FCC Test Report

Report No.:	RFBCKS-WTW-P21100725-2
FCC ID:	2AAAS-DS01
Test Model:	DS01
Received Date:	Oct. 22, 2021
Test Date:	Nov. 03, 2021 ~ Dec. 16, 2021
Issued Date:	Jan. 13, 2022
Applicant:	Vivint, Inc.
Address:	4931 N. 300 W. Provo, UT 84604 USA
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Test Location:	No.19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, Taiwan
FCC Registration / Designation Number:	788550 / TW0003

Testing Laboratory
2021

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Release Control Record

Issue No.	Description	Date Issued
RFBCKS-WTW-P21100725-2	Original Release	Jan. 13, 2022

1 Certificate of Conformity

Product:	Alarm System Display
Brand:	Vivint, Inc.
Test Model:	DS01
Sample Status:	Engineering Sample
Applicant:	Vivint, Inc.
Test Date:	Nov. 03, 2021 ~ Dec. 16, 2021
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 : Vera Huang , **Date:** Jan. 13, 2022

Vera Huang / Specialist

Approved by : Jeremy Lin , **Date:** Jan. 13, 2022

Jeremy Lin / 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)(9)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -4.67 dB at 0.39633 MHz.
15.407(b) (1/2/3/4(i/ii)/9)	Radiated Emissions & Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -0.5 dB at 5150.00 MHz & 5470.00 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	Antenna connector is I-PEX not a standard connector.

Note:

1. For U-NII-3 band compliance with rule part 15.407(b)(4)(i), the OOBE test plots were recorded in Annex A.
2. 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.
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	Alarm System Display
Brand	Vivint, Inc.
Test Model	DS01
Status of EUT	Engineering Sample
Power Supply Rating	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 300 Mbps 802.11ac: up to 867 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	235.658 mW for 5180 ~ 5240 MHz 176.436 mW for 5260 ~ 5320 MHz 177.966 mW for 5500 ~ 5720 MHz 739.433 mW for 5745 ~ 5825 MHz
Antenna Type	Refer to Note as below
Antenna Connector	Refer to Note as below
Accessory Device	Refer to Note as below
Data Cable Supplied	Refer to Note as below

Note:

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

Modulation Mode	Tx Function
802.11a	2TX
802.11n (HT20)	2TX
802.11n (HT40)	2TX
802.11ac (VHT20)	2TX
802.11ac (VHT40)	2TX
802.11ac (VHT80)	2TX

* 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 1	Zbpower	ZB-H120020A-88	I/P: 100-240 Vac, 50/60 Hz, 0.6 A O/P: 12 Vdc, 2 A 1.5m non-shielded DC cable without core
Adapter 2 (Support unit only)	HONOTO	ADS-24FUD-12 12024EPCU	I/P: 100-240 Vac, 50/60 Hz, 0.6 A O/P: 12 Vdc, 2 A 1.5m non-shielded DC cable without core
Battery	BYD	13199655-00	3.8 Vdc, 2110 mAh
LCD Panel	Wistron	WHVS1 7” LCM+TP	P/N: P81.0AZ45.0003
CPU	NXP	MIMX8MM6DVTLZAA	--
eMMC	SANDISK	SDINBDG4-8G	--
RAM	Micron	MT41K256M16TW-107:P	--

3. The antenna information is listed as below.

Ant. No.	RF Chain No.	Brand	Model	Antenna Net Gain (dBi)	Frequency Range (GHz)	Antenna Type	Connector Type	Cable Length (mm)
1	0	WNC	81XKAB15.G69	3.8	2.4~2.4835	PIFA	ipex(MHF)	47
		WNC	81XKAB15.G69	3.3	5.15~5.25	PIFA	ipex(MHF)	47
		WNC	81XKAB15.G69	3.5	5.25~5.35	PIFA	ipex(MHF)	47
		WNC	81XKAB15.G69	3.6	5.47~5.725	PIFA	ipex(MHF)	47
		WNC	81XKAB15.G69	4.1	5.725~5.85	PIFA	ipex(MHF)	47
2	1	WNC	Display Pro	4.2	2.4~2.4835	PIFA	ipex(MHF)	123.5
		WNC	Display Pro	4.7	5.15~5.25	PIFA	ipex(MHF)	123.5
		WNC	Display Pro	4.4	5.25~5.35	PIFA	ipex(MHF)	123.5
		WNC	Display Pro	4.2	5.47~5.725	PIFA	ipex(MHF)	123.5
		WNC	Display Pro	4.3	5.725~5.85	PIFA	ipex(MHF)	123.5
3	0	WNC	81XKAB15.G70	4.2	2.4~2.4835 (BT)	Monopole	ipex(MHF)	129

4. 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.
5. 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.
6. WLAN 2.4G and 5G cannot transmit at same time.
7. WLAN, BT LE, and DECT technology can transmit at same time.
8. Spurious emission of the simultaneous operation WLAN, BT LE, and DECT has been evaluated and no non-compliance was found.

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≥1G	RE<1G	PLC	APCM	
A	√	√	√	√	EUT + Adapter 1
B	-	√	√	-	EUT + Adapter 2

Where **RE≥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. For radiated emission (below 1GHz) and power line conducted emission test items chosen the worst maximum power.
3. "-"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)
A	5180-5240	802.11a	36 to 48	36, 40, 48	OFDM	BPSK	6.0
A		802.11ac (VHT20)	36 to 48	36, 40, 48	OFDM	BPSK	7.2
A		802.11ac (VHT40)	38 to 46	38, 46	OFDM	BPSK	15.0
A		802.11ac (VHT80)	42	42	OFDM	BPSK	29.3
A	5260-5320	802.11a	52 to 64	52, 60, 64	OFDM	BPSK	6.0
A		802.11ac (VHT20)	52 to 64	52, 60, 64	OFDM	BPSK	7.2
A		802.11ac (VHT40)	54 to 62	54, 62	OFDM	BPSK	15.0
A		802.11ac (VHT80)	58	58	OFDM	BPSK	29.3
A	5500-5720	802.11a	100 to 144	100, 116, 140, 144	OFDM	BPSK	6.0
A		802.11ac (VHT20)	100 to 144	100, 116, 140, 144	OFDM	BPSK	7.2
A		802.11ac (VHT40)	102 to 142	102, 110, 134, 142	OFDM	BPSK	15.0
A		802.11ac (VHT80)	106 to 138	106, 122, 138	OFDM	BPSK	29.3
A	5745-5825	802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6.0
A		802.11ac (VHT20)	149 to 165	149, 157, 165	OFDM	BPSK	7.2
A		802.11ac (VHT40)	151 to 159	151, 159	OFDM	BPSK	15.0
A		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)
A, B	5745-5825	802.11ac (VHT20)	149 to 165	157	OFDM	BPSK	7.2

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)
A, B	5745-5825	802.11ac (VHT20)	149 to 165	157	OFDM	BPSK	7.2

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)
A	5180-5240	802.11a	36 to 48	36, 40, 48	OFDM	BPSK	6.0
A		802.11ac (VHT20)	36 to 48	36, 40, 48	OFDM	BPSK	7.2
A		802.11ac (VHT40)	38 to 46	38, 46	OFDM	BPSK	15.0
A		802.11ac (VHT80)	42	42	OFDM	BPSK	29.3
A	5260-5320	802.11a	52 to 64	52, 60, 64	OFDM	BPSK	6.0
A		802.11ac (VHT20)	52 to 64	52, 60, 64	OFDM	BPSK	7.2
A		802.11ac (VHT40)	54 to 62	54, 62	OFDM	BPSK	15.0
A		802.11ac (VHT80)	58	58	OFDM	BPSK	29.3
A	5500-5720	802.11a	100 to 144	100, 116, 140, 144	OFDM	BPSK	6.0
A		802.11ac (VHT20)	100 to 144	100, 116, 140, 144	OFDM	BPSK	7.2
A		802.11ac (VHT40)	102 to 142	102, 110, 134, 142	OFDM	BPSK	15.0
A		802.11ac (VHT80)	106 to 138	106, 122, 138	OFDM	BPSK	29.3
A	5745-5825	802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6.0
A		802.11ac (VHT20)	149 to 165	149, 157, 165	OFDM	BPSK	7.2
A		802.11ac (VHT40)	151 to 159	151, 159	OFDM	BPSK	15.0
A		802.11ac (VHT80)	155	155	OFDM	BPSK	29.3

Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested by
RE≥1G	22 deg. C, 70 % RH	120 Vac, 60 Hz	Rex Wang
RE<1G	22 deg. C, 70 % RH	120 Vac, 60 Hz	Rex Wang / Titan Hsu
PLC	25 deg. C, 75 % RH	120 Vac, 60 Hz	Hans Wu / Titan Hsu
APCM	25 deg. C, 60 % RH	3.8 Vdc	Jisyong Wang

3.3 Duty Cycle of Test Signal

MODULATION TYPE: BPSK

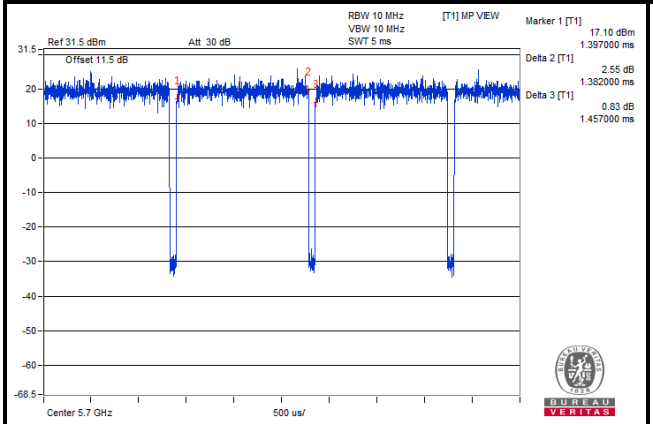
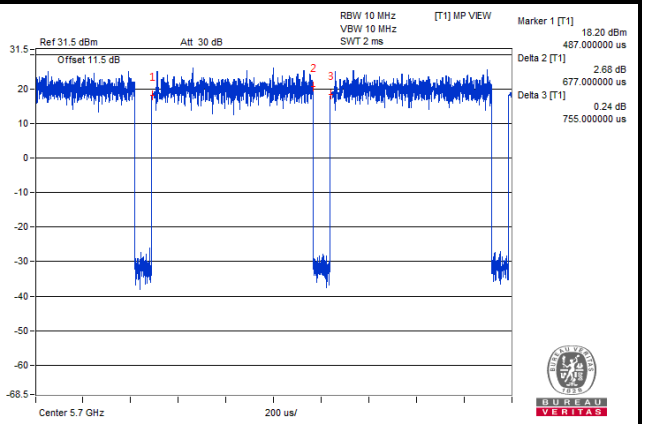
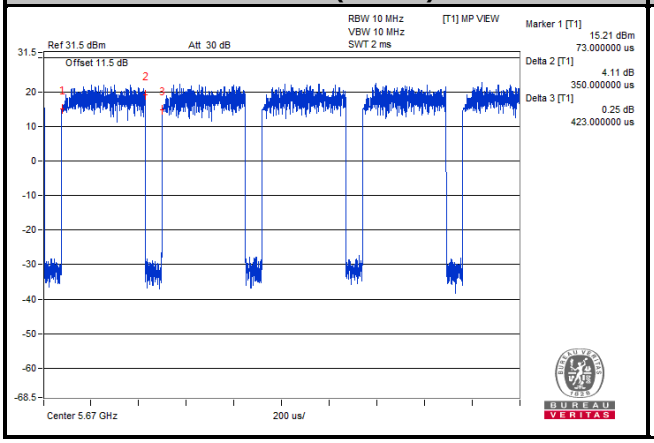
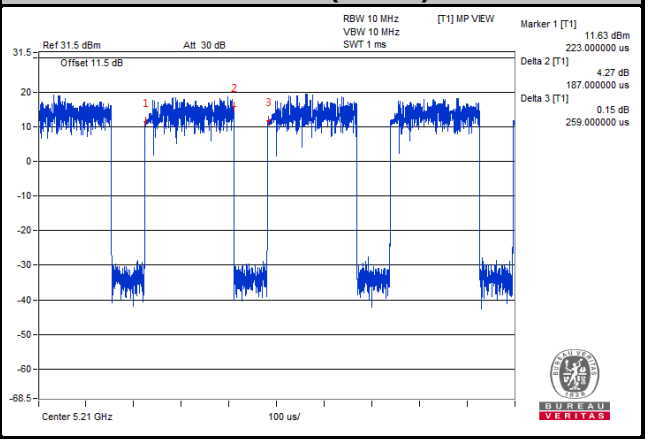
Duty cycle of test signal is < 98 %, duty factor is required.

802.11a: Duty cycle = 1.382/1.457 = 0.949, Duty factor = 10 * log(1/0.949) = 0.23

802.11ac (VHT20): Duty cycle = 0.677/0.755 = 0.897, Duty factor = 10 * log(1/0.897) = 0.47

802.11ac (VHT40): Duty cycle = 0.35/0.423 = 0.827, Duty factor = 10 * log(1/0.827) = 0.82

802.11ac (VHT80): Duty cycle = 0.187/0.259 = 0.722, Duty factor = 10 * log(1/0.722) = 1.41

802.11a	802.11ac (VHT20)
	
802.11ac (VHT40)	**802.11ac (VHT80)**
	

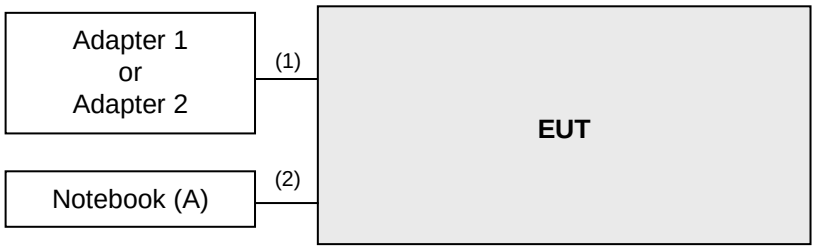
3.4 Description of Support Units

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.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Notebook	DELL	E6230	N/A	N/A	--

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	DC Power Cable	1	1.5	N	0	Accessory of the EUT
2.	Micro USB Cable	1	1	N	0	--

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
KDB 662911 D01 Multiple Transmitter Output 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	☒	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
	☐	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:

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

4.1.2 Test Instruments

Mode A

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver ROHDE & SCHWARZ	ESR3	102579	Jul. 05, 2021	Jul. 04, 2022
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	Jun. 07, 2021	Jun. 06, 2022
BILOG Antenna SCHWARZBECK	VULB9168	9168-171	Oct. 29, 2021	Oct. 28, 2022
HORN Antenna SCHWARZBECK	9120D	209	Nov. 22, 2020	Nov. 21, 2021
			Nov. 14, 2021	Nov. 13, 2022
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Oct. 26, 2021	Oct. 25, 2022
Loop Antenna EMCI	EM-6879	269	Sep. 16, 2021	Sep. 15, 2022
Preamplifier Agilent (Below 1GHz)	8447D	2944A10738	Jul. 24, 2021	Jul. 23, 2022
Preamplifier Agilent (Above 1GHz)	8449B	3008A02465	Mar. 22, 2021	Mar. 21, 2022
RF Coaxial Cable WOKEN With 5dB PAD	8D-FB	Cable-CH3-01	Jul. 24, 2021	Jul. 23, 2022
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH3-03 (223653/4)	Jul. 24, 2021	Jul. 23, 2022
RF signal cable HUBER+SUHNER& EMCI	SUCOFLEX 104&EMC104-SM- SM-8000	Cable-CH3-03 (309224+170907)	Jul. 24, 2021	Jul. 23, 2022
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/MY55190004/MY55190007/MY55210005	Jul. 12, 2021	Jul. 11, 2022
Pre-amplifier (18GHz-40GHz) EMC	EMC184045B	980175	Sep. 04, 2021	Sep. 03, 2022

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.

Mode B

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver KEYSIGHT	N9038A	MY55420137	Apr. 09, 2021	Apr. 08, 2022
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Jun. 10, 2021	Jun. 09, 2022
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Oct. 28, 2021	Oct. 27, 2022
Preamplifier Agilent (Below 1GHz)	8447D	2944A10638	Jun. 05, 2021	Jun. 04, 2022
RF signal cable HUBER+SUHNER&EMCI	SUCOFLEX 104 & EMC104-SM-SM8000	CABLE-CH9-02 (248780+171006)	Jan. 16, 2021	Jan. 15, 2022
RF signal cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-(250795/4)	Jan. 16, 2021	Jan. 15, 2022
RF signal cable Woken	8D-FB	Cable-CH9-01	Jun. 05, 2021	Jun. 04, 2022
Software BV ADT	ADT_Radiated_V7.6.15.9.5	NA	NA	NA
Antenna Tower &Turn BV ADT	AT100	AT93021705	NA	NA
Turn Table BV ADT	TT100	TT93021705	NA	NA
Turn Table Controller BV ADT	SC100	SC93021705	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	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 Chamber 9.

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:

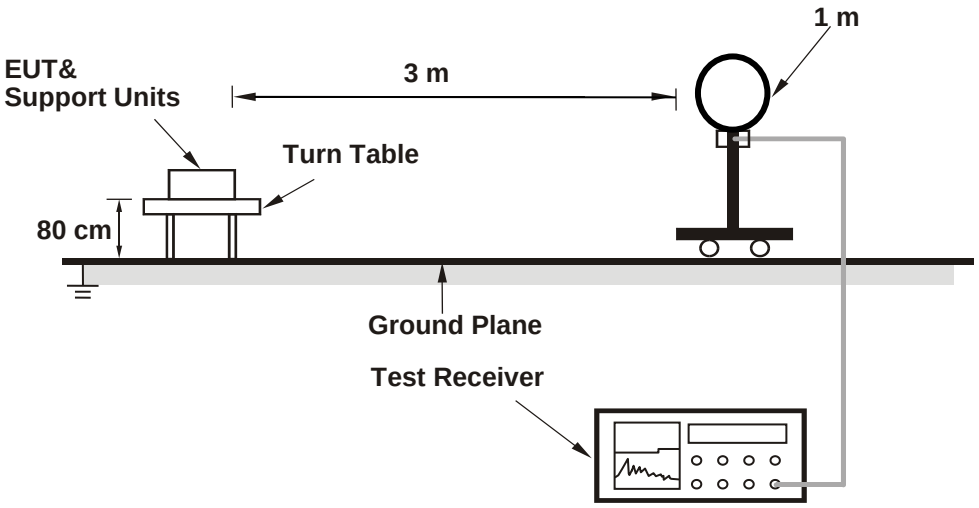
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) or Peak detection (PK) at frequency below 1 GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK)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

4.1.4 Deviation from Test Standard

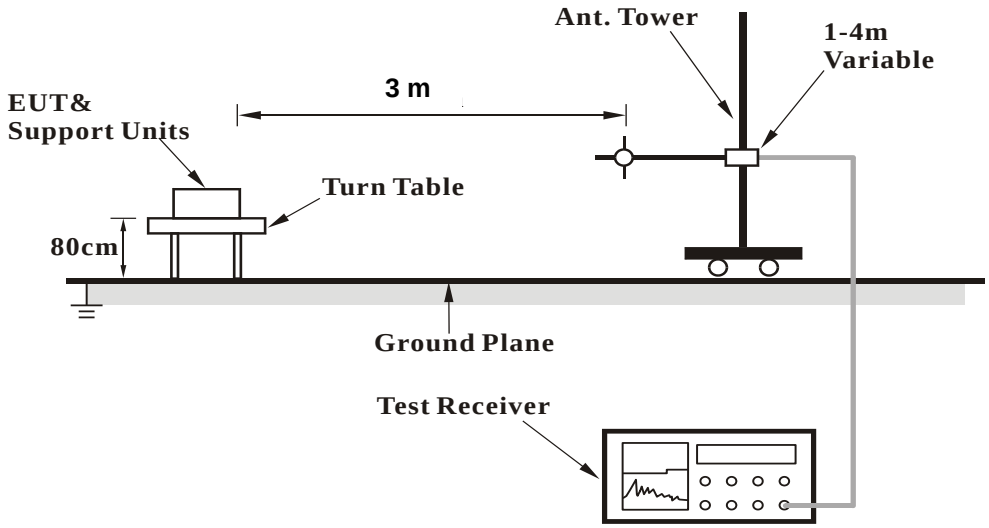
No deviation.

4.1.5 Test Setup

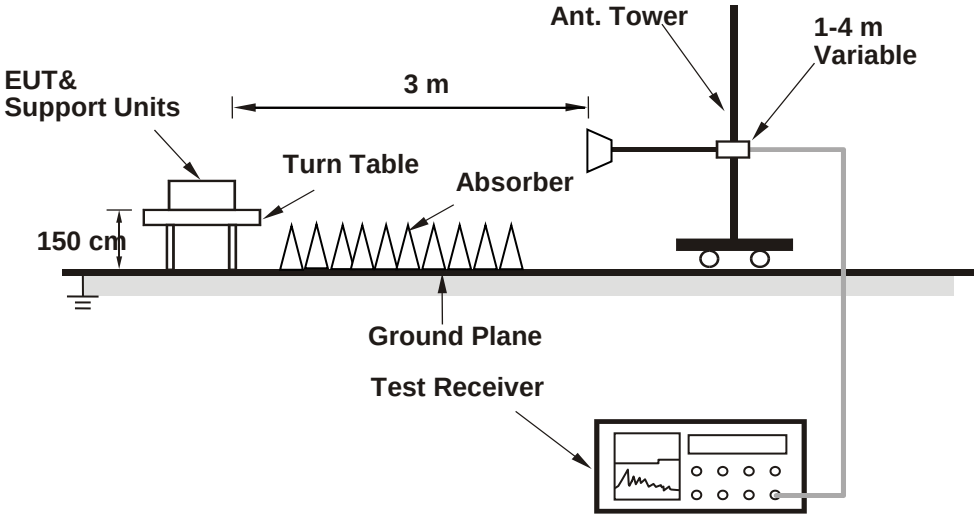
<Radiated Emission below 30 MHz>



<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:

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	60.4 PK	74.0	-13.6	2.22 H	53	53.1	7.3
2	5150.00	48.1 AV	54.0	-5.9	2.22 H	53	40.8	7.3
3	*5180.00	116.6 PK			2.22 H	53	75.0	41.6
4	*5180.00	107.1 AV			2.22 H	53	65.5	41.6
5	#10360.00	60.8 PK	68.2	-7.4	2.32 H	138	41.8	19.0
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	66.8 PK	74.0	-7.2	2.39 V	233	59.5	7.3
2	5150.00	50.5 AV	54.0	-3.5	2.39 V	233	43.2	7.3
3	*5180.00	120.3 PK			2.39 V	233	78.7	41.6
4	*5180.00	110.8 AV			2.39 V	233	69.2	41.6
5	#10360.00	61.2 PK	68.2	-7.0	2.84 V	44	42.2	19.0

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 802.11a	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	116.1 PK			2.45 H	58	74.6	41.5
2	*5200.00	107.3 AV			2.45 H	58	65.8	41.5
3	#10400.00	59.3 PK	68.2	-8.9	2.33 H	136	40.2	19.1
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	120.3 PK			2.88 V	223	78.8	41.5
2	*5200.00	110.9 AV			2.88 V	223	69.4	41.5
3	#10400.00	60.8 PK	68.2	-7.4	2.79 V	36	41.7	19.1

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	116.3 PK			2.43 H	54	74.9	41.4
2	*5240.00	107.5 AV			2.43 H	54	66.1	41.4
3	5350.00	57.3 PK	74.0	-16.7	2.43 H	54	50.3	7.0
4	5350.00	45.2 AV	54.0	-8.8	2.43 H	54	38.2	7.0
5	#10480.00	59.5 PK	68.2	-8.7	2.30 H	136	40.5	19.0
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	*5240.00	119.9 PK			2.88 V	224	78.5	41.4
2	*5240.00	110.8 AV			2.88 V	224	69.4	41.4
3	5350.00	58.9 PK	74.0	-15.1	2.88 V	224	51.9	7.0
4	5350.00	46.8 AV	54.0	-7.2	2.88 V	224	39.8	7.0
5	#10480.00	59.9 PK	68.2	-8.3	2.79 V	45	40.9	19.0

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 802.11a	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	59.1 PK	74.0	-14.9	1.57 H	47	51.8	7.3
2	5150.00	45.5 AV	54.0	-8.5	1.57 H	47	38.2	7.3
3	*5260.00	114.0 PK			1.57 H	47	72.7	41.3
4	*5260.00	104.9 AV			1.57 H	47	63.6	41.3
5	#10520.00	59.6 PK	68.2	-8.6	2.30 H	129	40.5	19.1
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	5150.00	59.6 PK	74.0	-14.4	2.73 V	272	52.3	7.3
2	5150.00	47.1 AV	54.0	-6.9	2.73 V	272	39.8	7.3
3	*5260.00	118.7 PK			2.73 V	272	77.4	41.3
4	*5260.00	109.7 AV			2.73 V	272	68.4	41.3
5	#10520.00	59.9 PK	68.2	-8.3	2.89 V	56	40.8	19.1

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 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	114.0 PK			1.55 H	40	72.9	41.1
2	*5300.00	105.1 AV			1.55 H	40	64.0	41.1
3	10600.00	61.0 PK	74.0	-13.0	2.35 H	137	41.3	19.7
4	10600.00	46.9 AV	54.0	-7.1	2.35 H	137	27.2	19.7
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	*5300.00	119.0 PK			2.60 V	219	77.9	41.1
2	*5300.00	109.5 AV			2.60 V	219	68.4	41.1
3	10600.00	60.9 PK	74.0	-13.1	2.06 V	64	41.2	19.7
4	10600.00	47.6 AV	54.0	-6.4	2.06 V	64	27.9	19.7

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.

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	114.3 PK			1.44 H	48	73.1	41.2
2	*5320.00	105.3 AV			1.44 H	48	64.1	41.2
3	5350.00	59.8 PK	74.0	-14.2	1.44 H	48	52.8	7.0
4	5350.00	47.0 AV	54.0	-7.0	1.44 H	48	40.0	7.0
5	10640.00	61.1 PK	74.0	-12.9	2.38 H	142	41.4	19.7
6	10640.00	47.4 AV	54.0	-6.6	2.38 H	142	27.7	19.7
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	*5320.00	119.7 PK			2.85 V	268	78.5	41.2
2	*5320.00	109.6 AV			2.85 V	268	68.4	41.2
3	5350.00	63.9 PK	74.0	-10.1	2.85 V	268	56.9	7.0
4	5350.00	49.4 AV	54.0	-4.6	2.85 V	268	42.4	7.0
5	10640.00	61.2 PK	74.0	-12.8	2.84 V	58	41.5	19.7
6	10640.00	47.5 AV	54.0	-6.5	2.84 V	58	27.8	19.7

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.

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	59.9 PK	74.0	-14.1	3.66 H	195	52.1	7.8
2	5460.00	47.1 AV	54.0	-6.9	3.66 H	195	39.3	7.8
3	#5470.00	63.1 PK	68.2	-5.1	3.66 H	195	55.3	7.8
4	*5500.00	116.9 PK			3.66 H	195	74.9	42.0
5	*5500.00	107.0 AV			3.66 H	195	65.0	42.0
6	11000.00	61.5 PK	74.0	-12.5	2.01 H	144	41.1	20.4
7	11000.00	48.0 AV	54.0	-6.0	2.01 H	144	27.6	20.4
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	61.9 PK	74.0	-12.1	3.29 V	238	54.1	7.8
2	5460.00	50.1 AV	54.0	-3.9	3.29 V	238	42.3	7.8
3	**#5470.00**	**67.7 PK**	**68.2**	**-0.5**	**3.29 V**	**238**	**59.9**	**7.8**
4	*5500.00	118.2 PK			3.29 V	238	76.2	42.0
5	*5500.00	108.1 AV			3.29 V	238	66.1	42.0
6	11000.00	62.0 PK	74.0	-12.0	3.00 V	72	41.6	20.4
7	11000.00	48.3 AV	54.0	-5.7	3.00 V	72	27.9	20.4

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 802.11a	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	112.4 PK			2.58 H	48	70.5	41.9
2	*5580.00	104.3 AV			2.58 H	48	62.4	41.9
3	11160.00	60.6 PK	74.0	-13.4	2.39 H	146	40.9	19.7
4	11160.00	47.2 AV	54.0	-6.8	2.39 H	146	27.5	19.7
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	*5580.00	118.7 PK			2.48 V	217	76.8	41.9
2	*5580.00	109.0 AV			2.48 V	217	67.1	41.9
3	11160.00	61.3 PK	74.0	-12.7	2.96 V	55	41.6	19.7
4	11160.00	47.5 AV	54.0	-6.5	2.96 V	55	27.8	19.7

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.

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	114.3 PK			3.64 H	176	72.2	42.1
2	*5700.00	104.6 AV			3.64 H	176	62.5	42.1
3	#5725.00	60.8 PK	68.2	-7.4	3.64 H	176	52.9	7.9
4	11400.00	60.7 PK	74.0	-13.3	2.36 H	161	40.5	20.2
5	11400.00	47.4 AV	54.0	-6.6	2.36 H	161	27.2	20.2
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	*5700.00	119.3 PK			2.59 V	238	77.2	42.1
2	*5700.00	109.4 AV			2.59 V	238	67.3	42.1
3	#5725.00	67.6 PK	68.2	-0.6	2.59 V	238	59.7	7.9
4	11400.00	60.4 PK	74.0	-13.6	2.95 V	48	40.2	20.2
5	11400.00	48.2 AV	54.0	-5.8	2.95 V	48	28.0	20.2

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 802.11a	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	57.5 PK	68.2	-10.7	2.64 H	50	50.0	7.5
2	*5720.00	111.4 PK			2.64 H	50	69.4	42.0
3	*5720.00	102.6 AV			2.64 H	50	60.6	42.0
4	#5850.00	58.4 PK	68.2	-9.8	2.64 H	50	50.1	8.3
5	11440.00	60.7 PK	74.0	-13.3	2.38 H	136	40.5	20.2
6	11440.00	47.4 AV	54.0	-6.6	2.38 H	136	27.2	20.2
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	#5470.00	59.1 PK	68.2	-9.1	2.54 V	223	51.6	7.5
2	*5720.00	118.7 PK			2.54 V	223	76.7	42.0
3	*5720.00	108.6 AV			2.54 V	223	66.6	42.0
4	#5850.00	59.6 PK	68.2	-8.6	2.54 V	223	51.3	8.3
5	11440.00	61.0 PK	74.0	-13.0	2.96 V	63	40.8	20.2
6	11440.00	47.5 AV	54.0	-6.5	2.96 V	63	27.3	20.2

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 802.11a	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	119.1 PK			2.47 H	146	77.1	42.0
2	*5745.00	109.4 AV			2.47 H	146	67.4	42.0
3	11490.00	60.5 PK	74.0	-13.5	2.39 H	167	40.5	20.0
4	11490.00	47.6 AV	54.0	-6.4	2.39 H	167	27.6	20.0
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	*5745.00	122.7 PK			2.72 V	316	80.7	42.0
2	*5745.00	113.2 AV			2.72 V	316	71.2	42.0
3	11490.00	61.5 PK	74.0	-12.5	2.94 V	76	41.5	20.0
4	11490.00	47.3 AV	54.0	-6.7	2.94 V	76	27.3	20.0

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 802.11a	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	119.3 PK			2.52 H	153	77.2	42.1
2	*5785.00	110.4 AV			2.52 H	153	68.3	42.1
3	11570.00	61.1 PK	74.0	-12.9	2.22 H	184	41.3	19.8
4	11570.00	47.3 AV	54.0	-6.7	2.22 H	184	27.5	19.8
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	*5785.00	122.7 PK			2.72 V	319	80.6	42.1
2	*5785.00	113.5 AV			2.72 V	319	71.4	42.1
3	11570.00	61.7 PK	74.0	-12.3	2.73 V	40	41.9	19.8
4	11570.00	47.8 AV	54.0	-6.2	2.73 V	40	28.0	19.8

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.

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	119.2 PK			2.52 H	154	76.8	42.4
2	*5825.00	110.6 AV			2.52 H	154	68.2	42.4
3	11650.00	60.0 PK	74.0	-14.0	1.93 H	182	40.3	19.7
4	11650.00	47.9 AV	54.0	-6.1	1.93 H	182	28.2	19.7
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	*5825.00	122.9 PK			2.74 V	318	80.5	42.4
2	*5825.00	113.5 AV			2.74 V	318	71.1	42.4
3	11650.00	61.0 PK	74.0	-13.0	2.43 V	66	41.3	19.7
4	11650.00	47.8 AV	54.0	-6.2	2.43 V	66	28.1	19.7

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.

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	68.2 PK	74.0	-5.8	1.86 H	50	60.9	7.3
2	5150.00	50.8 AV	54.0	-3.2	1.86 H	50	43.5	7.3
3	*5180.00	114.7 PK			1.86 H	50	73.1	41.6
4	*5180.00	106.1 AV			1.86 H	50	64.5	41.6
5	#10360.00	60.3 PK	68.2	-7.9	2.15 H	119	41.3	19.0
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	71.1 PK	74.0	-2.9	2.44 V	241	63.8	7.3
2	5150.00	51.8 AV	54.0	-2.2	2.44 V	241	44.5	7.3
3	*5180.00	118.9 PK			2.44 V	241	77.3	41.6
4	*5180.00	108.3 AV			2.44 V	241	66.7	41.6
5	#10360.00	60.5 PK	68.2	-7.7	2.83 V	55	41.5	19.0

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 (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	115.0 PK			1.72 H	49	73.5	41.5
2	*5200.00	105.7 AV			1.72 H	49	64.2	41.5
3	#10400.00	60.7 PK	68.2	-7.5	2.24 H	136	41.6	19.1
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	118.8 PK			2.44 V	234	77.3	41.5
2	*5200.00	109.0 AV			2.44 V	234	67.5	41.5
3	#10400.00	60.5 PK	68.2	-7.7	2.88 V	57	41.4	19.1

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	115.4 PK			1.70 H	51	74.0	41.4
2	*5240.00	104.9 AV			1.70 H	51	63.5	41.4
3	5350.00	59.0 PK	74.0	-15.0	1.70 H	51	52.0	7.0
4	5350.00	45.6 AV	54.0	-8.4	1.70 H	51	38.6	7.0
5	#10480.00	59.5 PK	68.2	-8.7	2.07 H	123	40.5	19.0
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	*5240.00	118.8 PK			2.55 V	242	77.4	41.4
2	*5240.00	109.2 AV			2.55 V	242	67.8	41.4
3	5350.00	58.0 PK	74.0	-16.0	2.55 V	242	51.0	7.0
4	5350.00	46.0 AV	54.0	-8.0	2.55 V	242	39.0	7.0
5	#10480.00	59.7 PK	68.2	-8.5	2.84 V	62	40.7	19.0

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 (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	58.4 PK	74.0	-15.6	1.54 H	49	51.1	7.3
2	5150.00	45.4 AV	54.0	-8.6	1.54 H	49	38.1	7.3
3	*5260.00	113.1 PK			1.54 H	49	71.8	41.3
4	*5260.00	103.3 AV			1.54 H	49	62.0	41.3
5	#10520.00	59.9 PK	68.2	-8.3	2.29 H	132	40.8	19.1
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	5150.00	58.4 PK	74.0	-15.6	2.78 V	287	51.1	7.3
2	5150.00	46.0 AV	54.0	-8.0	2.78 V	287	38.7	7.3
3	*5260.00	118.8 PK			2.78 V	287	77.5	41.3
4	*5260.00	107.8 AV			2.78 V	287	66.5	41.3
5	#10520.00	60.7 PK	68.2	-7.5	2.93 V	67	41.6	19.1

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 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	113.3 PK			1.53 H	46	72.2	41.1
2	*5300.00	102.9 AV			1.53 H	46	61.8	41.1
3	10600.00	60.2 PK	74.0	-13.8	2.24 H	139	40.5	19.7
4	10600.00	47.2 AV	54.0	-6.8	2.24 H	139	27.5	19.7
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	*5300.00	118.4 PK			2.79 V	224	77.3	41.1
2	*5300.00	106.7 AV			2.79 V	224	65.6	41.1
3	10600.00	60.4 PK	74.0	-13.6	2.92 V	58	40.7	19.7
4	10600.00	47.3 AV	54.0	-6.7	2.92 V	58	27.6	19.7

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.

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	112.1 PK			1.62 H	39	70.9	41.2
2	*5320.00	102.8 AV			1.62 H	39	61.6	41.2
3	5350.00	58.7 PK	74.0	-15.3	1.62 H	39	51.7	7.0
4	5350.00	46.7 AV	54.0	-7.3	1.62 H	39	39.7	7.0
5	10640.00	60.7 PK	74.0	-13.3	2.29 H	138	41.0	19.7
6	10640.00	47.1 AV	54.0	-6.9	2.29 H	138	27.4	19.7
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	*5320.00	118.3 PK			2.72 V	266	77.1	41.2
2	*5320.00	106.9 AV			2.72 V	266	65.7	41.2
3	5350.00	59.0 PK	74.0	-15.0	2.72 V	266	52.0	7.0
4	5350.00	46.6 AV	54.0	-7.4	2.72 V	266	39.6	7.0
5	10640.00	61.4 PK	74.0	-12.6	2.95 V	61	41.7	19.7
6	10640.00	47.5 AV	54.0	-6.5	2.95 V	61	27.8	19.7

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.

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	60.2 PK	74.0	-13.8	3.04 H	17	52.4	7.8
2	5460.00	47.6 AV	54.0	-6.4	3.04 H	17	39.8	7.8
3	#5470.00	62.3 PK	68.2	-5.9	3.04 H	17	54.5	7.8
4	*5500.00	114.5 PK			3.04 H	17	72.5	42.0
5	*5500.00	105.0 AV			3.04 H	17	63.0	42.0
6	11000.00	61.4 PK	74.0	-12.6	2.34 H	130	41.0	20.4
7	11000.00	48.2 AV	54.0	-5.8	2.34 H	130	27.8	20.4
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	64.5 PK	74.0	-9.5	2.84 V	234	56.7	7.8
2	5460.00	52.1 AV	54.0	-1.9	2.84 V	234	44.3	7.8
3	**#5470.00**	**67.7 PK**	**68.2**	**-0.5**	**2.84 V**	**234**	**59.9**	**7.8**
4	*5500.00	119.8 PK			2.84 V	234	77.8	42.0
5	*5500.00	109.3 AV			2.84 V	234	67.3	42.0
6	11000.00	61.7 PK	74.0	-12.3	2.92 V	68	41.3	20.4
7	11000.00	48.8 AV	54.0	-5.2	2.92 V	68	28.4	20.4

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 (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	111.5 PK			2.45 H	43	69.6	41.9
2	*5580.00	102.0 AV			2.45 H	43	60.1	41.9
3	11160.00	60.3 PK	74.0	-13.7	2.35 H	139	40.6	19.7
4	11160.00	47.0 AV	54.0	-7.0	2.35 H	139	27.3	19.7
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	*5580.00	117.3 PK			2.85 V	232	75.4	41.9
2	*5580.00	106.3 AV			2.85 V	232	64.4	41.9
3	11160.00	61.2 PK	74.0	-12.8	2.87 V	54	41.5	19.7
4	11160.00	47.3 AV	54.0	-6.7	2.87 V	54	27.6	19.7

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.

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	113.9 PK			2.88 H	18	71.8	42.1
2	*5700.00	104.7 AV			2.88 H	18	62.6	42.1
3	#5725.00	61.3 PK	68.2	-6.9	2.88 H	18	53.4	7.9
4	11400.00	61.3 PK	74.0	-12.7	2.36 H	129	41.1	20.2
5	11400.00	48.3 AV	54.0	-5.7	2.36 H	129	28.1	20.2
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	*5700.00	117.6 PK			2.80 V	228	75.5	42.1
2	*5700.00	107.2 AV			2.80 V	228	65.1	42.1
3	#5725.00	67.6 PK	68.2	-0.6	2.80 V	228	59.7	7.9
4	11400.00	61.7 PK	74.0	-12.3	2.74 V	45	41.5	20.2
5	11400.00	48.6 AV	54.0	-5.4	2.74 V	45	28.4	20.2

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 (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	58.4 PK	68.2	-9.8	2.63 H	46	50.9	7.5
2	*5720.00	110.9 PK			2.63 H	46	68.9	42.0
3	*5720.00	101.0 AV			2.63 H	46	59.0	42.0
4	#5850.00	58.2 PK	68.2	-10.0	2.63 H	46	49.9	8.3
5	11440.00	60.8 PK	74.0	-13.2	2.42 H	135	40.6	20.2
6	11440.00	47.5 AV	54.0	-6.5	2.42 H	135	27.3	20.2
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	#5470.00	59.0 PK	68.2	-9.2	2.83 V	236	51.5	7.5
2	*5720.00	116.1 PK			2.83 V	236	74.1	42.0
3	*5720.00	106.2 AV			2.83 V	236	64.2	42.0
4	#5850.00	58.9 PK	68.2	-9.3	2.83 V	236	50.6	8.3
5	11440.00	61.7 PK	74.0	-12.3	2.84 V	66	41.5	20.2
6	11440.00	47.6 AV	54.0	-6.4	2.84 V	66	27.4	20.2

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 (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	118.8 PK			2.69 H	14	76.8	42.0
2	*5745.00	109.6 AV			2.69 H	14	67.6	42.0
3	11490.00	61.4 PK	74.0	-12.6	2.33 H	145	41.4	20.0
4	11490.00	47.9 AV	54.0	-6.1	2.33 H	145	27.9	20.0
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	*5745.00	122.5 PK			2.52 V	218	80.5	42.0
2	*5745.00	112.0 AV			2.52 V	218	70.0	42.0
3	11490.00	61.3 PK	74.0	-12.7	2.58 V	53	41.3	20.0
4	11490.00	48.1 AV	54.0	-5.9	2.58 V	53	28.1	20.0

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 (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	119.2 PK			2.64 H	5	77.1	42.1
2	*5785.00	109.9 AV			2.64 H	5	67.8	42.1
3	11570.00	61.2 PK	74.0	-12.8	2.39 H	129	41.4	19.8
4	11570.00	48.1 AV	54.0	-5.9	2.39 H	129	28.3	19.8
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	*5785.00	123.5 PK			2.68 V	216	81.4	42.1
2	*5785.00	112.8 AV			2.68 V	216	70.7	42.1
3	11570.00	61.0 PK	74.0	-13.0	2.85 V	59	41.2	19.8
4	11570.00	47.9 AV	54.0	-6.1	2.85 V	59	28.1	19.8

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.

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	119.6 PK			2.62 H	9	77.2	42.4
2	*5825.00	110.3 AV			2.62 H	9	67.9	42.4
3	11650.00	61.4 PK	74.0	-12.6	2.42 H	132	41.7	19.7
4	11650.00	47.4 AV	54.0	-6.6	2.42 H	132	27.7	19.7
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	*5825.00	121.5 PK			2.84 V	225	79.1	42.4
2	*5825.00	111.1 AV			2.84 V	225	68.7	42.4
3	11650.00	61.2 PK	74.0	-12.8	2.92 V	50	41.5	19.7
4	11650.00	47.6 AV	54.0	-6.4	2.92 V	50	27.9	19.7

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.

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	59.5 PK	74.0	-14.5	2.88 H	58	52.2	7.3
2	5150.00	48.1 AV	54.0	-5.9	2.88 H	58	40.8	7.3
3	*5190.00	110.4 PK			2.88 H	58	68.7	41.7
4	*5190.00	99.7 AV			2.88 H	58	58.0	41.7
5	#10380.00	59.7 PK	68.2	-8.5	2.27 H	132	40.6	19.1
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	5150.00	65.8 PK	74.0	-8.2	2.61 V	289	58.5	7.3
2	**5150.00**	**53.5 AV**	**54.0**	**-0.5**	**2.61 V**	**289**	**46.2**	**7.3**
3	*5190.00	116.2 PK			2.61 V	289	74.5	41.7
4	*5190.00	104.0 AV			2.61 V	289	62.3	41.7
5	#10380.00	59.8 PK	68.2	-8.4	2.85 V	56	40.7	19.1

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 (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	112.9 PK			1.74 H	50	71.5	41.4
2	*5230.00	102.7 AV			1.74 H	50	61.3	41.4
3	5350.00	57.5 PK	74.0	-16.5	1.74 H	50	50.5	7.0
4	5350.00	44.6 AV	54.0	-9.4	1.74 H	50	37.6	7.0
5	#10460.00	60.4 PK	68.2	-7.8	2.31 H	129	41.4	19.0
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	*5230.00	117.6 PK			2.16 V	267	76.2	41.4
2	*5230.00	106.4 AV			2.16 V	267	65.0	41.4
3	5350.00	57.8 PK	74.0	-16.2	2.16 V	267	50.8	7.0
4	5350.00	45.1 AV	54.0	-8.9	2.16 V	267	38.1	7.0
5	#10460.00	60.9 PK	68.2	-7.3	2.77 V	60	41.9	19.0

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 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	5150.00	57.9 PK	74.0	-16.1	1.58 H	40	50.6	7.3
2	5150.00	44.9 AV	54.0	-9.1	1.58 H	40	37.6	7.3
3	*5270.00	109.7 PK			1.58 H	40	68.4	41.3
4	*5270.00	99.7 AV			1.58 H	40	58.4	41.3
5	#10540.00	59.5 PK	68.2	-8.7	2.34 H	130	40.3	19.2
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	5150.00	59.4 PK	74.0	-14.6	2.75 V	239	52.1	7.3
2	5150.00	46.4 AV	54.0	-7.6	2.75 V	239	39.1	7.3
3	*5270.00	115.8 PK			2.75 V	239	74.5	41.3
4	*5270.00	105.3 AV			2.75 V	239	64.0	41.3
5	#10540.00	60.7 PK	68.2	-7.5	2.96 V	65	41.5	19.2

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 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	110.8 PK			2.77 H	52	69.6	41.2
2	*5310.00	100.4 AV			2.77 H	52	59.2	41.2
3	5350.00	63.4 PK	74.0	-10.6	2.77 H	52	56.5	6.9
4	5350.00	49.7 AV	54.0	-4.3	2.77 H	52	42.8	6.9
5	10620.00	60.3 PK	74.0	-13.7	2.37 H	137	40.8	19.5
6	10620.00	46.9 AV	54.0	-7.1	2.37 H	137	27.4	19.5
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	*5310.00	117.2 PK			2.47 V	289	76.0	41.2
2	*5310.00	105.2 AV			2.47 V	289	64.0	41.2
3	5350.00	67.7 PK	74.0	-6.3	2.47 V	289	60.8	6.9
4	5350.00	53.4 AV	54.0	-0.6	2.47 V	289	46.5	6.9
5	10620.00	61.0 PK	74.0	-13.0	2.91 V	54	41.5	19.5
6	10620.00	46.8 AV	54.0	-7.2	2.91 V	54	27.3	19.5

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 (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	59.8 PK	74.0	-14.2	2.80 H	47	52.0	7.8
2	5460.00	47.9 AV	54.0	-6.1	2.80 H	47	40.1	7.8
3	#5470.00	64.6 PK	68.2	-3.6	2.80 H	47	56.8	7.8
4	*5510.00	109.5 PK			2.80 H	47	67.5	42.0
5	*5510.00	100.2 AV			2.80 H	47	58.2	42.0
6	11020.00	60.7 PK	74.0	-13.3	2.35 H	136	40.5	20.2
7	11020.00	47.6 AV	54.0	-6.4	2.35 H	136	27.4	20.2
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	5460.00	62.1 PK	74.0	-11.9	2.54 V	287	54.3	7.8
2	5460.00	49.5 AV	54.0	-4.5	2.54 V	287	41.7	7.8
3	#5470.00	67.6 PK	68.2	-0.6	2.54 V	287	59.8	7.8
4	*5510.00	114.6 PK			2.54 V	287	72.6	42.0
5	*5510.00	103.0 AV			2.54 V	287	61.0	42.0
6	11020.00	60.9 PK	74.0	-13.1	2.78 V	49	40.7	20.2
7	11020.00	48.0 AV	54.0	-6.0	2.78 V	49	27.8	20.2

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 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	111.1 PK			2.62 H	123	69.2	41.9
2	*5550.00	100.8 AV			2.62 H	123	58.9	41.9
3	11100.00	61.0 PK	74.0	-13.0	2.34 H	137	41.5	19.5
4	11100.00	46.9 AV	54.0	-7.1	2.34 H	137	27.4	19.5
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	*5550.00	114.9 PK			2.65 V	226	73.0	41.9
2	*5550.00	104.4 AV			2.65 V	226	62.5	41.9
3	11100.00	61.3 PK	74.0	-12.7	2.91 V	58	41.8	19.5
4	11100.00	47.2 AV	54.0	-6.8	2.91 V	58	27.7	19.5

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 (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	110.5 PK			2.79 H	153	68.6	41.9
2	*5670.00	100.7 AV			2.79 H	153	58.8	41.9
3	#5725.00	57.6 PK	68.2	-10.6	2.79 H	153	49.9	7.7
4	11340.00	61.1 PK	74.0	-12.9	2.24 H	133	40.8	20.3
5	11340.00	47.6 AV	54.0	-6.4	2.24 H	133	27.3	20.3
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	*5670.00	114.0 PK			2.81 V	230	72.1	41.9
2	*5670.00	103.4 AV			2.81 V	230	61.5	41.9
3	#5725.00	66.3 PK	68.2	-1.9	2.81 V	230	58.6	7.7
4	11340.00	61.0 PK	74.0	-13.0	2.80 V	66	40.7	20.3
5	11340.00	47.7 AV	54.0	-6.3	2.80 V	66	27.4	20.3

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 (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	57.3 PK	68.2	-10.9	2.79 H	154	49.8	7.5
2	*5710.00	110.7 PK			2.79 H	154	68.8	41.9
3	*5710.00	100.9 AV			2.79 H	154	59.0	41.9
4	#5850.00	59.1 PK	68.2	-9.1	2.79 H	154	50.8	8.3
5	11420.00	61.8 PK	74.0	-12.2	2.32 H	143	41.5	20.3
6	11420.00	47.5 AV	54.0	-6.5	2.32 H	143	27.2	20.3
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	#5470.00	60.0 PK	68.2	-8.2	2.99 V	236	52.5	7.5
2	*5710.00	114.4 PK			2.99 V	236	72.5	41.9
3	*5710.00	103.0 AV			2.99 V	236	61.1	41.9
4	#5850.00	59.4 PK	68.2	-8.8	2.99 V	236	51.1	8.3
5	11420.00	62.0 PK	74.0	-12.0	2.81 V	52	41.7	20.3
6	11420.00	48.1 AV	54.0	-5.9	2.81 V	52	27.8	20.3

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 (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	116.1 PK			2.59 H	155	74.1	42.0
2	*5755.00	106.3 AV			2.59 H	155	64.3	42.0
3	11510.00	61.4 PK	74.0	-12.6	2.43 H	136	41.5	19.9
4	11510.00	48.1 AV	54.0	-5.9	2.43 H	136	28.2	19.9
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	*5755.00	119.4 PK			2.48 V	216	77.4	42.0
2	*5755.00	108.4 AV			2.48 V	216	66.4	42.0
3	11510.00	60.7 PK	74.0	-13.3	2.76 V	63	40.8	19.9
4	11510.00	47.7 AV	54.0	-6.3	2.76 V	63	27.8	19.9

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 (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	118.0 PK			2.81 H	13	75.8	42.2
2	*5795.00	108.0 AV			2.81 H	13	65.8	42.2
3	11590.00	60.6 PK	74.0	-13.4	2.27 H	139	40.8	19.8
4	11590.00	47.7 AV	54.0	-6.3	2.27 H	139	27.9	19.8
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	119.3 PK			2.55 V	216	77.1	42.2
2	*5795.00	108.2 AV			2.55 V	216	66.0	42.2
3	11590.00	61.1 PK	74.0	-12.9	2.79 V	63	41.3	19.8
4	11590.00	47.6 AV	54.0	-6.4	2.79 V	63	27.8	19.8

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.

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	63.6 PK	74.0	-10.4	2.75 H	54	56.3	7.3
2	5150.00	51.8 AV	54.0	-2.2	2.75 H	54	44.5	7.3
3	*5210.00	108.5 PK			2.75 H	54	66.8	41.7
4	*5210.00	98.0 AV			2.75 H	54	56.3	41.7
5	#10420.00	59.5 PK	68.2	-8.7	2.25 H	144	40.5	19.0
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	65.0 PK	74.0	-9.0	2.61 V	288	57.7	7.3
2	5150.00	53.3 AV	54.0	-0.7	2.61 V	288	46.0	7.3
3	*5210.00	114.7 PK			2.61 V	288	73.0	41.7
4	*5210.00	102.0 AV			2.61 V	288	60.3	41.7
5	#10420.00	59.6 PK	68.2	-8.6	2.88 V	63	40.6	19.0

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 (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	*5290.00	105.9 PK			3.02 H	23	64.6	41.3
2	*5290.00	96.0 AV			3.02 H	23	54.7	41.3
3	5350.00	62.1 PK	74.0	-11.9	3.02 H	23	55.2	6.9
4	5350.00	50.1 AV	54.0	-3.9	3.02 H	23	43.2	6.9
5	#10580.00	60.0 PK	68.2	-8.2	2.28 H	139	40.7	19.3
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	*5290.00	111.3 PK			2.60 V	287	70.0	41.3
2	*5290.00	99.6 AV			2.60 V	287	58.3	41.3
3	5350.00	64.5 PK	74.0	-9.5	2.60 V	287	57.6	6.9
4	5350.00	53.4 AV	54.0	-0.6	2.60 V	287	46.5	6.9
5	#10580.00	60.6 PK	68.2	-7.6	2.87 V	66	41.3	19.3

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 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	61.8 PK	74.0	-12.2	2.98 H	55	54.0	7.8
2	5460.00	49.6 AV	54.0	-4.4	2.98 H	55	41.8	7.8
3	#5470.00	66.6 PK	68.2	-1.6	2.98 H	55	58.8	7.8
4	*5530.00	107.6 PK			2.98 H	55	65.7	41.9
5	*5530.00	97.5 AV			2.98 H	55	55.6	41.9
6	11060.00	60.4 PK	74.0	-13.6	2.36 H	142	40.7	19.7
7	11060.00	47.0 AV	54.0	-7.0	2.36 H	142	27.3	19.7
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	63.2 PK	74.0	-10.8	2.51 V	217	55.4	7.8
2	5460.00	51.6 AV	54.0	-2.4	2.51 V	217	43.8	7.8
3	#5470.00	67.5 PK	68.2	-0.7	2.51 V	217	59.7	7.8
4	*5530.00	111.0 PK			2.51 V	217	69.1	41.9
5	*5530.00	100.3 AV			2.51 V	217	58.4	41.9
6	11060.00	60.5 PK	74.0	-13.5	2.90 V	67	40.8	19.7
7	11060.00	47.1 AV	54.0	-6.9	2.90 V	67	27.4	19.7

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 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	*5610.00	108.8 PK			2.04 H	141	66.9	41.9
2	*5610.00	98.6 AV			2.04 H	141	56.7	41.9
3	#5725.00	58.3 PK	68.2	-9.9	2.04 H	141	50.6	7.7
4	11220.00	60.0 PK	74.0	-14.0	2.43 H	195	40.3	19.7
5	11220.00	47.3 AV	54.0	-6.7	2.43 H	195	27.6	19.7
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	*5610.00	112.9 PK			2.62 V	227	71.0	41.9
2	*5610.00	100.6 AV			2.62 V	227	58.7	41.9
3	#5725.00	63.2 PK	68.2	-5.0	2.62 V	227	55.5	7.7
4	11220.00	60.6 PK	74.0	-13.4	2.73 V	45	40.9	19.7
5	11220.00	48.0 AV	54.0	-6.0	2.73 V	45	28.3	19.7

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 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	58.0 PK	68.2	-10.2	2.05 H	142	50.5	7.5
2	*5690.00	109.5 PK			2.05 H	142	67.6	41.9
3	*5690.00	98.7 AV			2.05 H	142	56.8	41.9
4	#5850.00	58.1 PK	68.2	-10.1	2.05 H	142	49.8	8.3
5	11380.00	61.6 PK	74.0	-12.4	2.00 H	175	41.2	20.4
6	11380.00	47.7 AV	54.0	-6.3	2.00 H	175	27.3	20.4
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	#5470.00	59.0 PK	68.2	-9.2	2.59 V	218	51.5	7.5
2	*5690.00	112.2 PK			2.59 V	218	70.3	41.9
3	*5690.00	100.8 AV			2.59 V	218	58.9	41.9
4	#5850.00	58.6 PK	68.2	-9.6	2.59 V	218	50.3	8.3
5	11380.00	61.5 PK	74.0	-12.5	2.94 V	77	41.1	20.4
6	11380.00	47.9 AV	54.0	-6.1	2.94 V	77	27.5	20.4

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 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	*5775.00	111.9 PK			2.99 H	1	69.5	42.4
2	*5775.00	101.9 AV			2.99 H	1	59.5	42.4
3	11550.00	61.0 PK	74.0	-13.0	2.36 H	147	41.2	19.8
4	11550.00	47.2 AV	54.0	-6.8	2.36 H	147	27.4	19.8
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	*5775.00	117.5 PK			2.87 V	290	75.1	42.4
2	*5775.00	105.6 AV			2.87 V	290	63.2	42.4
3	11550.00	61.0 PK	74.0	-13.0	2.84 V	65	41.2	19.8
4	11550.00	47.2 AV	54.0	-6.8	2.84 V	65	27.4	19.8

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.

Below 1GHz worst-case data:

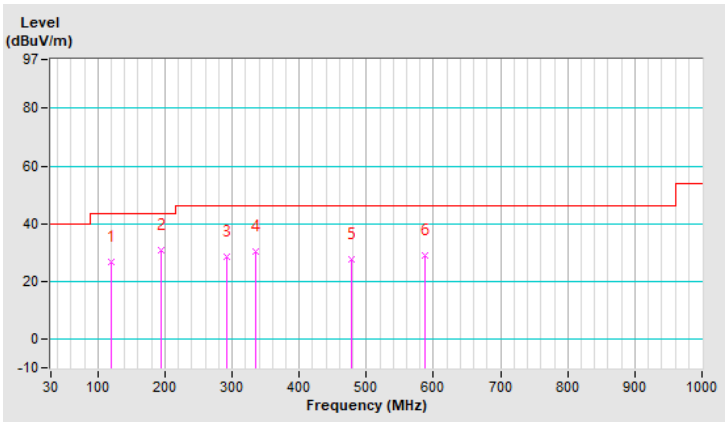
Mode A

RF Mode	TX 802.11ac (VHT20)	Channel	CH 157：5785 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	120.21	26.7 QP	43.5	-16.8	1.00 H	5	37.9	-11.2
2	194.90	30.7 QP	43.5	-12.8	1.50 H	5	42.2	-11.5
3	292.87	28.4 QP	46.0	-17.6	1.00 H	5	35.5	-7.1
4	335.55	30.3 QP	46.0	-15.7	1.25 H	5	36.4	-6.1
5	478.14	27.7 QP	46.0	-18.3	1.50 H	5	30.7	-3.0
6	587.75	29.0 QP	46.0	-17.0	1.00 H	5	29.7	-0.7

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 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.

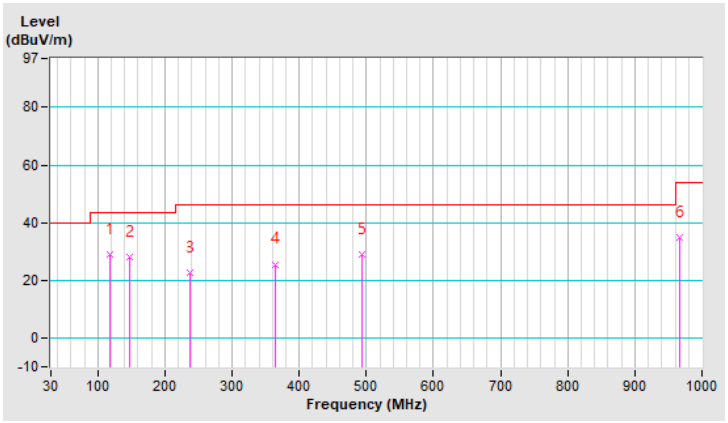


RF Mode	TX 802.11ac (VHT20)	Channel	CH 157：5785 MHz
Frequency Range	30MHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

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	118.27	29.1 QP	43.5	-14.4	1.00 V	28	40.5	-11.4
2	146.40	28.2 QP	43.5	-15.3	1.50 V	5	37.1	-8.9
3	236.61	22.7 QP	46.0	-23.3	1.50 V	28	32.5	-9.8
4	363.68	25.6 QP	46.0	-20.4	1.00 V	32	31.3	-5.7
5	492.69	29.0 QP	46.0	-17.0	1.25 V	5	31.7	-2.7
6	967.02	34.9 QP	54.0	-19.1	1.00 V	5	28.6	6.3

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.



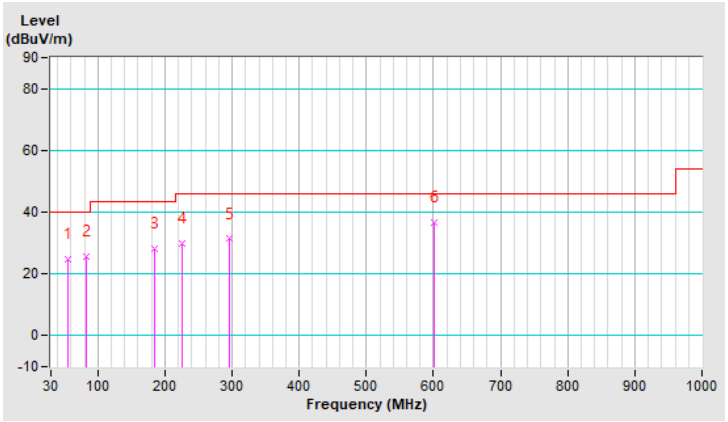
Mode B

RF Mode	TX 802.11ac (VHT20)	Channel	CH 157：5785 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	55.22	24.9 QP	40.0	-15.1	1.50 H	138	33.7	-8.8
2	82.38	25.7 QP	40.0	-14.3	1.50 H	103	39.3	-13.6
3	185.20	28.2 QP	43.5	-15.3	1.00 H	22	39.0	-10.8
4	225.94	29.8 QP	46.0	-16.2	1.50 H	271	41.3	-11.5
5	295.78	31.3 QP	46.0	-14.7	1.00 H	234	39.0	-7.7
6	600.36	36.8 QP	46.0	-9.2	1.00 H	6	38.9	-2.1

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 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.

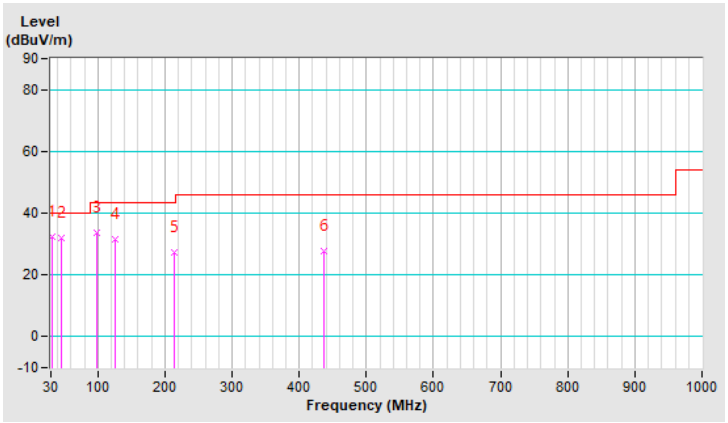


RF Mode	TX 802.11ac (VHT20)	Channel	CH 157：5785 MHz
Frequency Range	30MHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

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	31.94	32.4 QP	40.0	-7.6	1.49 V	238	42.7	-10.3
2	45.52	31.8 QP	40.0	-8.2	1.00 V	256	40.5	-8.7
3	97.90	33.6 QP	43.5	-9.9	1.49 V	302	47.2	-13.6
4	125.06	31.4 QP	43.5	-12.1	1.00 V	34	42.1	-10.7
5	214.30	27.5 QP	43.5	-16.0	1.00 V	34	39.0	-11.5
6	437.40	27.8 QP	46.0	-18.2	1.00 V	228	32.9	-5.1

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 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	ESR3	102783	Dec. 21, 2020	Dec. 20, 2021
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond2-01	Sep. 04, 2021	Sep. 03, 2022
AMN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Jan. 28, 2021	Jan. 27, 2022
AMN ROHDE & SCHWARZ (Peripheral)	ENV216	101196	Apr. 26, 2021	Apr. 25, 2022
Software ADT	BV ADT_Cond_ V7.3.7.4	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 2.
3. The VCCI Site Registration No. is C-12047.

4.2.3 Test Procedures

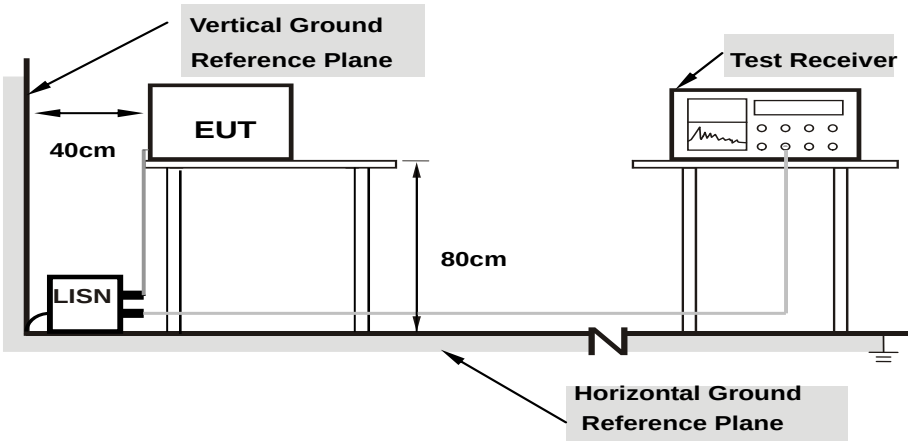
a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling 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

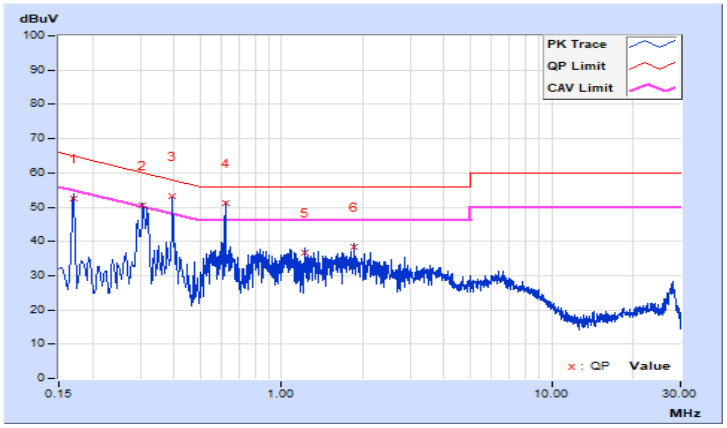
Mode A

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25 °C, 75% RH
Tested by	Hans Wu	Test Date	2021/11/3

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	0.16955	10.07	42.37	26.69	52.44	36.76	64.98	54.98	-12.54	-18.22
2	0.30640	10.09	40.37	30.47	50.46	40.56	60.07	50.07	-9.61	-9.51
3	**0.39633**	**10.09**	**43.17**	**28.93**	**53.26**	**39.02**	**57.93**	**47.93**	**-4.67**	**-8.91**
4	0.61920	10.11	41.14	27.94	51.25	38.05	56.00	46.00	-4.75	-7.95
5	1.21743	10.14	26.58	17.72	36.72	27.86	56.00	46.00	-19.28	-18.14
6	1.86649	10.16	28.38	18.68	38.54	28.84	56.00	46.00	-17.46	-17.16

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

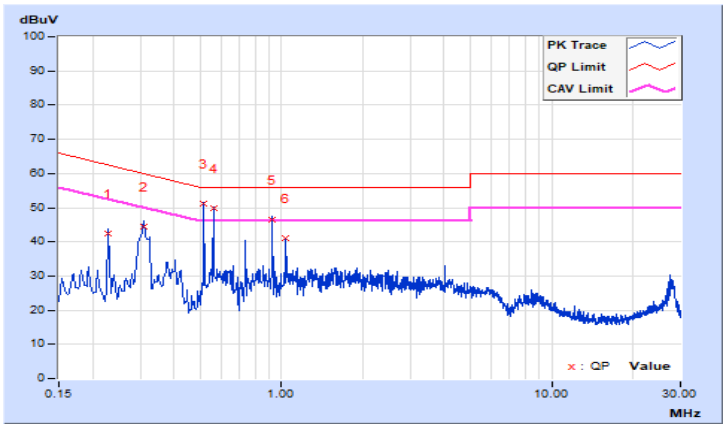


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25 °C, 75% RH
Tested by	Hans Wu	Test Date	2021/11/3

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	0.22820	10.08	32.31	17.56	42.39	27.64	62.51	52.51	-20.12	-24.87
2	0.31021	10.09	34.26	24.99	44.35	35.08	59.96	49.96	-15.61	-14.88
3	0.51754	10.11	41.05	28.34	51.16	38.45	56.00	46.00	-4.84	-7.55
4	0.56055	10.11	39.63	21.92	49.74	32.03	56.00	46.00	-6.26	-13.97
5	0.92809	10.14	36.37	16.63	46.51	26.77	56.00	46.00	-9.49	-19.23
6	1.03757	10.15	31.06	14.71	41.21	24.86	56.00	46.00	-14.79	-21.14

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



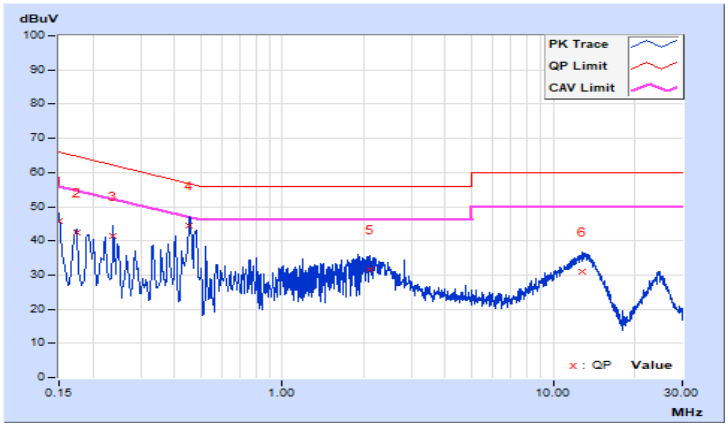
Mode B

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	23 °C, 66% RH
Tested by	Titan Hsu	Test Date	2021/12/16

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	0.15000	10.12	35.77	17.78	45.89	27.90	66.00	56.00	-20.11	-28.10
2	0.17384	10.13	32.25	19.13	42.38	29.26	64.77	54.77	-22.39	-25.51
3	0.23800	10.16	31.17	13.09	41.33	23.25	62.17	52.17	-20.84	-28.92
4	0.45400	10.23	34.08	24.10	44.31	34.33	56.80	46.80	-12.49	-12.47
5	2.10200	10.36	21.43	9.98	31.79	20.34	56.00	46.00	-24.21	-25.66
6	12.86200	10.55	20.58	13.26	31.13	23.81	60.00	50.00	-28.87	-26.19

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

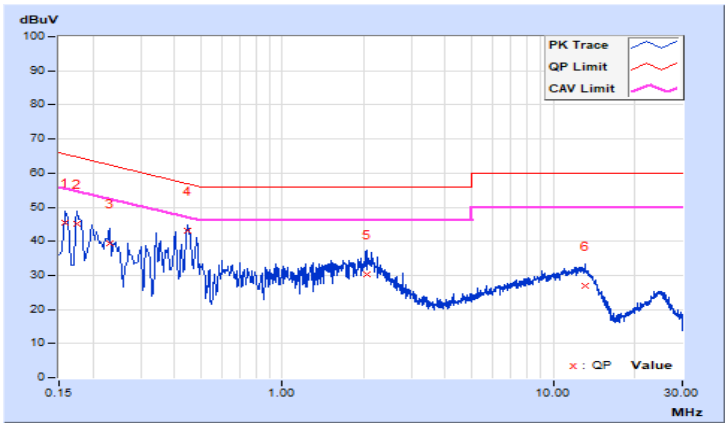


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	23 °C, 66% RH
Tested by	Titan Hsu	Test Date	2021/12/16

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	0.15800	10.14	35.16	19.74	45.30	29.88	65.57	55.57	-20.27	-25.69
2	0.17400	10.15	34.92	20.64	45.07	30.79	64.77	54.77	-19.70	-23.98
3	0.23000	10.18	29.29	16.94	39.47	27.12	62.45	52.45	-22.98	-25.33
4	0.44763	10.24	32.75	25.81	42.99	36.05	56.92	46.92	-13.93	-10.87
5	2.06600	10.35	19.87	12.28	30.22	22.63	56.00	46.00	-25.78	-23.37
6	13.09800	10.66	16.40	10.47	27.06	21.13	60.00	50.00	-32.94	-28.87

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 ≦ 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 $N_{ANT} \leq 4$;

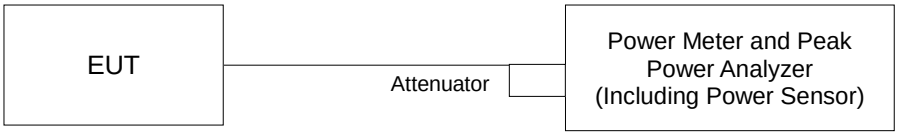
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};

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

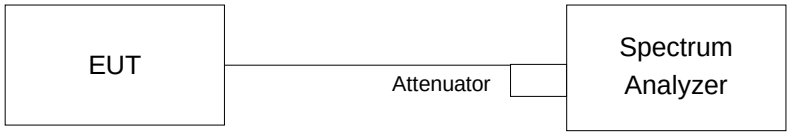
For power measurements on all other devices: Array Gain = 10 log(N_{ANT}/N_{SS}) dB.

4.3.2 Test Setup

For Power Output



For 26dB Bandwidth and power output of ransmission above 5.725 GHz where the EBW crosses 5.725 GHz



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

For Average Power Measurement
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 and set the detector to average. Duty factor is not added to measured value.

For transmission above 5.725 GHz where the EBW crosses 5.725 GHz
For channel aggregation (channel 138, 142, 144) measurement refer to KDB 789033 D02 General UNII Test Procedures New Rules v02r01 Section II E 2 e) method SA-2A.

For 26dB Bandwidth

a. Set RBW = approximately 1% of the emission bandwidth.

b. Set the VBW > 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 (dBm)		Duty Factor (dB)	Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1					
36	5180	19.16	19.38	0.00	169.11	22.28	24	Pass
40	5200	19.17	19.35	0.00	168.703	22.27	24	Pass
48	5240	19.10	19.34	0.00	167.184	22.23	24	Pass
52	5260	19.08	19.53	0.00	170.652	22.32	24	Pass
60	5300	19.23	19.67	0.00	**176.436**	**22.47**	24	Pass
64	5320	19.11	19.74	0.00	175.659	22.45	24	Pass
100	5500	18.84	19.12	0.00	158.218	21.99	24	Pass
116	5580	19.10	19.81	0.00	177.002	22.48	24	Pass
140	5700	17.45	18.34	0.00	123.824	20.93	24	Pass
144	5720 (U-NII-2C)	18.33	19.28	0.23	161.092	22.07	22.80	Pass
144	5720 (U-NII-3)	10.54	11.48	0.23	26.762	14.28	30	Pass
149	5745	25.14	25.87	0.00	712.955	28.53	30	Pass
157	5785	25.22	25.81	0.00	713.725	28.54	30	Pass
165	5825	25.12	25.39	0.00	671.027	28.27	30	Pass

Note:

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

Chain 0

1. 11 dBm + 10log (20.43) = 24.10 dBm > 24 dBm.
2. 11 dBm + 10log (20.39) = 24.09 dBm > 24 dBm.
3. 11 dBm + 10log (20.29) = 24.07 dBm > 24 dBm.
4. 11 dBm + 10log (20.39) = 24.09 dBm > 24 dBm.
5. 11 dBm + 10log (20.29) = 24.07 dBm > 24 dBm.
6. 11 dBm + 10log (20.41) = 24.10 dBm > 24 dBm.
7. 11 dBm + 10log (15.18) = 22.81 dBm < 24 dBm.

Chain 1

1. 11 dBm + 10log (20.33) = 24.08 dBm > 24 dBm.
2. 11 dBm + 10log (20.47) = 24.11 dBm > 24 dBm.
3. 11 dBm + 10log (20.28) = 24.07 dBm > 24 dBm.
4. 11 dBm + 10log (20.43) = 24.10 dBm > 24 dBm.
5. 11 dBm + 10log (20.34) = 24.08 dBm > 24 dBm.
6. 11 dBm + 10log (20.59) = 24.14 dBm > 24 dBm.
7. 11 dBm + 10log (15.14) = 22.80 dBm < 24 dBm.

802.11n (HT20)

Channel	Frequency (MHz)	Maximum Conducted Power (dBm)		Duty Factor (dB)	Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1					
36	5180	19.30	19.33	0.00	170.818	22.33	24	Pass
40	5200	19.23	19.30	0.00	168.867	22.28	24	Pass
48	5240	19.10	19.45	0.00	169.388	22.29	24	Pass
52	5260	19.06	19.65	0.00	172.795	22.38	24	Pass
60	5300	19.05	19.72	0.00	174.109	22.41	24	Pass
64	5320	18.92	19.75	0.00	172.389	22.37	24	Pass
100	5500	19.21	19.65	0.00	175.625	22.45	24	Pass
116	5580	18.92	19.45	0.00	166.088	22.20	24	Pass
140	5700	18.91	19.82	0.00	173.744	22.40	24	Pass
144	5720 (U-NII-2C)	17.68	18.41	0.47	142.699	21.54	22.85	Pass
144	5720 (U-NII-3)	10.00	10.51	0.47	23.694	13.75	30	Pass
149	5745	25.18	26.02	0.00	729.554	28.63	30	Pass
157	5785	25.30	25.98	0.00	735.122	28.66	30	Pass
165	5825	25.07	25.23	0.00	654.792	28.16	30	Pass

Note:

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

Chain 0

1. 11 dBm + 10log (20.62) = 24.14 dBm > 24 dBm.
2. 11 dBm + 10log (20.68) = 24.16 dBm > 24 dBm.
3. 11 dBm + 10log (20.61) = 24.14 dBm > 24 dBm.
4. 11 dBm + 10log (20.65) = 24.15 dBm > 24 dBm.
5. 11 dBm + 10log (20.59) = 24.14 dBm > 24 dBm.
6. 11 dBm + 10log (20.67) = 24.15 dBm > 24 dBm.
7. 11 dBm + 10log (15.35) = 22.86 dBm < 24 dBm.

Chain 1

1. 11 dBm + 10log (20.66) = 24.15 dBm > 24 dBm.
2. 11 dBm + 10log (20.65) = 24.15 dBm > 24 dBm.
3. 11 dBm + 10log (20.64) = 24.15 dBm > 24 dBm.
4. 11 dBm + 10log (20.61) = 24.14 dBm > 24 dBm.
5. 11 dBm + 10log (20.75) = 24.17 dBm > 24 dBm.
6. 11 dBm + 10log (20.65) = 24.15 dBm > 24 dBm.
7. 11 dBm + 10log (15.32) = 22.85 dBm < 24 dBm.

802.11n (HT40)

Channel	Frequency (MHz)	Maximum Conducted Power (dBm)		Duty Factor (dB)	Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1					
38	5190	19.02	19.07	0.00	160.523	22.06	24	Pass
46	5230	20.35	21.00	0.00	234.285	23.70	24	Pass
54	5270	19.08	19.58	0.00	171.692	22.35	24	Pass
62	5310	18.00	18.81	0.00	139.128	21.43	24	Pass
102	5510	17.75	17.96	0.00	122.083	20.87	24	Pass
110	5550	19.07	19.53	0.00	170.466	22.32	24	Pass
134	5670	18.98	19.75	0.00	173.474	22.39	24	Pass
142	5710 (U-NII-2C)	18.27	18.85	0.82	173.888	22.40	24	Pass
142	5710 (U-NII-3)	5.70	6.10	0.82	9.414	9.74	30	Pass
151	5755	25.11	25.82	0.00	706.284	28.49	30	Pass
159	5795	25.30	25.90	0.00	727.889	28.62	30	Pass

Note:

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

Chain 0

1. 11 dBm + 10log (41.83) = 27.21 dBm > 24 dBm.
2. 11 dBm + 10log (41.93) = 27.23 dBm > 24 dBm.
3. 11 dBm + 10log (41.91) = 27.22 dBm > 24 dBm.
4. 11 dBm + 10log (41.97) = 27.23 dBm > 24 dBm.
5. 11 dBm + 10log (41.72) = 27.20 dBm > 24 dBm.
6. 11 dBm + 10log (36.07) = 26.57 dBm > 24 dBm.

Chain 1

1. 11 dBm + 10log (41.92) = 27.22 dBm > 24 dBm.
2. 11 dBm + 10log (42.01) = 27.23 dBm > 24 dBm.
3. 11 dBm + 10log (41.94) = 27.23 dBm > 24 dBm.
4. 11 dBm + 10log (42.00) = 27.23 dBm > 24 dBm.
5. 11 dBm + 10log (41.93) = 27.23 dBm > 24 dBm.
6. 11 dBm + 10log (36.01) = 26.56 dBm > 24 dBm.

802.11ac (VHT20)

Channel	Frequency (MHz)	Maximum Conducted Power (dBm)		Duty Factor (dB)	Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1					
36	5180	19.32	19.35	0.00	171.606	22.35	24	Pass
40	5200	19.25	19.35	0.00	170.239	22.31	24	Pass
48	5240	19.13	19.48	0.00	170.562	22.32	24	Pass
52	5260	19.09	19.68	0.00	173.993	22.41	24	Pass
60	5300	19.08	19.74	0.00	175.099	22.43	24	Pass
64	5320	18.95	19.77	0.00	173.365	22.39	24	Pass
100	5500	19.25	19.68	0.00	177.036	22.48	24	Pass
116	5580	18.94	19.47	0.00	166.855	22.22	24	Pass
140	5700	18.94	19.85	0.00	174.948	22.43	24	Pass
144	5720 (U-NII-2C)	17.71	18.44	0.47	143.688	21.57	22.85	Pass
144	5720 (U-NII-3)	10.01	10.53	0.47	23.777	13.76	30	Pass
149	5745	25.21	26.04	0.00	733.685	28.66	30	Pass
157	5785	25.32	26.01	0.00	**739.433**	**28.69**	30	Pass
165	5825	25.11	25.27	0.00	660.851	28.20	30	Pass

Note:

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

Chain 0

1. 11 dBm + 10log (20.62) = 24.14 dBm > 24 dBm.
2. 11 dBm + 10log (20.68) = 24.16 dBm > 24 dBm.
3. 11 dBm + 10log (20.61) = 24.14 dBm > 24 dBm.
4. 11 dBm + 10log (20.65) = 24.15 dBm > 24 dBm.
5. 11 dBm + 10log (20.59) = 24.14 dBm > 24 dBm.
6. 11 dBm + 10log (20.67) = 24.15 dBm > 24 dBm.
7. 11 dBm + 10log (15.35) = 22.86 dBm < 24 dBm.

Chain 1

1. 11 dBm + 10log (20.66) = 24.15 dBm > 24 dBm.
2. 11 dBm + 10log (20.65) = 24.15 dBm > 24 dBm.
3. 11 dBm + 10log (20.64) = 24.15 dBm > 24 dBm.
4. 11 dBm + 10log (20.61) = 24.14 dBm > 24 dBm.
5. 11 dBm + 10log (20.75) = 24.17 dBm > 24 dBm.
6. 11 dBm + 10log (20.65) = 24.15 dBm > 24 dBm.
7. 11 dBm + 10log (15.32) = 22.85 dBm < 24 dBm.

802.11ac (VHT40)

Channel	Frequency (MHz)	Maximum Conducted Power (dBm)		Duty Factor (dB)	Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1					
38	5190	19.05	19.11	0.00	161.823	22.09	24	Pass
46	5230	20.37	21.03	0.00	**235.658**	**23.72**	24	Pass
54	5270	19.11	19.62	0.00	173.092	22.38	24	Pass
62	5310	18.02	18.84	0.00	139.947	21.46	24	Pass
102	5510	17.78	18.01	0.00	123.22	20.91	24	Pass
110	5550	19.11	19.56	0.00	171.835	22.35	24	Pass
134	5670	19.01	19.79	0.00	174.896	22.43	24	Pass
142	5710 (U-NII-2C)	18.30	18.88	0.82	175.093	22.43	24	Pass
142	5710 (U-NII-3)	5.72	6.12	0.82	9.457	9.76	30	Pass
151	5755	25.14	25.87	0.00	712.955	28.53	30	Pass
159	5795	25.33	25.94	0.00	733.838	28.66	30	Pass

Note:

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

Chain 0

1. 11 dBm + 10log (41.83) = 27.21 dBm > 24 dBm.
2. 11 dBm + 10log (41.93) = 27.23 dBm > 24 dBm.
3. 11 dBm + 10log (41.91) = 27.22 dBm > 24 dBm.
4. 11 dBm + 10log (41.97) = 27.23 dBm > 24 dBm.
5. 11 dBm + 10log (41.72) = 27.20 dBm > 24 dBm.
6. 11 dBm + 10log (36.07) = 26.57 dBm > 24 dBm.

Chain 1

1. 11 dBm + 10log (41.92) = 27.22 dBm > 24 dBm.
2. 11 dBm + 10log (42.01) = 27.23 dBm > 24 dBm.
3. 11 dBm + 10log (41.94) = 27.23 dBm > 24 dBm.
4. 11 dBm + 10log (42.00) = 27.23 dBm > 24 dBm.
5. 11 dBm + 10log (41.93) = 27.23 dBm > 24 dBm.
6. 11 dBm + 10log (36.01) = 26.56 dBm > 24 dBm.

802.11ac (VHT80)

Channel	Frequency (MHz)	Maximum Conducted Power (dBm)		Duty Factor (dB)	Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1					
42	5210	20.06	20.23	0.00	206.83	23.16	24	Pass
58	5290	17.58	18.15	0.00	122.593	20.88	24	Pass
106	5530	18.06	18.17	0.00	129.588	21.13	24	Pass
122	5610	19.22	19.75	0.00	**177.966**	**22.50**	24	Pass
138	5690 (U-NII-2C)	17.29	18.61	1.41	174.777	22.42	24	Pass
138	5690 (U-NII-3)	1.55	1.86	1.41	4.105	6.13	30	Pass
155	5775	24.10	24.78	0.00	557.647	27.46	30	Pass

Note:

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

Chain 0

1. 11 dBm + 10log (82.00) = 30.14 dBm > 24 dBm.
2. 11 dBm + 10log (81.88) = 30.13 dBm > 24 dBm.
3. 11 dBm + 10log (81.88) = 30.13 dBm > 24 dBm.
4. 11 dBm + 10log (76.13) = 29.82 dBm > 24 dBm.

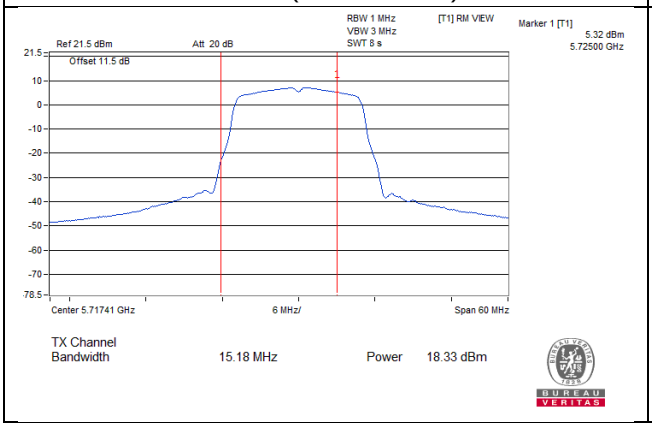
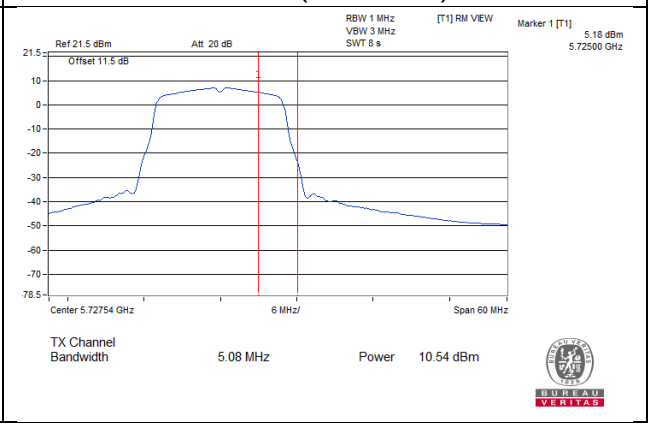
Chain 1

1. 11 dBm + 10log (82.31) = 30.15 dBm > 24 dBm.
2. 11 dBm + 10log (82.02) = 30.14 dBm > 24 dBm.
3. 11 dBm + 10log (82.02) = 30.14 dBm > 24 dBm.
4. 11 dBm + 10log (76.18) = 29.82 dBm > 24 dBm.

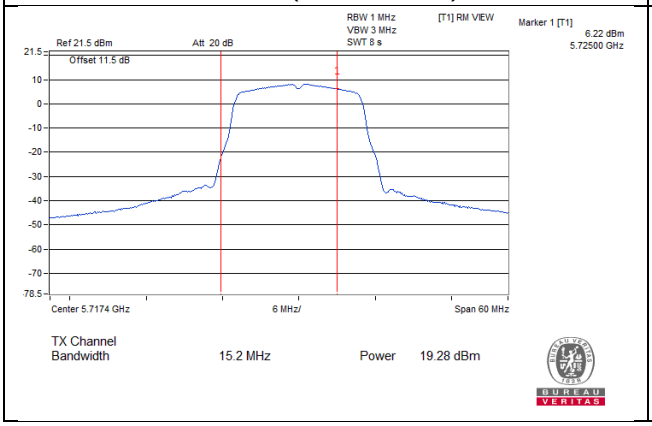
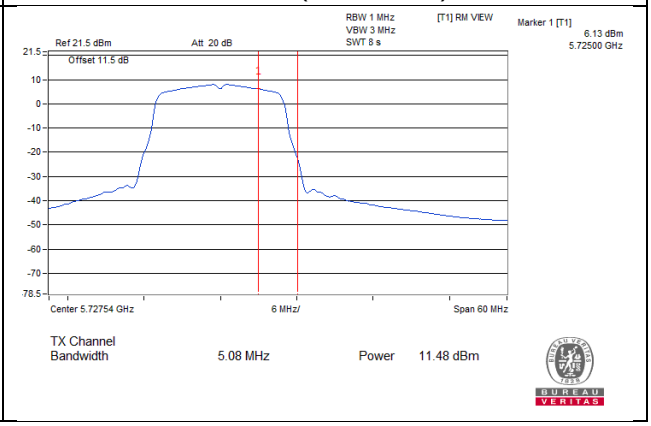
Straddle channel power plots:

802.11a

Chain 0

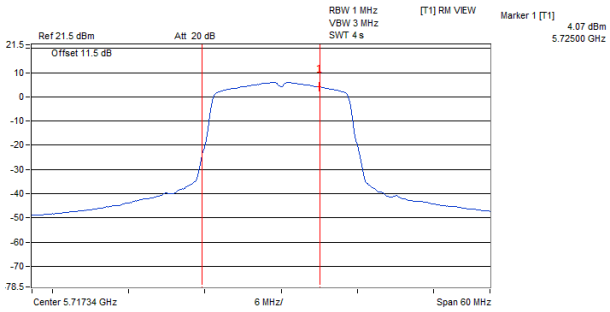
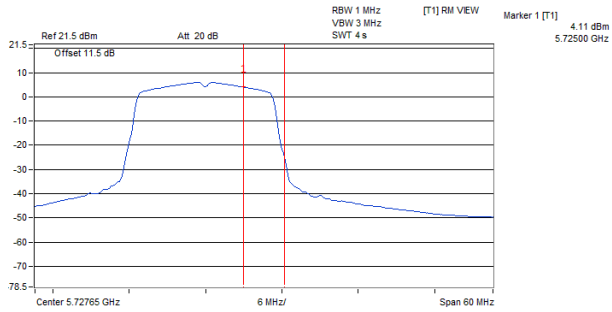
CH 144 (For U-NII-2C)	CH 144 (For U-NII-3)
	
TX Channel Bandwidth 15.18 MHz Power 18.33 dBm	TX Channel Bandwidth 5.08 MHz Power 10.54 dBm

Chain 1

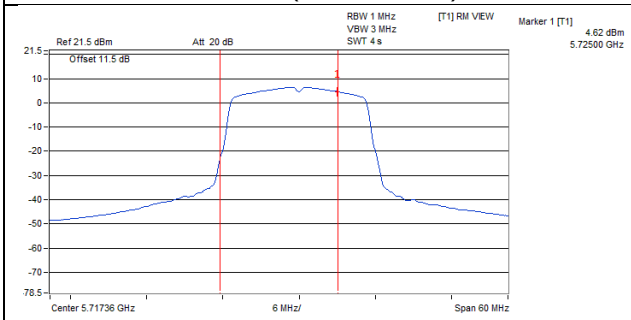
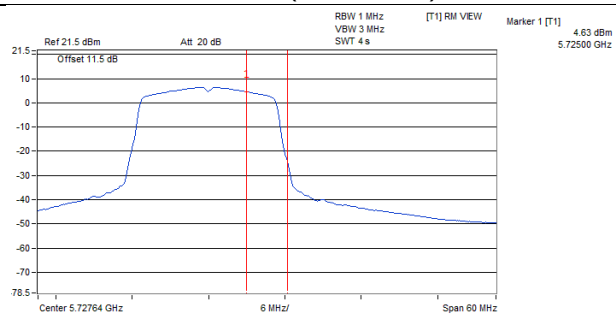
CH 144 (For U-NII-2C)	CH 144 (For U-NII-3)
	
TX Channel Bandwidth 15.2 MHz Power 19.28 dBm	TX Channel Bandwidth 5.08 MHz Power 11.48 dBm

802.11ac (VHT20)

Chain 0

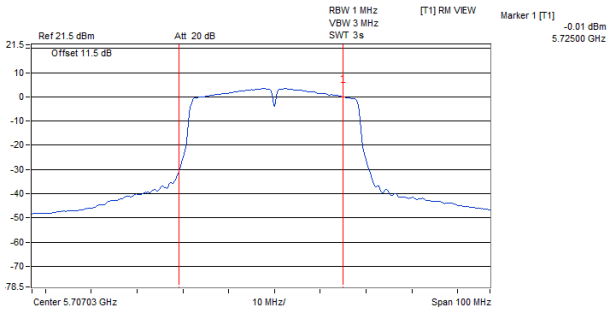
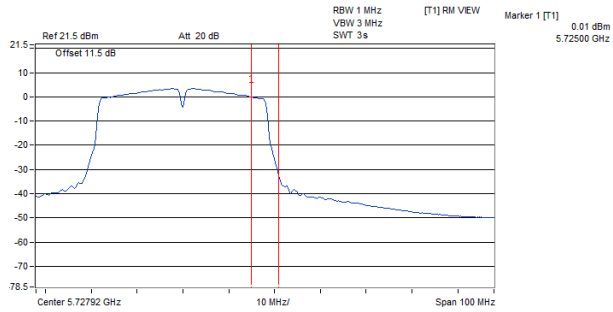
CH 144 (For U-NII-2C)	CH 144 (For U-NII-3)
 TX Channel Bandwidth 15.32 MHz Power 17.71 dBm	 TX Channel Bandwidth 5.31 MHz Power 10.01 dBm

Chain 1

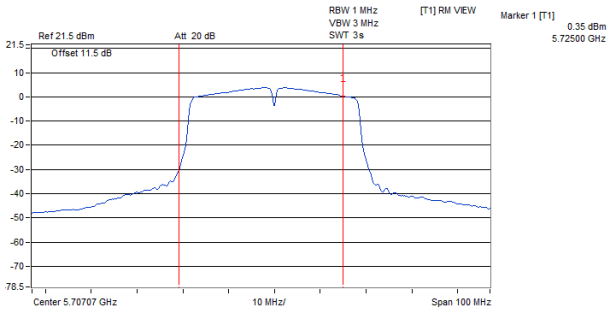
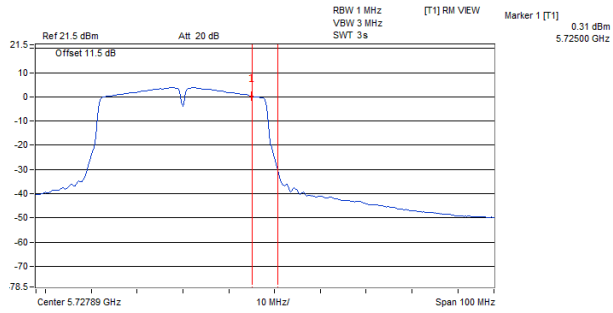
CH 144 (For U-NII-2C)	CH 144 (For U-NII-3)
 TX Channel Bandwidth 15.27 MHz Power 18.44 dBm	 TX Channel Bandwidth 5.28 MHz Power 10.53 dBm

802.11ac (VHT40)

Chain 0

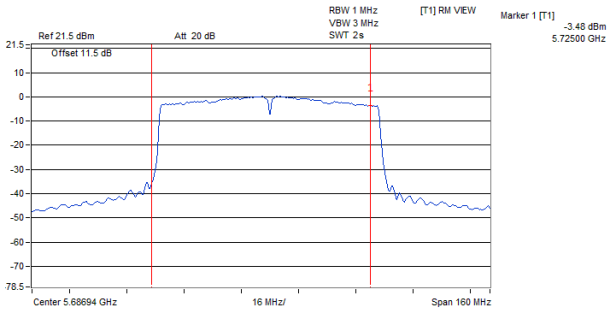
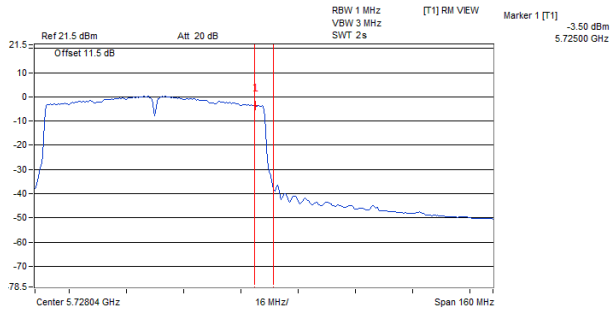
CH 142 (For U-NII-2C)	CH 142 (For U-NII-3)
 TX Channel Bandwidth 35.93 MHz Power 18.3 dBm	 TX Channel Bandwidth 5.84 MHz Power 5.72 dBm

Chain 1

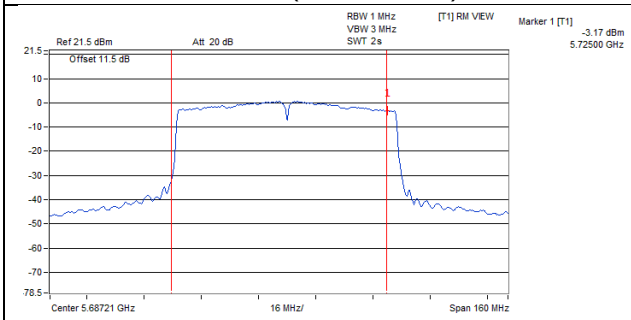
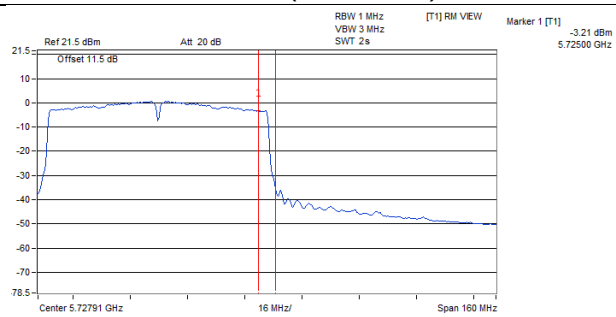
CH 142 (For U-NII-2C)	CH 142 (For U-NII-3)
 TX Channel Bandwidth 35.86 MHz Power 18.88 dBm	 TX Channel Bandwidth 5.79 MHz Power 6.12 dBm

802.11ac (VHT80)

Chain 0

CH 138 (For U-NII-2C)	CH 138 (For U-NII-3)
 TX Channel Bandwidth 76.12 MHz Power 17.29 dBm	 TX Channel Bandwidth 6.08 MHz Power 1.55 dBm

Chain 1

CH 138 (For U-NII-2C)	CH 138 (For U-NII-3)
 TX Channel Bandwidth 75.57 MHz Power 18.61 dBm	 TX Channel Bandwidth 5.82 MHz Power 1.86 dBm

26 dB Bandwidth:

802.11a

Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	20.35	20.43
40	5200	20.44	20.29
48	5240	20.35	20.43
52	5260	20.43	20.33
60	5300	20.39	20.47
64	5320	20.29	20.28
100	5500	20.39	20.43
116	5580	20.29	20.34
140	5700	20.41	20.59
144	5720 (U-NII-2C)	15.18	15.14
144	5720 (U-NII-3)	5.02	5.22

802.11ac (VHT20)

Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	20.77	20.75
40	5200	20.82	20.66
48	5240	20.75	20.76
52	5260	20.62	20.66
60	5300	20.68	20.65
64	5320	20.61	20.64
100	5500	20.65	20.61
116	5580	20.59	20.75
140	5700	20.67	20.65
144	5720 (U-NII-2C)	15.35	15.32
144	5720 (U-NII-3)	5.28	5.21

802.11ac (VHT40)

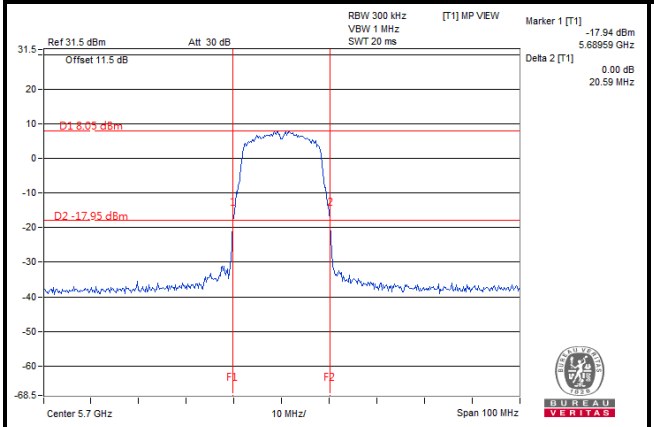
Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	41.92	41.99
46	5230	41.93	41.80
54	5270	41.83	41.92
62	5310	41.93	42.01
102	5510	41.91	41.94
110	5550	41.97	42.00
134	5670	41.72	41.93
142	5710 (U-NII-2C)	36.07	36.01
142	5710 (U-NII-3)	5.96	5.85

802.11ac (VHT80)

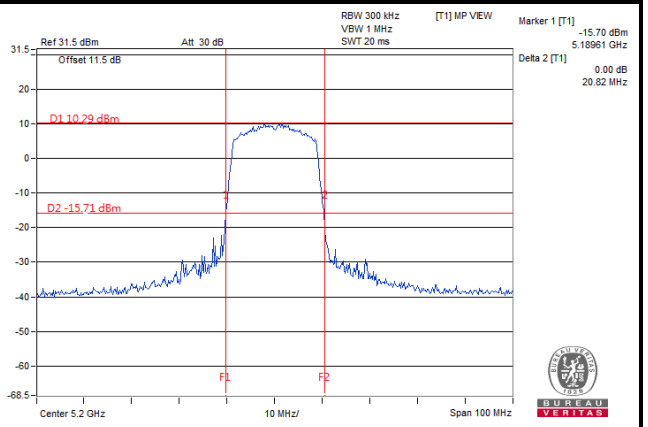
Channel	Frequency (MHz)	26 dBc Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	82.09	81.99
58	5290	82.00	82.31
106	5530	81.88	82.02
122	5610	81.88	82.02
138	5690 (U-NII-2C)	76.13	76.18
138	5690 (U-NII-3)	5.92	5.95

Spectrum Plot of Worst Value

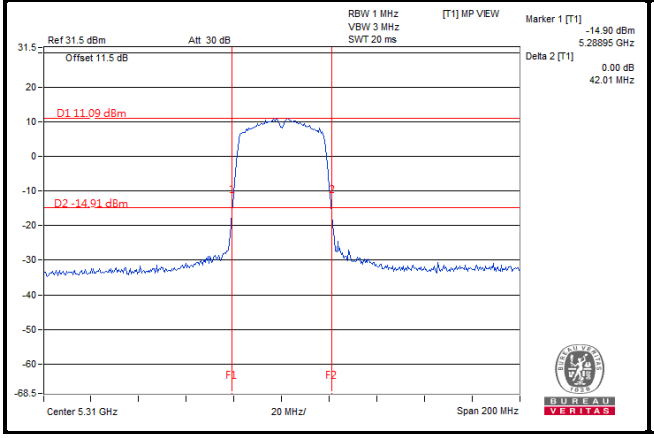
802.11a



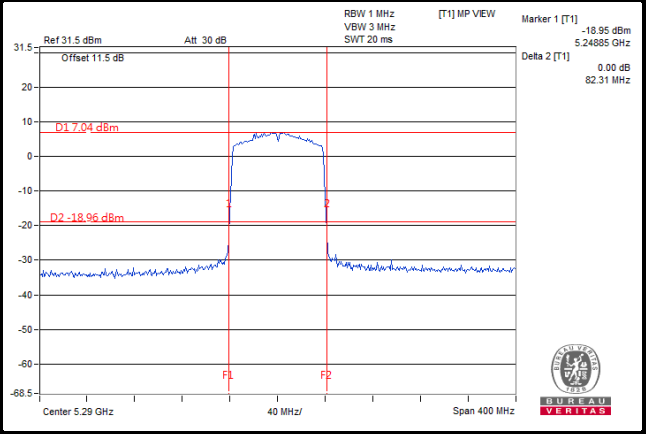
802.11ac (VHT20)



802.11ac (VHT40)

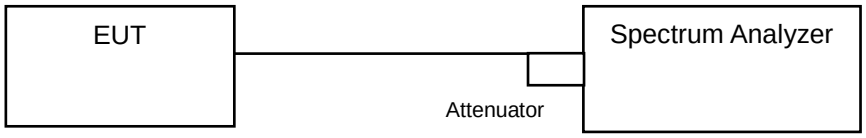


802.11ac (VHT80)



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)	
		Chain 0	Chain 1
36	5180	16.68	16.56
40	5200	16.68	16.56
48	5240	16.68	16.68
52	5260	16.68	16.68
60	5300	16.68	16.68
64	5320	16.68	16.68
100	5500	16.68	16.68
116	5580	16.68	16.68
140	5700	16.68	16.68
144	5720 (U-NII-2C)	13.40	13.40
144	5720 (U-NII-3)	3.28	3.16
149	5745	16.95	17.04
157	5785	17.04	17.40
165	5825	17.64	17.52

802.11ac (VHT20)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	17.64	17.64
40	5200	17.64	17.64
48	5240	17.64	17.64
52	5260	17.64	17.64
60	5300	17.64	17.76
64	5320	17.64	17.64
100	5500	17.64	17.64
116	5580	17.64	17.64
140	5700	17.64	17.64
144	5720 (U-NII-2C)	13.88	13.88
144	5720 (U-NII-3)	3.76	3.76
149	5745	17.88	18.00
157	5785	18.24	18.24
165	5825	18.24	18.36

802.11ac (VHT40)

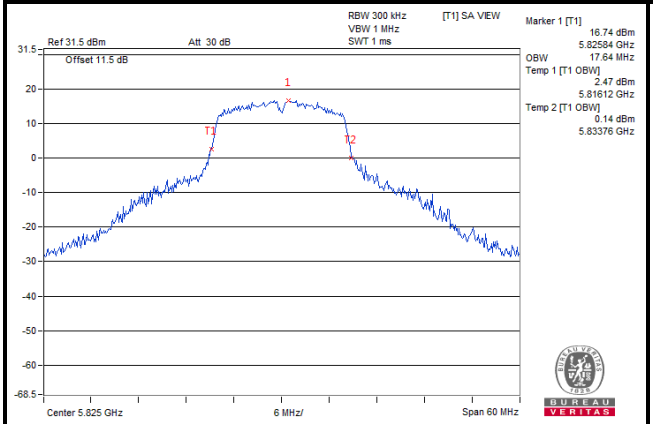
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	36.12	36.12
46	5230	36.36	36.24
54	5270	36.36	36.24
62	5310	36.36	36.24
102	5510	36.36	36.24
110	5550	36.36	36.24
134	5670	36.12	36.36
142	5710 (U-NII-2C)	33.24	33.24
142	5710 (U-NII-3)	3.00	3.00
151	5755	36.96	36.84
159	5795	37.08	37.08

802.11ac (VHT80)

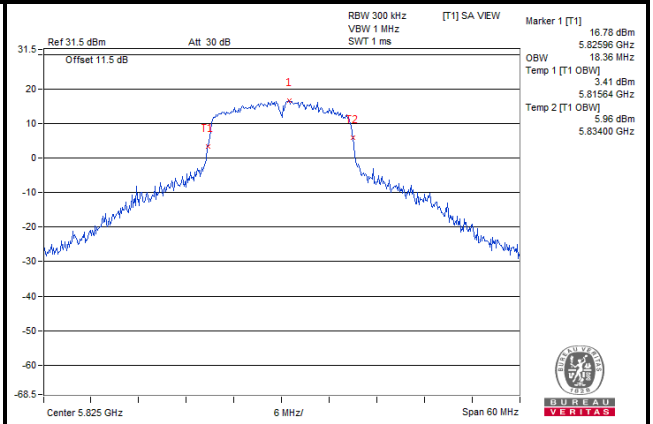
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	75.36	75.36
58	5290	75.36	75.36
106	5530	75.36	75.60
122	5610	75.36	75.36
138	5690 (U-NII-2C)	72.68	72.68
138	5690 (U-NII-3)	2.68	2.68
155	5775	75.60	75.60

Spectrum Plot of Worst Value

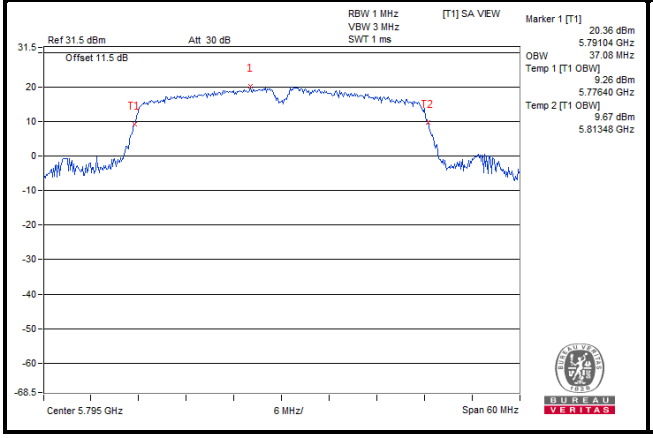
802.11a



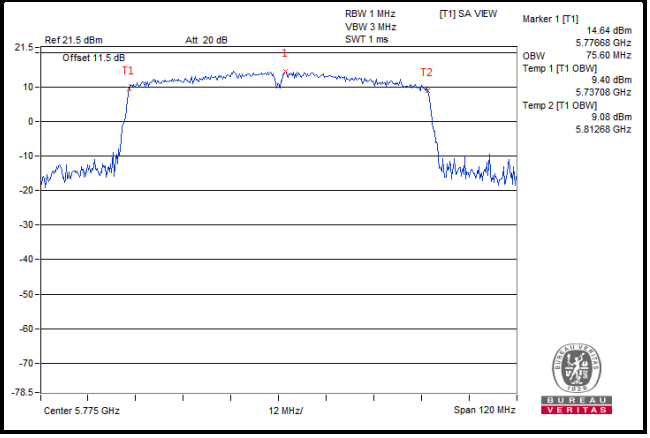
802.11ac (VHT20)



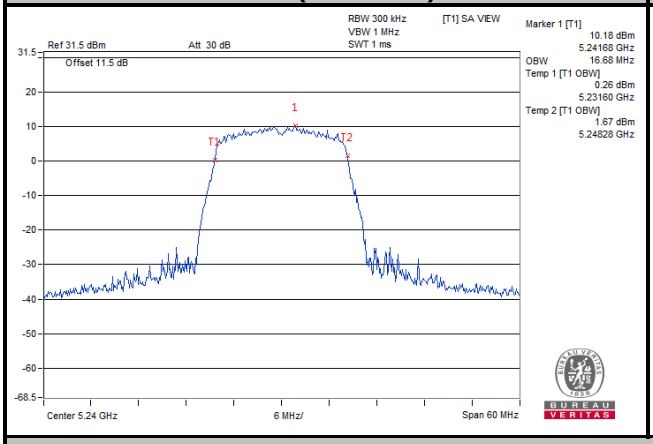
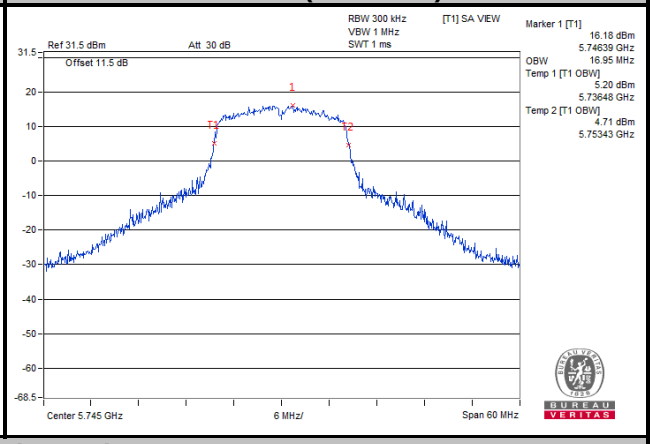
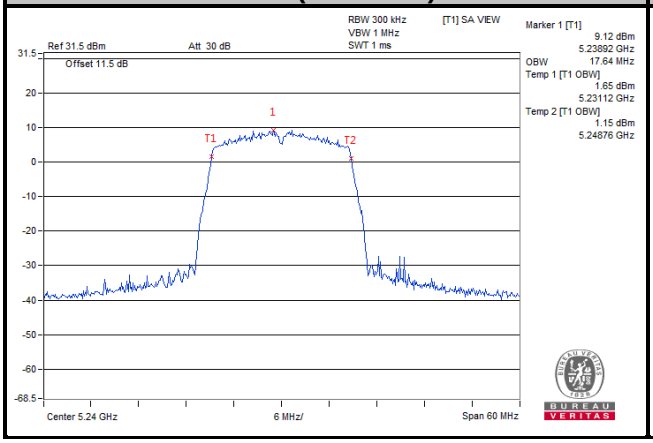
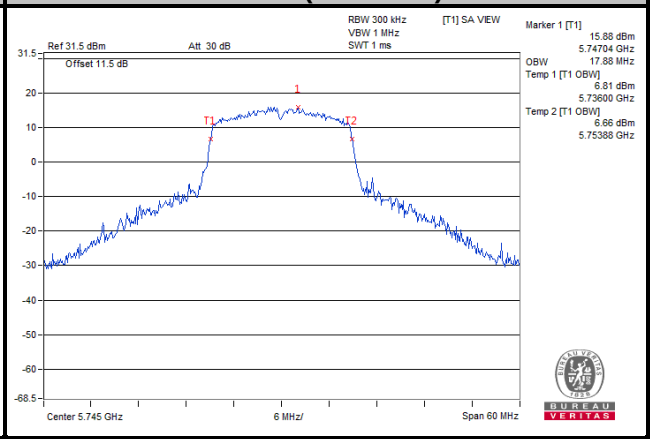
802.11ac (VHT40)



802.11ac (VHT80)

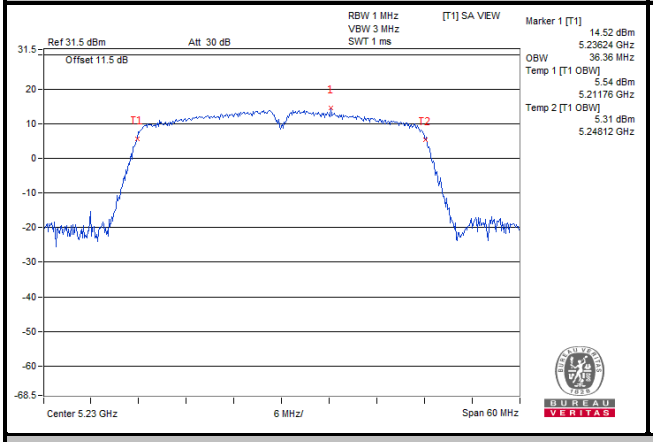


Chain 0

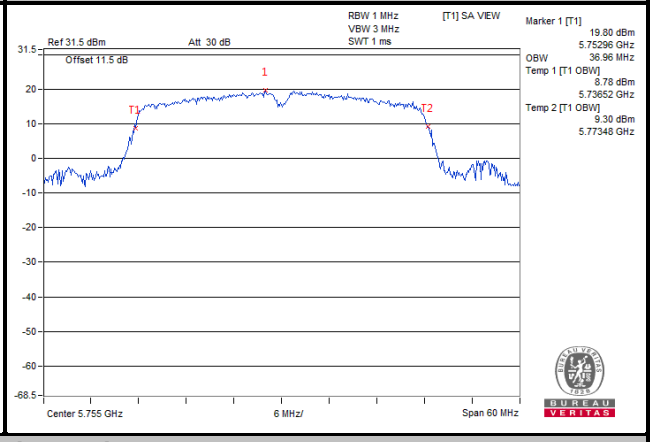
Spectrum Plot for Nearby DFS Band	
802.11a	
Ch 48 (5240 MHz)	Ch 149 (5745 MHz)
	
802.11ac (VHT20)	
Ch 48 (5240 MHz)	Ch 149 (5745 MHz)
	

802.11ac (VHT40)

Ch 46 (5230 MHz)

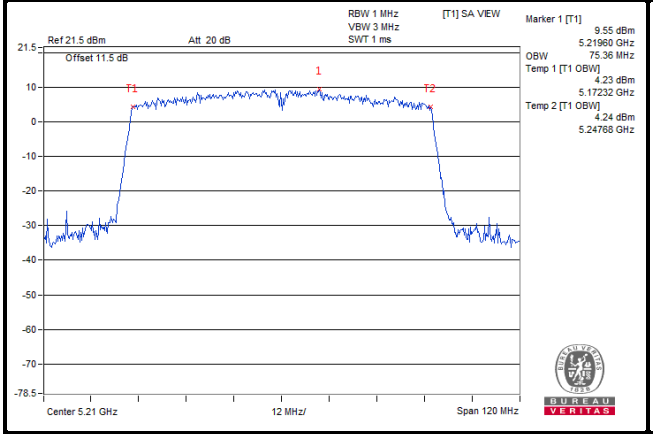


Ch 151 (5755 MHz)

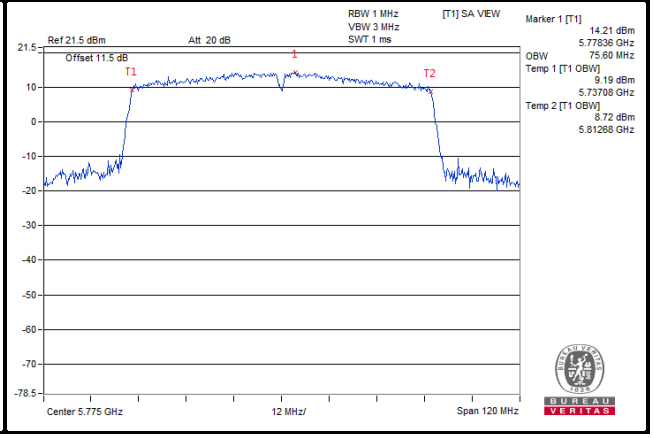


802.11ac (VHT80)

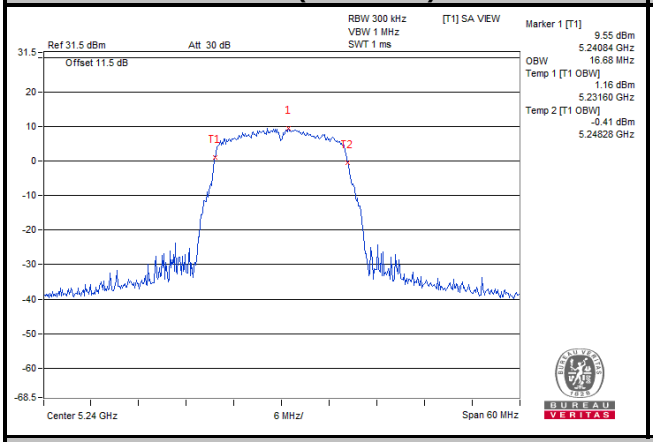
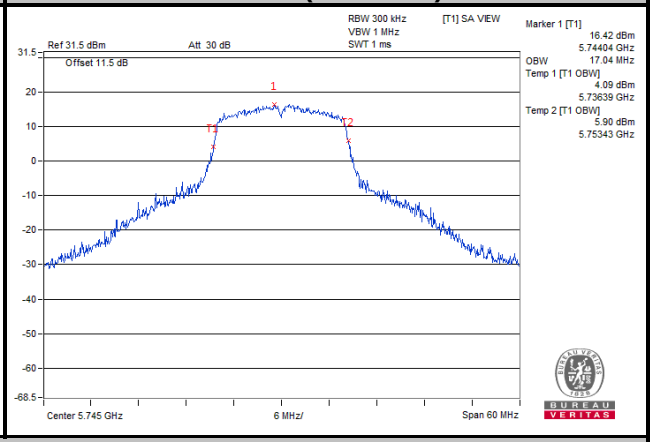
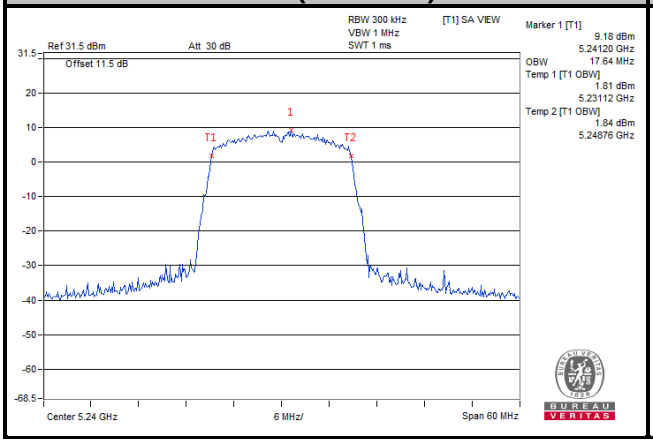
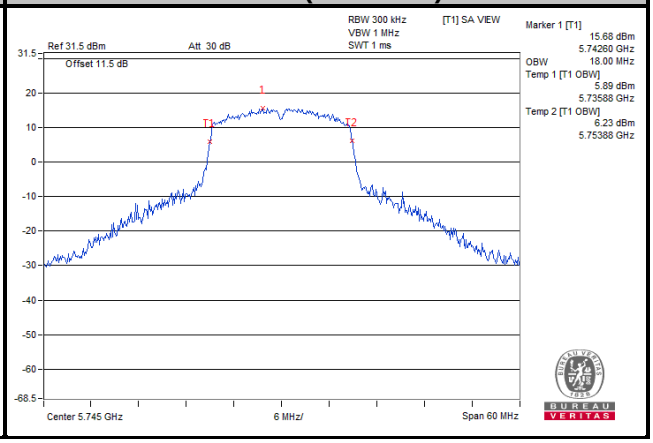
Ch 42 (5210 MHz)

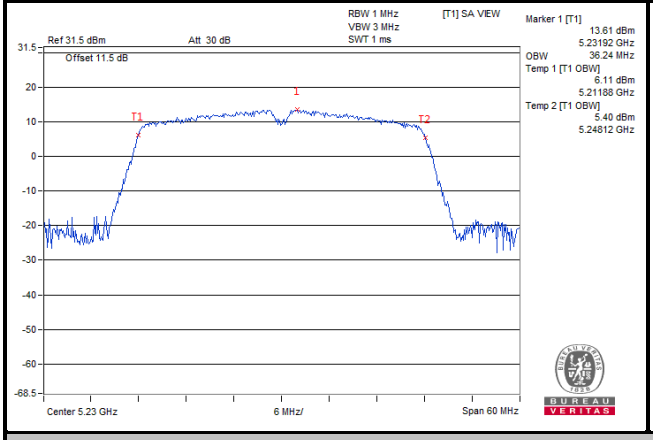
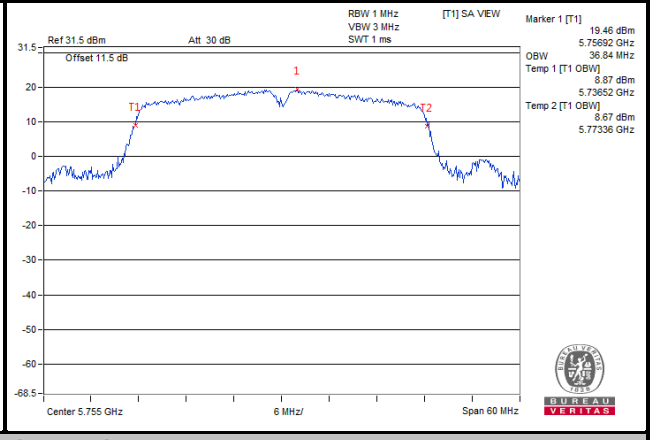
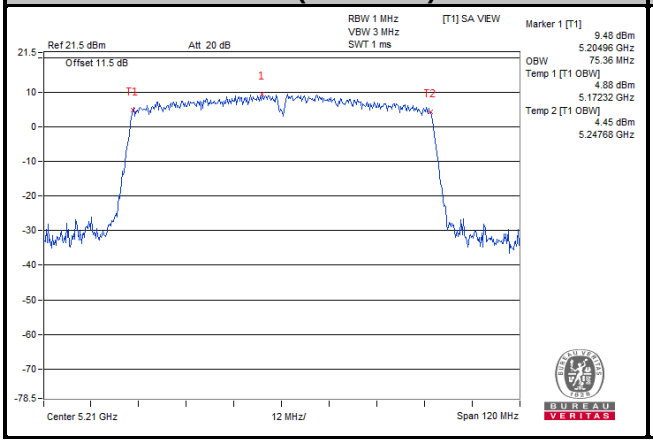
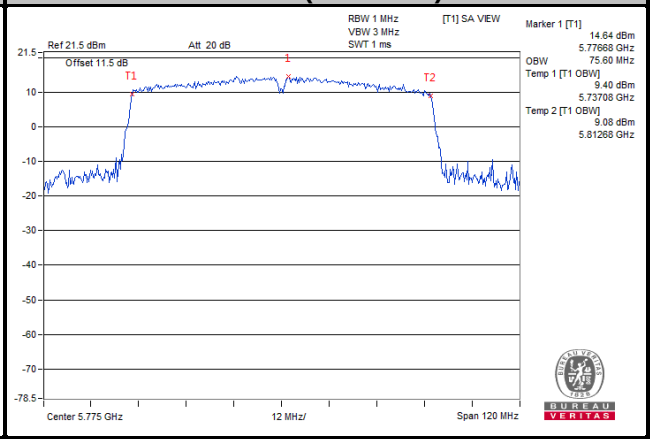


Ch 155 (5775 MHz)



Chain 1

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)
	

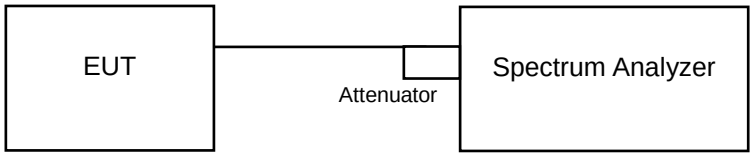
802.11ac (VHT40)	
Ch 46 (5230 MHz)	Ch 151 (5755 MHz)
	
802.11ac (VHT80)	
Ch 42 (5210 MHz)	Ch 155 (5775 MHz)
	

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 (increasing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log(500 kHz / 300 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 (dBm/MHz)		Duty Factor (dB)	Total PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
36	5180	5.93	6.12	0.23	9.27	9.96	Pass
40	5200	5.98	6.21	0.23	9.34	9.96	Pass
48	5240	6.00	6.09	0.23	9.28	9.96	Pass
52	5260	5.99	6.37	0.23	9.42	10.03	Pass
60	5300	6.06	6.55	0.23	9.55	10.03	Pass
64	5320	5.94	6.67	0.23	9.56	10.03	Pass
100	5500	5.11	5.30	0.23	8.45	10.08	Pass
116	5580	6.08	6.40	0.23	9.48	10.08	Pass
140	5700	3.85	4.86	0.23	7.62	10.08	Pass
144	5720 (U-NII-2C)	6.13	6.72	0.23	9.68	10.08	Pass

Note:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.

2.

5180~5240MHz: Directional gain = $10\log[(10^{G1/20} + 10^{G2/20} + \ldots. + 10^{GN/20})^2 / N_{ANT}]$ = 7.04 dBi > 6 dBi , so the power density limit shall be reduced to 11-(7.04-6) = 9.96 dBm.

5260~5320MHz: Directional gain = $10\log[(10^{G1/20} + 10^{G2/20} + \ldots. + 10^{GN/20})^2 / N_{ANT}]$ = 6.97 dBi > 6 dBi , so the power density limit shall be reduced to 11-(6.97-6) = 10.03 dBm.

5500~5700MHz: Directional gain = $10\log[(10^{G1/20} + 10^{G2/20} + \ldots. + 10^{GN/20})^2 / N_{ANT}]$ = 6.92 dBi > 6 dBi , so the power density limit shall be reduced to 11-(6.92-6) = 10.08 dBm.

3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT20)

Channel	Frequency (MHz)	PSD (dBm/MHz)		Duty Factor (dB)	Total PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
36	5180	5.98	6.17	0.47	9.56	9.96	Pass
40	5200	6.21	6.15	0.47	9.66	9.96	Pass
48	5240	5.91	6.39	0.47	9.64	9.96	Pass
52	5260	6.08	6.44	0.47	9.75	10.03	Pass
60	5300	5.91	6.61	0.47	9.76	10.03	Pass
64	5320	5.92	6.54	0.47	9.72	10.03	Pass
100	5500	5.79	5.94	0.47	9.35	10.08	Pass
116	5580	5.82	6.12	0.47	9.46	10.08	Pass
140	5700	5.09	5.99	0.47	9.05	10.08	Pass
144	5720 (U-NII-2C)	5.90	6.53	0.47	9.71	10.08	Pass

Note:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.

2.

5180~5240MHz: Directional gain = $10\log[(10^{G1/20} + 10^{G2/20} + \ldots. + 10^{GN/20})^2 / N_{ANT}] = 7.04$ dBi > 6 dBi , so the power density limit shall be reduced to 11-(7.04-6) = 9.96 dBm.

5260~5320MHz: Directional gain = $10\log[(10^{G1/20} + 10^{G2/20} + \ldots. + 10^{GN/20})^2 / N_{ANT}] = 6.97$ dBi > 6 dBi , so the power density limit shall be reduced to 11-(6.97-6) = 10.03 dBm.

5500~5700MHz: Directional gain = $10\log[(10^{G1/20} + 10^{G2/20} + \ldots. + 10^{GN/20})^2 / N_{ANT}] = 6.92$ dBi > 6 dBi , so the power density limit shall be reduced to 11-(6.92-6) = 10.08 dBm.

3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT40)

Channel	Frequency (MHz)	PSD (dBm/MHz)		Duty Factor (dB)	Total PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
38	5190	2.98	2.92	0.82	6.78	9.96	Pass
46	5230	4.10	4.78	0.82	8.29	9.96	Pass
54	5270	2.97	3.49	0.82	7.07	10.03	Pass
62	5310	1.57	2.33	0.82	5.80	10.03	Pass
102	5510	1.31	1.11	0.82	5.04	10.08	Pass
110	5550	3.16	3.30	0.82	7.06	10.08	Pass
134	5670	2.91	3.63	0.82	7.12	10.08	Pass
142	5710 (U-NII-2C)	2.95	3.98	0.82	7.33	10.08	Pass

Note:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.

2.

5180~5240MHz: Directional gain = $10\log[(10^{G1/20} + 10^{G2/20} + \ldots. + 10^{GN/20})^2 / N_{ANT}] = 7.04$ dBi > 6 dBi , so the power density limit shall be reduced to 11-(7.04-6) = 9.96 dBm.

5260~5320MHz: Directional gain = $10\log[(10^{G1/20} + 10^{G2/20} + \ldots. + 10^{GN/20})^2 / N_{ANT}] = 6.97$ dBi > 6 dBi , so the power density limit shall be reduced to 11-(6.97-6) = 10.03 dBm.

5500~5700MHz: Directional gain = $10\log[(10^{G1/20} + 10^{G2/20} + \ldots. + 10^{GN/20})^2 / N_{ANT}] = 6.92$ dBi > 6 dBi , so the power density limit shall be reduced to 11-(6.92-6) = 10.08 dBm.

3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT80)

Channel	Frequency (MHz)	PSD (dBm/MHz)		Duty Factor (dB)	Total PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
42	5210	-0.24	0.55	1.41	4.60	9.96	Pass
58	5290	-1.33	-0.84	1.41	3.35	10.03	Pass
106	5530	-1.67	-1.68	1.41	2.75	10.08	Pass
122	5610	-0.01	0.54	1.41	4.70	10.08	Pass
138	5690 (U-NII-2C)	-1.08	-0.19	1.41	3.81	10.08	Pass

Note:

1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.

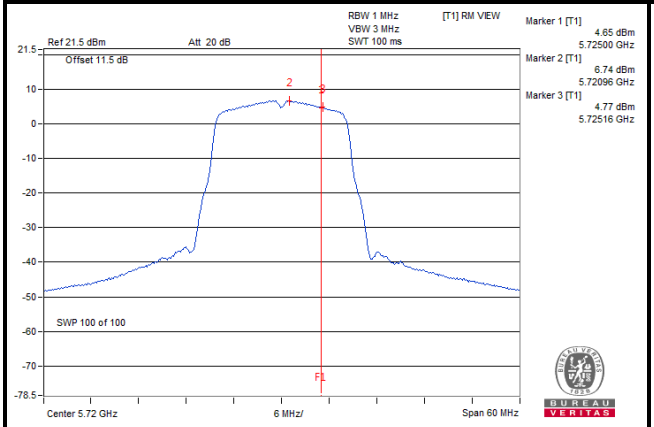
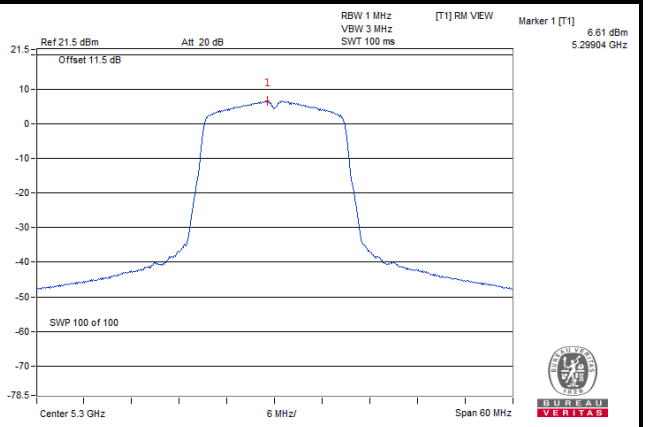
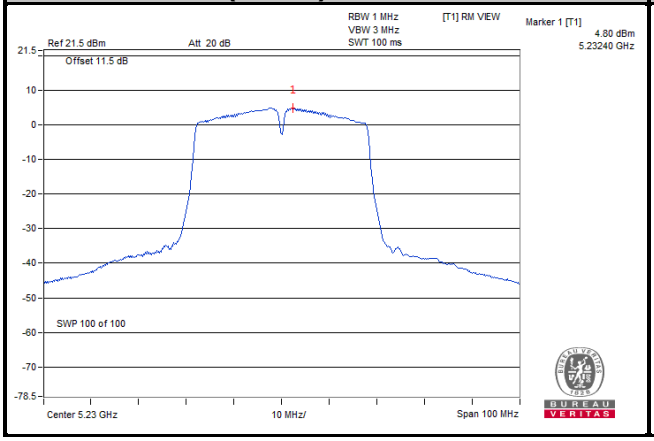
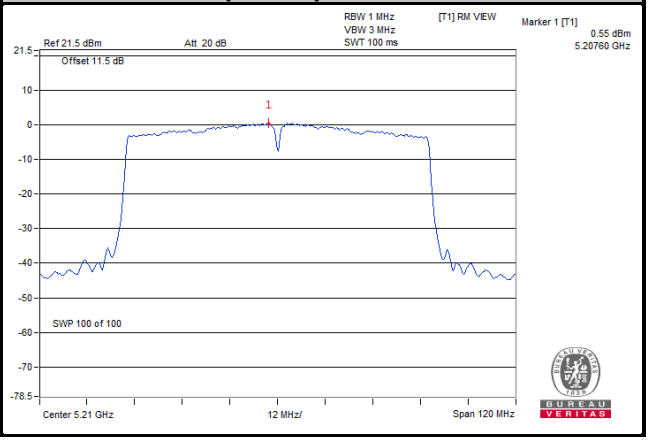
2.

5180~5240MHz: Directional gain = $10\log[(10^{G1/20} + 10^{G2/20} + \ldots. + 10^{GN/20})^2 / N_{ANT}] = 7.04$ dBi > 6 dBi , so the power density limit shall be reduced to 11-(7.04-6) = 9.96 dBm.

5260~5320MHz: Directional gain = $10\log[(10^{G1/20} + 10^{G2/20} + \ldots. + 10^{GN/20})^2 / N_{ANT}] = 6.97$ dBi > 6 dBi , so the power density limit shall be reduced to 11-(6.97-6) = 10.03 dBm.

5500~5700MHz: Directional gain = $10\log[(10^{G1/20} + 10^{G2/20} + \ldots. + 10^{GN/20})^2 / N_{ANT}] = 6.92$ dBi > 6 dBi , so the power density limit shall be reduced to 11-(6.92-6) = 10.08 dBm.

3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value	
802.11a / Chain 1 / CH 144	802.11ac (VHT20) / Chain 1 / CH 60
	
802.11ac (VHT40) / Chain 1 / CH 46	802.11ac (VHT80) / Chain 1 / CH 42
	

For U-NII-3 Band

802.11a

TX Chain	Channel	Frequency (MHz)	PSD		10 log (N=2) dB	Duty Factor (dB)	Total PSD with Duty Factor (dBm/500 kHz)	Limit (dBm/500 kHz)	Pass / Fail
			(dBm/300 kHz)	(dBm/500 kHz)					
0	144	5720 (U-NII-3)	-5.1	-2.88	3.01	0.23	0.36	28.79	Pass
	149	5745	3.98	6.2	3.01	0.23	9.44	28.79	Pass
	157	5785	4.51	6.73	3.01	0.23	9.97	28.79	Pass
	165	5825	4.86	7.08	3.01	0.23	10.32	28.79	Pass
1	144	5720 (U-NII-3)	-4.86	-2.64	3.01	0.23	0.6	28.79	Pass
	149	5745	4.05	6.27	3.01	0.23	9.51	28.79	Pass
	157	5785	4.6	6.82	3.01	0.23	10.06	28.79	Pass
	165	5825	4.98	7.2	3.01	0.23	10.44	28.79	Pass

Note:

1. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density.
2. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2 / N_{ANT}$]= 7.21 > 6 dBi , so the power density limit shall be reduced to 30-(7.21-6) = 28.79 dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT20)

TX Chain	Channel	Frequency (MHz)	PSD		10 log (N=2) dB	Duty Factor (dB)	Total PSD with Duty Factor (dBm/500 kHz)	Limit (dBm/500 kHz)	Pass / Fail
			(dBm/300 kHz)	(dBm/500 kHz)					
0	144	5720 (U-NII-3)	-6.02	-3.8	3.01	0.47	-0.32	28.79	Pass
	149	5745	3.69	5.91	3.01	0.47	9.39	28.79	Pass
	157	5785	4.42	6.64	3.01	0.47	10.12	28.79	Pass
	165	5825	4.88	7.1	3.01	0.47	10.58	28.79	Pass
1	144	5720 (U-NII-3)	-5.91	-3.69	3.01	0.47	-0.21	28.79	Pass
	149	5745	4.1	6.32	3.01	0.47	9.8	28.79	Pass
	157	5785	4.59	6.81	3.01	0.47	10.29	28.79	Pass
	165	5825	4.62	6.84	3.01	0.47	10.32	28.79	Pass

Note:

1. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density.
2. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2 / N_{ANT}$]= 7.21 > 6 dBi , so the power density limit shall be reduced to 30-(7.21-6) = 28.79 dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT40)

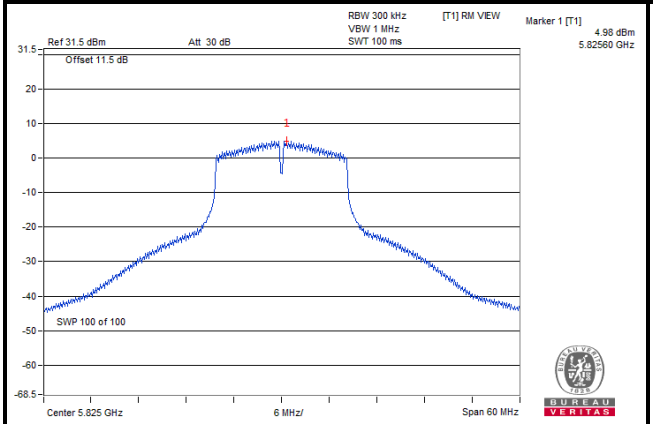
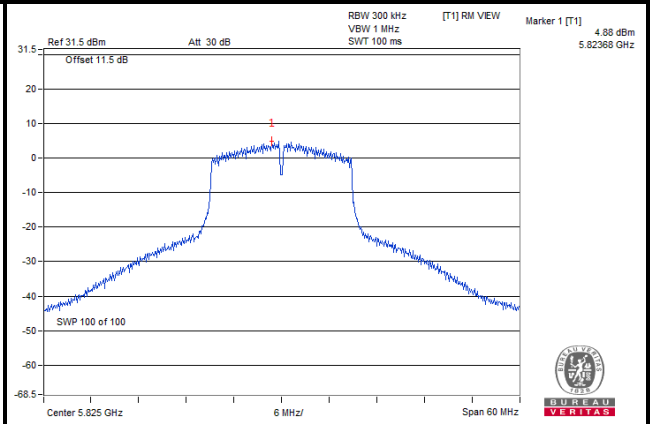
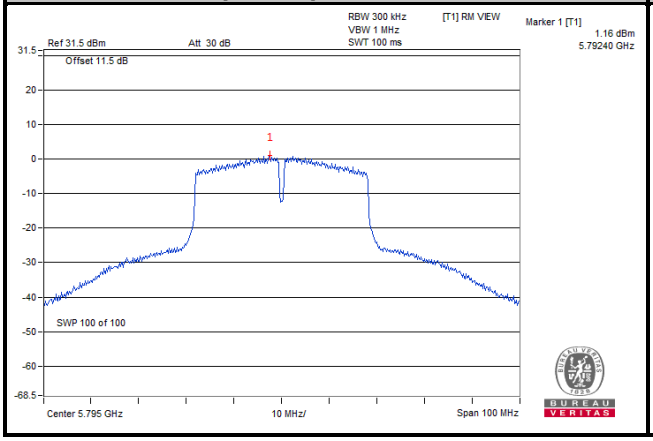
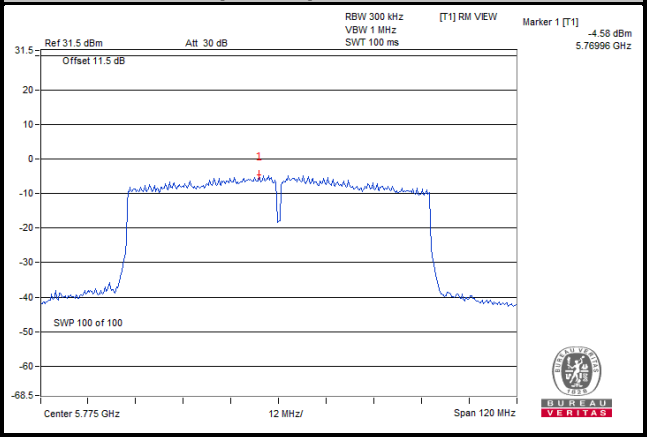
TX Chain	Channel	Frequency (MHz)	PSD		10 log (N=2) dB	Duty Factor (dB)	Total PSD with Duty Factor (dBm/500 kHz)	Limit (dBm/500 kHz)	Pass / Fail
			(dBm/300 kHz)	(dBm/500 kHz)					
0	142	5710 (U-NII-3)	-9.9	-7.68	3.01	0.82	-3.85	28.79	Pass
	151	5755	0.53	2.75	3.01	0.82	6.58	28.79	Pass
	159	5795	1.16	3.38	3.01	0.82	7.21	28.79	Pass
1	142	5710 (U-NII-3)	-9.81	-7.59	3.01	0.82	-3.76	28.79	Pass
	151	5755	0.3	2.52	3.01	0.82	6.35	28.79	Pass
	159	5795	0.77	2.99	3.01	0.82	6.82	28.79	Pass

Note:
1. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density.
2. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2 / N_{ANT}$]= 7.21 > 6 dBi , so the power density limit shall be reduced to 30-(7.21-6) = 28.79 dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT80)

TX Chain	Channel	Frequency (MHz)	PSD		10 log (N=2) dB	Duty Factor (dB)	Total PSD with Duty Factor (dBm/500 kHz)	Limit (dBm/500 kHz)	Pass / Fail
			(dBm/300 kHz)	(dBm/500 kHz)					
0	138	5690 (U-NII-3)	-13.53	-11.31	3.01	1.41	-6.89	28.79	Pass
	155	5775	-4.96	-2.74	3.01	1.41	1.68	28.79	Pass
1	138	5690 (U-NII-3)	-13.6	-11.38	3.01	1.41	-6.96	28.79	Pass
	155	5775	-4.58	-2.36	3.01	1.41	2.06	28.79	Pass

Note:
1. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density.
2. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2 / N_{ANT}$]= 7.21 > 6 dBi , so the power density limit shall be reduced to 30-(7.21-6) = 28.79 dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

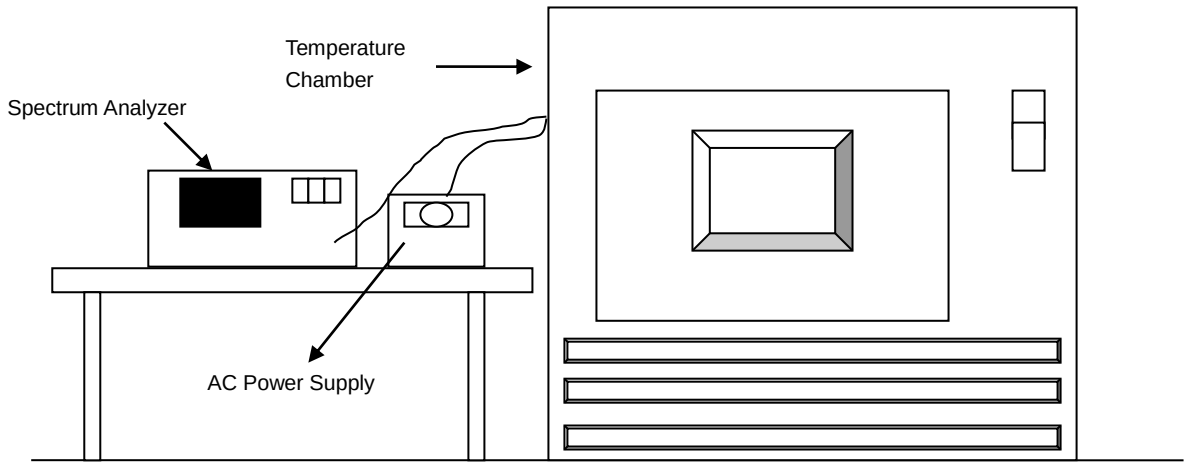
Spectrum Plot of Worst Value	
802.11a / Chain 1 / CH 165	**802.11ac (VHT20) / Chain 0 / CH 165**
	
802.11ac (VHT40) / Chain 0 / CH 159	**802.11ac (VHT80) / Chain 1 / CH 155**
	

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

a. The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
b. Turn the EUT on and couple its output to a spectrum analyzer.
c. Turn the EUT off and set the chamber to the highest temperature specified.
d. 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.
e. Repeat step (d) with the temperature chamber set to the next desired temperature until measurements down to the lowest specified temperature have been completed.
f. 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. (℃)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result
49	120	5180.0132	PASS	5180.009	PASS	5180.0109	PASS	5180.0102	PASS
40	120	5180.0156	PASS	5180.0147	PASS	5180.018	PASS	5180.0164	PASS
30	120	5180.0148	PASS	5180.0163	PASS	5180.0162	PASS	5180.0148	PASS
20	120	5180.011	PASS	5180.012	PASS	5180.0128	PASS	5180.0113	PASS
10	120	5180.0057	PASS	5180.0046	PASS	5180.005	PASS	5180.0053	PASS
0	120	5180.0012	PASS	5180.0045	PASS	5180.0024	PASS	5180.0058	PASS

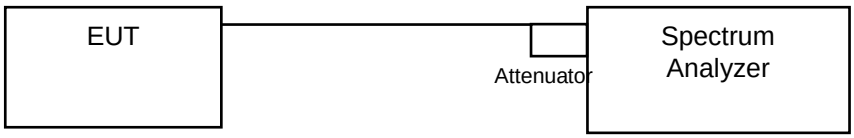
Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
Temp. (℃)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result
20	138	5180.0118	PASS	5180.013	PASS	5180.0134	PASS	5180.0122	PASS
	120	5180.011	PASS	5180.012	PASS	5180.0128	PASS	5180.0113	PASS
	102	5180.0113	PASS	5180.0115	PASS	5180.0125	PASS	5180.011	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

a. Set resolution bandwidth (RBW) = 100 kHz
b. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.
c. Trace mode = max hold.
d. Sweep = auto couple.
e. 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
		Chain 0	Chain 1		
144	5720 (U-NII-3)	2.71	2.73	0.5	Pass
149	5745	15.14	15.38	0.5	Pass
157	5785	15.19	15.49	0.5	Pass
165	5825	15.19	15.35	0.5	Pass

802.11ac (VHT20)

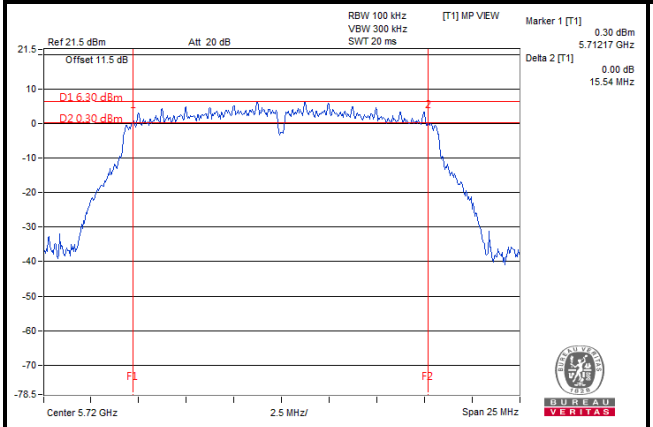
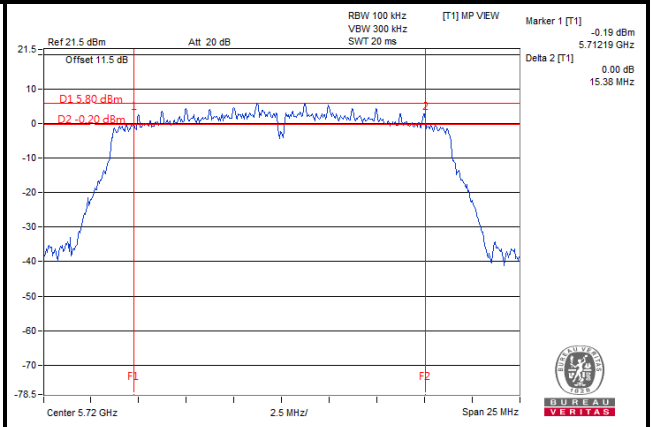
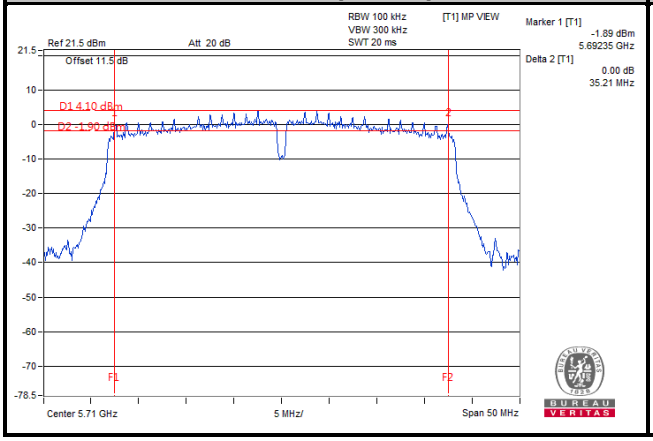
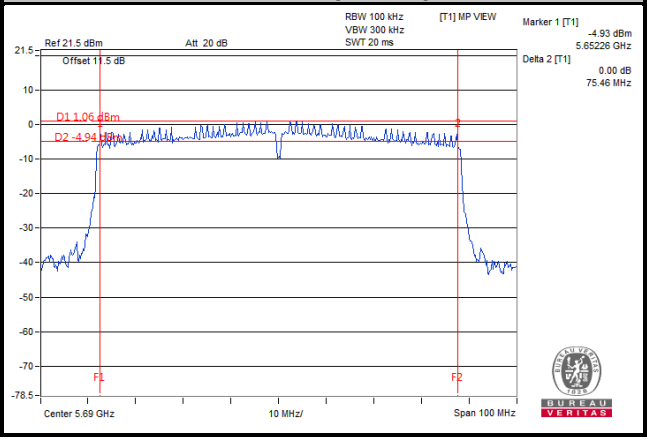
Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
144	5720 (U-NII-3)	2.57	2.75	0.5	Pass
149	5745	15.19	15.19	0.5	Pass
157	5785	15.18	15.19	0.5	Pass
165	5825	15.19	15.17	0.5	Pass

802.11ac (VHT40)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
142	5710 (U-NII-3)	2.56	2.57	0.5	Pass
151	5755	35.20	35.19	0.5	Pass
159	5795	35.19	35.19	0.5	Pass

802.11ac (VHT80)

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
138	5690 (U-NII-3)	2.72	2.72	0.5	Pass
155	5775	75.41	75.45	0.5	Pass

Spectrum Plot of Worst Value	
802.11a	802.11ac (VHT20)
	
802.11ac (VHT40)	802.11ac (VHT80)
	

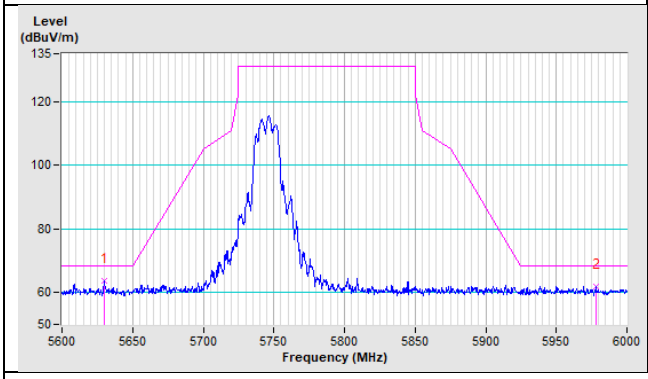
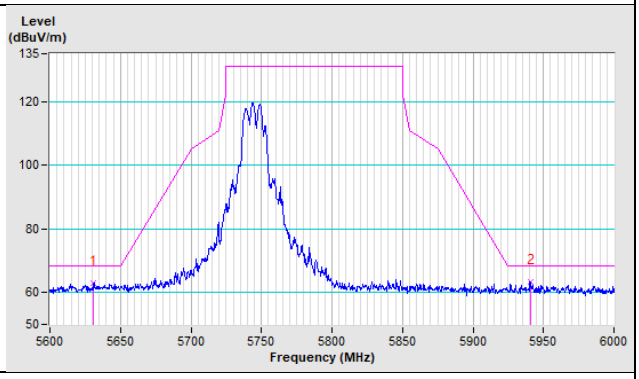
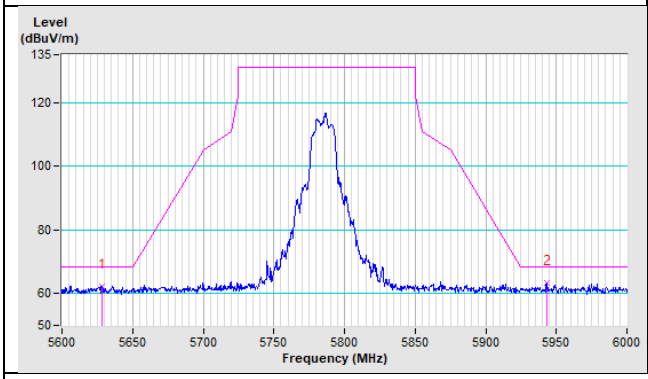
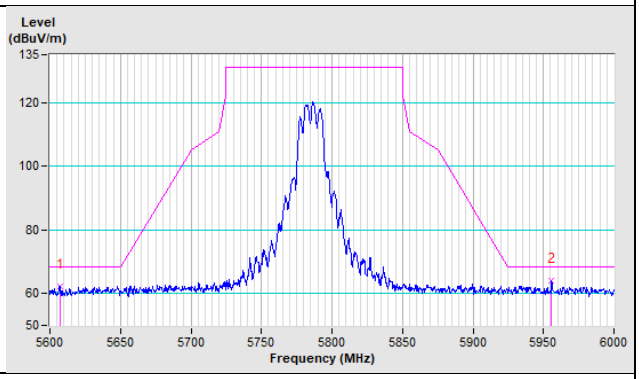
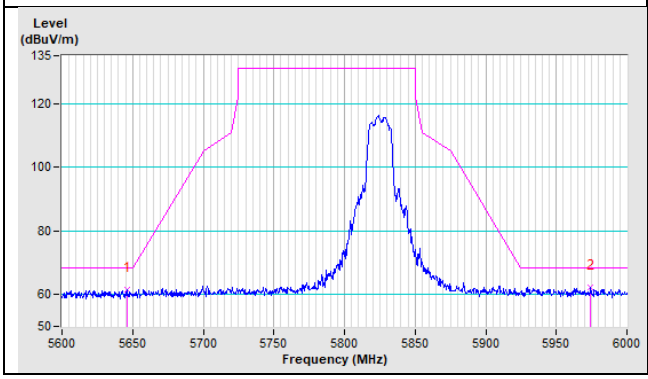
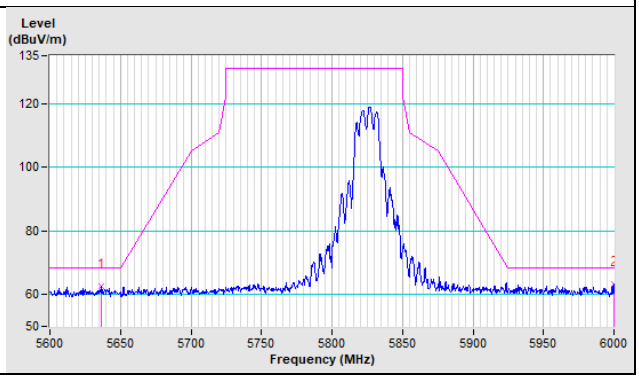
Note:
For Ch144 (UNII-3 Band): The 6 dB bandwidth above 5725 MHz = Marker 1 + Delta 2 – 5725 MHz
For Ch142 (UNII-3 Band): The 6 dB bandwidth above 5725 MHz = Marker 1 + Delta 2 – 5725 MHz

5 Pictures of Test Arrangements

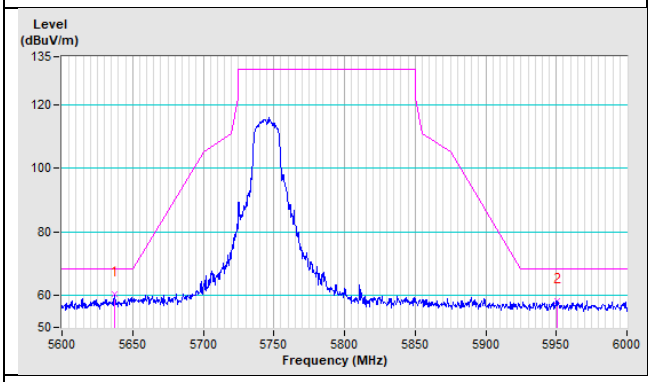
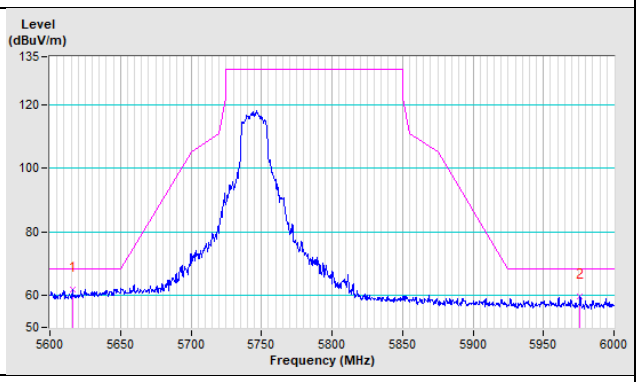
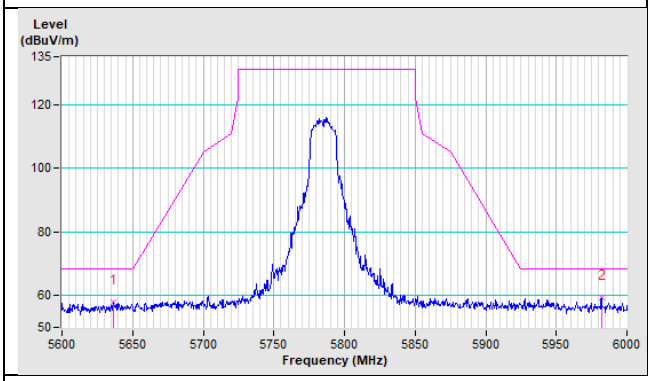
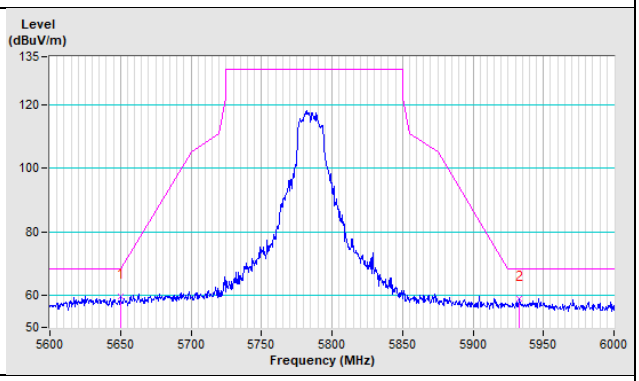
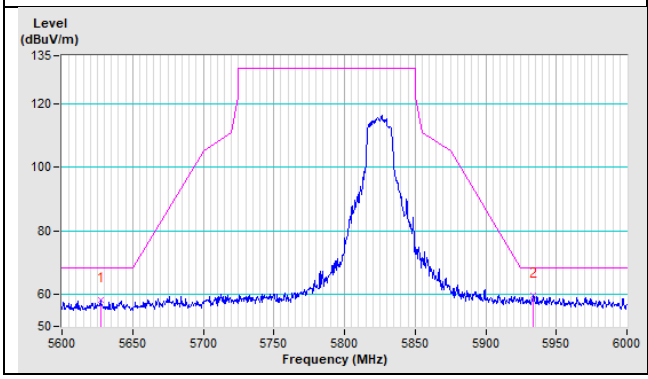
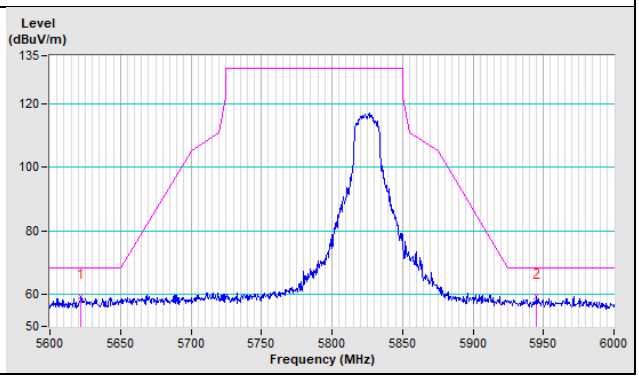
Please refer to the attached file (Test Setup Photo).

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

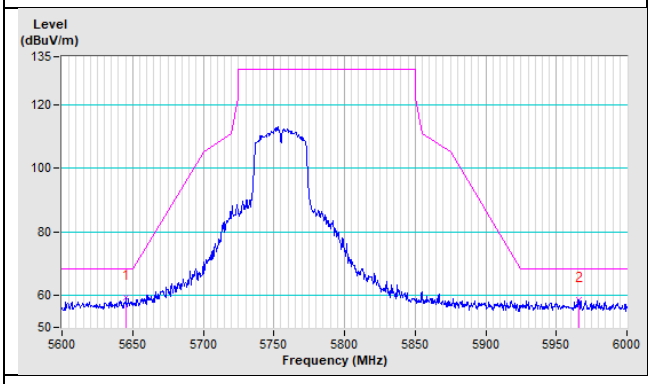
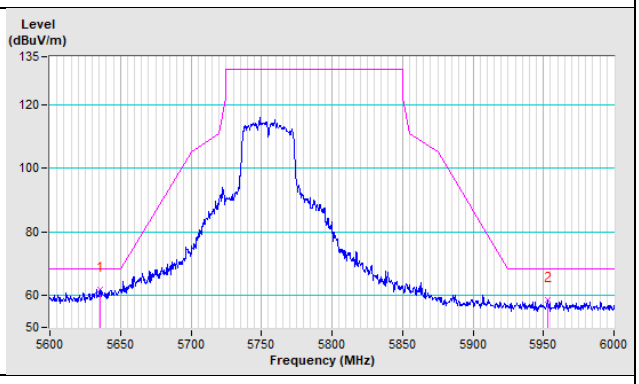
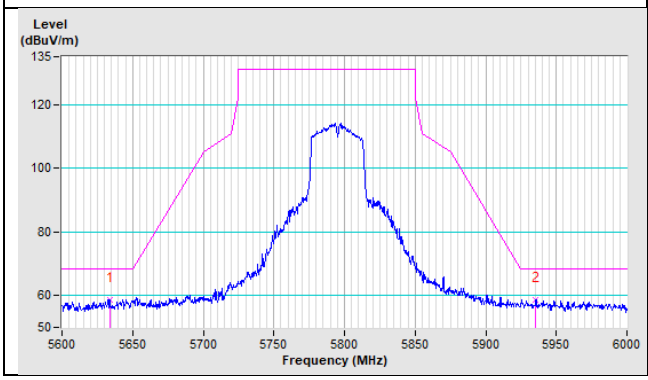
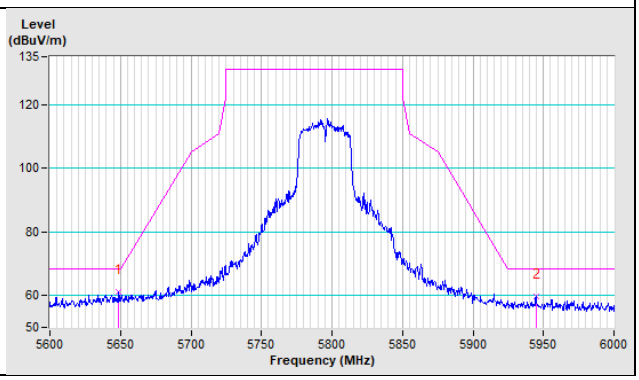
802.11a

CH 149	5745 MHz
Horizontal	Vertical
	
CH 157	5785 MHz
Horizontal	Vertical
	
CH 165	5825 MHz
Horizontal	Vertical
	

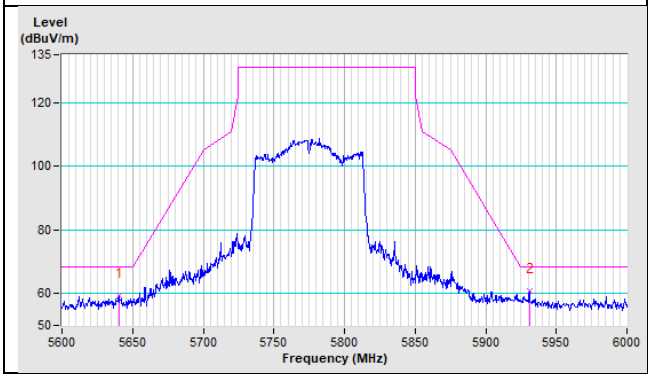
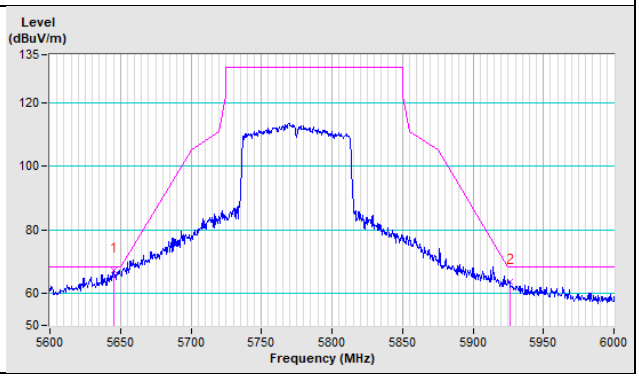
802.11ac (VHT20)

CH 149	5745 MHz
Horizontal	Vertical
	
CH 157	5785 MHz
Horizontal	Vertical
	
CH 165	5825 MHz
Horizontal	Vertical
	

802.11ac (VHT40)

CH 151 5755 MHz	
Horizontal	Vertical
	
CH 159 5795 MHz	
Horizontal	Vertical
	

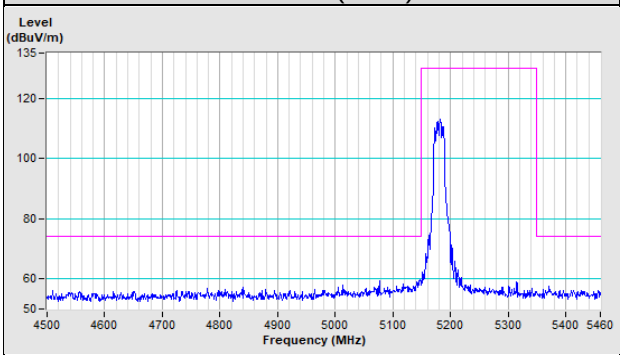
802.11ac (VHT80)

CH 155 5775 MHz	
Horizontal	Vertical
	

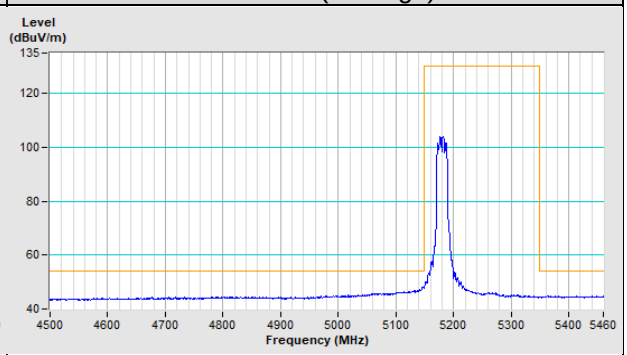
Annex B- Band Edge Measurement

802.11a Channel 36

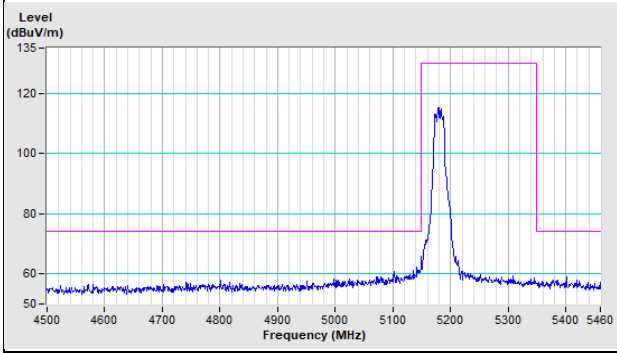
Horizontal (Peak)



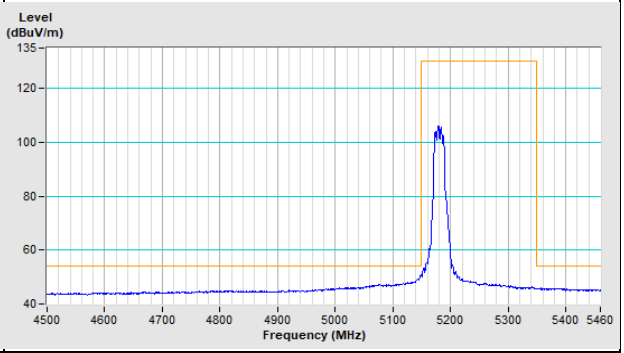
Horizontal (Average)



Vertical (Peak)

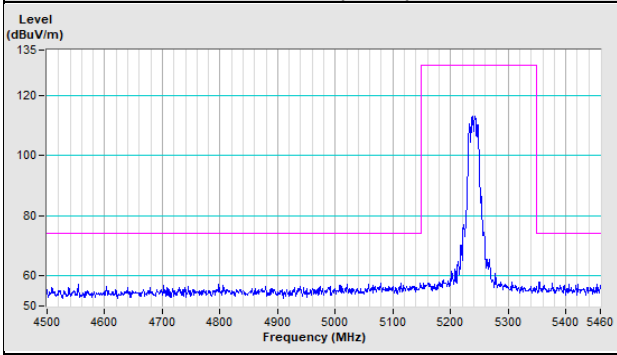


Vertical (Average)

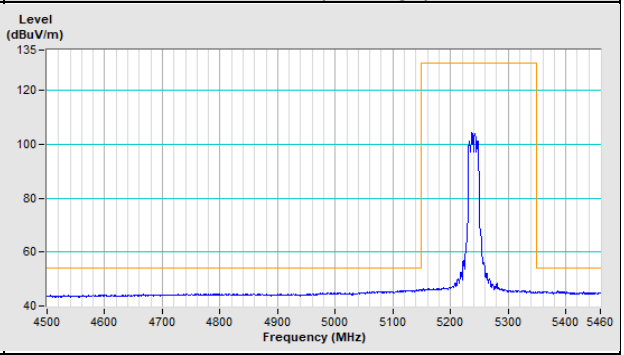


802.11a Channel 48

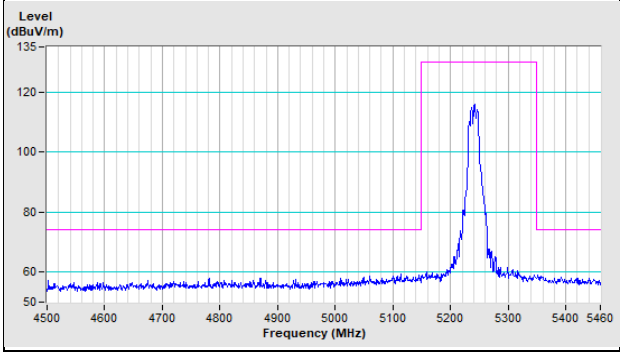
Horizontal (Peak)



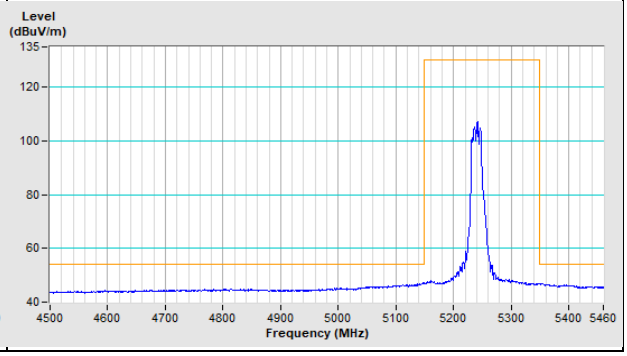
Horizontal (Average)

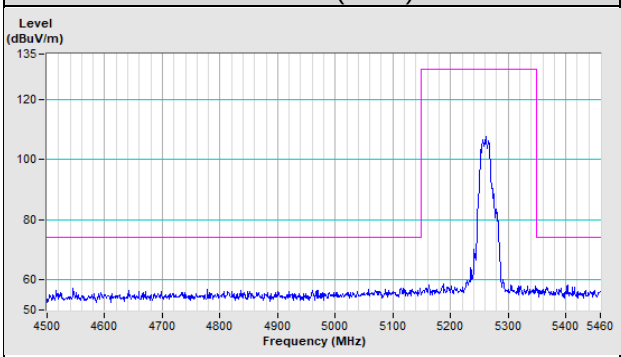
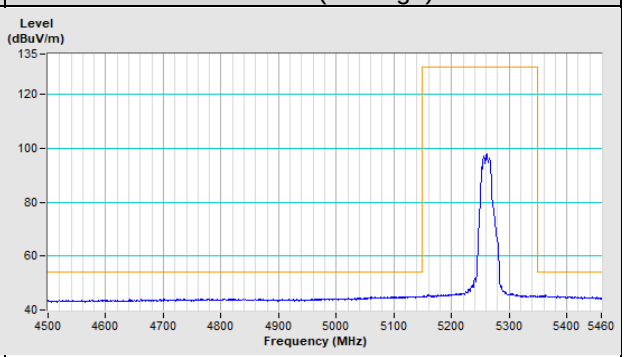
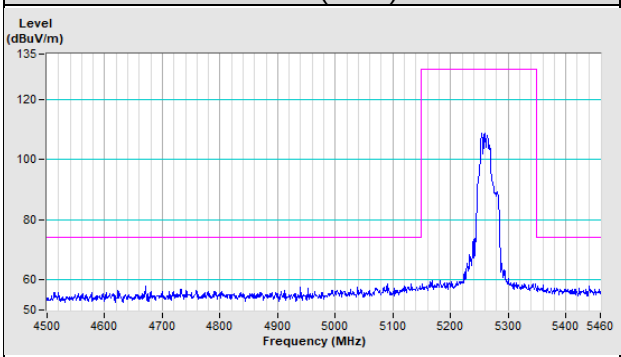
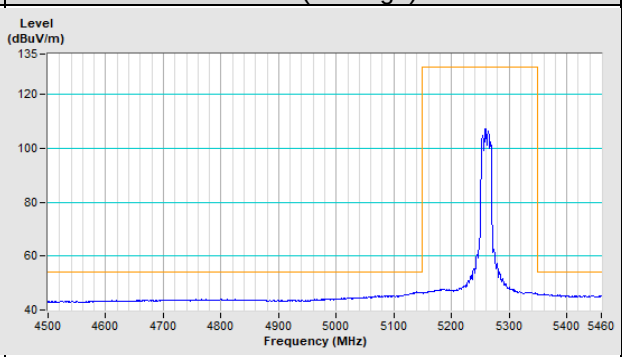


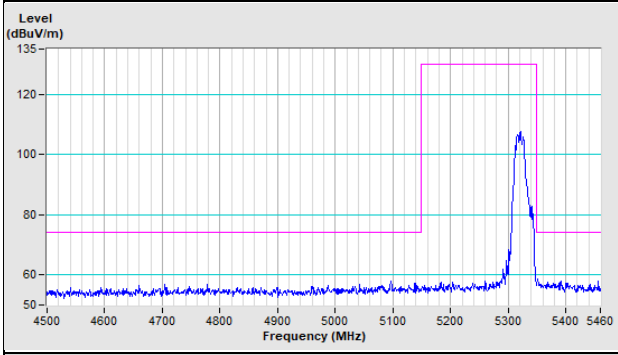
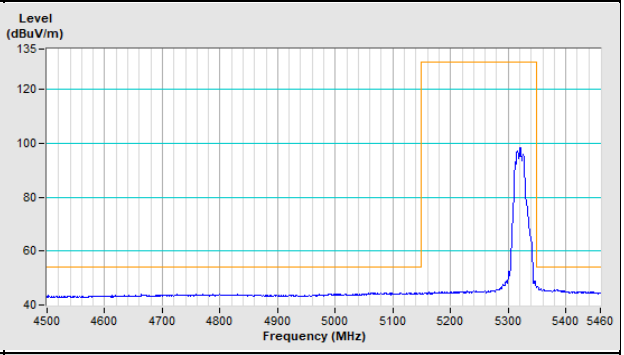
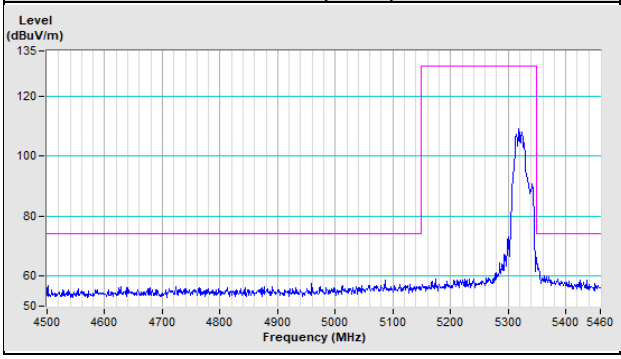
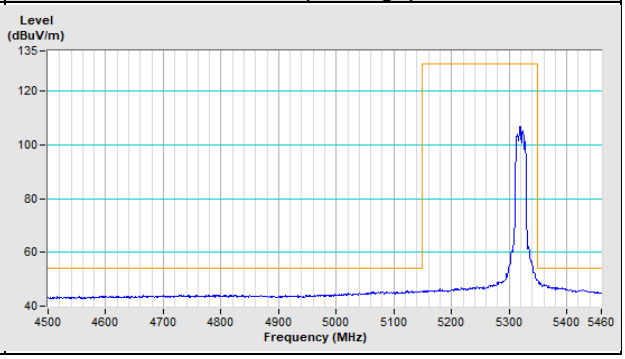
Vertical (Peak)

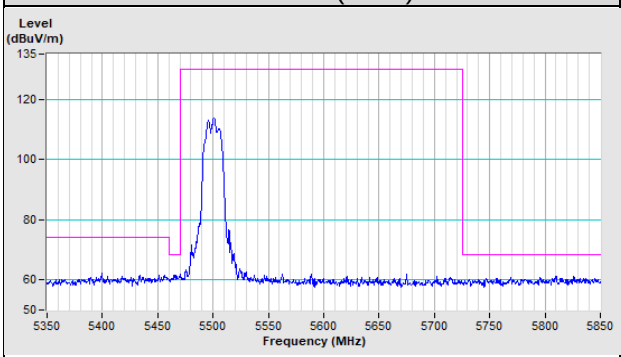
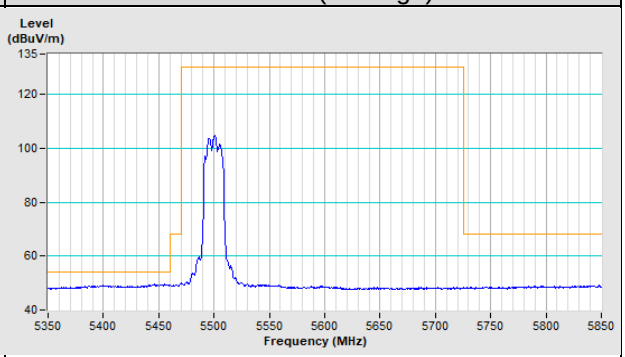
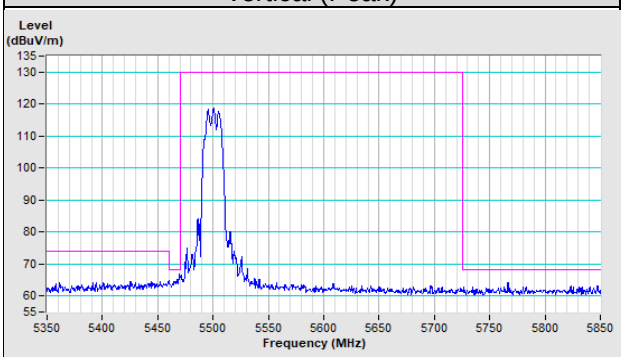
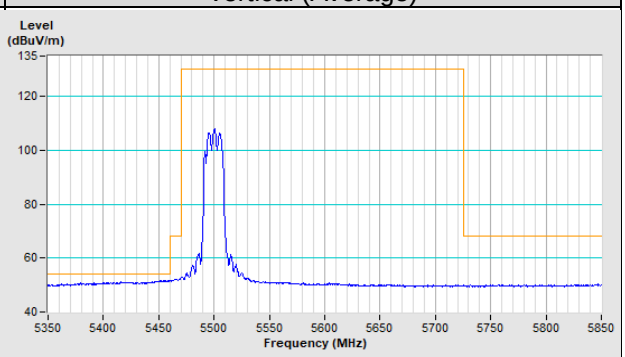


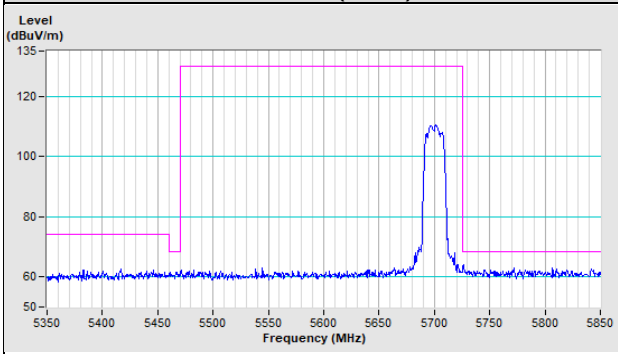
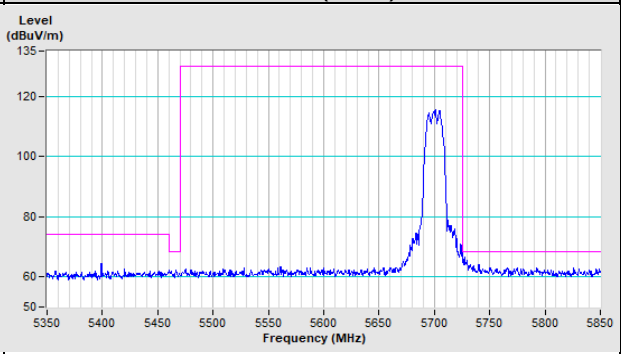
Vertical (Average)

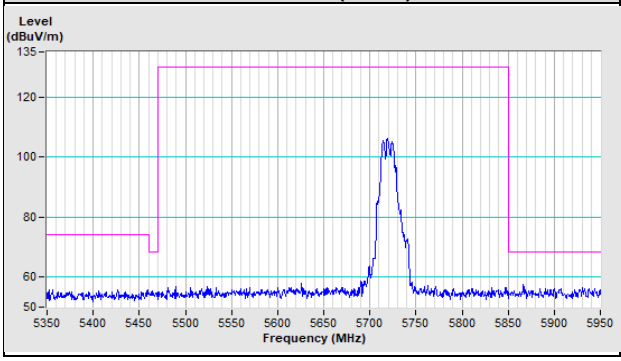
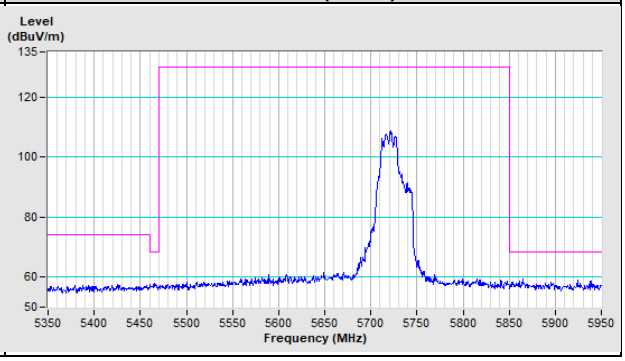


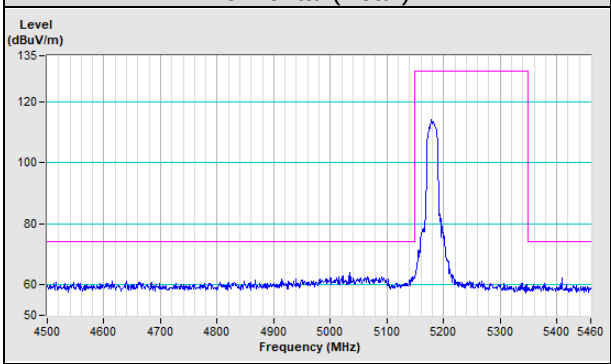
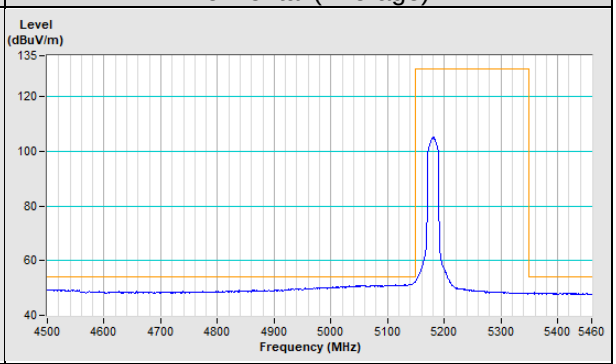
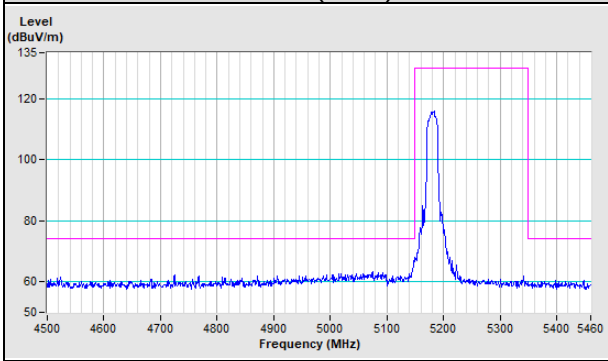
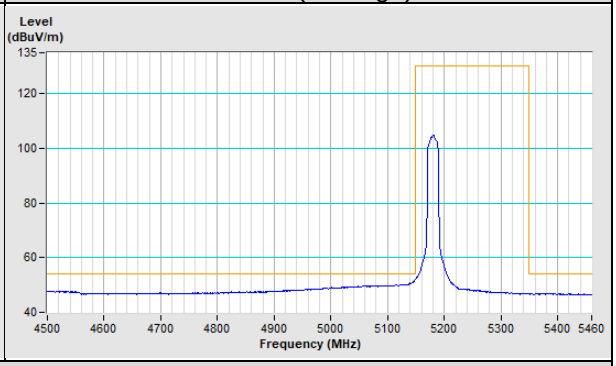
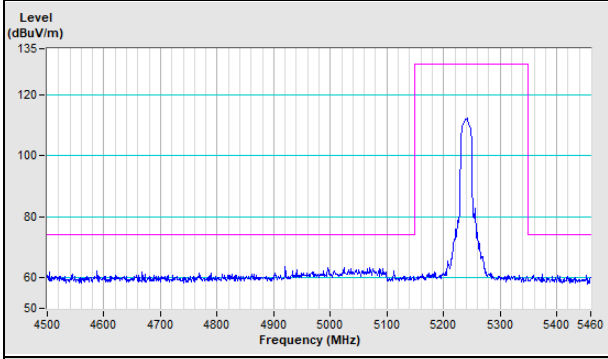
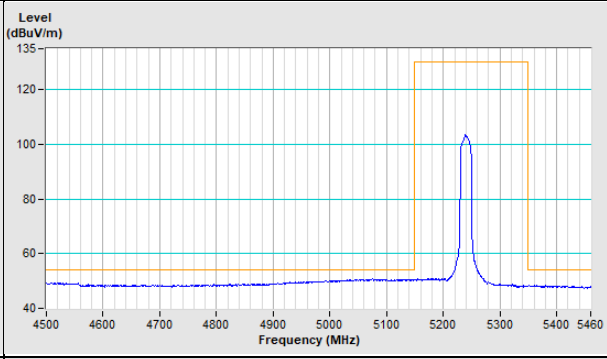
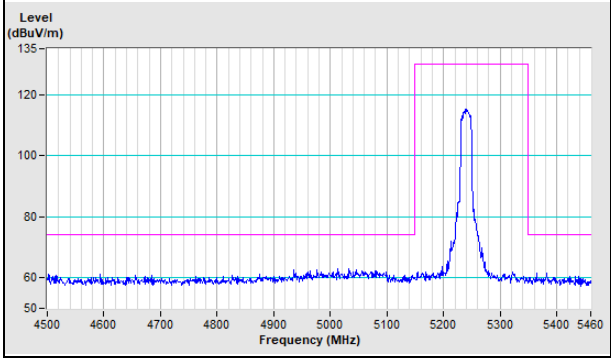
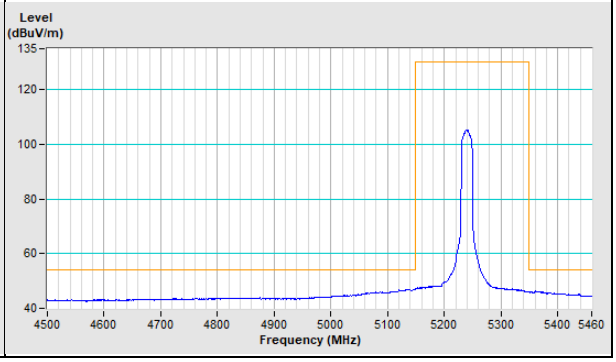
802.11a Channel 52	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

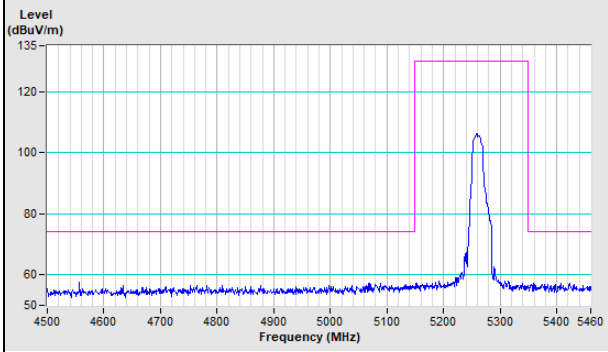
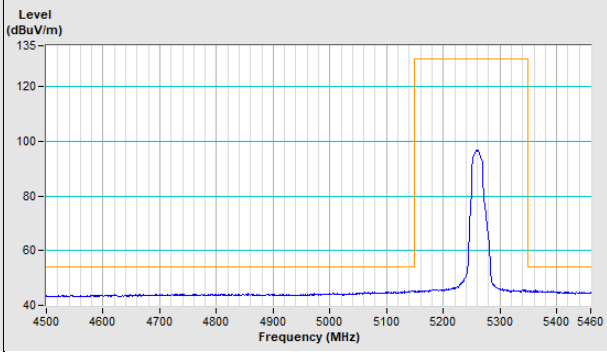
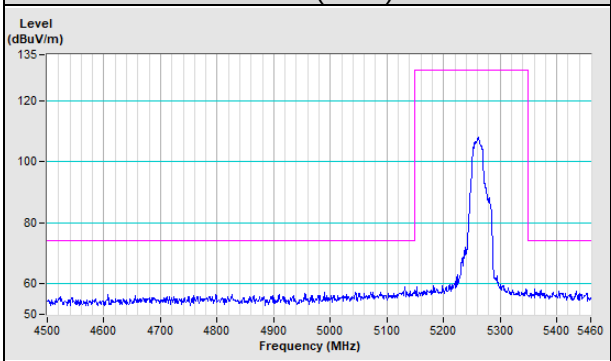
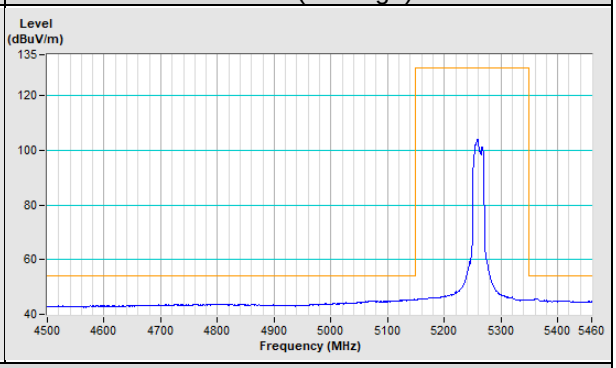
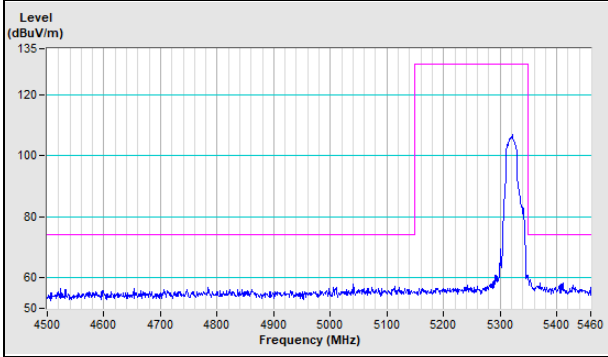
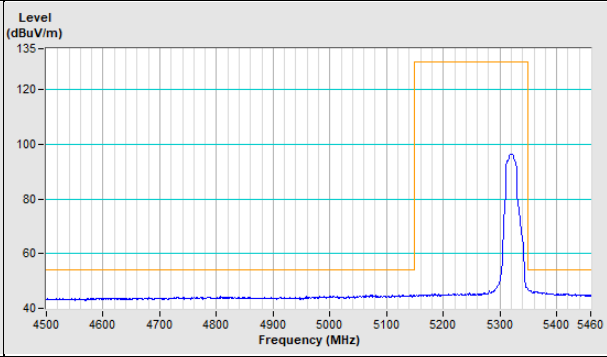
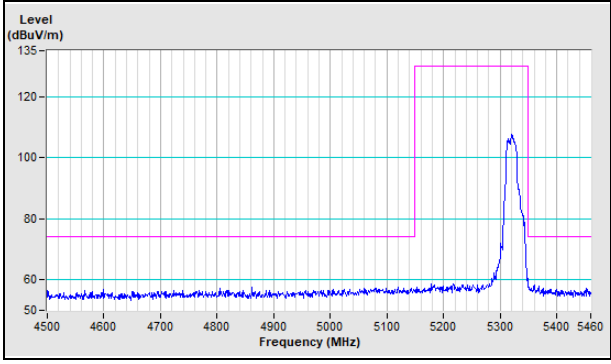
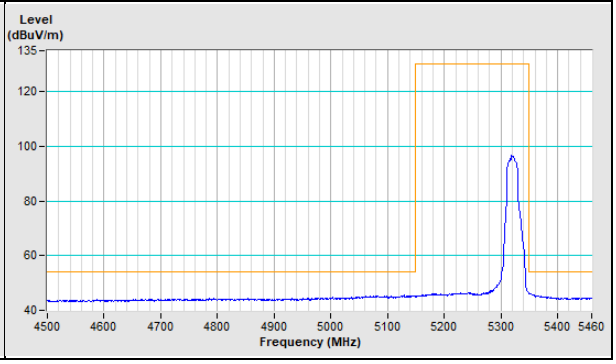
802.11a Channel 64	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

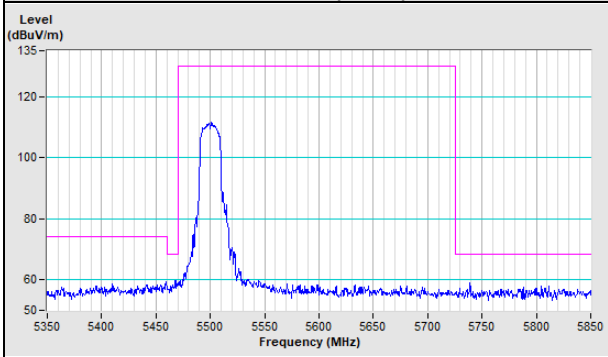
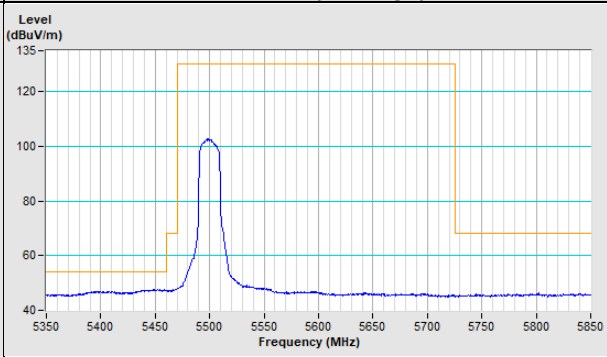
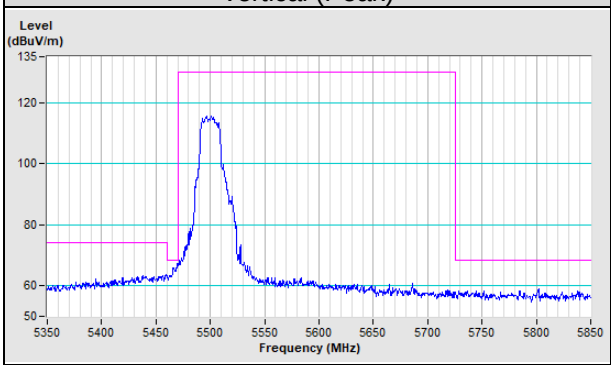
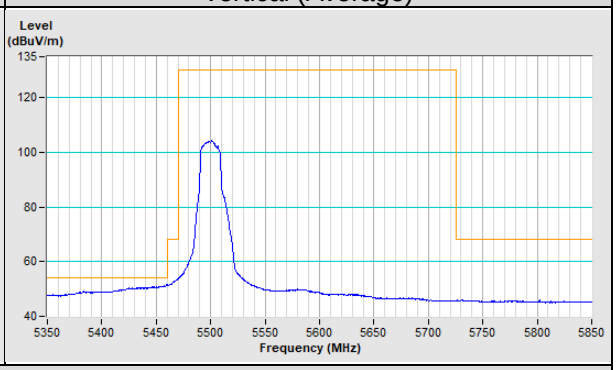
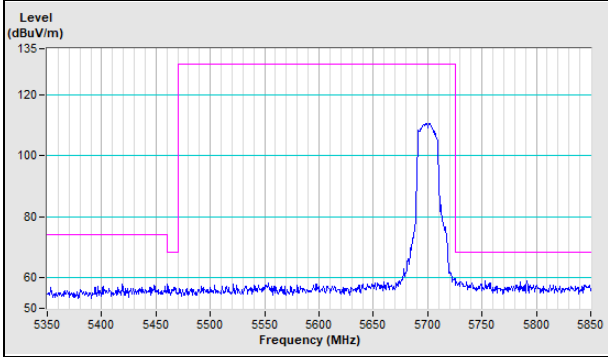
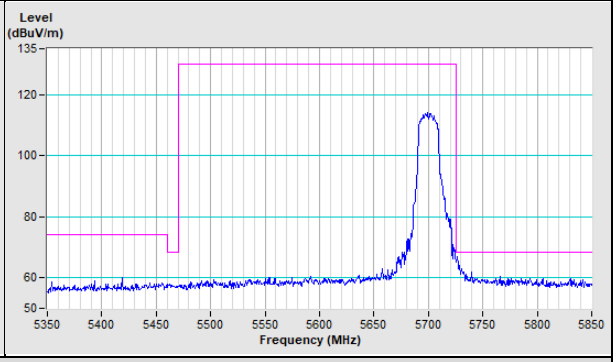
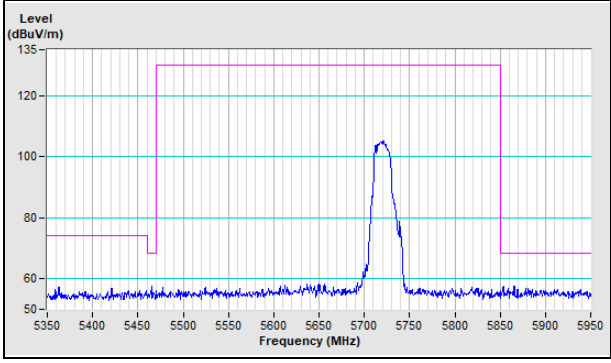
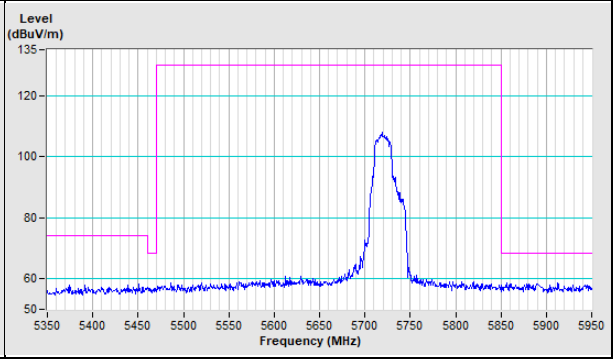
802.11a Channel 100	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

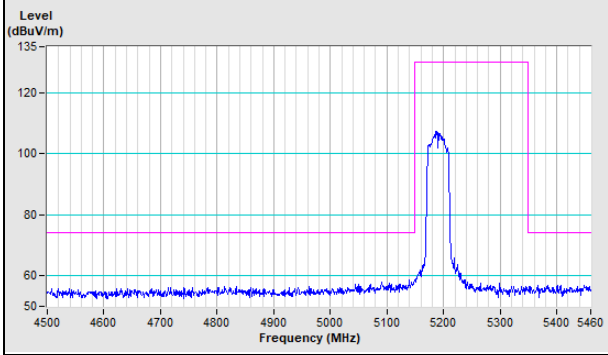
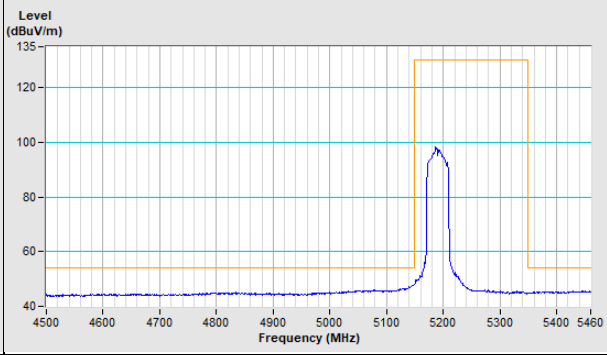
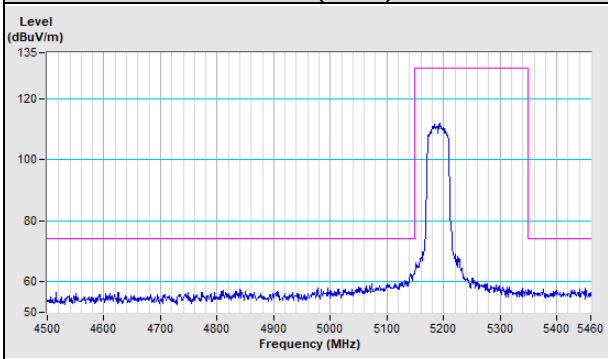
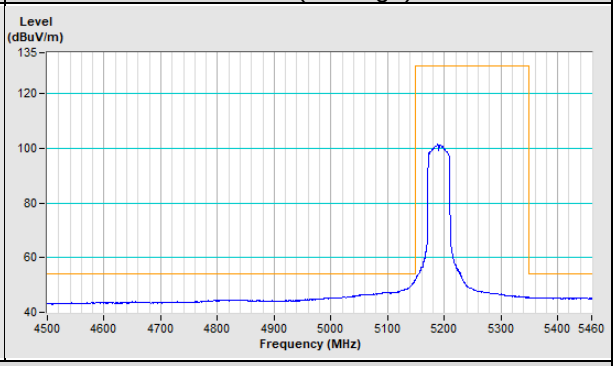
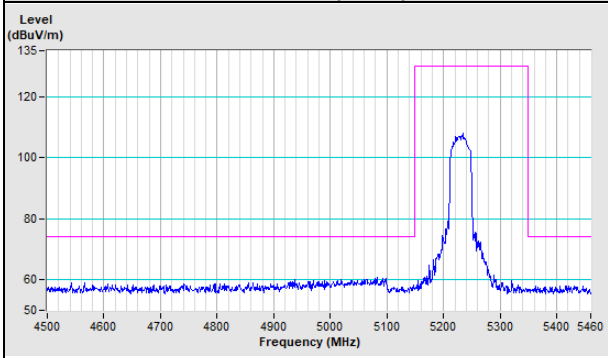
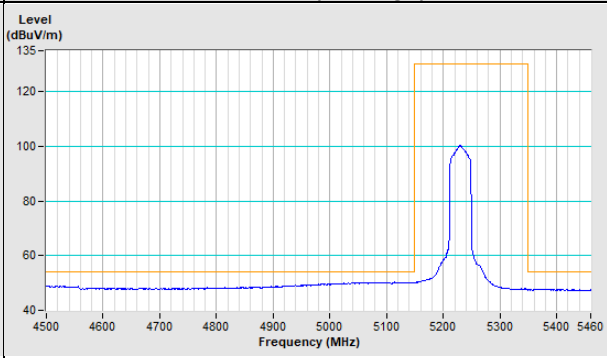
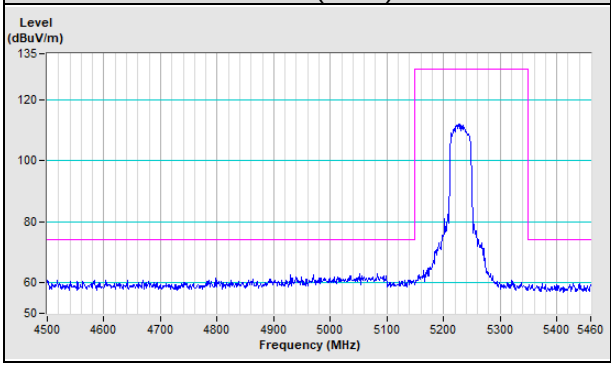
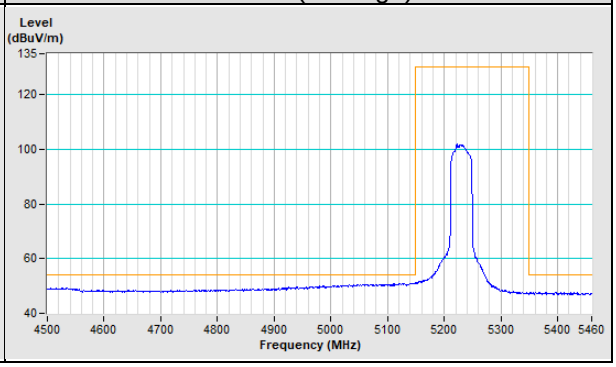
802.11a Channel 140	
Horizontal (Peak)	Vertical (Peak)
	

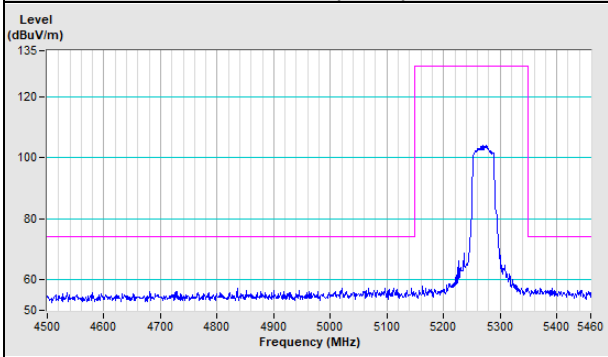
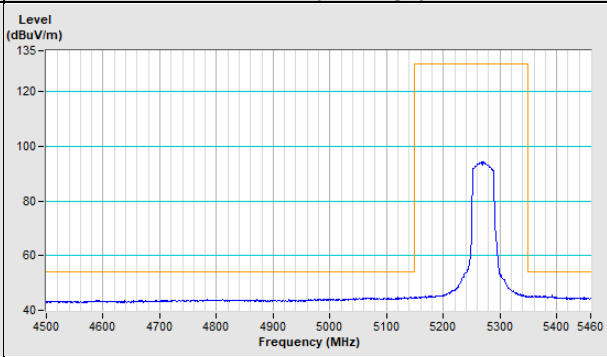
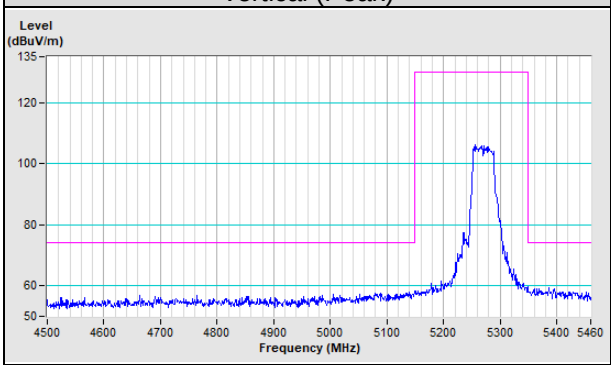
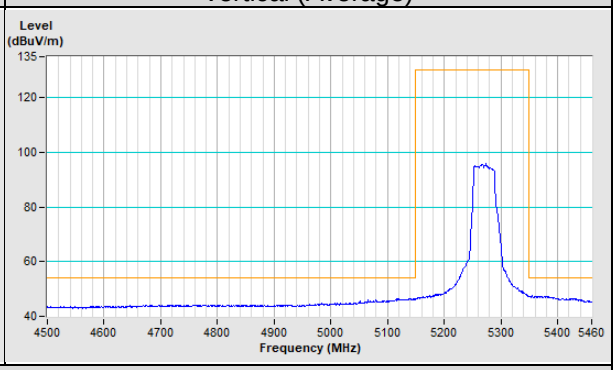
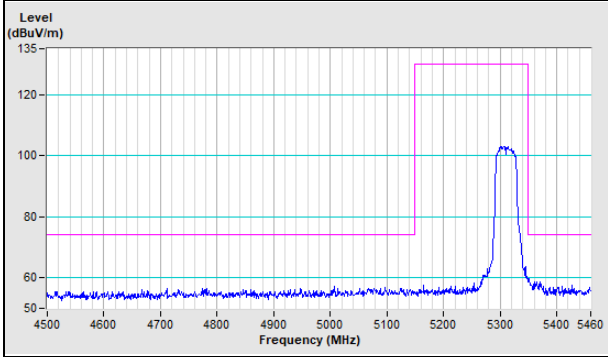
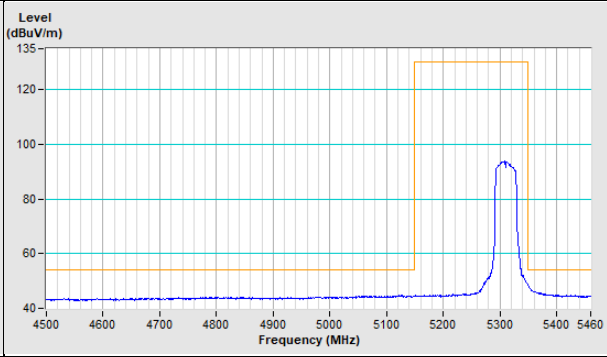
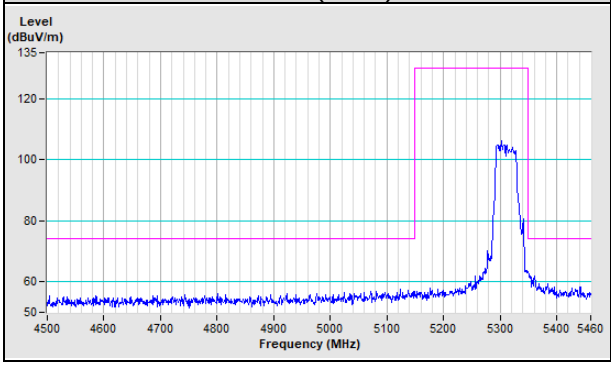
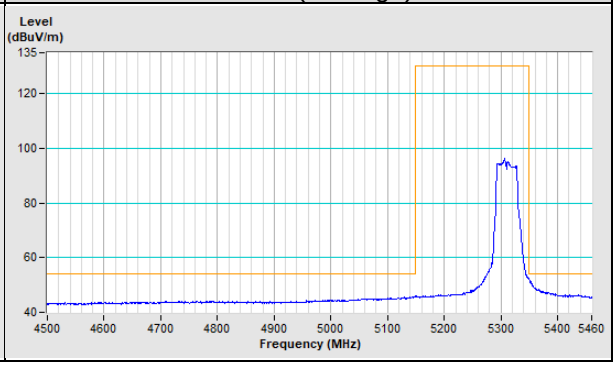
802.11a Channel 144	
Horizontal (Peak)	Vertical (Peak)
	

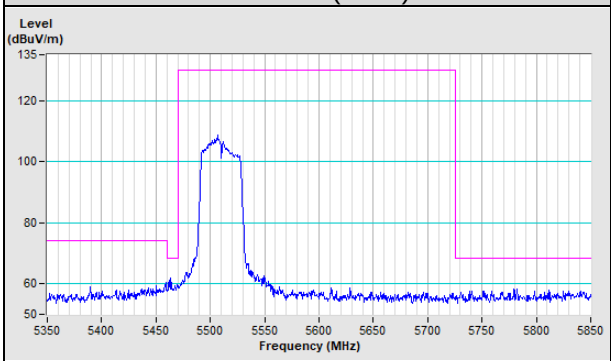
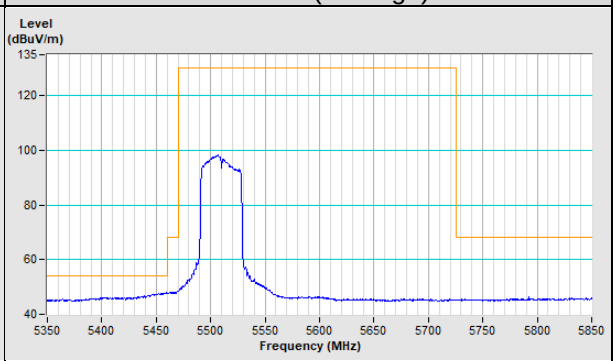
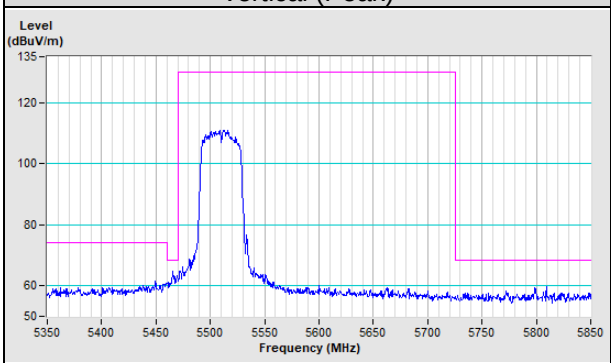
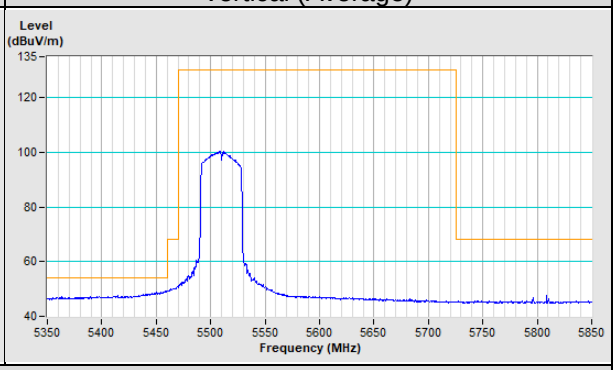
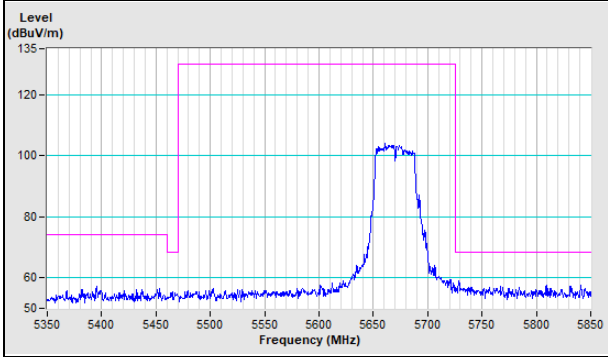
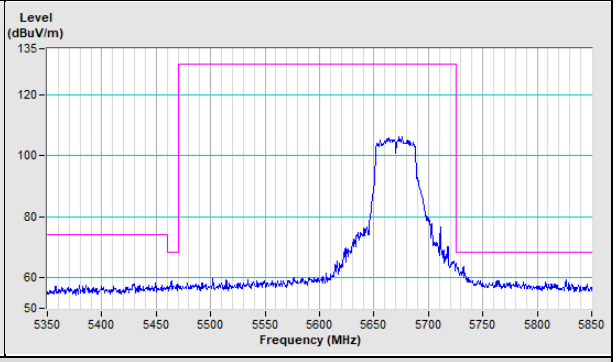
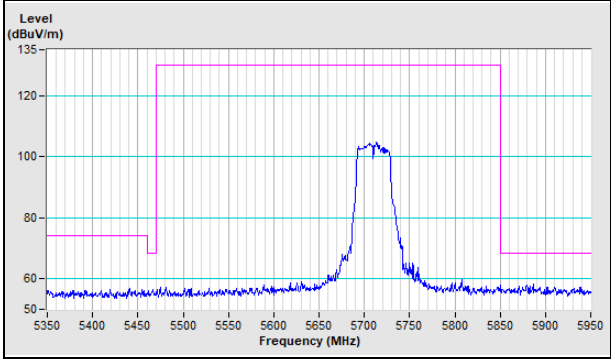
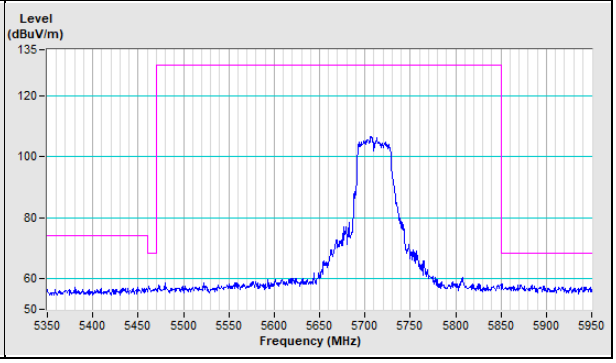
802.11ac (VHT20) Channel 36	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	
802.11ac (VHT20) Channel 48	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

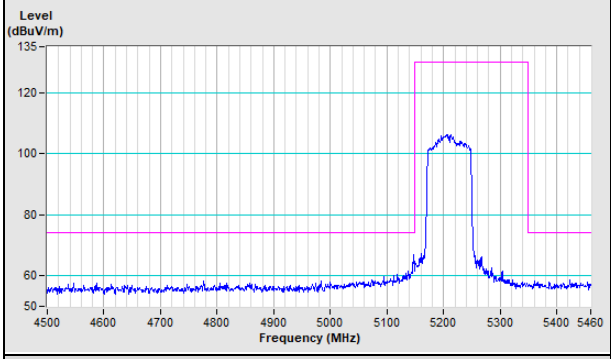
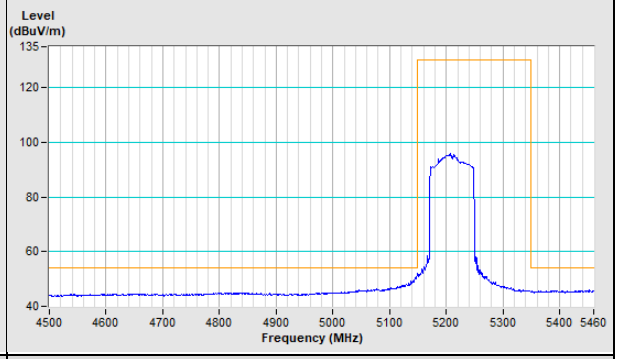
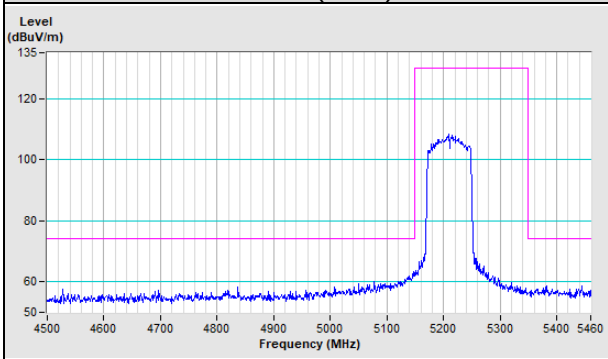
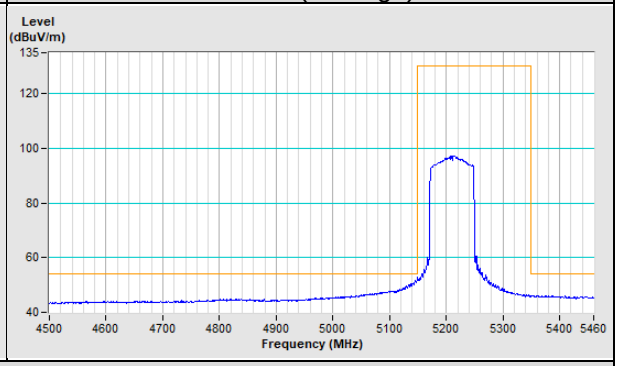
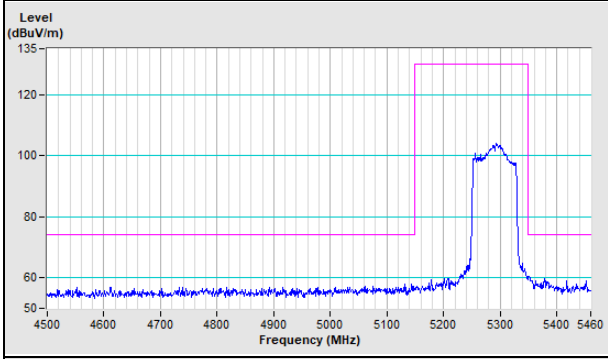
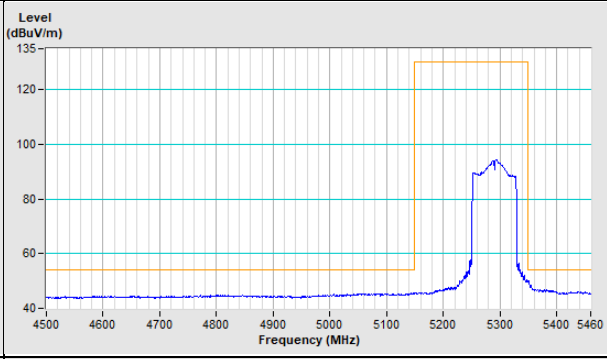
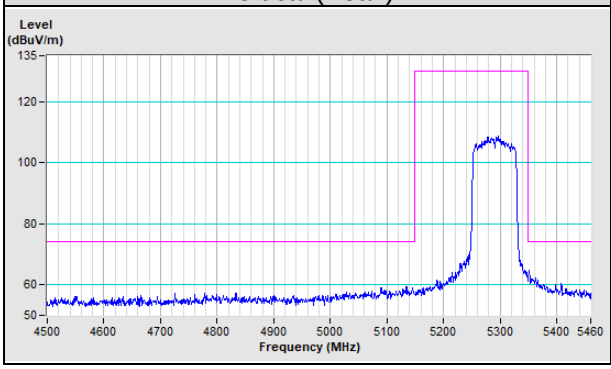
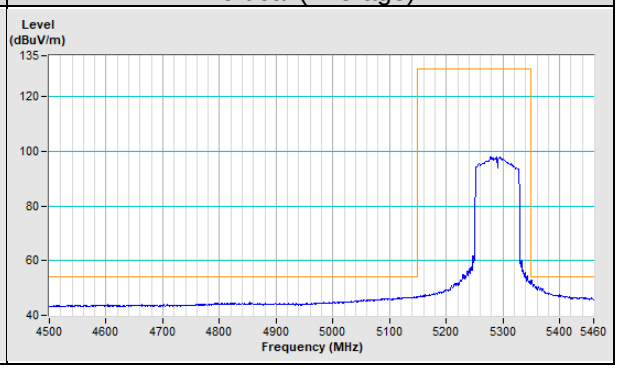
802.11ac (VHT20) Channel 52	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	
802.11ac (VHT20) Channel 64	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

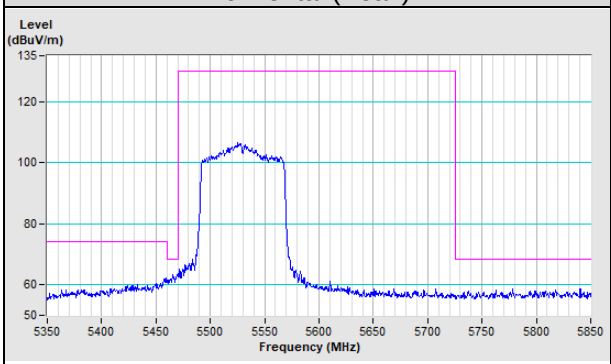
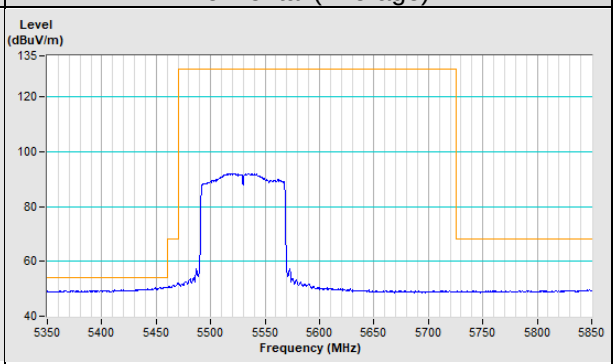
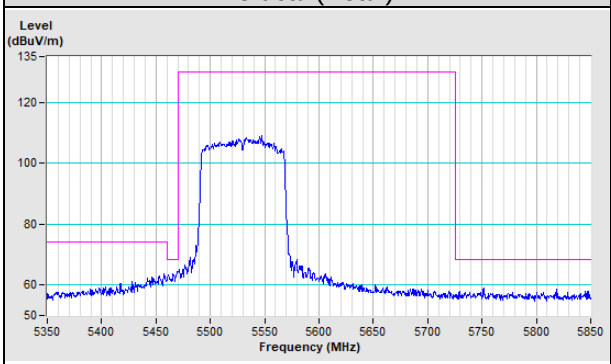
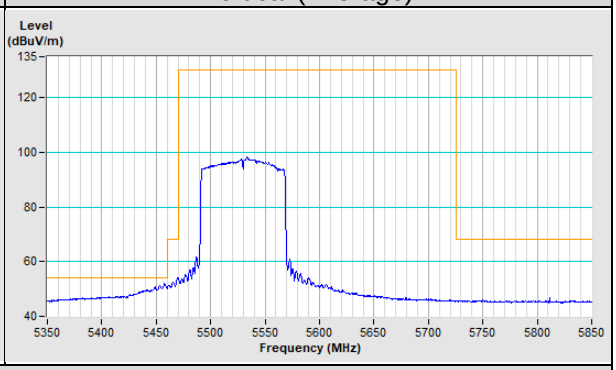
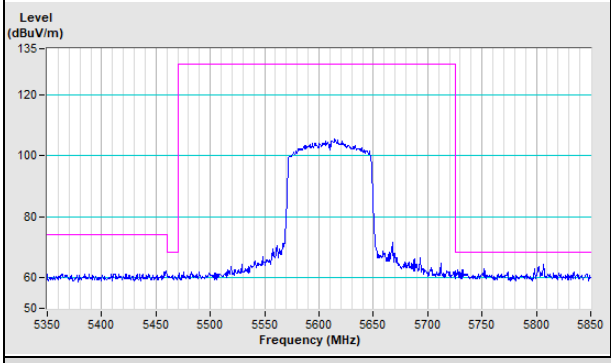
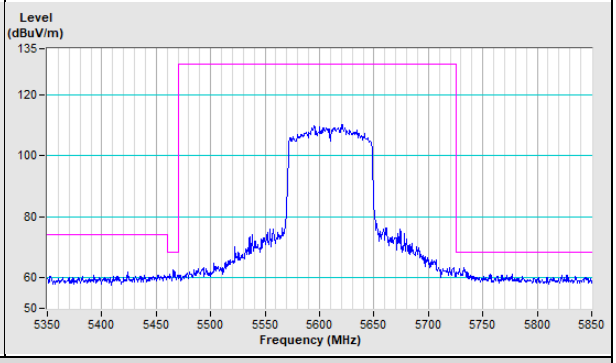
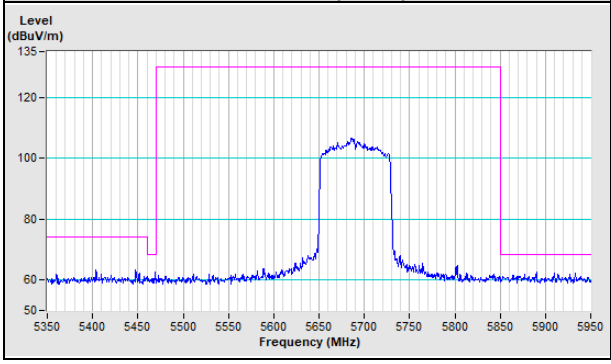
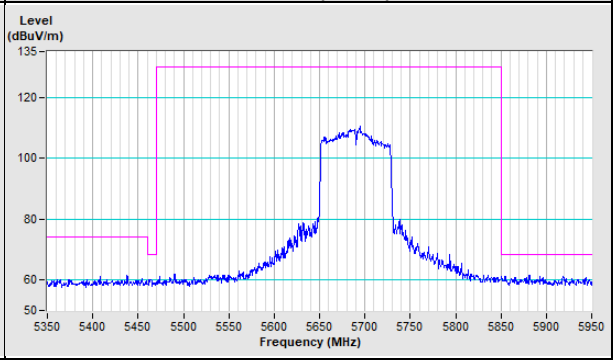
802.11ac (VHT20) Channel 100	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	
802.11ac (VHT20) Channel 140	
Horizontal (Peak)	Vertical (Peak)
	
802.11ac (VHT20) Channel 144	
Horizontal (Peak)	Vertical (Peak)
	

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) 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)	Vertical (Peak)
	
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.

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

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