MEASUREMENT REPORT

FCC PART 15.407 WLAN 802.11a/n/ac

FCC ID:	2ALJ3AP211
APPLICANT:	HAN Networks Co., Ltd.
Application Type:	Certification
Product:	HAN Access Point
Model No.:	AP211
Brand Name:	HAN NETWORKS
FCC Classification:	Unlicensed National Information Infrastructure (NII)
FCC Rule Part(s):	Part15 Subpart E (Section 15.407)
Test Procedure(s):	ANSI C63.10-2013, KDB 789033 D02v02r01, KDB 662911 D01v02r01
Test Date:	September 06 ~ November 27, 2018

Reviewed By: (Sunny Sun)

Approved By: (Robin Wu)

Revision History

Report No.	Version	Description	Issue Date	Note
1808RSU025-U6	Rev. 01	Initial Report	11-22-2018	Invalid
1808RSU025-U6	Rev. 02	Added some radiated bandedge test result	11-28-2018	Valid

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Description Page

§2.1033General Information

Applicant:	HAN Networks Co., Ltd
Applicant Address:	5/F, Building 37, No. 8 Dongbeiwang West Road, Haidian District Beijing 100194, P.R. China
Manufacturer:	HAN Networks Co., Ltd.
Manufacturer Address:	5/F, Building 37, No. 8 Dongbeiwang West Road, Haidian District Beijing 100194, P.R. China
Test Site:	MRT Technology (Suzhou) Co., Ltd
Test Site Address:	D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China
MRT Registration No.:	893164
Test Device Serial No.:	N/A ☐ Production ☒ Pre-Production ☐ Engineering

Test Facility / Accreditations

Measurements were performed at MRT Laboratory located in Tian'edang Rd., Suzhou, China.

- **MRT facility is a FCC registered (MRT Reg. No. 893164) test facility with the site description report on file and has met all the requirements specified in ANSI C63.4-2014.**
- **MRT facility is an IC registered (MRT Reg. No. 11384A-1) test laboratory with the site description on file at Industry Canada.**
- **MRT facility is a VCCI registered (R-20025, G-20034, C-20020, T-20020) test laboratory with the site description on file at VCCI Council.**
- **MRT Lab is accredited to ISO 17025 by the American Association for Laboratory Accreditation (A2LA) under the American Association for Laboratory Accreditation Program (A2LA Cert. No. 3628.01) in EMC, Telecommunications, Radio and SAR testing.**

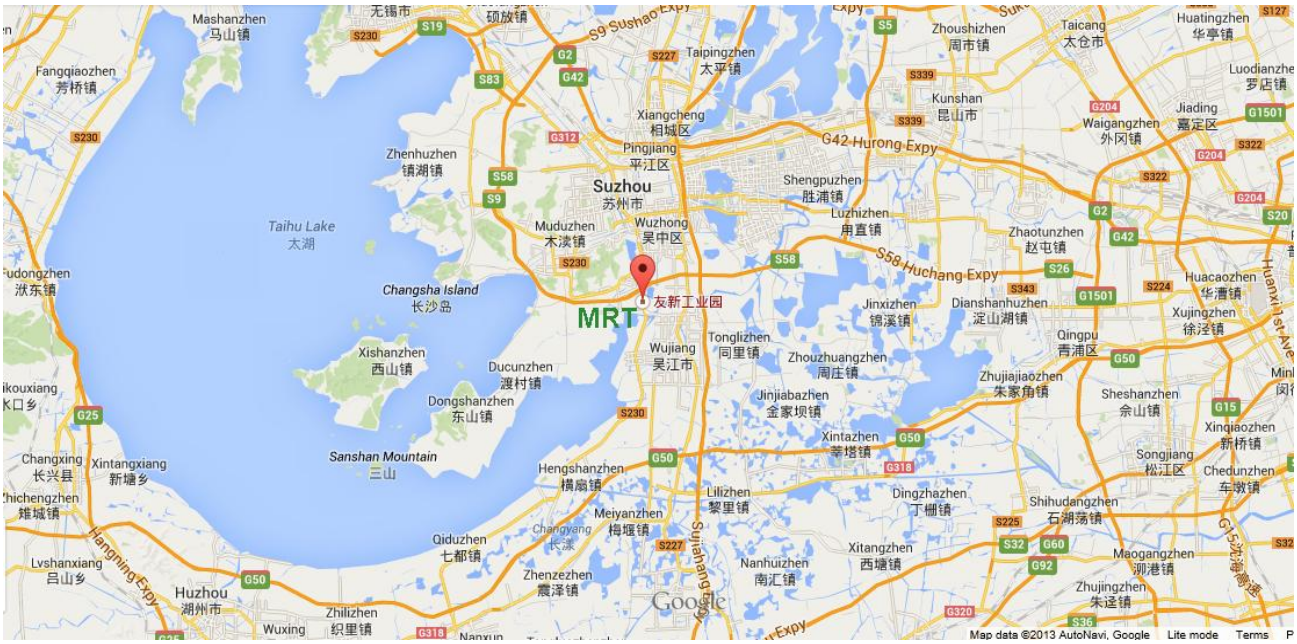
1. INTRODUCTION

1.1. Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Industry Canada Certification and Engineering Bureau.

1.2. MRT Test Location

The map below shows the location of the MRT LABORATORY, its proximity to the Taihu Lake. These measurement tests were conducted at the MRT Technology (Suzhou) Co., Ltd. Facility located at D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China. The measurement facility compliant with the test site requirements specified in ANSI C63.4-2014.



2. PRODUCT INFORMATION

2.1. Equipment Description

Product Name:	HAN Access Point
Model No.:	AP211
Brand Name:	HAN NETWORKS
Wi-Fi Specification	802.11a/b/g/n/ac
Bluetooth Specification:	v5.0
Operating Temperature:	0 ~ 45 °C
Power Type:	POE input or AC adapter input
Operating Environment:	Indoor Use
Accessories	
Adapter 1#	Model No.: ADP-30HR B Input Power: 100 - 240V ~ 50/60Hz, 1.0A Output Power: 48VDC/0.66A
Adapter 2#	Model No.: PD-9001 GR/AT/AC Input Power: 100 - 240V ~ 50/60Hz, 0.67A Output Power: 55VDC/0.6A

2.2. Product Specification Subjective to this Report

Frequency Range	For 802.11a/n-HT20/ac-VHT20: 5260~5320MHz, 5500~5720MHz For 802.11n-HT40/ac-VHT40: 5270~5310MHz, 5510~5710MHz, For 802.11ac-VHT80: 5290MHz, 5530MHz, 5610MHz, 5690MHz
Type of Modulation	802.11a/n/ac: OFDM
Data Rate	802.11a: 6/9/12/18/24/36/48/54Mbps 802.11n: up to 300Mbps 802.11ac: up to 866.6Mbps

Note: For other features of this EUT, test report will be issued separately.

2.3. Working Frequencies for this report

802.11a/n-HT20/ac-VHT20

Channel	Frequency	Channel	Frequency	Channel	Frequency
52	5260 MHz	56	5280 MHz	60	5300 MHz
64	5320 MHz	100	5500 MHz	104	5520 MHz
108	5540 MHz	112	5560 MHz	116	5580 MHz
120	5600 MHz	124	5620 MHz	128	5640 MHz
132	5660 MHz	136	5680 MHz	140	5700 MHz
144	5720 MHz	--	--	--	--

802.11n-HT40/ac-VHT40

Channel	Frequency	Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz	102	5510 MHz
110	5550 MHz	118	5590 MHz	126	5630 MHz
134	5670 MHz	142	5710 MHz	--	--

802.11ac-VHT80

Channel	Frequency	Channel	Frequency	Channel	Frequency
58	5290 MHz	106	5530 MHz	122	5610 MHz
138	5690 MHz	--	--	--	--

2.4. Description of Available Antenna

Antenna Type	Frequency Band (GHz)	Tx Paths	Per Chain Max Antenna Gain (dBi)		Beam-Forming Directional Gain (dBi)	CDD Directional Gain(dBi)	
			Ant 0	Ant 1		For Power	For PSD
Wi-Fi Internal Antenna							
PCB	2412 ~ 2462	2	4.70	3.70	7.22	4.70	7.71
	5150 ~ 5250	2	3.80	3.00	6.42	3.80	6.81
	5250 ~ 5350	2	3.80	3.00	6.42	3.80	6.81
	5470 ~ 5725	2	4.60	3.80	7.22	4.60	7.61
	5725 ~ 5850	2	4.60	3.00	6.85	4.60	7.61
Bluetooth Internal Antenna							
PCB	2402 ~ 2480	1	3.70		--		

Note:

1. The EUT supports SISO technology for 802.11b mode only.
2. The EUT supports Cyclic Delay Diversity (CDD) mode, and CDD signals are correlated.
   For CDD transmissions, directional gain is calculated as follows, $N_{ANT} = 2$, $N_{SS} = 1$.
   If all antennas have the same gain, G_{ANT}, Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows.
   - For power spectral density (PSD) measurements on all devices,

   Array Gain = 10 log (N_{ANT}/ N_{SS}) dB = 3.01;
   - For power measurements on IEEE 802.11 devices,

   Array Gain = 0 dB for $N_{ANT} \leq 4$;
   If antenna gains are not equal, Directional gain may be calculated by using the formulas applicable to equal gain antennas with G_{ANT} set equal to the gain of the antenna having the highest gain.
   The EUT also supports Beam Forming mode, and the Beam Forming support 802.11n/ac, not include 802.11a/b/g. The directional gain = $10*\log[(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2/N_{ANT}]$dBi.

2.5. Description of Antenna RF Port

Antenna RF Port				
--	2.4GHz RF Port		5GHz RF Port	
Software Control Port	Ant 0	Ant 1	Ant 0	Ant 1

2.6. Test Mode

Test Mode	Mode 1: Transmit by 802.11a (6Mbps)
	Mode 2: Transmit by 802.11ac-VHT20 (MSC0)
	Mode 3: Transmit by 802.11ac-VHT40 (MSC0)
	Mode 4: Transmit by 802.11ac-VHT80 (MSC0)

5GHz Test Mode	Ant 0 + 1	
	CDD	Beam-Forming
802.11a	√	×
802.11n-HT20	√	√
802.11n-HT40	√	√
802.11ac-VHT20	√	√
802.11ac-VHT40	√	√
802.11ac-VHT80	√	√

2.7. Description of Test Software

The test utility software used during testing was “QRCT”, and the version was “3.0.211.0”.

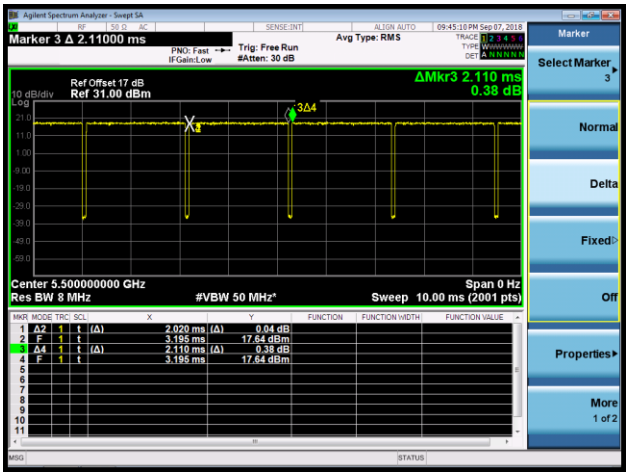
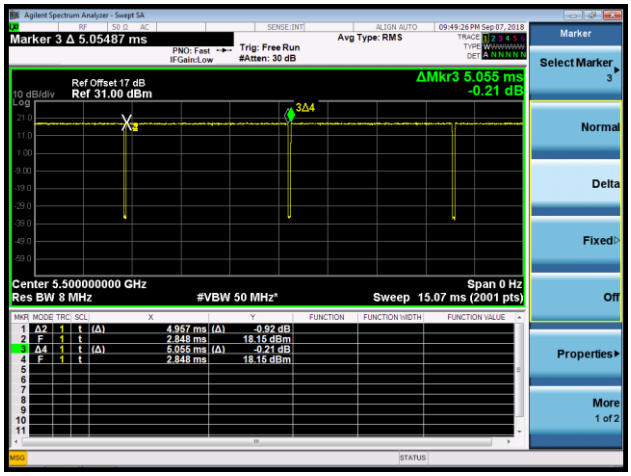
2.8. Device Capabilities

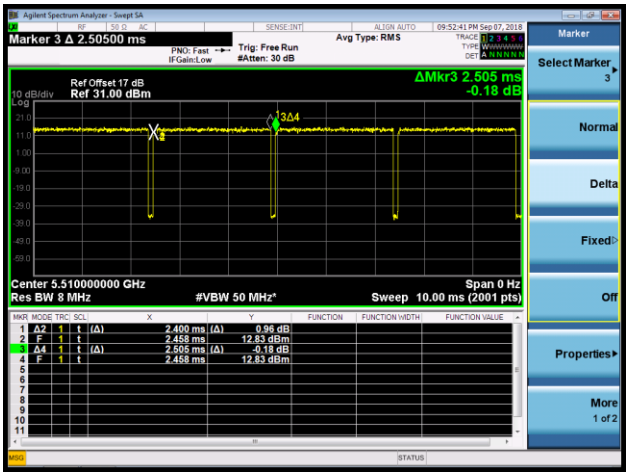
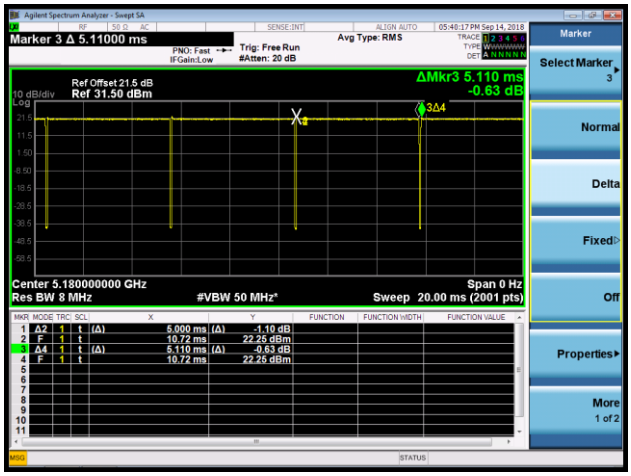
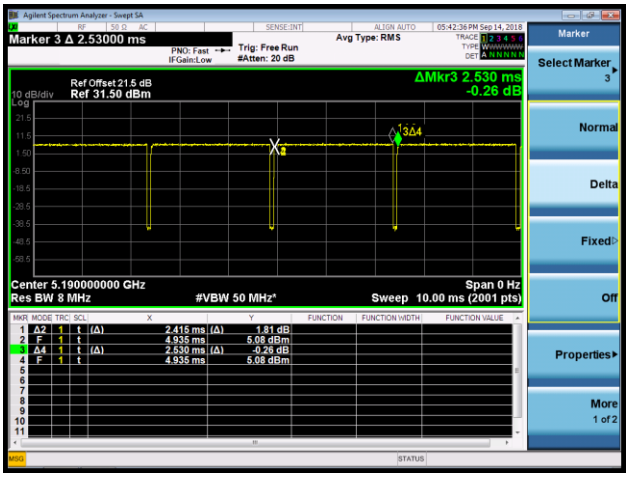
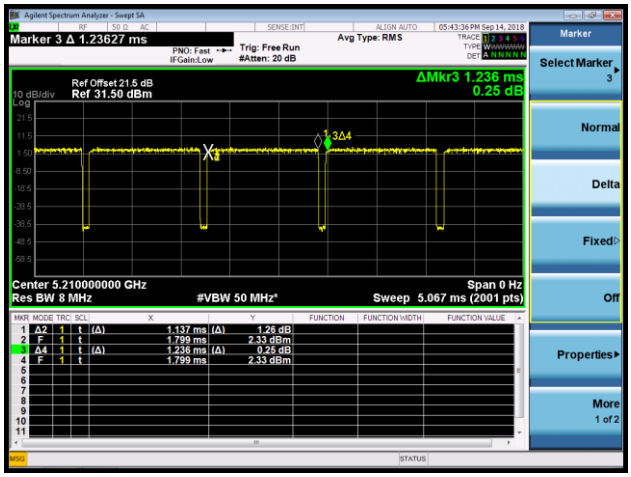
This device contains the following capabilities:

2.4GHz WLAN (DTS), 5GHzWLAN (NII), Bluetooth (v5.0)

Note: 5GHz (NII) operation is possible in 20MHz, 40MHzand 80MHz channel bandwidths. The maximum achievable duty cycles for all modes were determined based on measurements performed on a spectrum analyzer in zero-span mode with RBW = 8MHz, VBW = 50MHz, and detector = average. The RBW and VBW were both greater than 50/T, where T is the minimum transmission duration, and the number of sweep points across T was greater than 100. The duty cycles are as follows:

Test Mode	Duty Cycle
802.11a	95.73 %
802.11n-HT20	98.06 %
802.11n-HT40	95.80 %
802.11ac-VHT20	97.84 %
802.11ac-VHT40	95.45 %
802.11ac-VHT80	91.99 %

802.11a (T = 2.020ms)	802.11n-HT20 (T = 4.957ms)
	

802.11n-HT40 (T = 2.400ms)	802.11ac-VHT20 (T = 5.000ms)
	
802.11ac-VHT40 (T = 2.415ms)	**802.11ac-VHT80 (T = 1.137ms)**
	

2.9. Test Configuration

The device was tested per the guidance of KDB 789033 D02v02r01. ANSI C63.10-2013 was used to reference the appropriate EUT setup for radiated spurious emissions testing and AC line conducted testing.

2.10. EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and/or no modifications were made during testing.

2.11. Labeling Requirements

Per 2.1074 & 15.19; Docket 95-19

The label shall be permanently affixed at a conspicuous location on the device; instruction manual or pamphlet supplied to the user and be readily visible to the purchaser at the time of purchase. However, when the device is so small wherein placement of the label with specified statement is not practical, only the FCC ID must be displayed on the device per Section 15.19(a)(5). Please see attachment for FCC ID label and label location.

3. DESCRIPTION OF TEST

3.1. Evaluation Procedure

The measurement procedures described in the American National Standard for Testing Unlicensed Wireless Devices (ANSI C63.10-2013), and the guidance provided in KDB 789033 D02v02r01 were used in the measurement.

Deviation from measurement procedure…….....None

3.2. AC Line Conducted Emissions

The line-conducted facility is located inside an8'x4'x4' shielded enclosure. A 1m x 2m wooden table 80cm high is placed 40cm away from the vertical wall and 80cm away from the sidewall of the shielded room. Two 10kHz-30MHz, 50Ω/50uH Line-Impedance Stabilization Networks (LISNs) are bonded to the shielded room floor. Power to the LISNs is filtered by external high-current high-insertion loss power line filters. These filters attenuate ambient signal noise from entering the measurement lines. These filters are also bonded to the shielded enclosure.

The EUT is powered from one LISN and the support equipment is powered from the second LISN. All interconnecting cables more than 1 meter were shortened to a 1 meter length by non-inductive bundling (serpentine fashion) and draped over the back edge of the test table. All cables were at least 40cm above the horizontal reference ground-plane. Power cables for support equipment were routed down to the second LISN while ensuring that that cables were not draped over the second LISN. Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The RF output of the LISN was connected to the receiver and exploratory measurements were made to determine the frequencies producing the maximum emission from the EUT. The receiver was scanned from 150kHz to 30MHz. The detector function was set to peak mode for exploratory measurements while the bandwidth of the analyzer was set to 9kHz. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Each emission was also maximized by varying: power lines, the mode of operation or data exchange speed, or support equipment whichever determined the worst-case emission. Once the worst case emissions have been identified, the one EUT cable configuration/arrangement and mode of operation that produced these emissions are used for final measurements on the same test site. The analyzer is set to CISPR quasi-peak and average detectors with a 9kHz resolution bandwidth for final measurements.

An extension cord was used to connect to a single LISN which powered by EUT. The extension cord was calibrated with LISN, the impedance and insertion loss are compliance with the requirements as stated in ANSI C63.10-2013.

3.3. Radiated Emissions

The radiated test facilities consisted of an indoor 3 meter semi-anechoic chamber used for final measurements and exploratory measurements, when necessary. The measurement area is contained within the semi-anechoic chamber which is shielded from any ambient interference. For measurements above 1GHz absorbers are arranged on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections. For measurements below 1GHz, the absorbers are removed. A MF Model 210SS turntable is used for radiated measurement. It is a continuously rotatable, remote controlled, metallic turntable and 2 meters (6.56 ft.) in diameter. The turn table is flush with the raised floor of the chamber in order to maintain its function as a ground plane. An80cm high PVC support structure is placed on top of the turntable.

For all measurements, the spectrum was scanned through all EUT azimuths and from 1 to 4 meter receive antenna height using a broadband antenna from 30MHz up to the upper frequency shown in 15.33(b)(1) depending on the highest frequency generated or used in the device or on which the device operates or tunes. For frequencies above 1GHz, linearly polarized double ridge horn antennas were used. For frequencies below 30MHz, a calibrated loop antenna was used. When exploratory measurements were necessary, they were performed at 1 meter test distance inside the semi-anechoic chamber using broadband antennas, broadband amplifiers, and spectrum analyzers to determine the frequencies and modes producing the maximum emissions. Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The test set-up for frequencies below 1GHz was placed on top of the 0.8 meter high, 1 x 1.5 meter table; and test set-up for frequencies 1-40GHz was placed on top of the 1.5 meter high, 1 x 1.5 meter table. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Appropriate precaution was taken to ensure that all emissions from the EUT were maximized and investigated. The system configuration, clock speed, mode of operation or video resolution, if applicable, turntable azimuth, and receive antenna height was noted for each frequency found.

Final measurements were made in the semi-anechoic chamber using calibrated, linearly polarized broadband and horn antennas. The test setup was configured to the setup that produced the worst case emissions. The spectrum analyzer was set to investigate all frequencies required for testing to compare the highest radiated disturbances with respect to the specified limits. The turntable containing the EUT was rotated through 360 degrees and the height of the receive antenna was varied 1 to 4 meters and stopped at the azimuth and height producing the maximum emission. Each emission was maximized by changing the orientation of the EUT through three orthogonal planes and changing the polarity of the receive antenna, whichever produced the worst-case emissions. According to 3dB Beam-Width of horn antenna, the horn antenna should be always directed to the EUT when rising height.

4. ANTENNA REQUIREMENTS

Excerpt from §15.203 of the FCC Rules/Regulations:

“An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can 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 antenna of the **HAN Access Point** is **permanently attached.**
- There are no provisions for connection to an external antenna.

Conclusion:

The **HAN Access Point** unit complies with the requirement of §15.203.

5. TEST EQUIPMENT CALIBRATION DATE

Conducted Emissions - SR2

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EMI Test Receiver	R&S	ESR3	MRTSUE06185	1 year	2019/04/25
Two-Line V-Network	R&S	ENV216	MRTSUE06002	1 year	2019/06/21
Two-Line V-Network	R&S	ENV216	MRTSUE06003	1 year	2019/06/21
Thermohygrometer	Testo	608-H1	MRTSUE06404	1 year	2019/08/14
Shielding Anechoic Chamber	Mikebang	Chamber-TR3	MRTSUE06215	1 year	2019/05/10

Radiated Disturbance - AC1

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
MXE EMI Receiver	Agilent	N9038A	MRTSUE06125	1 year	2019/08/18
Loop Antenna	Schwarzbeck	FMZB1519	MRTSUE06025	1 year	2018/11/20
Bilog Period Antenna	Schwarzbeck	VULB9162	MRTSUE06022	1 year	2019/10/21
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	MRTSUE06171	1 year	2018/11/18
Broadband Coaxial Preamplifier	Schwarzbeck	BBV 9718	MRTSUE06176	1 year	2018/11/17
Broadband Horn Antenna	Schwarzbeck	BBHA9170	MRTSUE06024	1 year	2018/12/14
Digitial Thermometer & Hygrometer	Minggao	ETH529	MRTSUE06170	1 year	2018/12/12
Anechoic Chamber	RIKEN	Chamber-AC1	MRTSUE06213	1 year	2019/05/10

Conducted Test Equipment - TR3

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Spectrum Analyzer	Agilent	N9020A	MRTSUE06106	1 year	2019/04/25
Power Meter	Agilent	U2021XA	MRTSUE06030	1 year	2018/12/06
Thermohygrometer	Testo	608-H1	MRTSUE06401	1 year	2019/08/14

Software	Version	Function
e3	V8.3.5	EMI Test Software

6. MEASUREMENT UNCERTAINTY

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k = 2.

AC Conducted Emission Measurement – SR2
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 150kHz~30MHz: 3.46dB
Radiated Emission Measurement - AC1
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 9kHz ~ 1GHz: 4.18dB 1GHz ~ 40GHz: 4.76dB
Output Power - TR3
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 1.13dB
Power Spectrum Density - TR3
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 1.15dB
Occupied Bandwidth - TR3
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 0.28%

7. TEST RESULT

7.1. Summary

Product Name: **HAN Access Point**

FCC ID: **2ALJ3AP211**

FCC Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
15.407(a)	26dB Bandwidth	N/A	Conducted	Pass	Section7.2
15.407(e)	6dB Bandwidth	≥ 500kHz		Pass	Section 7.3
15.407(a)(1)(ii), (2), (3)	Maximum Conducted Output Power	Refer to Section 7.5		Pass	Section 7.5
15.407(h)(1)	Transmit Power Control	≤ 24 dBm		Pass	Section 7.6
15.407(a)(1)(ii), (2), (3), (5)	Peak Power Spectral Density	Refer to Section 7.7		Pass	Section 7.7
15.407(g)	Frequency Stability	N/A		Pass	Section 7.8
15.407(b)(1), (2), (3), (4)	Undesirable Emissions	Refer to Section 7.9 & 7.10	Radiated	Pass	Section 7.9 & 7.10
15.205, 15.209 15.407(b)(5), (6), (7)	General Field Strength Limits(Restricted Bands andRadiated Emission Limits)	Emissions in restrictedbands must meet theradiated limits detailed in15.209		Pass	
15.207	AC Conducted Emissions 150kHz - 30MHz	< FCC 15.207 limits	Line Conducted	Pass	Section 7.11

Notes:

1) The analyzer plots shown in this section were all taken with a correction table loaded into the analyzer.The correction table was used to account for the losses of the cables and attenuators used as part ofthe system to connect the EUT to the analyzer at all frequencies of interest.
2) All modes of operation and data rates were investigated. For radiated emission test, every axis (X, Y, Z) was also verified. The test results shown in the following sections represent the worst case emissions.
3) Test Items “26dB Bandwidth”, “99% Bandwidth”, “6dB Bandwidth” have been assessed single and MIMO transmission, and showed the worst test data in this report.
4) We have evaluated 802.11a/n/ac mode and only show the test data of 802.11a/ac mode.

7.2. 26dB Bandwidth Measurement

7.2.1.Test Limit

N/A

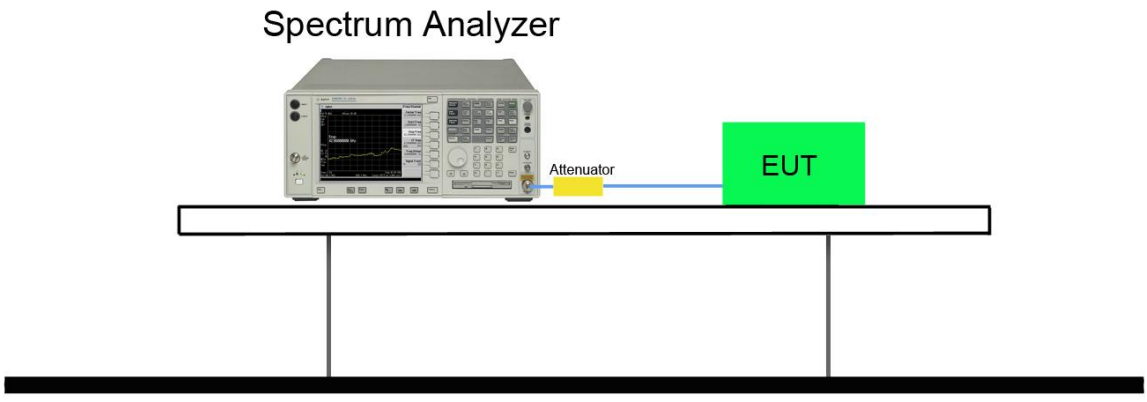
7.2.2.Test Procedure used

KDB 789033 D02v02r01-Section C.1

7.2.3.Test Setting

1. The analyzers' automatic bandwidth measurement capability was used to perform the 26dB bandwidth measurement. The "X" dB bandwidth parameter was set to X = 26. The automatic bandwidth measurement function also has the capability of simultaneously measuring the 99% occupied bandwidth. The bandwidth measurement was not influenced by any intermediated power nulls in the fundamental emission.
2. RBW = approximately 1% of the emission bandwidth.
3. VBW ≥ 3×RBW.
4. Detector = Peak.
5. Trace mode = max hold.

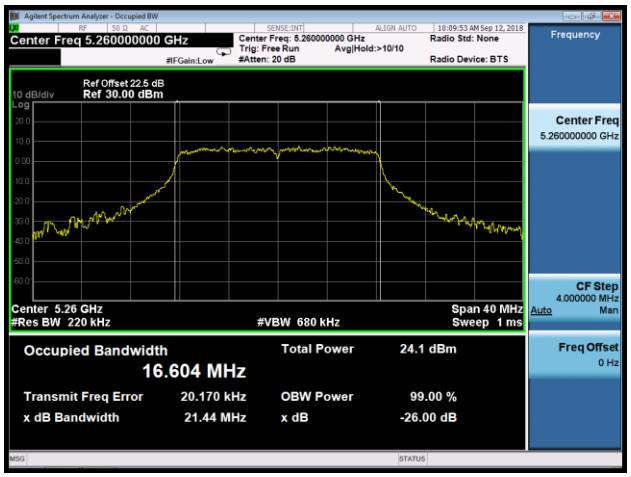
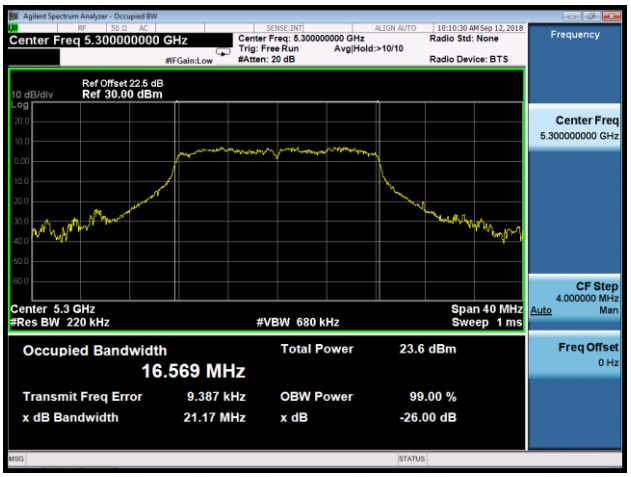
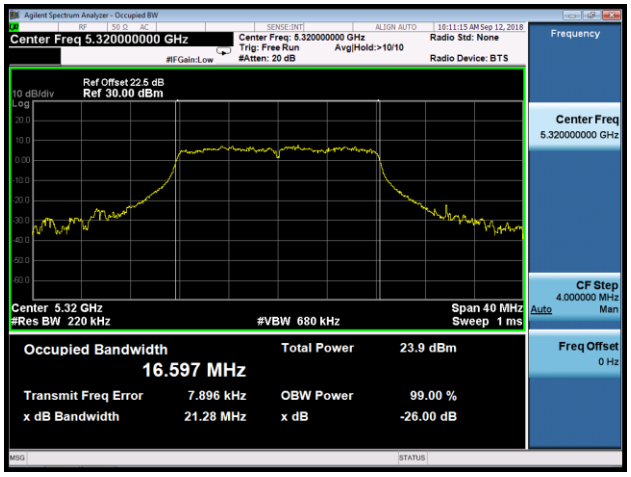
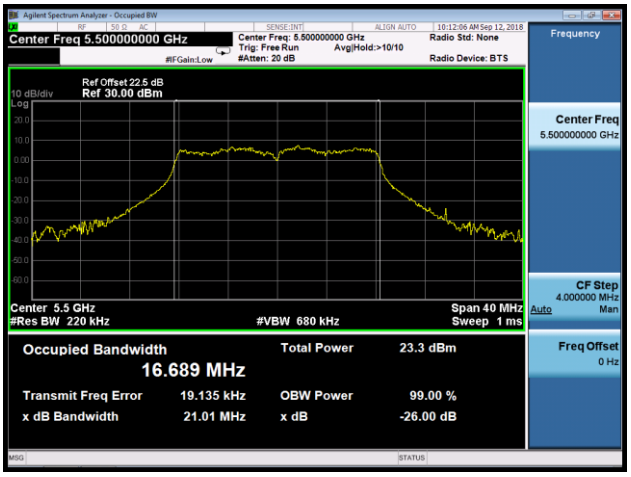
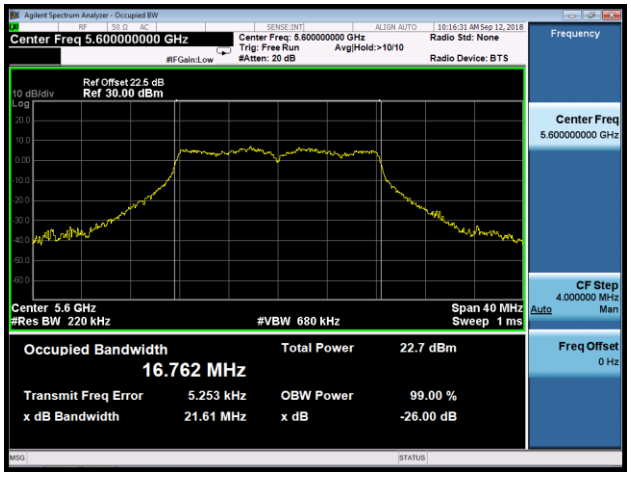
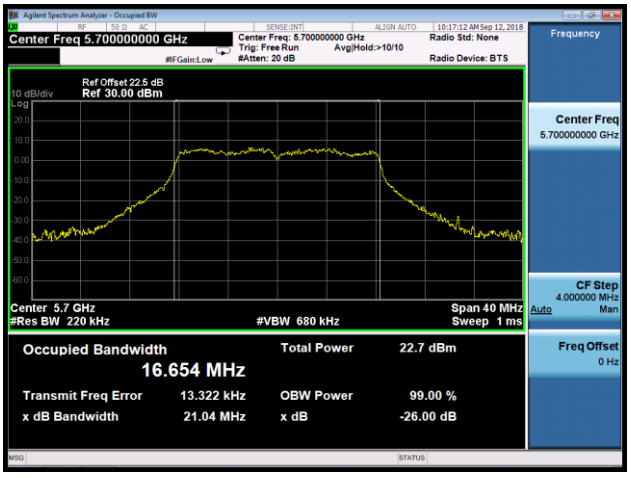
7.2.4.Test Setup



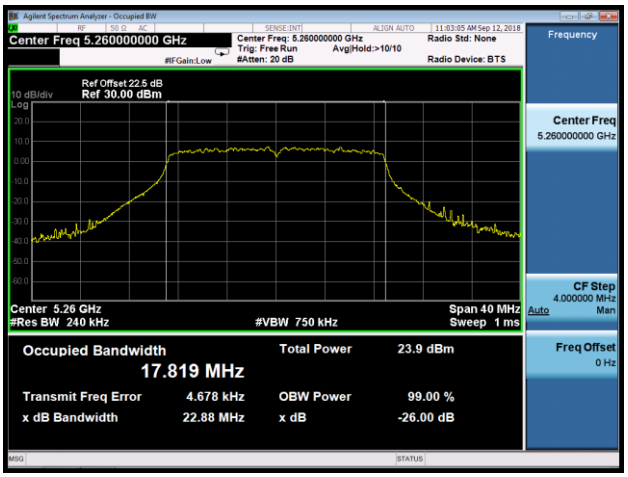
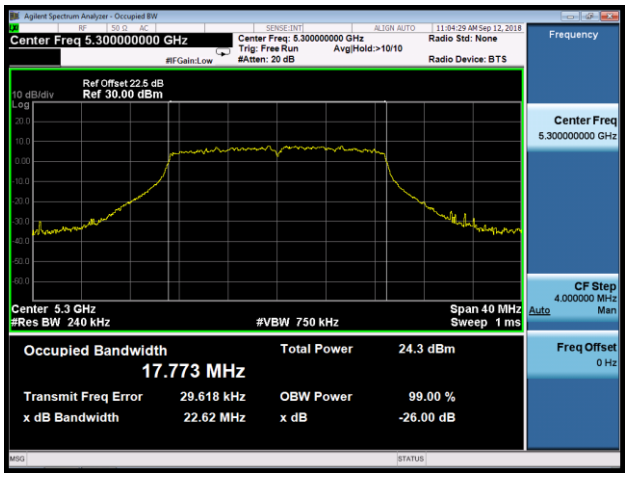
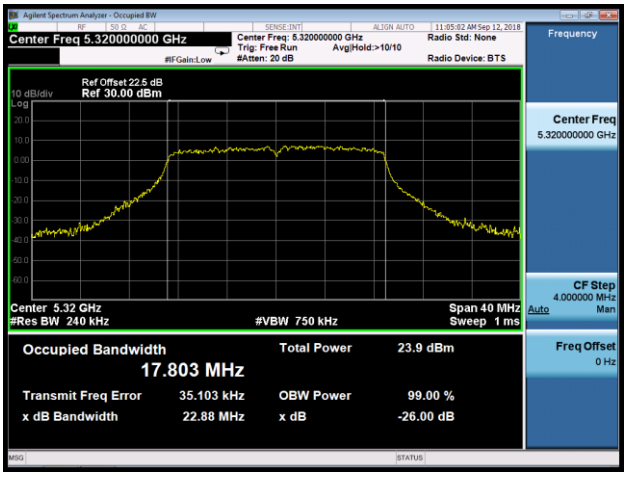
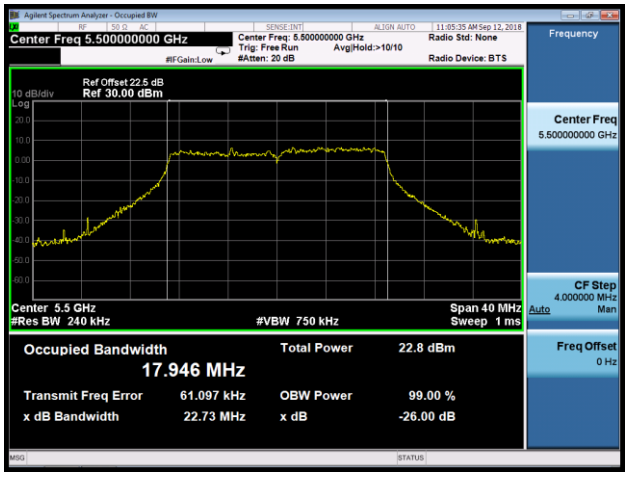
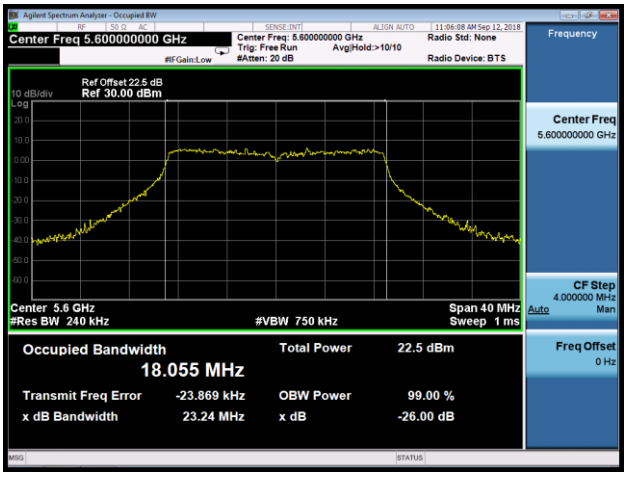
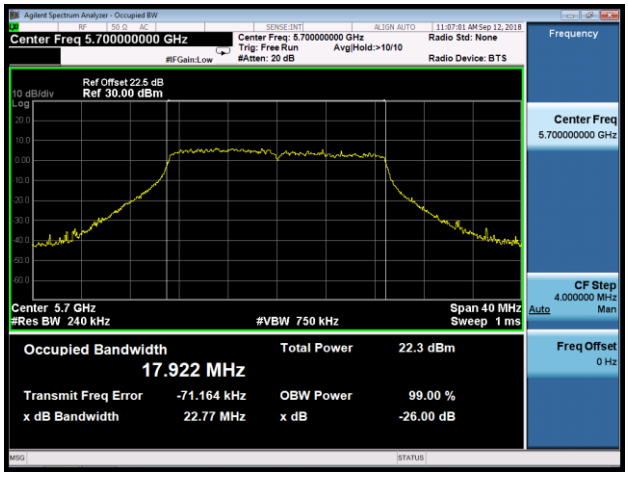
7.2.5.Test Result

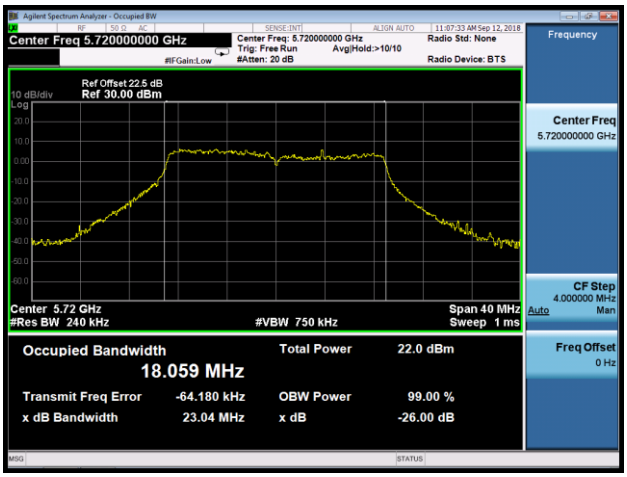
Product	HAN Access Point	Temperature	24°C
Test Engineer	Bruce Wang	Relative Humidity	59%
Test Site	TR3	Test Date	2018/09/12

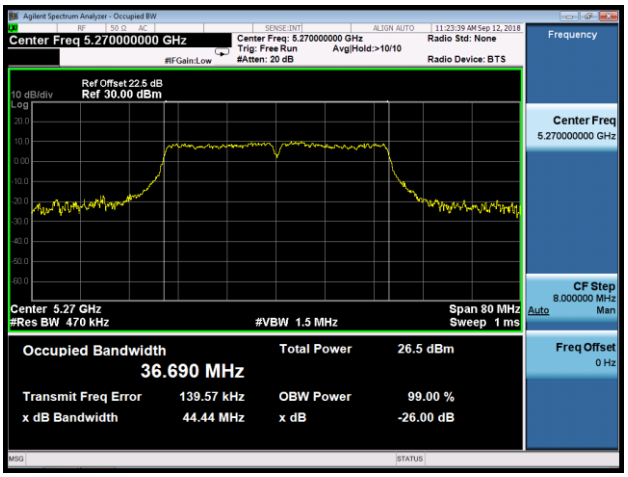
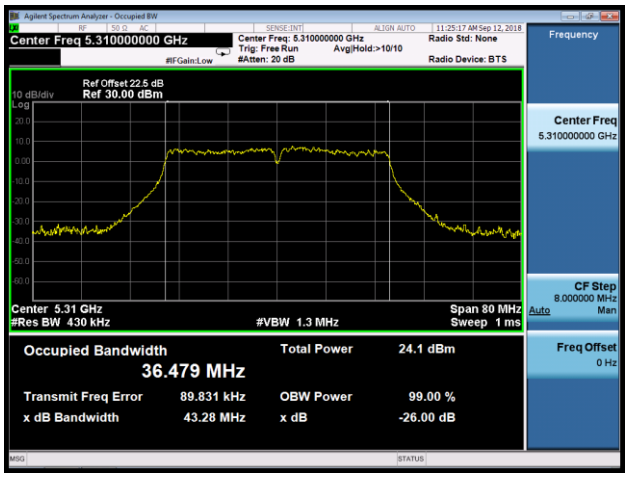
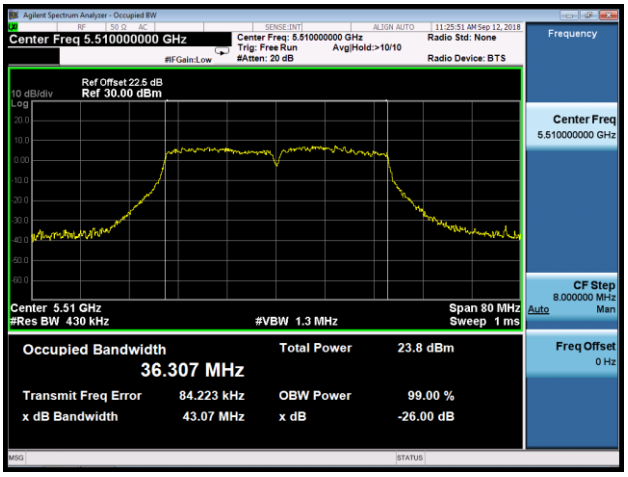
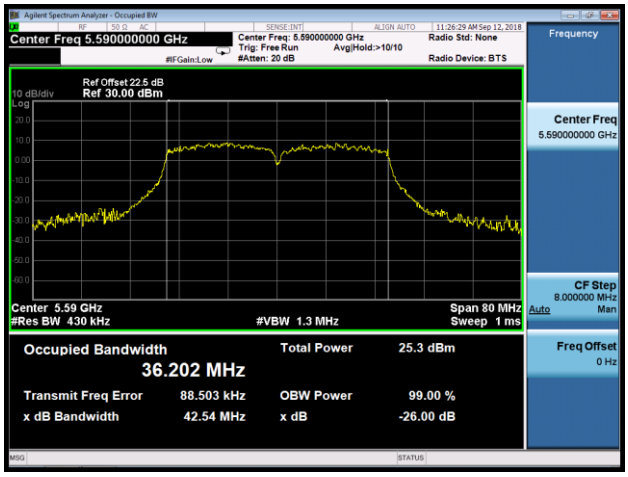
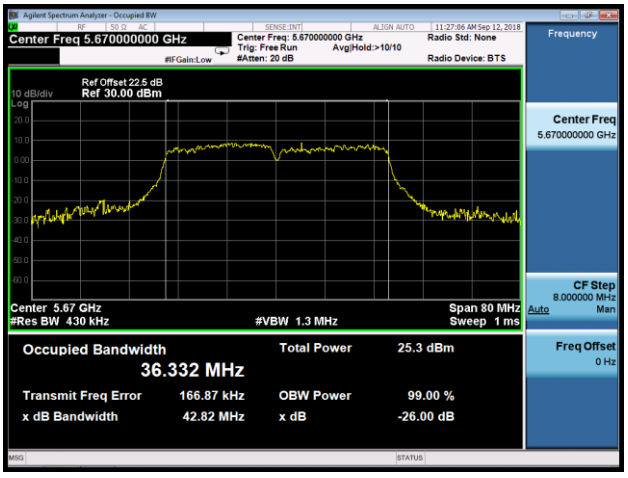
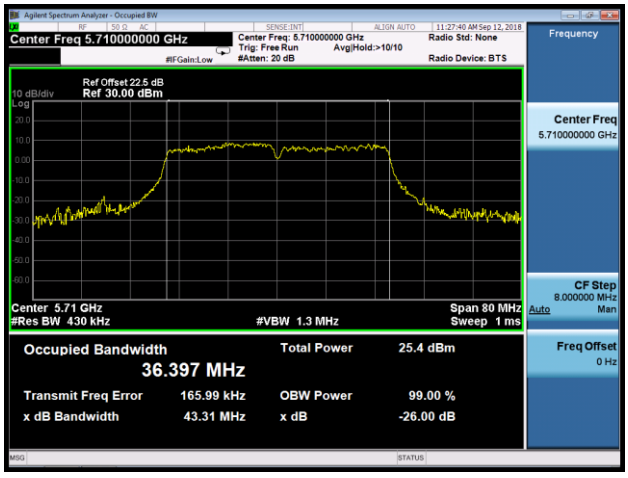
Test Mode	Data Rate/ MCS	Channel No.	Frequency (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)
Ant 0 / Ant 0 + 1					
802.11a	6Mbps	52	5260	21.44	16.60
802.11a	6Mbps	60	5300	21.17	16.57
802.11a	6Mbps	64	5320	21.28	16.60
802.11a	6Mbps	100	5500	21.01	16.69
802.11a	6Mbps	120	5600	21.61	16.76
802.11a	6Mbps	140	5700	21.04	16.65
802.11a	6Mbps	144	5720	21.58	16.74
802.11ac-VHT20	MCS0	52	5260	22.88	17.82
802.11ac-VHT20	MCS0	60	5300	22.62	17.77
802.11ac-VHT20	MCS0	64	5320	22.88	17.80
802.11ac-VHT20	MCS0	100	5500	22.73	17.95
802.11ac-VHT20	MCS0	120	5600	23.24	18.06
802.11ac-VHT20	MCS0	140	5700	22.77	17.92
802.11ac-VHT20	MCS0	144	5720	23.04	18.06
802.11ac-VHT40	MCS0	54	5270	44.44	36.69
802.11ac-VHT40	MCS0	62	5310	43.28	36.48
802.11ac-VHT40	MCS0	102	5510	43.07	36.31
802.11ac-VHT40	MCS0	118	5590	42.54	36.20
802.11ac-VHT40	MCS0	134	5670	42.82	36.33
802.11ac-VHT40	MCS0	142	5710	43.31	36.40
802.11ac-VHT80	MCS0	58	5290	88.87	76.49
802.11ac-VHT80	MCS0	106	5530	88.93	76.23
802.11ac-VHT80	MCS0	122	5610	90.82	76.32
802.11ac-VHT80	MCS0	138	5690	114.40	77.11

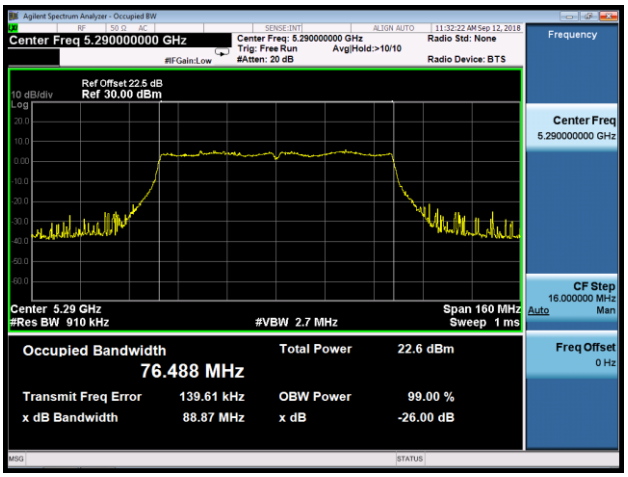
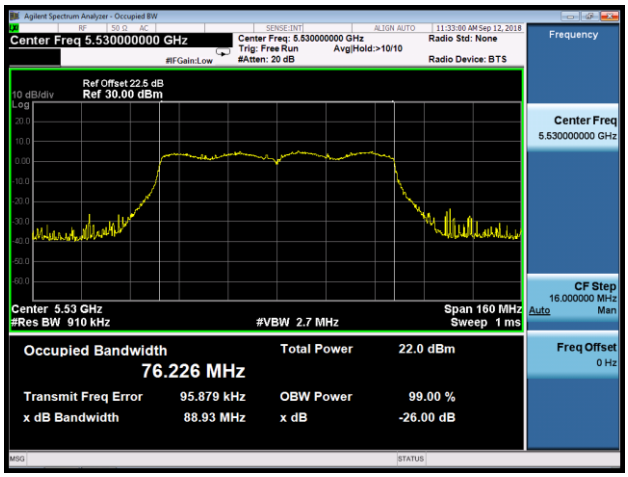
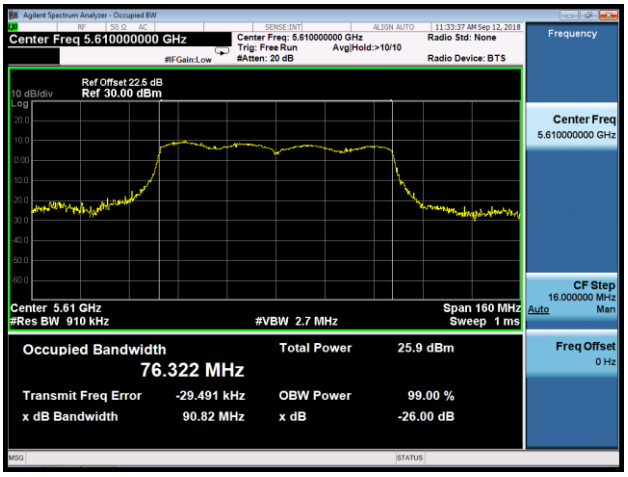
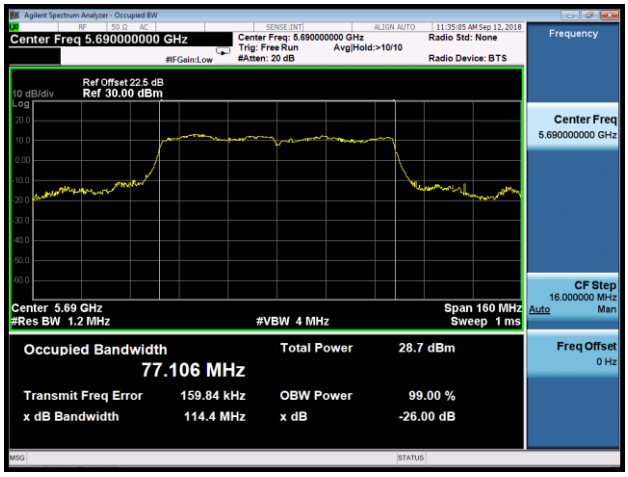
802.11a 26dB Bandwidth & 99% Bandwidth - Ant 0 / Ant 0 + 1	
Channel 52 (5260MHz)	Channel 60 (5300MHz)
	
Channel 64 (5320MHz)	Channel 100 (5500MHz)
	
Channel 120 (5600MHz)	Channel 140 (5700MHz)
	

Channel 144 (5720MHz)	
	

802.11ac-VHT20 26dB Bandwidth & 99% Bandwidth - Ant 0 / Ant 0 + 1	
Channel 52 (5260MHz)	Channel 60 (5300MHz)
	
Channel 64 (5320MHz)	Channel 100 (5500MHz)
	
Channel 120 (5600MHz)	Channel 140 (5700MHz)
	

Channel 144 (5720MHz)	
	

802.11ac-VHT40 26dB Bandwidth & 99% Bandwidth - Ant 0 / Ant 0 + 1	
Channel 54 (5270MHz)	Channel 62 (5310MHz)
	
Channel 102 (5510MHz)	Channel 118 (5590MHz)
	
Channel 134 (5670MHz)	Channel 142 (5710MHz)
	

802.11ac-VHT80 26dB Bandwidth & 99% Bandwidth - Ant 0 / Ant 0 + 1	
Channel 58 (5290MHz)	Channel 106 (5530MHz)
	
Channel 122 (5610MHz)	Channel 138 (5690MHz)
	

7.3. Output Power Measurement

7.3.1.Test Limit

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW (23.98dBm) or 11dBm +10 log (26dB BW).

If transmitting antennas of directional gain greater than 6dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

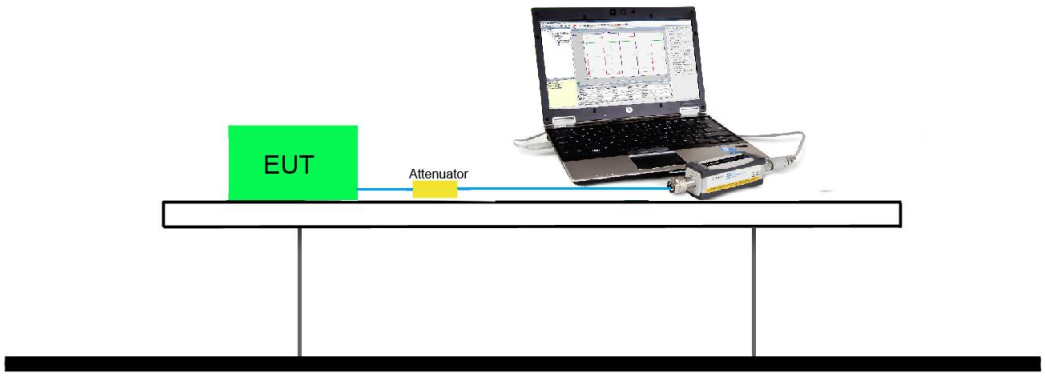
7.3.2.Test Procedure Used

KDB 789033D02v01r04- Section E)3)b) Method PM-G

7.3.3.Test Setting

Average power measurements were perform only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter. The trace was averaged over 100 traces to obtain the final measured average power.

7.3.4.Test Setup



7.3.5.Test Result

Power output test was verified over all data rates of each mode shown as below table, and then choose the maximum power output (gray marker) for final test of each channel.

Output power at various data rates for Ant 0 / Ant 0 + 1 port:

Test Mode	Bandwidth	Channel	Frequency (MHz)	Data Rate/ MCS	Average Power (dBm)
802.11a	20	52	5260	6Mbps	17.48
				24Mbps	17.09
				54Mbps	16.59
802.11ac	20	52	5260	MCS0	17.24
				MCS4	16.73
				MCS8	16.15
802.11ac	40	54	5270	MCS0	20.43
				MCS4	19.80
				MCS9	19.17
802.11ac	80	58	5290	MCS0	14.74
				MCS4	14.18
				MCS9	13.63

Product	HAN Access Point	Temperature	24°C
Test Engineer	Dandy Li	Relative Humidity	59%
Test Site	TR3	Test Date	2018/09/09

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
Ant 0 + 1 (CDD Mode)								
11a	6Mbps	52	5260	17.48	17.33	20.42	≤ 23.98	Pass
11a	6Mbps	60	5300	17.35	17.05	20.21	≤ 23.98	Pass
11a	6Mbps	64	5320	17.38	17.09	20.25	≤ 23.98	Pass
11a	6Mbps	100	5500	16.58	15.67	19.16	≤ 23.98	Pass
11a	6Mbps	120	5600	16.14	15.33	18.76	≤ 23.98	Pass
11a	6Mbps	140	5700	16.62	15.84	19.26	≤ 23.98	Pass
11a	6Mbps	144	5720	16.46	15.90	19.20	≤ 23.98	Pass
11ac-VHT20	MCS0	52	5260	17.24	16.85	20.06	≤ 23.98	Pass
11ac-VHT20	MCS0	60	5300	17.71	17.01	20.38	≤ 23.98	Pass
11ac-VHT20	MCS0	64	5320	17.72	16.97	20.37	≤ 23.98	Pass
11ac-VHT20	MCS0	100	5500	16.35	15.64	19.02	≤ 23.98	Pass
11ac-VHT20	MCS0	120	5600	15.81	15.46	18.65	≤ 23.98	Pass
11ac-VHT20	MCS0	140	5700	16.21	15.72	18.98	≤ 23.98	Pass
11ac-VHT20	MCS0	144	5720	16.16	16.12	19.15	≤ 23.98	Pass
11ac-VHT40	MCS0	54	5270	20.43	20.14	23.30	≤ 23.98	Pass
11ac-VHT40	MCS0	62	5310	17.07	15.96	19.56	≤ 23.98	Pass
11ac-VHT40	MCS0	102	5510	16.25	15.57	18.93	≤ 23.98	Pass
11ac-VHT40	MCS0	118	5590	19.02	18.50	21.78	≤ 23.98	Pass
11ac-VHT40	MCS0	134	5670	18.35	17.97	21.17	≤ 23.98	Pass
11ac-VHT40	MCS0	142	5710	19.67	19.07	22.39	≤ 23.98	Pass
11ac-VHT80	MCS0	58	5290	14.74	14.05	17.42	≤ 23.98	Pass
11ac-VHT80	MCS0	106	5530	13.45	12.97	16.23	≤ 23.98	Pass
11ac-VHT80	MCS0	122	5610	17.83	17.40	20.63	≤ 23.98	Pass
11ac-VHT80	MCS0	138	5690	19.28	18.34	21.85	≤ 23.98	Pass

Note 1: Total Average Power (dBm) = $10*\log\{10^{(\text{Ant 0 Average Power }/10)} +10^{(\text{Ant 1 Average Power }/10)}\}$..

Test Mode	Data Rate/ MCS	Channel No.	Freq. (MHz)	Ant 0 Average Power (dBm)	Ant 1 Average Power (dBm)	Total Average Power (dBm)	Average Power Limit (dBm)	Result
Ant 0 + 1 (Beam-Forming Mode)								
11ac-VHT20	MCS0	52	5260	17.24	16.85	20.06	≤ 23.56	Pass
11ac-VHT20	MCS0	60	5300	17.71	17.01	20.38	≤ 23.56	Pass
11ac-VHT20	MCS0	64	5320	17.72	16.97	20.37	≤ 23.56	Pass
11ac-VHT20	MCS0	100	5500	16.35	15.64	19.02	≤ 22.76	Pass
11ac-VHT20	MCS0	120	5600	15.81	15.46	18.65	≤ 22.76	Pass
11ac-VHT20	MCS0	140	5700	16.21	15.72	18.98	≤ 22.76	Pass
11ac-VHT20	MCS0	144	5720	16.16	16.12	19.15	≤ 22.76	Pass
11ac-VHT40	MCS0	54	5270	20.43	20.14	23.30	≤ 23.56	Pass
11ac-VHT40	MCS0	62	5310	17.07	15.96	19.56	≤ 23.56	Pass
11ac-VHT40	MCS0	102	5510	16.25	15.57	18.93	≤ 22.76	Pass
11ac-VHT40	MCS0	118	5590	19.02	18.50	21.78	≤ 22.76	Pass
11ac-VHT40	MCS0	134	5670	18.35	17.97	21.17	≤ 22.76	Pass
11ac-VHT40	MCS0	142	5710	19.67	19.07	22.39	≤ 22.76	Pass
11ac-VHT80	MCS0	58	5290	14.74	14.05	17.42	≤ 23.56	Pass
11ac-VHT80	MCS0	106	5530	13.45	12.97	16.23	≤ 22.76	Pass
11ac-VHT80	MCS0	122	5610	17.83	17.40	20.63	≤ 22.76	Pass
11ac-VHT80	MCS0	138	5690	19.28	18.34	21.85	≤ 22.76	Pass

Note 1: Total Average Power (dBm) = $10*\log\{10^{(\text{Ant 0 Average Power }/10)} +10^{(\text{Ant 1 Average Power }/10)}\}$..

Note 2: For 5250 ~ 5350MHz Band, Average Power Limit (dBm) = 23.98dBm - (6.42dBi - 6dBi) = 23.56dBm.

For 5470 ~ 5725MHz Band, Average Power Limit (dBm) = 23.98dBm - (7.22dBi - 6dBi) = 22.76dBm.

7.4. Transmit Power Control

7.4.1.Test Limit

The U-NII device is required to have the capability to operate at least 6 dB below the mean EIRP value of 30dBm.

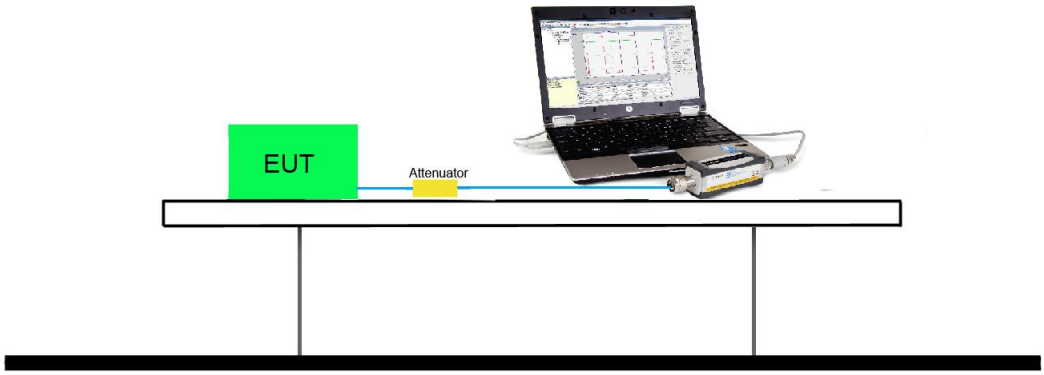
7.4.2.Test Procedure Used

KDB 789033 D02v01- Section E)3)b) Method PM-G

7.4.3.Test Setting

Average power measurements were perform only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter. The trace was averaged over 100 traces to obtain the final measured average power.

7.4.4.Test Setup



7.4.5.Test Result

Product	HAN Access Point	Temperature	24°C
Test Engineer	Cloud Guo	Relative Humidity	59%
Test Site	TR3	Test Date	2018/09/14
Test Item	Transmit Power Control		

Test Mode	Data Rate /MCS	Channel No.	Freq. (MHz)	Ant 0 TPC Power (dBm)	Ant 1 TPC Power (dBm)	Total EIRP TPC Power (dBm)	Limit (dBm)	Result
Ant 0 + 1 (CDD Mode)								
11a	6Mbps	52	5260	16.91	16.84	23.69	≤ 24.00	Pass
11a	6Mbps	60	5300	16.78	16.61	23.51	≤ 24.00	Pass
11a	6Mbps	64	5320	16.89	16.58	23.55	≤ 24.00	Pass
11a	6Mbps	100	5500	16.60	15.81	23.83	≤ 24.00	Pass
11a	6Mbps	120	5600	16.25	15.37	23.44	≤ 24.00	Pass
11a	6Mbps	140	5700	16.59	15.78	23.81	≤ 24.00	Pass
11a	6Mbps	144	5720	16.53	15.93	23.85	≤ 24.00	Pass
11ac-VHT20	MCS0	52	5260	17.11	16.76	23.75	≤ 24.00	Pass
11ac-VHT20	MCS0	60	5300	17.27	16.70	23.80	≤ 24.00	Pass
11ac-VHT20	MCS0	64	5320	17.27	16.62	23.77	≤ 24.00	Pass
11ac-VHT20	MCS0	100	5500	16.42	15.59	23.64	≤ 24.00	Pass
11ac-VHT20	MCS0	120	5600	15.89	15.63	23.37	≤ 24.00	Pass
11ac-VHT20	MCS0	140	5700	16.29	15.83	23.68	≤ 24.00	Pass
11ac-VHT20	MCS0	144	5720	16.21	16.03	23.73	≤ 24.00	Pass
11ac-VHT40	MCS0	54	5270	17.00	16.78	23.70	≤ 24.00	Pass
11ac-VHT40	MCS0	62	5310	17.04	16.31	23.50	≤ 24.00	Pass
11ac-VHT40	MCS0	102	5510	16.38	15.62	23.63	≤ 24.00	Pass
11ac-VHT40	MCS0	118	5590	16.39	15.89	23.76	≤ 24.00	Pass
11ac-VHT40	MCS0	134	5670	16.18	15.87	23.64	≤ 24.00	Pass
11ac-VHT40	MCS0	142	5710	16.26	15.89	23.69	≤ 24.00	Pass
11ac-VHT80	MCS0	58	5290	16.89	16.37	23.45	≤ 24.00	Pass
11ac-VHT80	MCS0	106	5530	16.22	15.67	23.56	≤ 24.00	Pass
11ac-VHT80	MCS0	122	5610	16.37	16.04	23.82	≤ 24.00	Pass
11ac-VHT80	MCS0	138	5690	16.63	15.77	23.83	≤ 24.00	Pass

Note: Total EIRP TPC Power (dBm) = $10*\log \{10^{(\text{Ant 0 TPC Power }/10)} + 10^{(\text{Ant 1 TPC Power }/10)}\}$ + CDD Ant Gain (dBi).

Test Mode	Data Rate /MCS	Channel No.	Freq. (MHz)	Ant 0 TPC Power (dBm)	Ant 1 TPC Power (dBm)	Total EIRP TPC Power (dBm)	Limit (dBm)	Result
Ant 0 + 1 (Beam-Forming Mode)								
11ac-VHT20	MCS0	52	5260	14.56	14.03	23.73	≤ 24.00	Pass
11ac-VHT20	MCS0	60	5300	14.63	13.95	23.73	≤ 24.00	Pass
11ac-VHT20	MCS0	64	5320	14.58	13.89	23.68	≤ 24.00	Pass
11ac-VHT20	MCS0	100	5500	13.89	13.16	23.77	≤ 24.00	Pass
11ac-VHT20	MCS0	120	5600	13.46	13.38	23.65	≤ 24.00	Pass
11ac-VHT20	MCS0	140	5700	13.67	13.22	23.68	≤ 24.00	Pass
11ac-VHT20	MCS0	144	5720	13.78	13.18	23.72	≤ 24.00	Pass
11ac-VHT40	MCS0	54	5270	14.62	14.03	23.77	≤ 24.00	Pass
11ac-VHT40	MCS0	62	5310	14.78	13.89	23.79	≤ 24.00	Pass
11ac-VHT40	MCS0	102	5510	13.89	13.41	23.89	≤ 24.00	Pass
11ac-VHT40	MCS0	118	5590	13.92	13.28	23.84	≤ 24.00	Pass
11ac-VHT40	MCS0	134	5670	13.67	13.44	23.79	≤ 24.00	Pass
11ac-VHT40	MCS0	142	5710	13.69	13.14	23.65	≤ 24.00	Pass
11ac-VHT80	MCS0	58	5290	14.71	14.06	23.83	≤ 24.00	Pass
11ac-VHT80	MCS0	106	5530	13.52	13.03	23.51	≤ 24.00	Pass
11ac-VHT80	MCS0	122	5610	13.69	13.20	23.68	≤ 24.00	Pass
11ac-VHT80	MCS0	138	5690	13.67	13.15	23.65	≤ 24.00	Pass

Note: Total EIRP TPC Power (dBm) = $10*\log \{10^{(\text{Ant 0 TPC Power }/10)} + 10^{(\text{Ant 1 TPC Power }/10)}\}$ + Beam-Forming Gain (dBi).

7.5. Power Spectral Density Measurement

7.5.1.Test Limit

For the band 5.25-5.35 GHz and 5.47-5725 GHz, the power spectral density shall not exceed 11 dBm in any 1.0 MHz band.

If transmitting antennas of directional gain greater than 6dBi are used, the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

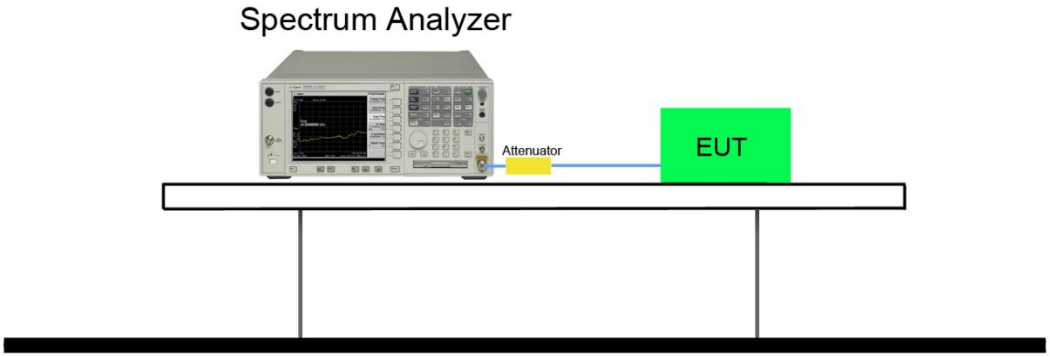
7.5.2.Test Procedure Used

KDB 789033 D02v02r01 - Section F

7.5.3.Test Setting

1. Analyzer was set to the center frequency of the UNII channel under investigation
2. Span was set to encompass the entire 26dB EBW of the signal.
3. RBW = 1MHz, if measurement bandwidth of Maximum PSD is specified in 500 kHz, RBW = 100 kHz
4. VBW = 3MHz
5. Number of sweep points ≥ 2 × (span / RBW)
6. Detector = power averaging (Average)
7. Sweep time = auto
8. Trigger = free run
9. Use the peak search function on the instrument to find the peak of the spectrum and record its value.
10. Add 10*log(1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times (because the measurement represents an average over both the on and off times of the transmission). For example, add 10*log(1/0.25) = 6 dB if the duty cycle is 25 percent.
11. When the measurement bandwidth of Maximum PSD is specified in 500 kHz, add a constant factor 10*log(500kHz/100kHz) = 6.99 dB to the measured result.

7.5.4.Test Setup



7.5.5.Test Result

Product	HAN Access Point	Temperature	22°C
Test Engineer	Lewis Huang	Relative Humidity	54%
Test Site	TR3	Test Date	2018/09/12
Test Item	Power Spectral Density (Band 2a & Band 2c)		

Test Mode	Data Rate / MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/ MHz)	Ant 1 PSD (dBm/ MHz)	Duty Cycle (%)	Total PSD (dBm/ MHz)	PSD Limit (dBm/MHz)	Result
11a	6Mbps	52	5260	6.75	6.66	95.73	9.91	≤ 10.19	Pass
11a	6Mbps	60	5300	6.88	6.55	95.73	9.92	≤ 10.19	Pass
11a	6Mbps	64	5320	6.84	6.31	95.73	9.78	≤ 10.19	Pass
11a	6Mbps	100	5500	6.28	5.56	95.73	9.13	≤ 9.39	Pass
11a	6Mbps	120	5600	6.07	5.60	95.73	9.04	≤ 9.39	Pass
11a	6Mbps	140	5700	5.97	5.71	95.73	9.04	≤ 9.39	Pass
11a	6Mbps	144	5720	6.12	5.41	95.73	8.98	≤ 9.39	Pass
11ac-VHT20	MCS0	52	5260	6.49	5.98	97.84	9.35	≤ 10.19	Pass
11ac-VHT20	MCS0	60	5300	6.83	6.10	97.84	9.59	≤ 10.19	Pass
11ac-VHT20	MCS0	64	5320	6.91	5.86	97.84	9.52	≤ 10.19	Pass
11ac-VHT20	MCS0	100	5500	6.08	5.33	97.84	8.83	≤ 9.39	Pass
11ac-VHT20	MCS0	120	5600	5.50	5.69	97.84	8.70	≤ 9.39	Pass
11ac-VHT20	MCS0	140	5700	5.64	5.55	97.84	8.70	≤ 9.39	Pass
11ac-VHT20	MCS0	144	5720	5.65	5.56	97.84	8.71	≤ 9.39	Pass
11ac-VHT40	MCS0	54	5270	6.86	6.04	95.45	9.68	≤ 10.19	Pass
11ac-VHT40	MCS0	62	5310	3.82	2.96	95.45	6.62	≤ 10.19	Pass
11ac-VHT40	MCS0	102	5510	3.73	2.93	95.45	6.56	≤ 9.39	Pass
11ac-VHT40	MCS0	118	5590	6.41	5.15	95.45	9.04	≤ 9.39	Pass
11ac-VHT40	MCS0	134	5670	5.42	4.81	95.45	8.34	≤ 9.39	Pass
11ac-VHT40	MCS0	142	5710	6.15	5.58	95.45	9.09	≤ 9.39	Pass
11ac-VHT80	MCS0	58	5290	-2.11	-1.81	91.99	1.42	≤ 10.19	Pass
11ac-VHT80	MCS0	106	5530	-2.44	-2.55	91.99	0.88	≤ 9.39	Pass
11ac-VHT80	MCS0	122	5610	1.97	1.35	91.99	5.04	≤ 9.39	Pass
11ac-VHT80	MCS0	138	5690	3.65	2.80	91.99	6.62	≤ 9.39	Pass

Note 1: When EUT duty cycle ≥ 98%, the total PSD = $10*\log\{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\}$

Note 2: When EUT duty cycle < 98%, the total PSD = $10*\log\{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\} + 10*\log(1/\text{duty cycle})$

Note 3: For 5250 - 5350MHz Band: PSD Limit (dBm/MHz) = 11dBm/MHz - (6.81dBi - 6.00dBi) = 10.19dBm/MHz.

For 5470 - 5725MHz Band: PSD Limit (dBm/MHz) = 11dBm/MHz - (7.61dBi - 6.00dBi) = 9.39dBm/MHz.

Product	HAN Access Point	Temperature	22°C
Test Engineer	Lewis Huang	Relative Humidity	54%
Test Site	TR3	Test Date	2018/09/17
Test Item	Power Spectral Density (Band 2a & Band 2c)		

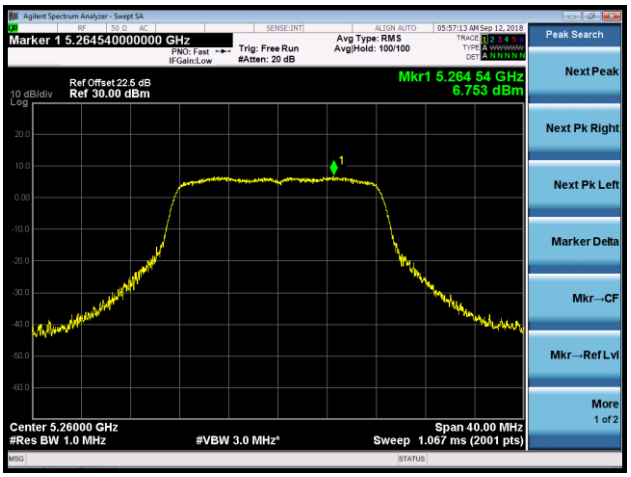
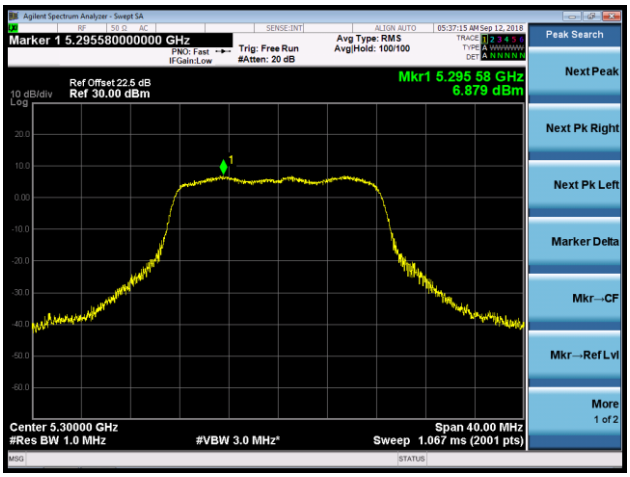
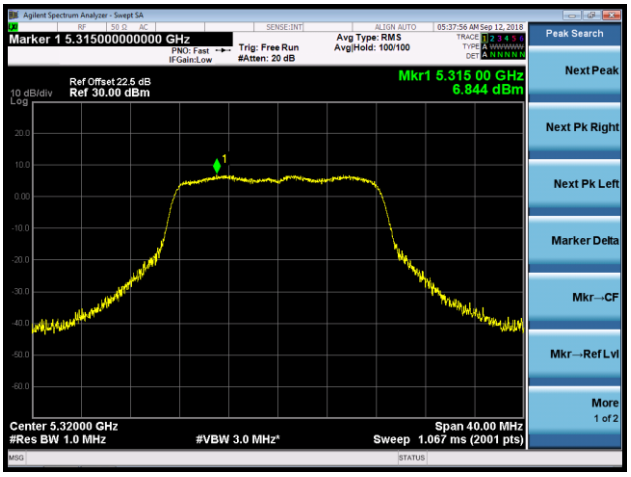
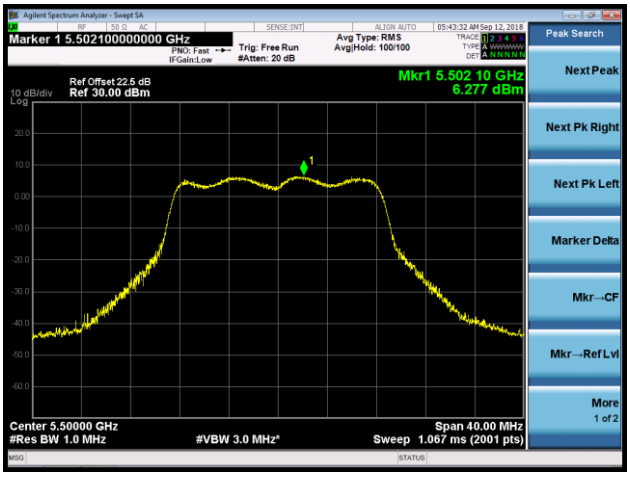
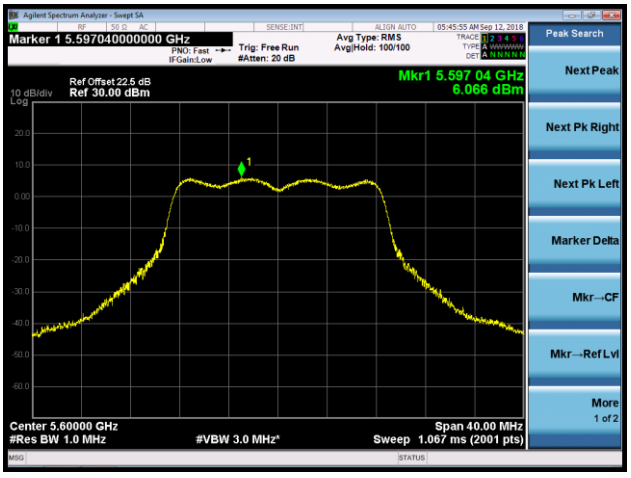
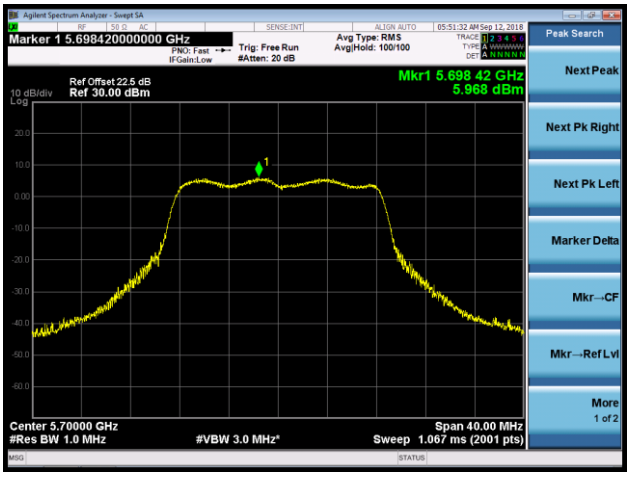
Test Mode	Data Rate / MCS	Channel No.	Freq. (MHz)	Ant 0 PSD (dBm/ MHz)	Ant 1 PSD (dBm/ MHz)	Duty Cycle (%)	Total PSD (dBm/ MHz)	PSD Limit (dBm/MHz)	Result
Ant 0 + 1 (Beam-Forming Mode)									
11ac-VHT20	MCS0	52	5260	7.63	6.99	97.84	10.43	≤ 10.58	Pass
11ac-VHT20	MCS0	60	5300	7.59	6.62	97.84	10.24	≤ 10.58	Pass
11ac-VHT20	MCS0	64	5320	7.66	6.50	97.84	10.22	≤ 10.58	Pass
11ac-VHT20	MCS0	100	5500	7.19	5.91	97.84	9.70	≤ 9.78	Pass
11ac-VHT20	MCS0	120	5600	6.61	6.01	97.84	9.43	≤ 9.78	Pass
11ac-VHT20	MCS0	140	5700	6.37	6.10	97.84	9.34	≤ 9.78	Pass
11ac-VHT20	MCS0	144	5720	6.56	6.44	97.84	9.61	≤ 9.78	Pass
11ac-VHT40	MCS0	54	5270	7.13	6.48	95.45	10.03	≤ 10.58	Pass
11ac-VHT40	MCS0	62	5310	7.01	6.40	95.45	9.93	≤ 10.58	Pass
11ac-VHT40	MCS0	102	5510	6.63	6.00	95.45	9.54	≤ 9.78	Pass
11ac-VHT40	MCS0	118	5590	6.36	5.82	95.45	9.31	≤ 9.78	Pass
11ac-VHT40	MCS0	134	5670	6.68	5.94	95.45	9.54	≤ 9.78	Pass
11ac-VHT40	MCS0	142	5710	6.36	5.49	95.45	9.16	≤ 9.78	Pass
11ac-VHT80	MCS0	58	5290	1.26	0.62	91.99	4.33	≤ 10.58	Pass
11ac-VHT80	MCS0	106	5530	1.70	1.02	91.99	4.75	≤ 9.78	Pass
11ac-VHT80	MCS0	122	5610	4.99	4.18	91.99	7.98	≤ 9.78	Pass
11ac-VHT80	MCS0	138	5690	3.73	3.45	91.99	6.97	≤ 9.78	Pass

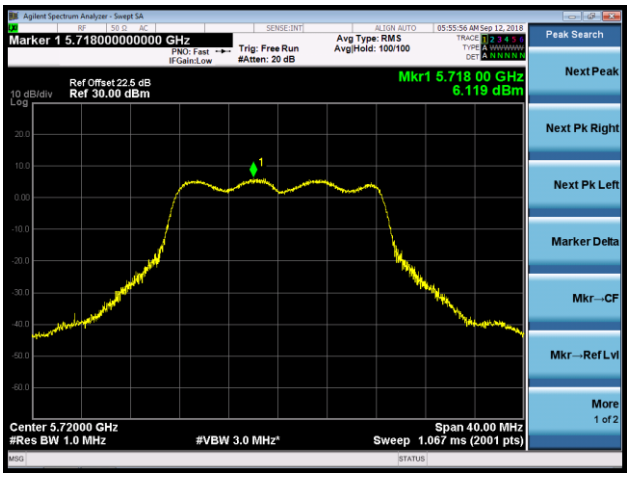
Note 1: When EUT duty cycle ≥ 98%, the total PSD = $10*\log\{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\}$

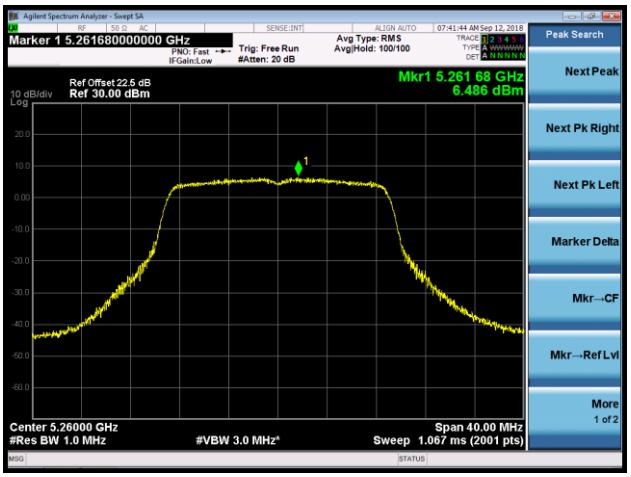
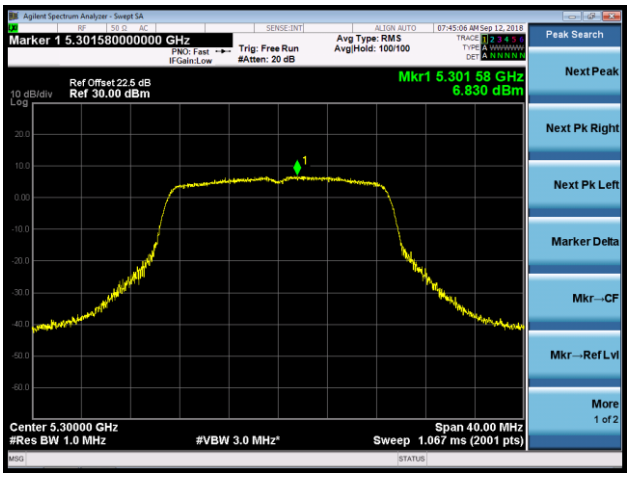
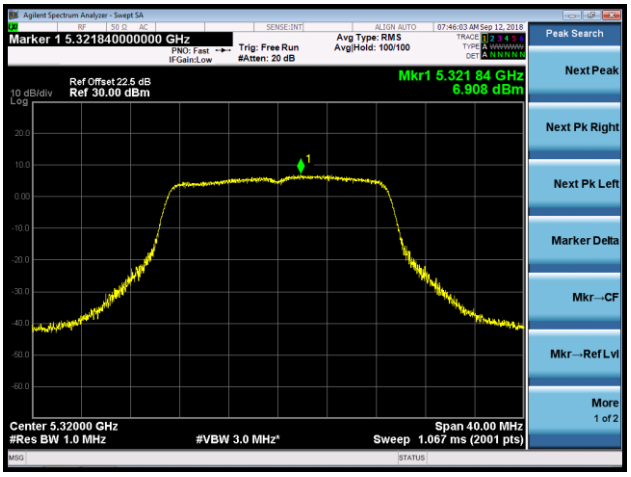
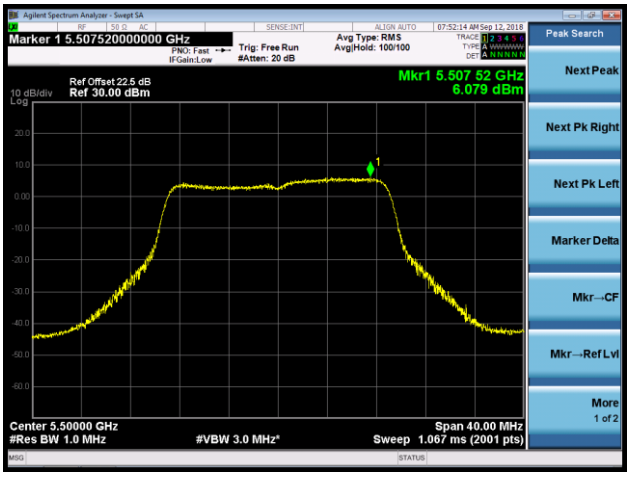
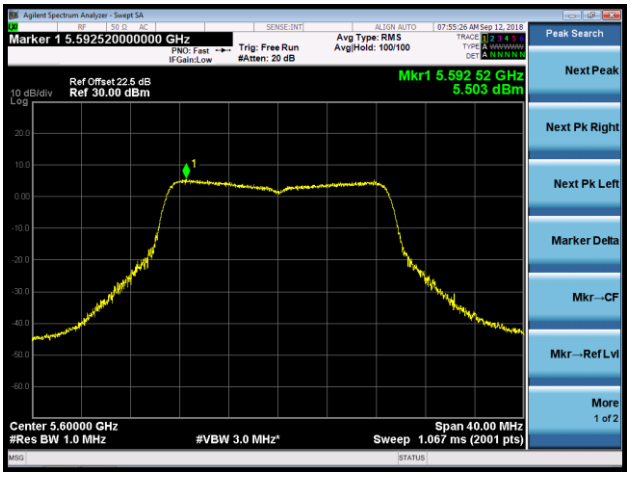
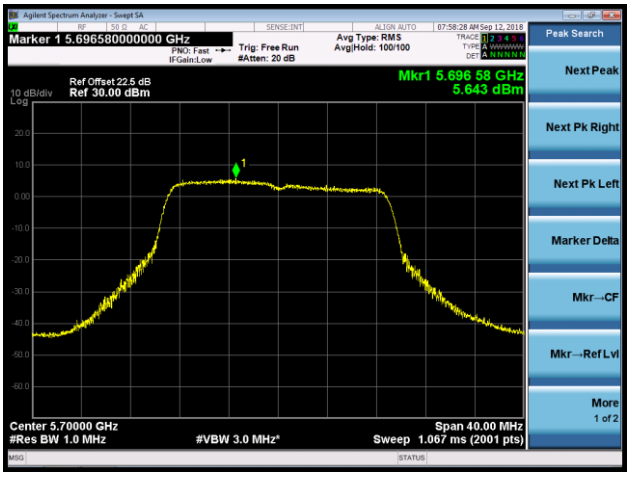
Note 2: When EUT duty cycle < 98%, the total PSD = $10*\log\{10^{(\text{Ant 0 PSD}/10)} + 10^{(\text{Ant 1 PSD}/10)}\} + 10*\log(1/\text{duty cycle})$

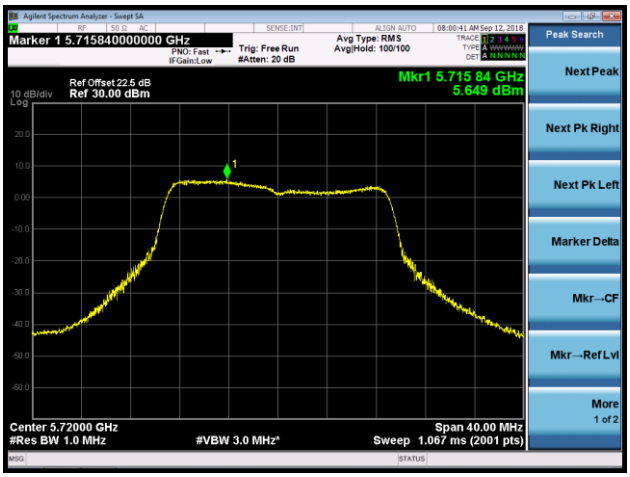
Note 3: For 5250 - 5350MHz Band: PSD Limit (dBm/MHz) = 11dBm/MHz - (6.42dBi - 6.00dBi) = 10.58dBm/MHz.

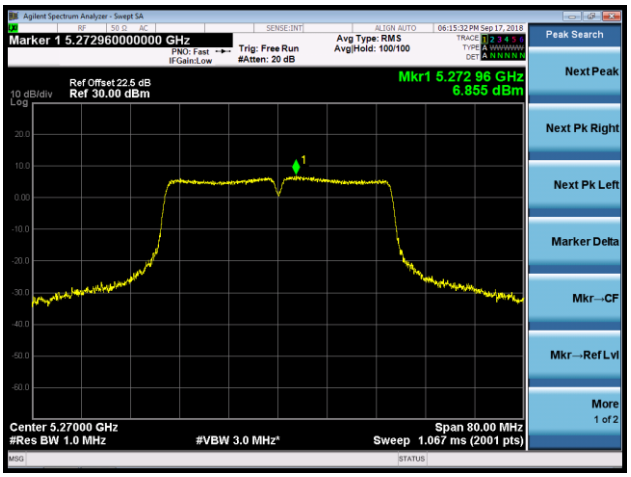
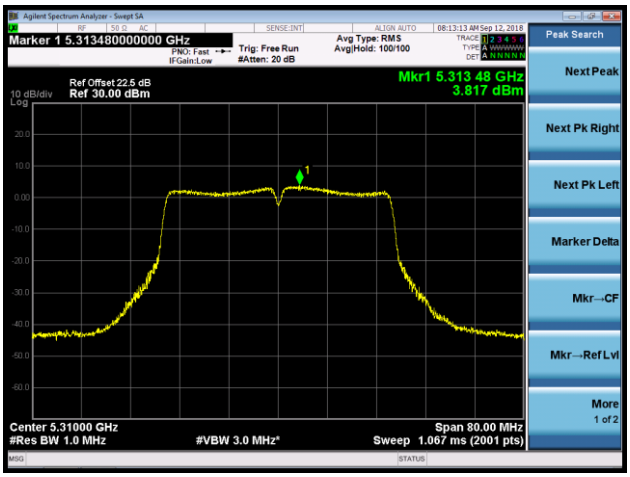
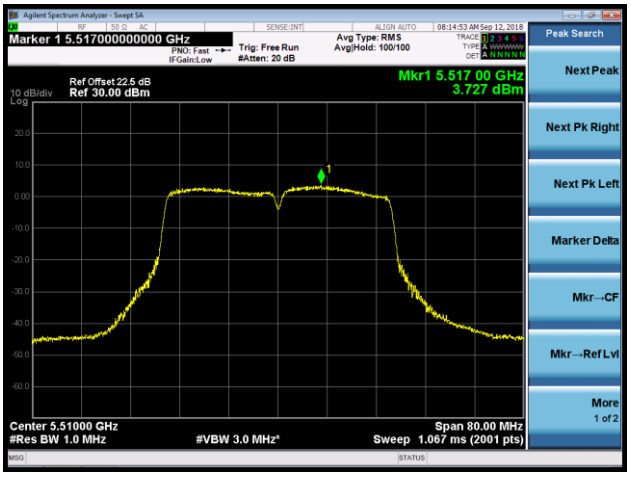
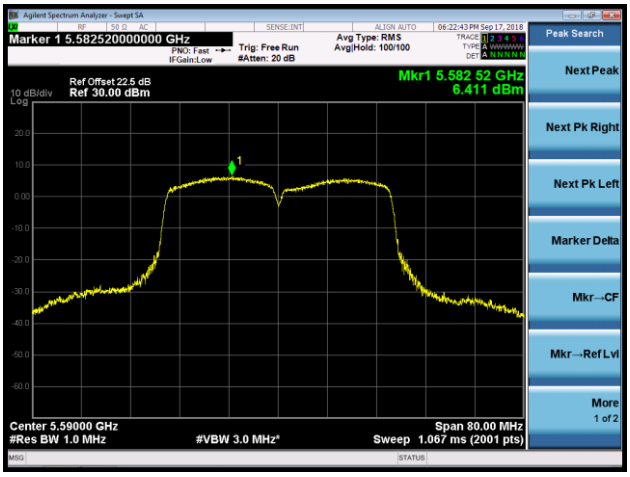
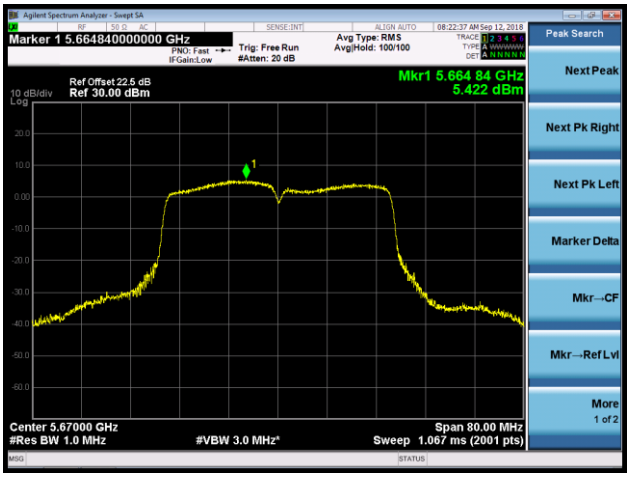
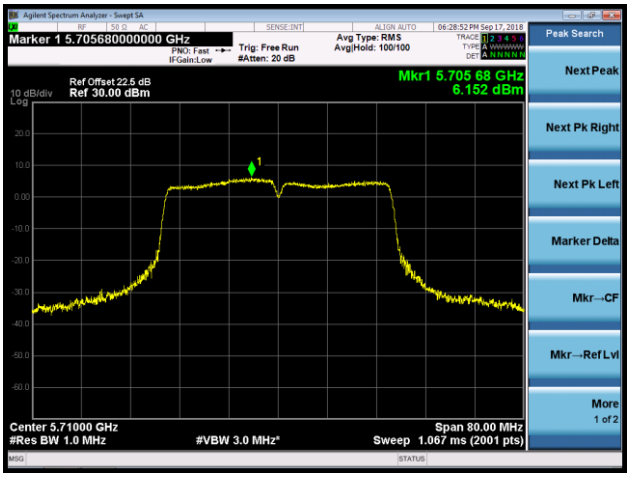
For 5470 - 5725MHz Band: PSD Limit (dBm/MHz) = 11dBm/MHz - (7.22dBi - 6.00dBi) = 9.78dBm/MHz.

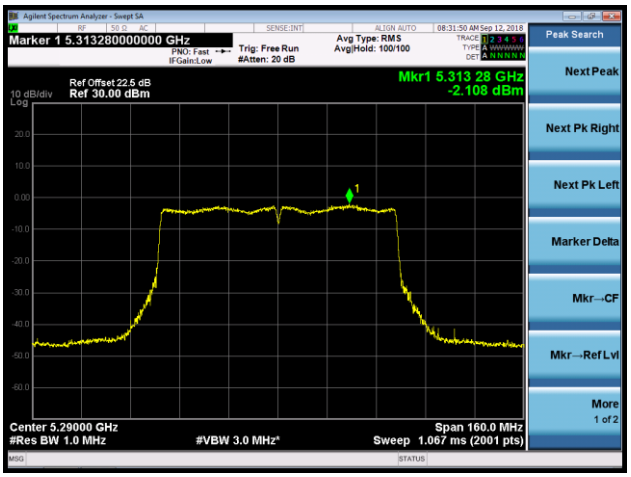
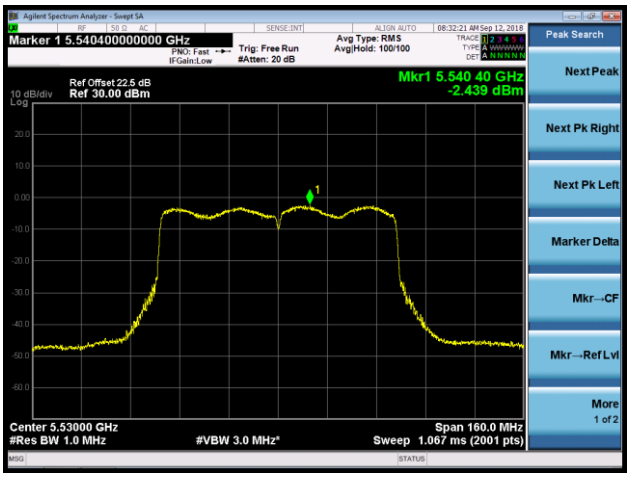
802.11a Power Spectral Density - Ant 0 / Ant 0 + 1 (CDD Mode)	
Channel 52 (5260MHz)	Channel 60 (5300MHz)
	
Channel 64 (5320MHz)	Channel 100 (5500MHz)
	
Channel 120 (5600MHz)	Channel 140 (5700MHz)
	

Channel 144 (5720MHz)	
	

802.11ac-VHT20 Power Spectral Density - Ant 0 / Ant 0 + 1 (CDD Mode)	
Channel 52 (5260MHz)	Channel 60 (5300MHz)
	
Channel 64 (5320MHz)	Channel 100 (5500MHz)
	
Channel 120 (5600MHz)	Channel 140 (5700MHz)
	

Channel 144 (5720MHz)	
	

802.11ac-VHT40 Power Spectral Density - Ant 0 / Ant 0 + 1 (CDD Mode)	
Channel 54 (5270MHz)	Channel 62 (5310MHz)
	
Channel 102 (5510MHz)	Channel 118 (5590MHz)
	
Channel 134 (5670MHz)	Channel 142 (5710MHz)
	

802.11ac-VHT80 Power Spectral Density - Ant 0 / Ant 0 + 1 (CDD Mode)	
Channel 58 (5290MHz)	Channel 106 (5530MHz)
	
Channel 122 (5610MHz)	Channel 138 (5690MHz)