

FCC Test Report

Report No. : 1812C60242612502

Applicant : Dongguan Suoai Electronics Co., LTD.

Address : SOAI Industry Park, Huayu Street Changlong
Village Huangjiang Town Dongguan,
Guangdong, China

Product Name : Mechanical Keyboard

Report Date : 2026-05-28



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TEST REPORT

Applicant : Dongguan Suoai Electronics Co., LTD.
Manufacturer : Dongguan Suoai Electronics Co., LTD.
Product Name : Mechanical Keyboard
Model No. : F99 MAX, F2088AIR, S102PRO, HERO75, NOVA99, NOVA87, F75 HE,
F108PRO V2, F98Pro V3, S99PRO V2
Trade Mark : N/A
Rating(s) : Input: 5V=1250mA
Battery Capacity: DC 3.7V, 4000mAh*2
47 CFR Part 15.247
Test Standard(s) : ANSI C63.10-2020+Cor.1-2023
KDB 558074 D01 15.247 Meas Guidance v05r02

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with above listed standard(s) requirements. This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Receipt: 2026-04-27

Date of Test: 2026-04-27 to 2026-05-14

Prepared By:

Yuki Long

(Yuki Long)

Approved & Authorized Signer:

Hugo Chen

(Hugo Chen)

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Revision History

Report Version	Description	Issued Date
R00	Original Issue.	2026-05-28

1. General Information

1.1. Client Information

Applicant	:	Dongguan Suoai Electronics Co., LTD.
Address	:	SOAI Industry Park, Huayu Street Changlong Village Huangjiang Town Dongguan, Guangdong, China
Manufacturer	:	Dongguan Suoai Electronics Co., LTD.
Address	:	SOAI Industry Park, Huayu Street Changlong Village Huangjiang Town Dongguan, Guangdong, China
Factory	:	Dongguan Suoai Electronics Co., LTD.
Address	:	SOAI Industry Park, Huayu Street Changlong Village Huangjiang Town Dongguan, Guangdong, China

1.2. Description of Device (EUT)

Product Name	:	Mechanical Keyboard
Model No.	:	F99 MAX, F2088AIR, S102PRO, HERO75, NOVA99, NOVA87, F75 HE, F108PRO V2, F98Pro V3, S99PRO V2 (Note: All samples are the same except the model name, so we prepare "F99 MAX" for test only.)
Trade Mark	:	N/A
Test Power Supply	:	AC 120V/60Hz for adapter, DC 3.7V battery inside
Test Sample No.	:	1-2-1(Normal Sample), 1-2-2(Engineering Sample)
Adapter	:	N/A
RF Specification		
Operation Frequency	:	2402MHz to 2480MHz
Number of Channel	:	16
Modulation Type	:	GFSK
Antenna Type	:	PCB Antenna
Antenna Gain(Peak)	:	2.94dBi
Remark: (1) All of the RF specification are provided by customer. (2) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.		

1.3. Auxiliary Equipment Used During Test

Title	Manufacturer	Model No.	Serial No.
Xiaomi 33W adapter	Xiaomi	MDY-11-EX	SA62212LA04358J

1.4. Operation channel list

Operation Band:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	4	2424	8	2452	12	2468
1	2408	5	2432	9	2456	13	2472
2	2414	6	2440	10	2460	14	2476
3	2420	7	2446	11	2464	15	2480

1.5. Description of Test Modes

Pretest Modes	Descriptions
TM1	Keep the EUT in continuously transmitting mode with GFSK modulation (non-hopping).
TM2	Keep the EUT in continuously transmitting mode with GFSK modulation (hopping).

1.6. Measurement Uncertainty

Parameter	Uncertainty
Conducted emissions (AMN 150kHz~30MHz)	2.8dB
Conducted Output Power	0.84dB
Occupied Bandwidth	552Hz
Dwell Time	2%
Conducted Spurious Emission	1.24dB
Radiated spurious emissions (above 1GHz)	1G-6GHz: 4.64dB; 6G-18GHz: 4.82dB 18G-40GHz: 5.62dB
Radiated emissions (Below 30MHz)	3.14dB
Radiated spurious emissions (30MHz~1GHz)	Horizontal: 3.70dB; Vertical: 4.42dB
The measurement uncertainty and decision risk evaluated according to AB/WI-RF-F-032. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

1.7. Additional Instructions

Power level setup in software: RF Test Tools

Operation Band:

Mode	Channel(MHz)	Power level	Transmitting type
2.4G	2402	default	data pack TX
2.4G	2440	default	data pack TX
2.4G	2480	default	data pack TX

1.8. Test Summary

Test Items	Test Modes	Status
Antenna requirement	/	P
Conducted Emission at AC power line	Mode1	P
Maximum Conducted Output Power	Mode1	P
Channel Separation	Mode2	P
Number of Hopping Frequencies	Mode2	P
Dwell Time	Mode2	P
Emissions in non-restricted frequency bands	Mode1,2	P
Band edge emissions (Radiated)	Mode1	P
Emissions in restricted frequency bands (below 1GHz)	Mode1	P
Emissions in restricted frequency bands (above 1GHz)	Mode1	P
Note: P: Pass N: N/A, not applicable		

1.9. Description of Test Facility

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

FCC-Registration No.:279531

Shenzhen Anbotek Compliance Laboratory Limited, 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 No. 279531.

Test Location

Shenzhen Anbotek Compliance Laboratory Limited.
Sogood Industrial Zone Laboratory & 1/F. of Building D, Sogood Science and Technology Park, Sanwei Community, Hangcheng Subdistrict, Bao'an District, Shenzhen, Guangdong, China.

1.10. Disclaimer

1. The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.
2. The test report is invalid if there is any evidence and/or falsification.
3. The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.
4. This document may not be altered or revised in any way unless done so by Anbotek and all revisions are duly noted in the revisions section.
5. Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.
6. The authenticity of the information provided by the customer is the responsibility of the customer and the laboratory is not responsible for its authenticity.
7. The data in this report will be synchronized with the corresponding national market supervision and management departments and cross-border e-commerce platforms as required by regulatory agencies.

The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.

1.11. Test Equipment List

Conducted Emission at AC power line					
Item	Equipment	Manufacturer	Model No.	Last Cal.	Cal.Due Date
1	L.I.S.N. Artificial Mains Network	Rohde & Schwarz	ENV216	2025-09-05	2026-09-04
2	Software Name EZ-EMC	Farad Technology	ANB-03A	/	/
3	EMI Test Receiver(CE2#)	Rohde & Schwarz	ESCI3	2025-12-29	2026-12-28
4	Three Phase V-type Artificial Power Network LISN 200A	EMtrace	PWL-50-3200A	2025-12-29	2026-12-28
5	10dB Attenuator	Emtrace	10dB100W	2025-12-29	2026-12-28
6	Pulse limiter	EMtrace	PL00903-2#	2025-12-30	2026-12-29

Maximum Conducted Output Power Channel Separation Number of Hopping Frequencies Dwell Time Emissions in non-restricted frequency bands					
Item	Equipment	Manufacturer	Model No.	Last Cal.	Cal.Due Date
1	Constant Temperature Humidity Chamber	ZHONGJIAN	ZJ-KHWS80B	2025-10-10	2026-10-09
2	DC Power Supply	IVYTECH	IV3605	2025-09-05	2026-09-04
3	Spectrum Analyzer	Rohde & Schwarz	FSV40-N	2025-12-29	2026-12-28
4	MXA Spectrum Analysis	KEYSIGHT	N9020A	2025-12-29	2026-12-28
5	Oscilloscope	Tektronix	MDO3012	2025-09-30	2026-09-29
6	MXG RF Vector Signal Generator	Agilent	N5182A	2025-12-29	2026-12-28
7	RF Test software	Toscend	JS1120-3	/	/

Band edge emissions (Radiated)					
Emissions in frequency bands (above 1GHz)					
Item	Equipment	Manufacturer	Model No.	Last Cal.	Cal.Due Date
1	EMI Test Receiver(RE2/3#)	Rohde & Schwarz	ESR26	2025-12-30	2026-12-29
2	EMI Preamplifier	SKET Electronic	LNPA-0118G-45	2025-12-30	2026-12-29
3	Double Ridged Horn Antenna	SCHWARZBECK	BBHA 9120D	2025-10-27	2028-10-26
4	EMI Test Software EZ-EMC	SHURPLE	N/A	/	/
5	Horn Antenna	A-INFO	LB-180400-KF	2024-01-22	2027-01-21
6	Spectrum Analyzer	Rohde & Schwarz	FSV40-N	2025-12-29	2026-12-28
7	Amplifier	Talent Microwave	TLLA18G40G-53-30	2026-01-05	2027-01-04

Emissions in frequency bands (below 1GHz)					
Item	Equipment	Manufacturer	Model No.	Last Cal.	Cal.Due Date
1	EMI Test Receiver(RE2/3#)	Rohde & Schwarz	ESR26	2025-12-30	2026-12-29
2	Pre-amplifier	SONOMA	310N	2025-12-30	2026-12-29
3	Bilog Broadband Antenna	Schwarzbeck	VULB9163	2025-10-26	2028-10-25
4	Loop Antenna (9K-30M)	Schwarzbeck	FMZB1519B	2025-09-05	2026-09-04
5	EMI Test Software EZ-EMC	SHURPLE	N/A	/	/

2. Antenna requirement

Test Requirement:	Refer to 47 CFR Part 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.
Test Method:	---

2.1. Conclusion

The antenna is a PCB Antenna which permanently attached, and the best case gain of the antenna is 2.94 dBi . It complies with the standard requirement.

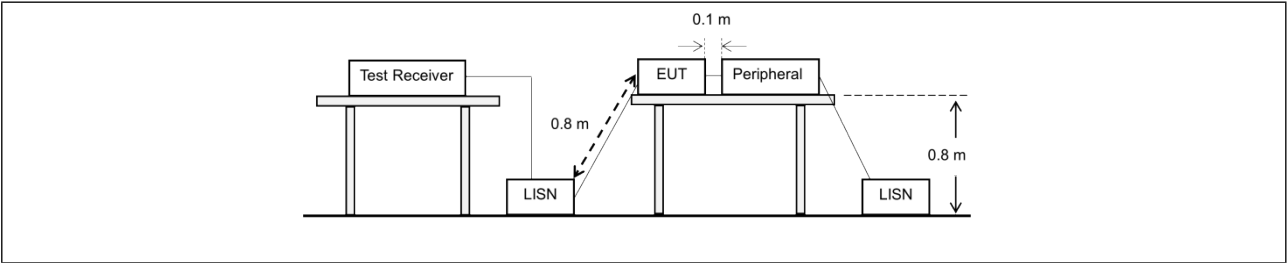
3. Conducted Emission at AC power line

Test Requirement:	Refer to 47 CFR 15.207(a), Except as shown in paragraphs (b)and (c)of this section, 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 μ H/50 ohms line impedance stabilization network (LISN).		
Test Limit:	Frequency of emission (MHz)	Conducted limit (dB μ V)	
		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 Method:	ANSI C63.10-2020+Cor.1-2023 section 6.2		
Procedure:	Refer to ANSI C63.10-2020+Cor.1-2023 section 6.2, standard test method for ac power-line conducted emissions from unlicensed wireless devices		

3.1. EUT Operation

Operating Environment:	
Test mode:	1: TX (Non-Hopping): Keep the EUT in continuously transmitting mode with GFSK modulation (non-hopping).

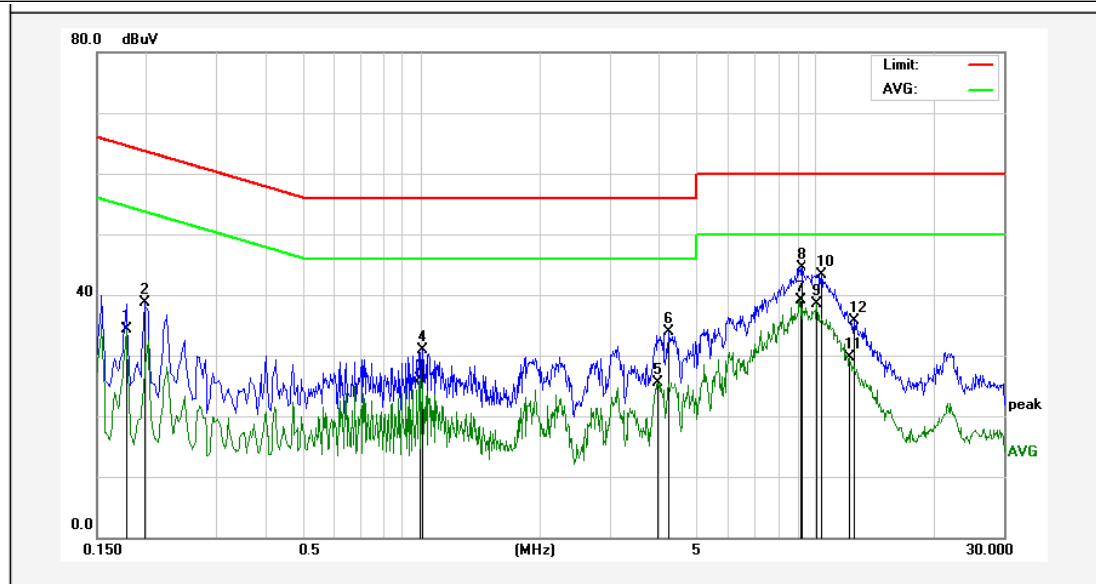
3.2. Test Setup



3.3. Test Data

Temperature:	23.4 °C	Humidity:	60 %	Atmospheric Pressure:	101 kPa
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TM1 / Line: Line / Band: 2400-2483.5 MHz / BW: 1 / CH: L



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1780	16.21	18.00	34.21	54.57	-20.36	AVG	
2	0.1980	20.63	18.04	38.67	63.69	-25.02	QP	
3	0.9940	8.10	18.10	26.20	46.00	-19.80	AVG	
4	1.0060	12.83	18.10	30.93	56.00	-25.07	QP	
5	3.9780	7.52	18.02	25.54	46.00	-20.46	AVG	
6	4.2340	15.81	18.01	33.82	56.00	-22.18	QP	
7	9.0620	21.18	17.94	39.12	50.00	-10.88	AVG	
8	9.2340	26.47	17.94	44.41	60.00	-15.59	QP	
9	10.0740	20.59	17.97	38.56	50.00	-11.44	AVG	
10	10.3660	25.34	17.99	43.33	60.00	-16.67	QP	
11	12.2100	11.55	18.15	29.70	50.00	-20.30	AVG	
12	12.5219	17.58	18.19	35.77	60.00	-24.23	QP	

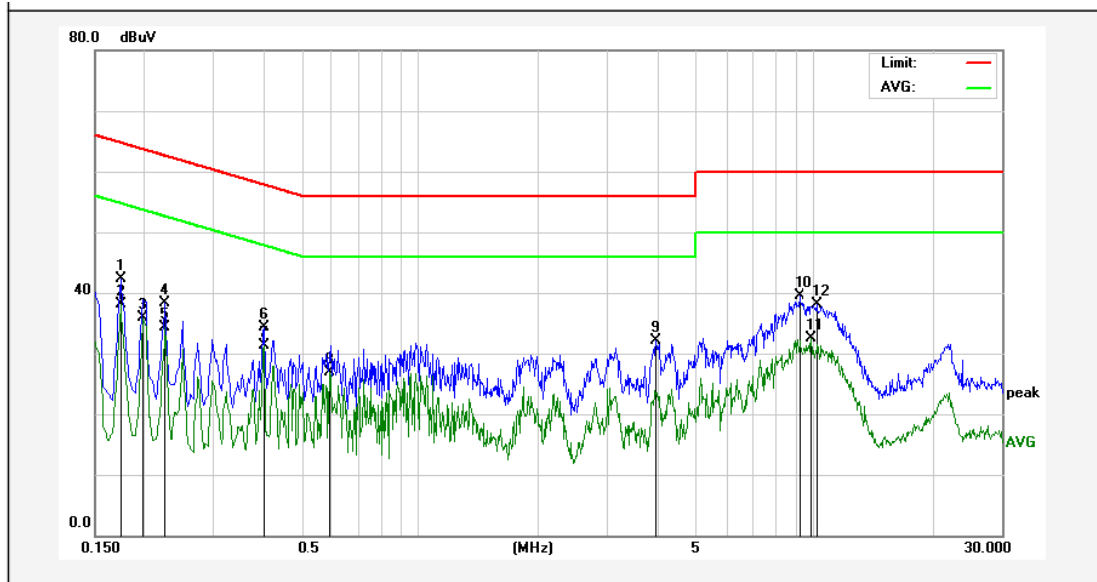
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Temperature:	23.4 °C	Humidity:	60 %	Atmospheric Pressure:	101 kPa
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TM1 / Line: Neutral / Band: 2400-2483.5 MHz / BW: 1 / CH: L



No.	Freq. (MHz)	Reading (dBμV)	Factor (dB)	Result (dBμV)	Limit (dBμV)	Over Limit (dB)	Detector	Remark
1	0.1740	24.29	17.99	42.28	64.76	-22.48	QP	
2	0.1740	20.06	17.99	38.05	54.76	-16.71	AVG	
3	0.1980	17.96	18.04	36.00	53.69	-17.69	AVG	
4	0.2260	20.26	18.09	38.35	62.59	-24.24	QP	
5	0.2260	16.24	18.09	34.33	52.59	-18.26	AVG	
6	0.4020	16.15	18.08	34.23	57.81	-23.58	QP	
7	0.4020	13.29	18.08	31.37	47.81	-16.44	AVG	
8	0.5940	8.75	18.11	26.86	46.00	-19.14	AVG	
9	3.9740	14.10	18.02	32.12	56.00	-23.88	QP	
10	9.1820	21.58	17.94	39.52	60.00	-20.48	QP	
11	9.9060	14.49	17.96	32.45	50.00	-17.55	AVG	
12	10.2180	20.10	17.98	38.08	60.00	-21.92	QP	

Note: Result(dB μ V) = Reading(dB μ V) + Factor(dB);
Over Limit(dB) = Result(dB μ V) - Limit(dB μ V)

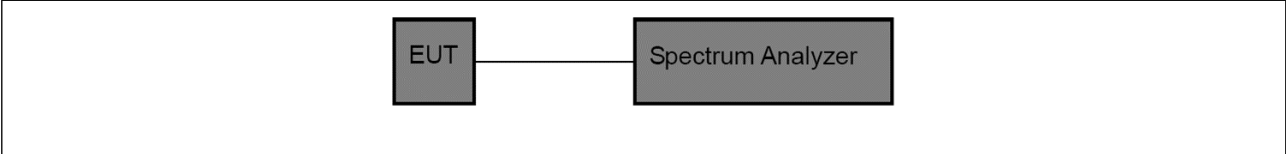
4. Maximum Conducted Output Power

Test Requirement:	47 CFR 15.247(b)(1)
Test Limit:	Refer to 47 CFR 15.247(b)(1), For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.
Test Method:	ANSI C63.10-2020+Cor 1-2023, section 7.8.5 KDB 558074 D01 15.247 Meas Guidance v05r02

4.1. EUT Operation

Operating Environment:	
Test mode:	1: TX (Non-Hopping): Keep the EUT in continuously transmitting mode with GFSK modulation (non-hopping).

4.2. Test Setup



4.3. Test Data

Temperature:	21 °C	Humidity:	65 %	Atmospheric Pressure:	101 kPa
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Please Refer to Appendix for Details.

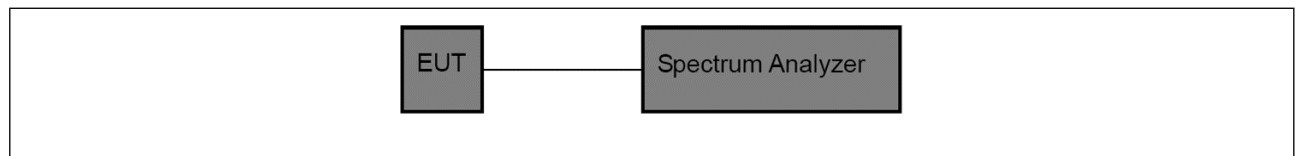
5. Channel Separation

Test Requirement:	47 CFR 15.247(a)(1)
Test Limit:	Refer to 47 CFR 15.247(a)(1), 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 Method:	ANSI C63.10-2020+Cor 1-2023, section 7.8.2 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	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: No faster than coupled (auto) time. e) Detector function: Peak. f) Trace: Max-hold. g) Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. Compliance of an EUT with the appropriate regulatory limit shall be determined. A spectral plot of the data shall be included in the test report.

5.1. EUT Operation

Operating Environment:	
Test mode:	2: TX (Hopping): Keep the EUT in continuously transmitting mode with GFSK modulation (hopping).

5.2. Test Setup



5.3. Test Data

Temperature:	21 °C	Humidity:	65 %	Atmospheric Pressure:	101 kPa
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Please Refer to Appendix for Details.

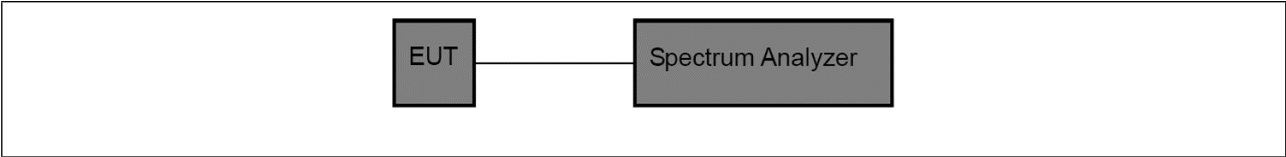
6. Number of Hopping Frequencies

Test Requirement:	47 CFR 15.247(a)(1)(iii)
Test Limit:	Refer to 47 CFR 15.247(a)(1)(iii), Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. 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. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.
Test Method:	ANSI C63.10-2020+Cor 1-2023, section 7.8.3 KDB 558074 D01 15.247 Meas Guidance v05r02

6.1. EUT Operation

Operating Environment:	
Test mode:	2: TX (Hopping): Keep the EUT in continuously transmitting mode with GFSK modulation (hopping).

6.2. Test Setup



6.3. Test Data

Temperature:	21 °C	Humidity:	65 %	Atmospheric Pressure:	101 kPa
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Please Refer to Appendix for Details.

7. Dwell Time

Test Requirement:	47 CFR 15.247(a)(1)(iii)
Test Limit:	Refer to 47 CFR 15.247(a)(1)(iii), Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. 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. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.
Test Method:	ANSI C63.10-2020+Cor 1-2023, section 7.8.4 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	The dwell time per hop on a channel is the time from the start of the first transmission to the end of the last transmission for that hop. If the device has a single transmission per hop then the dwell time is the duration of that transmission. If the device has a multiple transmissions per hop then the dwell time is measured from the start of the first transmission to the end of the last transmission. The time of occupancy is the total time that the device dwells on a channel over an observation period specified in the regulatory requirement. To determine the time of occupancy the spectrum analyzer will be configured to measure both the dwell time per hop and the number of times the device transmits on a specific channel in a given period. The EUT shall have its hopping function enabled. Compliance with the requirements shall be made with the minimum and with the maximum number of channels enabled. If the dwell time per channel does not vary with the number of channels then compliance with the requirements may be based on the minimum number of channels. If the device supports different dwell times per channel (example Bluetooth devices can dwell on a channel for 1, 3 or 5 time slots) then measurements can be limited to the longest dwell time with the minimum number of channels. Use the following spectrum analyzer settings to determine the dwell time per hop: a) Span: Zero span, centered on a hopping channel. b) RBW shall be $\leq$ channel spacing and where possible RBW should be set $\gg 1/T$, where T is the expected transmission time per hop. c) Sweep time: Set so that the start of the first transmission and end of the last transmission for the hop are clearly captured. Setting the sweep time to be slightly longer than the hopping period per channel (hopping period = $1/\text{hopping rate}$) should achieve this. d) Use a video trigger, where possible with a trigger delay, so that the start of the transmission is clearly observed. The trigger level might need adjustment to reduce the chance of triggering when the system hops on an adjacent channel. e) Detector function: Peak. f) Trace: Clear-write, single sweep. g) Place markers at the start of the first transmission on the channel and at

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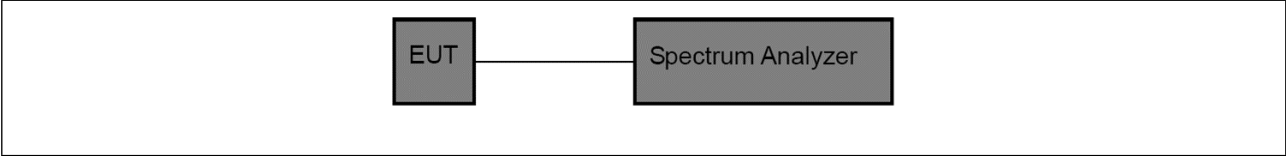
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	the end of the last transmission. The dwell time per hop is the time between these two markers. To determine the number of hops on a channel in the regulatory observation period repeat the measurement using a longer sweep time. When the device uses a single hopping sequence the period of measurement should be sufficient to capture at least 2 hops. When the device uses a dynamic hopping sequence, or the sequence varies, the period of measurement may need to capture multiple hops to better determine the average time of occupancy. Count the number of hops on the channel across the sweep time. The average number of hops on the same channel within the regulatory observation period is calculated from the number of hops on the channel divided by the spectrum analyzer sweep time multiplied by the regulatory observation period. For example, if three hops are counted with an analyzer sweep time of 500 ms and the regulatory observation period is 10 s, then the number of hops in that ten seconds is $3 / 0.5 \times 10$, or 60 hops. The average time of occupancy is calculated by multiplying the dwell time per hop by the number of hops in the observation period.
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7.1. EUT Operation

Operating Environment:	
Test mode:	2: TX (Hopping): Keep the EUT in continuously transmitting mode with GFSK modulation (hopping).

7.2. Test Setup



7.3. Test Data

Temperature:	21 °C	Humidity:	65 %	Atmospheric Pressure:	101 kPa
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Please Refer to Appendix for Details.

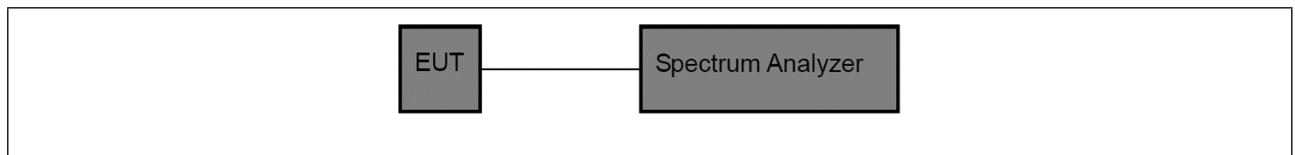
8. Emissions in non-restricted frequency bands

Test Requirement:	47 CFR 15.247(d)
Test Limit:	Refer to 47 CFR 15.247(d), In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in § 15.209(a) is not required.
Test Method:	ANSI C63.10-2020+Cor 1-2023 section 7.8.7 KDB 558074 D01 15.247 Meas Guidance v05r02

8.1. EUT Operation

Operating Environment:	
Test mode:	1: TX (Non-Hopping): Keep the EUT in continuously transmitting mode with GFSK modulation (non-hopping). 2: TX (Hopping): Keep the EUT in continuously transmitting mode with GFSK modulation (hopping).

8.2. Test Setup



8.3. Test Data

Temperature:	21 °C	Humidity:	65 %	Atmospheric Pressure:	101 kPa
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Please Refer to Appendix for Details.

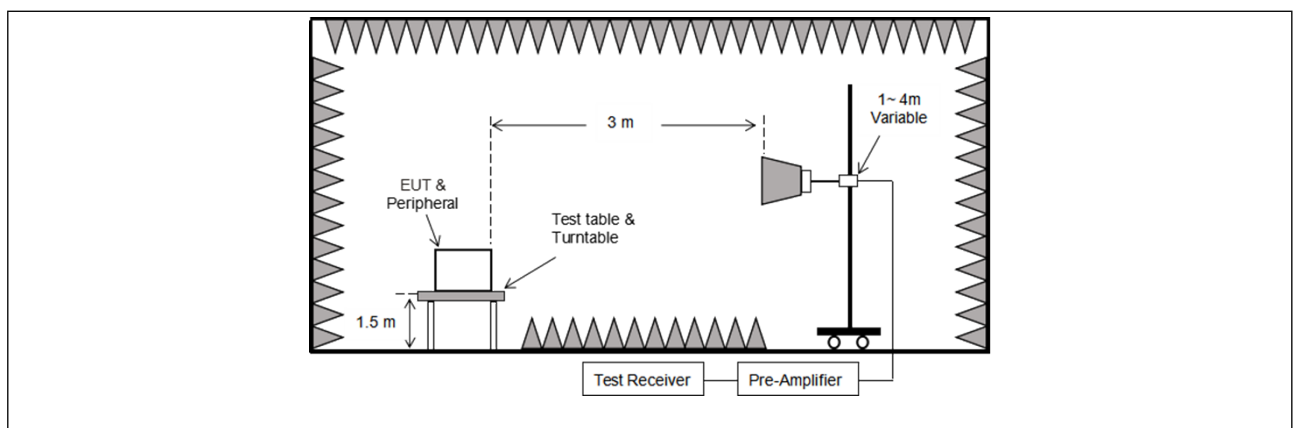
9. Band edge emissions (Radiated)

Test Requirement:	Refer to 47 CFR 15.247(d), In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)(see § 15.205(c)).		
Test Limit:	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
** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241. In the emission table above, the tighter limit applies at the band edges. The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.			
Test Method:	ANSI C63.10-2020+Cor 1-2023 section 6.10 KDB 558074 D01 15.247 Meas Guidance v05r02		
Procedure:	ANSI C63.10-2020+Cor 1-2023 section 6.10.5.2		

9.1. EUT Operation

Operating Environment:	
Test mode:	1: TX (Non-Hopping): Keep the EUT in continuously transmitting mode with GFSK modulation (non-hopping).

9.2. Test Setup



9.3. Test Data

Temperature:	21 °C	Humidity:	65 %	Atmospheric Pressure:	101 kPa
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TM1 / CH: L						
Peak value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	polarization
2390.000	33.37	9.73	43.10	74.00	-30.90	Vertical
2333.662	42.14	9.73	51.87	74.00	-22.13	Vertical
2390.000	31.83	9.73	41.56	74.00	-32.44	Horizontal
2328.039	37.45	9.73	47.18	74.00	-26.82	Horizontal
TM1 / CH: H						
Peak value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	polarization
2483.500	23.76	9.91	33.67	74.00	-40.33	Vertical
2508.843	31.03	9.91	40.94	74.00	-33.06	Vertical
2483.500	30.27	9.91	40.18	74.00	-33.82	Horizontal
2500.388	40.14	9.91	50.05	74.00	-23.95	Horizontal

Note: When the PK measure result value is less than the AVG limit value, the AV measure result values test not applicable.

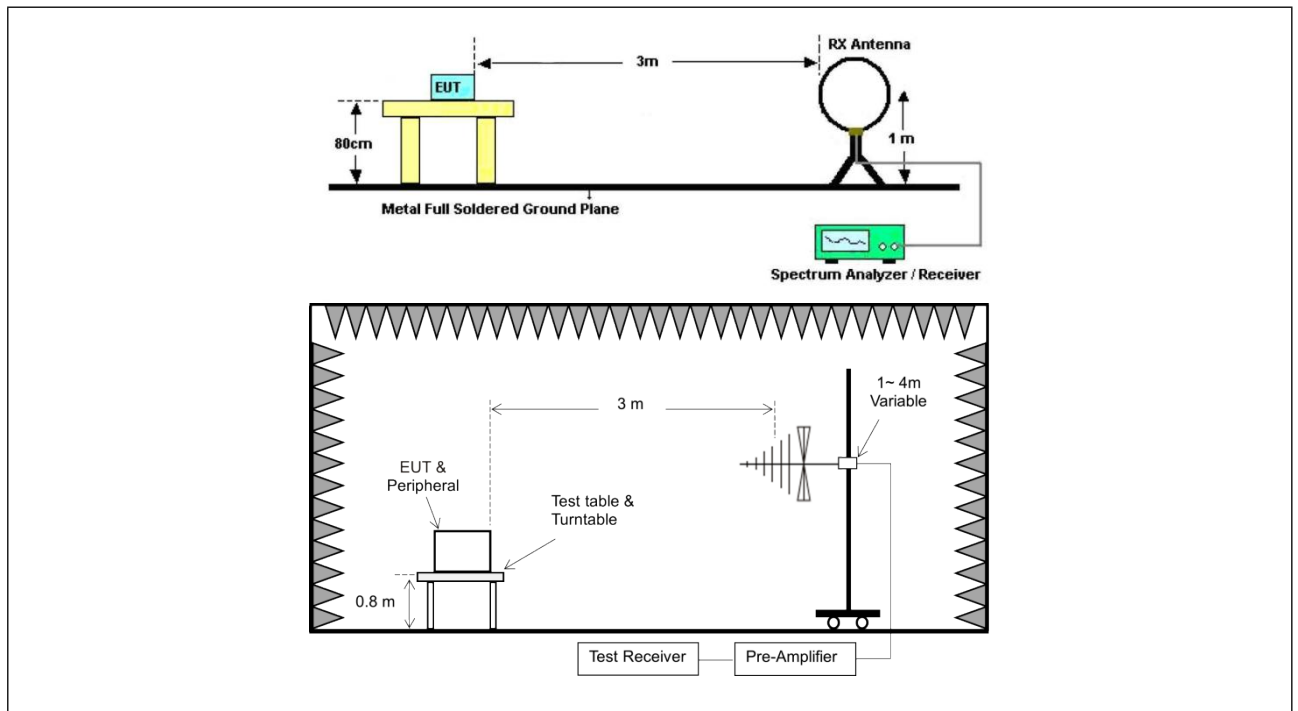
10. Emissions in restricted frequency bands (below 1GHz)

Test Requirement:	Refer to 47 CFR 15.247(d), In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)(see § 15.205(c)).		
Test Limit:	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
** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241. In the emission table above, the tighter limit applies at the band edges. The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.			
Test Method:	ANSI C63.10-2020+Cor 1-2023 section 6.5.4 KDB 558074 D01 15.247 Meas Guidance v05r02		
Procedure:	ANSI C63.10-2020+Cor 1-2023 section 6.5.4		

10.1. EUT Operation

Operating Environment:	
Test mode:	1: TX (Non-Hopping): Keep the EUT in continuously transmitting mode with GFSK modulation (non-hopping).

10.2. Test Setup

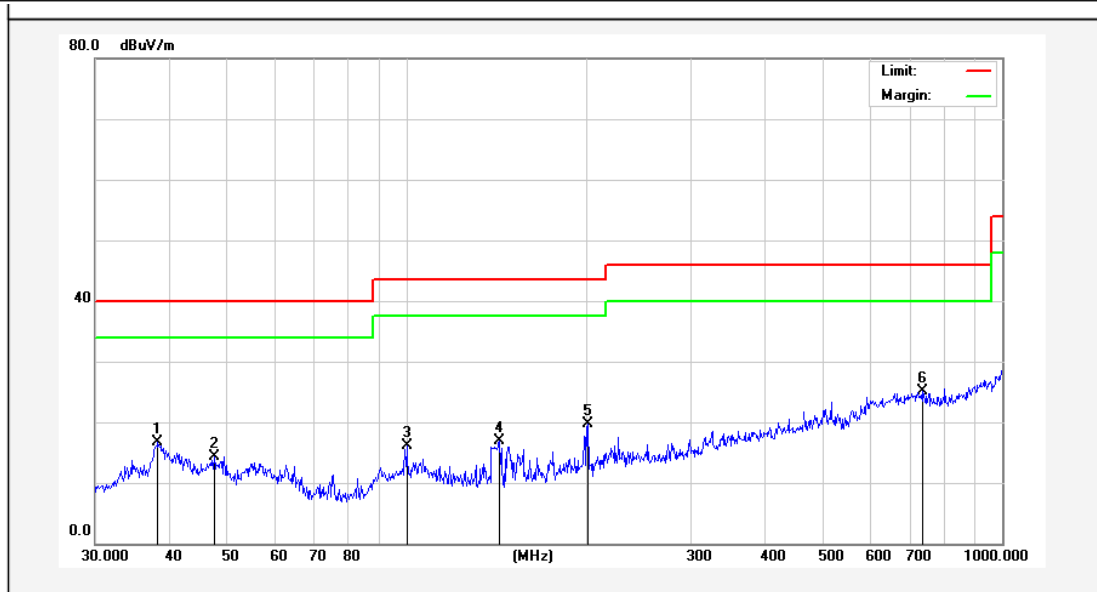


10.3. Test Data

The test results of 9kHz-30MHz was attenuated more than 20dB below the permissible limits, so the results don't record in the report.

Temperature:	22.3 °C	Humidity:	56 %	Atmospheric Pressure:	101 kPa
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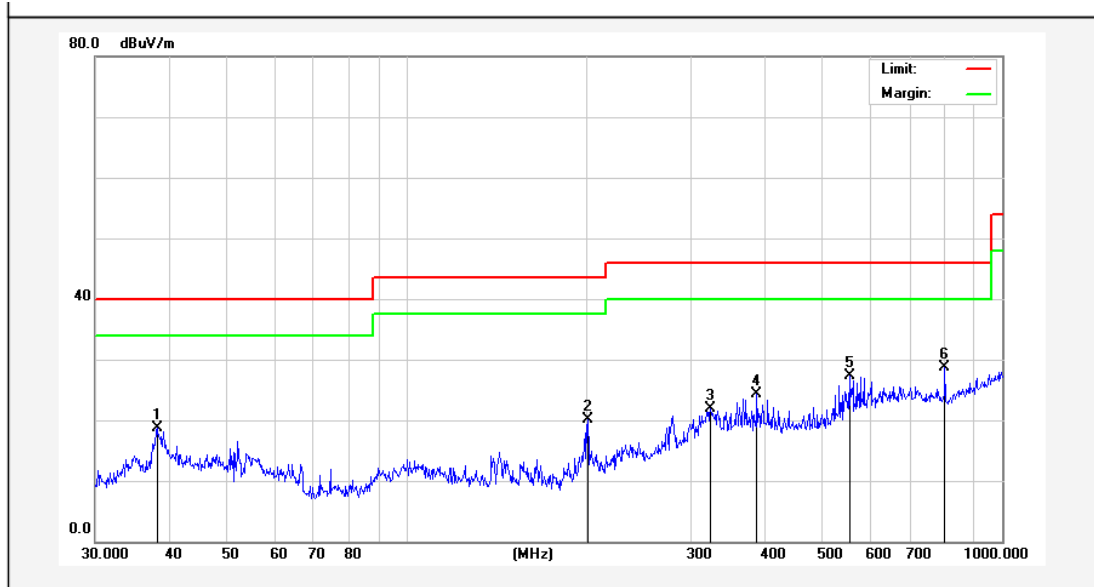
TM1 / Polarization: Horizontal / Band: 2400-2483.5 MHz / BW: 1 / CH: L



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Remark
1	38.2120	33.51	-16.82	16.69	40.00	-23.31	QP	
2	47.4918	31.35	-16.96	14.39	40.00	-25.61	QP	
3	100.2286	34.63	-18.57	16.06	43.50	-27.44	QP	
4	143.3261	39.65	-22.79	16.86	43.50	-26.64	QP	
5	201.3930	39.72	-20.08	19.64	43.50	-23.86	QP	
6	734.4913	33.66	-8.51	25.15	46.00	-20.85	QP	

Temperature:	22.3 °C	Humidity:	56 %	Atmospheric Pressure:	101 kPa
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TM1 / Polarization: Vertical / Band: 2400-2483.5 MHz / BW: 1 / CH: L



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Remark
1	38.0783	35.55	-16.89	18.66	40.00	-21.34	QP	
2	201.3930	40.07	-20.01	20.06	43.50	-23.44	QP	
3	323.3204	37.65	-15.65	22.00	46.00	-24.00	QP	
4	386.6338	38.30	-13.90	24.40	46.00	-21.60	QP	
5	554.8254	39.27	-11.95	27.32	46.00	-18.68	QP	
6	801.7863	37.40	-8.66	28.74	46.00	-17.26	QP	

Note:

- Only record the worst data in the report.
- Result(dB μ V/m) = Reading(dB μ V) + Factor(dB/m);
Over Limit(dB) = Result(dB μ V/m) - Limit(dB μ V/m)

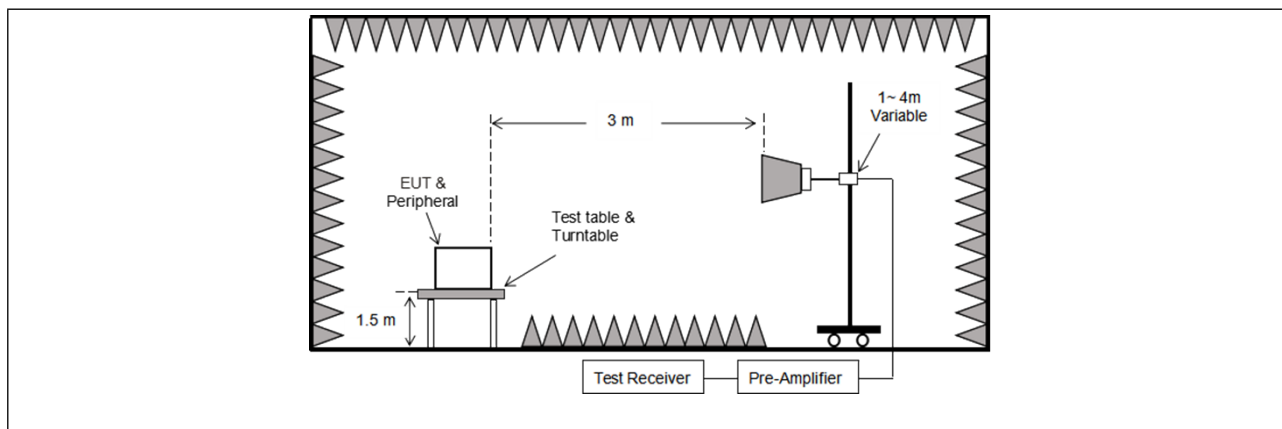
11. Emissions in restricted frequency bands (above 1GHz)

Test Requirement:	Refer to 47 CFR 15.247(d), in addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a)(see § 15.205(c)).		
Test Limit:	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
** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241. In the emission table above, the tighter limit applies at the band edges. The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.			
Test Method:	ANSI C63.10-2020+Cor 1-2023 section 6.5.4 KDB 558074 D01 15.247 Meas Guidance v05r02		
Procedure:	ANSI C63.10-2020+Cor 1-2023 section 6.5.4		

11.1. EUT Operation

Operating Environment:	
Test mode:	1: TX (Non-Hopping): Keep the EUT in continuously transmitting mode with GFSK modulation (non-hopping).

11.2. Test Setup



11.3. Test Data

Temperature:	21 °C	Humidity:	65 %	Atmospheric Pressure:	101 kPa
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TM1 / CH: L						
Peak value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	polarization
4804.00	27.91	15.27	43.18	74.00	-30.82	Vertical
7206.00	29.12	18.09	47.21	74.00	-26.79	Vertical
9608.00	30.05	23.76	53.81	74.00	-20.19	Vertical
12010.00	*			74.00		Vertical
14412.00	*			74.00		Vertical
4804.00	28.31	15.27	43.58	74.00	-30.42	Horizontal
7206.00	29.03	18.09	47.12	74.00	-26.88	Horizontal
9608.00	28.68	23.76	52.44	74.00	-21.56	Horizontal
12010.00	*			74.00		Horizontal
14412.00	*			74.00		Horizontal
Average value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	polarization
4804.00	17.29	15.27	32.56	54.00	-21.44	Vertical
7206.00	18.15	18.09	36.24	54.00	-17.76	Vertical
9608.00	19.07	23.76	42.83	54.00	-11.17	Vertical
12010.00	*			54.00		Vertical
14412.00	*			54.00		Vertical
4804.00	16.66	15.27	31.93	54.00	-22.07	Horizontal
7206.00	18.09	18.09	36.18	54.00	-17.82	Horizontal
9608.00	17.99	23.76	41.75	54.00	-12.25	Horizontal
12010.00	*			54.00		Horizontal
14412.00	*			54.00		Horizontal

TM1 / CH: M						
Peak value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	polarization
4880.00	27.93	15.42	43.35	74.00	-30.65	Vertical
7320.00	28.97	18.02	46.99	74.00	-27.01	Vertical
9760.00	29.06	23.80	52.86	74.00	-21.14	Vertical
12200.00	*			74.00		Vertical
14640.00	*			74.00		Vertical
4880.00	28.01	15.42	43.43	74.00	-30.57	Horizontal
7320.00	29.02	18.02	47.04	74.00	-26.96	Horizontal
9760.00	28.38	23.80	52.18	74.00	-21.82	Horizontal
12200.00	*			74.00		Horizontal
14640.00	*			74.00		Horizontal
Average value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	polarization
4880.00	17.02	15.42	32.44	54.00	-21.56	Vertical
7320.00	18.25	18.02	36.27	54.00	-17.73	Vertical
9760.00	18.93	23.80	42.73	54.00	-11.27	Vertical
12200.00	*			54.00		Vertical
14640.00	*			54.00		Vertical
4880.00	16.57	15.42	31.99	54.00	-22.01	Horizontal
7320.00	17.65	18.02	35.67	54.00	-18.33	Horizontal
9760.00	18.50	23.80	42.30	54.00	-11.70	Horizontal
12200.00	*			54.00		Horizontal
14640.00	*			54.00		Horizontal

Shenzhen Anbotek Compliance Laboratory Limited

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Hotline: 400-003-0500 web: www.anbotek.com E-mail: service@anbotek.com

TM1 / CH: H						
Peak value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	polarization
4960.00	28.20	15.58	43.78	74.00	-30.22	Vertical
7440.00	28.98	17.93	46.91	74.00	-27.09	Vertical
9920.00	29.61	23.83	53.44	74.00	-20.56	Vertical
12400.00	*			74.00		Vertical
14880.00	*			74.00		Vertical
4960.00	28.08	15.58	43.66	74.00	-30.34	Horizontal
7440.00	29.05	17.93	46.98	74.00	-27.02	Horizontal
9920.00	29.06	23.83	52.89	74.00	-21.11	Horizontal
12400.00	*			74.00		Horizontal
14880.00	*			74.00		Horizontal
Average value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	polarization
4960.00	18.14	15.58	33.72	54.00	-20.28	Vertical
7440.00	19.26	17.93	37.19	54.00	-16.81	Vertical
9920.00	19.48	23.83	43.31	54.00	-10.69	Vertical
12400.00	*			54.00		Vertical
14880.00	*			54.00		Vertical
4960.00	18.01	15.58	33.59	54.00	-20.41	Horizontal
7440.00	19.02	17.93	36.95	54.00	-17.05	Horizontal
9920.00	18.40	23.83	42.23	54.00	-11.77	Horizontal
12400.00	*			54.00		Horizontal
14880.00	*			54.00		Horizontal

Remark:

1. Result =Reading + Factor
2. Test frequency are from 1GHz to 25GHz, “*” means the test results were attenuated more than 20dB below the permissible limits, so the results don't record in the report.

APPENDIX I -- TEST SETUP PHOTOGRAPH

Please refer to separated files Appendix I -- Test Setup Photograph_RF

APPENDIX II -- EXTERNAL PHOTOGRAPH

Please refer to separated files Appendix II -- External Photograph

APPENDIX III -- INTERNAL PHOTOGRAPH

Please refer to separated files Appendix III -- Internal Photograph

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

