

EUROFINS ELECTRICAL TESTING SERVICE (SHENZHEN) CO., LTD.

RADIO TEST - REPORT

FCC & ISED Compliance Test Report for

Product name: Transmitter

Model name: C01 TX

FCC ID: 2ABYN155

IC: 20034-155

Test Report Number: EFGX25100007-IE-02-E05

1	General Information	3
1.1	Notes	3
1.2	Testing laboratory	4
1.3	Details of applicant	4
1.4	Details of manufacturer	4
1.5	Application details	5
1.6	Test item	5
1.7	Test standards	6
2	Technical test	7
2.1	Summary of test results	7
2.2	Test environment	7
2.3	Measurement uncertainty	7
2.4	Test mode	8
2.5	Test equipment utilized	9
2.6	Auxiliary equipment used during test	10
2.7	Test software information:	10
2.8	Test setup-	11
2.9	Test results	13
3	Technical Requirement	14
3.1	Conducted emission AC power port	14
3.2	Duty cycle	17
3.3	20dB Occupied bandwidth	21
3.4	99% Occupied Bandwidth	25
3.5	Carrier frequency separation	29
3.6	Number of hopping frequencies	31
3.7	Time of occupancy (dwell time)	33
3.8	Peak Output Power	35
3.9	Conducted Band-edge & Spurious Emissions	39
3.10	Radiated emissions for transmitter	54
3.11	Hopping sequence requirement	69
4	Test Setup Photos	70
5	External Photo	70
6	Internal Photos	70

1 General Information

1.1 Notes

The results of this test report relate exclusively to the item tested as specified in chapter “Description of test item” and are not transferable to any other test items.

Eurofins Electrical Testing Service (Shenzhen) Co., Ltd. is not responsible for any generalisations and conclusions drawn from this report. Any modification of the test item can lead to invalidity of test results and this test report may therefore be not applicable to the modified test item.

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Operator:

2025-11-10 Bruce Zheng / Project Engineer

Date	Eurofins-Lab.	Name / Title	Signature
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Technical responsibility for area of testing:

2025-11-10 Albert Xu / Lab Manager

Date	Eurofins-Lab.	Name / Title	Signature
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1.2 Testing laboratory

Eurofins Electrical Testing Service (Shenzhen) Co., Ltd.

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The Laboratory has passed the Accreditation by the American Association for Laboratory Accreditation (A2LA). The Accreditation number is 5376.01

The Laboratory has been listed by industry Canada to perform electromagnetic emission measurements, The CAB identifier is CN0088

1.3 Details of applicant

Name	:	GODOX PHOTO EQUIPMENT CO.,LTD
Address	:	1st to 4th Floor, Building 2/1st to 4th Floor, Building 4 ,Yaochuan Industrial Zone, Tangwei Community, Fuhai Street, Baoan District, Shenzhen, 518103 China
Telephone	:	./.
Fax	:	./.

1.4 Details of manufacturer

Name	:	GODOX Photo Equipment Co.,Ltd.
Address	:	4th Floor of Building 1, 1st to 4 th Floor of Building 2, 4th Floor of Building 3,1st to 4th Floor of Building 4, Yaochuan Industrial Zone, Tangwei Community, Fuhai Street, Bao'an District, Shenzhen 518103, China
Telephone	:	./.
Fax	:	./.

1.5 Application details

Date of receipt of application : 2025-09-22
Date of receipt of test item : 2025-09-22
Date of test : 2025-09-22 to 2025-11-09
Date of issue : 2025-11-10

1.6 Test item

Product type : Transmitter
Test Model : C01 TX
Sample ID : 250925-06-002
Brand : 
Serial number : ./.
Hardware Version : 20250517H31
Software / Firmware Version : V1.0
Ratings : DC5V 90mA, Built-in lithium battery:3.87V 97mAh 0.376Wh
Test voltage : 3.87V

RadioTechnical data

Frequency range : 2402MHz – 2480MHz
Radio Tech. : 2.4GHz SRD
Frequency channel : CH0 – CH78, Total 79 channels
Modulation : GFSK, $\pi/4$ DQPSK
Antenna type : Internal antenna
Maximum antenna gain : 1.82dBi
Additional information : ./.

The above sample(s) and sample information was/were submitted and identified on behalf of the applicant.
Eurofins assures objectivity and impartiality of the test, and fulfills the obligation of confidentiality for applicant's commercial information and technical documents.

1.7 Test standards

Test Standards	
FCC Part 15 Subpart C	PART 15 - RADIO FREQUENCY DEVICES Subpart C - Intentional Radiators
RSS-247	Digital Transmission Systems, Frequency Hopping Systems and Licence-Exempt Local Area Network Devices in 902-928 MHz, 2400-2483.5 MHz, 5150-5350 MHz, and 5470-5895 MHz bands

Test Method

- 1: ANSI C63.4-2014, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.
- 2: ANSI C63.10-2020, American National Standard for Testing Unlicensed Wireless Devices.
- 3: KDB558074 D01 15.247 Meas Guidance v05r02

2 Technical test

2.1 Summary of test results

No deviations from the technical specification(s) were ascertained in the course of the tests performed.



or

The deviations as specified were ascertained in the course of the tests performed.



2.2 Test environment

Ac line conducted

Environment Parameter	Temperature	Relative Humidity
101.2kPa	23.7 °C	61.3%

RF conducted

Environment Parameter	Temperature	Relative Humidity
101.2kPa	24.7 °C	43.1%

Radiated

Environment Parameter	Temperature	Relative Humidity
101.2kPa	24.3 °C	51.6%

2.3 Measurement uncertainty

The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in Measurement" (GUM) published by ISO.

System Measurement Uncertainty	
Test Items	Extended Uncertainty
Uncertainty in conducted measurements	1.96dB
Uncertainty for Conducted RF test	RF Power Conducted: 1.16dB Frequency test involved: 1.05×10 ⁻⁷ or 1%
Uncertainty for Radiated Spurious Emission 25MHz-3000MHz	Horizontal: 4.46dB; Vertical: 4.54dB;
Uncertainty for Radiated Spurious Emission 3000MHz-18000MHz	Horizontal: 4.42dB; Vertical: 4.41dB;
Uncertainty for Radiated Spurious Emission 18000MHz-40000MHz	Horizontal: 4.63dB; Vertical: 4.62dB;

2.4 Test mode

Center Frequency of Each Channel:

CHANNEL	FREQ. (MHZ)	CHANNEL	FREQ. (MHZ)	CHANNEL	FREQ. (MHZ)	CHANNEL	FREQ. (MHZ)
0	2402	20	2422	40	2442	60	2462
1	2403	21	2423	41	2443	61	2463
2	2404	22	2424	42	2444	62	2464
3	2405	23	2425	43	2445	63	2465
4	2406	24	2426	44	2446	64	2466
5	2407	25	2427	45	2447	65	2467
6	2408	26	2428	46	2448	66	2468
7	2409	27	2429	47	2449	67	2469
8	2410	28	2430	48	2450	68	2470
9	2411	29	2431	49	2451	69	2471
10	2412	30	2432	50	2452	70	2472
11	2413	31	2433	51	2453	71	2473
12	2414	32	2434	52	2454	72	2474
13	2415	33	2435	53	2455	73	2475
14	2416	34	2436	54	2456	74	2476
15	2417	35	2437	55	2457	75	2477
16	2418	36	2438	56	2458	76	2478
17	2419	37	2439	57	2459	77	2479
18	2420	38	2440	58	2460	78	2480
19	2421	39	2441	59	2461		

The channels marked with the blue background are the bottom, mid and top channels used in the tests
The EUT was set at continuously transmitting mode during the test.
Below modulations was tested and recorded in the report:
GFSK , $\pi/4$ DQPSK

2.5 Test equipment utilized

EQUIPMENT ID	EQUIPMENT NAME	MODEL NO.	CAL. DUE DATE
23-2-13-05	EMI Test Receiver	ESR3	2026-03-25
23-2-13-06	LISN	NNLK 8127 RC	2026-03-25
23-2-10-16	Attenuator	VTSD 9561-F	2026-03-25
23-2-10-63	Temperature & Humidity Meter	COS-03	2026-03-25
23-2-10-65	Barometer	Baro	2026-03-25
23-2-13-12	Signal Analyzer	N9010B-544	2026-03-25
23-2-13-13	BT/WLAN Tester	CMW270	2026-03-25
23-2-13-14	Signal Generator	N5183B-520	2026-03-25
23-2-13-15	Vector Signal Generator	N5182B-506	2026-03-25
23-2-10-43	Switch and Control Unit	ERIT-E-JS0806-2	2026-03-25
23-2-10-44	DC power supply	E3642A	2026-03-25
23-2-10-45	Temperature test chamber	SG-80-CC-2	2026-03-25
23-2-10-50	Temperature & Humidity Meter	COS-03	2026-03-25
23-2-10-66	Barometer	Baro	2026-03-25
23-2-13-01	EMI Test Receiver	ESR7	2026-03-25
23-2-13-02	Signal Analyzer	N9020B-544	2026-03-25
23-2-12-01	Active Loop Antenna	FMZB 1519B	2025-05-29
23-2-12-02	TRILOG Broadband Antenna	VULB9168	2025-05-29
23-2-12-03	Horn Antenna	3117	2026-05-29
23-2-12-04	Horn Antenna	BBHA 9170	2026-05-29
23-2-10-01	Preamplifier	BBV9745	2026-03-25
23-2-10-02	Preamplifier	TAP01018048	2026-03-25
23-2-10-03	Preamplifier	TAP18040048	2026-03-25
23-2-10-62	Temperature & Humidity Meter	COS-03	2026-03-25
23-2-10-64	Barometer	Baro	2026-03-25
23-2-10-14	Switch and Control Unit	ERIT-E-JS0806-SF1	N/A
23-2-13-03	EMI Test Receiver	ESR7	2026-03-25
23-2-13-04	Signal Analyzer	N9020B-526	2026-03-25
23-2-12-06	Active Loop Antenna	FMZB 1519B	2026-03-25
23-2-10-46	Preamplifier	BBV9745	2026-03-25
23-2-10-47	Preamplifier	TAP01018048	2026-03-25
23-2-10-61	Temperature & Humidity Meter	COS-03	2026-03-25
23-2-10-52	Barometer	Baro	2026-03-25
23-2-10-15	Switch and Control Unit	ERIT-E-JS0806-SF1	N/A

2.6 Auxiliary equipment used during test

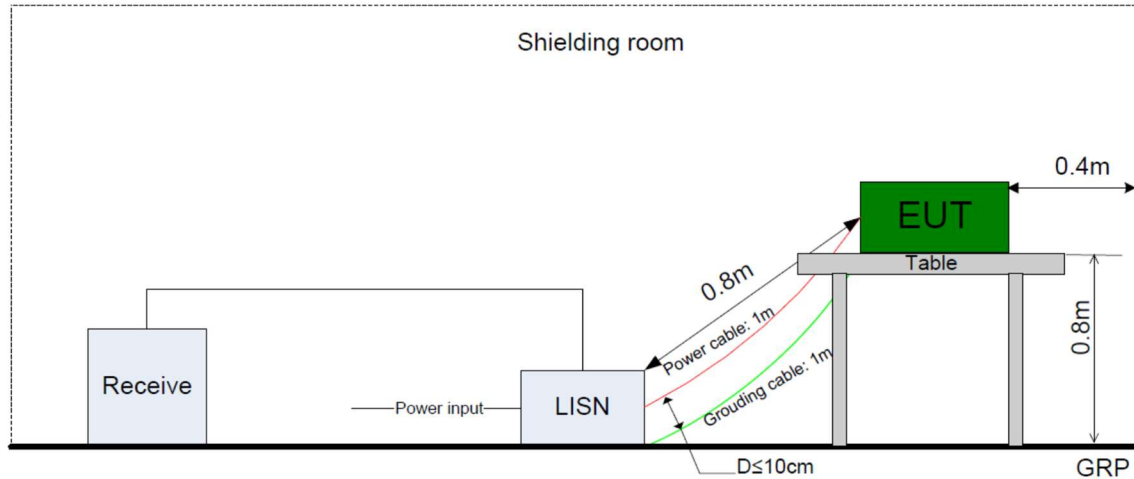
DESCRIPTION	MANUFACTURER	MODEL NO.	S/N
Laptop	LENOVO	TP00096A	PF-1QH0LV

2.7 Test software information:

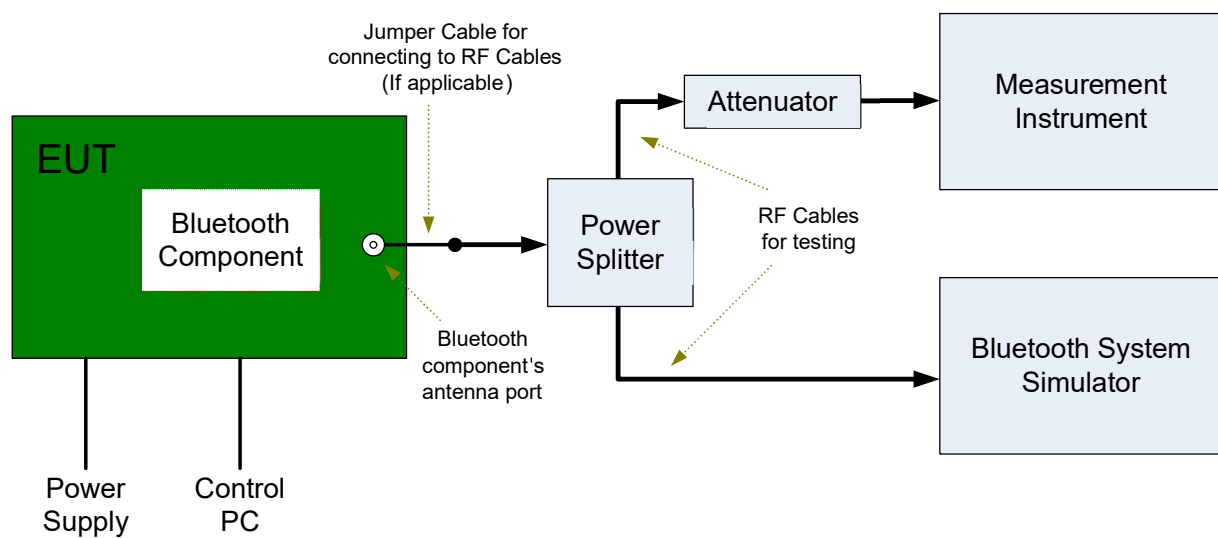
Test Software&Version	BT TOOL		
Mode	Power setting	TX Pattern	Modulation Type
DH1/5	5	PRBS9	GFSK
2-DH1/5	5	PRBS9	$\pi/4$ DQPSK

2.8 Test setup-

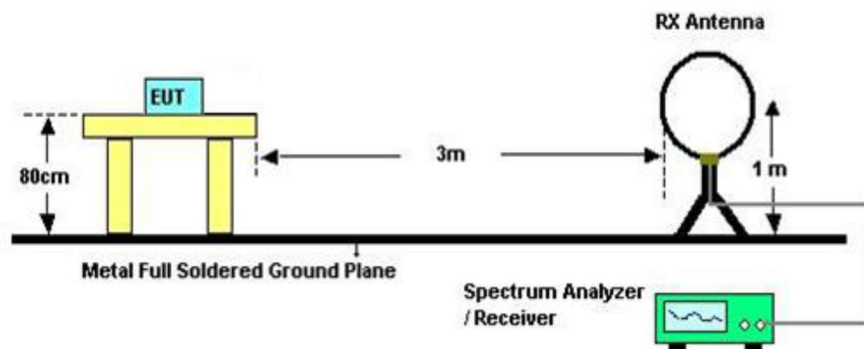
Ac line conducted



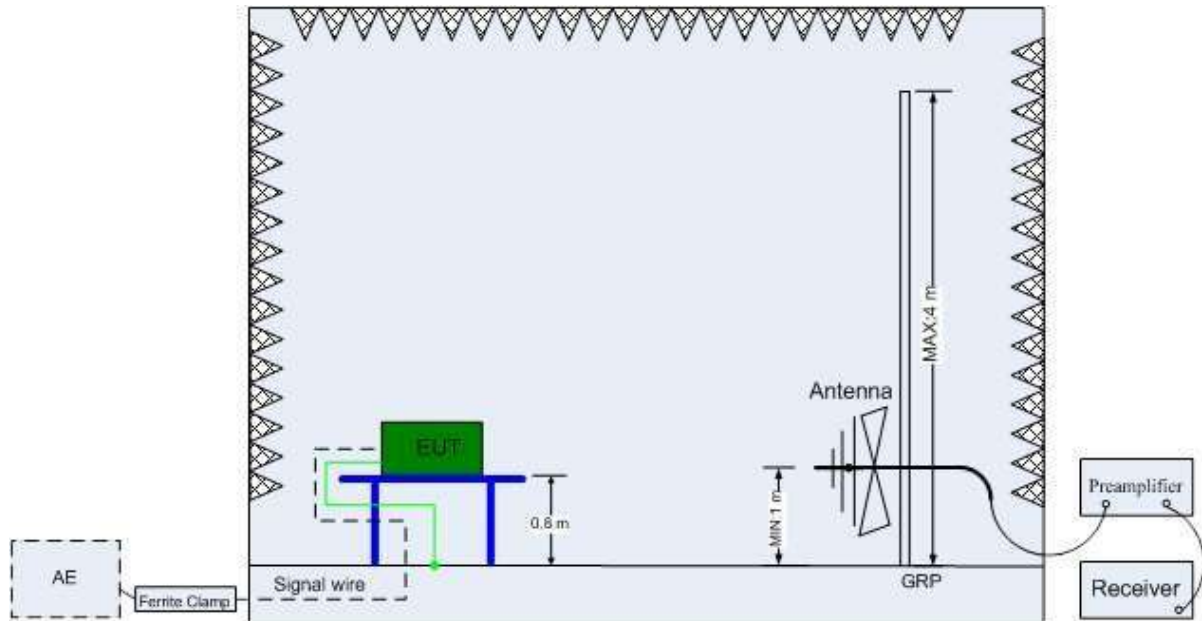
RF Conducted tests



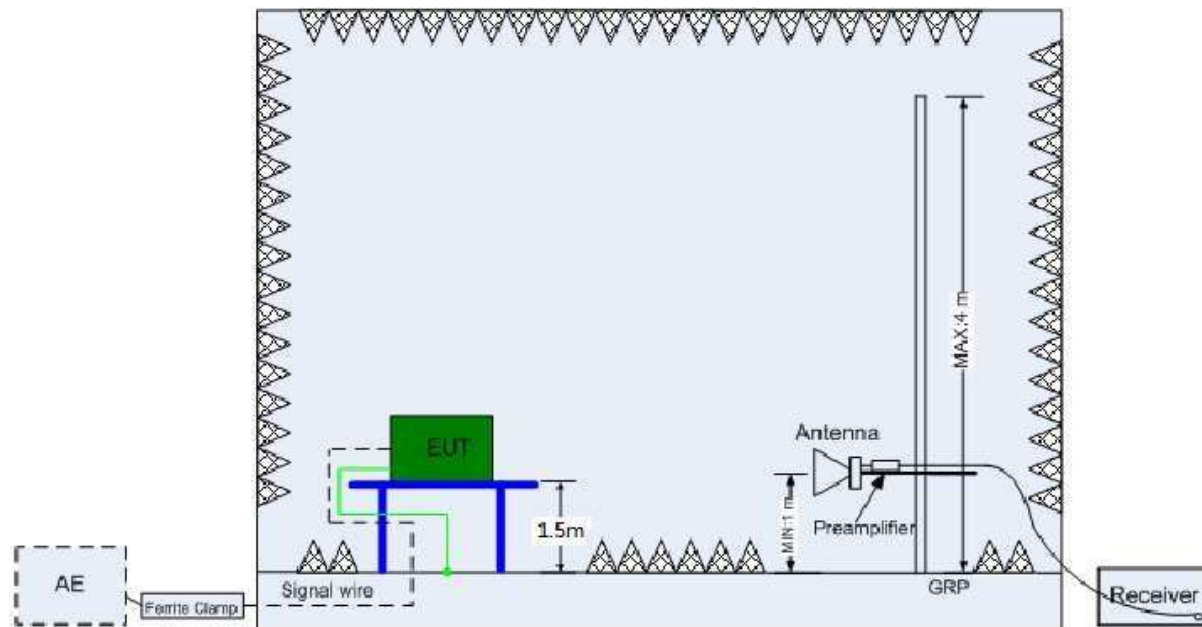
Radiated tests below 30MHz



Radiated tests below 1GHz



Radiated tests above 1GHz



2.9 Test results

☒ 1st test

☐ test after modification

☐ production test

Technical Requirements				
FCC Part 15 Subpart C/RSS-247 Issue 4/RSS-Gen Issue 5				
Test Condition			Verdict	Test Site
§15.207	RSS-GEN 8.8	Conducted emission AC power port	Pass	Site 1
§15.247(b)(1)	RSS-247 Clause 5.4(b)	Conducted output power for FHSS	Pass	Site 1
§15.247(b)(3)	RSS-247 Clause 5.4(d)	Conducted output power for DTS	N/A	--
§15.247(e)	RSS-247 Clause 5.2(b)	Power spectral density	N/A	--
§15.247(a)(2)	RSS-247 Clause 5.2(a)	6dB bandwidth	N/A	--
§15.247(a)(1)	RSS-247 Clause 5.1(a)	20dB Occupied bandwidth	Pass	Site 1
--	RSS-GEN 6.7	99% Occupied Bandwidth	Pass	Site 1
§15.247(a)(1)	RSS-247 Clause 5.1(b)	Carrier frequency separation	Pass	Site 1
§15.247(a)(1)(iii)	RSS-247 Clause 5.1(d)	Number of hopping frequencies	Pass	Site 1
§15.247(a)(1)(iii)	RSS-247 Clause 5.1(d)	Dwell Time	Pass	Site 1
§15.247(d) §15.205	RSS-247 Clause 5.5 RSS-GEN 8.10	Conducted Spurious Emissions	Pass	Site 1
§15.247(d)	RSS-247 Clause 5.5	Band edge	Pass	Site 1
§15.247(d) & §15.209 & §15.205	RSS-247 Clause 5.5 & RSS-GEN 6.13 RSS-GEN 8.9 RSS-GEN 8.10	Radiated emissions for transmitter	Pass	Site 1
--	--	Duty cycle	Pass	Site 1
§15.203	RSS-GEN 6.8	Antenna requirement See note 1	Pass	--

Remark 1: N/A – Not Applicable.

Note 1: The EUT uses internal antenna. According to §15.203/ RSS-GEN 6.8, it is considered sufficiently to comply with the provisions of this section.

3 Technical Requirement

3.1 Conducted emission AC power port

Test Method:

The test method was referred to the subclause 6.2 of ANSI C63.10-2020.

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.10.

The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorded for both Neutral and Live lines.

Limit:

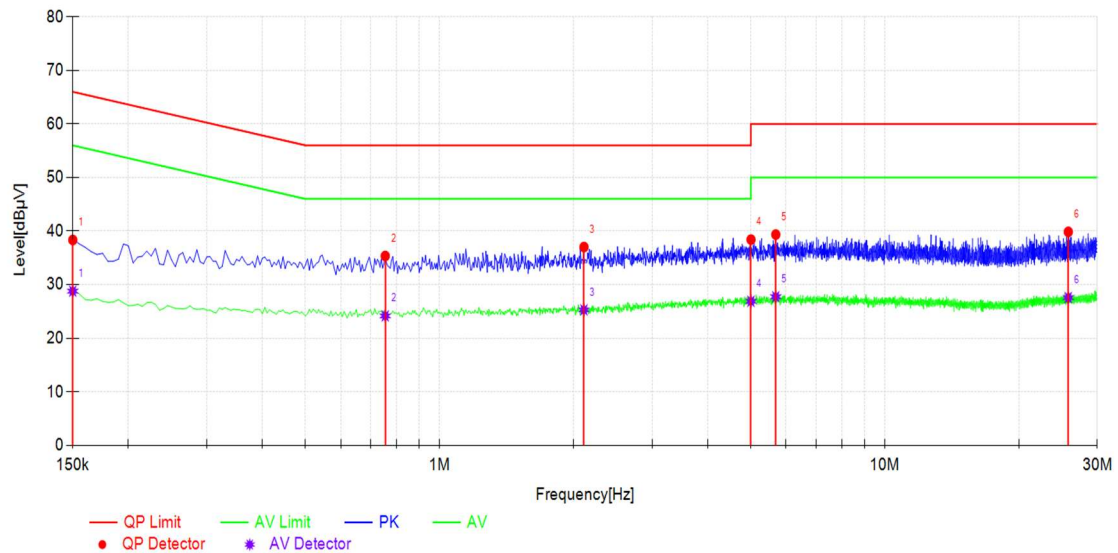
FCC §15.207 (a)

RSS-Gen 8.8

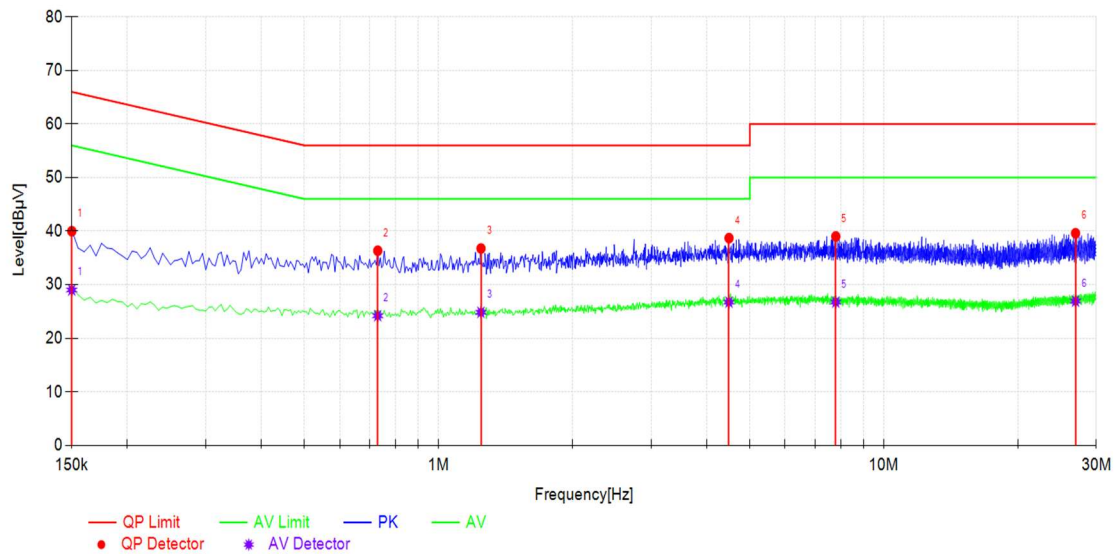
Frequency	QP Limit	AV Limit
MHz	dBμV	dBμV
0.150-0.500	66-56*	56-46*
0.500-5	56	46
5-30	60	50

Decreasing linear.

Test Result:



Final Data List										
NO.	Freq. [MHz]	Factor [dB]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Type	Verdict
1	0.15	12.25	38.35	66.00	27.65	28.79	56.00	27.21	L1	PASS
2	0.755	12.28	35.36	56.00	20.64	24.17	46.00	21.83	L1	PASS
3	2.11	12.28	37.03	56.00	18.97	25.29	46.00	20.71	L1	PASS
4	5.005	12.34	38.42	60.00	21.58	26.90	50.00	23.10	L1	PASS
5	5.69	12.37	39.36	60.00	20.64	27.75	50.00	22.25	L1	PASS
6	25.825	12.76	39.86	60.00	20.14	27.59	50.00	22.41	L1	PASS



Final Data List										
NO.	Freq. [MHz]	Factor [dB]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Type	Verdict
1	0.15	12.35	40.00	66.00	26.00	29.02	56.00	26.98	N	PASS
2	0.73	12.26	36.36	56.00	19.64	24.22	46.00	21.78	N	PASS
3	1.245	12.29	36.77	56.00	19.23	24.86	46.00	21.14	N	PASS
4	4.49	12.40	38.71	56.00	17.29	26.76	46.00	19.24	N	PASS
5	7.8	12.43	39.02	60.00	20.98	26.76	50.00	23.24	N	PASS
6	26.955	12.78	39.61	60.00	20.39	26.94	50.00	23.06	N	PASS

3.2 Duty cycle

Test Method:

The test method was referred to the subclause 11.6 of ANSI C63.10-2020.

Measurements of duty cycle and transmission duration shall be performed using one of the following techniques:

- a) A diode detector and an oscilloscope that together have a sufficiently short response time to permit accurate measurements of the ON and OFF times of the transmitted signal.
- b) The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the ON and OFF times of the transmitted signal:
 - 1) Set the center frequency of the instrument to the center frequency of the transmission.
 - 2) Set RBW $\geq$ OBW if possible; otherwise, set RBW to the largest available value.
 - 3) Set VBW $\geq$ RBW. Set detector = peak or average.
 - 4) The zero-span measurement method shall not be used unless both RBW and VBW are $> 50/T$ and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring the duty cycle shall not be used if $T \leq 16.7 \mu\text{s}$.)

Limit:

None; for reporting purposes only.

Test Result:

TestMode	Antenna	Frequency[M Hz]	ON Time [ms]	Period [ms]	Duty Cycle [%]
DH5	Ant1	2402	2.91	3.75	77.60
		2441	2.91	3.75	77.60
		2480	2.92	3.76	77.66
2DH5	Ant1	2402	2.92	3.75	77.87
		2441	2.92	3.75	77.87
		2480	2.92	3.76	77.66







3.3 20dB Occupied bandwidth

Test Method:

The test method was referred to the subclause 6.9.2 of ANSI C63.10-2020.

The occupied bandwidth is measured as the width of the spectral envelope of the modulated signal, at an amplitude level reduced from a reference value by a specified ratio (or in decibels, a specified number of dB down from the reference value). Typical ratios, expressed in dB, are -6 dB, -20 dB, and -26 dB, corresponding to 6 dB BW, 20 dB BW, and 26 dB BW, respectively. In this subclause, the ratio is designated by “-xx dB.” The reference value is either the level of the unmodulated carrier or the highest level of the spectral envelope of the modulated signal, as stated by the applicable requirement. Some requirements might specify a specific maximum or minimum value for the “-xx dB” bandwidth; other requirements might specify that the “-xx dB” bandwidth be entirely contained within the authorized or designated frequency band.

- a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the EMI receiver or spectrum analyzer shall be between two times and five times the OBW.
- b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW and video bandwidth (VBW) shall be approximately three times RBW, unless otherwise specified by the applicable requirement.
- c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than $[10 \log (OBW/RBW)]$ below the reference level. Specific guidance is given in 4.1.5.2.
- d) Steps a) through c) might require iteration to adjust within the specified tolerances.
- e) The dynamic range of the instrument at the selected RBW shall be more than 10 dB below the target “-xx dB down” requirement; that is, if the requirement calls for measuring the -20 dB OBW, the instrument noise floor at the selected RBW shall be 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 “-xx dB down amplitude” using $[(\text{reference value}) - xx]$. Alternatively, this calculation may be made by using the marker-delta function of the instrument.
- i) If the reference value is determined by an unmodulated carrier, then turn the EUT modulation ON, and either clear the existing trace or start a new trace on the spectrum analyzer and allow the new trace to stabilize. Otherwise, the trace from step g) shall 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 “ixx dB down amplitude” determined in step h). If a marker is below this “-xx dB down amplitude” value, then it shall be as close as possible to this value. The occupied 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 “ixx 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.
- k) The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

Limit:

None; for reporting purposes only.

Test Result:

TestMode	Antenna	Frequency[MHz]	20db EBW[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	1.041	2401.484	2402.525	---	---
		2441	0.978	2440.535	2441.513	---	---
		2480	0.948	2479.535	2480.483	---	---
2DH5	Ant1	2402	1.278	2401.370	2402.648	---	---
		2441	1.239	2440.376	2441.615	---	---
		2480	1.242	2479.373	2480.615	---	---







3.4 99% Occupied Bandwidth

Test Method:

The test method was referred to the subclause 6.9.3 of ANSI C63.10-2020.

The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission. The following procedure shall be used for measuring 99% power bandwidth:

- a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.
- b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be approximately three times the RBW, unless otherwise specified by the applicable requirement.
- c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than $[10 \log (OBW/RBW)]$ below the reference level. Specific guidance is given in 4.1.5.2.
- d) Step a) through step c) might require iteration to adjust within the specified range.
- e) Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
- f) Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth.
- g) If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is the difference between these two frequencies.
- h) The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

Limit:

None; for reporting purposes only.

Test Result:

TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
DH5	Ant1	2402	0.99054	2401.5064	2402.4969	---	---
		2441	0.94739	2440.5299	2441.4772	---	---
		2480	0.92189	2479.5423	2480.4642	---	---
2DH5	Ant1	2402	1.2322	2401.3931	2402.6253	---	---
		2441	1.1934	2440.4074	2441.6008	---	---
		2480	1.1661	2479.4159	2480.5820	---	---







3.5 Carrier frequency separation

Test Method:

The test method was referred to the subclause 7.8.2 of ANSI C63.10-2020.

The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings:

- a) Span: Wide enough to capture the peaks of two adjacent channels.
- b) RBW: Start with the RBW set to approximately 30% of the channel spacing; adjust as necessary to best identify the center of each individual channel.
- c) Video (or average) bandwidth (VBW) $\geq$ RBW.
- d) Sweep: Auto.
- e) Detector function: Peak.
- f) Trace: Max hold.
- g) Allow the trace to stabilize.

Limit:

FCC §15.247 (a) (1)

RSS-247 (5.1) (b)

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

Test Result:

TestMode	Antenna	Frequency[MHz]	Result[MHz]	Limit[MHz]	Verdict
DH5	Ant1	Hop	1.006	≥ 0.694	PASS
2DH5	Ant1	Hop	1.022	≥ 0.852	PASS



3.6 Number of hopping frequencies

Test Method:

The test method was referred to the subclause 7.8.3 of ANSI C63.10-2020.

The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings:

- a) Span: The frequency band of operation. Depending on the number of channels the device supports, it may be necessary to divide the frequency range of operation across multiple spans, to allow the individual channels to be clearly seen.
- b) RBW: To identify clearly the individual channels, set the RBW to less than 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller.
- c) VBW $\geq$ RBW.
- d) Sweep: Auto.
- e) Detector function: Peak.
- f) Trace: Max hold.
- g) Allow the trace to stabilize.

Limit:

FCC §15.247 (a) (1) (iii)

RSS-247 (5.1) (d)

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.

Test Result:

TestMode	Antenna	Frequency[MHz]	Result[Num]	Limit[Num]	Verdict
DH5	Ant1	Hop	79	≥ 15	PASS
2DH5	Ant1	Hop	79	≥ 15	PASS



3.7 Time of occupancy (dwell time)

Test Method:

The test method was referred to the subclause 7.8.4 of ANSI C63.10-2020.

The EUT shall have its hopping function enabled. Use the following spectrum analyzer settings:

- Span: Zero span, centered on a hopping channel.
- RBW shall be $\leq$ channel spacing and where possible RBW should be set $\gg 1 / T$, where T is the expected dwell time per channel.
- Sweep: As necessary to capture the entire dwell time per hopping channel; where possible use a video trigger and trigger delay so that the transmitted signal starts a little to the right of the start of the plot. The trigger level might need slight adjustment to prevent triggering when the system hops on an adjacent channel; a second plot might be needed with a longer sweep time to show two successive hops on a channel.
- Detector function: Peak.
- Trace: Max hold.

Use the marker-delta function to determine the transmit time per hop. If this value varies with different modes of operation (data rate, modulation format, number of hopping channels, etc.), then repeat this test for each variation in transmit time.

Repeat the measurement using a longer sweep time to determine the number of hops over the period specified in the requirements. The sweep time shall be equal to, or less than, the period specified in the requirements. Determine the number of hops over the sweep time and calculate the total number of hops in the period specified in the requirements, using the following equation:

$$\begin{aligned} & \text{(Number of hops in the period specified in the requirements)} = \\ & \text{(number of hops on spectrum analyzer)} \times (\text{period specified in the requirements} / \text{analyzer sweep time}) \end{aligned}$$

The average time of occupancy is calculated from the transmit time per hop multiplied by the number of hops in the period specified in the requirements. If the number of hops in a specific time varies with different modes of operation (data rate, modulation format, number of hopping channels, etc.), then repeat this test for each variation.

Limit:

FCC §15.247 (a) (1) (iii)

RSS-247 (5.1) (d)

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

Test Result:

TestMode	Antenna	Frequency[M Hz]	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
DH5	Ant1	Hop	2.911	106.67	0.311	≤ 0.4	PASS
2DH5	Ant1	Hop	2.917	106.67	0.311	≤ 0.4	PASS

In normal mode, hopping rate is 1600 hops/s with 6 slots in 79 hopping channels.

With channel hopping rate (1600 / 6 / 79) in Occupancy Time Limit (0.4 x 79) (s), Hops

Over Occupancy Time comes to (1600 / 6 / 79) x (0.4 x 79) = 106.67 hops.

Dwell Time(s) = Hops Over Occupancy Time (hops) x BurstWidth (ms)



3.8 Peak Output Power

Test Method:

The test method was referred to the subclause 7.8.5 of ANSI C63.10-2020.

This is an RF-conducted test to evaluate maximum peak output power. Use a direct connection between the antenna port of the unlicensed wireless device and the spectrum analyzer, through suitable attenuation. The hopping shall be disabled for this test:

- a) Use the following spectrum analyzer settings:
 - 1) Span: Approximately five times the 20 dB bandwidth, centered on a hopping channel.
 - 2) RBW > 20 dB bandwidth of the emission being measured.
 - 3) VBW $\geq$ RBW.
 - 4) Sweep: Auto.
 - 5) Detector function: Peak.
 - 6) Trace: Max hold.
- b) Allow trace to stabilize.
- c) Use the marker-to-peak function to set the marker to the peak of the emission.
- d) The indicated level is the peak output power, after any corrections for external attenuators and cables.
- e) A plot of the test results and setup description shall be included in the test report.

NOTE—A peak responding power meter may be used, where the power meter and sensor system video bandwidth is greater than the occupied bandwidth of the unlicensed wireless device, rather than a spectrum analyzer.

Limits:

§15.247 (b) (1)

RSS-247 (5.4) (b)

For FHSs operating in the band 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1.0 W if the hopset uses 75 or more hopping channels; the maximum peak conducted output power shall not exceed 0.125 W if the hopset uses less than 75 hopping channels. The e.i.r.p. shall not exceed 4 W, except as provided in section 5.4(e).

Test Result:

Test Mode	Antenna	Frequency [MHz]	Conducted Peak Power[dBm]	Conducted Limit[dBm]	EIRP[dBm]	EIRP Limit[dBm]	Verdict
DH5	Ant1	2402	1.15	≤ 20.97	2.97	≤ 36	PASS
		2441	-0.25	≤ 20.97	1.57	≤ 36	PASS
		2480	-2.61	≤ 20.97	-0.79	≤ 36	PASS
2DH5	Ant1	2402	0.96	≤ 20.97	2.78	≤ 36	PASS
		2441	-0.46	≤ 20.97	1.36	≤ 36	PASS
		2480	-2.82	≤ 20.97	-1.00	≤ 36	PASS