

1F., Block A of Tongsheng Technology Building, Huahui Road, Dalang Street, Longhua District, Shenzhen, China

Report Template Version: V05

Telephone: +86-755-26648640 Fax: +86-755-26648637

Website: www.cqa-cert.com Report Template Revision Date: 2021-11-03

Test Report

Report No.: CQASZ20250200251E

Applicant: Shenzhen Hollyland Technology Co.,Ltd.

Address of Applicant: 8F, Building 5D, Skyworth Innovation Valley, Tangtou Road, Shiyan Street,

Baoan District, Shenzhen, 518055 China

Equipment Under Test (EUT):

Product: Wireless Microphone

Model No.: M18T

Test Model No.: M18T

Brand Name:

(X) HOLLYLAND

FCC ID: 2ADZC-M18T

Standards: 47 CFR Part 15, Subpart C

KDB558074 D01 15.247 Meas Guidance v05r02

ANSI C63.10:2013

Date of Receipt: 2025-02-14

Date of Test: 2025-02-14 to 2025-04-10

Date of Issue: 2025-04-10
Test Result: PASS*

*In the configuration tested, the EUT complied with the standards specified above.

Tested By:

(Lewis Zhou)

Reviewed By:

(Timo Lei)

Approved By: (Jack Ai)







1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20250200251E	Rev.01	Initial report	2025-04-10



2 Test Summary

Test Item	Test Requirement	Test method	Result
Antenna Requirement	47 CFR Part 15.203	1	PASS
AC Power Line Conducted Emission	47 CFR Part 15, Subpart C Section 15.207	ANSI C63.10-2013	PASS
Conducted Peak Output Power	47 CFR Part 15.247	ANSI C63.10-2013	PASS
20dB Occupied Bandwidth	47 CFR Part 15.247	ANSI C63.10-2013	PASS
Carrier Frequencies Separation	47 CFR Part 15.247	ANSI C63.10-2013	PASS
Hopping Channel Number	47 CFR Part 15.247	ANSI C63.10-2013	PASS
Dwell Time	47 CFR Part 15.247	ANSI C63.10-2013	PASS
Pseudorandom Frequency Hopping Sequence	47 CFR Part 15.247	ANSI C63.10-2013	PASS
Band-edge for RF Conducted Emissions	47 CFR Part 15.247	ANSI C63.10-2013	PASS
RF Conducted Spurious Emissions	47 CFR Part 15.247	ANSI C63.10-2013	PASS
Radiated Spurious emissions	47 CFR Part 15.209	ANSI C63.10-2013	PASS
Restricted bands around fundamental frequency (Radiated Emission)	47 CFR Part 15.205/15.209	ANSI C63.10-2013	PASS

Remark:

The tested sample(s) and the sample information are provided by the client.

Tx: In this whole report Tx (or tx) means Transmitter.

Rx: In this whole report Rx (or rx) means Receiver.

RF: In this whole report RF means Radiated Frequency.

CH: In this whole report CH means channel.

Volt: In this whole report Volt means Voltage.

Temp: In this whole report Temp means Temperature. Humid: In this whole report Humid means humidity.

Press: In this whole report Press means Pressure.

N/A: In this whole report not application



3 Contents

	Page
1 VERSION	2
2 TEST SUMMARY	3
3 CONTENTS	
4 GENERAL INFORMATION	5
4.1 CLIENT INFORMATION	5
4.2 GENERAL DESCRIPTION OF EUT	5
4.3 Additional Instructions	
4.4 Test Environment	
4.5 DESCRIPTION OF SUPPORT UNITS	
4.6 STATEMENT OF THE MEASUREMENT UNCERTAINTY	
4.7 TEST LOCATION	
4.8 TEST FACILITY	
4.9 ABNORMALITIES FROM STANDARD CONDITIONS 4.10 OTHER INFORMATION REQUESTED BY THE CUSTOMER	
4.11 EQUIPMENT LIST	11
5 TEST RESULTS AND MEASUREMENT DATA	
5.1 Antenna Requirement	12
5.2 CONDUCTED EMISSIONS	
5.3 CONDUCTED PEAK OUTPUT POWER	17
5.4 20dB Occupied Bandwidth	22
5.5 CARRIER FREQUENCIES SEPARATION	
5.6 HOPPING CHANNEL NUMBER	
5.7 DWELL TIME	
5.8 BAND-EDGE FOR RF CONDUCTED EMISSIONS	
5.9 Spurious RF Conducted Emissions	
5.10 OTHER REQUIREMENTS FREQUENCY HOPPING SPREAD SPECTRUM SYSTEM	
5.11 Radiated Spurious emission & Restricted Bands	
5.11.2 Transmitter Emission above 1GHz	
6 PHOTOGRAPHS - EUT TEST SETUP	
7 PHOTOGRAPHS - EUT CONSTRUCTIONAL DETAILS	58





4 General Information

4.1 Client Information

Applicant:	Shenzhen Hollyland Technology Co.,Ltd.
Address of Applicant:	8F, Building 5D, Skyworth Innovation Valley, Tangtou Road, Shiyan Street, Baoan District, Shenzhen, 518055 China
Manufacturer:	Shenzhen Hollyland Technology Co.,Ltd.
Address of Manufacturer:	8F, Building 5D, Skyworth Innovation Valley, Tangtou Road, Shiyan Street, Baoan District, Shenzhen, 518055 China
Factory:	Shenzhen Hollyland Technology Co.,Ltd.
Address of Factory:	8F, Building 5D, Skyworth Innovation Valley, Tangtou Road, Shiyan Street, Baoan District, Shenzhen, 518055 China

4.2 General Description of EUT

TIE CONOTAL ECCOMPAIGN	
Product Name:	Wireless Microphone
Model No.:	M18T
Test Model No.:	M18T
Trade Mark:	HOLLYLAND
Software Version:	A6108_TX_V1.0.0.10.fw
Hardware Version:	A6108-TX-V08
Operation Frequency:	2402MHz~2480MHz
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK
Transfer Rate:	1Mbps/2Mbps
Number of Channel:	40
Hopping Channel Type:	Adaptive Frequency Hopping systems
Product Type:	☐ Mobile ☐ Portable
Test Software of EUT:	Telink BDT
Antenna Type:	PIFA antenna
Antenna Gain:	-1.13dBi
Power Supply:	TX:lithium battery 3.8V 65mAh 0.247Wh
Simultaneous Transmission	☐ Simultaneous TX is supported and evaluated in this report.☑ Simultaneous TX is not supported.



Report No.: CQASZ20250200251E

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
0	2402MHz	10	2422MHz	20	2442MHz	30	2462MHz
1	2404MHz	11	2424MHz	21	2444MHz	31	2464MHz
2	2406MHz	12	2426MHz	22	2446MHz	32	2466MHz
3	2408MHz	13	2428MHz	23	2448MHz	33	2468MHz
4	2410MHz	14	2430MHz	24	2450MHz	34	2470MHz
5	2412MHz	15	2432MHz	25	2452MHz	35	2472MHz
6	2414MHz	16	2434MHz	26	2454MHz	36	2474MHz
7	2416MHz	17	2436MHz	27	2456MHz	37	2476MHz
8	2418MHz	18	2438MHz	28	2458MHz	38	2478MHz
9	2420MHz	19	2440MHz	29	2460MHz	39	2480MHz

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Channel	Frequency
The Lowest channel	2402MHz
The Middle channel	2440MHz
The Highest channel	2480MHz

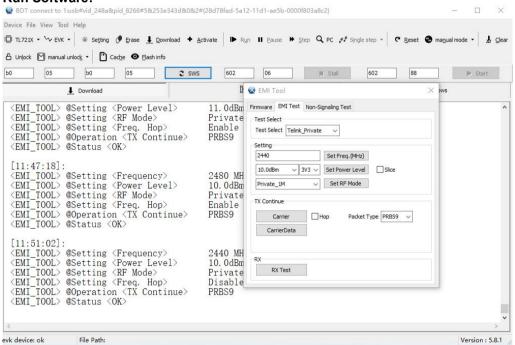


Report No.: CQASZ20250200251E

4.3 Additional Instructions

EUT Test Software Settings:					
Mode:	⊠ Special software is used.				
	☐ Through engineering command into the engineering mode. engineering command: *#*#3646633#*#*				
EUT Power level:	(Power level is built-in set parameters selected)	(Power level is built-in set parameters and cannot be changed and selected)			
Use test software to set the lov	Use test software to set the lowest frequency, the middle frequency and the highest frequency keep				
transmitting of the EUT.					
Mode	Mode Channel Frequency(MHz)				
CH0 2402					
GFSK	FSK CH19 2440				
	CH39	2480			

Run Software:





Report No.: CQASZ20250200251E

4.4 Test Environment

Operating Environment:	Operating Environment:			
Temperature:	25 °C			
Humidity:	54% RH			
Atmospheric Pressure:	1009mbar			
Test Mode:	Use test software to set the lowest frequency, the middle frequency and the highest frequency keep transmitting of the EUT.			

4.5 Description of Support Units

The EUT has been tested with associated equipment below.

Description	Manufacturer	Model No.	Remark	Supplied
Adapter	MI	/	/	CQA





4.6 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate.

The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities.

The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements" and is documented in the **Shenzhen Huaxia Testing Technology Co., Ltd.** quality system acc. to DIN EN ISO/IEC 17025.

Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for CQA laboratory is reported:

No.	Item	Uncertainty
1	Radiated Emission (Below 1GHz)	5.12dB
2	Radiated Emission (Above 1GHz)	4.60dB
3	Conducted Disturbance (0.15~30MHz)	3.34dB
4	Radio Frequency	3×10 ⁻⁸
5	Duty cycle	0.6 %
6	Occupied Bandwidth	1.1%
7	RF conducted power	0.86dB
8	RF power density	0.74
9	Conducted Spurious emissions	0.86dB
10	Temperature test	0.8℃
11	Humidity test	2.0%
12	Supply voltages	0.5 %
13	Frequency Error	5.5 Hz



Report No.: CQASZ20250200251E

4.7 Test Location

All tests were performed at:

Shenzhen Huaxia Testing Technology Co., Ltd.

1F., Block A of Tongsheng Technology Building, Huahui Road, Dalang Street, Longhua District, Shenzhen, China

4.8 Test Facility

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

IC Registration No.: 22984-1

The 3m Semi-anechoic chamber of Shenzhen Huaxia Testing Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing

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

• CNAS (No. CNAS L5785)

CNAS has accredited Shenzhen Huaxia Testing Technology Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

A2LA (Certificate No. 4742.01)

Shenzhen Huaxia Testing Technology Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 4742.01.

• FCC Registration No.: 522263

Shenzhen Huaxia Testing Technology Co., Ltd., Shenzhen 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.:522263

4.9 Abnormalities from Standard Conditions

None.

4.10 Other Information Requested by the Customer

None.



4.11 Equipment List

			Instrument	Calibration	Calibration
Test Equipment	Manufacturer	Model No.	No.	Date	Due Date
EMI Test Receiver	R&S	ESR7	CQA-005	2024/9/2	2025/9/1
Spectrum analyzer	R&S	FSU26	CQA-038	2024/9/2	2025/9/1
Spectrum analyzer	R&S	FSU40	CQA-075	2024/9/2	2025/9/1
Preamplifier	MITEQ	AFS4-00010300-18- 10P-4	CQA-035	2024/9/2	2025/9/1
Preamplifier	MITEQ	AMF-6D-02001800- 29-20P	CQA-036	2024/9/2	2025/9/1
Preamplifier	EMCI	EMC184055SE	CQA-089	2024/9/2	2025/9/1
Loop antenna	Schwarzbeck	FMZB1516	CQA-060	2023/9/8	2026/9/7
Bilog Antenna	R&S	HL562	CQA-011	2023/11/01	2026/10/31
Horn Antenna	R&S	HF906	CQA-012	2023/11/01	2026/10/31
Horn Antenna	Schwarzbeck	BBHA 9170	CQA-088	2023/9/7	2026/9/6
Coaxial Cable (Above 1GHz)	CQA	N/A	C007	2024/9/2	2025/9/1
Coaxial Cable (Below 1GHz)	CQA	N/A	C013	2024/9/2	2025/9/1
Antenna Connector	CQA	RFC-01	CQA-080	2024/9/2	2025/9/1
RF cable(9KHz~40GHz)	CQA	RF-01	CQA-079	2024/9/2	2025/9/1
Power meter	R&S	NRVD	CQA-029	2024/9/2	2025/9/1
Power divider	MIDWEST	PWD-2533-02-SMA- 79	CQA-067	2024/9/2	2025/9/1
EMI Test Receiver	R&S	ESR7	CQA-005	2024/9/2	2025/9/1
LISN	R&S	ENV216	CQA-003	2024/9/2	2025/9/1
Coaxial cable	CQA	N/A	CQA-C009	2024/9/2	2025/9/1
DC power	KEYSIGHT	E3631A	CQA-028	2024/9/2	2025/9/1

Test software:

		Software	Software
	Manufacturer	brand	version
Dadiated Fusiasiana taat aaftuuna	T	104400 0	\/
Radiated Emissions test software	Tonscend	JS1120-3	Version:8
Conducted Emissions test software	Audix	e3	Version:9
RF Conducted test software	Audix	e3	V3.5.39

Note:

The temporary antenna connector is soldered on the PCB board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list.





5 Test results and Measurement Data

5.1 Antenna Requirement

Standard requirement: 47 CFR Part 15C Section 15.203 /247(c)

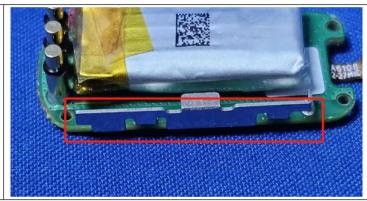
15.203 requirement:

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, 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.

15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

EUT Antenna:



The antenna is PIFA antenna.

The connection/connection type between the antenna to the EUT's antenna port is: permanently attachment





5.2 Conducted Emissions

Test Requirement:	47 CFR Part 15C Section 15.207			
Test Method:	ANSI C63.10: 2013			
Test Frequency Range:	150kHz to 30MHz			
Limit:	Frequency range (MHz)	Limit (d	BuV)	
	Frequency range (MHZ)	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 Procedure:	 The mains terminal disturb room. The EUT was connected to Impedance Stabilization Not impedance. The power cab connected to a second LIS reference plane in the sam measured. A multiple sock power cables to a single LI exceeded. The tabletop EUT was place ground reference plane. Ar placed on the horizontal ground reference plane. Ar vertical ground reference preference plane. The LISN unit under test and bonded mounted on top of the group between the closest points the EUT and associated ed. In order to find the maximule equipment and all of the integral ANSI C63.10: 2013 on con 	o AC power source throetwork) which provides oles of all other units of N 2, which was bonded e way as the LISN 1 for et outlet strip was used SN provided the rating and for floor-standing arround reference plane, the a vertical ground referom the vertical ground referom the vertical ground reference und reference plane. The of the LISN 1 and the quipment was at least 0 m emission, the relative terface cables must be	ugh a LISN 1 (Line a 50Ω/50μH + 5Ω linear the EUT were of to the ground or the unit being to connect multiple of the LISN was not at table 0.8m above the tangement, the EUT was become plane. The rear of the rear largement of the boundary of the plane for LISNs his distance was EUT. All other units of 0.8 m from the LISN 2. The positions of	
Test Setup:	Shielding Room EUT AC Mains LISN1	AE LISN2 AC Main Ground Reference Plane	Test Receiver	



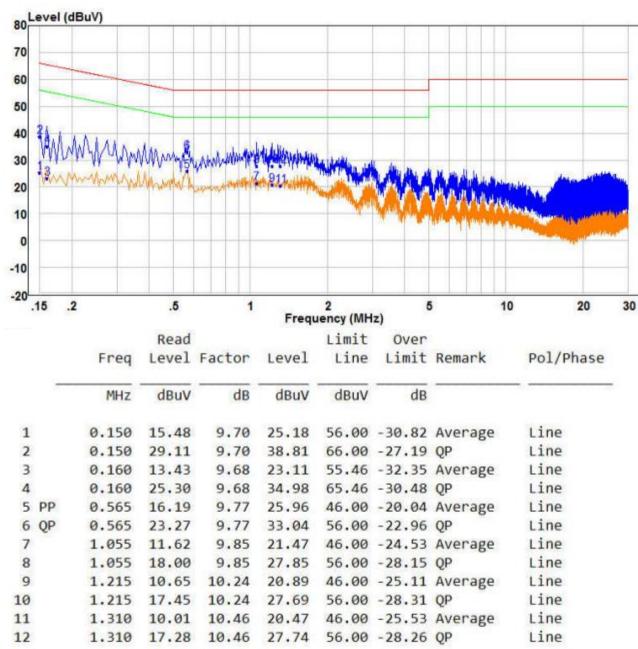
Report No.: CQASZ20250200251E

Exploratory Test Mode:	Non-hopping transmitting mode with all kind of modulation and all kind of data type at the lowest, middle, high channel.
	data type at the lowest, middle, high channel.
Final Test Mode:	Through Pre-scan, find the GFSK 1Mbps modulation at the lowest channel is the worst case.
	Only the worst case is recorded in the report.
Test Voltage:	AC 120V/60Hz
Test Results:	Pass



Measurement Data

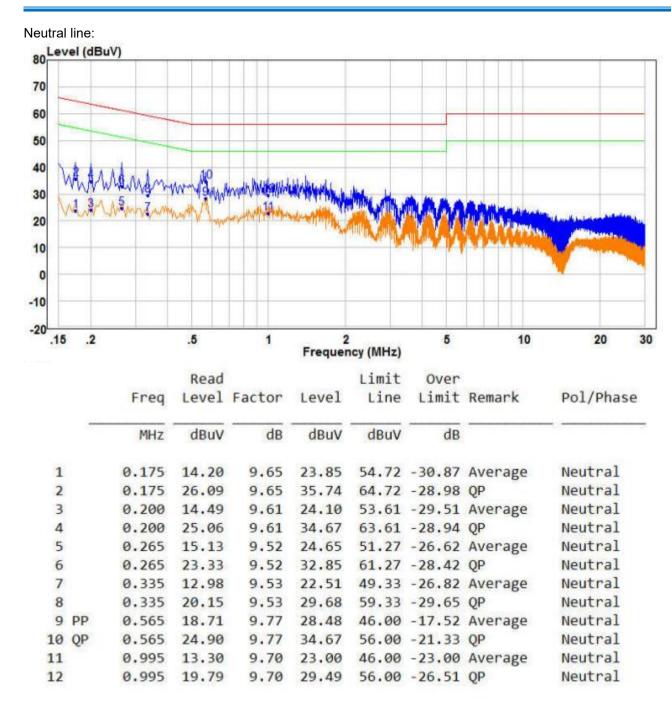
Live line:



Remark:

- 1. The following Quasi-Peak and Average measurements were performed on the EUT:
- 2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.
- 3. If the Peak value under Average limit, the Average value is not recorded in the report.





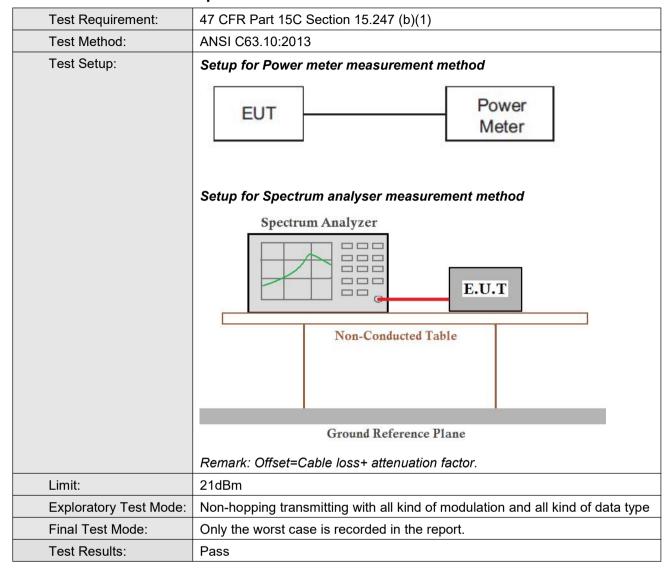
Remark:

- 1. The following Quasi-Peak and Average measurements were performed on the EUT:
- 2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.
- 3. If the Peak value under Average limit, the Average value is not recorded in the report.



Report No.: CQASZ20250200251E

5.3 Conducted Peak Output Power





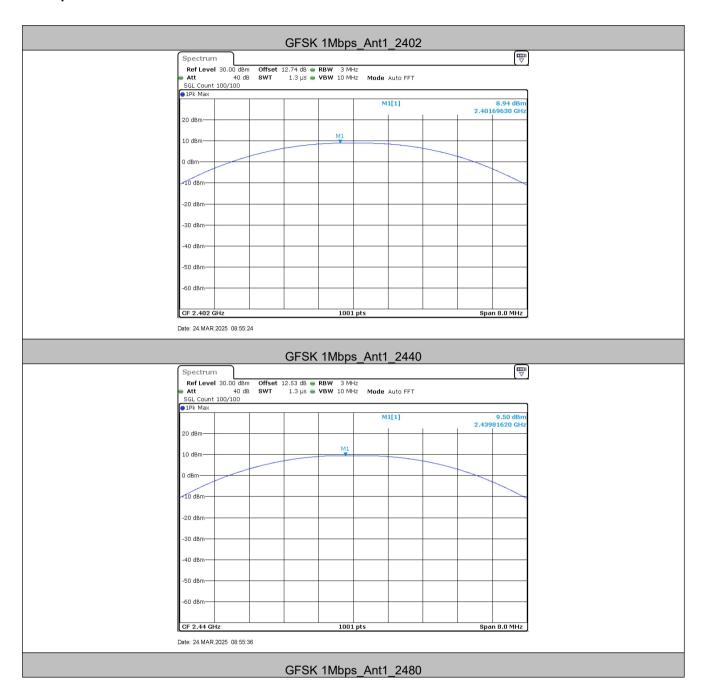
Report No.: CQASZ20250200251E

Measurement Data

	GFSK 1Mbps mode					
Test channel	Peak Output Power (dBm)	Result				
Lowest	8.94	21.00	Pass			
Middle	9.50	21.00	Pass			
Highest	10.69	21.00	Pass			
	GFSK 2Mbps mode					
Test channel	Limit (dBm)	Result				
Lowest	8.98	21.00	Pass			
Middle	9.43	21.00	Pass			
Highest	10.70	21.00	Pass			

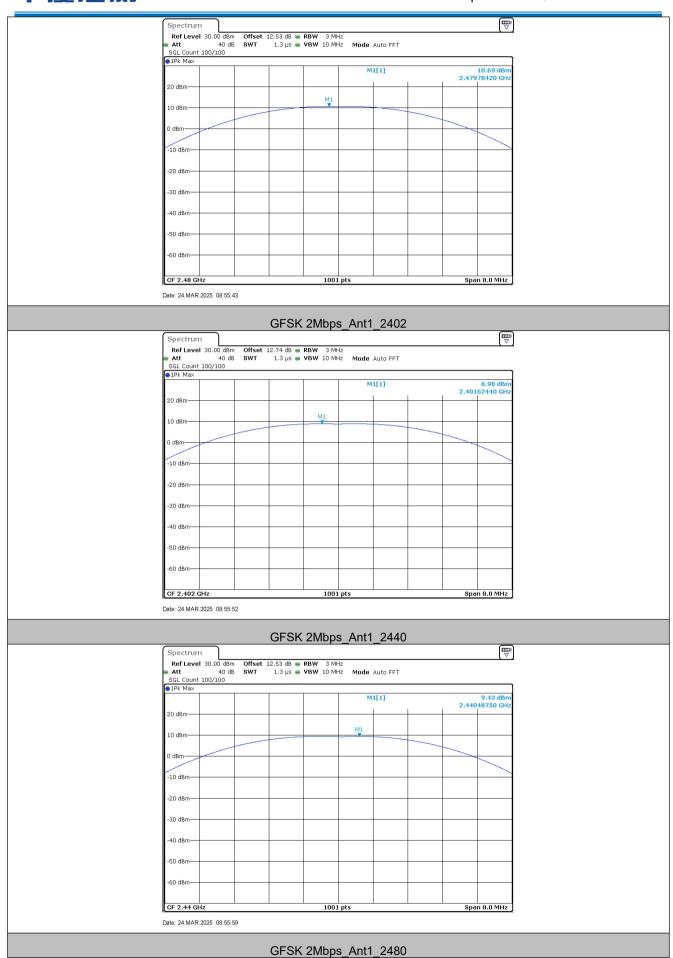


Test plot as follows:



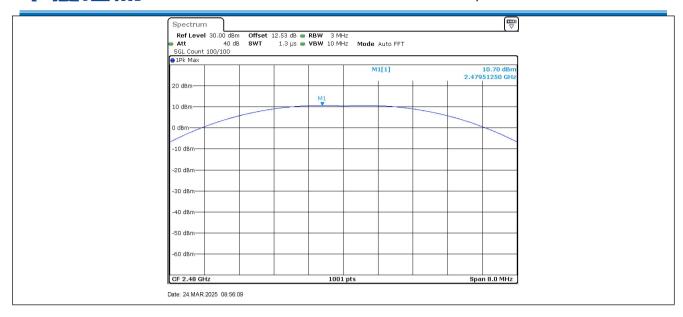


Report No.: CQASZ20250200251E





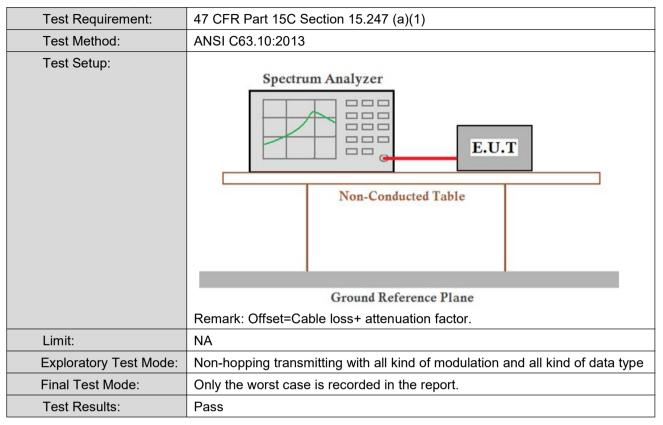
Report No.: CQASZ20250200251E







5.4 20dB Occupied Bandwidth

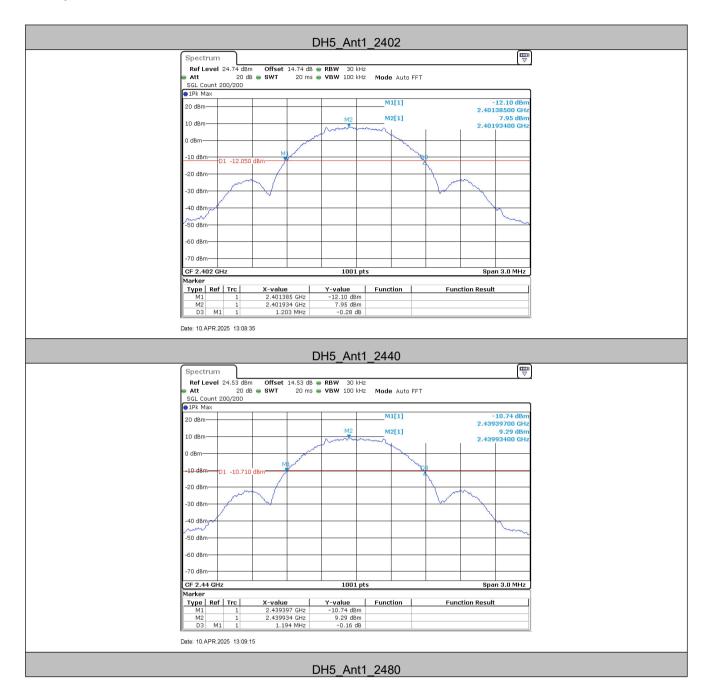


Measurement Data

To della considera	20dB Occupy Bandwidth (MHz)		
Test channel	GFSK 1Mbps	GFSK 2Mbps	
Lowest	1.20	2.30	
Middle	1.19	2.23	
Highest	1.18	2.31	

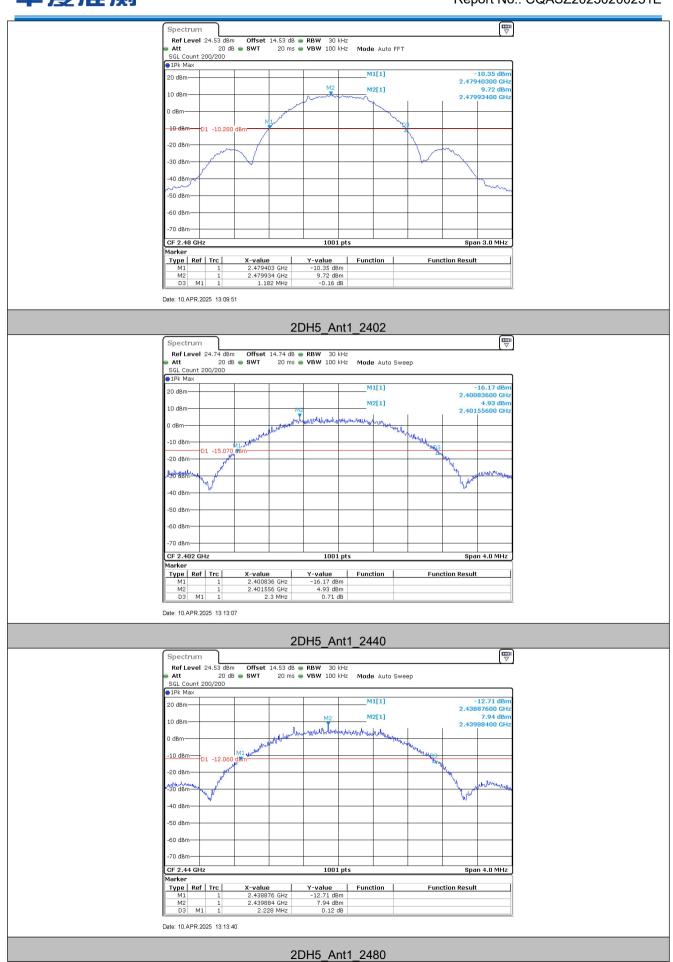


Test plot as follows:



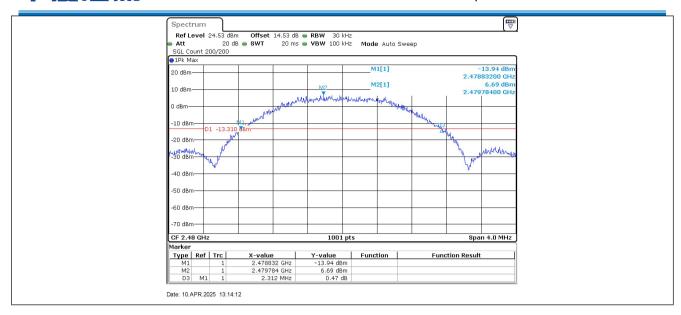


Report No.: CQASZ20250200251E





Report No.: CQASZ20250200251E







5.5 Carrier Frequencies Separation

Test Requirement:	47 CFR Part 15C Section 15.247 (a)(1)		
Test Method:	ANSI C63.10:2013		
Test Setup:	Constitution And Invest		
	Spectrum Analyzer E.U.T Non-Conducted Table		
	Constant Constant		
	Ground Reference Plane		
	Remark: Offset=Cable loss+ attenuation factor.		
Limit:	2/3 of the 20dB bandwidth		
	Remark: the transmission power is less than 0.125W.		
Exploratory Test Mode:	Hopping transmitting with all kind of modulation and all kind of data type		
Final Test Mode:	Only the worst case is recorded in the report.		
Test Results:	Pass		



Report No.: CQASZ20250200251E

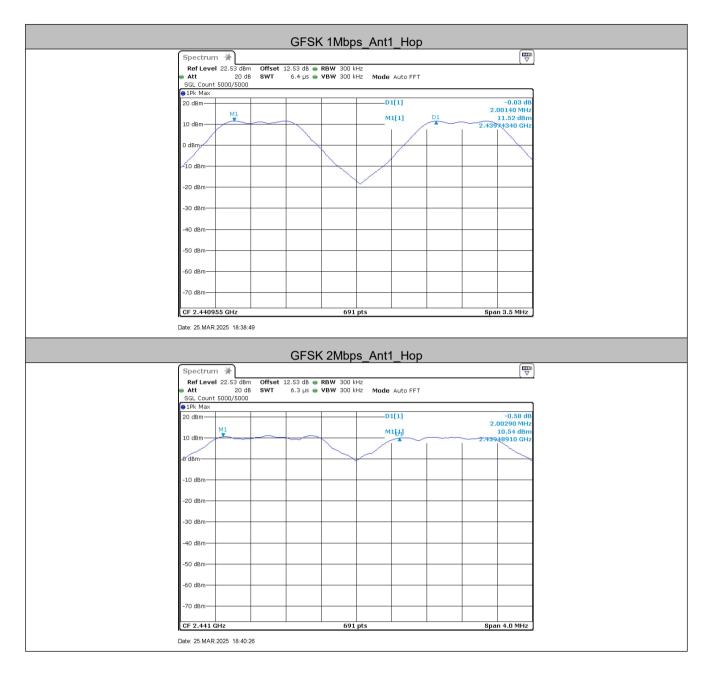
Measurement Data

TestMode	Freq(MHz)	Result[MHz]	Limit[MHz]	Verdict
GFSK 1Mbps	Нор	2.001	≥0.8	PASS
GFSK 2Mbps	Нор	2.003	≥1.54	PASS

Mode	20dB bandwidth (MHz)	Limit (MHz)
Mode	(worse case)	(Carrier Frequencies Separation)
GFSK 1Mbps	1.20	≥0.8
GFSK 2Mbps	2.31	≥1.54



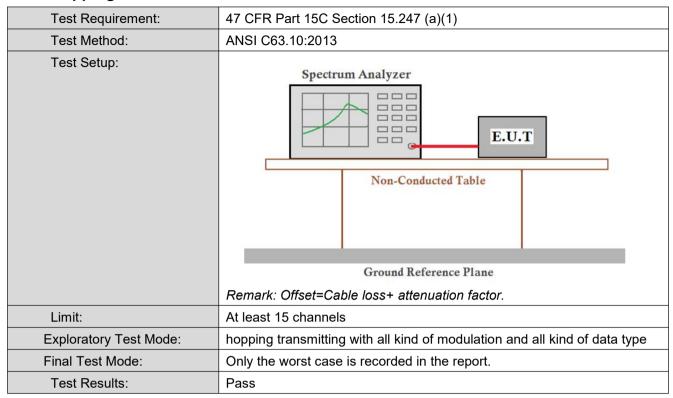
Test plot as follows:





Report No.: CQASZ20250200251E

5.6 Hopping Channel Number

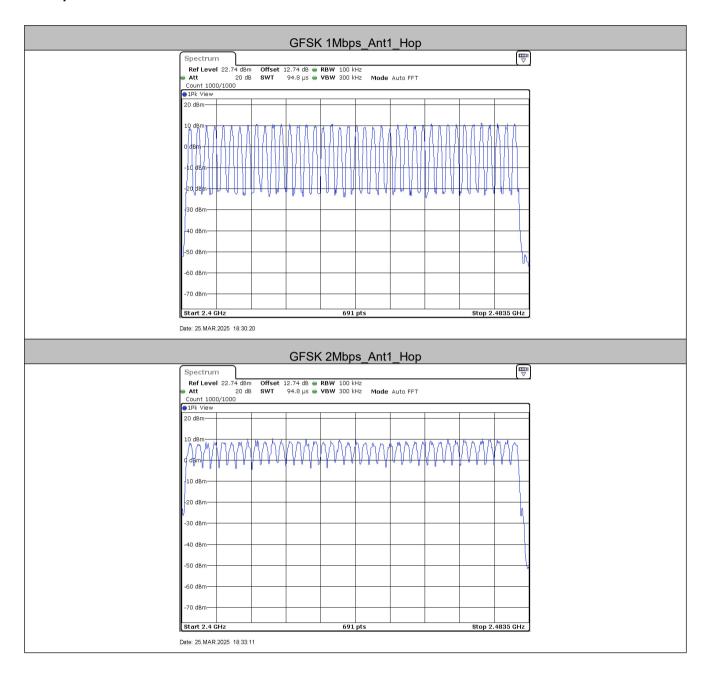


Measurement Data

Mode	Hopping channel numbers	Limit
GFSK 1Mbps	GFSK 1Mbps 40	
GFSK 2Mbps	40	≥15



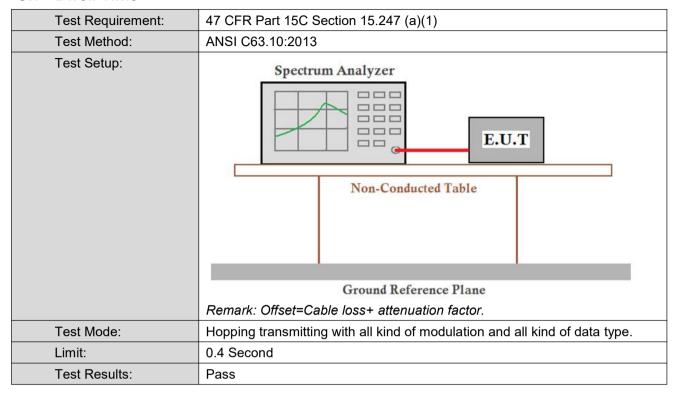
Test plot as follows:







5.7 Dwell Time





Report No.: CQASZ20250200251E

Measurement Data

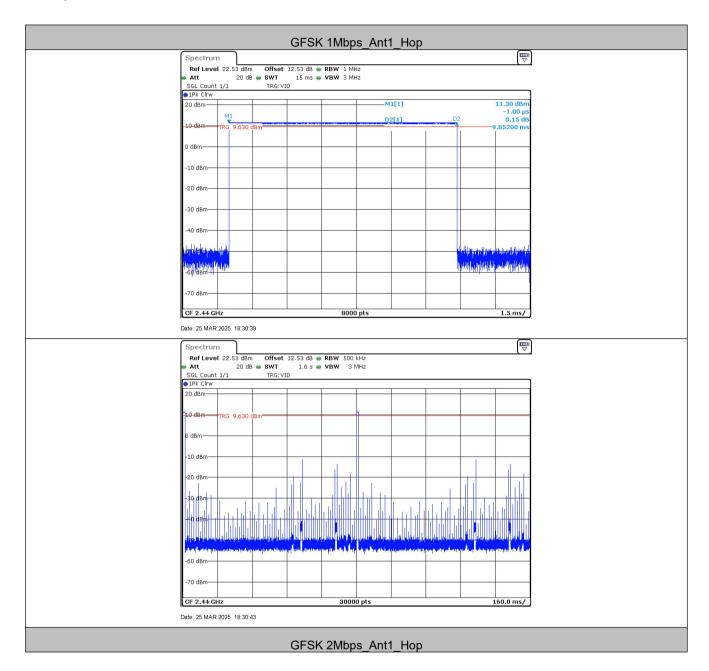
TestMode	Freq(MHz)	BurstWidth [ms]	TotalHops [Num]	Result[s]	Limit[s]	Verdict
GFSK 1Mbps	Нор	9.852	20	0.197	≤0.4	PASS
GFSK 2Mbps	Нор	9.845	20	0.197	≤0.4	PASS

Remark:

The test period: T= 0.4 Second/Channel x 40 Channel = 16 s

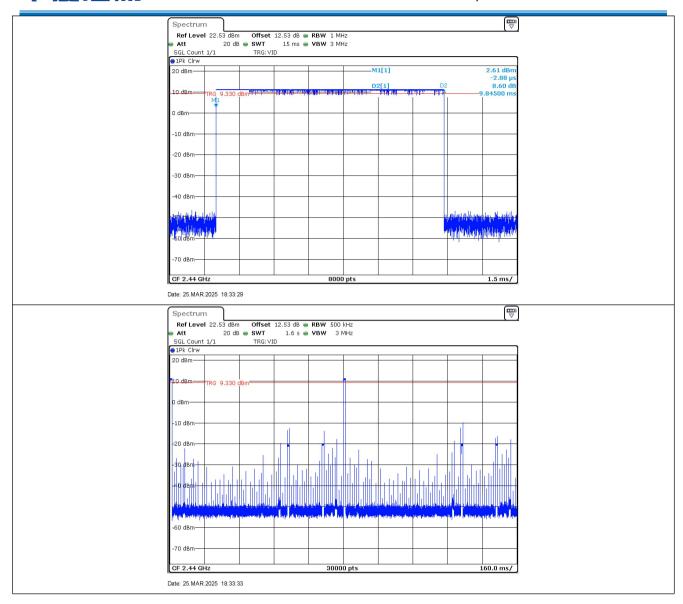


Test plot as follows:





Report No.: CQASZ20250200251E







5.8 Band-edge for RF Conducted Emissions

Test Requirement:	47 CFR Part 15C Section 15.247 (d)		
Test Method:	ANSI C63.10:2013		
Test Setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane Remark: Offset=cable loss+ attenuation factor.		
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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.		
Exploratory Test Mode:	Hopping and Non-hopping transmitting with all kind of modulation and all kind of data type		
Final Test Mode:	Only the worst case is recorded in the report.		
Test Results:	Pass		



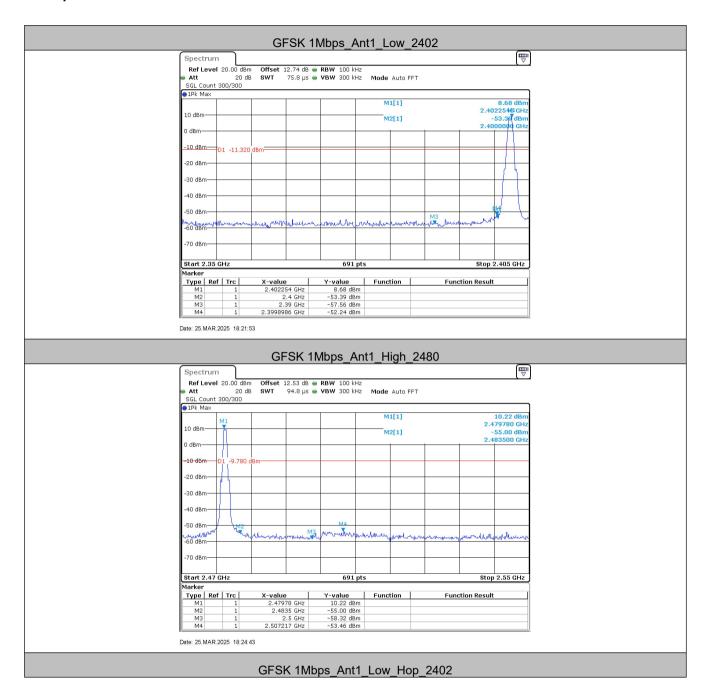
Report No.: CQASZ20250200251E

Measurement Data

TestMode	ChName	Freq(MHz)	RefLevel	Result	Limit [dBm]	Verdict
	Low	2402	8.68	-52.24	≤-11.32	PASS
GFSK	High	2480	10.22	-53.46	≤-9.78	PASS
1Mbps	Low	Hop_2402	9.96	-41.5	≤-10.04	PASS
	High	Hop_2480	11.41	-40.48	≤-8.59	PASS
	Low	2402	6.88	-26.5	≤-13.12	PASS
GFSK	High	2480	8.21	-52.82	≤-11.79	PASS
2Mbps	Low	Hop_2402	7.71	-27.73	≤-12.29	PASS
	High	Hop_2480	8.97	-40.2	≤-11.03	PASS



Test plot as follows:





Report No.: CQASZ20250200251E

