TEST REPORT

Applicant Name:	YEALINK(XIAMEN) NETWORK TECHNOLOGY CO.,LTD.
Address:	No.666 Hu'an Rd. Huli District Xiamen City, Fujian, P.R. China
Report Number:	2401V67572E-RFA
FCC ID:	T2C-AX83H
IC:	10741A-AX83H

Test Standard (s)

FCC PART 15.247; RSS-GEN ISSUE 5, FEBRUARY 2021 AMENDMENT 2;
RSS-247 ISSUE 3, AUGUST 2023

Sample Description

Product Type:	Wi-Fi IP Phone
Model No.:	AX83H
Multiple Model(s) No.:	N/A
Trade Mark:	Yealink
Date Received:	2024/08/01
Issue Date:	2024/12/13

Test Result:	Pass▲

▲ In the configuration tested, the EUT complied with the standards above.

Prepared and Checked By:

Gala Liu
RF Engineer

Approved By:

Nancy Wang
RF Supervisor

TABLE OF CONTENTS

DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	2401V67572E-RFA	Original Report	2024/12/13

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

HVIN	AX83H
FVIN	180.86.254.93
Product	Wi-Fi IP Phone
Tested Model	AX83H
Multiple Model(s)	N/A
Frequency Range	Bluetooth: 2402-2480MHz
Transmit Power	11.91dBm
Modulation Technique	Bluetooth: GFSK, π/4-DQPSK, 8DPSK
Antenna Specification#	0.21dBi (provided by the applicant)
Voltage Range	DC 3.80V from Battery or DC 5V from Type-C Port or DC 5V from Adapter
Sample serial number	2PBE-1 for Conducted and Radiated Emissions Test 2PBE-6 for RF Conducted Test (Assigned by BACL, Shenzhen)
Sample/EUT Status	Good condition
Adapter Information	Adapter 1 Model: YLPS051200B1-US Input: 100-240V~50/60Hz 0.2A Output: 5.0V, 1.2A Adapter 2 Model: YLPS051200C1-US Input: 100-240V~50/60Hz 0.2A Output: 5.0V, 1.2A
Note: The EUT powered by Type-C Port or Charger, the worst case powered by Charger with adapter 1 was selected to test for radiated emission below 1GHz according to DTS report test result.	

Objective

This test report is in accordance with Part 2-Subpart J, Part 15-Subparts A and C of the Federal Communication Commissions rules, section 15.203, 15.205, 15.207, 15.209, 15.247 rules and RSS-247 Issue 3, August 2023, RSS-GEN Issue 5, Feb. 2021Amendment 2 of the Innovation, Science and Economic Development Canada rules.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices and RSS-247 Issue 3, August 2023, RSS-GEN Issue 5, Feb. 2021Amendment 2 of the Innovation, Science and Economic Development Canada rules.

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Each test item follows test standards and with no deviation.

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		±5%
RF output power, conducted		0.72 dB(k=2, 95% level of confidence)
AC Power Lines Conducted Emissions	9kHz-150kHz	3.94dB(k=2, 95% level of confidence)
	150kHz-30MHz	3.84dB(k=2, 95% level of confidence)
Radiated Emissions	9kHz - 30MHz	3.30dB(k=2, 95% level of confidence)
	30MHz~200MHz (Horizontal)	4.48dB(k=2, 95% level of confidence)
	30MHz~200MHz (Vertical)	4.55dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Horizontal)	4.85dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Vertical)	5.05dB(k=2, 95% level of confidence)
	1GHz - 6GHz	5.35dB(k=2, 95% level of confidence)
	6GHz - 18GHz	5.44dB(k=2, 95% level of confidence)
	18GHz - 40GHz	5.16dB(k=2, 95% level of confidence)
Temperature		±1℃
Humidity		±1%
Supply voltages		±0.4%

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

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 5F(B-West) , 6F, 7F, the 3rd Phase of Wan Li Industrial Building D, Shihua Rd, FuTian Free Trade Zone, Shenzhen, 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. : 715558, the FCC Designation No. : CN5045.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0023.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in an engineering mode.

Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	40	2442
1	2403	41	2443
2	2404	42	2444
…	…	…	…
…	…	…	…
36	2438	75	2477
37	2439	76	2478
38	2440	77	2479
39	2441	78	2480

EUT was tested with Channel 0, 39 and 78.

EUT Exercise Software

"Authentication Tool.exe V 2.0.11.0#" exercise software was used and the power level is 6#. The software and power level was provided by the applicant.

Special Accessories

No special accessory.

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Unknown	Receptacle	Unknown	Unknown
Guang dong Beicom Electronics Co.,LTD	Adapter	TN-050200E3	Unknown
Unknown	Earphone	Unknown	Unknown

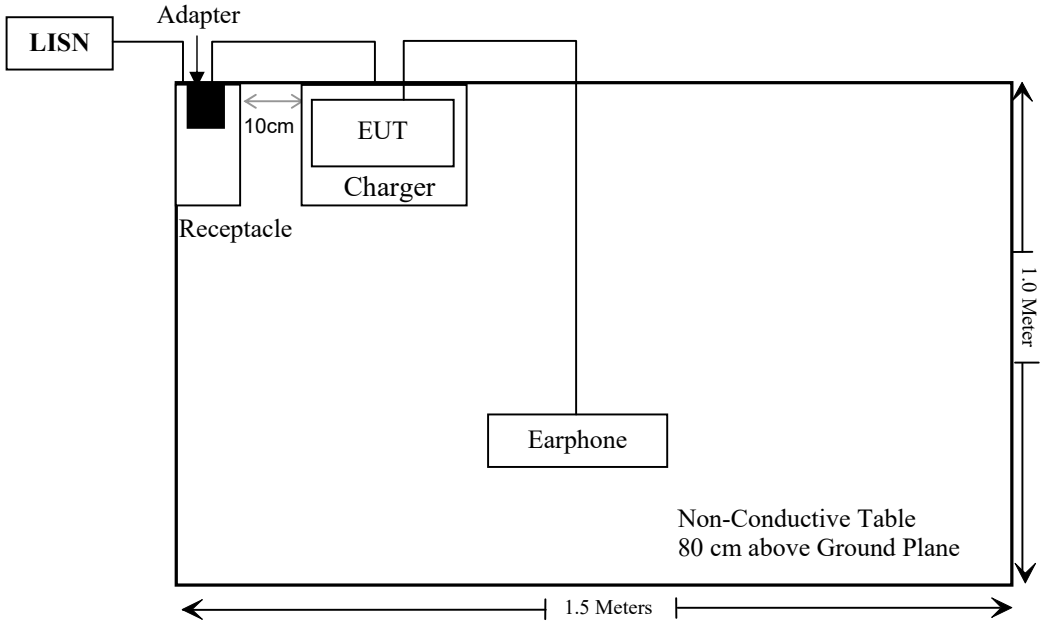
External I/O Cable

Cable Description	Length (m)	From Port	To
Un-shielded Un-Detachable AC Cable	1.5	Receptacle	LISN/AC Mains
Un-shielding Un-Detachable DC Cable	2.0	Adapter	Charger
Un-shielding Detachable USB Cable	0.8	Adapter	EUT
Un-shielding Detachable Audio Cable	1.2	EUT	Earphone

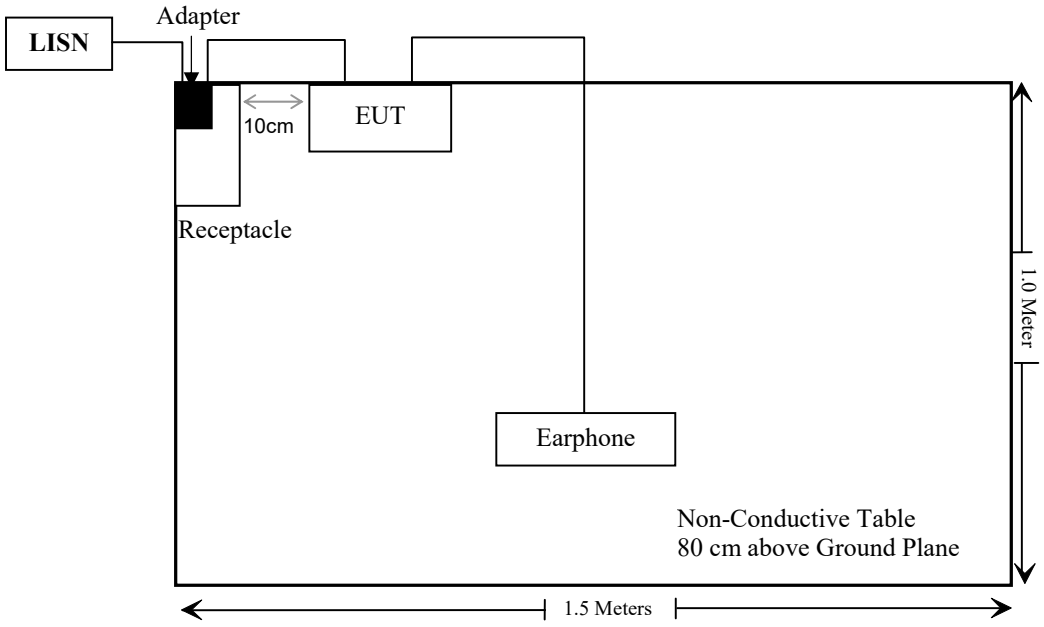
Block Diagram of Test Setup

For Conducted Emissions:

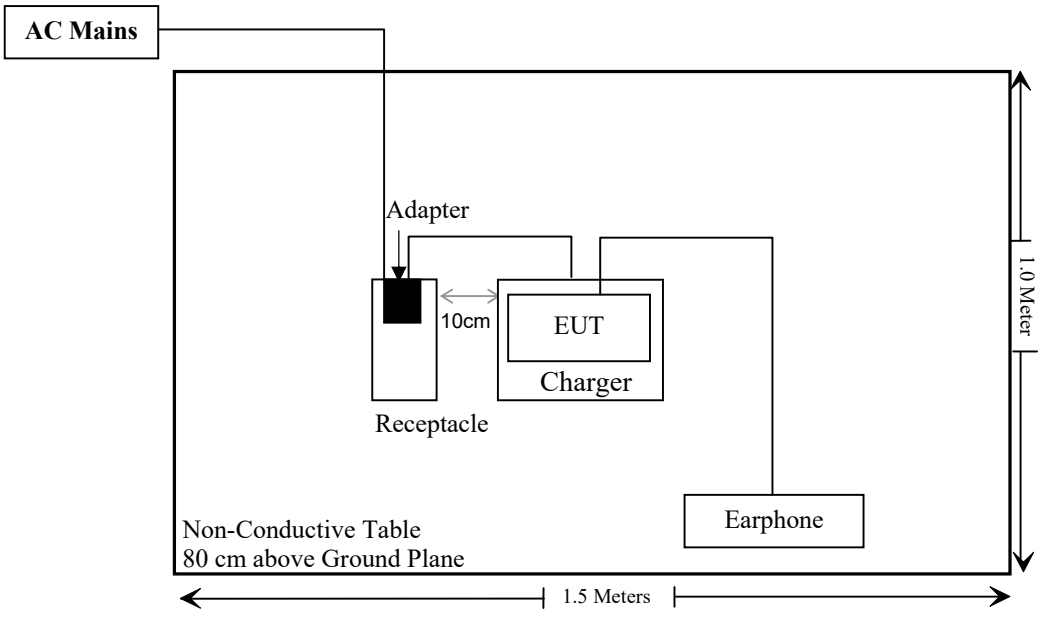
Powered by Charger:



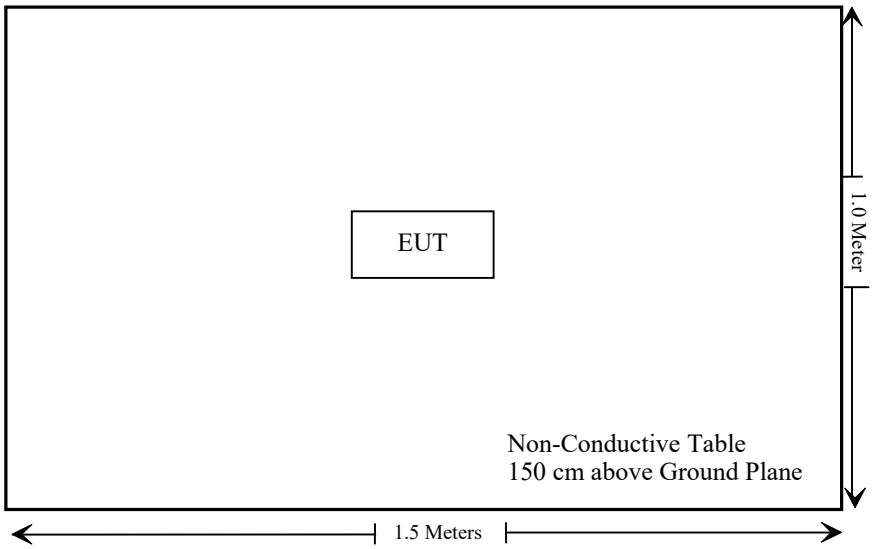
Powered by Type-C Port:



For Radiated Emissions below 1GHz:



For Radiated Emissions above 1GHz:



SUMMARY OF TEST RESULTS

FCC Rules	RSS Rules	Description of Test	Result
FCC §15.203	RSS-Gen §6.8	Antenna Requirement	Compliant
FCC §15.207(a)	RSS-Gen §8.8	AC Line Conducted Emissions	Compliant
FCC §15.205, §15.209, §15.247(d)	RSS-247 § 5.5, RSS-GEN § 8.10	Radiated Emissions	Compliant
FCC §15.247(a)(1)	RSS-247 § 5.1(a), RSS-GEN § 6.7	20 dB Emission Bandwidth & 99% Occupied Bandwidth	Compliant
FCC §15.247(a)(1)	RSS-247 § 5.1 (b)	Channel Separation Test	Compliant
FCC §15.247(a)(1)(iii)	RSS-247 § 5.1 (d)	Time of Occupancy (Dwell Time)	Compliant
FCC §15.247(a)(1)(iii)	RSS-247 § 5.1 (d)	Quantity of hopping channel Test	Compliant
FCC §15.247(b)(1)	RSS-247 § 5.1(b) &§ 5.4(b)	Peak Output Power Measurement	Compliant
FCC §15.247(d)	RSS-247 § 5.5	Band edges	Compliant

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted Emission Test					
Rohde & Schwarz	EMI Test Receiver	ESCI	101120	2024/01/16	2025/01/15
Rohde & Schwarz	LISN	ENV216	101613	2024/01/16	2025/01/15
Rohde & Schwarz	Transient Limiter	ESH3Z2	DE25985	2024/05/21	2025/05/20
Unknown	CE Cable	Unknown	UF A210B-1-0720-504504	2024/05/21	2025/05/20
Rohde & Schwarz	EMC Measurement	EMC32	V8.53.0	NCR	NCR
Radiated Emission Test					
Rohde & Schwarz	EMI Test Receiver	ESR3	102455	2024/01/16	2025/01/15
Sonoma instrument	Pre-amplifier	310 N	186238	2024/05/21	2025/05/20
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2023/07/20	2026/07/19
Unknown	Cable	Chamber A Cable 1	N/A	2024/06/18	2025/06/17
Unknown	Cable	XH500C	J-10M-A	2024/06/18	2025/06/17
BACL	Active Loop Antenna	1313-1A	4031911	2024/05/14	2027/05/13
Audix	EMI Test software	E3	19821b(V9)	NCR	NCR
Rohde & Schwarz	Spectrum Analyzer	FSV40	101605	2024/03/27	2025/03/26
COM-POWER	Pre-amplifier	PA-122	181919	2024/06/18	2025/06/17
Schwarzbeck	Horn Antenna	BBHA9120D(1201)	1143	2023/07/26	2026/07/25
Unknown	RF Cable	KMSE	735	2024/06/18	2025/06/17
Unknown	RF Cable	UFA147	219661	2024/06/18	2025/06/17
Unknown	RF Cable	XH750A-N	J-10M	2024/06/18	2025/06/17
JD	Multiplex Switch Test Control Set	DT7220FSU	DQ77926	2024/06/18	2025/06/17
A.H.System	Pre-amplifier	PAM-1840VH	190	2024/06/18	2025/06/17
Electro-Mechanics Co	Horn Antenna	3116	9510-2270	2023/09/18	2026/09/17
Audix	EMI Test software	E3	191218(V9)	NCR	NCR

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
Tonscend	RF control Unit	JS0806-2	19D8060154	2024/08/06	2025/08/05
Rohde &Schwarz	Spectrum Analyzer	FSV40	101473	2024/01/16	2025/01/15
MARCONI	10dB Attenuator	6534/3	2942	2024/06/27	2025/06/26

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

FCC §15.203 & RSS-GEN §6.8 - ANTENNA REQUIREMENT

Applicable Standard

According to § 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 user of a standard antenna jack or electrical connector is prohibited.

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 res ponsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

a. Antenna must be permanently attached to the unit.
b. Antenna must use a unique type of connector to attach to the EUT.
c. Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

And according to FCC 47 CFR section 15.247 (b), if the transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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.

Antenna Connector Construction

The EUT has one internal antenna arrangement which was permanently attached for Bluetooth and the maximum antenna gain# is 0.21dBi, fulfill the requirement of this section. Please refer to the EUT photos.

Antenna Type	Antenna Gain#	Impedance	Frequency Range
Metal	0.21dBi	50Ω	2.4~2.5GHz

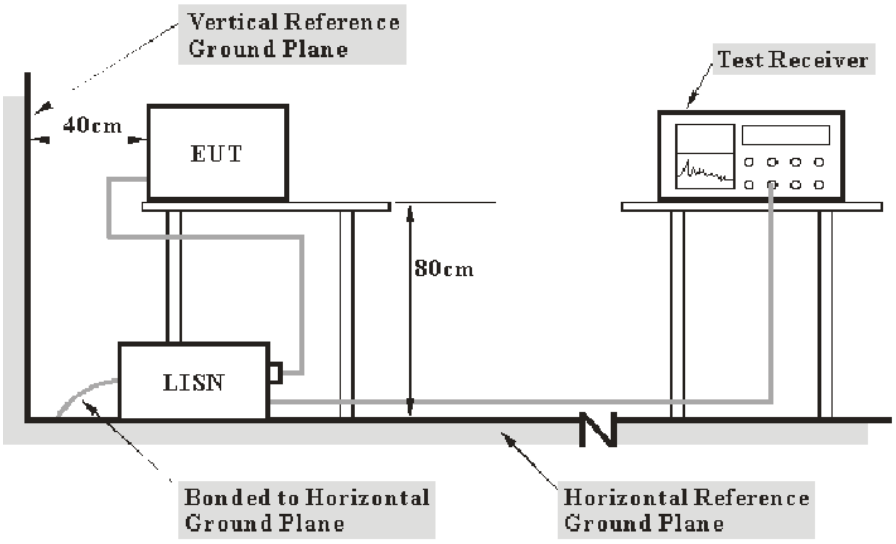
Result: Compliant

FCC §15.207 (a) & RSS-GEN § 8.8 - AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207(a), RSS-GEN § 8.8

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The measurement procedure of EUT setup is according with ANSI C63.10-2013. The related limit was specified in FCC Part 15.207 & RSS-Gen.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All final data was recorded in the Quasi-peak and average detection mode.

Corrected Factor & Margin Calculation

The Corrected Factor (Corr.) is calculated by adding LISN VDF (Voltage Division Factor), Cable Loss and Transient Limiter Attenuation. The basic equation is as follows:

Correction Factor (Corr.) = LISN VDF + Cable Loss + Transient Limiter Attenuation

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7 dB means the emission is 7 dB below the limit. The equation for margin calculation is as follows:

Margin = Limit – Corrected Amplitude

Note: The term "cable loss" refers to the combination of a cable and a 10dB transient limiter (attenuator).

Test Data

Environmental Conditions

Temperature:	23.1~25.3 ℃
Relative Humidity:	52~55 %
ATM Pressure:	101.2 kPa

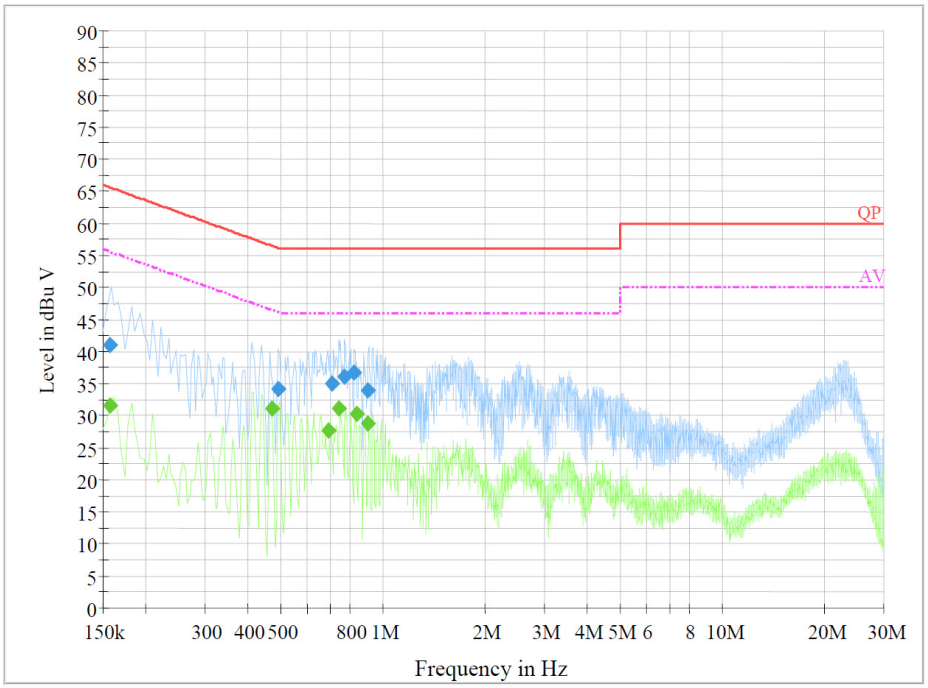
The testing was performed by Macy Shi from 2024-12-09 to 2024-12-13.

EUT operation mode: Transmitting (Maximum output power mode, 8DPSK Low Channel)

Powered by Charger with Adapter 1:

AC 120V/60 Hz, Line

Project No.:	2401V67572E-RF	**Environmental Conditions:**	25.3°C 55%RH 101.2kPa
EUT Number:	2PBE-1	**Test By:**	Macy Shi
Test Mode:	8DPSK Low Channel	**Date:**	2024.12.09



Final Result 1

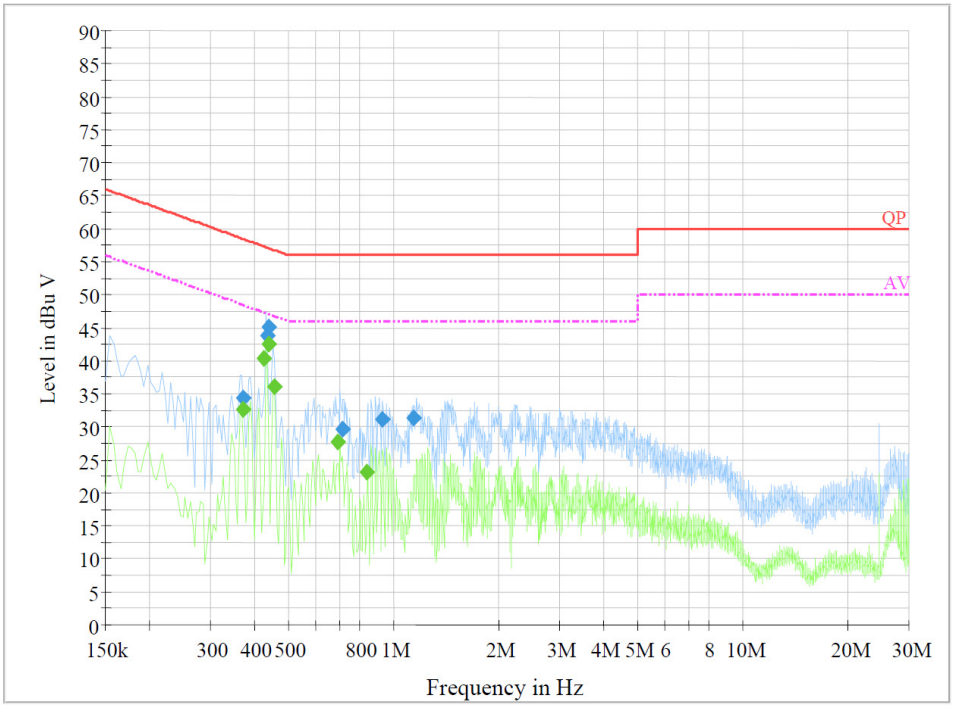
Frequency (MHz)	Quasi Peak (dB µ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.157500	40.9	9.000	L1	20.4	24.7	65.6
0.494590	34.1	9.000	L1	20.4	22.0	56.1
0.707230	35.1	9.000	L1	20.5	20.9	56.0
0.774390	36.1	9.000	L1	20.5	19.9	56.0
0.825610	36.8	9.000	L1	20.4	19.2	56.0
0.904350	33.9	9.000	L1	20.4	22.1	56.0

Final Result 2

Frequency (MHz)	Average (dB µ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.157500	32.9	9.000	L1	20.4	22.7	55.6
0.494590	31.1	9.000	L1	20.4	15.0	46.1
0.707230	26.5	9.000	L1	20.5	19.5	46.0
0.774390	32.2	9.000	L1	20.5	13.8	46.0
0.825610	30.9	9.000	L1	20.4	15.1	46.0
0.904350	28.9	9.000	L1	20.4	17.1	46.0

AC 120V/60 Hz, Neutral

Project No.:	2401V67572E-RF	**Environmental Conditions:**	25.3°C 55%RH 101.2kPa
EUT Number:	2PBE-1	**Test By:**	Macy Shi
Test Mode:	8DPSK Low Channel	**Date:**	2024.12.09



Final Result 1

Frequency (MHz)	Quasi Peak (dB µ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.372450	34.4	9.000	N	20.4	24.0	58.4
0.436450	43.8	9.000	N	20.4	13.3	57.1
0.440510	45.1	9.000	N	20.4	12.0	57.1
0.715410	29.7	9.000	N	20.4	26.3	56.0
0.903350	32.1	9.000	N	20.3	23.9	56.0
1.148510	33.2	9.000	N	20.4	22.8	56.0

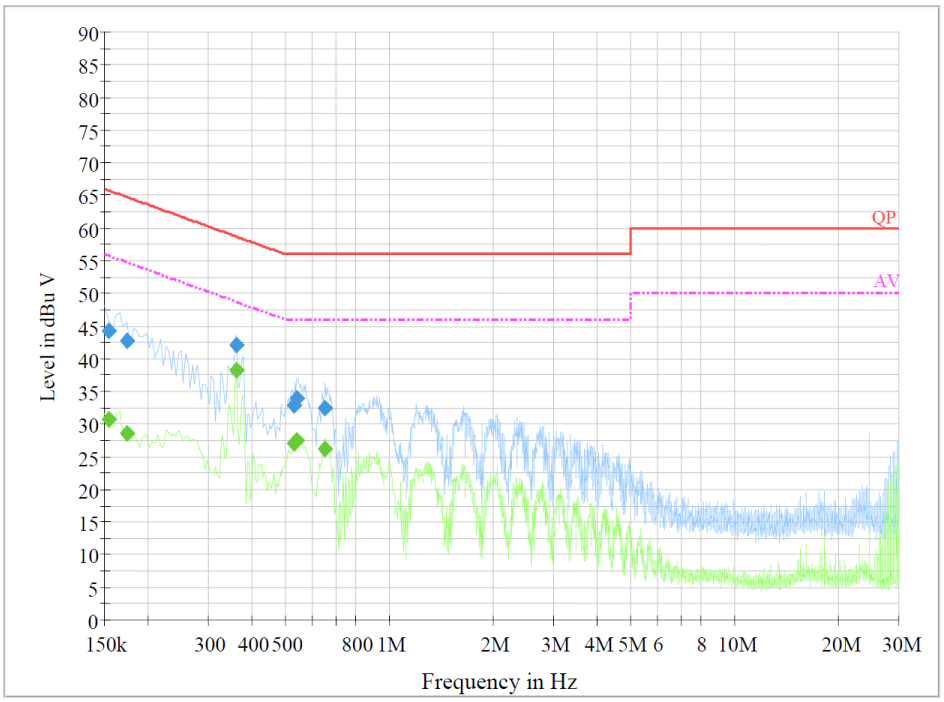
Final Result 2

Frequency (MHz)	Average (dB µ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.366000	32.2	9.000	N	20.4	16.4	48.6
0.430000	40.9	9.000	N	20.4	6.4	47.3
0.434000	43.1	9.000	N	20.4	4.1	47.2
0.458000	33.4	9.000	N	20.4	13.3	46.7
0.706000	28.9	9.000	N	20.4	17.1	46.0
0.866000	25.2	9.000	N	20.4	20.8	46.0

Powered by Charger with Adapter 2:

AC 120V/60 Hz, Line

Project No.:	2401V67572E-RF	**Environmental Conditions:**	25.3°C 55%RH 101.2kPa
EUT Number:	2PBE-1	**Test By:**	Macy Shi
Test Mode:	8DPSK Low Channel	**Date:**	2024.12.09



Final Result 1

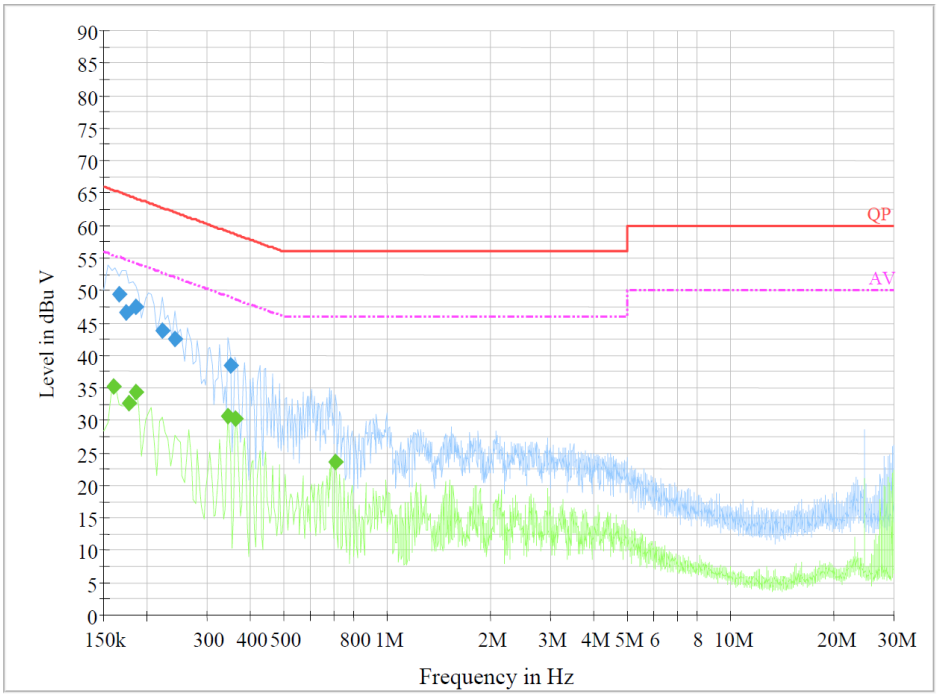
Frequency (MHz)	Quasi Peak (dB µ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.154500	44.4	9.000	L1	20.3	21.4	65.8
0.173500	42.8	9.000	L1	20.4	22.0	64.8
0.360570	42.1	9.000	L1	20.4	16.6	58.7
0.529990	32.9	9.000	L1	20.4	23.1	56.0
0.541870	33.9	9.000	L1	20.4	22.1	56.0
0.652190	32.5	9.000	L1	20.5	23.5	56.0

Final Result 2

Frequency (MHz)	Average (dB µ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.154500	30.7	9.000	L1	20.3	25.1	55.8
0.173500	28.5	9.000	L1	20.4	26.3	54.8
0.360570	38.3	9.000	L1	20.4	10.4	48.7
0.529990	27.0	9.000	L1	20.4	19.0	46.0
0.541870	27.6	9.000	L1	20.4	18.4	46.0
0.652190	26.2	9.000	L1	20.5	19.8	46.0

AC 120V/60 Hz, Neutral

Project No.:	2401V67572E-RF	**Environmental Conditions:**	25.3°C 55%RH 101.2kPa
EUT Number:	2PBE-1	**Test By:**	Macy Shi
Test Mode:	8DPSK Low Channel	**Date:**	2024.12.09



Final Result 1

Frequency (MHz)	Quasi Peak (dB µ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.166501	49.3	9.000	N	20.4	15.8	65.1
0.173500	46.7	9.000	N	20.4	18.1	64.8
0.185500	47.4	9.000	N	20.4	16.8	64.2
0.221500	43.9	9.000	N	20.4	18.9	62.8
0.241500	42.4	9.000	N	20.4	19.6	62.0
0.351190	38.4	9.000	N	20.5	20.5	58.9

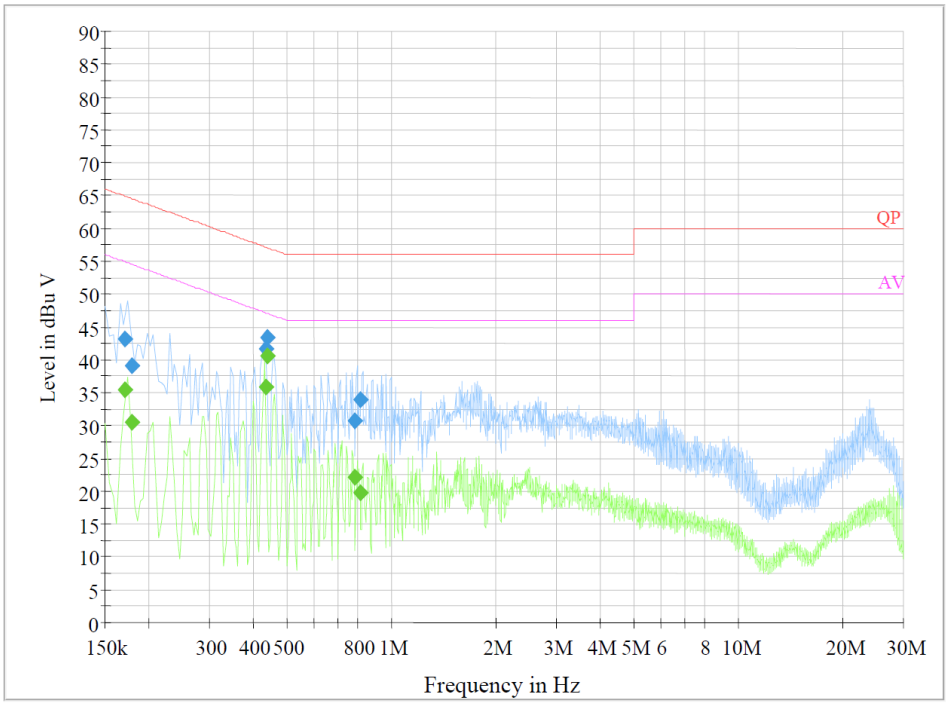
Final Result 2

Frequency (MHz)	Average (dB µ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.162000	35.6	9.000	N	20.4	19.8	55.4
0.178000	33.6	9.000	N	20.4	21.0	54.6
0.186000	37.7	9.000	N	20.4	16.5	54.2
0.346000	32.7	9.000	N	20.4	16.4	49.1
0.366000	31.9	9.000	N	20.4	16.7	48.6
0.710000	27.6	9.000	N	20.4	18.4	46.0

Powered by Type-C Port:

AC 120V/60 Hz, Line

Project No.:	2401V67572E-RF	**Environmental Conditions:**	23.1°C 52%RH 101.2kPa
EUT Number:	2PBE-1	**Test By:**	Macy Shi
Test Mode:	8DPSK Low Channel	**Date:**	2024.12.13



Final Result 1

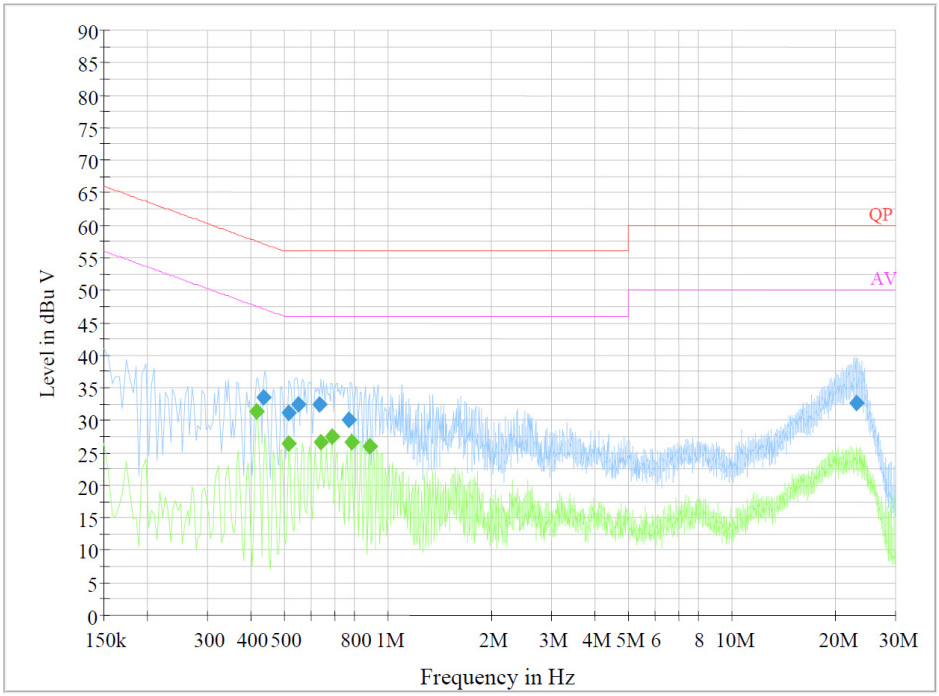
Frequency (MHz)	Quasi Peak (dB µ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.171500	43.1	9.000	L1	21.0	22.3	65.4
0.178500	39.1	9.000	L1	20.9	25.5	64.6
0.435550	41.6	9.000	L1	20.7	15.5	57.1
0.440510	43.3	9.000	L1	20.7	13.8	57.1
0.790030	30.8	9.000	L1	20.6	25.2	56.0
0.817550	34.0	9.000	L1	20.6	22.0	56.0

Final Result 2

Frequency (MHz)	Average (dB µ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.171500	35.5	9.000	L1	21.0	19.9	55.4
0.178500	30.5	9.000	L1	20.9	24.1	54.6
0.435550	35.9	9.000	L1	20.7	11.2	47.1
0.440510	40.6	9.000	L1	20.7	6.5	47.1
0.790030	22.1	9.000	L1	20.6	23.9	46.0
0.817550	19.9	9.000	L1	20.6	26.1	46.0

AC 120V/60 Hz, Neutral

Project No.:	2401V67572E-RF	**Environmental Conditions:**	23.1°C 52%RH 101.2kPa
EUT Number:	2PBE-1	**Test By:**	Macy Shi
Test Mode:	8DPSK Low Channel	**Date:**	2024.12.13



Final Result 1

Frequency (MHz)	Quasi Peak (dB µ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.435370	33.5	9.000	N	20.8	23.6	57.1
0.518230	31.1	9.000	N	20.8	24.9	56.0
0.549870	32.4	9.000	N	20.8	23.6	56.0
0.636370	32.4	9.000	N	20.8	23.6	56.0
0.774270	30.1	9.000	N	20.9	25.9	56.0
23.095970	32.6	9.000	N	20.8	27.4	60.0

Final Result 2

Frequency (MHz)	Average (dB µ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.418000	31.4	9.000	N	20.7	16.1	47.5
0.518000	26.5	9.000	N	20.8	19.5	46.0
0.642000	26.7	9.000	N	20.8	19.3	46.0
0.690000	27.5	9.000	N	20.8	18.5	46.0
0.786000	26.7	9.000	N	20.9	19.3	46.0
0.886000	25.9	9.000	N	20.9	20.1	46.0

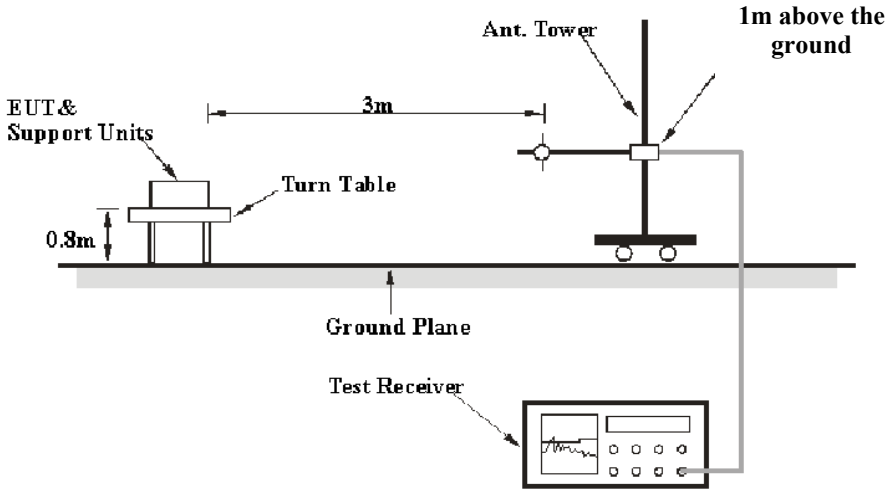
FCC §15.209, §15.205 & §15.247(D) & RSS-247§ 5.5 - SPURIOUS EMISSIONS

Applicable Standard

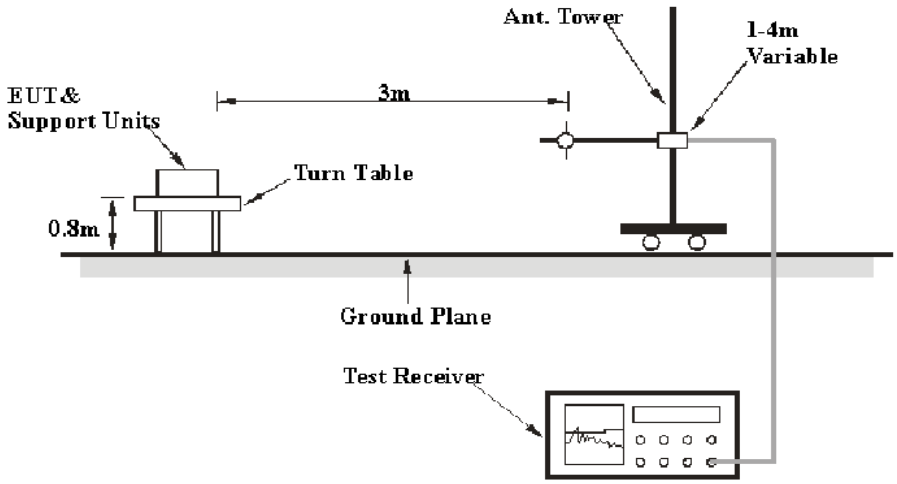
FCC §15.205; §15.209; §15.247(d); RSS-247§ 5.5; RSS-GEN § 8.10

EUT Setup

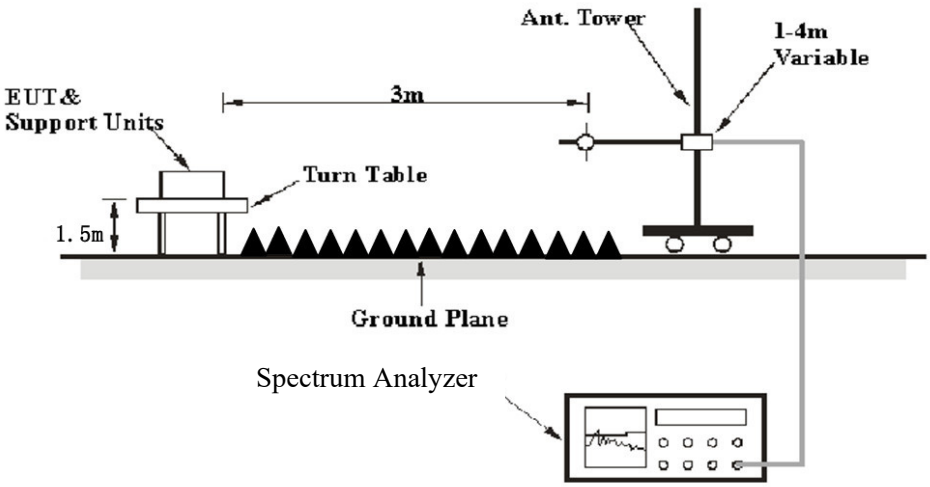
9 kHz-30MHz:



30MHz-1GHz:



Above 1GHz:



The radiated emission performed in the 3 meters, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209, FCC 15.247, RSS-247, RSS-Gen limits.

EMI Test Receiver & Spectrum Analyzer Setup

The EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Measurement
9 kHz – 150 kHz	/	/	200 Hz	QP
	300 Hz	1 kHz	/	PK
150 kHz – 30 MHz	/	/	9 kHz	QP
	10 kHz	30 kHz	/	PK
30 MHz – 1000 MHz	/	/	120 kHz	QP
	100 kHz	300 kHz	/	PK
Above 1 GHz	Harmonics & Band Edge			
	1MHz	3 MHz	/	PK
	Average Emission Level=Peak Emission Level+20*log(Duty cycle)			
	Other Emissions			
	1MHz	3 MHz	/	PK
	1MHz	≥10 Hz	/	Average

For Duty cycle measurement:

Use the duty cycle factor correction factor method per 15.35(c).
Duty cycle=On time/100milliseconds, On time=N1*L1+N2*L2+…Nn-1*Ln-1+Nn*Ln,
Where N1 is number of type 1 pulses, L1 is length of type 1 pulse, etc.

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All final data was recorded in Quasi-peak detection mode except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz, average detection modes for frequency bands 9–90 kHz and 110–490 kHz, peak and average detection modes for frequencies above 1 GHz.

For 9 kHz-30MHz, the report shall list the six emissions with the smallest margin relative to the limit, for each of the three antenna orientations (parallel, perpendicular, and ground-parallel) unless the margin is greater than 20 dB.

If the maximized peak measured value complies with under the QP/Average limit more than 6dB, then it is unnecessary to perform an QP/Average measurement.

All emissions under the average limit and under the noise floor have not recorded in the report.

Factor & Over Limit/Margin Calculation

The Factor is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain. The basic equation is as follows:

Factor = Antenna Factor + Cable Loss - Amplifier Gain

The "**Over Limit/Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, an Over Limit/margin of -7dB means the emission is 7dB below the limit. The equation for calculation is as follows:

Over Limit/Margin = Level / Corrected Amplitude – Limit
Level / Corrected Amplitude = Read Level + Factor

Test Data

Environmental Conditions

Temperature:	25~25.6 ℃
Relative Humidity:	50~54 %
ATM Pressure:	101 kPa

The testing was performed by Carl Zhu on 2024-10-08 for below 1GHz and Sadow Tan and Dylan Yang from 2024-08-26 to 2024-10-26 for above 1GHz.

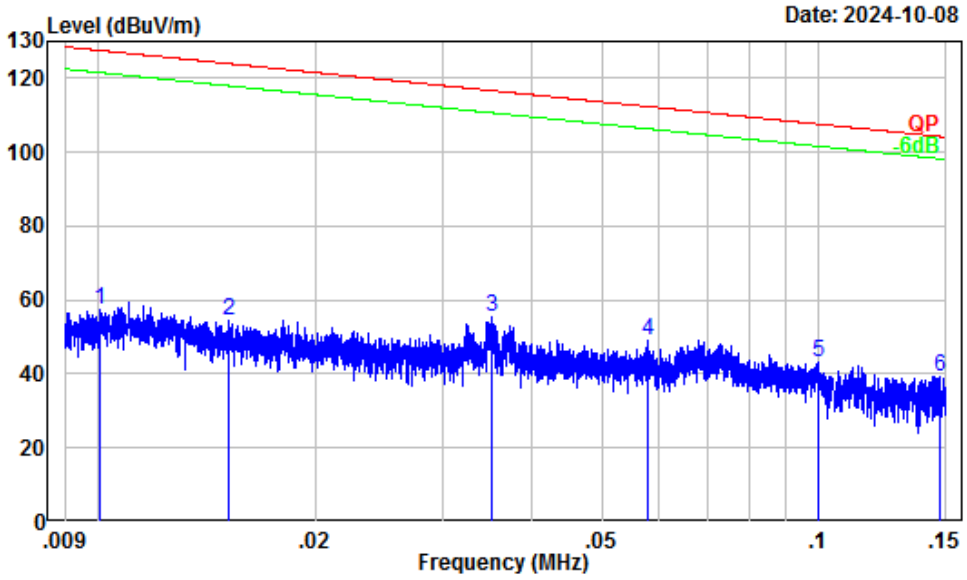
EUT operation mode: Transmitting

Note: Pre-scan in the X, Y and Z axes of orientation, the worst case Z-axis of orientation was recorded.

9 kHz-30MHz: *(Maximum output power mode, 8DPSK Low Channel)*

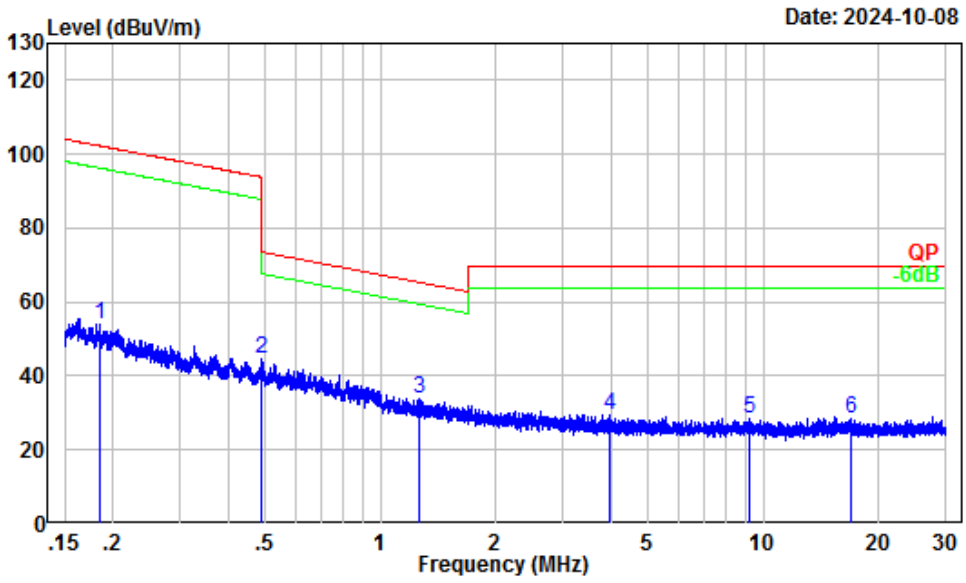
Note: When the test result of peak was less than the limit of QP/Average more than 6dB, just peak value were recorded.

Parallel (worst case)



Site : Chamber A
Condition : 3m
Project Number: 2401V67572E-RF
Test Mode : Transmitting
Tester : Carl Zhu

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.01	32.28	25.23	57.51	127.54	-70.03	Peak
2	0.02	31.31	23.05	54.36	123.96	-69.60	Peak
3	0.04	27.96	27.40	55.36	116.69	-61.33	Peak
4	0.06	25.61	23.32	48.93	112.35	-63.42	Peak
5	0.10	22.00	21.22	43.22	107.60	-64.38	Peak
6	0.15	19.23	20.23	39.46	104.26	-64.80	Peak

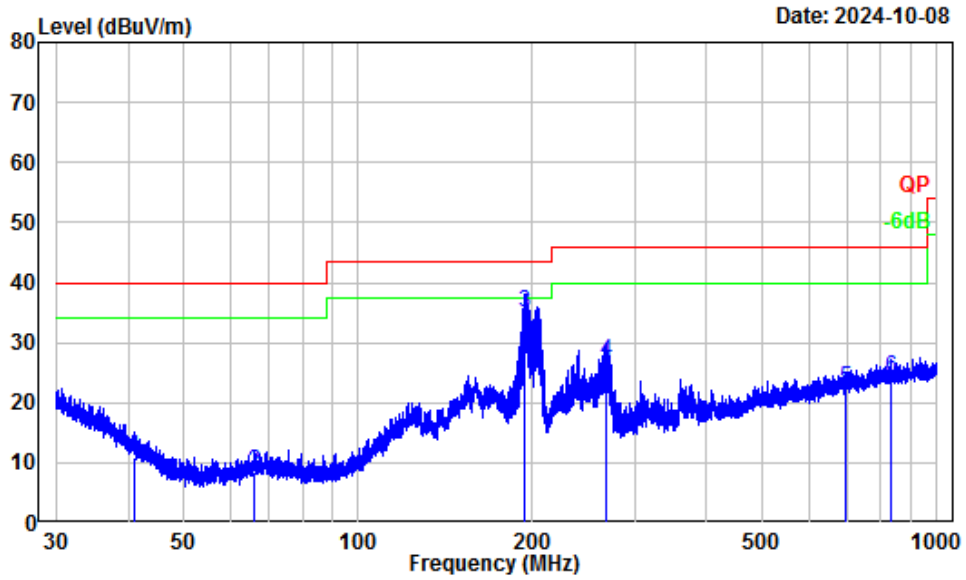


Site : Chamber A
Condition : 3m
Project Number: 2401V67572E-RF
Test Mode : Transmitting
Tester : Carl Zhu

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.19	16.95	36.88	53.83	102.23	-48.40	Peak
2	0.49	6.65	37.97	44.62	93.85	-49.23	Peak
3	1.26	0.46	33.24	33.70	65.40	-31.70	Peak
4	3.99	-2.69	32.26	29.57	69.54	-39.97	Peak
5	9.17	-2.88	31.13	28.25	69.54	-41.29	Peak
6	17.04	-2.61	31.04	28.43	69.54	-41.11	Peak

30MHz-1GHz: *(Maximum output power mode, 8DPSK Low Channel)*

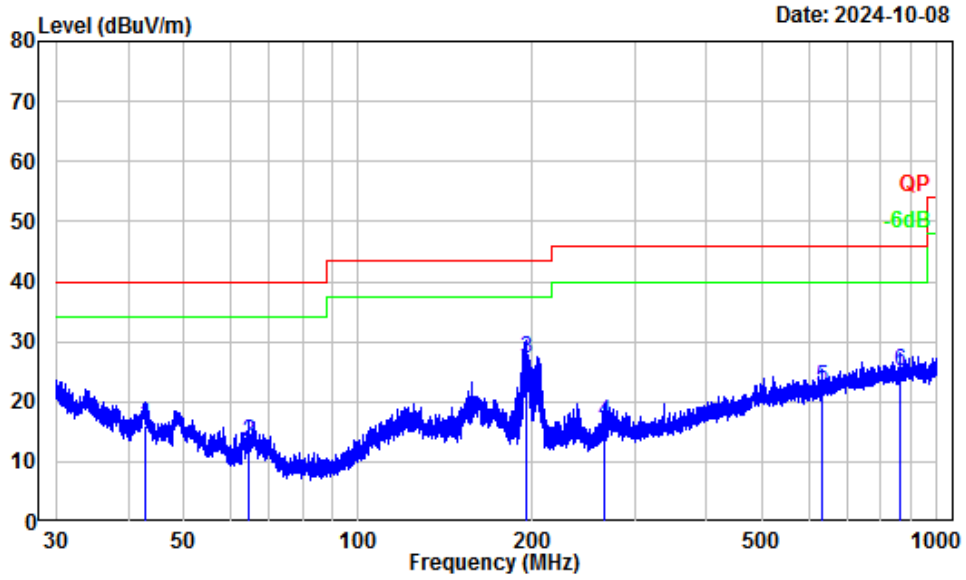
Horizontal



Site : Chamber A
Condition : 3m Horizontal
Project Number: 2401V67572E-RF
Test Mode : Transmitting
Tester : Carl Zhu

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	40.92	-13.02	24.04	11.02	40.00	-28.98	QP
2	65.98	-17.89	26.45	8.56	40.00	-31.44	QP
3	193.77	-13.83	48.75	34.92	43.50	-8.58	QP
4	268.49	-11.97	38.85	26.88	46.00	-19.12	QP
5	697.16	-3.53	25.77	22.24	46.00	-23.76	QP
6	833.68	-1.86	25.90	24.04	46.00	-21.96	QP

Vertical



Site : Chamber A
Condition : 3m Vertical
Project Number: 2401V67572E-RF
Test Mode : Transmitting
Tester : Carl Zhu

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	42.79	-14.43	30.31	15.88	40.00	-24.12	QP
2	64.49	-18.00	31.25	13.25	40.00	-26.75	QP
3	195.05	-13.64	40.77	27.13	43.50	-16.37	QP
4	267.08	-12.09	28.79	16.70	46.00	-29.30	QP
5	634.46	-4.36	26.71	22.35	46.00	-23.65	QP
6	861.54	-1.63	26.69	25.06	46.00	-20.94	QP

Above 1GHz:

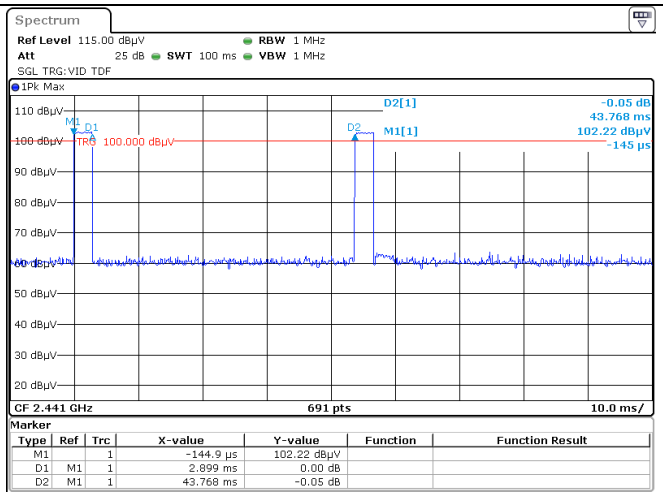
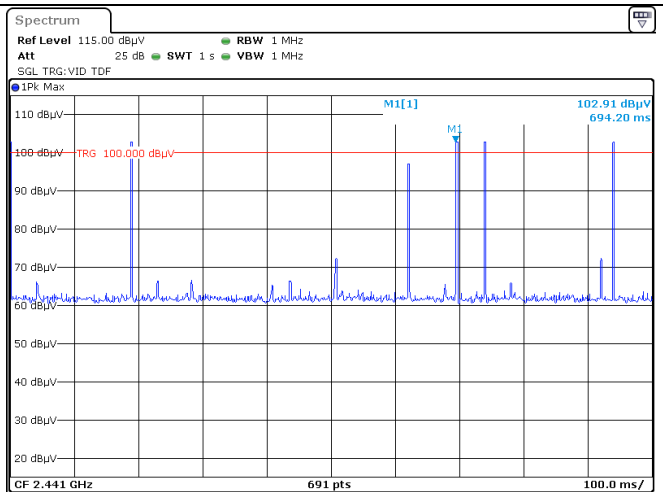
Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/Ave					
Maximum output power mode, 8DPSK							
Low Channel 2402MHz							
2388.44	54.05	PK	H	-2.93	51.12	74	-22.88
2372.23	54.55	PK	V	-2.93	51.62	74	-22.38
4804.00	49.82	PK	H	1.69	51.51	74	-22.49
4804.00	48.22	PK	V	1.69	49.91	74	-24.09
Middle Channel 2441MHz							
4882.00	49.51	PK	H	1.69	51.20	74	-22.80
4882.00	48.45	PK	V	1.69	50.14	74	-23.86
High Channel 2480MHz							
2483.76	59.24	PK	H	-3.17	56.07	74	-17.93
2483.66	54.53	PK	V	-3.17	51.36	74	-22.64
4960.00	49.41	PK	H	2.77	52.18	74	-21.82
4960.00	47.01	PK	V	2.77	49.78	74	-24.22

Note:
Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
Corrected Amplitude = Factor + Reading
Margin = Corrected. Amplitude - Limit
The other spurious emission which is in the noise floor level was not recorded.

Field Strength of Average							
Frequency (MHz)	**Peak Measurement @3m (dBμV/m)**	**Polar (H/V)**	**Duty Cycle Corrected Factor (dB)**	**Average Level (dBμV/m)**	**Limit (dBμV/m)**	**Margin (dB)**	**Comment**
Low Channel 2402MHz							
2388.44	51.12	H	-24.73	26.39	54	-27.61	Bandedge
2372.23	51.62	V	-24.73	26.89	54	-27.11	Bandedge
4804.00	51.51	H	-24.73	26.78	54	-27.22	Harmonic
4804.00	49.91	V	-24.73	25.18	54	-28.82	Harmonic
Middle Channel 2441MHz							
4882.00	51.2	H	-24.73	26.47	54	-27.53	Harmonic
4882.00	50.14	V	-24.73	25.41	54	-28.59	Harmonic
High Channel 2480MHz							
2483.76	56.14	H	-24.73	31.41	54	-22.59	Bandedge
2483.66	51.43	V	-24.73	26.70	54	-27.30	Bandedge
4960.00	52.18	H	-24.73	27.45	54	-26.55	Harmonic
4960.00	49.78	V	-24.73	25.05	54	-28.95	Harmonic

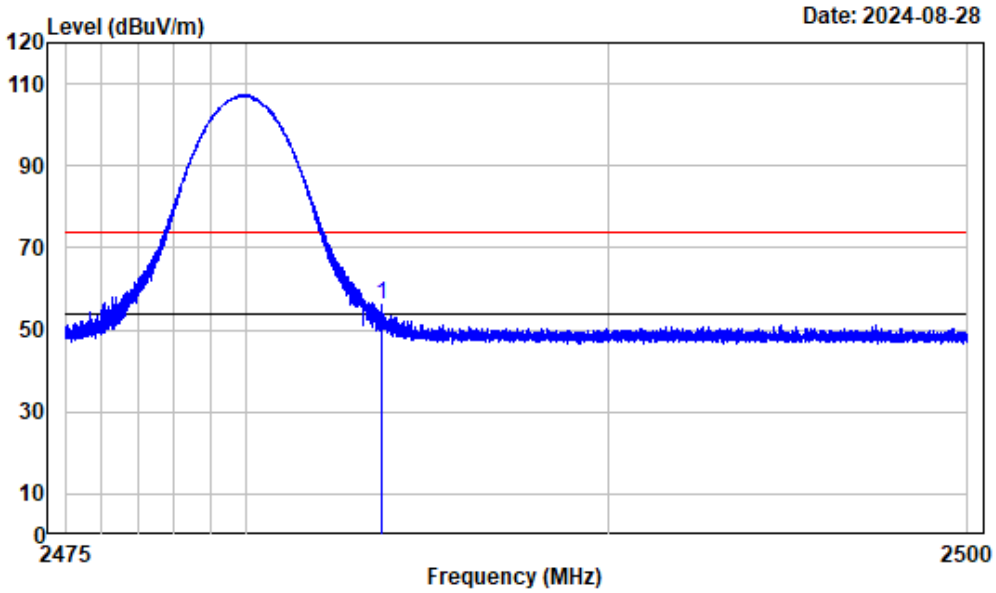
Note: Average level= Peak level+ Duty Cycle Corrected Factor

Worst case duty cycle:
Duty cycle = Ton/100ms = 2.90*2/100=0.058
Duty Cycle Corrected Factor = 20lg (Duty cycle) = 20lg0.058 = -24.73

Duty Cycle (100ms)	
Duty Cycle (1s)	

Test plots for worst Band Edge Measurements (Radiated):

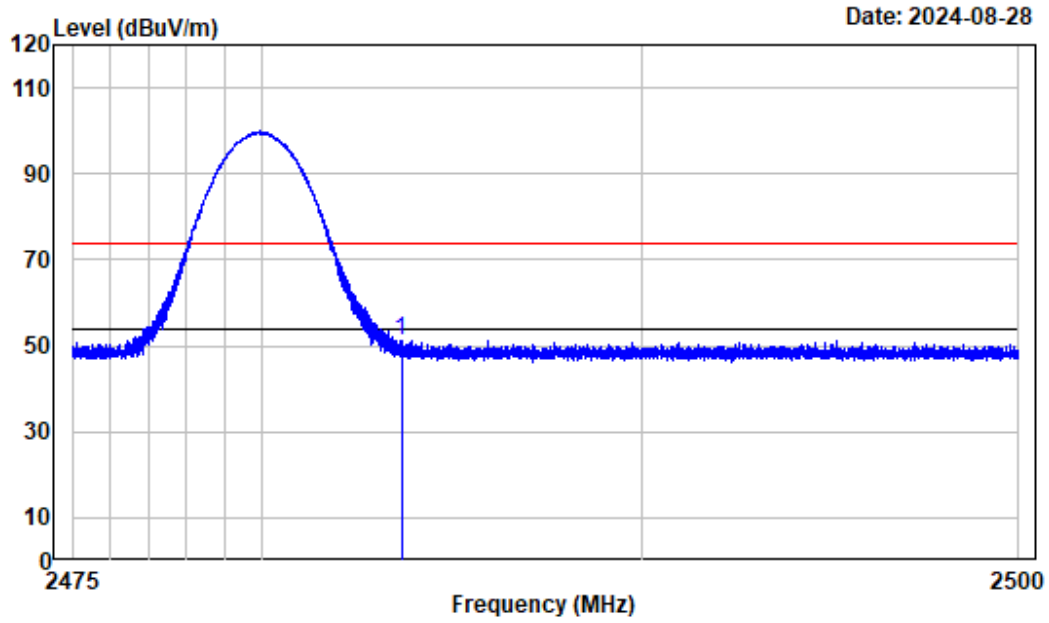
8DPSK			
Test Channel:	**2480MHz**	**Ant. Polar. :**	**Horizontal**




```
Condition   : Horizontal
Project No.: 2401V67572E-RF
Tester      : Sadow Tan
Note        : BT_2480
```

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	2483.759	-3.17	59.24	56.07	74.00	-17.93	peak

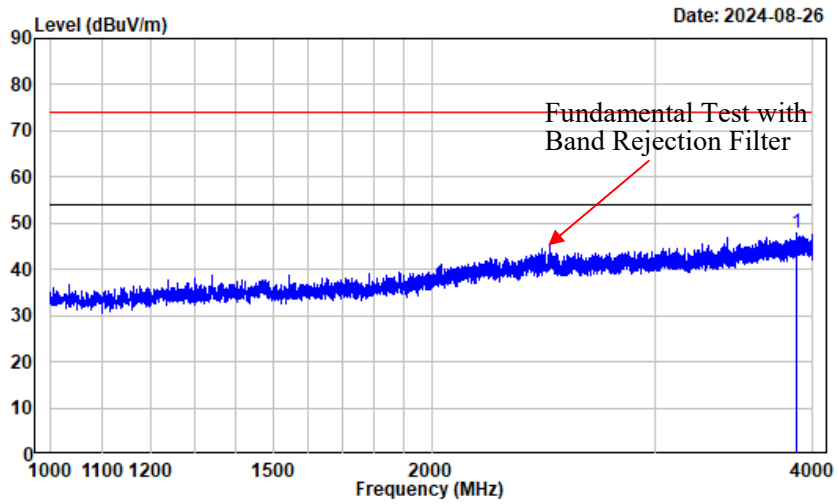
8DPSK			
Test Channel:	**2480MHz**	**Ant. Polar. :**	**Vertical**

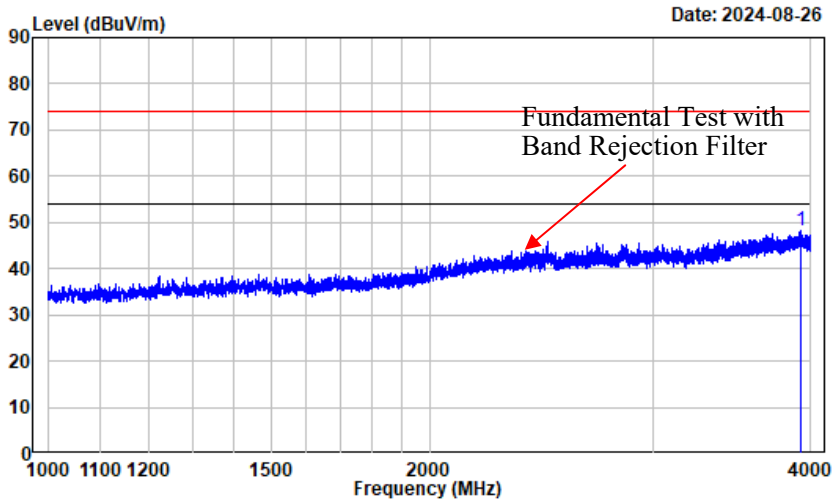


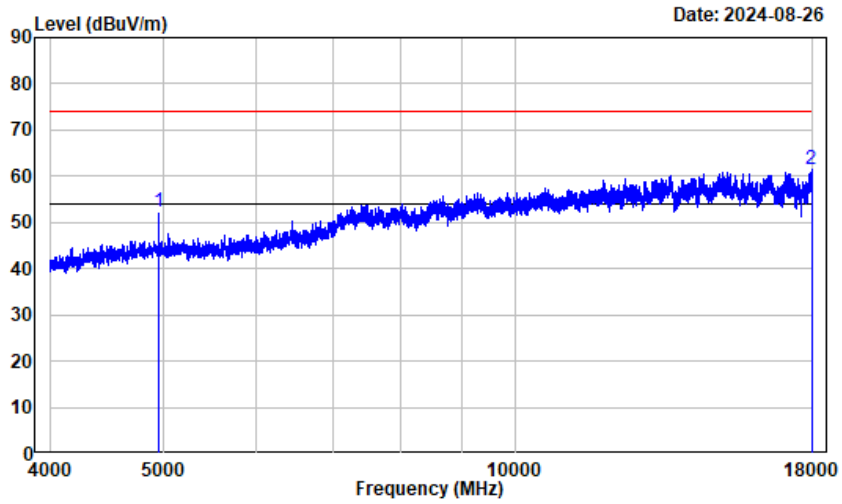
Condition : Vertical
Project No.: 2401V67572E-RF
Tester : Sadow Tan
Note : BT_2480

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	2483.663	-3.17	54.53	51.36	74.00	-22.64	peak

Listed with the worst harmonic margin test plot:

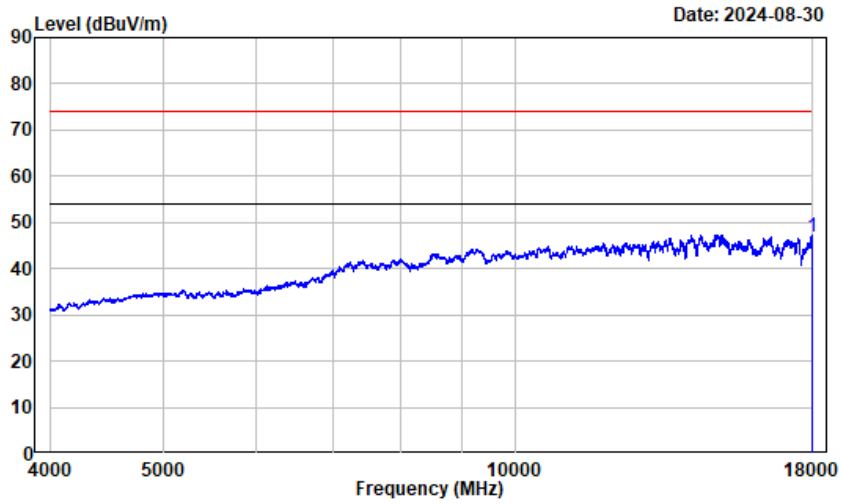
Horizontal	
1-4GHz	 Condition : Horizontal Project No.: 2401V67572E-RF Tester : Dylan.Yang Note : BT_3DH5_2480 Freq / Factor / Read Level / Limit Level / Limit Line / Over Limit / Remark MHz / dB/m / dBuV / dBuV/m / dBuV/m / dB 1 3883.360 -0.61 48.39 47.78 74.00 -26.22 Peak

Vertical	
1-4GHz	 Condition : Vertical Project No.: 2401V67572E-RF Tester : Dylan.Yang Note : BT_3DH5_2480 Freq / Factor / Read Level / Limit Level / Limit Line / Over Limit / Remark MHz / dB/m / dBuV / dBuV/m / dBuV/m / dB 1 3932.116 -0.30 48.66 48.36 74.00 -25.64 Peak

Horizontal-Peak	
4-18GHz	 Condition : Horizontal Project No.: 2401V67572E-RF Tester : Dylan.Yang Note : BT_3DH5_2480 Freq / Factor / Read Level / Level / Limit Line / Over Limit / Remark MHz / dB/m / dBuV / dBuV/m / dBuV/m / dB 1 4960.000 2.77 49.41 52.18 74.00 -21.82 Peak 2 17957.990 24.33 37.10 61.43 74.00 -12.57 Peak

Horizontal-Average

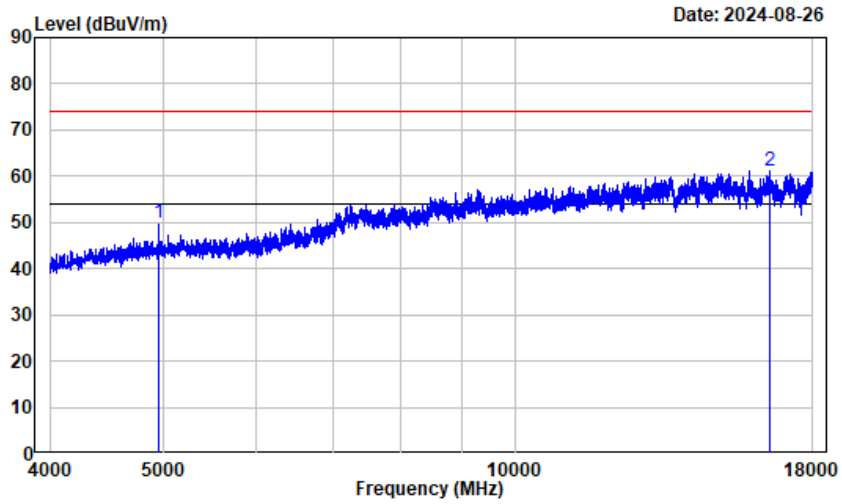
4-18GHz



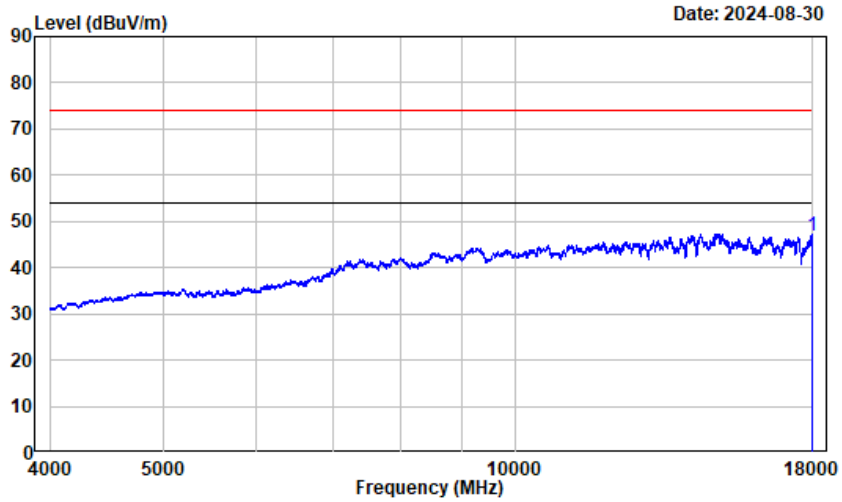
Condition : Horizontal
Project No.: 2401V67572E-RF
Tester : Dylan.Yang
Note : BT_3DH5_2480

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	18000.000	24.62	22.22	46.84	54.00	-7.16	Average

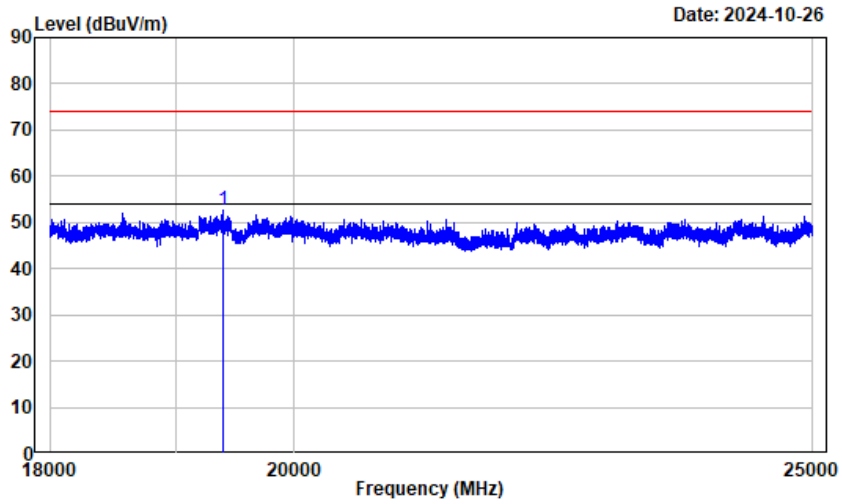
Note: Spectrum analyzer setting: RBW=1 MHz, VBW=5 kHz

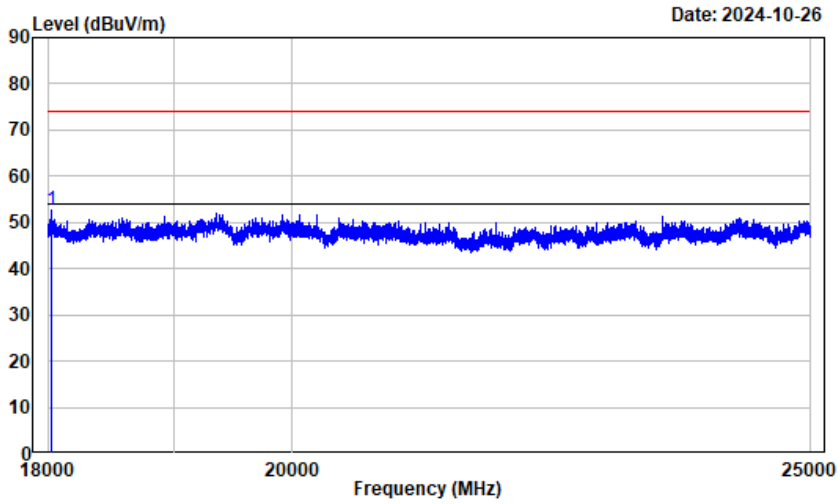
Vertical-Peak	
4-18GHz	 Condition : Vertical Project No.: 2401V67572E-RF Tester : Dylan.Yang Note : BT_3DH5_2480

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	4960.000	2.77	47.01	49.78	74.00	-24.22	Peak
2	16545.570	15.85	45.19	61.04	74.00	-12.96	Peak

Vertical-Average	
4-18GHz	 Condition : Vertical Project No.: 2401V67572E-RF Tester : Dylan.Yang Note : BT_3DH5_2480 Freq / Factor / Read Level / Limit Level / Over Limit / Remark MHz / dB/m / dBuV / dBuV/m / dBuV/m / dB 1 17998.250 24.61 22.30 46.91 54.00 -7.09 Average

Note: Spectrum analyzer setting: RBW=1 MHz, VBW=5 kHz

Horizontal	
18-25GHz	 Condition : Horizontal Project No.: 2401V67572E-RF Tester : Dylan.Yang Note : BT_3DH5_2480 Freq / Factor / Read Level / Level / Limit Line / Over Limit / Remark MHz / dB/m / dBuV / dBuV/m / dBuV/m / dB 1 19400.180 15.08 37.45 52.53 74.00 -21.47 Peak

Vertical	
18-25GHz	 Condition : Vertical Project No.: 2401V67572E-RF Tester : Dylan.Yang Note : BT_3DH5_2480 Freq / Factor / Read Level / Limit Level / Limit Line / Over Limit / Remark MHz / dB/m / dBuV / dBuV/m / dBuV/m / dB 1 18023.630 13.86 38.85 52.71 74.00 -21.29 Peak

FCC §15.247(a) (1) & RSS-247 § 5.1 (b) - CHANNEL SEPARATION TEST

Applicable Standard

According to FCC §15.247(a) (1):

Frequency hopping systems shall have hoping 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. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

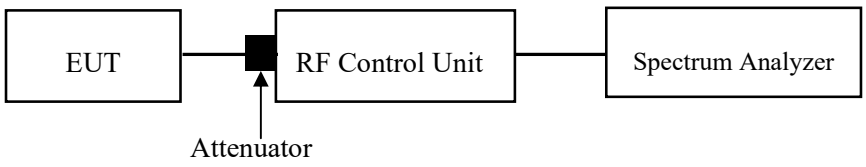
According to RSS-247 § 5.1 (b):

Frequency hopping systems (FHSs) 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, FHSs operating in the band 2400-2483.5 MHz 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 that the systems operate with an output power no greater than 0.125 W. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

Test Procedure

Test Method: ANSI C63.10-2013 Clause 7.8.2

1. Set the EUT in transmitting mode, max hold the channel.
2. Set the adjacent channel of the EUT and max hold another trace.
3. Measure the channel separation.



Test Data

Environmental Conditions

Temperature:	24 °C
Relative Humidity:	51 %
ATM Pressure:	101 kPa

The testing was performed by Tom Tan from 2024-08-26 to 2024-09-18.

EUT operation mode: Transmitting

Test Result: Compliant. Please refer to the Appendix.

FCC §15.247(a) (1) & RSS-247 § 5.1 (a), RSS-GEN § 6.7 - 20 dB EMISSION BANDWIDTH & 99% OCCUPIED BANDWIDTH

Applicable Standard

According to FCC §15.247(a) (1):

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.

According to RSS-247 § 5.1 (a), RSS-GEN § 6.7:

The occupied bandwidth or the "99% emission bandwidth" is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs.
In some cases, the "x dB bandwidth" is required, which is defined as the frequency range between two points, one at the lowest frequency below and one at the highest frequency above the carrier frequency, at which the maximum power level of the transmitted emission is attenuated x dB below the maximum in-band power level of the modulated signal, where the two points are on the outskirts of the in-band emission.

The following conditions shall be observed for measuring the occupied bandwidth and x dB bandwidth:

- The transmitter shall be operated at its maximum carrier power measured under normal test conditions.
- The span of the spectrum analyzer shall be set large enough to capture all products of the modulation process, including the emission skirts, around the carrier frequency, but small enough to avoid having other emissions (e.g. on adjacent channels) within the span.
- The detector of the spectrum analyzer shall be set to "Sample". However, a peak, or peak hold, may be used in place of the sampling detector since this usually produces a wider bandwidth than the actual bandwidth (worst-case measurement). Use of a peak hold (or "Max Hold") may be necessary to determine the occupied / x dB bandwidth if the device is not transmitting continuously.
- The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the actual occupied / x dB bandwidth and the video bandwidth (VBW) shall not be smaller than three times the RBW value. Video averaging is not permitted.

Note: It may be necessary to repeat the measurement a few times until the RBW and VBW are in compliance with the above requirement.

For the 99% emission bandwidth, the trace data points are recovered and directly summed in linear power level 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, and that frequency recorded. The process is repeated for the highest frequency data points (starting at the highest frequency, at the right side of the span, and going down in frequency). This frequency is then recorded. The difference between the two recorded frequencies is the occupied bandwidth (or the 99% emission bandwidth).

Test Procedure

Test Method: ANSI C63.10-2013 Clause 7.8.7 &Clause 6.9.2&RSS-Gen §6.7

The following conditions shall be observed for measuring the occupied bandwidth and 20 dB bandwidth:

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 fivetimes the OBW.

b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW andvideo bandwidth (VBW) shall be approximately three times RBW, unless otherwise specifiedby the applicable requirement.

c) Set the reference level of the instrument as required, keeping the signal from exceeding themaximum input mixer level for linear operation. In general, the peak of the spectral envelopeshall be more than [10 log (OBW/RBW)] below the reference level.

d) Steps a) through c) might require iteration to adjust within the specified tolerances.

e) The dynamic range of the instrument at the selected RBW shall be more than 10 dB below thetarget "−xx dB down" requirement; that is, if the requirement calls for measuring the −20 dBOBW, the instrument noise floor at the selected RBW shall be at least 30 dB below thereference value.

f) Set detection mode to peak and trace mode to max hold.

g) Determine the reference value: Set the EUT to transmit an un-modulated carrier or modulatedsignal, as applicable. Allow the trace to stabilize. Set the spectrum analyzer marker to thehighest 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.

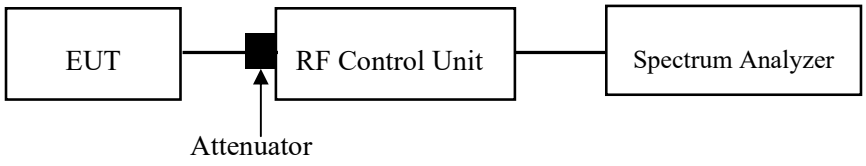
i) If the reference value is determined by an un-modulated carrier, then turn the EUT modulation on, and either clear the existing trace or start a new trace on the spectrum analyzer and allow thenew trace to stabilize. Otherwise, the trace from step g) shall be used for step j).

j) Place two markers, one at the lowest frequency and the other at the highest frequency of theenvelope of the spectral display, such that each marker is at or slightly below the "- xx" dB downamplitude"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 frequencydifference between the two markers. Alternatively, set a marker at the lowest frequency of theenvelope of the spectral display, such that the marker is at or slightly below the "- xx dB downamplitude" determined in step h). Reset the marker-delta function and move the marker to theother side of the emission until the delta marker amplitude is at the same level as the referencemarker amplitude. The marker-delta frequency reading at this point is the specified emissionbandwidth.

k) The occupied bandwidth shall be reported by providing plot(s) of the measuring instrumentdisplay; the plot axes and the scale units per division shall be clearly labeled. Tabular data maybe reported in addition to the plot(s).

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. Procedure as below

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 (for RSS rules, VBW shall not be smaller than 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.
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 maybe reported in addition to the plot(s).



Test Data

Environmental Conditions

Temperature:	24 ℃
Relative Humidity:	51 %
ATM Pressure:	101 kPa

The testing was performed by Tom Tan on 2024-08-26.

EUT operation mode: Transmitting

Test Result: Compliant. Please refer to the Appendix.

FCC §15.247(a) (1) (iii) & RSS-247 § 5.1 (d) - QUANTITY OF HOPPING CHANNEL TEST

Applicable Standard

According to FCC §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.

According to RSS-247 § 5.1 (d):

Frequency hopping systems (FHSS) operating in the band 2400-2483.5 MHz shall use at least 15 hopping 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. Transmissions on particular hopping frequencies may be avoided or suppressed provided that at least 15 hopping channels are used.

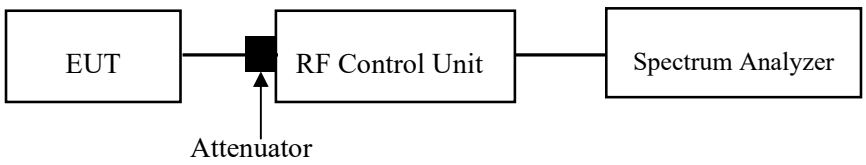
Test Procedure

Test Method: ANSI C63.10-2013 Clause 7.8.3

1. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.

2. Set the EUT in hopping mode from first channel to last.

3. By using the max-hold function record the quantity of the channel.



Note: Limit=20 dB bandwidth*2/3

Test Data

Environmental Conditions

Temperature:	24 ℃
Relative Humidity:	51 %
ATM Pressure:	101 kPa

The testing was performed by Tom Tan on 2024-08-26.

EUT operation mode: Transmitting

Test Result: Compliant. Please refer to the Appendix.