TEST REPORT
On behalf of

Savant Technologies LLC, dba GE Lighting, a Savant company

Product Name: RTL8721DM Module

Model No.: JXC8721-65

FCC ID: PUU-KEYPADSG2A

Prepared For: Savant Technologies LLC, dba GE Lighting, a Savant company
1975 Noble Road, Cleveland, OH 44112

Prepared By: Audix Technology (Shanghai) Co., Ltd.
3F and 4F, 34Bldg, 680 Guiping Rd.,
Caohejing Hi-Tech Park,
Shanghai 200233, China

Tel: +86-21-64955500

TESTING
NVLAP LAB CODE 200371-0

File No. : C1D2206038
Report No. : ACI-F22105
Date of Test : 2022.06.14-20
Date of Report : 2022.07.11

The statement is based on a single evaluation of one sample of the above-mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test lab logo.
The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

TABLE OF CONTENTS

Page

TEST REPORT

Applicant	:	Savant Technologies LLC, dba GE Lighting, a Savant company
EUT Description	:	RTL8721DM Module
	(A) Model No.	: JXC8721-65
	(B) Power Supply	: DC 3.3V
	(C) Test Voltage	: DC 3.3V

Test Procedure Used:

FCC RULES AND REGULATIONS PART 15 SUBPART C
AND ANSI C63.10-2020

The device described above is tested by Audix Technology (Shanghai) Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C limits.

The test results are contained in this test report and Audix Technology (Shanghai) Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements. This report also shows that the EUT (M/N: Refer to Sec2.1), which was tested is technically compliance with the FCC limits.

This report applies to above tested Sample only. This report shall not be reproduced in part without written approval of Audix Technology (Shanghai) Co., Ltd.

The test results for EUT's BLE function are contained in No.ACI-F22104 report.

Date of Test : 2022.06.14-20 Date of Report : 2022.07.11

Producer : Huimin Yan
HUIMIN YAN / Assistant

Reviewer : Byron Wu
BYRON WU/ Deputy Assistant Manager

AUDIX®
For and on behalf of
Audix Technology (Shanghai) Co., Ltd.

Signatory :
KAMP CHEN/ Manager
Authorized Signature(s)

1 SUMMARY OF STANDARDS AND RESULTS

1.1 Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below:

Description / Test Item	Test Standard	Results	Meets Limit
EMISSION			
Conducted Emission	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2020	Pass	15.207
Radiated Emission	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2020	Pass	15.209(a) 15.205(a)(c)
6 dB Bandwidth Measurement	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2020	Pass	15.247(a)(2)
Maximum Peak Output Power Measurement	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2020	Pass	15.247(b)(3)
Emission Limitations Measurement	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2020	Pass	15.247(d)
Band Edge Measurement	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2020	Pass	15.247(d)
Power Spectral Density Measurement	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2020	Pass	15.247(e)
N/A is an abbreviation for Not Applicable.			

2 GENERAL INFORMATION

2.1 Description of Equipment Under Test

Description : RTL8721DM Module

Type of EUT : ☑ Production ☐ Pre-product ☐ Pro-type

Model Number : JXC8721-65

Radio Tech : BLE 5.0;
IEEE 802.11 a/b/g/n.

Note : Bluetooth LE1M only.

Channel Freq. : BLE: 2402MHz-2480MHz;
IEEE 802.11a:
5180MHz—5240MHz; 5260MHz—5320MHz
5500MHz—5700MHz; 5745MHz—5825MHz
IEEE 802.11b: 2412MHz—2462MHz
IEEE 802.11g: 2412MHz—2462MHz
IEEE802.11nHT20:
2412MHz—2462MHz;
5180MHz—5240MHz; 5260MHz—5320MHz
5500MHz—5700MHz; 5745MHz—5825MHz
IEEE802.11nHT40:
2422MHz—2452MHz;
5190MHz—5230MHz; 5270MHz—5310MHz
5510MHz—5670MHz; 5755MHz—5795MHz

Modulation : BLE: GFSK;
802.11b: DSSS (CCK, DQPSK, DBPSK);
802.11a/g/n: OFDM (64QAM, 16QAM, QPSK, BPSK).

Antenna Info. : Antenna Type: IPEX Antenna
Antenna Gain:
2400MHz~2483.5MHz: -2.72 dBi;
5GHz bands:
Band1: 2.15 dBi;
Band2: 2.43 dBi;
Band3: 4.1 dBi;
Band4: 2.41 dBi.
The Antenna uses an antenna that use a unique coupling to the intentional radiator that is comply with 15.203 requirement.

Test Mode : The EUT was set at continuous TX during all the test in the report.

Applicant : Savant Technologies LLC, dba GE Lighting, a Savant company
1975 Noble Road, Cleveland, OH 44112

Manufacturer	:	same as Applicant
Factory	:	Shenzhen Jingxun Technology Co., Ltd. 3/F,A5 building Zhiyuan Community No.1001, Xueyuan Road Nanshan District, Shenzhen City, China

2.2 EUT Specifications Assessed in Current Report

Mode	Modulation	Data Rate(Mbps)
802.11b	DS (DQPSK, DBPSK, CCK)	Up to 11
802.11g	OFDM (64-QAM, 16-QAM, QPSK, BPSK)	Up to 54
802.11n-HT 20	OFDM (64-QAM, 16-QAM, QPSK, BPSK)	Up to 72.2
802.11n-HT 40	OFDM (64-QAM, 16-QAM, QPSK, BPSK)	Up to 150

Channel List			
Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
1	2412	7	2442
2	2417	8	2447
3	2422	9	2452
4	2427	10	2457
5	2432	11	2462
6	2437		

2.3 Test Information

The test software " UI_mptool.exe" was used to control EUT work in TX mode, Power Index and select test channel.

Modulation	data rate (Mbps)	Test Channel		Frequency (MHz)
802.11b	11	Low:	1	2412
		Middle:	6	2437
		High:	11	2462
802.11g	6	Low:	1	2412
		Middle:	6	2437
		High:	11	2462
802.11n20	MCS0	Low:	1	2412
		Middle:	6	2437
		High:	11	2462
802.11n40	MCS0	Low:	3	2422
		Middle:	6	2437
		High:	9	2452

2.4 Sample Description

Test Item	Model Number	Sample Number	Date of receipted
Conducted Emission	JXC8721-65	E2206269a-01/05	2022.06.09
Radiated Emission	JXC8721-65	E2206269a-01/05	2022.06.09
Conducted RF Test	JXC8721-65	E2206269a-01/05	2022.06.09

2.5 Supported equipment

Brand	:	Acer
Product Name:	:	Notebook PC
Model Name	:	TravelMate P238 series
Model Number	:	N15W8

Brand	:	Chicony
Product Name:	:	AC ADAPTER
Model Name	:	A18-045N2A
Model Number	:	A045R072P

2.6 Description of Test Facility

Name of Firm	:	Audix Technology (Shanghai) Co., Ltd.
Site Location	:	3F and 4F, 34Bldg, 680 Guiping Rd., Caohejing Hi-Tech Park, Shanghai 200233, China.
Accredited by NVLAP, Lab Code	:	200371-0
FCC Designation Number	:	CN5027
Test Firm Registration Number	:	954668

3 CONDUCTED EMISSION TEST

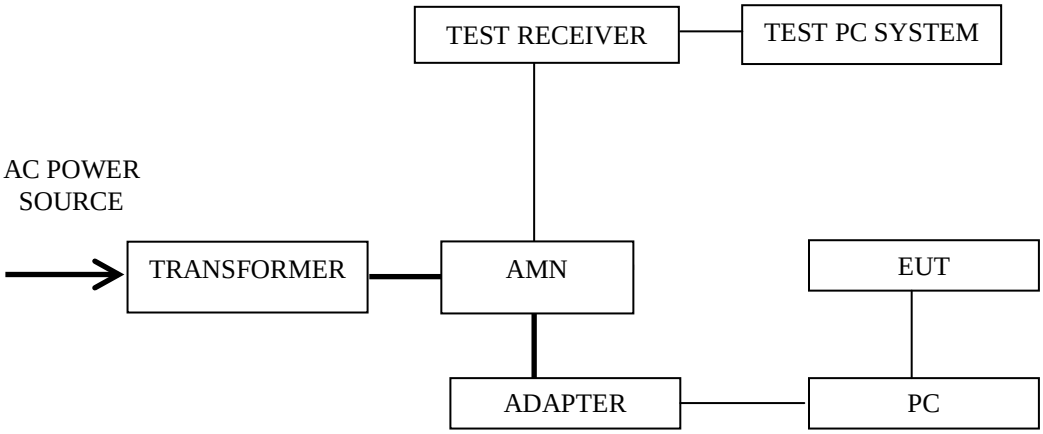
3.1 Test Equipment

The following test equipments are used during the conducted emission test in a shielded room:

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Test Receiver	R&S	ESCI	100841	2022.01.25	1 Year
2.	Artificial Mains Network (AMN)	R&S	ESH2-Z5	843890/011	2022.01.06	1 Year
3.	CE Cable	HANWEI	RG233/U	KJ09052	2022.03.07	1 Year
4.	Software	Audix	e3	6.2009-1-15	--	--

3.2 Block Diagram of Test Setup

3.2.1 Conducted Disturbance Test Setup



—— : Signal Line
—— : Power Line

3.3 Conducted Emission Limits (§15.207)

Frequency Range (MHz)	Limits dB(μV)	
	Quasi-peak	Average
0.15 ~ 0.5	66~56	56~46
0.5 ~ 5	56	46
5 ~ 30	60	50

NOTE 1 – The lower limit shall apply at the transition frequencies.

NOTE 2 – The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz~0.50 MHz

3.4 Test Configuration

The EUT (listed in Sec.2.1) was installed as shown on Sec.3.2 to meet FCC requirement and operating in a manner which tends to maximize its emission level in a normal application.

3.5 Operating Condition of EUT

3.5.1 Setup the EUT as shown in Sec. 3.2.

3.5.2 Turn on the power of all equipment.

3.5.3 Turn the EUT on the test mode, and then test.

3.6 Test Procedures

The EUT was placed upon a non-metallic table, which is 0.8 m above the horizontal conducting ground plane and 0.4 m from a vertical reference plane. The EUT was connected to the power mains through an Artificial Mains Network (AMN) to provide a 50 Ω coupling impedance for the measuring equipment. Both sides of AC line (Line & Neutral) were checked to find out the maximum conducted emission according to FCC Part 15 Subpart C and ANSI C63.10: 2020 requirements during conducted disturbance test.

The I.F. bandwidth of Test Receiver ESCI was set at 9 kHz.

The frequency range from 150 kHz to 30 MHz was checked.

Test with a dummy load in lieu of the antenna to determine compliance with Section 15.207 limits within the transmitter's fundamental emission band. (According to KDB 174176 D01 Line Conducted FAQ)

The test modes were done on conducted disturbance test and all the test results are listed in Sec. 3.7

3.7 Test Results

< PASS >

The frequency and amplitude of the highest conducted emission relative the limit is reported. All the emissions not reported below are too low against the FCC limit.

Worst case emission:

No.	Operation	Modulation	Channel	Frequency (MHz)	Data Page
1.	Transmitting	--	--	--	P13

NOTE 1 – Level = Read Level + AMN Factor + Cable Loss
NOTE 2 – "QP" means "Quasi-Peak" values
NOTE 3 – The emission levels which not reported are too low against the official limit.

Worst case emission

EUT	:	RTL8721DM Module	Temperature :	22℃
Model No.	:	JXC8721-65	Humidity :	51%RH
Test Mode	:	Transmitting	Date of Test :	2022.06.20

Polarization	Frequency (MHz)	Meter Reading dB (μV)	AMN Factor (dB)	Cable Loss (dB)	Emission Level dB (μV)	Limits dB (μV)	Margin (dB)	Remark
Line	**0.15321**	**43.24**	**0.16**	**0.03**	**43.43**	**65.82**	**22.39**	**QP**
	0.15321	25.06	0.16	0.03	25.25	55.82	30.57	Average
	0.50469	26.94	0.2	0.04	27.18	56	28.82	QP
	0.50469	19.5	0.2	0.04	19.74	46	26.26	Average
	0.66127	24.6	0.21	0.05	24.86	56	31.14	QP
	0.66127	16.7	0.21	0.05	16.96	46	29.04	Average
	1.249	10.77	0.23	0.07	11.07	56	44.93	QP
	1.249	3.48	0.23	0.07	3.78	46	42.22	Average
	4.224	13.28	0.27	0.13	13.68	56	42.32	QP
	4.224	7.64	0.27	0.13	8.04	46	37.96	Average
	15.552	25.73	0.42	0.24	26.39	60	33.61	QP
	15.552	20.8	0.42	0.24	21.46	50	28.54	Average
Neutral	0.15321	43.22	0.12	0.03	43.37	65.82	22.45	QP
	0.15321	25.03	0.12	0.03	25.18	55.82	30.64	Average
	0.50469	25.85	0.2	0.04	26.09	56	29.91	QP
	0.50469	18.44	0.2	0.04	18.68	46	27.32	Average
	0.66127	25.46	0.22	0.05	25.73	56	30.27	QP
	0.66127	17.2	0.22	0.05	17.47	46	28.53	Average
	1.352	13.28	0.35	0.07	13.7	56	42.3	QP
	1.352	6.38	0.35	0.07	6.8	46	39.2	Average
	4.269	15.42	0.43	0.13	15.98	56	40.02	QP
	4.269	7.36	0.43	0.13	7.92	46	38.08	Average
	15.885	25.67	0.75	0.25	26.67	60	33.33	QP
	15.885	19.64	0.75	0.25	20.64	50	29.36	Average

TEST ENGINEER: Jarey

4 RADIATED EMISSION TEST

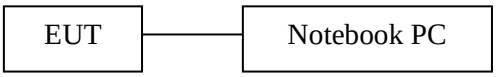
4.1 Test Equipment

The following test equipment are used during the radiated emission test in a semi-anechoic chamber:

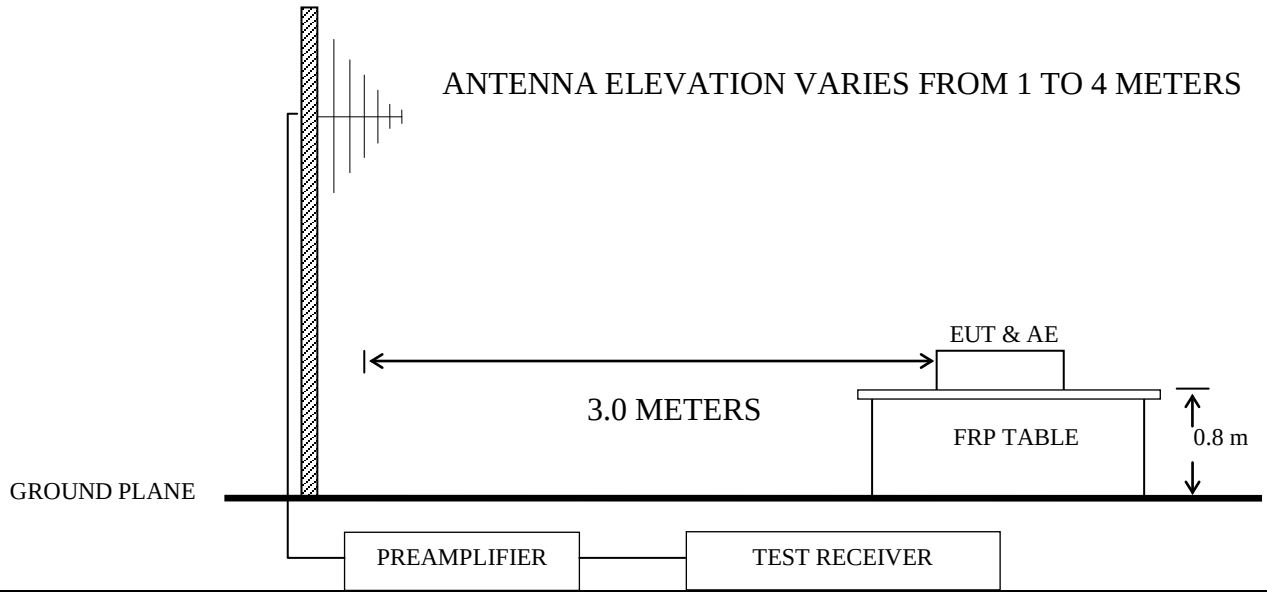
Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Preamplifier	Agilent	8447D	2944A10548	2022.06.06	1 Year
2.	Preamplifier	HP	8449B	3008A00864	2022.06.06	1 Year
3.	Spectrum Analyzer	Agilent	N9010A	MY52221182	2021.09.16	1 Year
4.	Test Receiver	R&S	ESCI	101303	2022.06.06	1 Year
5.	Bilog Antenna+6dB Attenuator	Schwarz beck	VULB 9168+EMCI-N-6-06	708+AT-N0638	2021.12.13	1 Year
6.	Horn Antenna	EMCO	3115	9607-4878	2021.07.27	1 Year
7.	Horn Antenna	EMCO	3116	00062643	2021.10.10	1 Year
8.	Coaxial Cable	SCHAFFNER	RG 212U-MIL C 17+N1K50-EW0630-N1K50-15m-1	RE-10m-001/'RE-15m-002	2022.03.07	1 Year
9.	Cavity Band Rejection Filter	Microwave	WT-A3882-R10	WT200312-1-1	2022.04.14	1 Year
10.	Software	Audix	e3	6.111206	--	--

4.2 Block Diagram of Test Setup

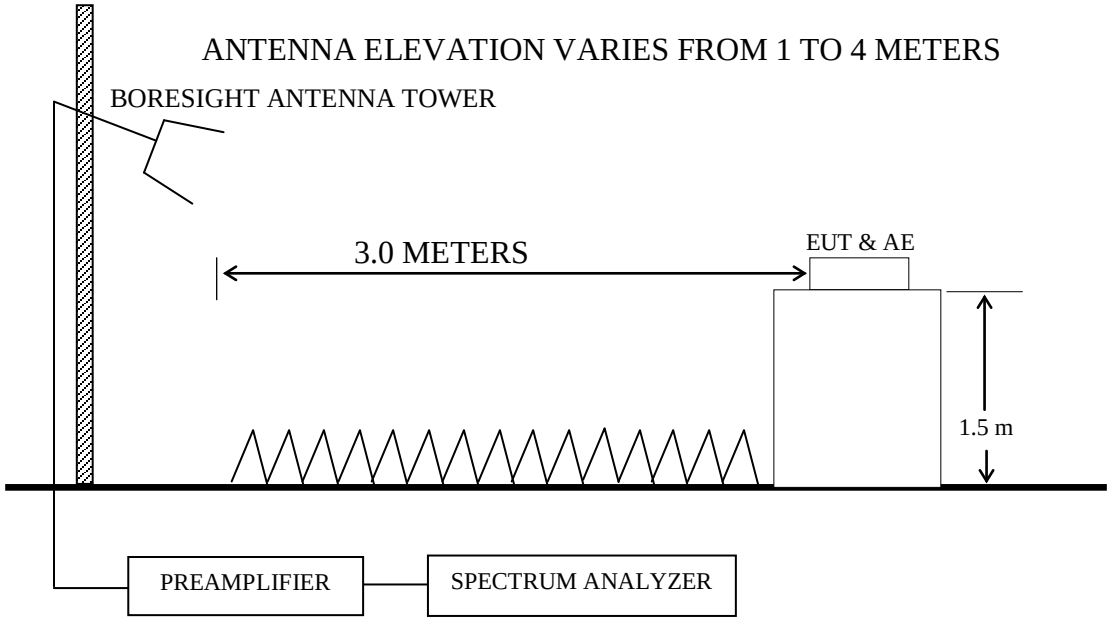
4.2.1 EUT & Peripherals



4.2.2 Below 1GHz



4.2.3 Above 1GHz



4.3 Radiated Emission Limit (§15.209)

Frequency (MHz)	Distance (m)	Field strength limits (μV/m)	
		(μV/m)	(μV/m)
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
Above 960	3	500	54.0

NOTE 1 - Emission Level dB (μV/m) = 20 log Emission Level (μV/m)
NOTE 2 - The tighter limit applies at the band edges.
NOTE 3 - Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
NOTE 4 - The limits shown are based on Quasi-peak value detector below or equal to 1GHz and Average value detector above 1GHz.
NOTE 5 - Above 1 GHz, the limit on peak emission is 20 dB above the maximum permitted average emission limit applicable to the EUT

4.4 Test Configuration

The EUT (listed in Sec.2.1) and the simulators (listed in Sec.2.2) were installed as shown on Sec.4.2 to meet FCC requirements and operating in a manner that tends to maximize its emission level in a normal application.

4.5 Operating Condition of EUT

4.5.1 Setup the EUT as shown in Sec. 4.2.

4.5.2 Turn on the power of all equipment.

4.5.3 Turn the EUT on the test mode, and then test.

4.6 Test Procedures

Radiated emission test applies to harmonics/spurs that fall in the restricted bands listed in Section 15.205. The maximum permitted average field strength is listed in Section 15.209. A pre-amp is necessary for this measurement. For measurement above 1 GHz, set RBW = 1MHz, VBW = 10 Hz, Sweep: Auto. If the emission is pulsed, modify the unit for continuous operation; use the settings shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation.

The EUT was placed on a turntable. Below 1 GHz, the table height is 80 cm above the reference ground plane. Above 1 GHz, the table height is 1.5 m. The turntable rotated 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna, which was mounted on an antenna tower. The antenna moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (Calibrated Bilog Antenna) or Horn antenna was used as receiving antenna. Both horizontal and vertical polarizations of the antenna were set on measurement. In order to find the maximum emission, all of the interference cables were manipulated according to ANSI C63.10: 2020 requirements during radiated emission test.

The bandwidth of Test Receiver R&S ESCI was set at 120 kHz from 30MHz to 1000MHz.

The bandwidth of Agilent N9010A was set at 1MHz for above 1GHz.

The frequency range from 30 MHz to 25 GHz (Up to 10^{th} harmonics from fundamental frequency) was checked.

All the test results are listed in Sec.4.7.

4.7 Test Results

<PASS>

The frequency and amplitude of the highest radiated emission relative the limit is reported. All the emissions not reported below are too low against the FCC limit.

Frequency range: below 1GHz (Worst case emission)

No.	Operation	Modulation	Channel	Frequency	Data Page
1.	Transmitting	802.11b	1	2412 MHz	P19
2.			6	2437 MHz	P19
3.			11	2462 MHz	P20
4.		802.11g	6	2437 MHz	P20
5.		802.11n20	6	2437 MHz	P21
6.		802.11n40	6	2437 MHz	P21

Frequency range: above 1GHz

No.	Operation	Modulation	Channel	Frequency	Data Page
1.	Transmitting	802.11b	1	2412 MHz	P22
2.			6	2437 MHz	P22
3.			11	2462 MHz	P23
4.	Transmitting	802.11g	6	2437 MHz	P23
5.	Transmitting	802.11n20	6	2437 MHz	P24
6.	Transmitting	802.11n40	6	2437 MHz	P24

Band-Edge:

No.	Operation	Modulation	Channel	Frequency	Data Page
1.	Transmitting	802.11b	1	2412 MHz	P25
2.			11	2462 MHz	P25
3.		802.11g	1	2412 MHz	P25
4.			11	2462 MHz	P26
5.		802.11n20	1	2412 MHz	P26
6.			11	2462 MHz	P26
7.		802.11n40	3	2422 MHz	P26
8.			9	2452 MHz	P26

Restricted bands:

No.	Operation	Modulation	Channel	Frequency	Data Page
1.	Transmitting	802.11b	1	2412 MHz	P27
2.			11	2462 MHz	P27
3.		802.11g	1	2412 MHz	P28
4.			11	2462 MHz	P28
5.		802.11n20	1	2412 MHz	P29
6.			11	2462 MHz	P29
7.		802.11n40	3	2422 MHz	P30
8.			9	2452 MHz	P30

NOTE 1 – Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
NOTE 2 – "QP" means "Quasi-Peak" values
NOTE 3 – 0°was the table front facing the antenna. Degree is calculated from 0°clockwise facing the antenna.
NOTE 4 – The emission levels which not reported are too low against the official limit.
NOTE 5 – The emission levels recorded below is data of EUT configured in Standing direction, for Standing direction was the maximum emission direction during the test. The data of Side & Lying direction are too low against the official limit to be reported.
NOTE 6 – All reading are Quasi-Peak values below or equal to 1GHz, Peak and Average values above 1GHz.
For above 1GHz test, if the peak measured value complies with the average limit, it is unnecessary to perform an average measurement.
NOTE 7 – The frequency range 2310-2390MHz & 2483.5-2500MHz were tested for Restricted bands.

Worst case emission < 1GHz

EUT	:	RTL8721DM Module	Temperature :	22℃
Model No.	:	JXC8721-65	Humidity :	51%RH
Test Mode	:	Transmitting	Date of Test :	2022.06.19

802.11b CH2412MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	47.994	22.96	19.68	0.73	28.21	15.16	40	24.84	QP
	96.099	36.21	14.67	1.07	28.02	23.93	43.5	19.57	QP
	143.83	33.42	18.94	1.29	27.82	25.83	43.5	17.67	QP
	191.745	37.7	16.5	1.51	27.47	28.24	43.5	15.26	QP
	289.002	30.79	18.93	1.86	27.06	24.52	46	21.48	QP
	560.693	28.44	24.61	2.57	27.88	27.74	46	18.26	QP
Vertical	50.942	23.45	19.62	0.76	28.2	15.63	40	24.37	QP
	96.099	27.88	14.67	1.07	28.02	15.6	43.5	27.9	QP
	168.414	27.47	18.8	1.39	27.67	19.99	43.5	23.51	QP
	191.745	30.14	16.5	1.51	27.47	20.68	43.5	22.82	QP
	437.12	23.04	22.59	2.26	27.75	20.14	46	25.86	QP
	599.321	27.81	25.4	2.73	27.8	28.14	46	17.86	QP

802.11b CH2437MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	51.301	23.7	19.59	0.76	28.19	15.86	40	24.14	QP
	96.099	36.35	14.67	1.07	28.02	24.07	43.5	19.43	QP
	143.83	32.46	18.94	1.29	27.82	24.87	43.5	18.63	QP
	191.745	37.51	16.5	1.51	27.47	28.05	43.5	15.45	QP
	289.002	30.96	18.93	1.86	27.06	24.69	46	21.31	QP
	560.693	27.62	24.61	2.57	27.88	26.92	46	19.08	QP
Vertical	50.409	23.32	19.67	0.76	28.2	15.55	40	24.45	QP
	96.099	29.21	14.67	1.07	28.02	16.93	43.5	26.57	QP
	168.414	28.22	18.8	1.39	27.67	20.74	43.5	22.76	QP
	191.745	30.32	16.5	1.51	27.47	20.86	43.5	22.64	QP
	289.002	24.54	18.93	1.86	27.06	18.27	46	27.73	QP
	599.321	28.87	25.4	2.73	27.8	29.2	46	16.8	QP

802.11b CH2462MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	55.609	23.07	19.24	0.8	28.18	14.93	40	25.07	QP
	96.099	36.54	14.67	1.07	28.02	24.26	43.5	19.24	QP
	143.83	32.92	18.94	1.29	27.82	25.33	43.5	18.17	QP
	192.419	37.45	16.43	1.51	27.47	27.92	43.5	15.58	QP
	289.002	30.62	18.93	1.86	27.06	24.35	46	21.65	QP
	499.425	31.09	23.6	2.48	27.9	29.27	46	16.73	QP
Vertical	49.359	23.58	19.69	0.74	28.2	15.81	40	24.19	QP
	96.099	28.29	14.67	1.07	28.02	16.01	43.5	27.49	QP
	168.414	27.22	18.8	1.39	27.67	19.74	43.5	23.76	QP
	191.745	30.15	16.5	1.51	27.47	20.69	43.5	22.81	QP
	289.002	25.14	18.93	1.86	27.06	18.87	46	27.13	QP
	599.321	28.73	25.4	2.73	27.8	29.06	46	16.94	QP

802.11g CH2437MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	50.409	23.77	19.67	0.76	28.2	16	40	24	QP
	96.099	36.29	14.67	1.07	28.02	24.01	43.5	19.49	QP
	144.335	33.32	18.97	1.29	27.82	25.76	43.5	17.74	QP
	192.419	37.23	16.43	1.51	27.47	27.7	43.5	15.8	QP
	289.002	31.91	18.93	1.86	27.06	25.64	46	20.36	QP
	480.528	30.37	23.38	2.4	27.86	28.29	46	17.71	QP
Vertical	46.995	23.31	19.67	0.73	28.21	15.5	40	24.5	QP
	96.099	29.62	14.67	1.07	28.02	17.34	43.5	26.16	QP
	168.414	28.57	18.8	1.39	27.67	21.09	43.5	22.41	QP
	191.745	30.4	16.5	1.51	27.47	20.94	43.5	22.56	QP
	499.425	24.82	23.6	2.48	27.9	23	46	23	QP
	599.321	29.24	25.4	2.73	27.8	29.57	46	16.43	QP

802.11n20 CH2437MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	48.843	23.3	19.69	0.74	28.2	15.53	40	24.47	QP
	96.099	36.51	14.67	1.07	28.02	24.23	43.5	19.27	QP
	143.83	33.08	18.94	1.29	27.82	25.49	43.5	18.01	QP
	192.419	37.46	16.43	1.51	27.47	27.93	43.5	15.57	QP
	289.002	30.87	18.93	1.86	27.06	24.6	46	21.4	QP
	560.693	29.04	24.61	2.57	27.88	28.34	46	17.66	QP
Vertical	50.409	23.32	19.67	0.76	28.2	15.55	40	24.45	QP
	68.391	22.31	17.72	0.9	28.13	12.8	40	27.2	QP
	143.83	25.39	18.94	1.29	27.82	17.8	43.5	25.7	QP
	167.824	24.87	18.83	1.39	27.67	17.42	43.5	26.08	QP
	403.25	23.12	21.4	2.17	27.6	19.09	46	26.91	QP
	499.425	28.6	23.6	2.48	27.9	26.78	46	19.22	QP

TEST ENGINEER: Jarey

802.11n40 CH2437MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	49.359	23.55	19.69	0.74	28.2	15.78	40	24.22	QP
	96.099	36.82	14.67	1.07	28.02	24.54	43.5	18.96	QP
	143.83	33.09	18.94	1.29	27.82	25.5	43.5	18	QP
	191.745	37.77	16.5	1.51	27.47	28.31	43.5	15.19	QP
	289.002	31.24	18.93	1.86	27.06	24.97	46	21.03	QP
	550.948	30.05	24.4	2.53	27.9	29.08	46	16.92	QP
Vertical	41.132	24.28	19.61	0.68	28.24	16.33	40	23.67	QP
	96.099	30.15	14.67	1.07	28.02	17.87	43.5	25.63	QP
	143.83	25.48	18.94	1.29	27.82	17.89	43.5	25.61	QP
	191.745	30.38	16.5	1.51	27.47	20.92	43.5	22.58	QP
	289.002	24.97	18.93	1.86	27.06	18.7	46	27.3	QP
	599.321	29.59	25.4	2.73	27.8	29.92	46	16.08	QP

TEST ENGINEER: Jarey

Radiated Emission > 1GHz

EUT	:	RTL8721DM Module	Temperature :	22℃
Model No.	:	JXC8721-65	Humidity :	51%RH
Test Mode	:	Transmitting	Date of Test :	2022.06.19

802.11b CH2412MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	3193	42.41	30.6	6.09	35.24	43.86	74	30.14	Peak
	4910	39.22	33.66	7.61	34.72	45.77	74	28.23	Peak
	6066	39.68	34.31	8.43	34.71	47.71	74	26.29	Peak
	7749	37.14	37.25	10.01	34.8	49.6	74	24.4	Peak
	9619	37.03	38.32	11.15	34.64	51.86	74	22.14	Peak
	11302	35.83	38.8	11.87	34.34	52.16	74	21.84	Peak
Vertical	3618	40.33	31.61	6.44	35.11	43.27	74	30.73	Peak
	4995	38.63	33.94	7.73	34.7	45.6	74	28.4	Peak
	6185	36.72	34.34	8.52	34.72	44.86	74	29.14	Peak
	7749	36.28	37.25	10.01	34.8	48.74	74	25.26	Peak
	9670	35.02	38.33	11.15	34.63	49.87	74	24.13	Peak
	11523	34.58	38.81	11.99	34.29	51.09	74	22.91	Peak

802.11b CH2437MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	3448	42.18	31.19	6.31	35.15	44.53	74	29.47	Peak
	5267	38.76	34.05	7.89	34.7	46	74	28	Peak
	7137	38.19	35.95	9.37	34.8	48.71	74	25.29	Peak
	8327	36.88	38.3	10.4	34.77	50.81	74	23.19	Peak
	9840	35.99	38.37	11.24	34.62	50.98	74	23.02	Peak
	11421	35.56	38.8	11.99	34.32	52.03	74	21.97	Peak
Vertical	3499	41.57	31.3	6.36	35.14	44.09	74	29.91	Peak
	5369	37.51	34.07	7.99	34.7	44.87	74	29.13	Peak
	7018	35.83	35.65	9.26	34.8	45.94	74	28.06	Peak
	8225	36.53	38.13	10.34	34.78	50.22	74	23.78	Peak
	9568	35.61	38.31	11.06	34.64	50.34	74	23.66	Peak
	11489	35.04	38.8	11.99	34.3	51.53	74	22.47	Peak

802.11b CH2462MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	3329	42.21	30.92	6.23	35.19	44.17	74	29.83	Peak
	4842	39.41	33.38	7.55	34.74	45.6	74	28.4	Peak
	6695	37.66	34.88	9.01	34.77	46.78	74	27.22	Peak
	8055	36.77	37.83	10.28	34.79	50.09	74	23.91	Peak
	9466	37.01	38.29	11.06	34.65	51.71	74	22.29	Peak
	11166	36.13	38.8	11.76	34.37	52.32	74	21.68	Peak
Vertical	3397	41.53	31.07	6.27	35.17	43.7	74	30.3	Peak
	5250	38.06	34.05	7.89	34.7	45.3	74	28.7	Peak
	7154	35.96	36	9.37	34.8	46.53	74	27.47	Peak
	8208	35.39	38.09	10.34	34.78	49.04	74	24.96	Peak
	9823	35.52	38.36	11.24	34.62	50.5	74	23.5	Peak
	11591	34.83	38.84	12.1	34.28	51.49	74	22.51	Peak

802.11g CH2437MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	3499	41.58	31.3	6.36	35.14	44.1	74	29.9	Peak
	5080	38.22	34.02	7.78	34.7	45.32	74	28.68	Peak
	6899	36.89	35.36	9.18	34.79	46.64	74	27.36	Peak
	8565	37.59	38.54	10.52	34.74	51.91	74	22.09	Peak
	10129	36.02	38.38	11.37	34.57	51.2	74	22.8	Peak
	11693	34.81	38.88	12.1	34.26	51.53	74	22.47	Peak
Vertical	3176	41.87	30.55	6.05	35.24	43.23	74	30.77	Peak
	4842	39.94	33.38	7.55	34.74	46.13	74	27.87	Peak
	6219	39.15	34.34	8.6	34.72	47.37	74	26.63	Peak
	7715	37.15	37.21	10.01	34.8	49.57	74	24.43	Peak
	9449	36.87	38.29	11.06	34.65	51.57	74	22.43	Peak
	11013	36.07	38.8	11.64	34.4	52.11	74	21.89	Peak

802.11n20 CH2437MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	3448	42.4	31.19	6.31	35.15	44.75	74	29.25	Peak
	4927	39.41	33.72	7.67	34.72	46.08	74	27.92	Peak
	7035	37.38	35.7	9.26	34.8	47.54	74	26.46	Peak
	8463	37.09	38.56	10.46	34.75	51.36	74	22.64	Peak
	9925	36.68	38.38	11.33	34.61	51.78	74	22.22	Peak
	11710	34.81	38.88	12.1	34.25	51.54	74	22.46	Peak
Vertical	3108	41.78	30.37	6.01	35.26	42.9	74	31.1	Peak
	4978	39.73	33.89	7.67	34.7	46.59	74	27.41	Peak
	7375	37.71	36.5	9.69	34.8	49.1	74	24.9	Peak
	8429	36.64	38.51	10.46	34.76	50.85	74	23.15	Peak
	9687	36.26	38.34	11.15	34.63	51.12	74	22.88	Peak
	11149	35.63	38.8	11.76	34.37	51.82	74	22.18	Peak

TEST ENGINEER: Jarey

802.11n40 CH2437MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	3516	42.33	31.35	6.36	35.13	44.91	74	29.09	Peak
	5148	38.48	34.03	7.83	34.7	45.64	74	28.36	Peak
	6236	38.38	34.35	8.6	34.73	46.6	74	27.4	Peak
	8157	37.28	38	10.28	34.79	50.77	74	23.23	Peak
	9619	36.95	38.32	11.15	34.64	51.78	74	22.22	Peak
	11183	35.85	38.8	11.76	34.36	52.05	74	21.95	Peak
Vertical	3261	41.38	30.76	6.14	35.21	43.07	74	30.93	Peak
	4910	39.24	33.66	7.61	34.72	45.79	74	28.21	Peak
	6304	37.56	34.36	8.68	34.73	45.87	74	28.13	Peak
	7766	36.7	37.29	10.01	34.8	49.2	74	24.8	Peak
	9381	36.81	38.28	10.97	34.66	51.4	74	22.6	Peak
	11353	35	38.8	11.87	34.33	51.34	74	22.66	Peak

TEST ENGINEER: Jarey

Band-Edge:

EUT	:	RTL8721DM Module	Temperature :	22℃
Model No.	:	JXC8721-65	Humidity :	51%RH
Test Mode	:	Transmitting	Date of Test :	2022.06.19

802.11b CH2412MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	2390	50.93	28.21	5.36	35.86	48.64	74	25.36	Peak
	2390	40.59	28.21	5.36	35.86	38.3	54	15.7	Average
Vertical	2390	48.95	28.21	5.36	35.86	46.66	74	27.34	Peak
	2390	34.59	28.21	5.36	35.86	32.3	54	21.7	Average

802.11b CH2462MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	2483.5	46.2	28.46	5.43	35.76	44.33	74	29.67	Peak
	2483.5	37.5	28.46	5.43	35.76	35.63	54	18.37	Average
Vertical	2483.5	44.66	28.46	5.43	35.76	42.79	74	31.21	Peak
	2483.5	33.47	28.46	5.43	35.76	31.6	54	22.4	Average

802.11g CH2412MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	2390	49.03	28.21	5.36	35.86	46.74	74	27.26	Peak
	2390	39.02	28.21	5.36	35.86	36.73	54	17.27	Average
Vertical	2390	45.58	28.21	5.36	35.86	43.29	74	30.71	Peak
	2390	33.46	28.21	5.36	35.86	31.17	54	22.83	Average

802.11g CH2462MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	2483.5	45.82	28.46	5.43	35.76	43.95	74	30.05	Peak
	2483.5	34.38	28.46	5.43	35.76	32.51	54	21.49	Average
Vertical	2483.5	42.24	28.46	5.43	35.76	40.37	74	33.63	Peak
	2483.5	33.22	28.46	5.43	35.76	31.35	54	22.65	Average

802.11n20 CH2412MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	2390	49.94	28.21	5.36	35.86	47.65	74	26.35	Peak
	2390	39.49	28.21	5.36	35.86	37.2	54	16.8	Average
Vertical	2390	47.36	28.21	5.36	35.86	45.07	74	28.93	Peak
	2390	33.43	28.21	5.36	35.86	31.14	54	22.86	Average

802.11n20 CH2462MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	2483.5	45.85	28.46	5.43	35.76	43.98	74	30.02	Peak
	2483.5	35.58	28.46	5.43	35.76	33.71	54	20.29	Average
Vertical	2483.5	41.63	28.46	5.43	35.76	39.76	74	34.24	Peak
	2483.5	31.46	28.46	5.43	35.76	29.59	54	24.41	Average

802.11n40 CH2422MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	2390	55.24	28.21	5.36	35.86	52.95	74	21.05	Peak
	2390	43.42	28.21	5.36	35.86	41.13	54	12.87	Average
Vertical	2390	48.13	28.21	5.36	35.86	45.84	74	28.16	Peak
	2390	37.41	28.21	5.36	35.86	35.12	54	18.88	Average

802.11n40 CH2452MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	2483.5	48.62	28.46	5.43	35.76	46.75	74	27.25	Peak
	2483.5	37.56	28.46	5.43	35.76	35.69	54	18.31	Average
Vertical	2483.5	45.03	28.46	5.43	35.76	43.16	74	30.84	Peak
	2483.5	35.3	28.46	5.43	35.76	33.43	54	20.57	Average

Emissions in restricted frequency bands:

EUT	:	RTL8721DM Module	Temperature :	22℃
Model No.	:	JXC8721-65	Humidity :	51%RH
Test Mode	:	Transmitting	Date of Test :	2022.06.19

802.11b CH2412MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	2332.08	49.07	28.06	5.29	35.93	46.49	74	27.51	Peak
	2332.08	38.41	28.06	5.29	35.93	35.83	54	18.17	Average
	2361.36	48.48	28.14	5.32	35.89	46.05	74	27.95	Peak
	2361.36	37.25	28.14	5.32	35.89	34.82	54	19.18	Average
	2386.01	50.91	28.21	5.36	35.87	48.61	74	25.39	Peak
	2386.01	38.49	28.21	5.36	35.87	36.19	54	17.81	Average
Vertical	2332.45	45.31	28.06	5.29	35.93	42.73	74	31.27	Peak
	2332.45	33.24	28.06	5.29	35.93	30.66	54	23.34	Average
	2362.58	44.51	28.14	5.32	35.89	42.08	74	31.92	Peak
	2362.58	32.55	28.14	5.32	35.89	30.12	54	23.88	Average
	2388.81	51.2	28.21	5.36	35.86	48.91	74	25.09	Peak
	2388.81	33.52	28.21	5.36	35.86	31.23	54	22.77	Average

802.11b CH2462MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	2485.33	48.73	28.46	5.47	35.76	46.9	74	27.1	Peak
	2485.33	36.47	28.46	5.47	35.76	34.64	54	19.36	Average
	2491.76	48.66	28.48	5.47	35.76	46.85	74	27.15	Peak
	2491.76	37.27	28.48	5.47	35.76	35.46	54	18.54	Average
	2498.09	48.22	28.5	5.47	35.76	46.43	74	27.57	Peak
	2498.09	37.42	28.5	5.47	35.76	35.63	54	18.37	Average
Vertical	2485.79	44.66	28.46	5.47	35.76	42.83	74	31.17	Peak
	2485.79	32.46	28.46	5.47	35.76	30.63	54	23.37	Average
	2491.13	44.58	28.48	5.47	35.76	42.77	74	31.23	Peak
	2491.13	34.26	28.48	5.47	35.76	32.45	54	21.55	Average
	2497.16	43.82	28.5	5.47	35.76	42.03	74	31.97	Peak
	2497.16	32.58	28.5	5.47	35.76	30.79	54	23.21	Average

802.11g CH2412MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	2332.57	46.58	28.06	5.29	35.93	44	74	30	Peak
	2332.57	35.36	28.06	5.29	35.93	32.78	54	21.22	Average
	2369.05	47.85	28.15	5.32	35.89	45.43	74	28.57	Peak
	2369.05	36.5	28.15	5.32	35.89	34.08	54	19.92	Average
	2386.98	49.1	28.21	5.36	35.87	46.8	74	27.2	Peak
	2386.98	37.51	28.21	5.36	35.87	35.21	54	18.79	Average
Vertical	2314.39	46.22	28.01	5.29	35.94	43.58	74	30.42	Peak
	2314.39	32.52	28.01	5.29	35.94	29.88	54	24.12	Average
	2350.99	44.47	28.12	5.32	35.9	42.01	74	31.99	Peak
	2350.99	32.25	28.12	5.32	35.9	29.79	54	24.21	Average
	2387.71	48.28	28.21	5.36	35.86	45.99	74	28.01	Peak
	2387.71	32.43	28.21	5.36	35.86	30.14	54	23.86	Average

802.11g CH2462MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	2484.28	45.45	28.46	5.47	35.76	43.62	74	30.38	Peak
	2484.28	34.34	28.46	5.47	35.76	32.51	54	21.49	Average
	2490.95	46.87	28.48	5.47	35.76	45.06	74	28.94	Peak
	2490.95	34.58	28.48	5.47	35.76	32.77	54	21.23	Average
	2494.43	45.44	28.48	5.47	35.76	43.63	74	30.37	Peak
	2494.43	34.25	28.48	5.47	35.76	32.44	54	21.56	Average
Vertical	2484.63	43.44	28.46	5.47	35.76	41.61	74	32.39	Peak
	2484.63	32.64	28.46	5.47	35.76	30.81	54	23.19	Average
	2492.63	44.43	28.48	5.47	35.76	42.62	74	31.38	Peak
	2492.63	31.54	28.48	5.47	35.76	29.73	54	24.27	Average
	2498.84	44.9	28.5	5.47	35.76	43.11	74	30.89	Peak
	2498.84	33.69	28.5	5.47	35.76	31.9	54	22.1	Average

802.11n20 CH2412MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	2336.23	47.65	28.08	5.29	35.92	45.1	74	28.9	Peak
	2336.23	36.57	28.08	5.29	35.92	34.02	54	19.98	Average
	2357.95	46.23	28.14	5.32	35.89	43.8	74	30.2	Peak
	2357.95	35.22	28.14	5.32	35.89	32.79	54	21.21	Average
	2388.81	51.13	28.21	5.36	35.86	48.84	74	25.16	Peak
	2388.81	38.41	28.21	5.36	35.86	36.12	54	17.88	Average
Vertical	2338.3	44.84	28.08	5.29	35.92	42.29	74	31.71	Peak
	2338.3	33.29	28.08	5.29	35.92	30.74	54	23.26	Average
	2354.77	44.28	28.12	5.32	35.9	41.82	74	32.18	Peak
	2354.77	32.53	28.12	5.32	35.9	30.07	54	23.93	Average
	2388.69	48.31	28.21	5.36	35.86	46.02	74	27.98	Peak
	2388.69	32.53	28.21	5.36	35.86	30.24	54	23.76	Average

802.11n20 CH2462MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	2484.11	47.08	28.46	5.43	35.76	45.21	74	28.79	Peak
	2484.11	35.51	28.46	5.43	35.76	33.64	54	20.36	Average
	2492	46.91	28.48	5.47	35.76	45.1	74	28.9	Peak
	2492	34.69	28.48	5.47	35.76	32.88	54	21.12	Average
	2497.04	46.11	28.5	5.47	35.76	44.32	74	29.68	Peak
	2497.04	34.41	28.5	5.47	35.76	32.62	54	21.38	Average
Vertical	2485.73	42.93	28.46	5.47	35.76	41.1	74	32.9	Peak
	2485.73	31.59	28.46	5.47	35.76	29.76	54	24.24	Average
	2489.62	43.69	28.48	5.47	35.76	41.88	74	32.12	Peak
	2489.62	31.26	28.48	5.47	35.76	29.45	54	24.55	Average
	2496.87	44.52	28.5	5.47	35.76	42.73	74	31.27	Peak
	2496.87	32.35	28.5	5.47	35.76	30.56	54	23.44	Average

TEST ENGINEER: Jarey

802.11n40 CH2422MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	2333.71	46.53	28.06	5.29	35.92	43.96	74	30.04	Peak
	2333.71	35.26	28.06	5.29	35.92	32.69	54	21.31	Average
	2358.42	46.67	28.14	5.32	35.89	44.24	74	29.76	Peak
	2358.42	35.37	28.14	5.32	35.89	32.94	54	21.06	Average
	2385.69	56.56	28.21	5.36	35.87	54.26	74	19.74	Peak
	2385.69	41.26	28.21	5.36	35.87	38.96	54	15.04	Average
Vertical	2331.16	44.83	28.06	5.29	35.93	42.25	74	31.75	Peak
	2331.16	33.69	28.06	5.29	35.93	31.11	54	22.89	Average
	2354.02	44.31	28.12	5.32	35.9	41.85	74	32.15	Peak
	2354.02	32.23	28.12	5.32	35.9	29.77	54	24.23	Average
	2388.95	49.34	28.21	5.36	35.86	47.05	74	26.95	Peak
	2388.95	36.53	28.21	5.36	35.86	34.24	54	19.76	Average

802.11n40 CH2452MHz

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	2483.23	49.81	28.46	5.43	35.76	47.94	74	26.06	Peak
	2483.23	36.58	28.46	5.43	35.76	34.71	54	19.29	Average
	2488.22	49.96	28.46	5.47	35.76	48.13	74	25.87	Peak
	2488.22	36.59	28.46	5.47	35.76	34.76	54	19.24	Average
	2496.88	46.88	28.5	5.47	35.76	45.09	74	28.91	Peak
	2496.88	33.29	28.5	5.47	35.76	31.5	54	22.5	Average
Vertical	2484.56	46.64	28.46	5.47	35.76	44.81	74	29.19	Peak
	2484.56	34.46	28.46	5.47	35.76	32.63	54	21.37	Average
	2488.3	49.05	28.46	5.47	35.76	47.22	74	26.78	Peak
	2488.3	36.4	28.46	5.47	35.76	34.57	54	19.43	Average
	2496.18	46.17	28.48	5.47	35.76	44.36	74	29.64	Peak
	2496.18	33.62	28.48	5.47	35.76	31.81	54	22.19	Average

TEST ENGINEER: Jarey

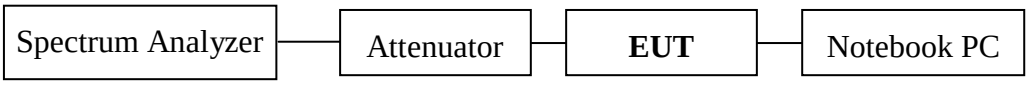
5 99% OCCUPIED BANDWIDTH MEASUREMENT

5.1 Test Equipment

The following test equipment was used during the Emission Bandwidth measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Agilent	N9010A	MY52221182	2021.09.16	1 Year
2.	Coaxial Cable	WOKEN	SFL402-105F LEX	F02-150819-045	2022.03.08	1 Year
3.	20 dB Attenuator	Mini-Circuits	VAT-20+	001	2021.08.06	1 Year

5.2 Block Diagram of Test Setup



5.3 Operating Condition of EUT

The switch ON/OFF was used to enable the EUT to change the channel one by one.

5.4 Test Procedure

The transmitter output was connected to the spectrum analyzer. The bandwidth of 99% power bandwidth was measure by spectrum analyzer with settings: Span = between 1.5 times and 5.0 times of the OBW, RBW = 1% to 5% of the OBW, VBW ≥ 3 × RBW, Detector = Peak, Trace = Max Hold.
Use the 99% power bandwidth function of the instrument and report the measured bandwidth.

The test procedure is defined in ANSI C63.10-2020 (the 6.9.3 Measurement Procedure "Occupied bandwidth—power bandwidth (99%) measurement procedure" was used).

5.5 Test Results

PASSED.

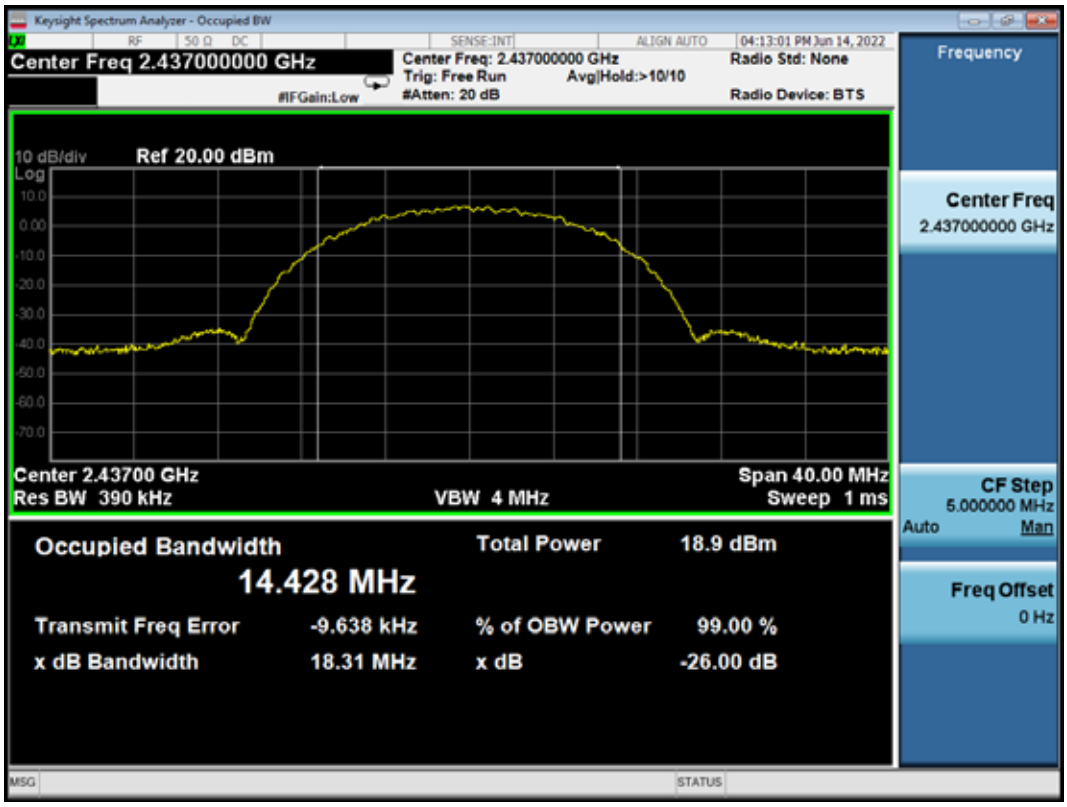
All the test results are attached in next pages.

(Test Date: 2022.06.14 Temperature: 23℃ Humidity: 51 %)

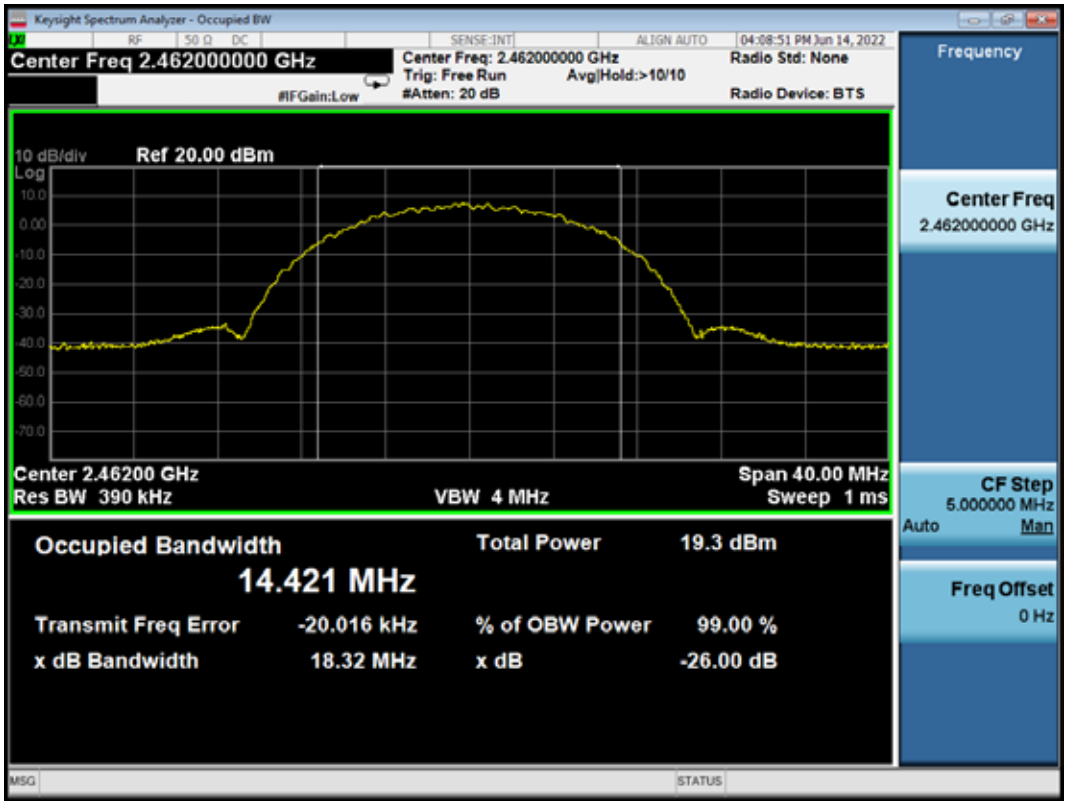
Modulation	Channel	Frequency (MHz)	**99% Bandwidth (MHz)**
802.11b	1	2412	**14.43**
	6	2437	**14.428**
	11	2462	**14.421**
802.11g	1	2412	**16.943**
	6	2437	**16.939**
	11	2462	**16.943**
802.11n20	1	2412	**18.069**
	6	2437	**17.965**
	11	2462	**18.014**
802.11n40	3	2422	**35.768**
	6	2437	**35.772**
	9	2452	**35.773**

802.11b CH2412MHz

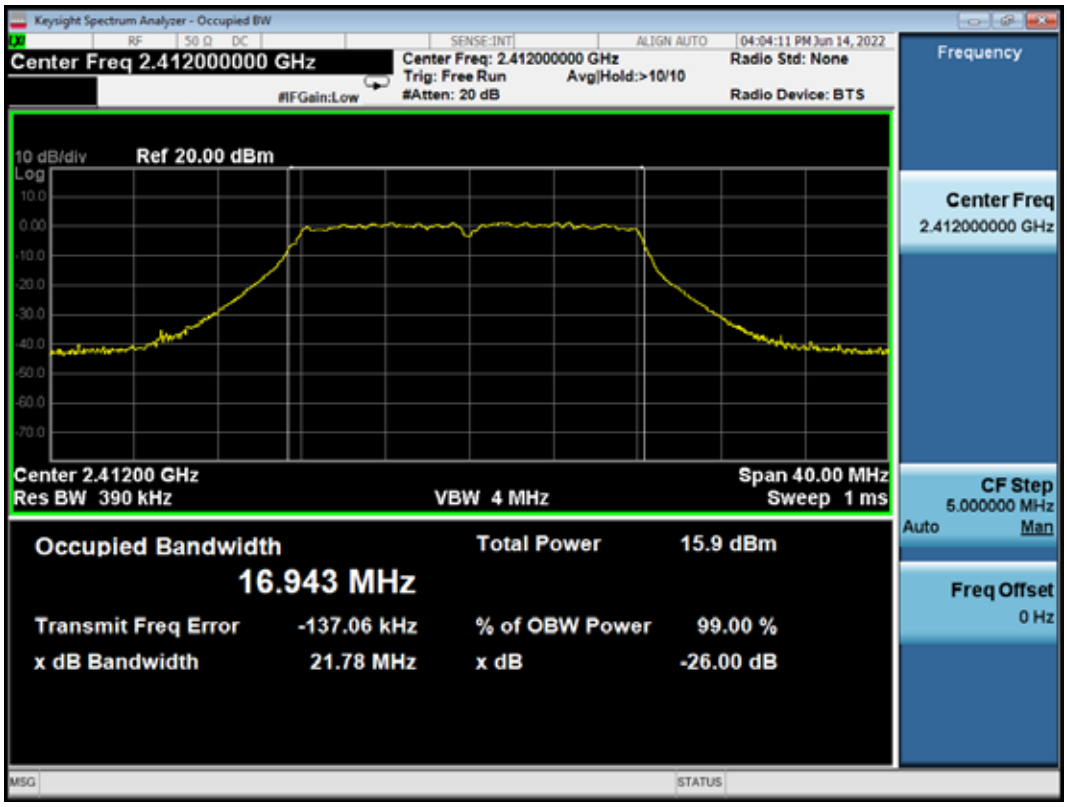
802.11b CH2437MHz



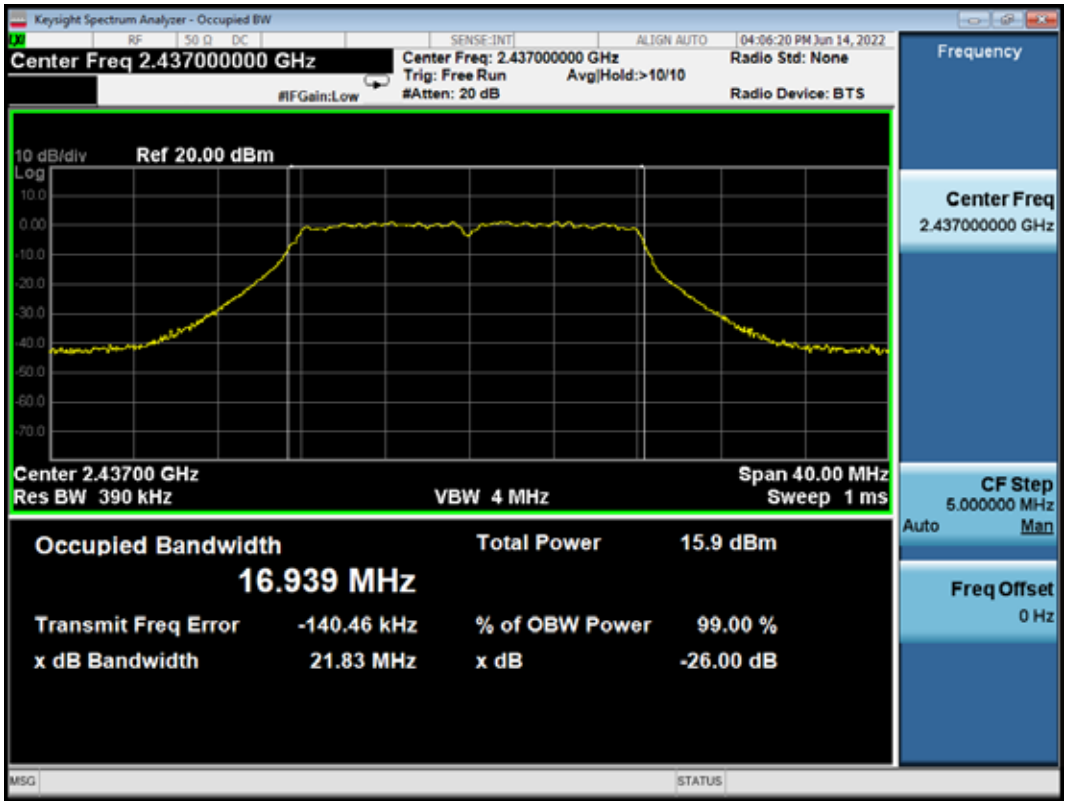
802.11b CH2462MHz



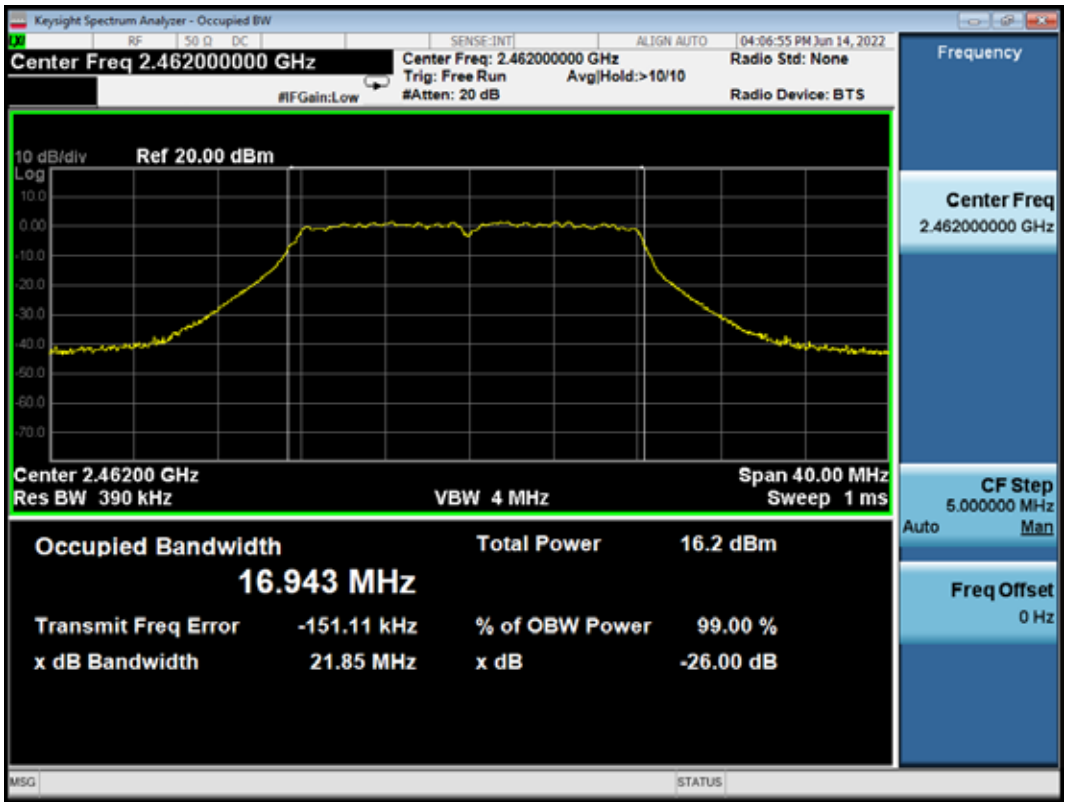
802.11g CH2412MHz



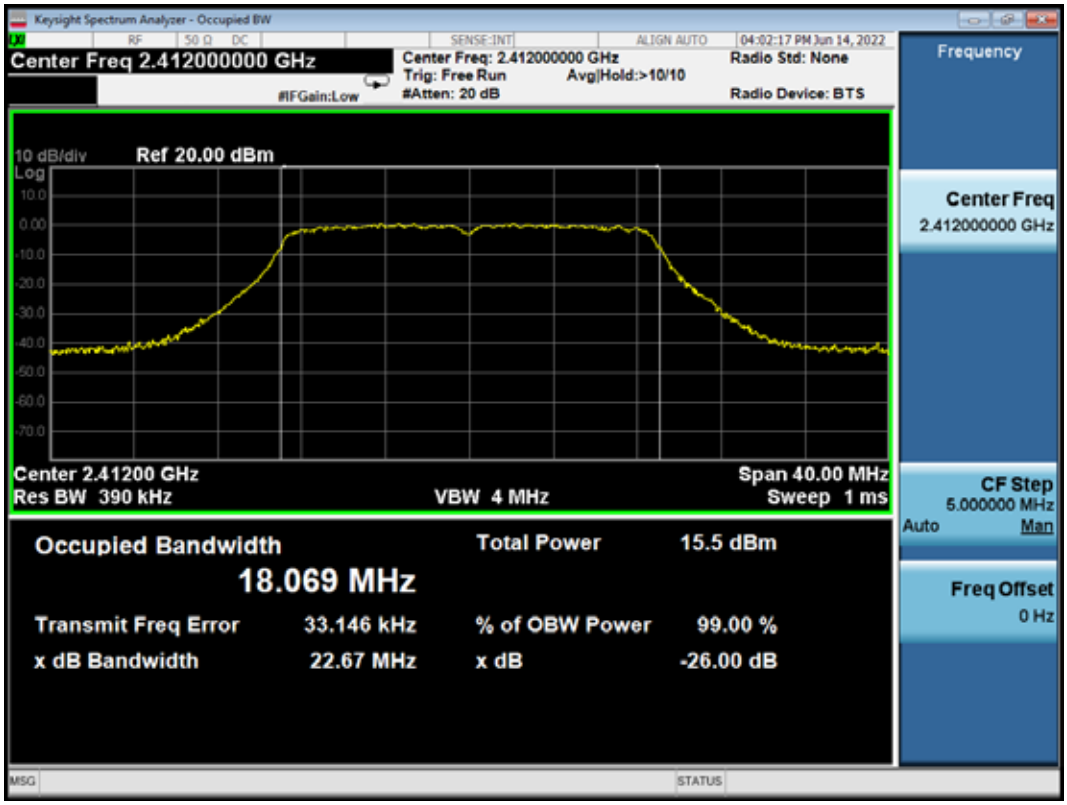
802.11g CH2437MHz



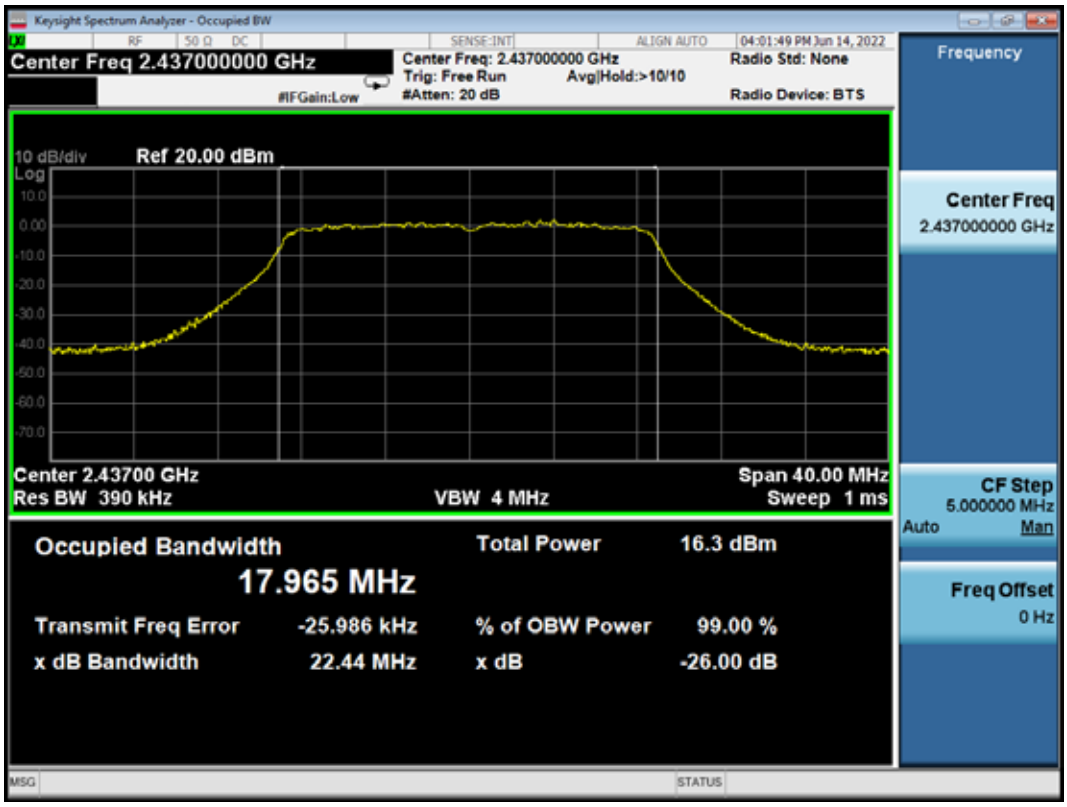
802.11g CH2462MHz



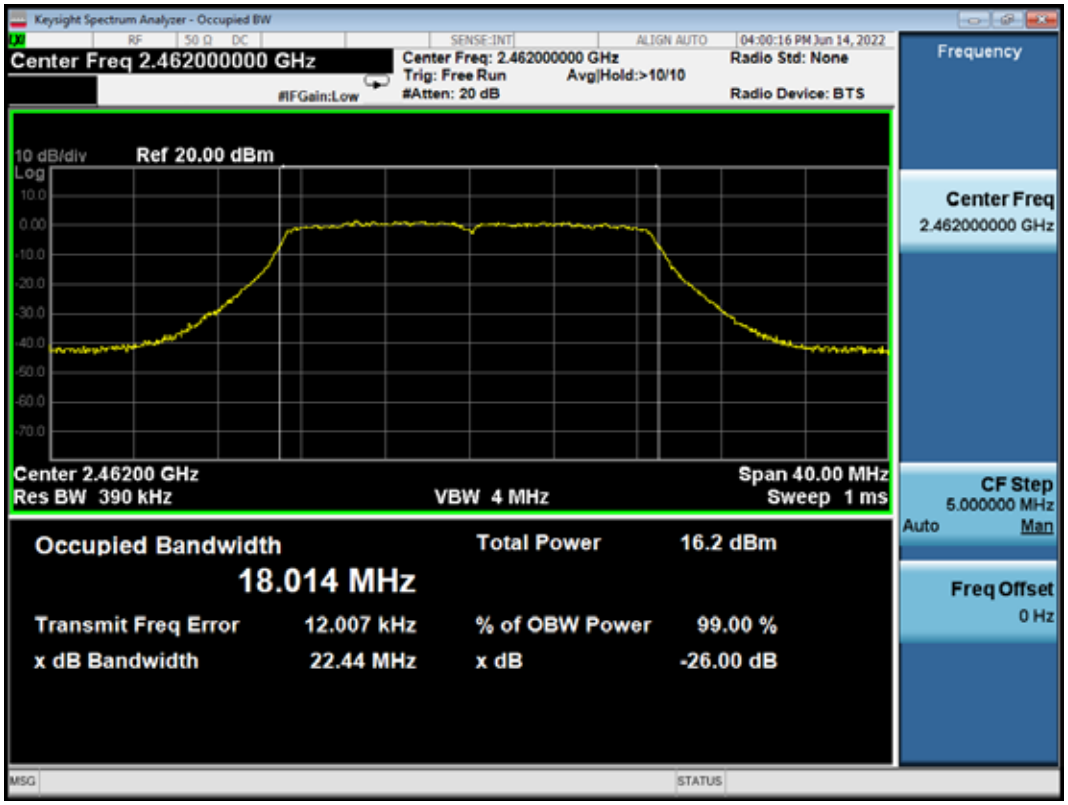
802.11n20 CH2412MHz



802.11n20 CH2437MHz

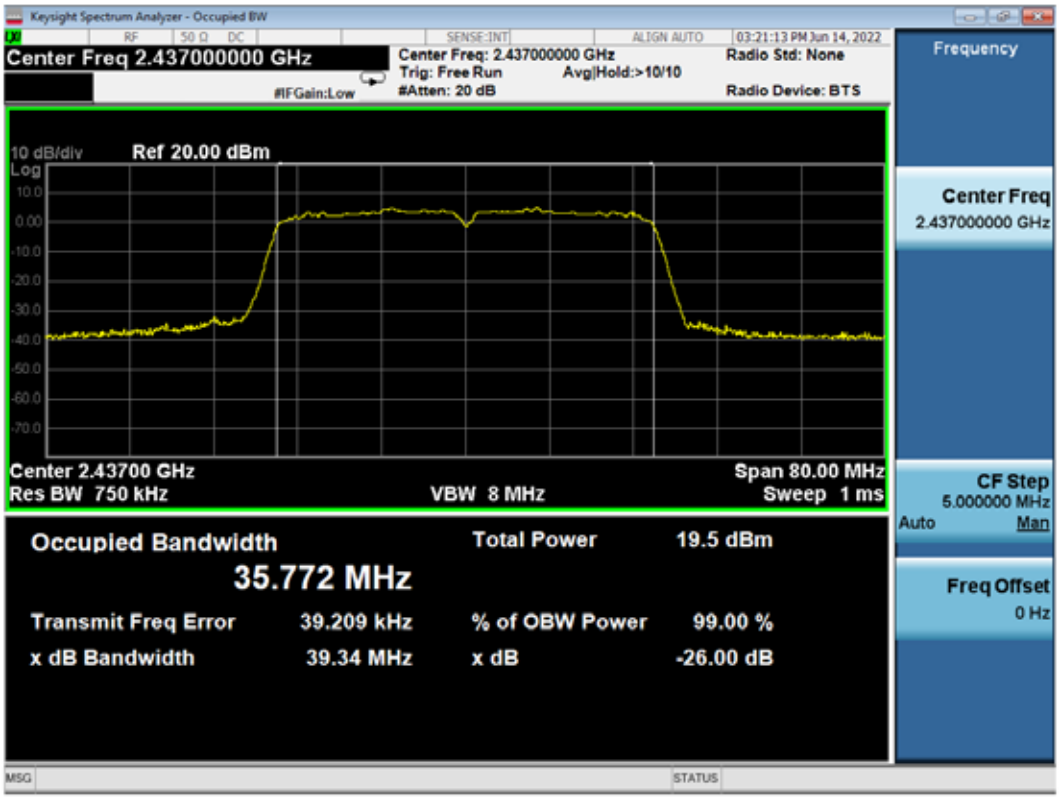


802.11n20 CH2462MHz

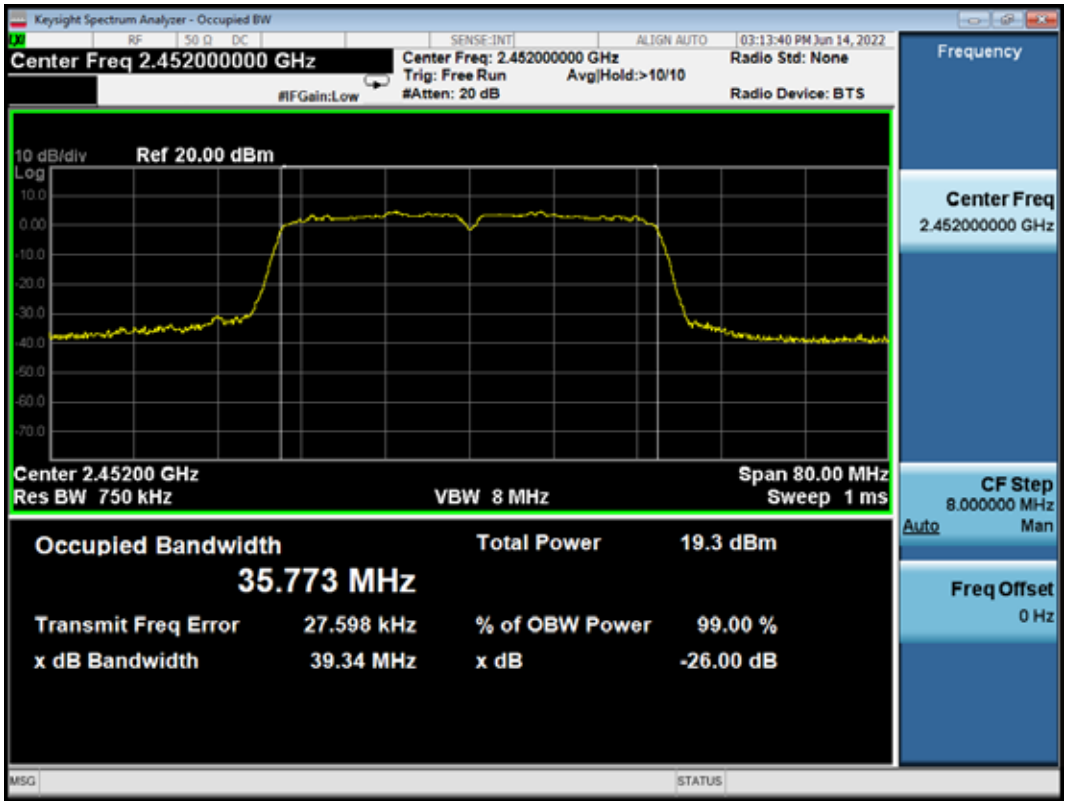


802.11n40 CH2422MHz

802.11n40 CH2437MHz



802.11n40 CH2452MHz



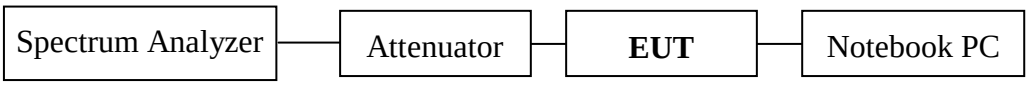
6 6 dB BANDWIDTH MEASUREMENT

6.1 Test Equipment

The following test equipment was used during the Emission Bandwidth measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
5.	Spectrum Analyzer	Agilent	N9010A	MY52221182	2021.09.16	1 Year
6.	Coaxial Cable	WOKEN	SFL402-105F LEX	F02-150819-045	2022.03.08	1 Year
7.	20 dB Attenuator	Mini-Circuits	VAT-20+	001	2021.08.06	1 Year

6.2 Block Diagram of Test Setup



6.3 Specification Limits (§15.247(a)(2))

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

6.4 Operating Condition of EUT

The switch ON/OFF was used to enable the EUT to change the channel one by one.

6.5 Test Procedure

The transmitter output was connected to the spectrum analyzer. The bandwidth of the fundamental frequency was measure by spectrum analyzer with settings: RBW = 100kHz, VBW ≥ 3 × RBW.

The 6 dB bandwidth is defined as the total spectrum the power of which is lower than peak power minus 6 dB .

The test procedure is defined in ANSI C63.10-2020 (the 11.8.2 Measurement Procedure “Option 2” was used).

6.6 Test Results

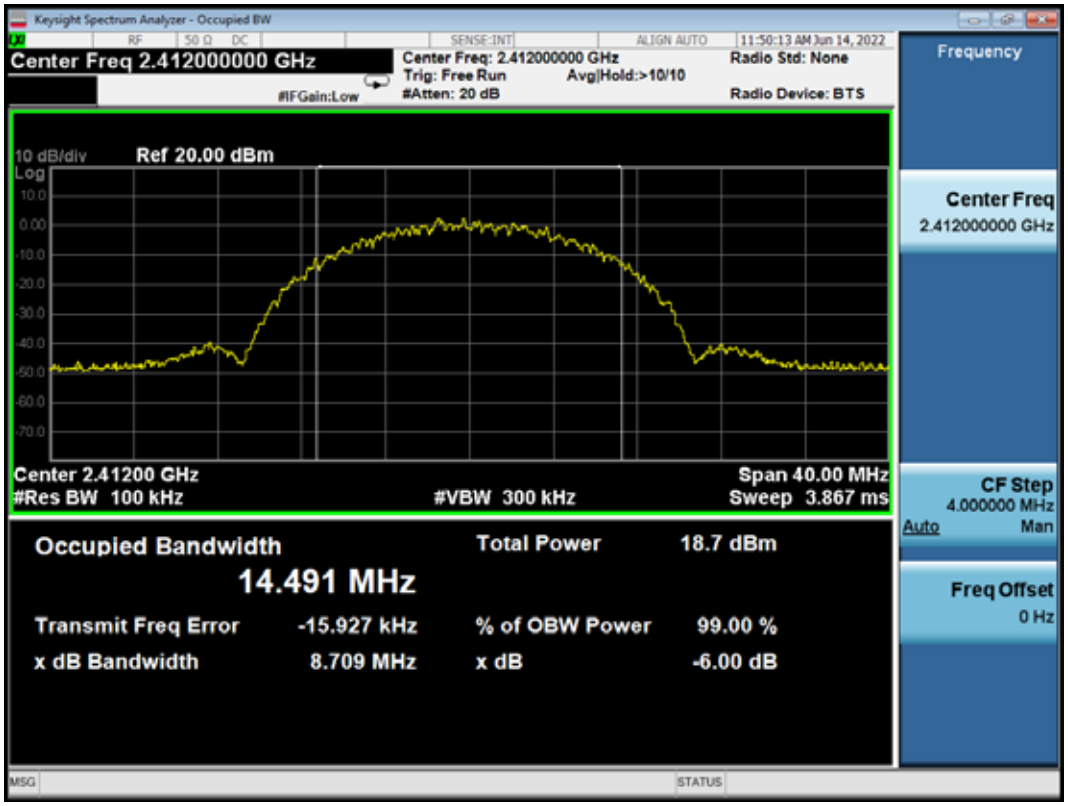
PASSED.

All the test results are attached in next pages.

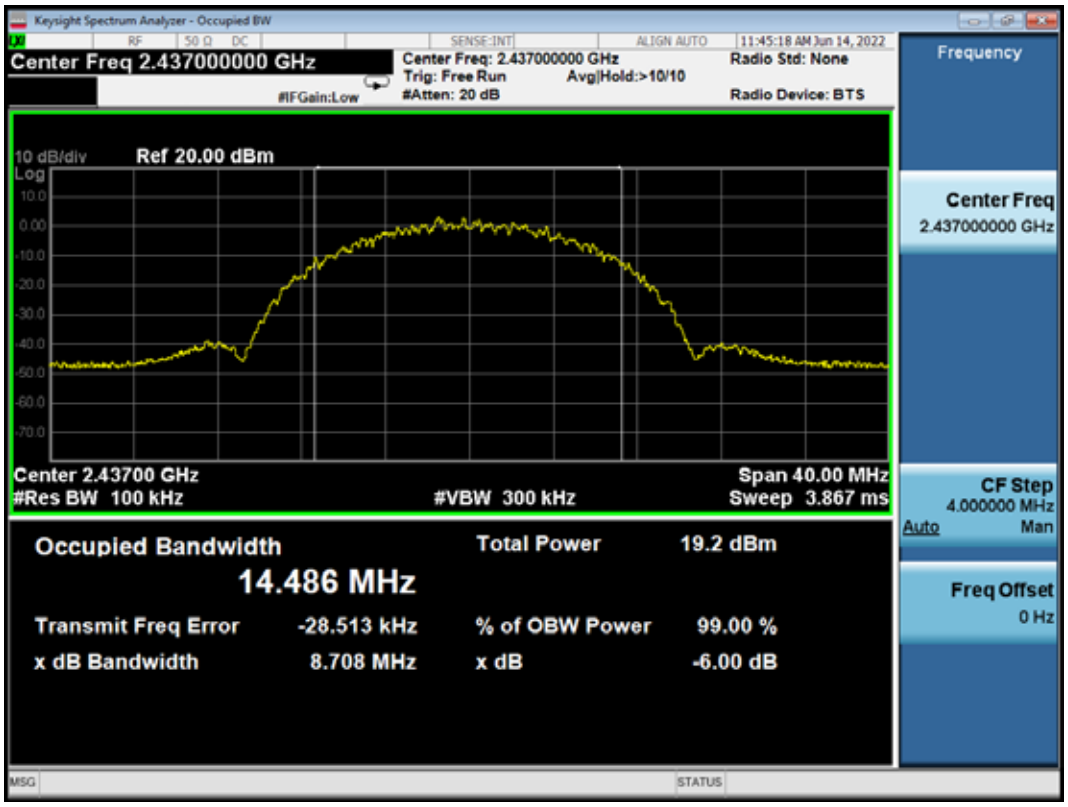
(Test Date: 2022.06.14 Temperature: 23℃ Humidity: 51 %)

Modulation	Channel	Frequency (MHz)	**6dB Bandwidth (MHz)**	Limit
802.11b	1	2412	**8.709**	500 kHz
	6	2437	**8.708**	500 kHz
	11	2462	**8.711**	500 kHz
802.11g	1	2412	**16.52**	500 kHz
	6	2437	**16.53**	500 kHz
	11	2462	**16.52**	500 kHz
802.11n20	1	2412	**17.68**	500 kHz
	6	2437	**17.68**	500 kHz
	11	2462	**17.68**	500 kHz
802.11n40	3	2422	**36.37**	500 kHz
	6	2437	**36.37**	500 kHz
	9	2452	**36.37**	500 kHz

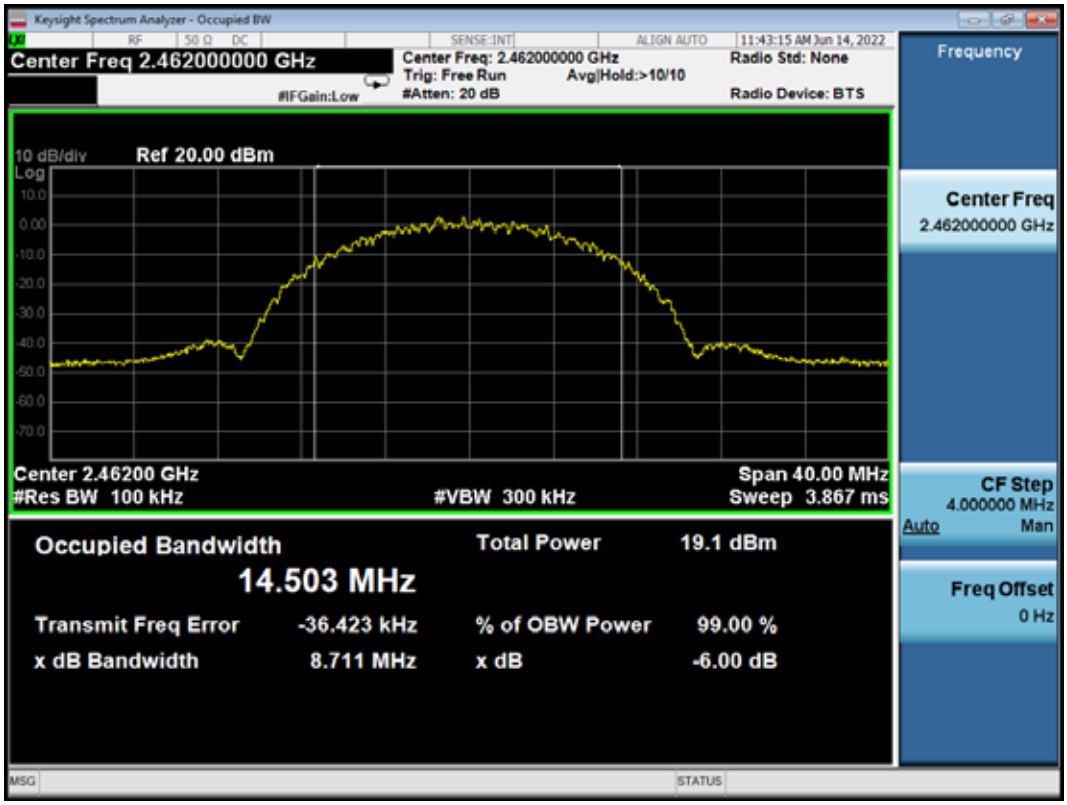
802.11b CH2412MHz



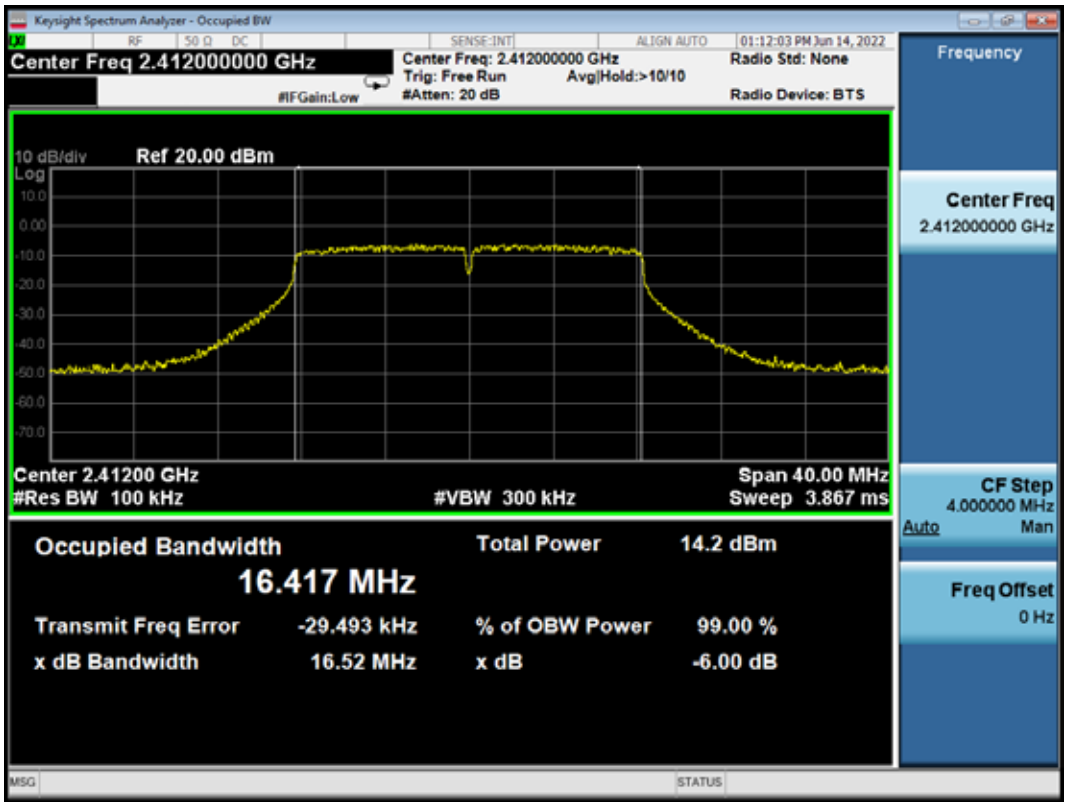
802.11b CH2437MHz



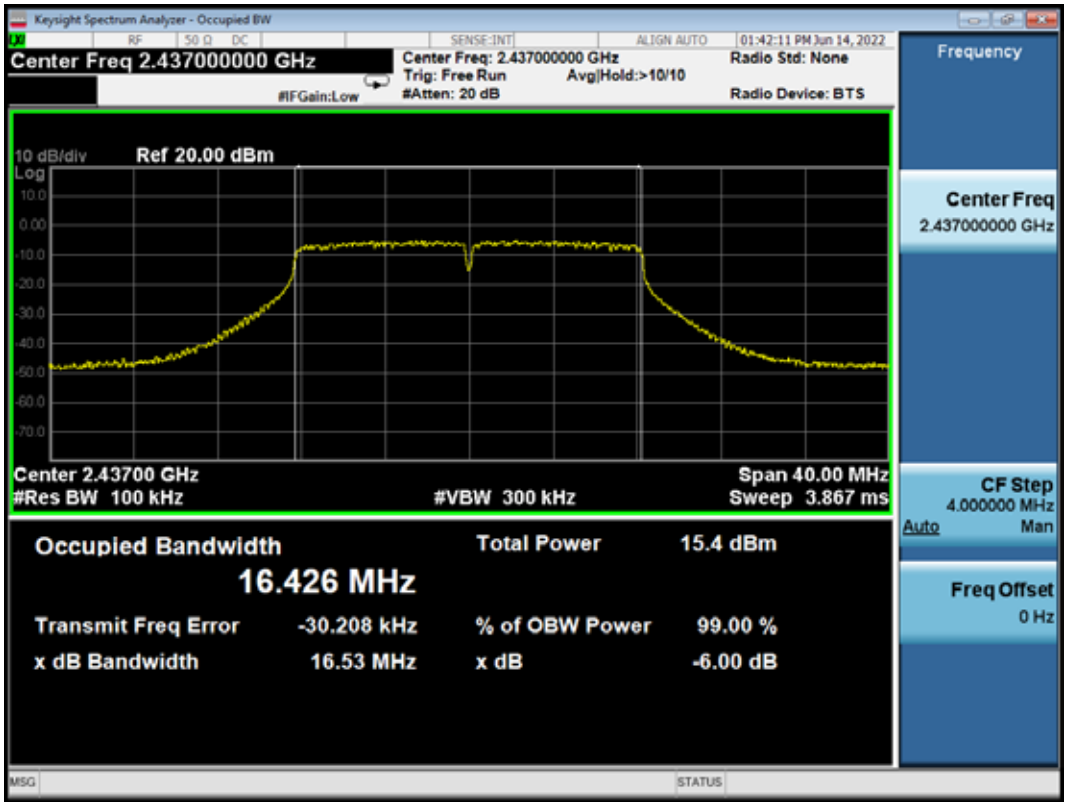
802.11b CH2462MHz



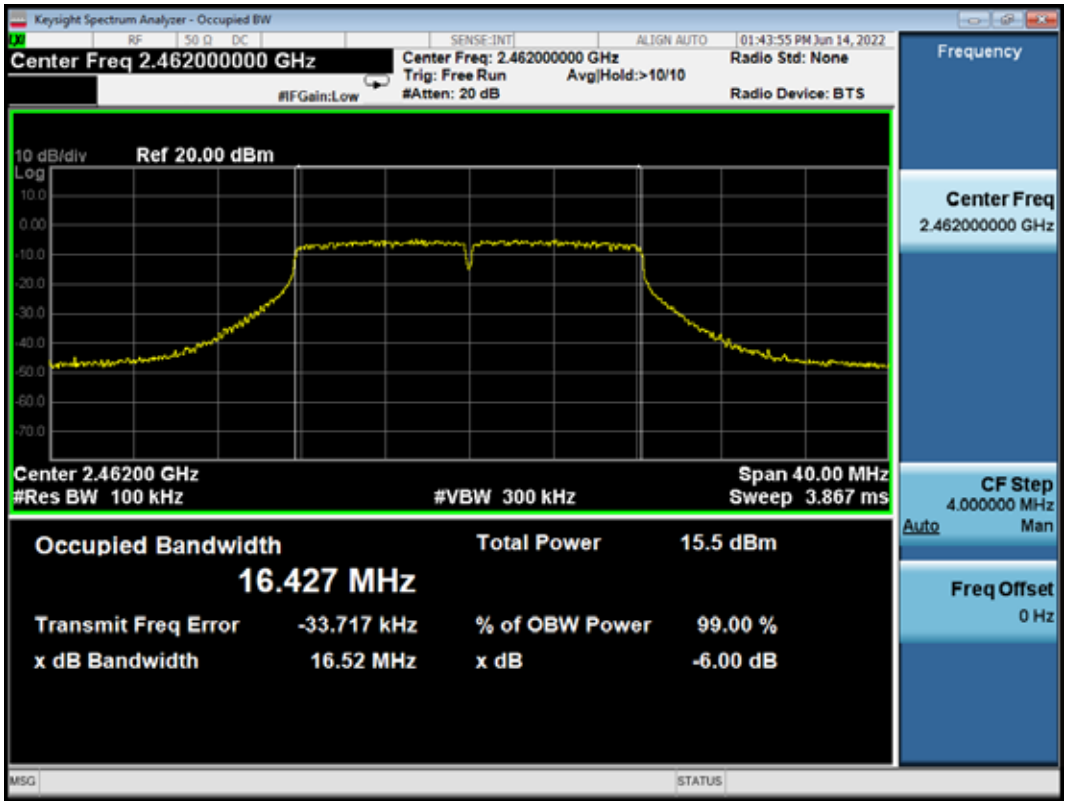
802.11g CH2412MHz



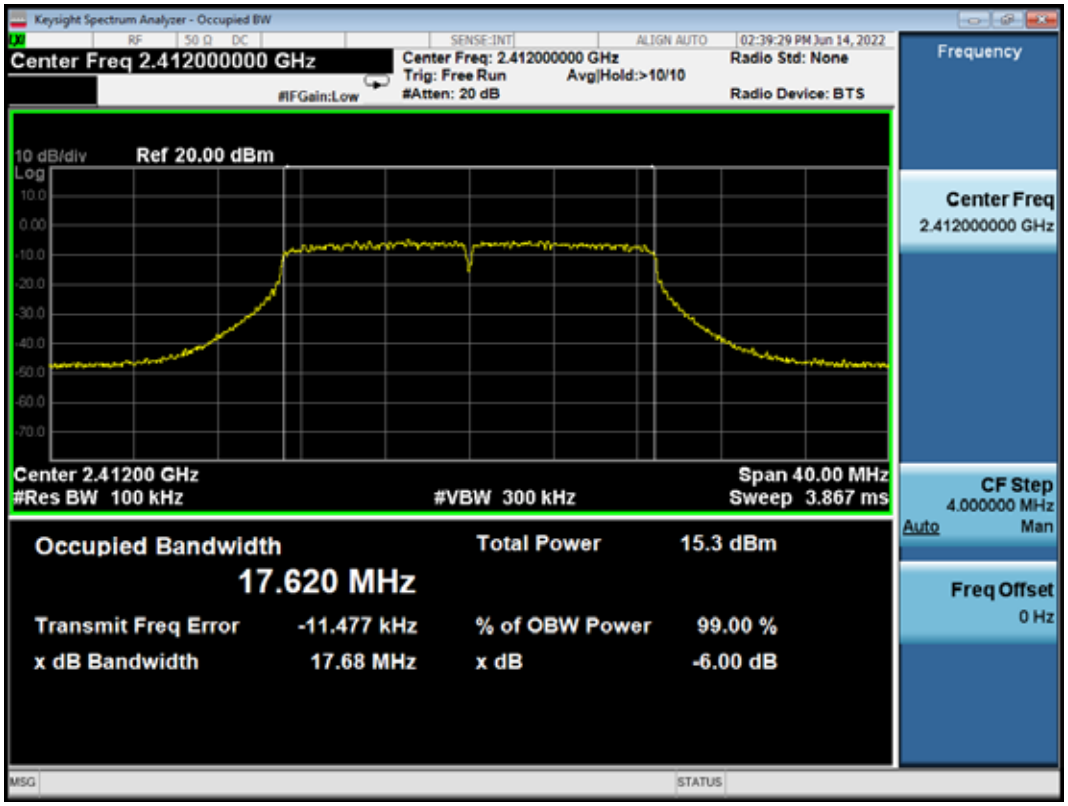
802.11g CH2437MHz



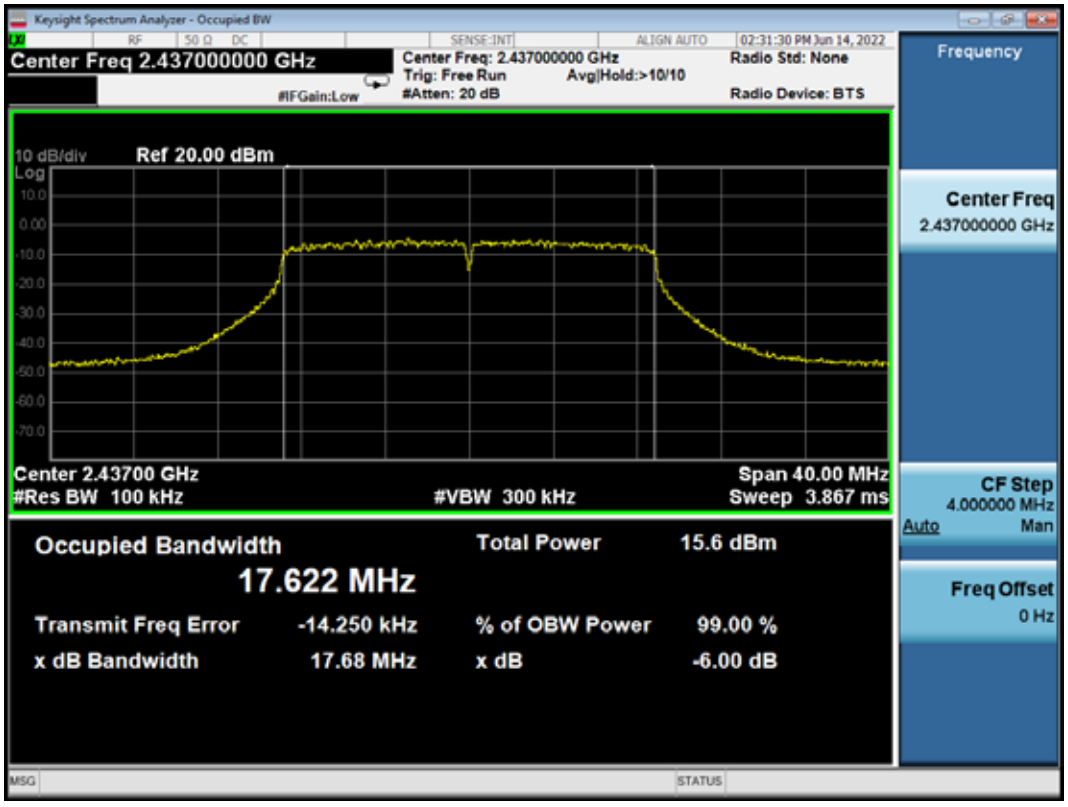
802.11g CH2462MHz



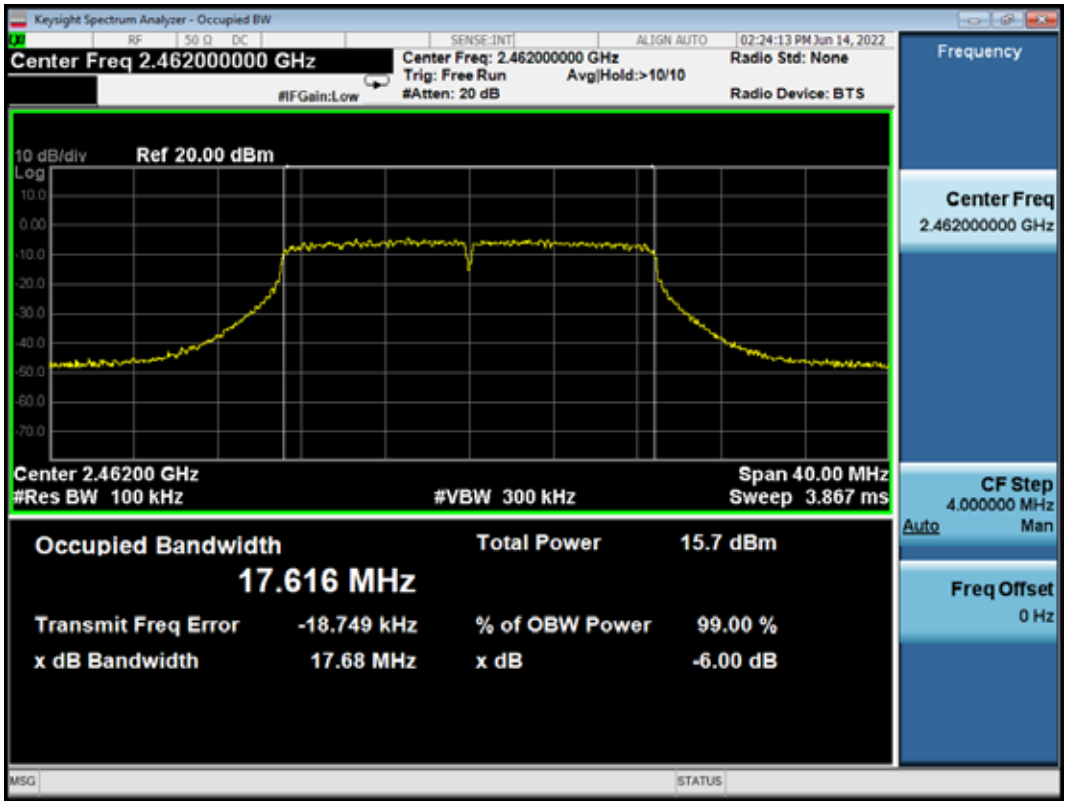
802.11n20 CH2412MHz



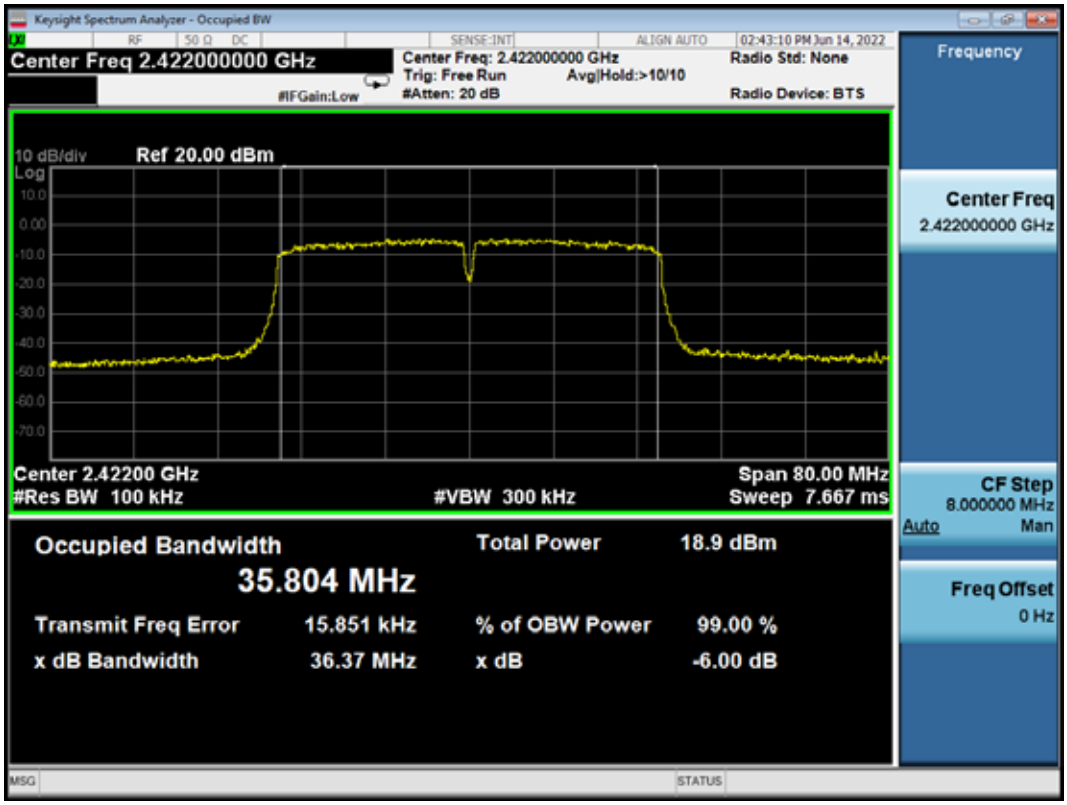
802.11n20 CH2437MHz



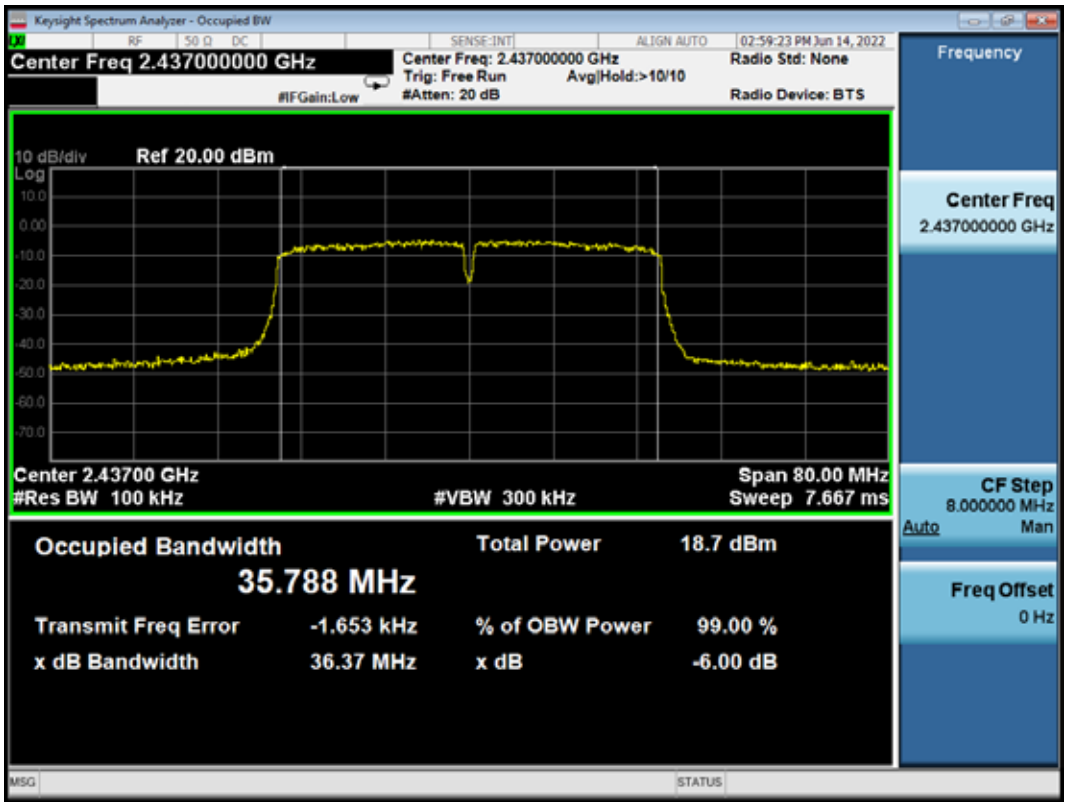
802.11n20 CH2462MHz



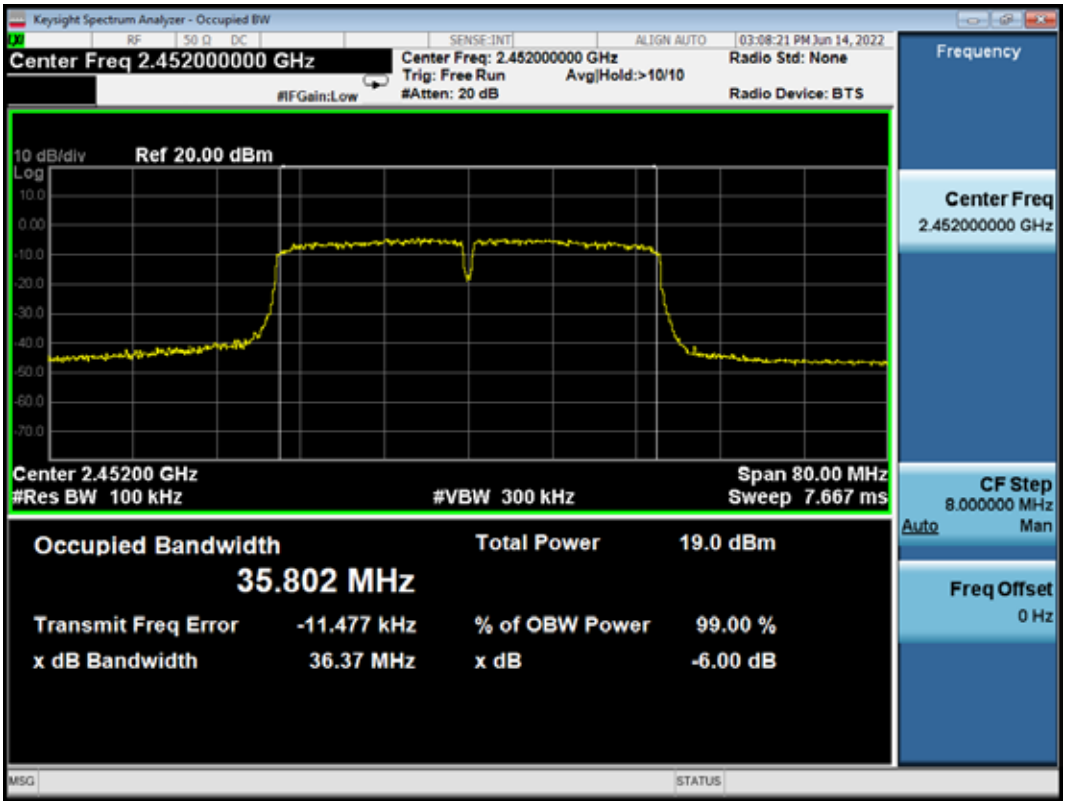
802.11n40 CH2422MHz



802.11n40 CH2437MHz



802.11n40 CH2452MHz



7 MAXIMUM PEAK OUTPUT POWER MEASUREMENT

7.1 Test Equipment

The following test equipment was used during the maximum peak output power measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Agilent	N9010A	MY52221182	2021.09.16	1 Year
2.	Coaxial Cable	WOKEN	SFL402-105F LEX	F02-150819-045	2022.03.08	1 Year
3.	20 dB Attenuator	Mini-Circuits	VAT-20+	001	2021.08.06	1 Year

7.2 Block Diagram of Test Setup

The Same as Section. 5.2.

7.3 Specification Limits ((§15.247(b)(3))

The Limits of maximum Peak Output Power for digital modulation in 2400-2483.5 MHz is: 1 Watt. (30 dBm)

7.4 Operating Condition of EUT

The switch ON/OFF was used to enable the EUT to change the channel one by one.

7.5 Test Procedure

The transmitter output was connected to the spectrum analyzer.

Method AVGSA-1 uses trace averaging with the EUT transmitting at full power throughout each sweep.
The procedure for this method is as follows:
a) Set span to at least 1.5 times the OBW.
b) Set RBW = 1% to 5% of the OBW, not to exceed 1 MHz.
c) Set VBW ≥ [3 × RBW].
d) Number of points in sweep ≥ [2 × span / RBW]. (This gives bin-to-bin spacing ≤ RBW / 2, so that narrowband signals are not lost between frequency bins.)
e) Sweep time = auto.
f) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
g) If transmit duty cycle < 98%, use a sweep trigger with the level set to enable triggering only on full power pulses. The transmitter shall operate at the maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no OFF intervals) or at duty cycle ≥ 98%, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to "free run."
h) Trace average at least 100 traces in power averaging (rms) mode.
i) Compute power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function, with band limits set equal to the OBW band edges. If the instrument does not have a band power

function, sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.

The test procedure is defined in ANSI C63.10-2020 (11.9.2.2.2 Measurement Procedure " Method AVGSA-1" was used).

7.6 Test Results

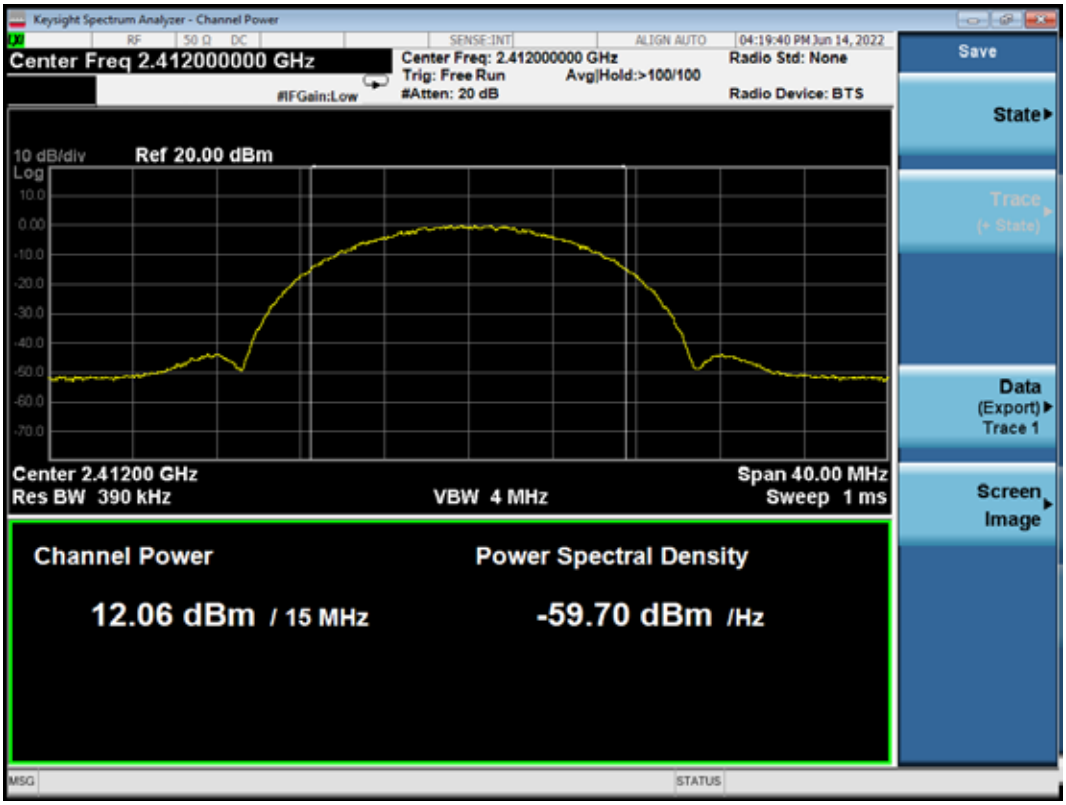
PASSED.

All the test results are listed below.

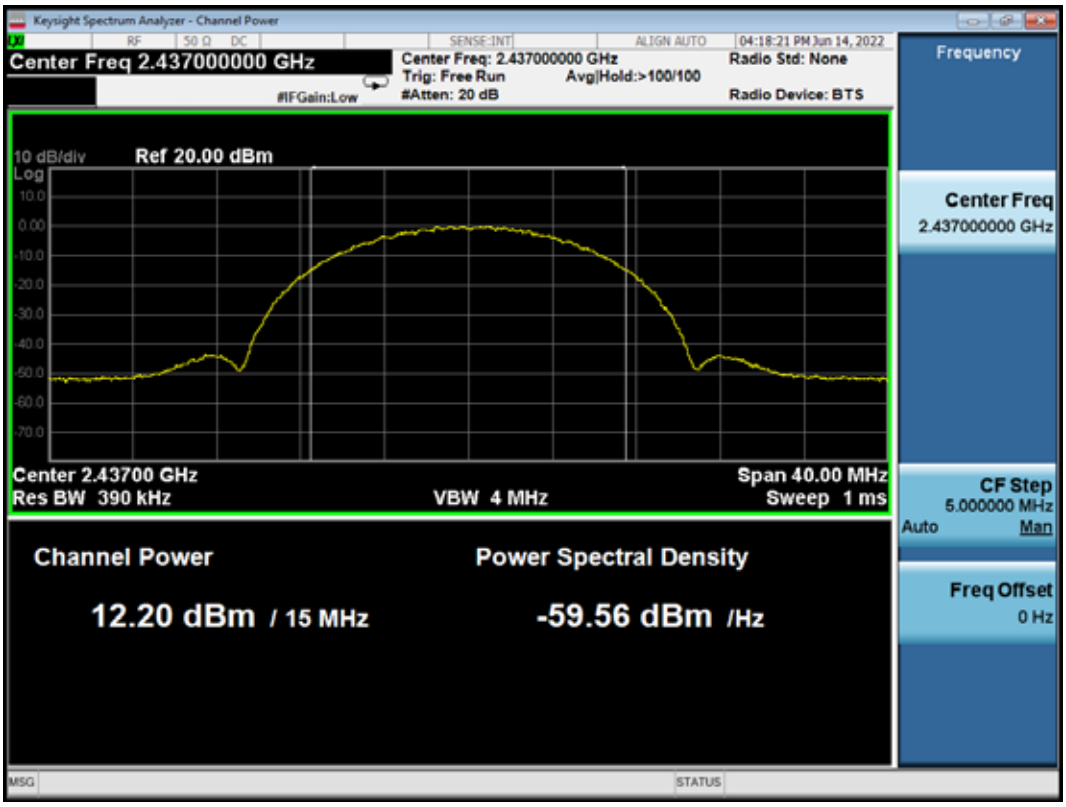
(Test Date: 2022.06.14 Temperature: 23℃ Humidity: 51 %)

Modulation	Channel	Frequency (MHz)	**Peak Output Power (dBm)**	Limit
802.11b	1	2412	**12.06**	30 dBm
	6	2437	**12.2**	30 dBm
	11	2462	**12.22**	30 dBm
802.11g	1	2412	**8.99**	30 dBm
	6	2437	**9.09**	30 dBm
	11	2462	**9.23**	30 dBm
802.11n20	1	2412	**8.63**	30 dBm
	6	2437	**8.74**	30 dBm
	11	2462	**8.87**	30 dBm
802.11n40	3	2422	**11.53**	30 dBm
	6	2437	**11.58**	30 dBm
	9	2452	**11.77**	30 dBm

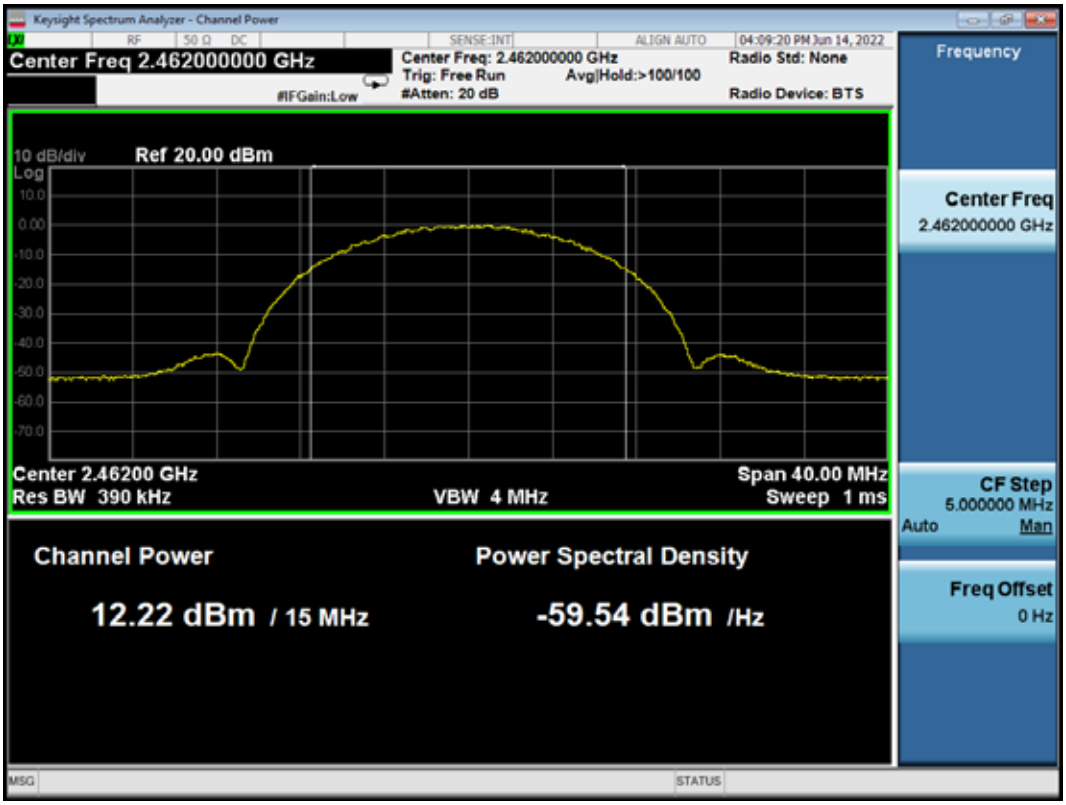
802.11b CH2412MHz



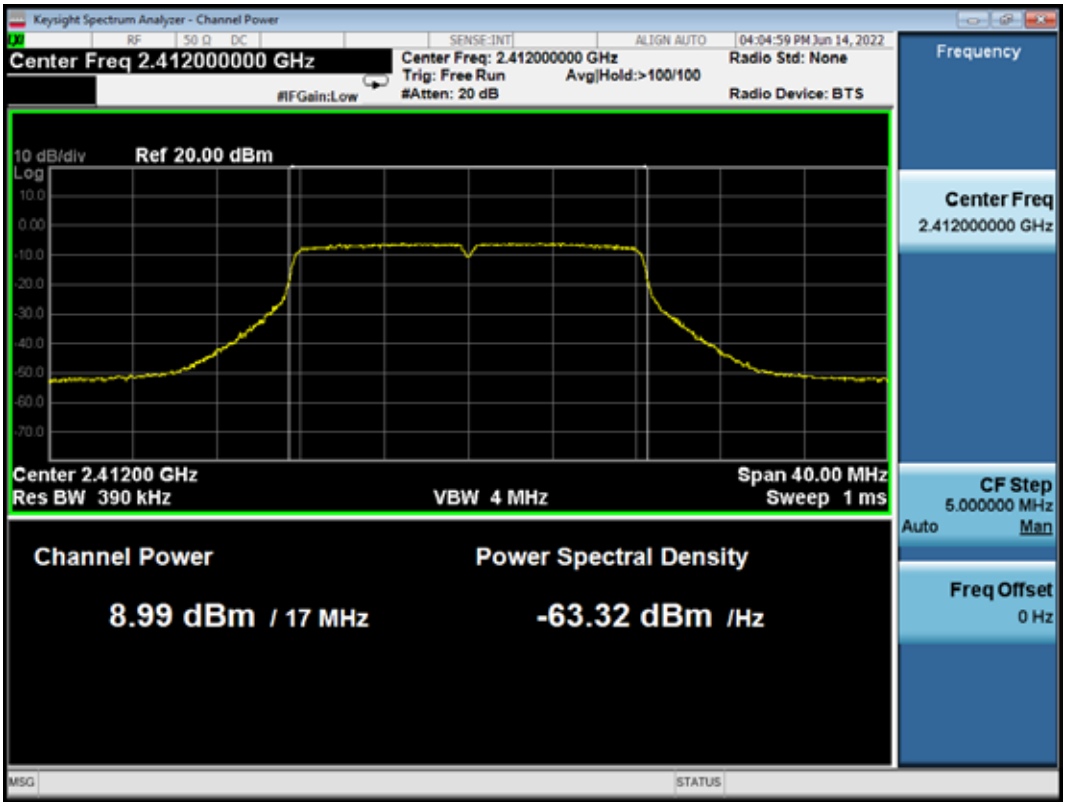
802.11b CH2437MHz



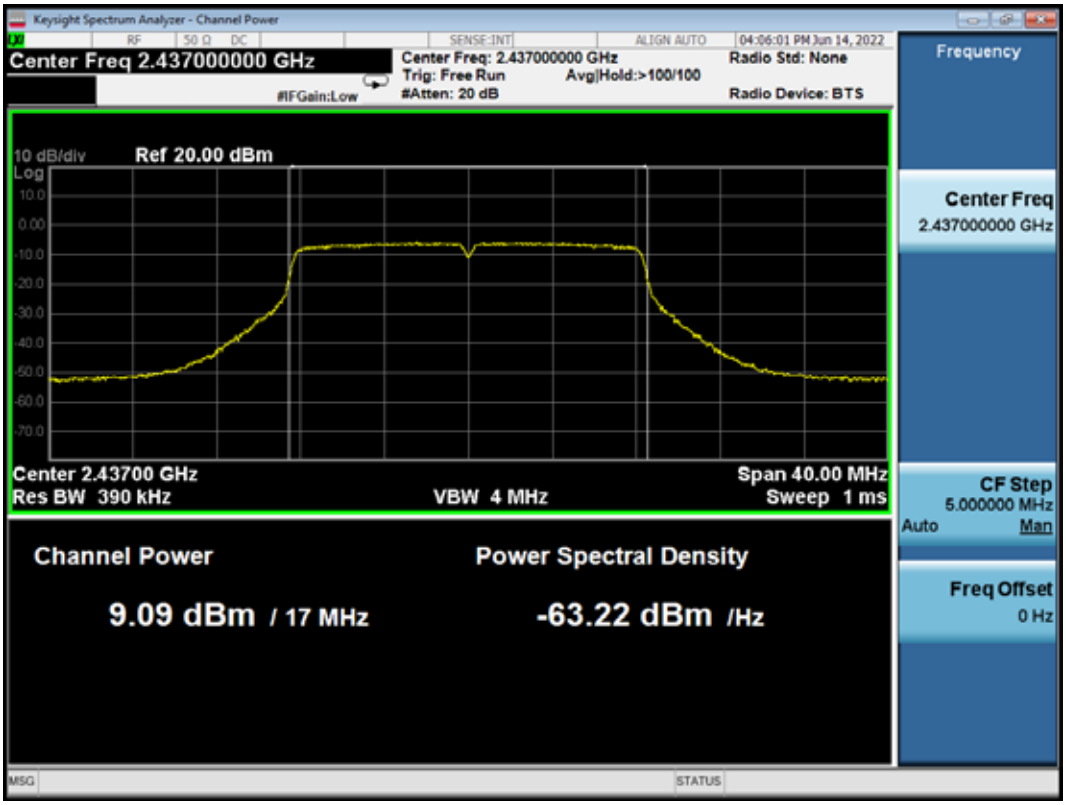
802.11b CH2462MHz



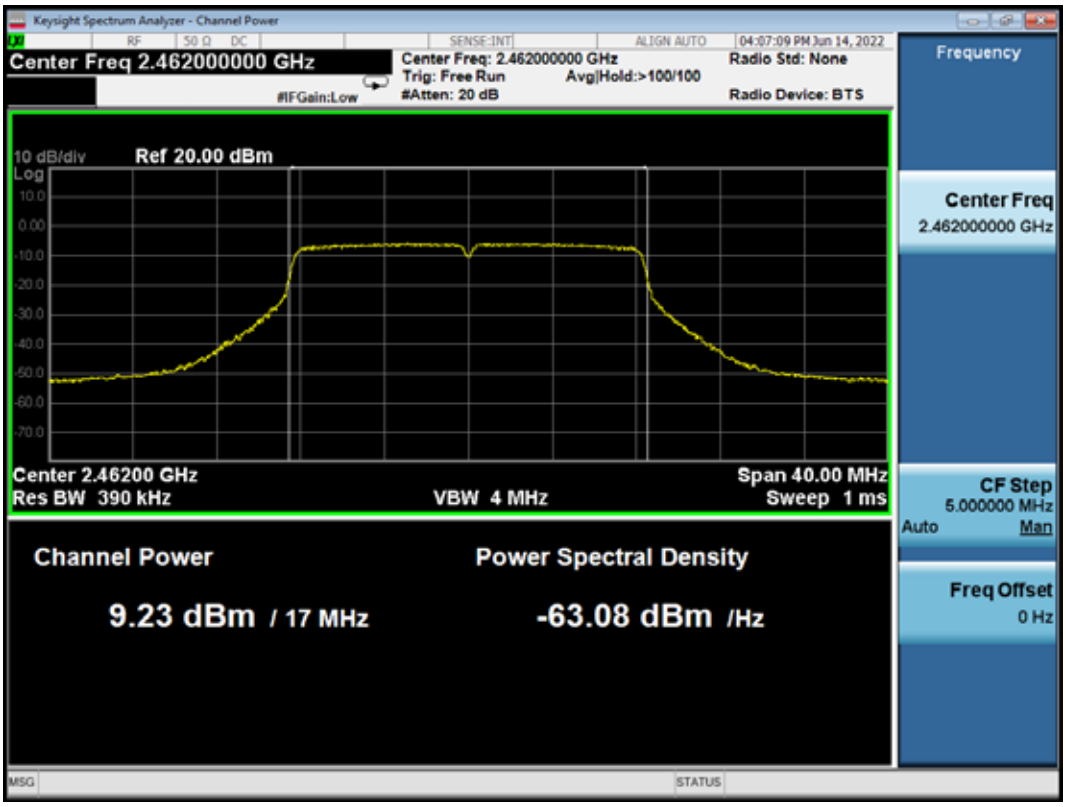
802.11g CH2412MHz



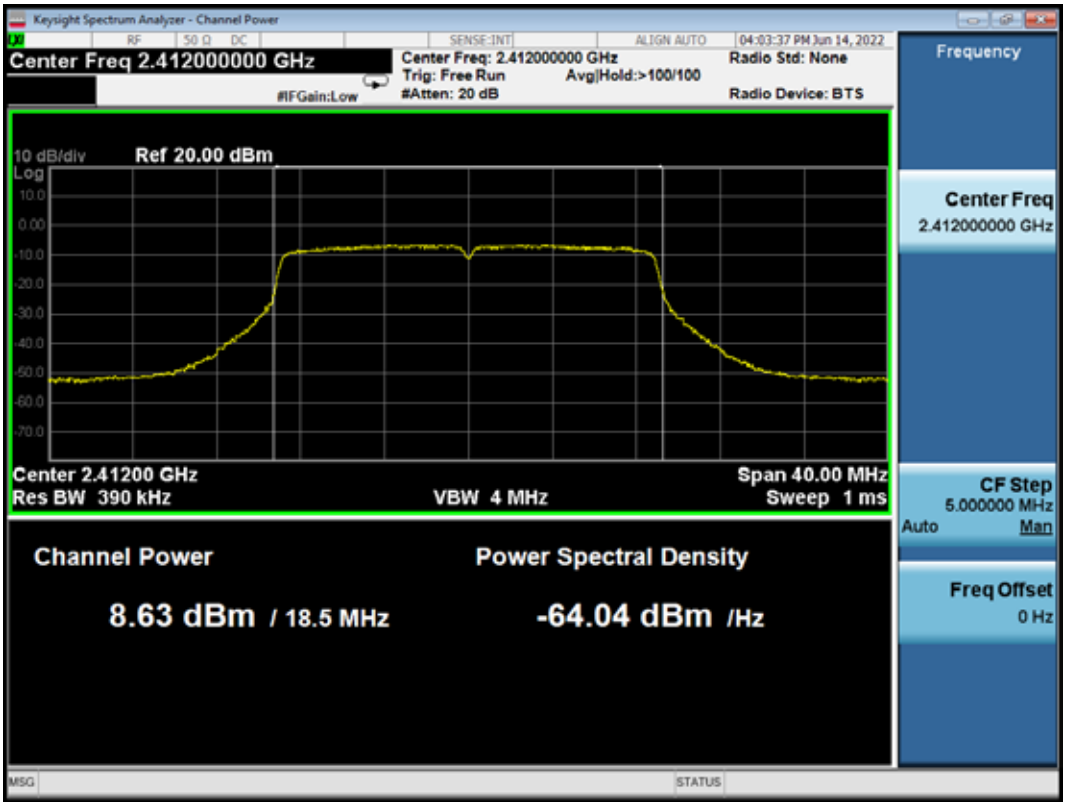
802.11g CH2437MHz



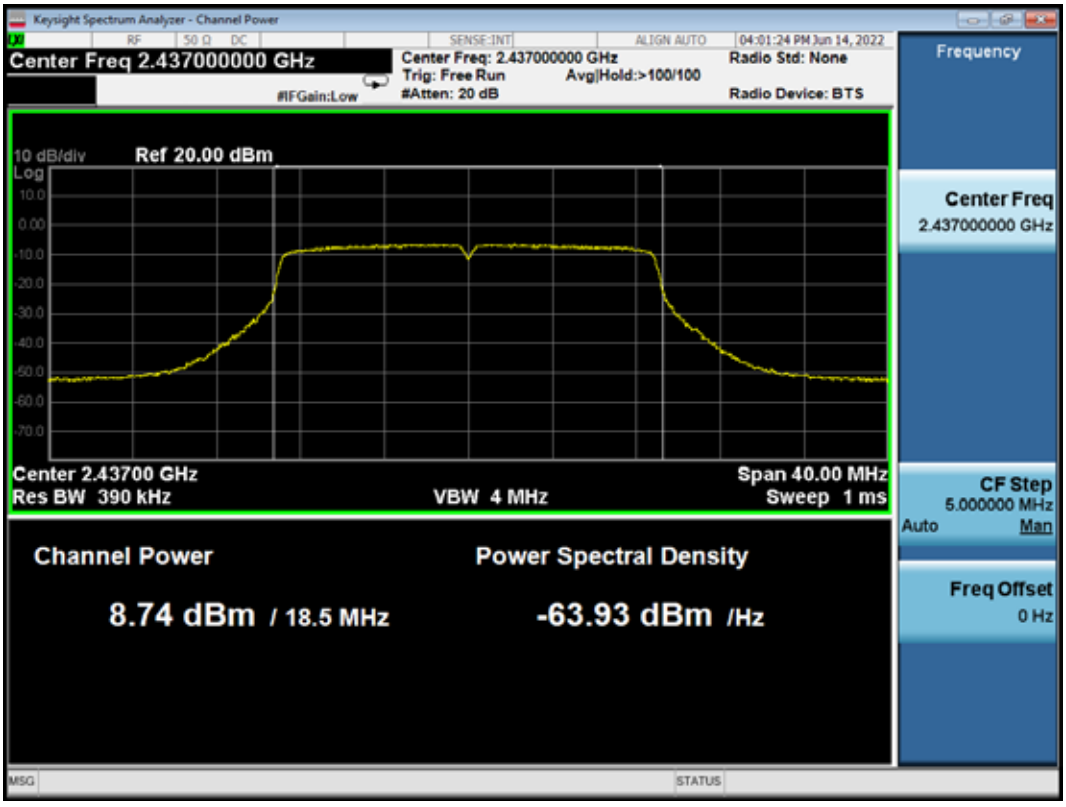
802.11g CH2462MHz



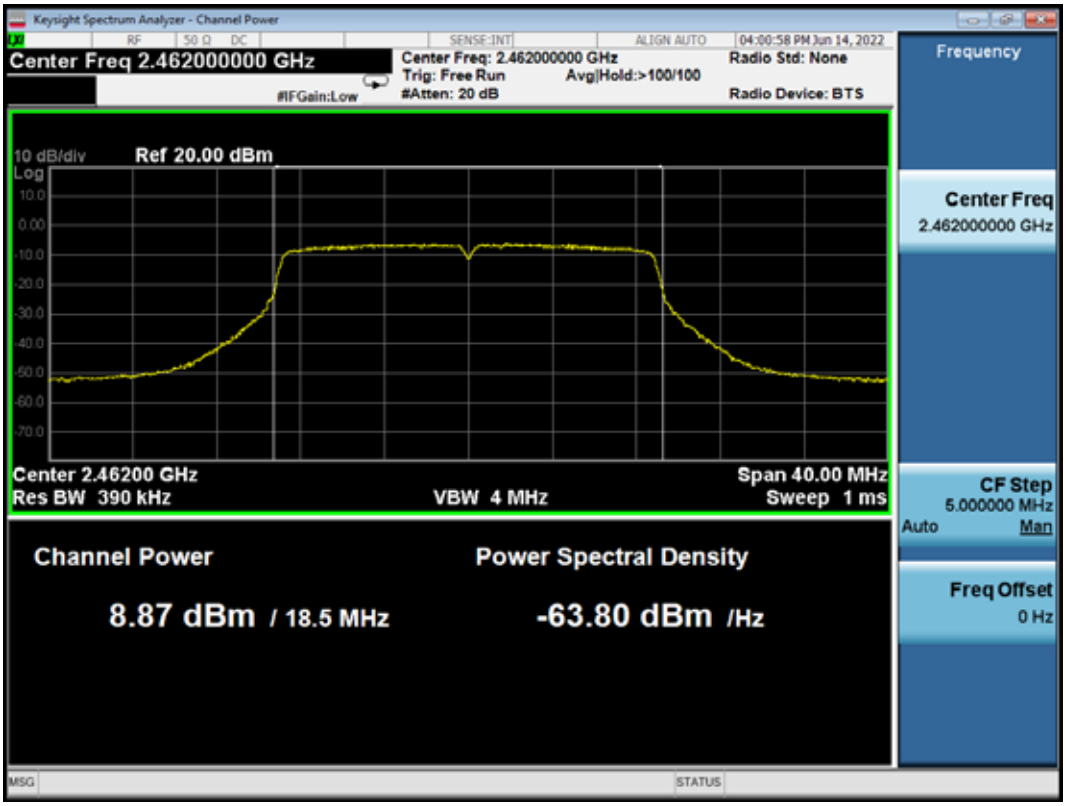
802.11n20 CH2412MHz



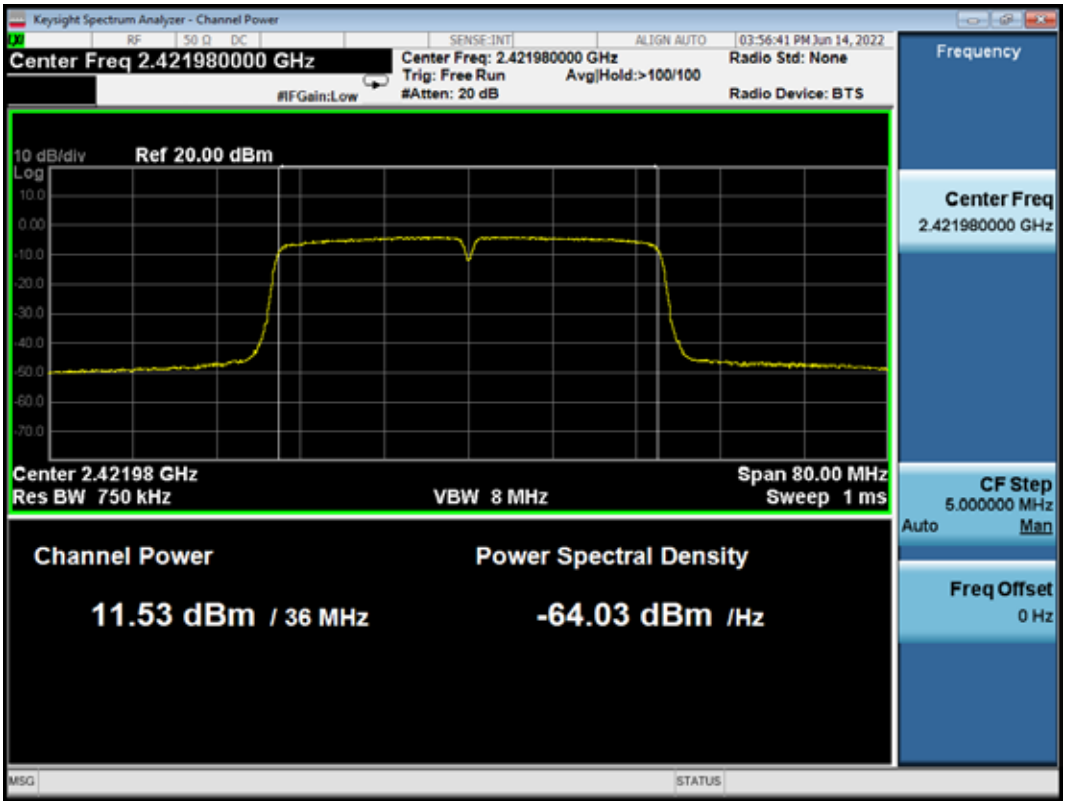
802.11n20 CH2437MHz



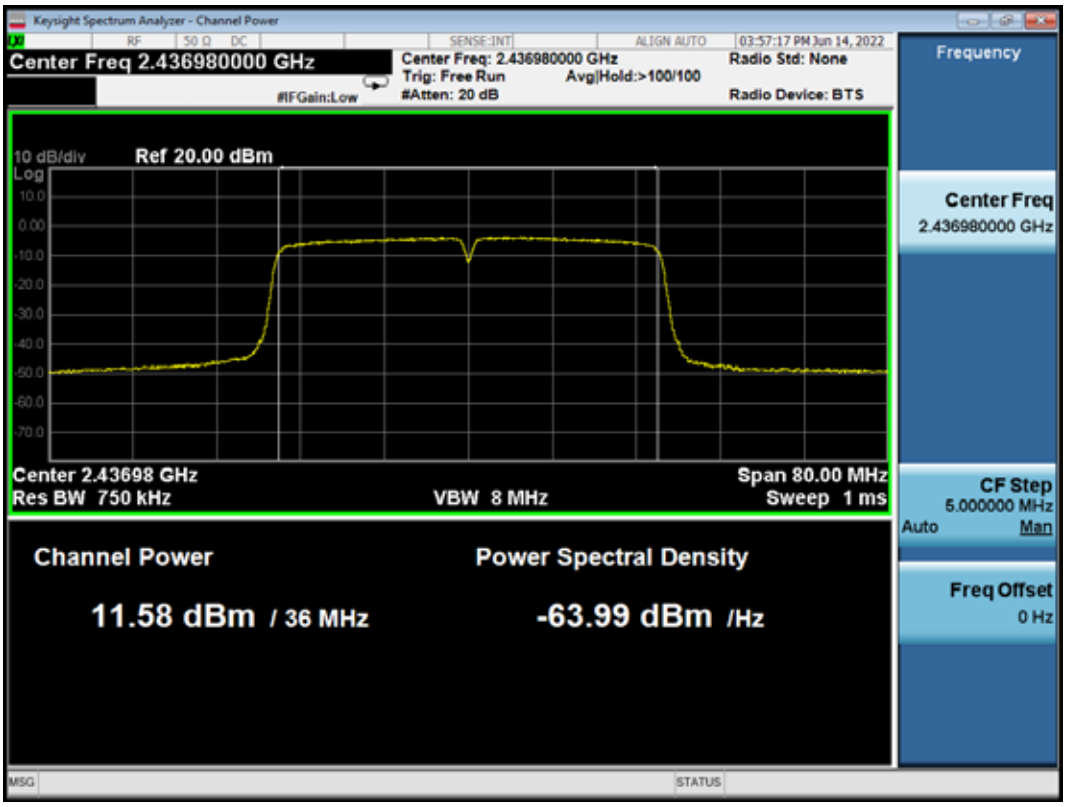
802.11n20 CH2462MHz



802.11n40 CH2422MHz



802.11n40 CH2437MHz



802.11n40 CH2452MHz