FCC Test Report

Report No: WD-RF-R-240372-C0

Product Name	**:**	Audio Device
Model Name	**:**	ACVG
FCC ID	**:**	Y4O-ACVG
Applicant	**:**	inMusic Brands, Inc.
Received Date	**:**	Nov. 22, 2024
Tested Date	**:**	Dec. 20, 2024 ~ Jan. 13, 2025
Applicable Standard	**:**	47 CFR FCC Part 15, Subpart C (Section 15.247) KDB 558074 D01 DTS Meas. Guidance v05 ANSI C63.10 : 2013

Testing Laboratory
2965

Wendell Industrial Co., Ltd
Wendell EMC & RF Laboratory

Caution:
This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted.
The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment.
Please note that the measurement uncertainty are provided for informational purpose only and are not used in determining the Pass/Fail results.
This report must not be used to claim product endorsement by TAF or any agency of the government.

Test Report

Issued Date: January 14, 2025

Project No.: 24Q111801-1

Product Name	Audio Device
Trade Name	AKAI PROFESSIONAL
Model Name	ACVG
FCC ID	Y4O-ACVG
Applicant	inMusic Brands, Inc.
Manufacturer	inMusic Brands, Inc.
EUT Rated Voltage	Battery 14.4V / AC 100-240V, 1.5A 50-60Hz
EUT Test Voltage	AC 120V / 60Hz
EUT Supports Radios Application	WLAN 802.11a/b/g WLAN 802.11n (HT20/40) WLAN 802.11ac(VHT20/40/80) and ax(HE20/40/80) Bluetooth BR/EDR/LE
Applicable Standard	47 CFR FCC Part 15, Subpart C (Section 15.247) KDB 558074 D01 DTS Meas. Guidance v05 ANSI C63.10 : 2013
Output Power	24.93 dBm
Test Result	Complied

Documented : Emma Lu

(Specialist / Emma Lu)

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(Assistant Section Manager / Jason Hsieh)

Approved : Gary Wu

(Project Manager / Gary Wu)

Table of Contents

Document Revision History

Report No.	Issue date	Description
WD-RF-R-240372-C0	January 14, 2025	Initial report

Summary of Test Result

Ref. Std. Clause	Test Items	Result
15.203 15.247(C)	Antenna Requirement	Pass
15.247(b)	Peak Output Power	Pass
15.247(a)(2)	6dB Bandwidth	Pass
15.247(e)	Power Spectral Density	Pass
15.247(d)	Conducted Band Edges and Conducted Spurious Emission	Pass
15.247(d)	Radiated Band Edges and Radiated Spurious Emission	Pass
15.207	AC Conducted Emission	Pass

1 Generation Information

1.1 Applicant

inMusic Brands, Inc.
200 Scenic View Drive, Cumberland, RI 02864, U.S.A.

1.2 Manufacturer

inMusic Brands, Inc.
200 Scenic View Drive, Cumberland, RI 02864, U.S.A.

1.3 Description of Equipment under Test

Product Name	Audio Device
Model No.	ACVG
FCC ID	Y4O-ACVG
Frequency Range	802.11b/g/n-HT20/ax-HE20: 2412~2462MHz
Number of Channels	802.11b/g/n/ax-20MHz: 11
Data Rate	802.11b：1M - 11Mbps 802.11g：6M - 54Mbps 802.11n：up to 144.4Mbps 802.11ax：up to 286.8Mbps
Channel separation	802.11b/g/n/ax: 5 MHz
Type of Modulation	802.11b:DSSS (DBPSK, DQPSK, CCK) 802.11g/n:OFDM (BPSK, QPSK, 16QAM, 64QAM) 802.11ax: OFDMA (BPSK, QPSK, 16~1024QAM)
Antenna Information	Refer to the table “Antenna List”
EUT Supports Radios Application	WLAN 802.11a/b/g WLAN 802.11n (HT20/40) WLAN 802.11ac(VHT20/40/80) and ax(HE20/40/80) Bluetooth BR/EDR/LE
EUT Rated Voltage	Battery 14.4V / AC 100-240V, 1.5A 50-60Hz
EUT Test Voltage	AC 120V / 60Hz

The EUT uses following adapter.

Trade Name	FSP
Model No.	FSP065-RBBN3
Input Power	AC 100-240V, 1.5A 50-60Hz
Output Power	DC 19.0V/3.42A 65.0W
Power Line	Shielded, 1 Core, 1.4m

Antenna List

No.	Manufacturer	Model No.	Antenna Type	Peak Gain
1	Brito Technology	OTDB1EM60-I0350	PCB Antenna	2 dBi for 2.4GHz
2	Brito Technology	OTDB1EM60-I0195	PCB Antenna	2 dBi for 2.4GHz

Remark: The antenna of EUT is conforming to FCC 15.203

Channel List

802.11b/g 802.11n-HT20/ax-HE20			
Channel	**Frequency(MHz)**	**Channel**	**Frequency(MHz)**
01	2412	07	2442
02	2417	08	2447
03	2422	09	2452
04	2427	10	2457
05	2432	11	2462
06	2437	--	--

Test Frequencies in each operating band

Frequency range over which the device operates in each operating band (Note 1)	Number of test frequencies required	Location of test frequencies inside the operating frequency range (Note 1,2)
≤ 1 MHz	1	near center
> 1 MHz and ≤ 10 MHz	2	1 near high end, 1 near low end
> 10 MHz	3	1 near high end, 1 near center, and 1 near low end

Note 1: The frequency range over which the device operates in a given operating band is the difference between the highest and lowest frequencies on which the device can be tuned within that given operating band. The frequency range can be smaller than or equal to the operating band, but cannot be greater than the operating band.

Note 2: In the third column of table 1, “near” means as close as possible to or at the center / low end / high end of the frequency range over which the device operates.

Firmware / Software Version

1	**Product Name**	Audio Device
2	**Model No.**	ACVG
3	**Test SW Version**	Putty Ver.0.63
4	**RF power setting in TEST SW**	☐ RF power setting was not able to alter during testing. ☒ RF power setting was able to alter during testing. (See the following table)

Parameters of test software setting

Type of Modulation	Channel	Frequency (MHz)	Set Value			
			Chain A	Chain B	Chain C	Chain D
802.11b	01	2412	15	15	--	--
	06	2437	15	15	--	--
	11	2462	12	12	--	--
802.11g	01	2412	11	11	--	--
	06	2437	11	11	--	--
	11	2462	9	9	--	--
802.11n HT20	01	2412	10	10	--	--
	06	2437	10	10	--	--
	11	2462	8	8	--	--
802.11ax HE20	01	2412	10	10	--	--
	06	2437	10	10	--	--
	11	2462	8	8	--	--

1.4 Test Mode Applicability And Tested Channel Detail

1. This device is a Audio Device with a built-in Wi-Fi and Bluetooth transceiver.
2. These tests were performed on a sample of equipment to demonstrate compliance with 47 CFR FCC Part 15, Subpart C (Section 15.247).
3. Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports.
4. The EUT has been pre-tested under the following mode A：Adapter and mode B：Battery. Test mode A：Adapter was the worst case for final test.
5. The worst case was found when positioned on X axis for radiated emission. Following test modes were selected for the final test, and the final worst case is recorded in the report:

EUT Configure Mode	RE < 1G	RE ≥ 1G	ACM	ACP
Mode 1：Transmit (802.11b 1Mbps)	☒	☒	☒	☐
Mode 2：Transmit (802.11g 6Mbps)	☒	☒	☒	☐
Mode 3：Transmit (802.11n HT20 MCS0)	☒	☒	☒	☐
Mode 4：Transmit (802.11ax HE20 MCS0)	☒	☒	☒	☐
Mode 5：Charging Mode	☐	☐	☐	☒

Note : RE<1G: Radiated Emission below 1GHz RE≥1G: Radiated Emission above 1GHz
ACM: Antenna Port Conducted Measurement ACP: AC Power Line Conducted Emission

Following channel(s) was (were) selected for the final test as listed below:

Radiated Spurious Emission Measurement(Below 1GHz):

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Type	Data Rate (Mbps)
--	802.11g	1 ~ 11	06	OFDM	6

Radiated Spurious Emission Measurement(Above 1GHz):

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Type	Data Rate (Mbps)
--	802.11b	1 ~ 11	01, 06, 11	DSSS	1
--	802.11g	1 ~ 11	01, 06, 11	OFDM	6
--	802.11n HT20	1 ~ 11	01, 06, 11	OFDM	MCS 0
--	802.11ax HE20	1 ~ 11	01, 06, 11	OFDMA	MCS 0

Radiated Band Edge Emission Measurement(Above 1GHz):

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Type	Data Rate (Mbps)
--	802.11b	1 ~ 11	01, 11	DSSS	1
--	802.11g	1 ~ 11	01, 11	OFDM	6
--	802.11n HT20	1 ~ 11	01, 11	OFDM	MCS 0
--	802.11ax HE20	1 ~ 11	01, 06, 11	OFDMA	MCS 0

Peak Output Power, 6dB Bandwidth, Power Spectral Density, Conducted Spurious Emission:

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Type	Data Rate (Mbps)
--	802.11b	1 ~ 11	01, 06, 11	DSSS	1
--	802.11g	1 ~ 11	01, 06, 11	OFDM	6
--	802.11n HT20	1 ~ 11	01, 06, 11	OFDM	MCS 0
--	802.11ax HE20	1 ~ 11	01, 06, 11	OFDMA	MCS 0

Conducted Band Edges:

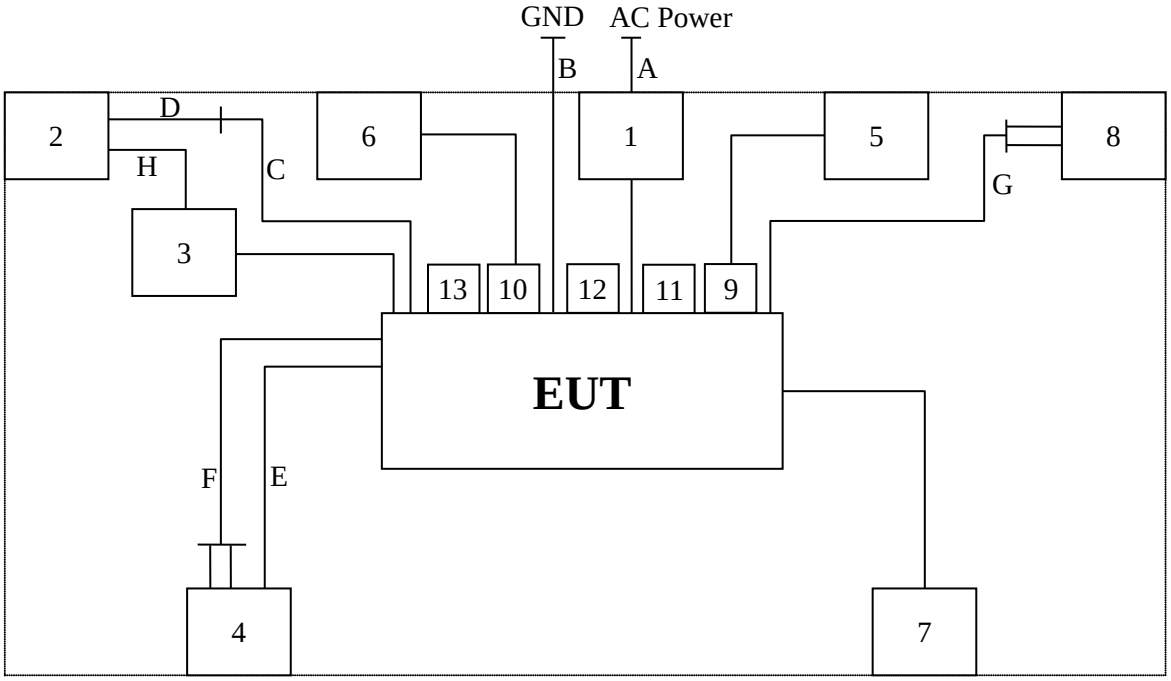
EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Type	Data Rate (Mbps)
--	802.11b	1 ~ 11	01, 11	DSSS	1
--	802.11g	1 ~ 11	01, 11	OFDM	6
--	802.11n HT20	1 ~ 11	01, 11	OFDM	MCS 0
--	802.11ax HE20	1 ~ 11	01, 06, 11	OFDMA	MCS 0

AC Conducted Emission:

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Type	Data Rate (Mbps)
--	802.11g	1 ~ 11	06	OFDM	6

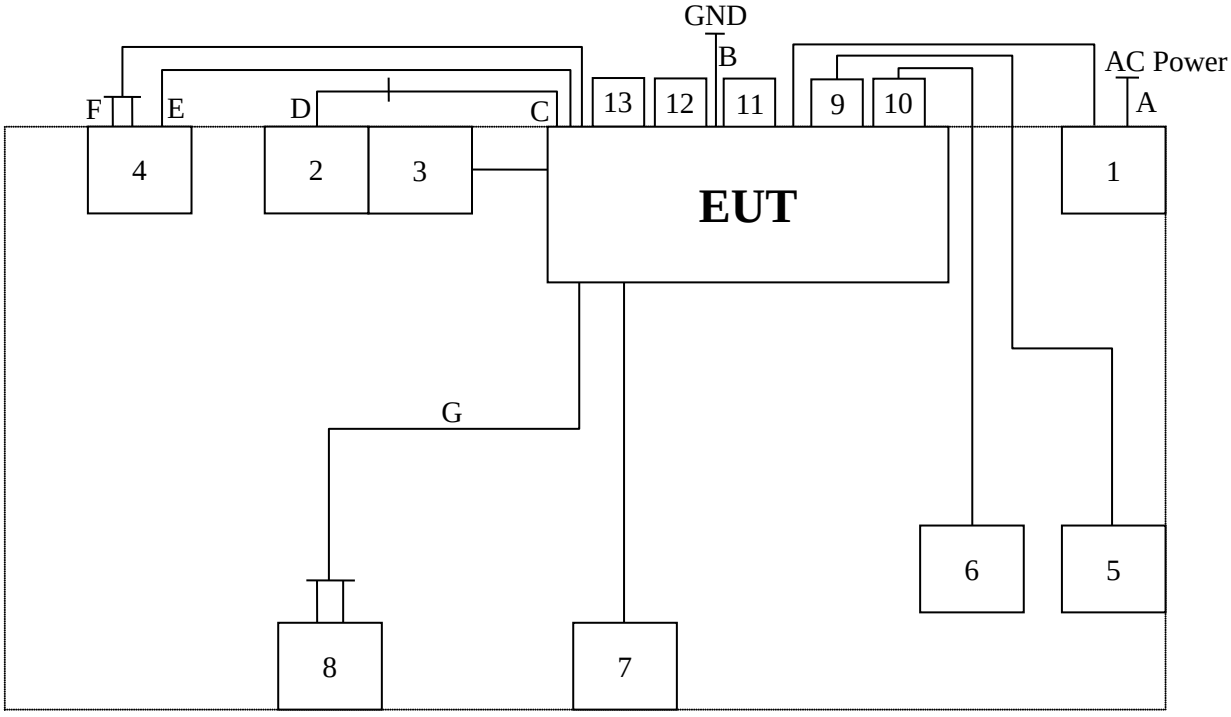
1.5 Configuration of Tested System

Radiation



Test Table

AC Conduction



Test Table

1.6 EUT Exercise Software

1. Setup the EUT as shown in Section 1.5
2. Execute software “Putty Ver.0.63”.
3. Configure the test mode, the test channel, and the data rate.
4. Press “OK” to start the continuous transmit.
5. Verify that the EUT works properly.

1.7 Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

No.	Product	Manufacturer	Model No.	Serial No.	Power Cord
1	Adapter	FSP	FSP065-RBBN3	N/A	Shielded, 1 Core, 1.4m
2	Notebook PC	acer	N16Q1	NXVD4TA023742254707600	N/A
3	Fixture	WD	CH340	N/A	N/A
4	4 in 1 Speaker	WD	SK-04	N/A	N/A
5	Speaker	Dell	AX-210	N/A	Non-shielded, Non-Core, 0.5m
6	Speaker	Dell	AX-210	N/A	Non-shielded, Non-Core, 0.5m
7	Microphone	PX	PK-120	N/A	Non-shielded, Non-Core, 3.2m
8	DVD Player	Dennys	DVD-6400	C7RJMCPHF0GQ	Non-shielded, Non-Core, 1.2m
9	6.3mm to RCA Connector	WD	TRS6.3M-RCA	N/A	N/A
10	6.3mm to RCA Connector	WD	TRS6.3M-RCA	N/A	N/A
11	SD Card& Micro SD Card	ADATA	MSC-2	N/A	N/A
12	Flash drive	SanDisk	SDCZ50-008G	N/A	N/A
13	Flash drive	SanDisk	SDDDC3-032G-G46	BM2407005781Z	N/A

No.	Signal Cable Type	Signal cable Description
A	Power Cable	Non-shielded, Non-Core,1m
B	Ground Cable	Non-shielded, Non-Core, 1.6m
C	RCA Cable	Non-shielded, Non-Core, 1.5m
D	3.5mm to RCA Cable	Non-shielded, Non-Core, 0.3m
E	3.5mm Audio Cable	Non-shielded, 2 Core, 1.5m
F	1 to 2 Audio Cable	Shielded, Non-Core, 1.5m
G	1 to 2 Audio Cable	Shielded, Non-Core, 1.5m
H	USB Cable	Shielded, Non-Core, 1m

Accessories:

No.	Product	Manufacturer	Model No.	Serial No.	Power Cord
1	Adapter	FSP	FSP065-RBBN3	N/A	Shielded, 1 Core, 1.4m

No.	Signal Cable Type	Signal cable Description
A	Power Cable	Non-shielded, Non-Core,1m

1.8 Test Facility

Items	Required (IEC 60068-1)
Temperature (°C)	15-35
Humidity (% RH)	25-75
Barometric pressure (mbar)	860-1060

Description: Accredited by TAF
Accredited Number: 2965

Issued by: Wendell Industrial Co., Ltd

Company Address: 6F/6F-1, No.188, Baoqiao Rd., Xindian Dist.,
New Taipei City 23145, Taiwan R.O.C

Test Lab: Wendell EMC & RF Laboratory

Lab Address: 5F-1, No.188, Baoqiao Rd., Xindian Dist.,
New Taipei City 23145, Taiwan R.O.C

Test Location: No. 119, Wugong 3rd Rd., Wugu Dist.,
New Taipei City 248, Taiwan (R.O.C.)

Designation Number: TW0025

Test Firm Registration Number: 665221

1.9 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence (level based on a coverage factor K=2)

Measurement Project	Condition	Expended Uncertainty
AC Conducted Emission	0.150 ~ 30 MHz	± 2.64 dB
Radiated Emission	0.009 ~ 30 MHz	± 1.8 dB
	30 ~ 1000 MHz	± 1.8 dB
	1000 ~ 18000 MHz	± 3.0 dB
	18000 ~ 40000 MHz	± 3.0 dB
RF Power, Conducted	Conducted Measuring	± 1.3 dB
Occupied Bandwidth	Conducted Measuring	± 2.4 %
Power Density	Conducted Measuring	± 1.2 dB
Duty Cycle and Dwell Time	Conducted Measuring	± 0.9 %
Conducted Unwanted Emission Strength	Conducted Measuring	± 1.4 dB
DC Power Supply	--	± 0.068 ppm
Temperature	--	± 2.1 %
Humidity	--	± 0.58 °C

Note: Please note that the measurement uncertainty are provided for informational purpose only and are not used in determining the Pass/Fail results.

1.10 List of Test Equipment

For Conducted measurements / W08-Conducted Measurement

Equipment		Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
✓	Spectrum analyzer	Keysight	N9010A	SG50420005	2024/08/09	2025/08/08
✓	Wideband Peak Power Meter	Anritsu	ML2495A	1733007	2024/09/05	2025/09/04
✓	Pulse Power Sensor + Precision Adaptor	Anritsu	MA2411B	1726022	2024/09/05	2025/09/04
	Temperature Chamber	TAICHY	MHK-225LK	1061121	2024/04/19	2025/04/18
	Wireless Connectivity Tester	R&S	CMW270	101307	2024/06/04	2025/06/03
✓	Attenuator	MVE	MVE2211-10	CT-9-056	2024/08/08	2026/08/07
	Attenuator	MVE	MVE2211-20	CT-9-057	2024/08/08	2026/08/07
	Attenuator	MVE	MVE2211-30	CT-9-058	2024/08/08	2026/08/07
	Power Divider	MVE	MVE8546	170826003	2024/08/08	2026/08/07
	Power Splitter	MVE	MVE8547	170302047	2024/08/10	2026/08/09
	DC Power Supply	GW INSTEK	GPC-3060D	GER817636	2024/08/05	2025/08/04

Remark:

1. The equipments are calibrated every one year.
2. The Attenuator/ Divider/ Splitter are calibrated every two year.
3. The test instruments marked with "✓" are used to measure the final test results.

For AC Conduction measurements / W08-CE

Equipment		Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
✓	EMI Test Receiver	R&S	ESR3	102309	2024/06/21	2025/06/20
✓	2-Line V-Network LISN	R&S	ENV216	101185	2024/06/20	2025/06/19
✓	LISN	SCHWARZBECK	NSLK 8127RC	05028	2024/06/20	2025/06/19
✓	Transient Limiter	EM Electronics Corporation	EM-7600	857	2024/06/24	2025/06/23
✓	50ohm Cable	EMCI	EMCCFD300-BM-BM-5000	170612	2024/06/24	2025/06/23
✓	50 ohm terminal impedance	HUBER+SUHNER	50 ohm terminal impedance	CT-1-109-1	2024/06/20	2025/06/19

Remark:

1. All equipments are calibrated every one year.
2. The test instruments marked with "✓" are used to measure the final test results.
3. Test Software version: FARAD EZ-EMC Ver.EMC-CON 3A1

For Radiated measurements / W08-996-2

	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
✓	EMI Receiver	Keysight	N9038A	MY51210173	2024/08/21	2025/08/20
✓	Spectrum Analyzer	Keysight	N9010A	MY52220228	2024/08/19	2025/08/18
✓	Active Loop Antenna	Schwarzbeck	FMZB 1513-60B	00033	2024/05/02	2025/05/01
✓	TRILOG super broad Antenna	Schwarzbeck	VULB 9168	VULB 9168-700 & 20E03	2024/07/23	2025/07/22
✓	Horn Antenna	Schwarzbeck	BBHA 9120D	01767	2024/08/15	2025/08/14
✓	Horn Antenna	Schwarzbeck	BBHA 9170	703	2024/08/15	2025/08/14
✓	Pre-Amplifier	EM	EMC330	060774	2024/08/16	2025/08/15
✓	Pre-Amplifier	EMEC	EM01G18G	060648	2024/08/16	2025/08/15
✓	Pre-Amplifier	JPT	JPA0118-55-303K	1910001800055003	2024/08/20	2025/08/19
✓	Pre-Amplifier	EMCI	EMC184045SE	980515	2024/08/16	2025/08/15
✓	Cable	EMEC	EM-CB400	105060103	2024/08/21	2025/08/20
✓	Cable	EMEC	EM-CB400	105060102	2024/08/21	2025/08/20
✓	Cable	EMEC	EM-CB400	105060101	2024/08/21	2025/08/20
✓	RF Cable	HUBER+SUHNER	SF102	MY2752/2	2024/08/21	2025/08/20
✓	RF Cable	MVE	280280.LL266.1200	C90177C	2024/08/21	2025/08/20
✓	RF Cable	EMCI	EMC102-KM-KM-600	190646	2024/08/21	2025/08/20
✓	RF Cable	MVE	140140.LL404.700	B90014C	2024/08/21	2025/08/20
✓	RF Cable	MVE	140140.LL404.300	B90006C	2024/08/21	2025/08/20
✓	RF Filter	EMEC	BRF-2400-2500	002	2024/08/26	2026/08/25
	RF Filter	EMEC	BRF-5150-5350	104	2024/08/26	2026/08/25
	RF Filter	EMEC	BRF-5470-5725	092	2024/08/26	2026/08/25
	RF Filter	EMEC	BRF-5725-5875	091	2024/08/26	2026/08/25
✓	RF Filter	EMEC	HPF-2800	002	2024/08/26	2026/08/25
	RF Filter	EMEC	HPF-5850	059	2024/08/26	2026/08/25
	SMA Notch Filter	MVE	MFN-902.928.S1	190604001	2024/08/21	2026/08/20

Remark:

1. The equipments are calibrated every one year.
2. The Filter calibrated every two year.
3. The test instruments marked with "✓" are used to measure the final test results.
4. Test Software version: FARAD EZ-EMC Ver.WD-03A1-1

2 Test Result

2.1 Antenna Requirement

2.1.1 Applicable Standard

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.

An intentional radiator shall be designed to ensure that no antenna other than as furnished by the responsible party shall be used with the device. If transmitting antennas of directional gain greater than 6dBi are using the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi, for compliance to FCC 47CFR 15.247 (c) requirements.

2.1.2 Antenna Connected Construction

Non-standard antenna connector is used.

2.1.3 Antenna Gain

No.	Manufacturer	Model No.	Antenna Type	Peak Gain
1	Brito Technology	OTDB1EM60-I0350	PCB Antenna	2 dBi for 2.4GHz
2	Brito Technology	OTDB1EM60-I0195	PCB Antenna	2 dBi for 2.4GHz

Description of the operating transmit modes：

＊ 802.11b：CDD mode, this port is MIMO

＊ 802.11g：CDD mode, this port is MIMO

＊ 802.11n_HT20：MIMO mode, this port is MIMO

＊ 802.11ax_HE20：MIMO mode, this port is MIMO

Directional gain calculation & Conducted Output Power limit after correction：

＊802.11b：Directional Gain = GANT + Array Gain = 2 dBi ≤ 6dBi；

＊802.11g：Directional Gain = GANT + Array Gain = 2 dBi ≤ 6dBi；

＊802.11n_HT20：Directional Gain = 10*log{[10^(G1/20)+10^(G2/20)+…+10^(Gn/20)]^2/NANT} = 5.01 dBi ≤ 6dBi；

＊802.11ax_HE20：Directional Gain = 10*log{[10^(G1/20)+10^(G2/20)+…+10^(Gn/20)]^2/NANT} = 5.01 dBi ≤ 6dBi；

Directional gain calculation & Power Spectral Density limit after correction：

＊802.11b：Directional Gain = GANT + Array Gain = 2 dBi ≤ 6dBi；

＊802.11g：Directional Gain = GANT + Array Gain = 2 dBi ≤ 6dBi；

＊802.11n_HT20：Directional Gain = 10*log{[10^(G1/20)+10^(G2/20)+…+10^(Gn/20)]^2/NANT} = 5.01 dBi ≤ 6dBi；

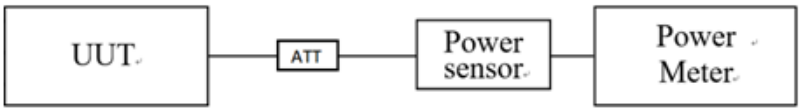
＊802.11ax_HE20：Directional Gain = 10*log{[10^(G1/20)+10^(G2/20)+…+10^(Gn/20)]^2/NANT} = 5.01 dBi ≤ 6dBi；

2.2 Peak Output Power Measurement

2.2.1 Limit

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is 1W. If transmitting antenna of directional gain greater than 6dBi is used, the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

2.2.2 Test Setup



2.2.3 Test Procedure

1. Reference ANSI C63.10 : 2013 chapter 11.9.1.3
2. Enable the EUT transmit continuously.
3. Let EUT be connected to the power meter, and record the max. reading.
4. Measurement using a gated RF average power meter, since this measurement is made only during the ON time of the transmitter, no duty cycle correction is required.

2.2.4 Test Result

Mode	Frequency (MHz)	Peak power (dBm)			Limit (dBm)	Result
		Chain A	Chain B	Total		
802.11b	2412	18.95	17.81	21.43	≤ 30	Pass
	2437	19.11	18.06	21.63	≤ 30	Pass
	2462	16.23	15.45	18.87	≤ 30	Pass
802.11g	2412	21.76	21.10	24.45	≤ 30	Pass
	2437	22.02	21.82	24.93	≤ 30	Pass
	2462	19.90	20.55	23.25	≤ 30	Pass
802.11n HT20	2412	21.53	20.33	23.98	≤ 30	Pass
	2437	21.63	20.47	24.10	≤ 30	Pass
	2462	18.44	17.86	21.17	≤ 30	Pass
802.11ax HE20	2412	21.18	20.64	23.93	≤ 30	Pass
	2437	21.21	20.91	24.07	≤ 30	Pass
	2462	18.81	16.95	20.99	≤ 30	Pass

Remark:

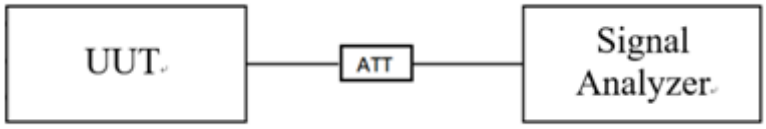
1. Peak Power = Reading value on power meter + cable loss
2. 10 Log(X/mW) = dBm, X=1 watt (Limit)
   1 watt = 30 dBm

2.3 6dB Bandwidth Measurement

2.3.1 Limit

The minimum 6 dB bandwidth shall be at least 500 kHz.

2.3.2 Test Setup



2.3.3 Test Procedure

1. Reference ANSI C63.10 : 2013 chapter 11.8.2
2. Enable the EUT transmit continuously.
3. Spectrum analyzer set:
   a) RBW = 100 kHz
   b) VBW ≥ 3 RBW
   c) Detector = peak
   d) Sweep time = auto couple
   e) Trace mode = max hold.

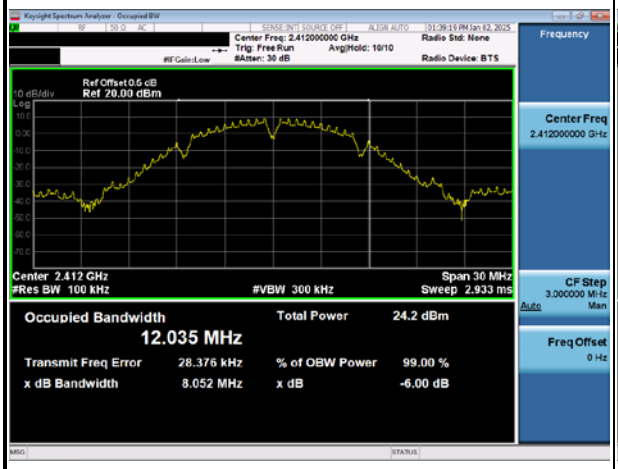
2.3.4 Test Result

802.11b

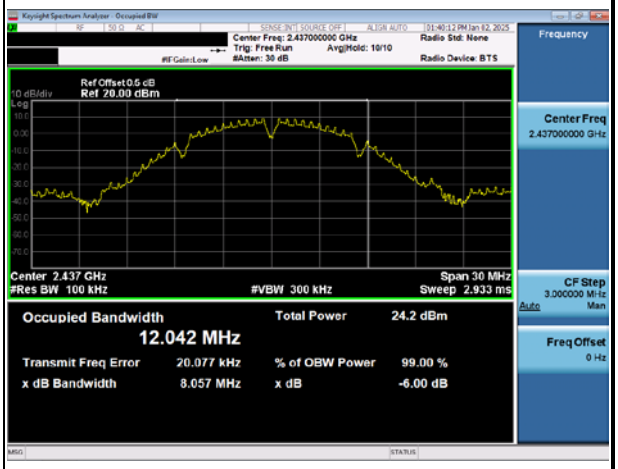
Frequency (MHz)	6dB BW (kHz)		Limit (kHz)	Result
	Chain A	Chain B		
2412	8052	8053	≥ 500	Pass
2437	8057	8067	≥ 500	Pass
2462	8057	8057	≥ 500	Pass

Chain A

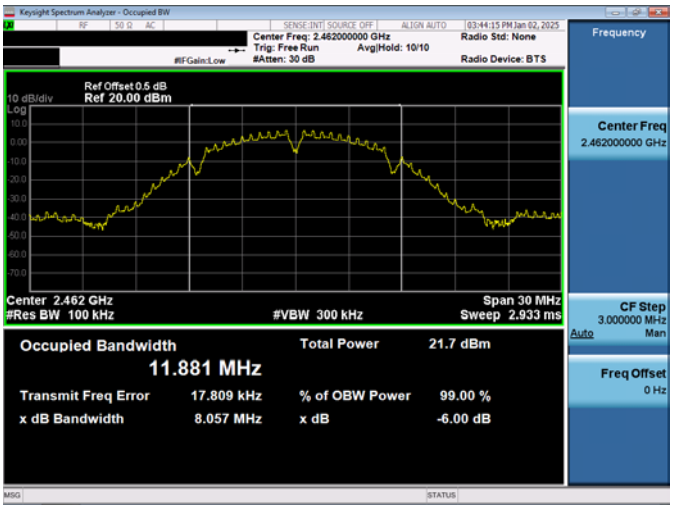
WLAN 802.11b (2412 MHz)



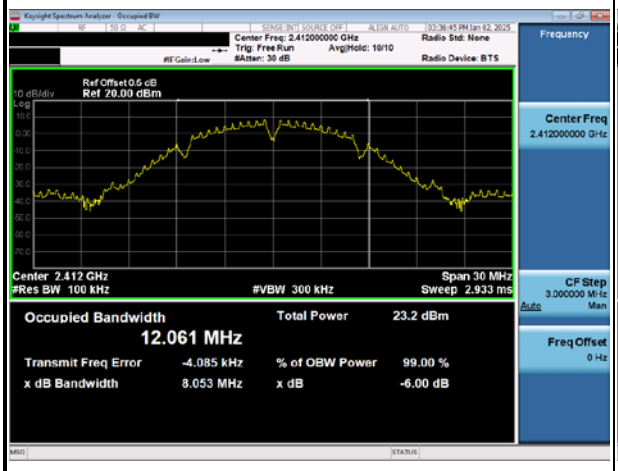
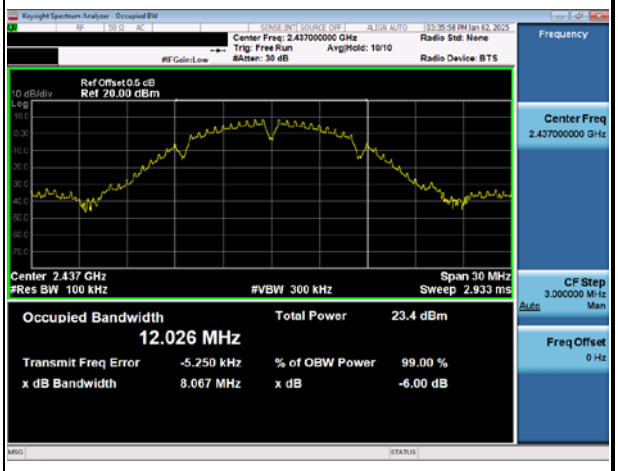
WLAN 802.11b (2437 MHz)

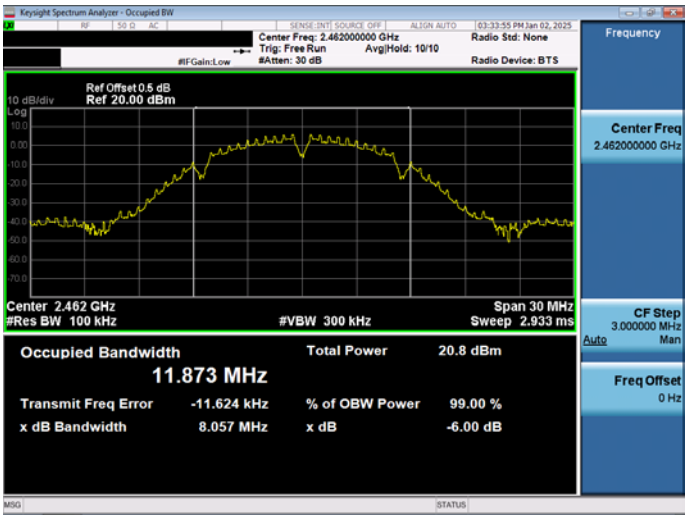


WLAN 802.11b (2462 MHz)



Chain B

WLAN 802.11b (2412 MHz)	WLAN 802.11b (2437 MHz)
	

WLAN 802.11b (2462 MHz)


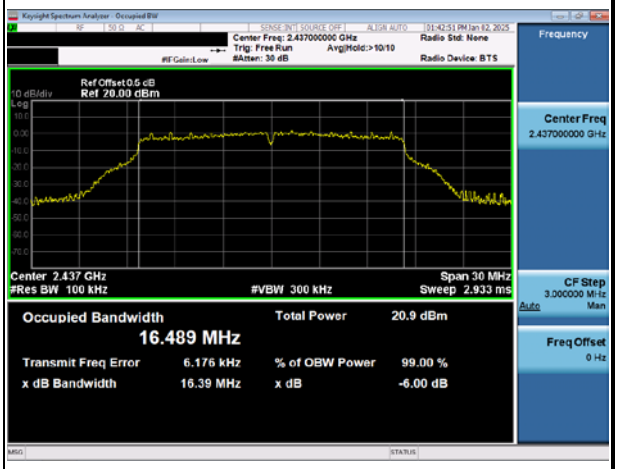
802.11g

Frequency (MHz)	6dB BW (kHz)		Limit (kHz)	Result
	Chain A	Chain B		
2412	16390	16430	≥ 500	Pass
2437	16390	16410	≥ 500	Pass
2462	16390	16410	≥ 500	Pass

Chain A

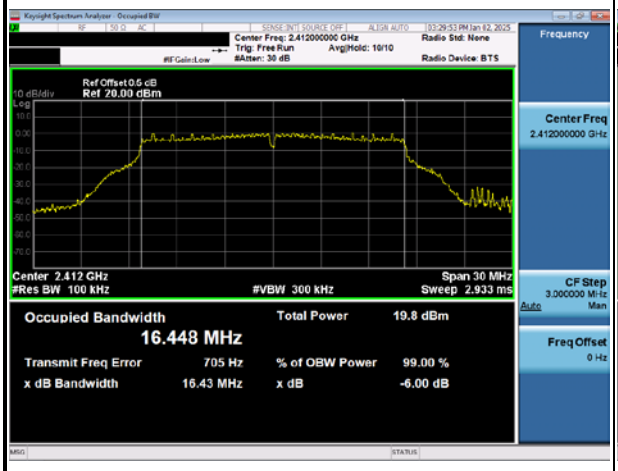
WLAN 802.11g (2412 MHz)

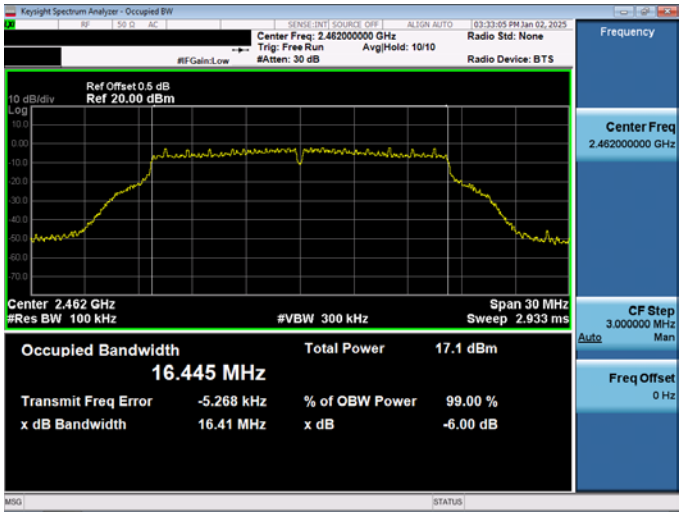
WLAN 802.11g (2437 MHz)



WLAN 802.11g (2462 MHz)

Chain B

WLAN 802.11g (2412 MHz)	WLAN 802.11g (2437 MHz)
	

WLAN 802.11g (2462 MHz)


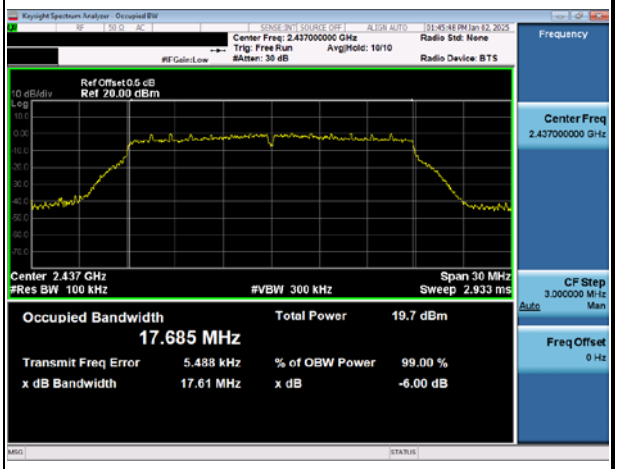
802.11n HT20

Frequency (MHz)	6dB BW (kHz)		Limit (kHz)	Result
	Chain A	Chain B		
2412	17620	17630	≥ 500	Pass
2437	17610	17660	≥ 500	Pass
2462	17620	17660	≥ 500	Pass

Chain A

WLAN 802.11n HT20 (2412 MHz)

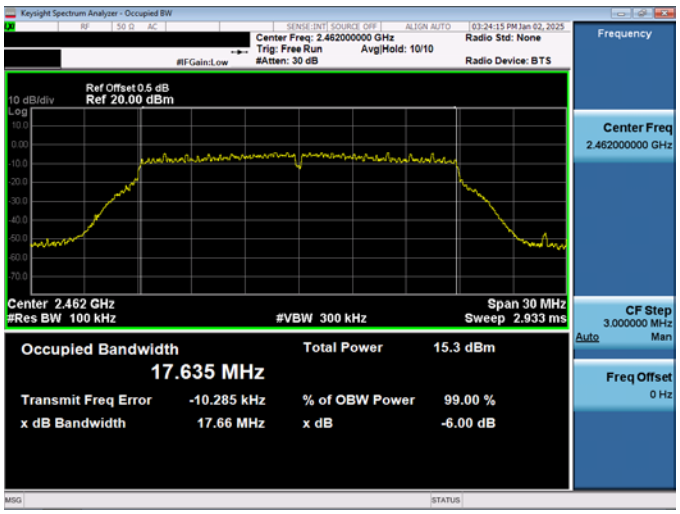
WLAN 802.11n HT20 (2437 MHz)



WLAN 802.11n HT20 (2462 MHz)

Chain B

WLAN 802.11n HT20 (2412 MHz)	WLAN 802.11n HT20 (2437 MHz)
	

WLAN 802.11n HT20 (2462 MHz)


802.11ax HE20

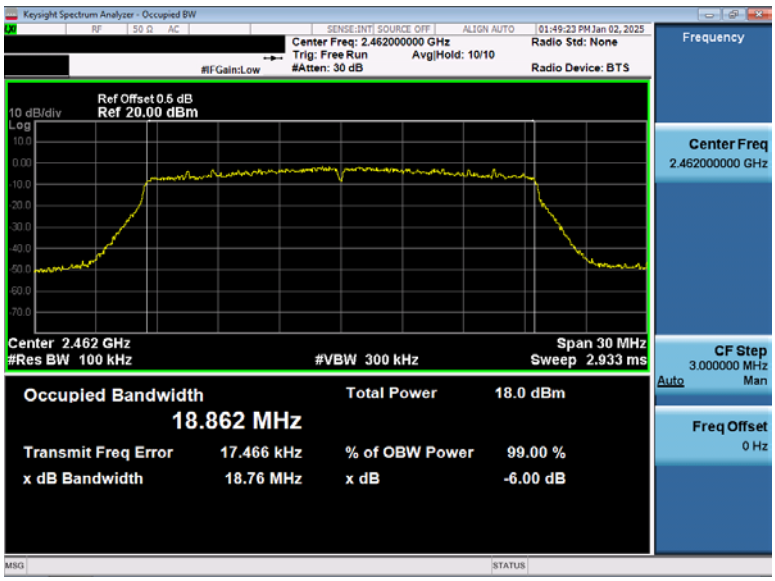
Channel	Frequency (MHz)	6dB BW (kHz)		Limit (kHz)	Result
		Chain A	Chain B		
1	2412	18760	18870	≥ 500	Pass
6	2437	18770	18940	≥ 500	Pass
11	2462	18760	18890	≥ 500	Pass

Chain A

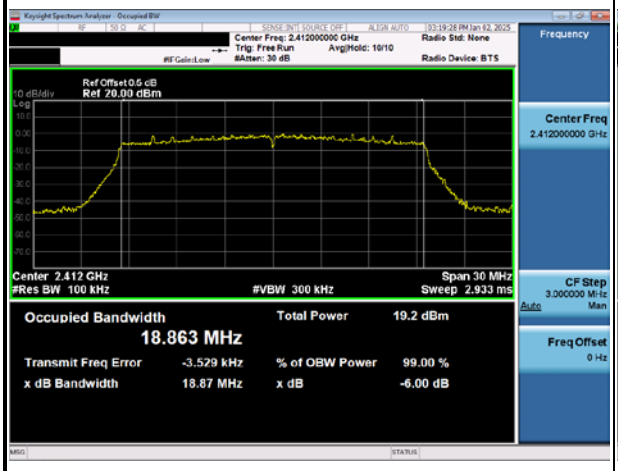
WLAN 802.11ax HE20 (2412 MHz)

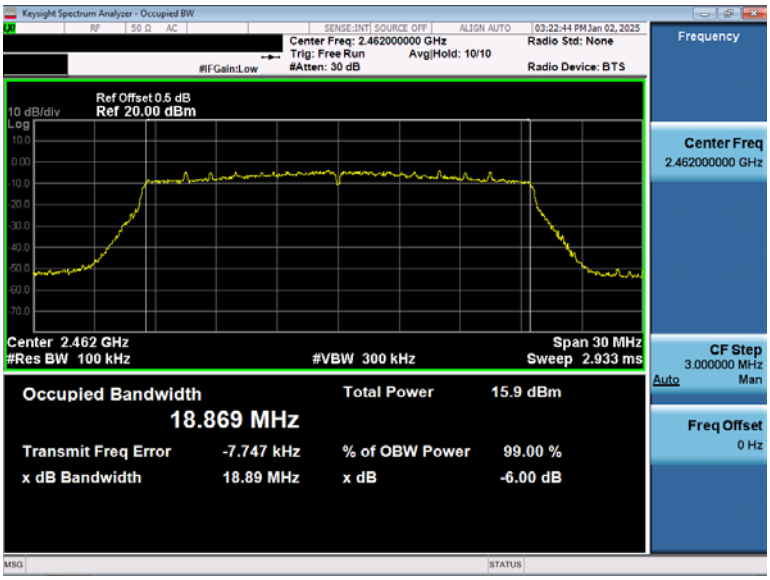
WLAN 802.11ax HE20 (2437 MHz)

WLAN 802.11ax HE20 (2462 MHz)



Chain B

WLAN 802.11ax HE20 (2412 MHz)	WLAN 802.11ax HE20 (2437 MHz)
	

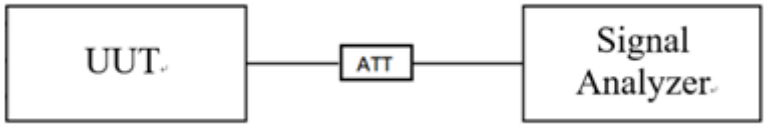
WLAN 802.11ax HE20 (2462 MHz)


2.4 Power Spectral Density Measurement

2.4.1 Limit

The peak power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.

2.4.2 Test Setup



2.4.3 Test Procedure

1. Reference ANSI C63.10 : 2013 chapter 11.10.2
2. Enable the EUT transmit continuously.
3. Spectrum analyzer set:
   a) RBW = 3 kHz ~ 100 kHz
   b) VBW ≥ 3 RBW
   c) Span = 1.5 times DTS Channel 6dB Bandwidth
   d) Detector = peak
   e) Sweep time = auto couple
   f) Trace mode = max hold.

2.4.4 Test Result

802.11b

Frequency (MHz)	Power Spectral Density (dBm)			Limit (dBm)	Result
	Chain A	Chain B	Total		
2412	-4.154	-5.476	-1.755	≤ 8	Pass
2437	-3.768	-5.077	-1.363	≤ 8	Pass
2462	-7.457	-7.525	-4.481	≤ 8	Pass

Remark: PSD = Reading value on spectrum analyzer + cable loss

Chain A

WLAN 802.11b (2412 MHz)

WLAN 802.11b (2437 MHz)

WLAN 802.11b (2462 MHz)

Chain B

WLAN 802.11b (2412 MHz)	WLAN 802.11b (2437 MHz)
	

WLAN 802.11b (2462 MHz)


802.11g

Frequency (MHz)	Power Spectral Density (dBm)			Limit (dBm)	Result
	Chain A	Chain B	Total		
2412	-9.555	-10.994	-7.205	≤ 8	Pass
2437	-10.054	-11.171	-7.566	≤ 8	Pass
2462	-12.702	-14.442	-10.475	≤ 8	Pass

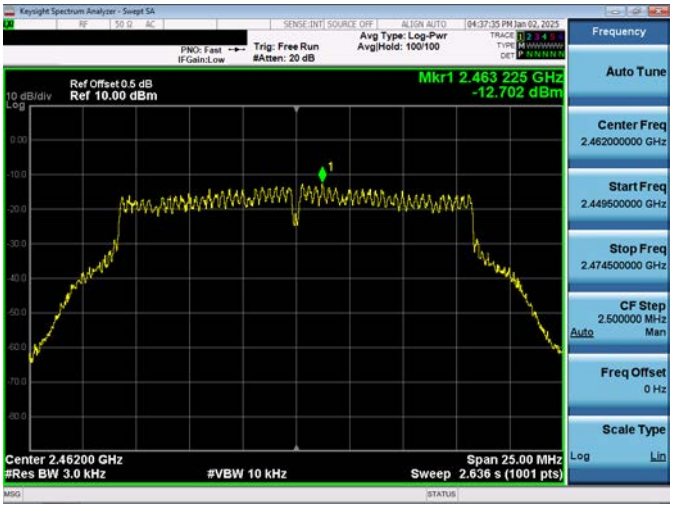
Remark: PSD = Reading value on spectrum analyzer + cable loss

Chain A

WLAN 802.11g (2412 MHz)

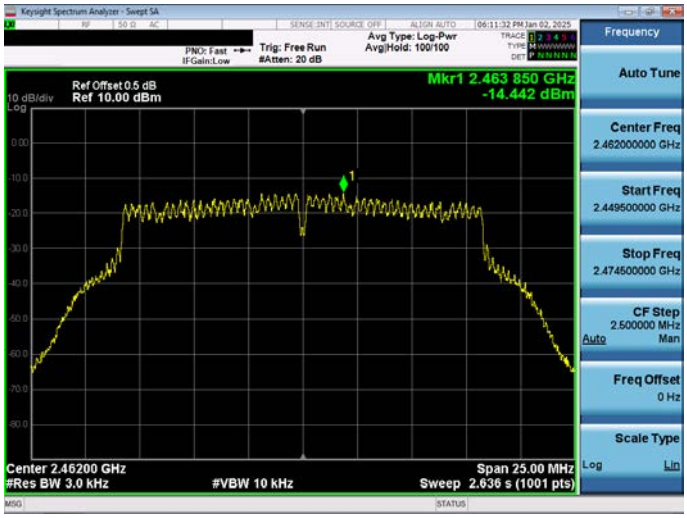
WLAN 802.11g (2437 MHz)

WLAN 802.11g (2462 MHz)



Chain B

WLAN 802.11g (2412 MHz)	WLAN 802.11g (2437 MHz)
	

WLAN 802.11g (2462 MHz)


802.11n HT20

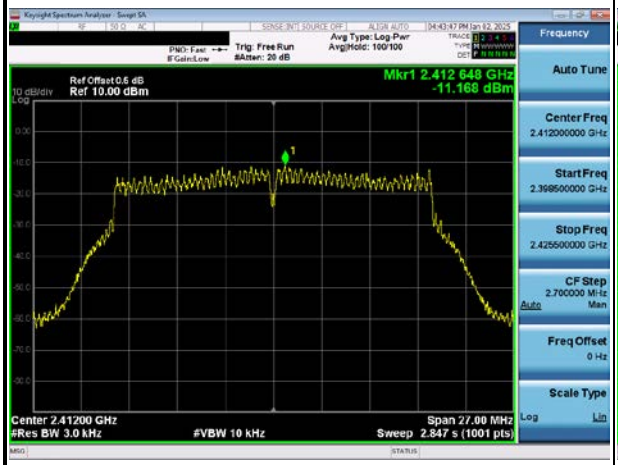
Frequency (MHz)	Power Spectral Density (dBm)			Limit (dBm)	Result
	Chain A	Chain B	Total		
2412	-11.168	-12.532	-8.786	≤ 8	Pass
2437	-11.111	-12.573	-8.770	≤ 8	Pass
2462	-14.340	-15.762	-11.983	≤ 8	Pass

Remark:

1. PSD = Reading value on spectrum analyzer + cable loss
2. Section E) method 2) b) of power density measurement of KDB 662911 is used for calculating total power density.

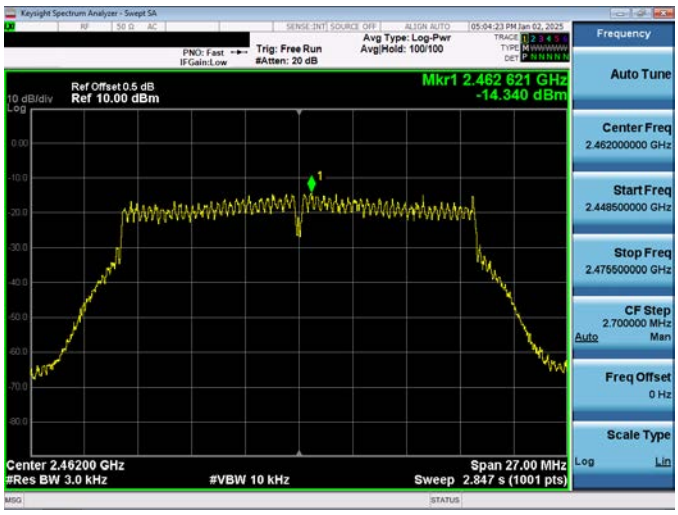
Chain A

WLAN 802.11n HT20 (2412 MHz)

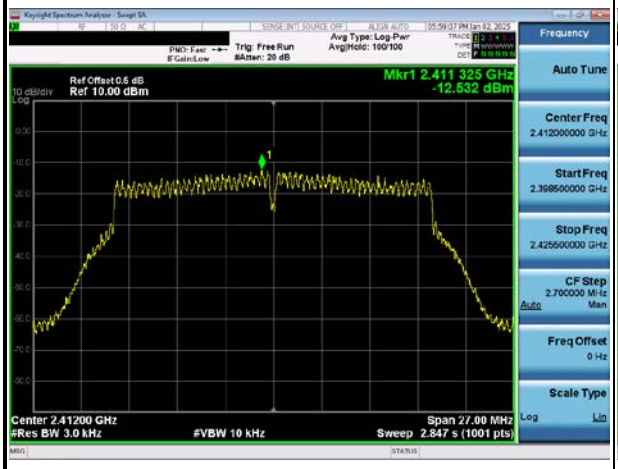
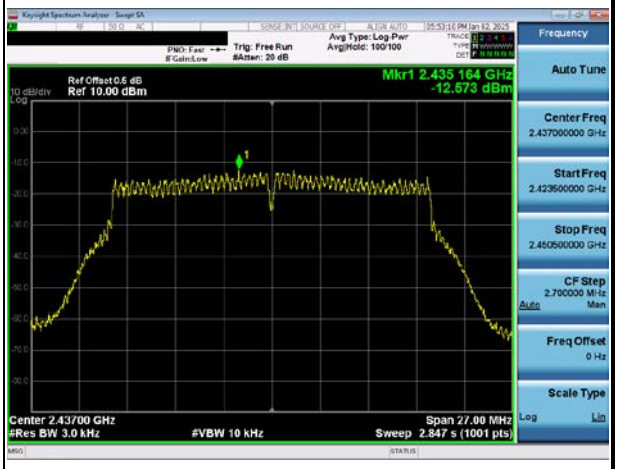


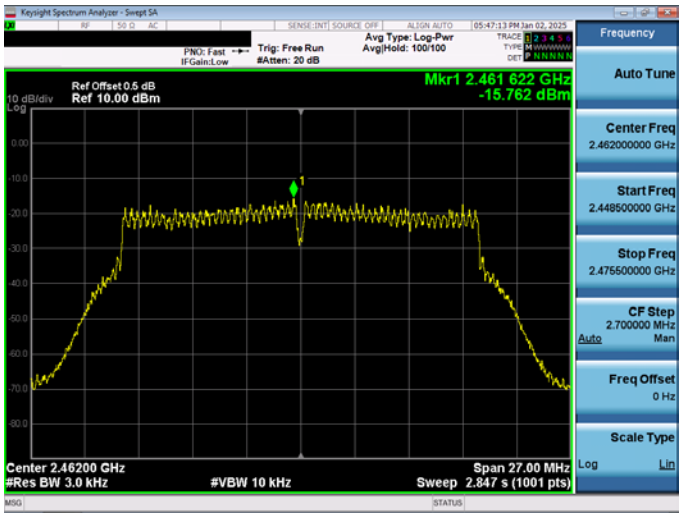
WLAN 802.11n HT20 (2437 MHz)

WLAN 802.11n HT20 (2462 MHz)



Chain B

WLAN 802.11n HT20 (2412 MHz)	WLAN 802.11n HT20 (2437 MHz)
	

WLAN 802.11n HT20 (2462 MHz)


802.11ax HE20

Channel	Frequency (MHz)	PSD (dBm)			Limit (dBm)	Result
		Chain A	Chain B	Total		
1	2412	-12.128	-12.209	-9.158	≤ 8	Pass
6	2437	-11.762	-12.924	-9.294	≤ 8	Pass
11	2462	-14.052	-15.629	-11.759	≤ 8	Pass

Remark:

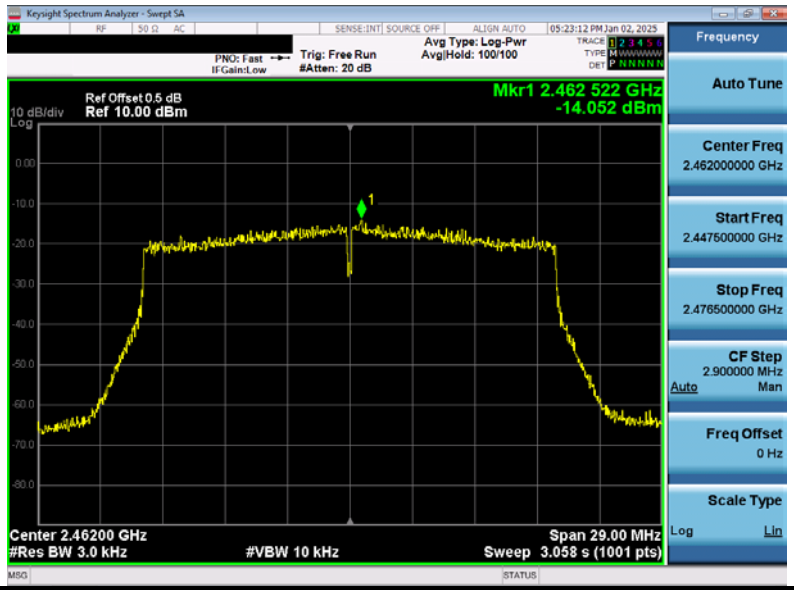
1. PSD = Reading value on spectrum analyzer + cable loss
2. Section E) method 2) b) of power density measurement of KDB 662911 is used for calculating total power density.

Chain A

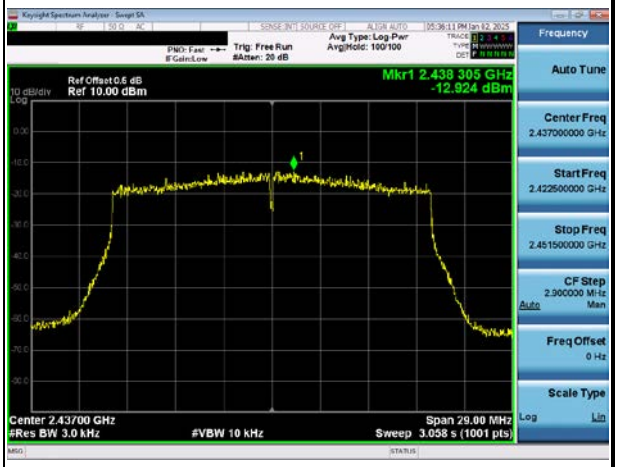
WLAN 802.11ax HE20 (2412 MHz)

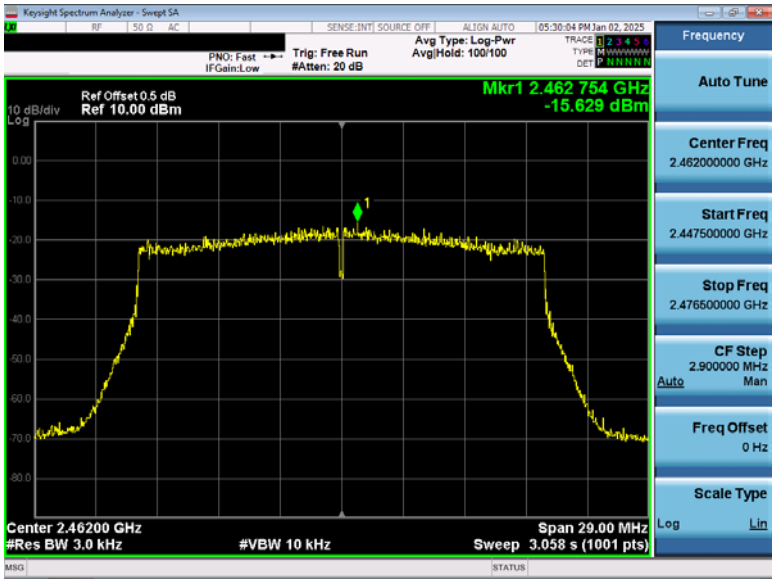
WLAN 802.11ax HE20 (2437 MHz)

WLAN 802.11ax HE20 (2462 MHz)



Chain B

WLAN 802.11ax HE20 (2412 MHz)	WLAN 802.11ax HE20 (2437 MHz)
	

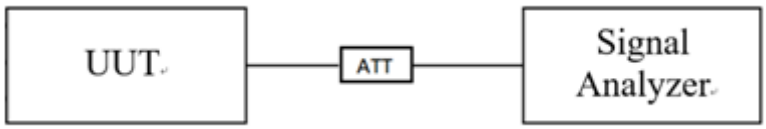
WLAN 802.11ax HE20 (2462 MHz)


2.5 Conducted Band Edges and Spurious Emission Measurement

2.5.1 Limit

In any 100 KHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100KHz bandwidth within the band that contains the highest level of the desired power, In addition, radiated emissions which fall in the restricted bands, as defined in must also comply with the radiated emission limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB

2.5.2 Test Setup

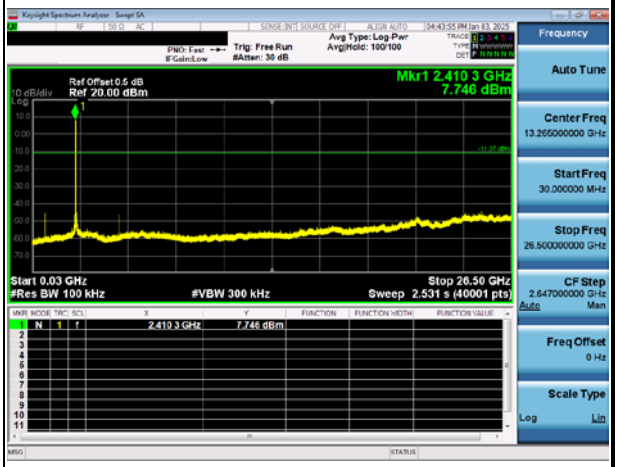
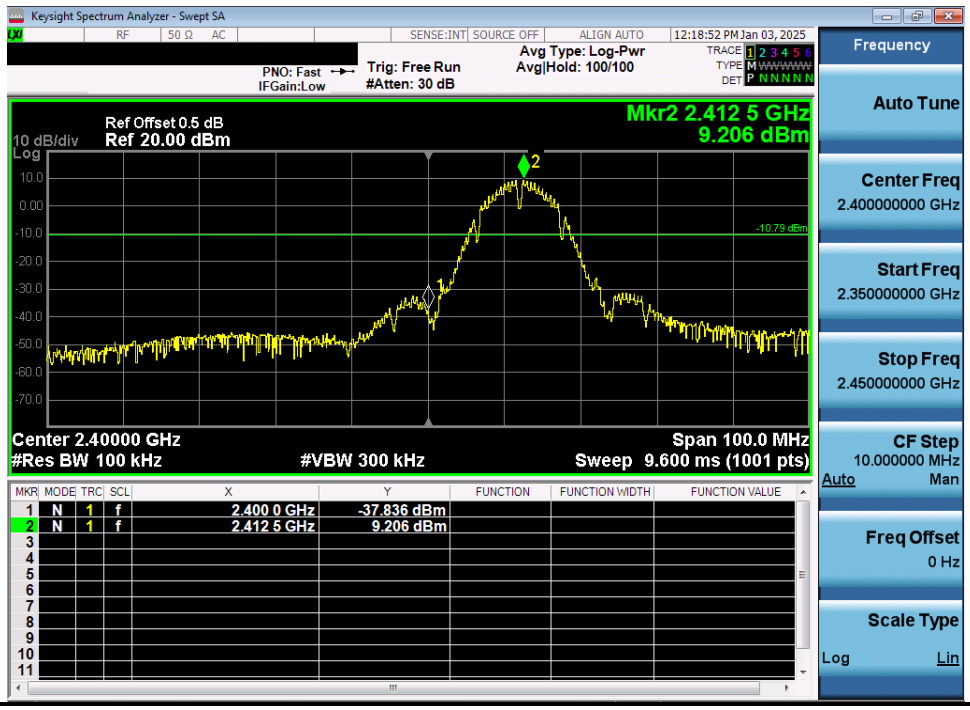


2.5.3 Test Procedure

1. Reference ANSI C63.10 : 2013 chapter 6.10
2. Enable the EUT transmit continuously.
3. Spectrum analyzer set :
   a) RBW = 100 kHz
   b) VBW ≥ 3 RBW
   c) Detector = peak
   d) Sweep time = auto couple
   e) Trace mode = max hold.

2.5.4 Test Result

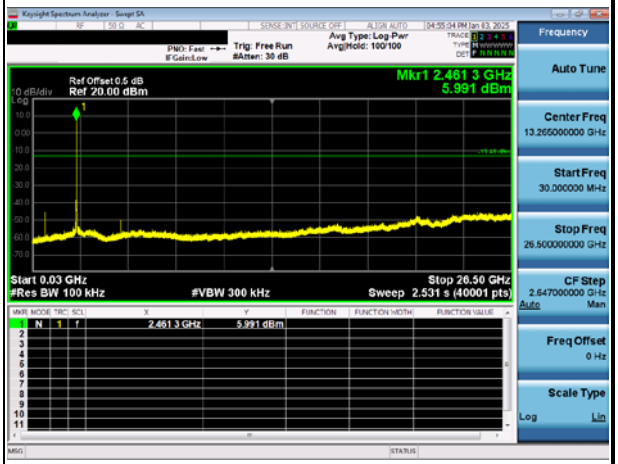
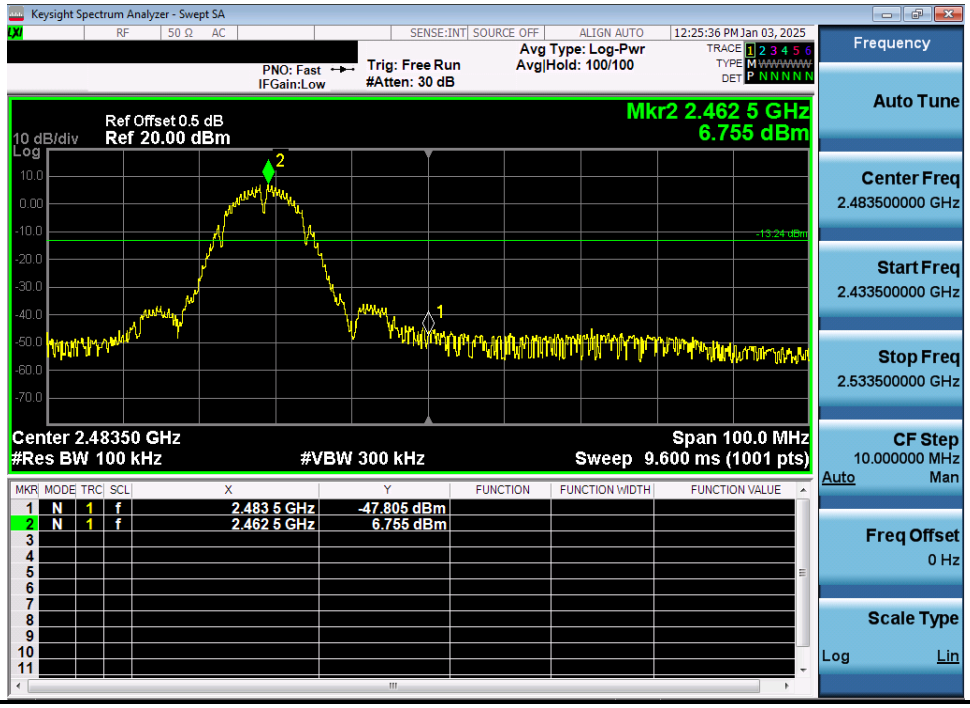
Chain A

WLAN 802.11b channel 01 (2412 MHz)	
Reference Level	**Spurious Emission**
	
Band Edge	
	

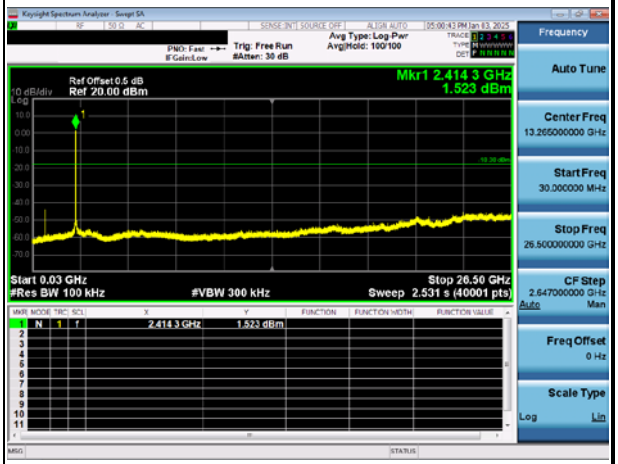
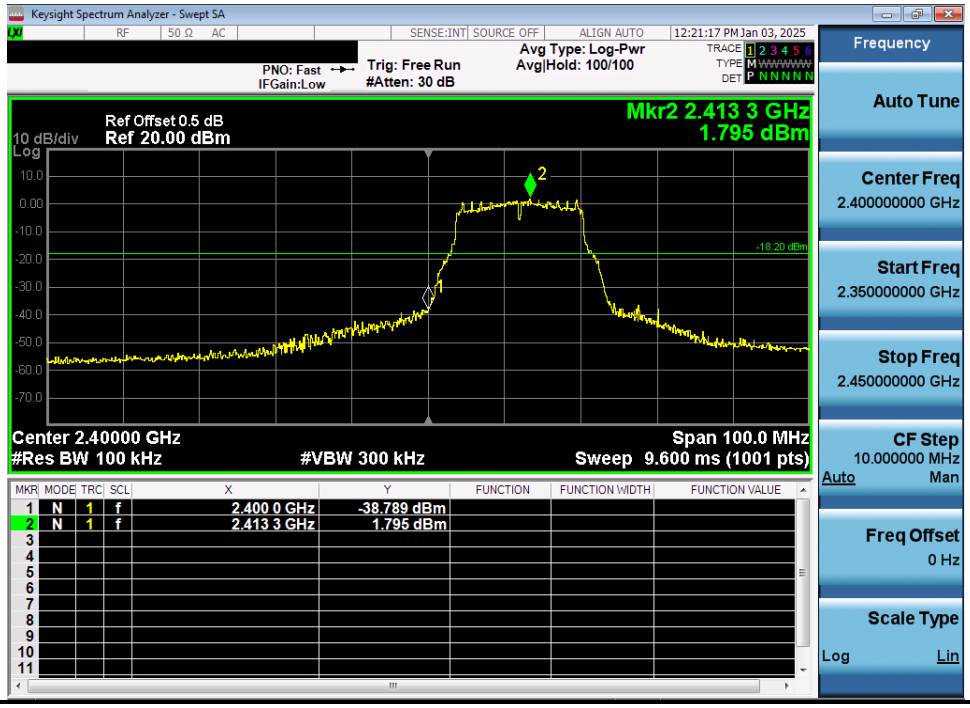
Chain A

WLAN 802.11b channel 06 (2437 MHz)	
Reference Level	**Spurious Emission**
	

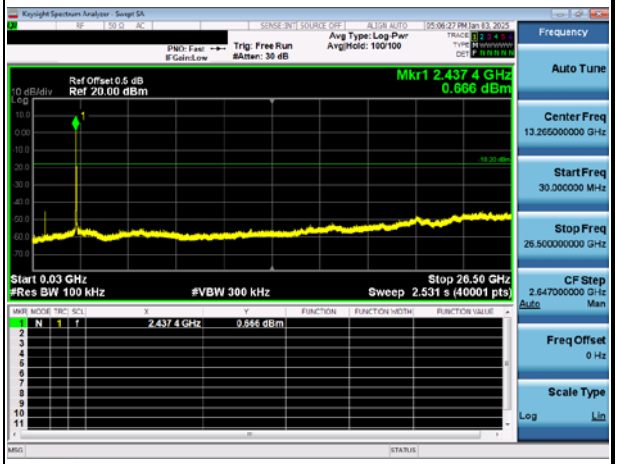
Chain A

WLAN 802.11b channel 11 (2462MHz)	
Reference Level	**Spurious Emission**
	
Band Edge	
	

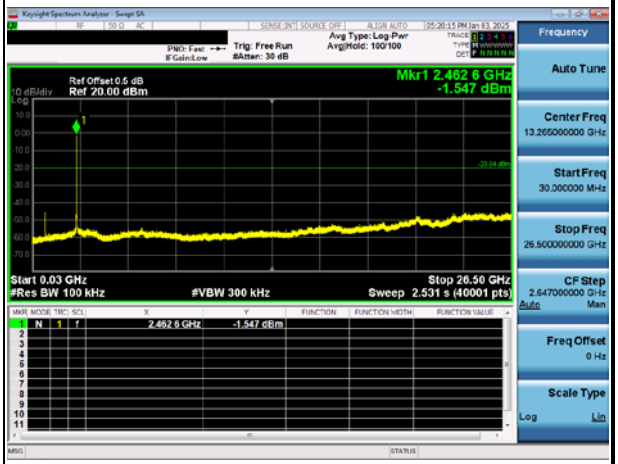
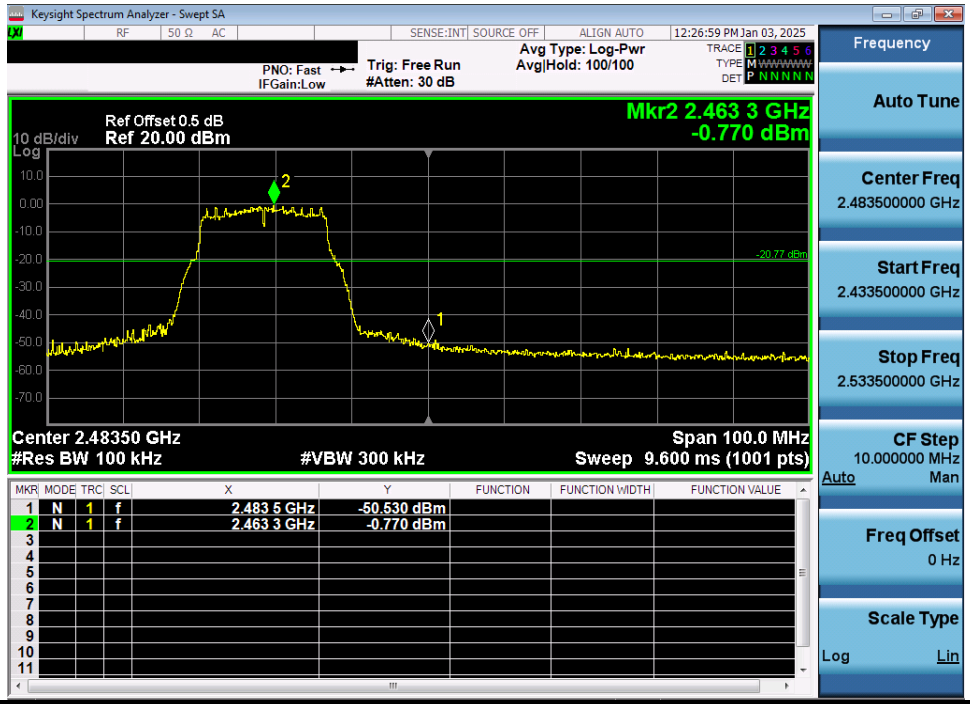
Chain A

WLAN 802.11g channel 01 (2412 MHz)	
Reference Level	**Spurious Emission**
	
Band Edge	
	

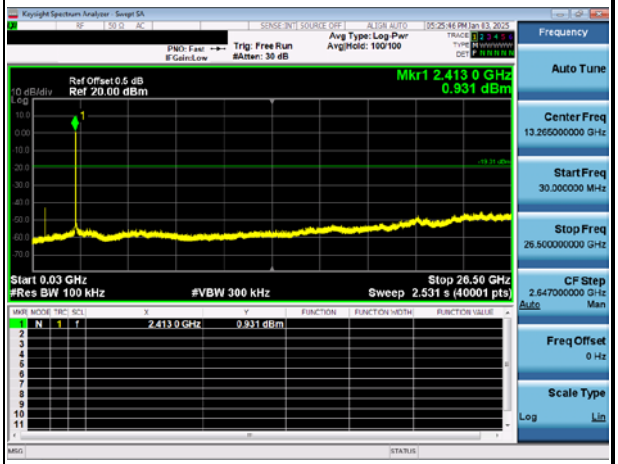
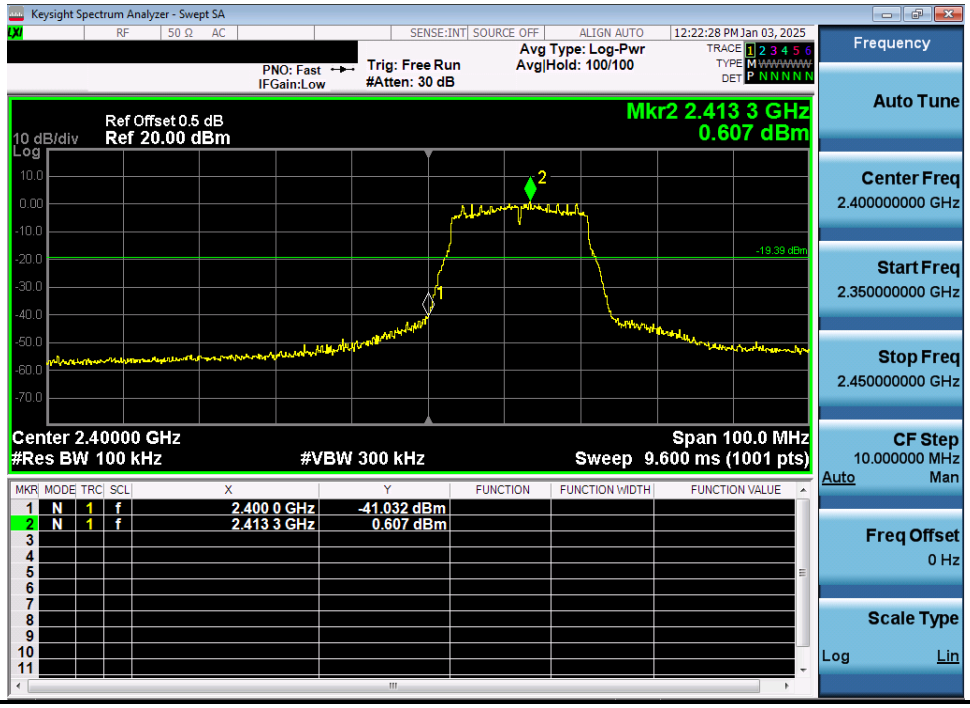
Chain A

WLAN 802.11g channel 06 (2437 MHz)	
Reference Level	**Spurious Emission**
	

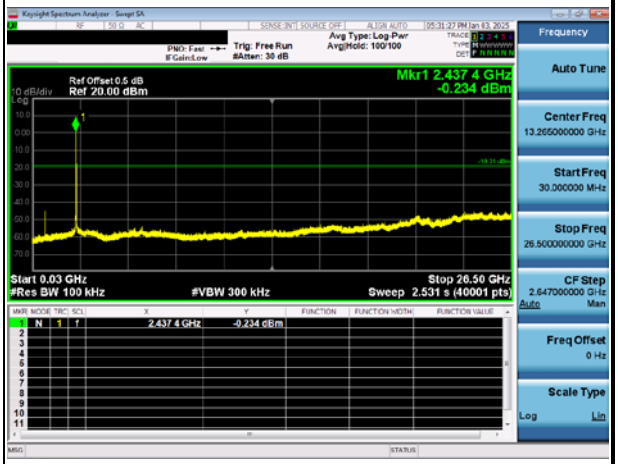
Chain A

WLAN 802.11g channel 11 (2462MHz)	
Reference Level	**Spurious Emission**
	
Band Edge	
	

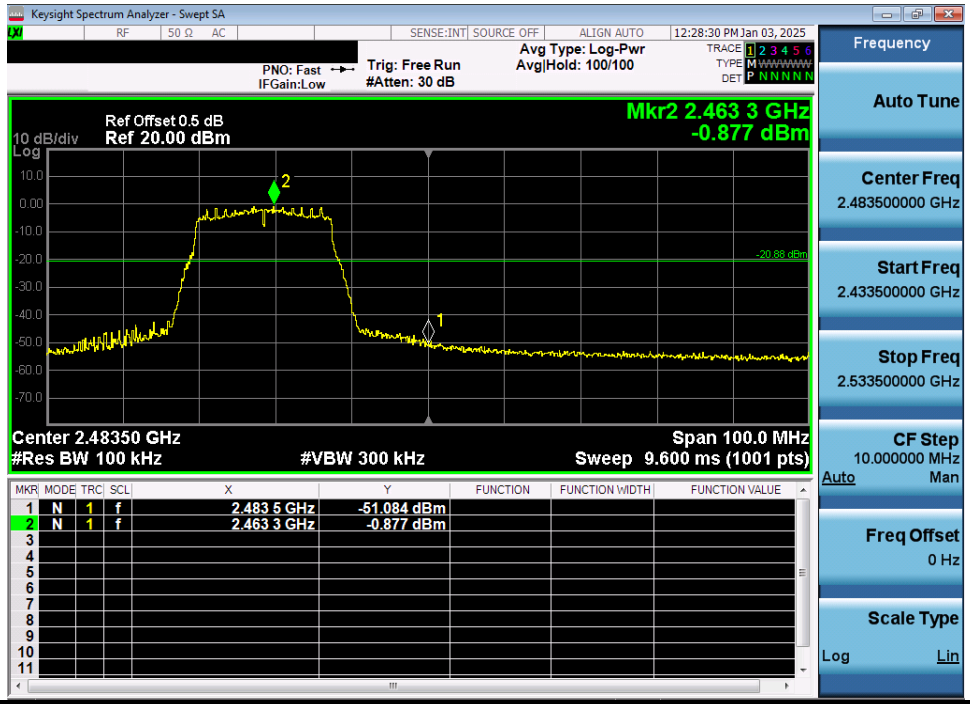
Chain A

WLAN 802.11n HT20 channel 01 (2412 MHz)	
Reference Level	**Spurious Emission**
	
Band Edge	
	

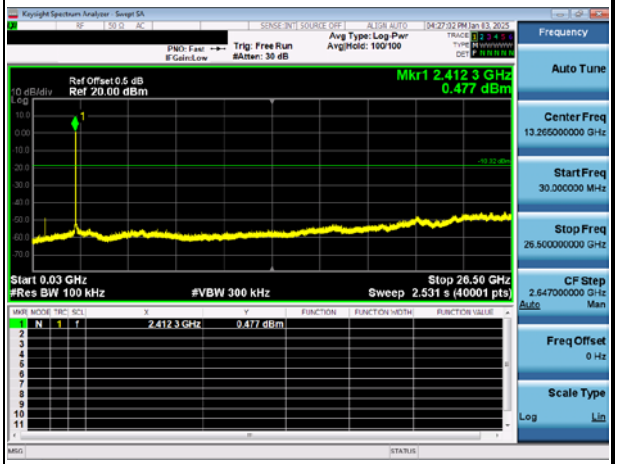
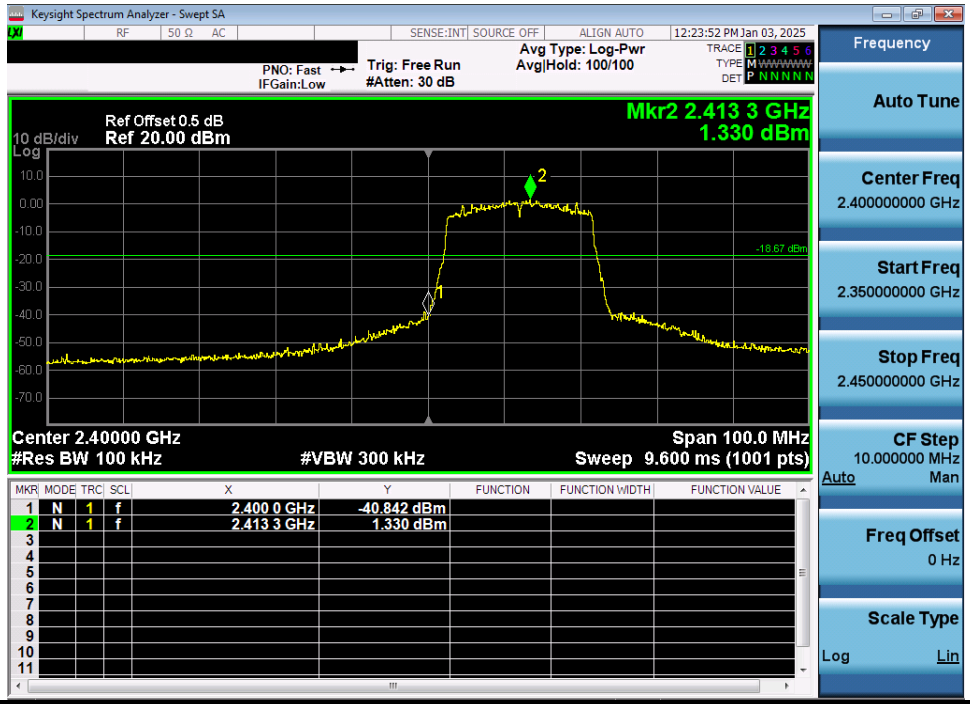
Chain A

WLAN 802.11n HT20 channel 06 (2437 MHz)	
Reference Level	**Spurious Emission**
	

Chain A

WLAN 802.11n HT20 channel 11 (2462MHz)	
Reference Level	**Spurious Emission**
	
Band Edge	
	

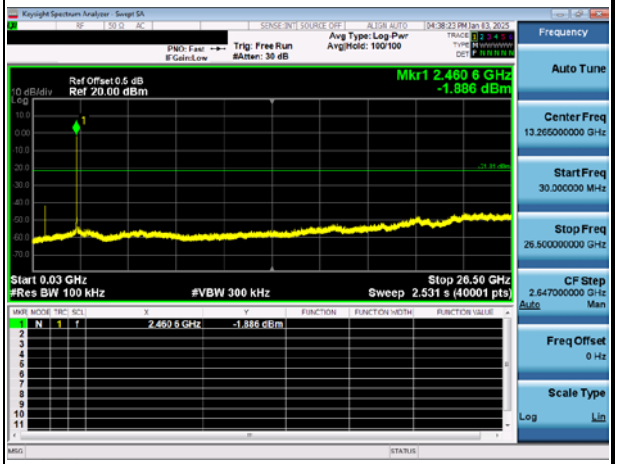
Chain A

WLAN 802.11ax HE20 channel 01 (2412 MHz)	
Reference Level	**Spurious Emission**
	
Band Edge	
	

Chain A

WLAN 802.11ax HE20 channel 06 (2437 MHz)	
Reference Level	**Spurious Emission**
	

Chain A

WLAN 802.11ax HE20 channel 11 (2462MHz)	
Reference Level	**Spurious Emission**
	
Band Edge