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency of emission (MHz)	Conducted Limit (dBμV)	
	Quasi-peak	Average
0.15-0.5	66-56	56-46
0.5-5	56	46
5-30	60	50

Conducted emissions test setup



The measurement equipment setup is complied with ANSI C 63.10 requirements, the EUT is setup as typical use of normal operating as manufacture defined

Conducted emissions test procedure

- a) EMI Test receiver setup: Start frequency=150KHz; stop frequency: 30MHz; IFBW=9KHz; Step Size: 4KHz; Sweep Time: 20ms; Detector: PK+AV, Trace mode: Max hold.
- b) ensure the LISN output voltage is AC 120±0.2V/60Hz,connect the power cord of EUT to the LISN, power on and enter into normal working mode;
- c) Adjust the couple switch to L-PE(or N-PE), scan from 150KHz(9K when applicable) to 30MHz with PK/AV detector;
- d) exploratory measurements is used to identify the frequency of the emission that has the highest amplitude relative to the limit by operate the EUT in a range of typical working mode with typical cable positions, and with a typical system equipment configuration and arrangement; based on the exploratory tests of the EUT, the EUT cable(s) configuration and arrangement and mode of operation that produced the emission with the highest amplitude relative to the limit is selected for the final measurement.
- e) Select the highest config to re-scan from 150KHz to 30MHz as final measurement;
- f) Select 6 highest PK emissions relative to the limit from the trace, re-measure the 6 highest emissions with Quasi-peak detector and Average detector to confirm the QP and AV emission level, final report is the spectral plot together with 6 highest emission QP&AV data.
- g) Set the conducted emission couple switch to another conductor wire N(or L), and repeat from e) to f)

Conducted emissions test data and plots

The EUT is power by DC 3V Battery, the conducted emission is omitted

Radiated emission

§ 15.249 (a) IExcept as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental frequency (MHz)	Field strength of fundamental (millivolts/meter)	Field strength of spurious emissions (microvolts/meter)
902-928 MHz	50	500
2400-2483.5 MHz	50	500
5725-5875 MHz	50	500
24.0-24.25 GHz	250	2500

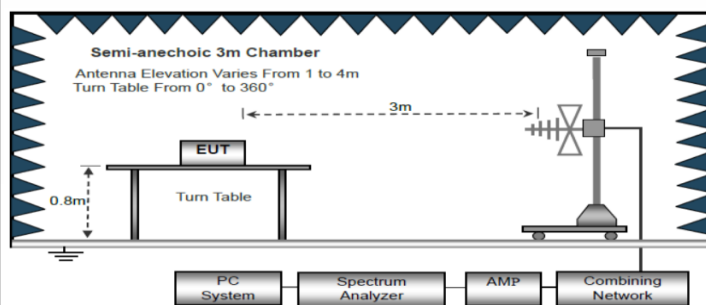
(c)Field strength limits are specified at a distance of 3 meters.
(d)Click to open paragraph tools Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation.

15.209 (a) Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

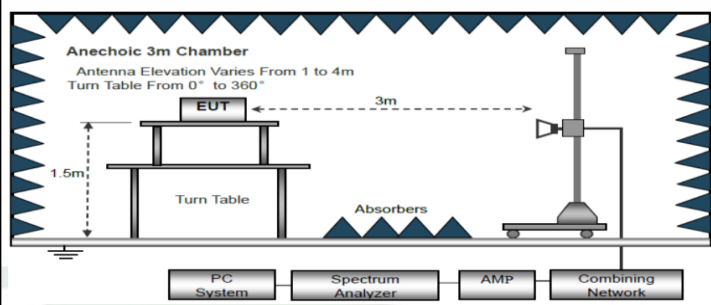
Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009–0.490	2400/F(kHz)	300
0.490–1.705	24000/F(kHz)	30
1.705–30.0	30	30
30-88	100**	3
88-216	150**	3
216-960	200**	3
Above 960	500	3

Radiated emission test setup

30MHz-1GHz setup diagram



>1GHz setup diagram



Radiated emission test procedure

a) ≤ 1 GHz: measurements are made at a 3m anechoic chamber, the EUT is placed on a height of 0.8 m above the turntable on a styrene support and it is centered on the turntable for radiated emission test. The EUT is setting to transmitting continuously.

Lowest frequency to 30MHz

- a1, 60cm loop antenna is placed 3 meters far away from the periphery of the EUT, align the antenna along the site axis.
- a2, The EMI Test receiver is setting to :Start frequency= lowest frequency used in products(MHz) ; stop frequency=30MHz; RBW=10KHz; VBW=30KHz; Detector=PK, sweep time=Auto, Trace mode: max hold;
- a3, Rotate the turntable from 0-360°, continuous azimuth searches are made to capture the max emission level;
- a4, exploratory measurements is used to identify the frequency of the emission that has the highest amplitude relative to the limit by adjust the cables arrangement positions, repeat the test process from a3 to a4
- a5, the emission with the highest amplitude relative to the limit in exploratory measurement is selected for the final measurement.
- a6, Change the antenna to orthogonal to the axis and repeat the process

30MHz-1000MHz

- a7, Biconic Logarithmic Periodic Antennas (Hybrid) is placed 3 meters far away from the periphery of the EUT, the antenna polarization is horizontal(or vertical) polarization.
- a8) The EMI Test receiver is setting to :Start frequency=30MHz; stop frequency=1000MHz; RBW=100KHz; VBW=300KHz; Detector=PK, sweep time=Auto, Trace mode: max hold;
- a9) The measurement antenna is varied from 1 m to 4 m with 1 m interval, the turntable will rotate 360° at each height, continuous azimuth searches are made to capture the max emission level;
- a10) use the peak marker function to determine the maximum amplitude level after scan.
- a11) exploratory measurements is used to identify the frequency of the emission that has the highest amplitude relative to the limit by adjust the cables arrangement positions, adjust the cable and repeat the test process from a9) to a10)
- a12) the emission with the highest amplitude relative to the limit in exploratory measurement is selected for the final measurement.
- a13) change the antenna to another polarization and repeat the process

b) > 1 GHz: measurements are made at a 3m anechoic chamber, floor is covered by absorbers. the EUT is placed on a styrene support with 1.5 m above the turntable, it is centered on the turntable for radiated emission test, and is set to transmitting continuously mode.

- b1) Horn antenna is placed 3 meters far away from the periphery of the EUT, the antenna polarization is horizontal(or vertical) polarization.
- b2) Spectrum analyzer is setting to :Start frequency=1000MHz; stop frequency=40000MHz; RBW=1MHz; VBW=3MHz; Detector=PK, sweep time=Auto, Trace mode: max hold;
- b3) Use the peak marker function to determine the maximum amplitude level.
- b4) The measurement antenna is varied from 1 m to 2.5 m with 0.5 m interval, the turntable will rotate 360° at each height, continuous azimuth searches are made to capture the max emission level;
- b5) use the peak marker function to determine the maximum amplitude level after scan.
- b6) exploratory measurements is used to identify the frequency of the emission that has the highest amplitude relative to the limit by adjust the cables arrangement positions, adjust the cable and repeat the test process from b4) to b5)
- b7) the emission with the highest amplitude relative to the limit in exploratory measurement is selected for the final measurement.
- b8) change the antenna to another polarization, and repeat the process

Radiated emission test data and plots

all emissions were greater than 20 dB below the limit from Lowest frequency to 30MHz, the data and plots are not reported;
the worst data and plots are reported from 30MHz to 18000MHz;
all emissions were greater than 20 dB below the limit from 18GHz to 25GHz, the data and plots are not report;

The test data and spectral plots are Appendix A, Margin=Level- Limit

Revision Summary

Date	Version	Description of Change
05/28/2026	Issue 1	Original
08/26/2026	Issue 2	According to applicant requirements: 1. Change the FCC ID number.

Note: The report issue 1 is invalidated and replaced by this report.

End of report



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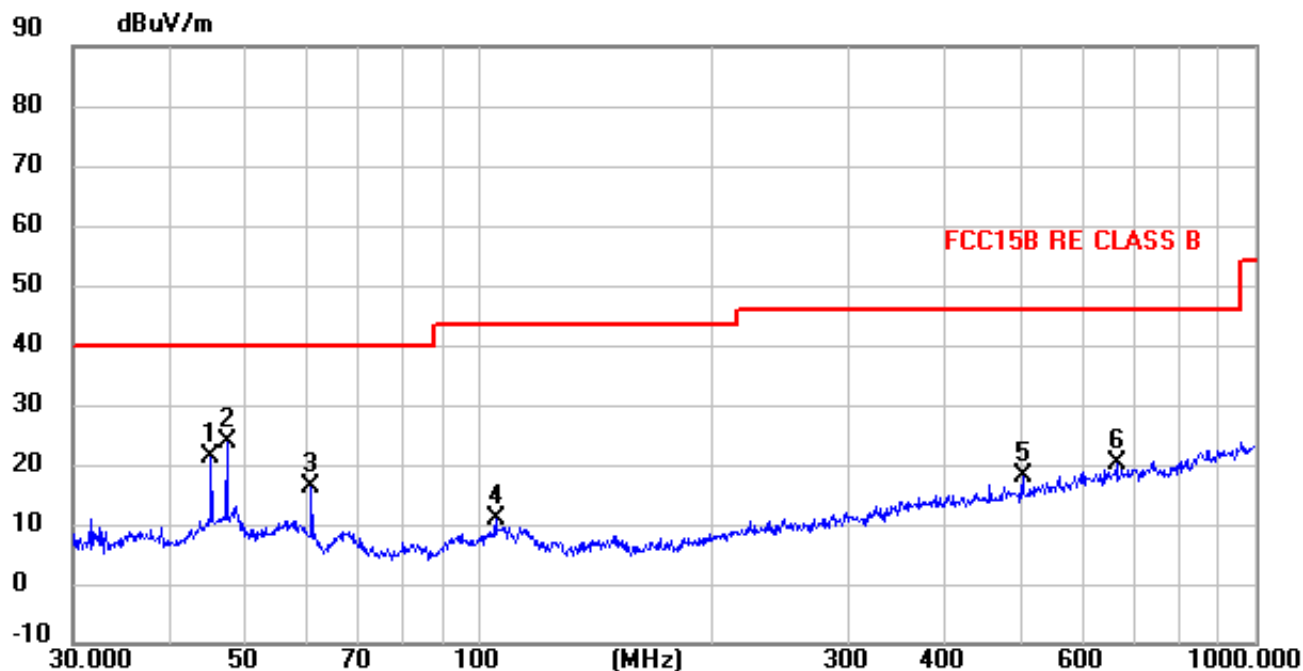
Radiated Emission Measurement

Project No.: 02_01_0331

Data :#23

2026/05/20

17:04:21



Site: 3m chamber

Polarization: **Vertical**

Temperature: 22 °C

Limit: FCC15B RE CLASS B

Power: DC 3V Battery

Humidity: 54 %RH

EUT: 2.4G remote control

Distance: 3m

M/N: RC01

Mode: SIDE

Client: Dongguan Co-lighting Optoelectronics Technology Co., Ltd.

Note:

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	45.296	44.18	-22.95	21.23	40.00	-18.77	peak	200	360	P	
2 *	47.367	46.14	-22.43	23.71	40.00	-16.29	peak	200	360	P	
3	61.024	40.11	-24.01	16.10	40.00	-23.90	peak	200	360	P	
4	105.272	35.14	-24.09	11.05	43.50	-32.45	peak	200	31	P	
5	504.264	35.01	-16.87	18.14	46.00	-27.86	peak	100	360	P	
6	665.803	33.88	-13.67	20.21	46.00	-25.79	peak	100	334	P	

*:Maximum data x:Over limit !:over margin



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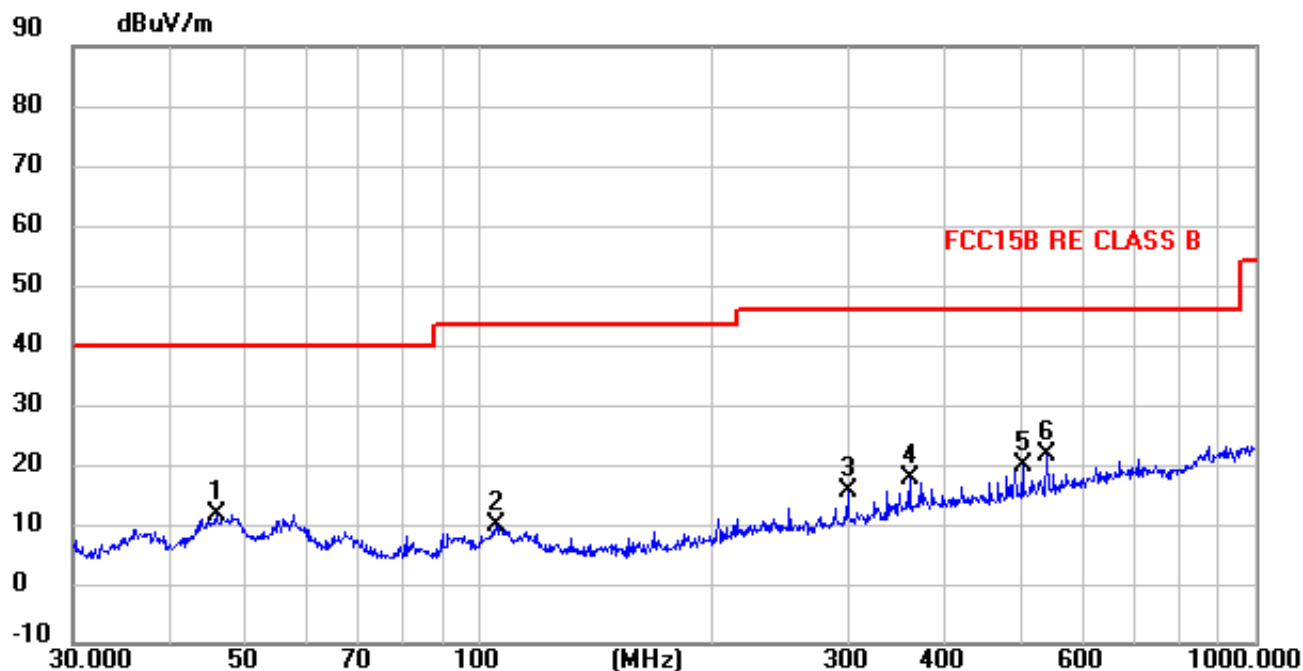
Radiated Emission Measurement

Project No.: 02_01_0331

Data :#24

2026/05/20

17:07:43



Site: 3m chamber

Polarization: **Horizontal**

Temperature: 22 °C

Limit: FCC15B RE CLASS B

Power: DC 3V Battery

Humidity: 54 %RH

EUT: 2.4G remote control

Distance: 3m

M/N: RC01

Mode: SIDE

Client: Dongguan Co-lighting Optoelectronics Technology Co., Ltd.

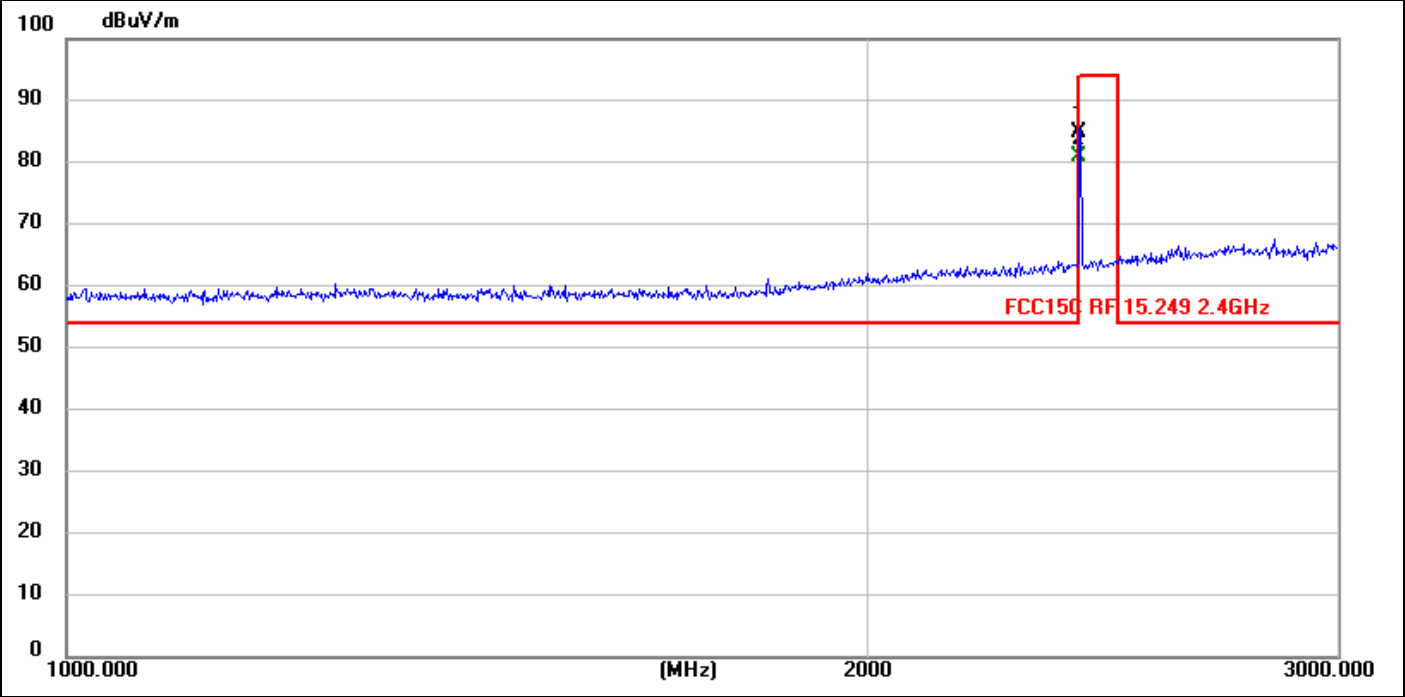
Note:

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	45.895	34.32	-22.83	11.49	40.00	-28.51	peak	200	319	P	
2	105.734	33.90	-24.09	9.81	43.50	-33.69	peak	100	142	P	
3	300.104	37.05	-21.46	15.59	46.00	-30.41	peak	100	123	P	
4	360.132	37.17	-19.39	17.78	46.00	-28.22	peak	100	123	P	
5	504.264	36.84	-16.87	19.97	46.00	-26.03	peak	200	257	P	
6 *	540.424	37.69	-16.17	21.52	46.00	-24.48	peak	100	325	P	

*:Maximum data x:Over limit !:over margin



APPENDIX A

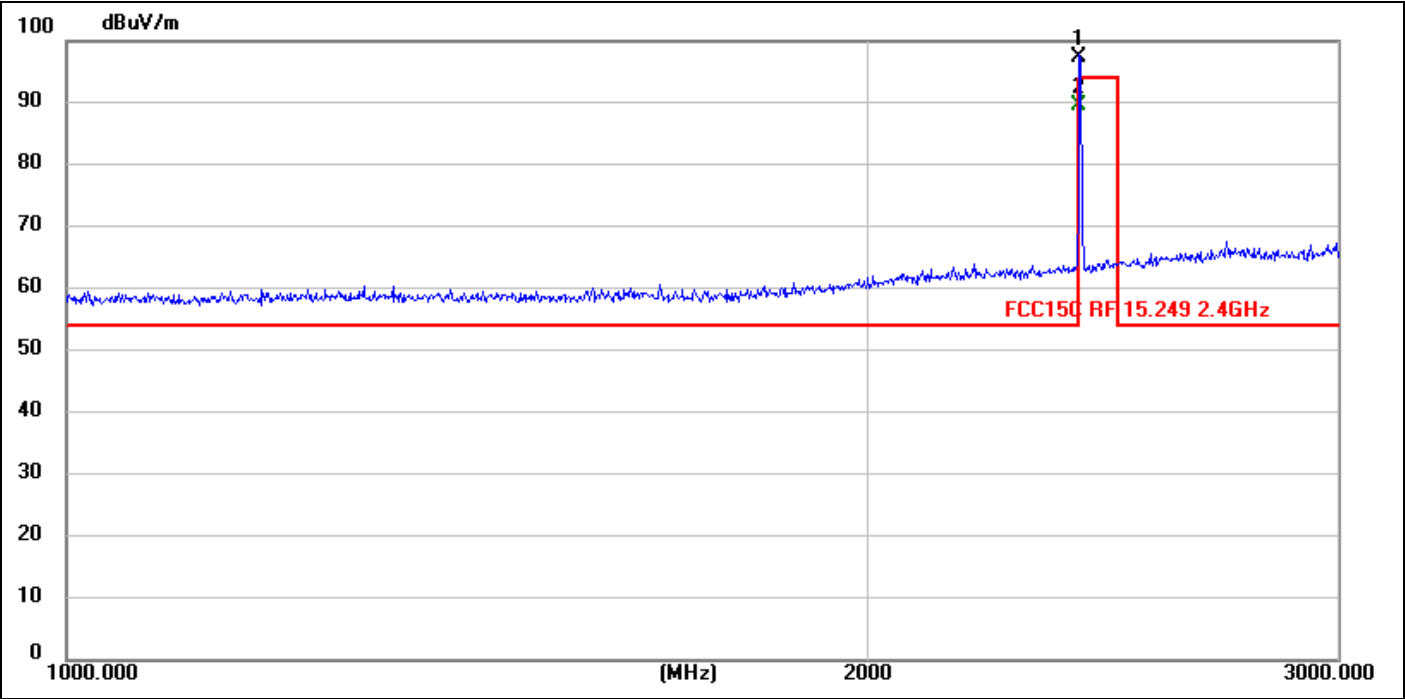


Site:	3m chamber	Antenna:Horizontal	Temperature(°C):25℃
Limit:	FCC15C RF 15.249 2.4GHz	Atm Pressure:1006 mbar	Humidity(%):54%
EUT:	2.4G remote control	Test Time:	2026/05/12 3:33:01
M/N.:	RC01	Power Rating:	DC 3V Battery
Mode:	STAND	Test Engineer:	LEO
Note:	Dongguan Co-lighting Optoelectronics Technology Co., Ltd.		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)	Remark
1 *	2400.301	53.19	31.79	84.98	114.00	-29.02	peak	150	265	
2	2400.301	49.20	31.79	80.99	94.00	-13.01	AVG	150	265	



APPENDIX A



Site:	3m chamber	Antenna:Vertical	Temperature(℃):25℃
Limit:	FCC15C RF 15.249 2.4GHz	Atm Pressure:1006 mbar	Humidity(%):54%
EUT:	2.4G remote control	Test Time:	2026/05/12 3:31:22
M/N.:	RC01	Power Rating:	DC 3V Battery
Mode:	STAND	Test Engineer:	LEO
Note:	Dongguan Co-lighting Optoelectronics Technology Co., Ltd.		

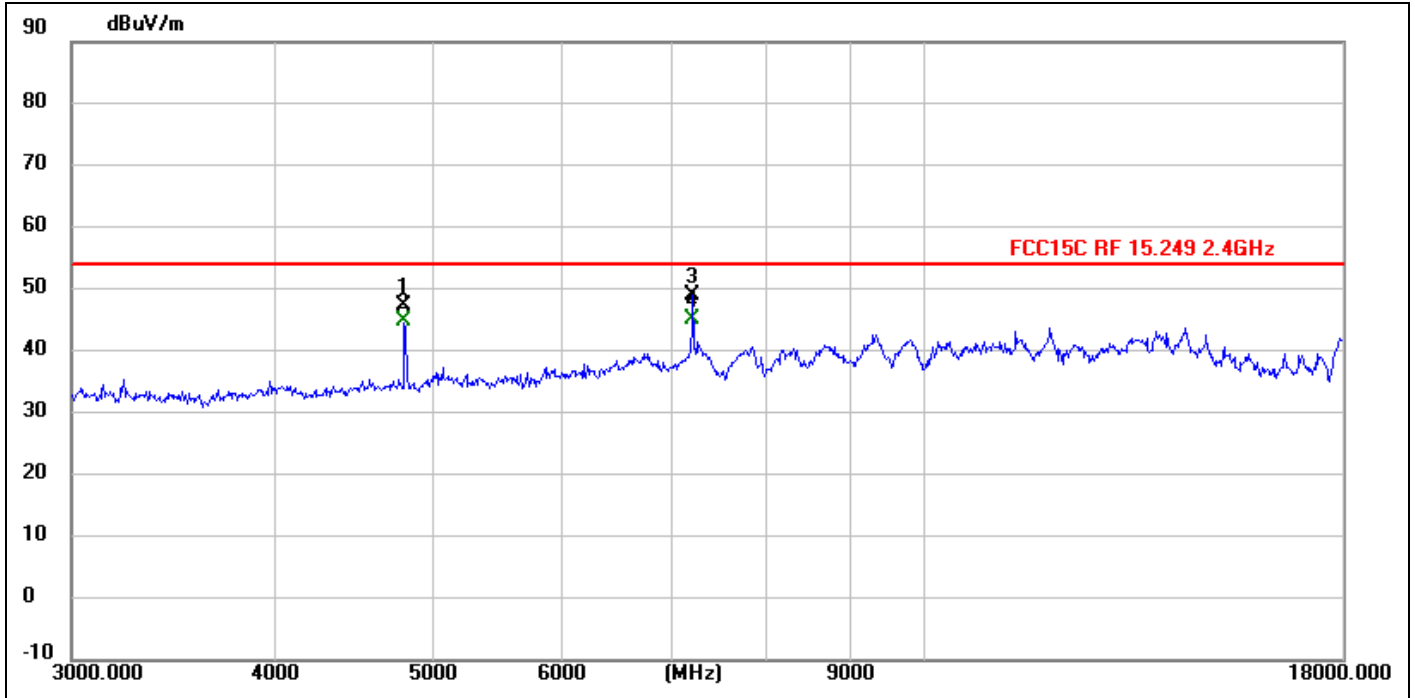
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)	Remark
1 *	2400.301	65.69	31.79	97.48	114.00	-16.52	peak	150	204	
2	2400.301	57.74	31.79	89.53	94.00	-4.47	AVG	150	204	



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APPENDIX A



Site:	3m chamber	Antenna:Horizontal	Temperature(°C):25°C
Limit:	FCC15C RF 15.249 2.4GHz	Atm Pressure:1006 mbar	Humidity(%):54%
EUT:	2.4G remote control	Test Time:	2026/05/12 2:44:56
M/N.:	RC01	Power Rating:	DC 3V Battery
Mode:	STAND	Test Engineer:	LEO
Note:	Dongguan Co-lighting Optoelectronics Technology Co., Ltd.		

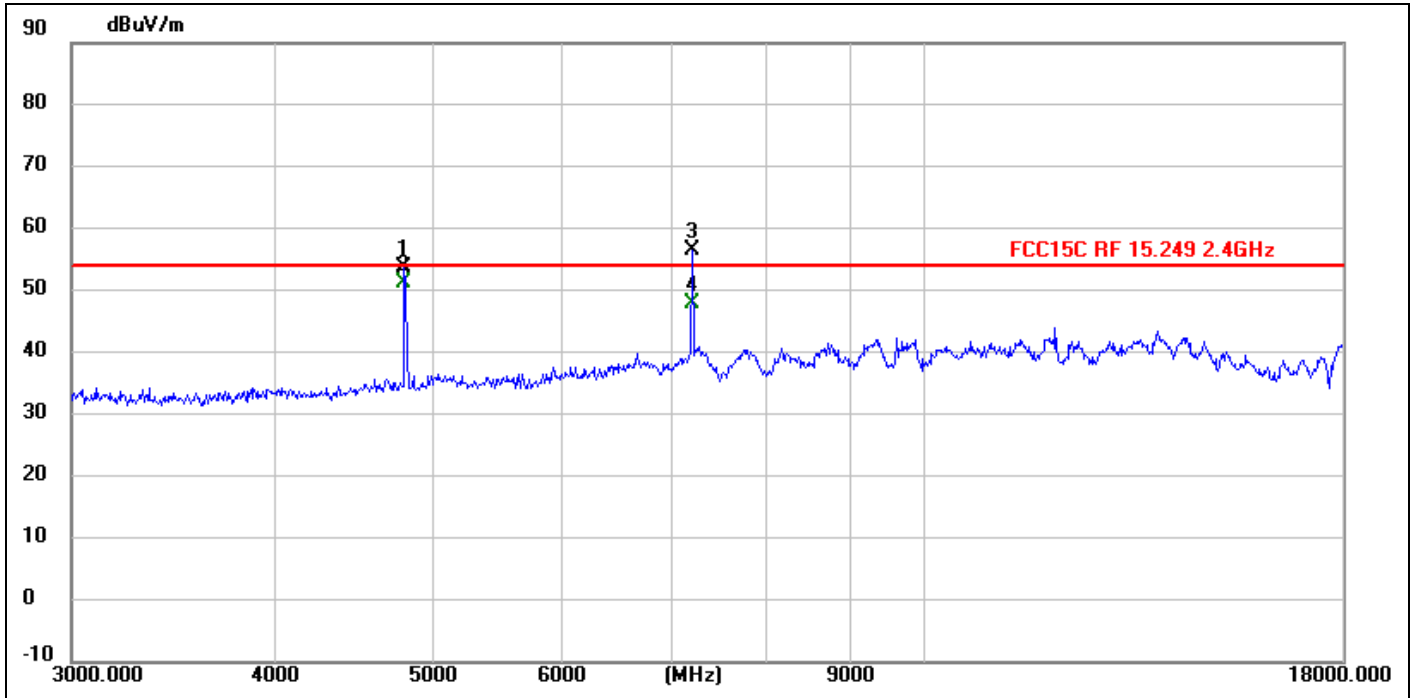
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)	Remark
1	4804.497	67.79	-20.50	47.29	74.00	-26.71	peak	150	260	
2	4804.497	65.34	-20.49	44.85	54.00	-9.15	AVG	150	260	
3 *	7205.054	64.94	-15.88	49.06	74.00	-24.94	peak	150	360	
4	7205.054	61.06	-15.88	45.18	54.00	-8.82	AVG	150	360	



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APPENDIX A



Site:	3m chamber	Antenna:Vertical	Temperature(°C):25°C
Limit:	FCC15C RF 15.249 2.4GHz	Atm Pressure:1006 mbar	Humidity(%):54%
EUT:	2.4G remote control	Test Time:	2026/05/12 2:43:17
M/N.:	RC01	Power Rating:	DC 3V Battery
Mode:	STAND	Test Engineer:	LEO
Note:	Dongguan Co-lighting Optoelectronics Technology Co., Ltd.		

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)	Remark
1	4804.497	74.35	-20.50	53.85	74.00	-20.15	peak	150	0	
2	4804.497	71.84	-20.49	51.35	54.00	-2.65	AVG	150	0	
3	7205.054	72.37	-15.88	56.49	74.00	-17.51	peak	150	355	
4	7205.054	63.89	-15.88	48.01	54.00	-5.99	AVG	150	355	