NVLAP TESTING
NVLAP LAB CODE 600341-0

BACL Bay Area Compliance Labs Corp.

TEST REPORT

Applicant:	**Aputure Imaging Industries Co.,Ltd.**
Address:	**3rd Floor, Building 21, Longjun industrial estate, Longhua, Bao'an, Shenzhen Guangdong 518131 China**
Product Name:	**THEOS Digital Wireless 2ch Kit**
FCC ID:	**2AABZ-DE253TX**
IC:	**28850-DE253TX**
HVIN:	**Deity DBTX Bodypack Transmitter**
Standard(s):	**47 CFR Part 15, Subpart C(15.236) RSS-210 Issue 11, June 25, 2024 RSS-Gen, Issue 5, February 2021 Amendment 2 ANSI C63.10-2020**
Report Number:	**2502T10728E-RF-00AA1**
Report Date:	**2025/8/7**

The above device has been tested and found compliant with the requirement of the relative standards by Bay Area Compliance Laboratories Corp. (Dongguan).

Alice Tan

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Title: RF Engineer

Pedro Yun

Approved By: Pedro Yun
Title: RF Supervisor

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CONTENTS

DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	2502T10728E-RF-00AA1	Original report	2025/8/7

1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

EUT Name:	THEOS Digital Wireless 2ch Kit
EUT Model:	Deity DBTX Bodypack Transmitter
Operation Frequency:	550-607.9 MHz
Maximum Output Power (EIRP)▲:	9.80 dBm
Modulation Type:	GFSK
Necessary Bandwidth▲:	175kHz
Rated Input Voltage:	DC 3V from Battery
Serial Number:	32HU-7 (For RF Conducted Test) 32HU-1 (For Radiated Spurious Emissions Test)
EUT Received Date:	2025/5/12
EUT Received Status:	Good

1.2 Accessory Information

Manufacturer	Description	Model	Length (m)
Aputure Imaging Industries Co., Ltd	Microphone	Unknown	1.53
Aputure Imaging Industries Co., Ltd	USB	Unknown	0.36

1.3 Antenna Information Detail▲

Antenna Type	input impedance (Ohm)	Frequency Range	Antenna Gain
Monopole	50	550~714MHz	1.62 dBi
The design of compliance with §15.203:			
☐ Antenna was permanently attached to the unit.			
☐ Antenna uses a unique type of connector to attach to the EUT.			
☐ Unit was professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.			
☒ This requirement does not apply to devices operated under the provisions of §§15.211, 15.213, 15.217, 15.219, 15.221, or **§15.236**			

1.4 Equipment Modifications

No modifications are made to the EUT during all test items.

2. SUMMARY OF TEST RESULTS

Standard(s)/Rule(s)	Description of Test	Result
§15.207(a) RSS-Gen Clause 8.8	AC Line Conducted Emissions	Not Applicable
§15.236(d) RSS-210 Annex G.2	RF Output Power	Compliant
§15.236(f) RSS-210 Annex G.3	Operating Bandwidth	Compliant
§15.236(g) RSS-210 Annex G.5	Emission Mask	Compliant
§15.236(g) RSS-210 Annex G.5	Conducted Spurious Emission	Compliant
§15.236(g) RSS-210 Annex G.5	Radiated Spurious Emission	Compliant
§15.236(f) RSS-210 Annex G.4	Frequency Tolerance	Compliant
§15.203 RSS-Gen Clause 6.8	Antenna Requirement	Compliant
Note: Not applicable for the AC Line Conducted Emissions, the device was powered by battery.		

Purpose:

1.The device is **upgraded software** to Increase the Necessary Bandwidth from 100kHz to 175kHz based on the original device, no other change was made to the device.

For FCC, according to KDB 178919 D01 Permissive Change Policy v06, this is a Class II permissive change, original device certified on 2024/03/11.
For ISED, according to RSP-100 this is a Class III permissive change, the original device certified on 2024/03/12.

2.Updated RSS 210 standard to RSS-210 Issue 11, June 25, 2024

3.Updated RSS 102 standard to RSS-102 Issue 6, December 15, 2023

Based on the change, all the items were tested in the report.

3. DESCRIPTION OF TEST CONFIGURATION

3.1 Operation Frequency Detail

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	**550**	291	**579**
2	550.1	292	579.1
3	550.2	293	579.2
~	~	~	~
~	~	~	~
~	~	~	~
289	578.8	579	607.8
290	578.9	580	**607.9**
Test was performed at the above frequencies in bold.			

3.2 EUT Operation Condition

The system was configured for testing in Engineering Mode, which was provided by the manufacturer. The test modes and channel can be switched by keys in this Engineering Mode sample.

3.3 EUT Exercise Software

No.

3.4 Support Equipment List and Details

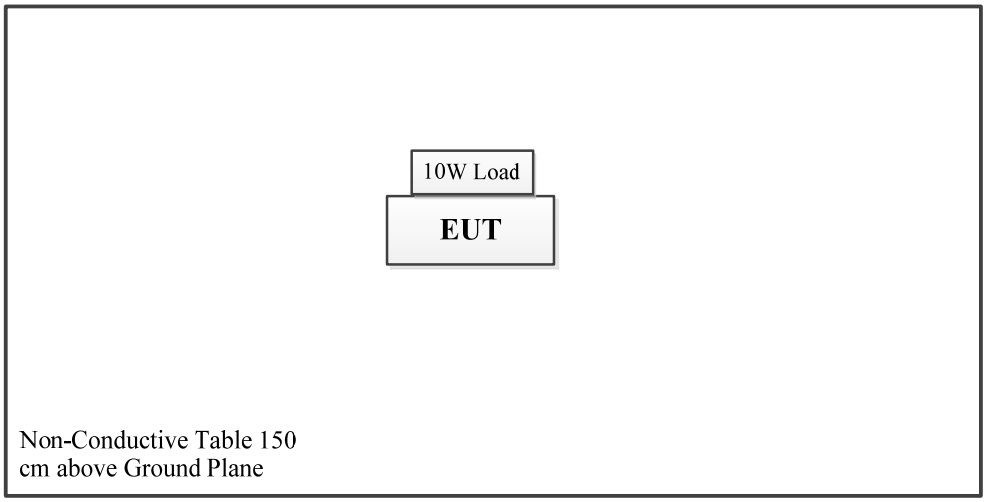
Manufacturer	Description	Model	Serial Number
Fenfei Election	10 W Load	N-J-10W	N-J-10W-S1

3.5 Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
/	/	/	/	/	/

3.6 Block Diagram of Test Setup

Spurious emissions:



3.7 Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.12, Pulong East 1st Road, Tangxia Town, Dongguan, Guangdong, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 829273, the FCC Designation No. : CN5044.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0022.

3.8 Measurement Uncertainty

Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.

Parameter	Measurement Uncertainty
Occupied Channel Bandwidth	±5 %
RF output power, conducted	±0.61dB
Unwanted Emissions, radiated	9kHz~30MHz: 3.3dB, 30MHz~200MHz: 4.55 dB, 200MHz~1GHz: 5.92 dB, 1GHz~6GHz: 4.98 dB, 6GHz~18GHz: 5.89 dB, 18GHz~26.5GHz:5.47 dB, 26.5GHz~40GHz:5.63 dB
Temperature	±1℃
Humidity	±5%
DC and low frequency voltages	±0.4%
Duty Cycle	1%
AC Power Lines Conducted Emission	3.11 dB (150 kHz to 30 MHz)

4. REQUIREMENTS AND TEST RESULTS

4.1 AC Line Conducted Emissions

Not Applicable, the device was powered by battery.

4.2 RF Output Power

4.2.1 Applicable Standard

FCC§15.236(d) *Power limits.* The maximum radiated power shall not exceed the following values:
(1) In the bands allocated and assigned for broadcast television:

(i) Wireless microphones: 50 mW EIRP.

(ii) Wireless multichannel audio systems with a bandwidth up to 1 MHz: 50 mW EIRP.

(iii) Wireless multichannel audio systems with a bandwidth greater than 1 MHz: 100 mW EIRP.

(2) In the 600 MHz guard band and the 600 MHz duplex gap: 20 mW EIRP.

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Frequency bands, e.i.r.p., authorized bandwidth and frequency stability

The transmit power shall be measured in terms of average value over any period of continuous transmission. The frequency bands, e.i.r.p., authorized bandwidth and frequency stability limits for devices are provided in table G1 for wireless microphones and table G2 for WMAS.

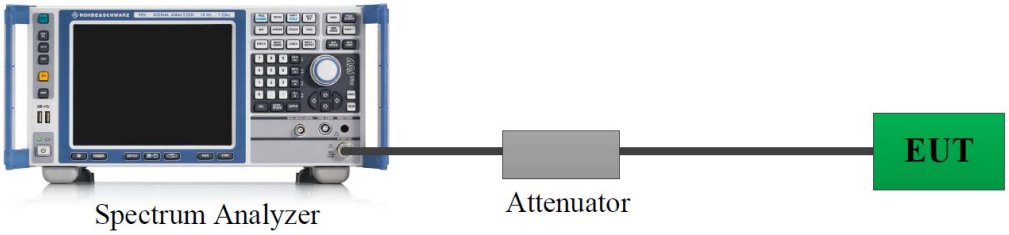
Table G1: Specifications for wireless microphones

Frequency bands (MHz)	e.i.r.p. (mW)	Authorized bandwidth (kHz)	Frequency stability (± ppm)
54-72 76-88 174-216	≤ 50	≤ 200	≤ 50
470-608	≤ 250	≤ 200	≤ 50
614-616 653-663	≤ 20	≤ 200	≤ 50

Table G2: Specifications for WMAS

Frequency bands (MHz)	e.i.r.p. (mW)	Authorized bandwidth (MHz)
54-72 76-88 174-216	≤ 50	≤ 1
54-72 76-88 174-216	≤ 100*	> 1 and ≤ 6
470-608	≤ 250	≤ 6
657-663	≤ 20	≤ 6

4.2.2 EUT Setup



A short RF cable with low cable loss connected to the EUT antenna port. The insert loss of this RF cable/attenuator was offset into the setting of test equipment.

4.2.3 Test Procedure

Use the following spectrum analyzer settings:
1) Span: Approximately five times the 20 dB bandwidth.
2) RBW > 20 dB bandwidth of the emission being measured.
3) VBW ≥ 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.

EIRP = P +G
P is the transmitter output power, in dBm(power over a specified reference bandwidth)
G is the gain of the transmitting antenna, in dBi (EIRP)

4.2.4 Test Result

Serial Number:	32HU-7	Test Date:	2025/7/1~2025/7/11
Test Site:	RF	Test Mode:	Transmitting
Tester:	Stu Song	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	26.1	Relative Humidity: (%)	66~70	ATM Pressure: (kPa)	100.1~100.7

Test Equipment List and Details:

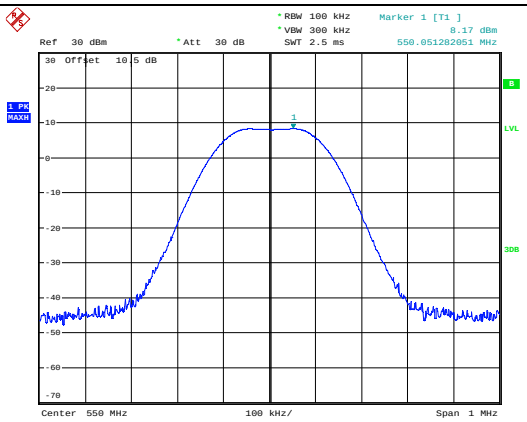
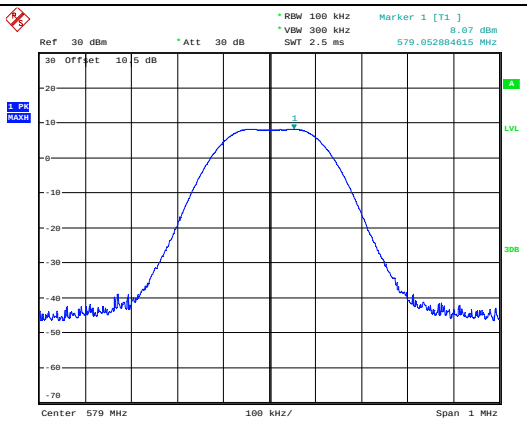
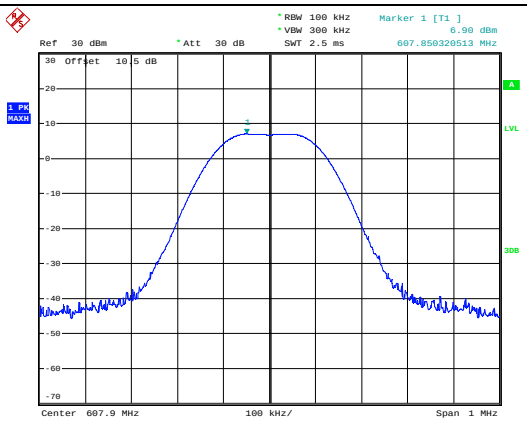
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU 26	200160/026	2024/9/5	2025/9/4
Unknown	Coaxial Cable	C-NJNJ-50	C-0200-03	2024/8/23	2025/8/22
Eastsheep	Coaxial Attenuator	5W-N-JK-6G-10dB	F-08-EM504	2025/6/6	2026/6/5

** Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Data:

Test Frequency (MHz)	Conducted Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	FCC Limit (dBm)	IC Limit (dBm)
550	8.17	1.62	9.79	17.0	24.0
579	8.07	1.62	9.69	17.0	24.0
607.9	6.90	1.62	8.52	17.0	24.0

Note: The test data were similar to the original data.

Conducted Output Power	
Low Channel	 ProjectNo.:2502T10728E-RF-A1 Tester:Stu Song Date: 11.JUL.2025 13:20:12
Middle Channel	 ProjectNo.:2502T10728E-RF-A1 Tester:Stu Song Date: 1.JUL.2025 10:51:40
High Channel	 ProjectNo.:2502T10728E-RF-A1 Tester:Stu Song Date: 1.JUL.2025 10:52:53

4.3 Operating Bandwidth

4.3.1 Applicable Standard

FCC§15.236(f)

Wireless microphones. The operating frequency within a permissible band of operation defined in paragraph (c) of this section must comply with the following requirements.

(i) The frequency selection shall be offset from the upper or lower band limits by 25 kHz or an integral multiple thereof.

(ii) One or more adjacent 25 kHz segments within the assignable frequencies may be combined to form a channel whose maximum bandwidth shall not exceed 200 kHz. The operating bandwidth shall not exceed 200 kHz.

(iii) The frequency tolerance of the carrier signal shall be maintained within ±0.005% of the operating frequency over a temperature variation of −20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. Battery operated equipment shall be tested using a new battery.

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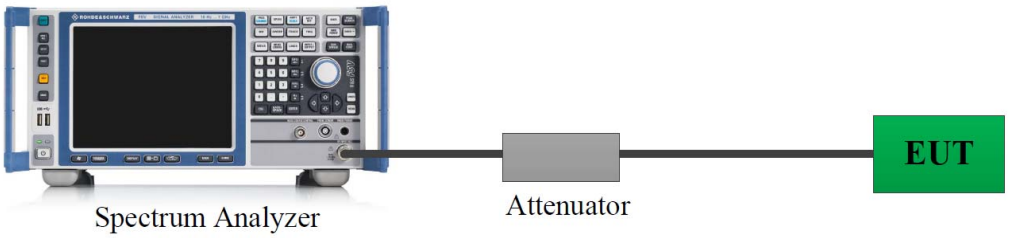
The occupied bandwidth for wireless microphones shall not exceed the authorized bandwidth specified in tables G1 and G2, above.

WMAS shall have a bandwidth less than 6 megahertz and shall have a mode of operation capable of operating with at least three (3) audio channels per megahertz.

For WMAS operating in the TV bands (54-72 MHz, 76-88 MHz, 174-216 MHz and 470-608 MHz), the 6 megahertz (or less) channel shall fall entirely within a single TV channel.

4.3.2 EUT Setup



A short RF cable with low cable loss connected to the EUT antenna port. The insert loss of this RF cable/attenuator was offset into the setting of test equipment.

4.3.3 Test Procedure

According to ANSI C63.10-2020 Section 6.9.2

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 [(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 "−xx 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 "−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.

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).

According to ANSI C63.10-2020 Section 6.9.3

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 4.1.6.2.

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).

4.3.4 Test Result

Serial Number:	32HU-7	Test Date:	2025/7/1
Test Site:	RF	Test Mode:	Transmitting
Tester:	Stu Song	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	26.1	Relative Humidity: (%)	66	ATM Pressure: (kPa)	100.7

Test Equipment List and Details:

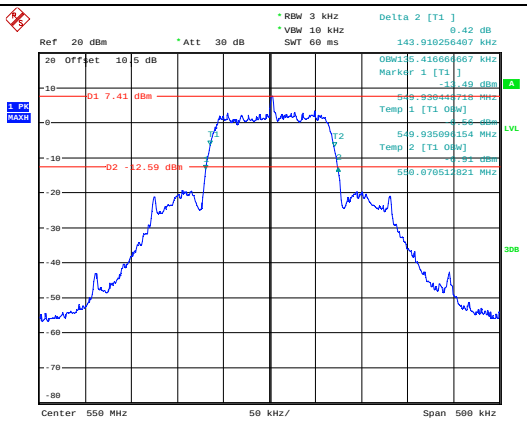
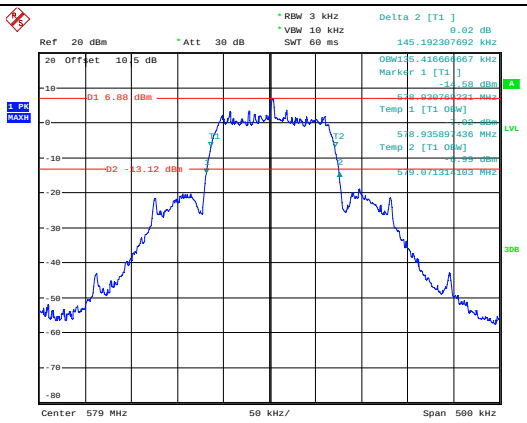
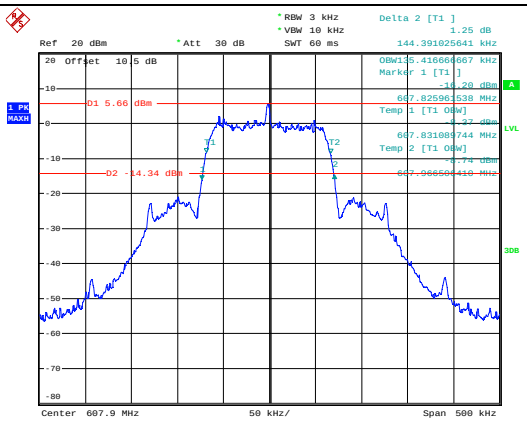
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU 26	200160/026	2024/9/5	2025/9/4
Eastsheep	Coaxial Attenuator	5W-N-JK-6G-10dB	F-08-EM504	2025/6/6	2026/6/5

** Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Data:

Test Frequency (MHz)	**99% Occupied Bandwidth (kHz)**	**20 dB Bandwidth (kHz)**	**Limit (kHz)**
550	135.417	143.910	200
579	135.417	145.192	200
607.9	135.417	144.391	200

Note:
the Necessary Bandwidth is 175kHz
According to ETSI EN 300 422-1 V2.2.1,for equipment employing digital modulation techniques including WMAS, the *Occupied Channel Bandwidth* shall be between 70 % and 100 % of the *Declared Channel Bandwidth* during time intervals of transmissions.

99% Occupied Bandwidth&20 dB Bandwidth	
Low Channel	
Middle Channel	
High Channel	

4.4 Emission Mask

4.4.1 Applicable Standard

FCC§15.236(g)

(1) Analog systems. Emissions within the band from 2.5 × B below to 2.5 × B above the carrier frequency, where B is the channel bandwidth, shall comply with the emission mask in Figure 1 of section 4.2.4.2.2 of ETSI EN 300 422-1 V2.2.1 (2021-11) (incorporated by reference, see § 15.38).

(2) Digital systems. Emissions within the band from 2.5 × B below to 2.5 × B above the carrier frequency, where B is the channel bandwidth, shall comply with the emission mask in Figure 2 of section 4.2.4.2.2 of ETSI EN 300 422-1 V2.2.1 (2021-11) (incorporated by reference, see § 15.38).

(3) Wireless Multichannel Audio Systems. Emissions within the band from 2.5 × B below to 2.5 × B above the carrier frequency, where B is the channel bandwidth, shall comply with the emission mask in Figure 3 of section 4.2.4.2.2 of ETSI EN 300 422-1 V2.2.1 (2021-11), (incorporated by reference, see § 15.38).

(4) Spurious emission limits. Emissions outside of the emission masks listed in paragraphs (g)(1) through (g)(3) shall comply with the limits specified in section 4.2.4.1.2 of ETSI EN 300 422-1 V2.2.1 (2021-11), (incorporated by reference, see § 15.38).

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The transmitter unwanted emissions shall meet and be measured according to the requirements in sections 4.2.4.1.2 and 4.2.4.2.2 of ETSI EN 300 422-1.

ETSI EN 300 422-1, 4.2.4.2.2:

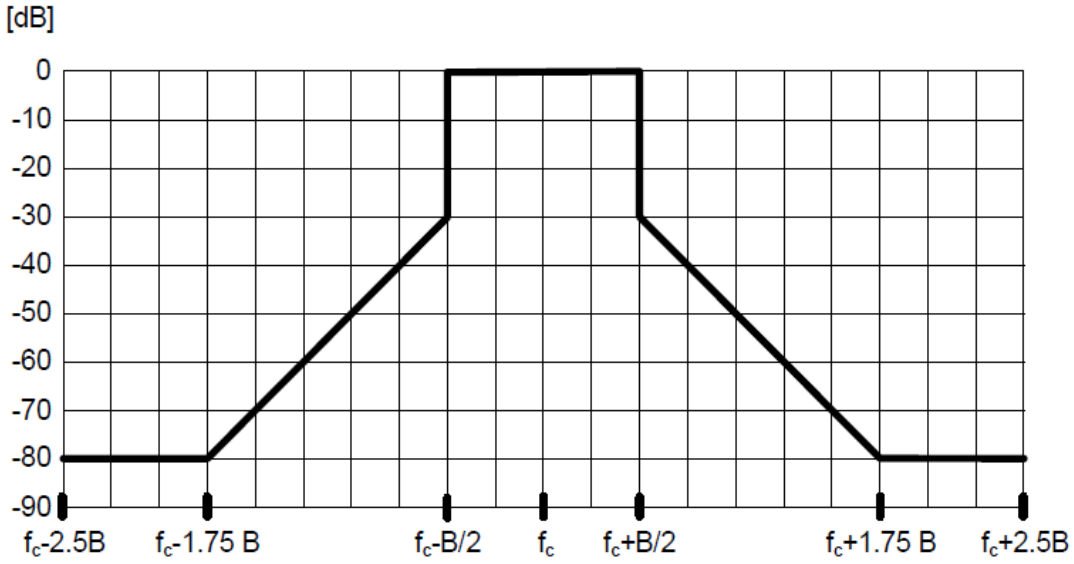
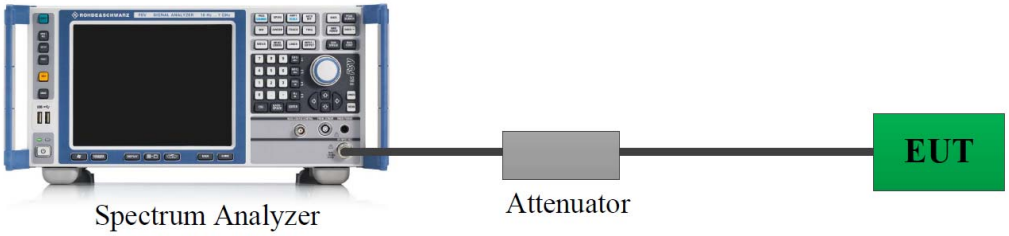


Figure 2: Transmit spectral power mask for equipment employing digital modulation, except WMAS, RBW = 1 kHz

4.4.2 EUT Setup



A short RF cable with low cable loss connected to the EUT antenna port. The insert loss of this RF cable/attenuator was offset into the setting of test equipment.

4.4.3 Test Procedure

According to sections 5.4.3.2.1.2 of ETSI EN 300 422-1 V2.2.1

The settings of the spectrum analyser shall be:

Centre Frequency = fcm (actual centre frequency)
Span = 5 × B
RBW = 1 kHz
VBW = 1 kHz
Sweep Points > Span / RBW
Detector = RMS
Trace Mode = Clear Write
Measurement Time ≥ 20 s
Sweep Time = Measurement Time
Sweep Mode = Single sweep

NOTE: If the DUT does not provide an unmodulated carrier to measure the actual centre frequency fcm according to clause 5.4.2, the declared centre frequency fc can be used.

Step 1:
Perform spectrum mask conformity test.

Step 2:
Use the 99 % bandwidth function of the spectrum analyser to measure the *Occupied Channel Bandwidth* of the DUT.

This value shall be recorded.

4.4.4 Test Result

Serial Number:	32HU-7	Test Date:	2025/7/1
Test Site:	RF	Test Mode:	Transmitting
Tester:	Stu Song	Test Result:	Pass

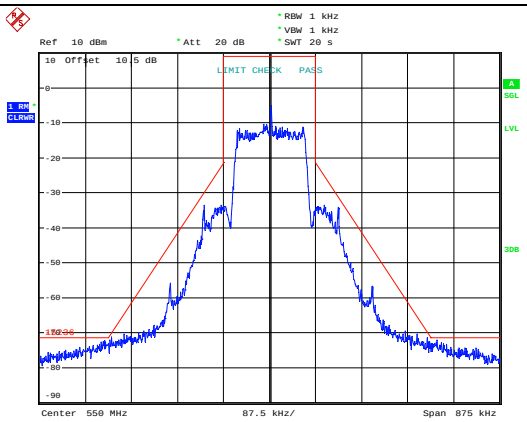
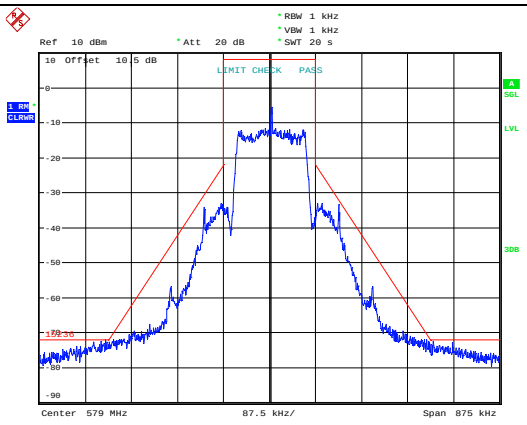
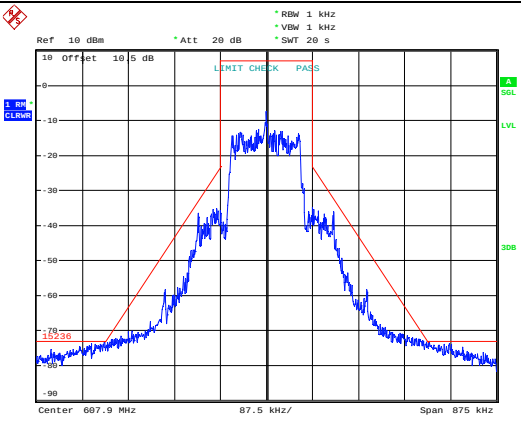
Environmental Conditions:					
Temperature: (℃)	26.1	Relative Humidity: (%)	66	ATM Pressure: (kPa)	100.7

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU 26	200160/026	2024/9/5	2025/9/4
Unknown	Coaxial Cable	C-NJNJ-50	C-0200-03	2024/8/23	2025/8/22
Eastsheep	Coaxial Attenuator	5W-N-JK-6G-10dB	F-08-EM504	2025/6/6	2026/6/5

** Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Data:
Note: the Necessary Bandwidth is 175kHz

Emission Mask	
Low Channel	
Middle Channel	
High Channel	

4.5 Conducted Spurious Emissions

4.5.1 Applicable Standard

FCC§15.236(g)

(1) Analog systems. Emissions within the band from 2.5 × B below to 2.5 × B above the carrier frequency, where B is the channel bandwidth, shall comply with the emission mask in Figure 1 of section 4.2.4.2.2 of ETSI EN 300 422-1 V2.2.1 (2021-11) (incorporated by reference, see § 15.38).

(2) Digital systems. Emissions within the band from 2.5 × B below to 2.5 × B above the carrier frequency, where B is the channel bandwidth, shall comply with the emission mask in Figure 2 of section 4.2.4.2.2 of ETSI EN 300 422-1 V2.2.1 (2021-11) (incorporated by reference, see § 15.38).

(3) Wireless Multichannel Audio Systems. Emissions within the band from 2.5 × B below to 2.5 × B above the carrier frequency, where B is the channel bandwidth, shall comply with the emission mask in Figure 3 of section 4.2.4.2.2 of ETSI EN 300 422-1 V2.2.1 (2021-11), (incorporated by reference, see § 15.38).

(4) Spurious emission limits. Emissions outside of the emission masks listed in paragraphs (g)(1) through (g)(3) shall comply with the limits specified in section 4.2.4.1.2 of ETSI EN 300 422-1 V2.2.1 (2021-11), (incorporated by reference, see § 15.38).

RSS-210 Annex G.5

The transmitter unwanted emissions shall meet and be measured according to the requirements in sections 4.2.4.1.2 and 4.2.4.2.2 of ETSI EN 300 422-1.

ETSI EN 300 422-1, 4.2.4.1.2:

The level of transmitter unwanted emissions in the spurious domain shall not exceed the limits given in table 4.

Table 4: Transmitter unwanted emission limits (from ERC Recommendation 74-01 [2])

Frequency range	Maximum power	RBW
9 kHz - 150 kHz	-36 dBm	1 kHz
150 kHz - 30 MHz	-36 dBm	10 kHz
30 MHz - 1 GHz	-36 dBm	F_c + 2,5 B ≤ f ≤ f_c + 4 B: 1 kHz F_c + 4 B < f ≤ f_c + 10 B: 10 kHz f > f_c + 10 B: 100 kHz f < f_c - 10 B: 100 kHz f_c - 10 B ≤ f < f_c - 4 B: 10 kHz f_c - 4 B ≤ f ≤ f_c - 2,5 B: 1 kHz
except:		
47 MHz - 74 MHz 87,5 MHz - 118 MHz	-54 dBm	100 kHz
174 MHz - 230 MHz 470 MHz - 862 MHz	-54 dBm	F_c + 2,5 B ≤ f ≤ f_c + 4 B: 1 kHz F_c + 4 B < f ≤ f_c + 10 B: 10 kHz f > f_c + 10 B: 100 kHz f < f_c - 10 B: 100 kHz f_c - 10 B ≤ f < f_c - 4 B: 10 kHz f_c - 4 B ≤ f ≤ f_c - 2,5 B: 1 kHz
1 GHz < *f* ≤ F_{upper}	-30 dBm	F_c + 2,5 B ≤ f ≤ f_c + 10 B: 30 kHz F_c + 10 B < f ≤ f_c + 12 B: 300 kHz f > f_c + 12 B: 1 MHz f < f_c - 12 B: 1 MHz f_c - 12 B ≤ f < f_c - 10 B: 300 kHz f_c - 10 B ≤ f ≤ f_c - 2,5 B: 30 kHz

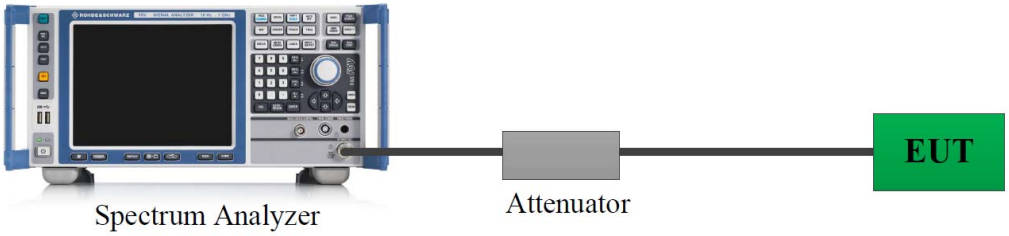
with B being the Declared Channel Bandwidth.

F_{upper} is defined in table 5.

Table 5: Frequency range for measurement of unwanted emissions (from ERC Recommendation 74-01 [2])

Applicable fundamental frequency range	Frequency range for measurements	
	Lower frequency	Upper frequency
9 kHz - 100 MHz	9 kHz	1 GHz
100 MHz - 300 MHz	9 kHz	10th harmonic of the operating frequency
300 MHz - 600 MHz	30 MHz	3 GHz
600 MHz - 3 GHz	30 MHz	5th harmonic of the operating frequency

4.5.2 EUT Setup



A short RF cable with low cable loss connected to the EUT antenna port. The insert loss of this RF cable/attenuator was offset into the setting of test equipment.

4.5.3 Test Procedure

According to sections 5.4.4.2.2.1 of ETSI EN 300 422-1 V2.2.1

The settings of the spectrum analyser shall be:

Centre Frequency = centre frequency in the middle of each frequency band
Span = according to segmented frequency range
RBW = according to table 3
VBW ⩾ RBW
Sweep Points ⩾ Span / RBW
Detector = RMS
Trace Mode = Clear Write
Measurement Time = Sweep Time
Sweep Time = 10 s - 20 s
Sweep Mode = Single sweep

4.5.4 Test Result

Serial Number:	32HU-7	Test Date:	2025/8/7
Test Site:	RF	Test Mode:	Transmitting
Tester:	Stu Song	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	25.9	Relative Humidity: (%)	72	ATM Pressure: (kPa)	99.7

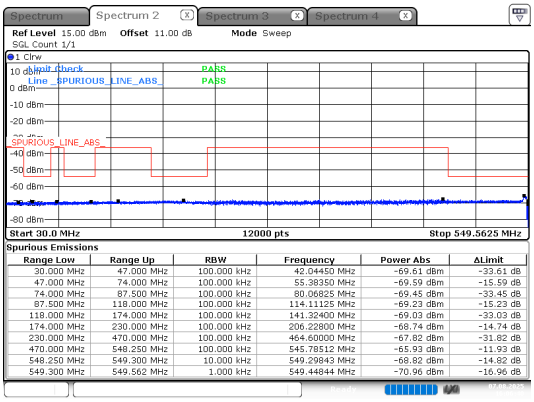
Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101461	2024/9/5	2025/9/4
Unknown	Coaxial Cable	C-NJNJ-50	C-0200-03	2024/8/23	2025/8/22
Eastsheep	Coaxial Attenuator	5W-N-JK-6G-10dB	F-08-EM504	2025/6/6	2026/6/5

** Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Note: The maximum path attenuation of 30MHz-4GHz was added into the offset.

Low Channel

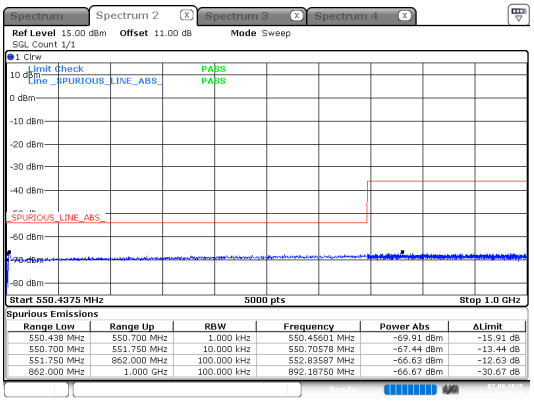


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	47.000 MHz	100.000 kHz	42.04450 MHz	-69.61 dBm	-33.61 dB
47.000 MHz	74.000 MHz	100.000 kHz	55.38350 MHz	-69.59 dBm	-15.59 dB
74.000 MHz	87.500 MHz	100.000 kHz	80.06825 MHz	-69.45 dBm	-33.45 dB
87.500 MHz	118.000 MHz	100.000 kHz	114.11125 MHz	-69.23 dBm	-15.23 dB
118.000 MHz	174.000 MHz	100.000 kHz	141.32400 MHz	-69.03 dBm	-33.03 dB
174.000 MHz	230.000 MHz	100.000 kHz	206.22800 MHz	-68.74 dBm	-14.74 dB
230.000 MHz	470.000 MHz	100.000 kHz	464.60000 MHz	-67.82 dBm	-31.82 dB
470.000 MHz	548.250 MHz	100.000 kHz	545.78512 MHz	-65.93 dBm	-11.93 dB
548.250 MHz	549.300 MHz	10.000 kHz	549.29843 MHz	-68.82 dBm	-14.82 dB
549.300 MHz	549.562 MHz	1.000 kHz	549.44844 MHz	-70.96 dBm	-16.96 dB

ProjectNo.:2502T10728E-RF-A1 Tester:Stu Song
Date: 7.AUG.2025 16:06:40

Low Channel

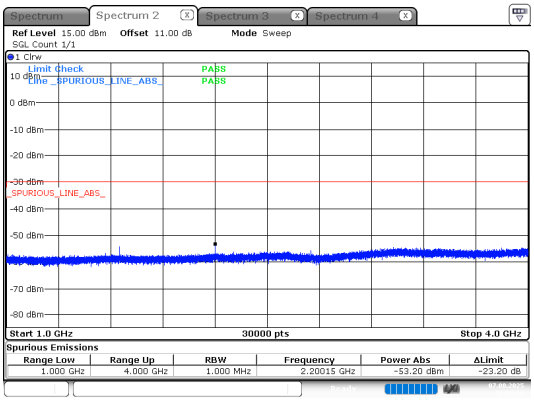


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
550.438 MHz	550.700 MHz	1.000 kHz	550.45601 MHz	-69.91 dBm	-15.91 dB
550.700 MHz	551.750 MHz	10.000 kHz	550.70578 MHz	-67.44 dBm	-13.44 dB
551.750 MHz	862.000 MHz	100.000 kHz	552.83587 MHz	-66.63 dBm	-12.63 dB
862.000 MHz	1.000 GHz	100.000 kHz	892.18750 MHz	-66.67 dBm	-30.67 dB

ProjectNo.:2502T10728E-RF-A1 Tester:Stu Song
Date: 7.AUG.2025 16:07:31

Low Channel

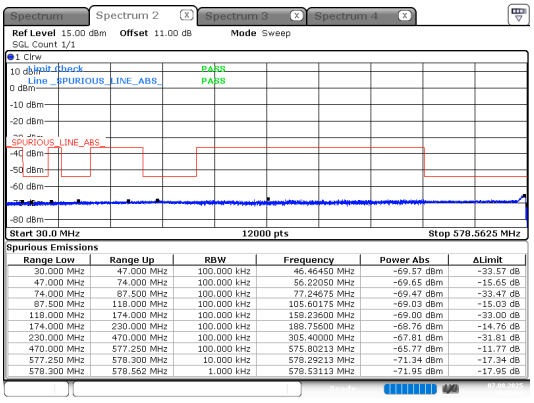


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.000 GHz	4.000 GHz	1.000 MHz	2.20015 GHz	-53.20 dBm	-23.20 dB

ProjectNo.:2502T10728E-RF-A1 Tester:Stu Song
Date: 7.AUG.2025 16:08:10

Middle Channel

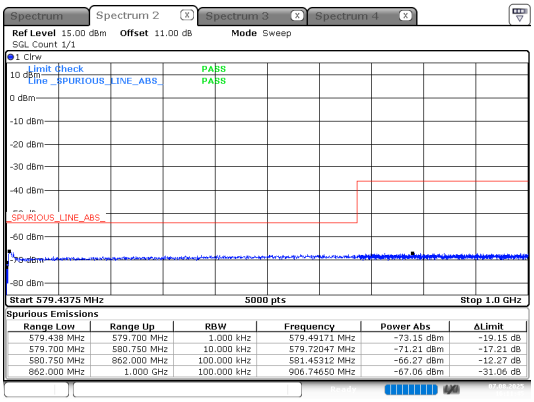


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	47.000 MHz	100.000 kHz	46.46450 MHz	-69.57 dBm	-33.57 dB
47.000 MHz	74.000 MHz	100.000 kHz	56.22050 MHz	-69.65 dBm	-15.65 dB
74.000 MHz	87.500 MHz	100.000 kHz	77.24675 MHz	-69.47 dBm	-33.47 dB
87.500 MHz	118.000 MHz	100.000 kHz	105.60175 MHz	-69.03 dBm	-15.03 dB
118.000 MHz	174.000 MHz	100.000 kHz	158.23600 MHz	-69.00 dBm	-33.00 dB
174.000 MHz	230.000 MHz	100.000 kHz	188.75600 MHz	-68.76 dBm	-14.76 dB
230.000 MHz	470.000 MHz	100.000 kHz	305.40000 MHz	-67.81 dBm	-31.81 dB
470.000 MHz	577.250 MHz	100.000 kHz	575.80213 MHz	-65.77 dBm	-11.77 dB
577.250 MHz	578.300 MHz	10.000 kHz	578.29213 MHz	-71.34 dBm	-17.34 dB
578.300 MHz	578.562 MHz	1.000 kHz	578.53113 MHz	-71.95 dBm	-17.95 dB

ProjectNo.:2502T10728E-RF-A1 Tester:Stu Song
Date: 7.AUG.2025 16:11:06

Middle Channel

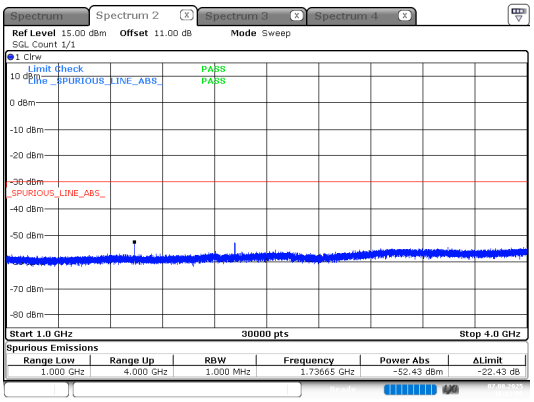


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
579.438 MHz	579.700 MHz	1.000 kHz	579.49171 MHz	-73.15 dBm	-19.15 dB
579.700 MHz	580.750 MHz	10.000 kHz	579.72047 MHz	-71.21 dBm	-17.21 dB
580.750 MHz	862.000 MHz	100.000 kHz	581.45312 MHz	-66.27 dBm	-12.27 dB
862.000 MHz	1.000 GHz	100.000 kHz	906.74650 MHz	-67.06 dBm	-31.06 dB

ProjectNo.:2502T10728E-RF-A1 Tester:Stu Song
Date: 7.AUG.2025 16:11:45

Middle Channel

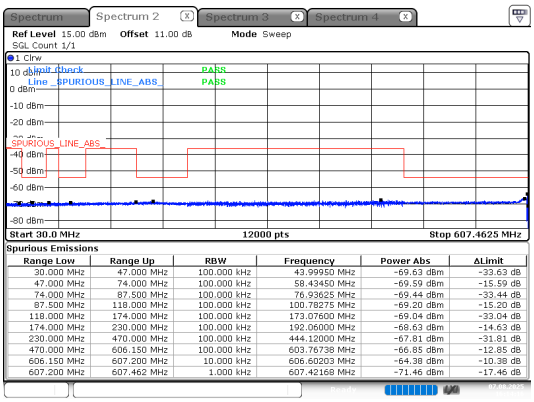


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.000 GHz	4.000 GHz	1.000 MHz	1.73665 GHz	-52.43 dBm	-22.43 dB

ProjectNo.:2502T10728E-RF-A1 Tester:Stu Song
Date: 7.AUG.2025 16:12:06

High Channel

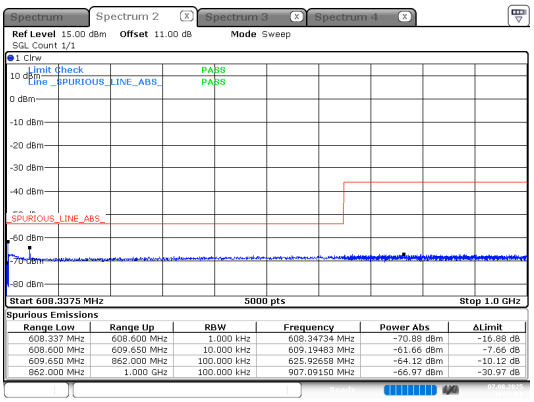


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
30.000 MHz	47.000 MHz	100.000 kHz	43.99950 MHz	-69.63 dBm	-33.63 dB
47.000 MHz	74.000 MHz	100.000 kHz	58.43450 MHz	-69.59 dBm	-15.59 dB
74.000 MHz	87.500 MHz	100.000 kHz	76.93625 MHz	-69.44 dBm	-33.44 dB
87.500 MHz	118.000 MHz	100.000 kHz	100.78275 MHz	-69.20 dBm	-15.20 dB
118.000 MHz	174.000 MHz	100.000 kHz	173.07600 MHz	-69.04 dBm	-33.04 dB
174.000 MHz	230.000 MHz	100.000 kHz	192.06000 MHz	-68.63 dBm	-14.63 dB
230.000 MHz	470.000 MHz	100.000 kHz	444.12000 MHz	-67.81 dBm	-31.81 dB
470.000 MHz	606.150 MHz	100.000 kHz	603.76738 MHz	-66.85 dBm	-12.85 dB
606.150 MHz	607.200 MHz	10.000 kHz	606.60203 MHz	-64.38 dBm	-10.38 dB
607.200 MHz	607.462 MHz	1.000 kHz	607.42168 MHz	-71.46 dBm	-17.46 dB

ProjectNo.:2502T10728E-RF-A1 Tester:Stu Song
Date: 7.AUG.2025 16:14:16

High Channel

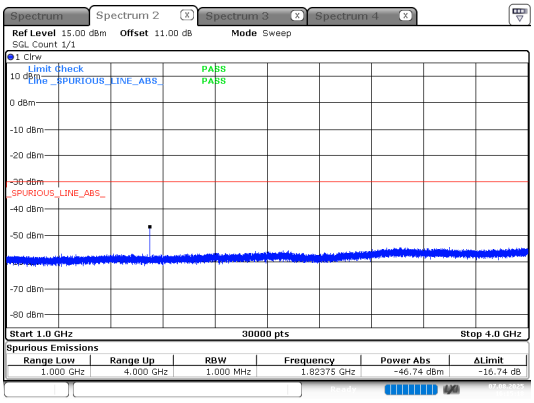


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
608.337 MHz	608.600 MHz	1.000 kHz	608.34734 MHz	-70.88 dBm	-16.88 dB
608.600 MHz	609.650 MHz	10.000 kHz	609.19483 MHz	-61.66 dBm	-7.66 dB
609.650 MHz	862.000 MHz	100.000 kHz	625.92658 MHz	-64.12 dBm	-10.12 dB
862.000 MHz	1.000 GHz	100.000 kHz	907.09150 MHz	-66.97 dBm	-30.97 dB

ProjectNo.:2502T10728E-RF-A1 Tester:Stu Song
Date: 7.AUG.2025 16:15:01

High Channel



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
1.000 GHz	4.000 GHz	1.000 MHz	1.82375 GHz	-46.74 dBm	-16.74 dB

ProjectNo.:2502T10728E-RF-A1 Tester:Stu Song
Date: 7.AUG.2025 16:15:18

4.6 Radiated Spurious Emissions

4.6.1 Applicable Standard

FCC§15.236(g)

(5) Analog systems. Emissions within the band from 2.5 × B below to 2.5 × B above the carrier frequency, where B is the channel bandwidth, shall comply with the emission mask in Figure 1 of section 4.2.4.2.2 of ETSI EN 300 422-1 V2.2.1 (2021-11) (incorporated by reference, see § 15.38).

(6) Digital systems. Emissions within the band from 2.5 × B below to 2.5 × B above the carrier frequency, where B is the channel bandwidth, shall comply with the emission mask in Figure 2 of section 4.2.4.2.2 of ETSI EN 300 422-1 V2.2.1 (2021-11) (incorporated by reference, see § 15.38).

(7) Wireless Multichannel Audio Systems. Emissions within the band from 2.5 × B below to 2.5 × B above the carrier frequency, where B is the channel bandwidth, shall comply with the emission mask in Figure 3 of section 4.2.4.2.2 of ETSI EN 300 422-1 V2.2.1 (2021-11), (incorporated by reference, see § 15.38).

(8) Spurious emission limits. Emissions outside of the emission masks listed in paragraphs (g)(1) through (g)(3) shall comply with the limits specified in section 4.2.4.1.2 of ETSI EN 300 422-1 V2.2.1 (2021-11), (incorporated by reference, see § 15.38).

RSS-210 Annex G.5

The transmitter unwanted emissions shall meet and be measured according to the requirements in sections 4.2.4.1.2 and 4.2.4.2.2 of ETSI EN 300 422-1.

ETSI EN 300 422-1, 4.2.4.1.2:

The level of transmitter unwanted emissions in the spurious domain shall not exceed the limits given in table 4.

Table 4: Transmitter unwanted emission limits (from ERC Recommendation 74-01 [2])

Frequency range	Maximum power	RBW
9 kHz - 150 kHz	-36 dBm	1 kHz
150 kHz - 30 MHz	-36 dBm	10 kHz
30 MHz - 1 GHz	-36 dBm	F_c + 2,5 B ≤ f ≤ f_c + 4 B: 1 kHz F_c + 4 B < f ≤ f_c + 10 B: 10 kHz f > f_c + 10 B: 100 kHz f < f_c - 10 B: 100 kHz f_c - 10 B ≤ f < f_c - 4 B: 10 kHz f_c - 4 B ≤ f ≤ f_c - 2,5 B: 1 kHz
except:		
47 MHz - 74 MHz 87,5 MHz - 118 MHz	-54 dBm	100 kHz
174 MHz - 230 MHz 470 MHz - 862 MHz	-54 dBm	F_c + 2,5 B ≤ f ≤ f_c + 4 B: 1 kHz F_c + 4 B < f ≤ f_c + 10 B: 10 kHz f > f_c + 10 B: 100 kHz f < f_c - 10 B: 100 kHz f_c - 10 B ≤ f < f_c - 4 B: 10 kHz f_c - 4 B ≤ f ≤ f_c - 2,5 B: 1 kHz
1 GHz < *f* ≤ F_{upper}	-30 dBm	F_c + 2,5 B ≤ f ≤ f_c + 10 B: 30 kHz F_c + 10 B < f ≤ f_c + 12 B: 300 kHz f > f_c + 12 B: 1 MHz f < f_c - 12 B: 1 MHz f_c - 12 B ≤ f < f_c - 10 B: 300 kHz f_c - 10 B ≤ f ≤ f_c - 2,5 B: 30 kHz

with B being the Declared Channel Bandwidth.

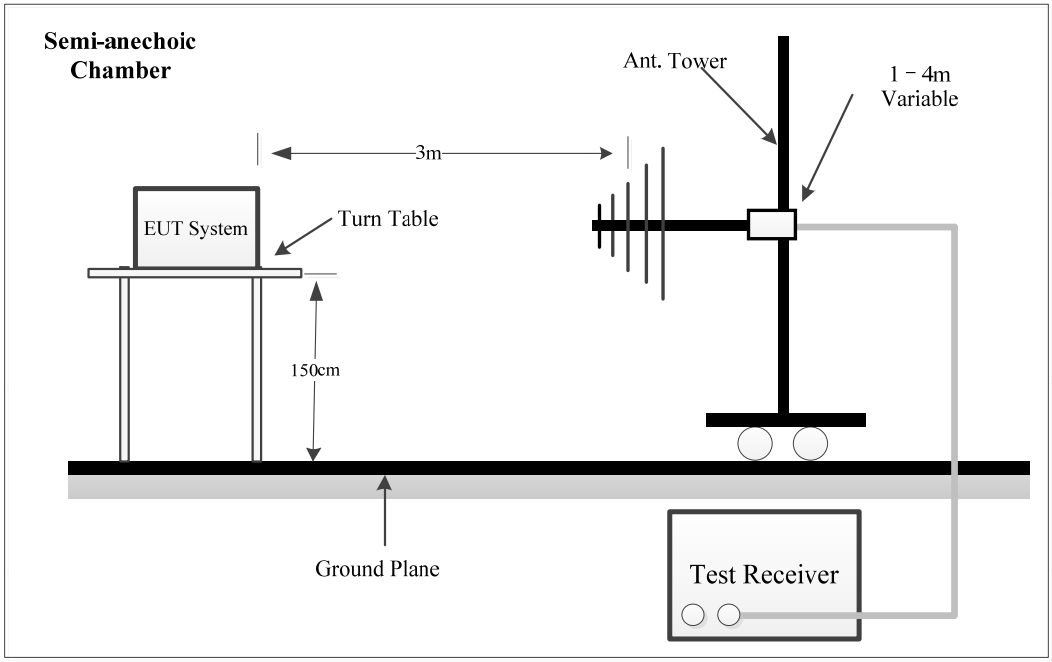
F_{upper} is defined in table 5.

Table 5: Frequency range for measurement of unwanted emissions (from ERC Recommendation 74-01 [2])

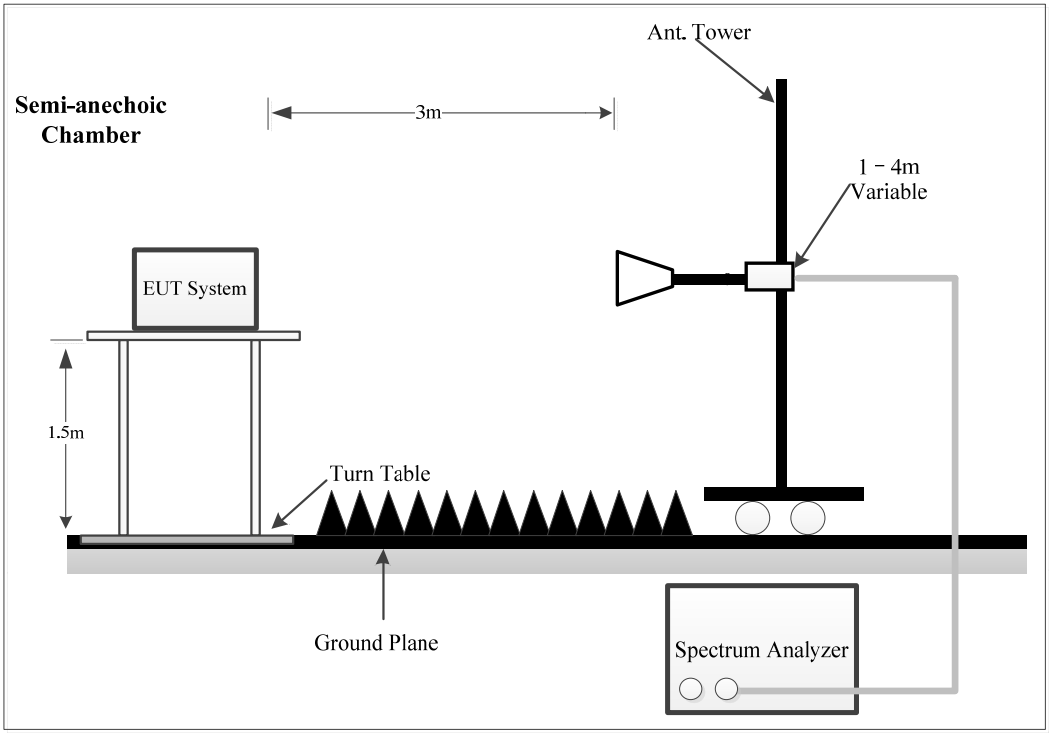
Applicable fundamental frequency range	Frequency range for measurements	
	Lower frequency	Upper frequency
9 kHz - 100 MHz	9 kHz	1 GHz
100 MHz - 300 MHz	9 kHz	10th harmonic of the operating frequency
300 MHz - 600 MHz	30 MHz	3 GHz
600 MHz - 3 GHz	30 MHz	5th harmonic of the operating frequency

4.6.2 EUT Setup

30MHz~1GHz:



Above 1GHz:



4.6.3 Test Procedure

ETSI EN 300 422-1 V2.2.1, 5.4.4.2.3:

Radiated measurements shall only be used for a DUT with integral antenna(s) and without a temporary antenna connector(s) / test fixture.
The test set up as described in annex D shall be used with a spectrum analyser attached to the test antenna.
The test procedure is as described under clause 5.4.4.2.2.

4.6.4 Test Result

Serial Number:	32HU-1	Test Date:	Below 1GHz: 2025/5/23 Above 1GHz: 2025/5/20
Test Site:	Chamber A	Test Mode:	Transmitting
Tester:	Lancer Zhang	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	25.4~26.8	Relative Humidity: (%)	46	ATM Pressure: (kPa)	100.6~100.9

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
30MHz~1000MHz					
Sunol Sciences	Hybrid Antenna	JB3	A060611-2	2024/4/16	2027/4/15
Narda	Coaxial Attenuator	757C-6dB	34010	2024/4/16	2027/4/15
Unknown	Coaxial Cable	C-NJNJ-50	C-0075-01	2024/7/1	2025/6/30
Unknown	Coaxial Cable	C-NJNJ-50	C-0400-01	2024/7/1	2025/6/30
Unknown	Coaxial Cable	C-NJNJ-50	C-1400-01	2024/7/1	2025/6/30
Sonoma	Amplifier	310N	372193	2024/8/16	2025/8/15
R&S	EMI Test Receiver	ESR3	102453	2024/8/26	2025/8/25
EMCO	Adjustable Dipole Antenna	3121C	9109-753	N/A	N/A
Micro-Coax	Coaxial Cable	UFA210B	99G1448	2024/9/5	2025/9/4
Agilent	Signal Generator	E8247C	MY43321350	2024/9/5	2025/9/4
Above 1GHz					
AH	Horn Antenna	SAS-571	1177	2023/2/22	2026/2/21
ETS-Lindgren	Horn Antenna	3115	000 527 35	2023/9/7	2026/9/6
HUBER+SUHNER	Coaxial Cable	SUCOFLEX 126EA	MY369/26/26EA	2024/7/1	2025/6/30
Micro-Coax	Coaxial Cable	UFA210B	99G1448	2024/9/5	2025/9/4
Mini-Circuits	Preamplifier	ZVA-183-S+	5696001267	2025/2/14	2026/2/13
R&S	Spectrum Analyzer	FSP 38	100478	2024/9/5	2025/9/4
Agilent	Signal Generator	E8247C	MY43321350	2024/9/5	2025/9/4

** Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Data:

Please refer to the below table and plots.
After pre-scan in the X, Y and Z axes of orientation, the worst case is below:

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
frequency:550MHz								
363.51	H	45.19	-67.33	0.00	0.19	-67.52	-36.00	31.52
361.81	V	48.64	-66.55	0.00	0.19	-66.74	-36.00	30.74
1100.00	H	50.39	-66.08	6.88	0.35	-59.55	-30.00	29.55
1100.00	V	52.63	-64.75	6.88	0.35	-58.22	-30.00	28.22
1650.00	H	50.67	-68.23	9.44	0.44	-59.23	-30.00	29.23
1650.00	V	57.03	-61.93	9.44	0.44	-52.93	-30.00	22.93
2200.00	H	52.87	-64.13	9.68	0.58	-55.03	-30.00	25.03
2200.00	V	54.14	-63.21	9.68	0.58	-54.11	-30.00	24.11
2750.00	H	50.67	-63.35	9.70	0.68	-54.33	-30.00	24.33
2750.00	V	51.62	-62.52	9.70	0.68	-53.50	-30.00	23.50
frequency:579MHz								
362.86	H	44.52	-68.03	0.00	0.19	-68.22	-36.00	32.22
361.83	V	49.02	-66.17	0.00	0.19	-66.36	-36.00	30.36
1158.00	H	50.67	-66.11	7.22	0.36	-59.25	-30.00	29.25
1158.00	V	50.48	-66.87	7.22	0.36	-60.01	-30.00	30.01
1737.00	H	51.45	-67.54	9.58	0.47	-58.43	-30.00	28.43
1737.00	V	52.34	-66.76	9.58	0.47	-57.65	-30.00	27.65
2316.00	H	51.24	-64.70	9.49	0.60	-55.81	-30.00	25.81
2316.00	V	52.68	-63.35	9.49	0.60	-54.46	-30.00	24.46
2895.00	H	50.66	-64.03	9.99	0.71	-54.75	-30.00	24.75
2895.00	V	50.39	-64.45	9.99	0.71	-55.17	-30.00	25.17
frequency:607.9MHz								
362.69	H	43.29	-69.27	0.00	0.19	-69.46	-36.00	33.46
361.83	V	48.52	-66.67	0.00	0.19	-66.86	-36.00	30.86
1215.80	H	50.71	-66.08	7.55	0.36	-58.89	-30.00	28.89
1215.80	V	50.37	-66.72	7.55	0.36	-59.53	-30.00	29.53
1823.70	H	50.88	-67.85	9.72	0.50	-58.63	-30.00	28.63
1823.70	V	53.64	-65.38	9.72	0.50	-56.16	-30.00	26.16
2431.60	H	52.41	-62.30	9.31	0.61	-53.60	-30.00	23.60
2431.60	V	50.87	-64.06	9.31	0.61	-55.36	-30.00	25.36
3039.50	H	50.68	-62.61	10.23	0.73	-53.11	-30.00	23.11
3039.50	V	50.67	-63.07	10.23	0.73	-53.57	-30.00	23.57

Note 1:The unit of antenna gain is dBd for frequency below 1GHz and is dBi for frequency above 1GHz.
Note 2:
Absolute Level = Substituted Level - Cable loss + Antenna Gain
Margin = Limit- Absolute Level

4.7 Frequency Tolerance

4.7.1 Applicable Standard

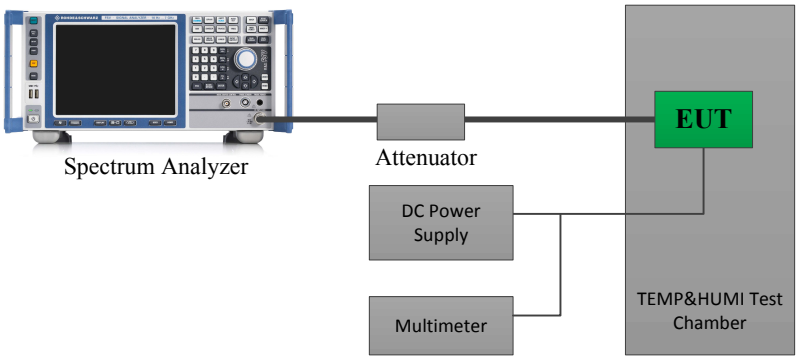
FCC§15.236(f)(iii)

The frequency tolerance of the carrier signal shall be maintained within ±0.005% of the operating frequency over a temperature variation of −20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. Battery operated equipment shall be tested using a new battery.

RSS-210 Annex G.4

The frequency stability of wireless microphones shall comply with the limits specified in table G1, when tested under the frequency stability testing conditions specified in RSS-Gen, General Requirements for Compliance of Radio Apparatus.

4.7.2 EUT Setup



4.7.3 Test Procedure

According to ANSI C63.10-2020 Section 6.8

Frequency stability with respect to ambient temperature

a) Supply the EUT with a nominal ac voltage or install a new or fully charged battery in the EUT. If possible, a dummy load shall be connected to the EUT because an antenna near the metallic walls of an environmental test chamber could affect the output frequency of the EUT. If the EUT is equipped with a permanently attached, adjustable-length antenna, then the EUT shall be placed in the center of the chamber with the antenna adjusted to the shortest length possible. Turn ON the EUT and tune it to one of the number of frequencies shown in 5.6.

b) Couple the unlicensed wireless device output to the measuring instrument by connecting an antenna to the measuring instrument with a suitable length of coaxial cable and placing the measuring antenna near the EUT (e.g., 15 cm away), or by connecting a dummy load to the measuring instrument, through an attenuator if necessary.

NOTE—An instrument that has an adequate level of accuracy as specified by the procuring or regulatory agency is the recommended measuring instrument.

c) Adjust the location of the measurement antenna and the controls on the measurement instrument to

obtain a suitable signal level (i.e., a level that will not overload the measurement instrument but is strong enough to allow measurement of the operating or fundamental frequency of the EUT).

d) Turn the EUT OFF and place it inside the environmental temperature chamber. For devices that have oscillator heaters, energize only the heater circuit.

e) Set the temperature control on the chamber to the highest specified in the regulatory requirements for the type of device and allow the oscillator heater and the chamber temperature to stabilize.

f) While maintaining a constant temperature inside the environmental chamber, turn the EUT ON and record the operating frequency at startup, and at 2 minutes, 5 minutes, and 10 minutes after the EUT is energized. Four measurements in total are made.

g) Measure the frequency at each of frequencies specified in 5.6.

h) Switch OFF the EUT but do not switch OFF the oscillator heater.

i) Lower the chamber temperature by not more that 10 °C, and allow the temperature inside the chamber to stabilize.

j) Repeat step f) through step i) down to the lowest specified temperature.

Frequency stability when varying supply voltage

Unless otherwise specified, these tests shall be made at ambient room temperature (+15 °C to +25 °C). An antenna shall be connected to the antenna output terminals of the EUT if possible. If the EUT is equipped with or uses an adjustable-length antenna, then it shall be fully extended.

a) Supply the EUT with nominal voltage or install a new or fully charged battery in the EUT. Turn ON the EUT and couple its output to a frequency counter or other frequency-measuring instrument.

NOTE—An instrument that has an adequate level of accuracy as specified by the procuring or regulatory agency is the recommended measuring instrument.

b) Tune the EUT to one of the number of frequencies required in 5.6. Adjust the location of the measurement antenna and the controls on the measurement instrument to obtain a suitable signal level (i.e., a level that will not overload the measurement instrument but is strong enough to allow measurement of the operating or fundamental frequency of the EUT).

c) Measure the frequency at each of the frequencies specified in 5.6.

d) Repeat the above procedure at 85% and 115% of the nominal supply voltage as described in 5.13.

4.7.4 Test Result

Serial Number:	32HU-7	Test Date:	2025/7/1
Test Site:	RF	Test Mode:	Transmitting
Tester:	Stu Song	Test Result:	Pass

Environmental Conditions:					
Temperature: (℃)	26.1	Relative Humidity: (%)	66	ATM Pressure: (kPa)	100.7

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU 26	200160/026	2024/9/5	2025/9/4
Unknown	Coaxial Cable	C-NJNJ-50	C-0200-03	2024/8/23	2025/8/22
Eastsheep	Coaxial Attenuator	5W-N-JK-6G-10dB	F-08-EM504	2025/6/6	2026/6/5
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30173	2024/9/6	2025/9/5
All-sun	Multimeter	EM305A	8348897	2024/8/16	2025/8/15
TDK-Lambda	DC Power Supply	Z+60-14	F-08-EM038-1	N/A	N/A

** Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Data:

		fc =	**579**	**MHz**		
Temerature	**Voltage**	**Reading**	**Frequency Error (FCC)**	**Limit (FCC)**	**Frequency Error (IC)**	**Limit (IC)**
℃	**Vdc**	**MHz**	**%**	**%**	ppm	ppm
-20	3	579.0159453	0.0028	±0.005	27.54	±50
-10		579.0130386	0.0023		22.52	
0		579.0091741	0.0016		15.84	
10		579.0065247	0.0011		11.27	
20		579.0040064	0.0007		6.92	
30		579.0013545	0.0002		2.34	
40		578.9972572	-0.0005		-4.74	
50		578.9948049	-0.0009		-8.97	
20	2.4	579.0095442	0.0016		16.48	
20	3.3	578.9981653	-0.0003		-3.17	

Note: the voltage range was declared by manufacturer▲.

4.8 Antenna Requirement

4.8.1 Applicable Standard

FCC §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.

RSS-Gen Clause 6.8

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

For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report (and in the notice to be included in the user manual, provided below).
When measurements at the antenna port are used to determine the RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna's manufacturer.
The test report shall state the RF power, output power setting and spurious emission measurements with each antenna type that is used with the transmitter being tested.
For licence-exempt equipment with detachable antennas, the user manual shall also contain the following notice in a conspicuous location:
This radio transmitter [enter the device's ISED certification number] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Immediately following the above notice, the manufacturer shall provide a list of all antenna types which can be used with the transmitter, indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna type.

4.8.2 Judgment

Compliant. Please refer to the Antenna Information detail in Section 1.3.

EXHIBIT A - EUT PHOTOGRAPHS

Please refer to the attachment XMTN1240126-06151E-RF-EXP EUT EXTERNAL PHOTOGRAPHS and XMTN1240126-06151E-RF-INP EUT INTERNAL PHOTOGRAPHS

EXHIBIT B - TEST SETUP PHOTOGRAPHS

Please refer to the attachment 2502T10728E-RF-00AA1-TSP TEST SETUP PHOTOGRAPHS.

EXHIBIT C - RF EXPOSURE EVALUATION

RF Exposure

Applicable Standard

According to§1.1310, systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

According to KDB447498 D01 General RF Exposure Guidance v06:

4.3.1. Standalone SAR test exclusion considerations

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:
[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm according to 5) in section 4.1 is applied to determine SAR test exclusion.

4.3.2. Simultaneous transmission SAR test exclusion considerations

When an antenna qualifies for the standalone SAR test exclusion of 4.3.1 and also transmits simultaneously with other antennas, the standalone SAR value must be estimated according to the following to determine the simultaneous transmission SAR test exclusion criteria:

1) [(*max. power of channel, including tune-up tolerance, mW*) / (*min. test separation distance, mm*)]·[$\sqrt{f_{(GHz)}}/x$] W/kg, for *test separation distances* ≤ 50 mm;
where x = 7.5 for 1-g SAR and x = 18.75 for 10-g SAR.
2) 0.4 W/kg for 1-g SAR and 1.0 W/kg for 10-g SAR, when the *test separation distance* is > 50 mm

Measurement Result

Standalone SAR test exclusion considerations:

For UHF Microphone:
The max conducted power including tune-up tolerance is 9 dBm (7.94 mW).
[(max. power of channel, mW)/(min. test separation distance, mm)][√f(GHz)]
=7.94/5*(√0.608) = 1.2< 3.0

For 2.4G SRD:
The max conducted power including tune-up tolerance is 4.0dBm (2.51 mW).
[(max. power of channel, mW)/(min. test separation distance, mm)][√f(GHz)]
=2.51/5*(√2.440) = 0.8< 3.0

Simultaneous transmission SAR test exclusion considerations:

Estimated SAR(UHF Microphone)+ Estimated SAR(2.4G SRD)
1.2/7.5+0.8/7.5=0.27
< 0.4

Result: Compliant. The stand-alone SAR evaluation and Simultaneous transmission SAR is not necessary.

Exemption Limits For Routine Evaluation- SAR Evaluation

Applicable Standard

RSS-102, Issue 6, Clause 6.3:

Devices operating at or below the applicable output power levels (adjusted for tune-up tolerance) specified in table 11, based on the separation distance, are exempt from SAR evaluation. The separation distance, defined as the distance between the user and/or bystander and the antenna and/or radiating element of the device or the outer surface of the device, shall be less than or equal to 20 cm for these exemption limits to apply.

Table 11: Power limits for exemption from routine SAR evaluation based on the separation distance

Frequency (MHz)	≤ 5 mm (mW)	10 mm (mW)	15 mm (mW)	20 mm (mW)	25 mm (mW)	30 mm (mW)	35 mm (mW)	40 mm (mW)	45 mm (mW)	> 50 mm (mW)
≤ 300	45	116	139	163	189	216	246	280	319	362
450	32	71	87	104	124	147	175	208	248	296
835	21	32	41	54	72	96	129	172	228	298
1900	6	10	18	33	57	92	138	194	257	323
2450	3	7	16	32	56	89	128	170	209	245
3500	2	6	15	29	50	72	94	114	134	158
5800	1	5	13	23	32	41	54	74	102	128

RSS-102, Issue 6, Clause 7.1.8:

SAR values from exempted transmitters shall be included in the total exposure assessment. A SAR value of 0.4 W/kg for 1 g, 1 W/kg for 10 g, or an estimated SAR value based on the ratio of the power level and the power exemption limit may be used to determine the standalone SAR value for test configurations that do not require a SAR evaluation based on test reductions or on the exemption limits outlined in section 6.3. The estimated SAR value, $SAR_{estimated}$ is calculated using equation (2):

$$SAR_{estimated} = \frac{P_{max}}{P_{max,exemption}} \times 0.25 \times SAR_{limit}\ W/kg \qquad (2)$$

Where:

- P_{max} is the maximum power level including tune-up tolerance for the exempted transmitter
- $P_{max,\ exemption}$ is the maximum power level of exemption at the same frequency and distance for the exempted transmitter
- SAR_{limit} is the applicable SAR limit (e.g. 1.6 W/kg for 1 g or 4 W/kg for 10 g)

For example, transmitter A has a maximum output power of 2mW and the power exemption threshold is 3mW at that specific frequency and distance (i.e. 2.45 GHz with a separation distance of 5 mm). The estimated SAR = (2mW /3mW) * 0.4 W/kg = 0.27 W/kg.

The SAR levels from exempted transmitters shall be included in the total exposure ratio assessment. Detailed guidance is included in section 8.2.2.1.

Measurement Result:

For 2.4G SRD:
The max conducted power including tune-up tolerance is 4.0 dBm (2.51 mW), Antenna gain is -2.207dBi,

The exemption power (P) limits for routine evaluation in 2440MHz is:
(2450-1900)/(2450-2440)=(3-6)/(3-P)
=>P=3.05 mW@2440 MHz
> 2.51mW

For UHF Microphone (500-607.9MHz):
The max conducted power including tune-up tolerance is 9 dBm (7.94 mW), Antenna Gain:1.62 dBi, EIRP=10.62dBm(11.53mW).

The exemption power (P) limits for routine evaluation in 607.9MHz is:
(835-450)/(835-607.9)=(21-32)/(21-P)
=>P=27.49 mW@607.9 MHz
> 11.53 mW

So the stand-alone SAR evaluation can be exempted.

Simultaneous transmission SAR test exclusion considerations:

$P_{UHF}/P_{UHF\ Limit}*0.25*1.6 + P_{2.4G}/P_{2.4G\_Limit}*0.25*1.6$

=11.53/27.49*0.25*1.6+2.51/3.05*0.25*1.6

=0.5 (W/kg)

<1.6 (W/kg)

So the Simultaneous transmission SAR evaluation can be exempted.

******* END OF REPORT *******