

TEST REPORT

Product Name : 4G LTE router
Model Number : DWR-M921, DWR-M922, DWR-M923, DWR-M924,
DWR-M925, DWR-M926, DWR-M927, DWR-M928,
DWR-M929, NL-430, NL-432
FCC ID : KA2WRM921

Prepared for : D-Link Corporation
Address : 14420 Myford Road, Suite 100, Irvine, California, United
States 92606

Prepared by : EMTEK (SHENZHEN) CO., LTD.
Address : Building 69, Majialong Industry Zone, Nanshan District,
Shenzhen, Guangdong, China

Tel: (0755) 26954280
Fax: (0755) 26954282

Report Number : ES210517011W
Date of Test : May 17, 2021 to June 6, 2021
Date of Report : June 7, 2021

TABLE OF CONTENTS

1 TEST RESULT CERTIFICATION.....	3
2 EUT TECHNICAL DESCRIPTION.....	4
3 SUMMARY OF TEST RESULT.....	5
4 TEST METHODOLOGY.....	6
4.1 GENERAL DESCRIPTION OF APPLIED STANDARDS.....	6
4.2 MEASUREMENT EQUIPMENT USED.....	6
4.3 DESCRIPTION OF TEST MODES.....	7
5 FACILITIES AND ACCREDITATIONS.....	8
5.1 FACILITIES.....	8
5.2 LABORATORY ACCREDITATIONS AND LISTINGS.....	8
6 TEST SYSTEM UNCERTAINTY.....	9
7 SETUP OF EQUIPMENT UNDER TEST.....	10
7.1 RADIO FREQUENCY TEST SETUP 1.....	10
7.2 RADIO FREQUENCY TEST SETUP 2.....	10
7.3 CONDUCTED EMISSION TEST SETUP.....	11
7.4 BLOCK DIAGRAM CONFIGURATION OF TEST SYSTEM.....	12
7.5 SUPPORT EQUIPMENT.....	12
8 TEST REQUIREMENTS.....	13
8.1 DTS(6DB)BANDWIDTH.....	13
8.2 MAXIMUM PEAK CONDUCTED OUTPUT POWER.....	26
8.3 MAXIMUM POWER SPECTRAL DENSITY.....	28
8.4 UNWANTED EMISSIONS IN NON-RESTRICTED FREQUENCY BANDS.....	41
8.5 RADIATED SPURIOUS EMISSION.....	46
8.6 CONDUCTED EMISSIONS TEST.....	58
8.7 ANTENNA APPLICATION.....	61

1 TEST RESULT CERTIFICATION

Applicant : D-Link Corporation
Address : 14420 Myford Road, Suite 100, Irvine, California, United States 92606
Manufacturer : D-Link Corporation
Address : 14420 Myford Road, Suite 100, Irvine, California, United States 92606
EUT : 4G LTE router
Model Name : DWR-M921, DWR-M922, DWR-M923, DWR-M924, DWR-M925, DWR-M926, DWR-M927, DWR-M928, DWR-M929, NL-430, NL-432
Trademark : D-Link

Measurement Procedure Used:

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
FCC 47 CFR Part 2 , Subpart J FCC 47 CFR Part 15 , Subpart C	PASS

The above equipment was tested by EMTEK (SHENZHEN) CO., LTD. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of FCC Rules Part 2 and Part 15.247

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

Date of Test : May 17, 2021 to June 6, 2021

Prepared by : Mill Chen
Mill Chen /Editor

Reviewer : Sewen Guo
Sewen Guo /Supervisor

Approve & Authorized Signer : Lisa Wang
Lisa Wang/Manager



2 EUT TECHNICAL DESCRIPTION

Characteristics	Description
IEEE 802.11 WLAN Mode Supported	<input checked="" type="checkbox"/> 802.11b <input checked="" type="checkbox"/> 802.11g <input checked="" type="checkbox"/> 802.11n(20MHz channel bandwidth) <input checked="" type="checkbox"/> 802.11n(40MHz channel bandwidth)
Model Number	DWR-M921, DWR-M922, DWR-M923, DWR-M924, DWR-M925, DWR-M926, DWR-M927, DWR-M928, DWR-M929, NL-430, NL-432 These models are identical in circuitry and electrical, mechanical and physical construction; the only difference is the model named different for trading purpose, we prepared DWR-M921 for test.
Sample	2#
Data Rate	<input checked="" type="checkbox"/> 802.11 b:1,2,5.5,11Mbps; <input checked="" type="checkbox"/> 802.11 g:6,9,12,18,24,36,48,54Mbps; <input checked="" type="checkbox"/> 802.11n(HT20):MCS0-MCS15; <input checked="" type="checkbox"/> 802.11n(HT40):MCS0-MCS15;
Modulation	DSSS with DBPSK/DQPSK/CCK for 802.11b; OFDM with BPSK/QPSK/16QAM/64QAM for 802.11g/n;
Operating Frequency Range	<input checked="" type="checkbox"/> 2412-2462MHz for 802.11b/g; <input checked="" type="checkbox"/> 2412-2462MHz for 802.11n(HT20); <input checked="" type="checkbox"/> 2422-2452MHz for 802.11n(HT40);
Number of Channels	<input checked="" type="checkbox"/> 11 channels for 802.11b/g; <input checked="" type="checkbox"/> 11 channels for 802.11n(HT20); <input checked="" type="checkbox"/> 7 channels for 802.11n(HT40);
Max Output Power	17.32 dBm
Antenna Type	External Antenna
Antenna Gain	Antenna 1: 4.4 dBi Antenna 2: 4.4 dBi
Directional gain	7.41 dBi
Antenna Port	<input checked="" type="checkbox"/> Ant 1 ; <input checked="" type="checkbox"/> Ant 2
Smart system	<input checked="" type="checkbox"/> SISO for 802.11b/g/n <input checked="" type="checkbox"/> MIMO for 802.11n
Power supply	AC 100-240V
Date of Received	May 17, 2021

Note: for more details, please refer to the User's manual of the EUT.

3 SUMMARY OF TEST RESULT

FCC PartClause	Test Parameter	Verdict	Remark
15.247(a)(2)	DTS (6dB) Bandwidth	PASS	
15.247(b)(3)	Maximum Peak Conducted Output Power	PASS	
15.247(e)	Maximum Power Spectral Density Level	PASS	
15.247(d)	Unwanted Emission Into Non-Restricted Frequency Bands	PASS	
15.247(d) 15.209	Unwanted Emission Into Restricted Frequency Bands (conducted)	PASS	
15.247(d) 15.209	Radiated Spurious Emission	PASS	
15.207	Conducted EmissionTest	PASS	
15.247(b)	Antenna Application	PASS	
	<p>NOTE1:N/A (Not Applicable)</p> <p>NOTE2:According to FCC OET KDB 558074, the report use radiated measurements in the restricted frequency bands. In addition, the radiated test is also performed to ensure the emissions emanating from the device cabinet also comply with the applicable limits.</p>		

RELATED SUBMITTAL(S) / GRANT(S):

This submittal(s) (test report) is intended for FCC ID: KA2WRM921 filing to comply with Section 15.247 of the FCC Part 15, Subpart C Rules.

4 TEST METHODOLOGY

4.1 GENERAL DESCRIPTION OF APPLIED STANDARDS

According to its specifications, the EUT must comply with the requirements of the following standards:

FCC 47 CFR Part 2, Subpart J

FCC 47 CFR Part 15, Subpart C

FCC KDB 558074 D01 15.247 Meas Guidance v05r02

4.2 MEASUREMENT EQUIPMENT USED

For Spurious Emissions Test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
EMI Test Receiver	Rohde & Schwarz	ESU 26	100154	May 15, 2021	1 Year
Pre-Amplifier	Lunar EM	LNA30M3G-25	J10100000070	May 15, 2021	1 Year
Bilog Antenna	Schwarzbeck	VULB9163	659	Sep 22, 2019	2 Year
Horn antenna	Schwarzbeck	BBHA9120D	9120D-1177	July 4, 2020	2 Year
Pre-Amplifier	SKET	LNPA_0118G-45	SK2019051801	May 15, 2021	1 Year
Loop Antenna	Schwarzbeck	FMZB1519	1519-012	July 14, 2019	2 Year
Spectrum Analyzer	Rohde & Schwarz	FSV40	100967	May 15, 2021	1 Year
Horn antenna	Schwarzbeck	BBHA9120D	9120D-1178	May 15, 2021	2 Year
Bilog Antenna	Schwarzbeck	VULB9163	660	July 4, 2020	2 Year
Cable	H+B	NmSm-05-C15052	N/A	May 15, 2021	1 Year
Cable	H+B	NmSm-2-C15201	N/A	May 15, 2021	1 Year
Cable	H+B	NmNm-7-C15702	N/A	May 15, 2021	1 Year
Cable	H+B	SAC-40G-1	414	May 15, 2021	1 Year
Cable	H+B	SUCOFLEX104	MY14871/4	May 15, 2021	
Cable	H+B	BLU18A-NmSm-6500	D8501	May 15, 2021	1 Year
Band reject Filter(50dB)	WI/DE	WRCGV-2400(2400-2485MHz)	2	May 15, 2021	1 Year

For other test items:

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
Vector Signal Generator	Agilent	N5182B	My53050553	May 15, 2021	1 Year
Analog Signal Generator	Agilent	N5171B	My53050878	May 15, 2021	1 Year
Signal Analyzer	Agilent	N9010A	My53470879	May 15, 2021	1 Year
Power Analyzer	Agilent	PS-X10-200	N/A	May 15, 2021	1 Year
Wideband Radio Communication Tester	R&S	CMW500	1201.0002K50-140822zk	May 15, 2021	1 Year
Test Accessories	Agilent	PS-X10-100	N/A	May 15, 2021	1 Year
Temperature&Humidity test chamber	ESPEC	EL-02KA	12107166	May 15, 2021	1 Year
Blocking Box	Agilent	AD211	N/A	May 15, 2021	1 Year

Remark: Each piece of equipment is scheduled for calibration once a year.

4.3 DESCRIPTION OF TEST MODES

The EUT has been tested under its typical operating condition.

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

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

Test of channel included the lowest and middle and highest frequency to perform the test, then record on this report.

Those data rates (802.11b: 1 Mbps; 802.11g: 6 Mbps; 802.11n (HT20): MCS0; 802.11n (HT40): MCS0) were used for all test.

Pre-defined engineering program for regulatory testing used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

Frequency and Channel list for 802.11 b/g/n (HT20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	5	2432	9	2452
2	2417	6	2437	10	2457
3	2422	7	2442	11	2462
4	2427	8	2447		

Frequency and Channel list for 802.11n(HT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
3	2422	6	2437	9	2452
4	2427	7	2442		
5	2432	8	2447		

Test Frequency and Channel for 802.11 b/g/n (HT20):

Lowest Frequency		Middle Frequency		Highest Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	6	2437	11	2462

Test Frequency and channel for 802.11n(HT40):

Lowest Frequency		Middle Frequency		Highest Frequency	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
3	2422	6	2437	9	2452

5 FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

All measurement facilities used to collect the measurement data are located at

Building 69, Majialong Industry Zone District, Nanshan District, Shenzhen, China

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.10 and CISPR Publication 22.

5.2 LABORATORY ACCREDITATIONS AND LISTINGS

Site Description

EMC Lab.

: **Accredited by CNAS**

The Certificate Registration Number is L2291.

The Laboratory has been assessed and proved to be in compliance with CNAS-CL01 (identical to ISO/IEC 17025:2017)

Accredited by FCC

Designation Number: CN1204

Test Firm Registration Number: 882943

Accredited by A2LA

The Certificate Number is 4321.01.

Accredited by Industry Canada

The Conformity Assessment Body Identifier is CN0008

Name of Firm

Site Location

: EMTEK (SHENZHEN) CO., LTD.

: Building 69, Majialong Industry Zone, Nanshan District, Shenzhen, Guangdong, China

6 TEST SYSTEM UNCERTAINTY

The following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Parameter	Uncertainty
Radio Frequency	$\pm 1 \times 10^{-5}$
Maximum Peak Output Power Test	$\pm 1.0\text{dB}$
Conducted Emissions Test	$\pm 2.0\text{dB}$
Radiated Emission Test	$\pm 2.0\text{dB}$
Power Density	$\pm 2.0\text{dB}$
Occupied Bandwidth Test	$\pm 1.0\text{dB}$
Band Edge Test	$\pm 3\text{dB}$
All emission, radiated	$\pm 3\text{dB}$
Antenna Port Emission	$\pm 3\text{dB}$
Temperature	$\pm 0.5^\circ\text{C}$
Humidity	$\pm 3\%$

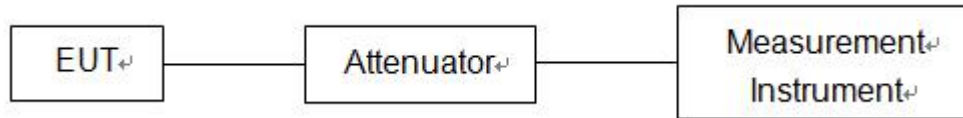
Measurement Uncertainty for a level of Confidence of 95%



7 SETUP OF EQUIPMENT UNDER TEST

7.1 RADIO FREQUENCY TEST SETUP 1

The WLAN component's antenna ports(s) of the EUT are connected to the measurement instrument per an appropriate attenuator. The EUT is controlled by PC/software to emit the specified signals for the purpose of measurements.



7.2 RADIO FREQUENCY TEST SETUP 2

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4 dB according to the standards: ANSI C63.10. The test distance is 3m. The setup is according to the requirements in Section 13.1.4.1 of ANSI C63.10-2013 and CAN/CSA-CEI/IEC CISPR 22.

Below 30MHz:

The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna (loop antenna). The Antenna should be positioned with its plane vertical at the specified distance from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. The center of the loop shall be 1 m above the ground. For certain applications, the loop antenna plane may also need to be positioned horizontally at the specified distance from the EUT.

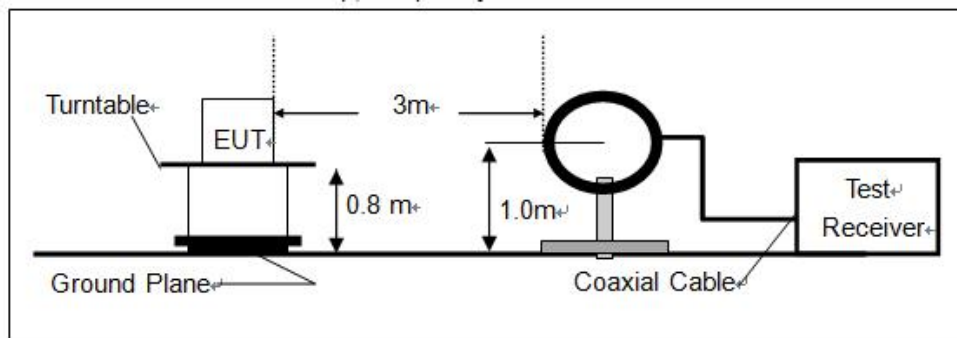
30MHz-1GHz:

The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).

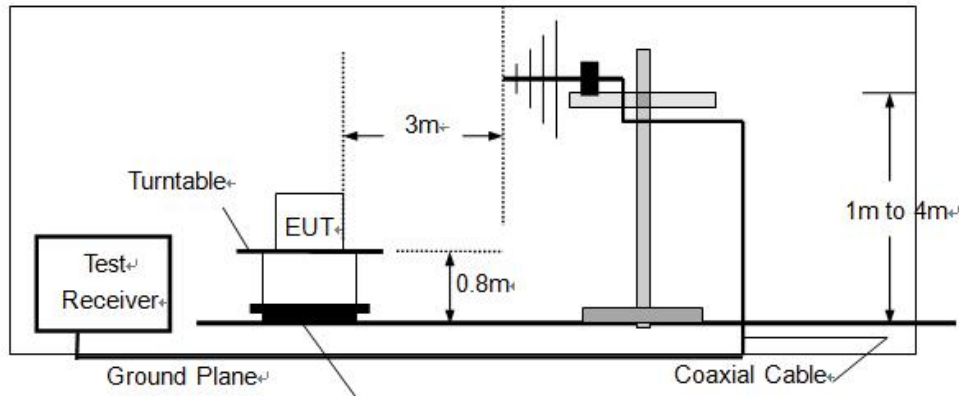
Above 1GHz:

The EUT is placed on a turntable 1.5 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).

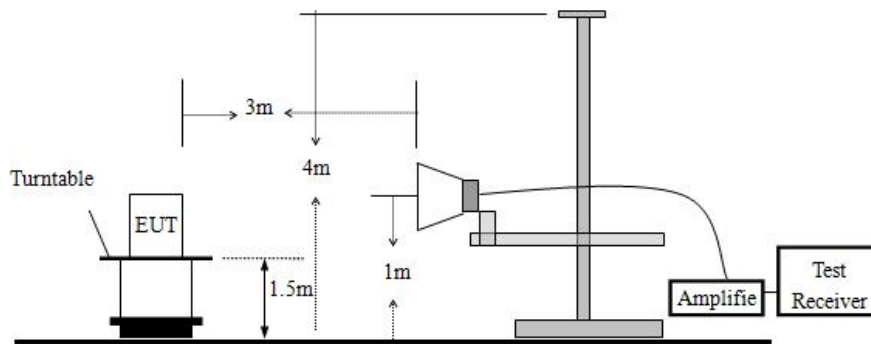
(a) Radiated Emission Test Set-Up, Frequency Below 30MHz



(b) Radiated Emission Test Set-Up, Frequency Below 1000MHz



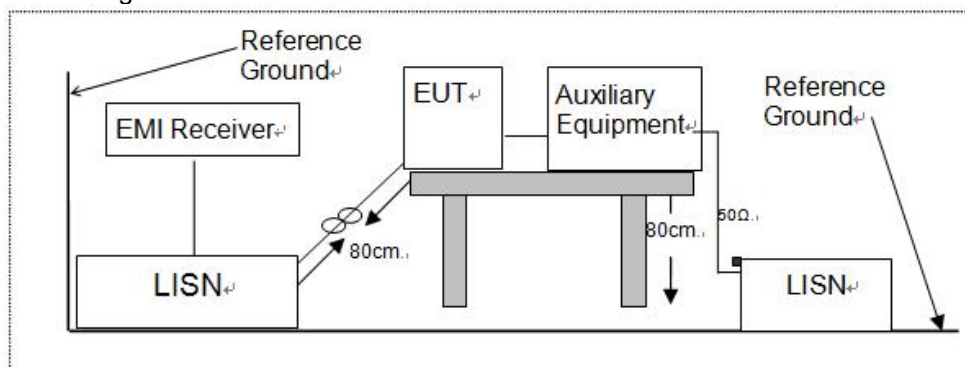
(c) Radiated Emission Test Set-Up, Frequency above 1000MHz



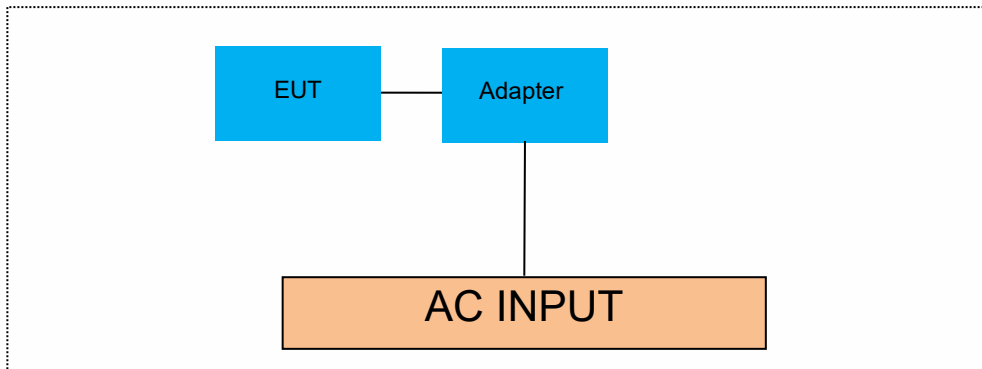
7.3 CONDUCTED EMISSION TEST SETUP

The mains cable of the EUT (maybe per AC/DC Adapter) must be connected to LISN. The LISN shall be placed 0.8 m from the boundary of EUT and bonded to a ground reference plane for LISN mounted on top of the ground reference plane. This distance is between the closest points of the LISN and the EUT. All other units of the EUT and associated equipment shall be at least 0.8m from the LISN. Ground connections, where required for safety purposes, shall be connected to the reference ground point of the LISN and, where not otherwise provided or specified by the manufacturer, shall be of same length as the mains cable and run parallel to the mains connection at a separation distance of not more than 0.1 m.

According to the requirements in Section 13.1.4.1 of ANSI C63.10-2013 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-Peak and average detector mode.



7.4 BLOCK DIAGRAM CONFIGURATION OF TEST SYSTEM



7.5 SUPPORT EQUIPMENT

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.	Note
N/A	N/A	N/A	N/A	N/A	N/A	N/A

Notes:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

8 TEST REQUIREMENTS

8.1 DTS(6DB)BANDWIDTH

8.1.1 Applicable Standard

According to FCC Part15.247 (a)(2) and KDB 558074 D01 15.247 Meas Guidance v05r02

8.1.2 Conformance Limit

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

8.1.3 Test Configuration

Test according to clause 7.1 radio frequency test setup 1

8.1.4 Test Procedure

The EUT was operating in IEEE 802.11b/g/n mode and controlled its channel. Printed out the test result from the spectrum by hard copy function.

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.

Set to the maximum power setting and enable the EUT transmit continuously

Set RBW = 100 kHz.

Set the video bandwidth (VBW) =300kHz.

Set Span=2 times OBW

Set Detector = Peak.

Set Trace mode = max hold.

Set Sweep = auto couple.

Allow the trace to stabilize.

Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Measure and record the results in the test report.

8.1.5 Test Results

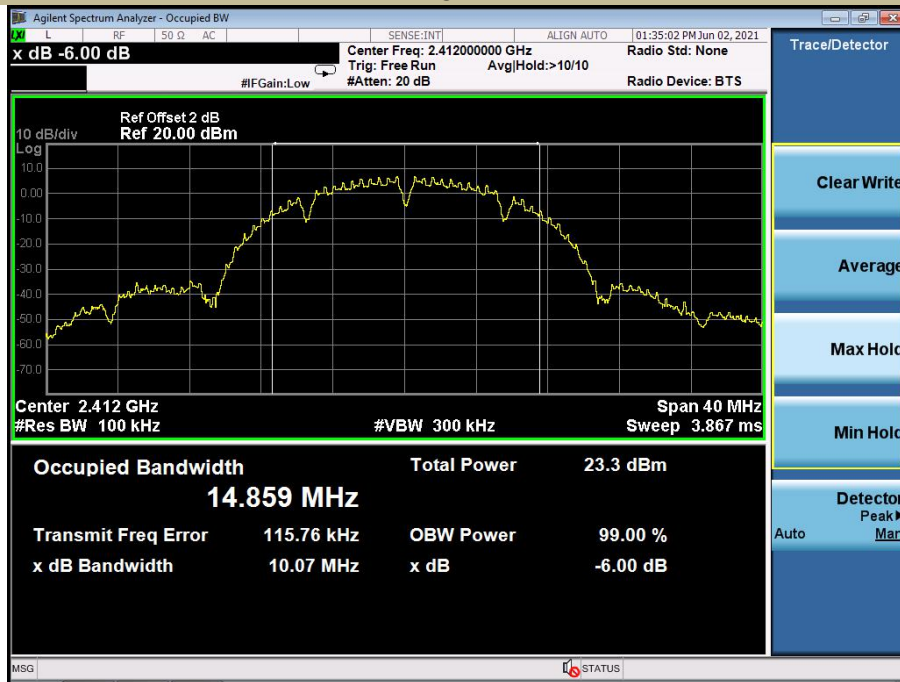
Temperature:	26° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

Operation Mode	Channel Number	Channel Frequency (MHz)	Measurement Bandwidth (MHz)		Limit (kHz)	Verdict
			Ant 1	Ant 2		
802.11b	1	2412	10.07	9.61	>500	PASS
	6	2437	9.60	9.14	>500	PASS
	11	2462	9.63	9.14	>500	PASS
802.11g	1	2412	16.33	16.08	>500	PASS
	6	2437	15.97	16.08	>500	PASS
	11	2462	16.31	15.71	>500	PASS
802.11n (ht20)	1	2412	16.69	16.32	>500	PASS
	6	2437	16.31	16.47	>500	PASS
	11	2462	16.93	16.06	>500	PASS
802.11n (ht40)	3	2422	35.23	35.46	>500	PASS
	6	2437	35.24	35.41	>500	PASS
	9	2452	35.25	35.99	>500	PASS

A. Antenna 1

Test Model

DTS (6dB) Bandwidth
802.11b
Channel 1: 2412MHz



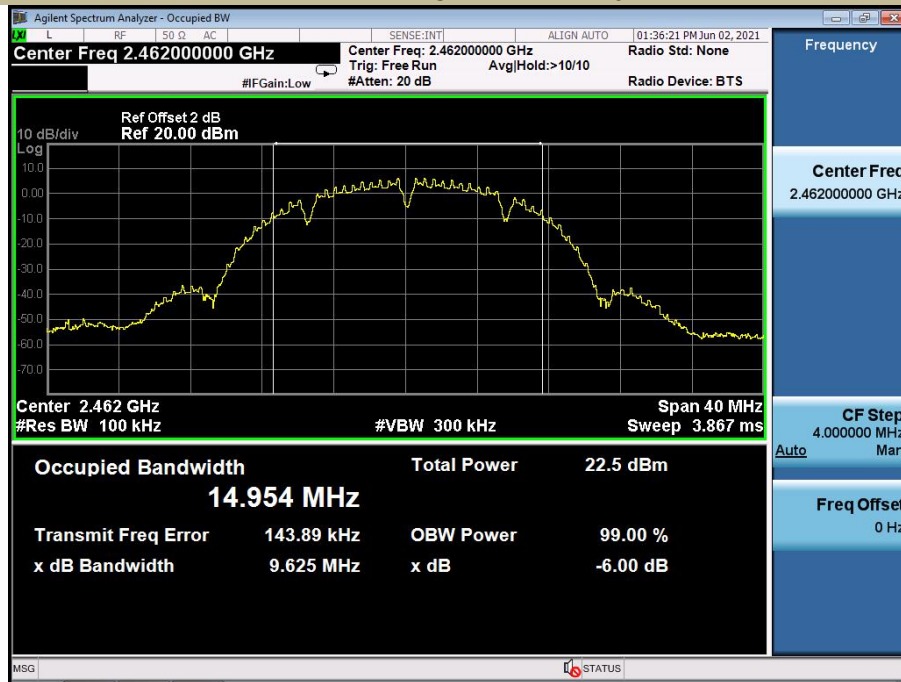
Test Model

DTS (6dB) Bandwidth
802.11b
Channel 6: 2437MHz



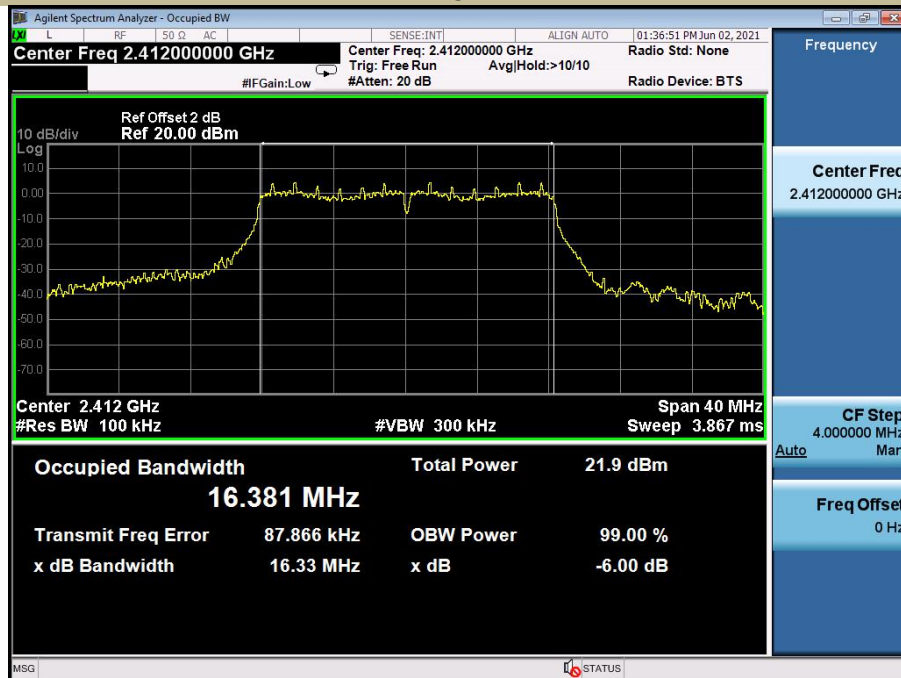
Test Model

DTS (6dB) Bandwidth
802.11b
Channel 11: 2462MHz



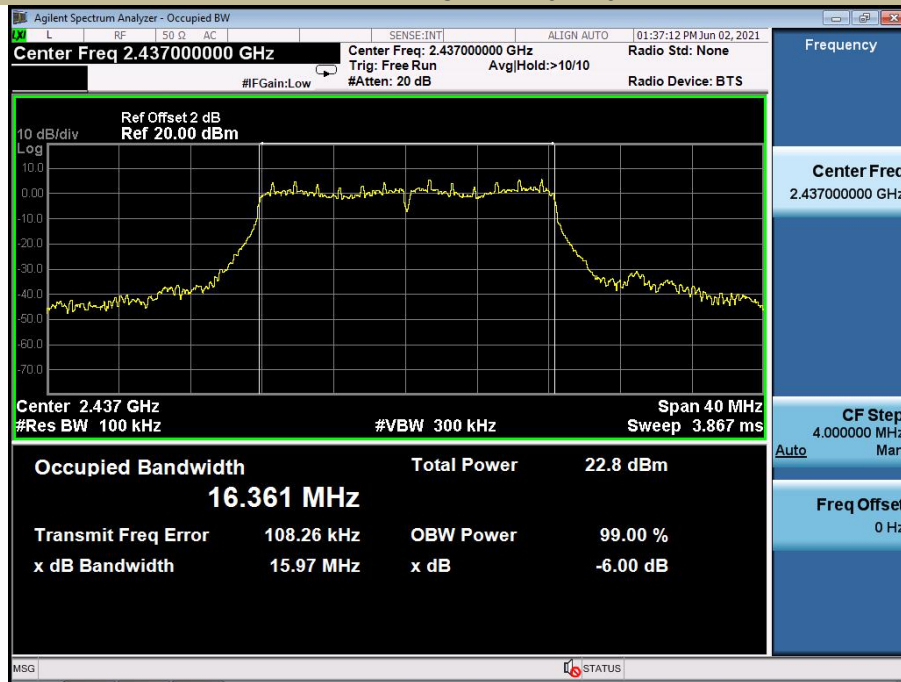
Test Model

DTS (6dB) Bandwidth
802.11g
Channel 1: 2412MHz



Test Model

DTS (6dB) Bandwidth
802.11g
Channel 6: 2437MHz



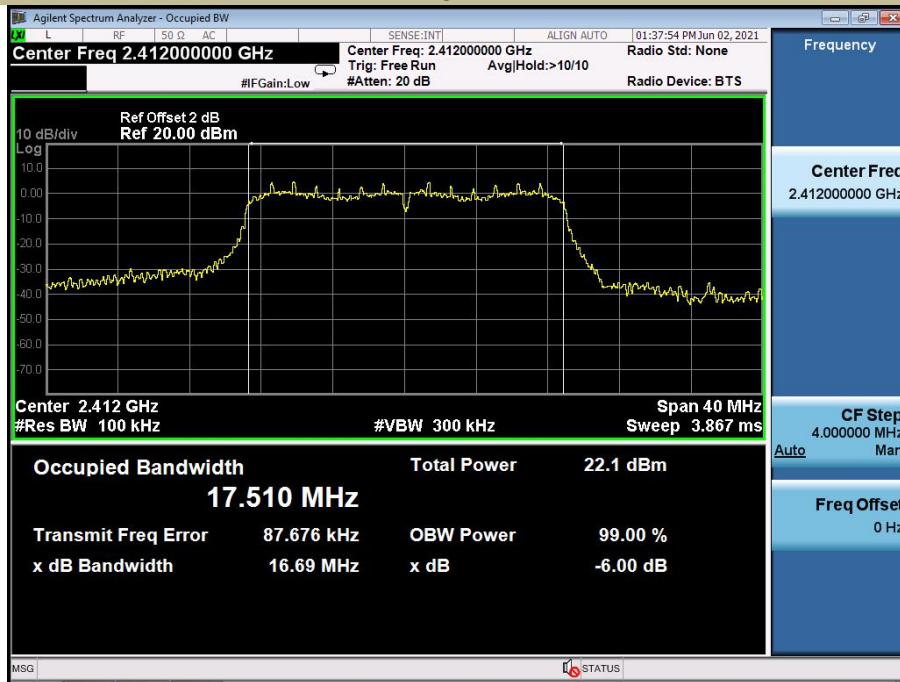
Test Model

DTS (6dB) Bandwidth
802.11g
Channel 11: 2462MHz



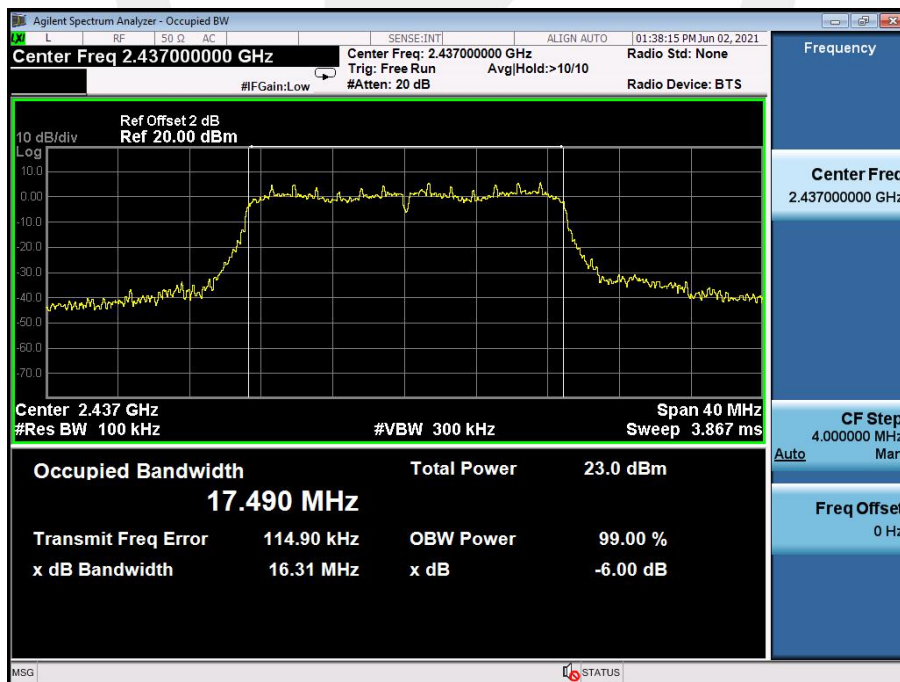
Test Model

DTS (6dB) Bandwidth
802.11n (HT20)
Channel 1: 2412MHz



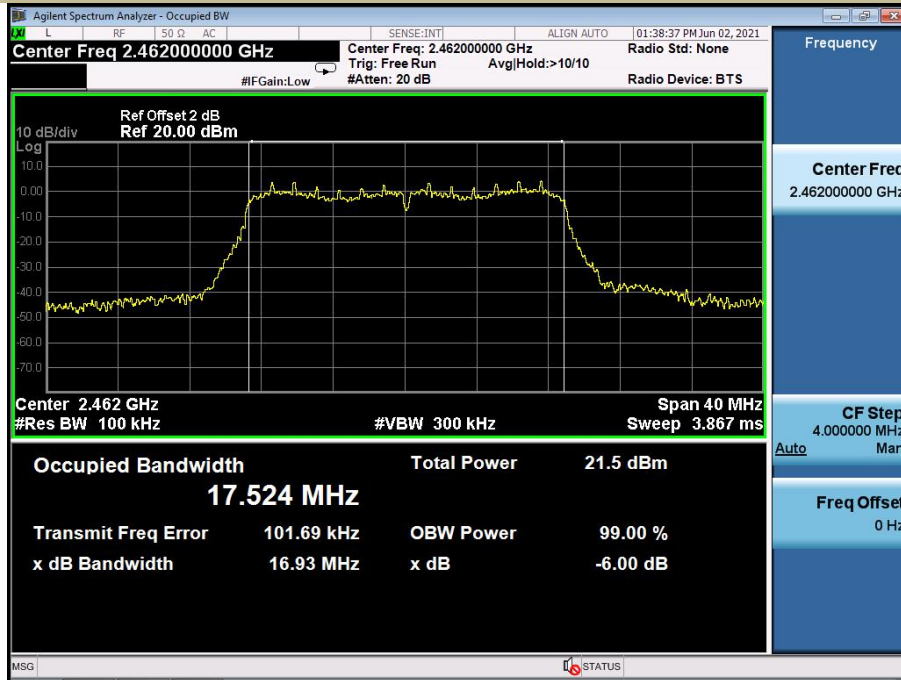
Test Model

DTS (6dB) Bandwidth
802.11n (HT20)
Channel 6: 2437MHz



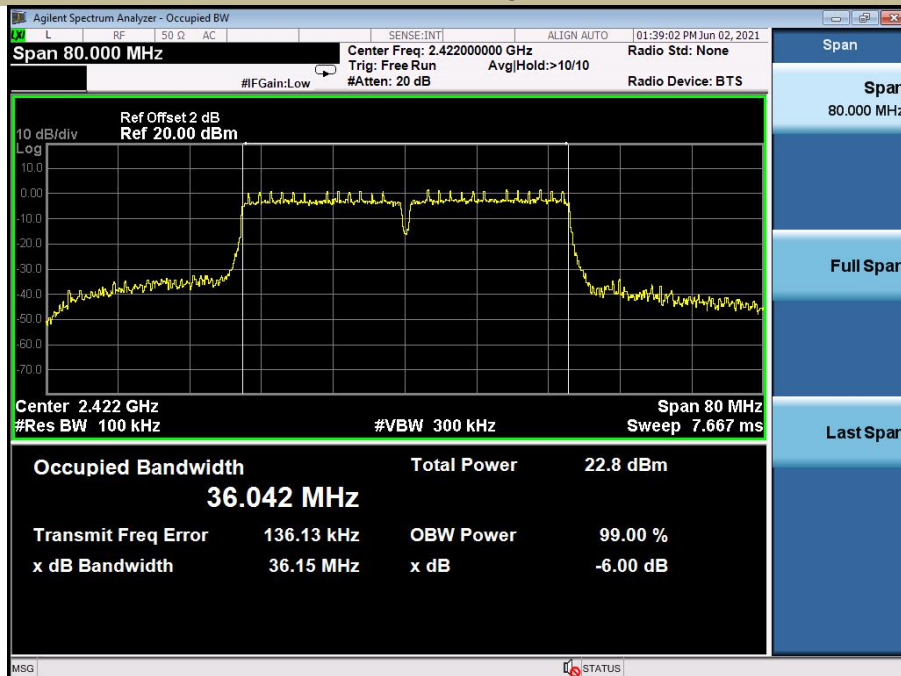
Test Model

DTS (6dB) Bandwidth
802.11n (HT20)
Channel 11: 2462MHz



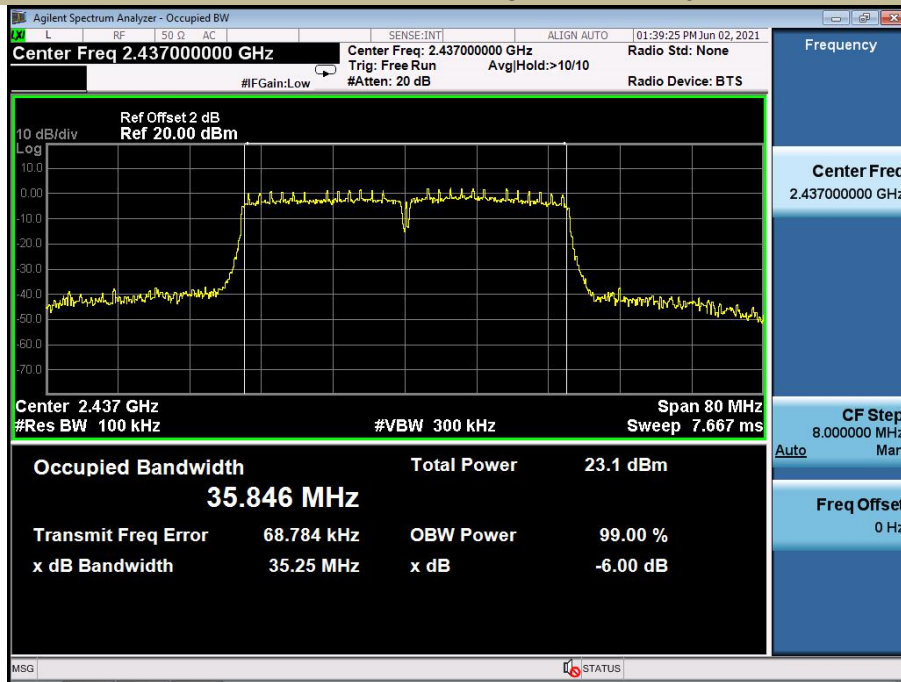
Test Model

DTS (6dB) Bandwidth
802.11n (HT40)
Channel 11: 2422MHz



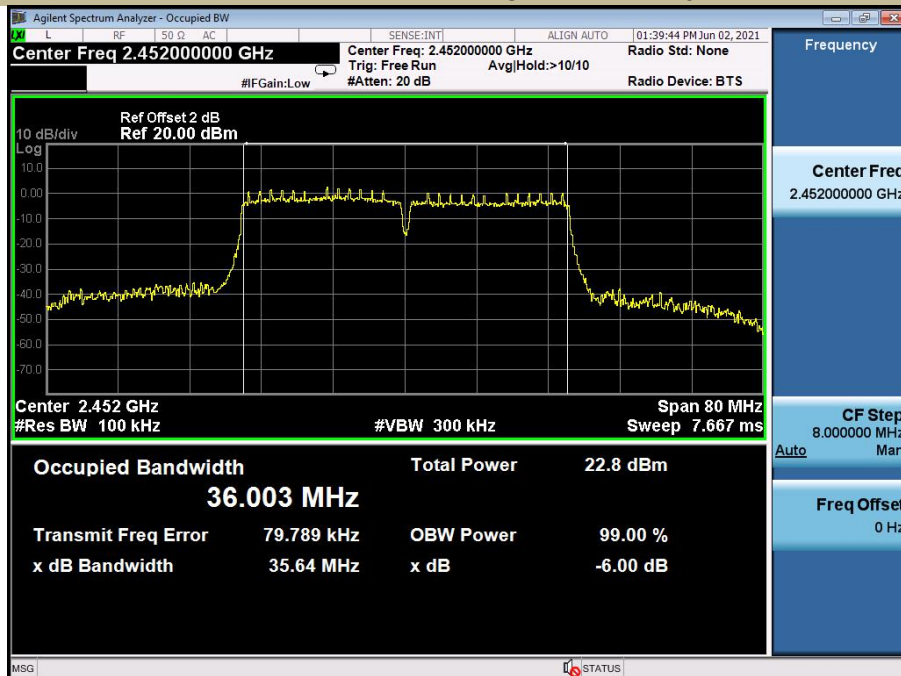
Test Model

DTS (6dB) Bandwidth
802.11n (HT40)
Channel 11: 2437MHz



Test Model

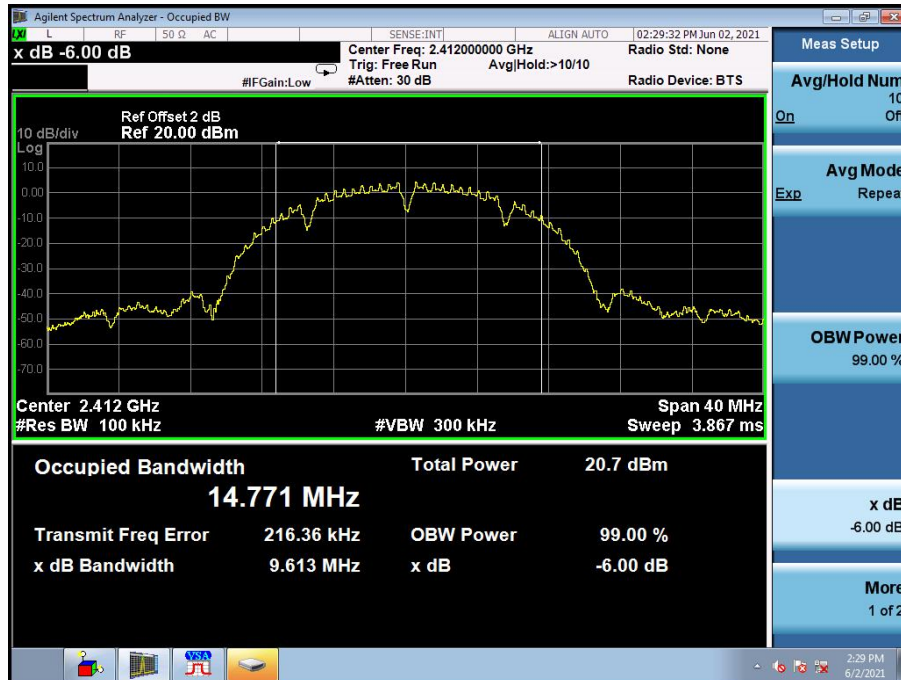
DTS (6dB) Bandwidth
802.11n (HT40)
Channel 11: 2452MHz



B. Antenna 2

Test Model

DTS (6dB) Bandwidth
802.11b
Channel 1: 2412MHz



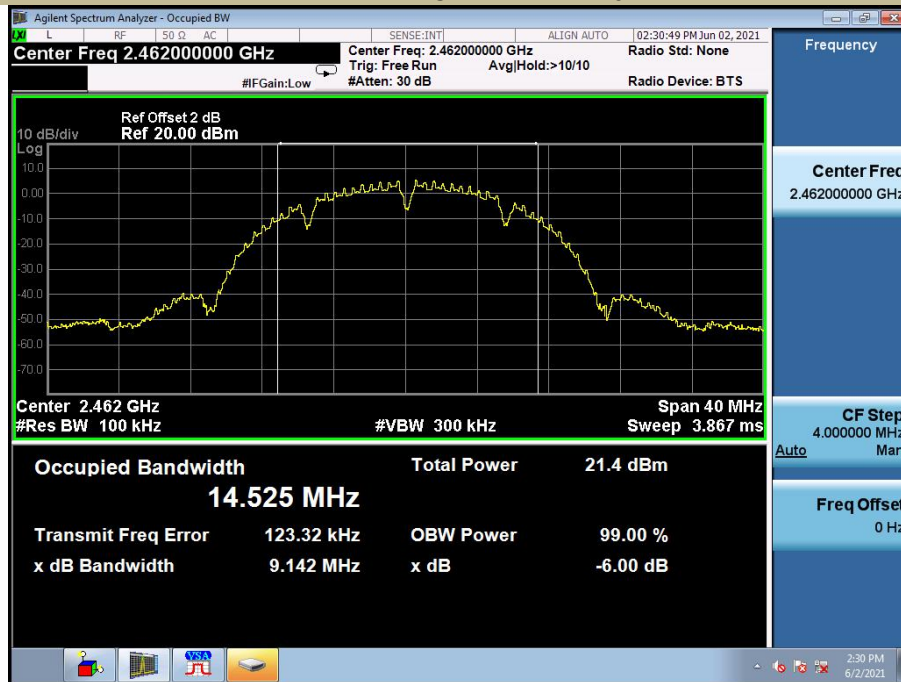
Test Model

DTS (6dB) Bandwidth
802.11b
Channel 6: 2437MHz



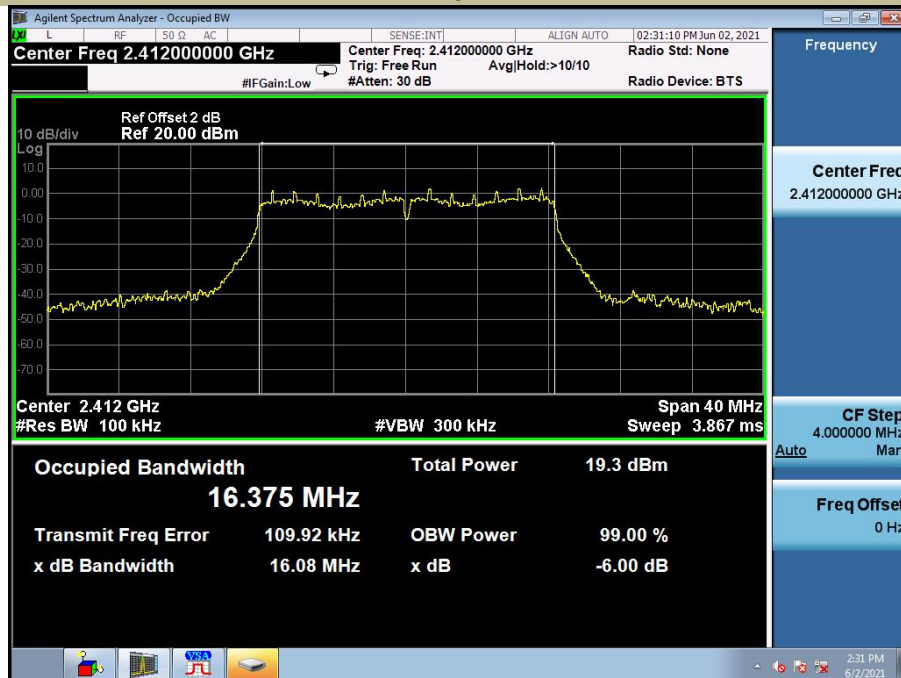
Test Model

DTS (6dB) Bandwidth
802.11b
Channel 11: 2462MHz



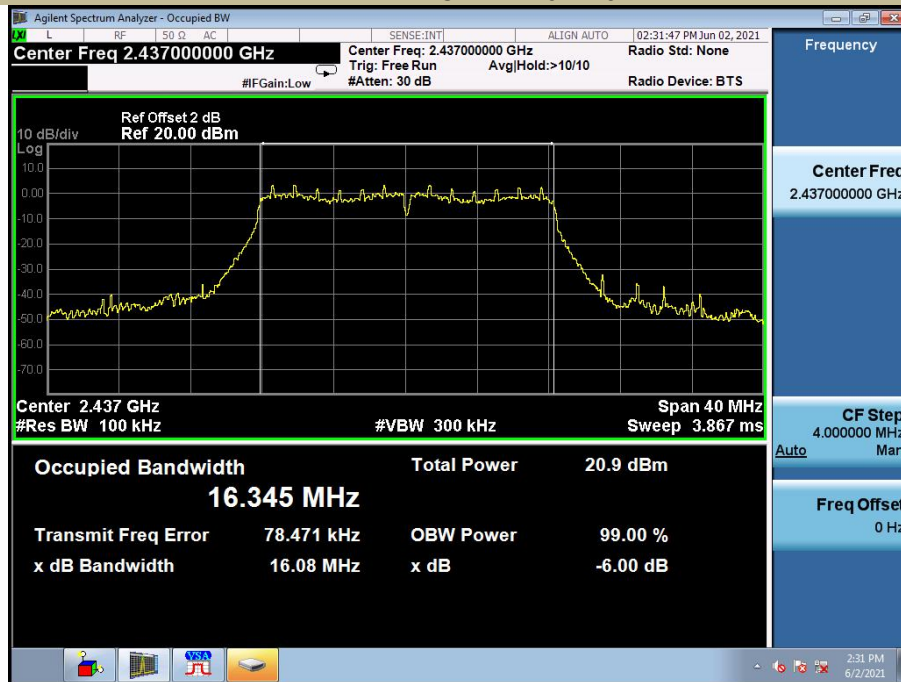
Test Model

DTS (6dB) Bandwidth
802.11g
Channel 1: 2412MHz



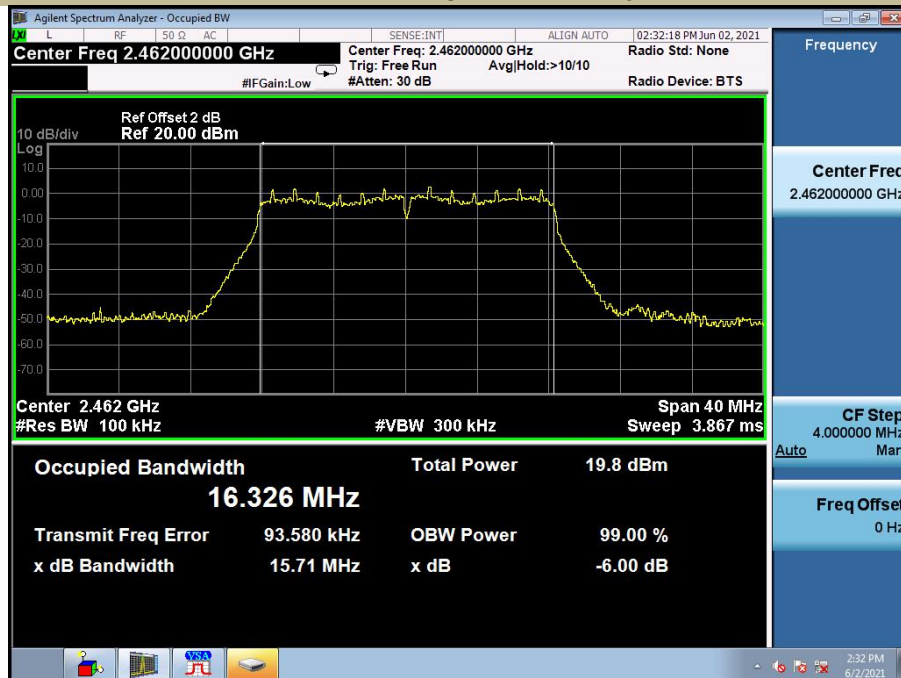
Test Model

DTS (6dB) Bandwidth
802.11g
Channel 6: 2437MHz



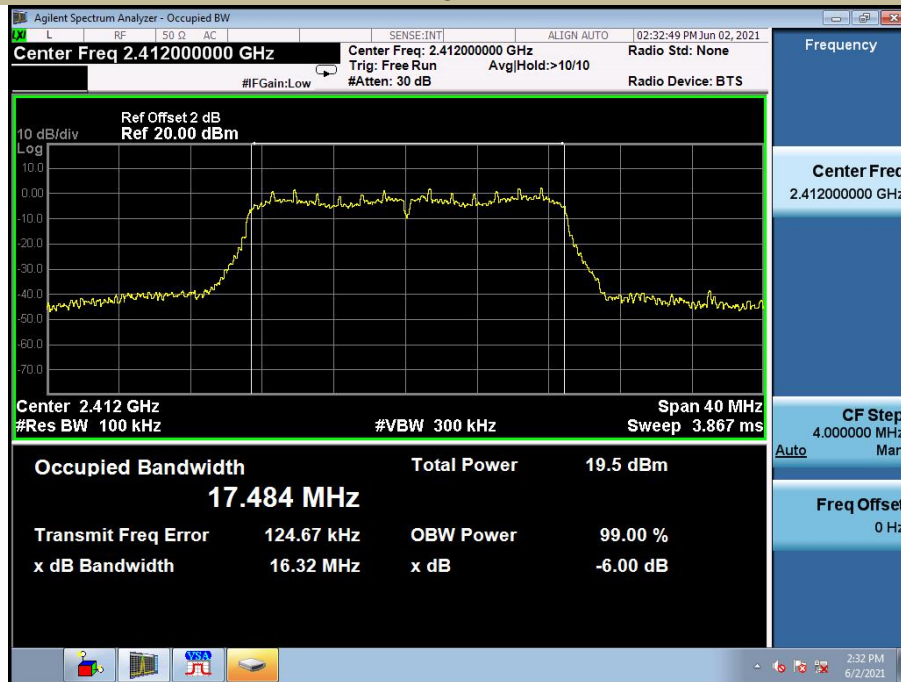
Test Model

DTS (6dB) Bandwidth
802.11g
Channel 11: 2462MHz



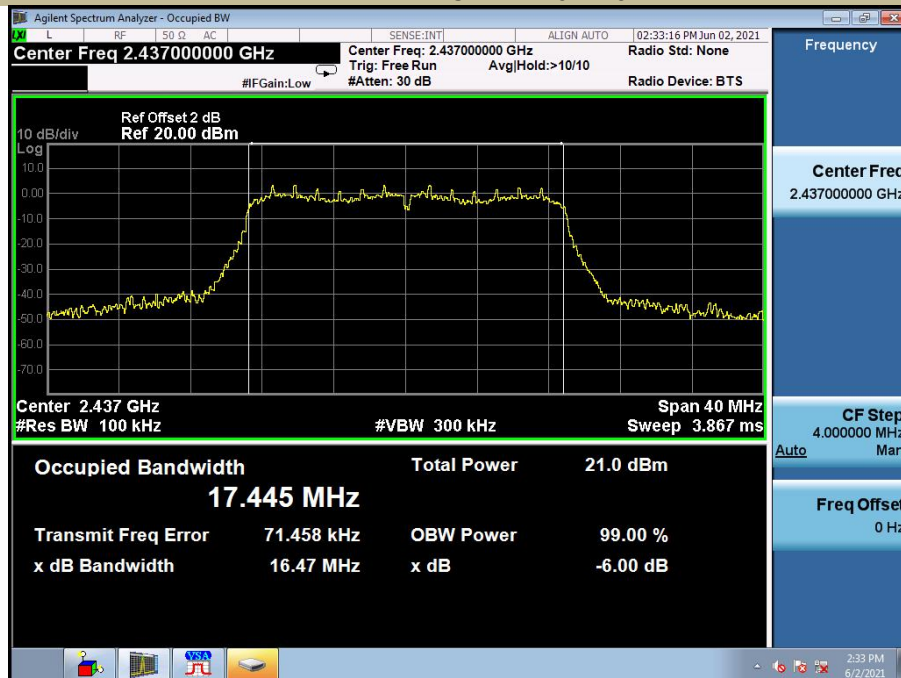
Test Model

DTS (6dB) Bandwidth
802.11n (HT20)
Channel 1: 2412MHz



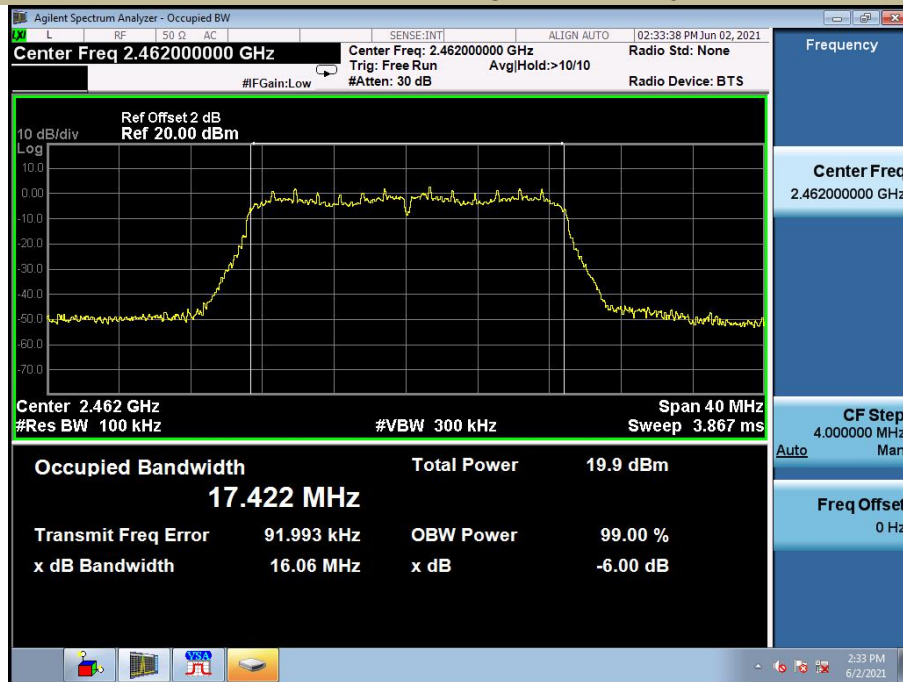
Test Model

DTS (6dB) Bandwidth
802.11n (HT20)
Channel 6: 2437MHz



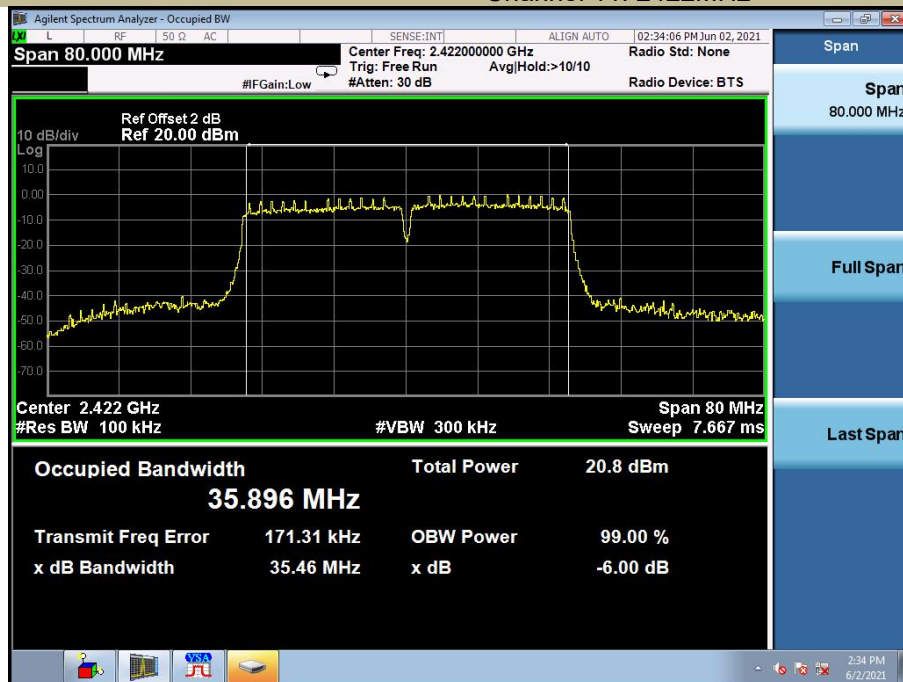
Test Model

DTS (6dB) Bandwidth
802.11n (HT20)
Channel 11: 2462MHz



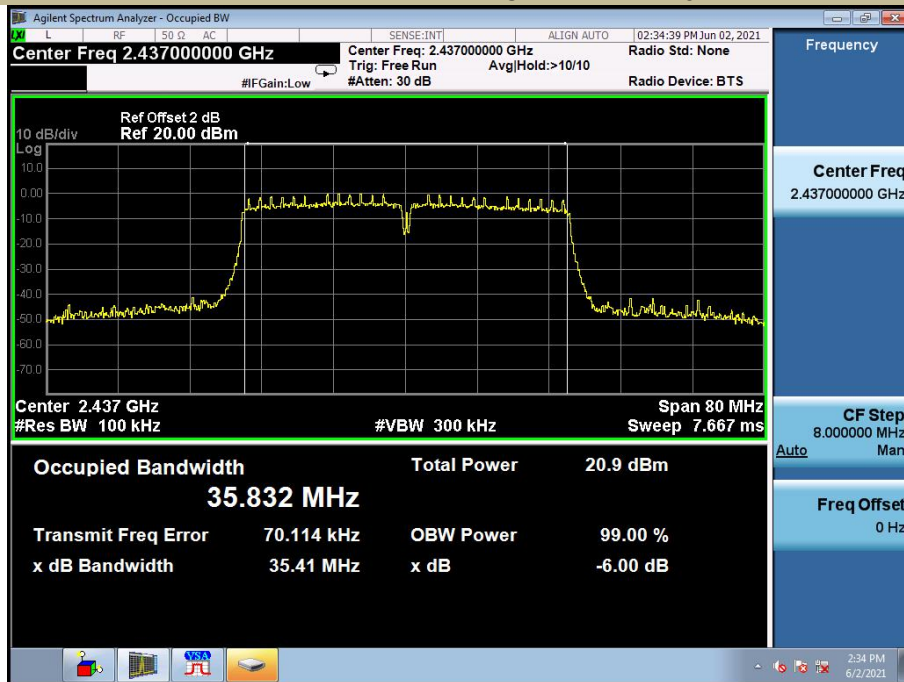
Test Model

DTS (6dB) Bandwidth
802.11n (HT40)
Channel 11: 2422MHz



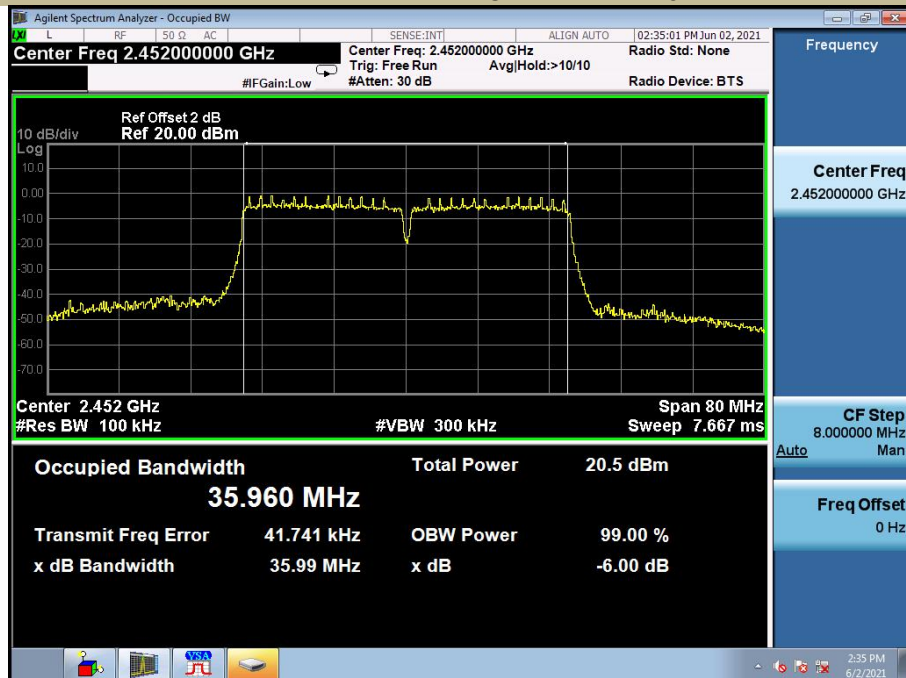
Test Model

DTS (6dB) Bandwidth
802.11n (HT40)
Channel 11: 2437MHz



Test Model

DTS (6dB) Bandwidth
802.11n (HT40)
Channel 11: 2452MHz



8.2 MAXIMUM PEAK CONDUCTED OUTPUT POWER

8.2.1 Applicable Standard

According to FCC Part15.247 (b)(3) and KDB 558074 D01 15.247 Meas Guidance v05r02

8.2.2 Conformance Limit

The maximum peak conducted output power of the intentional radiator for systems using digital modulation in the 2400 - 2483.5 MHz bands shall not exceed: 1 Watt (30dBm).

8.2.3 Test Configuration

Test according to clause 7.1 radio frequency test setup 1

8.2.4 Test Procedure

■ According to FCC Part15.247(b)(3)

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 utilize a fast-responding diode detector.

The testing follows FCC public Notice DA 00-705 Measurement Guidelines.

The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.

Set to the maximum output power setting and enable the EUT transmit continuously.

Measure the conducted output power with cable loss and record the results in the test report.

Measure and record the results in the report.

■ According to FCC Part 15.247(b)(4):

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. 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)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Note: If antenna Gain exceeds 6 dBi, then Output power Limit=30-(Gain- 6)

8.2.5 Test Results

Temperature:	26° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

Operation Mode	Channel Number	Channel Frequency (MHz)	Maximun Peak Conducted Output Power (dBm)			Limit (dBm)	Verdict
			Ant 1	Ant 2	Ant 1+ Ant 2		
802.11b	1	2412	15.35	12.99	-	30.00	PASS
	6	2437	16.39	14.51	-	30.00	PASS
	11	2462	14.93	13.95	-	30.00	PASS
802.11g	1	2412	14.42	11.50	-	30.00	PASS
	6	2437	15.40	13.16	-	30.00	PASS
	11	2462	14.03	12.50	-	30.00	PASS
802.11n (ht20)	1	2412	14.28	11.24	16.03	28.59	PASS
	6	2437	15.28	13.05	17.32	28.59	PASS
	11	2462	13.87	12.38	16.20	28.59	PASS
802.11n (ht40)	3	2422	14.50	12.45	16.61	28.59	PASS
	6	2437	15.00	12.80	17.05	28.59	PASS
	9	2452	14.69	12.45	16.72	28.59	PASS

Note: For smart antenna systems, Maximum Conducted Output Power is summed at the total transmit power delivered to all antennas.

8.3 MAXIMUM POWER SPECTRAL DENSITY

8.3.1 Applicable Standard

According to FCC Part15.247(e) and KDB 558074 D01 15.247 Meas Guidance v05r02

8.3.2 Conformance Limit

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.

8.3.3 Test Configuration

Test according to clause 7.1 radio frequency test setup 1

8.3.4 Test Procedure

This procedure shall be used if maximum peak conducted output power was used to demonstrate compliance

The transmitter output (antenna port) was connected to the spectrum analyzer

Set analyzer center frequency to DTS channel center frequency.

Set the span to 1.5 times the DTS bandwidth.

Set the RBW to: 3 kHz

Set the VBW to:10 kHz.

Set Detector = peak.

Set Sweep time = auto couple.

Set Trace mode = max hold.

Allow trace to fully stabilize.

Use the peak marker function to determine the maximum amplitude level within the RBW.

8.3.5 Test Results

Temperature:	26° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

Operation Mode	Channel Number	Channel Frequency (MHz)	Measurement Level (dBm/3kHz)			Limit (dBm/3kHz)	Verdict
			Ant 1	Ant 2	Ant 1+ Ant 2		
802.11b	1	2412	-0.848	-1.834	-	<=8	PASS
	6	2437	-0.780	-6.185	-	<=8	PASS
	11	2462	-2.379	-0.955	-	<=8	PASS
802.11g	1	2412	-9.746	-15.121	-	<=8	PASS
	6	2437	-11.493	-11.526	-	<=8	PASS
	11	2462	-11.691	-11.586	-	<=8	PASS
802.11n (ht20)	1	2412	-11.598	-13.373	-9.39	<=8	PASS
	6	2437	-10.395	-12.575	-8.34	<=8	PASS
	11	2462	-11.897	-13.244	-9.51	<=8	PASS
802.11n (ht40)	3	2422	-13.482	-15.975	-11.54	<=8	PASS
	6	2437	-13.300	-15.452	-11.23	<=8	PASS
	9	2452	-13.974	-16.762	-12.14	<=8	PASS

Note: For smart antenna systems, Maximum Conducted Output Power is summed at the total transmit power delivered to all antennas.

Ant. 1

Test Model

Power Spectral Density
802.11b
Channel 1: 2412MHz



Test Model

Power Spectral Density
802.11b
Channel 6: 2437MHz



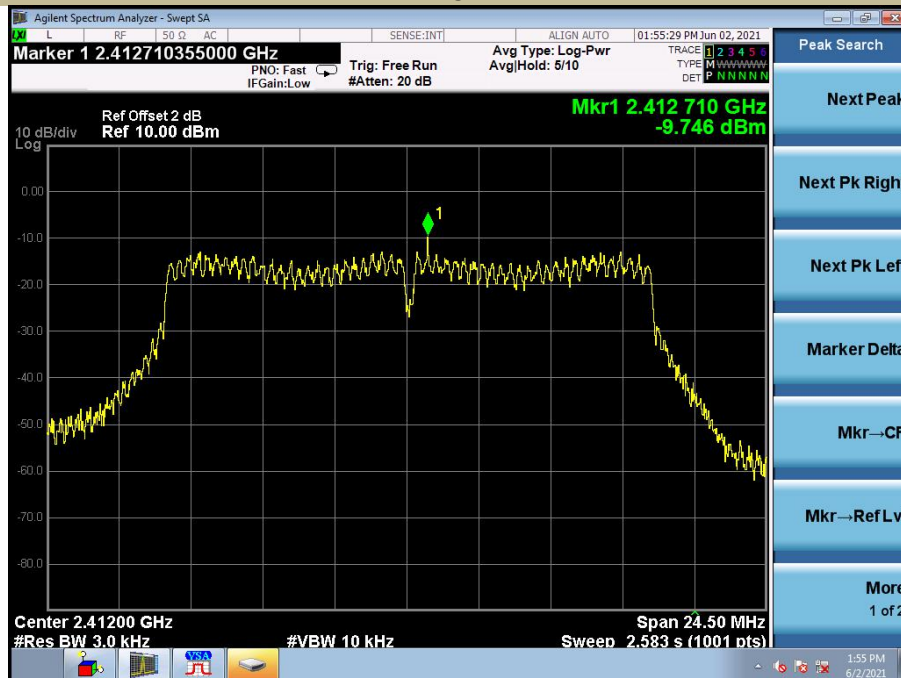
Test Model

Power Spectral Density
802.11b
Channel 11: 2462MHz



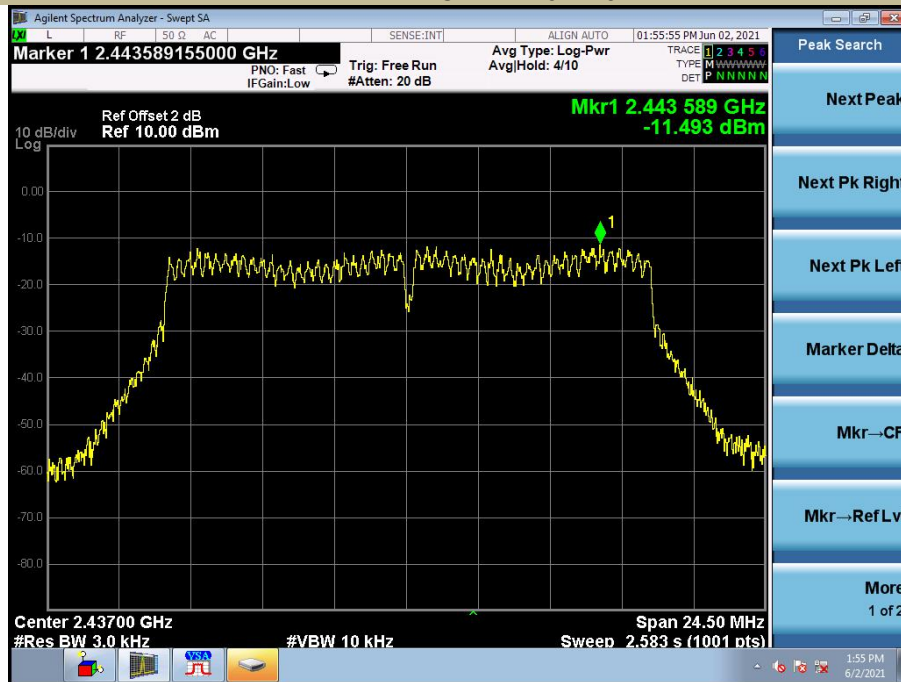
Test Model

Power Spectral Density
802.11g
Channel 1: 2412MHz



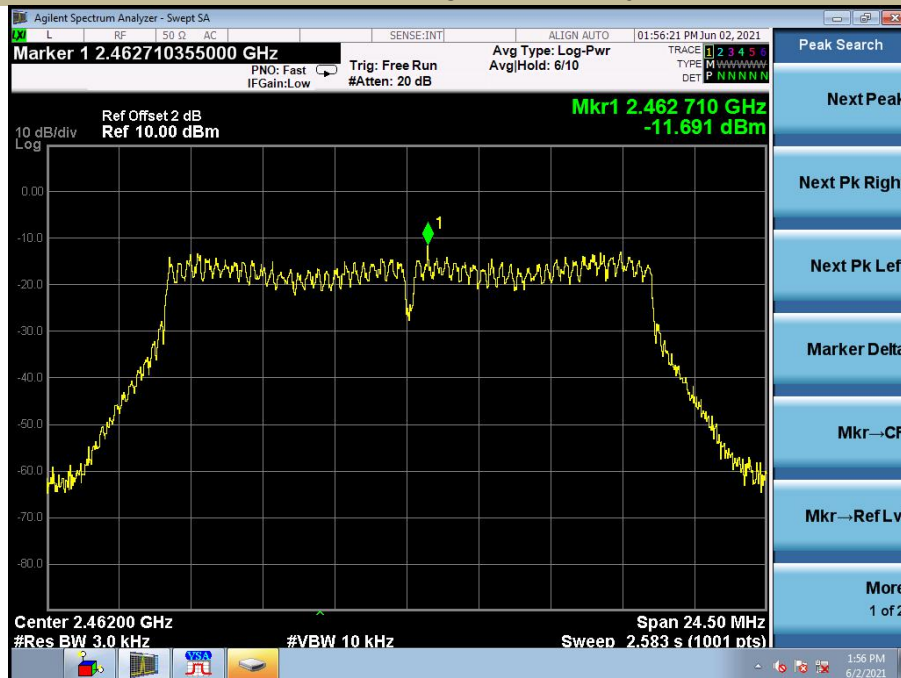
Test Model

Power Spectral Density
802.11g
Channel 6: 2437MHz



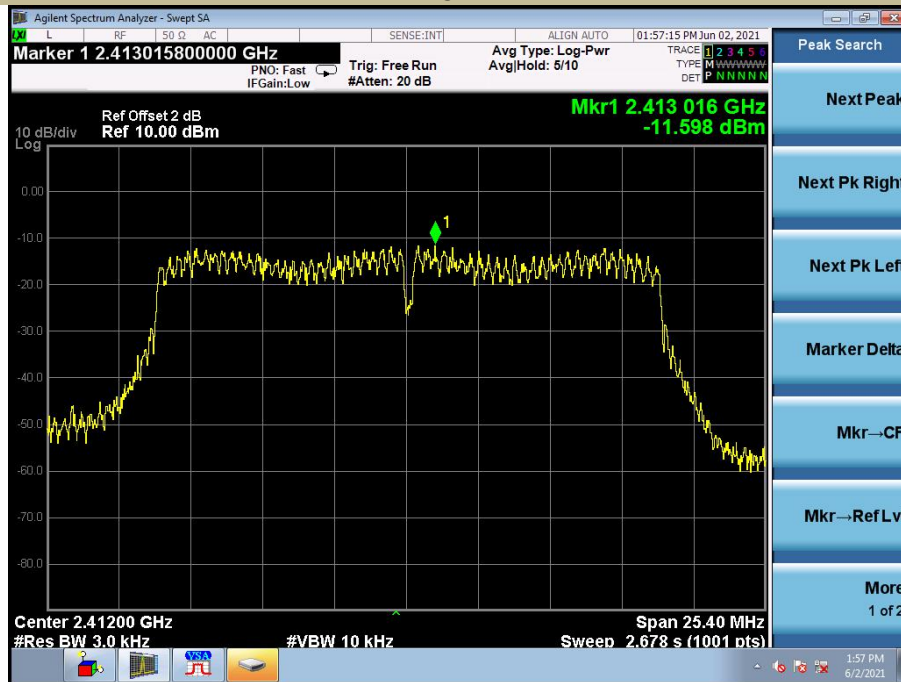
Test Model

Power Spectral Density
802.11g
Channel 11: 2462MHz



Test Model

Power Spectral Density
802.11n (HT20)
Channel 1: 2412MHz



Test Model

Power Spectral Density
802.11n (HT20)
Channel 6: 2437MHz

