

FCC Radio Test Report

FCC ID: 2AX4E-Q10107L

Original Grant

Report No. : TB-FCC176113
Applicant : Vitek Electronics International Co., Ltd
Equipment Under Test (EUT)
EUT Name : 10.1inch Tablet PC
Model No. : Q10107L-ME
Series Model No. VK1001G, VK1002G, VK1003G, VK1004G, VK1005G, VK1006G, VK1007G, VK1008G
Brand Name : AOC, VTEX
Sample ID : TBBJ-20200916-08-5#& TBBJ-20200916-08-6#
Receipt Date : 2020-09-14
Test Date : 2020-09-15 to 2020-11-17
Issue Date : 2020-11-18
Standards : FCC Part 15, Subpart E 15.407
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

Test/Witness Engineer :  Ivan Su

Approved& Authorized :  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-FCC176113	Rev.01	Initial issue of report	2020-11-18

1. General Information about EUT

1.1 Client Information

Applicant	:	Vitek Electronics International Co., Ltd
Address	:	Room 1104, 11/F., Witty Commercial Building, 1A-1L, Tung Choit St, Mong Kok, Kowloon, Hong Kong
Manufacturer	:	Vitek Electronics International Co., Ltd
Address	:	Room 1104, 11/F., Witty Commercial Building, 1A-1L, Tung Choit St, Mong Kok, Kowloon, Hong Kong

1.2 General Description of EUT (Equipment Under Test)

EUT Name	:	10.1inch Tablet PC
Models No.	:	Q10107L-ME , VK1001G, VK1002G, VK1003G, VK1004G, VK1005G, VK1006G, VK1007G, VK1008G
Model Difference	:	All these models are identical in the same PCB, layout and electrical circuit, The only difference is appearance.
Product Description	:	Operation Frequency: U-NII-1: 5180MHz~5240MHz
		Antenna Gain: 2.1dBi PIFA Antenna
		Modulation Type: 802.11a: OFDM (QPSK, BPSK, 16QAM) 802.11n: OFDM (QPSK, BPSK, 16QAM, 64QAM) 802.11ac: OFDM (QPSK, BPSK, 16QAM, 64QAM, 256QAM)
		Bit Rate of Transmitter: 802.11a: 6/9/12/18/24/36/48/54 Mbps 802.11n: up to 150Mbps 802.11ac: at most 433.3 Mbps
Power Rating	:	Adapter(HTY15-0502000U) Input: AC 100-240V, 50/60Hz Output: DC 5V 2A DC 3.7V by 5000mAh Li-ion battery
Software Version	:	android 10.0 S107
Hardware Version	:	S706-9863A
Remark	:	The adapter and antenna gain provided by the applicant, the verified for the RF conduction test provided by TOBY test lab.

Note:

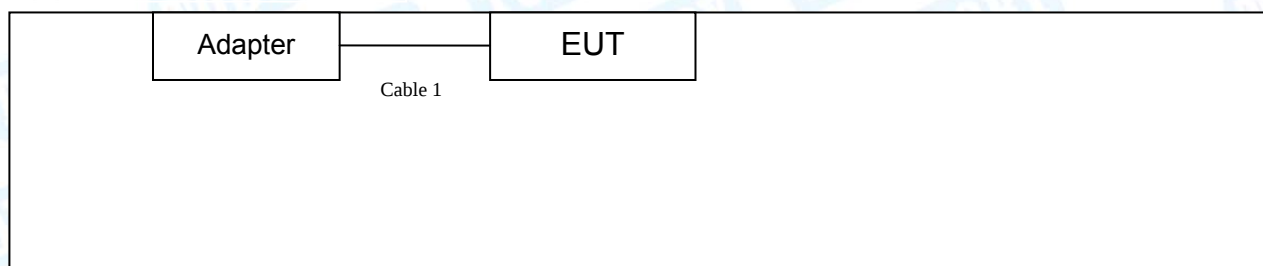
- (1) This Test Report is FCC Part 15, Subpart E(15.407) for 802.11a/n/ac, the test procedure follows the KDB 789033 D02 General U-NII Test Procedures New Rules v02r01. More detailed features description, please refer to the manufacturer's specifications or the User's Manual.

(2) Channel List:

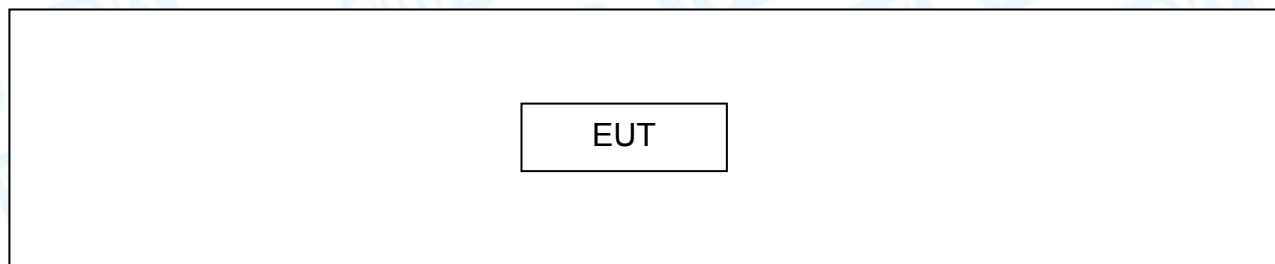
Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5180~5240MHz (U-NII-1)	36	5180 MHz	44	5220 MHz
	38	5190 MHz	46	5230 MHz
	40	5200 MHz	48	5240 MHz
	42	5210 MHz		
For 20 MHz Bandwidth, use channel 36, 40, 44, 48. For 40 MHz Bandwidth, use channel 38, 46. For 80 MHz Bandwidth, use channel 42.				

1.3 Block Diagram Showing the Configuration of System Tested

Charging + TX Mode



TX Mode



1.4 Description of Support Units

The EUT has been test as an independent unit.

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 a Mode(5180MHz)
For Radiated Test Below 1GHz		
Final Test Mode		Description
Mode 2		Charging + TX a Mode(5180MHz)
For Radiated Test Above 1GHz		
Test Band	Final Test Mode	Description
U-NII-1	Mode 3	TX Mode 802.11a Mode Channel 36/40/48
	Mode 4	TX Mode 802.11n(HT20) Mode Channel 36/40/48
	Mode 5	TX Mode 802.11ac(VHT20) Mode Channel 36/40/48
	Mode 6	TX Mode 802.11n(HT40) Mode Channel 38/46
	Mode 7	TX Mode 802.11ac(VHT40) Mode Channel 38/46
	Mode 8	TX Mode 802.11ac(VHT80) Mode Channel 42

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:

802.11a Mode: OFDM (6 Mbps)
802.11n (HT20) Mode: MCS 0
802.11n (HT40) Mode: MCS 0
802.11ac(VHT20) Mode: MCS 0
802.11ac(VHT40) Mode: MCS 0
802.11ac(VHT80) Mode: MCS 0

- (2) During the testing procedure, the continuously transmitting with the maximum power mode was programmed by the customer.
- (3) The EUT is considered a portable unit; 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: Engineering mode(***83781***)		
Test Mode: Continuously transmitting		
U-NII-1		
Mode	Frequency (MHz)	Parameters
802.11a	5180	DEF
	5200	DEF
	5240	DEF
802.11n(HT20)	5180	DEF
	5200	DEF
	5240	DEF
802.11ac(VHT20)	5180	DEF
	5200	DEF
	5240	DEF
802.11n(HT40)	5190	DEF
	5230	DEF
802.11ac(VHT40)	5190	DEF
	5230	DEF
802.11ac(VHT80)	5210	DEF

1.7 Measurement Uncertainty

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

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 was 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 E(15.407)				
Standard Section	Test Item	Test Sample(s)	Judgment	Remark
FCC				
15.203	Antenna Requirement	TBBJ-20200916-08-5#	PASS	N/A
15.207	Conducted Emission	TBBJ-20200916-08-6#	PASS	N/A
15.407(b)	Band Edge Emissions	TBBJ-20200916-08-5#	PASS	N/A
15.407(a)	26dB Bandwidth&99% Bandwidth	TBBJ-20200916-08-5#	PASS	N/A
15.407(e)	6dB Bandwidth	TBBJ-20200916-08-5#	PASS	N/A
15.407(a)	AVG Output Power	TBBJ-20200916-08-5#	PASS	N/A
15.407(a)	Power Spectral Density	TBBJ-20200916-08-6#	PASS	N/A
15.209 15.407(b)	Transmitter Radiated Spurious Emission	TBBJ-20200916-08-5# TBBJ-20200916-08-6#	PASS	N/A
15.407(a)	Peak Excursion	TBBJ-20200916-08-5#	PASS	N/A
15.407(g)	Frequency Stability	TBBJ-20200916-08-5#	PASS	N/A
Note: “/” for no requirement for this test item. N/A is an abbreviation for Not Applicable.				

3. Test Software

Test Item	Test Software	Manufacturer	Version No.
Conducted Emission	EZ-EMC	EZ	CDI-03A2
Radiation Emission	EZ-EMC	EZ	FA-03A2RE
RF Conducted Measurement	MTS-8310	MWRFtest	V2.0.0.0

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. 07, 2020	Jul. 06, 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	Mar.01, 2020	Feb. 28, 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	ESPI	100010/007	Jul. 06, 2020	Jul. 05, 2021
MXA Signal Analyzer	Agilent	N9020A	MY49100060	Sep. 11, 2020	Sep. 10, 2021
Vector Signal Generator	Agilent	N5182A	MY50141294	Sep. 11, 2020	Sep. 10, 2021
Analog Signal Generator	Agilent	N5181A	MY50141953	Sep. 11, 2020	Sep. 10, 2021
RF Power Sensor	DARE!! Instruments	RadiPowerRPR3006W	17100015SNO26	Sep. 11, 2020	Sep. 10, 2021
	DARE!! Instruments	RadiPowerRPR3006W	17100015SNO29	Sep. 11, 2020	Sep. 10, 2021
	DARE!! Instruments	RadiPowerRPR3006W	17100015SNO31	Sep. 11, 2020	Sep. 10, 2021
	DARE!! Instruments	RadiPowerRPR3006W	17100015SNO33	Sep. 11, 2020	Sep. 10, 2021

5. Conducted Emission Test

5.1 Test Standard and Limit

5.1.1 Test Standard

FCC Part 15.207

5.1.2 Test Limit

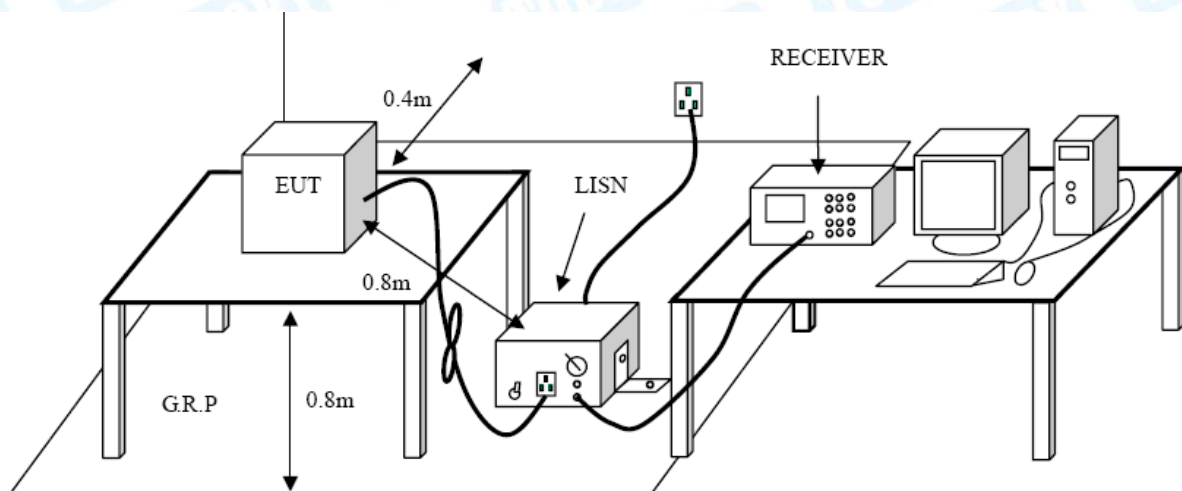
Conducted Emission Test Limit

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

Please refer to the Attachment A.

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 (9kHz~1000MHz)

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)

Limits of unwanted emission out of the restricted bands

Frequency (MHz)	EIRP Limits (dBm)	Equivalent Field Strength at 3m (dBuV/m)
5150~5250	-27	68.3
5250~5350	-27	68.3
5470~5725	-27	68.3
5725~5825	-27(Note 2)	68.3
	10(Note 2)	105.3
	15.6(Note 2)	110.9
	27(Note 2)	122.3

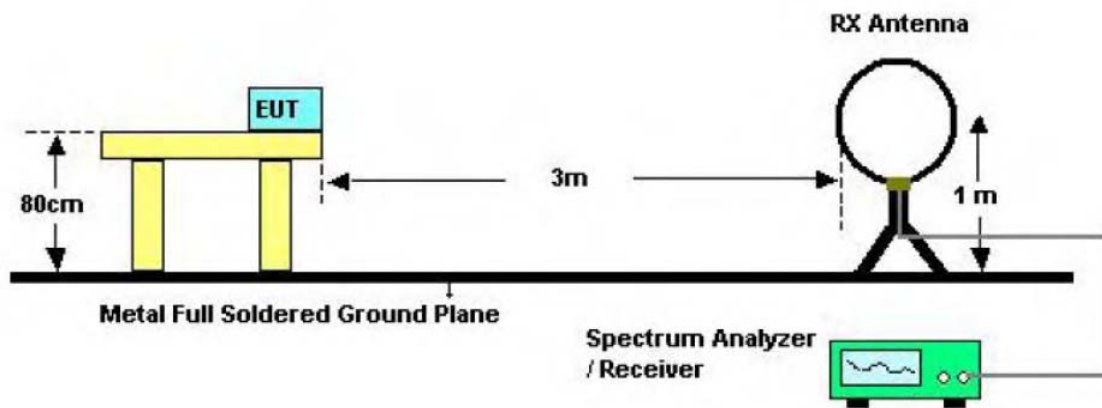
NOTE:

1, The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

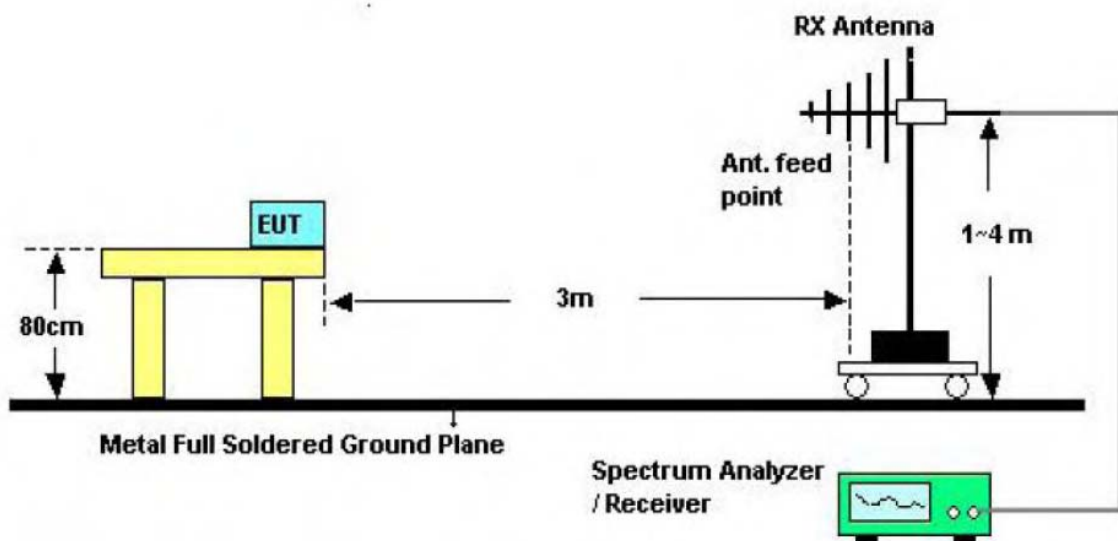
$$E = \frac{1000000\sqrt{30P}}{3} \text{ uV/m, where P is the eirp (Watts)}$$

2, According to FCC 16-24, All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27dBm/MHz at the band edge.

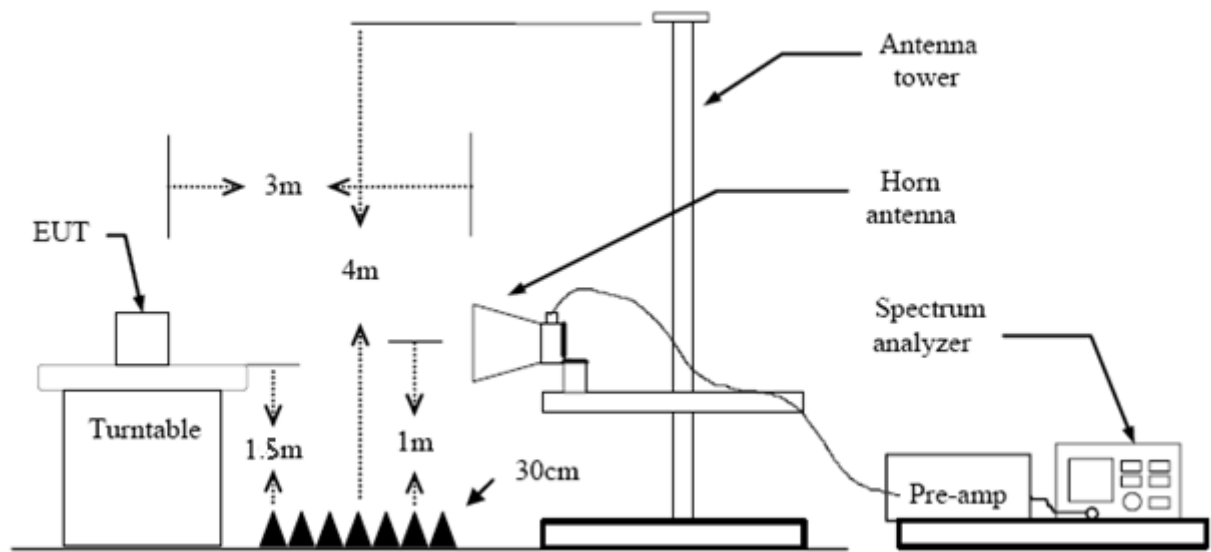
6.2 Test Setup



Below 30MHz Test Setup



Below 1000MHz Test Setup



Above 1GHz Test Setup

6.3 Test Procedure

- (1) The measuring distance of 3m shall be used for measurements at frequency up to 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.
- (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 Ore 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 B.

7. Band Edge Emissions

7.1 Test Standard and Limit

7.1.1 Test Standard

FCC Part 15.407(b)

7.1.2 Test Limit

Limits of unwanted emission out of the restricted bands

Frequency (MHz)	EIRP Limits (dBm)	Equivalent Field Strength at 3m (dBuV/m)
5150~5250	-27	68.3
5250~5350	-27	68.3
5470~5725	-27	68.3
5725~5825	-27(Note 2)	68.3
	10(Note 2)	105.3
	15.6(Note 2)	110.9
	27(Note 2)	122.3

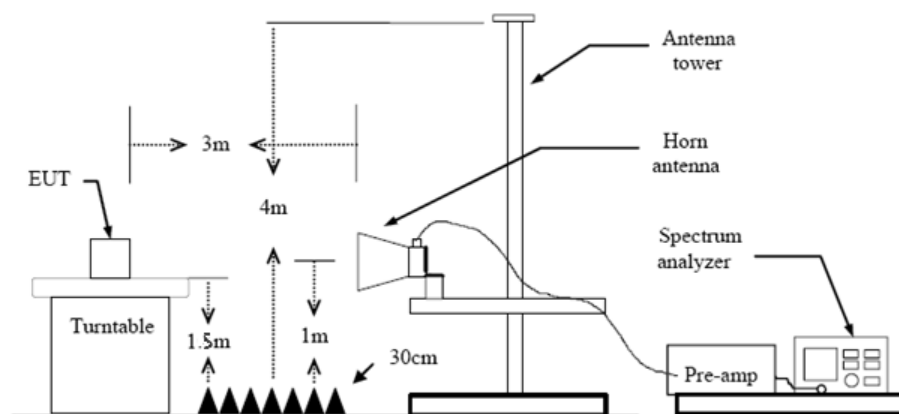
NOTE:

1, The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000\sqrt{30P}}{3} \text{ uV/m, where P is the eirp (Watts)}$$

2, According to FCC 16-24, All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27dBm/MHz at the band edge.

7.2 Test Setup



7.3 Test Procedure

- (1) The measuring distance of 3m shall be used for measurements at frequency up to 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.
- (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 0re 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 C.

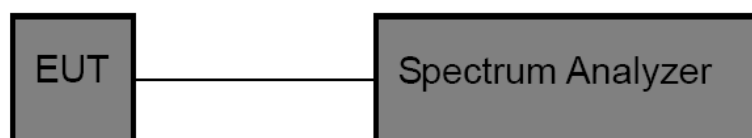
8. Bandwidth Test

8.1 Test Standard and Limit

- 8.1.1 Test Standard
FCC Part 15.407
- 8.1.2 Test Limit

FCC Part 15 Subpart C(15.407)/RSS-210		
Test Item	Limit	Frequency Range (MHz)
26 Bandwidth	N/A	5150~5250
		5250~5350
		5500~5700
6 dB Bandwidth	>500kHz	5725~5850

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 setting of the spectrum analyser as below:

26dB Bandwidth Test	
Spectrum Parameters	Setting
Attenuation	Auto
Span	>26 dB Bandwidth
RBW	Approximately 1% of the emission bandwidth
VBW	VBW>RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

6dB Bandwidth Test	
Spectrum Parameters	Setting
Attenuation	Auto
Span	>6 dB Bandwidth
RBW	100 kHz
VBW	VBW>=3*RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto
99% Occupied Bandwidth Test	
Spectrum Parameters	Setting
Attenuation	Auto
RBW	1% to 5% of the OBW
VBW	≥ 3RBW
Detector	Peak
Trace	Max Hold

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 D.

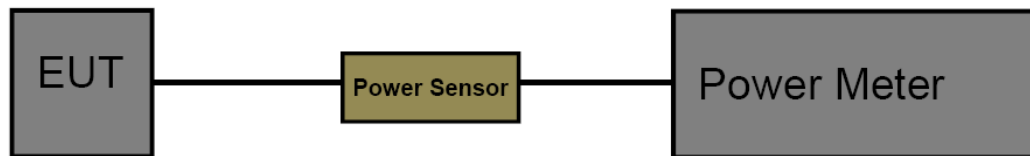
9. Output Power Test

9.1 Test Standard and Limit

- 9.1.1 Test Standard
FCC Part 15.407 (a)
9.1.2 Test Limit

FCC Part 15 Subpart E(15.407)/RSS-210		
Test Item	Limit	Frequency Range(MHz)
Conducted Output Power	Fixed: 1 Watt (30dBm) Mobile and Portable: 250mW (24dBm)	5150~5250
	250mW (24dBm)	5250~5350
	250mW (24dBm)	5500~5700
	1 Watt (30dBm)	5725~5850

9.2 Test Setup



9.3 Test Procedure

The measurement is according to section 3 of KDB 789033 D02 General U-NII Test Procedures New Rules v02r01.

The EUT was connected to RF power meter via a broadband power sensor as show the block above.

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 Date

Please refer to the Attachment E.

10. Power Spectral Density Test

10.1 Test Standard and Limit

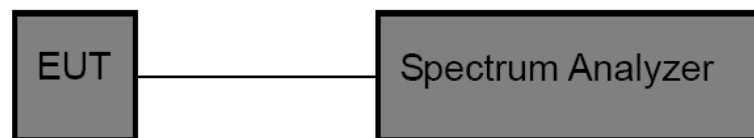
10.1.1 Test Standard

FCC Part 15.407 (a)

10.1.2 Test Limit

FCC Part 15 Subpart E(15.407)		
Test Item	Limit	Frequency Range(MHz)
Power Spectral Density	Other than Mobile and Portable : 17dBm/MHz Mobile and Portable : 11dBm/MHz	5150~5250
	11dBm/MHz	5250~5350
	11dBm/MHz	5500~5700
	30dBm/500kHz	5725~5850

9.2 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 is according to KDB 789033 D02 General U-NII Test Procedures New Rules v02r01.

- (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 transmitting frequency.
- (3) Set the span to encompass the entire emissions bandwidth (EBW)(alternatively, the entire 99% OBW) of the signal.
- (4) Set the RBW to: 1 MHz
- (5) Set the VBW to: 3 MHz
- (6) Detector: RMS
- (7) Trace: Max Hold
- (7) Sweep time: auto
- (8) Trace average at least 100 traces in power averaging.

- (9) User the peak marker function to determine the maximum amplitude level within the RBW.
Apply correction to the result if different RBW is used.

10.4 Deviation From Test Standard

No deviation

10.5 EUT Operating Condition

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

10.6 Test Data

Please refer to the Attachment F.

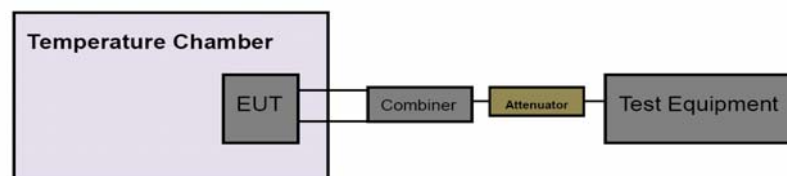
11. Frequency Stability Measurement

11.1 Test Standard and Limit

- 11.1.1 Test Standard
FCC Part 15.407
- 11.1.2 Test Limit

FCC Part 15 Subpart C(15.407)		
Test Item	Limit	Frequency Range(MHz)
Peak Excursion Measurement	Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual	5150~5250
		5250~5350
		5500~5700
		5725~5850

11.2 Test Setup



11.3 Test Procedure

The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above.

- (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 transmitting frequency.
- (3) Set the span to encompass the entire emissions bandwidth (EBW) of the signal.
- (4) Set the RBW to: 10 kHz, VBW=10 kHz with peak detector and maxhold settings.
- (5) The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value.
- (6) Extreme temperature is 0°C~50°C

11.4 Deviation From Test Standard

No deviation

11.5 EUT Operating Condition

The EUT was set to continuously transmitting in continuously un-modulation transmitting mode.

11.6 Test Data

Please refer to the Attachment G.

12. Antenna Requirement

12.1 Standard Requirement

12.1.1 Standard

FCC Part 15.203

12.1.2 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.

12.2 Antenna Connected Construction

The gains of the antenna used for transmitting is 2.1dBi, and the antenna de-signed with permanent attachment and no consideration of replacement. Please see the EUT photo for details.

12.3 Deviation From Test Standard

No deviation

12.4 Result

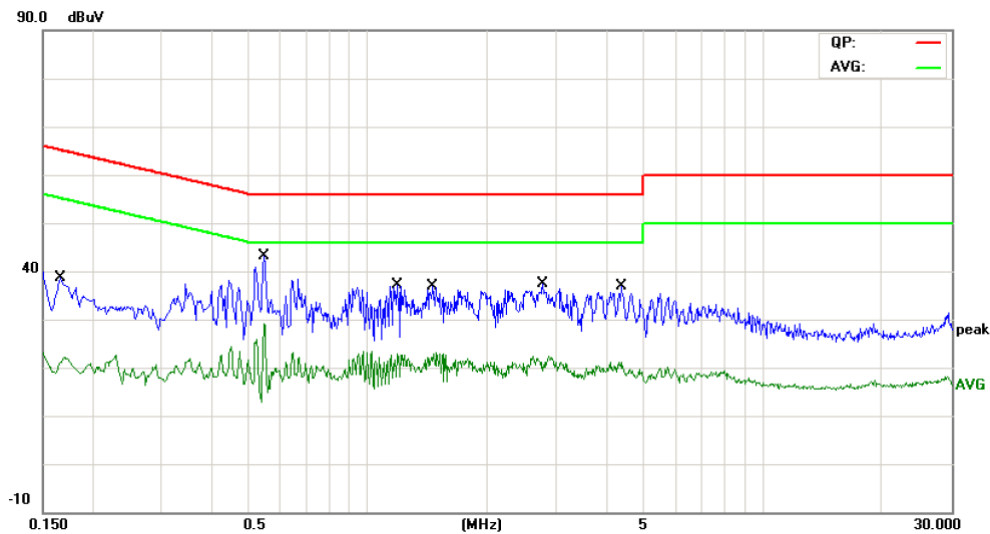
The EUT antennas are PIFA Antenna. It complies with the standard requirement.

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

Attachment A-- Conducted Emission Test Data

Remark: All channels have been tested and Shows only the worst channels.

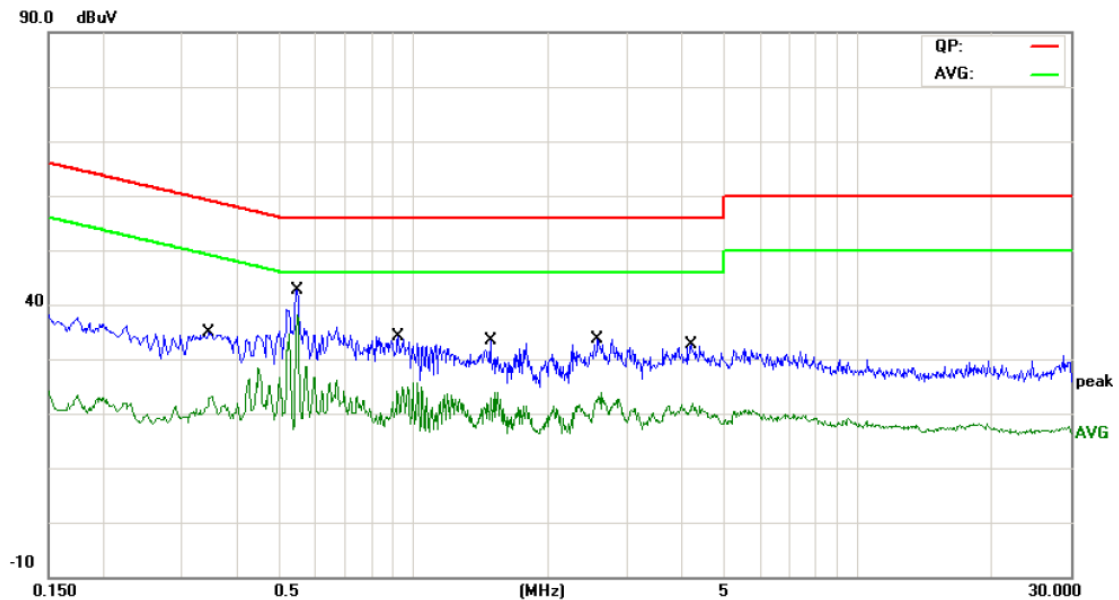
Temperature:	24.8 °C	Relative Humidity:	42%
Test Voltage:	AC 120V/60 Hz		
Terminal:	Line		
Test Mode:	TX 802.11a Mode CH36		
Remark:	Only worse case is reported.		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.1660	28.88	9.70	38.58	65.15	-26.57	QP
2		0.1660	11.33	9.70	21.03	55.15	-34.12	AVG
3	*	0.5460	33.49	9.70	43.19	56.00	-12.81	QP
4		0.5460	19.47	9.70	29.17	46.00	-16.83	AVG
5		1.1898	27.36	9.78	37.14	56.00	-18.86	QP
6		1.1898	12.98	9.78	22.76	46.00	-23.24	AVG
7		1.4618	27.02	9.75	36.77	56.00	-19.23	QP
8		1.4618	11.58	9.75	21.33	46.00	-24.67	AVG
9		2.7700	27.48	9.85	37.33	56.00	-18.67	QP
10		2.7700	9.60	9.85	19.45	46.00	-26.55	AVG
11		4.3619	27.08	9.90	36.98	56.00	-19.02	QP
12		4.3619	9.99	9.90	19.89	46.00	-26.11	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	24.8 °C	Relative Humidity:	42%
Test Voltage:	AC 120V/60 Hz		
Terminal:	Neutral		
Test Mode:	TX 802.11a Mode CH36		
Remark:	Only worse case is reported		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.3458	25.11	9.80	34.91	59.06	-24.15	QP
2		0.3458	13.02	9.80	22.82	49.06	-26.24	AVG
3		0.5460	32.92	9.80	42.72	56.00	-13.28	QP
4	*	0.5460	28.28	9.80	38.08	46.00	-7.92	AVG
5		0.9220	24.27	9.80	34.07	56.00	-21.93	QP
6		0.9220	13.85	9.80	23.65	46.00	-22.35	AVG
7		1.4858	23.47	9.80	33.27	56.00	-22.73	QP
8		1.4899	13.12	9.80	22.92	46.00	-23.08	AVG
9		2.5819	23.78	9.80	33.58	56.00	-22.42	QP
10		2.5819	12.42	9.80	22.22	46.00	-23.78	AVG
11		4.1939	22.70	9.80	32.50	56.00	-23.50	QP
12		4.1939	11.12	9.80	20.92	46.00	-25.08	AVG

Emission Level= Read Level+ Correct Factor

Attachment B-- Radiated Emission Test Data

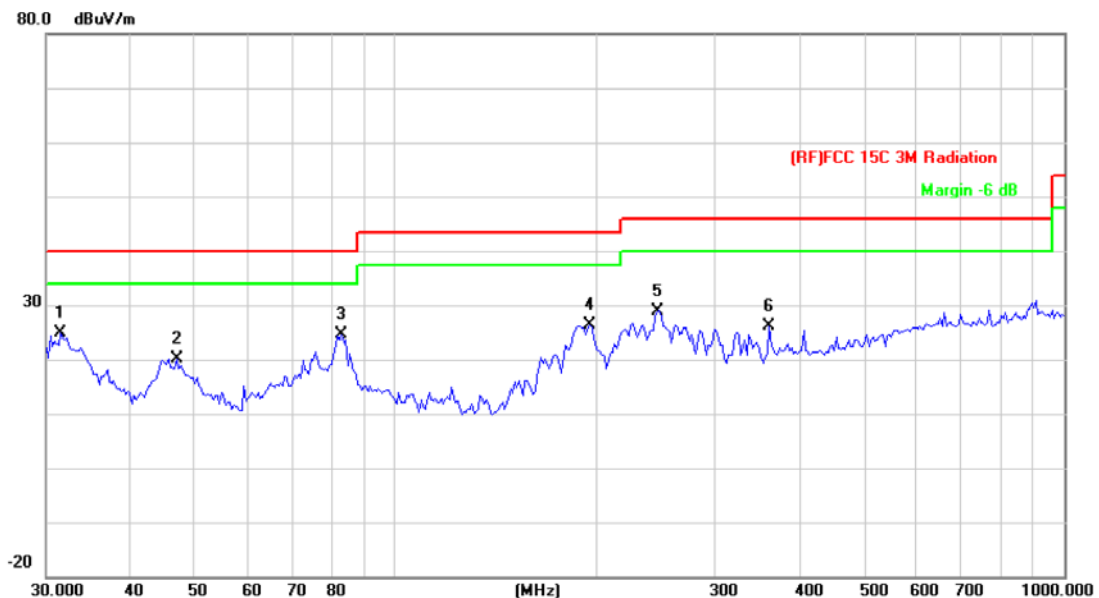
9 KHz~30 MHz

From 9 KHz to 30 MHz: 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

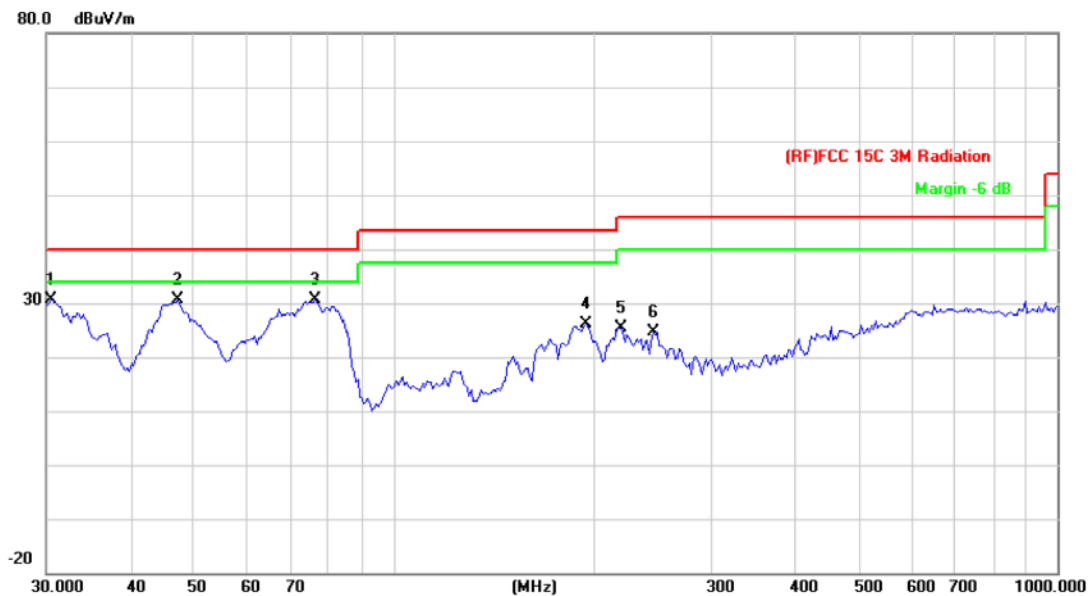
Temperature:	24.6 °C	Relative Humidity:	43%
Test Voltage:	AC 120V/60Hz		
Ant. Pol.	Horizontal		
Test Mode:	TX 802.11a Mode 5180MHz (U-NII-1)		
Remark:	Only worse case is reported		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1	*	31.5093	38.92	-14.08	24.84	40.00	-15.16	peak
2		46.9947	42.25	-22.07	20.18	40.00	-19.82	peak
3		82.9385	47.01	-22.28	24.73	40.00	-15.27	peak
4		195.1365	46.16	-19.87	26.29	43.50	-17.21	peak
5		245.9507	46.41	-17.44	28.97	46.00	-17.03	peak
6		361.7139	40.14	-14.09	26.05	46.00	-19.95	peak

Emission Level= Read Level+ Correct Factor

Temperature:	24.6 °C	Relative Humidity:	43%
Test Voltage:	AC 120V/60Hz		
Ant. Pol.	Vertical		
Test Mode:	TX 802.11a Mode 5180MHz (U-NII-1)		
Remark:	Only worse case is reported.		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		30.4237	43.86	-13.27	30.59	40.00	-9.41	peak
2	*	47.3253	52.78	-22.18	30.60	40.00	-9.40	peak
3		76.2442	53.34	-22.82	30.52	40.00	-9.48	peak
4		195.1365	46.03	-19.87	26.16	43.50	-17.34	peak
5		219.8446	44.28	-18.87	25.41	46.00	-20.59	peak
6		245.9507	41.98	-17.44	24.54	46.00	-21.46	peak

Emission Level= Read Level+ Correct Factor

5180MHz-5240MHz(U-NII-1)

Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Horizontal		
Test Mode:	TX 802.11a Mode 5180MHz (U-NII-1)		
Remark:	No report for the emission which more than 15 dB below the prescribed limit. Only worse case is reported.		

Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Vertical		
Test Mode:	TX 802.11a Mode 5180MHz (U-NII-1)		
Remark:	No report for the emission which more than 15 dB below the prescribed limit. Only worse case is reported.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		10360.560	31.72	20.50	52.22	68.30	-16.08	peak
2	*	10360.560	22.65	20.50	43.15	54.00	-10.85	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Horizontal		
Test Mode:	TX 802.11a Mode 5200MHz (U-NII-1)		
Remark:	No report for the emission which more than 15 dB below the prescribed limit.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	10400.120	22.77	20.56	43.33	54.00	-10.67	AVG
2		10400.320	33.06	20.56	53.62	68.30	-14.68	peak

Emission Level= Read Level+ Correct Factor

Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Vertical		
Test Mode:	TX 802.11a Mode 5200MHz (U-NII-1)		
Remark:	No report for the emission which more than 15 dB below the prescribed limit.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		10399.688	32.28	20.56	52.84	68.30	-15.46	peak
2	*	10400.400	22.52	20.56	43.08	54.00	-10.92	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Horizontal		
Test Mode:	TX 802.11a Mode 5240MHz (U-NII-1)		
Remark:	No report for the emission which more than 15 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	*	10480.820	21.98	20.68	42.66	54.00	-11.34	AVG
2		10481.200	32.49	20.68	53.17	68.30	-15.13	peak

Emission Level= Read Level+ Correct Factor

Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Vertical		
Test Mode:	TX 802.11a Mode 5240MHz (U-NII-1)		
Remark:	No report for the emission which more than 15 dB below the prescribed limit.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		10480.600	32.37	20.68	53.05	68.30	-15.25	peak
2	*	10480.600	22.48	20.68	43.16	54.00	-10.84	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Horizontal		
Test Mode:	TX 802.11n(HT20) Mode 5180MHz (U-NII-1)		
Remark:	No report for the emission which more than 15 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	*	10360.230	22.71	20.50	43.21	54.00	-10.79	AVG
2		10360.500	33.17	20.50	53.67	68.30	-14.63	peak

Emission Level= Read Level+ Correct Factor

Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Vertical		
Test Mode:	TX 802.11n(HT20) Mode 5180MHz (U-NII-1)		
Remark:	No report for the emission which more than 15 dB below the prescribed limit.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		10360.150	32.39	20.50	52.89	68.30	-15.41	peak
2	*	10361.101	22.58	20.50	43.08	54.00	-10.92	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Horizontal		
Test Mode:	TX 802.11n(HT20) Mode 5200MHz (U-NII-1)		
Remark:	No report for the emission which more than 15 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	*	10399.610	22.85	20.56	43.41	54.00	-10.59	AVG
2		10400.500	32.60	20.56	53.16	68.30	-15.14	peak

Emission Level= Read Level+ Correct Factor

Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Vertical		
Test Mode:	TX 802.11n(HT20) Mode 5200MHz (U-NII-1)		
Remark:	No report for the emission which more than 15 dB below the prescribed limit.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		10400.580	31.51	20.56	52.07	68.30	-16.23	peak
2	*	10400.580	22.59	20.56	43.15	54.00	-10.85	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Horizontal		
Test Mode:	TX 802.11n(HT20) Mode 5240MHz (U-NII-1)		
Remark:	No report for the emission which more than 15 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		10480.374	34.35	20.68	55.03	68.30	-13.27	peak
2	*	10480.611	23.68	20.68	44.36	54.00	-9.64	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Vertical		
Test Mode:	TX 802.11n(HT20) Mode 5240MHz (U-NII-1)		
Remark:	No report for the emission which more than 15 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		10480.220	32.95	20.68	53.63	68.30	-14.67 peak
2	*	10480.220	22.23	20.68	42.91	54.00	-11.09 AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Horizontal		
Test Mode:	TX 802.11ac(VHT20) Mode 5180MHz (U-NII-1)		
Remark:	No report for the emission which more than 15 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		10360.300	33.18	20.50	53.68	68.30	-14.62	peak
2	*	10361.120	19.55	20.50	40.05	54.00	-13.95	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Vertical		
Test Mode:	TX 802.11ac(VHT20) Mode 5180MHz (U-NII-1)		
Remark:	No report for the emission which more than 15 dB below the prescribed limit.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Detector
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	
1		10360.150	32.66	20.50	53.16	68.30	-15.14	peak
2	*	10360.150	19.58	20.50	40.08	54.00	-13.92	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Horizontal		
Test Mode:	TX 802.11ac(VHT20) Mode 5200MHz (U-NII-1)		
Remark:	No report for the emission which more than 15 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	*	10399.331	20.64	20.56	41.20	54.00	-12.80	AVG
2		10400.480	32.05	20.56	52.61	68.30	-15.69	peak

Emission Level= Read Level+ Correct Factor

Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Vertical		
Test Mode:	TX 802.11ac(VHT20) Mode 5200MHz (U-NII-1)		
Remark:	No report for the emission which more than 15 dB below the prescribed limit.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		10400.380	32.69	20.56	53.25	68.30	-15.05	peak
2	*	10400.412	20.93	20.56	41.49	54.00	-12.51	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Horizontal		
Test Mode:	TX 802.11 ac(VHT20) Mode 5240MHz (U-NII-1)		
Remark:	No report for the emission which more than 15 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		10480.331	33.47	20.68	54.15	68.30	-14.15 peak
2	*	10481.230	20.59	20.68	41.27	54.00	-12.73 AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Vertical		
Test Mode:	TX 802.11ac(VHT20) Mode 5240MHz (U-NII-1)		
Remark:	No report for the emission which more than 15 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	*	10479.341	20.52	20.68	41.20	54.00	-12.80	AVG
2		10480.160	32.80	20.68	53.48	68.30	-14.82	peak

Emission Level= Read Level+ Correct Factor

Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Horizontal		
Test Mode:	TX 802.11n(HT40) Mode 5190MHz (U-NII-1)		
Remark:	No report for the emission which more than 15 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		10380.000	31.88	20.53	52.41	68.30	-15.89 peak
2	*	10380.000	23.28	20.53	43.81	54.00	-10.19 AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Vertical		
Test Mode:	TX 802.11n(HT40) Mode 5190MHz (U-NII-1)		
Remark:	No report for the emission which more than 15 dB below the prescribed limit.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		10380.740	31.75	20.53	52.28	68.30	-16.02	peak
2	*	10380.740	22.80	20.53	43.33	54.00	-10.67	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Horizontal		
Test Mode:	TX 802.11n(HT40) Mode 5230MHz (U-NII-1)		
Remark:	No report for the emission which more than 15 dB below the prescribed limit.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		10460.190	32.46	20.65	53.11	68.30	-15.19	peak
2	*	10460.190	21.43	20.65	42.08	54.00	-11.92	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Vertical		
Test Mode:	TX 802.11n(HT40) Mode 5230MHz (U-NII-1)		
Remark:	No report for the emission which more than 15 dB below the prescribed limit.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		10460.280	32.36	20.65	53.01	68.30	-15.29	peak
2	*	10460.280	22.85	20.65	43.50	54.00	-10.50	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Horizontal		
Test Mode:	TX 802.11ac(VHT40) Mode 5190MHz (U-NII-1)		
Remark:	No report for the emission which more than 15 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		10380.266	32.64	20.53	53.17	68.30	-15.13	peak
2	*	10381.405	20.63	20.53	41.16	54.00	-12.84	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Vertical		
Test Mode:	TX 802.11ac(VHT40) Mode 5190MHz (U-NII-1)		
Remark:	No report for the emission which more than 15 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	*	10480.100	20.38	20.68	41.06	54.00	-12.94	AVG
2		10480.200	32.01	20.68	52.69	68.30	-15.61	peak

Emission Level= Read Level+ Correct Factor

Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Horizontal		
Test Mode:	TX 802.11ac(VHT40) Mode 5230MHz (U-NII-1)		
Remark:	No report for the emission which more than 15 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	*	10459.220	20.83	20.65	41.48	54.00	-12.52	AVG
2		10460.352	32.59	20.65	53.24	68.30	-15.06	peak

Emission Level= Read Level+ Correct Factor

Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Vertical		
Test Mode:	TX 802.11ac(VHT40) Mode 5230MHz (U-NII-1)		
Remark:	No report for the emission which more than 15 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		10460.322	32.96	20.65	53.61	68.30	-14.69	peak
2	*	10461.066	20.58	20.65	41.23	54.00	-12.77	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Horizontal		
Test Mode:	TX 802.11ac(VHT80) Mode 5210MHz (U-NII-1)		
Remark:	No report for the emission which more than 15 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		10420.140	33.09	20.59	53.68	68.30	-14.62 peak
2	*	10420.140	20.81	20.59	41.40	54.00	-12.60 AVG

Emission Level= Read Level+ Correct Factor

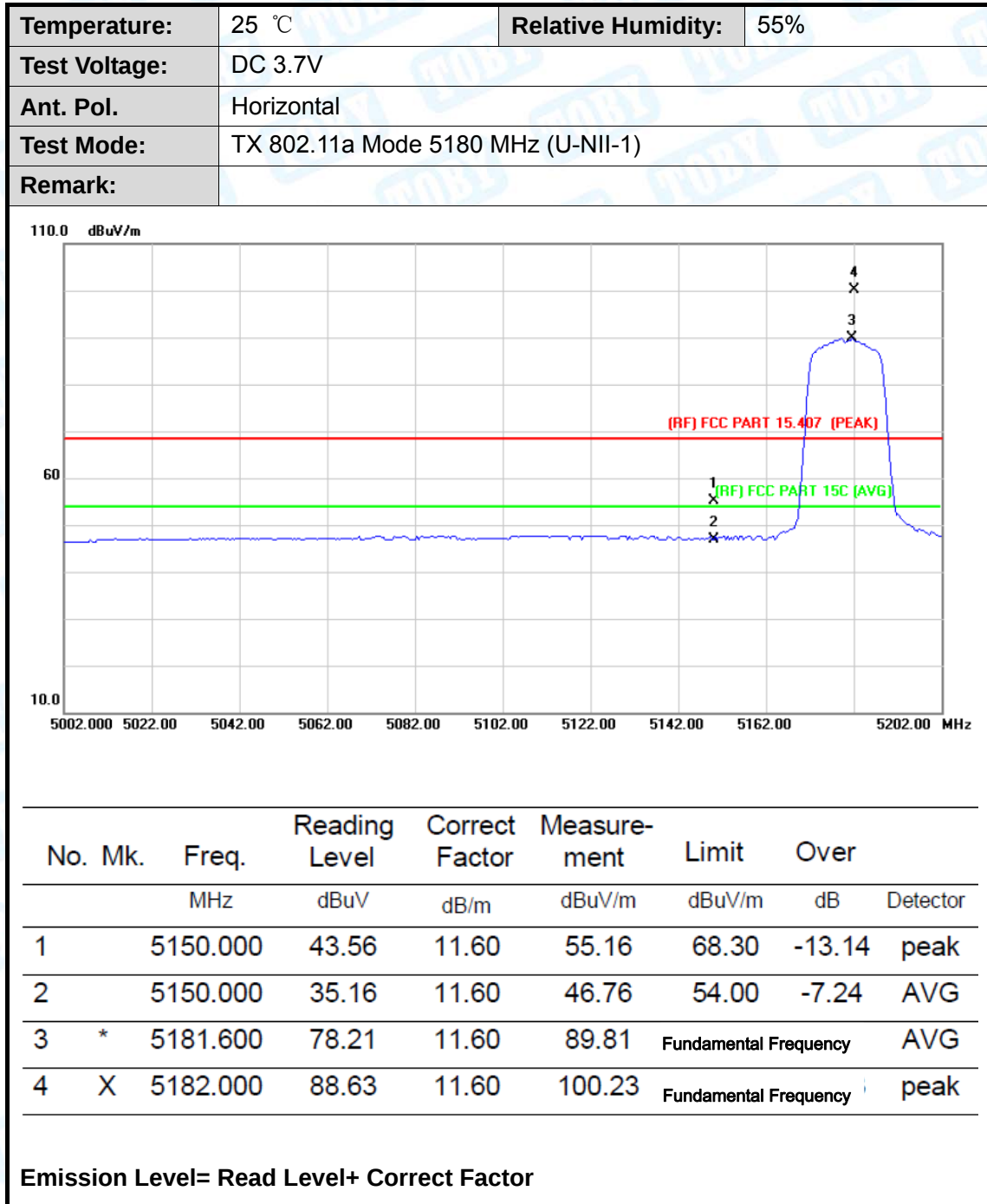
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Vertical		
Test Mode:	TX 802.11ac(VHT80) Mode 5210MHz (U-NII-1)		
Remark:	No report for the emission which more than 15 dB below the prescribed limit.		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	10420.370	21.01	20.59	41.60	54.00	-12.40	AVG
2		10421.222	32.96	20.59	53.55	68.30	-14.75	peak

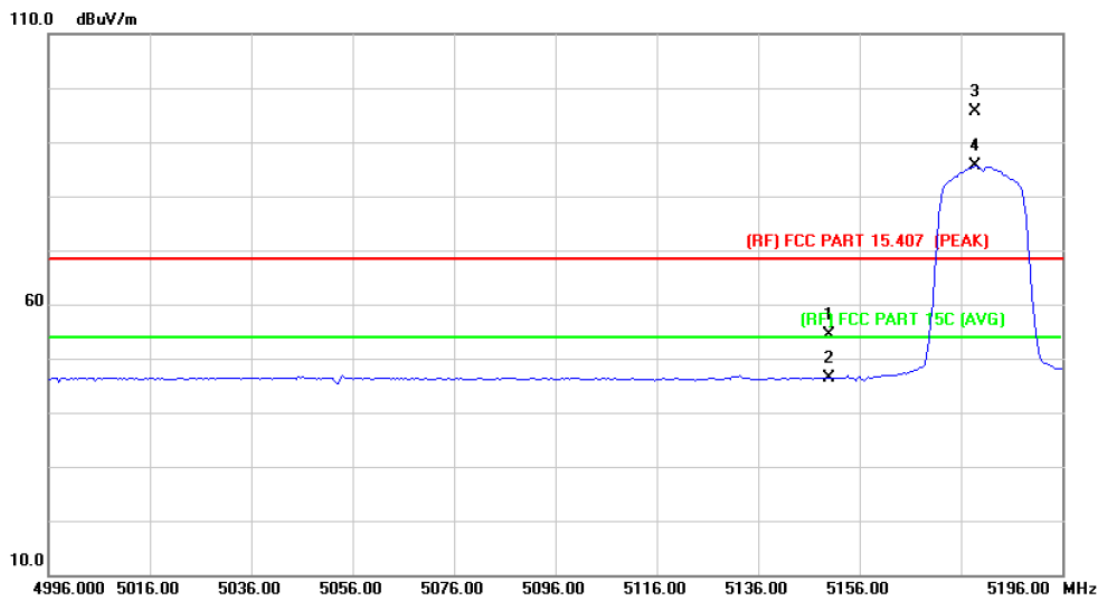
Emission Level= Read Level+ Correct Factor

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

(1) Radiation Test



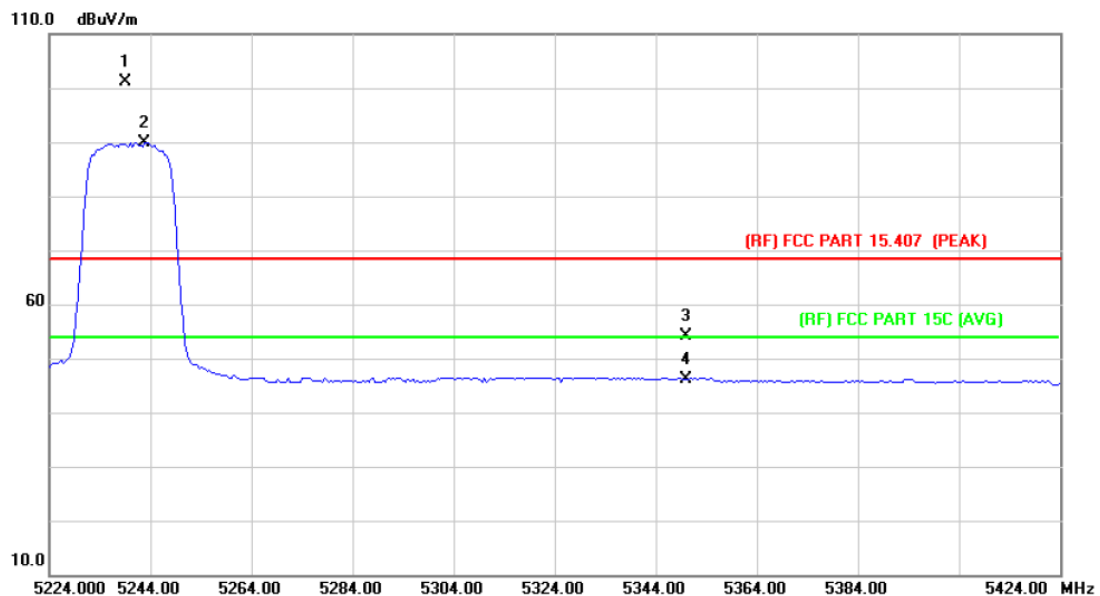
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Vertical		
Test Mode:	TX 802.11a Mode 5180 MHz (U-NII-1)		
Remark:			



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		5150.000	42.68	11.60	54.28	68.30	-14.02	peak
2		5150.000	34.76	11.60	46.36	54.00	-7.64	AVG
3	X	5178.800	84.00	11.60	95.60	Fundamental Frequency		peak
4	*	5178.800	74.14	11.60	85.74	Fundamental Frequency		AVG

Emission Level= Read Level+ Correct Factor

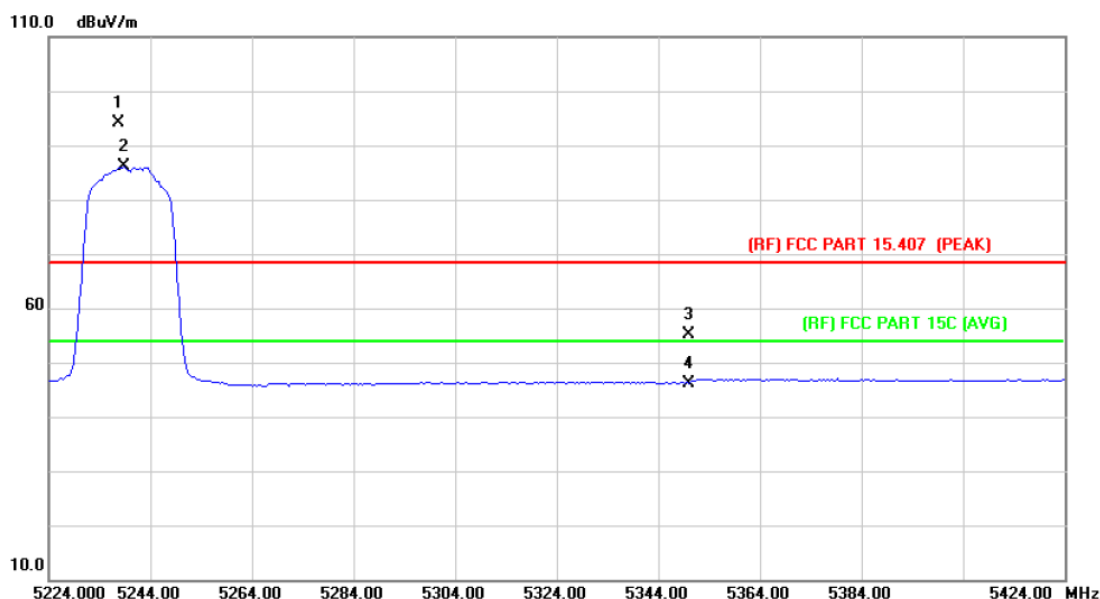
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Horizontal		
Test Mode:	TX 802.11a Mode 5240 MHz (U-NII-1)		
Remark:			



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	X	5239.200	89.49	11.56	101.05	Fundamental Frequency		peak
2	*	5242.800	78.38	11.57	89.95	Fundamental Frequency		AVG
3		5350.000	42.63	11.54	54.17	68.30	-14.13	peak
4		5350.000	34.62	11.54	46.16	54.00	-7.84	AVG

Emission Level= Read Level+ Correct Factor

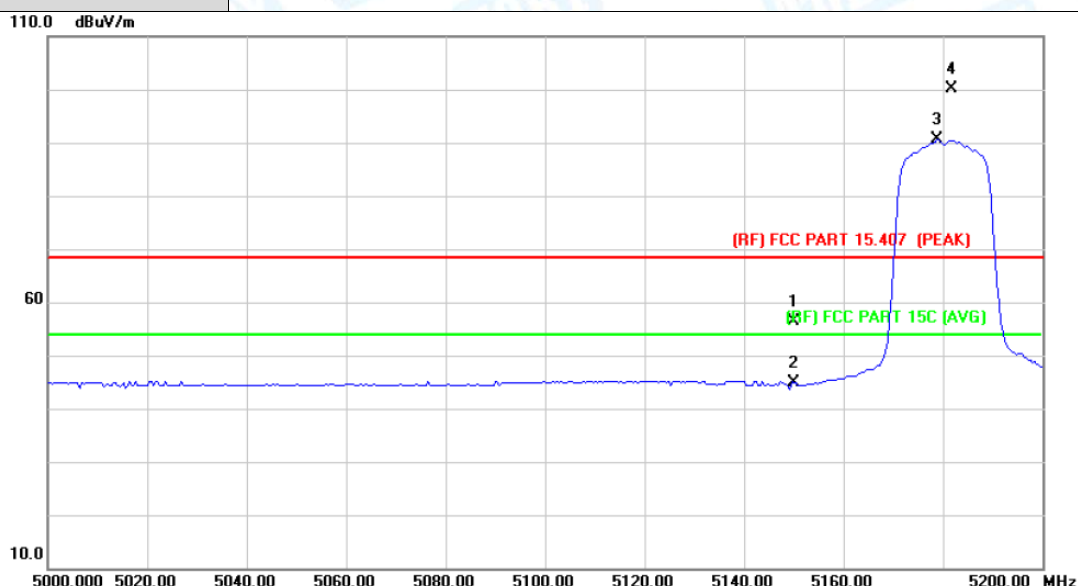
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Vertical		
Test Mode:	TX 802.11a Mode 5240 MHz (U-NII-1)		
Remark:			



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	X	5237.600	82.61	11.57	94.18	Fundamental Frequency		peak
2	*	5238.800	74.58	11.56	86.14	Fundamental Frequency		AVG
3		5350.000	43.50	11.54	55.04	68.30	-13.26	peak
4		5350.000	34.66	11.54	46.20	54.00	-7.80	AVG

Emission Level= Read Level+ Correct Factor

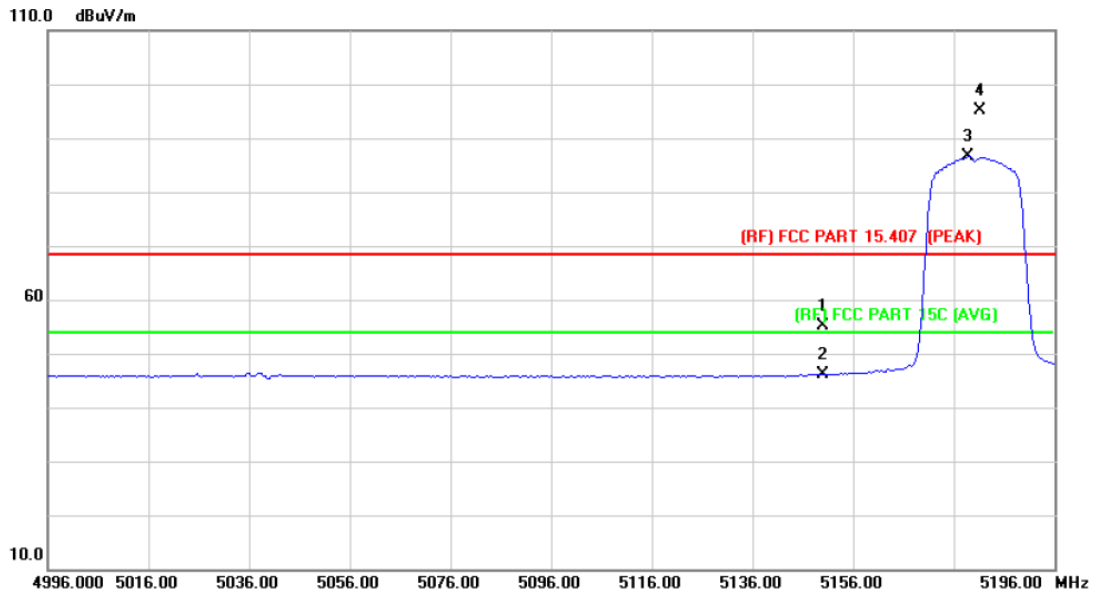
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Horizontal		
Test Mode:	TX 802.11n(HT20) Mode 5180 MHz (U-NII-1)		
Remark:			



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		5150.000	44.74	11.60	56.34	68.30	-11.96	peak
2		5150.000	33.26	11.60	44.86	54.00	-9.14	AVG
3	*	5178.800	78.92	11.60	90.52	Fundamental Frequency		AVG
4	X	5181.600	88.64	11.60	100.24	Fundamental Frequency		peak

Emission Level= Read Level+ Correct Factor

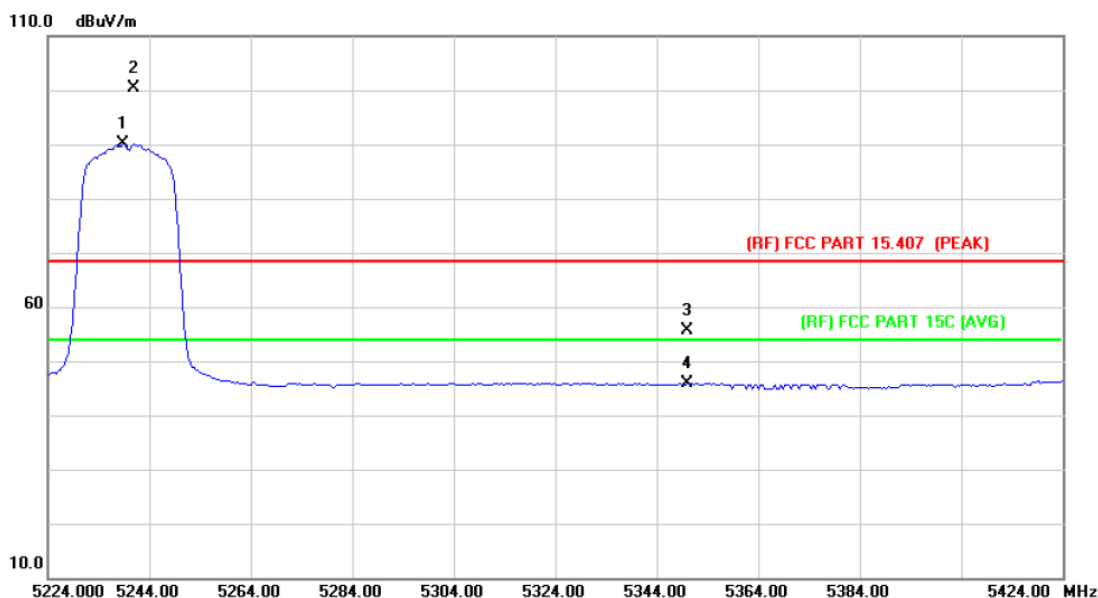
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Vertical		
Test Mode:	TX 802.11n(HT20) Mode 5180 MHz (U-NII-1)		
Remark:			



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		5150.000	43.48	11.60	55.08	68.30	-13.22	peak
2		5150.000	34.54	11.60	46.14	54.00	-7.86	AVG
3	*	5178.800	75.15	11.60	86.75	Fundamental Frequency		AVG
4	X	5181.200	83.64	11.60	95.24	Fundamental Frequency		peak

Emission Level= Read Level+ Correct Factor

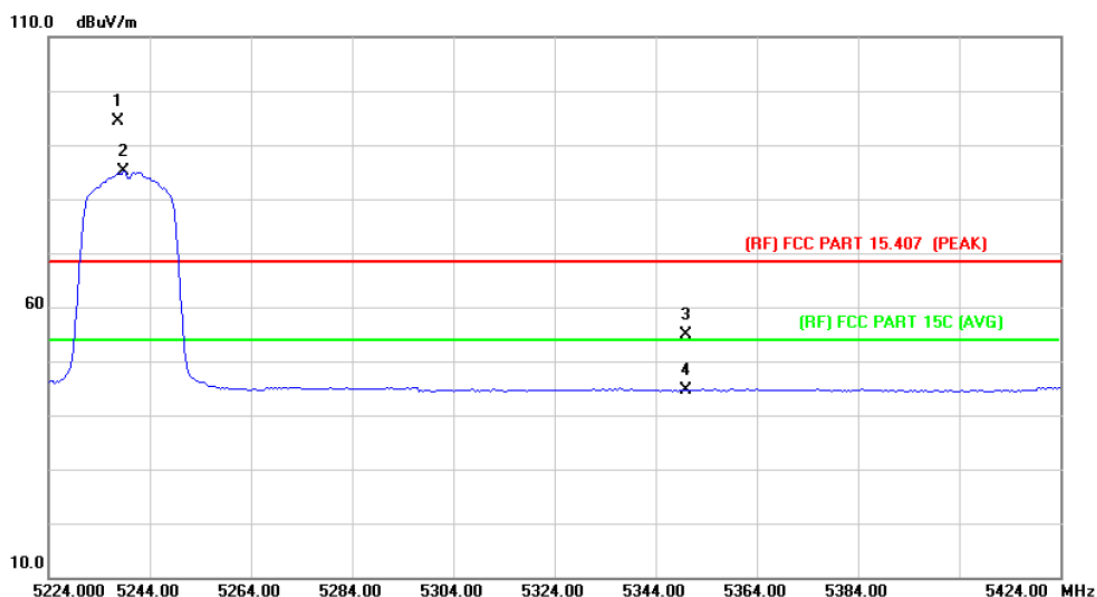
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Horizontal		
Test Mode:	TX 802.11n(HT20) Mode 5240 MHz (U-NII-1)		
Remark:			



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1	*	5238.800	78.58	11.56	90.14	Fundamental Frequency		AVG
2	X	5240.800	88.81	11.57	100.38	Fundamental Frequency		peak
3		5350.000	43.98	11.54	55.52	68.30	-12.78	peak
4		5350.000	34.22	11.54	45.76	54.00	-8.24	AVG

Emission Level= Read Level+ Correct Factor

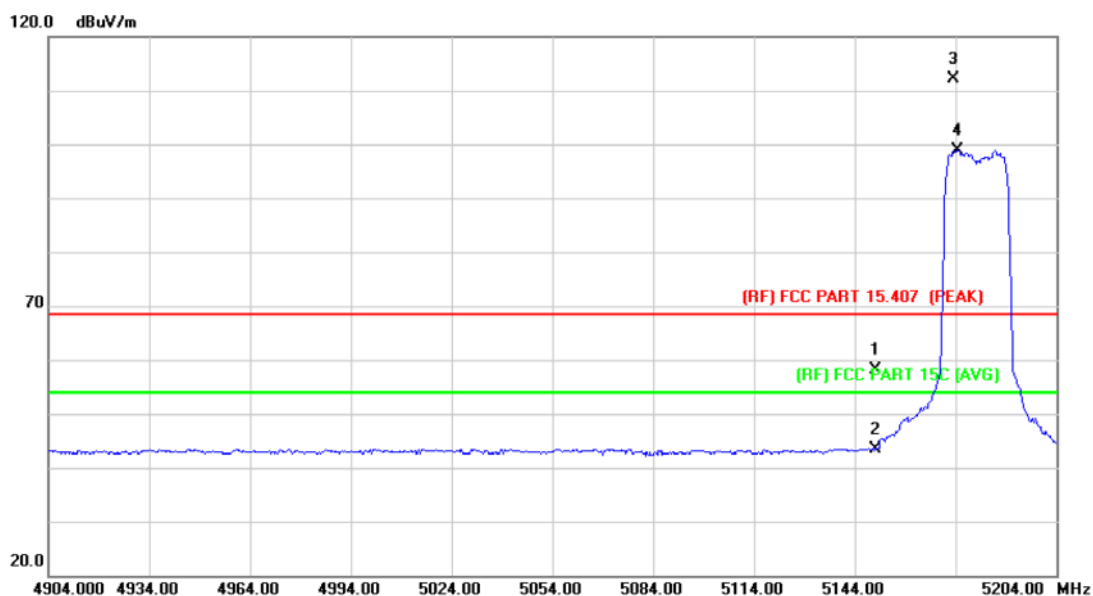
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Vertical		
Test Mode:	TX 802.11n(HT20) Mode 5240 MHz (U-NII-1)		
Remark:			



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	X	5237.600	82.70	11.57	94.27	Fundamental Frequency		peak
2	*	5238.800	73.49	11.56	85.05	Fundamental Frequency		AVG
3		5350.000	43.26	11.54	54.80	68.30	-13.50	peak
4		5350.000	33.12	11.54	44.66	54.00	-9.34	AVG

Emission Level= Read Level+ Correct Factor

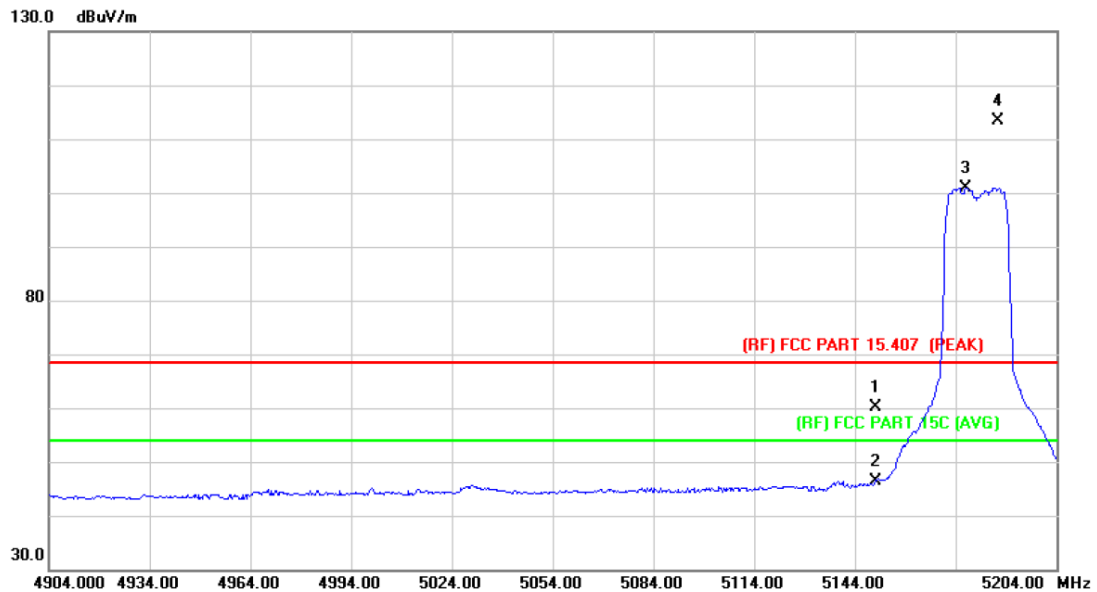
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Horizontal		
Test Mode:	TX 802.11ac(VHT20) Mode 5180 MHz (U-NII-1)		
Remark:			



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		5150.000	44.66	13.54	58.20	68.30	-10.10	peak
2		5150.000	29.94	13.54	43.48	54.00	-10.52	AVG
3	X	5173.280	98.73	13.52	112.25	Fundamental Frequency		peak
4	*	5174.600	85.39	13.52	98.91	Fundamental Frequency		AVG

Emission Level= Read Level+ Correct Factor

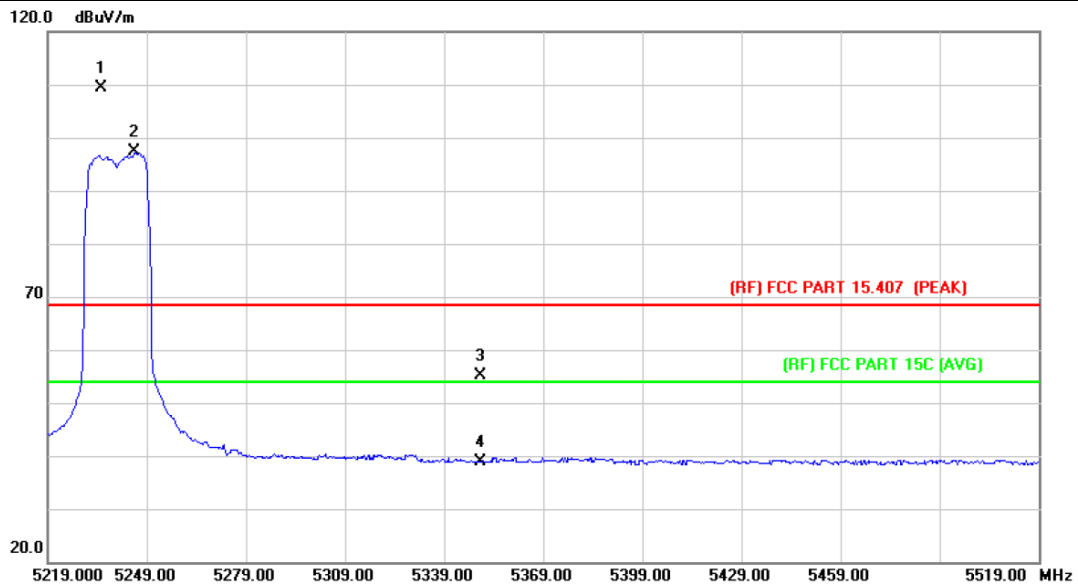
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Vertical		
Test Mode:	TX 802.11ac(VHT20) Mode 5180 MHz (U-NII-1)		
Remark:			



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		5150.000	46.64	13.54	60.18	68.30	-8.12	peak
2		5150.000	32.88	13.54	46.42	54.00	-7.58	AVG
3	*	5177.000	87.40	13.52	100.92	Fundamental Frequency		AVG
4	X	5186.470	99.74	13.52	113.26	Fundamental Frequency		peak

Emission Level= Read Level+ Correct Factor

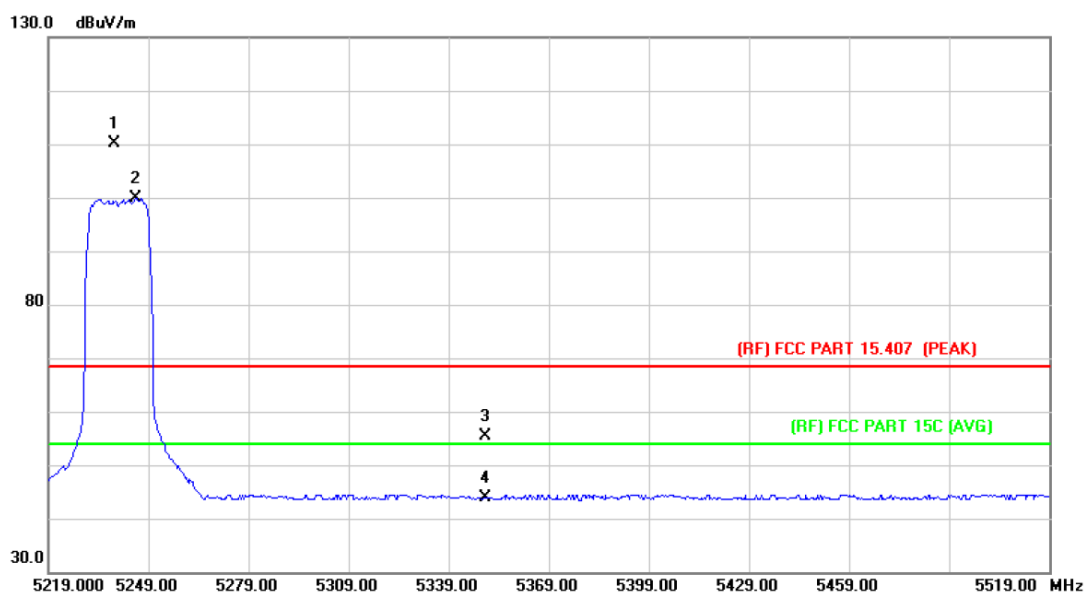
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Horizontal		
Test Mode:	TX 802.11ac(VHT20) Mode 5240 MHz (U-NII-1)		
Remark:			



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB Detector
1	X	5235.330	95.81	13.48	109.29	Fundamental Frequency	peak
2	*	5245.400	83.90	13.47	97.37	Fundamental Frequency	AVG
3		5350.000	41.70	13.40	55.10	68.30	-13.20 peak
4		5350.000	25.41	13.40	38.81	54.00	-15.19 AVG

Emission Level= Read Level+ Correct Factor

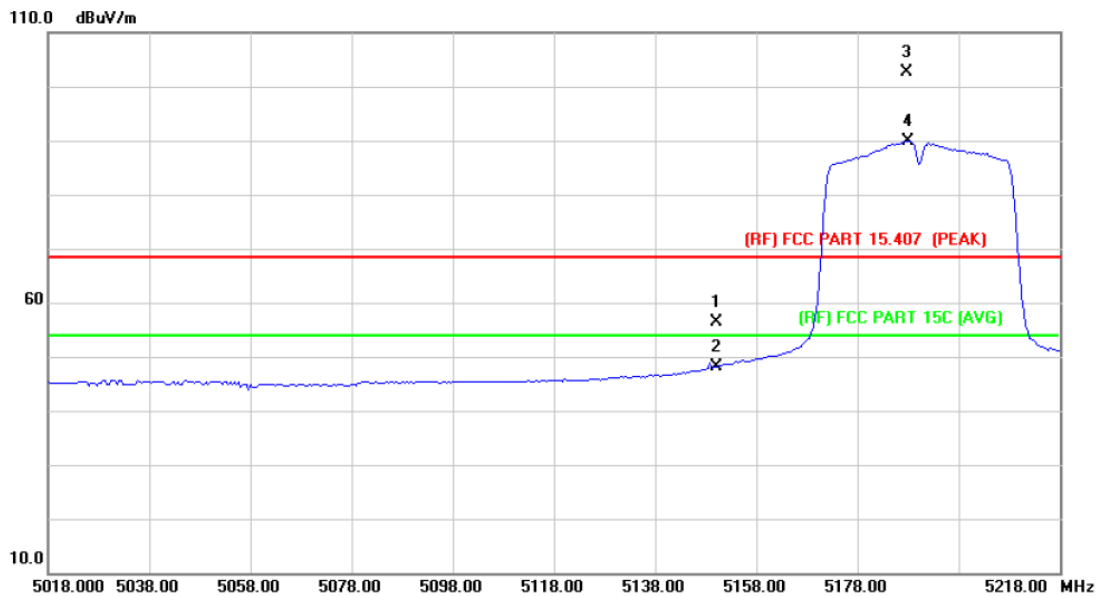
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Vertical		
Test Mode:	TX 802.11ac(VHT20) Mode 5240 MHz (U-NII-1)		
Remark:			



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1	X	5238.930	96.69	13.47	110.16	Fundamental Frequency		peak
2	*	5245.400	86.50	13.47	99.97	Fundamental Frequency		AVG
3		5350.000	41.89	13.40	55.29	68.30	-13.01	peak
4		5350.000	30.56	13.40	43.96	54.00	-10.04	AVG

Emission Level= Read Level+ Correct Factor

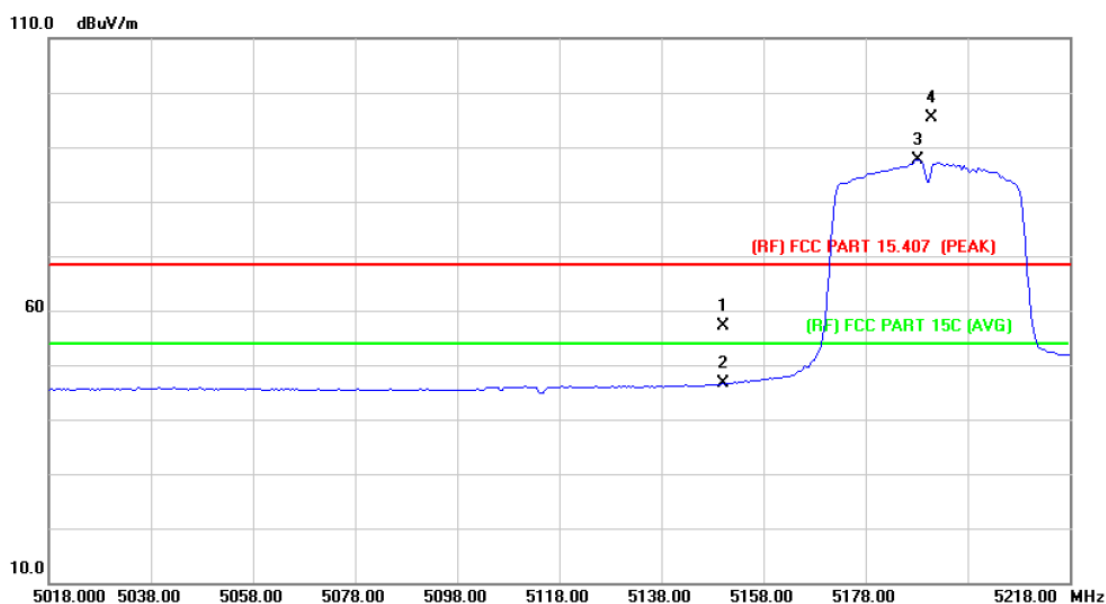
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Horizontal		
Test Mode:	TX 802.11n(HT40) Mode 5190 MHz (U-NII-1)		
Remark:			



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		5150.000	44.67	11.60	56.27	68.30	-12.03	peak
2		5150.000	36.48	11.60	48.08	54.00	-5.92	AVG
3	X	5187.600	90.97	11.59	102.56	Fundamental Frequency		peak
4	*	5188.000	78.31	11.58	89.89	Fundamental Frequency		AVG

Emission Level= Read Level+ Correct Factor

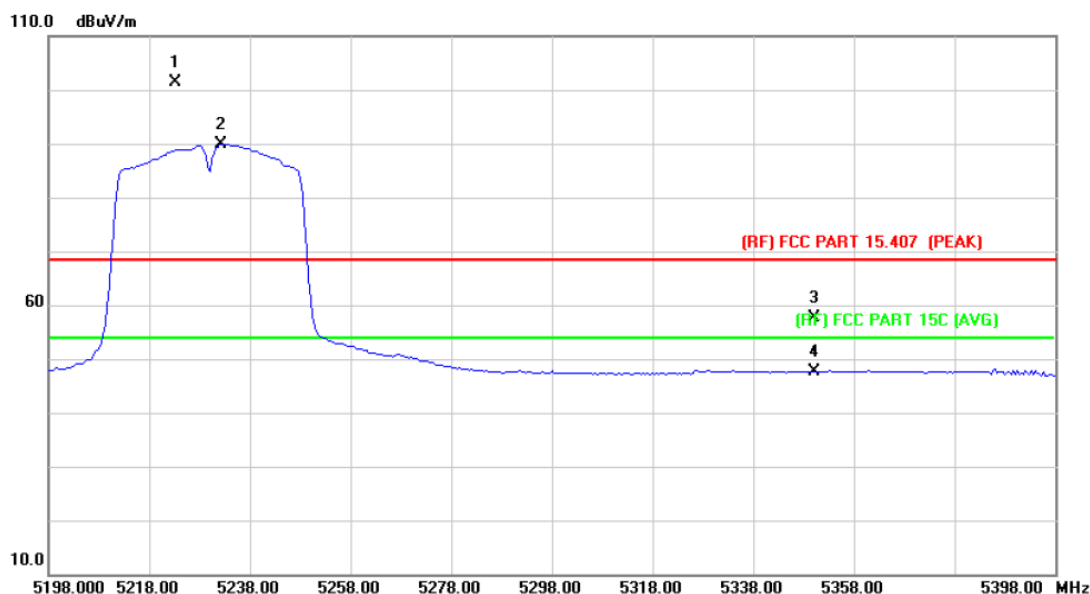
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Vertical		
Test Mode:	TX 802.11n(HT40) Mode 5190 MHz (U-NII-1)		
Remark:			



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		5150.000	45.51	11.60	57.11	68.30	-11.19	peak
2		5150.000	34.96	11.60	46.56	54.00	-7.44	AVG
3	*	5188.400	76.10	11.58	87.68	Fundamental Frequency		AVG
4	X	5190.800	83.82	11.58	95.40	Fundamental Frequency		peak

Emission Level= Read Level+ Correct Factor

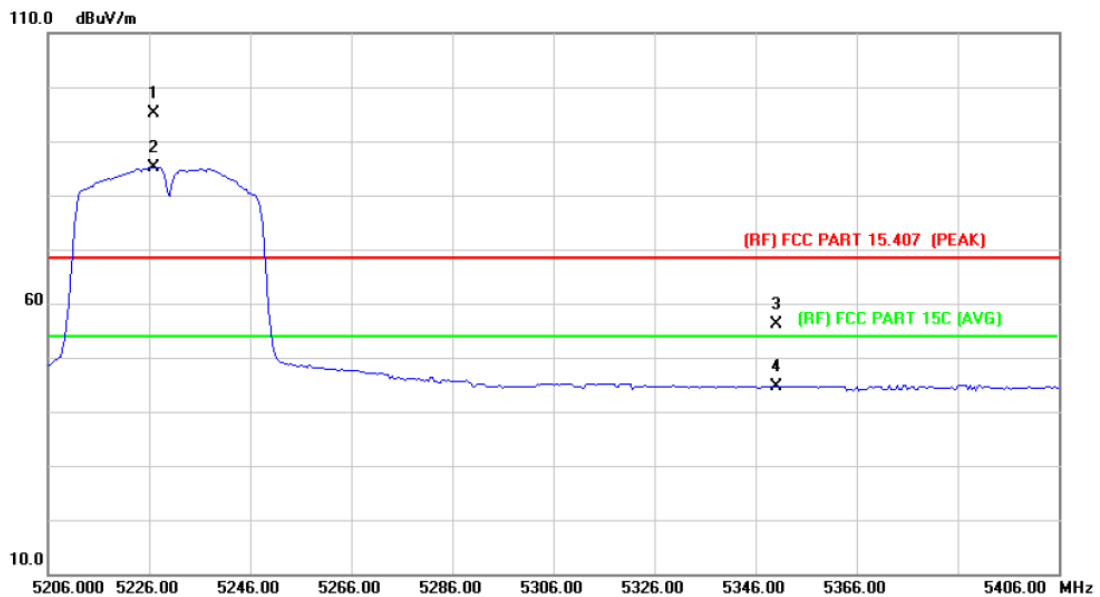
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Horizontal		
Test Mode:	TX 802.11n(HT40) Mode 5230 MHz (U-NII-1)		
Remark:			



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1	X	5223.200	89.72	11.58	101.30	Fundamental Frequency		peak
2	*	5232.400	78.39	11.58	89.97	Fundamental Frequency		AVG
3		5350.000	46.08	11.54	57.62	68.30	-10.68	peak
4		5350.000	36.19	11.54	47.73	54.00	-6.27	AVG

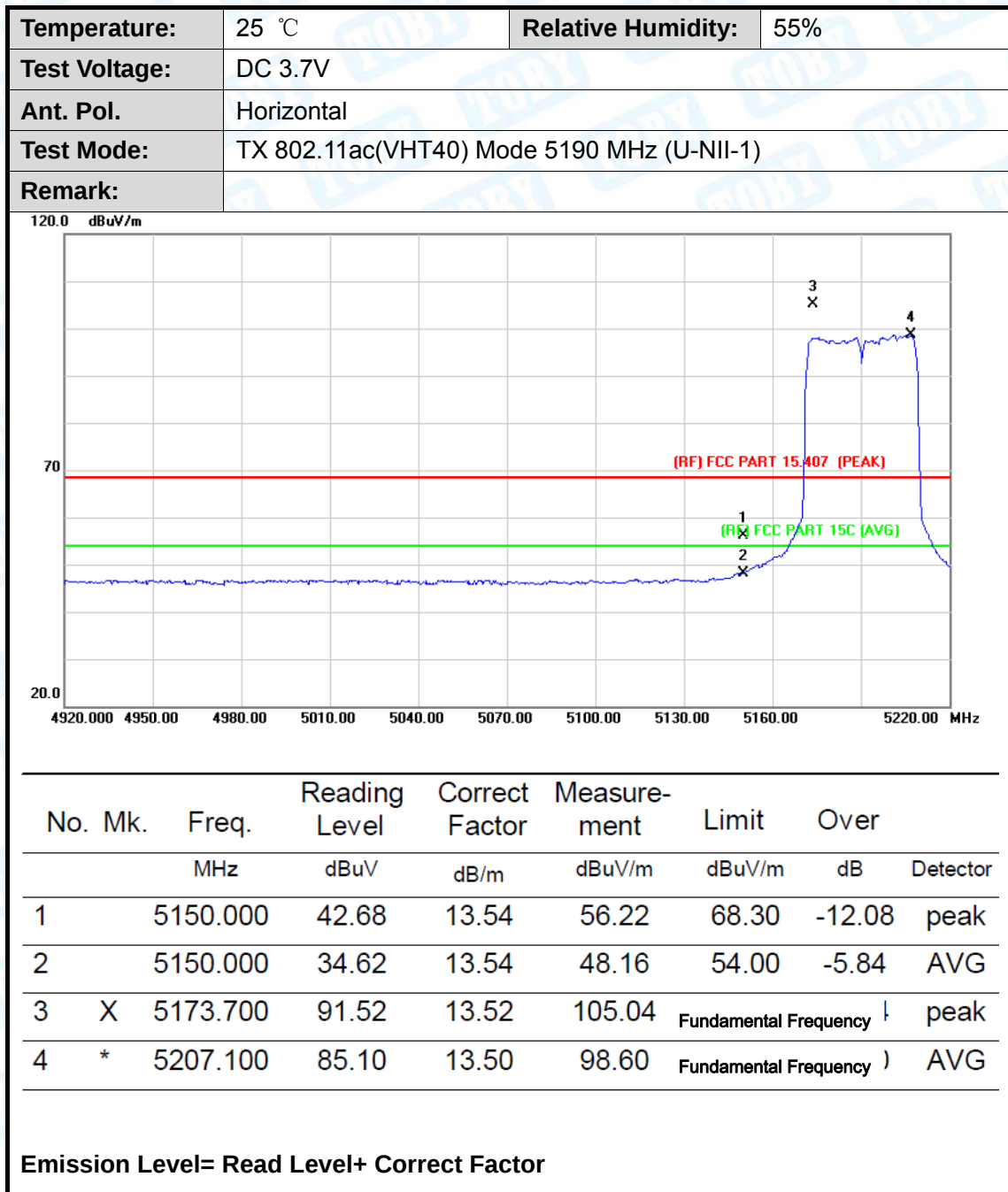
Emission Level= Read Level+ Correct Factor

Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Vertical		
Test Mode:	TX 802.11n(HT40) Mode 5230 MHz (U-NII-1)		
Remark:			

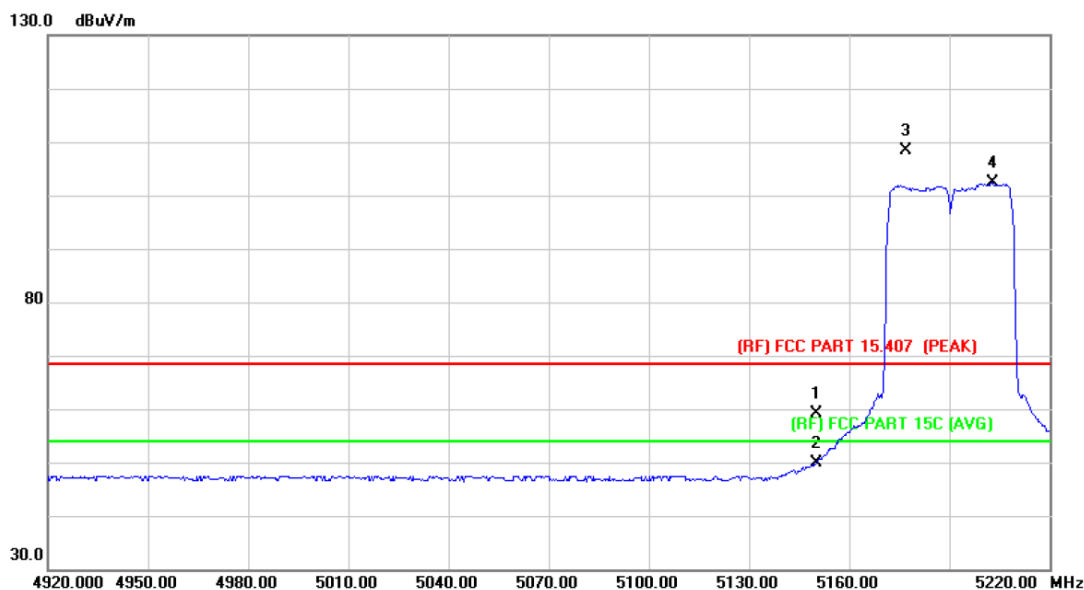


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	X	5226.800	83.50	11.58	95.08	Fundamental Frequency		peak
2	*	5226.800	73.66	11.58	85.24	Fundamental Frequency		AVG
3		5350.000	44.56	11.54	56.10	68.30	-12.20	peak
4		5350.000	33.08	11.54	44.62	54.00	-9.38	AVG

Emission Level= Read Level+ Correct Factor



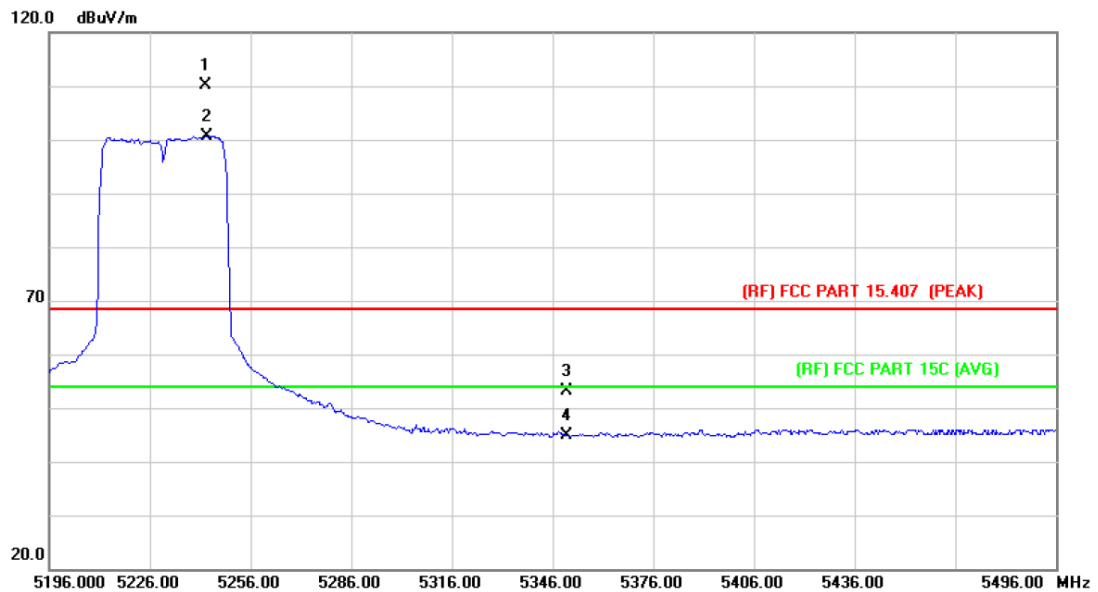
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Vertical		
Test Mode:	TX 802.11ac(VHT40) Mode 5190 MHz (U-NII-1)		
Remark:			



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB Detector
1		5150.000	45.60	13.54	59.14	68.30	-9.16 peak
2		5150.000	36.26	13.54	49.80	54.00	-4.20 AVG
3	X	5176.990	94.78	13.52	108.30	Fundamental Frequency peak	
4	*	5202.900	88.90	13.51	102.41	Fundamental Frequency AVG	

Emission Level= Read Level+ Correct Factor

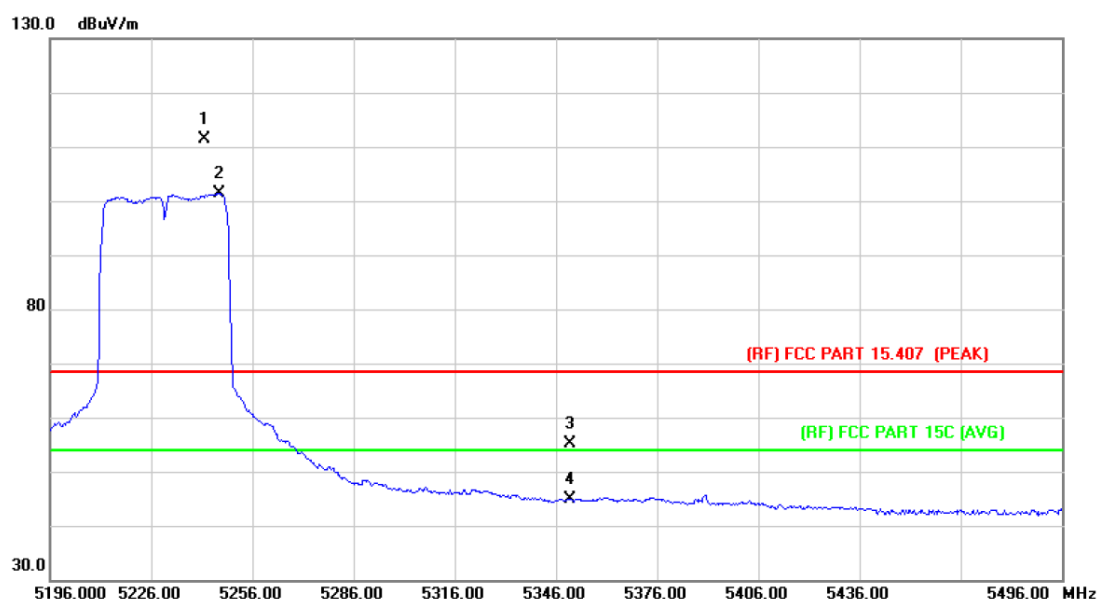
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Horizontal		
Test Mode:	TX 802.11ac(VHT40) Mode 5230 MHz (U-NII-1)		
Remark:			



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1	X	5242.600	96.73	13.48	110.21	Fundamental Frequency		peak
2	*	5242.800	87.16	13.48	100.64	Fundamental Frequency		AVG
3		5350.000	39.72	13.40	53.12	68.30	-15.18	peak
4		5350.000	31.51	13.40	44.91	54.00	-9.09	AVG

Emission Level= Read Level+ Correct Factor

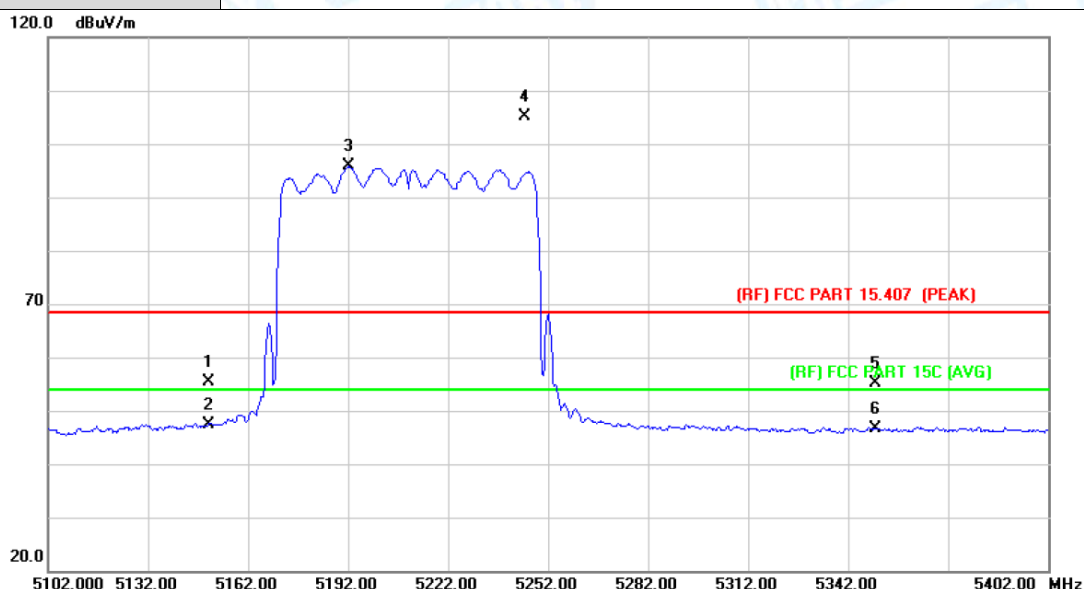
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Vertical		
Test Mode:	TX 802.11ac(VHT40) Mode 5230 MHz (U-NII-1)		
Remark:			



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1	X	5241.700	97.87	13.48	111.35	Fundamental Frequency	5	peak
2	*	5246.100	87.86	13.47	101.33	Fundamental Frequency	3	AVG
3		5350.000	41.76	13.40	55.16	68.30	-13.14	peak
4		5350.000	31.41	13.40	44.81	54.00	-9.19	AVG

Emission Level= Read Level+ Correct Factor

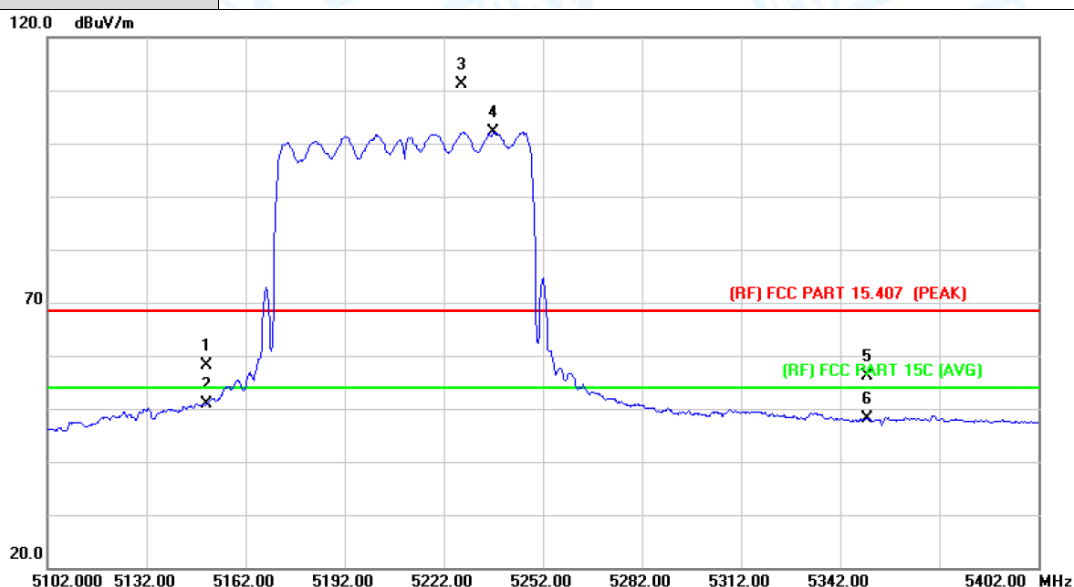
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Horizontal		
Test Mode:	TX 802.11ac(VHT80) Mode 5210 MHz (U-NII-1)		
Remark:			



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		5150.000	41.73	13.54	55.27	68.30	-13.03	peak
2		5150.000	33.74	13.54	47.28	54.00	-6.72	AVG
3	*	5192.000	82.25	13.51	95.76	Fundamental Frequency		AVG
4	X	5245.110	91.59	13.47	105.06	Fundamental Frequency		peak
5		5350.000	41.68	13.40	55.08	68.30	-13.22	peak
6		5350.000	33.30	13.40	46.70	54.00	-7.30	AVG

Emission Level= Read Level+ Correct Factor

Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Vertical		
Test Mode:	TX 802.11ac(VHT80) Mode 5210 MHz (U-NII-1)		
Remark:			

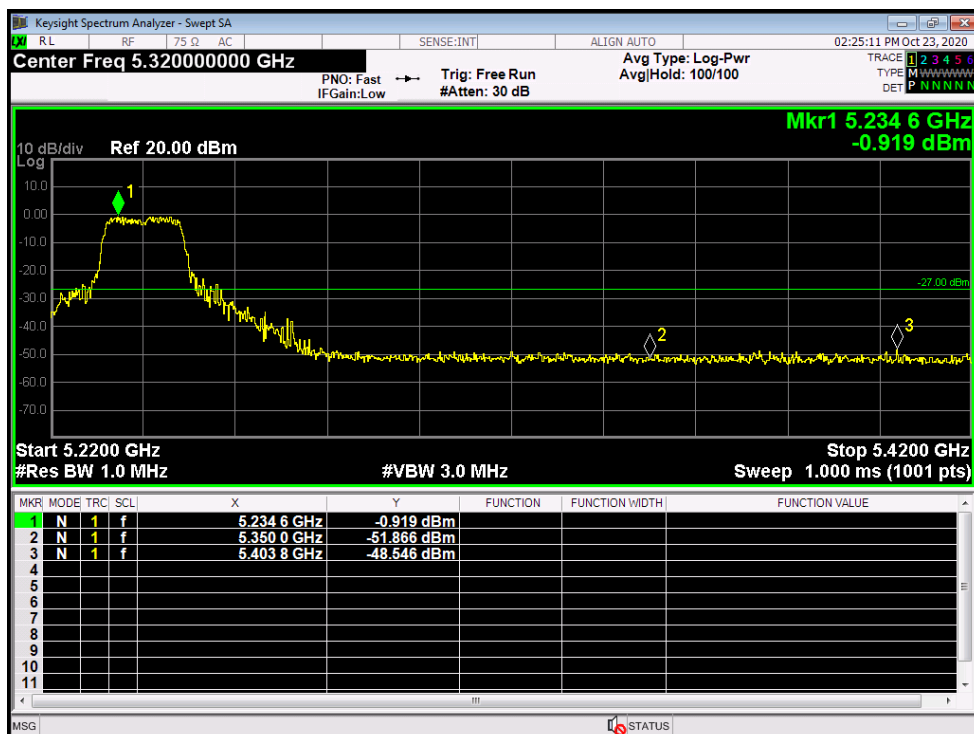
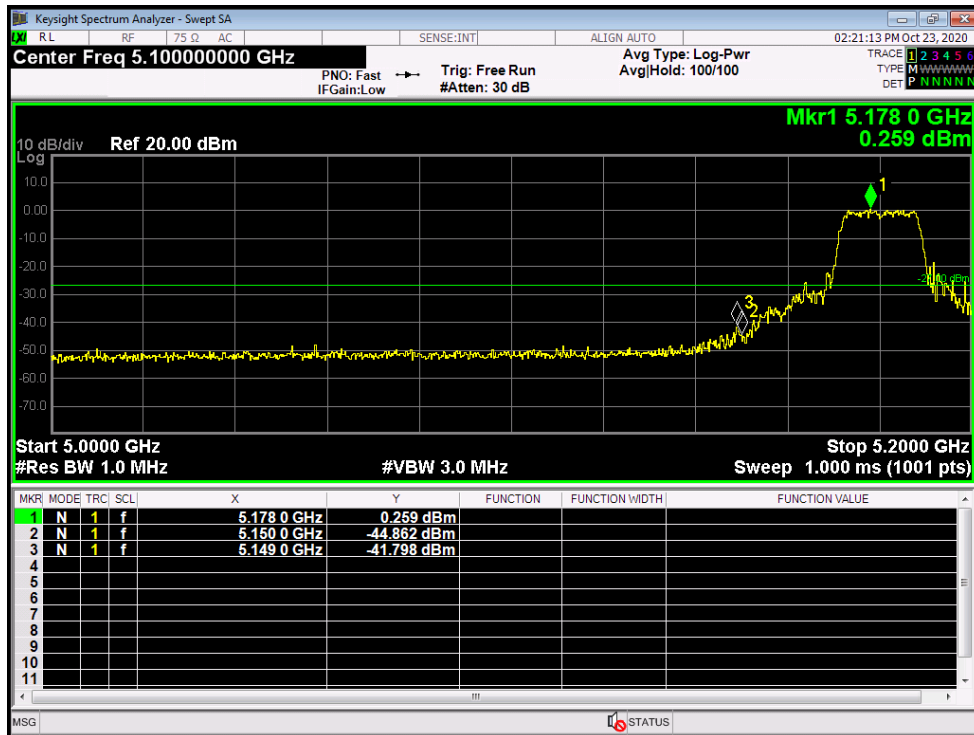


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		5150.000	44.70	13.54	58.24	68.30	-10.06	peak
2		5150.000	37.34	13.54	50.88	54.00	-3.12	AVG
3	X	5227.420	97.74	13.49	111.23	Fundamental Frequency		peak
4	*	5237.000	88.69	13.48	102.17	Fundamental Frequency		AVG
5		5350.000	42.79	13.40	56.19	68.30	-12.11	peak
6		5350.000	34.77	13.40	48.17	54.00	-5.83	AVG

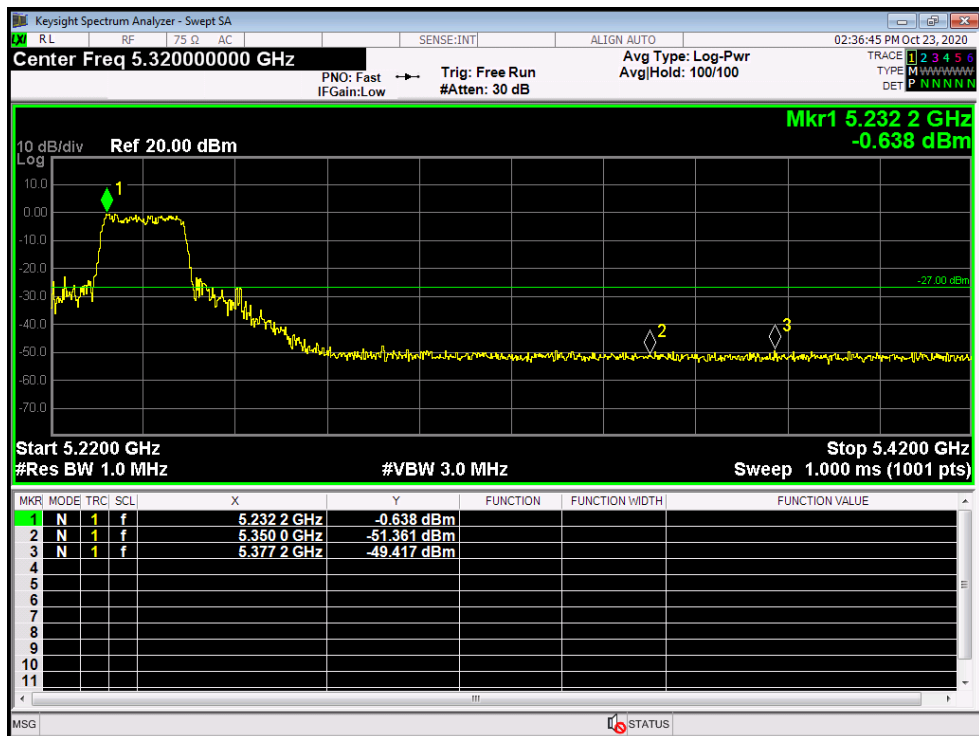
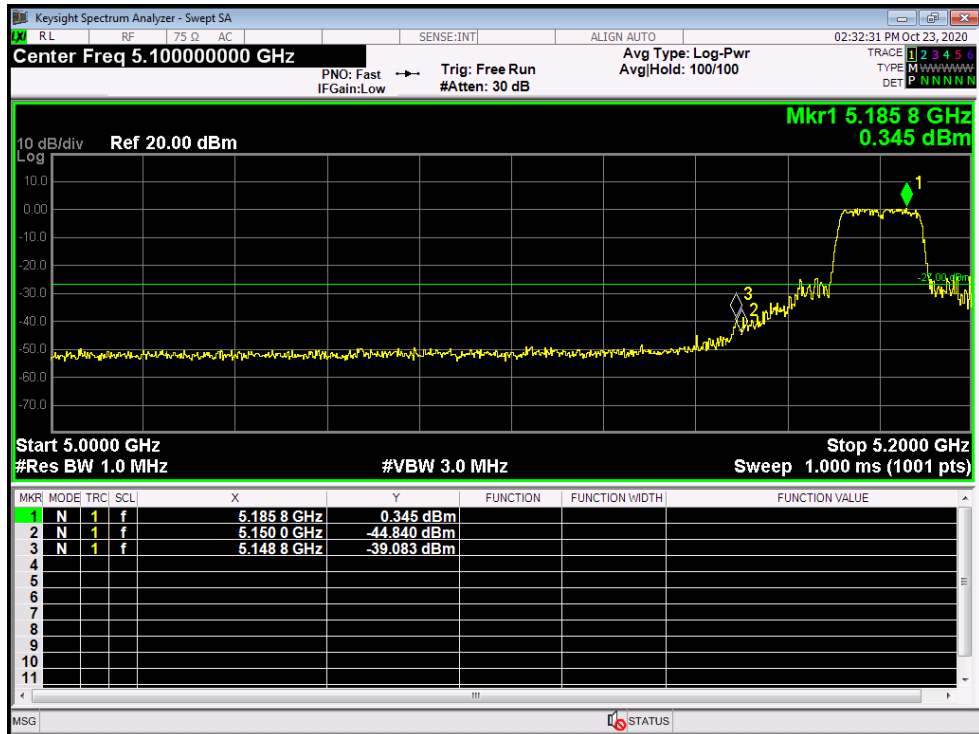
Emission Level= Read Level+ Correct Factor

(1) Conducted Test

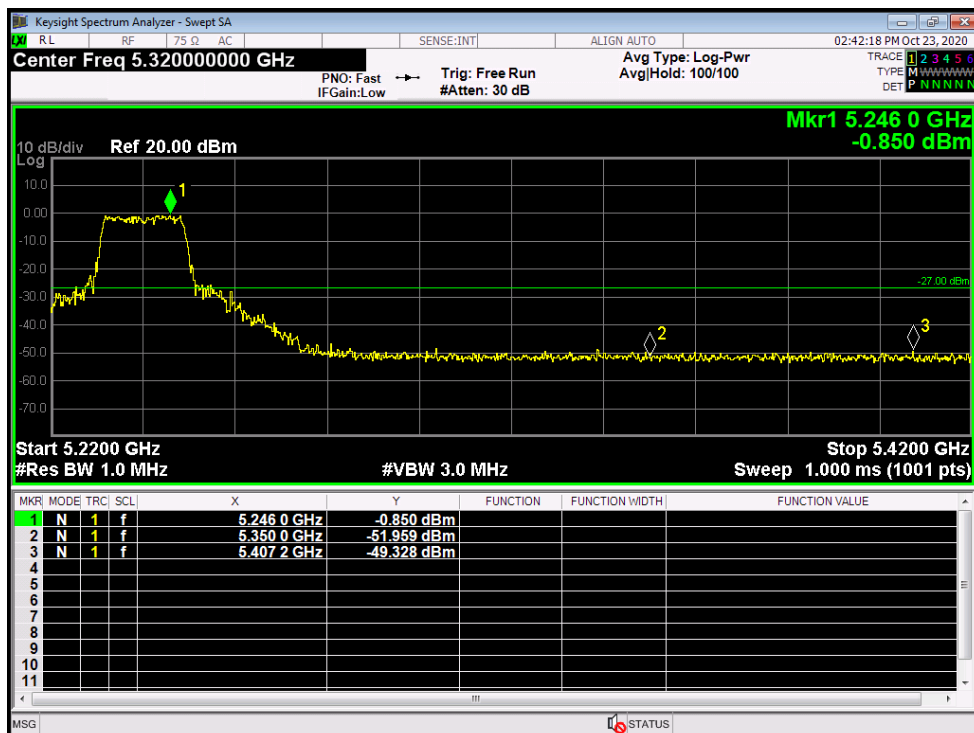
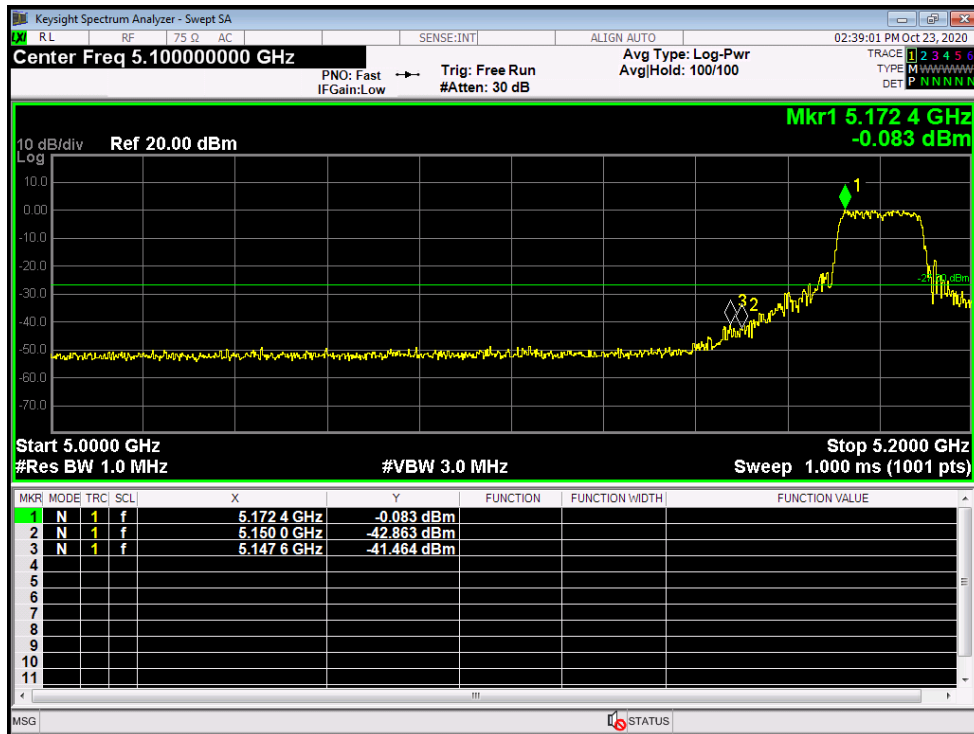
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Test Mode:	TX 802.11a mode(U-NII-1) / 5180MHz&5240MHz		
Remark:	The EUT is programmed in continuously transmitting mode		



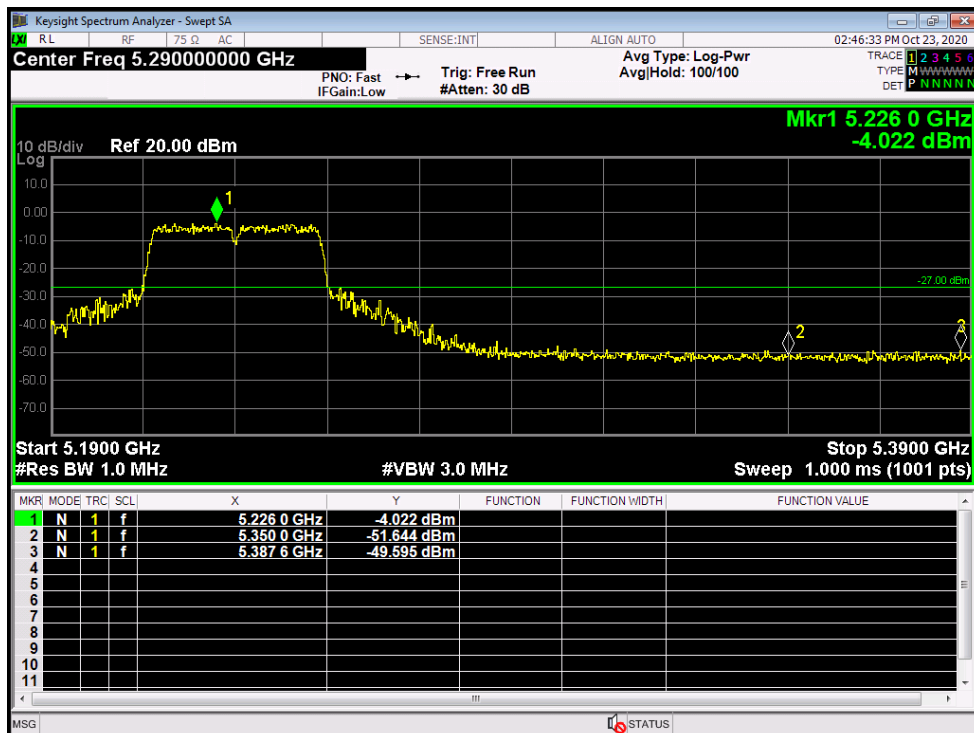
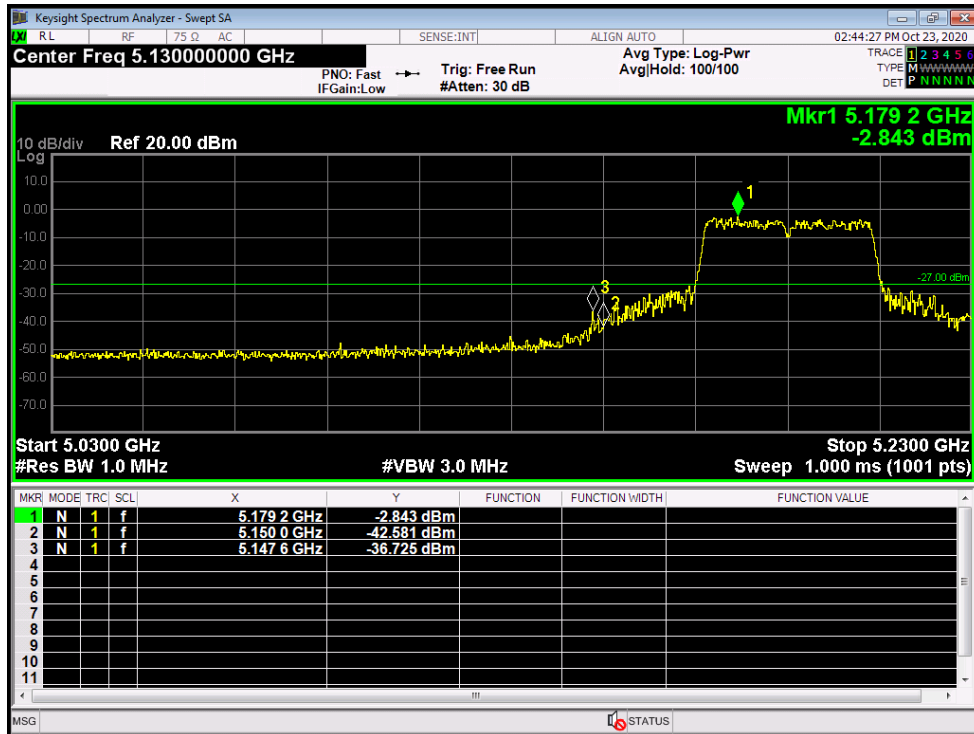
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Test Mode:	TX 802.11n(HT20) mode(U-NII-1) / 5180MHz&5240MHz		
Remark:	The EUT is programmed in continuously transmitting mode		



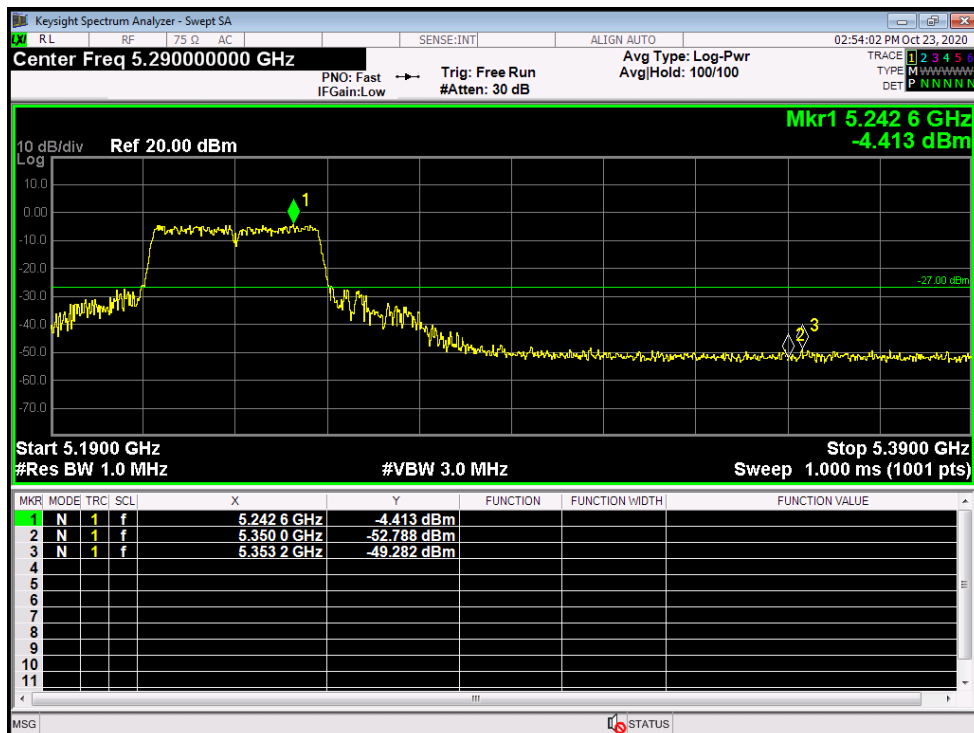
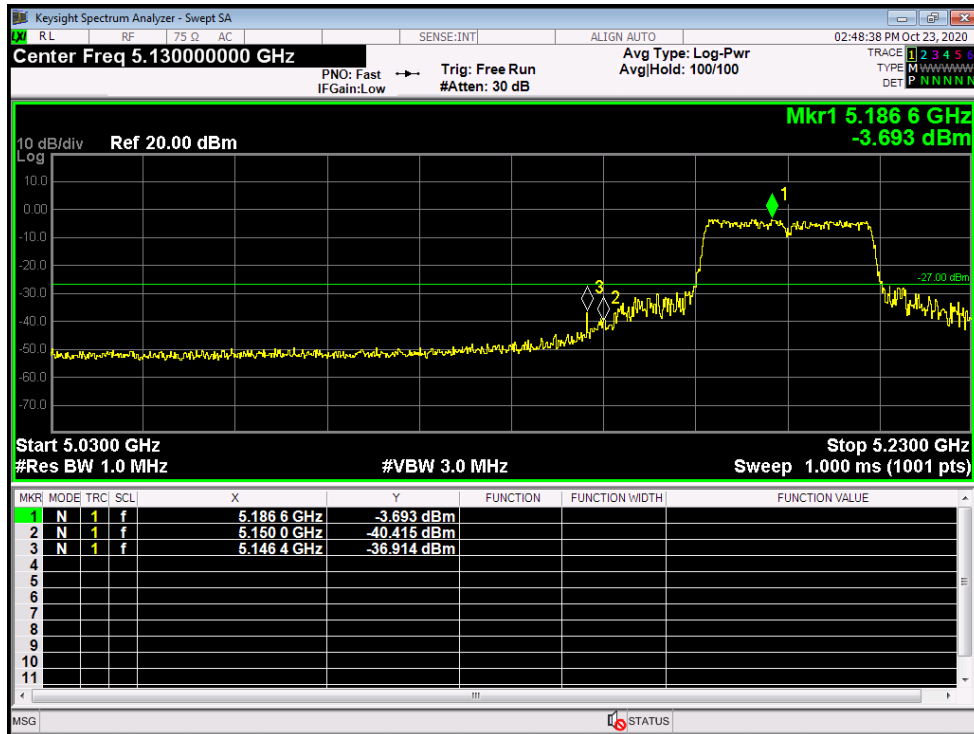
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Test Mode:	TX 802.11ac(VHT20) mode(U-NII-1) / 5180MHz&5240MHz		
Remark:	The EUT is programmed in continuously transmitting mode		



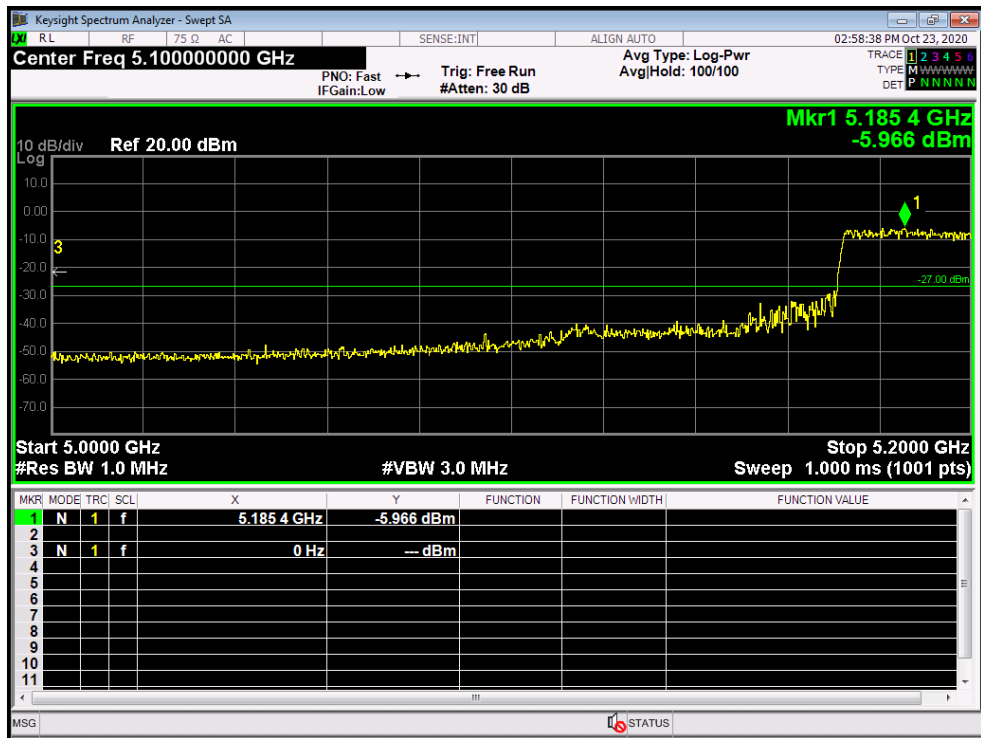
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Test Mode:	TX 802.11n(HT40) mode(U-NII-1) / 5190MHz&5230MHz		
Remark:	The EUT is programmed in continuously transmitting mode		



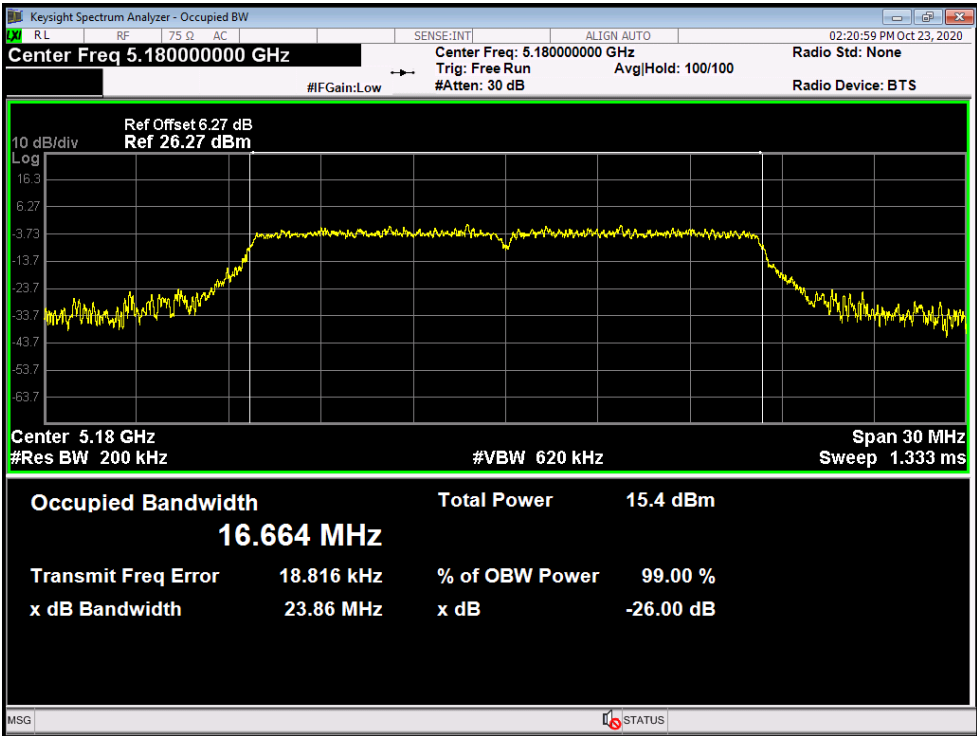
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Test Mode:	TX 802.11ac(VHT40) mode(U-NII-1) / 5190MHz&5230MHz		
Remark:	The EUT is programmed in continuously transmitting mode		



Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Test Mode:	TX 802.11ac(VHT80) mode(U-NII-1) / 5210MHz		
Remark:	The EUT is programmed in continuously transmitting mode		

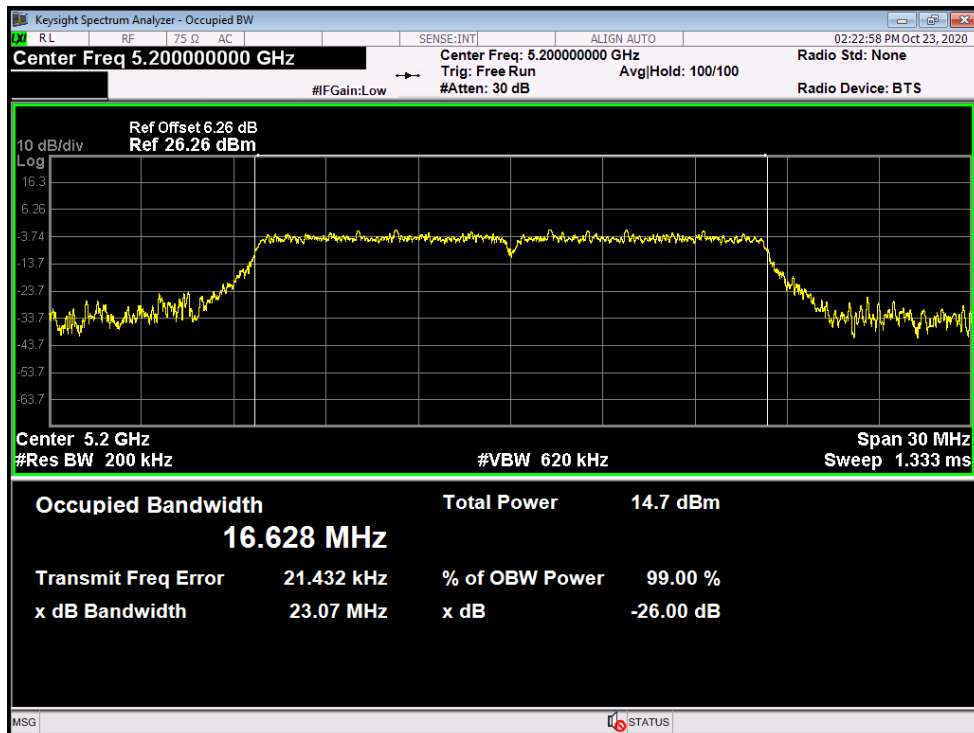


Attachment D--Bandwidth Test Data

Temperature:	25 °C	Relative Humidity:	55%																
Test Voltage:	DC 3.7V																		
Test Mode:	TX 802.11a Mode (U-NII-1)																		
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)																
36	5180	23.86	16.664																
40	5200	23.07	16.628																
48	5240	25.89	16.662																
802.11a Mode																			
5180 MHz																			
 <table border="1"> <thead> <tr> <th colspan="2">Occupied Bandwidth</th> <th>Total Power</th> <th>15.4 dBm</th> </tr> </thead> <tbody> <tr> <td colspan="2">16.664 MHz</td> <td></td> <td></td> </tr> <tr> <td>Transmit Freq Error</td> <td>18.816 kHz</td> <td>% of OBW Power</td> <td>99.00 %</td> </tr> <tr> <td>x dB Bandwidth</td> <td>23.86 MHz</td> <td>x dB</td> <td>-26.00 dB</td> </tr> </tbody> </table>				Occupied Bandwidth		Total Power	15.4 dBm	16.664 MHz				Transmit Freq Error	18.816 kHz	% of OBW Power	99.00 %	x dB Bandwidth	23.86 MHz	x dB	-26.00 dB
Occupied Bandwidth		Total Power	15.4 dBm																
16.664 MHz																			
Transmit Freq Error	18.816 kHz	% of OBW Power	99.00 %																
x dB Bandwidth	23.86 MHz	x dB	-26.00 dB																

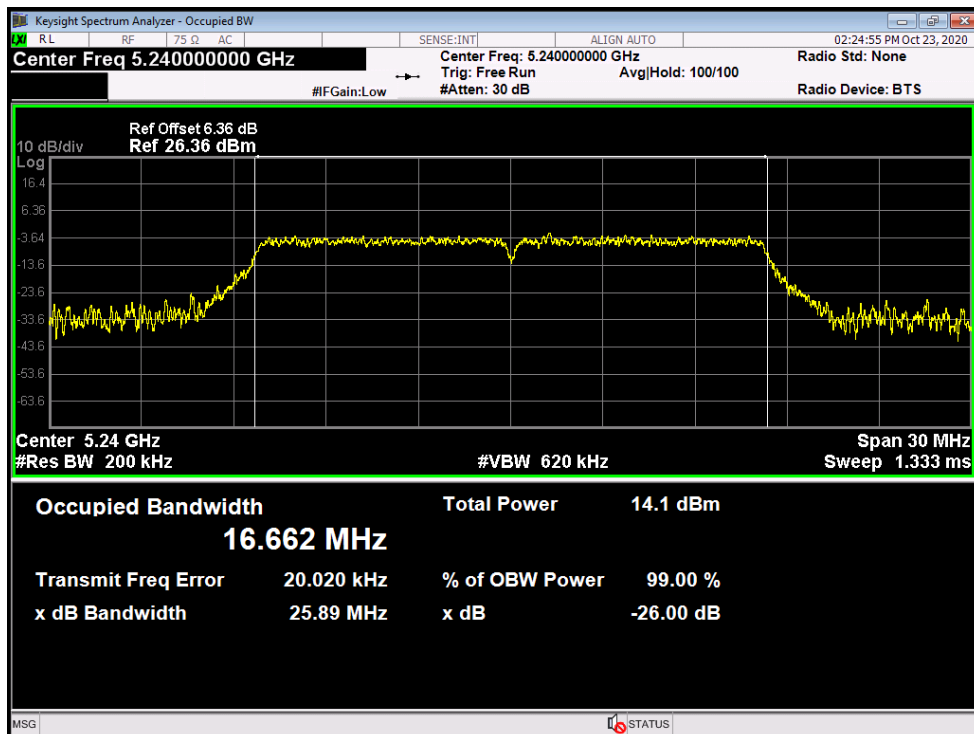
802.11a Mode

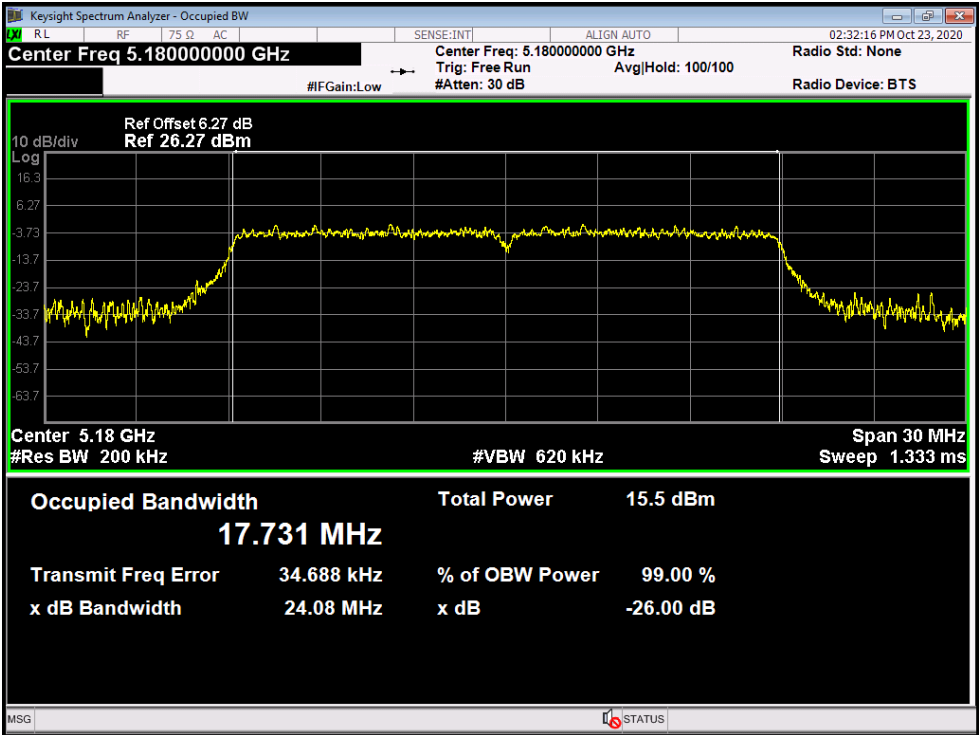
5200 MHz



802.11a Mode

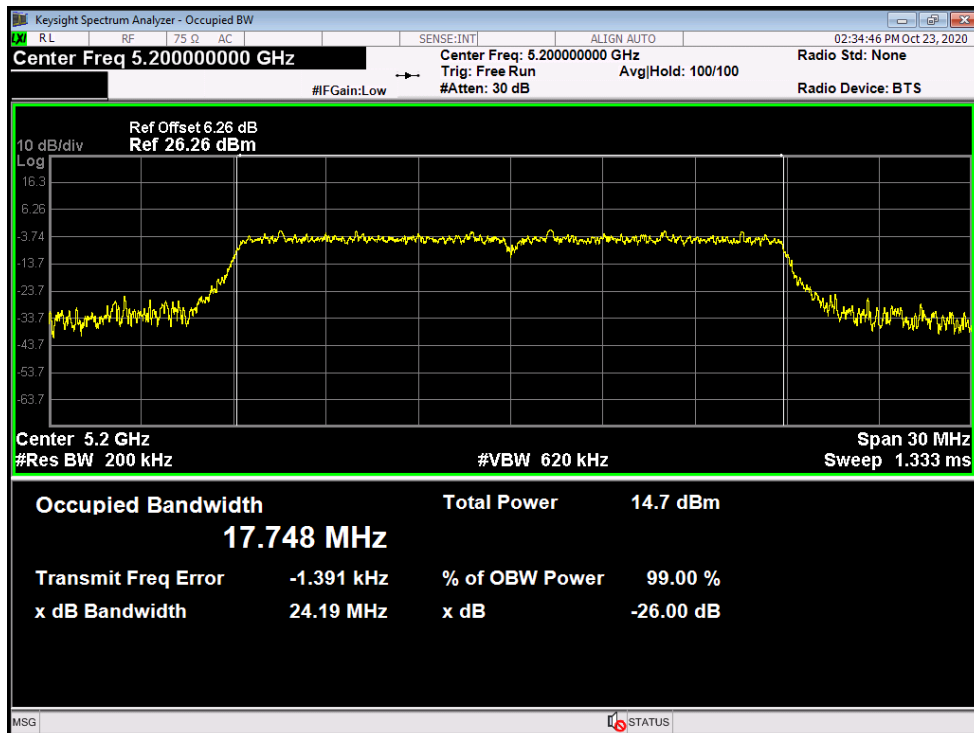
5240 MHz



Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Test Mode:	TX 802.11n(HT20) Mode (U-NII-1)		
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
36	5180	24.08	17.731
40	5200	24.19	17.748
48	5240	27.25	17.781
802.11n(HT20) Mode			
5180 MHz			
 The screenshot shows a Keysight Spectrum Analyzer interface. The main display is a log-scale plot of power (dBm) versus frequency (MHz). The center frequency is 5.18 GHz. The signal is a noisy burst centered around 5.18 GHz. The occupied bandwidth is 17.731 MHz. The total power is 15.5 dBm. The transmit frequency error is 34.688 kHz. The x dB bandwidth is 24.08 MHz. The % of OBW power is 99.00%. The x dB is -26.00 dB. The radio device is BTS.			

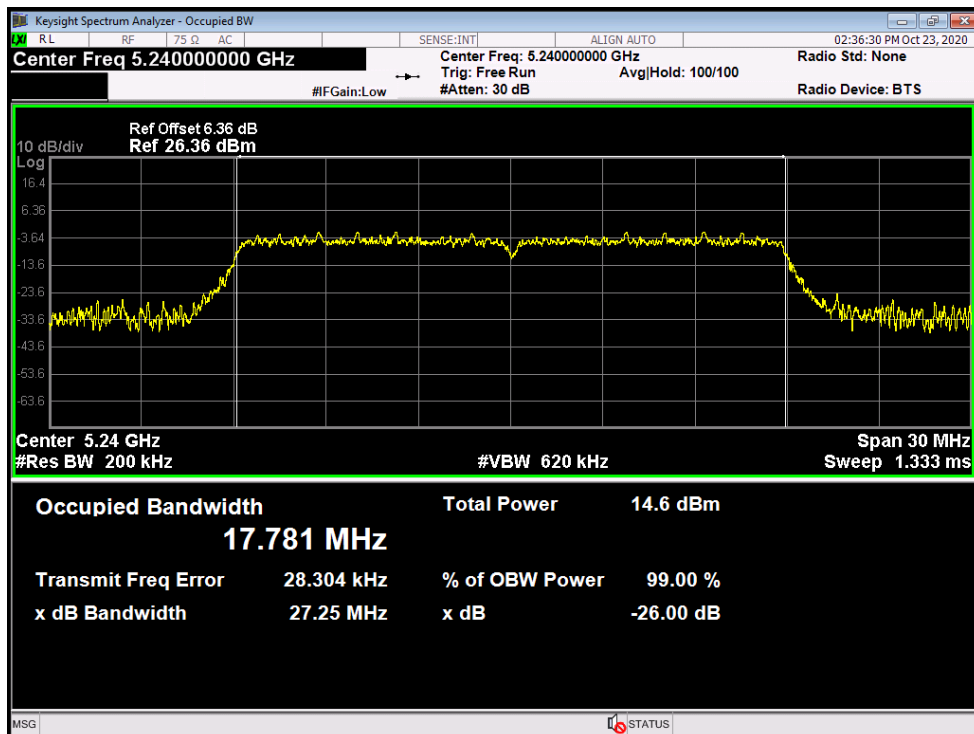
802.11n(HT20) Mode

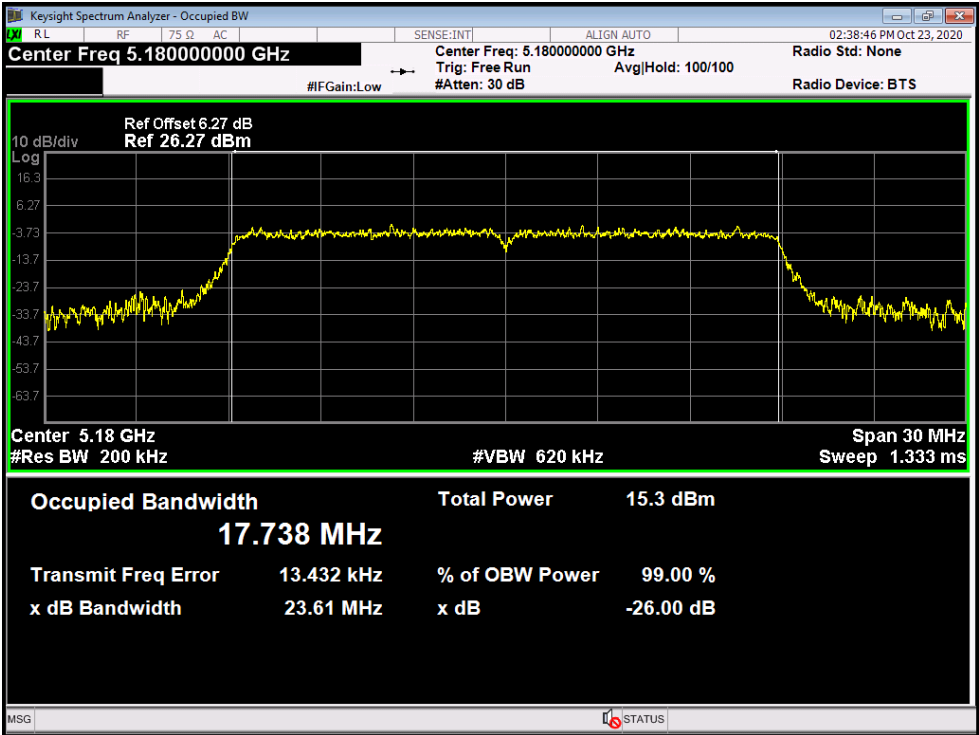
5200 MHz



802.11n(HT20) Mode

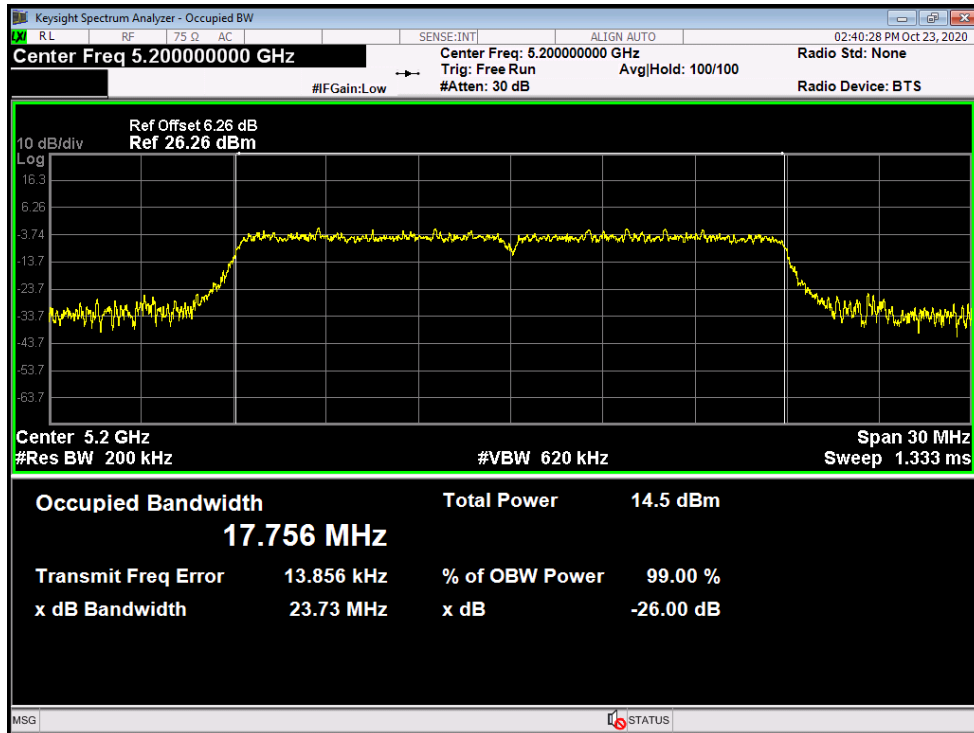
5240 MHz



Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Test Mode:	TX 802.11ac(VHT20) Mode (U-NII-1)		
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
36	5180	23.61	17.738
40	5200	23.73	17.756
48	5240	24.29	17.744
802.11ac(VHT20) Mode			
5180 MHz			
 The screenshot shows a Keysight Spectrum Analyzer interface. The main display is a log-scale plot of power vs. frequency. The center frequency is 5.180000000 GHz. The signal is a noisy burst centered around 5.18 GHz. The occupied bandwidth is 17.738 MHz. The total power is 15.3 dBm. The transmit frequency error is 13.432 kHz. The percentage of occupied bandwidth power is 99.00%. The x dB bandwidth is 23.61 MHz. The x dB power level is -26.00 dB. The reference offset is 6.27 dB. The reference level is 26.27 dBm. The resolution bandwidth is 200 kHz. The video bandwidth is 620 kHz. The span is 30 MHz. The sweep time is 1.333 ms. The radio device is BTS. The radio standard is None. The trigger is Free Run. The attenuation is 30 dB. The sense is INT. The alignment is AUTO. The time is 02:38:46 PM Oct 23, 2020.			

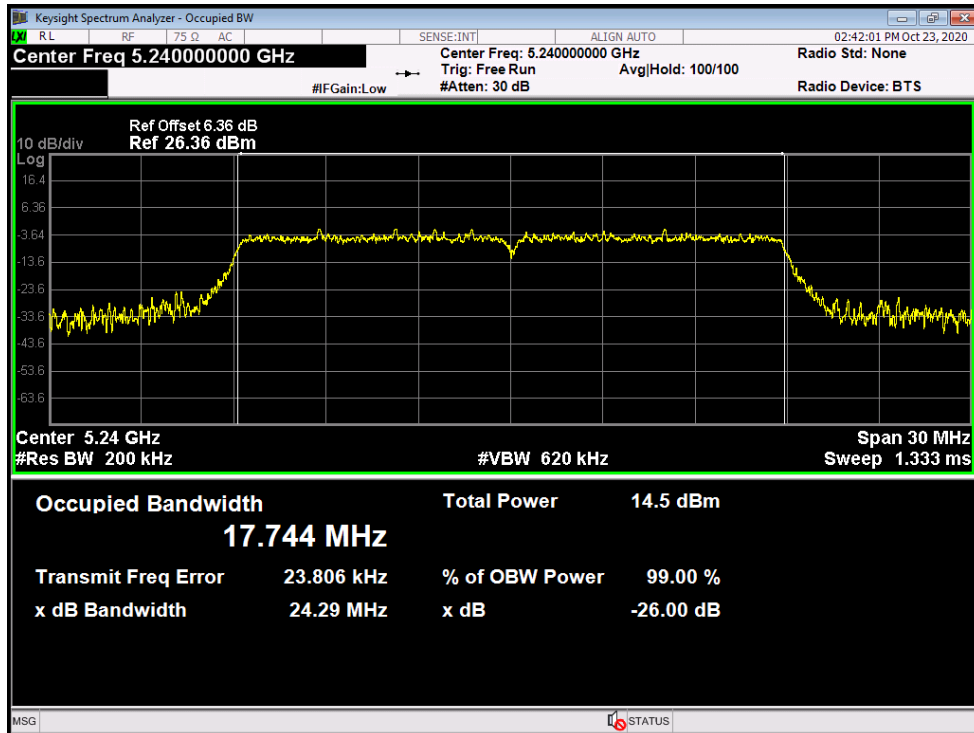
802.11ac(VHT20) Mode

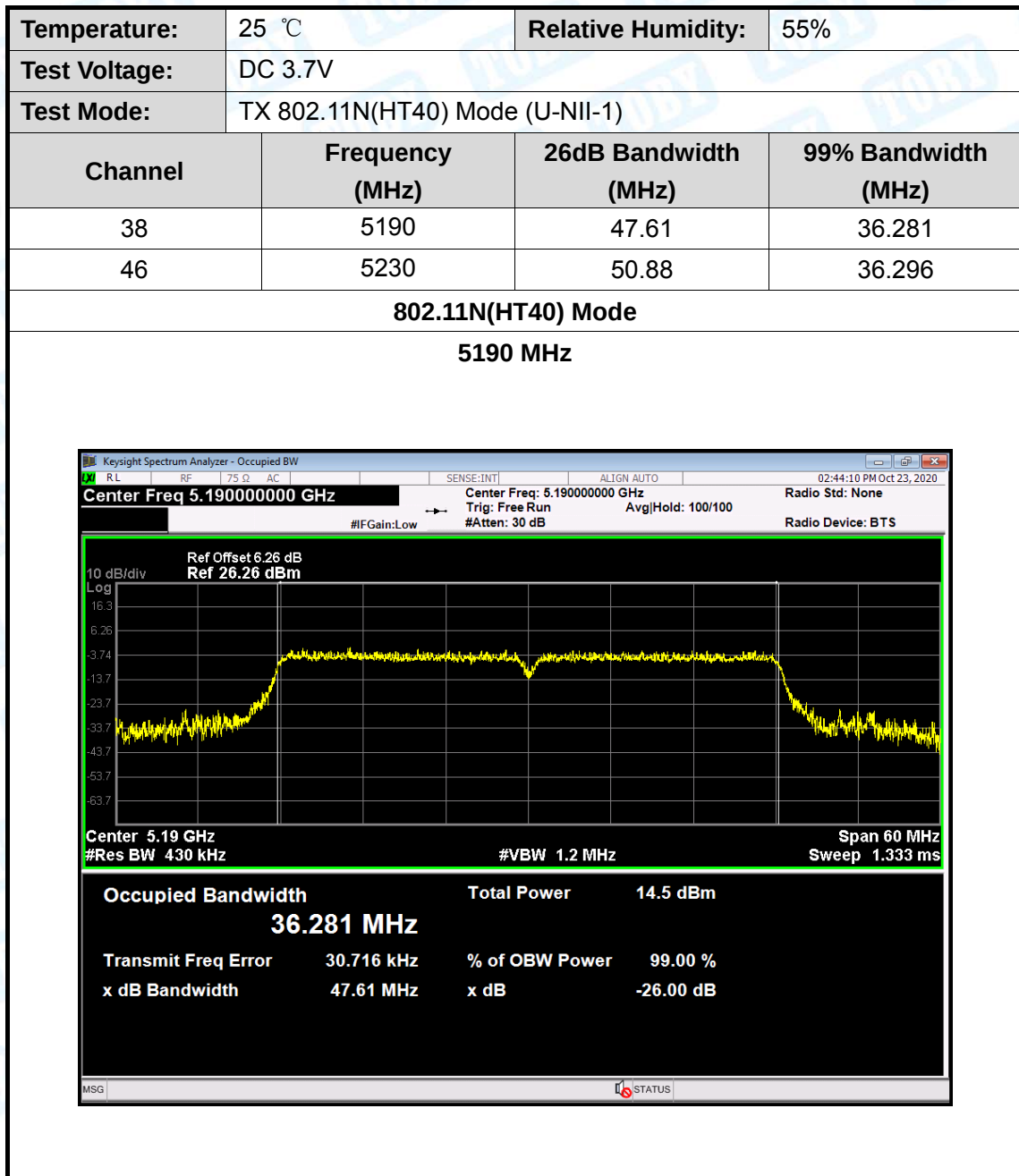
5200 MHz



802.11ac(VHT20) Mode

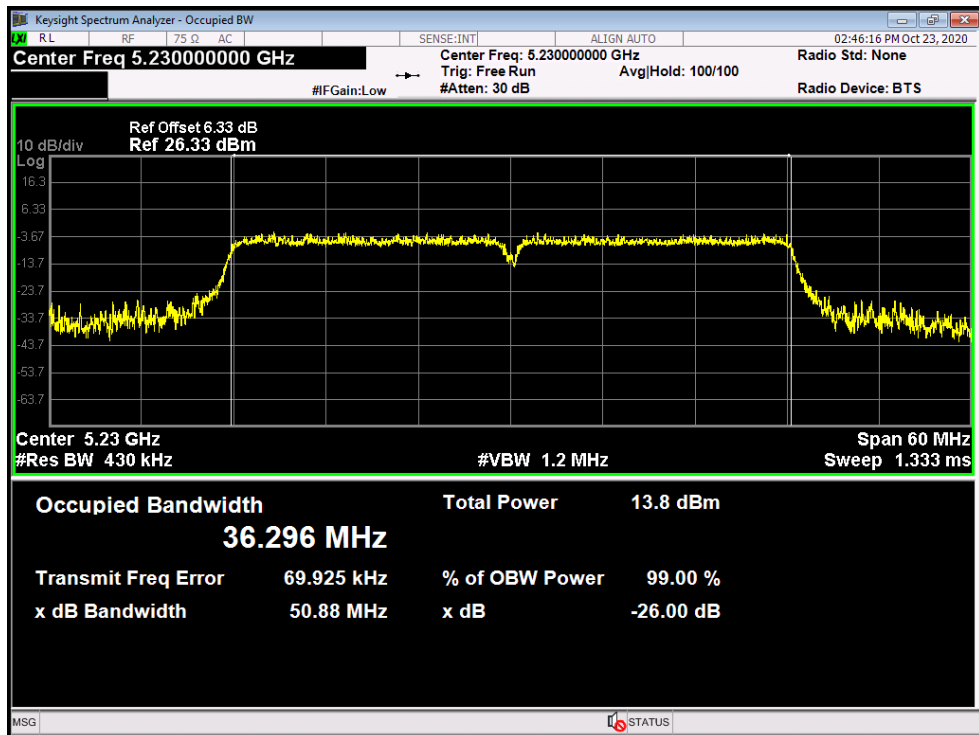
5240 MHz

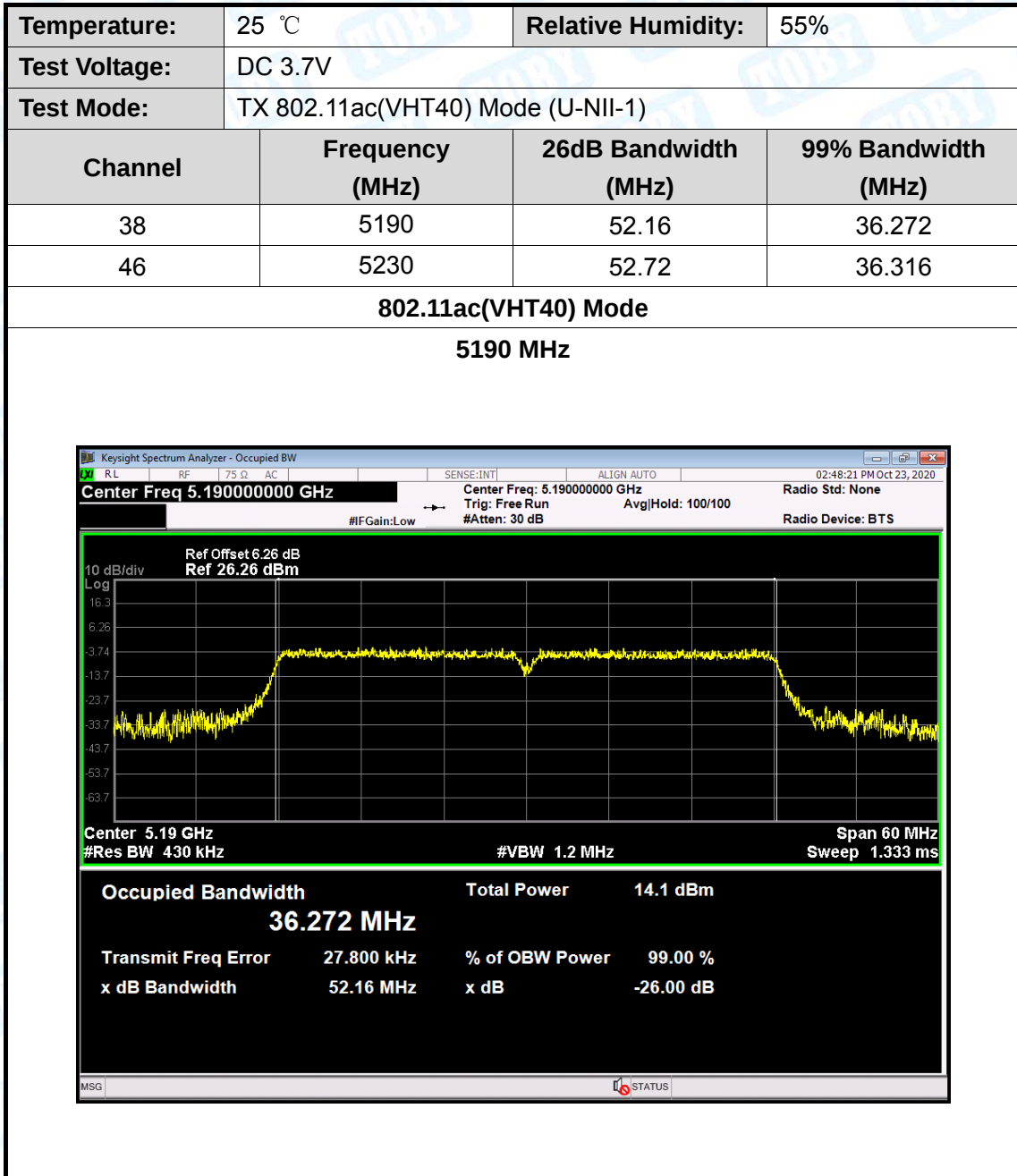




802.11N(HT40) Mode

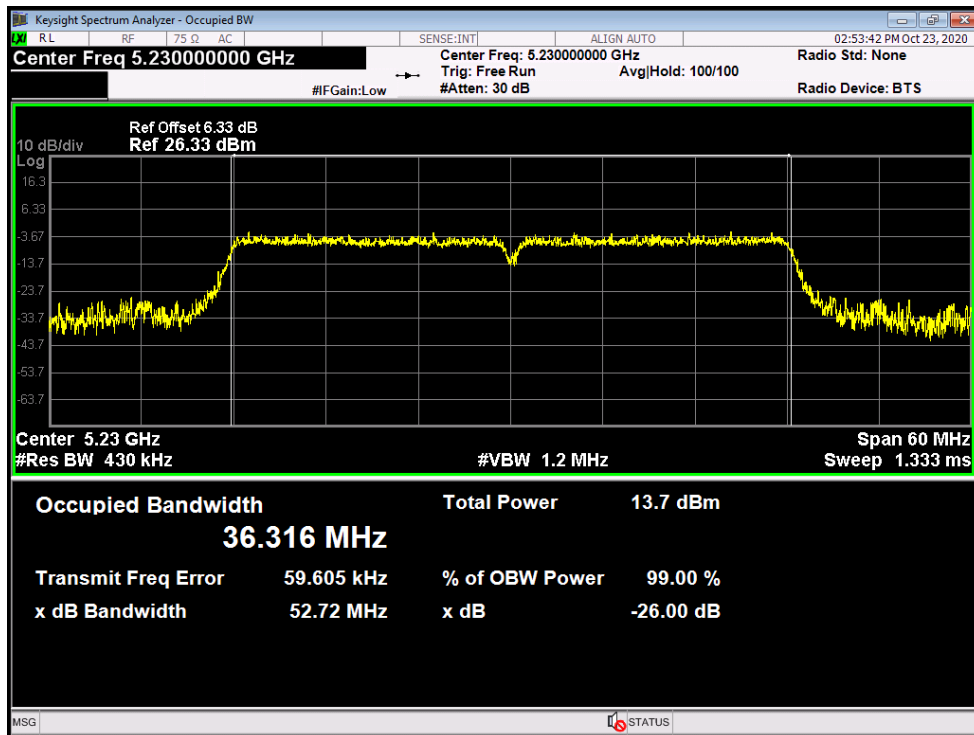
5230 MHz

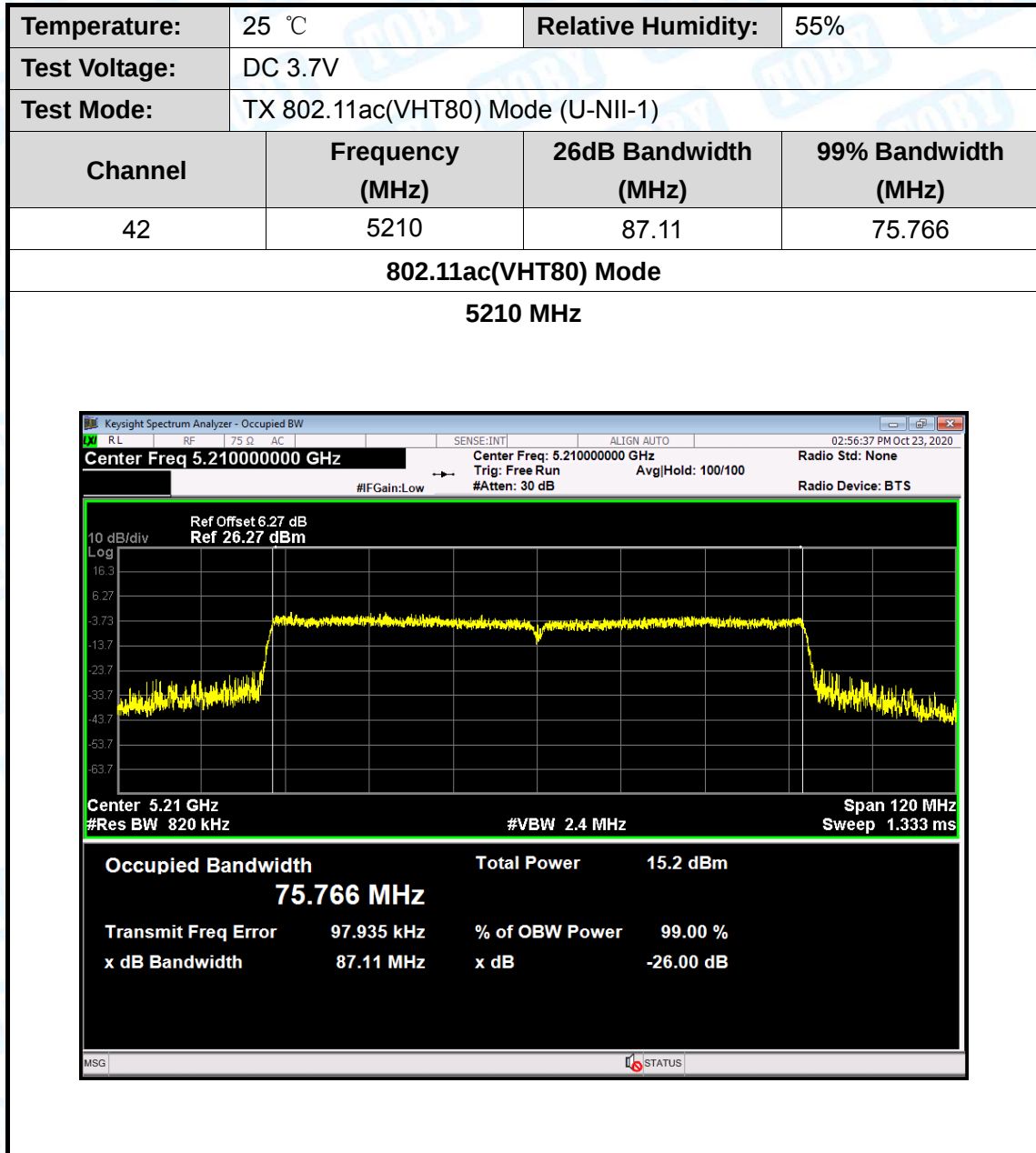




802.11ac(VHT40) Mode

5230 MHz



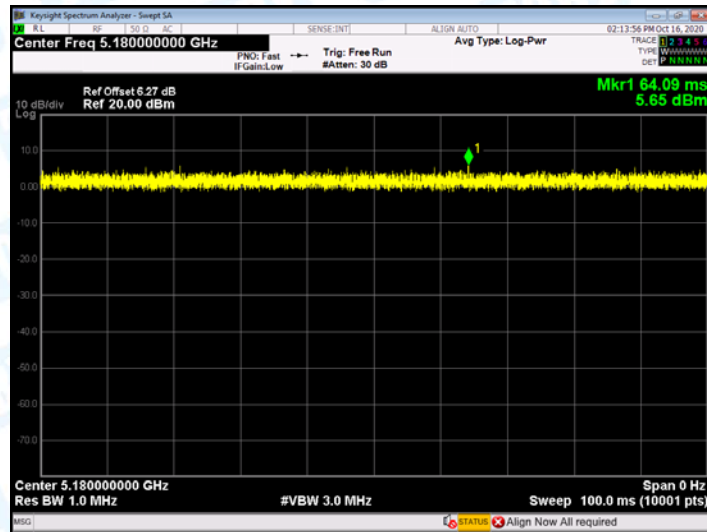


Attachment E--AVG Output Power Test Data

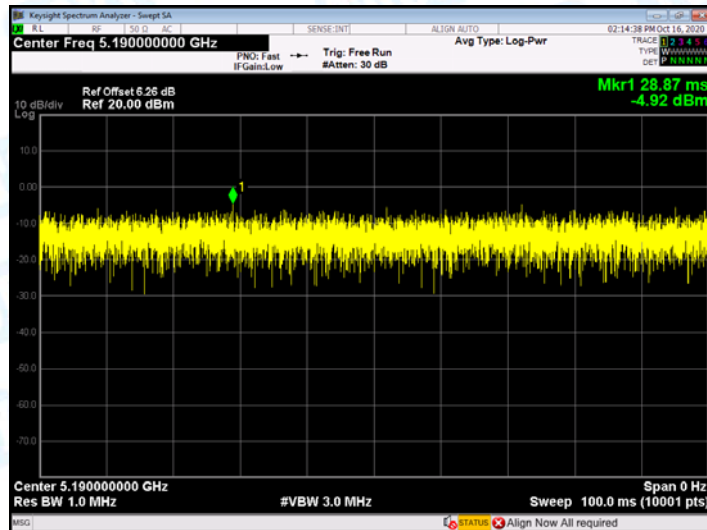
Temperature:	25 °C	Relative Humidity:	55%			
Test Voltage:	DC 3.7V					
U-NII-1						
Test Mode	Frequency (MHz)	Test Data			Limit (dBm)	
		Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)		
802.11a	5180	8.61	0	8.61	24	
	5200	7.71	0	7.71		
	5240	8.37	0	8.37		
802.11n (HT20)	5180	8.58	0	8.58		
	5200	7.77	0	7.77		
	5240	8.11	0	8.11		
802.11ac (VHT20)	5180	8.76	0	8.76		
	5200	8.15	0	8.15		
	5240	8.45	0	8.45		
802.11n (HT40)	5190	7.28	0	7.28		
	5230	6.39	0	6.39		
802.11 ac(VHT40)	5190	7.13	0	7.13		
	5230	6.78	0	6.78		
802.11 ac(VHT80)	5210	5.86	0	5.86		
Result: PASS						
Remark: the Directional Gain=2.1dBi<6 dBi. So P _{out} =P _{limit} =24dBm						

Test Mode		Duty cycle
U-NII-1	802.11 a	>98%
	802.11 n(HT20)	
	802.11 ac(VHT20)	
	802.11 n(HT40)	
	802.11 ac(VHT40)	
	802.11 ac(VHT80)	
Please see the next plots.		

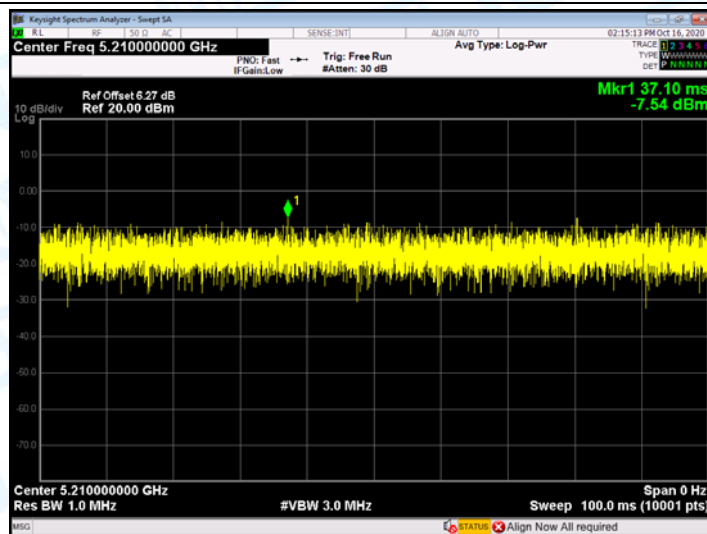
802.11 a



802.11 n(HT40)



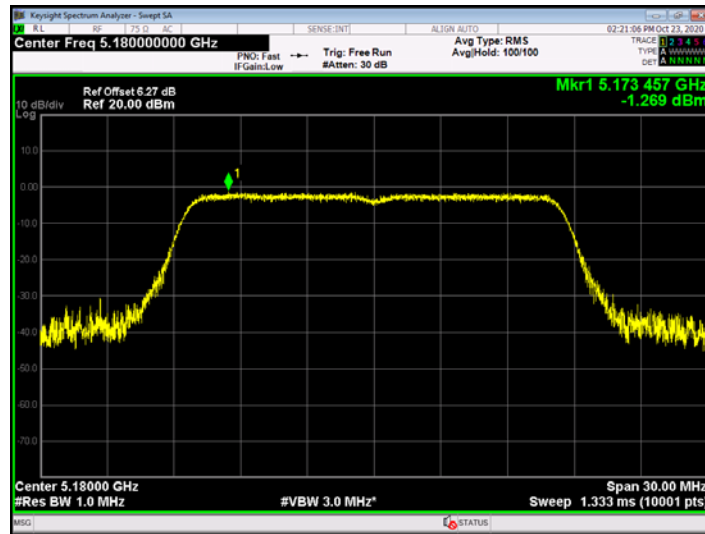
802.11 ac(VHT80)



Attachment F-- Power Spectral Density Test Data

Temperature:	25 °C	Relative Humidity:	55%	
Test Voltage:	DC 3.7V			
U-NII-1				
Test Mode	Frequency (MHz)	Test Data	Limit (dBm/MHz)	
		Power Density (dBm/MHz)		
802.11a	5180	-1.269	11	
	5200	-2.111		
	5240	-2.632		
802.11n (HT20)	5180	-1.363		
	5200	-2.349		
	5240	-2.501		
802.11ac (VHT20)	5180	-1.696		
	5200	-2.377		
	5240	-2.401		
802.11n (HT40)	5190	-6.102		
	5230	-7.086		
802.11ac(VHT40)	5190	-6.426		
	5230	-6.939		
802.11ac(VHT80)	5210	-9.915		
Result: PASS				
Remark: the Directional Gain=2.1dBi<6 dBi. So P _{out} =P _{limit}				
Test plots please refer to below pages:				

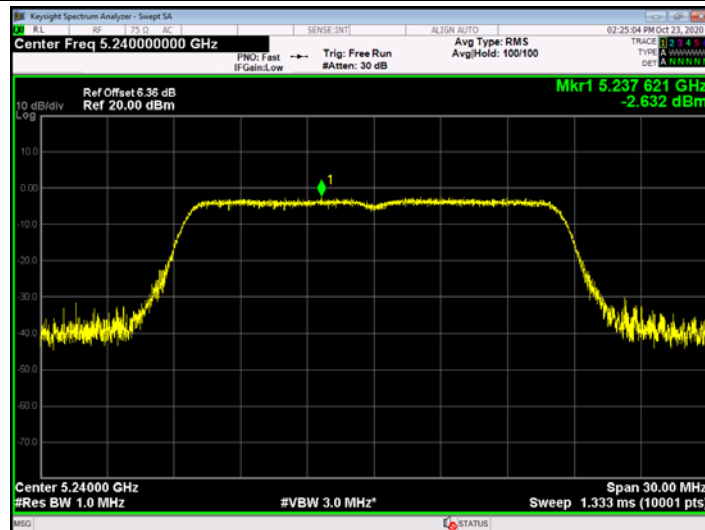
802.11 a 5180 MHz



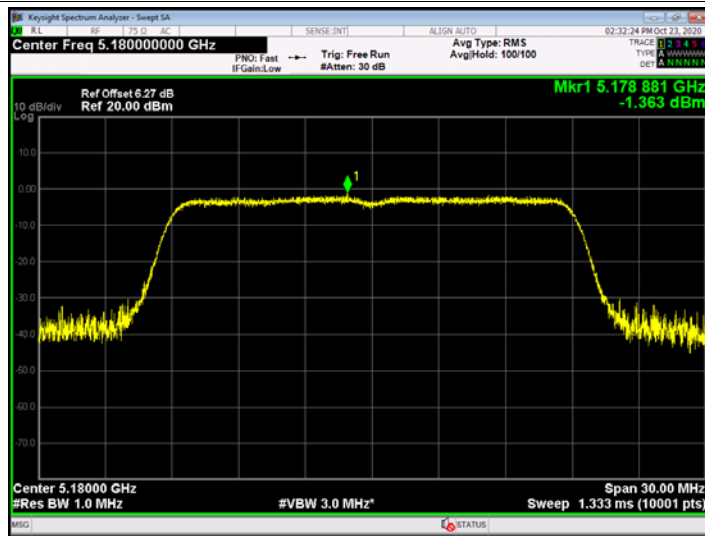
802.11 a 5200 MHz



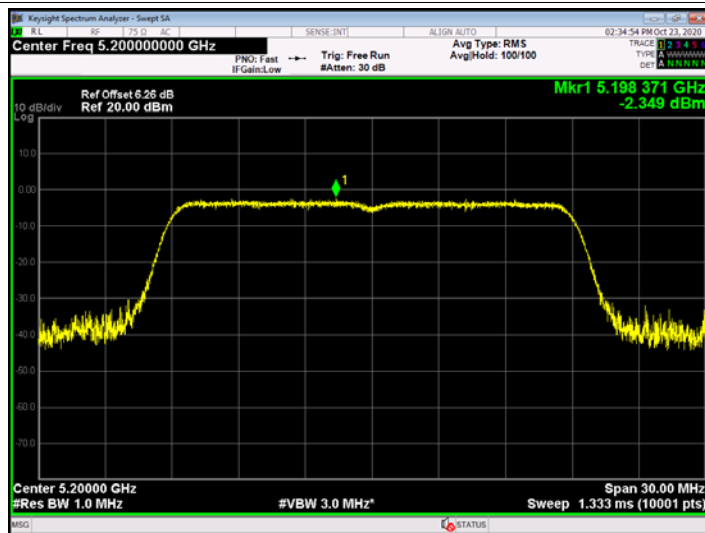
802.11 a 5240 MHz



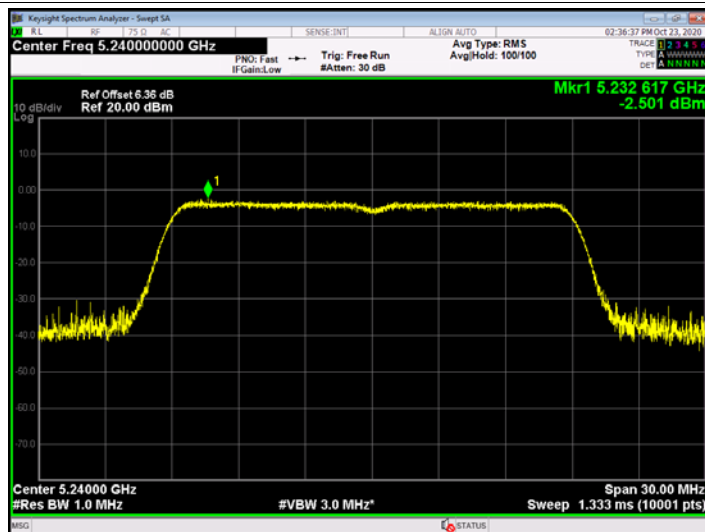
802.11 n(HT20) 5180 MHz



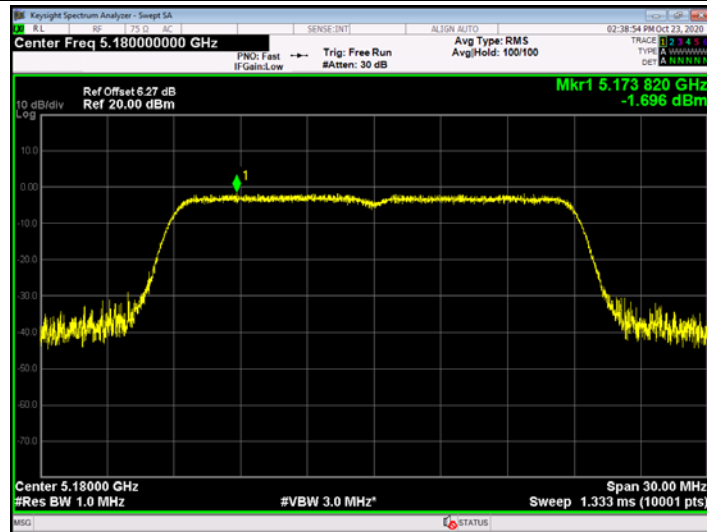
802.11 n(HT20) 5200 MHz



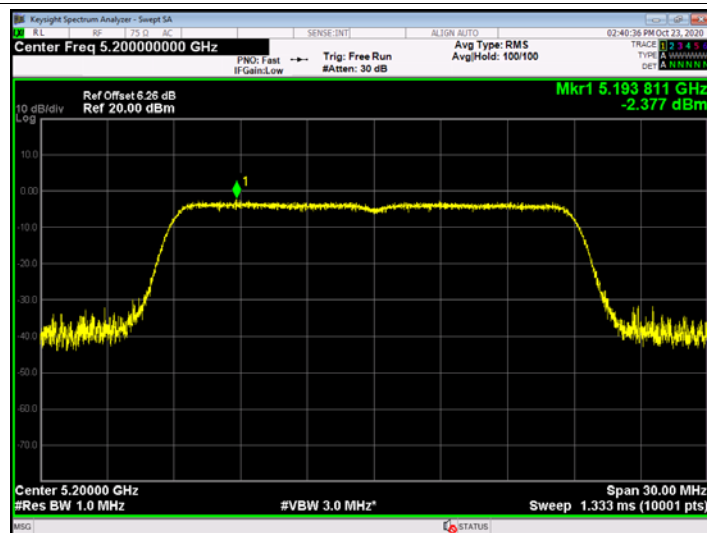
802.11 n(HT20) 5240 MHz



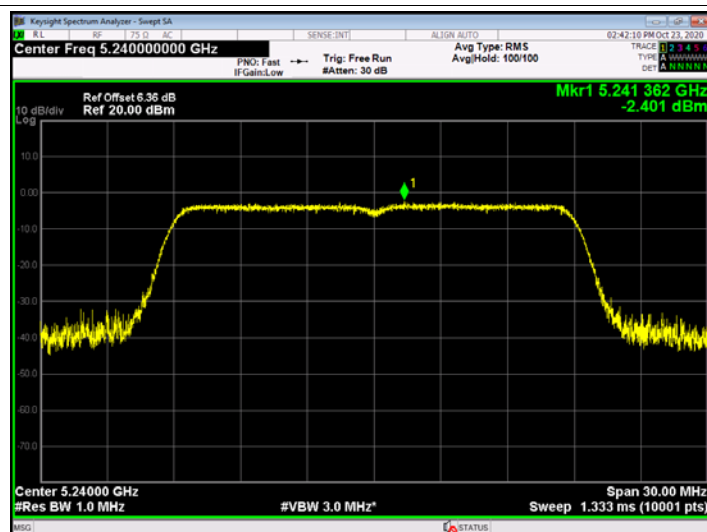
802.11 ac(VHT20) 5180 MHz



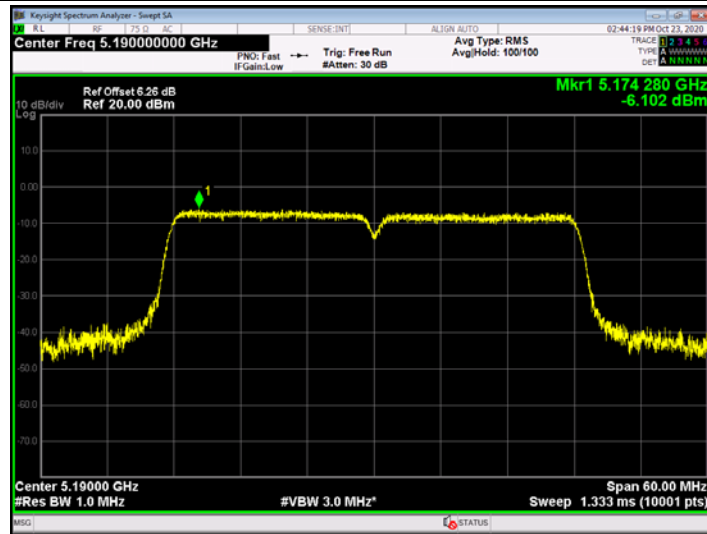
802.11 ac(VHT20) 5200 MHz



802.11 ac(VHT20) 5240 MHz



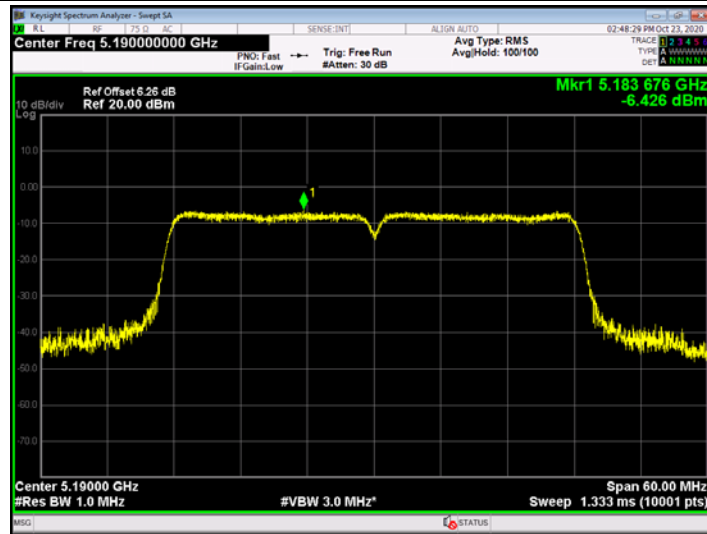
802.11 n(HT40) 5190 MHz



802.11 n(HT40) 5230 MHz



802.11 ac(VHT40) 5190 MHz



802.11 ac(VHT40) 5230 MHz



802.11 ac(VHT80) 5210 MHz



Attachment G----Frequency Stability Measurement Data

Only show the worst case 802.11 a Mode 5180MHz.

801.11a U-NII-1: 5180 MHz	
Voltage vs. Frequency Stability	
Voltage (V)	Measurement Frequency (MHz)
3.5	5180.0100
3.7	5180.0000
4.2	5180.0200
Limit Range (MHz)	5150-5250
Result	PASS
Temperature vs. Frequency Stability	
Temperature (°C)	Measurement Frequency (MHz)
0	5180.0000
10	5180.0500
20	5180.0000
30	5180.0200
40	5180.0200
50	5180.0100
Limit Range (MHz)	5150-5250
Result	PASS

-----END OF REPORT-----