

FCC Test Report

Report No.: RF200518C05-3

FCC ID: B94HHF135P

Test Model: TPC-F135P

Marketing Name: HP Bridge

Received Date: Mar. 18, 2020

Test Date: Jun. 29, 2020 ~ Aug. 08, 2020

Issued Date: Oct. 16, 2020

Applicant: HP Inc.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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**FCC Registration /
Designation Number:** 788550 / TW0003



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Release Control Record

Issue No.	Description	Date Issued
RF200518C05-3	Original Release	Oct. 16, 2020

1 Certificate of Conformity

Product: HP tablet

Brand: HP

Test Model: TPC-F135P

Marketing Name: HP Bridge

Sample Status: Engineering Sample

Applicant: HP Inc.

Test Date: Jun. 29, 2020 ~ Aug. 08, 2020

Standards: 47 CFR FCC Part 15, Subpart E (Section 15.407)
ANSI C63.10:2013

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

Prepared by : Shelly Hsueh , **Date:** Oct. 16, 2020
Shelly Hsueh / Specialist

Approved by : Dylan Chiou , **Date:** Oct. 16, 2020
Dylan Chiou / Senior Project Engineer

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -13.38 dB at 0.26600 MHz.
15.407(b) (1/2/3/4(i/ii)/6)	Radiated Emissions & Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -6.3 dB at 11000 MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	-	Reference only
15.407(a)(1/2/3)	Peak Power Spectral Density	Pass	Meet the requirement of limit.
15.407(e)	6 dB Bandwidth	Pass	Meet the requirement of limit. (U-NII-3 Band only)
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	No antenna connector is used.

Note:

- For U-NII-3 band compliance with rule part 15.407(b)(4)(i), the OOB test plots were recorded in Annex A.
- For U-NII-1, U-NII-2A, U-NII-2C band compliance with rule 15.407(b) of the band-edge items, the test plots were recorded in Annex B. Test Procedures refer to report 4.1.3.
- Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150 kHz ~ 30 MHz	2.79 dB
Radiated Emissions up to 1 GHz	9 kHz ~ 30 MHz	3.04 dB
	30 MHz ~ 200 MHz	2.93 dB
	200 MHz ~ 1000 MHz	2.95 dB
Radiated Emissions above 1 GHz	1 GHz ~ 18 GHz	2.26 dB
	18 GHz ~ 40 GHz	1.94 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	HP tablet
Brand	HP
Test Model	TPC-F135P
Marketing Name	HP Bridge
Status of EUT	Engineering Sample
Power Supply Rating	5 / 9 / 12 Vdc (adapter) 3.8 Vdc (Li-ion battery)
Modulation Type	256QAM, 64QAM, 16QAM, QPSK, BPSK
Modulation Technology	OFDM
Transfer Rate	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0 Mbps 802.11n: up to 150 Mbps 802.11ac: up to 433.3 Mbps
Operating Frequency	5180 ~ 5240 MHz, 5260 ~ 5320 MHz, 5500 ~ 5720 MHz, 5745 ~ 5825 MHz
Number of Channel	5180 ~ 5240 MHz: 4 for 802.11a, 802.11n (HT20), 802.11ac (VHT20) 2 for 802.11n (HT40), 802.11ac (VHT40) 1 for 802.11ac (VHT80) 5260 ~ 5320 MHz: 4 for 802.11a, 802.11n (HT20), 802.11ac (VHT20) 2 for 802.11n (HT40), 802.11ac (VHT40) 1 for 802.11ac (VHT80) 5500 ~ 5720 MHz: 12 for 802.11a, 802.11n (HT20), 802.11ac (VHT20) 6 for 802.11n (HT40), 802.11ac (VHT40) 3 for 802.11ac (VHT80) 5745 ~ 5825 MHz: 5 for 802.11a, 802.11n (HT20), 802.11ac (VHT20) 2 for 802.11n (HT40), 802.11ac (VHT40) 1 for 802.11ac (VHT80)
Output Power	31.117 mW for 5180 ~ 5240 MHz 30.974 mW for 5260 ~ 5320 MHz 31.046 mW for 5500 ~ 5720 MHz 31.189 mW for 5745 ~ 5825 MHz
Antenna Type	PIFA antenna with -1.42 dBi gain (5180 ~ 5240 MHz) PIFA antenna with -1.52 dBi gain (5260 ~ 5320 MHz) PIFA antenna with -1.10 dBi gain (5500 ~ 5720 MHz) PIFA antenna with -1.97 dBi gain (5745 ~ 5825 MHz)
Antenna Connector	N/A
Accessory Device	Refer to Note as below
Data Cable Supplied	Refer to Note as below

Note:

1. The EUT incorporates a SISO function. Physically, the EUT provides 1 completed transmitters and 1 receivers.

Modulation Mode	Tx Function
802.11a	1TX
802.11n (HT20)	1TX
802.11n (HT40)	1TX
802.11ac (VHT20)	1TX
802.11ac (VHT40)	1TX
802.11ac (VHT80)	1TX

* The modulation and bandwidth are similar for 802.11n mode for HT20 / HT40 and 802.11ac mode for VHT20 / VHT40, therefore investigated worst case to representative mode in test report. (Final test mode refer section 3.2.1)

2. The EUT contains following accessory devices.

Product	Brand	Model	Description
Adapter	HP	DSA-18QFE FUS A	I/P: 100-240 Vac, 50/60 Hz, 0.5 A O/P: 5 Vdc, 3 A, 15W / 9 Vdc, 2 A, 18W / 12 Vdc, 1.5 A, 18W
Battery	HP	HSP 1CP5/34/77	3.8 Vdc, 1500 mAh, 5.7Wh
BT/WLAN Module	Qualcomm	SDM660-3	--
USB Cable	HP	WU-0093-00	1.47 m shielded cable w/o core
Holster	HP	HP Bridge Holster	HP holster Marketing Name: HP Bridge Holster

3. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.
4. The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or User's Manual.

3.2 Description of Test Modes

For 5180 ~ 5240 MHz

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	44	5220
40	5200	48	5240

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	46	5230

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency (MHz)
42	5210

For 5260 ~ 5320 MHz

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
52	5260	60	5300
56	5280	64	5320

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
54	5270	62	5310

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency (MHz)
58	5290

For 5500 ~ 5720 MHz

12 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
100	5500	124	5620
104	5520	128	5640
108	5540	132	5660
112	5560	136	5680
116	5580	140	5700
120	5600	144	5720

6 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
102	5510	126	5630
110	5550	134	5670
118	5590	142	5710

3 channels are provided for 802.11ac (VHT80):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
106	5530	138	5690
122	5610		

For 5745 ~ 5825 MHz:

5 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	161	5805
153	5765	165	5825
157	5785		

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
151	5755	159	5795

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency (MHz)
155	5775

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable To				Description
	RE \geq 1G	RE $<$ 1G	PLC	APCM	
-	√	√	√	√	-

Where **RE \geq 1G**: Radiated Emission above 1 GHz **RE $<$ 1G**: Radiated Emission below 1 GHz
PLC: Power Line Conducted Emission **APCM**: Antenna Port Conducted Measurement

Note:

1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Y-plane**.
2. "-" means no effect.

Radiated Emission Test (Above 1 GHz):

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5180-5240	802.11a	36 to 48	36, 40, 48	OFDM	BPSK	6.0
-		802.11ac (VHT20)	36 to 48	36, 40, 48	OFDM	BPSK	6.5
-		802.11ac (VHT40)	38 to 46	38, 46	OFDM	BPSK	13.5
-		802.11ac (VHT80)	42	42	OFDM	BPSK	29.3
-	5260-5320	802.11a	52 to 64	52, 60, 64	OFDM	BPSK	6.0
-		802.11ac (VHT20)	52 to 64	52, 60, 64	OFDM	BPSK	6.5
-		802.11ac (VHT40)	54 to 62	54, 62	OFDM	BPSK	13.5
-		802.11ac (VHT80)	58	58	OFDM	BPSK	29.3
-	5500-5720	802.11a	100 to 144	100, 116, 140, 144	OFDM	BPSK	6.0
-		802.11ac (VHT20)	100 to 144	100, 116, 140, 144	OFDM	BPSK	6.5
-		802.11ac (VHT40)	102 to 142	102, 110, 134, 142	OFDM	BPSK	13.5
-		802.11ac (VHT80)	106 to 138	106, 122, 138	OFDM	BPSK	29.3
-	5745-5825	802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6.0
-		802.11ac (VHT20)	149 to 165	149, 157, 165	OFDM	BPSK	6.5
-		802.11ac (VHT40)	151 to 159	151, 159	OFDM	BPSK	13.5
-		802.11ac (VHT80)	155	155	OFDM	BPSK	29.3

Radiated Emission Test (Below 1 GHz):

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5180-5240	802.11ac (VHT20)	100 to 144	100	OFDM	BPSK	6.5

Power Line Conducted Emission Test:

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5180-5240	802.11ac (VHT20)	100 to 144	100	OFDM	BPSK	6.5

Antenna Port Conducted Measurement:

- This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5180-5240	802.11a	36 to 48	36, 40, 48	OFDM	BPSK	6.0
-		802.11ac (VHT20)	36 to 48	36, 40, 48	OFDM	BPSK	6.5
-		802.11ac (VHT40)	38 to 46	38, 46	OFDM	BPSK	13.5
-		802.11ac (VHT80)	42	42	OFDM	BPSK	29.3
-	5260-5320	802.11a	52 to 64	52, 60, 64	OFDM	BPSK	6.0
-		802.11ac (VHT20)	52 to 64	52, 60, 64	OFDM	BPSK	6.5
-		802.11ac (VHT40)	54 to 62	54, 62	OFDM	BPSK	13.5
-		802.11ac (VHT80)	58	58	OFDM	BPSK	29.3
-	5500-5720	802.11a	100 to 144	100, 116, 140, 144	OFDM	BPSK	6.0
-		802.11ac (VHT20)	100 to 144	100, 116, 140, 144	OFDM	BPSK	6.5
-		802.11ac (VHT40)	102 to 142	102, 110, 134, 142	OFDM	BPSK	13.5
-		802.11ac (VHT80)	106 to 138	106, 122, 138	OFDM	BPSK	29.3
-	5745-5825	802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6.0
-		802.11ac (VHT20)	149 to 165	149, 157, 165	OFDM	BPSK	6.5
-		802.11ac (VHT40)	151 to 159	151, 159	OFDM	BPSK	13.5
-		802.11ac (VHT80)	155	155	OFDM	BPSK	29.3

Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested by
RE \geq 1G	25 deg. C, 65 % RH	120 Vac, 60 Hz	Titan Hsu
RE $<$ 1G	25 deg. C, 65 % RH	120 Vac, 60 Hz	Titan Hsu
PLC	25 deg. C, 65 % RH	120 Vac, 60 Hz	Wayne Lin
APCM	25 deg. C, 65 % RH	3.8 Vdc	Wayne Lin

3.3 Duty Cycle of Test Signal

MODULATION TYPE: BPSK

Duty cycle of test signal is < 98 %, duty factor is required.

802.11a: Duty cycle = 2.053/2.105 = 0.975, Duty factor = $10 \cdot \log(1/0.975) = 0.11$

802.11ac (VHT20): Duty cycle = 1.92/1.97 = 0.975, Duty factor = $10 \cdot \log(1/0.975) = 0.11$

802.11ac (VHT40): Duty cycle = 0.944/0.999 = 0.945, Duty factor = $10 \cdot \log(1/0.945) = 0.25$

802.11ac (VHT80): Duty cycle = 0.46/0.502 = 0.916, Duty factor = $10 \cdot \log(1/0.916) = 0.38$



3.4 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

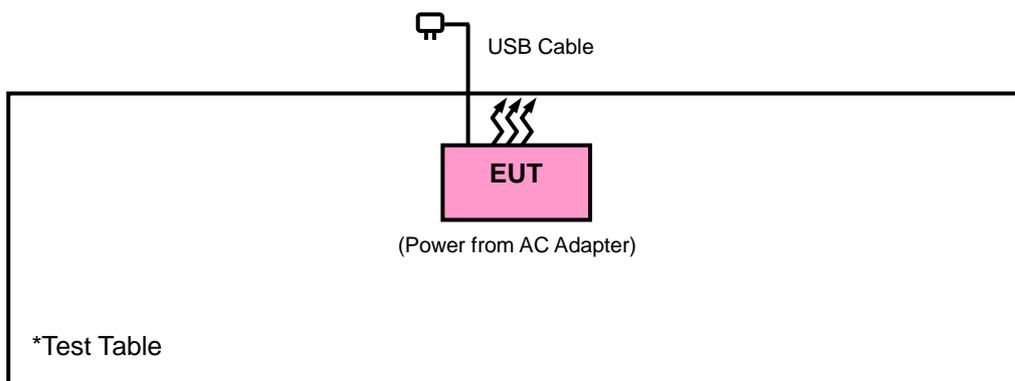
No.	Product	Brand	Model No.	Serial No.	FCC ID
1.	USB Cable	HP	WU-0093-00	N/A	N/A

No.	Signal Cable Description Of The Above Support Units
1.	1m

Note:

1. All power cords of the above support units are non-shielded (1.8m).

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standards and References

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards and references:

Test Standard:

FCC Part 15, Subpart E (15.407)

ANSI C63.10-2013

All test items have been performed and recorded as per the above standards.

References Test Guidance:

KDB 789033 D02 General UNII Test Procedures New Rules v02r01

All test items have been performed as a reference to the above KDB test guidance.

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

Frequencies (MHz)	Field Strength (microvolts/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

Note:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any condition of modulation.

Limits of Unwanted Emission Out of the Restricted Bands

Applicable To		Limit	
789033 D02 General UNII Test Procedures New Rules v02r01		Field Strength at 3 m	
		PK: 74 (dBµV/m)	AV: 54 (dBµV/m)
Frequency Band	Applicable To	EIRP Limit	Equivalent Field Strength at 3 m
5150~5250 MHz	15.407(b)(1)	PK: -27 (dBm/MHz)	PK: 68.2 (dBµV/m)
5250~5350 MHz	15.407(b)(2)		
5470~5725 MHz	15.407(b)(3)		
5725~5850 MHz	<input checked="" type="checkbox"/> 15.407(b)(4)(i)	PK:-27 (dBm/MHz) ^{*1} PK:10 (dBm/MHz) ^{*2} PK:15.6 (dBm/MHz) ^{*3} PK:27 (dBm/MHz) ^{*4}	PK: 68.2 (dBµV/m) ^{*1} PK:105.2 (dBµV/m) ^{*2} PK: 110.8 (dBµV/m) ^{*3} PK:122.2 (dBµV/m) ^{*4}
	<input type="checkbox"/> 15.407(b)(4)(ii)	Emission limits in section 15.247(d)	

^{*1} beyond 75 MHz or more above of the band edge.

^{*2} below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.

^{*3} below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.

^{*4} from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Note:

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

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

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver ROHDE & SCHWARZ	ESR3	102579	Jul. 27, 2019	Jul. 05, 2020
			Jul. 07, 2020	Jul. 06, 2021
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Jun. 09, 2020	Jun. 08, 2021
BILOG Antenna SCHWARZBECK	VULB9168	9168-171	Nov. 11, 2019	Nov. 10, 2020
HORN Antenna SCHWARZBECK	9120D	209	Nov. 24, 2019	Nov. 23, 2020
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Nov. 24, 2019	Nov. 23, 2020
Loop Antenna EMCI	EM-6879	269	Sep. 16, 2019	Sep. 16, 2020
			Sep. 17, 2020	Sep. 16, 2021
Preamplifier Agilent (Below 1GHz)	8447D	2944A10738	Aug. 20, 2019	Aug. 15, 2020
			Aug. 16, 2020	Aug. 15, 2021
Preamplifier Agilent (Above 1GHz)	8449B	3008A02465	Mar. 23, 2020	Mar. 22, 2021
RF Coaxial Cable WOKEN With 5dB PAD	8D-FB	Cable-CH3-01	Aug. 20, 2019	Aug. 15, 2020
			Aug. 16, 2020	Aug. 15, 2021
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH3-03 (223653/4)	Aug. 20, 2019	Aug. 15, 2020
			Aug. 16, 2020	Aug. 15, 2021
RF signal cable HUBER+SUHNER & EMCI	SUCOFLEX 104&EMC104-SM- SM-8000	Cable-CH3-03 (309224+170907)	Aug. 20, 2019	Aug. 15, 2020
			Aug. 16, 2020	Aug. 15, 2021
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021702	NA	NA
Turn Table BV ADT	TT100	TT93021702	NA	NA
Turn Table Controller BV ADT	SC100	SC93021702	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
USB Wideband Power Sensor KEYSIGHT	U2021XA	MY55050005/MY55 190004/MY551900 07/MY55210005	Jul. 15, 2019	Jul. 12, 2020
			Jul. 13, 2020	Jul. 12, 2021
Pre-amplifier (18GHz-40GHz) EMC	EMC184045B	980175	Sep. 05, 2019	Sep. 03, 2020
			Sep. 04, 2020	Sep. 03, 2021

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 3.

4.1.3 Test Procedures

For Radiated Emission below 30 MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9 kHz at frequency below 30 MHz.

For Radiated Emission above 30 MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters (for 30 MHz ~ 1 GHz) / 1.5 meters (for above 1 GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test-receiver system was set to peak and average detected function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

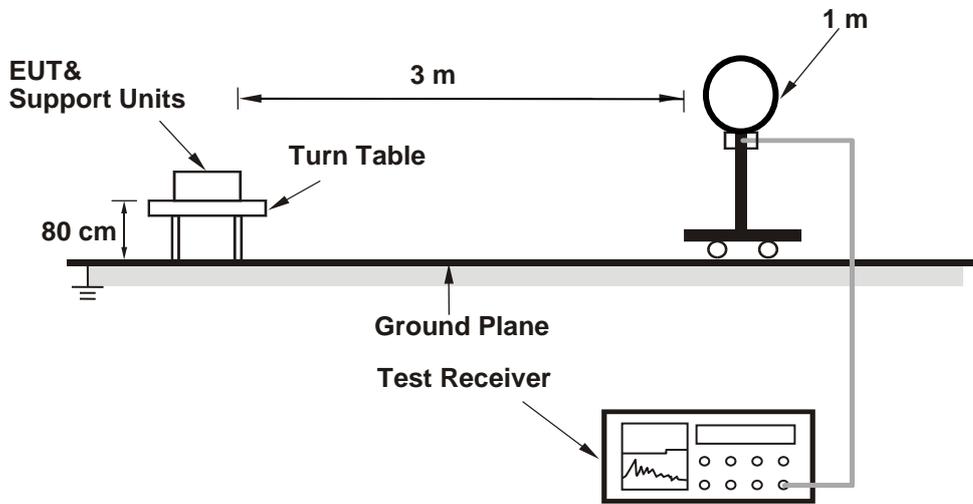
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) or Peak detection (PK) at frequency below 1 GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1 GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is $\geq 1/T$ (Duty cycle < 98 %) or 10 Hz (Duty cycle ≥ 98 %) for Average detection (AV) at frequency above 1 GHz.
(11a: RBW = 1 MHz, VBW = 10 Hz ; 11ac (VHT20): RBW = 1 MHz, VBW = 10 Hz ;
11ac (VHT40): RBW = 1 MHz, VBW = 1 kHz ; 11ac (VHT80): RBW = 1 MHz, VBW = 3 kHz)
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

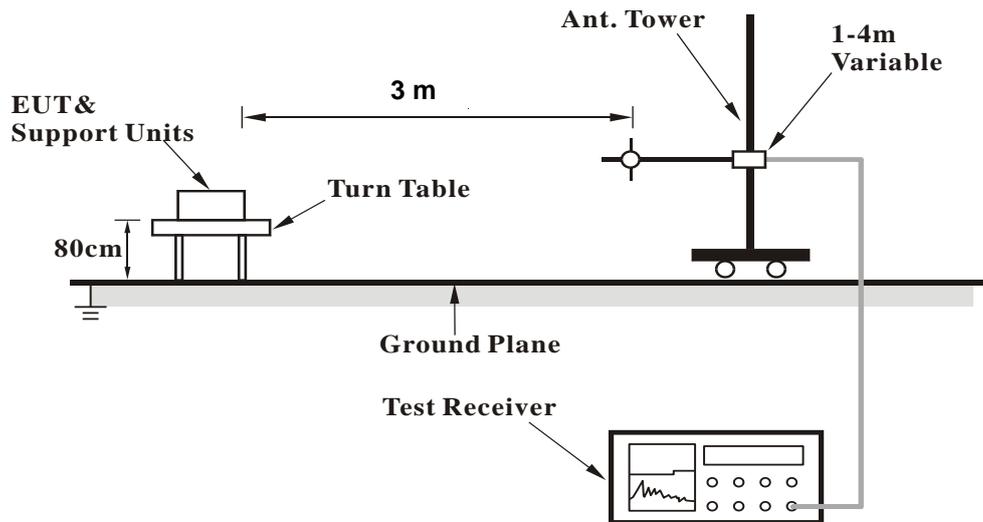
No deviation.

4.1.5 Test Setup

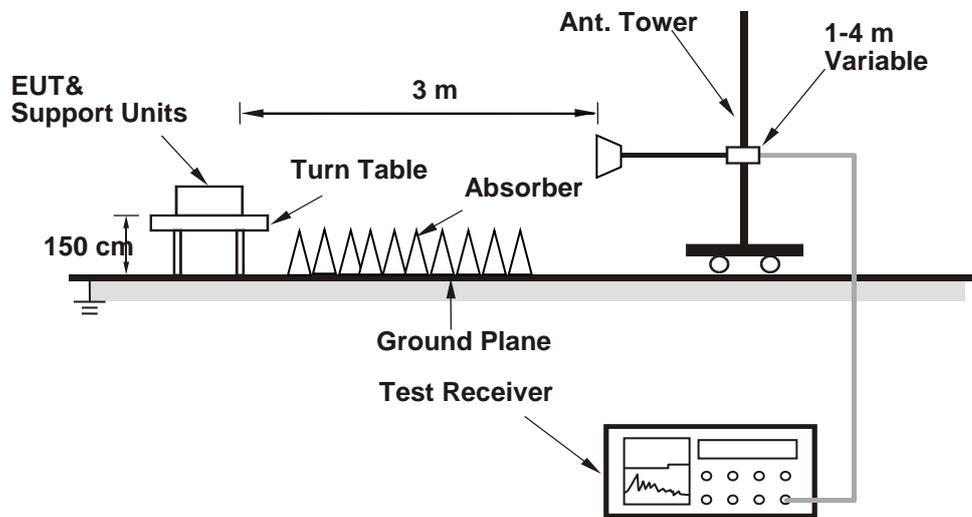
<Radiated Emission below 30 MHz>



<Radiated Emission 30 MHz to 1 GHz>



<Radiated Emission above 1 GHz>



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.1.6 EUT Operating Conditions

- a. Placed the EUT on a testing table.
- b. Use the software to control the EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results
Above 1 GHz Data :
802.11a

RF Mode	TX 802.11a	Channel	CH 36 : 5180 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	54.5 PK	74.0	-19.5	1.45 H	134	51.0	3.5
2	5150.00	42.0 AV	54.0	-12.0	1.45 H	134	38.5	3.5
3	*5180.00	100.0 PK			1.45 H	134	60.7	39.3
4	*5180.00	90.1 AV			1.45 H	134	50.8	39.3
5	#10360.00	59.1 PK	68.2	-9.1	3.11 H	161	42.2	16.9

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	56.5 PK	74.0	-17.5	1.31 V	131	53.0	3.5
2	5150.00	42.1 AV	54.0	-11.9	1.31 V	131	38.6	3.5
3	*5180.00	103.8 PK			1.31 V	131	64.5	39.3
4	*5180.00	94.1 AV			1.31 V	131	54.8	39.3
5	#10360.00	59.1 PK	68.2	-9.1	3.12 V	221	42.2	16.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency.
6. " # " : The radiated frequency is out of the restricted band.

RF Mode	TX 802.11a	Channel	CH 40 : 5200 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5200.00	100.0 PK			1.43 H	135	60.7	39.3
2	*5200.00	90.3 AV			1.43 H	135	51.0	39.3
3	#10400.00	59.2 PK	68.2	-9.0	3.05 H	165	42.1	17.1
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5200.00	102.8 PK			1.30 V	132	63.5	39.3
2	*5200.00	93.2 AV			1.30 V	132	53.9	39.3
3	#10400.00	59.2 PK	68.2	-9.0	3.03 V	225	42.1	17.1

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	TX 802.11a	Channel	CH 48 : 5240 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	99.5 PK			1.42 H	132	60.4	39.1
2	*5240.00	90.0 AV			1.42 H	132	50.9	39.1
3	5350.00	54.5 PK	74.0	-19.5	1.42 H	132	50.9	3.6
4	5350.00	41.2 AV	54.0	-12.8	1.42 H	132	37.6	3.6
5	#10480.00	59.7 PK	68.2	-8.5	3.03 H	155	42.1	17.6

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	102.3 PK			1.31 V	132	63.2	39.1
2	*5240.00	92.6 AV			1.31 V	132	53.5	39.1
3	5350.00	54.6 PK	74.0	-19.4	1.31 V	132	51.0	3.6
4	5350.00	41.1 AV	54.0	-12.9	1.31 V	132	37.5	3.6
5	#10480.00	59.7 PK	68.2	-8.5	3.08 V	219	42.1	17.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	TX 802.11a	Channel	CH 52 : 5260 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	54.4 PK	74.0	-19.6	1.40 H	132	50.9	3.5
2	5150.00	41.9 AV	54.0	-12.1	1.40 H	132	38.4	3.5
3	*5260.00	100.3 PK			1.40 H	132	61.3	39.0
4	*5260.00	90.6 AV			1.40 H	132	51.6	39.0
5	#10520.00	59.8 PK	68.2	-8.4	3.26 H	166	42.2	17.6

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	54.6 PK	74.0	-19.4	1.29 V	131	51.1	3.5
2	5150.00	41.9 AV	54.0	-12.1	1.29 V	131	38.4	3.5
3	*5260.00	102.9 PK			1.29 V	131	63.9	39.0
4	*5260.00	93.1 AV			1.29 V	131	54.1	39.0
5	#10540.00	59.8 PK	68.2	-8.4	3.15 V	228	42.1	17.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency.
6. " # " : The radiated frequency is out of the restricted band.

RF Mode	TX 802.11a	Channel	CH 60 : 5300 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	100.2 PK			1.42 H	131	61.1	39.1
2	*5300.00	90.7 AV			1.42 H	131	51.6	39.1
3	10600.00	59.8 PK	74.0	-14.2	3.16 H	149	42.3	17.5
4	10600.00	46.4 AV	54.0	-7.6	3.16 H	149	28.9	17.5

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	103.1 PK			1.26 V	130	64.0	39.1
2	*5300.00	92.7 AV			1.26 V	130	53.6	39.1
3	10600.00	59.6 PK	74.0	-14.4	3.11 V	227	42.1	17.5
4	10600.00	46.4 AV	54.0	-7.6	3.11 V	227	28.9	17.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

RF Mode	TX 802.11a	Channel	CH 64 : 5320 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	100.3 PK			1.41 H	132	61.1	39.2
2	*5320.00	90.5 AV			1.41 H	132	51.3	39.2
3	5350.00	54.4 PK	74.0	-19.6	1.41 H	132	50.8	3.6
4	5350.00	41.5 AV	54.0	-12.5	1.41 H	132	37.9	3.6
5	10640.00	59.8 PK	74.0	-14.2	3.21 H	168	42.2	17.6
6	10640.00	46.4 AV	54.0	-7.6	3.21 H	168	28.8	17.6

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	102.5 PK			1.30 V	132	63.3	39.2
2	*5320.00	92.5 AV			1.30 V	132	53.3	39.2
3	5350.00	54.6 PK	74.0	-19.4	1.30 V	132	51.0	3.6
4	5350.00	42.1 AV	54.0	-11.9	1.30 V	132	38.5	3.6
5	10640.00	59.7 PK	74.0	-14.3	3.15 V	228	42.1	17.6
6	10640.00	46.4 AV	54.0	-7.6	3.15 V	228	28.8	17.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

RF Mode	TX 802.11a	Channel	CH 100 : 5500 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	54.7 PK	74.0	-19.3	1.12 H	181	50.9	3.8
2	5460.00	41.1 AV	54.0	-12.9	1.12 H	181	37.3	3.8
3	#5470.00	55.0 PK	68.2	-13.2	1.12 H	181	51.2	3.8
4	*5500.00	101.4 PK			1.12 H	181	61.7	39.7
5	*5500.00	91.9 AV			1.12 H	181	52.2	39.7
6	11000.00	60.7 PK	74.0	-13.3	2.96 H	223	42.0	18.7
7	11000.00	47.5 AV	54.0	-6.5	2.96 H	223	28.8	18.7

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	54.7 PK	74.0	-19.3	1.06 V	255	50.9	3.8
2	5460.00	41.0 AV	54.0	-13.0	1.06 V	255	37.2	3.8
3	#5470.00	54.8 PK	68.2	-13.4	1.06 V	255	51.0	3.8
4	*5500.00	100.9 PK			1.06 V	255	61.2	39.7
5	*5500.00	91.2 AV			1.06 V	255	51.5	39.7
6	11000.00	60.4 PK	74.0	-13.6	2.59 V	269	41.7	18.7
7	11000.00	47.2 AV	54.0	-6.8	2.59 V	269	28.5	18.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	TX 802.11a	Channel	CH 116 : 5580 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5580.00	101.7 PK			1.20 H	172	62.0	39.7
2	*5580.00	92.1 AV			1.20 H	172	52.4	39.7
3	11160.00	60.4 PK	74.0	-13.6	3.08 H	209	42.1	18.3
4	11160.00	46.9 AV	54.0	-7.1	3.08 H	209	28.6	18.3

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5580.00	101.2 PK			1.11 V	258	61.5	39.7
2	*5580.00	91.5 AV			1.11 V	258	51.8	39.7
3	11160.00	60.3 PK	74.0	-13.7	2.65 V	266	42.0	18.3
4	11160.00	46.8 AV	54.0	-7.2	2.65 V	266	28.5	18.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency.

RF Mode	TX 802.11a	Channel	CH 140 : 5700 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	102.6 PK			1.36 H	173	62.8	39.8
2	*5700.00	92.8 AV			1.36 H	173	53.0	39.8
3	#5725.00	56.3 PK	68.2	-11.9	1.36 H	173	52.1	4.2
4	11400.00	60.2 PK	74.0	-13.8	3.02 H	220	42.1	18.1
5	11400.00	47.0 AV	54.0	-7.0	3.02 H	220	28.9	18.1
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	101.2 PK			1.05 V	279	61.4	39.8
2	*5700.00	91.5 AV			1.05 V	279	51.7	39.8
3	#5725.00	56.1 PK	68.2	-12.1	1.05 V	279	51.9	4.2
4	11400.00	60.1 PK	74.0	-13.9	2.63 V	272	42.0	18.1
5	11400.00	46.6 AV	54.0	-7.4	2.63 V	272	28.5	18.1

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	TX 802.11a	Channel	CH 144 : 5720 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5470.00	54.7 PK	68.2	-13.5	1.12 H	226	50.9	3.8
2	*5720.00	103.6 PK			1.12 H	226	63.6	40.0
3	*5720.00	93.8 AV			1.12 H	226	53.8	40.0
4	#5850.00	56.2 PK	68.2	-12.0	1.12 H	226	51.5	4.7
5	11440.00	60.4 PK	74.0	-13.6	3.12 H	230	42.3	18.1
6	11440.00	46.9 AV	54.0	-7.1	3.12 H	230	28.8	18.1

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5470.00	54.4 PK	68.2	-13.8	1.06 V	285	50.6	3.8
2	*5720.00	100.7 PK			1.06 V	285	60.7	40.0
3	*5720.00	91.0 AV			1.06 V	285	51.0	40.0
4	#5850.00	56.0 PK	68.2	-12.2	1.06 V	285	51.3	4.7
5	11440.00	60.1 PK	74.0	-13.9	2.75 V	270	42.0	18.1
6	11440.00	46.7 AV	54.0	-7.3	2.75 V	270	28.6	18.1

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	TX 802.11a	Channel	CH 149 : 5745 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5745.00	104.1 PK			1.38 H	172	64.1	40.0
2	*5745.00	94.0 AV			1.38 H	172	54.0	40.0
3	11490.00	60.3 PK	74.0	-13.7	3.11 H	212	42.0	18.3
4	11490.00	46.6 AV	54.0	-7.4	3.11 H	212	28.3	18.3

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5745.00	102.2 PK			1.14 V	254	62.2	40.0
2	*5745.00	92.8 AV			1.14 V	254	52.8	40.0
3	11490.00	59.8 PK	74.0	-14.2	2.58 V	266	41.5	18.3
4	11490.00	46.2 AV	54.0	-7.8	2.58 V	266	27.9	18.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency.

RF Mode	TX 802.11a	Channel	CH 157 : 5785 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5785.00	104.4 PK			1.11 H	219	64.2	40.2
2	*5785.00	94.7 AV			1.11 H	219	54.5	40.2
3	11570.00	59.8 PK	74.0	-14.2	3.11 H	215	41.9	17.9
4	11570.00	46.2 AV	54.0	-7.8	3.11 H	215	28.3	17.9

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5785.00	102.2 PK			1.19 V	261	62.0	40.2
2	*5785.00	92.3 AV			1.19 V	261	52.1	40.2
3	11570.00	59.4 PK	74.0	-14.6	2.75 V	263	41.5	17.9
4	11570.00	45.9 AV	54.0	-8.1	2.75 V	263	28.0	17.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency.

RF Mode	TX 802.11a	Channel	CH 165 : 5825 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5825.00	104.2 PK			1.12 H	212	63.8	40.4
2	*5825.00	94.7 AV			1.12 H	212	54.3	40.4
3	11650.00	60.2 PK	74.0	-13.8	2.93 H	223	42.3	17.9
4	11650.00	46.4 AV	54.0	-7.6	2.93 H	223	28.5	17.9
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5825.00	102.5 PK			1.16 V	262	62.1	40.4
2	*5825.00	92.4 AV			1.16 V	262	52.0	40.4
3	11650.00	59.9 PK	74.0	-14.1	2.83 V	269	42.0	17.9
4	11650.00	46.1 AV	54.0	-7.9	2.83 V	269	28.2	17.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency.

802.11ac (VHT20)

RF Mode	TX 802.11ac (VHT20)	Channel	CH 36 : 5180 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	54.5 PK	74.0	-19.5	1.46 H	133	51.0	3.5
2	5150.00	41.8 AV	54.0	-12.2	1.46 H	133	38.3	3.5
3	*5180.00	99.5 PK			1.46 H	133	60.2	39.3
4	*5180.00	89.5 AV			1.46 H	133	50.2	39.3
5	#10360.00	59.0 PK	68.2	-9.2	3.02 H	167	42.1	16.9

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	55.2 PK	74.0	-18.8	1.31 V	130	51.7	3.5
2	5150.00	41.7 AV	54.0	-12.3	1.31 V	130	38.2	3.5
3	*5180.00	104.9 PK			1.31 V	130	65.6	39.3
4	*5180.00	93.2 AV			1.31 V	130	53.9	39.3
5	#10360.00	59.1 PK	68.2	-9.1	3.15 V	229	42.2	16.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ac (VHT20)	Channel	CH 40 : 5200 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5200.00	99.5 PK			1.44 H	131	60.2	39.3
2	*5200.00	89.3 AV			1.44 H	131	50.0	39.3
3	#10400.00	59.4 PK	68.2	-8.8	3.02 H	166	42.3	17.1
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5200.00	103.7 PK			1.29 V	134	64.4	39.3
2	*5200.00	93.3 AV			1.29 V	134	54.0	39.3
3	#10400.00	59.3 PK	68.2	-8.9	3.05 V	215	42.2	17.1

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency.
6. " # " : The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ac (VHT20)	Channel	CH 48 : 5240 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	100.4 PK			1.49 H	131	61.3	39.1
2	*5240.00	89.6 AV			1.49 H	131	50.5	39.1
3	5350.00	54.4 PK	74.0	-19.6	1.49 H	131	50.8	3.6
4	5350.00	41.2 AV	54.0	-12.8	1.49 H	131	37.6	3.6
5	#10480.00	59.8 PK	68.2	-8.4	3.02 H	158	42.2	17.6

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	102.7 PK			1.31 V	133	63.6	39.1
2	*5240.00	92.3 AV			1.31 V	133	53.2	39.1
3	5350.00	54.4 PK	74.0	-19.6	1.31 V	133	50.8	3.6
4	5350.00	41.1 AV	54.0	-12.9	1.31 V	133	37.5	3.6
5	#10480.00	59.8 PK	68.2	-8.4	3.01 V	205	42.2	17.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency.
6. " # " : The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ac (VHT20)	Channel	CH 52 : 5260 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	54.4 PK	74.0	-19.6	1.39 H	133	50.9	3.5
2	5150.00	42.0 AV	54.0	-12.0	1.39 H	133	38.5	3.5
3	*5260.00	99.5 PK			1.39 H	133	60.5	39.0
4	*5260.00	89.2 AV			1.39 H	133	50.2	39.0
5	#10520.00	59.8 PK	68.2	-8.4	3.02 H	166	42.2	17.6

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	54.6 PK	74.0	-19.4	1.28 V	131	51.1	3.5
2	5150.00	41.9 AV	54.0	-12.1	1.28 V	131	38.4	3.5
3	*5260.00	102.4 PK			1.28 V	131	63.4	39.0
4	*5260.00	92.1 AV			1.28 V	131	53.1	39.0
5	#10540.00	59.9 PK	68.2	-8.3	3.15 V	216	42.2	17.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency.
6. " # " : The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ac (VHT20)	Channel	CH 60 : 5300 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	100.3 PK			1.41 H	131	61.2	39.1
2	*5300.00	89.8 AV			1.41 H	131	50.7	39.1
3	10600.00	59.7 PK	74.0	-14.3	3.19 H	158	42.2	17.5
4	10600.00	46.4 AV	54.0	-7.6	3.19 H	158	28.9	17.5
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	102.5 PK			1.32 V	128	63.4	39.1
2	*5300.00	92.2 AV			1.32 V	128	53.1	39.1
3	10600.00	59.7 PK	74.0	-14.3	3.11 V	221	42.2	17.5
4	10600.00	46.5 AV	54.0	-7.5	3.11 V	221	29.0	17.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency.

RF Mode	TX 802.11ac (VHT20)	Channel	CH 64 : 5320 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	100.0 PK			1.40 H	130	60.8	39.2
2	*5320.00	89.7 AV			1.40 H	130	50.5	39.2
3	5350.00	54.3 PK	74.0	-19.7	1.40 H	130	50.7	3.6
4	5350.00	41.4 AV	54.0	-12.6	1.40 H	130	37.8	3.6
5	10640.00	59.6 PK	74.0	-14.4	3.05 H	155	42.0	17.6
6	10640.00	46.5 AV	54.0	-7.5	3.05 H	155	28.9	17.6

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	102.3 PK			1.29 V	132	63.1	39.2
2	*5320.00	92.0 AV			1.29 V	132	52.8	39.2
3	5350.00	54.5 PK	74.0	-19.5	3.05 V	211	50.9	3.6
4	5350.00	41.3 AV	54.0	-12.7	3.05 V	211	37.7	3.6
5	10640.00	59.7 PK	74.0	-14.3	3.12 V	215	42.1	17.6
6	10640.00	46.4 AV	54.0	-7.6	3.12 V	215	28.8	17.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

RF Mode	TX 802.11ac (VHT20)	Channel	CH 100 : 5500 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	54.5 PK	74.0	-19.5	1.09 H	185	50.7	3.8
2	5460.00	40.9 AV	54.0	-13.1	1.09 H	185	37.1	3.8
3	#5470.00	54.8 PK	68.2	-13.4	1.09 H	188	51.0	3.8
4	*5500.00	101.0 PK			1.09 H	185	61.3	39.7
5	*5500.00	91.5 AV			1.09 H	185	51.8	39.7
6	11000.00	60.5 PK	74.0	-13.5	3.05 H	220	41.8	18.7
7	11000.00	47.7 AV	54.0	-6.3	3.05 H	220	29.0	18.7

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	54.3 PK	74.0	-19.7	1.07 V	255	50.5	3.8
2	5460.00	40.8 AV	54.0	-13.2	1.07 V	255	37.0	3.8
3	#5470.00	54.7 PK	68.2	-13.5	1.07 V	255	50.9	3.8
4	*5500.00	101.0 PK			1.07 V	255	61.3	39.7
5	*5500.00	90.5 AV			1.07 V	255	50.8	39.7
6	11000.00	60.2 PK	74.0	-13.8	2.70 V	263	41.5	18.7
7	11000.00	47.3 AV	54.0	-6.7	2.70 V	263	28.6	18.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ac (VHT20)	Channel	CH 116 : 5580 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5580.00	101.5 PK			1.19 H	180	61.8	39.7
2	*5580.00	92.0 AV			1.19 H	180	52.3	39.7
3	11160.00	60.2 PK	74.0	-13.8	2.99 H	211	41.9	18.3
4	11160.00	46.8 AV	54.0	-7.2	2.99 H	211	28.5	18.3

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5580.00	101.0 PK			1.11 V	256	61.3	39.7
2	*5580.00	91.5 AV			1.11 V	256	51.8	39.7
3	11160.00	59.9 PK	74.0	-14.1	2.63 V	261	41.6	18.3
4	11160.00	46.6 AV	54.0	-7.4	2.63 V	261	28.3	18.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency.

RF Mode	TX 802.11ac (VHT20)	Channel	CH 140 : 5700 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	101.8 PK			1.20 H	181	62.0	39.8
2	*5700.00	92.2 AV			1.20 H	181	52.4	39.8
3	#5725.00	55.3 PK	68.2	-12.9	1.20 H	181	51.1	4.2
4	11400.00	60.2 PK	74.0	-13.8	3.03 H	215	42.1	18.1
5	11400.00	46.7 AV	54.0	-7.3	3.03 H	215	28.6	18.1
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	101.3 PK			1.05 V	278	61.5	39.8
2	*5700.00	90.9 AV			1.05 V	278	51.1	39.8
3	#5725.00	55.2 PK	68.2	-13.0	1.05 V	278	51.0	4.2
4	11400.00	60.1 PK	74.0	-13.9	2.66 V	272	42.0	18.1
5	11400.00	46.4 AV	54.0	-7.6	2.66 V	272	28.3	18.1

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency.
6. " # " : The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ac (VHT20)	Channel	CH 144 : 5720 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5470.00	54.5 PK	68.2	-13.7	1.00 H	198	50.7	3.8
2	*5720.00	103.8 PK			1.00 H	198	63.8	40.0
3	*5720.00	93.5 AV			1.00 H	198	53.5	40.0
4	#5850.00	55.6 PK	68.2	-12.6	1.00 H	198	50.9	4.7
5	11440.00	60.6 PK	74.0	-13.4	3.01 H	212	42.5	18.1
6	11440.00	47.1 AV	54.0	-6.9	3.01 H	212	29.0	18.1

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5470.00	54.3 PK	68.2	-13.9	1.14 V	262	50.5	3.8
2	*5720.00	102.7 PK			1.14 V	262	62.7	40.0
3	*5720.00	91.3 AV			1.14 V	262	51.3	40.0
4	#5850.00	55.5 PK	68.2	-12.7	1.14 V	262	50.8	4.7
5	11440.00	60.3 PK	74.0	-13.7	2.61 V	259	42.2	18.1
6	11440.00	46.9 AV	54.0	-7.1	2.61 V	259	28.8	18.1

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ac (VHT20)	Channel	CH 149 : 5745 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5745.00	104.5 PK			1.02 H	219	64.5	40.0
2	*5745.00	94.1 AV			1.02 H	219	54.1	40.0
3	11490.00	60.3 PK	74.0	-13.7	3.23 H	220	42.0	18.3
4	11490.00	46.9 AV	54.0	-7.1	3.23 H	220	28.6	18.3

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5745.00	102.0 PK			1.32 V	263	62.0	40.0
2	*5745.00	91.8 AV			1.32 V	263	51.8	40.0
3	11490.00	59.9 PK	74.0	-14.1	2.69 V	258	41.6	18.3
4	11490.00	46.6 AV	54.0	-7.4	2.69 V	258	28.3	18.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency.

RF Mode	TX 802.11ac (VHT20)	Channel	CH 157 : 5785 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5785.00	104.6 PK			1.00 H	219	64.4	40.2
2	*5785.00	94.2 AV			1.00 H	219	54.0	40.2
3	11570.00	60.2 PK	74.0	-13.8	3.15 H	215	42.3	17.9
4	11570.00	46.2 AV	54.0	-7.8	3.15 H	215	28.3	17.9
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5785.00	102.1 PK			1.09 V	265	61.9	40.2
2	*5785.00	91.4 AV			1.09 V	265	51.2	40.2
3	11570.00	59.8 PK	74.0	-14.2	2.75 V	265	41.9	17.9
4	11570.00	45.7 AV	54.0	-8.3	2.75 V	265	27.8	17.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency.

RF Mode	TX 802.11ac (VHT20)	Channel	CH 165 : 5825 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5825.00	104.4 PK			1.00 H	219	64.0	40.4
2	*5825.00	94.3 AV			1.00 H	219	53.9	40.4
3	11650.00	60.1 PK	74.0	-13.9	3.19 H	208	42.2	17.9
4	11650.00	46.2 AV	54.0	-7.8	3.19 H	208	28.3	17.9

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5825.00	102.1 PK			1.10 V	280	61.7	40.4
2	*5825.00	91.5 AV			1.10 V	280	51.1	40.4
3	11650.00	59.7 PK	74.0	-14.3	2.59 V	263	41.8	17.9
4	11650.00	45.8 AV	54.0	-8.2	2.59 V	263	27.9	17.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency.

802.11ac (VHT40)

RF Mode	TX 802.11ac (VHT40)	Channel	CH 38 : 5190 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	54.5 PK	74.0	-19.5	1.48 H	133	51.0	3.5
2	5150.00	42.0 AV	54.0	-12.0	1.48 H	133	38.5	3.5
3	*5190.00	95.8 PK			1.48 H	133	56.5	39.3
4	*5190.00	86.3 AV			1.48 H	133	47.0	39.3
5	#10380.00	59.2 PK	68.2	-9.0	2.94 H	161	42.2	17.0

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	55.1 PK	74.0	-18.9	1.30 V	131	51.6	3.5
2	5150.00	41.8 AV	54.0	-12.2	1.30 V	131	38.3	3.5
3	*5190.00	99.8 PK			1.30 V	131	60.5	39.3
4	*5190.00	89.9 AV			1.30 V	131	50.6	39.3
5	#10380.00	59.1 PK	68.2	-9.1	3.11 V	223	42.1	17.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ac (VHT40)	Channel	CH 46 : 5230 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5230.00	96.4 PK			1.42 H	134	57.3	39.1
2	*5230.00	87.0 AV			1.42 H	134	47.9	39.1
3	5350.00	54.4 PK	74.0	-19.6	1.42 H	134	50.8	3.6
4	5350.00	41.1 AV	54.0	-12.9	1.42 H	134	37.5	3.6
5	#10460.00	59.4 PK	68.2	-8.8	3.02 H	153	42.0	17.4

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5230.00	99.2 PK			1.28 V	131	60.1	39.1
2	*5230.00	89.6 AV			1.28 V	131	50.5	39.1
3	5350.00	54.6 PK	74.0	-19.4	1.28 V	131	51.0	3.6
4	5350.00	41.1 AV	54.0	-12.9	1.28 V	131	37.5	3.6
5	#10460.00	59.5 PK	68.2	-8.7	3.11 V	215	42.1	17.4

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency.
6. " # " : The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ac (VHT40)	Channel	CH 54 : 5270 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5270.00	96.0 PK			1.39 H	133	56.9	39.1
2	*5270.00	86.5 AV			1.39 H	133	47.4	39.1
3	5350.00	54.4 PK	74.0	-19.6	1.39 H	133	50.8	3.6
4	5350.00	41.5 AV	54.0	-12.5	1.39 H	133	37.9	3.6
5	#10540.00	59.9 PK	68.2	-8.3	3.11 H	164	42.2	17.7

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5270.00	99.7 PK			1.28 V	131	60.6	39.1
2	*5270.00	90.0 AV			1.28 V	131	50.9	39.1
3	5350.00	54.6 PK	74.0	-19.4	1.28 V	131	51.0	3.6
4	5350.00	41.4 AV	54.0	-12.6	1.28 V	131	37.8	3.6
5	#10540.00	59.8 PK	68.2	-8.4	3.03 V	208	42.1	17.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency.
6. " # " : The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ac (VHT40)	Channel	CH 62 : 5310 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5310.00	96.6 PK			1.41 H	132	57.4	39.2
2	*5310.00	87.0 AV			1.41 H	132	47.8	39.2
3	5350.00	54.4 PK	74.0	-19.6	1.41 H	132	50.8	3.6
4	5350.00	41.4 AV	54.0	-12.6	1.41 H	132	37.8	3.6
5	10620.00	59.7 PK	74.0	-14.3	3.15 H	158	42.1	17.6
6	10620.00	46.6 AV	54.0	-7.4	3.15 H	158	29.0	17.6

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5310.00	98.9 PK			1.28 V	132	59.7	39.2
2	*5310.00	89.4 AV			1.28 V	132	50.2	39.2
3	5350.00	54.5 PK	74.0	-19.5	1.28 V	132	50.9	3.6
4	5350.00	41.5 AV	54.0	-12.5	1.28 V	132	37.9	3.6
5	10620.00	59.7 PK	74.0	-14.3	3.11 V	229	42.1	17.6
6	10620.00	46.6 AV	54.0	-7.4	3.11 V	229	29.0	17.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

RF Mode	TX 802.11ac (VHT40)	Channel	CH 102 : 5510 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	55.3 PK	74.0	-18.7	1.05 H	171	51.5	3.8
2	5460.00	41.5 AV	54.0	-12.5	1.05 H	171	37.7	3.8
3	#5470.00	55.3 PK	68.2	-12.9	1.05 H	171	51.5	3.8
4	*5510.00	99.9 PK			1.05 H	171	60.2	39.7
5	*5510.00	90.0 AV			1.05 H	171	50.3	39.7
6	11020.00	61.0 PK	74.0	-13.0	3.15 H	229	42.5	18.5
7	11020.00	47.1 AV	54.0	-6.9	3.15 H	229	28.6	18.5

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	55.1 PK	74.0	-18.9	1.33 V	257	51.3	3.8
2	5460.00	41.4 AV	54.0	-12.6	1.33 V	257	37.6	3.8
3	#5470.00	55.2 PK	68.2	-13.0	1.33 V	257	51.4	3.8
4	*5510.00	98.9 PK			1.33 V	257	59.2	39.7
5	*5510.00	89.0 AV			1.33 V	257	49.3	39.7
6	11020.00	60.6 PK	74.0	-13.4	2.71 V	263	42.1	18.5
7	11020.00	46.8 AV	54.0	-7.2	2.71 V	263	28.3	18.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ac (VHT40)	Channel	CH 110 : 5550 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5550.00	99.5 PK			1.02 H	197	59.8	39.7
2	*5550.00	89.6 AV			1.02 H	197	49.9	39.7
3	11100.00	60.2 PK	74.0	-13.8	3.08 H	233	42.2	18.0
4	11100.00	46.5 AV	54.0	-7.5	3.08 H	233	28.5	18.0

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5550.00	98.5 PK			1.29 V	261	58.8	39.7
2	*5550.00	88.5 AV			1.29 V	261	48.8	39.7
3	11100.00	60.0 PK	74.0	-14.0	2.62 V	263	42.0	18.0
4	11100.00	46.2 AV	54.0	-7.8	2.62 V	263	28.2	18.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency.

RF Mode	TX 802.11ac (VHT40)	Channel	CH 134 : 5670 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5670.00	100.1 PK			1.10 H	217	60.3	39.8
2	*5670.00	90.4 AV			1.10 H	217	50.6	39.8
3	#5725.00	55.4 PK	68.2	-12.8	1.10 H	217	51.2	4.2
4	11340.00	60.8 PK	74.0	-13.2	2.98 H	236	42.6	18.2
5	11340.00	47.2 AV	54.0	-6.8	2.98 H	236	29.0	18.2
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5670.00	99.2 PK			1.35 V	259	59.4	39.8
2	*5670.00	89.5 AV			1.35 V	259	49.7	39.8
3	#5725.00	55.2 PK	68.2	-13.0	1.35 V	259	51.0	4.2
4	11340.00	60.5 PK	74.0	-13.5	2.66 V	269	42.3	18.2
5	11340.00	47.0 AV	54.0	-7.0	2.66 V	269	28.8	18.2

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency.
6. " # " : The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ac (VHT40)	Channel	CH 142 : 5710 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5470.00	53.9 PK	68.2	-14.3	1.07 H	223	50.1	3.8
2	*5710.00	101.2 PK			1.07 H	223	61.2	40.0
3	*5710.00	91.5 AV			1.07 H	223	51.5	40.0
4	#5850.00	56.0 PK	68.2	-12.2	1.07 H	223	51.3	4.7
5	11420.00	60.6 PK	74.0	-13.4	3.20 H	233	42.6	18.0
6	11420.00	46.8 AV	54.0	-7.2	3.20 H	233	28.8	18.0

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5470.00	53.8 PK	68.2	-14.4	1.27 V	255	50.0	3.8
2	*5710.00	100.4 PK			1.27 V	255	60.4	40.0
3	*5710.00	90.6 AV			1.27 V	255	50.6	40.0
4	#5850.00	55.8 PK	68.2	-12.4	1.27 V	255	51.1	4.7
5	11420.00	60.3 PK	74.0	-13.7	2.53 V	272	42.3	18.0
6	11420.00	46.6 AV	54.0	-7.4	2.53 V	272	28.6	18.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ac (VHT40)	Channel	CH 151 : 5755 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5755.00	101.0 PK			1.11 H	220	61.0	40.0
2	*5755.00	91.2 AV			1.11 H	220	51.2	40.0
3	11510.00	60.5 PK	74.0	-13.5	3.17 H	222	42.2	18.3
4	11510.00	46.6 AV	54.0	-7.4	3.17 H	222	28.3	18.3

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5755.00	98.8 PK			1.10 V	263	58.8	40.0
2	*5755.00	89.0 AV			1.10 V	263	49.0	40.0
3	11510.00	60.3 PK	74.0	-13.7	2.69 V	258	42.0	18.3
4	11510.00	46.4 AV	54.0	-7.6	2.69 V	258	28.1	18.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency.

RF Mode	TX 802.11ac (VHT40)	Channel	CH 159 : 5795 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5795.00	101.4 PK			1.03 H	214	61.1	40.3
2	*5795.00	91.7 AV			1.03 H	214	51.4	40.3
3	11590.00	60.1 PK	74.0	-13.9	3.03 H	210	42.3	17.8
4	11590.00	46.1 AV	54.0	-7.9	3.03 H	210	28.3	17.8

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5795.00	98.6 PK			1.36 V	255	58.3	40.3
2	*5795.00	88.8 AV			1.36 V	255	48.5	40.3
3	11590.00	59.7 PK	74.0	-14.3	2.70 V	259	41.9	17.8
4	11590.00	45.7 AV	54.0	-8.3	2.70 V	259	27.9	17.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * " : Fundamental frequency.

802.11ac (VHT80)

RF Mode	TX 802.11ac (VHT80)	Channel	CH 42 : 5210 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	54.6 PK	74.0	-19.4	1.43 H	133	51.1	3.5
2	5150.00	42.4 AV	54.0	-11.6	1.43 H	133	38.9	3.5
3	*5210.00	94.3 PK			1.43 H	133	55.1	39.2
4	*5210.00	85.3 AV			1.43 H	133	46.1	39.2
5	5350.00	54.2 PK	74.0	-19.8	1.43 H	133	50.6	3.6
6	5350.00	42.0 AV	54.0	-12.0	1.43 H	133	38.4	3.6
7	#10420.00	59.4 PK	68.2	-8.8	2.96 H	163	42.1	17.3

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	54.7 PK	74.0	-19.3	1.30 V	131	51.2	3.5
2	5150.00	43.0 AV	54.0	-11.0	1.30 V	131	39.5	3.5
3	*5210.00	98.0 PK			1.30 V	131	58.8	39.2
4	*5210.00	88.6 AV			1.30 V	131	49.4	39.2
5	5350.00	54.5 PK	74.0	-19.5	1.30 V	131	50.9	3.6
6	5350.00	42.3 AV	54.0	-11.7	1.30 V	131	38.7	3.6
7	#10420.00	59.5 PK	68.2	-8.7	3.22 V	207	42.2	17.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ac (VHT80)	Channel	CH 58 : 5290 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	54.6 PK	74.0	-19.4	1.42 H	130	51.1	3.5
2	5150.00	42.0 AV	54.0	-12.0	1.42 H	130	38.5	3.5
3	*5290.00	94.1 PK			1.42 H	130	55.0	39.1
4	*5290.00	84.5 AV			1.42 H	130	45.4	39.1
5	5350.00	54.4 PK	74.0	-19.6	1.42 H	130	50.8	3.6
6	5350.00	41.6 AV	54.0	-12.4	1.42 H	130	38.0	3.6
7	#10580.00	59.8 PK	68.2	-8.4	3.11 H	164	42.1	17.7

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	54.6 PK	74.0	-19.4	1.28 V	132	51.1	3.5
2	5150.00	42.0 AV	54.0	-12.0	1.28 V	132	38.5	3.5
3	*5290.00	96.8 PK			1.28 V	132	57.7	39.1
4	*5290.00	87.6 AV			1.28 V	132	48.5	39.1
5	5350.00	54.4 PK	74.0	-19.6	1.28 V	132	50.8	3.6
6	5350.00	41.3 AV	54.0	-12.7	1.28 V	132	37.7	3.6
7	#10580.00	59.8 PK	68.2	-8.4	3.02 V	212	42.1	17.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ac (VHT80)	Channel	CH 106 : 5530 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	55.9 PK	74.0	-18.1	1.06 H	171	52.1	3.8
2	5460.00	42.2 AV	54.0	-11.8	1.06 H	171	38.4	3.8
3	#5470.00	55.4 PK	68.2	-12.8	1.06 H	171	51.6	3.8
4	*5530.00	96.9 PK			1.06 H	171	57.2	39.7
5	*5530.00	87.0 AV			1.06 H	171	47.3	39.7
6	#5725.00	55.3 PK	68.2	-12.9	1.06 H	171	51.1	4.2
7	11060.00	60.5 PK	74.0	-13.5	3.05 H	221	42.2	18.3
8	11060.00	47.3 AV	54.0	-6.7	3.05 H	221	29.0	18.3

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	55.6 PK	74.0	-18.4	1.22 V	252	51.8	3.8
2	5460.00	41.9 AV	54.0	-12.1	1.22 V	252	38.1	3.8
3	#5470.00	55.1 PK	68.2	-13.1	1.22 V	252	51.3	3.8
4	*5530.00	96.0 PK			1.22 V	252	56.3	39.7
5	*5530.00	86.0 AV			1.22 V	252	46.3	39.7
6	#5725.00	55.2 PK	68.2	-13.0	1.22 V	252	51.0	4.2
7	11060.00	60.3 PK	74.0	-13.7	2.66 V	266	42.0	18.3
8	11060.00	47.0 AV	54.0	-7.0	2.66 V	266	28.7	18.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ac (VHT80)	Channel	CH 122 : 5610 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	55.3 PK	74.0	-18.7	1.00 H	172	51.5	3.8
2	5460.00	42.0 AV	54.0	-12.0	1.00 H	172	38.2	3.8
3	#5470.00	54.3 PK	68.2	-13.9	1.00 H	172	50.5	3.8
4	*5610.00	97.3 PK			1.00 H	172	57.5	39.8
5	*5610.00	87.8 AV			1.00 H	172	48.0	39.8
6	#5725.00	55.2 PK	68.2	-13.0	1.00 H	172	51.0	4.2
7	11220.00	60.7 PK	74.0	-13.3	2.97 H	223	42.3	18.4
8	11220.00	47.5 AV	54.0	-6.5	2.97 H	223	29.1	18.4

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	55.1 PK	74.0	-18.9	1.35 V	266	51.3	3.8
2	5460.00	41.8 AV	54.0	-12.2	1.35 V	266	38.0	3.8
3	#5470.00	54.1 PK	68.2	-14.1	1.35 V	266	50.3	3.8
4	*5610.00	96.5 PK			1.35 V	266	56.7	39.8
5	*5610.00	86.8 AV			1.35 V	266	47.0	39.8
6	#5725.00	55.1 PK	68.2	-13.1	1.35 V	266	50.9	4.2
7	11220.00	60.4 PK	74.0	-13.6	2.55 V	260	42.0	18.4
8	11220.00	47.2 AV	54.0	-6.8	2.55 V	260	28.8	18.4

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ac (VHT80)	Channel	CH 138 : 5690 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5470.00	54.4 PK	68.2	-13.8	1.15 H	198	50.6	3.8
2	*5690.00	97.7 PK			1.00 H	198	57.9	39.8
3	*5690.00	87.6 AV			1.00 H	198	47.8	39.8
4	#5850.00	56.1 PK	68.2	-12.1	1.15 H	198	51.4	4.7
5	11380.00	60.6 PK	74.0	-13.4	3.05 H	243	42.5	18.1
6	11380.00	47.4 AV	54.0	-6.6	3.05 H	243	29.3	18.1

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5470.00	54.3 PK	68.2	-13.9	1.22 V	259	50.5	3.8
2	*5690.00	96.8 PK			1.22 V	259	57.0	39.8
3	*5690.00	86.8 AV			1.22 V	259	47.0	39.8
4	#5850.00	55.9 PK	68.2	-12.3	1.22 V	259	51.2	4.7
5	11380.00	60.4 PK	74.0	-13.6	2.65 V	260	42.3	18.1
6	11380.00	46.9 AV	54.0	-7.1	2.65 V	260	28.8	18.1

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

RF Mode	TX 802.11ac (VHT80)	Channel	CH 155 : 5775 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5650.00	54.3 PK	68.2	-13.9	1.07 H	220	50.5	3.8
2	*5775.00	98.9 PK			1.07 H	220	58.8	40.1
3	*5775.00	89.1 AV			1.07 H	220	49.0	40.1
4	#5925.00	56.6 PK	68.2	-11.6	1.07 H	220	51.8	4.8
5	11550.00	59.7 PK	74.0	-14.3	3.05 H	209	41.6	18.1
6	11550.00	46.5 AV	54.0	-7.5	3.05 H	209	28.4	18.1

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5650.00	54.7 PK	68.2	-13.5	1.12 V	277	50.9	3.8
2	*5775.00	96.5 PK			1.12 V	277	56.4	40.1
3	*5775.00	86.9 AV			1.12 V	277	46.8	40.1
4	#5925.00	56.6 PK	68.2	-11.6	1.12 V	277	51.8	4.8
5	11550.00	60.2 PK	74.0	-13.8	2.70 V	258	42.1	18.1
6	11550.00	46.6 AV	54.0	-7.4	2.70 V	258	28.5	18.1

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

9 kHz ~ 30 MHz Data:

The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

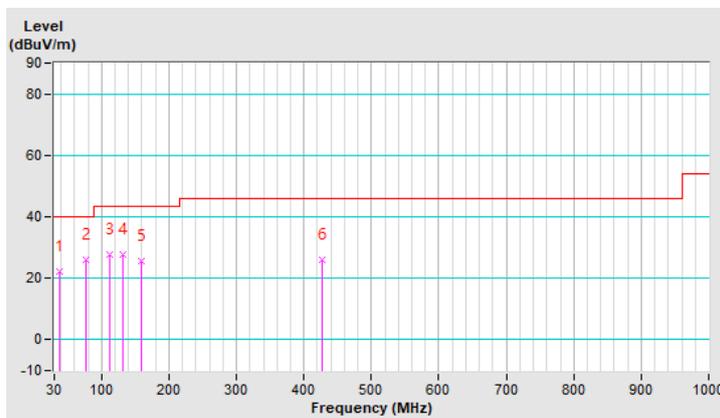
**30 MHz ~ 1 GHz Worst-Case Data:
802.11ac (VHT20)**

RF Mode	TX 802.11ac (VHT20)	Channel	CH 100 : 5500 MHz
Frequency Range	30MHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	37.03	22.1 QP	40.0	-17.9	2.00 H	63	32.0	-9.9
2	76.39	26.2 QP	40.0	-13.8	1.00 H	323	38.6	-12.4
3	111.54	27.6 QP	43.5	-15.9	1.00 H	139	39.4	-11.8
4	131.22	27.7 QP	43.5	-15.8	1.50 H	72	37.6	-9.9
5	159.33	25.5 QP	43.5	-18.0	1.00 H	121	34.0	-8.5
6	427.84	25.9 QP	46.0	-20.1	1.50 H	321	29.2	-3.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

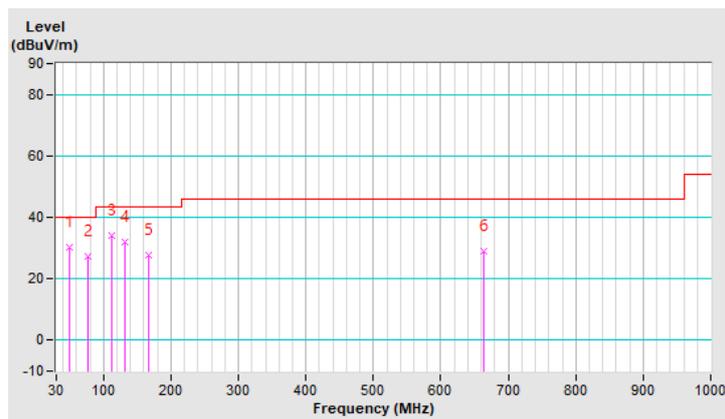


RF Mode	TX 802.11ac (VHT20)	Channel	CH 100 : 5500 MHz
Frequency Range	30MHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	49.68	30.4 QP	40.0	-9.6	2.00 V	73	39.2	-8.8
2	76.39	27.2 QP	40.0	-12.8	1.00 V	291	39.6	-12.4
3	111.54	34.1 QP	43.5	-9.4	1.00 V	102	45.9	-11.8
4	131.22	31.9 QP	43.5	-11.6	1.50 V	48	41.8	-9.9
5	166.36	27.7 QP	43.5	-15.8	1.00 V	4	36.4	-8.7
6	664.01	29.0 QP	46.0	-17.0	1.50 V	18	27.4	1.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

- Note: 1. The lower limit shall apply at the transition frequencies.
 2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.

4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date Of Calibration	Due Date Of Calibration
Test Receiver ROHDE & SCHWARZ	ESCI	100613	Dec. 11, 2019	Dec. 10, 2020
RF signal cable Woken	5D-FB	Cable-HYC01-01	Sep. 05, 2019	Sep. 04, 2020
LISN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Feb. 20, 2020	Feb. 19, 2021
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Aug. 22, 2019	Aug. 21, 2020
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

- Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in HwaYa Shielded Room 1.
 3. The VCCI Site Registration No. is C-12040.

4.2.3 Test Procedures

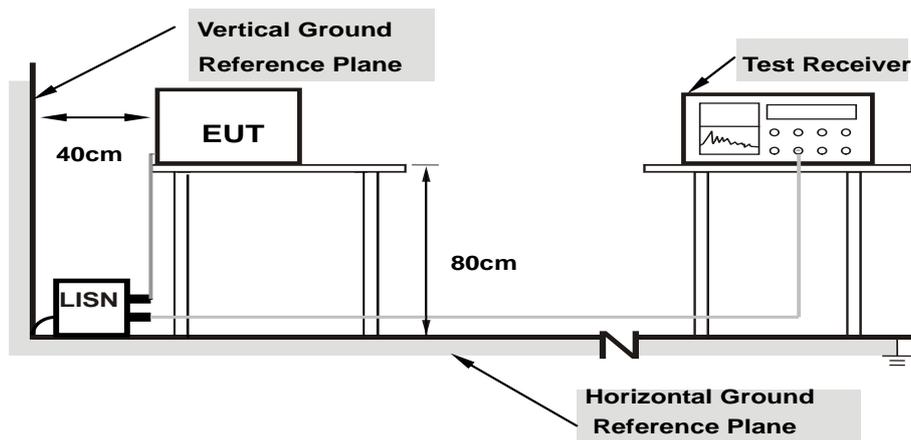
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit -20 dB) was not recorded.

Note: All modes of operation were investigated and the worst-case emissions are reported.

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



- Note:**
1. Support units were connected to second LISN.
 2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.2.6 EUT Operating Conditions

- a. Placed the EUT on a testing table.
- b. Use the software to control the EUT under transmission condition continuously at specific channel frequency.

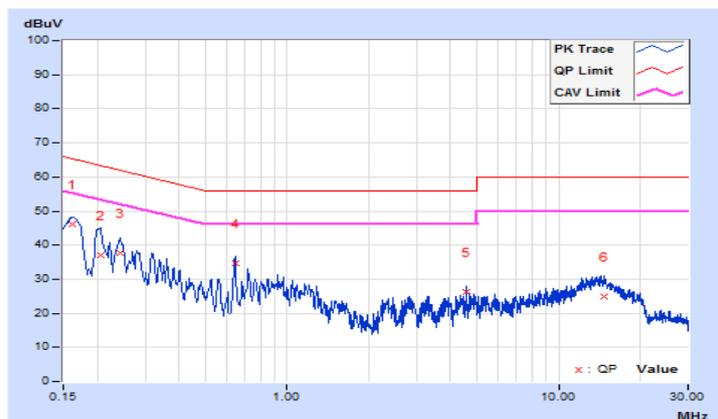
4.2.7 Test Results

Frequency Range	9kHz ~ 150kHz; 150kHz ~ 30Mz;	Detector Function & Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	23°C, 66%RH
Test Mode	Adapter Mode	Tested by	Titan Hsu

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16105	9.80	36.20	23.12	46.00	32.92	65.41	55.41	-19.41	-22.49
2	0.20523	9.81	27.18	15.11	36.99	24.92	63.40	53.40	-26.41	-28.48
3	0.24200	9.82	28.02	15.15	37.84	24.97	62.03	52.03	-24.19	-27.06
4	0.64559	9.88	24.74	19.24	34.62	29.12	56.00	46.00	-21.38	-16.88
5	4.57400	10.06	16.10	2.25	26.16	12.31	56.00	46.00	-29.84	-33.69
6	14.80600	10.20	14.58	8.56	24.78	18.76	60.00	50.00	-35.22	-31.24

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

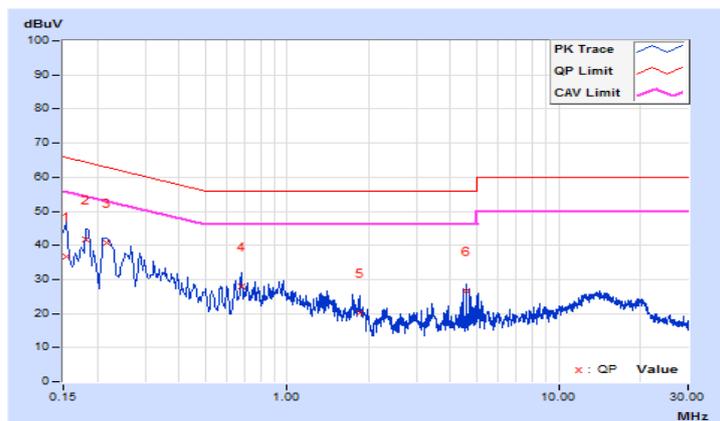


Frequency Range	9kHz ~ 150kHz; 150kHz ~ 30Mz;	Detector Function & Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	23°C, 66%RH
Test Mode	Adapter Mode	Tested by	Titan Hsu

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15400	9.82	26.98	11.42	36.80	21.24	65.78	55.78	-28.98	-34.54
2	0.18200	9.81	32.04	20.31	41.85	30.12	64.39	54.39	-22.54	-24.27
3	0.21576	9.82	30.95	19.98	40.77	29.80	62.98	52.98	-22.21	-23.18
4	0.67800	9.92	18.15	14.89	28.07	24.81	56.00	46.00	-27.93	-21.19
5	1.86200	10.02	10.21	4.06	20.23	14.08	56.00	46.00	-35.77	-31.92
6	4.57400	10.10	16.61	2.44	26.71	12.54	56.00	46.00	-29.29	-33.46

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

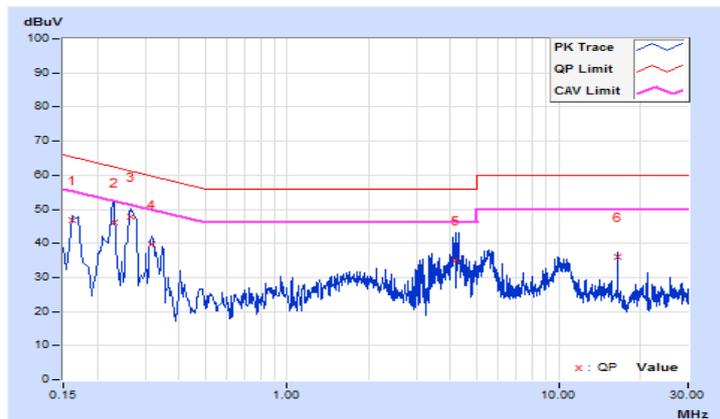


Frequency Range	9kHz ~ 150kHz; 150kHz ~ 30Mz;	Detector Function & Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	23°C, 66%RH
Test Mode	NB Mode	Tested by	Titan Hsu

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16190	9.63	37.32	27.22	46.95	36.85	65.37	55.37	-18.42	-18.52
2	0.22985	9.62	36.56	18.28	46.18	27.90	62.46	52.46	-16.28	-24.56
3	0.26600	9.63	38.23	26.05	47.86	35.68	61.24	51.24	-13.38	-15.56
4	0.31800	9.64	29.96	20.38	39.60	30.02	59.76	49.76	-20.16	-19.74
5	4.16200	9.79	25.20	10.83	34.99	20.62	56.00	46.00	-21.01	-25.38
6	16.46600	9.90	26.15	26.09	36.05	35.99	60.00	50.00	-23.95	-14.01

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value

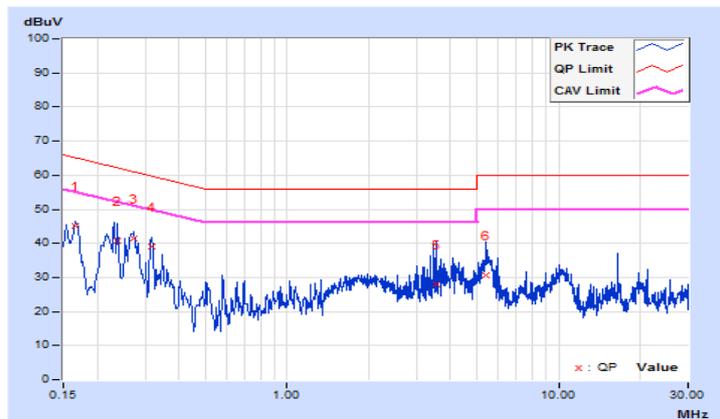


Frequency Range	9kHz ~ 150kHz; 150kHz ~ 30Mz;	Detector Function & Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	23°C, 66%RH
Test Mode	NB Mode	Tested by	Titan Hsu

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16579	9.65	35.44	25.25	45.09	34.90	65.17	55.17	-20.08	-20.27
2	0.23800	9.65	30.98	13.07	40.63	22.72	62.17	52.17	-21.54	-29.45
3	0.27400	9.65	31.93	20.21	41.58	29.86	61.00	51.00	-19.42	-21.14
4	0.31781	9.66	29.36	19.91	39.02	29.57	59.76	49.76	-20.74	-20.19
5	3.53000	9.81	17.97	6.89	27.78	16.70	56.00	46.00	-28.22	-29.30
6	5.42200	9.84	20.89	10.50	30.73	20.34	60.00	50.00	-29.27	-29.66

Remarks:

1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level – Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value



4.3 Transmit Power Measurement

4.3.1 Limits of Transmit Power Measurement

Operation Band	EUT Category	Limit
U-NII-1	Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p \leq 125 mW (21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
	Fixed point-to-point Access Point	1 Watt (30 dBm)
	Indoor Access Point	1 Watt (30 dBm)
	√ Mobile and Portable client device	250 mW (24 dBm)
U-NII-2A	√	250 mW (24 dBm) or 11 dBm + 10 log B*
U-NII-2C	√	250 mW (24 dBm) or 11 dBm + 10 log B*
U-NII-3	√	1 Watt (30 dBm)

*B is the 26 dB emission bandwidth in megahertz

Per KDB 662911 Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

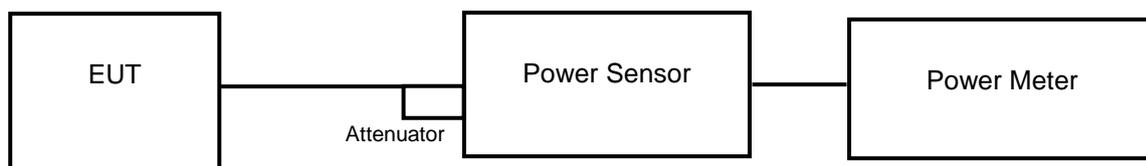
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;

Array Gain = $5 \log(N_{ANT}/N_{SS})$ dB or 3 dB, whichever is less for 20 MHz channel widths with $N_{ANT} \geq 5$.

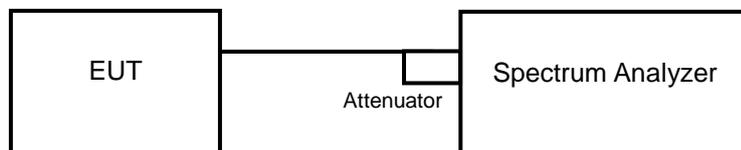
For power measurements on all other devices: Array Gain = $10 \log(N_{ANT}/N_{SS})$ dB.

4.3.2 Test Setup

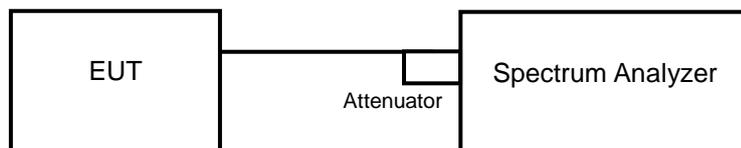
<Power Output Measurement>



or



<26 dB Bandwidth>



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

Average Power Measurement

<802.11a, 802.11ac (VHT20), 802.11ac (VHT40)>

Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

<802.11ac (VHT80)>

- a. Set span to encompass the entire 26 dB EBW (or, alternatively, the entire 99 % occupied bandwidth) of the signal.
- b. Set sweep trigger to “free run”.
- c. Set RBW = 1 MHz.
- d. Set VBW \geq 3 MHz
- e. Number of points in sweep \geq 2 Span / RBW.
- f. Sweep time \leq (number of points in sweep) * T
- g. Using emission bandwidth to determine the frequency span for integration the channel bandwidth.
- h. Detector = RMS.
- i. Trace mode = max hold.
- j. Allow max hold to run for at least 60 seconds, or longer as needed to allow the trace to stabilize.
- k. Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument’s band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at 1 MHz intervals extending across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the spectrum

26 dB Bandwidth

- a. Set RBW = approximately 1 % of the emission bandwidth.
- b. Set the VBW \geq 3 x RBW.
- c. Detector = Peak.
- d. Trace mode = max hold.
- e. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1 %.

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Conditions

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.3.7 Test Results

Power Output:

802.11a

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	30.761	14.88	24	Pass
40	5200	30.339	14.82	24	Pass
48	5240	30.832	14.89	24	Pass
52	5260	30.903	14.90	24	Pass
60	5300	30.974	14.91	24	Pass
64	5320	29.854	14.75	24	Pass
100	5500	31.046	14.92	24	Pass
116	5580	30.13	14.79	24	Pass
140	5700	30.832	14.89	24	Pass
144	5720 (U-NII-2C)	10.257	10.11	23.22	Pass
144	5720 (U-NII-3)	2	3.01	30	Pass
149	5745	31.046	14.92	30	Pass
157	5785	30.061	14.78	30	Pass
165	5825	31.046	14.92	30	Pass

Note:

For U-NII-2A, U-NII-2C Band:

- $11 \text{ dBm} + 10\log(21.69) = 24.36 \text{ dBm} > 24 \text{ dBm}$.
- $11 \text{ dBm} + 10\log(22.12) = 24.45 \text{ dBm} > 24 \text{ dBm}$.
- $11 \text{ dBm} + 10\log(22.21) = 24.47 \text{ dBm} > 24 \text{ dBm}$.
- $11 \text{ dBm} + 10\log(22.87) = 24.59 \text{ dBm} > 24 \text{ dBm}$.
- $11 \text{ dBm} + 10\log(22.01) = 24.43 \text{ dBm} > 24 \text{ dBm}$.
- $11 \text{ dBm} + 10\log(22.41) = 24.50 \text{ dBm} > 24 \text{ dBm}$.
- $11 \text{ dBm} + 10\log(16.69) = 23.22 \text{ dBm} < 24 \text{ dBm}$.

802.11ac (VHT20)

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	31.117	14.93	24	Pass
40	5200	30.339	14.82	24	Pass
48	5240	30.832	14.89	24	Pass
52	5260	30.269	14.81	24	Pass
60	5300	29.923	14.76	24	Pass
64	5320	30.339	14.82	24	Pass
100	5500	30.061	14.78	24	Pass
116	5580	30.62	14.86	24	Pass
140	5700	30.13	14.79	24	Pass
144	5720 (U-NII-2C)	11.641	10.66	23.36	Pass
144	5720 (U-NII-3)	3.184	5.03	30	Pass
149	5745	31.189	14.94	30	Pass
157	5785	31.117	14.93	30	Pass
165	5825	30.2	14.80	30	Pass

Note:

For U-NII-2A, U-NII-2C Band:

1. $11 \text{ dBm} + 10\log(23.31) = 24.68 \text{ dBm} > 24 \text{ dBm}$.
2. $11 \text{ dBm} + 10\log(23.13) = 24.64 \text{ dBm} > 24 \text{ dBm}$.
3. $11 \text{ dBm} + 10\log(23.86) = 24.78 \text{ dBm} > 24 \text{ dBm}$.
4. $11 \text{ dBm} + 10\log(23.03) = 24.62 \text{ dBm} > 24 \text{ dBm}$.
5. $11 \text{ dBm} + 10\log(23.53) = 24.72 \text{ dBm} > 24 \text{ dBm}$.
6. $11 \text{ dBm} + 10\log(23.38) = 24.69 \text{ dBm} > 24 \text{ dBm}$.
7. $11 \text{ dBm} + 10\log(17.24) = 23.36 \text{ dBm} < 24 \text{ dBm}$.

802.11ac (VHT40)

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
38	5190	30.974	14.91	24	Pass
46	5230	30.2	14.80	24	Pass
54	5270	30.339	14.82	24	Pass
62	5310	30.061	14.78	24	Pass
102	5510	31.046	14.92	24	Pass
110	5550	29.242	14.66	24	Pass
134	5670	29.648	14.72	24	Pass
142	5710 (U-NII-2C)	15.346	11.86	24	Pass
142	5710 (U-NII-3)	1.449	1.61	30	Pass
151	5755	29.717	14.73	30	Pass
159	5795	31.189	14.94	30	Pass

Note:

For U-NII-2A, U-NII-2C Band:

1. $11 \text{ dBm} + 10\log(42.13) = 27.25 \text{ dBm} > 24 \text{ dBm}$.
2. $11 \text{ dBm} + 10\log(42.01) = 27.23 \text{ dBm} > 24 \text{ dBm}$.
3. $11 \text{ dBm} + 10\log(42.31) = 27.26 \text{ dBm} > 24 \text{ dBm}$.
4. $11 \text{ dBm} + 10\log(42.26) = 27.26 \text{ dBm} > 24 \text{ dBm}$.
5. $11 \text{ dBm} + 10\log(42.00) = 27.23 \text{ dBm} > 24 \text{ dBm}$.
6. $11 \text{ dBm} + 10\log(36.21) = 26.59 \text{ dBm} > 24 \text{ dBm}$.

802.11ac (VHT80)

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
42	5210	29.717	14.73	24	Pass
58	5290	30.061	14.78	24	Pass
106	5530	29.648	14.72	24	Pass
122	5610	29.717	14.73	24	Pass
138	5690 (U-NII-2C)	12.531	10.98	24	Pass
138	5690 (U-NII-3)	1.208	0.82	30	Pass
155	5775	29.58	14.71	30	Pass

Note:

For U-NII-2A, U-NII-2C Band:

1. $11 \text{ dBm} + 10\log(83.16) = 30.20 \text{ dBm} > 24 \text{ dBm}$.
2. $11 \text{ dBm} + 10\log(83.95) = 30.24 \text{ dBm} > 24 \text{ dBm}$.
3. $11 \text{ dBm} + 10\log(83.12) = 30.20 \text{ dBm} > 24 \text{ dBm}$.
4. $11 \text{ dBm} + 10\log(77.16) = 29.87 \text{ dBm} > 24 \text{ dBm}$.

For U-NII-1 Band

802.11a

Channel	Frequency (MHz)	Conducted Power (dBm)	Directional Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Pass / Fail
36	5180	14.88	-1.42	13.46	21	Pass
40	5200	14.82	-1.42	13.40	21	Pass
48	5240	14.89	-1.42	13.47	21	Pass

Note:

Directional gain = $-1.42 \text{ dBi} + 10\log(1) = -1.42 \text{ dBi} < 6 \text{ dBi}$, so there is no need to reduce the power density limit.

802.11ac (VHT20)

Channel	Frequency (MHz)	Conducted Power (dBm)	Directional Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Pass / Fail
36	5180	14.93	-1.42	13.51	21	Pass
40	5200	14.82	-1.42	13.40	21	Pass
48	5240	14.89	-1.42	13.47	21	Pass

Note:

Directional gain = $-1.42 \text{ dBi} + 10\log(1) = -1.42 \text{ dBi} < 6 \text{ dBi}$, so there is no need to reduce the power density limit.

802.11ac (VHT40)

Channel	Frequency (MHz)	Conducted Power (dBm)	Directional Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Pass / Fail
38	5190	14.91	-1.42	13.49	21	Pass
46	5230	14.80	-1.42	13.38	21	Pass

Note:

Directional gain = $-1.42 \text{ dBi} + 10\log(1) = -1.42 \text{ dBi} < 6 \text{ dBi}$, so there is no need to reduce the power density limit.

802.11ac (VHT80)

Channel	Frequency (MHz)	Conducted Power (dBm)	Directional Gain (dBi)	EIRP (dBm)	EIRP Limit (dBm)	Pass / Fail
42	5210	14.73	-1.42	13.31	21	Pass

Note:

Directional gain = $-1.42 \text{ dBi} + 10\log(1) = -1.42 \text{ dBi} < 6 \text{ dBi}$, so there is no need to reduce the power density limit.

26 dB Bandwidth:
802.11a

Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)
36	5180	22.09
40	5200	22.18
48	5240	22.40
52	5260	21.69
60	5300	22.12
64	5320	22.21
100	5500	22.87
116	5580	22.01
140	5700	22.41
144	5720 (U-NII-2C)	16.69
144	5720 (U-NII-3)	7.06

802.11ac (VHT20)

Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)
36	5180	23.33
40	5200	23.19
48	5240	22.85
52	5260	23.31
60	5300	23.13
64	5320	23.86
100	5500	23.03
116	5580	23.53
140	5700	23.38
144	5720 (U-NII-2C)	17.24
144	5720 (U-NII-3)	7.17

802.11ac (VHT40)

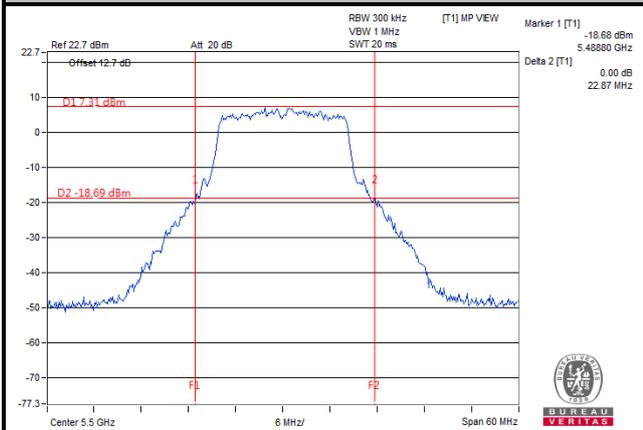
Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)
38	5190	42.21
46	5230	42.15
54	5270	42.13
62	5310	42.01
102	5510	42.31
110	5550	42.26
134	5670	42.00
142	5710 (U-NII-2C)	36.21
142	5710 (U-NII-3)	6.07

802.11ac (VHT80)

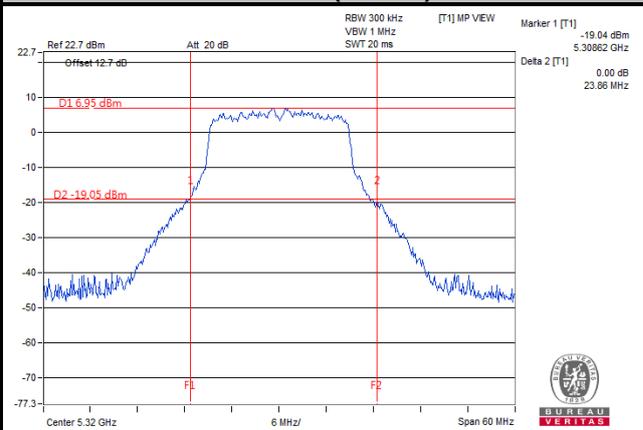
Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)
42	5210	82.84
58	5290	83.16
106	5530	83.95
122	5610	83.12
138	5690 (U-NII-2C)	77.16
138	5690 (U-NII-3)	7.32

Spectrum Plot of Worst Value

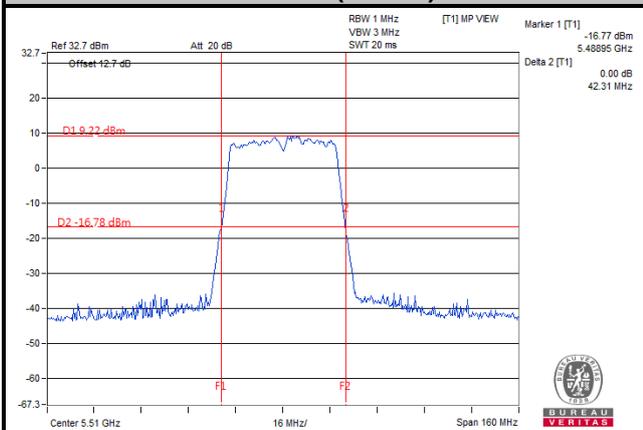
802.11a



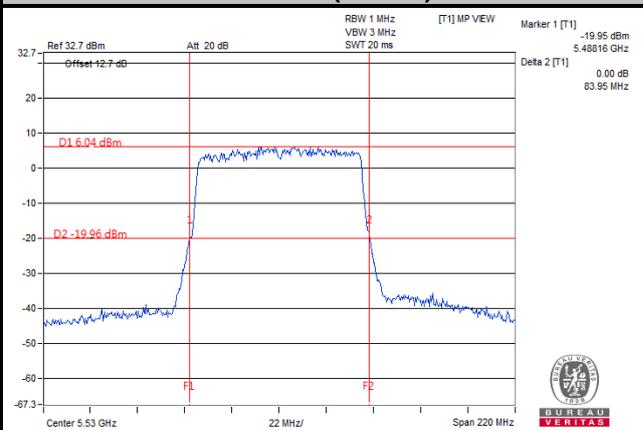
802.11ac (VHT20)



802.11ac (VHT40)

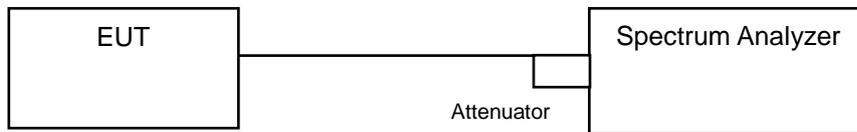


802.11ac (VHT80)



4.4 Occupied Bandwidth Measurement

4.4.1 Test Setup



4.4.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.3 Test Procedure

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with resolution bandwidth in the range of 1 % to 5 % of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth and set the detector to SAMPLE. The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 % of the total mean power of a given emission.

4.4.4 Test Results

802.11a

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)
36	5180	16.56
40	5200	16.68
48	5240	16.68
52	5260	16.68
60	5300	16.68
64	5320	16.68
100	5500	16.56
116	5580	16.68
140	5700	16.68
144	5720 (U-NII-2C)	13.40
144	5720 (U-NII-3)	3.28
149	5745	16.73
157	5785	16.64
165	5825	16.68

802.11ac (VHT20)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)
36	5180	17.88
40	5200	17.88
48	5240	17.88
52	5260	17.88
60	5300	17.88
64	5320	17.88
100	5500	17.88
116	5580	17.76
140	5700	17.88
144	5720 (U-NII-2C)	14.00
144	5720 (U-NII-3)	3.88
149	5745	17.79
157	5785	17.79
165	5825	17.79

802.11ac (VHT40)

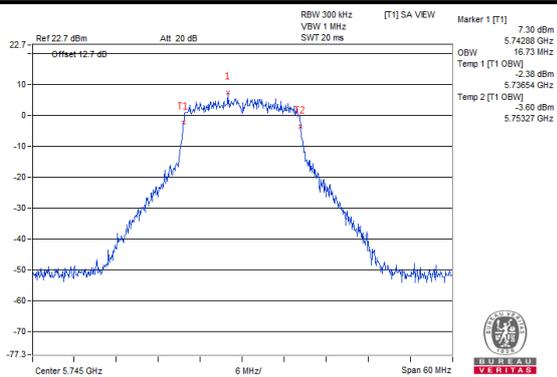
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)
38	5190	36.48
46	5230	36.48
54	5270	36.48
62	5310	36.48
102	5510	36.48
110	5550	36.72
134	5670	36.72
142	5710 (U-NII-2C)	33.48
142	5710 (U-NII-3)	3.24
151	5755	36.72
159	5795	36.72

802.11ac (VHT80)

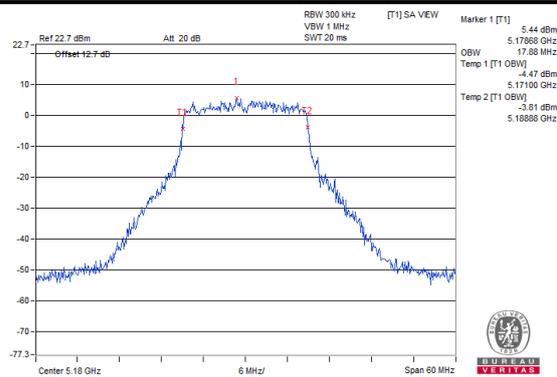
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)
42	5210	75.84
58	5290	75.84
106	5530	75.84
122	5610	75.84
138	5690 (U-NII-2C)	73.40
138	5690 (U-NII-3)	2.44
155	5775	75.77

Spectrum Plot of Worst Value

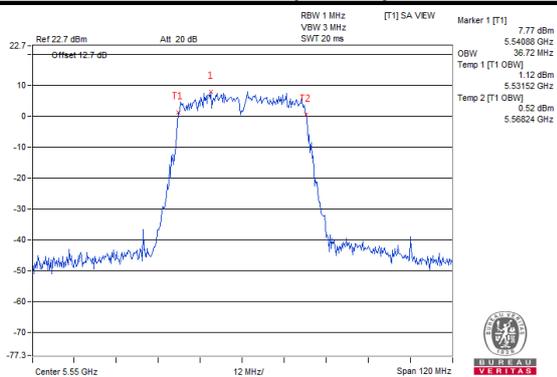
802.11a



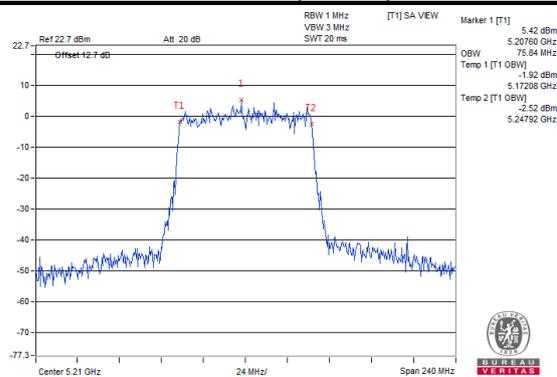
802.11ac (VHT20)



802.11ac (VHT40)



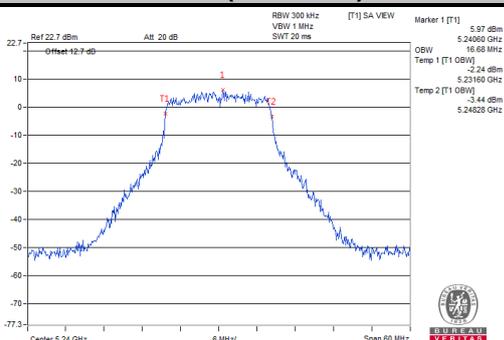
802.11ac (VHT80)



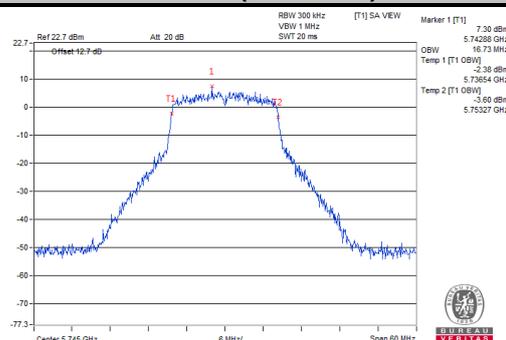
Spectrum Plot for Nearby DFS Band

802.11a

Ch 48 (5240 MHz)

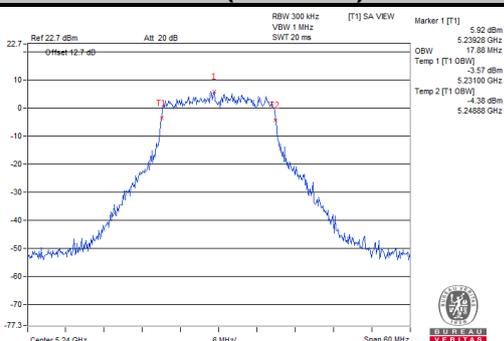


Ch 149 (5745 MHz)

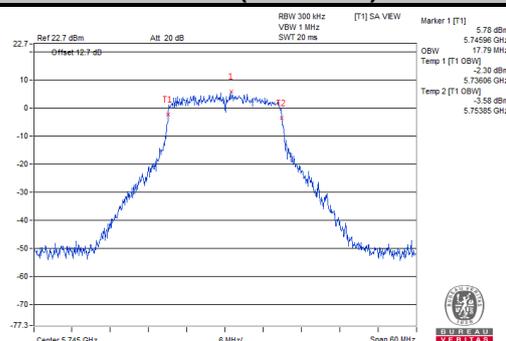


802.11ac (VHT20)

Ch 48 (5240 MHz)

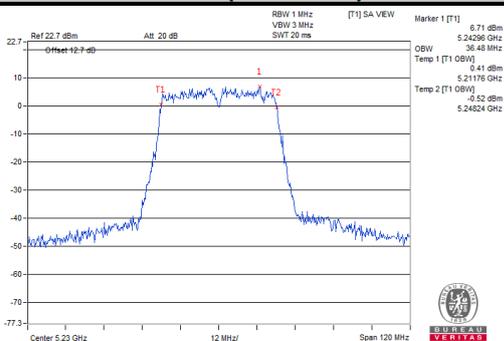


Ch 149 (5745 MHz)

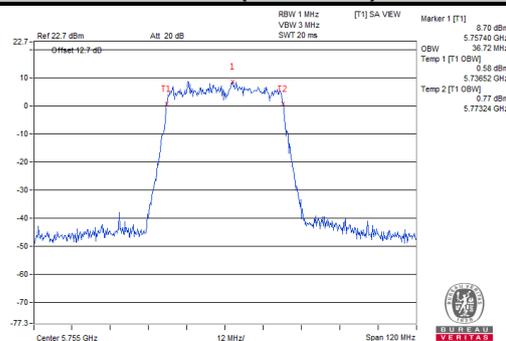


802.11ac (VHT40)

Ch 46 (5230 MHz)

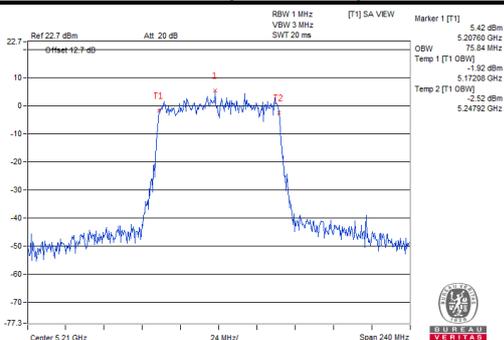


Ch 151 (5755 MHz)

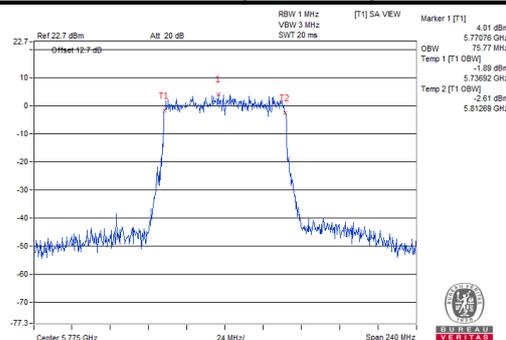


802.11ac (VHT80)

Ch 42 (5210 MHz)



Ch 155 (5775 MHz)

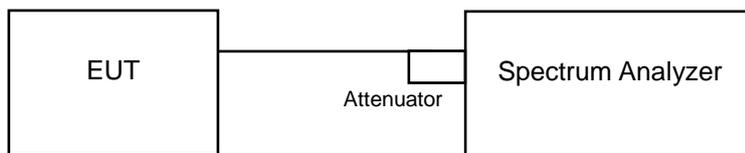


4.5 Peak Power Spectral Density Measurement

4.5.1 Limits of Peak Power Spectral Density Measurement

Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	17 dBm/MHz
		Fixed point-to-point Access Point	
		Indoor Access Point	
	√	Mobile and Portable client device	11 dBm/MHz
U-NII-2A		√	11 dBm/MHz
U-NII-2C		√	11 dBm/MHz
U-NII-3		√	30 dBm/500 kHz

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedures

For U-NII-1, U-NII-2A, U-NII-2C band:

Using method SA-2

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1 MHz, Set VBW ≥ 3 RBW, Detector = RMS
3. Sweep time = auto, trigger set to “free run”.
4. Trace average at least 100 traces in power averaging mode.
5. Record the max value and add 10 log (1/duty cycle)

※ For U-NII-3:

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 300 kHz, Set VBW ≥ 1 RBW, Detector = RMS
3. Use the peak marker function to determine the maximum power level in any 300 kHz band segment within the fundamental EBW.
4. Scale the observed power level to an equivalent value in 500 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where $BWCF = 10\log(500 \text{ kHz} / 300 \text{ kHz})$.
5. Sweep time = auto, trigger set to “free run”.
6. Trace average at least 100 traces in power averaging mode.
7. Record the max value and add 10 log (1/duty cycle)

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Conditions

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.5.7 Test Results

For U-NII-1, U-NII-2A, U-NII-2C Band

802.11a

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD with Duty Factor (dBm/MHz)	Maximum Limit (dBm/MHz)	Pass / Fail
36	5180	2.13	0.11	2.24	11	Pass
40	5200	1.92	0.11	2.03	11	Pass
48	5240	1.98	0.11	2.09	11	Pass
52	5260	2.03	0.11	2.14	11	Pass
60	5300	1.49	0.11	1.60	11	Pass
64	5320	2.21	0.11	2.32	11	Pass
100	5500	1.95	0.11	2.06	11	Pass
116	5580	2.19	0.11	2.30	11	Pass
140	5700	2.22	0.11	2.33	11	Pass
144	5720 (U-NII-2C)	1.46	0.11	1.57	11	Pass

Note: Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT20)

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD with Duty Factor (dBm/MHz)	Maximum Limit (dBm/MHz)	Pass / Fail
36	5180	1.44	0.11	1.55	11	Pass
40	5200	1.25	0.11	1.36	11	Pass
48	5240	1.41	0.11	1.52	11	Pass
52	5260	1.47	0.11	1.58	11	Pass
60	5300	1.78	0.11	1.89	11	Pass
64	5320	1.65	0.11	1.76	11	Pass
100	5500	1.49	0.11	1.60	11	Pass
116	5580	1.61	0.11	1.72	11	Pass
140	5700	1.63	0.11	1.74	11	Pass
144	5720 (U-NII-2C)	2.09	0.11	2.20	11	Pass

Note: Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT40)

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD with Duty Factor (dBm/MHz)	Maximum Limit (dBm/MHz)	Pass / Fail
38	5190	-2.01	0.25	-1.76	11	Pass
46	5230	-2.53	0.25	-2.28	11	Pass
54	5270	-1.59	0.25	-1.34	11	Pass
62	5310	-2.47	0.25	-2.22	11	Pass
102	5510	-2.14	0.25	-1.89	11	Pass
110	5550	-1.85	0.25	-1.60	11	Pass
134	5670	-1.93	0.25	-1.68	11	Pass
142	5710 (U-NII-2C)	-1.40	0.25	-1.15	11	Pass

Note: Refer to section 3.3 for duty cycle spectrum plot.

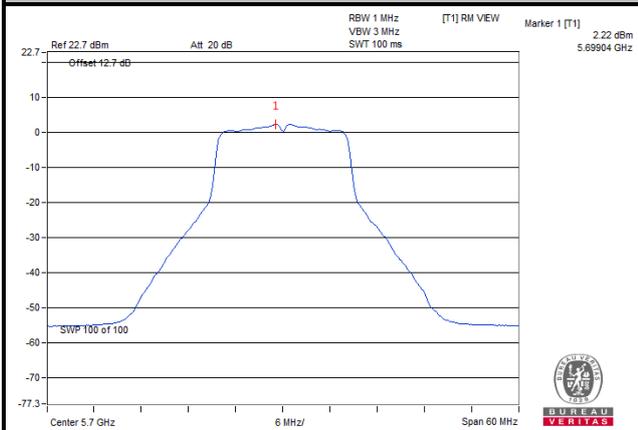
802.11ac (VHT80)

Channel	Frequency (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD with Duty Factor (dBm/MHz)	Maximum Limit (dBm/MHz)	Pass / Fail
42	5210	-5.18	0.38	-4.80	11	Pass
58	5290	-5.24	0.38	-4.86	11	Pass
106	5530	-4.82	0.38	-4.44	11	Pass
122	5610	-4.22	0.38	-3.84	11	Pass
138	5690 (U-NII-2C)	-4.00	0.38	-3.62	11	Pass

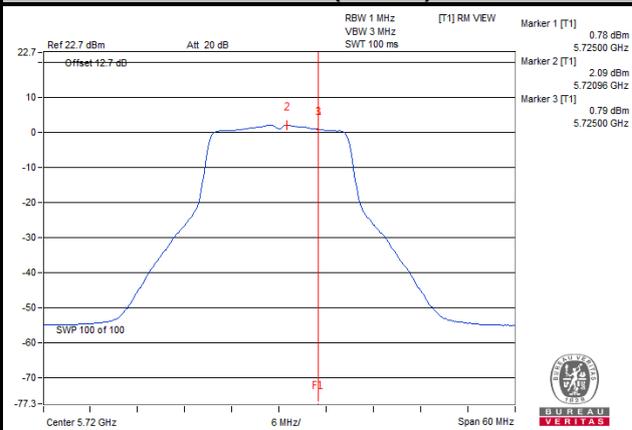
Note: Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

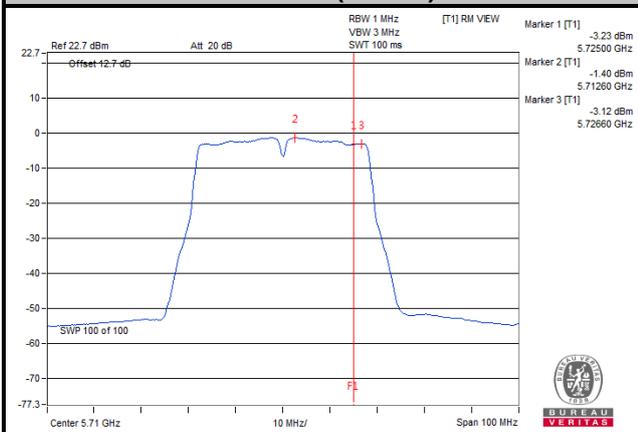
802.11a



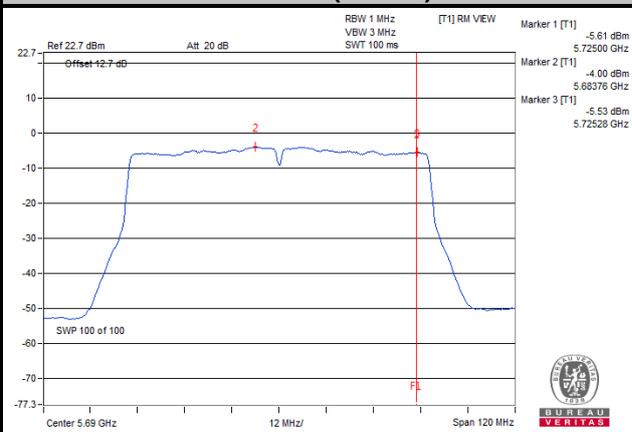
802.11ac (VHT20)



802.11ac (VHT40)



802.11ac (VHT80)



For U-NII-3 Band

802.11a

Channel	Frequency (MHz)	PSD w/o Duty Factor		Duty Factor (dB)	PSD with Duty Factor (dBm/500 kHz)	Limit (dBm/500 kHz)	Pass / Fail
		(dBm/300 kHz)	(dBm/500 kHz)				
144	5720 (U-NII-3)	-5.36	-3.14	0.11	-3.03	30	Pass
149	5745	-6.17	-3.95	0.11	-3.84	30	Pass
157	5785	-6.57	-4.35	0.11	-4.24	30	Pass
165	5825	-6.54	-4.32	0.11	-4.21	30	Pass

Note: Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT20)

Channel	Frequency (MHz)	PSD w/o Duty Factor		Duty Factor (dB)	PSD with Duty Factor (dBm/500 kHz)	Limit (dBm/500 kHz)	Pass / Fail
		(dBm/300 kHz)	(dBm/500 kHz)				
144	5720 (U-NII-3)	-4.63	-2.41	0.11	-2.3	30	Pass
149	5745	-6.76	-4.54	0.11	-4.43	30	Pass
157	5785	-7.58	-5.36	0.11	-5.25	30	Pass
165	5825	-6.5	-4.28	0.11	-4.17	30	Pass

Note: Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT40)

Channel	Frequency (MHz)	PSD w/o Duty Factor		Duty Factor (dB)	PSD with Duty Factor (dBm/500 kHz)	Limit (dBm/500 kHz)	Pass / Fail
		(dBm/300 kHz)	(dBm/500 kHz)				
142	5710 (U-NII-3)	-8.15	-5.93	0.25	-5.68	30	Pass
151	5755	-10.17	-7.95	0.25	-7.7	30	Pass
159	5795	-10.29	-8.07	0.25	-7.82	30	Pass

Note: Refer to section 3.3 for duty cycle spectrum plot.

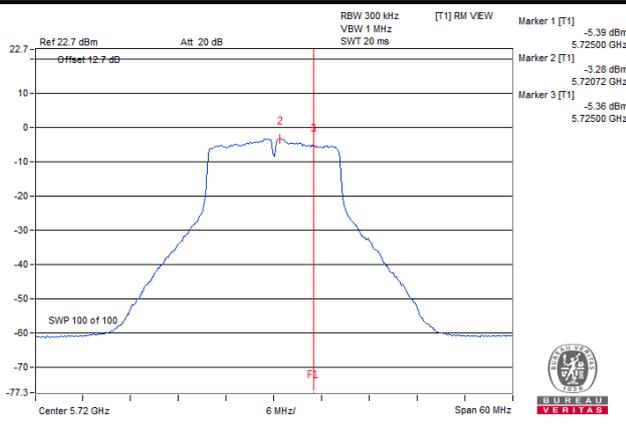
802.11ac (VHT80)

Channel	Frequency (MHz)	PSD w/o Duty Factor		Duty Factor (dB)	PSD with Duty Factor (dBm/500 kHz)	Limit (dBm/500 kHz)	Pass / Fail
		(dBm/300 kHz)	(dBm/500 kHz)				
138	5690 (U-NII-3)	-10.74	-8.52	0.38	-8.14	30	Pass
155	5775	-13.76	-11.54	0.38	-11.16	30	Pass

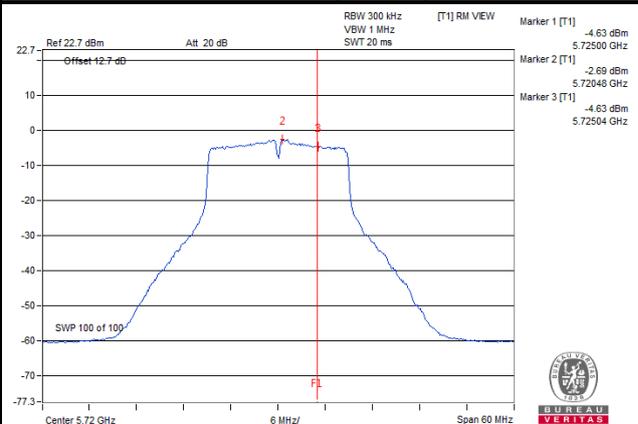
Note: Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

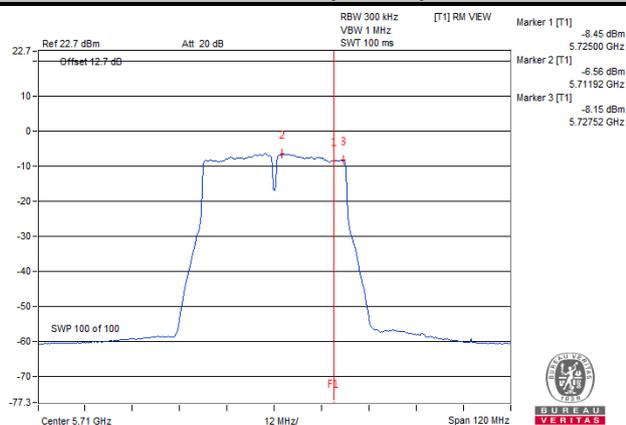
802.11a



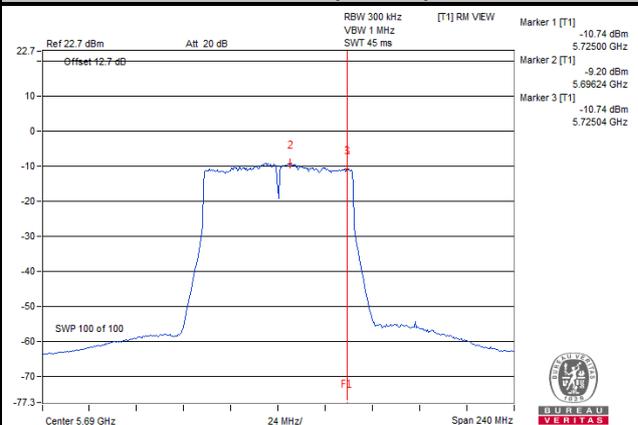
802.11ac (VHT20)



802.11ac (VHT40)



802.11ac (VHT80)

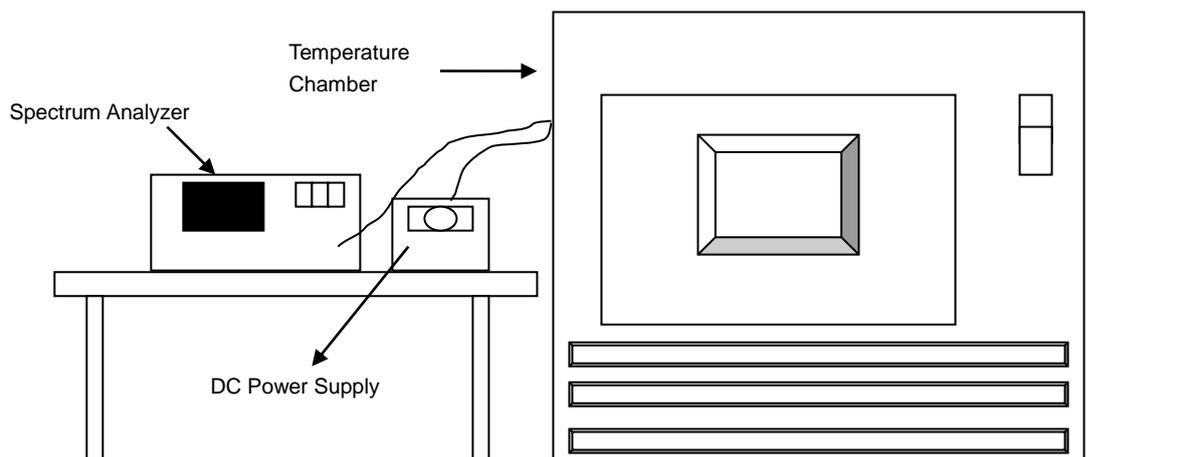


4.6 Frequency Stability

4.6.1 Limit of Frequency Stability Measurement

The frequency of the carrier signal shall be maintained within band of operation.

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

- The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.
- Turn the EUT on and couple its output to a spectrum analyzer.
- Turn the EUT off and set the chamber to the highest temperature specified.
- Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 Minutes.
- Repeat step (d) with the temperature chamber set to the next desired temperature until measurements down to the lowest specified temperature have been completed.
- The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 Minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

Set the EUT transmit at un-modulation mode to test frequency stability.

4.6.7 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 5180 MHz									
Temp. (°C)	Power Supply (Vdc)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
45	3.8	5179.9951	PASS	5179.9928	PASS	5179.9945	PASS	5179.9945	PASS
40	3.8	5180.0079	PASS	5180.0073	PASS	5180.0049	PASS	5180.0048	PASS
30	3.8	5180.0263	PASS	5180.0222	PASS	5180.0224	PASS	5180.0246	PASS
20	3.8	5179.9903	PASS	5179.991	PASS	5179.9879	PASS	5179.9878	PASS
10	3.8	5180.0055	PASS	5180.0082	PASS	5180.0073	PASS	5180.009	PASS
0	3.8	5180.0121	PASS	5180.0144	PASS	5180.0109	PASS	5180.0127	PASS
-10	3.8	5180.026	PASS	5180.0233	PASS	5180.0226	PASS	5180.0276	PASS

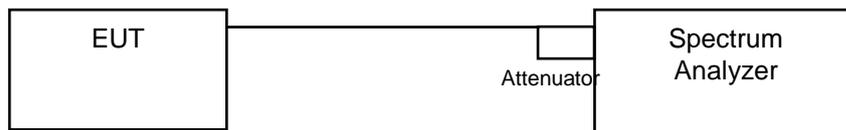
Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
Temp. (°C)	Power Supply (Vdc)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	4.37	5179.9898	PASS	5179.9904	PASS	5179.9885	PASS	5179.9888	PASS
	3.8	5179.9903	PASS	5179.991	PASS	5179.9879	PASS	5179.9878	PASS
	3.23	5179.9893	PASS	5179.9911	PASS	5179.9871	PASS	5179.9878	PASS

4.7 6 dB Bandwidth Measurement

4.7.1 Limits of 6 dB Bandwidth Measurement

The minimum of 6 dB Bandwidth Measurement is 0.5 MHz.

4.7.2 Test Setup



4.7.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.7.4 Test Procedure

MEASUREMENT PROCEDURE REF

- Set resolution bandwidth (RBW) = 100 kHz
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

4.7.5 Deviation from Test Standard

No deviation.

4.7.6 EUT Operating Condition

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

4.7.7 Test Results

802.11a

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
144	5720 (U-NII-3)	2.75	0.5	Pass
149	5745	15.57	0.5	Pass
157	5785	15.55	0.5	Pass
165	5825	15.58	0.5	Pass

802.11ac (VHT20)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
144	5720 (U-NII-3)	2.58	0.5	Pass
149	5745	15.99	0.5	Pass
157	5785	16.54	0.5	Pass
165	5825	16.53	0.5	Pass

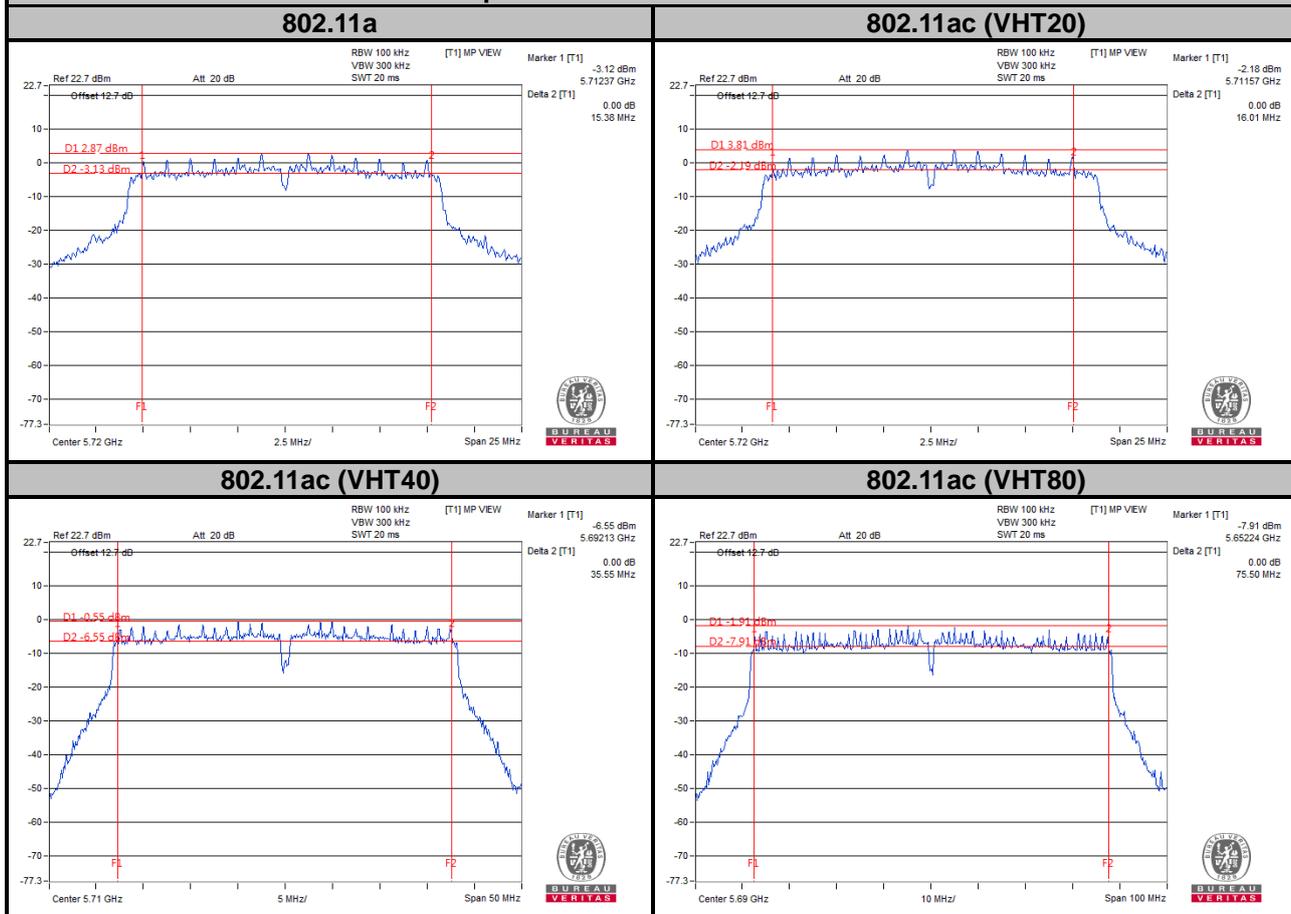
802.11ac (VHT40)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
142	5710 (U-NII-3)	2.68	0.5	Pass
151	5755	35.88	0.5	Pass
159	5795	36.08	0.5	Pass

802.11ac (VHT80)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
138	5690 (U-NII-3)	2.74	0.5	Pass
155	5775	75.41	0.5	Pass

Spectrum Plot of Worst Value



Note:

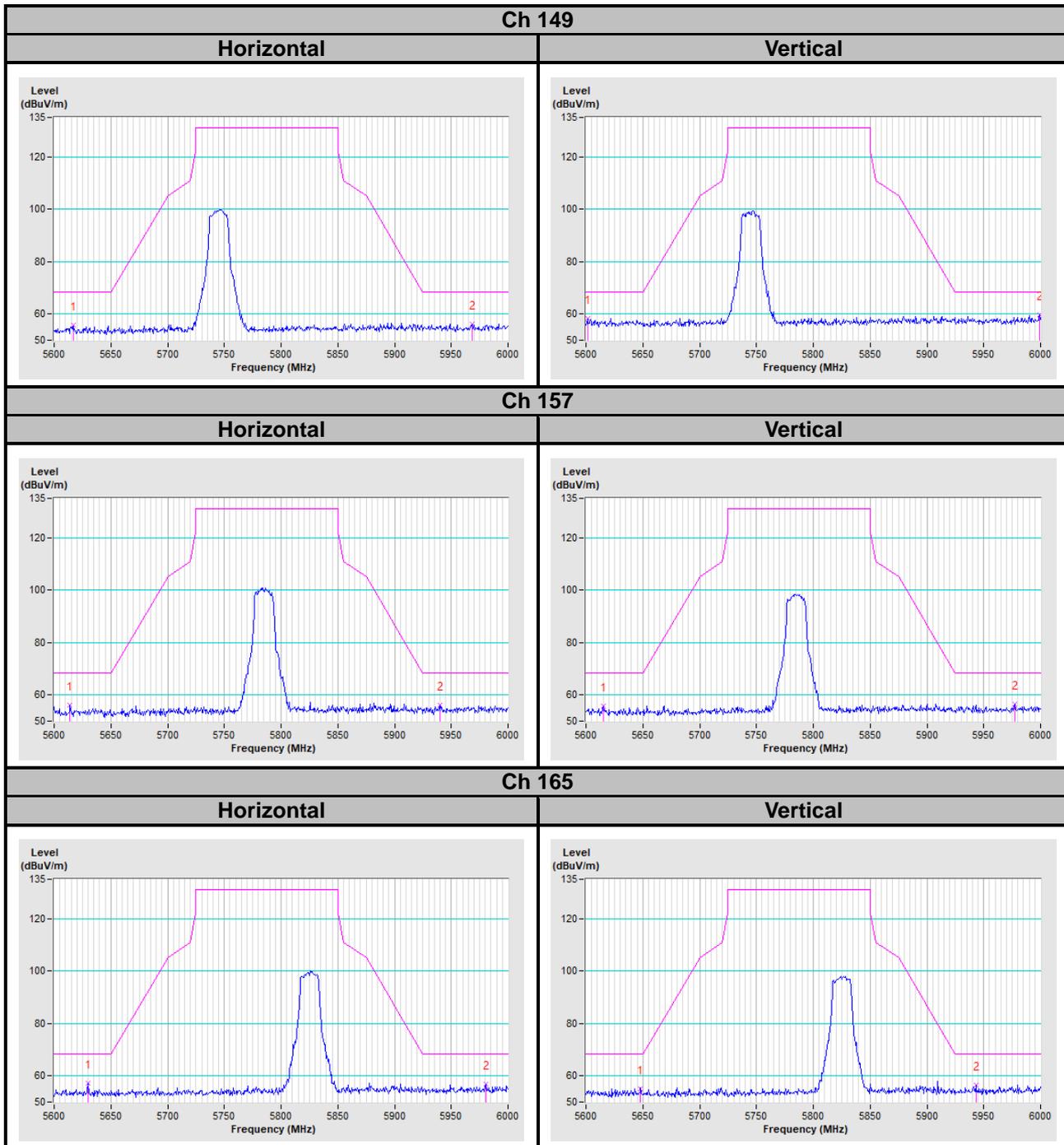
For Ch144 (UNII-3 Band): The 6 dB bandwidth above 5725 MHz = Marker 1 + Delta 2 – 5725 MHz
 For Ch142 (UNII-3 Band): The 6 dB bandwidth above 5725 MHz = Marker 1 + Delta 2 – 5725 MHz

5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

Annex A- Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band)

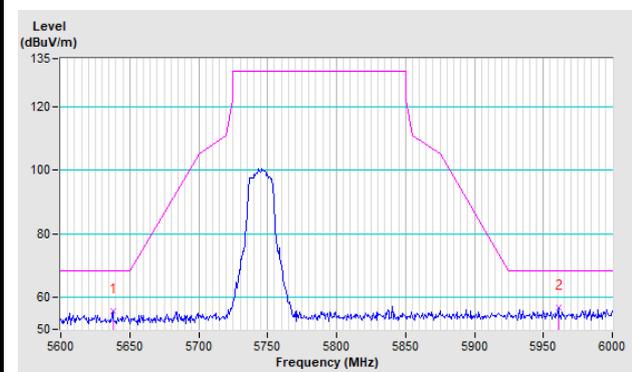
802.11a



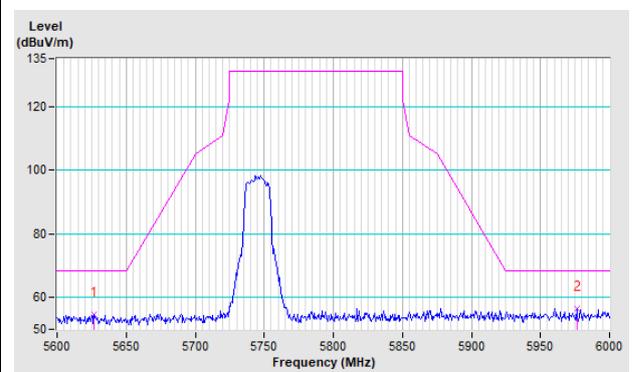
802.11ac (VHT20)

Ch 149

Horizontal

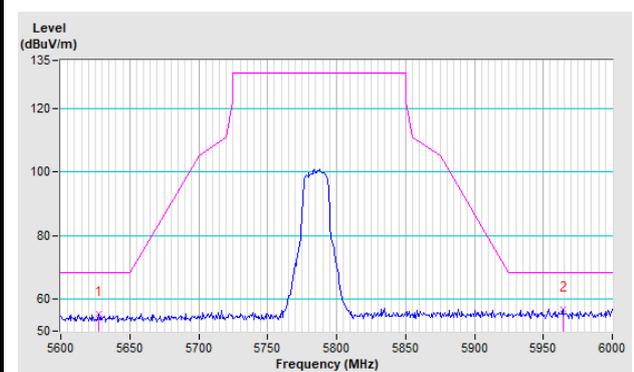


Vertical

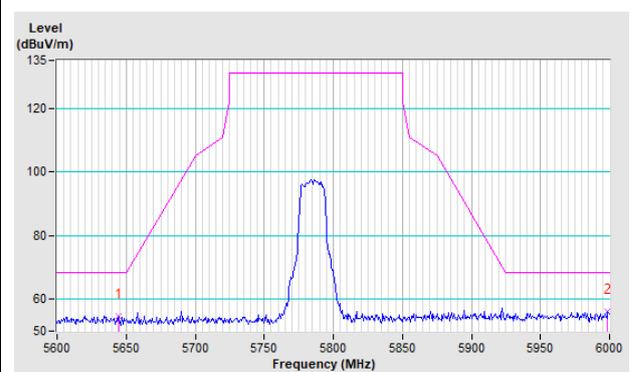


Ch 157

Horizontal

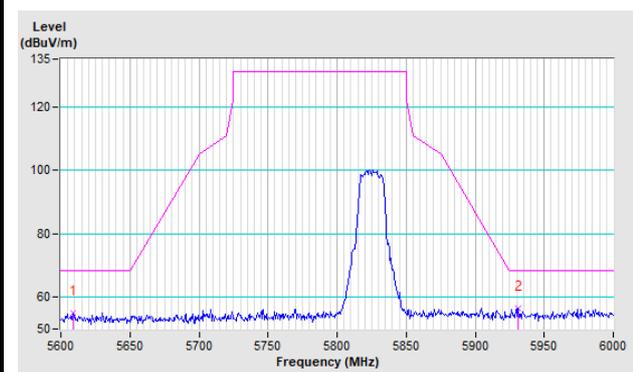


Vertical

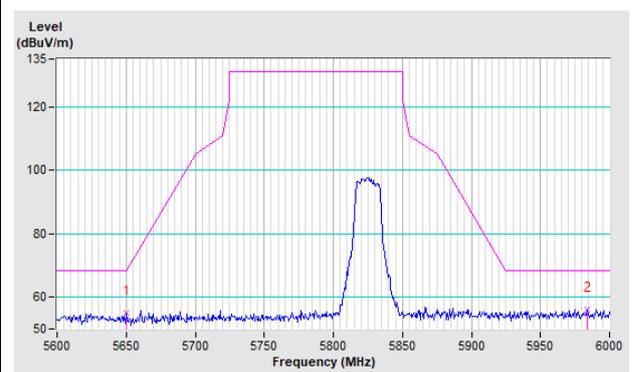


Ch 165

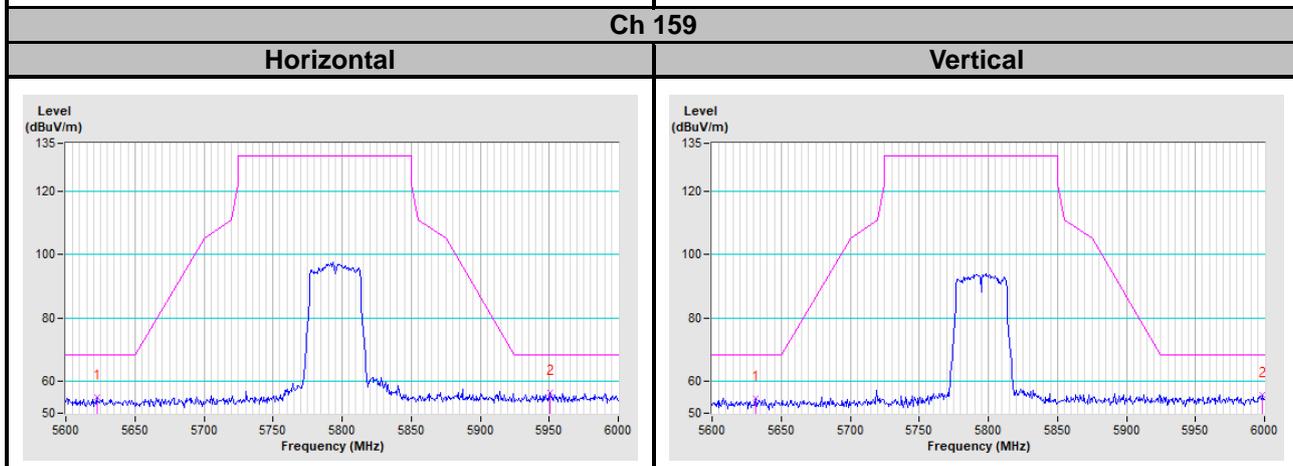
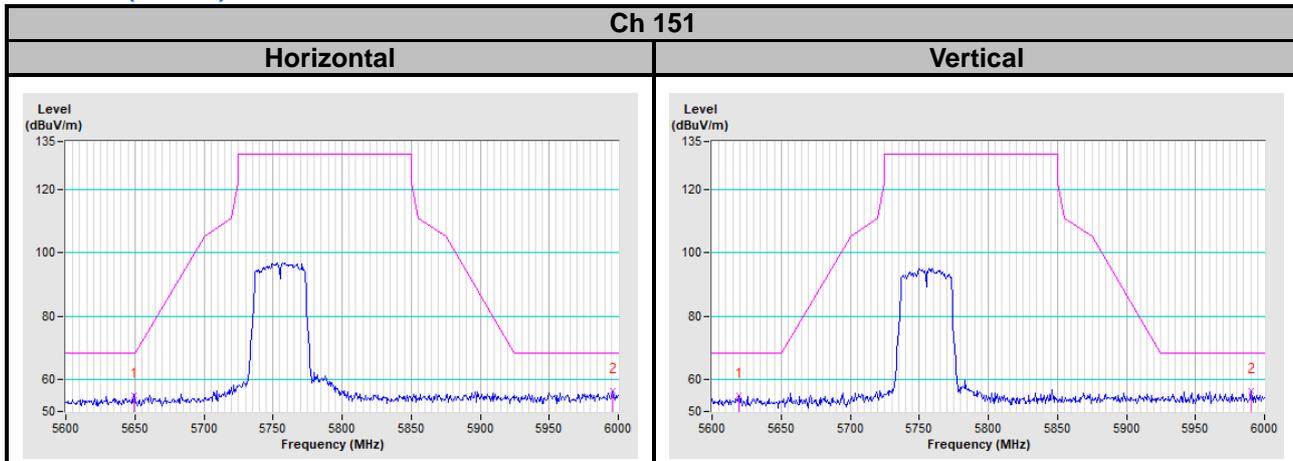
Horizontal



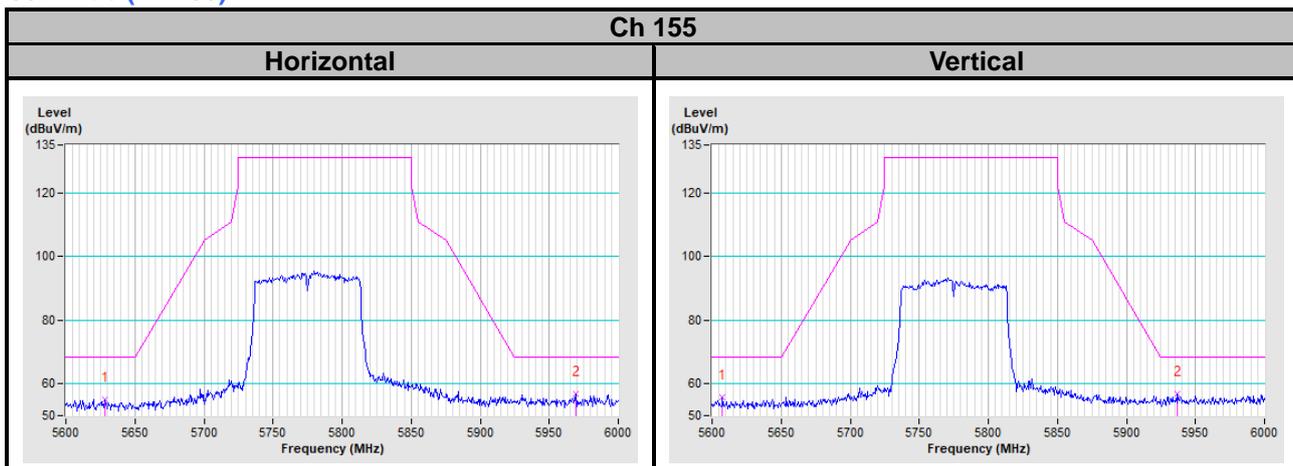
Vertical



802.11ac (VHT40)



802.11ac (VHT80)

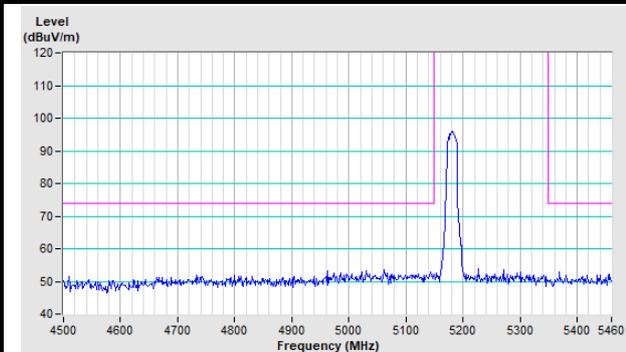


Annex B- Radiated Out of Band Emission (OOBE) Measurement

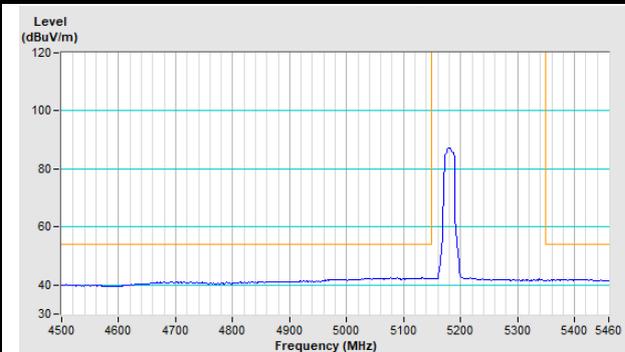
802.11a

802.11a Channel 36

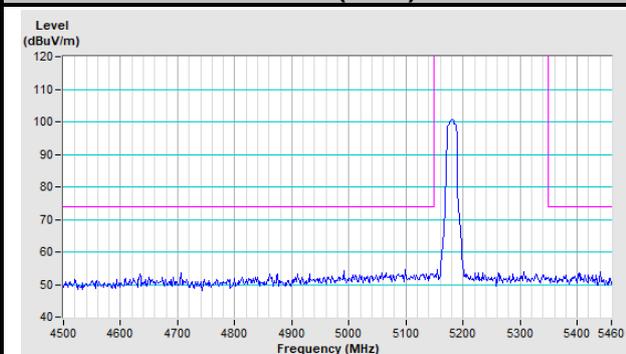
Horizontal (Peak)



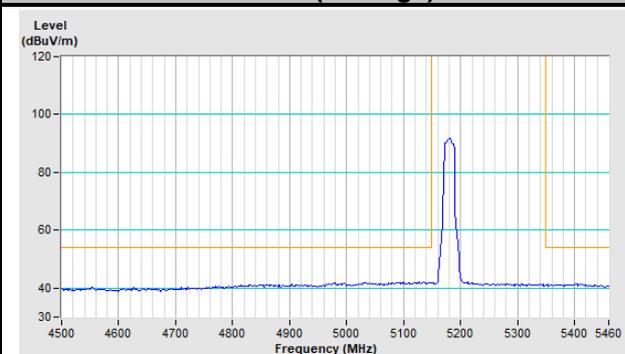
Horizontal (Average)



Vertical (Peak)

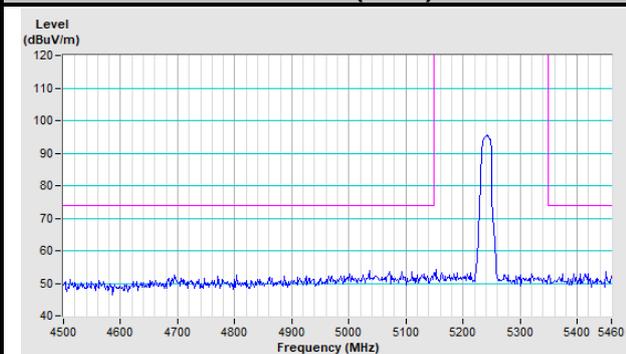


Vertical (Average)

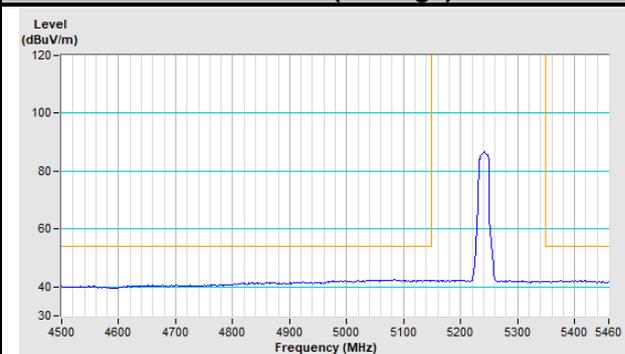


802.11a Channel 48

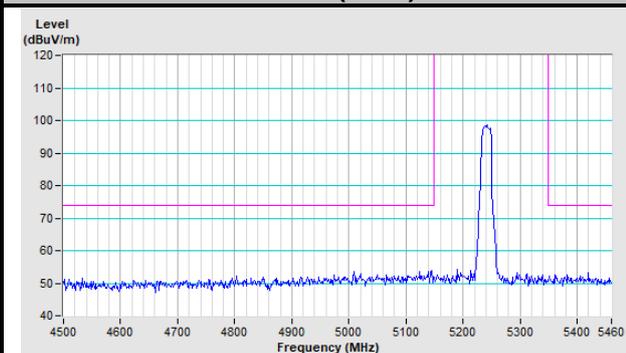
Horizontal (Peak)



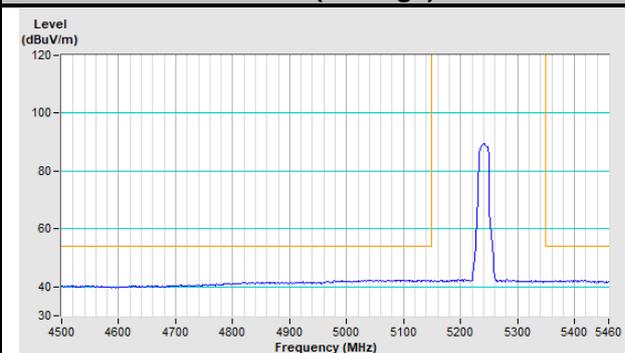
Horizontal (Average)



Vertical (Peak)

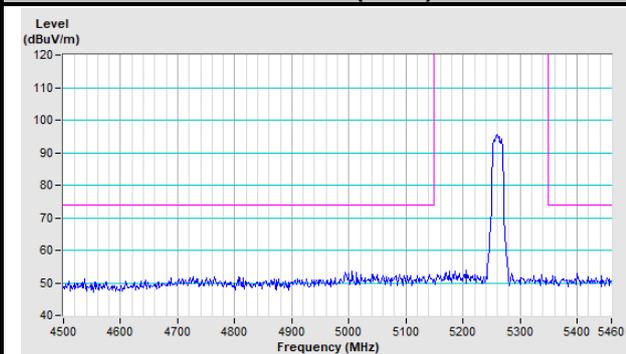


Vertical (Average)

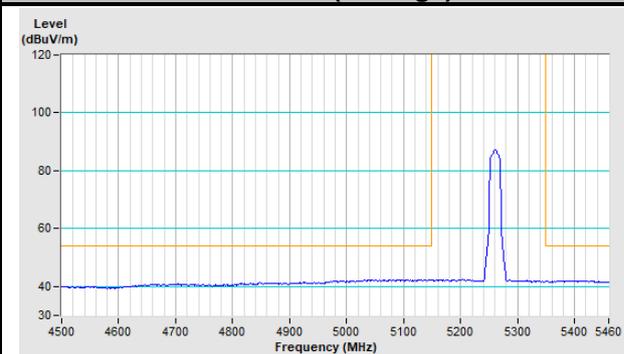


802.11a Channel 52

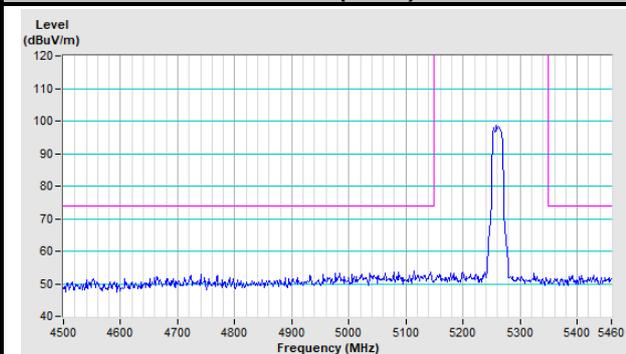
Horizontal (Peak)



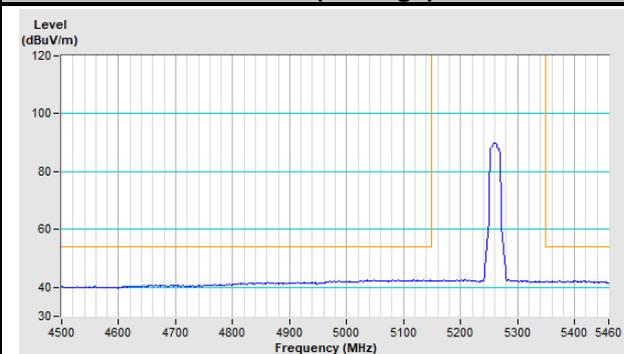
Horizontal (Average)



Vertical (Peak)

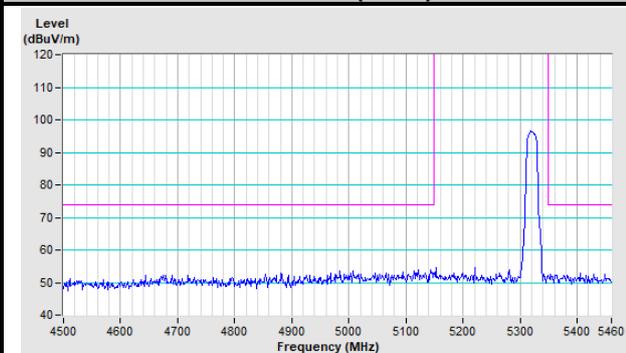


Vertical (Average)

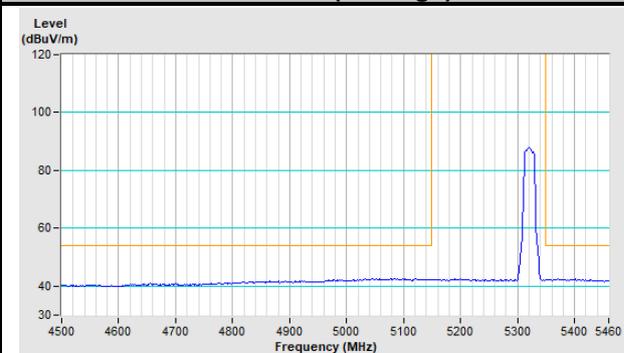


802.11a Channel 64

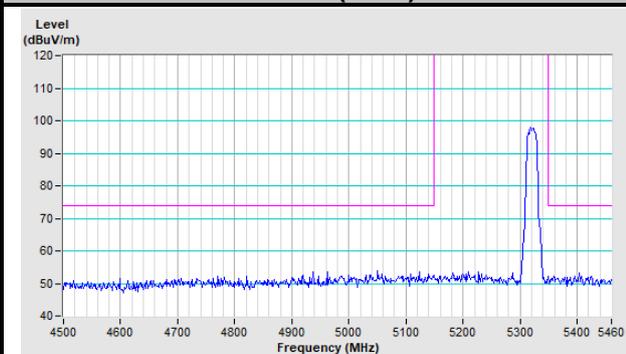
Horizontal (Peak)



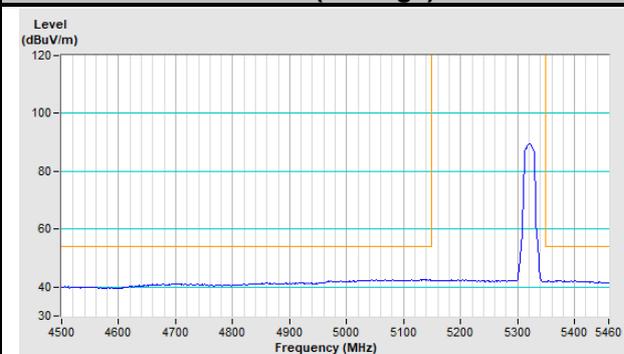
Horizontal (Average)



Vertical (Peak)

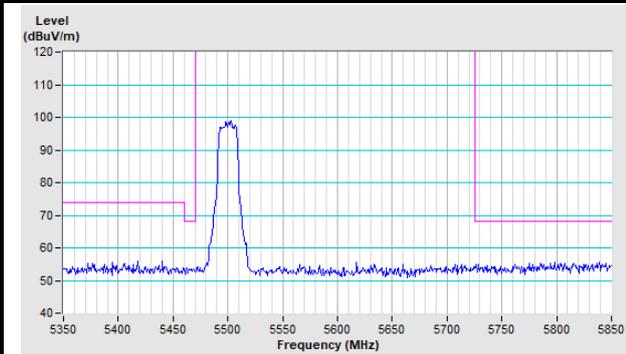


Vertical (Average)

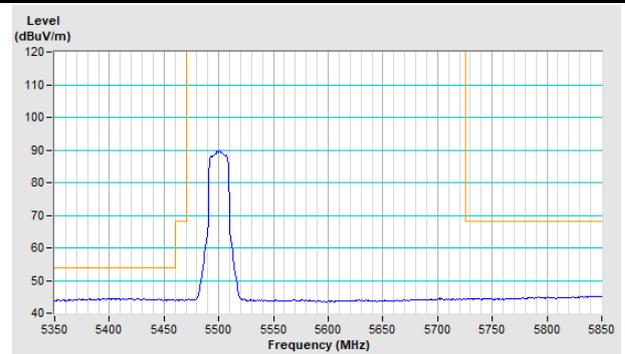


802.11a Channel 100

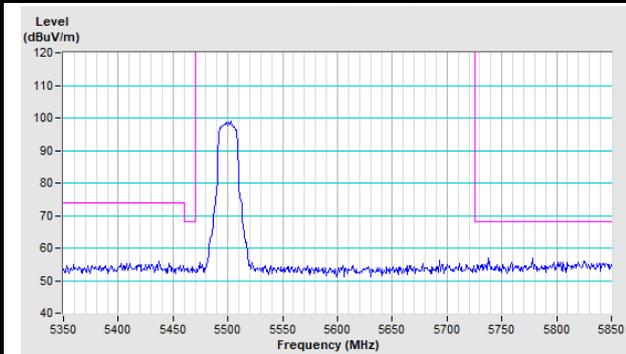
Horizontal (Peak)



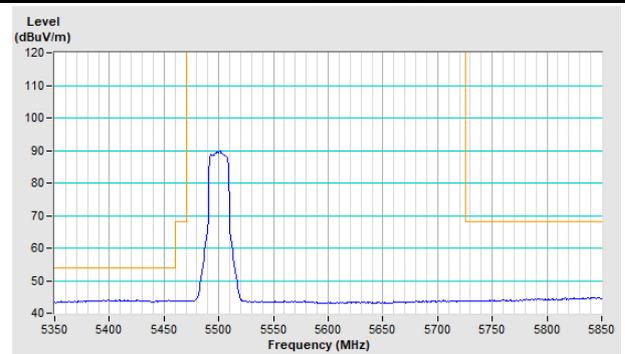
Horizontal (Average)



Vertical (Peak)

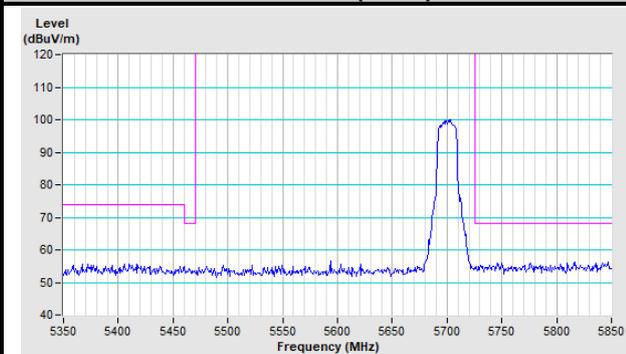


Vertical (Average)

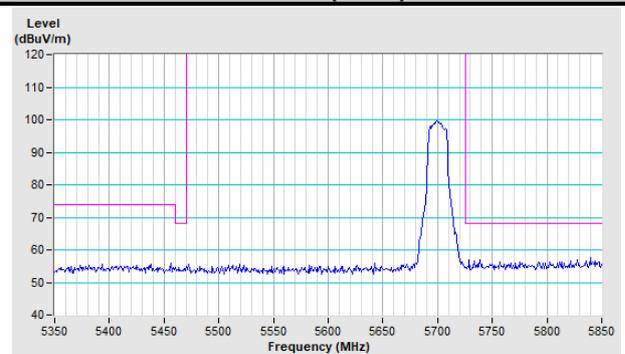


802.11a Channel 140

Horizontal (Peak)

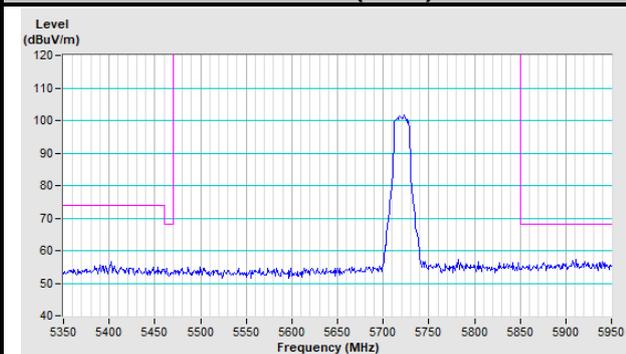


Vertical (Peak)

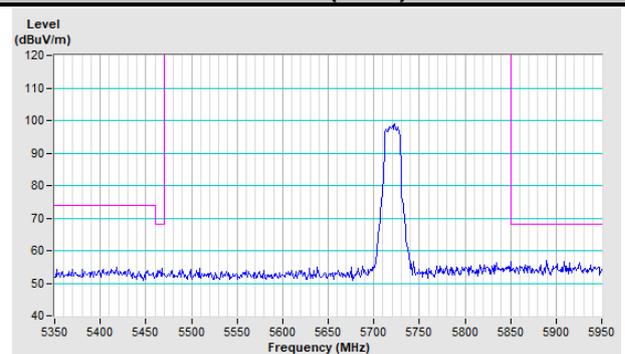


802.11a Channel 144

Horizontal (Peak)



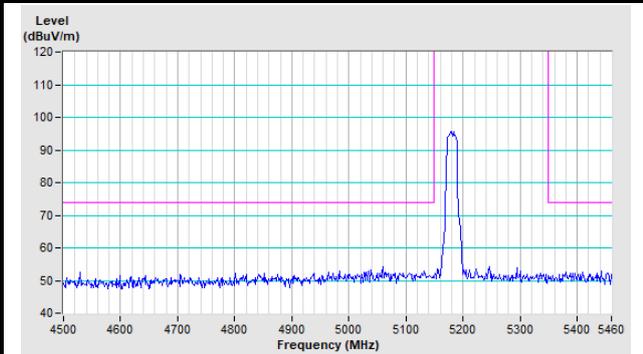
Vertical (Peak)



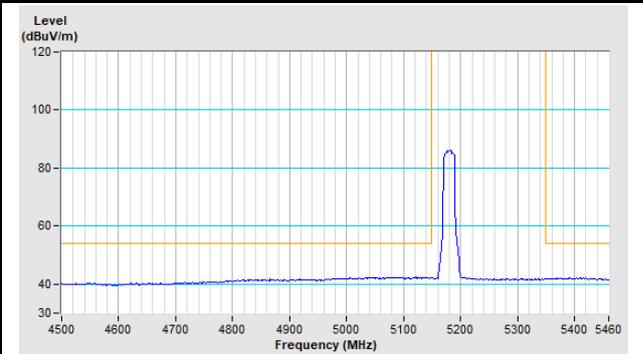
802.11ac (VHT20)

802.11ac (VHT20) Channel 36

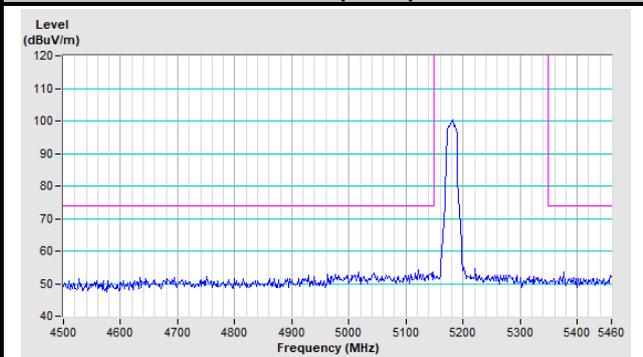
Horizontal (Peak)



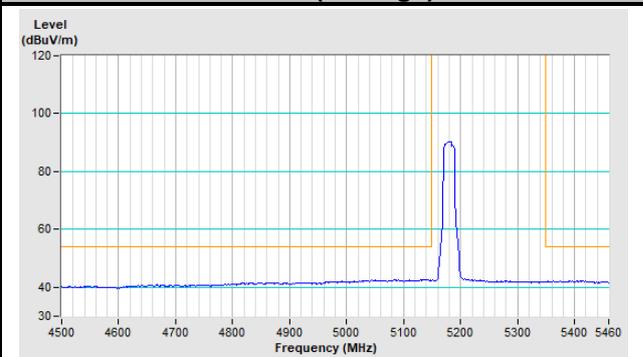
Horizontal (Average)



Vertical (Peak)

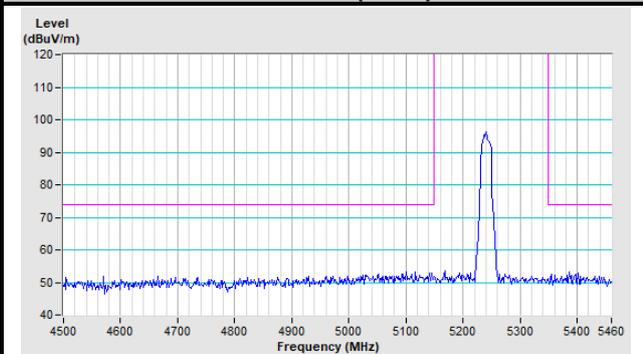


Vertical (Average)

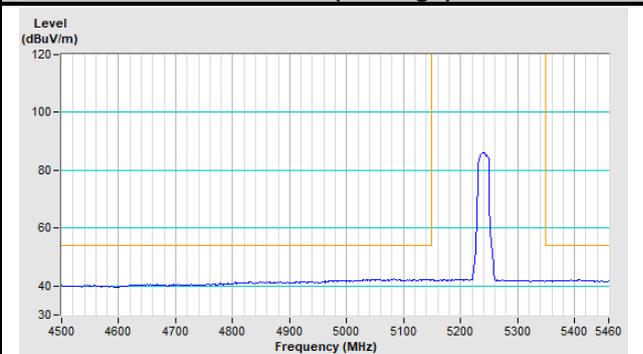


802.11ac (VHT20) Channel 48

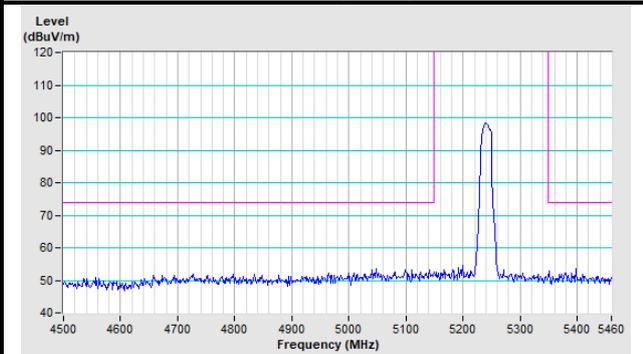
Horizontal (Peak)



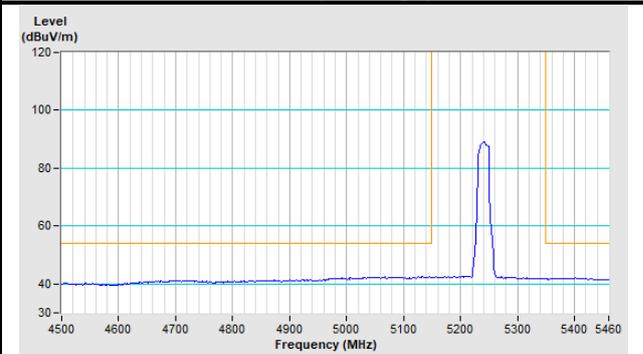
Horizontal (Average)



Vertical (Peak)

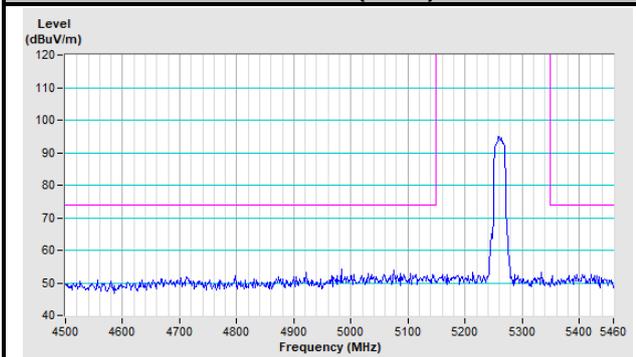


Vertical (Average)

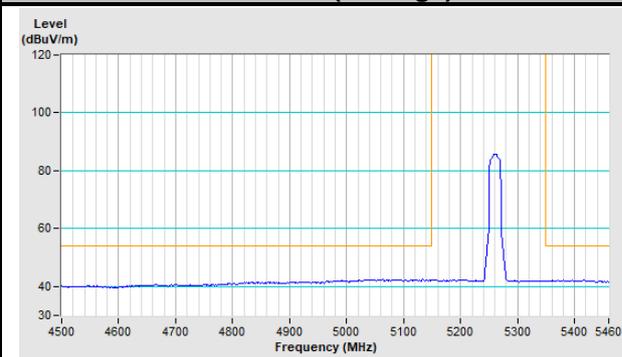


802.11ac (VHT20) Channel 52

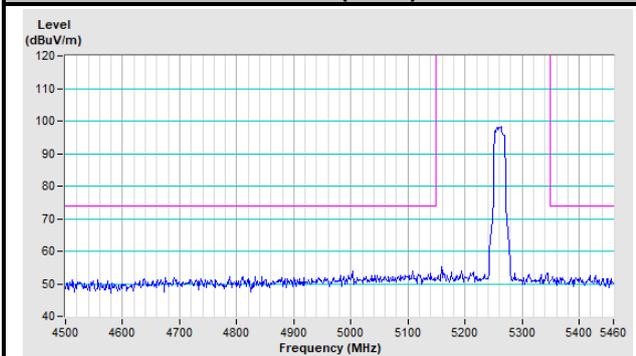
Horizontal (Peak)



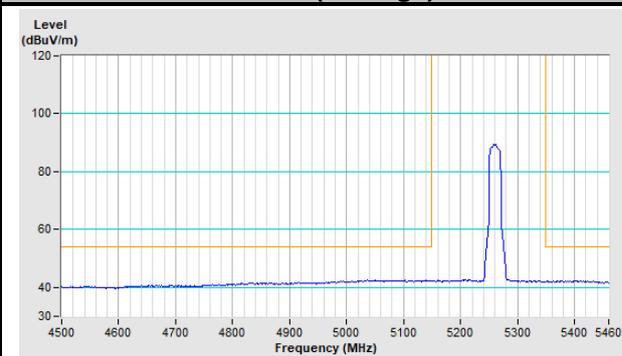
Horizontal (Average)



Vertical (Peak)

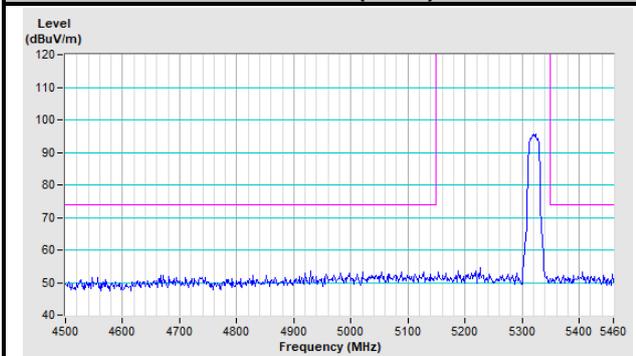


Vertical (Average)

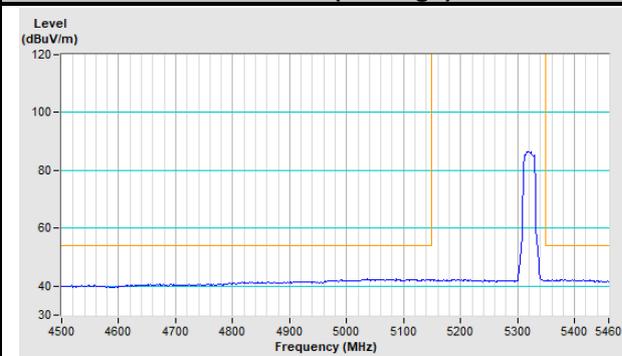


802.11ac (VHT20) Channel 64

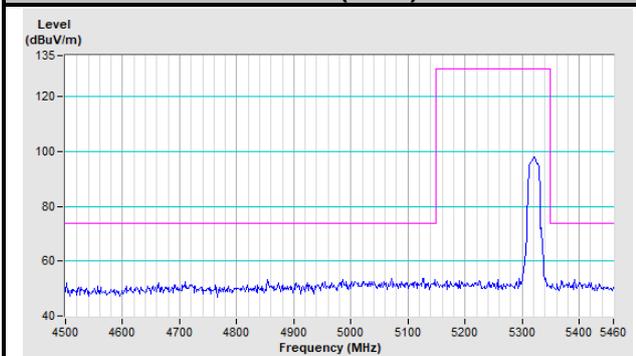
Horizontal (Peak)



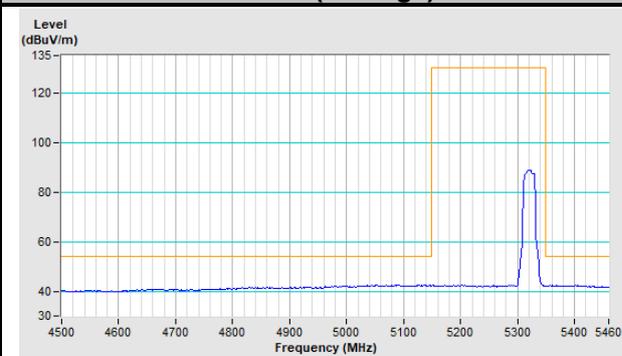
Horizontal (Average)



Vertical (Peak)

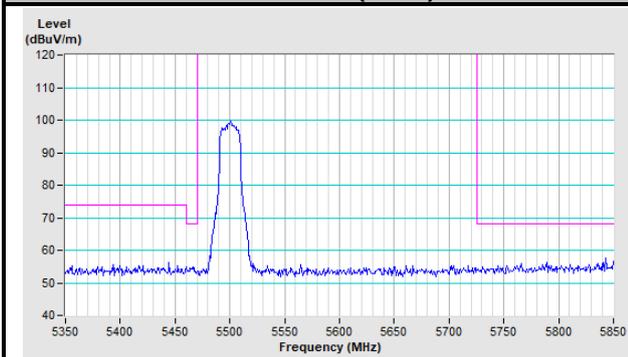


Vertical (Average)

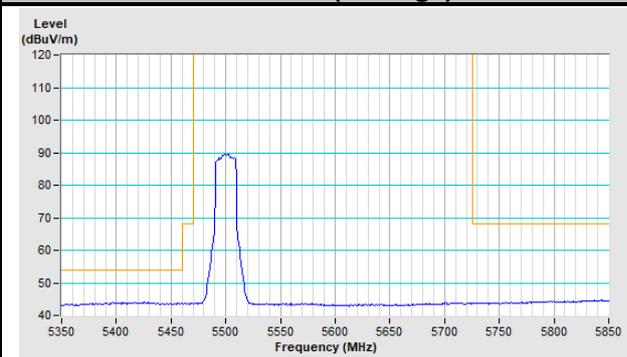


802.11ac (VHT20) Channel 100

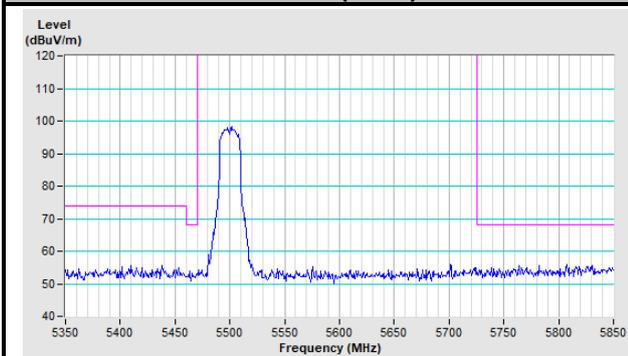
Horizontal (Peak)



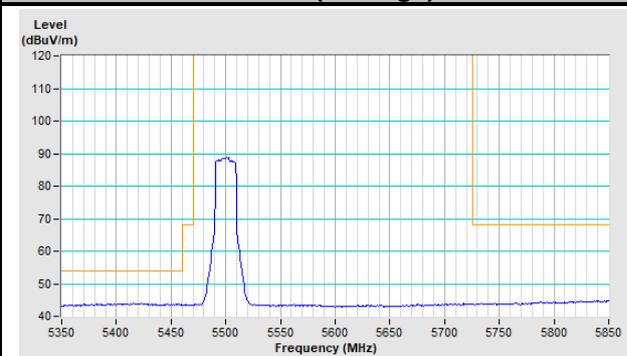
Horizontal (Average)



Vertical (Peak)

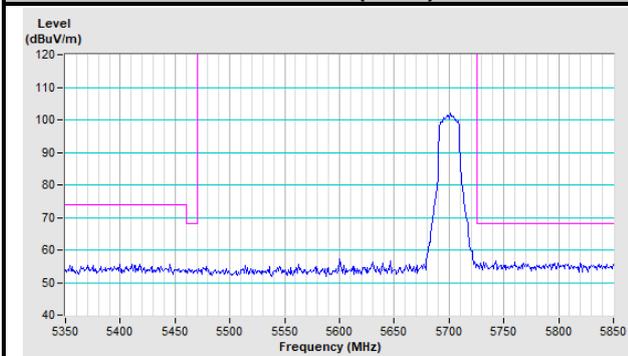


Vertical (Average)

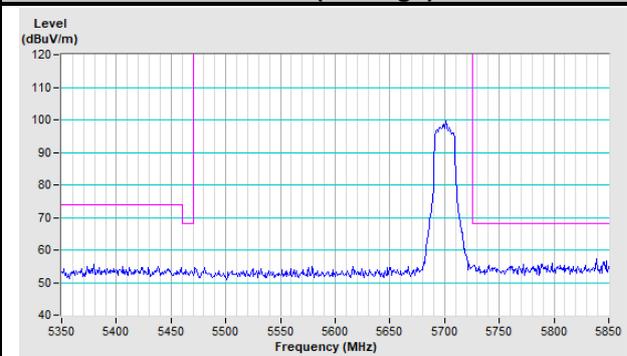


802.11ac (VHT20) Channel 140

Horizontal (Peak)

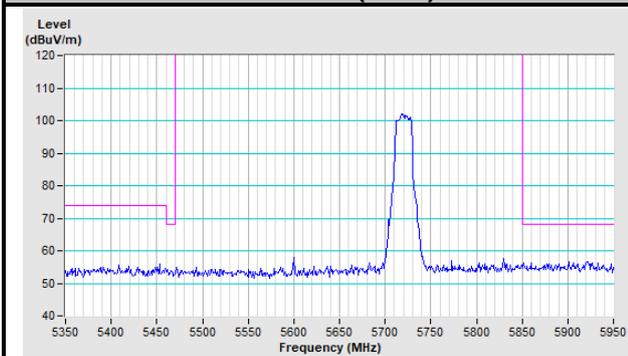


Vertical (Average)

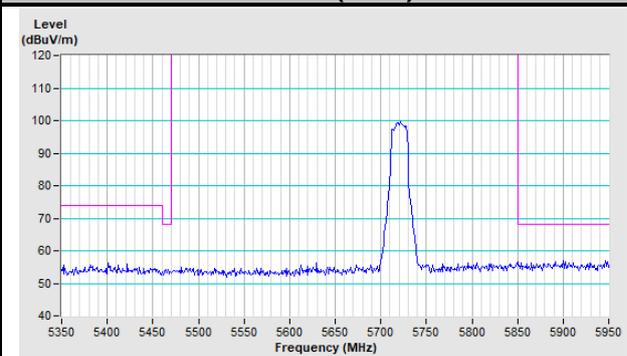


802.11ac (VHT20) Channel 144

Horizontal (Peak)



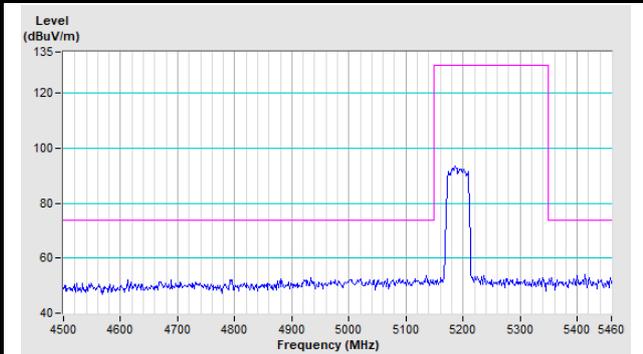
Vertical (Peak)



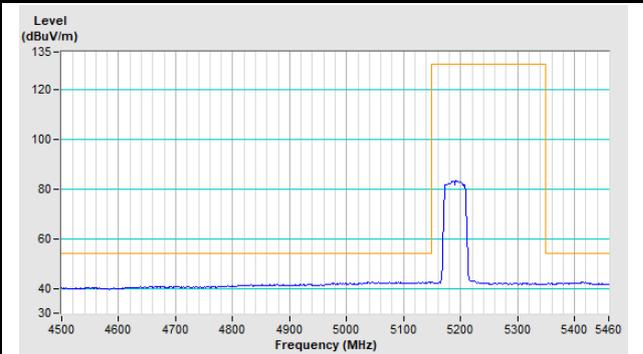
802.11ac (VHT40)

802.11ac (VHT40) Channel 38

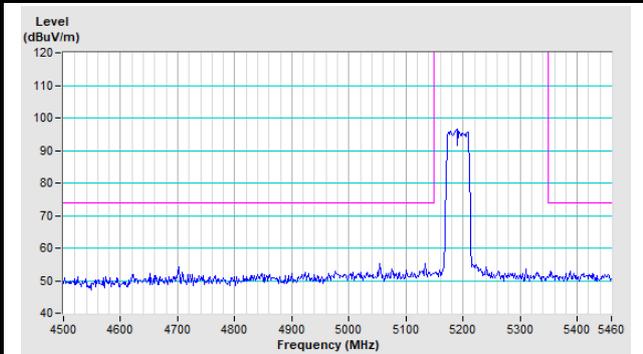
Horizontal (Peak)



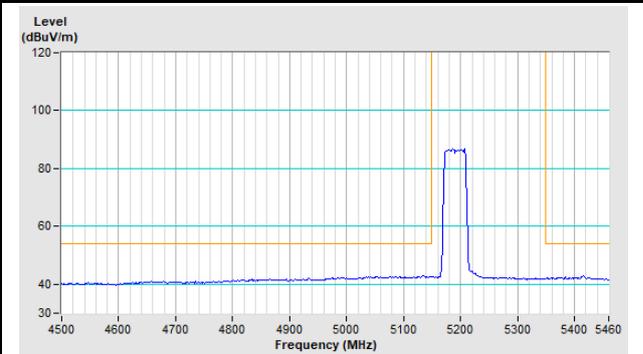
Horizontal (Average)



Vertical (Peak)

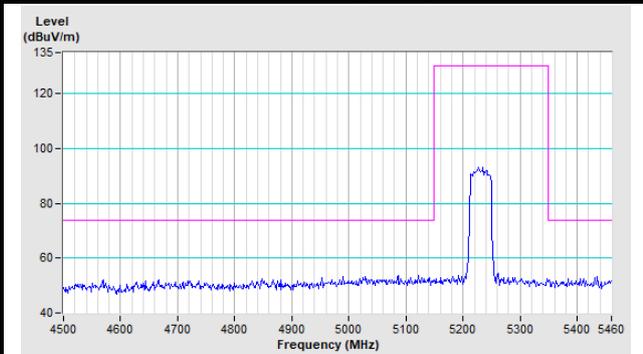


Vertical (Average)

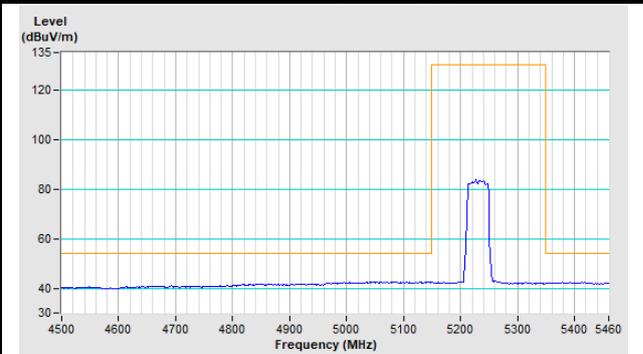


802.11ac (VHT40) Channel 46

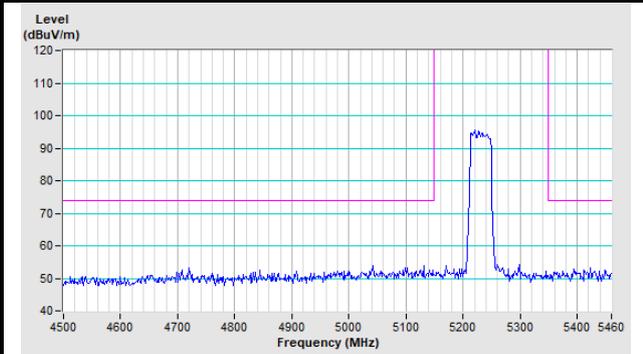
Horizontal (Peak)



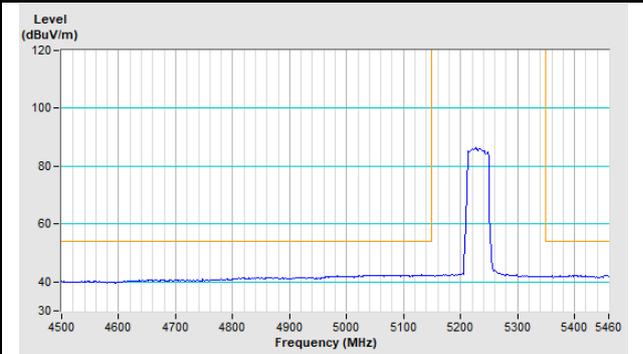
Horizontal (Average)



Vertical (Peak)

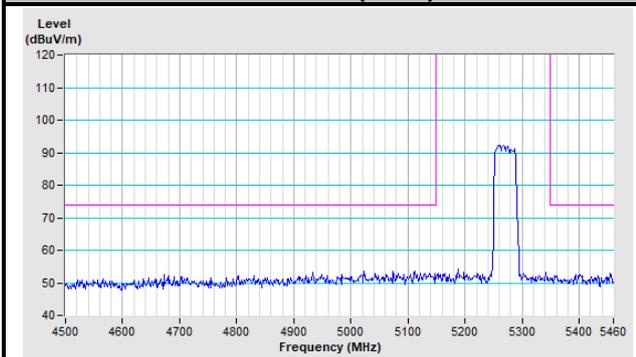


Vertical (Average)

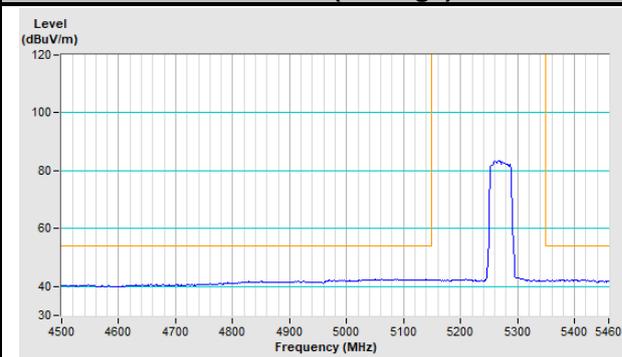


802.11ac (VHT40) Channel 54

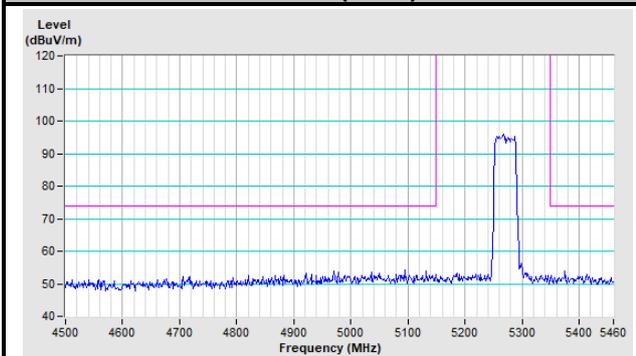
Horizontal (Peak)



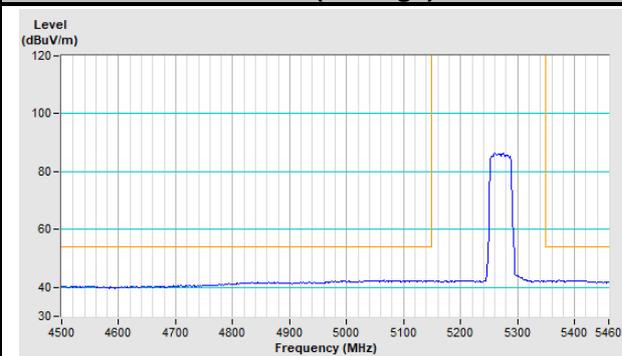
Horizontal (Average)



Vertical (Peak)

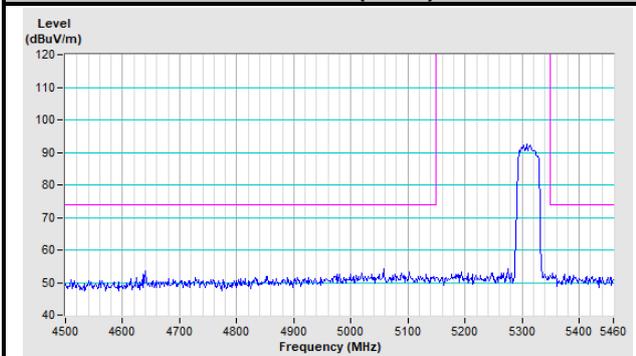


Vertical (Average)

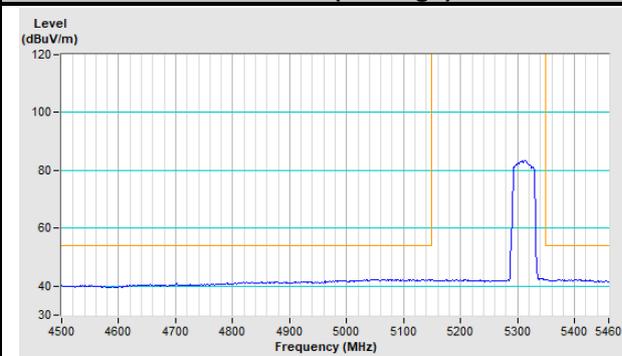


802.11ac (VHT40) Channel 62

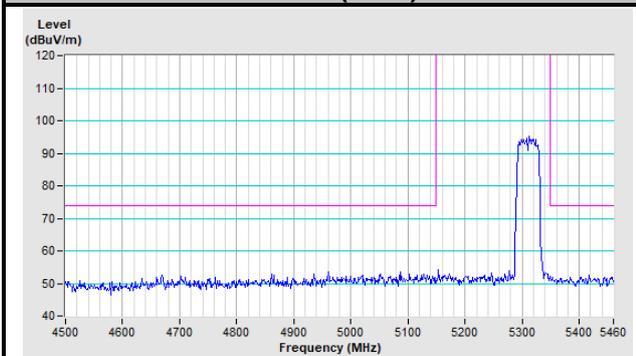
Horizontal (Peak)



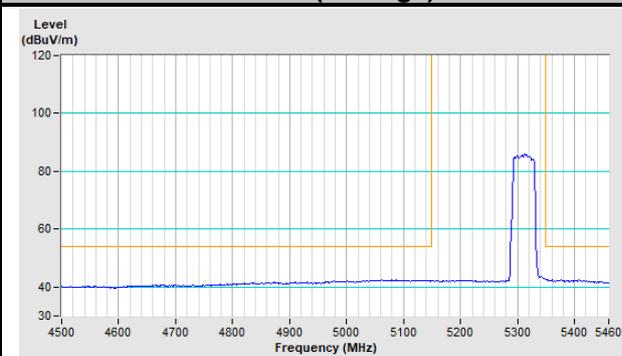
Horizontal (Average)



Vertical (Peak)

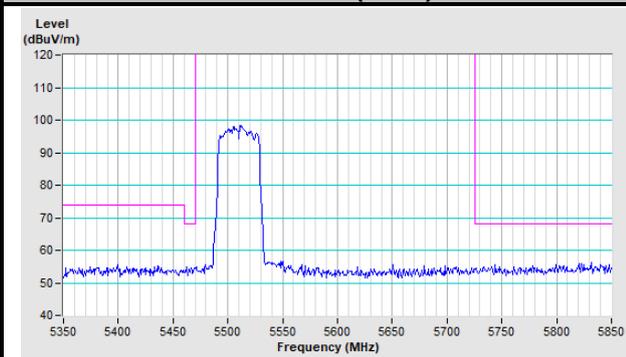


Vertical (Average)

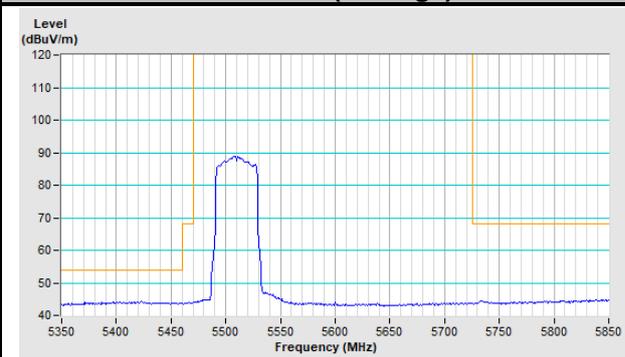


802.11ac (VHT40) Channel 102

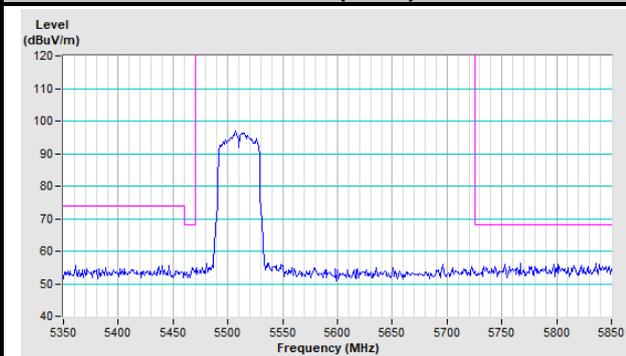
Horizontal (Peak)



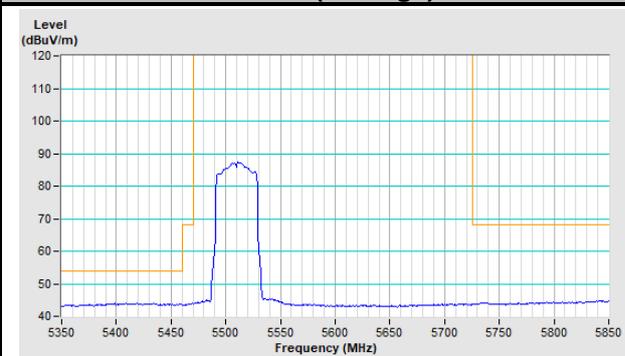
Horizontal (Average)



Vertical (Peak)

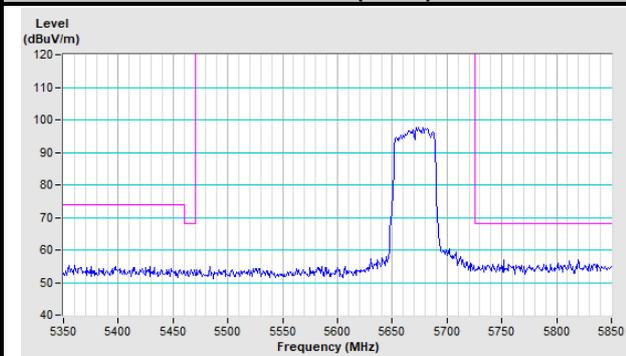


Vertical (Average)

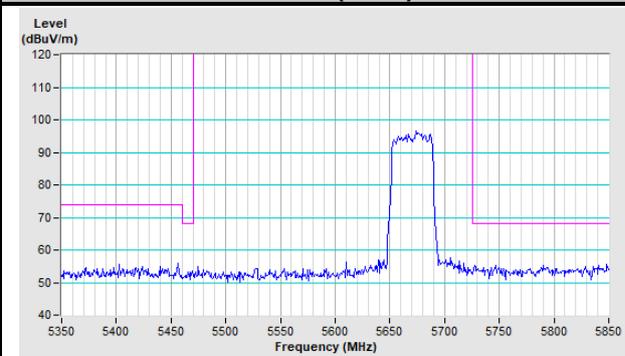


802.11ac (VHT40) Channel 134

Horizontal (Peak)

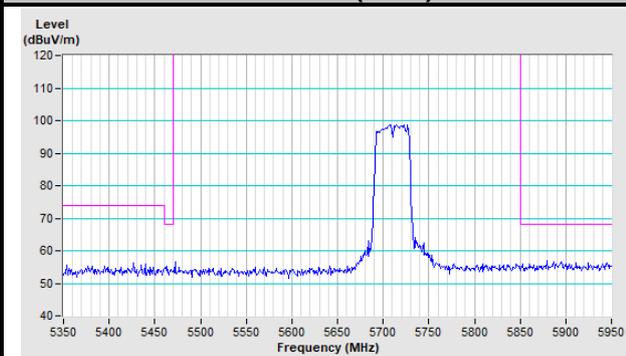


Vertical (Peak)

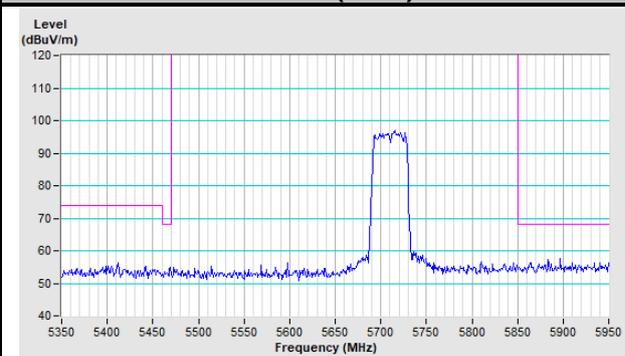


802.11ac (VHT40) Channel 142

Horizontal (Peak)



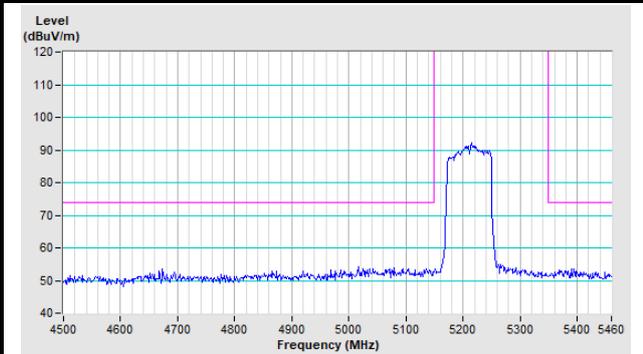
Vertical (Peak)



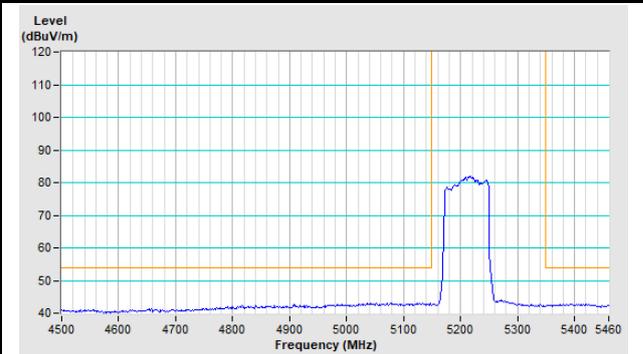
802.11ac (VHT80)

802.11ac (VHT80) Channel 42

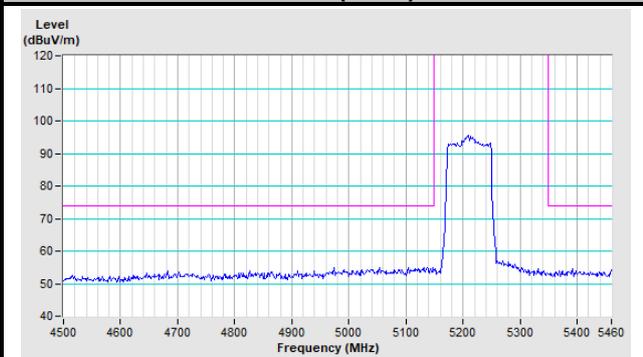
Horizontal (Peak)



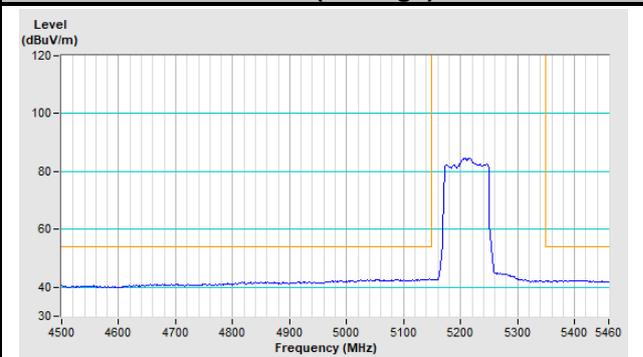
Horizontal (Average)



Vertical (Peak)

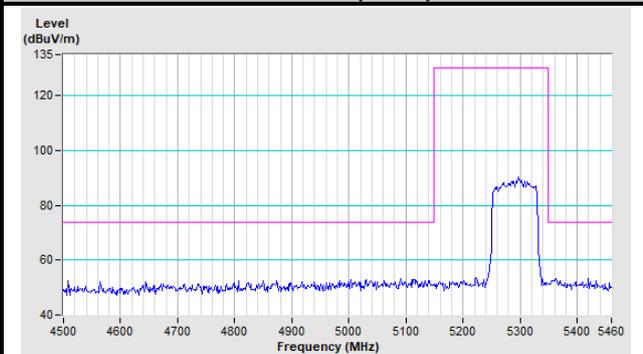


Vertical (Average)

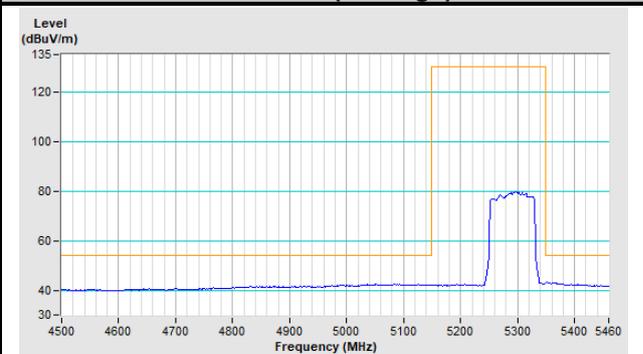


802.11ac (VHT80) Channel 58

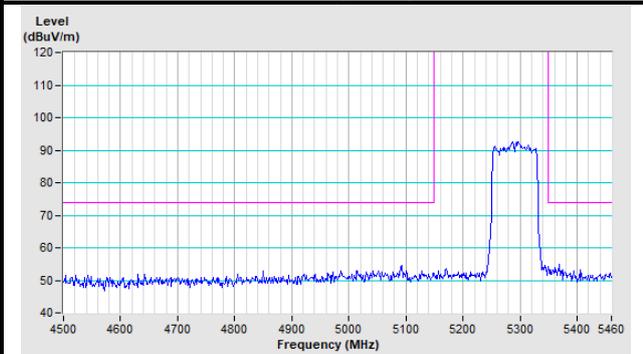
Horizontal (Peak)



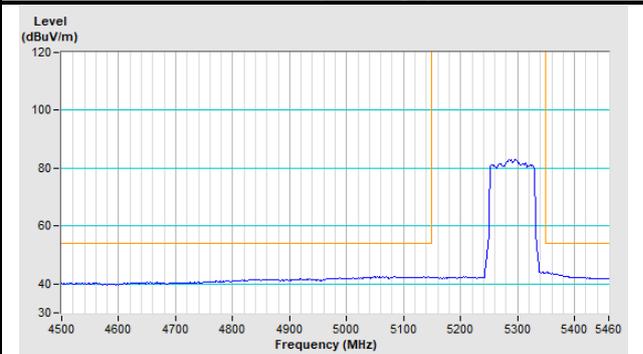
Horizontal (Average)



Vertical (Peak)

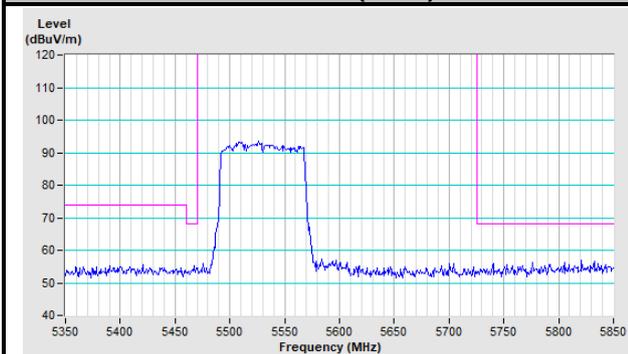


Vertical (Average)

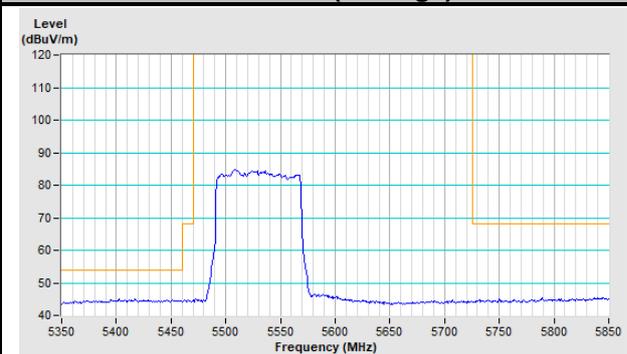


802.11ac (VHT80) Channel 106

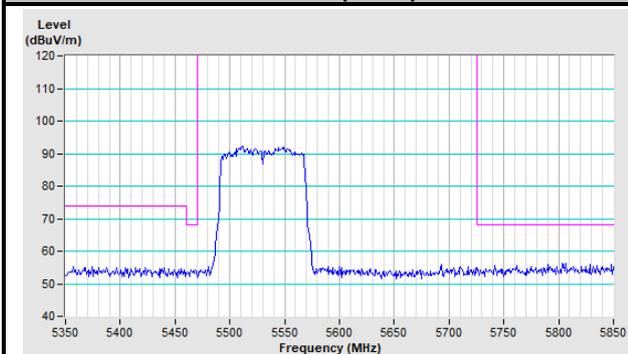
Horizontal (Peak)



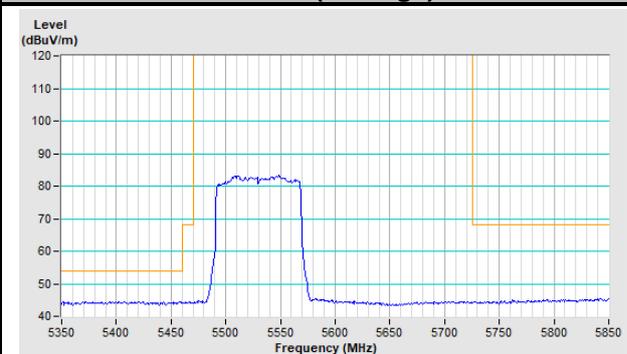
Horizontal (Average)



Vertical (Peak)

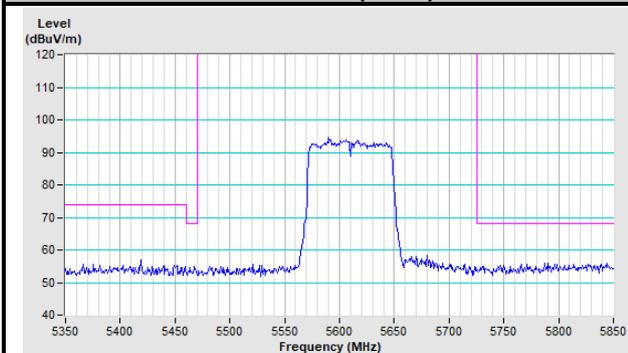


Vertical (Average)

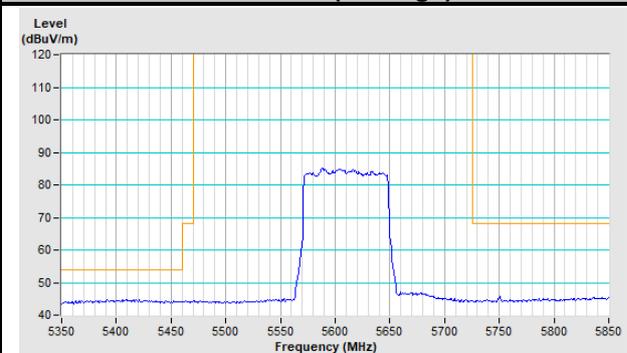


802.11ac (VHT80) Channel 122

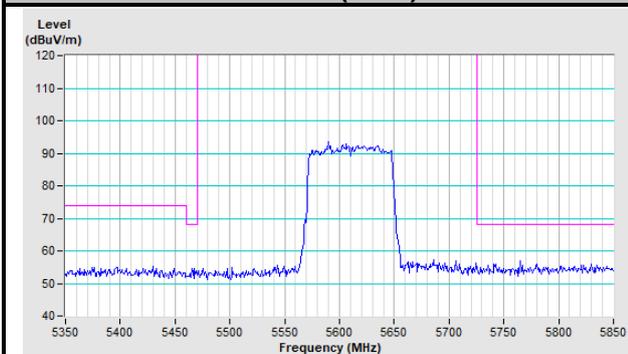
Horizontal (Peak)



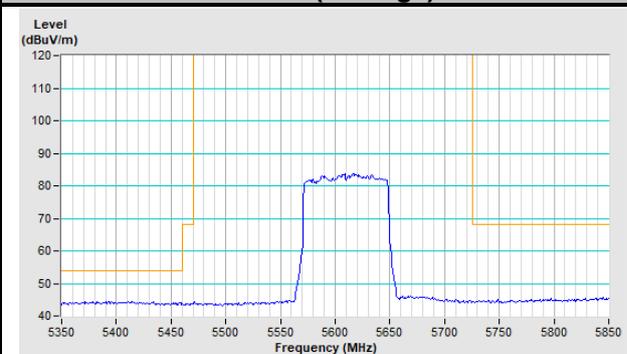
Horizontal (Average)



Vertical (Peak)

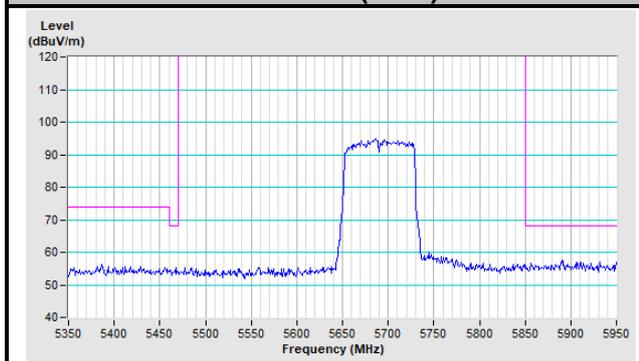


Vertical (Average)

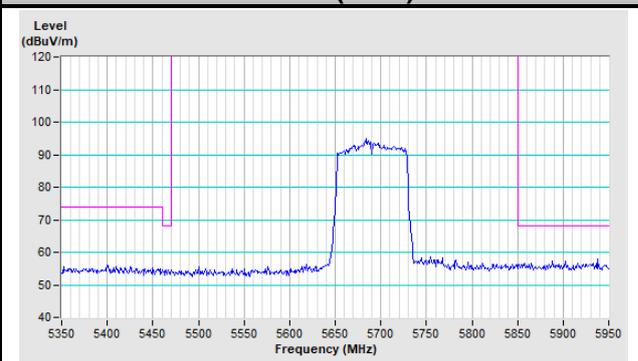


802.11ac (VHT80) Channel 138

Horizontal (Peak)



Vertical (Peak)



Appendix – Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

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Web Site: www.bureauveritas-adt.com

The address and road map of all our labs can be found in our web site also.

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