FCC Radio Test Report

FCC ID: 2AWDM-A9D

Original Grant

Report No.	:	TB-FCC175525
Applicant	:	Winpal Electronics Co.,Ltd
Equipment Under Test (EUT)		
EUT Name	:	Dash Camera
Model No.	:	A9D
Series Model No.	:	----
Brand Name	:	COXPAL
Sample ID	:	TBBJ-202000903-19-1#& TBBJ-202000903-19-2#
Receipt Date	:	2020-09-07
Test Date	:	2020-09-08 to 2020-09-16
Issue Date	:	2020-09-17
Standards	:	FCC Part 15, Subpart C 15.247
Test Method	:	ANSI C63.10: 2013
Conclusions	:	**PASS**
		In the configuration tested, the EUT complied with the standards specified above, The EUT technically complies with the FCC and IC requirements
Test/Witness Engineer	:	Jack Deng
Engineer Supervisor	:	Ivan Su
Engineer Manager	:	Ray Lai

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in the report.

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Revision History

Report No.	Version	Description	Issued Date
TB-FCC175525	Rev.01	Initial issue of report	2020-09-17

1. General Information about EUT

1.1 Client Information

Applicant	:	Winpal Electronics Co.,Ltd
Address	:	Room602, Building A1, Huafeng Hi-Tech Industrial Park, Hangkong road, Gushu, Xixiang, Baoan, Shenzhen, China 518102
Manufacturer	:	Winpal Electronics Co.,Ltd
Address	:	Room602, Building A1, Huafeng Hi-Tech Industrial Park, Hangkong road, Gushu, Xixiang, Baoan, Shenzhen, China 518102

1.2 General Description of EUT (Equipment Under Test)

EUT Name	:	Dash Camera	
Models No.	:	A9D	
Model Difference	:	N/A	
Product Description	:	Operation Frequency:	802.11b/g/n(HT20): 2412MHz~2462MHz 802.11n(HT40): 2422MHz~2452MHz
		Number of Channel:	802.11b/g/n(HT20):11 channels see note(3) 802.11n(HT40):7 channels see note(3)
		conducted power:	802.11b: 15.85dBm 802.11g: 14.59 dBm 802.11n (HT20): 14.66 dBm 802.11n (HT40): 14.74 dBm
		Modulation Type:	802.11b: DSSS(CCK, DQPSK, DBPSK) 802.11g/n: OFDM(BPSK,QPSK,16QAM,64QAM)
		Antenna Gain:	1.71dBi FPC Antenna
Power Supply	:	car charger Input:DC 12-24V Output USB 1: 5V 1.5A，USB 2:5V 2.1A Dash Camera Input:DC 5V 1.5A	
Software Version	:	Ver01	
Hardware Version	:	Ver02	
Connecting I/O Port(S)	:	Please refer to the User's Manual	
Remark	:	The antenna gain provided by the applicant, the verified for the RF conduction test and adapter provided by TOBY test lab.	

Note:

(1) This Test Report is FCC Part 15.247 for 802.11b/g/n, the test procedure follows the FCC KDB 558074 D01 DTS Meas Guidance v05.

(2) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

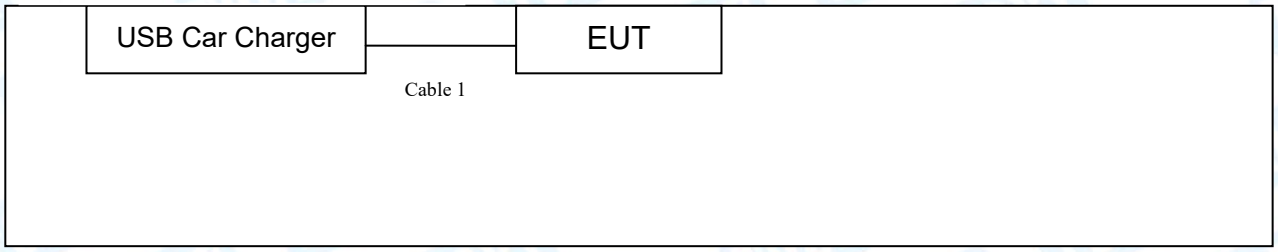
(3) Channel List:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	**2412**	05	2432	09	2452
02	2417	**06**	**2437**	10	2457
03	2422	07	2442	**11**	**2462**
04	2427	08	2447		
Note: CH 01~CH 11 for 802.11b/g/n(HT20) **CH 03~CH 9 for 802.11n(HT40)**					

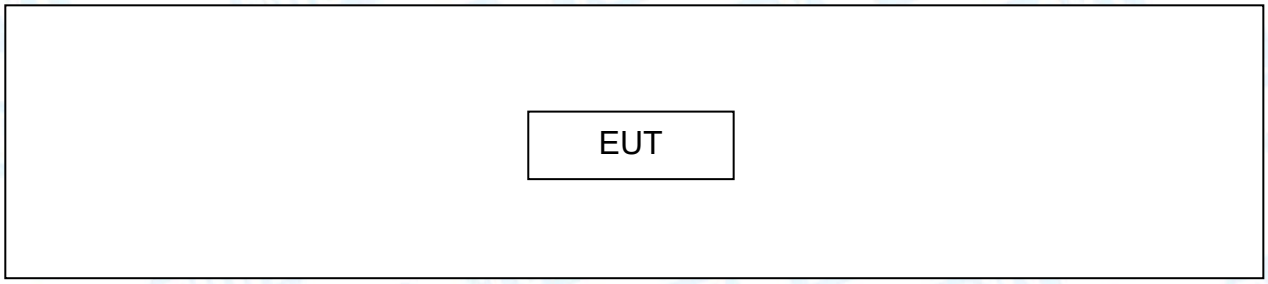
(4) The Antenna information about the equipment is provided by the applicant.

1.3 Block Diagram Showing the Configuration of System Tested

Charging Mode+TX mode



TX Mode



1.4 Description of Support Units

Equipment Information				
Name	**Model**	**FCC ID/VOC**	**Manufacturer**	**Used "√"**
Adapter	CPCU2	----	----	√
Cable Information				
Number	**Shielded Type**	**Ferrite Core**	**Length**	**Note**
Cable 1	Yes	NO	1.0M	Accessory

1.5 Description of Test Mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned follow was evaluated respectively.

For Conducted Test	
Final Test Mode	**Description**
Mode 1	Charging + TX B Mode

For Radiated Test	
Final Test Mode	**Description**
Mode 2	TX Mode B Mode Channel 01/06/11
Mode 3	TX Mode G Mode Channel 01/06/11
Mode 4	TX Mode N(HT20) Mode Channel 01/06/11
Mode 5	TX Mode N(HT40) Mode Channel 03/06/09

Note:

(1) For all test, we have verified the construction and function in typical operation. And all the test modes were carried out with the EUT in transmitting operation in maximum power with all kinds of data rate.

According to ANSI C63.10 standards, the measurements are performed at the highest, Middle, lowest available channels, and the worst case data rate as follows:

802.11b Mode: CCK (1 Mbps)
802.11g Mode: OFDM (6 Mbps)
802.11n (HT20) Mode: MCS 0 (6.5 Mbps)
802.11n (HT40) Mode: MCS 0 (13 Mbps)

(2) During the testing procedure, the continuously transmitting with the maximum power mode was programmed by the customer.

(3) The EUT is Fixed unit; in normal use it was positioned on X-plane. The worst case was found positioned on X-plane. Therefore only the test data of this X-plane was used for radiated emission measurement test.

1.6 Description of Test Software Setting

During testing channel&Power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of WLAN.

Test Software Version	**LaunchEngmode**		
Channel	**CH 01**	**CH 06**	**CH 11**
IEEE 802.11b DSSS	DEF	DEF	DEF
IEEE 802.11g OFDM	DEF	DEF	DEF
IEEE 802.11n (HT20)	DEF	DEF	DEF
Test Software Version	**n/a**		
Channel	**CH 03**	**CH 06**	**CH 09**
IEEE 802.11n (HT40)	DEF	DEF	DEF

1.7 Measurement Uncertainty

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

Test Item	**Parameters**	**Expanded Uncertainty (U_{Lab})**
Conducted Emission	Level Accuracy: 9kHz~150kHz 150kHz to 30MHz	±3.50 dB ±3.10 dB
Radiated Emission	Level Accuracy: 9kHz to 30 MHz	±4.60 dB
Radiated Emission	Level Accuracy: 30MHz to 1000 MHz	±4.50 dB
Radiated Emission	Level Accuracy: Above 1000MHz	±4.20 dB

1.8 Test Facility

The testing report were performed by the Shenzhen Toby Technology Co., Ltd., in their facilities located at 1A/F., Bldg.6, Yusheng Industrial Zone, The National Road No.107 Xixiang Section 467, Xixiang, Bao'an, Shenzhen, Guangdong, China. At the time of testing, the following bodies accredited the Laboratory:

CNAS (L5813)

The Laboratory has been accredited by CNAS to ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories for the competence in the field of testing. And the Registration No.: CNAS L5813.

A2LA Certificate No.: 4750.01

The laboratory has been accredited by American Association for Laboratory Accreditation(A2LA) to ISO/IEC 17025：2017 General Requirements for the Competence of Testing and Calibration Laboratories for the technical competence in the field of Electrical Testing. And the A2LA Certificate No.: 4750.01. FCC Accredited Test Site Number: 854351.

IC Registration No.: (11950A)

The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing. The site registration: Site# 11950A.

2. Test Summary

FCC Part 15 Subpart C(15.247)/RSS 247 Issue 2					
Standard Section		Test Item	Test Sample(s)	Judgment	Remark
FCC	IC				
15.203		Antenna Requirement	TBBJ-20200903-19-2#	PASS	N/A
15.207(a)	RSS-GEN 7.2.4	Conducted Emission	N/A	N/A	N/A
15.205&15.247(d)	RSS-GEN 7.2.2	Band-Edge & Unwanted Emissions into Restricted Frequency	TBBJ-20200903-19-2#	PASS	N/A
15.247(a)(2)	RSS 247 5.2 (1)	6dB Bandwidth	TBBJ-20200903-19-2#	PASS	N/A
15.247(b)(3)	RSS 247 5.4 (4)	Conducted Max Output Power	TBBJ-20200903-19-2#	PASS	N/A
15.247(e)	RSS 247 5.2 (2)	Power Spectral Density	TBBJ-20200903-19-2#	PASS	N/A
15.205, 15.209&15.247(d)	RSS 247 5.5	Transmitter Radiated Spurious &Unwanted Emissions into Restricted Frequency	TBBJ-20200903-19-1# TBBJ-20200903-19-2#	PASS	N/A
Note: N/A is an abbreviation for Not Applicable. TBBJ-20200903-19-2# is engineering prototype, TBBJ-20200903-19-1# is normal prototype					

3. Test Software

Test Item	Test Software	Manufacturer	Version No.
Conducted Emission	EZ-EMC	EZ	CDI-03A2
Radiation Emission	EZ-EMC	EZ	FA-03A2RE

4. Test Equipment

Conducted Emission Test					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Cal. Due Date**
EMI Test Receiver	Rohde & Schwarz	ESCI	100321	Jul. 06, 2020	Jul. 05, 2021
RF Switching Unit	Compliance Direction Systems Inc	RSU-A4	34403	Jul. 06, 2020	Jul. 05, 2021
AMN	SCHWARZBECK	NNBL 8226-2	8226-2/164	Jul. 06, 2020	Jul. 05, 2021
LISN	Rohde & Schwarz	ENV216	101131	Jul. 06, 2020	Jul. 05, 2021
Radiation Emission Test					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Cal. Due Date**
Spectrum Analyzer	Agilent	E4407B	MY45106456	Jul. 06, 2020	Jul. 05, 2021
EMI Test Receiver	Rohde & Schwarz	ESPI	100010/007	Jul. 06, 2020	Jul. 05, 2021
Spectrum Analyzer	Rohde & Schwarz	FSV40-N	102197	Jul. 06, 2020	Jul. 05, 2021
Bilog Antenna	ETS-LINDGREN	3142E	00117537	Mar.01, 2020	Feb. 28, 2022
Horn Antenna	ETS-LINDGREN	3117	00143207	Mar.01, 2020	Feb. 28, 2022
Horn Antenna	ETS-LINDGREN	BBHA 9170	BBHA9170582	Mar.01, 2020	Feb. 28, 2022
Loop Antenna	SCHWARZBECK	FMZB 1519 B	1519B-059	Jul. 06, 2020	Jul. 05, 2021
Pre-amplifier	Sonoma	310N	185903	Mar.01, 2020	Feb. 28, 2021
Pre-amplifier	HP	8449B	3008A00849	Mar.01, 2020	Feb. 28, 2021
Pre-amplifier	SKET	LNPA_1840G-50	SK201904032	Jul.07, 2020	Jul. 06, 2021
Cable	HUBER+SUHNER	100	SUCOFLEX	Mar.01, 2020	Feb. 28, 2021
Positioning Controller	ETS-LINDGREN	2090	N/A	N/A	N/A
Antenna Conducted Emission					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Cal. Due Date**
Spectrum Analyzer	Agilent	E4407B	MY45106456	Jul. 06, 2020	Jul. 05, 2021
Spectrum Analyzer	Rohde & Schwarz	ESCI	100010/007	Jul. 06, 2020	Jul. 05, 2021
MXA Signal Analyzer	Agilent	N9020A	MY49100060	Sep. 16, 2019	Sep. 15, 2020
Vector Signal Generator	Agilent	N5182A	MY50141294	Sep. 16, 2019	Sep. 15, 2020
Analog Signal Generator	Agilent	N5181A	MY50141953	Sep. 16, 2019	Sep. 15, 2020
RF Power Sensor	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO26	Sep. 16, 2019	Sep. 15, 2020
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO29	Sep. 16, 2019	Sep. 15, 2020
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO31	Sep. 16, 2019	Sep. 15, 2020
	DARE!! Instruments	RadiPowerRPR3006W	17I00015SNO33	Sep. 16, 2019	Sep. 15, 2020

5. Conducted Emission Test

5.1 Test Standard and Limit

5.1.1Test Standard

FCC Part 15.207

5.1.2 Test Limit

Conducted Emission Test Limit

Frequency	Maximum RF Line Voltage (dBμV)	
	Quasi-peak Level	Average Level
150kHz~500kHz	66 ~ 56 *	56 ~ 46 *
500kHz~5MHz	56	46
5MHz~30MHz	60	50

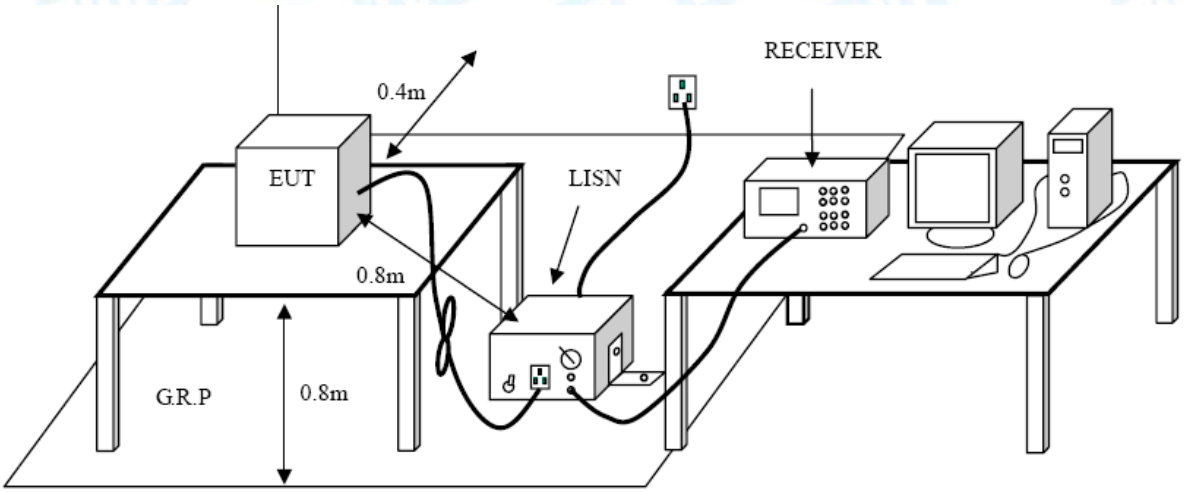
Notes:

(1) *Decreasing linearly with logarithm of the frequency.

(2) The lower limit shall apply at the transition frequencies.

(3) The limit decrease in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

5.2 Test Setup



5.3 Test Procedure

The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

LISN at least 80 cm from nearest part of EUT chassis.

The bandwidth of EMI test receiver is set at 9kHz, and the test frequency band is from 0.15MHz to 30MHz.

5.4 Deviation From Test Standard

No deviation

5.5 EUT Operating Mode

Please refer to the description of test mode.

5.6 Test Data

Not Applicable

6. Radiated Emission Test

6.1 Test Standard and Limit

6.1.1 Test Standard

FCC Part 15.209

6.1.2 Test Limit

Radiated Emission Limits (9 kHz~1000 MHz)

Frequency (MHz	Field Strength (microvolt/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

Radiated Emission Limit (Above 1000MHz)

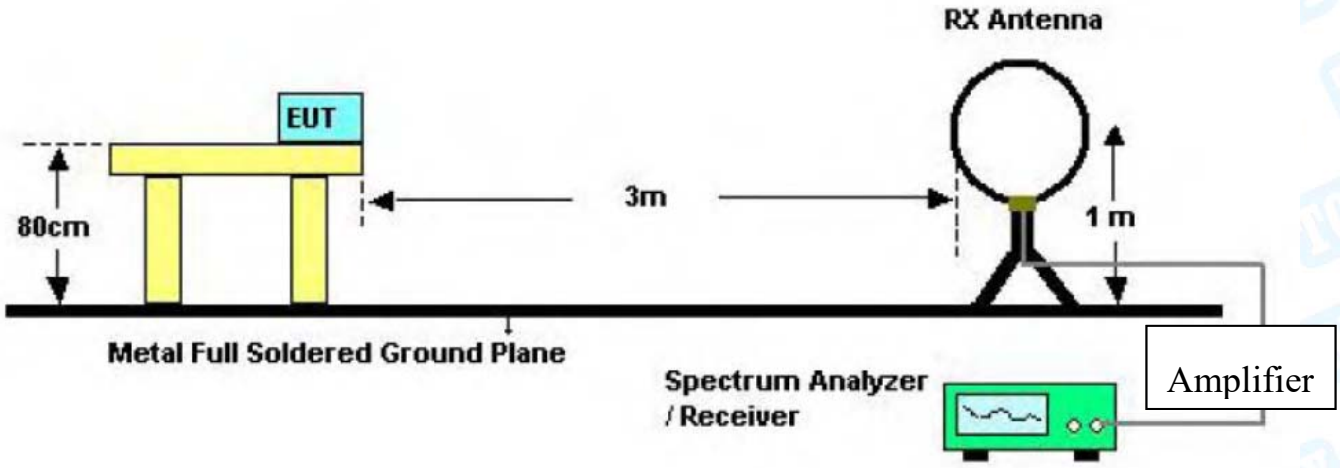
Frequency (MHz)	Distance of 3m (dBuV/m)	
	Peak	Average
Above 1000	74	54

Note:

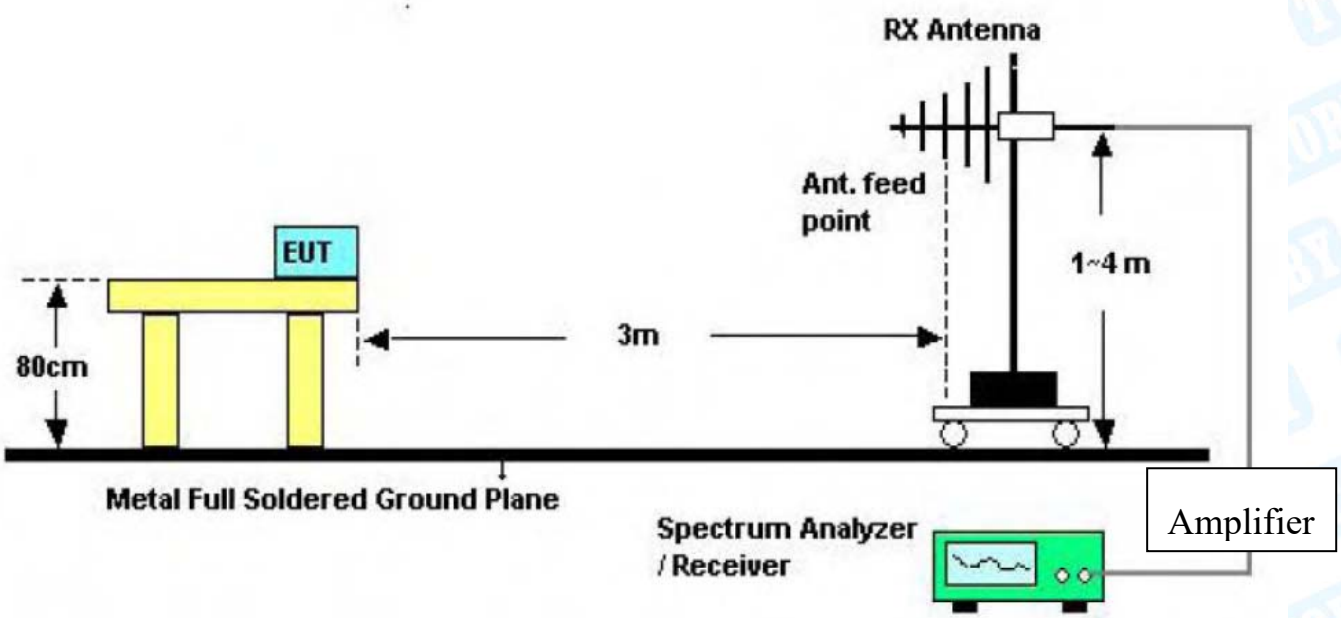
(1) The tighter limit applies at the band edges.

(2) Emission Level(dBuV/m)=20log Emission Level(uV/m)

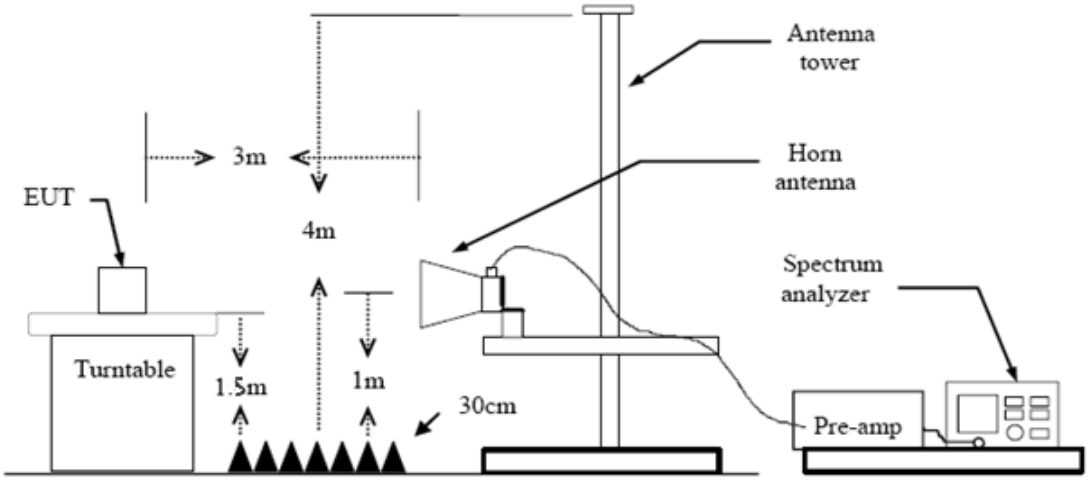
6.2 Test Setup



Below 30MHz Test Setup



Below 1000MHz Test Setup



Above 1GHz Test Setup

6.3 Test Procedure

(1) Measurements at frequency above 1GHz. The EUT was placed on a rotating 1.5m high above the ground. RF absorbers covered the ground plane with a minimum area of 3.0m by 3.0m between the EUT and measurement receiver antenna. The RF absorber shall not exceed 30cm in high above the conducting floor. The table was rotated 360 degrees to determine the position of the highest radiation.

(2) Measurements at frequency Below 1GHz. The EUT was placed on a rotating 0.8m high above the ground. The table was rotated 360 degrees to determine the position of the highest radiation.

(3) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.

(4) The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.

(5) If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit Bellow 1 GHz, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. But the Peak Value and average value both need to comply with applicable limit above 1 GHz.

(6) Testing frequency range below 1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection.

(7) Testing frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.

(8) For the actual test configuration, please see the test setup photo.

6.4 Deviation From Test Standard

No deviation

6.5 EUT Operating Condition

The Equipment Under Test was set to Continual Transmitting in maximum power.

6.6 Test Data

Remark: During testing above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.

Please refer to the Attachment A

7. Restricted Bands Requirement

7.1 Test Standard and Limit

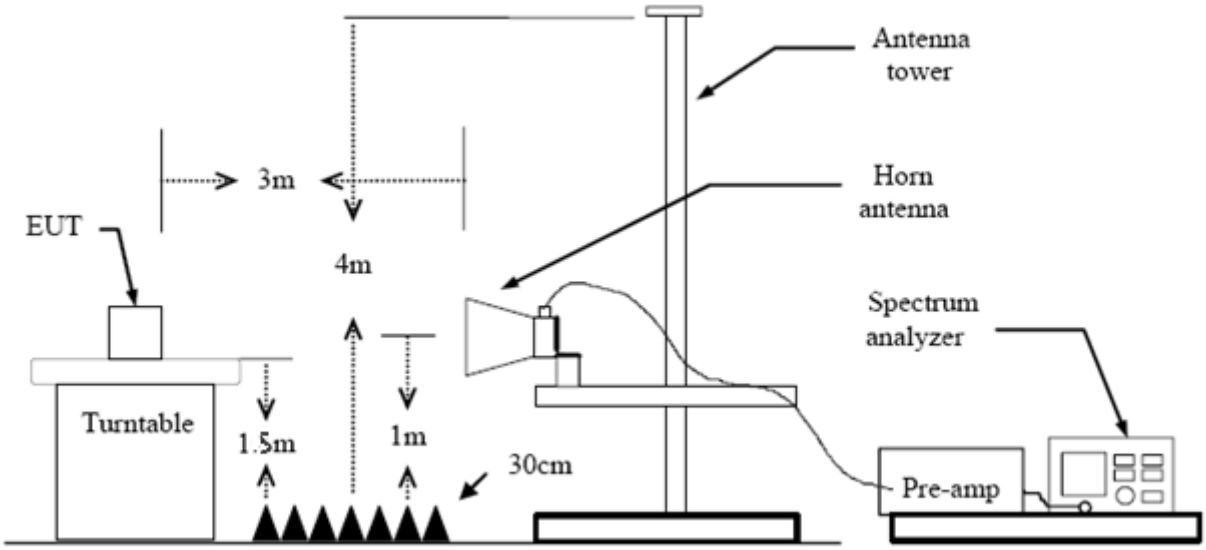
7.1.1 Test Standard

FCC Part 15.247(d)
FCC Part 15.209
FCC Part 15.205

7.1.2 Test Limit

Restricted Frequency Band (MHz)	Distance of 3m (dBuV/m)	
	Peak	Average
2310 ~2390	74	54
2483.5 ~2500	74	54

7.2 Test Setup



7.3 Test Procedure

(1) The measuring distance of 3m shall be used for measurements at frequency below 1GHz and above 1 GHz. The EUT was placed on a rotating 0.8m high above ground, the table was rotated 360 degrees to determine the position of the highest radiation.
(2) Measurements at frequency above 1GHz. The EUT was placed on a rotating 1.5m high above the ground. RF absorbers covered the ground plane with a minimum area of 3.0m by 3.0m between the EUT and measurement receiver antenna. The RF absorber shall not exceed 30cm in high above the conducting floor. The table was rotated 360 degrees to determine the position of the highest radiation.
(3) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.
(4) The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
(5) If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit Bellow 1 GHz, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. But the Peak Value and average value both need to comply with applicable limit above 1 GHz.
(6) Testing frequency range below 1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection.
(7) Testing frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.
(8) For the actual test configuration, please see the test setup photo.

7.4 Deviation From Test Standard

No deviation

7.5 EUT Operating Condition

The Equipment Under Test was set to Continual Transmitting in maximum power.

7.6 Test Data

Please refer to the Attachment B.

8. Bandwidth Test

8.1 Test Standard and Limit

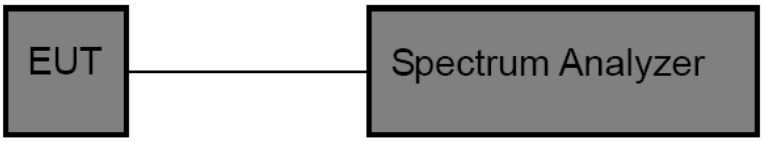
8.1.1 Test Standard

FCC Part 15.247 (a)(2)

8.1.2 Test Limit

FCC Part 15 Subpart C(15.247)/RSS-210		
Test Item	**Limit**	**Frequency Range(MHz)**
Bandwidth	>=500 KHz (6dB bandwidth)	2400~2483.5

8.2 Test Setup



8.3 Test Procedure

(1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.

(2) The bandwidth is measured at an amplitude level reduced 6dB from the reference level. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst –case (i.e the widest) bandwidth.

(3)Measure the channel separation the spectrum analyzer was set to Resolution Bandwidth:100 kHz, and Video Bandwidth:300 kHz, Detector: Peak, Sweep Time set auto.

8.4 Deviation From Test Standard

No deviation

8.5 EUT Operating Condition

The EUT was set to continuously transmitting in each mode and low, Middle and high channel for the test.

8.6 Test Data

Please refer to the Attachment C.

9. Peak Output Power Test

9.1 Test Standard and Limit

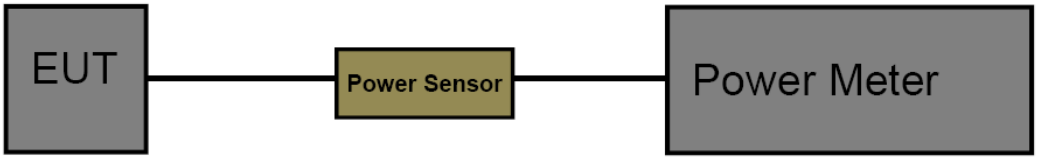
9.1.1 Test Standard

FCC Part 15.247 (b)

9.1.2 Test Limit

FCC Part 15 Subpart C(15.247)/RSS-210		
Test Item	**Limit**	**Frequency Range(MHz)**
Peak Output Power	1 Watt or 30 dBm	2400~2483.5

9.2 Test Setup



9.3 Test Procedure

The measurement is according to section 9.1.2 of KDB 558074 D01 DTS Meas Guidance v05. The EUT was connected to RF power meter via a broadband power sensor as show the block above. The power sensor video bandwidth is greater than or equal to the DTS bandwidth of the equipment.

9.4 Deviation From Test Standard

No deviation

9.5 EUT Operating Condition

The EUT was set to continuously transmitting in the max power during the test.

9.6 Test Data

Please refer to the Attachment D.

10. Power Spectral Density Test

10.1 Test Standard and Limit

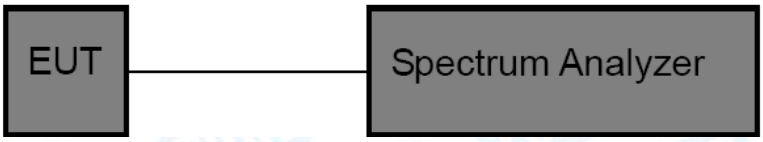
10.1.1 Test Standard

FCC Part 15.247 (e)

10.1.2 Test Limit

FCC Part 15 Subpart C(15.247)		
Test Item	**Limit**	**Frequency Range(MHz)**
Power Spectral Density	8dBm(in any 3 kHz)	2400~2483.5

10.2 Test Setup



10.3 Test Procedure

The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above. The measurement according to section 10.2 of KDB 558074 D01 DTS Meas Guidance v05.

(1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
(2) Set analyser centre frequency to DTS channel centre frequency.
(3) Set the span to 1.5 times the DTS bandwidth.
(4) Set the RBW to: 3 kHz
(5) Set the VBW to: 10 kHz
(6) Detector: peak
(7) Sweep time: auto
(8) Allow trace to fully stabilize. Then use the peak marker function to determine the maximum amplitude level.

9.4 Deviation From Test Standard

No deviation

9.5 EUT Operating Condition

The EUT was set to continuously transmitting in each mode and low, Middle and high channel for the test.

9.6 Test Data

Please refer to the Attachment E.

11. Antenna Requirement

11.1 Standard Requirement

11.1.1 Standard

FCC Part 15.203

11.1.2 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 shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

11.2 Deviation From Test Standard

No deviation

11.3 Antenna Connected Construction

The gains of the antenna used for transmitting is 1.71dBi, and the antenna de-signed with permanent attachment and no consideration of replacement. Please see the EUT photo for details.

Result

The EUT antenna is a FPC Antenna. It complies with the standard requirement.

Antenna Type
☐Permanent attached antenna
☒Unique connector antenna
☐Professional installation antenna

Attachment A-- Radiated Emission Test Data

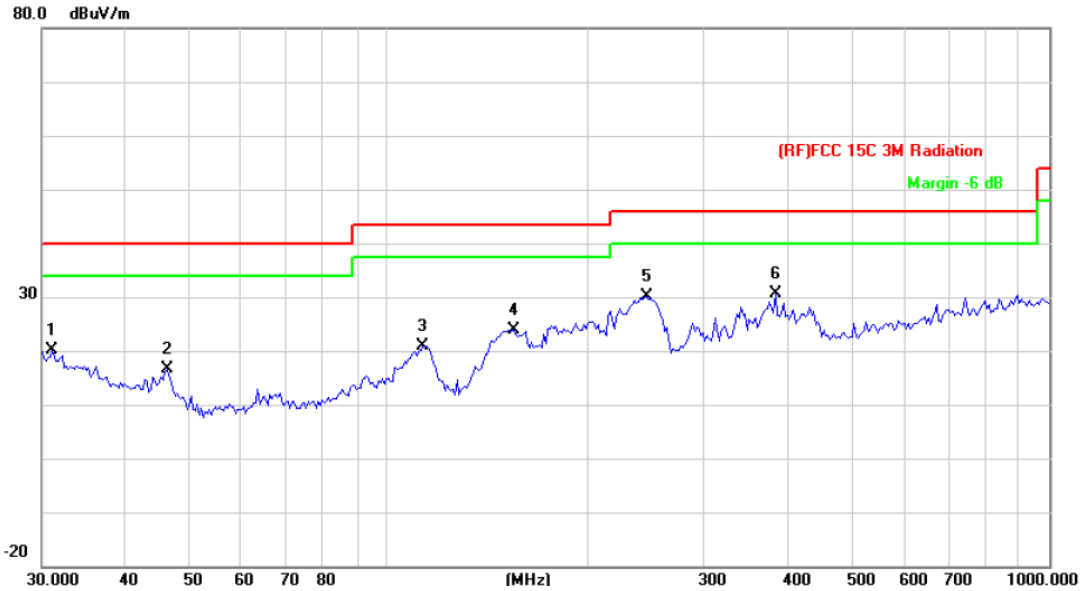
9KHz~30MHz

From 9KHz to 30MHz: Conclusion: PASS

Note: The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

30MHz~1GHz

Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V/60 Hz		
Ant. Pol.	Horizontal		
Test Mode:	TX B Mode 2412MHz		
Remark:	Only worse case is reported		

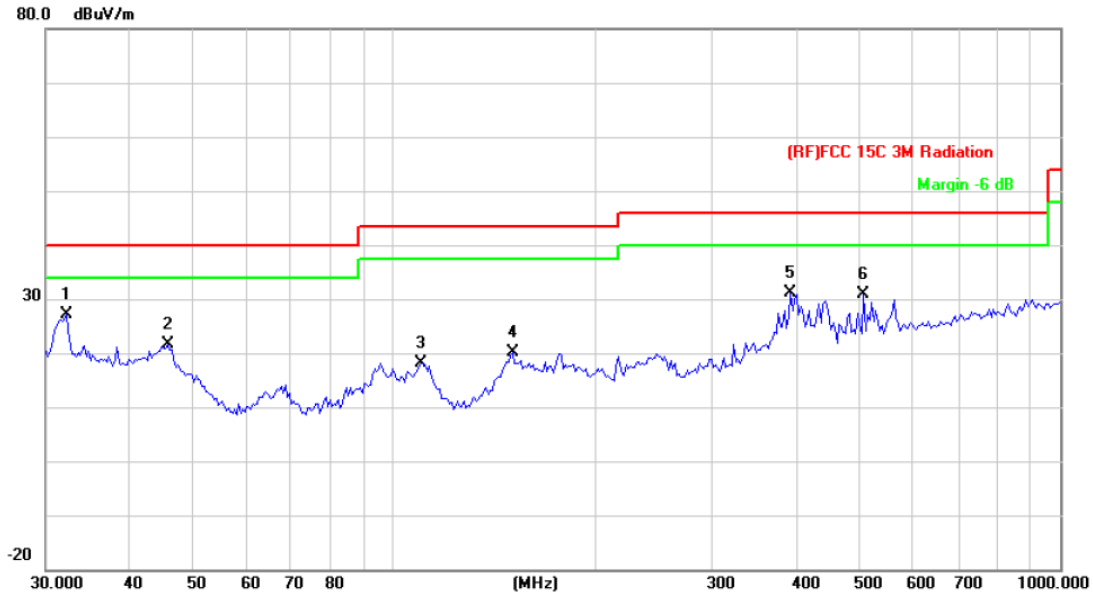


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		31.0706	33.76	-13.74	20.02	40.00	-19.98	QP
2		46.3402	38.57	-21.87	16.70	40.00	-23.30	QP
3		112.9196	43.17	-22.26	20.91	43.50	-22.59	QP
4		154.8204	45.00	-21.08	23.92	43.50	-19.58	QP
5		245.9509	47.47	-17.44	30.03	46.00	-15.97	QP
6	*	385.2805	43.64	-12.98	30.66	46.00	-15.34	QP

*:Maximum data x:Over limit !:over margin

Emission Level= Read Level+ Correct Factor

Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V/60 Hz		
Ant. Pol.	Vertical		
Test Mode:	TX B Mode 2412MHz		
Remark:	Only worse case is reported		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	32.1795	41.82	-14.57	27.25	40.00	-12.75	QP
2		45.6948	43.17	-21.65	21.52	40.00	-18.48	QP
3		109.7960	40.52	-22.29	18.23	43.50	-25.27	QP
4		150.5378	41.40	-21.31	20.09	43.50	-23.41	QP
5		393.4723	43.61	-12.60	31.01	46.00	-14.99	QP
6		506.4791	41.10	-10.28	30.82	46.00	-15.18	QP

*:Maximum data x:Over limit !:over margin

Emission Level= Read Level+ Correct Factor

Above 1GHz

Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Horizontal		
Test Mode:	TX B Mode 2412MHz		
Remark:	No report for the emission which more than 20 dB below the prescribed limit.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4825.110	48.02	13.17	61.19	74.00	-12.81	peak
2	*	4825.110	33.53	13.17	46.70	54.00	-7.30	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Vertical		
Test Mode:	TX B Mode 2412MHz		
Remark:	No report for the emission which more than 20 dB below the prescribed limit.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4824.396	33.43	13.16	46.59	54.00	-7.41	AVG
2		4824.876	48.15	13.16	61.31	74.00	-12.69	peak

Emission Level= Read Level+ Correct Factor

Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Horizontal		
Test Mode:	TX B Mode 2437MHz		
Remark:	No report for the emission which more than 20 dB below the prescribed limit.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4872.848	48.22	13.52	61.74	74.00	-12.26	peak
2	*	4875.338	33.73	13.54	47.27	54.00	-6.73	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Vertical		
Test Mode:	TX B Mode 2437MHz		
Remark:	No report for the emission which more than 20 dB below the prescribed limit.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4874.576	48.28	13.53	61.81	74.00	-12.19	peak
2	*	4875.500	33.71	13.54	47.25	54.00	-6.75	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Horizontal		
Test Mode:	TX B Mode 2462MHz		
Remark:	No report for the emission which more than 20 dB below the prescribed limit.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4923.856	49.50	13.89	63.39	74.00	-10.61	peak
2	*	4924.864	33.87	13.90	47.77	54.00	-6.23	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Vertical		
Test Mode:	TX B Mode 2462MHz		
Remark:	No report for the emission which more than 20 dB below the prescribed limit.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4922.500	33.87	13.89	47.76	54.00	-6.24	AVG
2		4924.762	48.57	13.90	62.47	74.00	-11.53	peak

Emission Level= Read Level+ Correct Factor

Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Horizontal		
Test Mode:	TX G Mode 2412MHz		
Remark:	No report for the emission which more than 20 dB below the prescribed limit.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4823.562	48.20	13.16	61.36	74.00	-12.64	peak
2	*	4823.562	33.38	13.16	46.54	54.00	-7.46	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Vertical		
Test Mode:	TX G Mode 2412MHz		
Remark:	No report for the emission which more than 20 dB below the prescribed limit.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4824.822	33.46	13.16	46.62	54.00	-7.38	AVG
2		4825.086	47.22	13.17	60.39	74.00	-13.61	peak

Emission Level= Read Level+ Correct Factor

Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Horizontal		
Test Mode:	TX G Mode 2437MHz		
Remark:	No report for the emission which more than 20 dB below the prescribed limit.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4873.130	49.16	13.52	62.68	74.00	-11.32	peak
2	*	4873.130	33.70	13.52	47.22	54.00	-6.78	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Vertical		
Test Mode:	TX G Mode 2437MHz		
Remark:	No report for the emission which more than 20 dB below the prescribed limit.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4872.554	48.07	13.52	61.59	74.00	-12.41	peak
2	*	4875.338	33.72	13.54	47.26	54.00	-6.74	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Horizontal		
Test Mode:	TX G Mode 2462MHz		
Remark:	No report for the emission which more than 20 dB below the prescribed limit.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4924.486	48.75	13.89	62.64	74.00	-11.36	peak
2	*	4924.870	33.85	13.90	47.75	54.00	-6.25	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Vertical		
Test Mode:	TX G Mode 2462MHz		
Remark:	No report for the emission which more than 20 dB below the prescribed limit.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4923.754	48.74	13.89	62.63	74.00	-11.37	peak
2	*	4923.754	33.82	13.89	47.71	54.00	-6.29	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Horizontal		
Test Mode:	TX N(HT20) Mode 2412MHz		
Remark:	No report for the emission which more than 20 dB below the prescribed limit.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4823.364	48.49	13.16	61.65	74.00	-12.35	peak
2	*	4825.122	33.56	13.17	46.73	54.00	-7.27	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Vertical		
Test Mode:	TX N(HT20) Mode 2412MHz		
Remark:	No report for the emission which more than 20 dB below the prescribed limit.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4823.724	48.28	13.16	61.44	74.00	-12.56	peak
2	*	4824.444	33.54	13.16	46.70	54.00	-7.30	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Horizontal		
Test Mode:	TX N(HT20) Mode 2437MHz		
Remark:	No report for the emission which more than 20 dB below the prescribed limit.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4875.440	48.26	13.54	61.80	74.00	-12.20	peak
2	*	4875.500	33.88	13.54	47.42	54.00	-6.58	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Vertical		
Test Mode:	TX N(HT20) Mode 2437MHz		
Remark:	No report for the emission which more than 20 dB below the prescribed limit.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4873.418	48.34	13.53	61.87	74.00	-12.13	peak
2	*	4873.418	33.77	13.53	47.30	54.00	-6.70	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Horizontal		
Test Mode:	TX N(HT20) Mode 2462MHz		
Remark:	No report for the emission which more than 20 dB below the prescribed limit.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4923.718	48.56	13.89	62.45	74.00	-11.55	peak
2	*	4923.832	34.03	13.89	47.92	54.00	-6.08	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Vertical		
Test Mode:	TX N(HT20) Mode 2462MHz		
Remark:	No report for the emission which more than 20 dB below the prescribed limit.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4923.544	48.20	13.89	62.09	74.00	-11.91	peak
2	*	4925.218	33.99	13.91	47.90	54.00	-6.10	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Horizontal		
Test Mode:	TX N(HT40) Mode 2422MHz		
Remark:	No report for the emission which more than 20 dB below the prescribed limit.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4844.798	48.52	13.31	61.83	74.00	-12.17	peak
2	*	4844.798	33.66	13.31	46.97	54.00	-7.03	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Vertical		
Test Mode:	TX N(HT40) Mode 2422MHz		
Remark:	No report for the emission which more than 20 dB below the prescribed limit.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4843.118	47.83	13.30	61.13	74.00	-12.87	peak
2	*	4843.910	33.72	13.31	47.03	54.00	-6.97	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Horizontal		
Test Mode:	TX N(HT40) Mode 2437MHz		
Remark:	No report for the emission which more than 20 dB below the prescribed limit.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4872.974	47.55	13.52	61.07	74.00	-12.93	peak
2	*	4875.260	33.86	13.54	47.40	54.00	-6.60	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Vertical		
Test Mode:	TX N(HT40) Mode 2437MHz		
Remark:	No report for the emission which more than 20 dB below the prescribed limit.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4875.146	33.87	13.54	47.41	54.00	-6.59	AVG
2		4875.272	47.98	13.54	61.52	74.00	-12.48	peak

Emission Level= Read Level+ Correct Factor

Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Horizontal		
Test Mode:	TX N(HT40) Mode 2452MHz		
Remark:	No report for the emission which more than 20 dB below the prescribed limit.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4903.214	48.72	13.74	62.46	74.00	-11.54	peak
2	*	4903.214	34.09	13.74	47.83	54.00	-6.17	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Vertical		
Test Mode:	TX N(HT40) Mode 2452MHz		
Remark:	No report for the emission which more than 20 dB below the prescribed limit.		

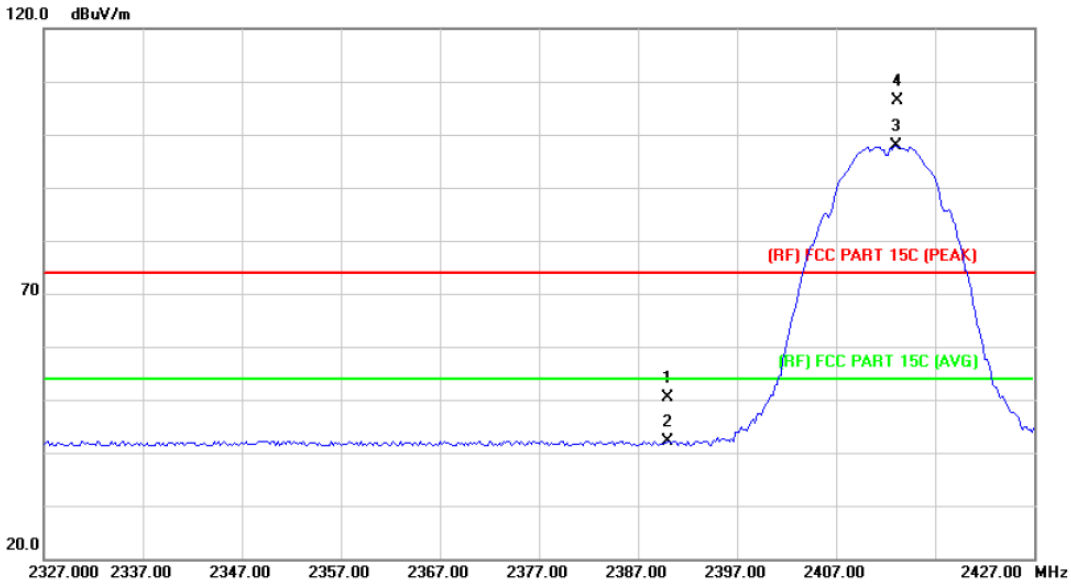
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4903.394	34.11	13.74	47.85	54.00	-6.15	AVG
2		4903.694	48.76	13.74	62.50	74.00	-11.50	peak

Emission Level= Read Level+ Correct Factor

Attachment B-- Restricted Bands Requirement and Band-edge Test Data

(1) Radiation Test

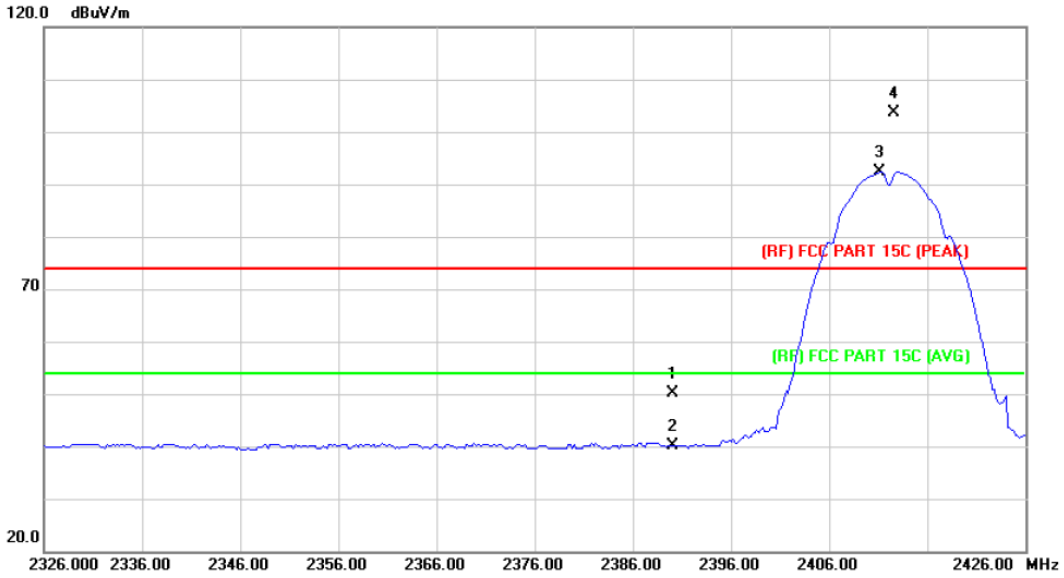
Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Horizontal		
Test Mode:	TX B Mode 2412MHz		
Remark:	N/A		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	49.18	1.28	50.46	74.00	-23.54	peak
2		2390.000	40.87	1.28	42.15	54.00	-11.85	AVG
3	*	2413.000	96.41	1.40	97.81	Fundamental Frequency		AVG
4	X	2413.200	104.94	1.41	106.35	Fundamental Frequency		peak

Emission Level= Read Level+ Correct Factor

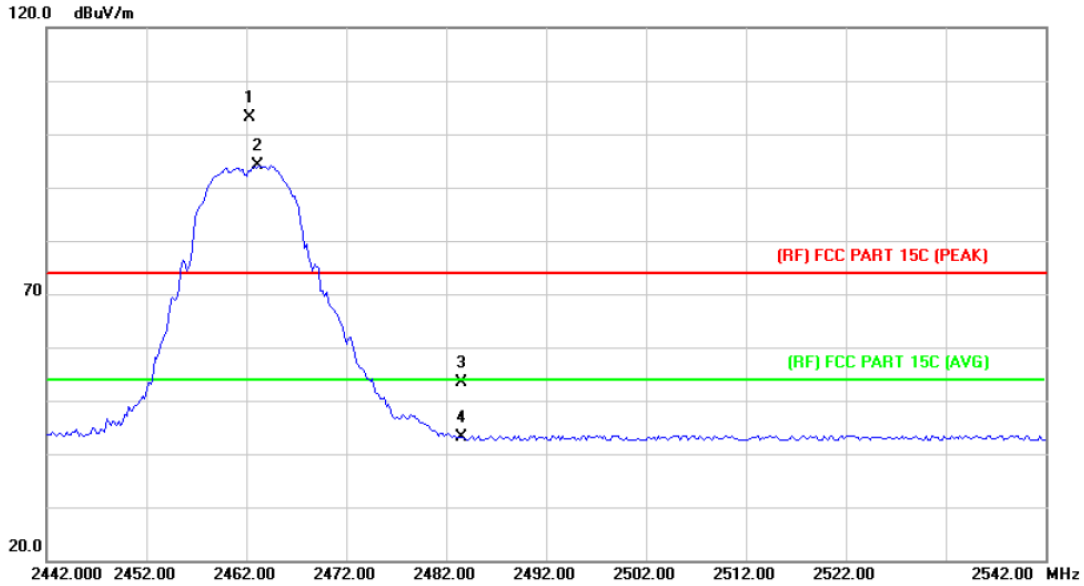
Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Vertical		
Test Mode:	TX B Mode 2412MHz		
Remark:	N/A		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	48.85	1.28	50.13	74.00	-23.87	peak
2		2390.000	38.85	1.28	40.13	54.00	-13.87	AVG
3	*	2411.200	90.94	1.39	92.33	Fundamental Frequency		AVG
4	X	2412.600	102.23	1.40	103.63	Fundamental Frequency		peak

Emission Level= Read Level+ Correct Factor

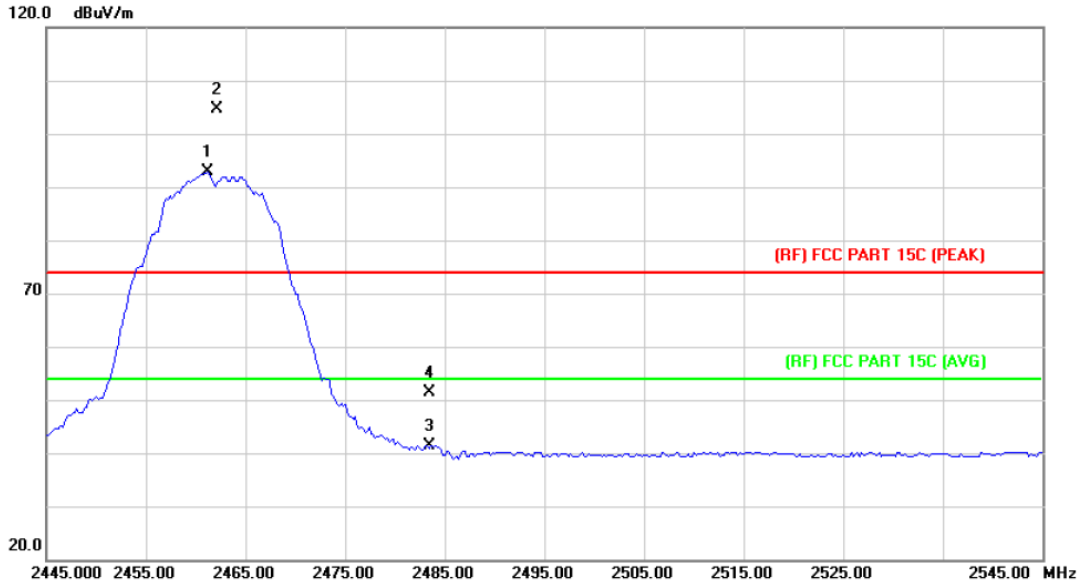
Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Horizontal		
Test Mode:	TX B Mode 2462MHz		
Remark:	N/A		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	X	2462.300	101.51	1.73	103.24	Fundamental Frequency		peak
2	*	2463.200	92.37	1.75	94.12	Fundamental Frequency		AVG
3		2483.500	51.38	1.88	53.26	74.00	-20.74	peak
4		2483.500	41.27	1.88	43.15	54.00	-10.85	AVG

Emission Level= Read Level+ Correct Factor

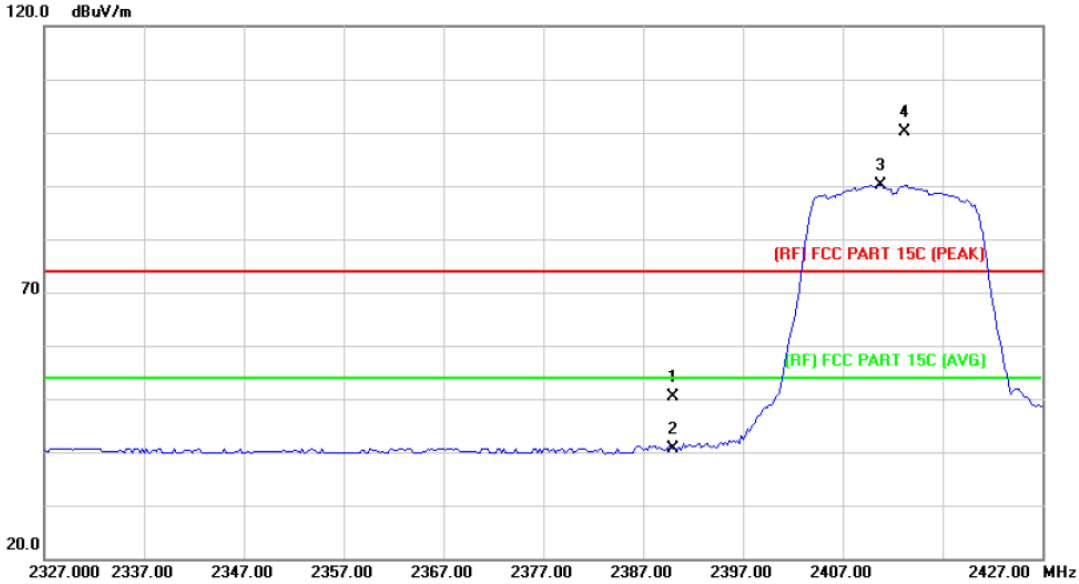
Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Vertical		
Test Mode:	TX B Mode 2462MHz		
Remark:	N/A		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	2461.200	91.07	1.73	92.80	Fundamental Frequency		AVG
2	X	2462.100	102.97	1.73	104.70	Fundamental Frequency		peak
3		2483.500	39.41	1.88	41.29	54.00	-12.71	AVG
4		2483.530	49.58	1.88	51.46	74.00	-22.54	peak

Emission Level= Read Level+ Correct Factor

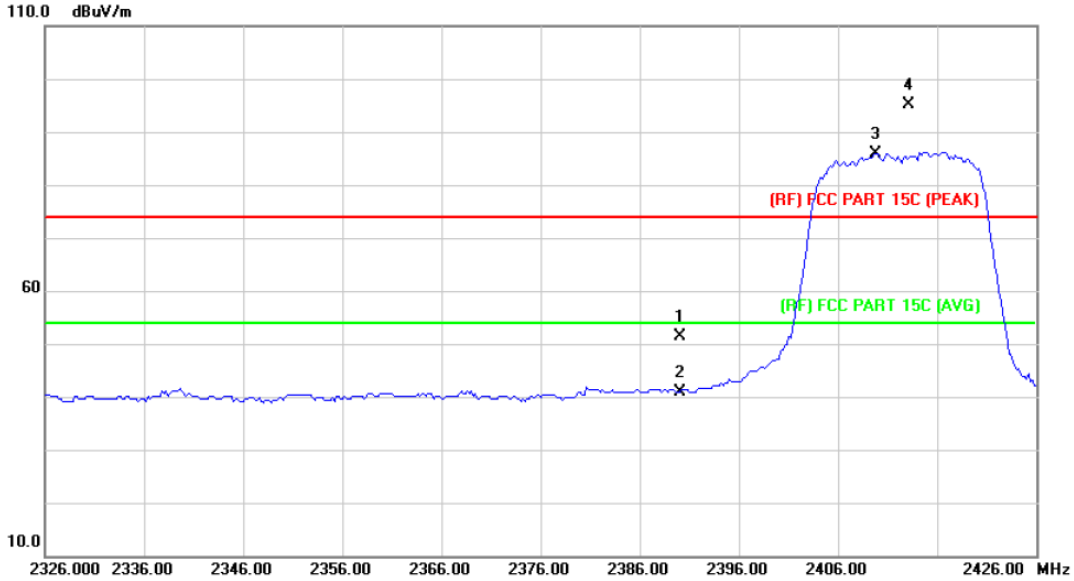
Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Horizontal		
Test Mode:	TX G Mode 2412MHz		
Remark:	N/A		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	49.01	1.28	50.29	74.00	-23.71	peak
2		2390.000	39.44	1.28	40.72	54.00	-13.28	AVG
3	*	2410.800	88.85	1.38	90.23	Fundamental Frequency		AVG
4	X	2413.200	98.82	1.41	100.23	Fundamental Frequency		peak

Emission Level= Read Level+ Correct Factor

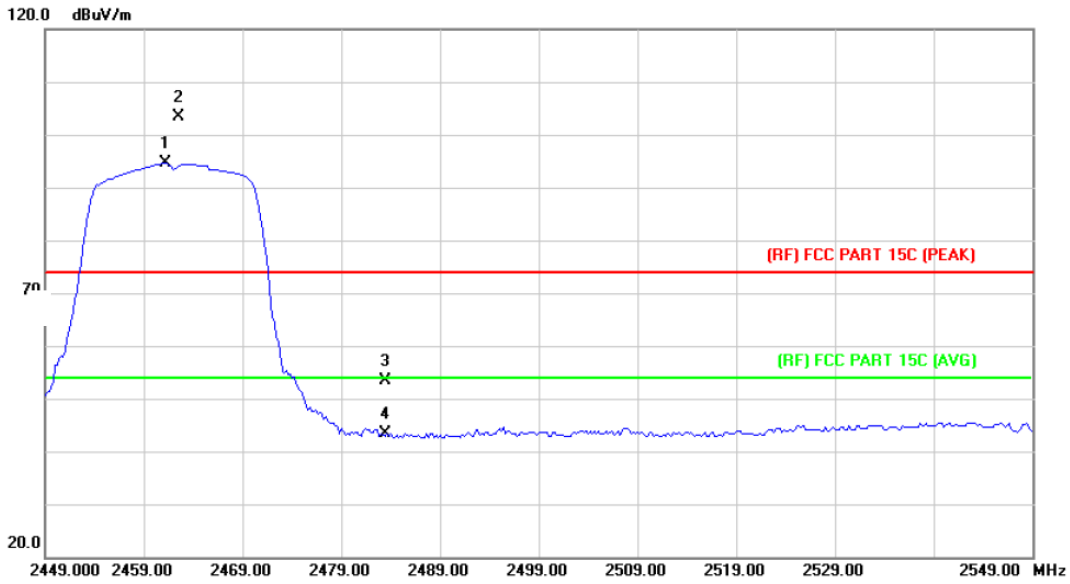
Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Vertical		
Test Mode:	TX G Mode 2412MHz		
Remark:	N/A		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	50.06	1.28	51.34	74.00	-22.66	peak
2		2390.000	39.65	1.28	40.93	54.00	-13.07	AVG
3	*	2409.800	84.46	1.38	85.84	Fundamental Frequency		AVG
4	X	2413.200	93.82	1.41	95.23	Fundamental Frequency	3	peak

Emission Level= Read Level+ Correct Factor

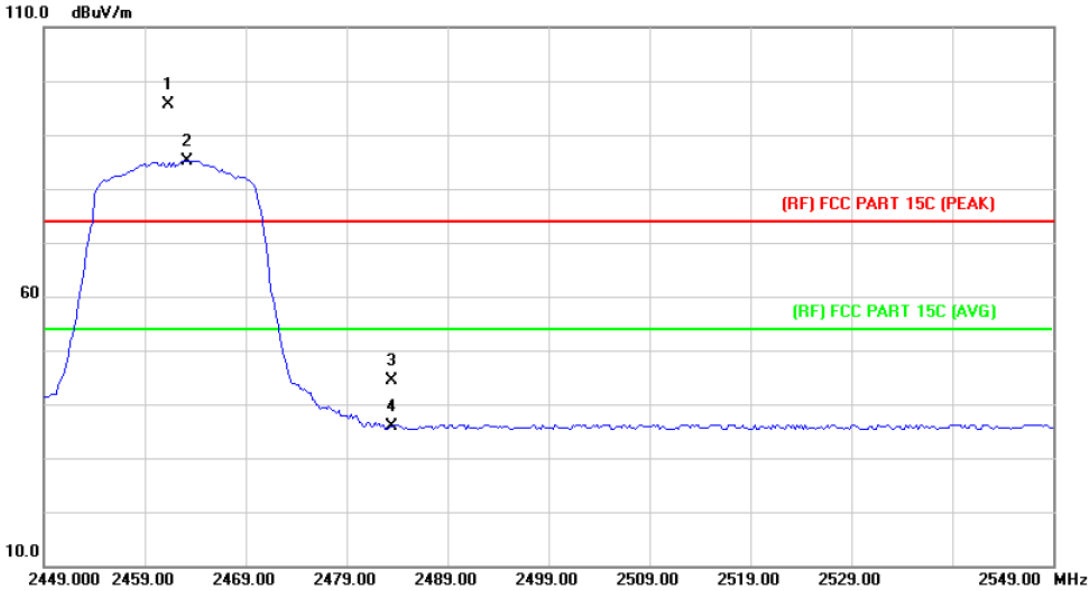
Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Horizontal		
Test Mode:	TX G Mode 2462MHz		
Remark:	N/A		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	2461.200	92.82	1.73	94.55	Fundamental Frequency		AVG
2	X	2462.500	101.59	1.74	103.33	Fundamental Frequency		peak
3		2483.500	51.55	1.88	53.43	74.00	-20.57	peak
4		2483.500	41.44	1.88	43.32	54.00	-10.68	AVG

Emission Level= Read Level+ Correct Factor

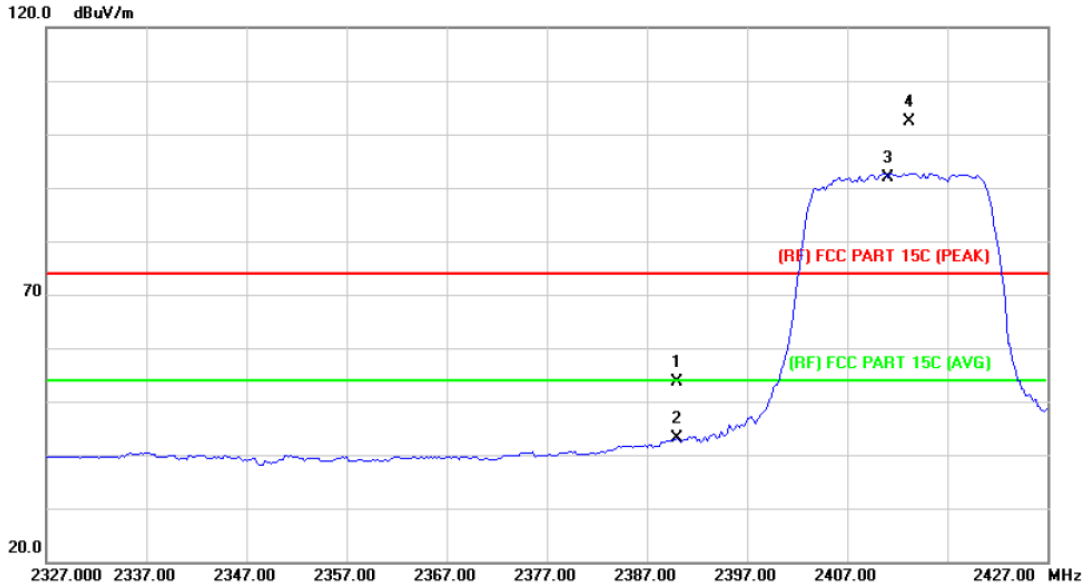
Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Vertical		
Test Mode:	TX G Mode 2462MHz		
Remark:	N/A		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	X	2461.300	93.83	1.73	95.56	Fundamental Frequency		peak
2	*	2463.200	83.45	1.75	85.20	Fundamental Frequency		AVG
3		2483.500	42.38	1.88	44.26	74.00	-29.74	peak
4		2483.500	34.07	1.88	35.95	54.00	-18.05	AVG

Emission Level= Read Level+ Correct Factor

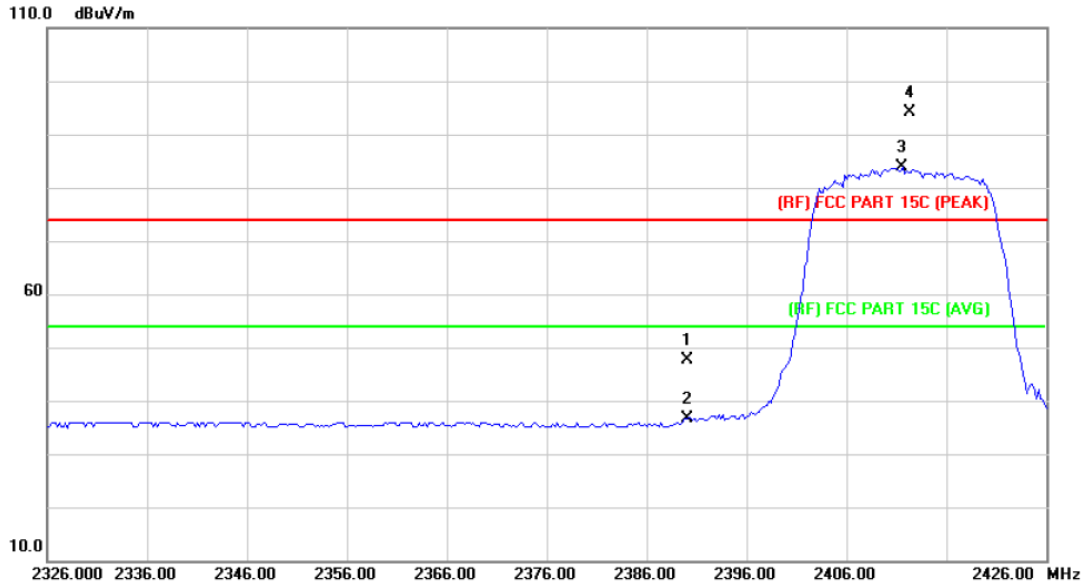
Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Horizontal		
Test Mode:	TX N(HT20) Mode 2412MHz		
Remark:	N/A		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	52.33	1.28	53.61	74.00	-20.39	peak
2		2390.000	41.75	1.28	43.03	54.00	-10.97	AVG
3	*	2411.000	90.48	1.38	91.86	Fundamental Frequency		AVG
4	X	2413.200	101.09	1.41	102.50	Fundamental Frequency		peak

Emission Level= Read Level+ Correct Factor

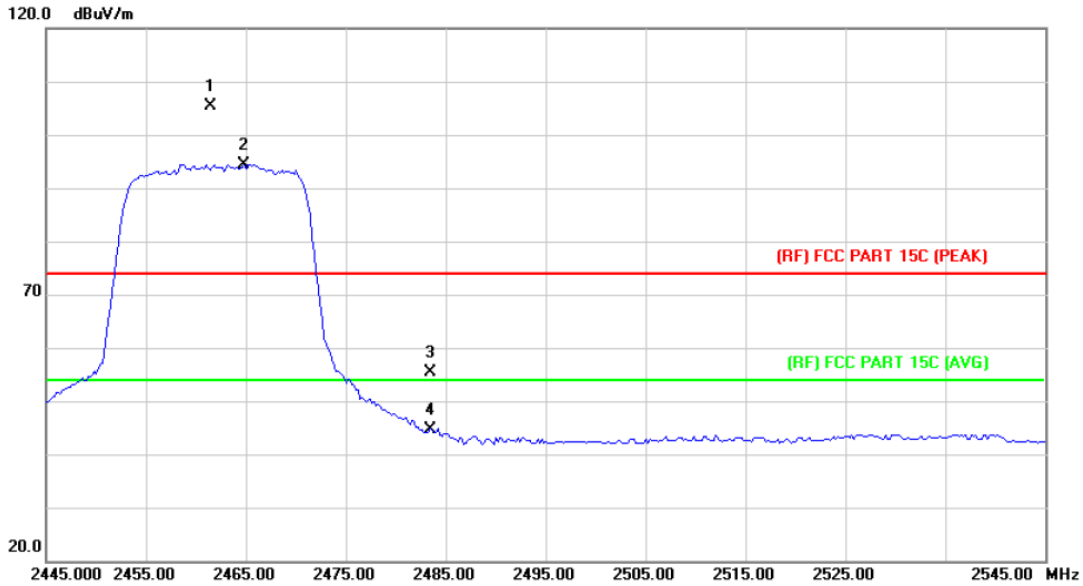
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 12V		
Ant. Pol.	Vertical		
Test Mode:	TX N(HT20) Mode 2412MHz		
Remark:	N/A		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	46.31	1.28	47.59	74.00	-26.41	peak
2		2390.000	35.27	1.28	36.55	54.00	-17.45	AVG
3	*	2411.600	82.38	1.39	83.77	Fundamental Frequency		AVG
4	X	2412.300	92.86	1.39	94.25	Fundamental Frequency		peak

Emission Level= Read Level+ Correct Factor

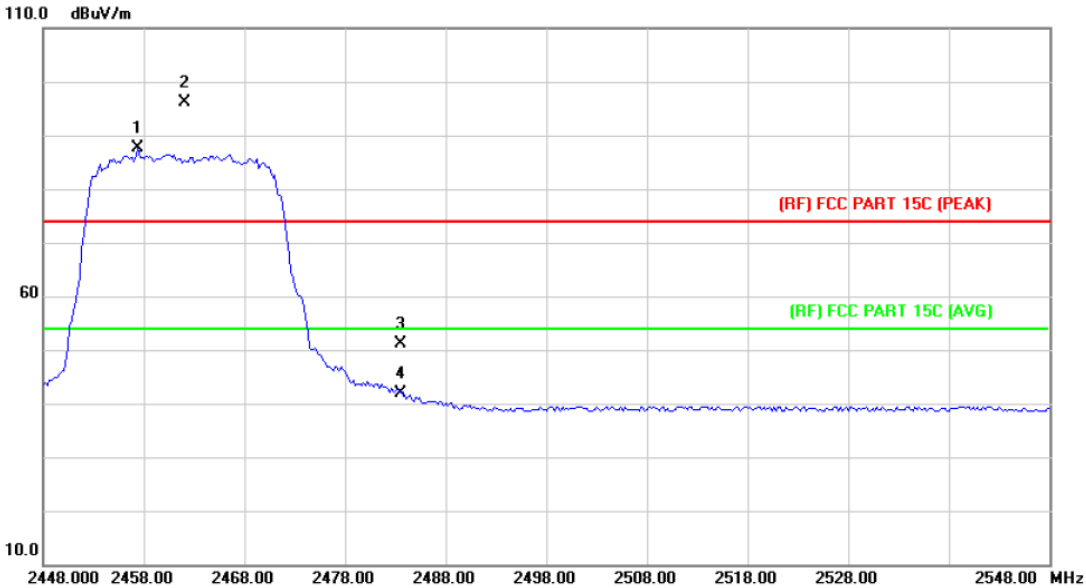
Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Horizontal		
Test Mode:	TX N(HT20) Mode 2462MHz		
Remark:	N/A		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	X	2461.500	103.66	1.73	105.39	Fundamental Frequency		peak
2	*	2464.800	92.75	1.75	94.50	Fundamental Frequency		AVG
3		2483.500	53.58	1.88	55.46	74.00	-18.54	peak
4		2483.500	42.73	1.88	44.61	54.00	-9.39	AVG

Emission Level= Read Level+ Correct Factor

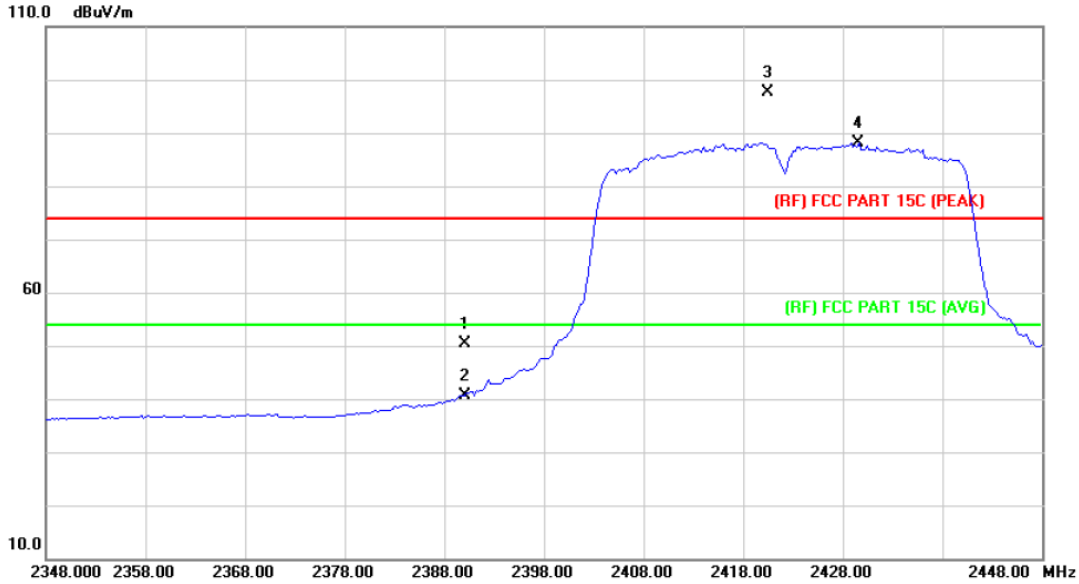
Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Vertical		
Test Mode:	TX N(HT20) Mode 2462MHz		
Remark:	N/A		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	2457.400	85.89	1.70	87.59	Fundamental Frequency		AVG
2	X	2462.100	94.43	1.73	96.16	Fundamental Frequency		peak
3		2483.500	49.35	1.88	51.23	74.00	-22.77	peak
4		2483.500	39.89	1.88	41.77	54.00	-12.23	AVG

Emission Level= Read Level+ Correct Factor

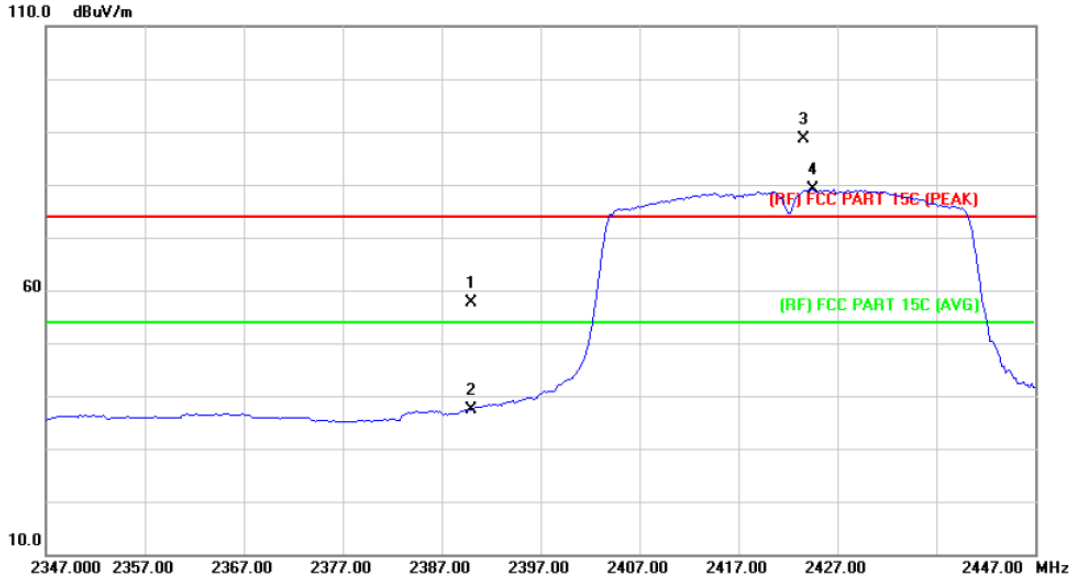
Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Horizontal		
Test Mode:	TX N(HT40) Mode 2422MHz		
Remark:	N/A		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	49.01	1.28	50.29	74.00	-23.71	peak
2		2390.000	39.43	1.28	40.71	54.00	-13.29	AVG
3	X	2420.500	96.11	1.45	97.56	Fundamental Frequency		peak
4	*	2429.600	86.61	1.51	88.12	Fundamental Frequency		AVG

Emission Level= Read Level+ Correct Factor

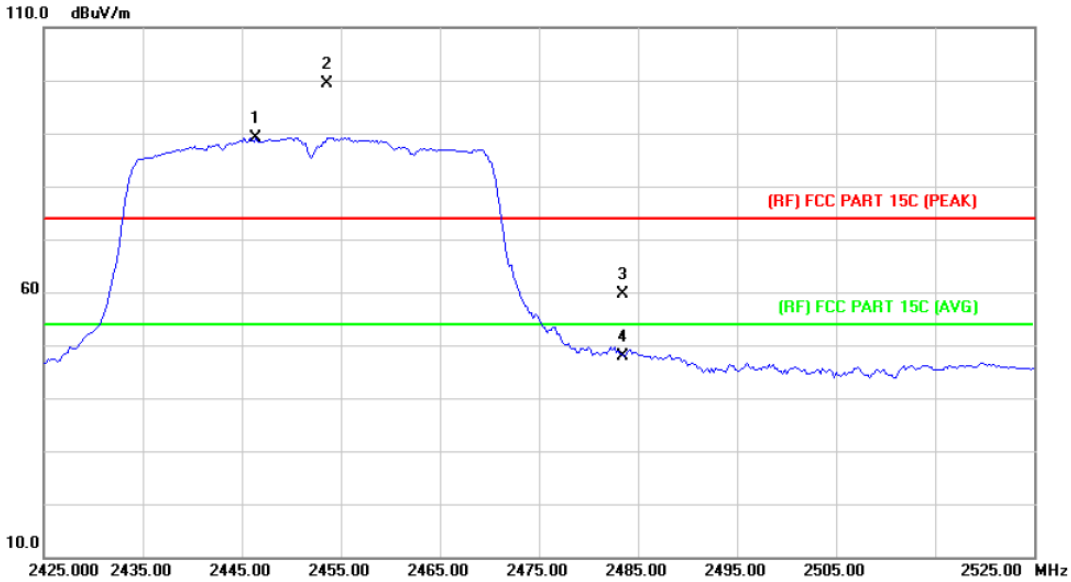
Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Vertical		
Test Mode:	TX N(HT40) Mode 2422MHz		
Remark:	N/A		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	56.37	1.28	57.65	74.00	-16.35	peak
2		2390.000	36.01	1.28	37.29	54.00	-16.71	AVG
3	X	2423.600	87.11	1.48	88.59	Fundamental Frequency		peak
4	*	2424.600	77.64	1.48	79.12	Fundamental Frequency		AVG

Emission Level= Read Level+ Correct Factor

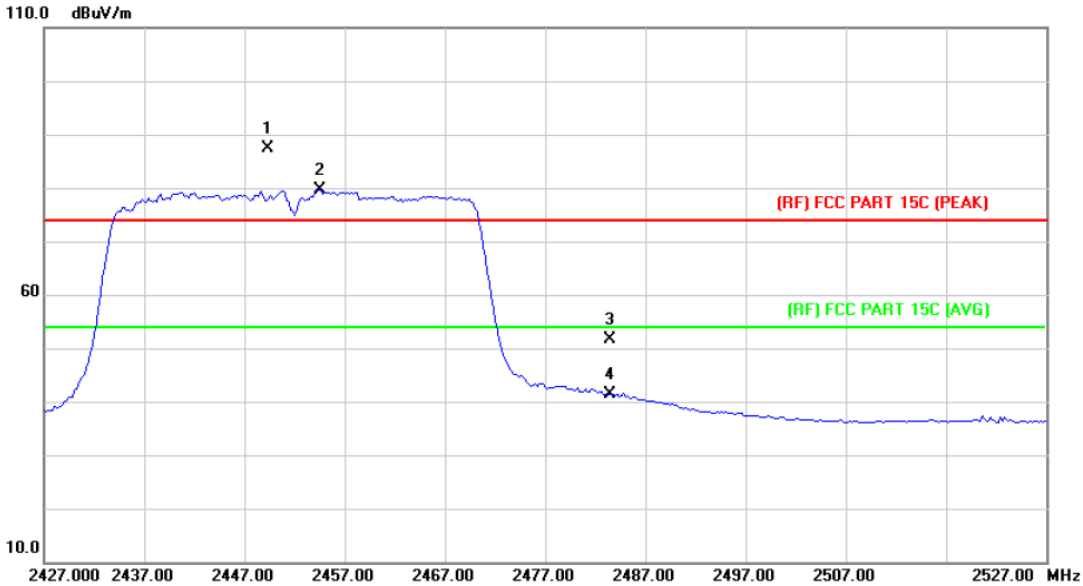
Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Horizontal		
Test Mode:	TX N(HT40) Mode 2452MHz		
Remark:	N/A		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	2446.400	87.56	1.63	89.19	Fundamental Frequency		AVG
2	X	2453.600	97.81	1.68	99.49	Fundamental Frequency		peak
3		2483.500	57.68	1.88	59.56	74.00	-14.44	peak
4		2483.500	46.10	1.88	47.98	54.00	-6.02	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Ant. Pol.	Vertical		
Test Mode:	TX N(HT40) Mode 2452MHz		
Remark:	N/A		

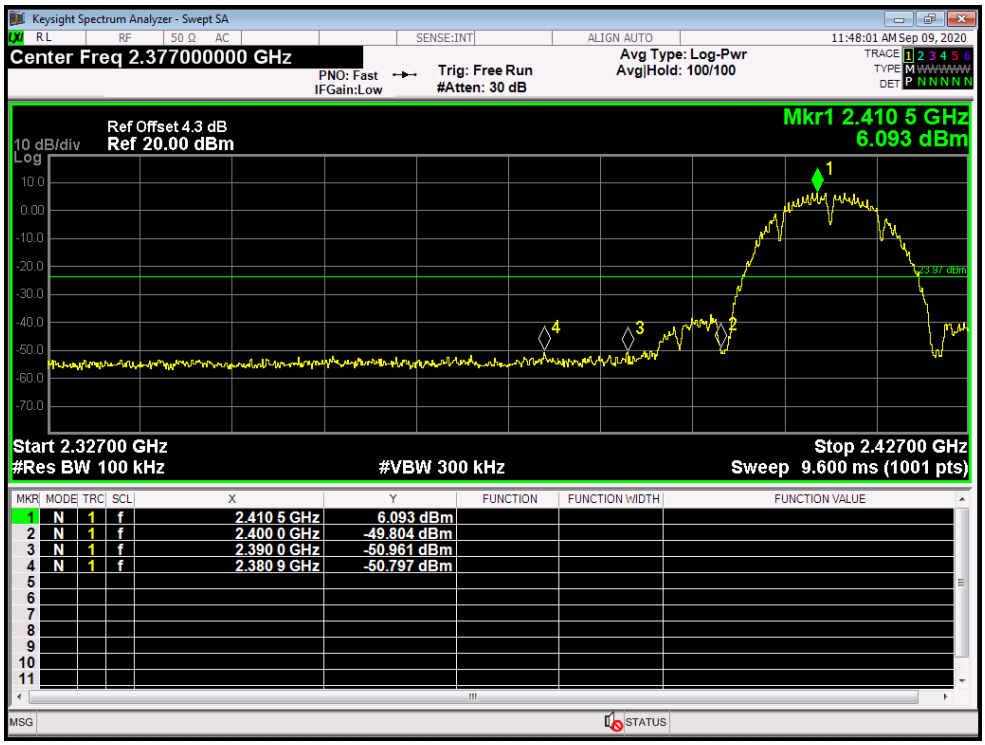


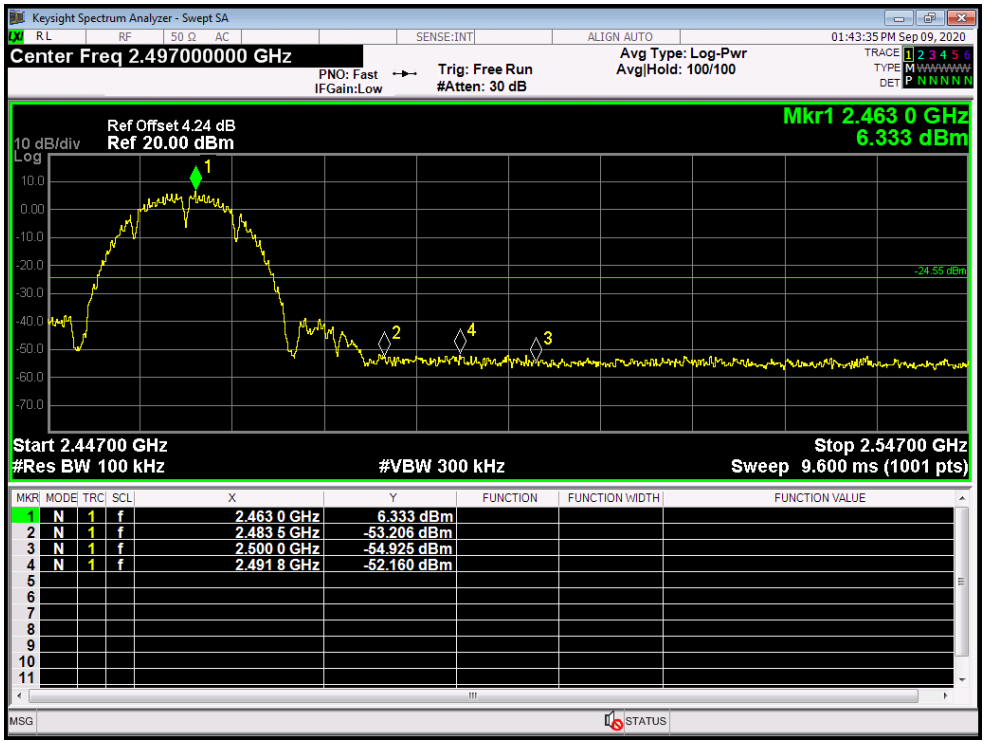
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	X	2449.360	85.84	1.65	87.49	Fundamental Frequency		peak
2	*	2454.600	77.92	1.68	79.60	Fundamental Frequency		AVG
3		2483.500	49.68	1.88	51.56	74.00	-22.44	peak
4		2483.500	39.55	1.88	41.43	54.00	-12.57	AVG

Emission Level= Read Level+ Correct Factor

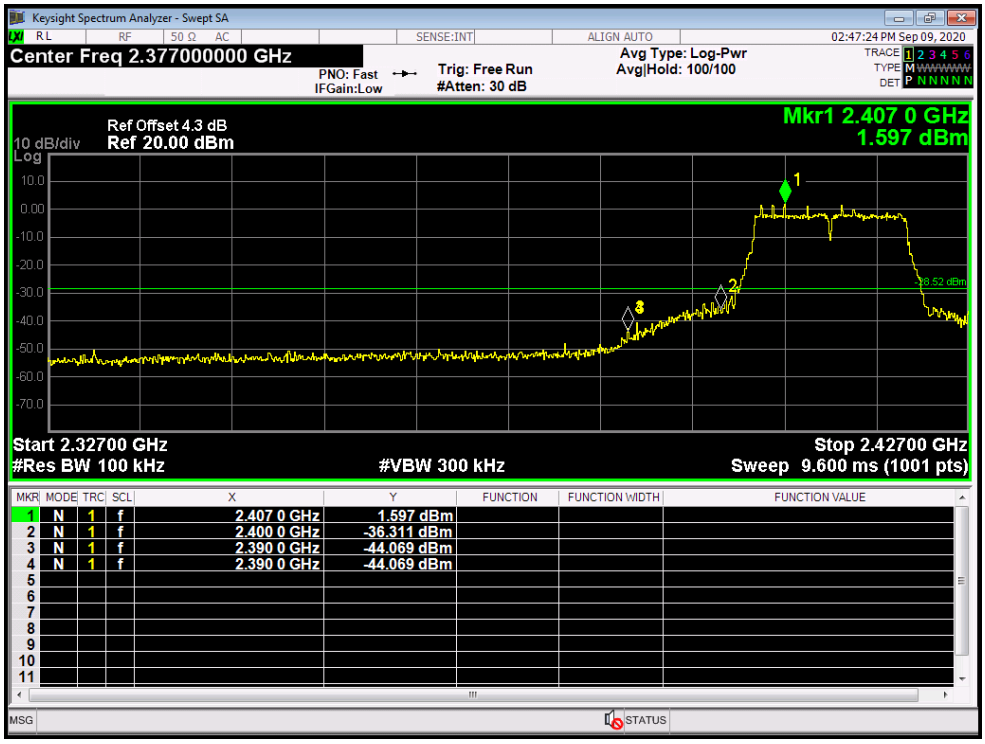
(2) Conducted Test

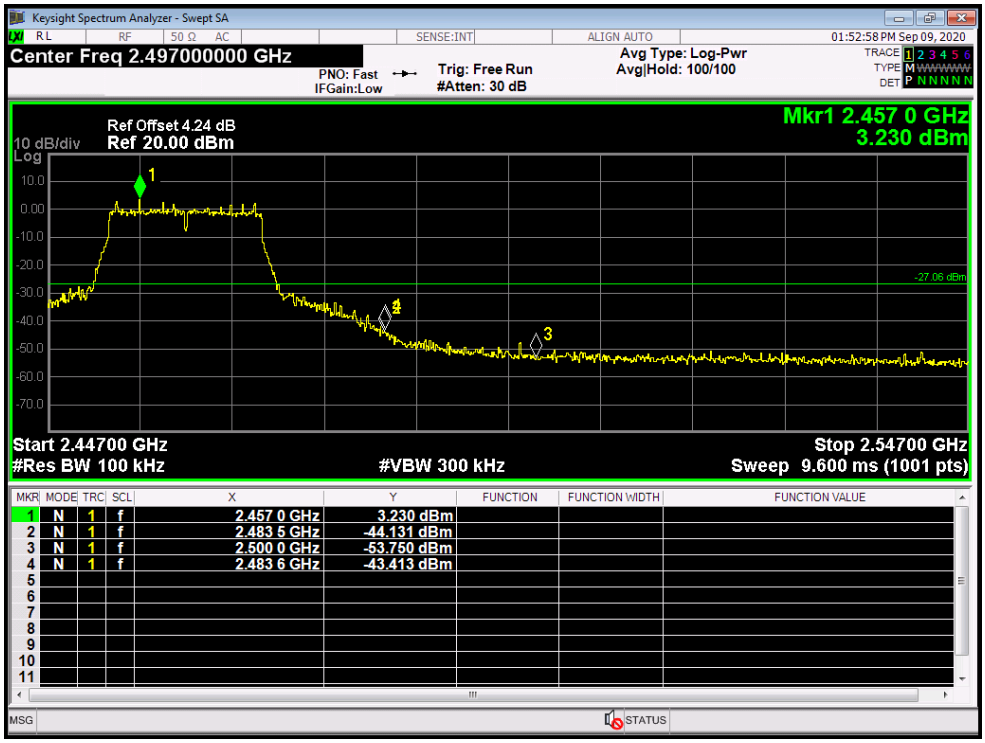
Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Test Mode:	TX B Mode 2412MHz / TX B Mode 2462MHz		
Remark:	The EUT is programed in continuously transmitting mode		



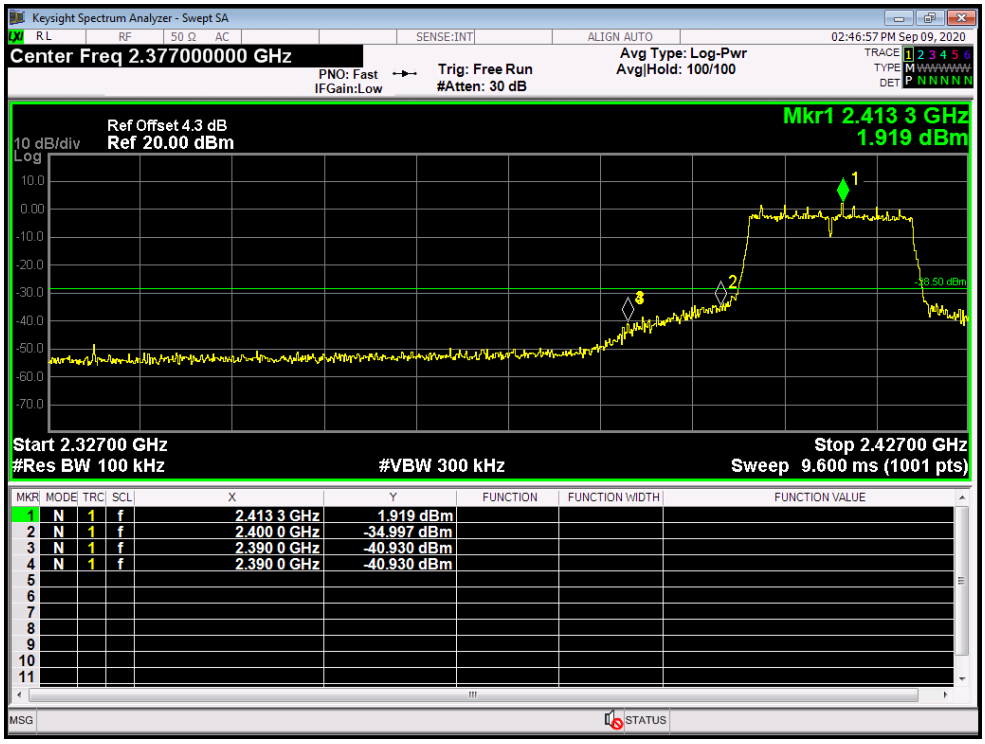


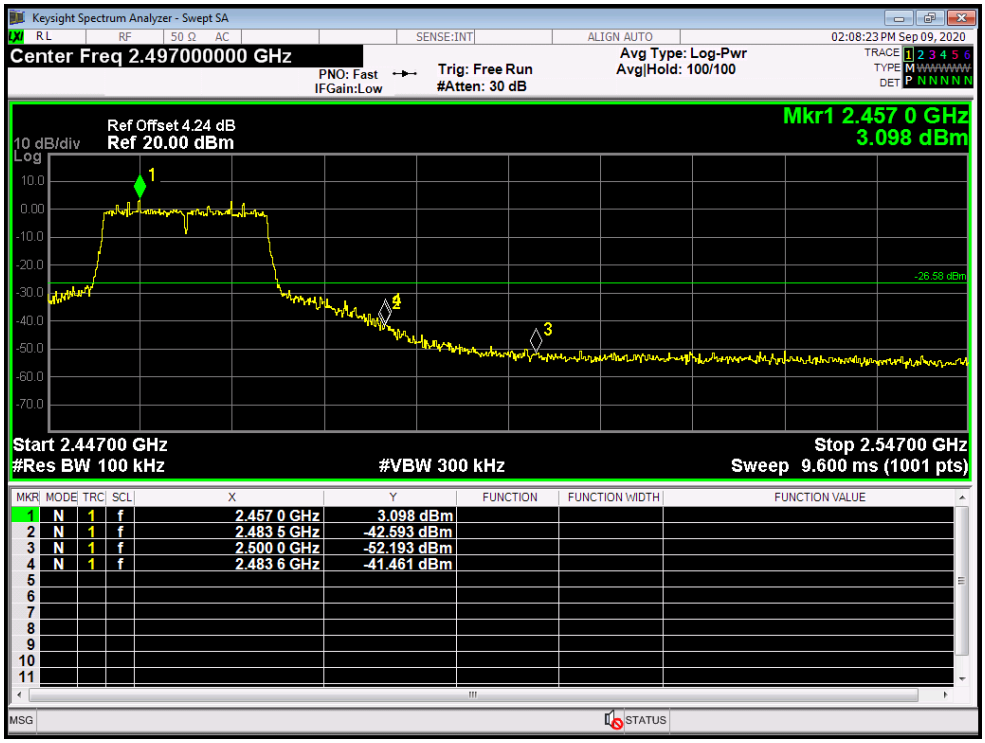
Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Test Mode:	TX G Mode 2412MHz / TX G Mode 2462MHz		
Remark:	The EUT is programed in continuously transmitting mode		



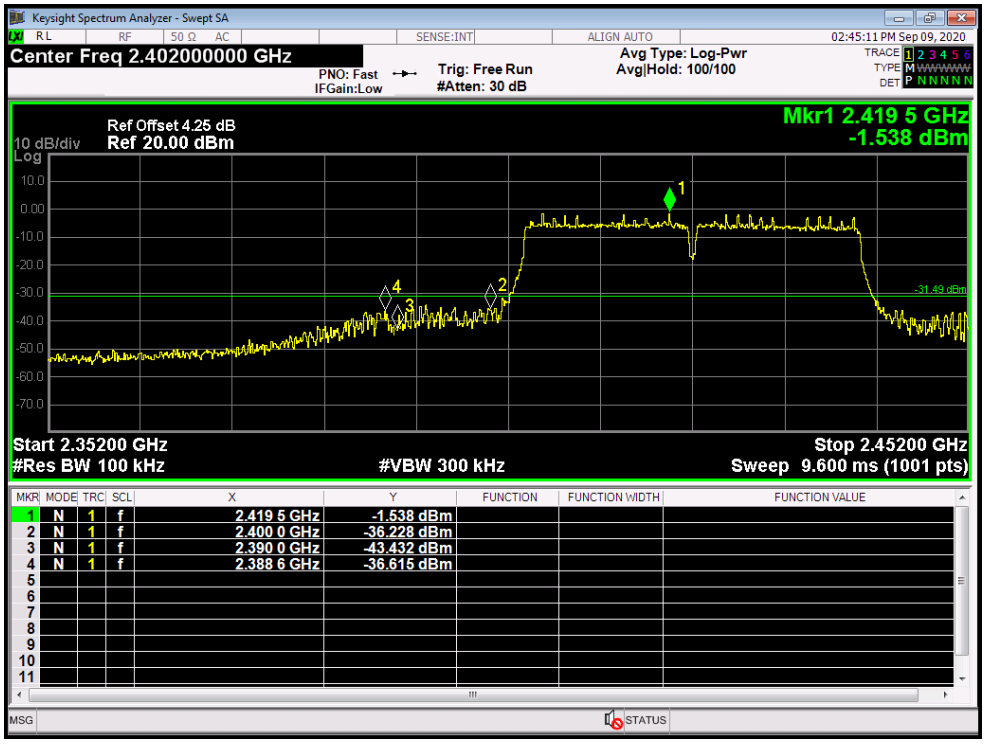


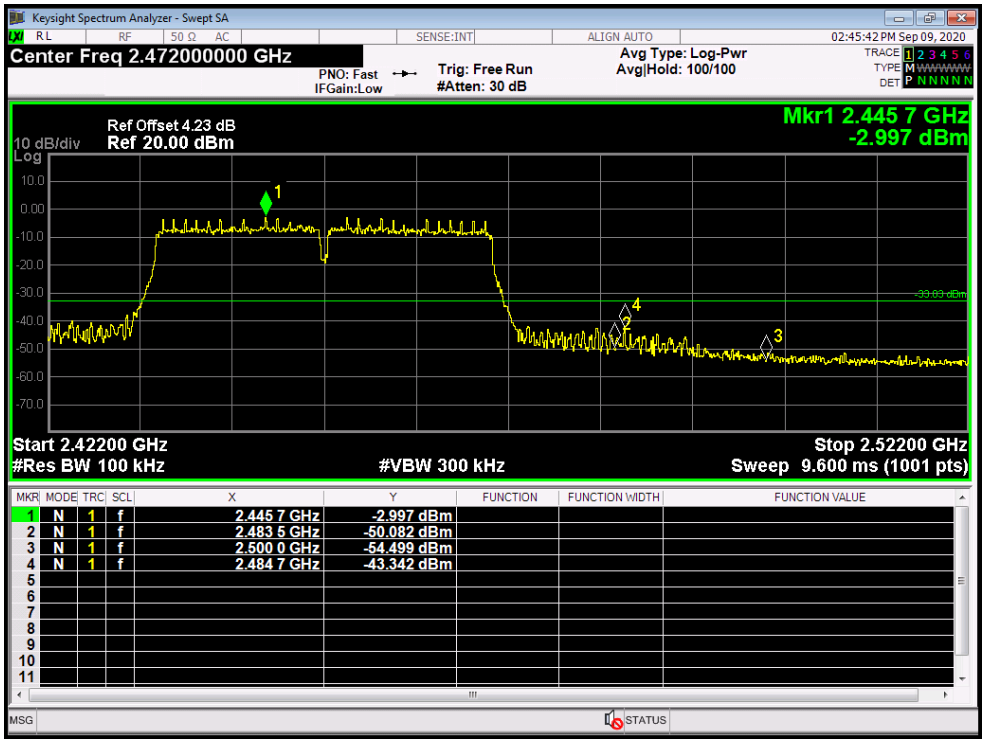
Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Test Mode:	TX N(HT20) Mode 2412MHz / TX N(HT20) Mode 2462MHz		
Remark:	The EUT is programed in continuously transmitting mode		





Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 12V		
Test Mode:	TX N(HT40) Mode 2422MHz / TX N(HT40) Mode 2452MHz		
Remark:	The EUT is programed in continuously transmitting mode		





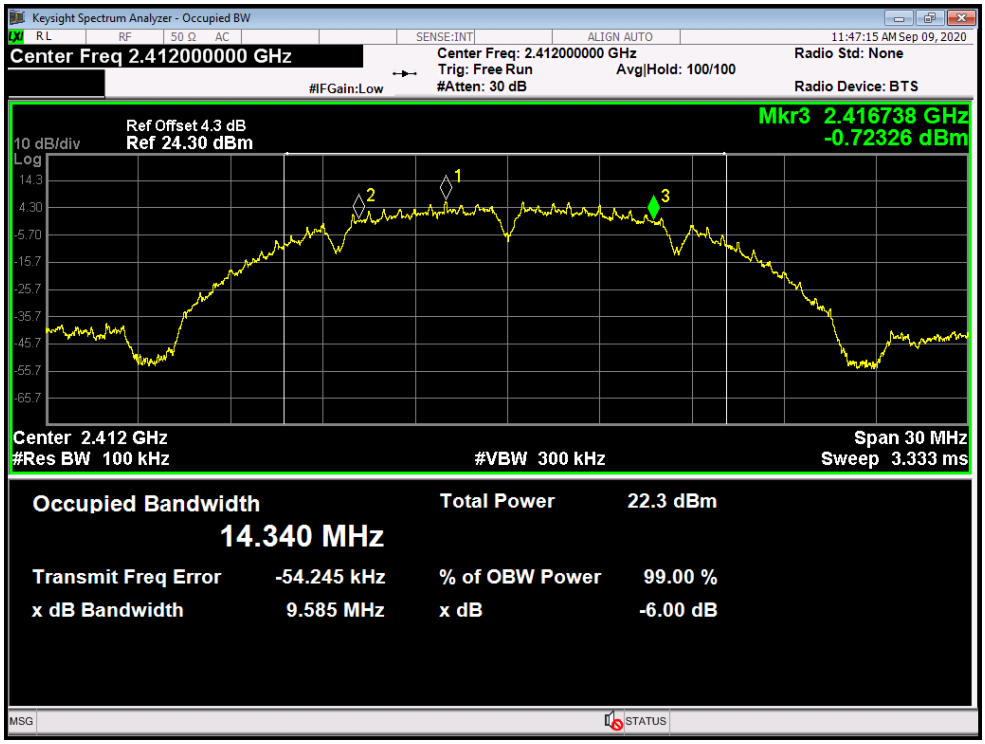
Attachment C-- Bandwidth Test Data

Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 12V		
Test Mode:	TX 802.11B Mode		

Channel frequency (MHz)	6dB Bandwidth (MHz)	99% Bandwidth (MHz)	Limit (MHz)
2412	9.585	14.340	>=0.5
2437	9.541	14.361	
2462	9.566	14.345	

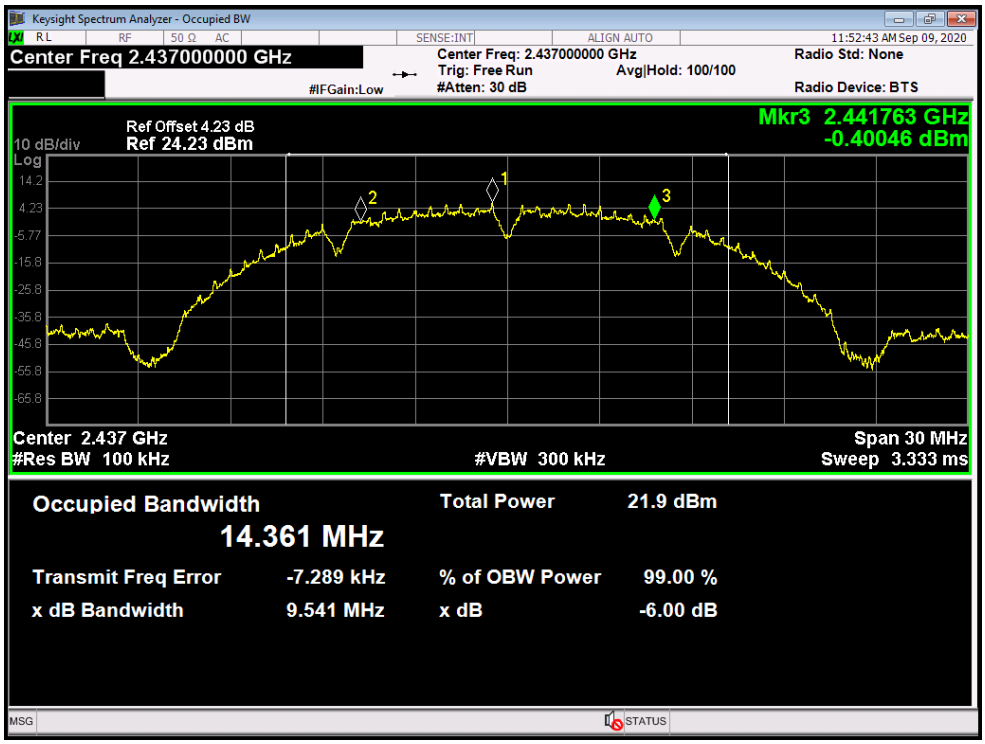
802.11B Mode

2412 MHz



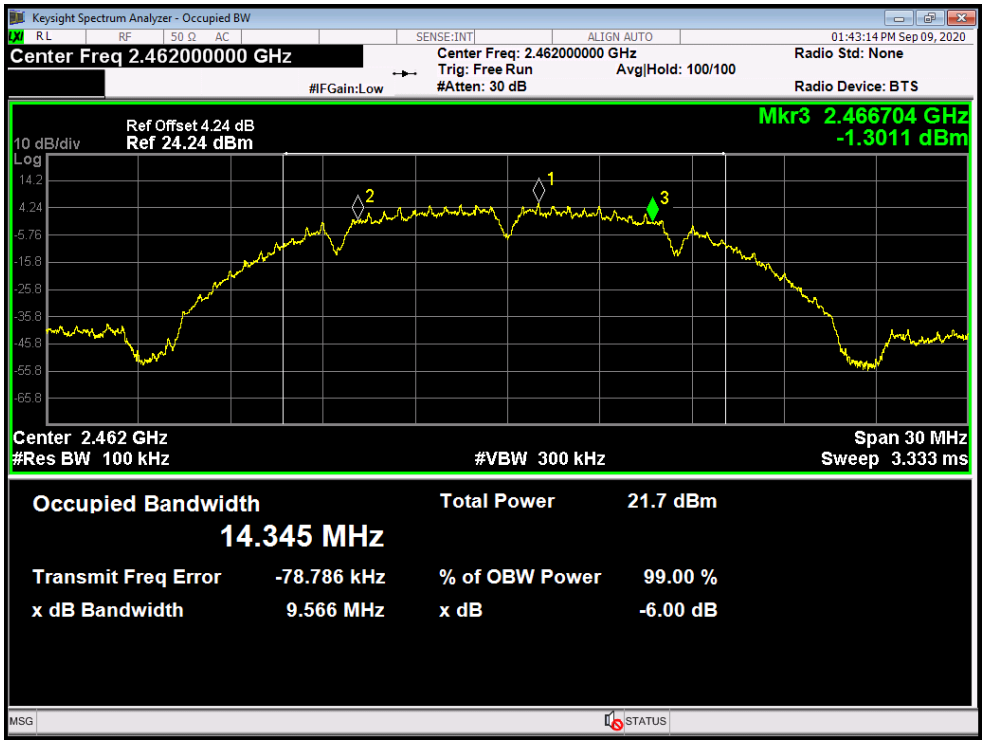
802.11B Mode

2437 MHz

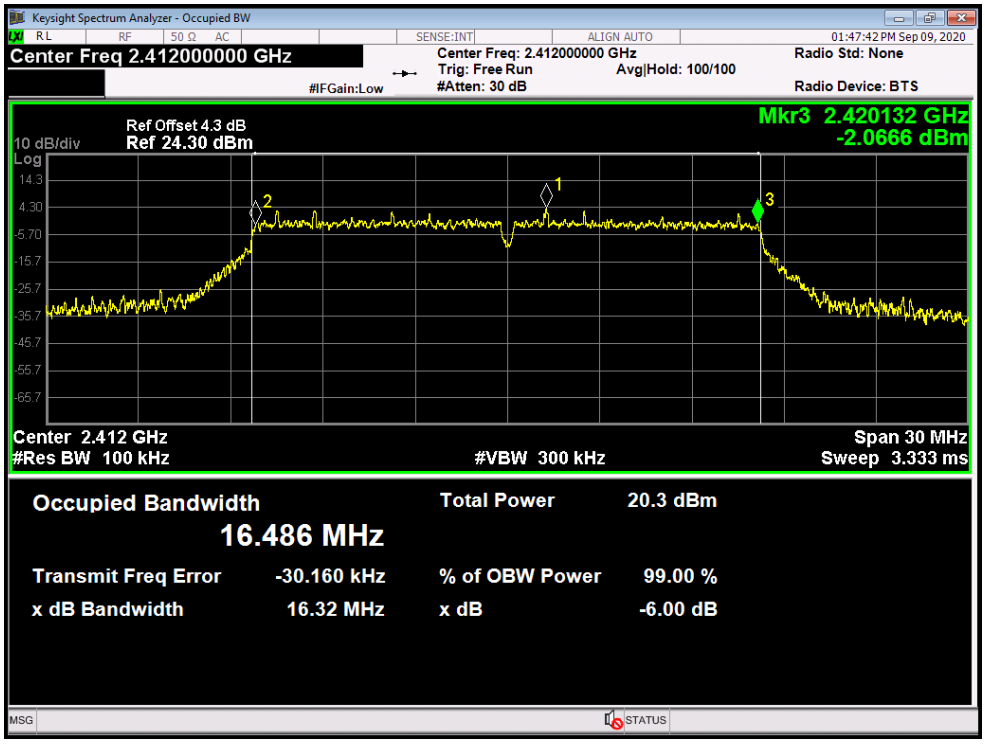


802.11B Mode

2462 MHz

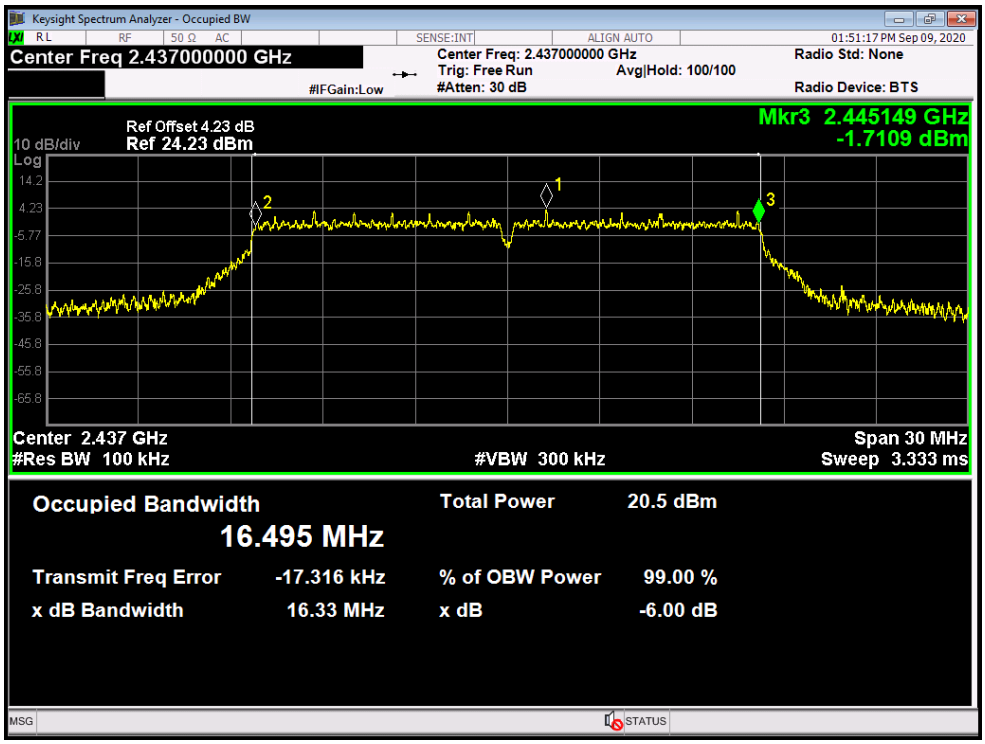


Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 12V		
Test Mode:	TX 802.11G Mode		
Channel frequency (MHz)	6dB Bandwidth (MHz)	99% Bandwidth (MHz)	Limit (MHz)
2412	16.32	16.486	>=0.5
2437	16.33	16.495	
2462	16.44	16.496	
802.11G Mode			
2412 MHz			



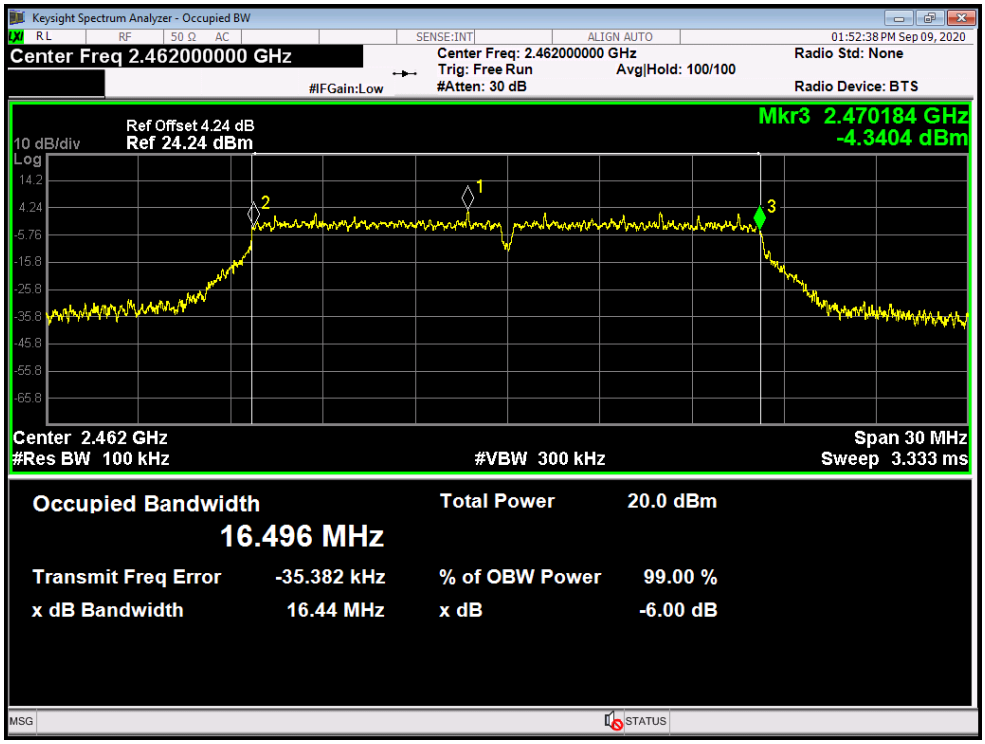
802.11G Mode

2437 MHz



802.11G Mode

2462 MHz

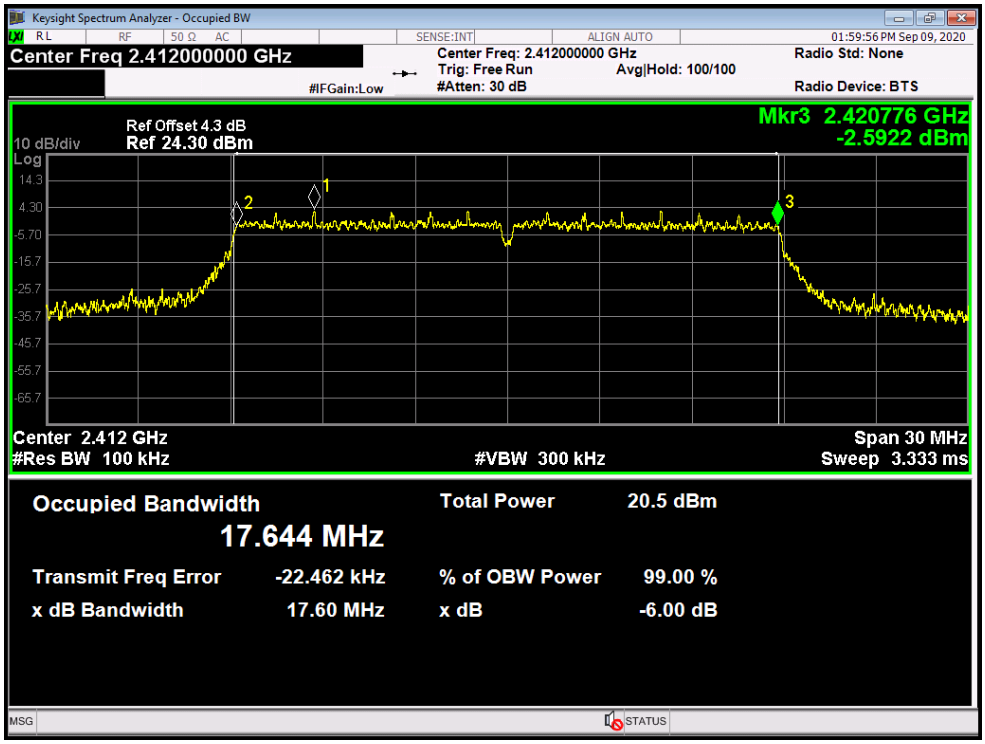


Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 12V		
Test Mode:	TX 802.11N(HT20) Mode		

Channel frequency (MHz)	6dB Bandwidth (MHz)	99% Bandwidth (MHz)	Limit (MHz)
2412	17.60	17.644	>=0.5
2437	17.60	17.668	
2462	17.59	17.659	

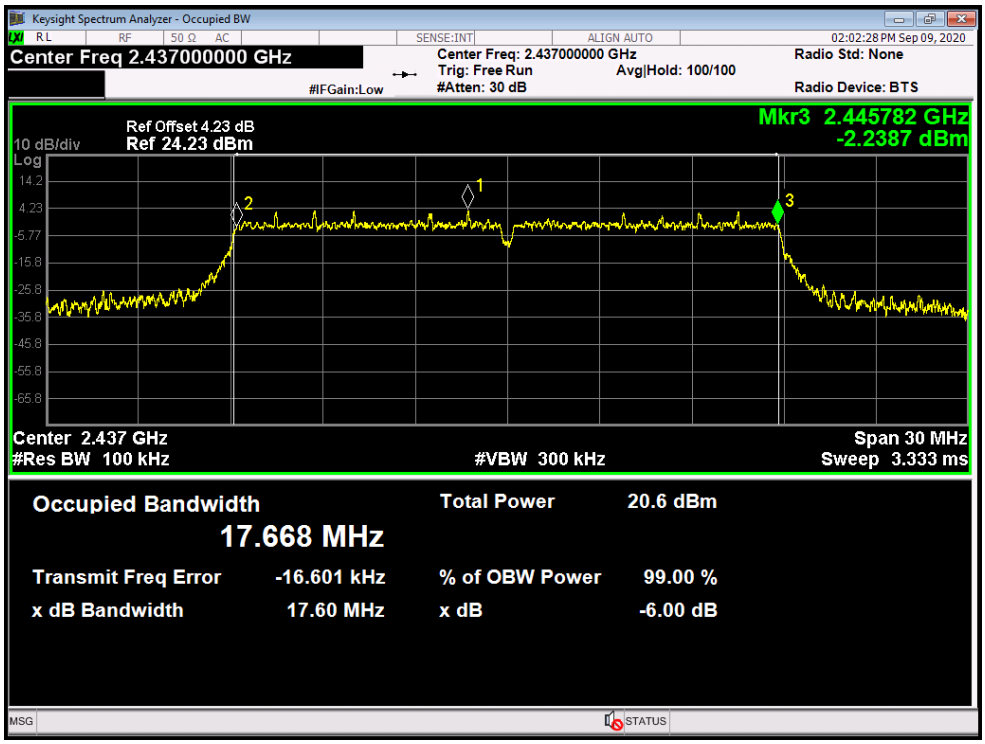
802.11N(HT20) Mode

2412 MHz



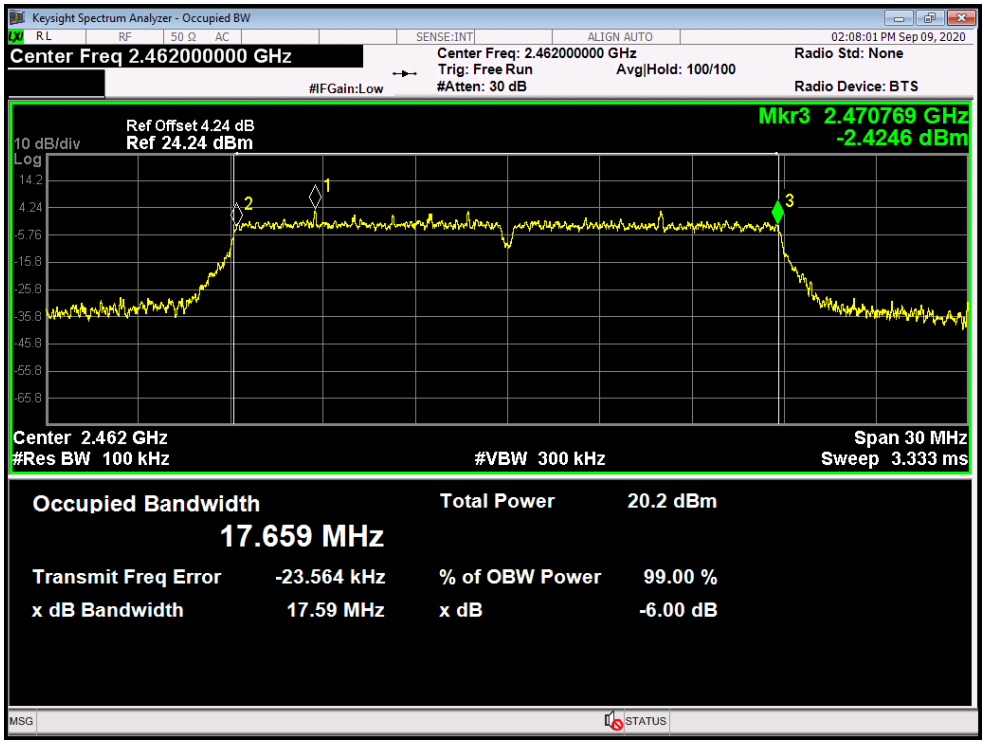
802.11N(HT20) Mode

2437 MHz

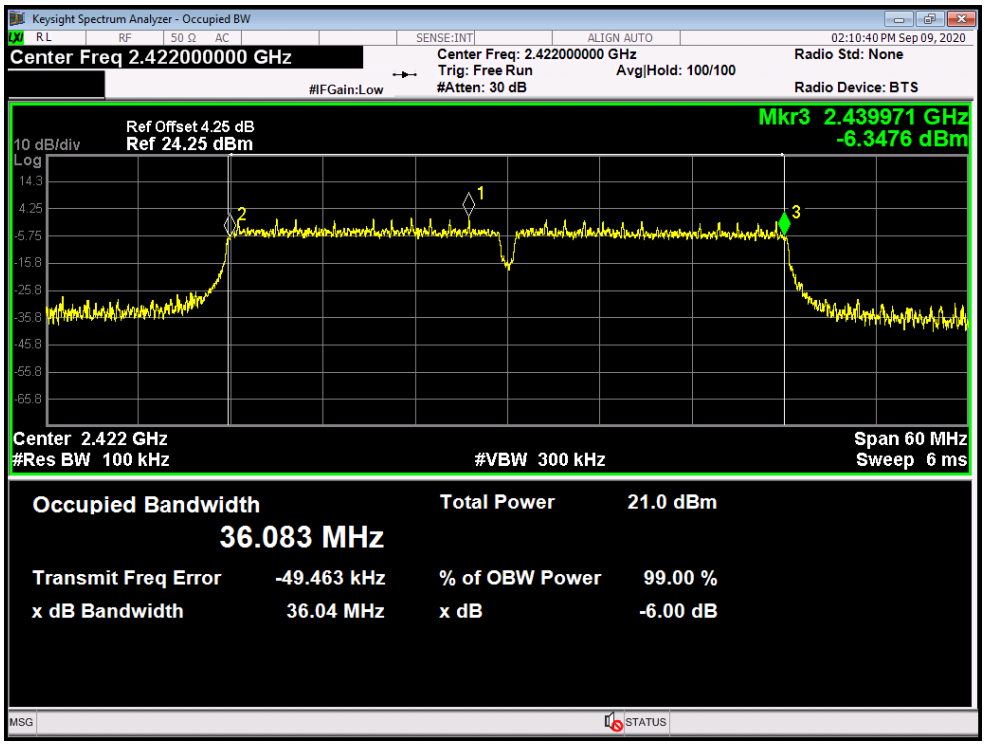


802.11N(HT20) Mode

2462 MHz

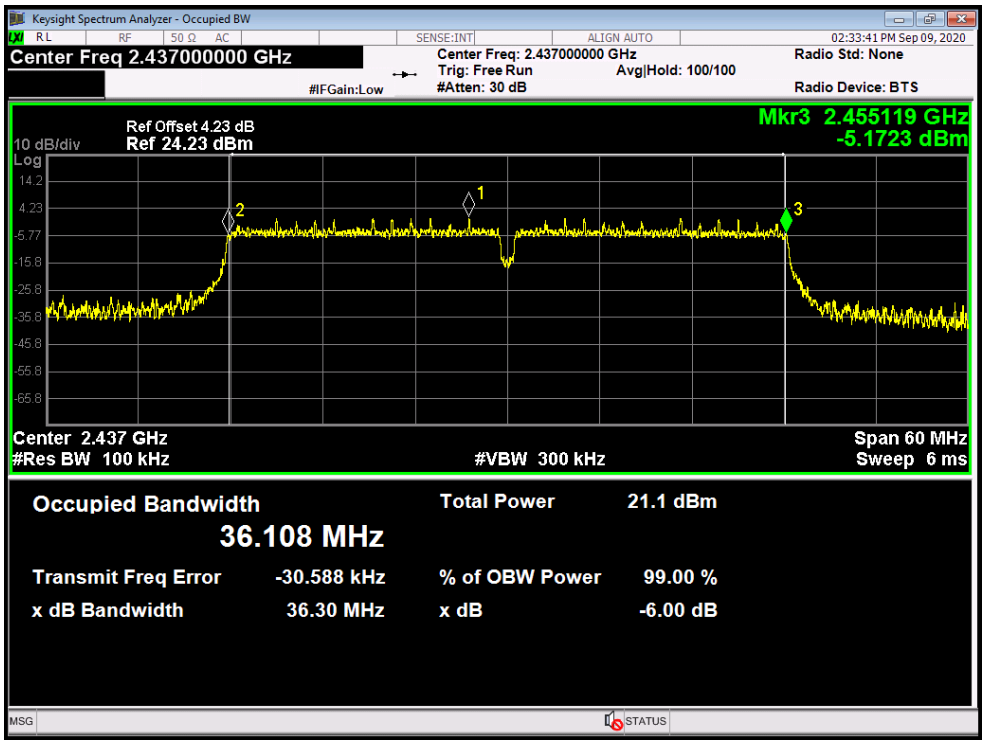


Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 12V		
Test Mode:	TX 802.11N(HT40) Mode		
Channel frequency (MHz)	6dB Bandwidth (MHz)	99% Bandwidth (MHz)	Limit (MHz)
2422	36.04	36.083	>=0.5
2437	36.30	36.108	
2452	35.91	36.066	
802.11N(HT40) Mode			
2422 MHz			



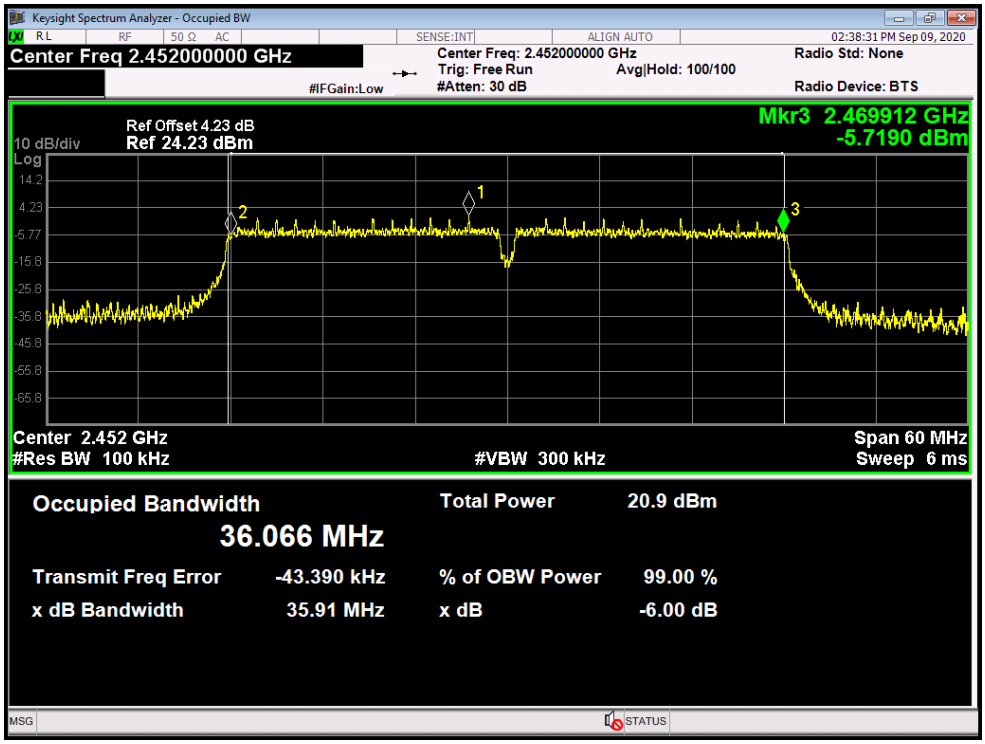
802.11N(HT40) Mode

2437 MHz



802.11N(HT40) Mode

2452 MHz



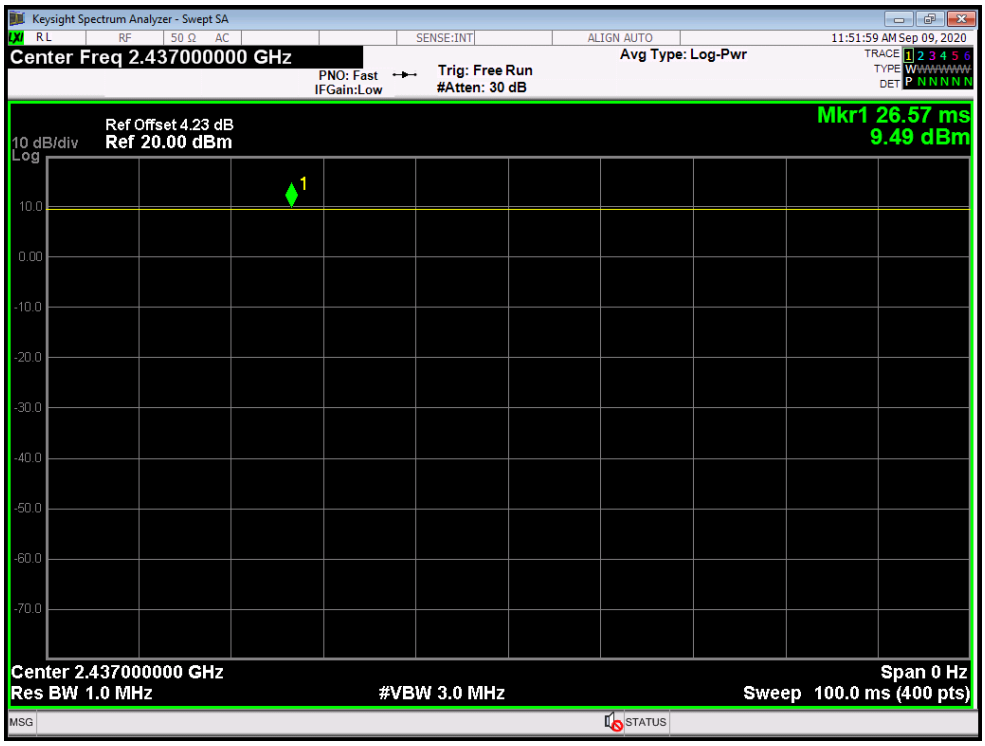
Attachment D-- Peak Output Power Test Data

Test Conditions:	Continuous Transmitting Mode		
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 12V		

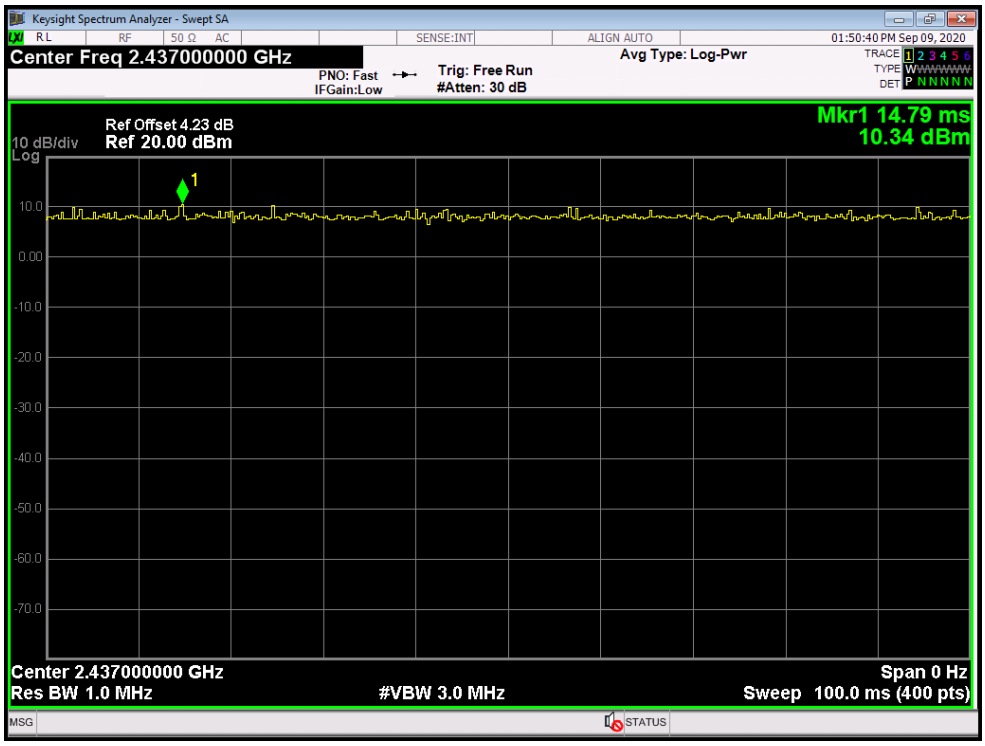
Mode	Channel frequency (MHz)	Test Result (dBm)	Limit (dBm)
802.11b	2412	15.85	30
	2437	15.50	
	2462	15.44	
802.11g	2412	14.46	
	2437	14.59	
	2462	14.17	
802.11n (HT20)	2412	14.51	
	2437	14.66	
	2462	14.26	
802.11n (HT40)	2422	14.65	
	2437	14.74	
	2452	14.55	
Result: PASS			

Duty Cycle		
Mode	**Channel frequency (MHz)**	**Test Result**
802.11b	2412	>98%
	2437	
	2462	
802.11g	2412	
	2437	
	2462	
802.11n (HT20)	2412	
	2437	
	2462	
802.11n (HT40)	2422	
	2437	
	2452	
Please see below plots		

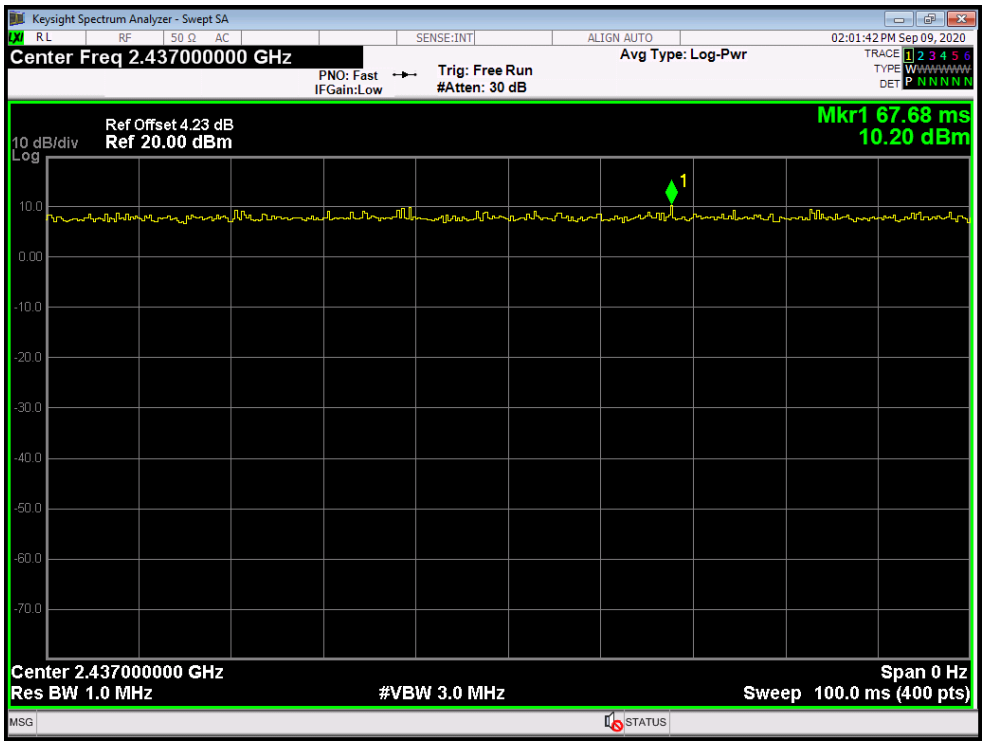
802.11 B Mode 2437 MHz



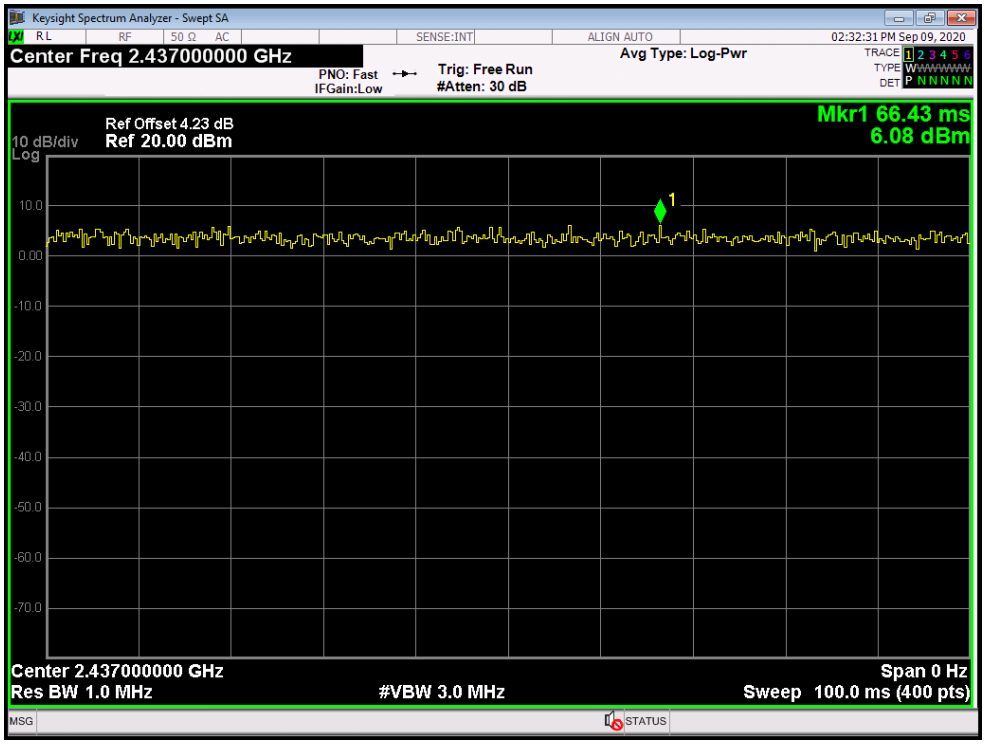
802.11 G Mode 2437 MHz



802.11 N20 Mode 2437 MHz



802.11 N40 Mode 2437 MHz



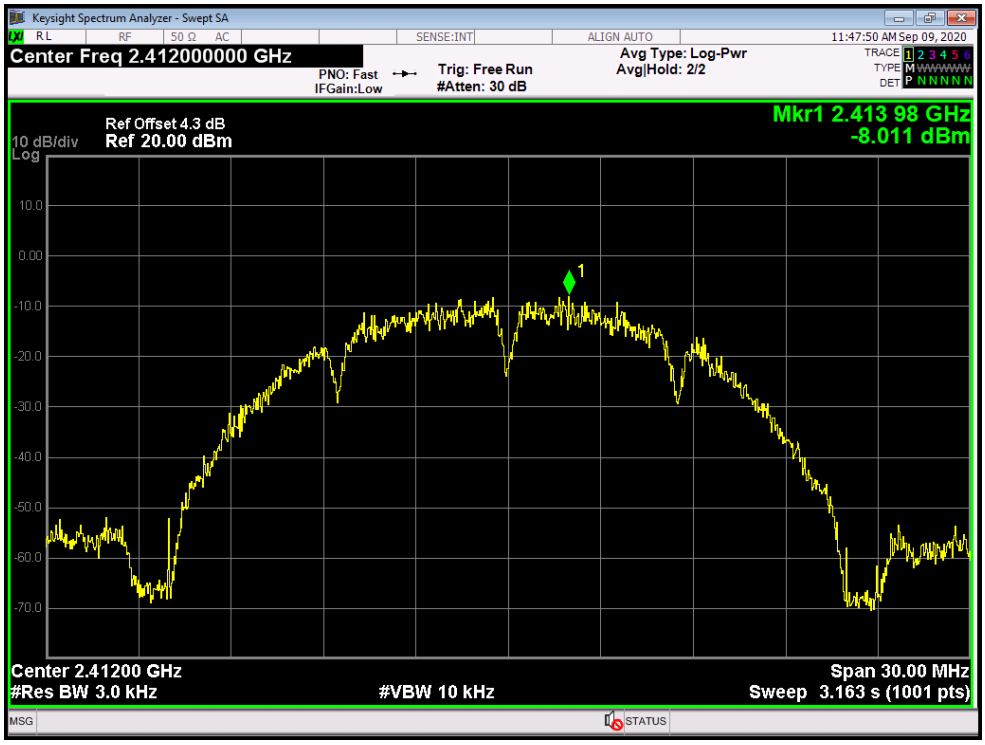
Attachment E-- Power Spectral Density Test Data

Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 12V		
Test Mode:	TX 802.11B Mode		

Channel Frequency (MHz)	Power Density (dBm/3 kHz)	Limit (dBm/3 kHz)
2412	-8.011	8
2437	-8.297	
2462	-8.559	

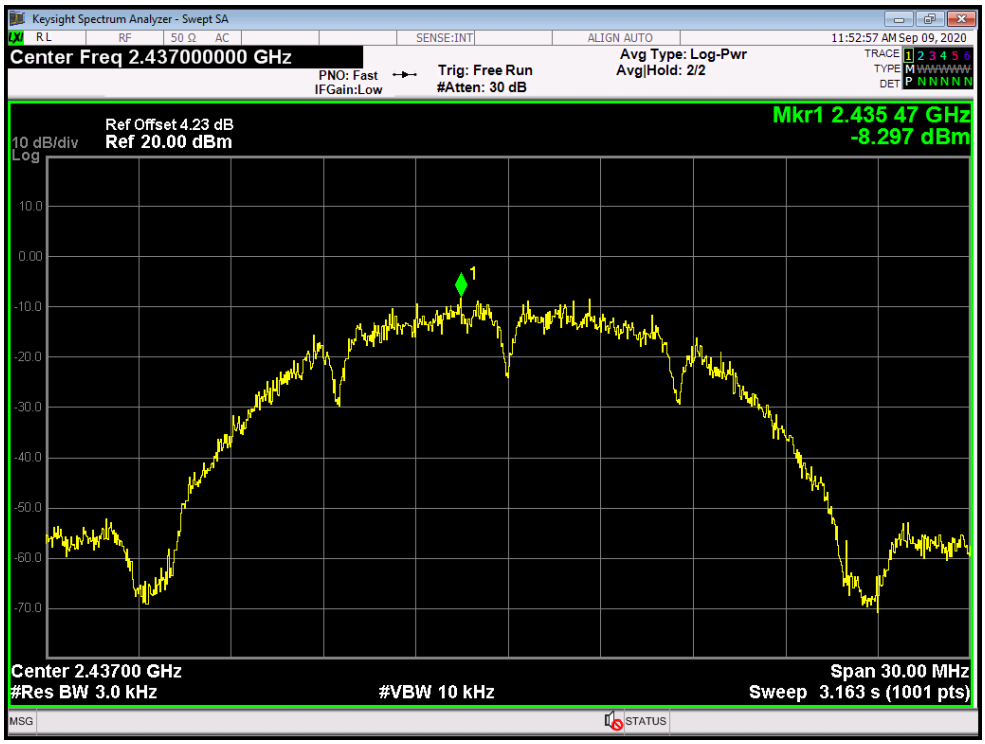
802.11B Mode

2412 MHz



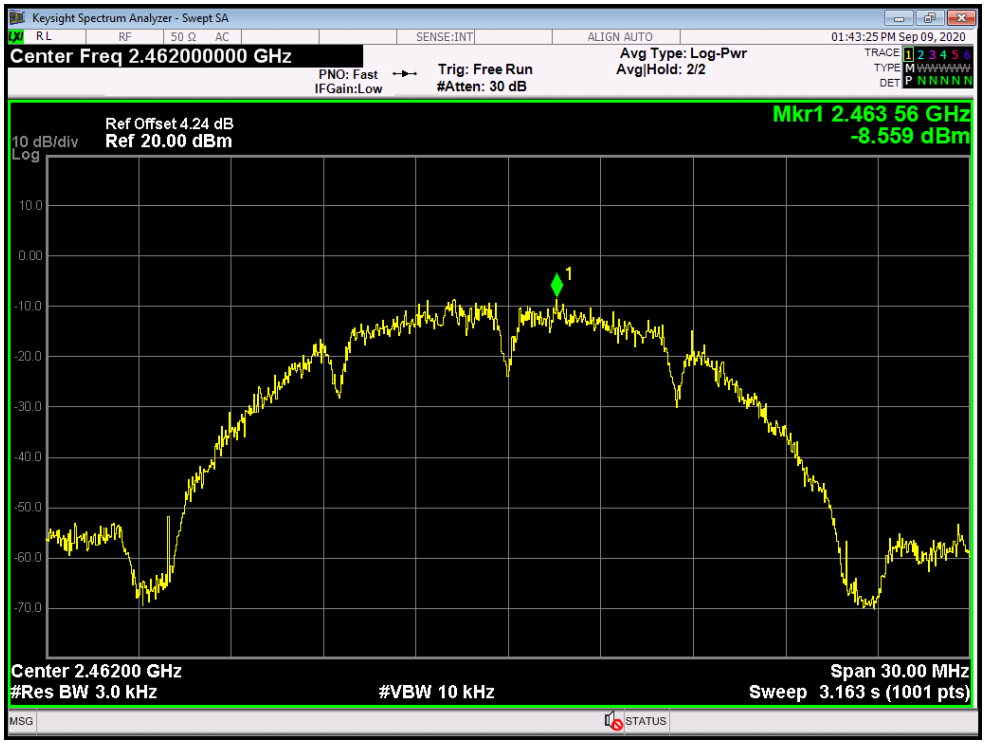
802.11B Mode

2437 MHz



802.11B Mode

2462 MHz

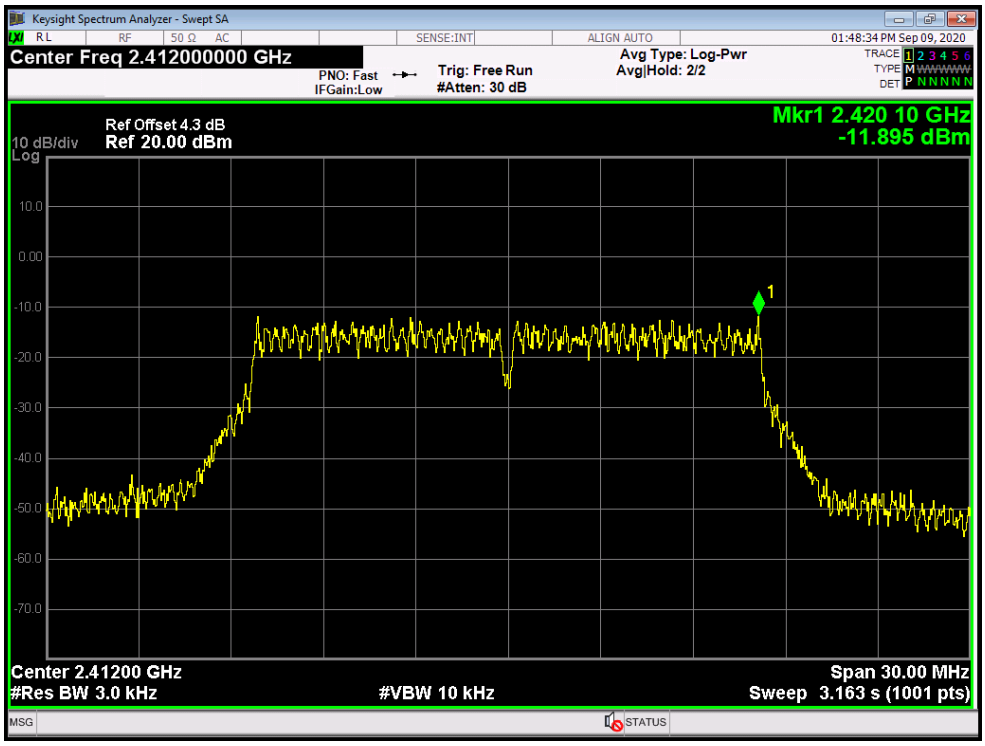


Temperature:	25 ℃	Temperature:	25 ℃
Test Voltage:	DC 12V		
Test Mode:	TX 802.11G Mode		

Channel Frequency (MHz)	Power Density (dBm/3 kHz)	Limit (dBm/3 kHz)
2412	-11.895	8
2437	-10.709	
2462	-10.248	

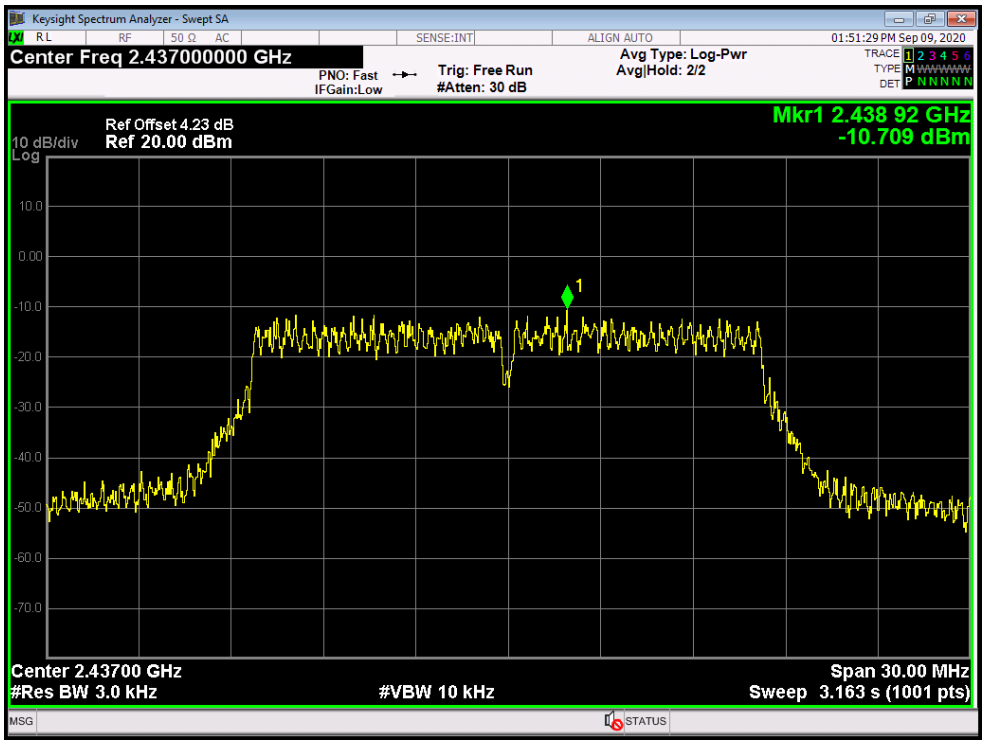
802.11G Mode

2412 MHz



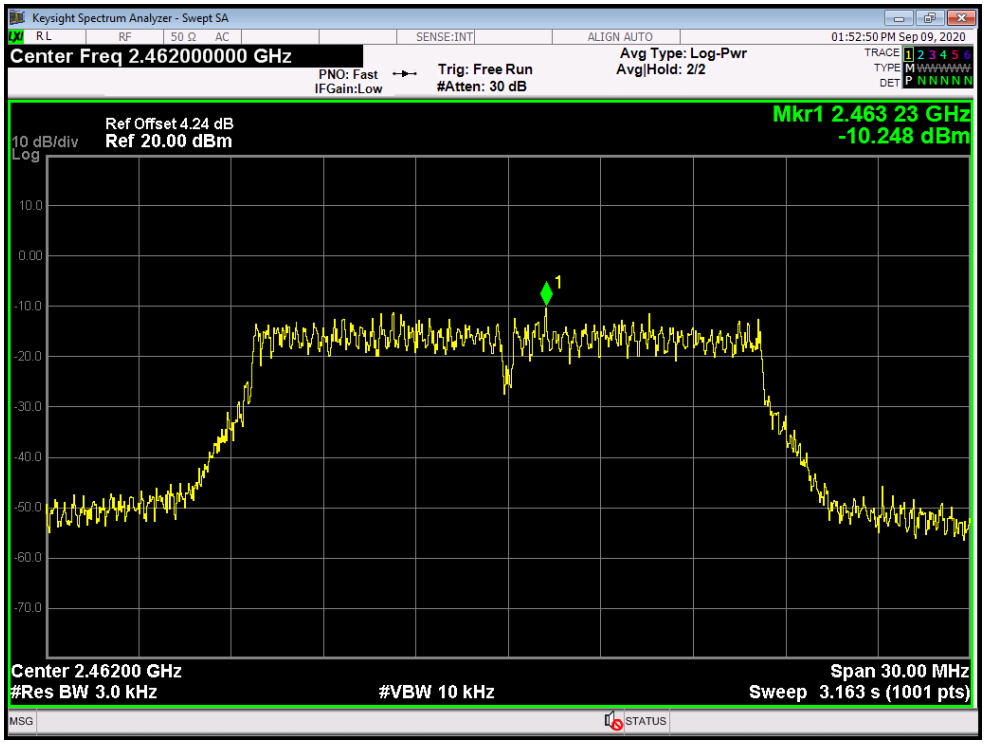
802.11G Mode

2437 MHz



802.11G Mode

2462 MHz

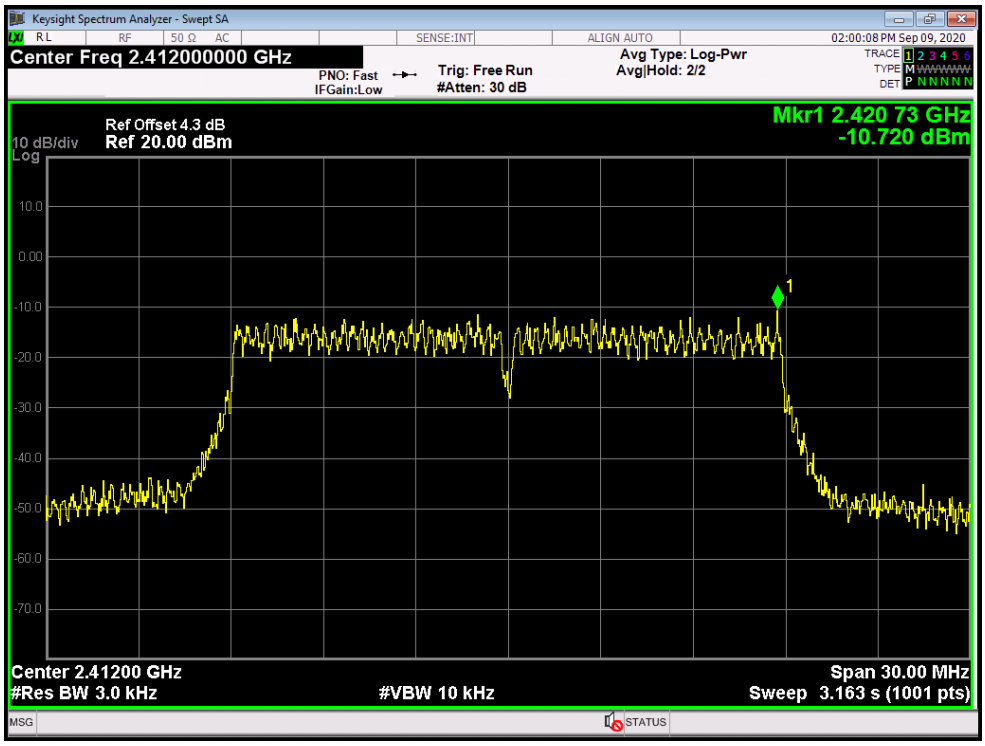


Temperature:	25 ℃	Temperature:	25 ℃
Test Voltage:	DC 12V		
Test Mode:	TX 802.11N(HT20) Mode		

Channel Frequency (MHz)	Power Density (dBm/3 kHz)	Limit (dBm/3 kHz)
2412	-10.720	8
2437	-11.179	
2462	-10.786	

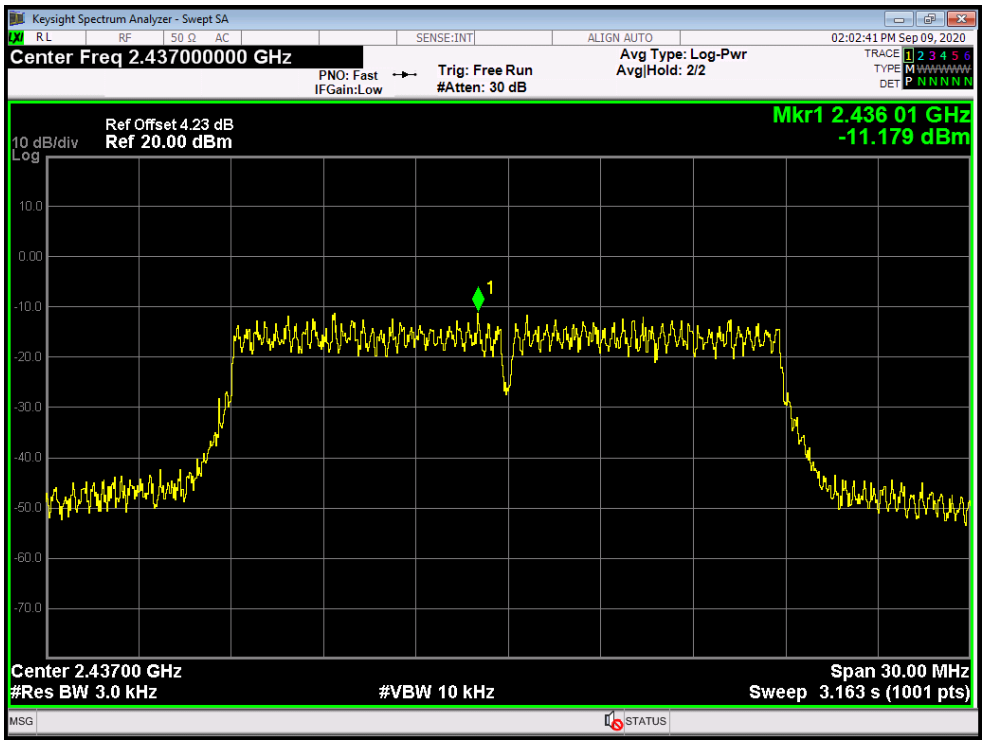
802.11N(HT20) Mode

2412 MHz



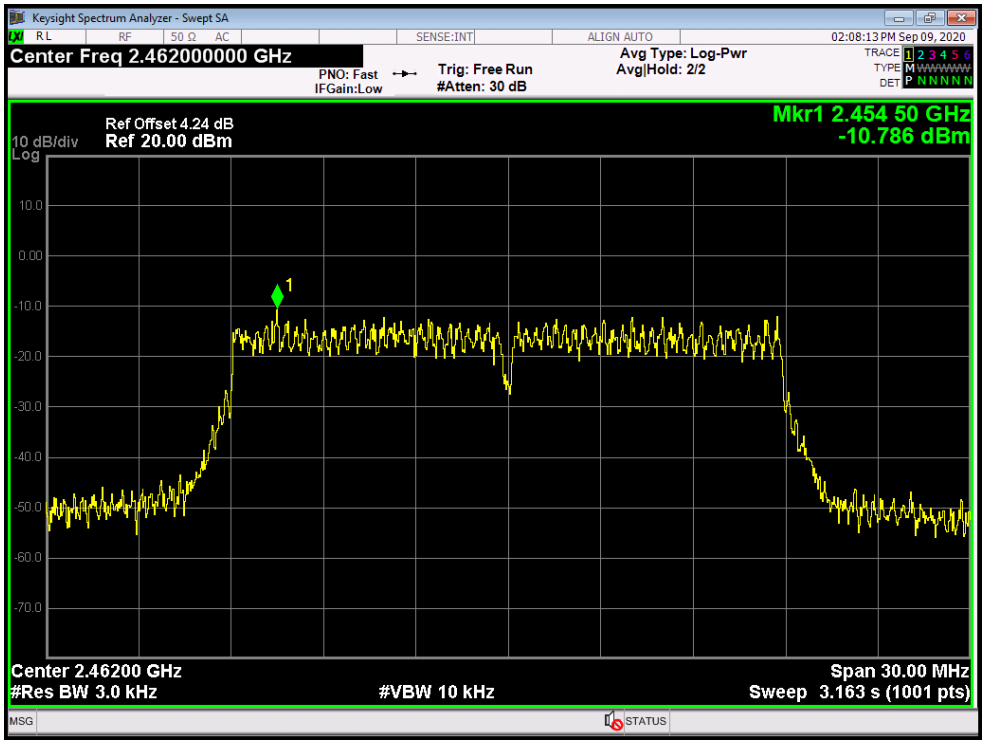
802.11N(HT20) Mode

2437 MHz



802.11N(HT20) Mode

2462 MHz

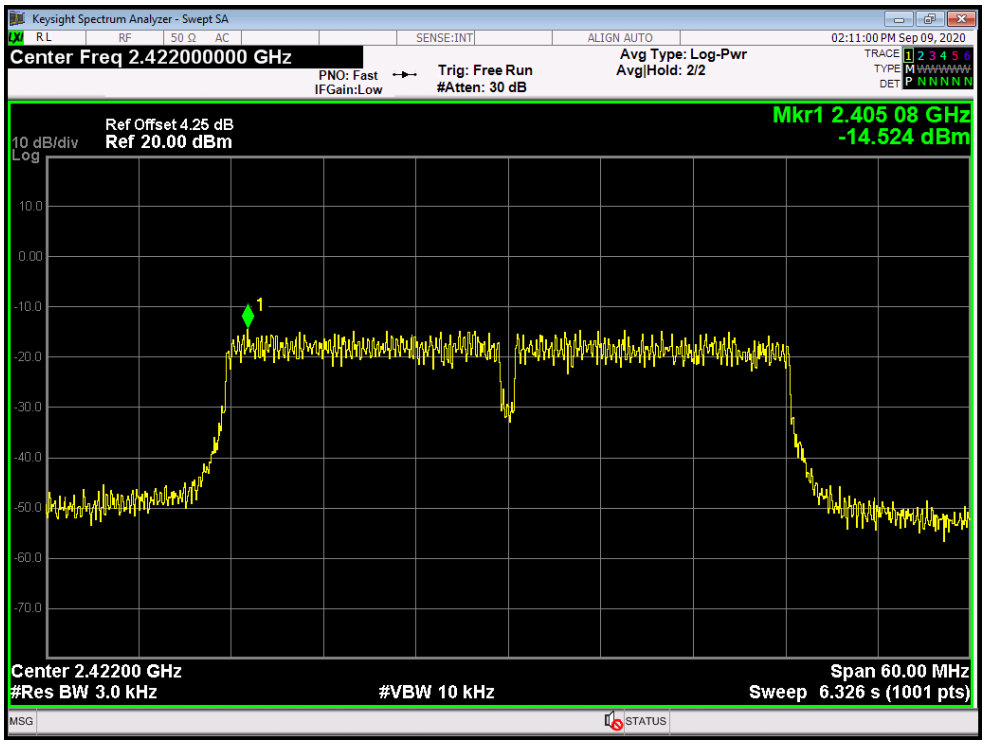


Temperature:	25 ℃	Temperature:	25 ℃
Test Voltage:	DC 12V		
Test Mode:	TX 802.11N(HT40) Mode		

Channel Frequency (MHz)	Power Density (dBm/3 kHz)	Limit (dBm/3 kHz)
2422	-14.524	8
2437	-14.228	
2452	-13.862	

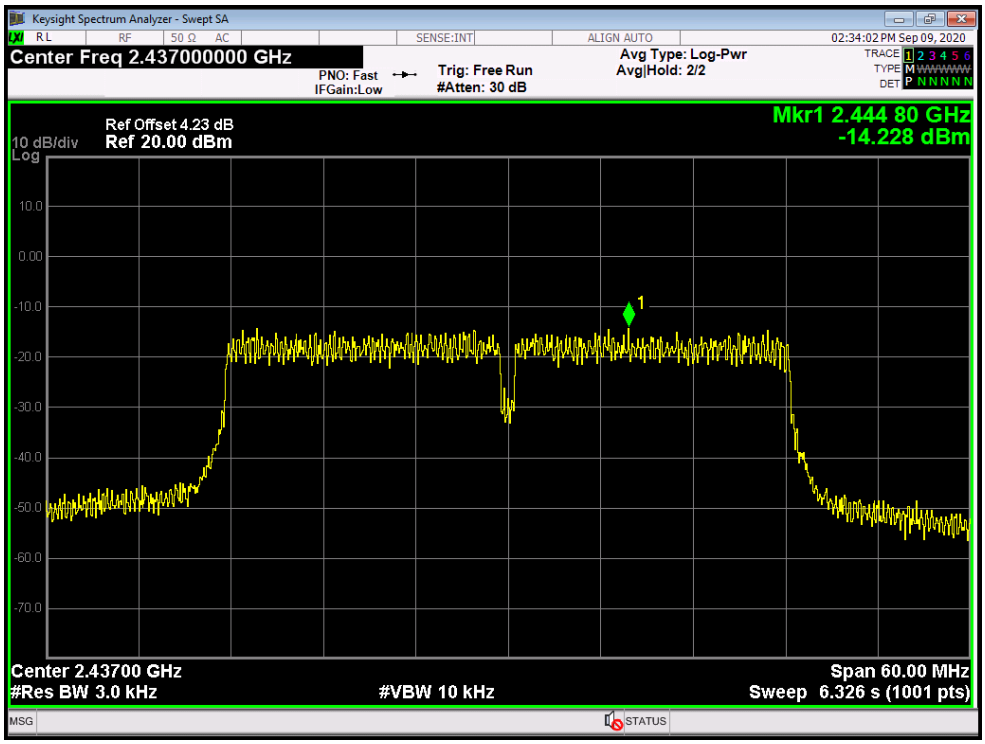
802.11N(HT40) Mode

2422 MHz



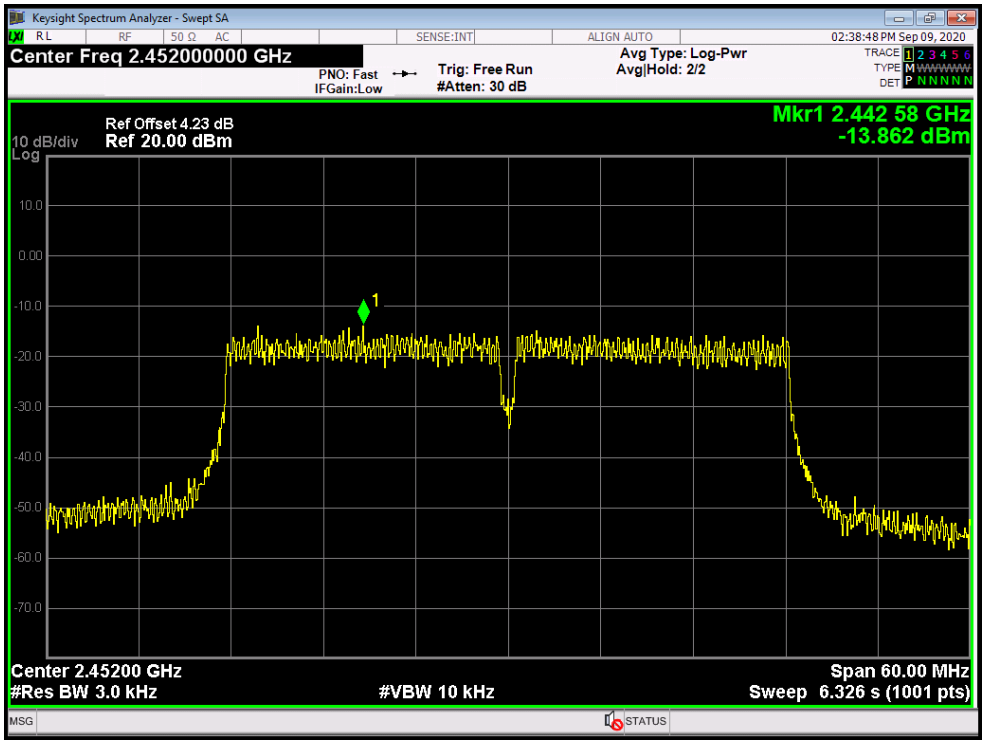
802.11N(HT40) Mode

2437 MHz



802.11N(HT40) Mode

2452 MHz



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