

FCC Test Report

Report No.: AGC07434251208FR01

FCC ID : 2ARXB-B4PRO

APPLICATION PURPOSE : Original Equipment

PRODUCT DESIGNATION : Smart Label Printer

BRAND NAME : NIIMBOT

MODEL NAME : NIIMBOT B4 Pro

APPLICANT : Wuhan Jingchen Intelligent Identification Technology Co., Ltd.

DATE OF ISSUE : May 25, 2026

STANDARD(S) : FCC Part 15 Subpart C §15.247

REPORT VERSION : V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd



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Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	May 25, 2026	Valid	Initial Release

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Table of Contents

1. General Information	5
2. Product Information	6
2.1 Product Technical Description	6
2.2 Table of Carrier Frequency	7
2.3 IEEE 802.11n Modulation Scheme	8
2.4 Related Submittal(S) / Grant (S)	9
2.5 Test Methodology	9
2.6 Special Accessories	9
2.7 Equipment Modifications	9
2.8 Antenna Requirement	9
2.9 Description of Test Software	10
3. Test Environment	11
3.1 Address of The Test Laboratory	11
3.2 Test Facility	11
3.3 Environmental Conditions	12
3.4 Measurement Uncertainty	12
3.5 List of Equipment Used	13
4. System Test Configuration	15
4.1 EUT Configuration	15
4.2 EUT Exercise	15
4.3 Configuration of Tested System	15
4.4 Equipment Used in Tested System	16
4.5 Summary of Test Results	17
5. Description of Test Modes	18
6. Duty Cycle Measurement	19
7. RF Output Power Measurement	21
7.1 Provisions Applicable	21
7.2 Measurement Procedure	21
7.3 Measurement Setup (Block Diagram of Configuration)	21
7.4 Measurement Result	22
8. 6dB Bandwidth Measurement	23
8.1 Provisions Applicable	23
8.2 Measurement Procedure	23
8.3 Measurement Setup (Block Diagram of Configuration)	23
8.4 Measurement Result	24
9. Power Spectral Density Measurement	37

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9.1 Provisions Applicable	37
9.2 Measurement Procedure	37
9.3 Measurement Setup (Block Diagram of Configuration)	38
9.4 Measurement Result	38
10. Conducted Band Edge and Out-of-Band Emissions	45
10.1 Provisions Applicable	45
10.2 Measurement Procedure	45
10.3 Measurement Setup (Block Diagram of Configuration)	45
10.4 Measurement Result	46
11. Radiated Spurious Emission	68
11.1 Measurement Limits	68
11.2 Measurement Procedure	68
11.3 Measurement Setup (Block Diagram of Configuration)	71
11.4 Measurement Result	72
12. AC Power Line Conducted Emission	103
12.1 Measurement Limits	103
12.2 Block Diagram of Line Conducted Emission Test	103
12.3 Preliminary Procedure of Line Conducted Emission Test	104
12.4 Final Procedure of Line Conducted Emission Test	104
12.5 Test Result of Line Conducted Emission Test	104
Appendix I: Photographs of Test Setup	107
Appendix II: Photographs of Test EUT	107

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1. General Information

Applicant	Wuhan Jingchen Intelligent Identification Technology Co., Ltd.
Address	No. 5, Creative Workshop, Creative World, Yezhihu West Road, Hongshan District, Wuhan, China
Manufacturer	Wuhan Jingchen Intelligent Identification Technology Co., Ltd.
Address	No. 5, Creative Workshop, Creative World, Yezhihu West Road, Hongshan District, Wuhan, China
Factory	Dongxihu branch of Wuhan Jingchen Intelligent Identification Technology Co., Ltd.
Address	No. 20, Xincheng eighteen Road, Changqing Street, Dongxihu District, Wuhan, Hubei Province, China
Product Designation	Smart Label Printer
Brand Name	NIIMBOT
Test Model	NIIMBOT B4 Pro
Series Model(s)	N/A
Difference Description	N/A
Date of receipt of test item	Dec. 13, 2025
Date of Test	Dec. 13, 2025~May 22, 2026
Deviation from Standard	No any deviation from the test method
Condition of Test Sample	Normal
Sample Number	251230233
Test Result	Pass
Test Report Form No	AGCER-FCC-2.4GWLAN-V1

Note: The test results of this report relate only to the tested sample identified in this report.

Prepared By



Cool Cheng
(Project Engineer)

May 25, 2026

Reviewed By



Jack Gui
(Reviewer)

May 25, 2026

Approved By



Angela Li
(Authorized Officer)

May 25, 2026

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2. Product Information

2.1 Product Technical Description

Equipment Type	WLAN 2.4G
Frequency Band	2400MHz ~ 2483.5MHz
Operation Frequency	2412MHz ~ 2462MHz
Output Power (Average)	IEEE 802.11b:15.05dBm; IEEE 802.11g:14.77dBm; IEEE 802.11n(HT20):14.38dBm; IEEE 802.11n(HT40):13.07dBm
Output Power (Peak)	IEEE 802.11b:17.84dBm; IEEE 802.11g:22.22dBm; IEEE 802.11n(HT20):22.08dBm; IEEE 802.11n(HT40):21.00dBm
Modulation	802.11b:(DQPSK, DBPSK, CCK) DSSS 802.11g/n:(64-QAM, 16-QAM, QPSK, BPSK) OFDM
Data Rate	802.11b:1/2/5.5/11Mbps 802.11g: 6/9/12/18/24/36/48/54Mbps 802.11n: up to 150Mbps
Number of channels	11
Hardware Version	63B4ProMC
Software Version	1.04
Antenna Designation	PCB Antenna
Antenna Gain	2.33dBi
Power Supply	DC 7.4V 2000mAh by battery or DC 5V from adapter

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2.2 Table of Carrier Frequency

For 2412-2462MHz:

11 channels are provided for 802.11b/g/n(HT20):

Channel	Frequency	Channel	Frequency	Channel	Frequency
01	2412 MHz	02	2417 MHz	03	2422 MHz
04	2427 MHz	05	2432 MHz	06	2437 MHz
07	2442 MHz	08	2447 MHz	09	2452 MHz
10	2457 MHz	11	2462 MHz		

7 channels are provided for 802.11n(HT40):

Channel	Frequency	Channel	Frequency	Channel	Frequency
01	--	02	--	03	2422 MHz
04	2427 MHz	05	2432 MHz	06	2437 MHz
07	2442 MHz	08	2447 MHz	09	2452 MHz
10	--	11	--		

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2.3 IEEE 802.11n Modulation Scheme

MCS Index	N _{ss}	Modulation	R	N _{BPSC}	N _{CBPS}		N _{DBPS}		Data Rate(Mbps)	
									800nsGI	
					20MHz	40MHz	20MHz	40MHz	20MHz	40MHz
0	1	BPSK	1/2	1	52	108	26	54	6.5	13.5
1	1	QPSK	1/2	2	104	216	52	108	13.0	27.0
2	1	QPSK	3/4	2	104	216	78	162	19.5	40.5
3	1	16-QAM	1/2	4	208	432	104	216	26.0	54.0
4	1	16-QAM	3/4	4	208	432	156	324	39.0	81.0
5	1	64-QAM	2/3	6	312	648	208	432	52.0	108.0
6	1	64-QAM	3/4	6	312	648	234	489	58.5	121.5
7	1	64-QAM	5/6	6	312	648	260	540	65.0	135.0

Symbol	Explanation
NSS	Number of spatial streams
R	Code rate
NBPSC	Number of coded bits per single carrier
NCBPS	Number of coded bits per symbol
NDBPS	Number of data bits per symbol
GI	Guard interval

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2.4 Related Submittal(S) / Grant (S)

This submittal(s) (test report) is intended for FCC ID: **2ARXB-B4PRO**, filing to comply with Part 2, Part 15 of the Federal Communication Commission rules.

2.5 Test Methodology

The tests were performed according to following standards:

No.	Identity	Document Title
1	FCC 47 CFR Part 2	Frequency allocations and radio treaty matters; general rules and regulations
2	FCC 47 CFR Part 15	Radio Frequency Devices
3	ANSI C63.10-2020 + Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024	American National Standard for Testing Unlicensed Wireless Devices

2.6 Special Accessories

Refer to section 4.4.

2.7 Equipment Modifications

Not available for this EUT intended for grant.

2.8 Antenna Requirement

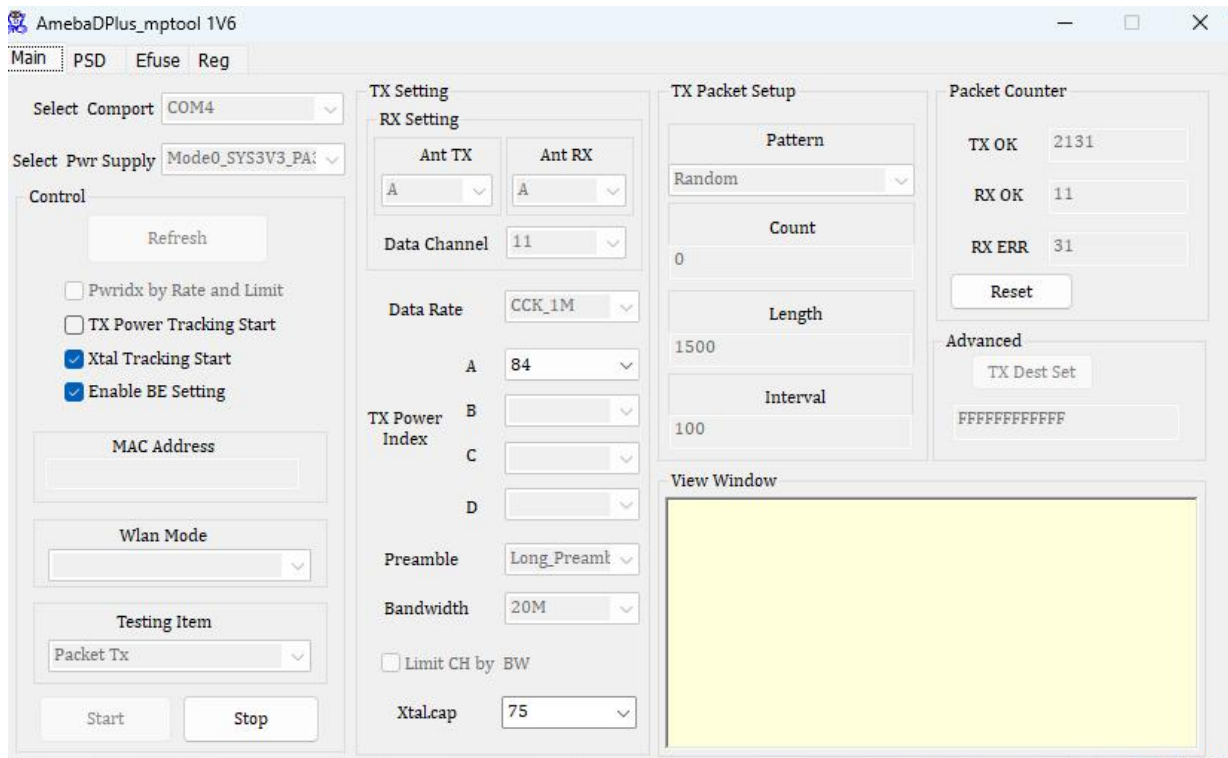
Standard Requirement
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. 15.247(b) (4) requirement: The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi EUT Antenna: The non-detachable antenna inside the device cannot be replaced by the user at will. The gain of the antenna is 2.33dBi.

2.9 Description of Test Software

For IEEE 802.11 mode:

The test utility software used during testing was “AmebaDPlus_mptool”, and the version was “1V6”.

Software Setting Diagram



The screenshot shows the 'AmebaDPlus_mptool 1V6' software interface. It has a menu bar with 'Main', 'PSD', 'Efuse', and 'Reg'. The 'Main' tab is active, displaying several configuration sections:

- Select Comport:** A dropdown menu set to 'COM4'.
- Select Pwr Supply:** A dropdown menu set to 'Mode0_SYS3V3_PA'.
- Control:** Includes a 'Refresh' button and checkboxes for 'Pwridx by Rate and Limit', 'TX Power Tracking Start', 'Xtal Tracking Start' (checked), and 'Enable BE Setting' (checked).
- MAC Address:** A text input field.
- Wlan Mode:** A dropdown menu.
- Testing Item:** A dropdown menu set to 'Packet Tx'.
- Start/Stop:** Two buttons at the bottom left.
- TX Setting:**
 - RX Setting:** 'Ant TX' and 'Ant RX' dropdowns set to 'A'.
 - Data Channel:** A dropdown menu set to '11'.
 - Data Rate:** A dropdown menu set to 'CCK_1M'.
 - TX Power Index:** Four dropdown menus labeled A, B, C, and D, with 'A' set to '84'.
 - Preamble:** A dropdown menu set to 'Long_Preamt'.
 - Bandwidth:** A dropdown menu set to '20M'.
 - Limit CH by BW:** An unchecked checkbox.
 - Xtalcap:** A dropdown menu set to '75'.
- TX Packet Setup:**
 - Pattern:** A dropdown menu set to 'Random'.
 - Count:** A text input field set to '0'.
 - Length:** A text input field set to '1500'.
 - Interval:** A text input field set to '100'.
- Packet Counter:**
 - TX OK:** A text input field set to '2131'.
 - RX OK:** A text input field set to '11'.
 - RX ERR:** A text input field set to '31'.
 - Reset:** A button.
 - Advanced:**
 - TX Dest Set:** A button.
 - FFFFFFFF:** A text input field.
- View Window:** A large yellow rectangular area at the bottom right.

Test Mode	Channel	Power Index
802.11b	L/M/H	84
802.11g	L/M/H	84
802.11n-HT20	L/M/H	82
802.11n-HT40	L/M/H	77

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3. Test Environment

3.1 Address of The Test Laboratory

Laboratory: Attestation of Global Compliance (Shenzhen) Co., Ltd.

Address: 101 & 201, Building 19(B5), Junfeng Industrial Park, Chongqing Road, P.R.C.

3.2 Test Facility

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

CNAS-Lab Code: L5488

Attestation of Global Compliance (Shenzhen) Co., Ltd. has been assessed and proved to follow CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories).

A2LA-Lab Cert. No.: 5054.02

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to follow ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC-Registration No.: 975832

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files with Registration 975832.

IC-Registration No.: 24842 (CAB identifier: CN0063)

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the Certification and Engineering Bureau of Industry Canada. The acceptance letter from the IC is maintained in our files with Registration 24842.

3.3 Environmental Conditions

	Normal Conditions
Temperature range (°C)	15 - 35
Relative humidity range	20 % - 75 %
Pressure range (kPa)	86 - 106

3.4 Measurement Uncertainty

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95%.

Item	Measurement Uncertainty
Uncertainty of Conducted Emission for AC Port	$U_c = \pm 2.9 \text{ dB}$
Uncertainty of Radiated Emission below 1GHz	$U_c = \pm 3.9 \text{ dB}$
Uncertainty of Radiated Emission above 1GHz	$U_c = \pm 4.9 \text{ dB}$
Uncertainty of total RF power, conducted	$U_c = \pm 0.8 \text{ dB}$
Uncertainty of RF power density, conducted	$U_c = \pm 2.6 \text{ dB}$
Uncertainty of spurious emissions, conducted	$U_c = \pm 2 \%$
Uncertainty of Occupied Channel Bandwidth	$U_c = \pm 2 \%$

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3.5 List of Equipment Used

● RF Conducted Test System							
Used	Equipment No.	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
☒	AGC-ER-E036	Spectrum Analyzer	Agilent	N9020A	MY49100060	2025-05-08	2026-05-07
☒	AGC-ER-E036	Spectrum Analyzer	Agilent	N9020A	MY49100060	2026-05-06	2027-05-05
☒	AGC-ER-E062	Power Sensor	Agilent	U2021XA	MY54110007	2025-01-15	2026-01-14
☒	AGC-ER-E062	Power Sensor	Agilent	U2021XA	MY54110007	2026-01-14	2027-01-13
☒	AGC-ER-A008	6dBFixed Attenuator	Mini circuits	BW-K6-2W44+	N/A	2024-02-01	2026-01-31
☒	AGC-ER-A008	6dBFixed Attenuator	Mini circuits	BW-K6-2W44+	N/A	2026-01-30	2028-01-29
☐	AGC-ER-E083	Signal Generator	Agilent	E4421B	US39340815	2026-05-19	2027-05-18
☒	N/A	RF Connection Cable	N/A	1#	N/A	Each time	N/A
☒	N/A	RF Connection Cable	N/A	2#	N/A	Each time	N/A

● Radiated Spurious Emission							
Used	Equipment No.	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
☒	AGC-EM-E046	EMI Test Receiver	R&S	ESCI	100096	2025-01-14	2026-01-13
☒	AGC-EM-E046	EMI Test Receiver	R&S	ESCI	100096	2026-01-13	2027-01-12
☐	AGC-EM-E116	EMI Test Receiver	R&S	ESCI	100034	2025-05-08	2026-05-07
☐	AGC-EM-E116	EMI Test Receiver	R&S	ESCI	100034	2026-05-06	2027-05-05
☒	AGC-EM-E061	Spectrum Analyzer	Agilent	N9010A	MY53470504	2025-05-08	2026-05-07
☒	AGC-EM-E061	Spectrum Analyzer	Agilent	N9010A	MY53470504	2026-05-06	2027-05-05
☒	AGC-EM-E086	Loop Antenna	ZHINAN	ZN30900C	18051	2024-03-05	2026-03-04
☒	AGC-EM-E086	Loop Antenna	ZHINAN	ZN30900C	18051	2026-01-14	2028-01-13
☒	AGC-EM-E001	Wideband Antenna	SCHWARZBECK	VULB9168	D69250	2025-03-14	2027-03-13
☒	AGC-EM-E029	Broadband Ridged Horn Antenna	ETS	3117	00034609	2025-03-14	2027-03-13
☒	AGC-EM-E082	Horn Antenna	SCHWARZBECK	BBHA 9170	#768	2025-09-10	2027-09-09
☒	AGC-EM-E146	Pre-amplifier	ETS	3117-PA	00246148	2024-07-24	2026-07-23
☒	AGC-EM-A119	2.4G Filter	SongYi	N/A	N/A	2025-05-16	2026-05-15
☒	AGC-EM-A119	2.4G Filter	SongYi	N/A	N/A	2026-05-14	2027-05-13
☒	AGC-EM-A138	6dB Attenuator	Eeatsheep	LM-XX-6-5W	N/A	2025-05-16	2027-05-15
☒	N/A	RF Connection Cable	N/A	3#	N/A	Each time	N/A

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● AC Power Line Conducted Emission							
Used	Equipment No.	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
☒	AGC-EM-A171	Attenuator	Mini-Circuits	UNAT-10A+	N/A	2024-02-01	2026-01-31
☒	AGC-EM-A171	Attenuator	Mini-Circuits	UNAT-10A+	N/A	2026-01-13	2028-01-12
☒	AGC-EM-E023	Artificial Mains Network	R&S	ESH2-Z5	100086	2025-05-08	2026-05-07
☒	AGC-EM-E023	Artificial Mains Network	R&S	ESH2-Z5	100086	2026-05-06	2027-05-05
☒	AGC-EM-E116	Test Receiver	R&S	ESCI	100034	2025-05-08	2026-05-07
☒	AGC-EM-E116	Test Receiver	R&S	ESCI	100034	2026-05-06	2027-05-05

● Test Software					
Used	Equipment No.	Test Equipment	Manufacturer	Model No.	Version Information
☒	AGC-EM-S001	CE Test System	R&S	ES-K1	V1.71
☒	AGC-EM-S003	RE Test System	FARA	EZ-EMC	VRA-03A
☐	AGC-EM-S004	RE Test System	Tonscend	TS ⁺ Ver2.1(JS32-RE)	4.0.0.0
☒	AGC-ER-S012	BT/WIFI Test System	Tonscend	JS1120-2	2.6
☒	AGC-EM-S011	RSE Test System	Tonscend	TS+-Ver2.1(JS36-RSE)	4.0.0.0

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4. System Test Configuration

4.1 EUT Configuration

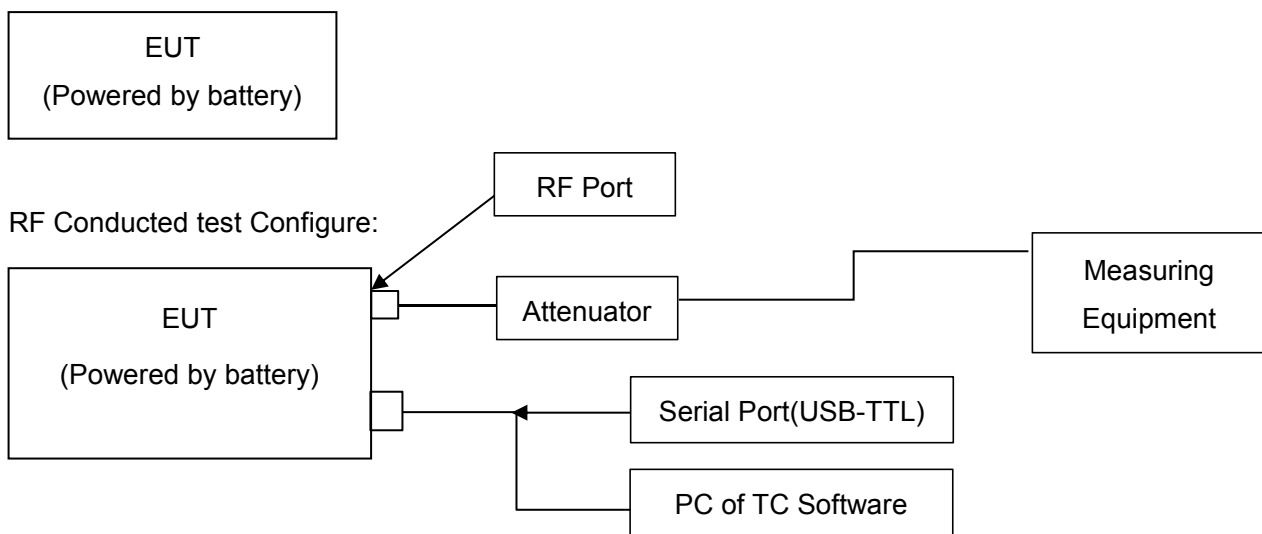
The EUT configuration for testing is installed on RF field strength measurement to meet the Commission's requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

4.2 EUT Exercise

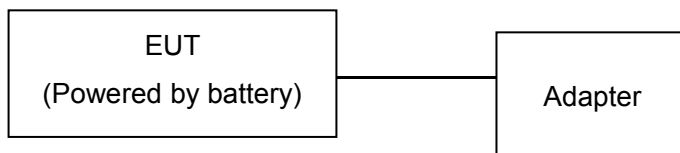
The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

4.3 Configuration of Tested System

Radiated Emission Configure:



AC Power Line Conducted Emission Configure:



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4.4 Equipment Used in Tested System

The following peripheral devices and interface cables were connected during the measurement:

☒ Test Accessories Come From The Laboratory

No.	Equipment	Manufacturer	Model No.	Specification Information	Cable
1	Control Box	RISYM	USB-TTL	--	--
2	Adapter	Apple	A2452	USB-C/140W	0.8m unshielded

☒ Test Accessories Come From The Manufacturer

No.	Equipment	Manufacturer	Model No.	Specification Information	Cable
1	USB Cable	N/A	N/A	--	0.8m shielded

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4.5 Summary of Test Results

Item	FCC Rules	Description of Test	Result
1	§15.203&15.247(b)(4)	Antenna Equipment	Pass
2	§15.247 (b)(1)	RF Output Power	Pass
3	§15.247 (a)(1)	6 dB Bandwidth	Pass
4	§15.247 (e)	Power Spectral Density	Pass
5	§15.247 (d)	Conducted Band Edge and Out-of-Band Emissions	Pass
6	§15.247 (d)&15.209	Radiated Spurious Emission	Pass
7	§15.207	AC Power Line Conducted Emission	Pass

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5. Description of Test Modes

Summary table of Test Cases	
Test Item	Data Rate / Modulation
	2.4G WLAN – 802.11b/g/n(DSSS/OFDM)
Radiated Test Cases	Mode 1: 802.11b_TX CH01_2412 MHz_1 Mbps(Battery powered) Mode 2: 802.11b_TX CH06_2437 MHz_1 Mbps(Battery powered) Mode 3: 802.11b_TX CH11_2462 MHz_1 Mbps(Battery powered) Mode 4: 802.11g_TX CH01_2412 MHz_6 Mbps(Battery powered) Mode 5: 802.11g_TX CH06_2437 MHz_6 Mbps(Battery powered) Mode 6: 802.11g_TX CH11_2462 MHz_6 Mbps(Battery powered) Mode 7: 802.11n-HT20_TX CH01_2412 MHz_MCS0 Mbps(Battery powered) Mode 8: 802.11n-HT20_TX CH06_2437 MHz_MCS0 Mbps(Battery powered) Mode 9: 802.11n-HT20_TX CH11_2462 MHz_MCS0 Mbps(Battery powered) Mode 10: 802.11n-HT40_TX CH03_2422 MHz_MCS0 Mbps(Battery powered) Mode 11: 802.11n-HT40_TX CH06_2437 MHz_MCS0 Mbps(Battery powered) Mode 12: 802.11n-HT40_TX CH09_2452 MHz_MCS0 Mbps(Battery powered)
Conducted Test Cases	Mode 1: 802.11b_TX CH01_2412 MHz_1 Mbps(Battery powered) Mode 2: 802.11b_TX CH06_2437 MHz_1 Mbps(Battery powered) Mode 3: 802.11b_TX CH11_2462 MHz_1 Mbps(Battery powered) Mode 4: 802.11g_TX CH01_2412 MHz_6 Mbps(Battery powered) Mode 5: 802.11g_TX CH06_2437 MHz_6 Mbps(Battery powered) Mode 6: 802.11g_TX CH11_2462 MHz_6 Mbps(Battery powered) Mode 7: 802.11n-HT20_TX CH01_2412 MHz_MCS0 Mbps(Battery powered) Mode 8: 802.11n-HT20_TX CH06_2437 MHz_MCS0 Mbps(Battery powered) Mode 9: 802.11n-HT20_TX CH11_2462 MHz_MCS0 Mbps(Battery powered) Mode 10: 802.11n-HT40_TX CH03_2422 MHz_MCS0 Mbps(Battery powered) Mode 11: 802.11n-HT40_TX CH06_2437 MHz_MCS0 Mbps(Battery powered) Mode 12: 802.11n-HT40_TX CH09_2452 MHz_MCS0 Mbps(Battery powered)
AC Conducted Emission	Mode 1: 2.4G WLAN Link + Battery + USB Cable (Charging from AC Adapter)

Note:

1. The battery is full-charged during the test.
2. For Radiated Emission, 3axis were chosen for testing for each applicable mode.
3. For Conducted Test method, a temporary antenna connector is provided by the manufacture.
4. The manufacturer of RF external cable claims that the cable loss is 0.5dB, and the cable loss and attenuator have been compensated into the Corrections Configuration of measuring equipment.
5. Input correction factor includes external cable loss and attenuator amplitude compensation. The formula is:
Input compensation coefficient (dB) = Cable Loss (dB) + Attenuator attenuation value (dB)

6. Duty Cycle Measurement

2.4GHz WLAN (DTS) operation is possible in 20MHz, and 40MHz channel bandwidths. The maximum achievable duty cycles for all modes were determined based on measurements performed on a spectrum analyzer in zero-span mode with RBW = 8MHz, VBW = 50MHz, and detector = Average. The RBW and VBW were both greater than $50/T$, where T is the minimum transmission duration, and the number of sweep points across T was greater than 100. The duty cycles are as follows:

Operating mode	Data rates (Mbps)	Duty Cycle (%)	Duty Cycle Factor (dB)
IEEE 802.11b	1	100	--
IEEE 802.11g	6	95	0.22
IEEE 802.11n-HT20	MCS0	95	0.22
IEEE 802.11n-HT40	MCS0	90	0.46

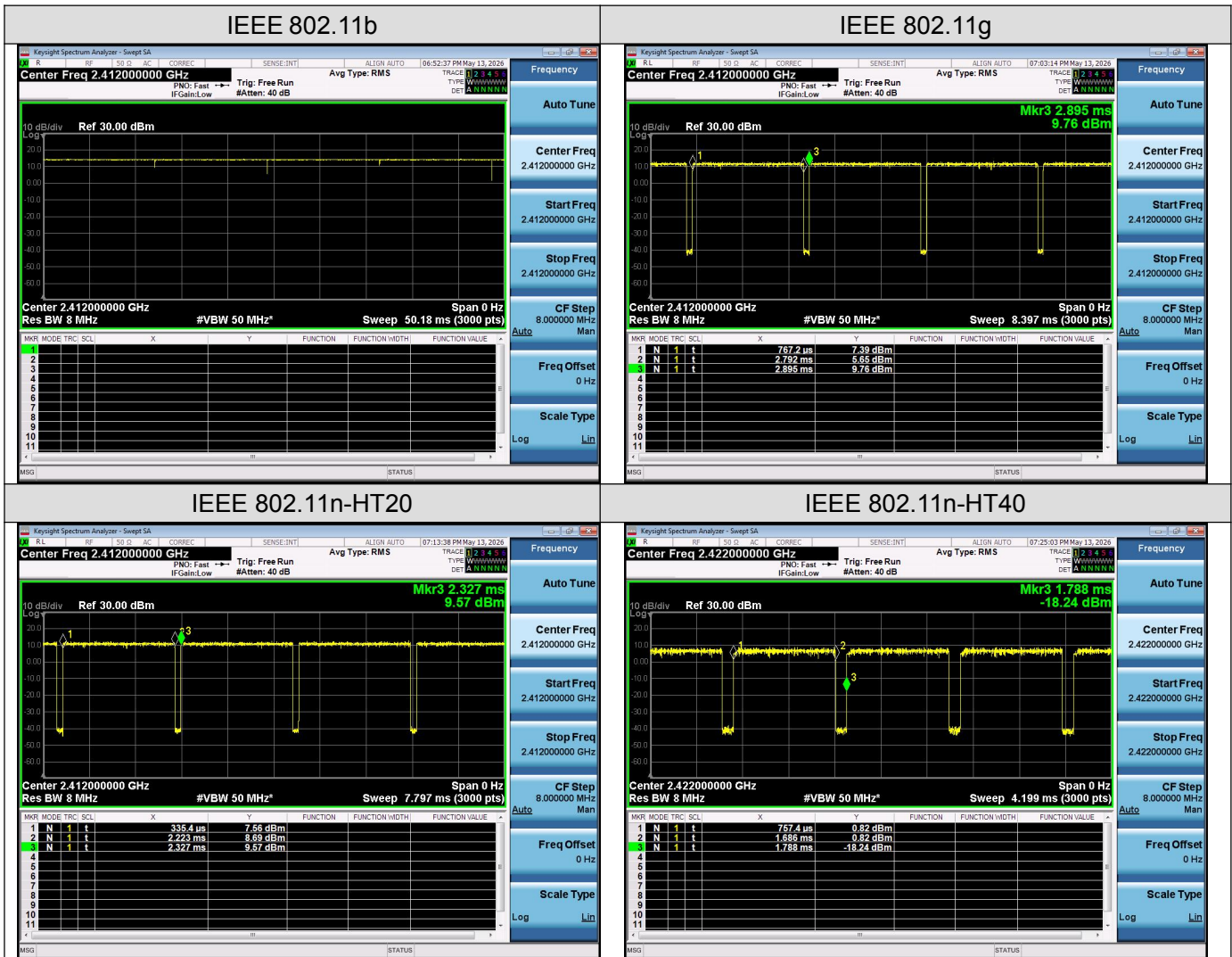
Remark:

1. Duty Cycle factor = $10 * \log (1/ \text{Duty cycle})$
2. The duty cycle of each frequency band mode reflects the determination requirements of the low channel measurement value.

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- The test plots as follows:



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7. RF Output Power Measurement

7.1 Provisions Applicable

For DTSs employing digital modulation techniques operating in the bands 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1 W.

7.2 Measurement Procedure

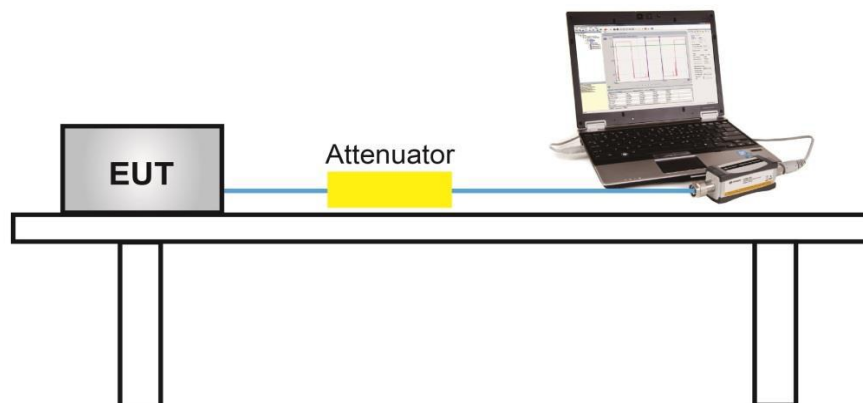
☒ Method PM is Measurement using an RF Peak power meter. The procedure for this method is as follows:

1. The testing follows the ANSI C63.10 Section 11.9.1.3
2. The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall use a fast-responding diode detector.

☒ Method PM is Measurement using an RF AV power meter. The procedure for this method is as follows:

1. The testing follows the ANSI C63.10 Section 11.9.2.3
2. Measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent if all of the following conditions are satisfied:
3. The EUT is configured to transmit continuously, or to transmit with a constant duty cycle.
4. At all times when the EUT is transmitting, it shall be transmitting at its maximum power control level.
5. The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.
6. Determine according to the duty cycle of the equipment: when it is less than 98%, follow the steps below.
7. Measure the average power of the transmitter. This measurement is an average over both the ON and OFF periods of the transmitter.
8. Adjust the measurement in dBm by adding $[10 \log (1 / D)]$, where D is the duty cycle {e.g., $[10 \log (1 / 0.25)]$, if the duty cycle is 25%}.
9. Record the test results in the report.

7.3 Measurement Setup (Block Diagram of Configuration)



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7.4 Measurement Result

Test Data of Conducted Output Power					
Test Mode	Test Frequency (MHz)	Average Power (dBm)	Peak Power (dBm)	Limits (dBm)	Result
802.11b	2412	15.05	17.84	≤30	Pass
	2437	13.78	16.58	≤30	Pass
	2462	13.14	15.95	≤30	Pass
802.11g	2412	14.77	22.22	≤30	Pass
	2437	13.45	21.26	≤30	Pass
	2462	13.63	21.42	≤30	Pass
802.11n20	2412	14.38	22.08	≤30	Pass
	2437	13.08	20.80	≤30	Pass
	2462	13.29	20.94	≤30	Pass
802.11n40	2422	13.07	21.00	≤30	Pass
	2437	12.24	20.08	≤30	Pass
	2452	12.03	19.96	≤30	Pass

Note: Duty cycle factor has been applied to the measured average power. The values shown are final corrected results.”

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8. 6dB Bandwidth Measurement

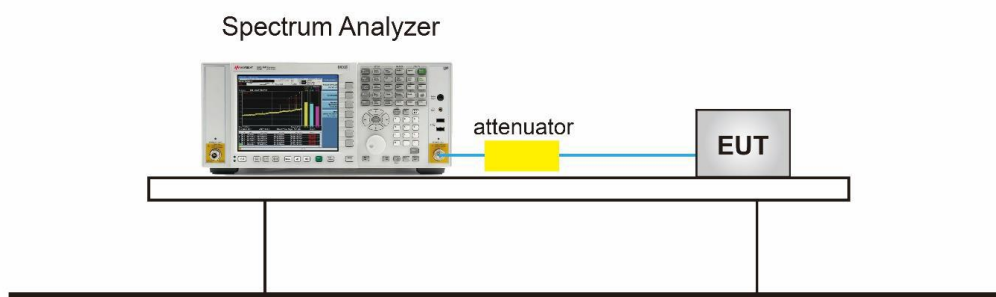
8.1 Provisions Applicable

The minimum 6dB bandwidth shall be 500 kHz.

8.2 Measurement Procedure

- The testing follows the ANSI C63.10 Section 6.9.3 (OBW) and 11.8.2 (6dB BW).
1. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
 2. Set to the maximum power setting and enable the EUT transmit continuously.
 3. For 6dB Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) = shall be in the range of 1% to 5% of the OBW but not less than 100 kHz, Set the Video bandwidth (VBW) $\geq 3 \times$ RBW, In order to make an accurate measurement.
 4. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set 1-5% of the OBW and set the Video bandwidth (VBW) $\geq 3 \times$ RBW.
 5. Detector = peak
 6. Trace mode = max hold.
 7. Sweep = auto couple.
 8. Allow the trace to stabilize.
 9. Measure and record the results in the test report.

8.3 Measurement Setup (Block Diagram of Configuration)



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8.4 Measurement Result

Test Data of Occupied Bandwidth and DTS Bandwidth					
Test Mode	Test Frequency (MHz)	99% Occupied Bandwidth (MHz)	DTS Bandwidth (MHz)	DTS Bandwidth Limits (MHz)	Result
802.11b	2412	13.981	10.13	≥0.5	Pass
	2437	14.022	10.14	≥0.5	Pass
	2462	13.931	10.14	≥0.5	Pass
802.11g	2412	16.949	16.45	≥0.5	Pass
	2437	16.945	16.45	≥0.5	Pass
	2462	16.957	16.45	≥0.5	Pass
802.11n20	2412	18.206	17.72	≥0.5	Pass
	2437	18.236	17.64	≥0.5	Pass
	2462	18.204	17.63	≥0.5	Pass
802.11n40	2422	36.164	36.30	≥0.5	Pass
	2437	36.136	36.35	≥0.5	Pass
	2452	36.152	36.33	≥0.5	Pass

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Test Graphs of Occupied Bandwidth

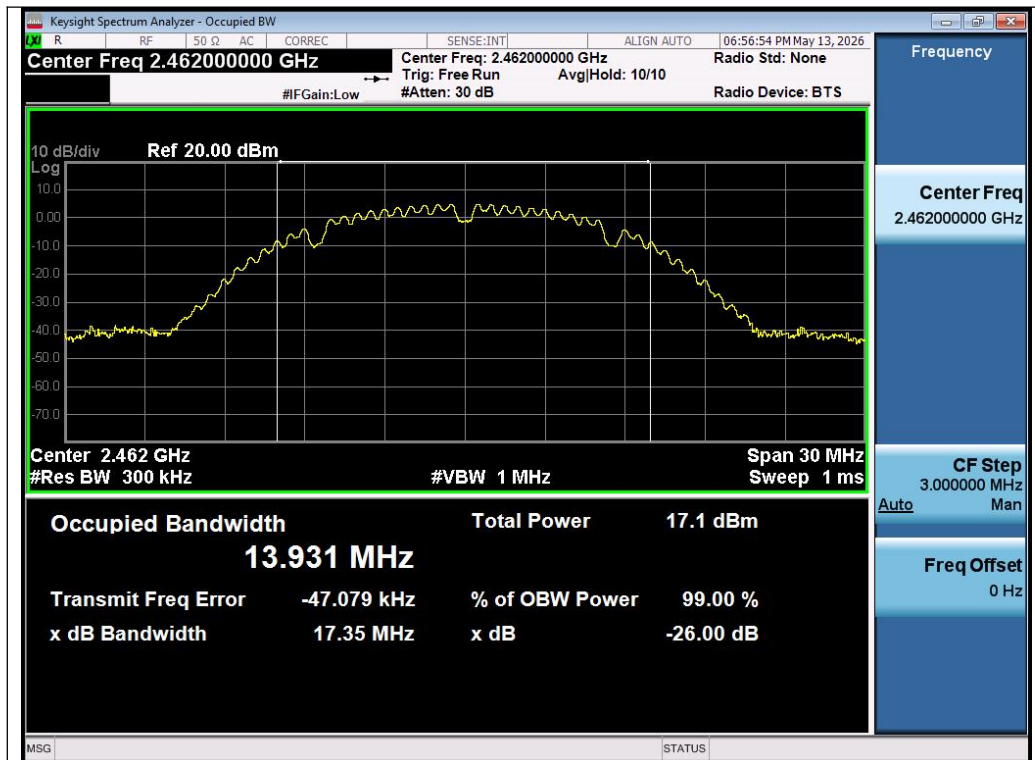


Test_Graph_802.11b_ANT1_2412_1Mbps_OBW

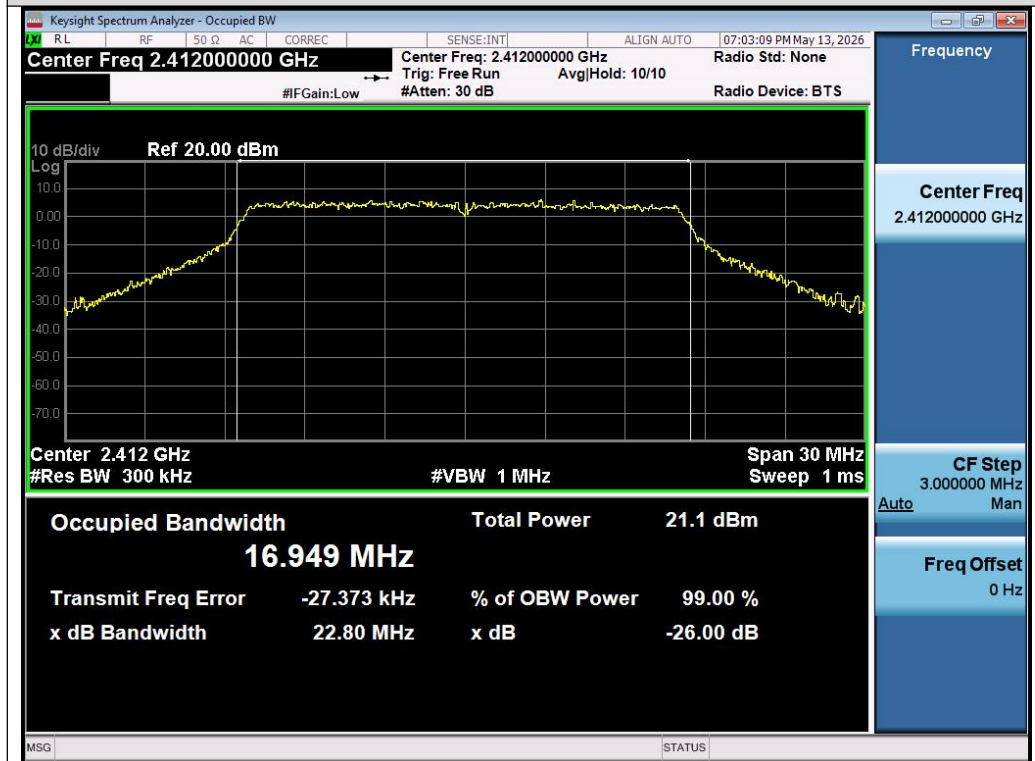


Test_Graph_802.11b_ANT1_2437_1Mbps_OBW

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Test_Graph_802.11b_ANT1_2462_1Mbps_OBW

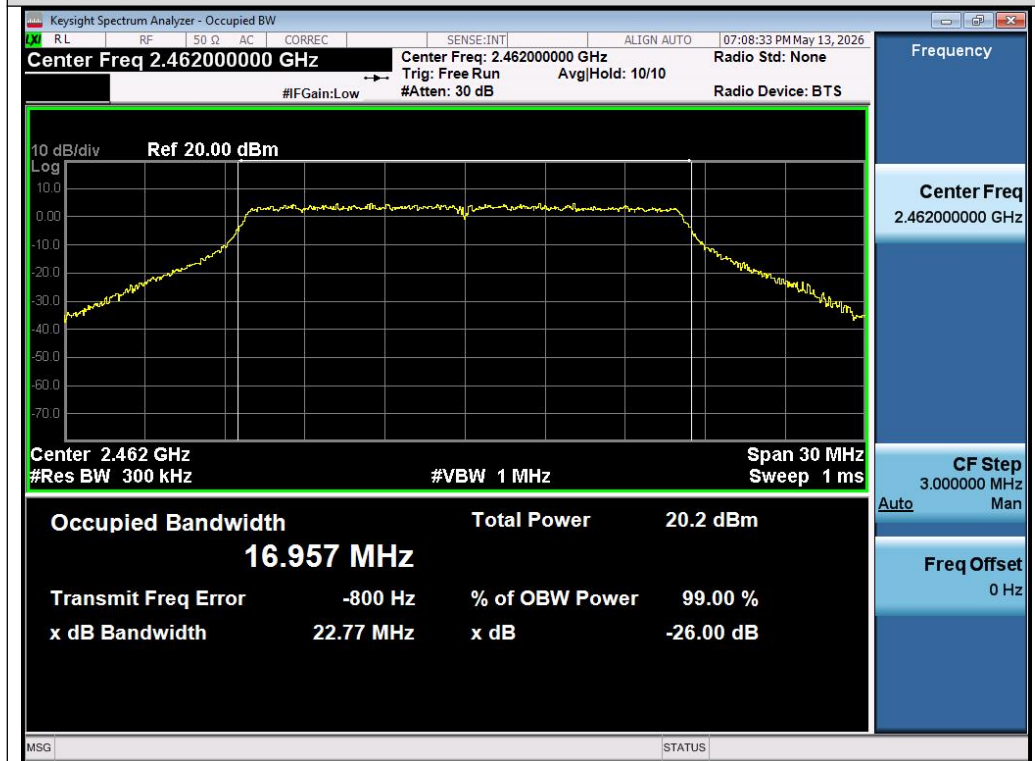


Test_Graph_802.11g_ANT1_2412_6Mbps_OBW

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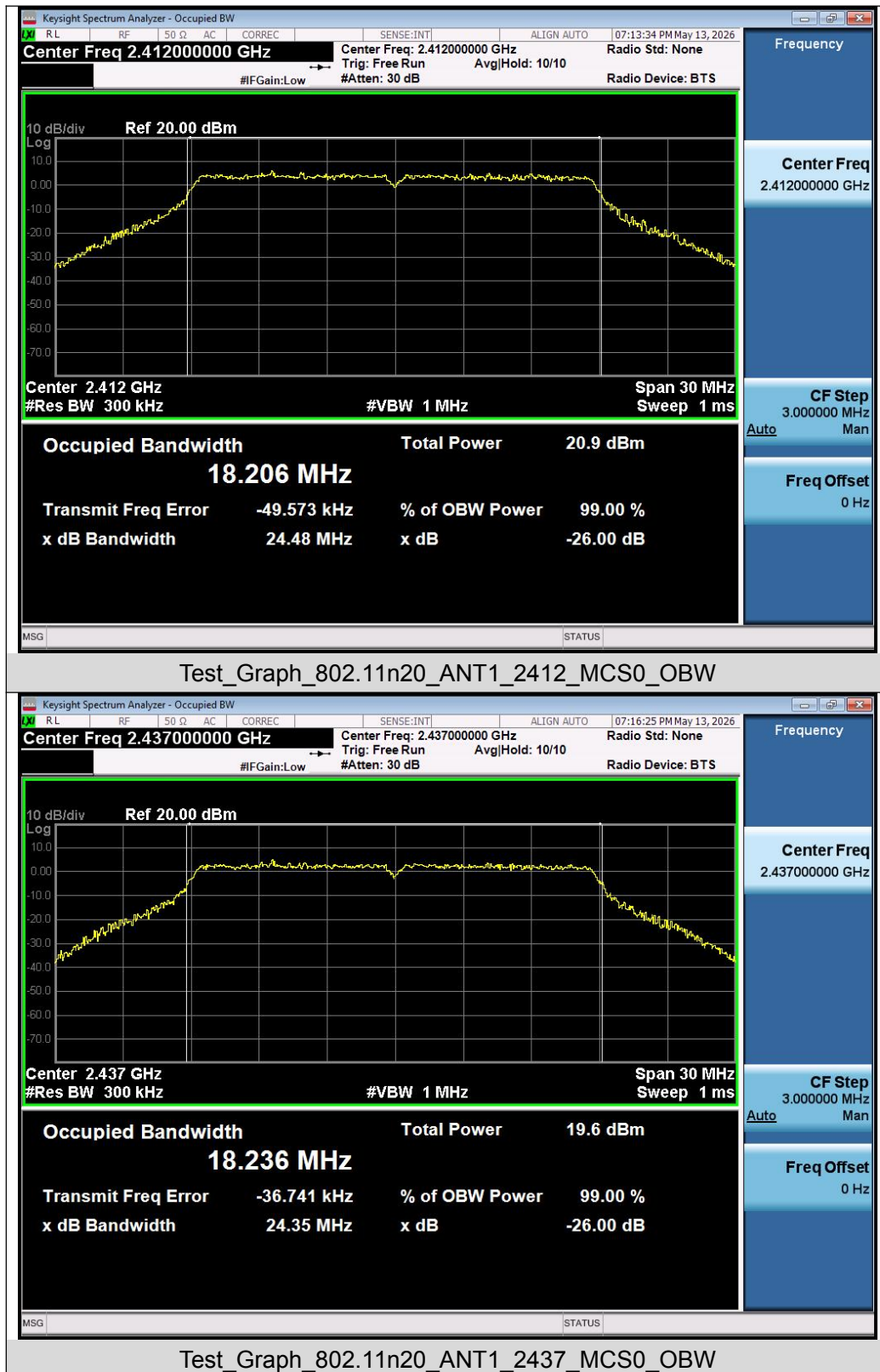


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Test_Graph_802.11g_ANT1_2462_6Mbps_OBW

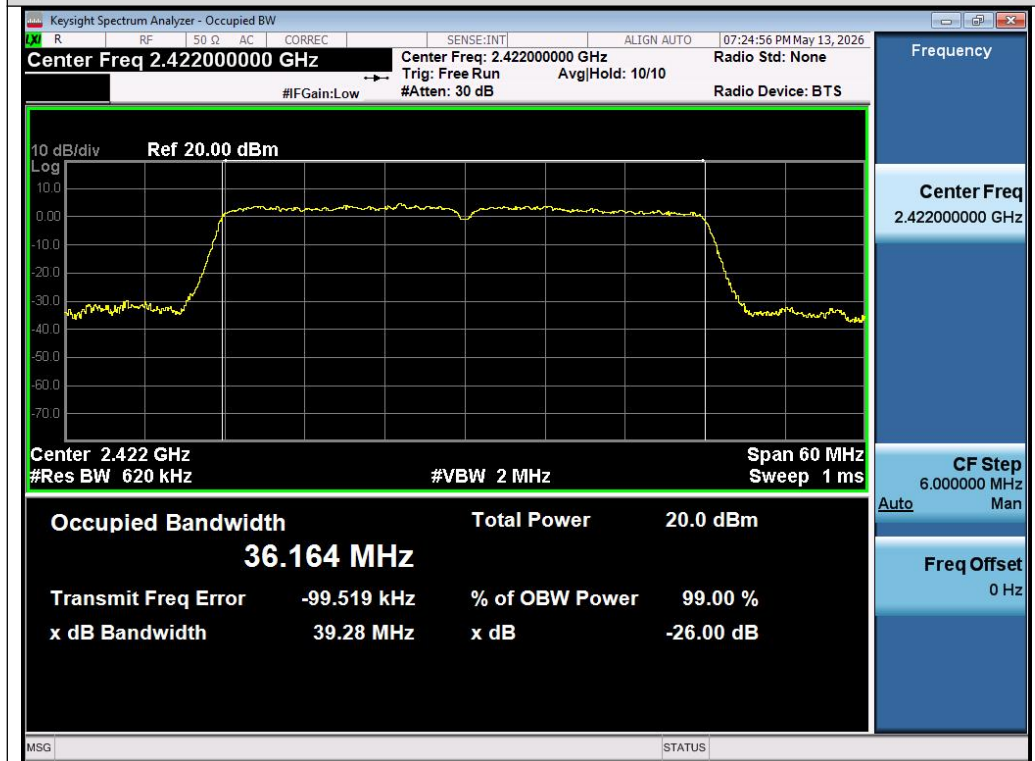
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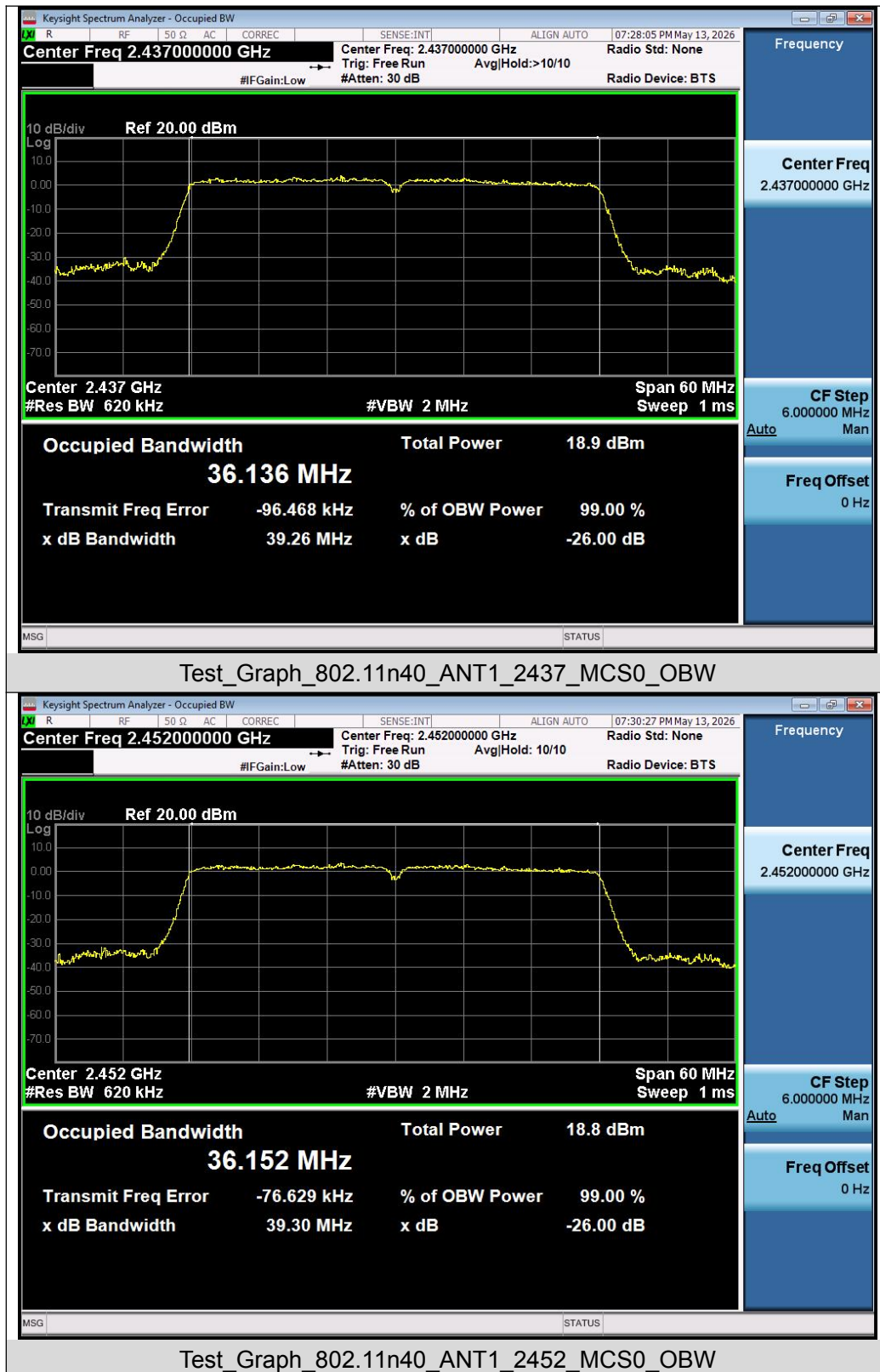
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Test_Graph_802.11n40_ANT1_2422_MCS0_OBW

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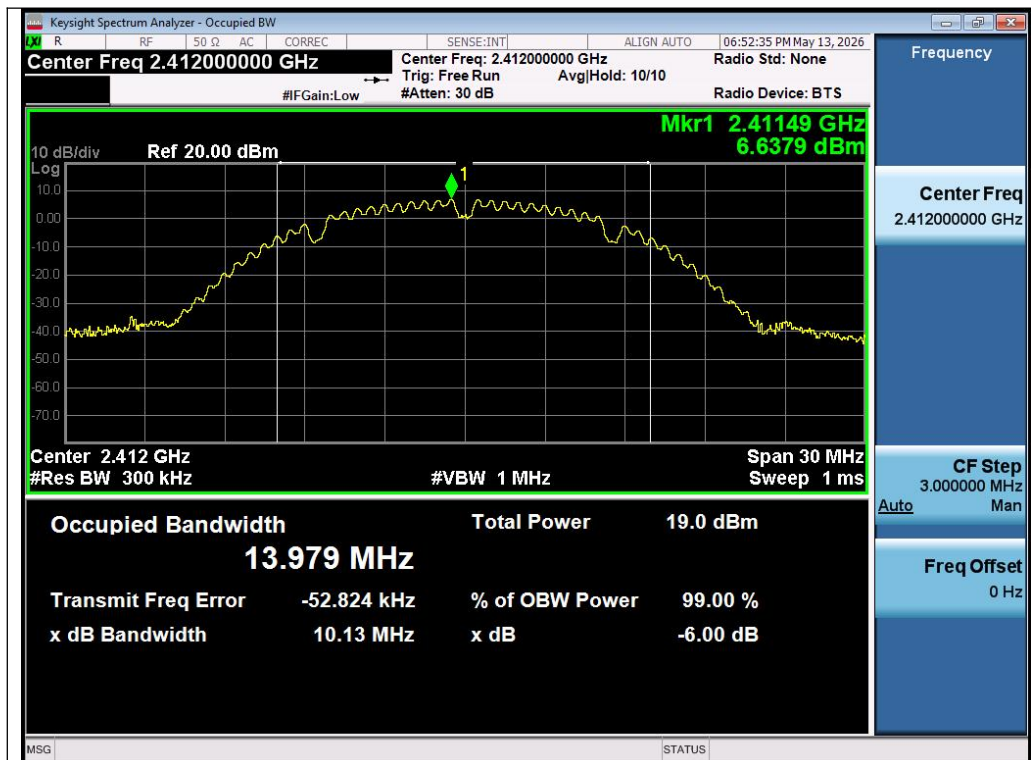
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Test Graphs of DTS Bandwidth

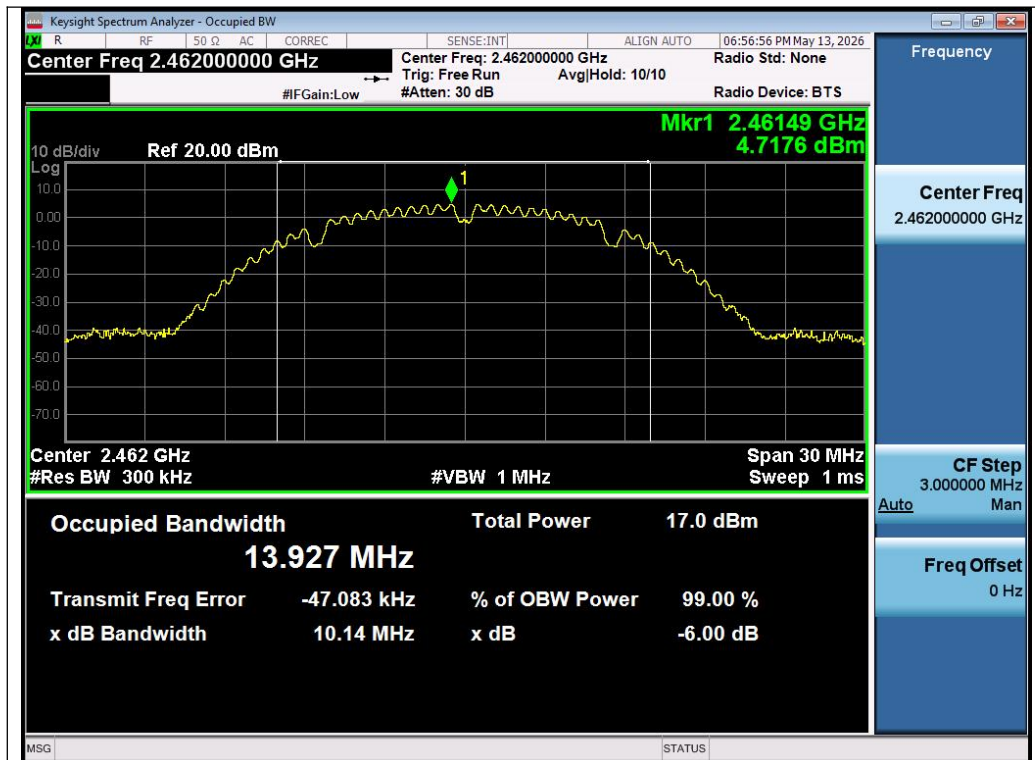


Test_Graph_802.11b_ANT1_2412_1Mbps_DTSSBW



Test_Graph_802.11b_ANT1_2437_1Mbps_DTSSBW

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Test_Graph_802.11b_ANT1_2462_1Mbps_DTSBW



Test_Graph_802.11g_ANT1_2412_6Mbps_DTSBW

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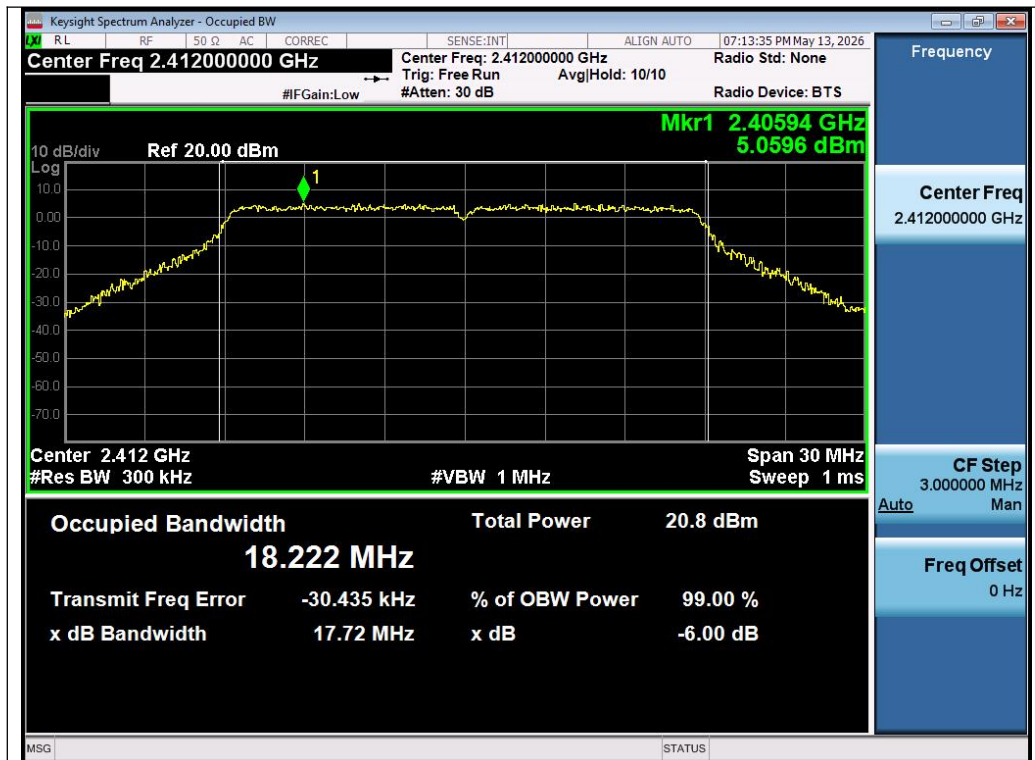
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Test_Graph_802.11g_ANT1_2462_6Mbps_DTSBW

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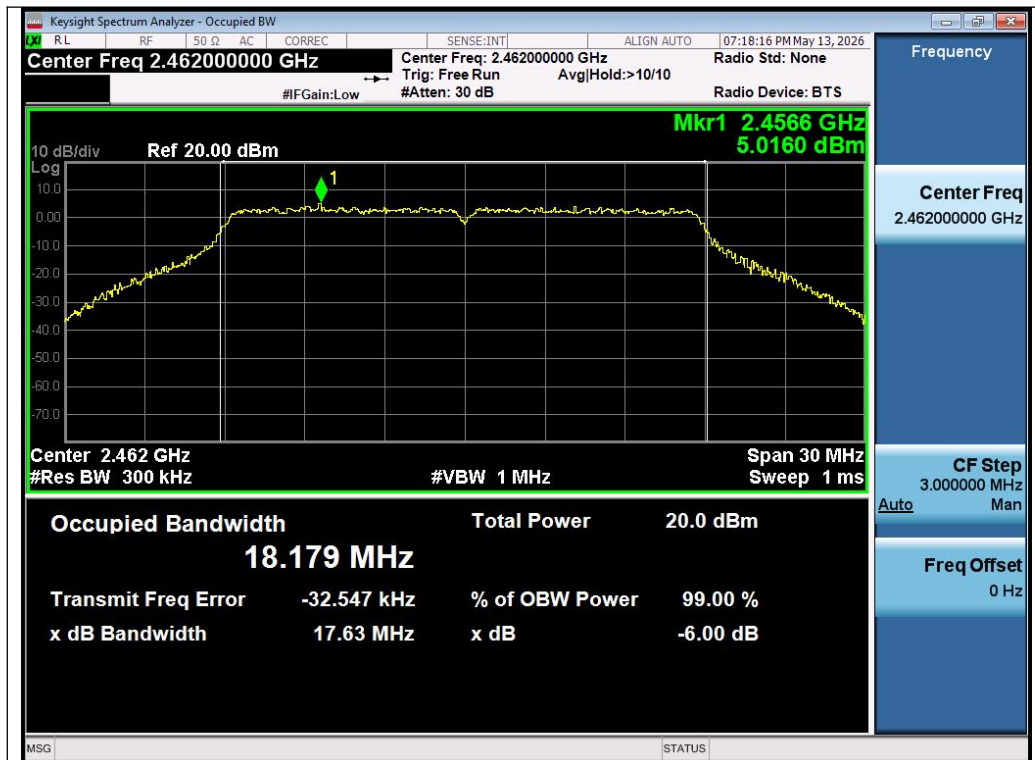


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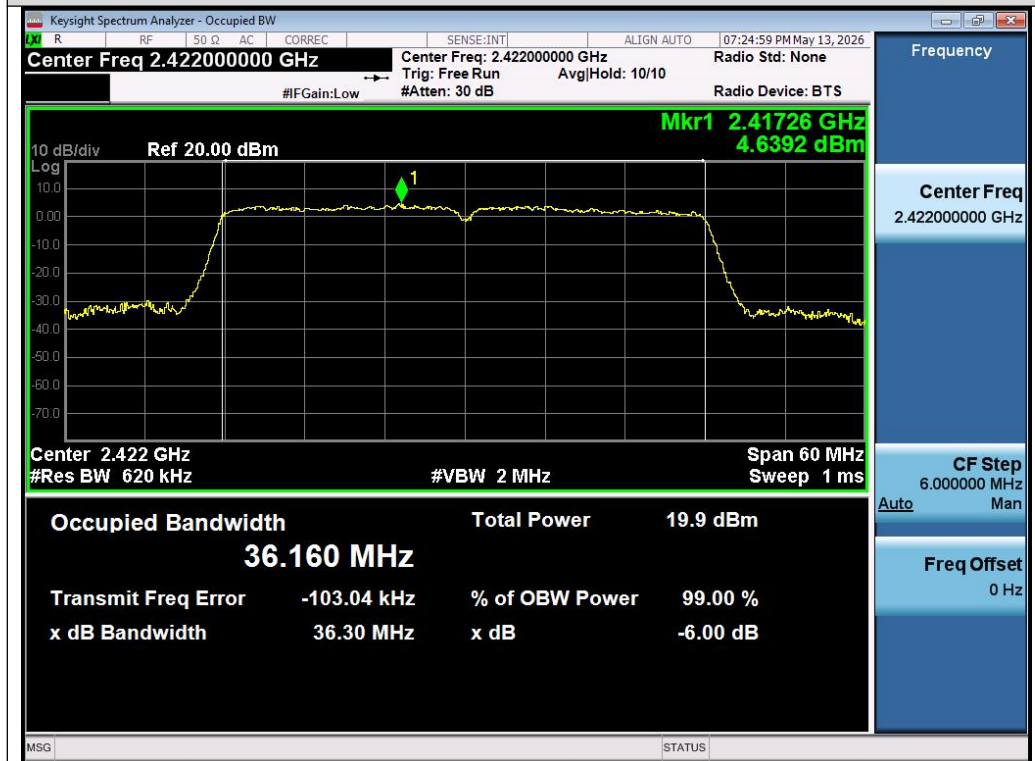


Test_Graph_802.11n20_ANT1_2437_MCS0_DTSBW

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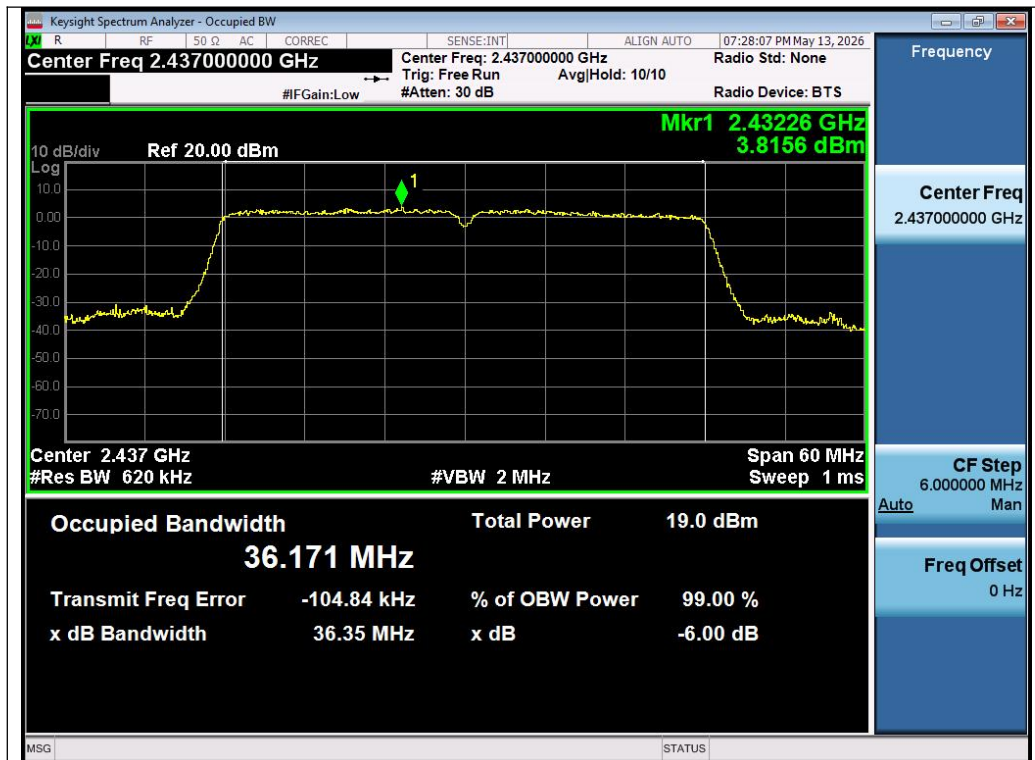


Test_Graph_802.11n20_ANT1_2462_MCS0_DTSBW

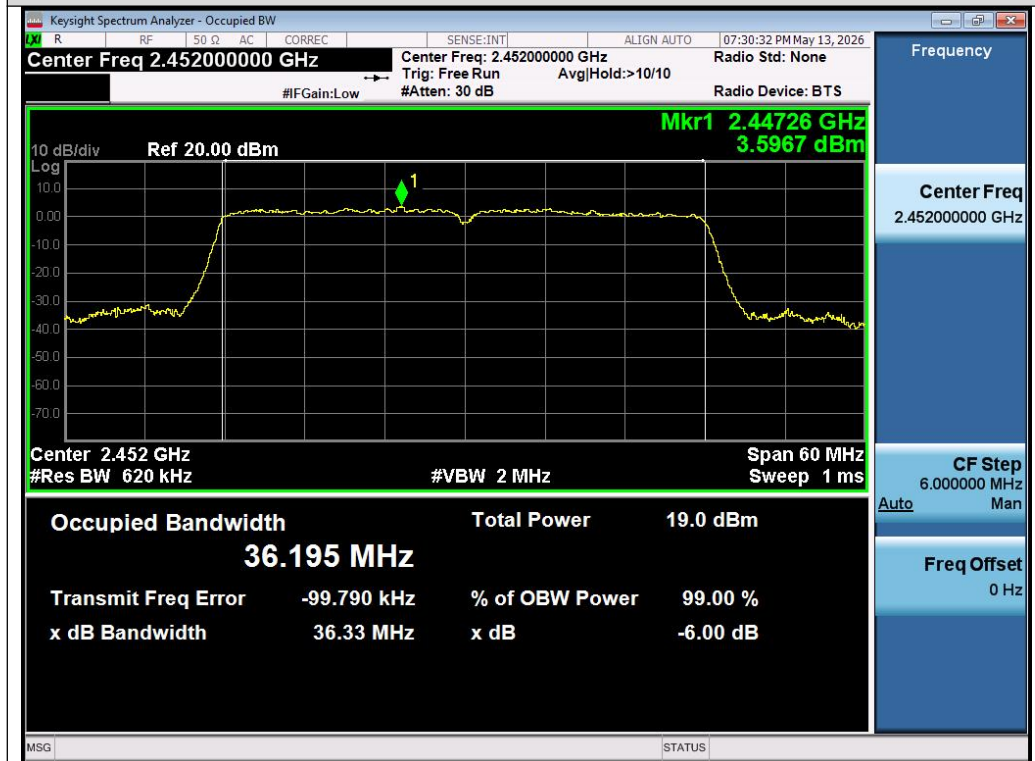


Test_Graph_802.11n40_ANT1_2422_MCS0_DTSBW

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Test_Graph_802.11n40_ANT1_2437_MCS0_DTSBW



Test_Graph_802.11n40_ANT1_2452_MCS0_DTSBW

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9. Power Spectral Density Measurement

9.1 Provisions Applicable

The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

9.2 Measurement Procedure

☒ For Peak power spectral density test:

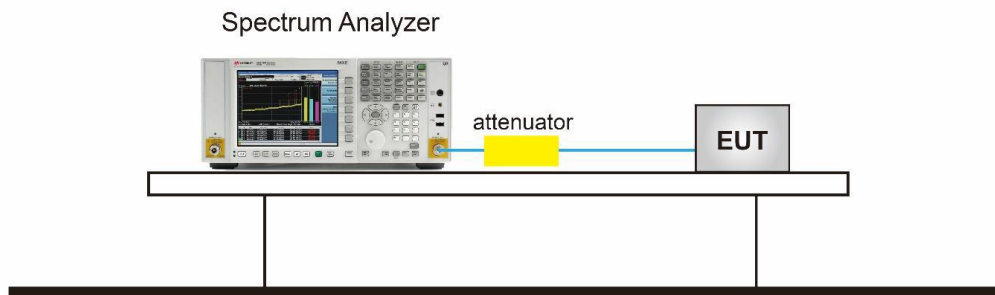
1. The testing follows the ANSI C63.10 Section 11.10.2 Method PKPSD.
2. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
3. Set the RBW = 20 kHz.
4. Set the VBW $\geq [3 \times \text{RBW}]$.
5. Set the Span $\geq [1.5 \times \text{DTS bandwidth}]$.
6. Sweep time=Auto couple.
7. Detector function=Peak.
8. Trace Mode=Max hold.
9. When the measurement bandwidth of the maximum PSD is 3 kHz, a constant factor of $10 \cdot \log(3\text{kHz}/20\text{kHz}) = -8.23 \text{ dB}$ is added to the measurement result.
10. Allow trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission.
11. The indicated level is the peak output power, after any corrections for external attenuators and cables.

☐ For Average power spectral density test:

1. The testing follows the ANSI C63.10 Section 11.10.5 Method AVPSD.
2. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator.
3. Set Span to at least 1.5 times the OBW.
4. Set RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
5. Set VBW $\geq [3 \times \text{RBW}]$.
6. Sweep Time=Auto couple.
7. Detector function=RMS (i.e., power averaging).
8. Trace average at least 100 traces in power averaging (rms) mode.
9. When the measurement bandwidth of the maximum PSD is 3 kHz, a constant factor of $10 \cdot \log(3\text{kHz}/20\text{kHz}) = -8.23 \text{ dB}$ is added to the measurement result.
10. Determine according to the duty cycle of the equipment: when it is less than 98%, follow the steps below.
11. Add $[10 \log (1 / D)]$, where D is the duty cycle, to the measured power to compute the average power during the actual transmission times (because the measurement represents an average over both the ON and OFF times of the transmission). For example, add $[10 \log (1/0.25)] = 6 \text{ dB}$ if the duty cycle is 25%.
12. Record the test results in the report.

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9.3 Measurement Setup (Block Diagram of Configuration)



9.4 Measurement Result

Test Data of Conducted Output Power Spectral Density				
Test Mode	Test Frequency (MHz)	Power Spectral density (dBm/3kHz)	Limit (dBm/3kHz)	Result
802.11b	2412	-8.058	≤ 8	Pass
	2437	-9.655	≤ 8	Pass
	2462	-9.779	≤ 8	Pass
802.11g	2412	-11.121	≤ 8	Pass
	2437	-12.292	≤ 8	Pass
	2462	-12.245	≤ 8	Pass
802.11n20	2412	-10.861	≤ 8	Pass
	2437	-12.417	≤ 8	Pass
	2462	-11.940	≤ 8	Pass
802.11n40	2422	-14.057	≤ 8	Pass
	2437	-14.800	≤ 8	Pass
	2452	-16.683	≤ 8	Pass

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Test Graphs of Conducted Output Power Spectral Density



Test_Graph_802.11b_ANT1_2412_1Mbps_PSD

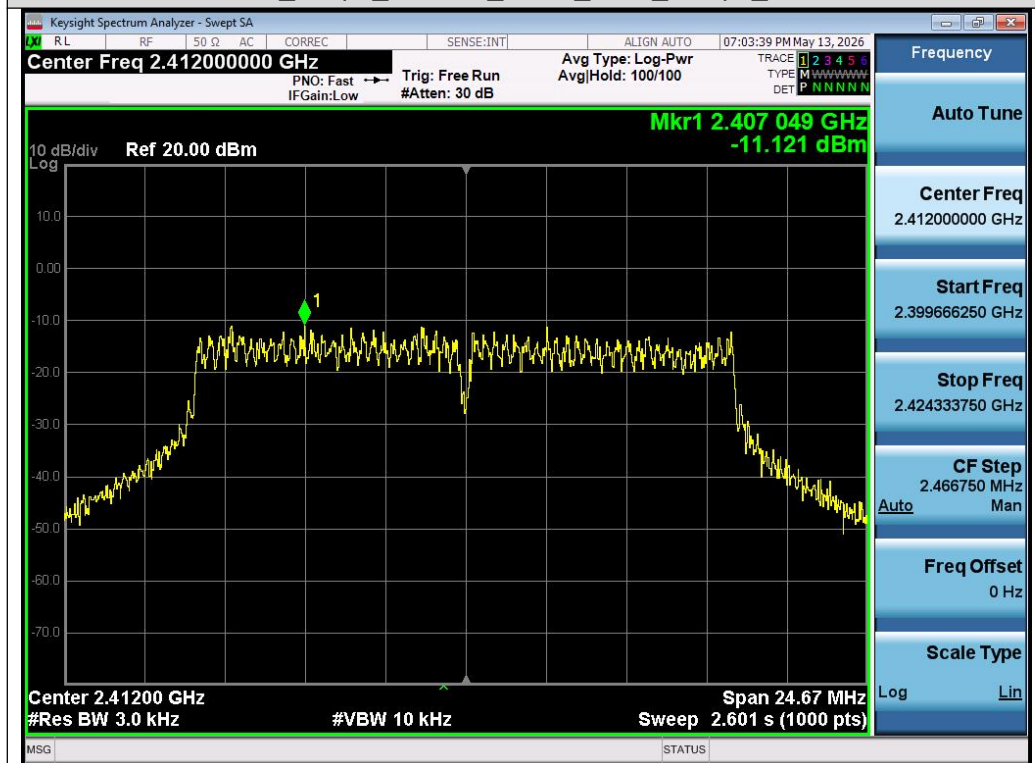


Test_Graph_802.11b_ANT1_2437_1Mbps_PSD

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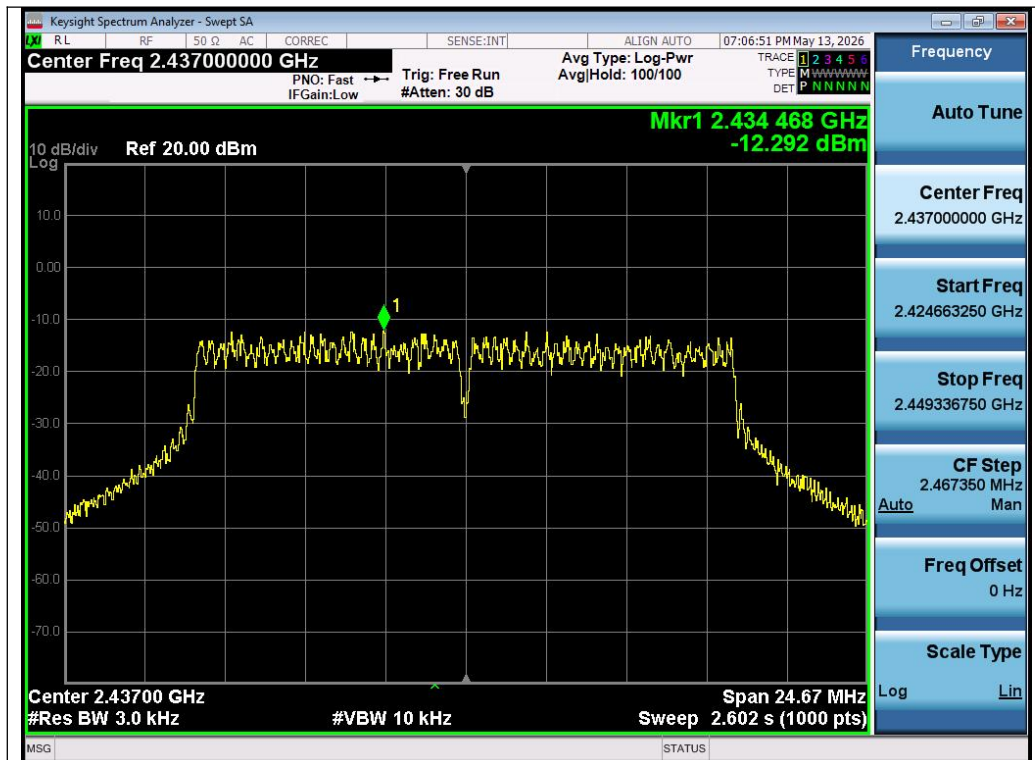
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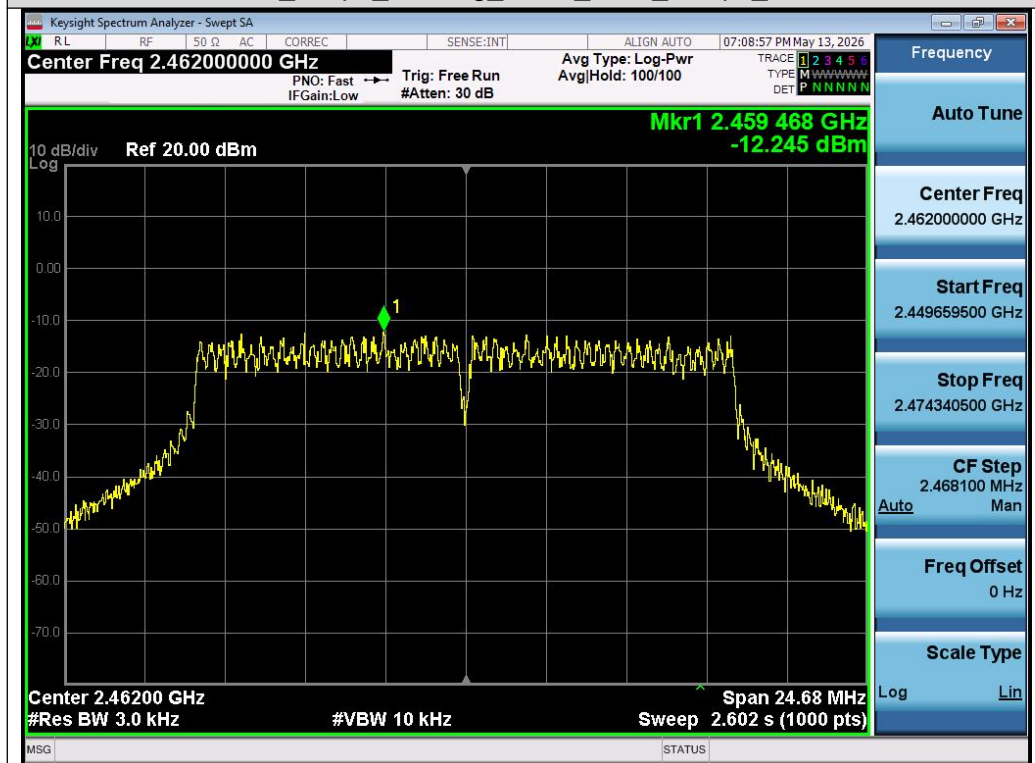
Test_Graph_802.11g_ANT1_2412_6Mbps_PSD

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