

FCC Test Report

Report No.: RFBEIH-WTW-P21040843-2

FCC ID: P27XHC3

Test Model: XHC3

Series Model: XHC3xxxxxxx, SCHC3AExxxxxxxx
(the 1st x should be "blank" or "-"; the rest x could be 0 to 9, A to Z, a to z, "blank" or "-", for marketing purpose)

Received Date: Apr. 22, 2021

Test Date: May 7 to 28, 2021

Issued Date: Jun. 9, 2021

Applicant: Sercomm Corp.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lin Kou Laboratories

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FCC Registration /
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Release Control Record

Issue No.	Description	Date Issued
RFBEIH-WTW-P21040843-2	Original release	Jun. 9, 2021

1 Certificate of Conformity

Product: Comcast Xfinity Low Cost Camera

Brand: Sercomm, Comcast, Xfinity

Test Model: XHC3

Series Model: XHC3xxxxxxx, SCHC3AExxxxxxxx (the 1st x should be "blank" or "-"; the rest x could be 0 to 9, A to Z, a to z, "blank" or "-", for marketing purpose)

Sample Status: Engineering sample

Applicant: Sercomm Corp.

Test Date: May 7 to 28, 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 :

Annie Chang

Date: May 3, 2021

Annie Chang / Senior Specialist

Approved by :

Rex Lai

Date: May 3, 2021

Rex Lai / Associate Technical Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(8)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -11.38dB at 0.48062MHz.
15.407(b)(1/2/3/4(i/ii)/8)	Radiated Emissions & Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -1.01dB at 5470.00MHz.
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)	6dB 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 IPEX not a standard connector.

Note:

1. For U-NII-3 band compliance with rule part 15.407(b)(4)(i), the OOB test plots were recorded in Annex A. Test Procedures refer to report 4.1.3.
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	150kHz ~ 30MHz	3.00 dB
Conducted Emissions	9kHz ~ 40GHz	2.63 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	2.61 dB
	30MHz ~ 1GHz	5.43 dB
Radiated Emissions above 1 GHz	Above 1GHz	5.42 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Comcast Xfinity Low Cost Camera
Brand	Sercomm, Comcast, Xfinity
Test Model	XHC3
Series Model	XHC3xxxxxxxx, SCHC3AExxxxxxxxx (the 1st x should be "blank" or "-"; the rest x could be 0 to 9, A to Z, a to z, "blank" or "-" , for marketing purpose)
Model Difference	For marketing purpose
Status of EUT	Engineering sample
Power Supply Rating	12Vdc from Adapter
Modulation Type	256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDM
Modulation Technology	OFDM
Transfer Rate	802.11a: up to 54Mbps 802.11n up to 300Mbps 802.11ac: up to 866.7Mbps
Operating Frequency	5180~5240MHz, 5260~5320MHz, 5500~5700MHz, 5745~5825MHz
Number of Channel	5180~5240MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 4 802.11n (HT40), 802.11ac (VHT40): 2 802.11ac (VHT80): 1 5260~5320MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 4 802.11n (HT40), 802.11ac (VHT40): 2 802.11ac (VHT80): 1 5500~5700MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 8 802.11n (HT40), 802.11ac (VHT40): 3 802.11ac (VHT80): 1 5745~5825MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 5 802.11n (HT40), 802.11ac (VHT40): 2 802.11ac (VHT80): 1
Output Power	5180~5240MHz: 63.614mW 5260~5320MHz: 63.392mW 5500~5700MHz: 201.388mW 5745~5825MHz: 204.678mW
Antenna Type	Dipole antenna with 4.71dBi gain
Antenna Connector	IPEX
Accessory Device	Adapter
Cable Supplied	N/A

Note:

1. The EUT provides 2 completed transmitters and 2 receivers.

Modulation Mode	TX Function	RX Function
802.11a	1TX	1RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX
802.11ac (VHT20)	2TX	2RX
802.11ac (VHT40)	2TX	2RX
802.11ac (VHT80)	2TX	2RX

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

2. All models are listed as below. Model: XHC3 is the representative for final test.

2. All models are listed as below. Model: XHC3 is the representative for final test.		
Brand	Model	Difference
Sercomm	XHC3xxxxxxxxx	All models are electrically identical, different model names are for brand difference and marketing purpose.
Comcast, Xfinity	SCHC3AExxxxxxxxxx	
The 1st x should be "blank" or "-"; the rest x could be 0 to 9, A to Z, a to z, "blank" or "-" , for marketing purpose		

3. The EUT uses following adapter.

Brand	APD
Model	WB-12G12FU
Input Power	100-240V, 50-60Hz, 0.3A
Output Power	12Vdc, 1A, 12W
Power Line	AC 2 Pin, Non-shielded DC cable (3.0m)

4. WLAN 2.4GHz, WLAN 5GHz and BT LE technologies cannot transmit at same time.

5. 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.

6. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3.2 Description of Test Modes

For 5180 ~ 5240MHz:

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

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

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

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
42	5210MHz

5260~5320MHz:

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

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

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

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
58	5290MHz

5500~5700MHz:

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

Channel	Frequency	Channel	Frequency
100	5500 MHz	116	5580 MHz
104	5520 MHz	132	5660 MHz
108	5540 MHz	136	5680 MHz
112	5560 MHz	140	5700 MHz

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

Channel	Frequency	Channel	Frequency
102	5510 MHz	110	5550 MHz
134	5670 MHz		

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
106	5530 MHz

5745~5825MHz:

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

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

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

Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
155	5775MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

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

Where **RE $\geq$ 1G**: Radiated Emission above 1GHz & Bandedge Measurement

RE<1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

NOTE: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Z-plane**.

Radiated Emission Test (Above 1GHz):

- ☒ 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	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
-	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0
	802.11ac (VHT20)		36 to 48	36, 40, 48	OFDM	MCS0
	802.11ac (VHT40)		38 to 46	38, 46	OFDM	MCS0
	802.11ac (VHT80)		42	42	OFDM	MCS0
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	6.0
	802.11ac (VHT20)		52 to 64	52, 60, 64	OFDM	MCS0
	802.11ac (VHT40)		54 to 62	54, 62	OFDM	MCS0
	802.11ac (VHT80)		58	58	OFDM	MCS0
-	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	6.0
	802.11ac (VHT20)		100 to 140	100, 116, 140	OFDM	MCS0
	802.11ac (VHT40)		102 to 134	102, 110, 134,	OFDM	MCS0
	802.11ac (VHT80)		106	106	OFDM	MCS0
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	6.0
	802.11ac (VHT20)		149 to 165	149, 157, 165	OFDM	MCS0
	802.11ac (VHT40)		151 to 159	151, 159	OFDM	MCS0
	802.11ac (VHT80)		155	155	OFDM	MCS0

Radiated Emission Test (Below 1GHz):

- ☒ 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	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
-	802.11a	5180-5240	36 to 48	157	OFDM	6.0
-	802.11a	5260-5320	52 to 64		OFDM	6.0
-	802.11a	5500-5700	100 to 140		OFDM	6.0
-	802.11a	5745-5825	149 to 165		OFDM	6.0

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	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
-	802.11a	5180-5240	36 to 48	157	OFDM	6.0
-	802.11a	5260-5320	52 to 64		OFDM	6.0
-	802.11a	5500-5700	100 to 140		OFDM	6.0
-	802.11a	5745-5825	149 to 165		OFDM	6.0

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	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
-	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0
	802.11ac (VHT20)		36 to 48	36, 40, 48	OFDM	MCS0
	802.11ac (VHT40)		38 to 46	38, 46	OFDM	MCS0
	802.11ac (VHT80)		42	42	OFDM	MCS0
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	6.0
	802.11ac (VHT20)		52 to 64	52, 60, 64	OFDM	MCS0
	802.11ac (VHT40)		54 to 62	54, 62	OFDM	MCS0
	802.11ac (VHT80)		58	58	OFDM	MCS0
-	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	6.0
	802.11ac (VHT20)		100 to 140	100, 116, 140	OFDM	MCS0
	802.11ac (VHT40)		102 to 134	102, 110, 134,	OFDM	MCS0
	802.11ac (VHT80)		106	106	OFDM	MCS0
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	6.0
	802.11ac (VHT20)		149 to 165	149, 157, 165	OFDM	MCS0
	802.11ac (VHT40)		151 to 159	151, 159	OFDM	MCS0
	802.11ac (VHT80)		155	155	OFDM	MCS0

Test Condition:

Applicable to	Environmental Conditions	Input Power	Tested by
RE $\geq$ 1G	20deg. C, 68%RH	120Vac, 60Hz	Ian Chang
RE<1G	21deg. C, 68%RH	120Vac, 60Hz	Ian Chang
PLC	25deg. C, 75%RH	120Vac, 60Hz	Ian Chang
APCM	25deg. C, 76%RH	120Vac, 60Hz	Pirar Hsieh

3.3 Duty Cycle of Test Signal

If duty cycle of test signal is $\geq 98\%$, duty factor is not required.

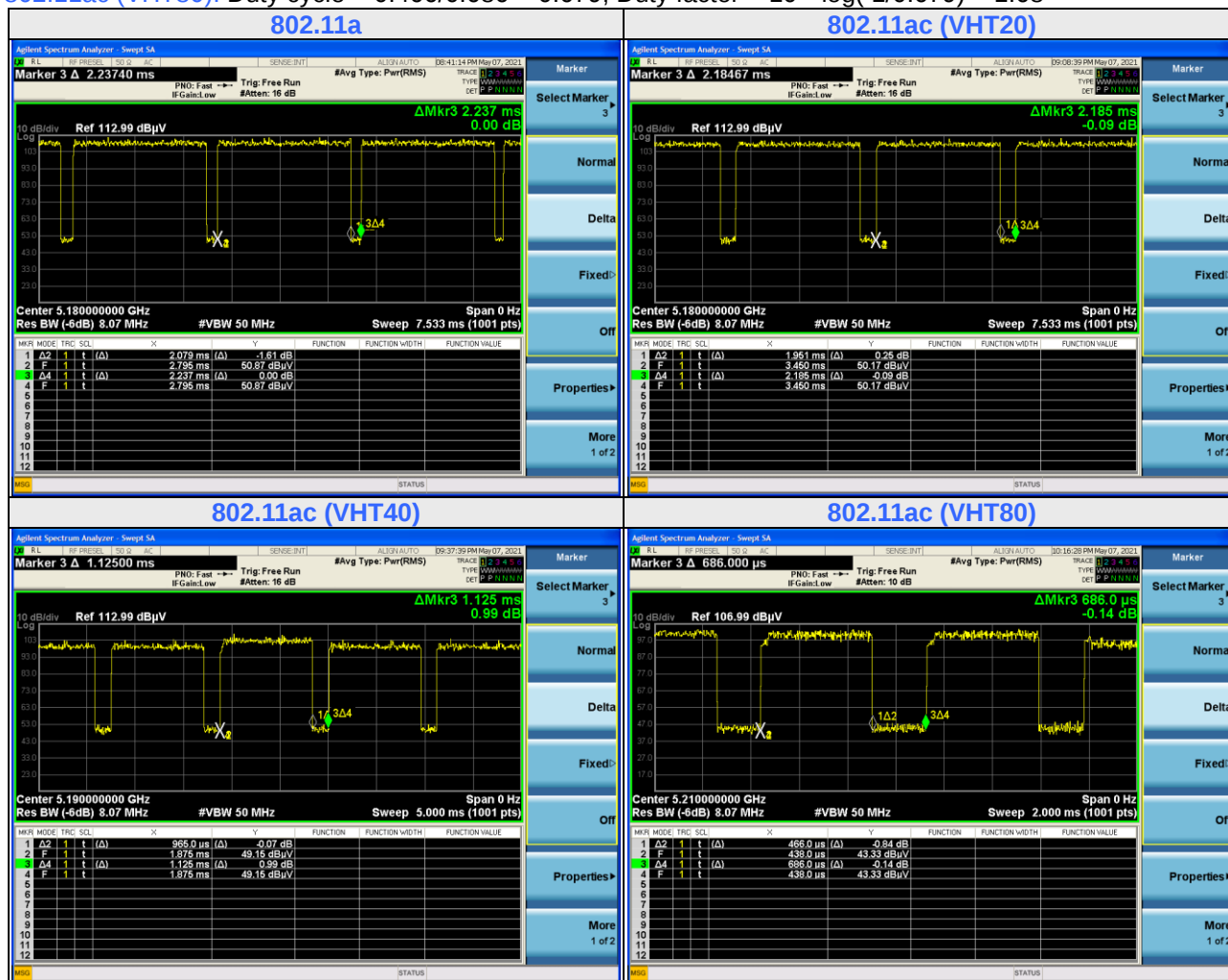
If duty cycle of test signal is $< 98\%$, duty factor shall be considered.

802.11a: Duty cycle = $2.079/2.237 = 0.929$, Duty factor = $10 * \log(1/0.929) = 0.32$

802.11ac (VHT20): Duty cycle = $1.951/2.185 = 0.893$, Duty factor = $10 * \log(1/0.893) = 0.49$

802.11ac (VHT40): Duty cycle = $0.965/1.125 = 0.858$, Duty factor = $10 * \log(1/0.858) = 0.67$

802.11ac (VHT80): Duty cycle = $0.466/0.686 = 0.679$, Duty factor = $10 * \log(1/0.679) = 1.68$



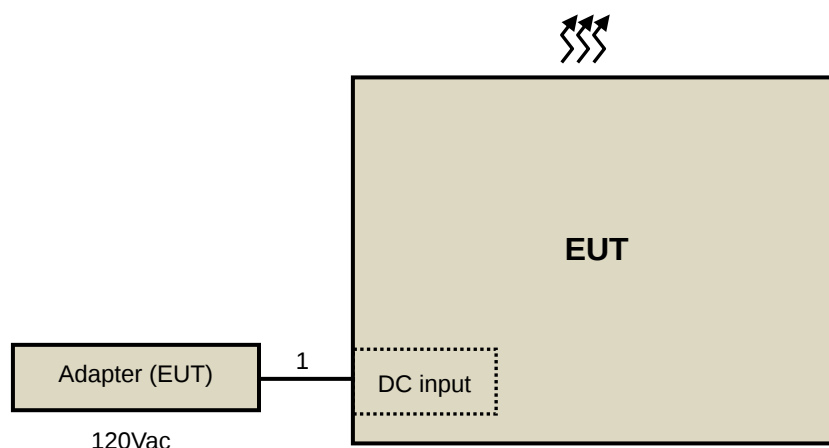
3.4 Description of Support Units

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	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	DC Cable	1	3.0	N	0	Supplied by client

Note: The core(s) is(are) originally attached to the cable(s).

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 Procedure 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 1000MHz, 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 20dB under any condition of modulation.

Limits of unwanted emission out of the restricted bands

Applicable To		Limit	
789033 D02 General UNII Test Procedure New Rules v02r01		Field Strength at 3m	
		PK: 74 (dBuV/m)	AV: 54 (dBuV/m)
Frequency Band	Applicable To	EIRP Limit	Equivalent Field Strength at 3m
5150~5250 MHz	15.407(b)(1)	PK: -27 (dBm/MHz)	PK: 68.2(dBuV/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(dBuV/m) ^{*1} PK: 105.2 (dBuV/m) ^{*2} PK: 110.8(dBuV/m) ^{*3} PK: 122.2 (dBuV/m) ^{*4}
^{*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:

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

4.1.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
HP Preamplifier	8447D	2432A03504	Feb. 18, 2021	Feb. 17, 2022
HP Preamplifier	8449B	3008A01201	Feb. 19, 2021	Feb. 18, 2022
MITEQ Preamplifier	AMF-6F-260400-33-8P	892164	Feb. 18, 2021	Feb. 17, 2022
Agilent TEST RECEIVER	N9038A	MY51210129	Mar. 12, 2021	Mar. 11, 2022
Schwarzbeck Antenna	VULB 9168	139	Nov. 6, 2020	Nov. 5, 2021
Schwarzbeck Antenna	VHBA 9123	480	Jun. 3, 2019	Jun. 2, 2021
Schwarzbeck Horn Antenna	BBHA-9170	212	Nov. 22, 2020	Nov. 21, 2021
EMCO Horn Antenna	3115	00027024	Nov. 22, 2020	Nov. 21, 2021
ADT. Turn Table	TT100	0306	NA	NA
ADT. Tower	AT100	0306	NA	NA
Software	Radiated V7.6.15.9.5	NA	NA	NA
SUHNER RF cable With 4dB PAD	SF102	Cable-CH6-01	Jul. 9, 2020	Jul. 8, 2021
EMEC RF cable With 3/4dB PAD	EM102-KMKM	01	Aug. 21, 2020	Aug. 20, 2021
KEYSIGHT MIMO Powermeasurement Test set	U2021XA	U2021XA-001	Jun. 16, 2020	Jun. 15, 2021
KEYSIGHT Spectrum Analyzer	N9030A	MY54490260	Jul. 22, 2020	Jul. 21, 2021
Loop Antenna EMCI	LPA600	270	Aug. 23, 2019	Aug. 22, 2021
EMCO Horn Antenna	3115	00028257	Nov. 22, 2020	Nov. 21, 2021
Highpass filter Wainwright Instruments	WHK 3.1/18G-10SS	SN 8	NA	NA
ROHDE & SCHWARZ Spectrum Analyzer	FSV40	101042	Sep. 8, 2020	Sep. 7, 2021
Anritsu Power Sensor	MA2411B	0738404	Apr. 15, 2021	Apr. 14, 2022
Anritsu Power Meter	ML2495A	0842014	Apr. 14, 2021	Apr. 13, 2022
EMCI Preamplifier	EMC184045B	980235	Feb. 19, 2021	Feb. 18, 2022

- NOTE:** 1. The calibration interval of the above test instruments is 12/24 months. And the calibrations are traceable to NML/ROC and NIST/USA.
2. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in Chamber No. 6.

4.1.3 Test Procedures

For Radiated emission below 30MHz

- 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.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- 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.
- The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

Note:

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

For Radiated emission above 30MHz

- The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- 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.
- 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.
- 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.
- The test-receiver system was set to peak and average detect 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:

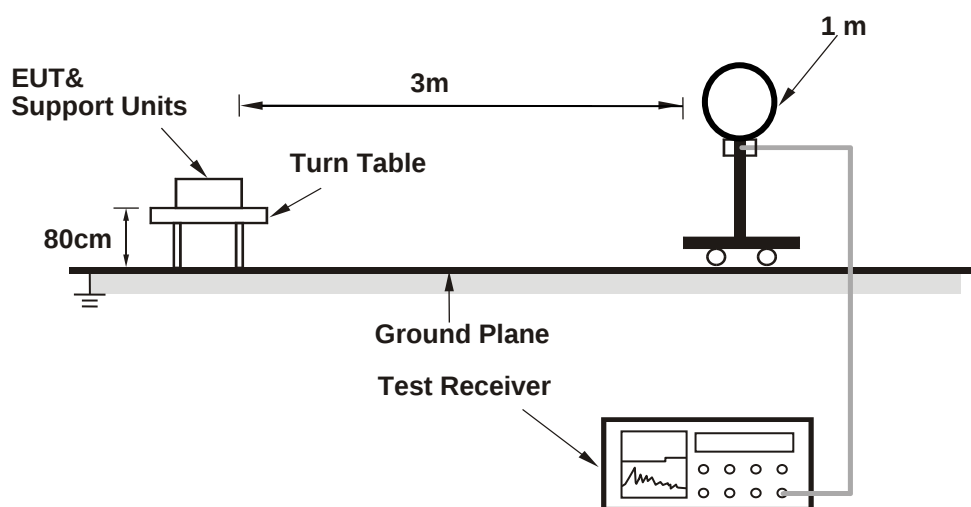
- The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
- The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
- The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle < 98%) or 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz.
(802.11a: RBW = 1MHz, VBW = 510Hz; 802.11ac (VHT20): RBW = 1MHz, VBW = 560Hz;
802.11ac (VHT40): RBW = 1MHz, VBW = 1.1kHz; 802.11ac (VHT80): RBW = 1MHz, VBW = 2.2kHz)
- All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

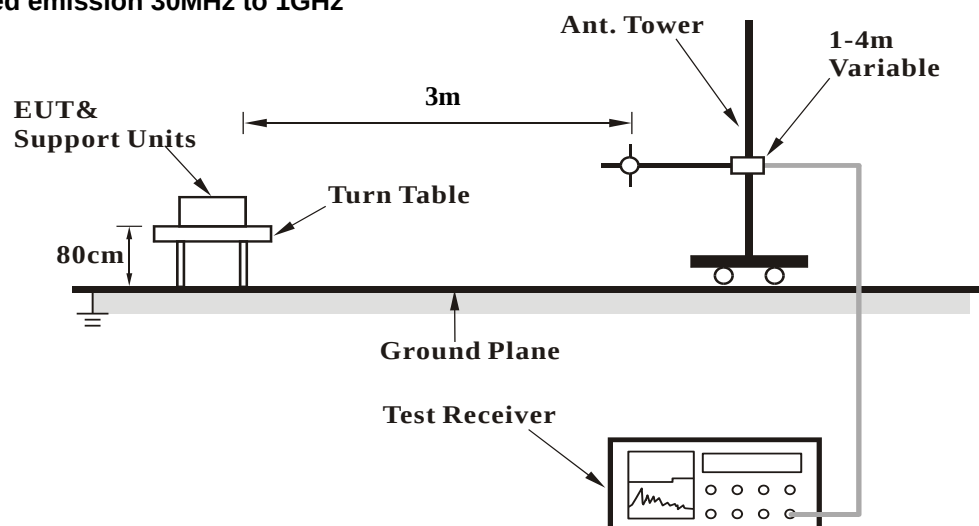
No deviation.

4.1.5 Test Setup

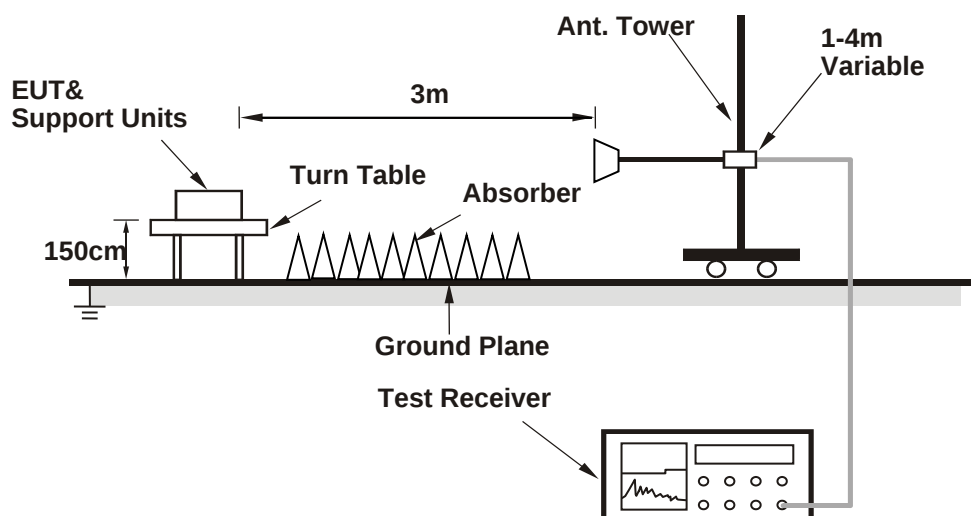
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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

4.1.6 EUT Operating Conditions

Set the EUT under transmission condition continuously at specific channel frequency continuously.

4.1.7 Test Results

ABOVE 1GHz 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	65.19 PK	74.00	-8.81	1.70 H	70	53.49	11.70
2	5150.00	49.04 AV	54.00	-4.96	1.70 H	70	37.34	11.70
3	*5180.00	108.83 PK			1.70 H	70	97.06	11.77
4	*5180.00	101.52 AV			1.70 H	70	89.75	11.77
5	#10360.00	57.78 PK	68.20	-10.42	2.13 H	265	39.26	18.52
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	68.10 PK	74.00	-5.90	1.64 V	257	56.40	11.70
2	5150.00	51.83 AV	54.00	-2.17	1.64 V	257	40.13	11.70
3	*5180.00	113.22 PK			1.64 V	257	101.45	11.77
4	*5180.00	105.20 AV			1.64 V	257	93.43	11.77
5	#10360.00	58.88 PK	68.20	-9.32	1.98 V	251	40.36	18.52

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	109.46 PK			1.68 H	66	97.64	11.82
2	*5200.00	101.15 AV			1.68 H	66	89.33	11.82
3	#10400.00	58.31 PK	68.20	-9.89	2.65 H	284	39.64	18.67
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	113.44 PK			1.65 V	261	101.62	11.82
2	*5200.00	105.38 AV			1.65 V	261	93.56	11.82
3	#10400.00	58.92 PK	68.20	-9.28	1.87 V	145	40.25	18.67

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	108.42 PK			1.68 H	66	96.52	11.90
2	*5240.00	100.57 AV			1.68 H	66	88.67	11.90
3	5350.00	52.42 PK	74.00	-21.58	1.68 H	66	40.06	12.36
4	5350.00	42.55 AV	54.00	-11.45	1.68 H	66	30.19	12.36
5	#10480.00	58.27 PK	68.20	-9.93	2.45 H	231	39.64	18.63
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	112.06 PK			2.12 V	292	100.16	11.90
2	*5240.00	104.69 AV			2.12 V	292	92.79	11.90
3	5350.00	53.06 PK	74.00	-20.94	2.12 V	292	40.70	12.36
4	5350.00	43.22 AV	54.00	-10.78	2.12 V	292	30.86	12.36
5	#10480.00	59.15 PK	68.20	-9.05	1.94 V	274	40.52	18.63

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	52.02 PK	74.00	-21.98	1.69 H	69	40.32	11.70
2	5150.00	42.13 AV	54.00	-11.87	1.69 H	69	30.43	11.70
3	*5260.00	109.59 PK			1.69 H	69	97.64	11.95
4	*5260.00	100.49 AV			1.69 H	69	88.54	11.95
5	#10520.00	58.25 PK	68.20	-9.95	1.42 H	136	39.64	18.61
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	53.34 PK	74.00	-20.66	2.64 V	293	41.64	11.70
2	5150.00	42.82 AV	54.00	-11.18	2.64 V	293	31.12	11.70
3	*5260.00	112.97 PK			2.64 V	293	101.02	11.95
4	*5260.00	104.34 AV			2.64 V	293	92.39	11.95
5	#10520.00	58.77 PK	68.20	-9.43	1.96 V	254	40.16	18.61

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	109.79 PK			1.74 H	72	97.64	12.15
2	*5300.00	100.43 AV			1.74 H	72	88.28	12.15
3	10600.00	58.24 PK	74.00	-15.76	2.14 H	152	39.65	18.59
4	10600.00	47.08 AV	54.00	-6.92	2.14 H	152	28.49	18.59
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	113.80 PK			2.56 V	291	101.65	12.15
2	*5300.00	104.49 AV			2.56 V	291	92.34	12.15
3	10600.00	58.85 PK	74.00	-15.15	1.88 V	241	40.26	18.59
4	10600.00	47.93 AV	54.00	-6.07	1.88 V	241	29.34	18.59

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	108.58 PK			1.72 H	65	96.34	12.24
2	*5320.00	99.76 AV			1.72 H	65	87.52	12.24
3	5350.00	59.04 PK	74.00	-14.96	1.72 H	65	46.68	12.36
4	5350.00	44.70 AV	54.00	-9.30	1.72 H	65	32.34	12.36
5	10640.00	58.23 PK	74.00	-15.77	1.55 H	205	39.68	18.55
6	10640.00	47.19 AV	54.00	-6.81	1.55 H	205	28.64	18.55
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	112.24 PK			1.65 V	270	100.00	12.24
2	*5320.00	103.27 AV			1.65 V	270	91.03	12.24
3	5350.00	63.01 PK	74.00	-10.99	1.65 V	270	50.65	12.36
4	5350.00	48.86 AV	54.00	-5.14	1.65 V	270	36.50	12.36
5	10640.00	59.07 PK	74.00	-14.93	1.87 V	169	40.52	18.55
6	10640.00	47.89 AV	54.00	-6.11	1.87 V	169	29.34	18.55

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	53.70 PK	74.00	-20.30	1.69 H	78	41.23	12.47
2	5460.00	42.14 AV	54.00	-11.86	1.69 H	78	29.67	12.47
3	#5470.00	62.72 PK	68.20	-5.48	1.69 H	78	50.22	12.50
4	*5500.00	106.86 PK			1.69 H	78	94.26	12.60
5	*5500.00	98.06 AV			1.69 H	78	85.46	12.60
6	11000.00	57.61 PK	74.00	-16.39	2.14 H	357	38.64	18.97
7	11000.00	46.66 AV	54.00	-7.34	2.14 H	357	27.69	18.97
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	57.55 PK	74.00	-16.45	2.00 V	282	45.08	12.47
2	5460.00	43.38 AV	54.00	-10.62	2.00 V	282	30.91	12.47
3	#5470.00	67.19 PK	68.20	-1.01	2.00 V	282	54.69	12.50
4	*5500.00	110.87 PK			2.00 V	282	98.27	12.60
5	*5500.00	102.31 AV			2.00 V	282	89.71	12.60
6	11000.00	58.20 PK	74.00	-15.80	1.87 V	216	39.23	18.97
7	11000.00	47.31 AV	54.00	-6.69	1.87 V	216	28.34	18.97

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	106.35 PK			1.68 H	68	94.36	11.99
2	*5580.00	97.77 AV			1.68 H	68	85.78	11.99
3	11160.00	58.52 PK	74.00	-15.48	2.34 H	162	38.76	19.76
4	11160.00	47.02 AV	54.00	-6.98	2.34 H	162	27.26	19.76
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	110.75 PK			1.98 V	278	98.76	11.99
2	*5580.00	101.67 AV			1.98 V	278	89.68	11.99
3	11160.00	59.41 PK	74.00	-14.59	1.78 V	145	39.65	19.76
4	11160.00	48.13 AV	54.00	-5.87	1.78 V	145	28.37	19.76

Remarks:

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

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

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	102.34 PK			1.89 H	238	90.65	11.69
2	*5700.00	95.26 AV			1.89 H	238	83.57	11.69
3	#5725.00	62.98 PK	68.20	-5.22	1.89 H	238	51.26	11.72
4	11400.00	58.04 PK	74.00	-15.96	1.28 H	136	38.41	19.63
5	11400.00	46.72 AV	54.00	-7.28	1.28 H	136	27.09	19.63
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	106.59 PK			1.51 V	53	94.90	11.69
2	*5700.00	99.14 AV			1.51 V	53	87.45	11.69
3	#5725.00	67.05 PK	68.20	-1.15	1.51 V	53	55.33	11.72
4	11400.00	58.95 PK	74.00	-15.05	1.94 V	274	39.32	19.63
5	11400.00	47.79 AV	54.00	-6.21	1.94 V	274	28.16	19.63

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	#5617.77	49.99 PK	68.20	-18.21	1.68 H	73	38.19	11.80
2	*5745.00	112.12 PK			1.68 H	73	100.36	11.76
3	*5745.00	102.40 AV			1.68 H	73	90.64	11.76
4	#5939.45	51.20 PK	68.20	-17.00	1.68 H	73	39.24	11.96
5	11490.00	58.69 PK	74.00	-15.31	1.34 H	285	38.65	20.04
6	11490.00	47.45 AV	54.00	-6.55	1.34 H	285	27.41	20.04
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	#5631.12	50.33 PK	68.20	-17.87	1.84 V	286	38.56	11.77
2	*5745.00	115.80 PK			1.84 V	286	104.04	11.76
3	*5745.00	106.04 AV			1.84 V	286	94.28	11.76
4	#5967.92	52.04 PK	68.20	-16.16	1.84 V	286	39.87	12.17
5	11490.00	59.40 PK	74.00	-14.60	1.64 V	236	39.36	20.04
6	11490.00	48.68 AV	54.00	-5.32	1.64 V	236	28.64	20.04

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 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	#5646.09	48.98 PK	68.20	-19.22	1.74 H	72	37.24	11.74
2	*5785.00	113.17 PK			1.74 H	72	101.35	11.82
3	*5785.00	103.18 AV			1.74 H	72	91.36	11.82
4	#5950.27	51.65 PK	68.20	-16.55	1.74 H	72	39.60	12.05
5	11570.00	58.79 PK	74.00	-15.21	1.47 H	124	38.42	20.37
6	11570.00	47.76 AV	54.00	-6.24	1.47 H	124	27.39	20.37
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	#5643.27	50.80 PK	68.20	-17.40	1.94 V	267	39.05	11.75
2	*5785.00	117.14 PK			1.94 V	267	105.32	11.82
3	*5785.00	106.97 AV			1.94 V	267	95.15	11.82
4	#5935.19	52.54 PK	68.20	-15.66	1.94 V	267	40.61	11.93
5	11570.00	60.02 PK	74.00	-13.98	1.66 V	221	39.65	20.37
6	11570.00	48.79 AV	54.00	-5.21	1.66 V	221	28.42	20.37

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 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	#5637.69	49.17 PK	68.20	-19.03	1.65 H	78	37.41	11.76
2	*5825.00	112.05 PK			1.65 H	78	100.26	11.79
3	*5825.00	102.13 AV			1.65 H	78	90.34	11.79
4	#5944.26	50.78 PK	68.20	-17.42	1.65 H	78	38.79	11.99
5	11650.00	59.86 PK	74.00	-14.14	1.28 H	295	39.32	20.54
6	11650.00	48.18 AV	54.00	-5.82	1.28 H	295	27.64	20.54
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	#5642.27	50.63 PK	68.20	-17.57	2.04 V	279	38.88	11.75
2	*5825.00	116.63 PK			2.04 V	279	104.84	11.79
3	*5825.00	106.08 AV			2.04 V	279	94.29	11.79
4	#5937.84	52.22 PK	68.20	-15.98	2.04 V	279	40.27	11.95
5	11650.00	60.16 PK	74.00	-13.84	1.54 V	220	39.62	20.54
6	11650.00	48.82 AV	54.00	-5.18	1.54 V	220	28.28	20.54

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 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	60.33 PK	74.00	-13.67	1.68 H	59	48.63	11.70
2	5150.00	45.86 AV	54.00	-8.14	1.68 H	59	34.16	11.70
3	*5180.00	108.31 PK			1.68 H	59	96.54	11.77
4	*5180.00	99.46 AV			1.68 H	59	87.69	11.77
5	#10360.00	58.00 PK	68.20	-10.20	2.22 H	320	39.48	18.52
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	64.30 PK	74.00	-9.70	1.97 V	296	52.60	11.70
2	5150.00	50.53 AV	54.00	-3.47	1.97 V	296	38.83	11.70
3	*5180.00	112.11 PK			1.97 V	296	100.34	11.77
4	*5180.00	103.41 AV			1.97 V	296	91.64	11.77
5	#10360.00	58.77 PK	68.20	-9.43	1.99 V	210	40.25	18.52

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	108.19 PK			1.69 H	62	96.37	11.82
2	*5200.00	99.36 AV			1.69 H	62	87.54	11.82
3	#10400.00	58.02 PK	68.20	-10.18	2.28 H	241	39.35	18.67
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	112.36 PK			2.01 V	289	100.54	11.82
2	*5200.00	103.51 AV			2.01 V	289	91.69	11.82
3	#10400.00	59.31 PK	68.20	-8.89	1.44 V	139	40.64	18.67

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	106.77 PK			1.67 H	81	94.87	11.90
2	*5240.00	98.26 AV			1.67 H	81	86.36	11.90
3	5350.00	52.39 PK	74.00	-21.61	1.67 H	81	40.03	12.36
4	5350.00	42.25 AV	54.00	-11.75	1.67 H	81	29.89	12.36
5	#10480.00	57.97 PK	68.20	-10.23	1.74 H	135	39.34	18.63
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	110.63 PK			1.68 V	275	98.73	11.90
2	*5240.00	102.72 AV			1.68 V	275	90.82	11.90
3	5350.00	53.31 PK	74.00	-20.69	1.68 V	275	40.95	12.36
4	5350.00	42.49 AV	54.00	-11.51	1.68 V	275	30.13	12.36
5	#10480.00	59.50 PK	68.20	-8.70	1.96 V	287	40.87	18.63

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	51.95 PK	74.00	-22.05	1.66 H	77	40.25	11.70
2	5150.00	42.26 AV	54.00	-11.74	1.66 H	77	30.56	11.70
3	*5260.00	107.29 PK			1.66 H	77	95.34	11.95
4	*5260.00	99.41 AV			1.66 H	77	87.46	11.95
5	#10520.00	58.25 PK	68.20	-9.95	2.21 H	132	39.64	18.61
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	52.96 PK	74.00	-21.04	2.21 V	270	41.26	11.70
2	5150.00	42.82 AV	54.00	-11.18	2.21 V	270	31.12	11.70
3	*5260.00	111.76 PK			2.21 V	270	99.81	11.95
4	*5260.00	103.56 AV			2.21 V	270	91.61	11.95
5	#10520.00	58.86 PK	68.20	-9.34	1.87 V	149	40.25	18.61

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	107.49 PK			2.69 H	71	95.34	12.15
2	*5300.00	99.39 AV			2.69 H	71	87.24	12.15
3	10600.00	57.93 PK	74.00	-16.07	2.41 H	159	39.34	18.59
4	10600.00	47.26 AV	54.00	-6.74	2.41 H	159	28.67	18.59
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	111.99 PK			2.34 V	268	99.84	12.15
2	*5300.00	103.51 AV			2.34 V	268	91.36	12.15
3	10600.00	58.84 PK	74.00	-15.16	1.52 V	258	40.25	18.59
4	10600.00	47.93 AV	54.00	-6.07	1.52 V	258	29.34	18.59

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	106.60 PK			1.72 H	63	94.36	12.24
2	*5320.00	98.83 AV			1.72 H	63	86.59	12.24
3	5350.00	59.62 PK	74.00	-14.38	1.72 H	63	47.26	12.36
4	5350.00	44.78 AV	54.00	-9.22	1.72 H	63	32.42	12.36
5	10640.00	58.10 PK	74.00	-15.90	1.78 H	185	39.55	18.55
6	10640.00	47.00 AV	54.00	-7.00	1.78 H	185	28.45	18.55
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	111.09 PK			2.07 V	297	98.85	12.24
2	*5320.00	102.24 AV			2.07 V	297	90.00	12.24
3	5350.00	63.96 PK	74.00	-10.04	2.07 V	297	51.60	12.36
4	5350.00	48.98 AV	54.00	-5.02	2.07 V	297	36.62	12.36
5	10640.00	58.90 PK	74.00	-15.10	2.14 V	156	40.35	18.55
6	10640.00	48.29 AV	54.00	-5.71	2.14 V	156	29.74	18.55

Remarks:

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

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

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	54.72 PK	74.00	-19.28	1.68 H	63	42.25	12.47
2	5460.00	42.49 AV	54.00	-11.51	1.68 H	63	30.02	12.47
3	#5470.00	62.74 PK	68.20	-5.46	1.68 H	63	50.24	12.50
4	*5500.00	104.95 PK			1.68 H	63	92.35	12.60
5	*5500.00	98.34 AV			1.68 H	63	85.74	12.60
6	11000.00	57.61 PK	74.00	-16.39	2.05 H	182	38.64	18.97
7	11000.00	46.86 AV	54.00	-7.14	2.05 H	182	27.89	18.97
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	59.38 PK	74.00	-14.62	1.76 V	268	46.91	12.47
2	5460.00	43.30 AV	54.00	-10.70	1.76 V	268	30.83	12.47
3	#5470.00	66.91 PK	68.20	-1.29	1.76 V	268	54.41	12.50
4	*5500.00	109.16 PK			1.76 V	268	96.56	12.60
5	*5500.00	101.60 AV			1.76 V	268	89.00	12.60
6	11000.00	58.63 PK	74.00	-15.37	1.76 V	268	39.66	18.97
7	11000.00	47.49 AV	54.00	-6.51	1.76 V	268	28.52	18.97

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	106.56 PK			1.66 H	72	94.57	11.99
2	*5580.00	99.62 AV			1.66 H	72	87.63	11.99
3	11160.00	58.18 PK	74.00	-15.82	2.35 H	198	38.42	19.76
4	11160.00	47.31 AV	54.00	-6.69	2.35 H	198	27.55	19.76
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	110.67 PK			1.84 V	274	98.68	11.99
2	*5580.00	103.25 AV			1.84 V	274	91.26	11.99
3	11160.00	59.41 PK	74.00	-14.59	2.31 V	163	39.65	19.76
4	11160.00	48.10 AV	54.00	-5.90	2.31 V	163	28.34	19.76

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	105.24 PK			1.69 H	69	93.55	11.69
2	*5700.00	97.03 AV			1.69 H	69	85.34	11.69
3	#5725.00	62.08 PK	68.20	-6.12	1.69 H	69	50.36	11.72
4	11400.00	58.05 PK	74.00	-15.95	2.36 H	251	38.42	19.63
5	11400.00	47.26 AV	54.00	-6.74	2.36 H	251	27.63	19.63
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	108.88 PK			1.54 V	270	97.19	11.69
2	*5700.00	101.11 AV			1.54 V	270	89.42	11.69
3	#5725.00	66.68 PK	68.20	-1.52	1.54 V	270	54.96	11.72
4	11400.00	58.99 PK	74.00	-15.01	1.87 V	144	39.36	19.63
5	11400.00	48.20 AV	54.00	-5.80	1.87 V	144	28.57	19.63

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	#5634.99	48.31 PK	68.20	-19.89	1.69 H	66	36.54	11.77
2	*5745.00	109.61 PK			1.69 H	66	97.85	11.76
3	*5745.00	101.43 AV			1.69 H	66	89.67	11.76
4	#5928.37	49.90 PK	68.20	-18.30	1.69 H	66	38.04	11.86
5	11490.00	59.83 PK	74.00	-14.17	2.68 H	254	39.79	20.04
6	11490.00	48.70 AV	54.00	-5.30	2.68 H	254	28.66	20.04
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	#5629.42	50.72 PK	68.20	-17.48	1.76 V	286	38.94	11.78
2	*5745.00	113.46 PK			1.76 V	286	101.70	11.76
3	*5745.00	105.51 AV			1.76 V	286	93.75	11.76
4	#5935.83	51.38 PK	68.20	-16.82	1.76 V	286	39.45	11.93
5	11490.00	59.93 PK	74.00	-14.07	1.98 V	178	39.89	20.04
6	11490.00	48.93 AV	54.00	-5.07	1.98 V	178	28.89	20.04

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 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	#5630.61	49.38 PK	68.20	-18.82	1.73 H	75	37.61	11.77
2	*5785.00	109.28 PK			1.73 H	75	97.46	11.82
3	*5785.00	101.18 AV			1.73 H	75	89.36	11.82
4	#5945.21	50.68 PK	68.20	-17.52	1.73 H	75	38.67	12.01
5	11570.00	58.83 PK	74.00	-15.17	2.52 H	201	38.46	20.37
6	11570.00	48.02 AV	54.00	-5.98	2.52 H	201	27.65	20.37
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	#5633.77	50.88 PK	68.20	-17.32	1.96 V	282	39.11	11.77
2	*5785.00	113.66 PK			1.96 V	282	101.84	11.82
3	*5785.00	105.69 AV			1.96 V	282	93.87	11.82
4	#5944.96	52.35 PK	68.20	-15.85	1.96 V	282	40.35	12.00
5	11570.00	59.73 PK	74.00	-14.27	1.42 V	132	39.36	20.37
6	11570.00	49.02 AV	54.00	-4.98	1.42 V	132	28.65	20.37

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 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	#5639.50	52.66 PK	68.20	-15.54	1.64 H	78	40.91	11.75
2	*5825.00	110.42 PK			1.64 H	78	98.63	11.79
3	*5825.00	106.15 AV			1.64 H	78	94.36	11.79
4	#5926.01	54.79 PK	68.20	-13.41	1.64 H	78	42.95	11.84
5	11650.00	58.78 PK	74.00	-15.22	1.24 H	195	38.24	20.54
6	11650.00	48.20 AV	54.00	-5.80	1.24 H	195	27.66	20.54
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	#5631.60	53.99 PK	68.20	-14.21	1.88 V	284	42.22	11.77
2	*5825.00	114.21 PK			1.88 V	284	102.42	11.79
3	*5825.00	106.15 AV			1.88 V	284	94.36	11.79
4	#5985.30	57.22 PK	68.20	-10.98	1.88 V	284	44.93	12.29
5	11650.00	59.66 PK	74.00	-14.34	1.28 V	284	39.12	20.54
6	11650.00	48.71 AV	54.00	-5.29	1.28 V	284	28.17	20.54

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 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	59.34 PK	74.00	-14.66	1.67 H	68	47.64	11.70
2	5150.00	47.96 AV	54.00	-6.04	1.67 H	68	36.26	11.70
3	*5190.00	100.44 PK			1.67 H	68	88.64	11.80
4	*5190.00	93.16 AV			1.67 H	68	81.36	11.80
5	#10380.00	58.05 PK	68.20	-10.15	2.36 H	214	39.45	18.60
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	62.81 PK	74.00	-11.19	2.27 V	247	51.11	11.70
2	5150.00	52.58 AV	54.00	-1.42	2.27 V	247	40.88	11.70
3	*5190.00	104.73 PK			2.27 V	247	92.93	11.80
4	*5190.00	97.24 AV			2.27 V	247	85.44	11.80
5	#10380.00	59.11 PK	68.20	-9.09	1.77 V	162	40.51	18.60

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	105.34 PK			1.71 H	69	93.46	11.88
2	*5230.00	97.52 AV			1.71 H	69	85.64	11.88
3	5350.00	52.71 PK	74.00	-21.29	1.71 H	69	40.35	12.36
4	5350.00	42.70 AV	54.00	-11.30	1.71 H	69	30.34	12.36
5	#10460.00	58.00 PK	68.20	-10.20	1.77 H	155	39.35	18.65
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	109.15 PK			2.55 V	295	97.27	11.88
2	*5230.00	101.70 AV			2.55 V	295	89.82	11.88
3	5350.00	54.45 PK	74.00	-19.55	2.55 V	295	42.09	12.36
4	5350.00	43.53 AV	54.00	-10.47	2.55 V	295	31.17	12.36
5	#10460.00	58.99 PK	68.20	-9.21	2.01 V	162	40.34	18.65

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	52.22 PK	74.00	-21.78	1.67 H	67	40.52	11.70
2	5150.00	42.25 AV	54.00	-11.75	1.67 H	67	30.55	11.70
3	*5270.00	105.52 PK			1.67 H	67	93.52	12.00
4	*5270.00	96.16 AV			1.67 H	67	84.16	12.00
5	#10540.00	57.97 PK	68.20	-10.23	2.45 H	162	39.36	18.61
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	54.11 PK	74.00	-19.89	2.91 V	296	42.41	11.70
2	5150.00	43.39 AV	54.00	-10.61	2.91 V	296	31.69	11.70
3	*5270.00	109.13 PK			2.91 V	296	97.13	12.00
4	*5270.00	100.39 AV			2.91 V	296	88.39	12.00
5	#10540.00	58.86 PK	68.20	-9.34	1.23 V	326	40.25	18.61

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	103.64 PK			1.66 H	62	91.45	12.19
2	*5310.00	96.45 AV			1.66 H	62	84.26	12.19
3	5350.00	62.61 PK	74.00	-11.39	1.66 H	62	50.25	12.36
4	5350.00	47.79 AV	54.00	-6.21	1.66 H	62	35.43	12.36
5	10620.00	57.89 PK	74.00	-16.11	1.12 H	261	39.32	18.57
6	10620.00	47.20 AV	54.00	-6.80	1.12 H	261	28.63	18.57
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	107.93 PK			2.86 V	297	95.74	12.19
2	*5310.00	100.37 AV			2.86 V	297	88.18	12.19
3	5350.00	66.44 PK	74.00	-7.56	2.86 V	297	54.08	12.36
4	5350.00	51.85 AV	54.00	-2.15	2.86 V	297	39.49	12.36
5	10620.00	59.12 PK	74.00	-14.88	2.16 V	254	40.55	18.57
6	10620.00	47.99 AV	54.00	-6.01	2.16 V	254	29.42	18.57

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	56.72 PK	74.00	-17.28	1.74 H	65	44.25	12.47
2	5460.00	42.73 AV	54.00	-11.27	1.74 H	65	30.26	12.47
3	#5470.00	62.69 PK	68.20	-5.51	1.74 H	65	50.19	12.50
4	*5510.00	101.21 PK			1.74 H	65	88.69	12.52
5	*5510.00	92.78 AV			1.74 H	65	80.26	12.52
6	11020.00	57.47 PK	74.00	-16.53	2.69 H	287	38.42	19.05
7	11020.00	46.57 AV	54.00	-7.43	2.69 H	287	27.52	19.05
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	60.74 PK	74.00	-13.26	2.00 V	270	48.27	12.47
2	5460.00	46.12 AV	54.00	-7.88	2.00 V	270	33.65	12.47
3	#5470.00	66.89 PK	68.20	-1.31	2.00 V	270	54.39	12.50
4	*5510.00	104.61 PK			2.00 V	270	92.09	12.52
5	*5510.00	96.95 AV			2.00 V	270	84.43	12.52
6	11020.00	58.28 PK	74.00	-15.72	1.88 V	211	39.23	19.05
7	11020.00	47.74 AV	54.00	-6.26	1.88 V	211	28.69	19.05

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	102.75 PK			1.74 H	78	90.52	12.23
2	*5550.00	94.90 AV			1.74 H	78	82.67	12.23
3	11100.00	57.86 PK	74.00	-16.14	2.32 H	218	38.47	19.39
4	11100.00	46.67 AV	54.00	-7.33	2.32 H	218	27.28	19.39
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	106.79 PK			2.06 V	273	94.56	12.23
2	*5550.00	99.22 AV			2.06 V	273	86.99	12.23
3	11100.00	58.65 PK	74.00	-15.35	1.94 V	175	39.26	19.39
4	11100.00	47.93 AV	54.00	-6.07	1.94 V	175	28.54	19.39

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	104.17 PK			1.73 H	69	92.45	11.72
2	*5670.00	96.41 AV			1.73 H	69	84.69	11.72
3	#5725.00	61.96 PK	68.20	-6.24	1.73 H	69	50.24	11.72
4	11340.00	58.15 PK	74.00	-15.85	1.77 H	144	38.46	19.69
5	11340.00	47.31 AV	54.00	-6.69	1.77 H	144	27.62	19.69
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	108.59 PK			2.08 V	277	96.87	11.72
2	*5670.00	99.98 AV			2.08 V	277	88.26	11.72
3	#5725.00	66.68 PK	68.20	-1.52	2.08 V	277	54.96	11.72
4	11340.00	59.23 PK	74.00	-14.77	1.85 V	222	39.54	19.69
5	11340.00	48.38 AV	54.00	-5.62	1.85 V	222	28.69	19.69

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	#5648.25	52.50 PK	68.20	-15.70	1.68 H	73	40.75	11.75
2	*5755.00	106.44 PK			1.68 H	73	94.68	11.76
3	*5755.00	98.37 AV			1.68 H	73	86.61	11.76
4	#5928.17	53.45 PK	68.20	-14.75	1.68 H	73	41.59	11.86
5	11510.00	58.37 PK	74.00	-15.63	2.14 H	156	38.24	20.13
6	11510.00	47.29 AV	54.00	-6.71	2.14 H	156	27.16	20.13
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	#5639.40	52.74 PK	68.20	-15.46	1.60 V	286	40.99	11.75
2	*5755.00	110.21 PK			1.60 V	286	98.45	11.76
3	*5755.00	102.40 AV			1.60 V	286	90.64	11.76
4	#5949.20	54.94 PK	68.20	-13.26	1.60 V	286	42.90	12.04
5	11510.00	59.39 PK	74.00	-14.61	2.03 V	26	39.26	20.13
6	11510.00	48.54 AV	54.00	-5.46	2.03 V	26	28.41	20.13

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 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	#5645.75	52.06 PK	68.20	-16.14	1.75 H	75	40.32	11.74
2	*5795.00	106.19 PK			1.75 H	75	94.36	11.83
3	*5795.00	98.49 AV			1.75 H	75	86.66	11.83
4	#5961.26	54.07 PK	68.20	-14.13	1.75 H	75	41.95	12.12
5	11590.00	58.59 PK	74.00	-15.41	1.43 H	263	38.15	20.44
6	11590.00	47.66 AV	54.00	-6.34	1.43 H	263	27.22	20.44
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	#5641.20	53.24 PK	68.20	-14.96	1.72 V	287	41.48	11.76
2	*5795.00	110.46 PK			1.72 V	287	98.63	11.83
3	*5795.00	102.29 AV			1.72 V	287	90.46	11.83
4	#5961.82	56.00 PK	68.20	-12.20	1.72 V	287	43.88	12.12
5	11590.00	59.76 PK	74.00	-14.24	1.88 V	254	39.32	20.44
6	11590.00	48.69 AV	54.00	-5.31	1.88 V	254	28.25	20.44

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 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	60.37 PK	74.00	-13.63	1.67 H	56	48.67	11.70
2	5150.00	49.32 AV	54.00	-4.68	1.67 H	56	37.62	11.70
3	*5210.00	98.18 PK			1.67 H	56	86.35	11.83
4	*5210.00	91.43 AV			1.67 H	56	79.60	11.83
5	5350.00	51.72 PK	74.00	-22.28	1.67 H	56	39.36	12.36
6	5350.00	42.25 AV	54.00	-11.75	1.67 H	56	29.89	12.36
7	#10420.00	58.40 PK	68.20	-9.80	2.24 H	169	39.74	18.66
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	64.18 PK	74.00	-9.82	2.46 V	294	52.48	11.70
2	5150.00	52.89 AV	54.00	-1.11	2.46 V	294	41.19	11.70
3	*5210.00	102.52 PK			2.46 V	294	90.69	11.83
4	*5210.00	95.27 AV			2.46 V	294	83.44	11.83
5	5350.00	52.74 PK	74.00	-21.26	2.46 V	294	40.38	12.36
6	5350.00	43.31 AV	54.00	-10.69	2.46 V	294	30.95	12.36
7	#10420.00	59.25 PK	68.20	-8.95	1.52 V	230	40.59	18.66

Remarks:

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

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

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	52.26 PK	74.00	-21.74	1.72 H	69	40.56	11.70
2	5150.00	43.68 AV	54.00	-10.32	1.72 H	69	31.98	11.70
3	*5290.00	100.69 PK			1.72 H	69	88.58	12.11
4	*5290.00	92.37 AV			1.72 H	69	80.26	12.11
5	5350.00	62.01 PK	74.00	-11.99	1.72 H	69	49.65	12.36
6	5350.00	48.71 AV	54.00	-5.29	1.72 H	69	36.35	12.36
7	#10580.00	57.95 PK	68.20	-10.25	2.65 H	247	39.35	18.60
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	54.55 PK	74.00	-19.45	2.40 V	298	42.85	11.70
2	5150.00	44.15 AV	54.00	-9.85	2.40 V	298	32.45	11.70
3	*5290.00	104.08 PK			2.40 V	298	91.97	12.11
4	*5290.00	96.98 AV			2.40 V	298	84.87	12.11
5	5350.00	65.41 PK	74.00	-8.59	2.40 V	298	53.05	12.36
6	5350.00	52.93 AV	54.00	-1.07	2.40 V	298	40.57	12.36
7	#10580.00	58.85 PK	68.20	-9.35	1.97 V	145	40.25	18.60

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	59.71 PK	74.00	-14.29	1.73 H	72	47.24	12.47
2	5460.00	46.73 AV	54.00	-7.27	1.73 H	72	34.26	12.47
3	#5470.00	62.57 PK	68.20	-5.63	1.73 H	72	50.07	12.50
4	*5530.00	98.94 PK			1.73 H	72	86.57	12.37
5	*5530.00	92.00 AV			1.73 H	72	79.63	12.37
6	11060.00	57.68 PK	74.00	-16.32	2.55 H	207	38.46	19.22
7	11060.00	46.41 AV	54.00	-7.59	2.55 H	207	27.19	19.22
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	63.73 PK	74.00	-10.27	2.07 V	277	51.26	12.47
2	5460.00	51.31 AV	54.00	-2.69	2.07 V	277	38.84	12.47
3	#5470.00	66.54 PK	68.20	-1.66	2.07 V	277	54.04	12.50
4	*5530.00	102.49 PK			2.07 V	277	90.12	12.37
5	*5530.00	95.58 AV			2.07 V	277	83.21	12.37
6	11060.00	58.87 PK	74.00	-15.13	1.62 V	287	39.65	19.22
7	11060.00	47.63 AV	54.00	-6.37	1.62 V	287	28.41	19.22

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	#5626.77	54.18 PK	68.20	-14.02	1.74 H	69	42.40	11.78
2	*5775.00	103.22 PK			1.74 H	69	91.42	11.80
3	*5775.00	95.06 AV			1.74 H	69	83.26	11.80
4	#5934.35	54.64 PK	68.20	-13.56	1.74 H	69	42.73	11.91
5	11550.00	58.52 PK	74.00	-15.48	1.21 H	142	38.24	20.28
6	11550.00	47.39 AV	54.00	-6.61	1.21 H	142	27.11	20.28
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	#5635.08	56.51 PK	68.20	-11.69	1.90 V	280	44.75	11.76
2	*5775.00	107.47 PK			1.90 V	280	95.67	11.80
3	*5775.00	99.58 AV			1.90 V	280	87.78	11.80
4	#5926.21	56.43 PK	68.20	-11.77	1.90 V	280	44.59	11.84
5	11550.00	59.60 PK	74.00	-14.40	2.52 V	139	39.32	20.28
6	11550.00	48.45 AV	54.00	-5.55	2.52 V	139	28.17	20.28

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.

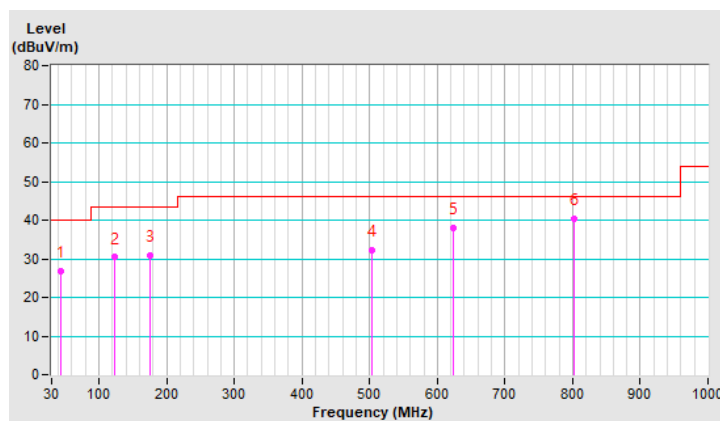
BELOW 1GHz WORST-CASE DATA

RF Mode	TX 802.11a	Channel	CH 157 : 5785 MHz
Frequency Range	9kHz ~ 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	42.61	26.90 QP	40.00	-13.10	2.80 H	196	34.24	-7.34
2	122.15	30.42 QP	43.50	-13.08	2.19 H	256	39.24	-8.82
3	174.53	31.00 QP	43.50	-12.50	2.45 H	230	37.83	-6.83
4	504.33	32.19 QP	46.00	-13.81	1.91 H	284	31.99	0.20
5	623.64	38.13 QP	46.00	-7.87	1.58 H	316	35.13	3.00
6	802.12	40.36 QP	46.00	-5.64	1.30 H	344	34.39	5.97

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.

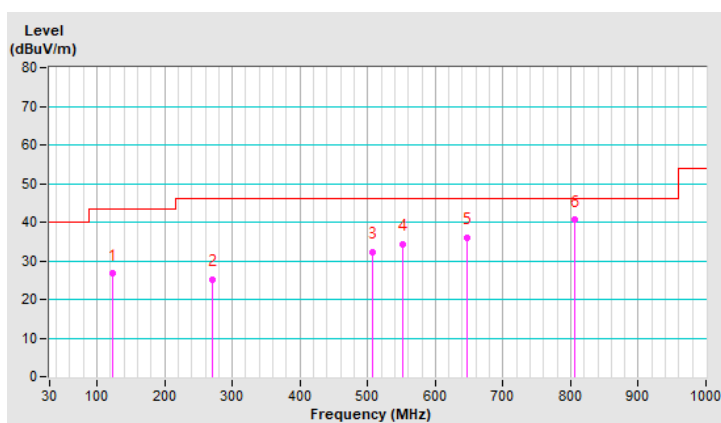


RF Mode	TX 802.11a	Channel	CH 157 : 5785 MHz
Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

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	123.12	26.63 QP	43.50	-16.87	2.46 V	155	35.30	-8.67
2	270.56	25.25 QP	46.00	-20.75	2.24 V	176	30.58	-5.33
3	507.24	32.23 QP	46.00	-13.77	1.97 V	203	31.93	0.30
4	551.86	34.26 QP	46.00	-11.74	1.62 V	237	33.34	0.92
5	647.89	35.91 QP	46.00	-10.09	1.00 V	323	32.71	3.20
6	805.03	40.59 QP	46.00	-5.41	1.29 V	270	34.54	6.05

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 0.50MHz.

4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
ROHDE & SCHWARZ TEST RECEIVER	ESR3	102412	Jan. 29, 2021	Jan. 28, 2022
SCHWARZBECK Artificial Mains Network (for EUT)	NSLK 8128	8128-244	Nov. 19, 2020	Nov. 18, 2021
LISN With Adapter (for EUT)	AD10	C05Ada-001	Nov. 19, 2020	Nov. 18, 2021
R&S Artificial Mains Network (for peripheral)	ESH3-Z5	100220	Dec. 1, 2020	Nov. 30, 2021
Software	Cond_V7.3.7.4	NA	NA	NA
RF cable (JYEBAO) With 10dB PAD	5D-FB	Cable-C05.01	Jan. 29, 2021	Jan. 28, 2022
LYNICS Terminator (For R&S LISN)	0900510	E1-01-305	Feb. 17, 2021	Feb. 16, 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 Shielded Room No. 5. (Conduction 5)

3. The VCCI Site Registration No. C-11093.

4.2.3 Test Procedures

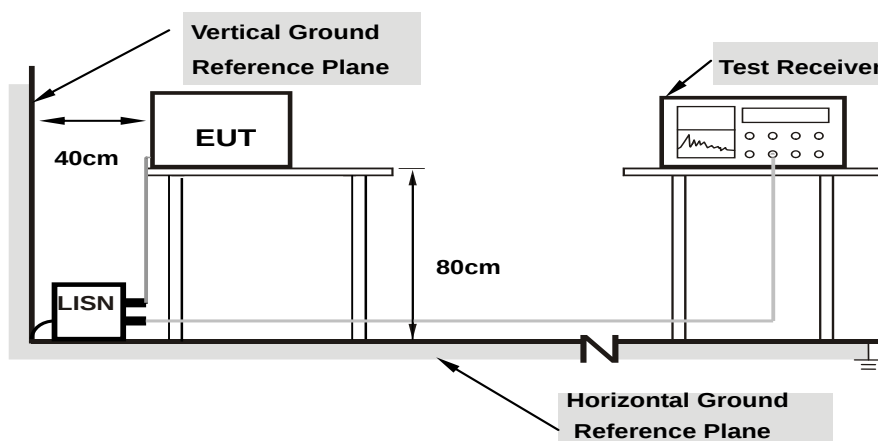
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

Note: The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



Note: 1.Support units were connected to second LISN.

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

4.2.6 EUT Operating Conditions

Same as 4.1.6.

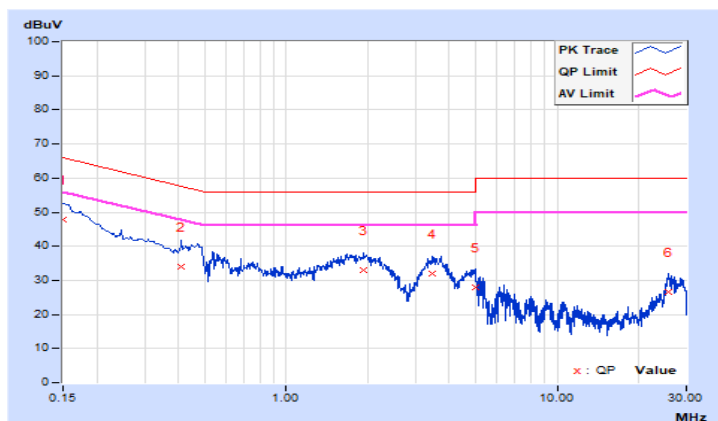
4.2.7 Test Results

RF Mode	TX 802.11a	Channel	CH 157 : 5785 MHz
Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz

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	9.72	38.14	20.17	47.86	29.89	66.00	56.00	-18.14	-26.11
2	0.41000	9.70	24.26	7.85	33.96	17.55	57.65	47.65	-23.69	-30.10
3	1.93200	9.77	23.37	6.99	33.14	16.76	56.00	46.00	-22.86	-29.24
4	3.48000	9.84	22.30	7.70	32.14	17.54	56.00	46.00	-23.86	-28.46
5	4.98400	9.90	18.01	4.35	27.91	14.25	56.00	46.00	-28.09	-31.75
6	25.76400	10.28	16.28	5.59	26.56	15.87	60.00	50.00	-33.44	-34.13

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

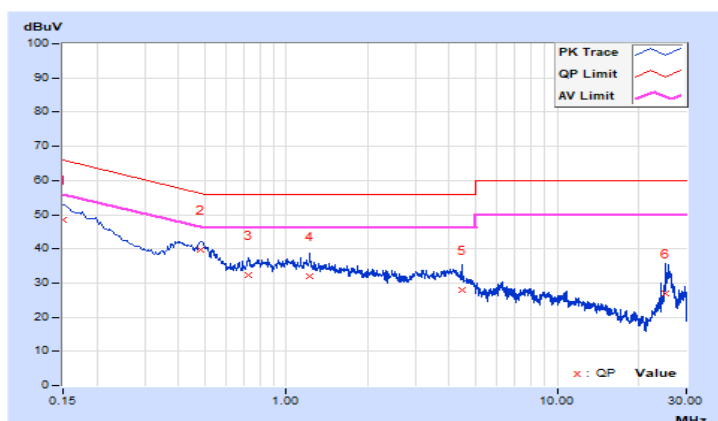


RF Mode	TX 802.11a	Channel	CH 157 : 5785 MHz
Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz

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	0.15000	9.72	38.71	20.11	48.43	29.83	66.00	56.00	-17.57	-26.17
2	0.48062	9.72	29.98	25.23	39.70	34.95	56.33	46.33	-16.63	-11.38
3	0.72800	9.74	22.48	14.47	32.22	24.21	56.00	46.00	-23.78	-21.79
4	1.22400	9.77	22.15	15.19	31.92	24.96	56.00	46.00	-24.08	-21.04
5	4.45200	9.88	18.09	12.41	27.97	22.29	56.00	46.00	-28.03	-23.71
6	25.24400	10.31	16.59	2.97	26.90	13.28	60.00	50.00	-33.10	-36.72

Remarks:

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



4.3 Transmit Power Measurement

4.3.1 Limits of Transmit Power Measurement

Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p $\leq$ 125mW(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	250mW (24 dBm)
U-NII-2A	√		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-2C	√		250mW (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 $N_{ANT} \leq 4$;

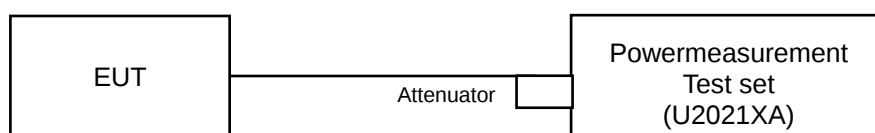
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;

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

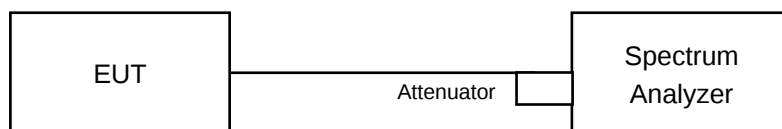
For power measurements on all other devices: Array Gain = $10 \log(N_{ANT}/N_{SS})$ dB.

4.3.2 Test Setup

For Power Output Measurement



For 26dB Bandwidth Measurement



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 26dB Bandwidth Measurement

1. Set RBW = approximately 1% to 5% of the emission bandwidth.
2. Set the VBW $\geq 3 \times$ RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. 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 Result

Power Output:

802.11a

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)	Maximum Conducted Power (mW)	Power Limit (dBm)	Pass / Fail
36	5180	17.28	53.456	24.00	Pass
40	5200	17.27	53.333	24.00	Pass
48	5240	17.17	52.119	24.00	Pass
52	5260	17.22	52.723	23.79	Pass
60	5300	17.31	53.827	23.76	Pass
64	5320	17.19	52.360	23.76	Pass
100	5500	20.05	101.158	24.00	Pass
116	5580	20.03	100.693	24.00	Pass
140	5700	19.93	98.401	24.00	Pass
149	5745	20.06	101.391	30.00	Pass
157	5785	19.98	99.541	30.00	Pass
165	5825	20.05	101.158	30.00	Pass

NOTE:

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

1. $11\text{dBm} + 10\log(19.02) = 23.79\text{ dBm} < 24\text{dBm}$.
2. $11\text{dBm} + 10\log(18.88) = 23.76\text{ dBm} < 24\text{dBm}$.
3. $11\text{dBm} + 10\log(18.89) = 23.76\text{ dBm} < 24\text{dBm}$.
4. $11\text{dBm} + 10\log(24.83) = 24.94\text{ dBm} > 24\text{dBm}$.
5. $11\text{dBm} + 10\log(28.73) = 25.58\text{ dBm} > 24\text{dBm}$.
6. $11\text{dBm} + 10\log(34.12) = 26.33\text{ dBm} > 24\text{dBm}$.

802.11ac (VHT20)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	12.87	12.83	38.551	15.86	24.00	Pass
40	5200	12.85	12.84	38.506	15.86	24.00	Pass
48	5240	12.82	12.83	38.329	15.84	24.00	Pass
52	5260	14.60	14.58	57.548	17.60	23.95	Pass
60	5300	14.53	14.57	57.021	17.56	23.97	Pass
64	5320	14.61	14.63	57.947	17.63	23.93	Pass
100	5500	19.58	19.63	182.615	22.62	24.00	Pass
116	5580	19.99	19.96	198.853	22.99	24.00	Pass
140	5700	18.12	18.15	130.176	21.15	24.00	Pass
149	5745	19.96	20.07	200.708	23.03	30.00	Pass
157	5785	19.90	20.10	200.053	23.01	30.00	Pass
165	5825	20.10	20.01	202.560	23.07	30.00	Pass

NOTE:

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

Chain 0

1. $11\text{dBm} + 10\log(19.77) = 23.96\text{ dBm} < 24\text{dBm}$.
2. $11\text{dBm} + 10\log(19.85) = 23.97\text{ dBm} < 24\text{dBm}$.
3. $11\text{dBm} + 10\log(19.64) = 23.93\text{ dBm} < 24\text{dBm}$.
4. $11\text{dBm} + 10\log(28.21) = 25.50\text{ dBm} > 24\text{dBm}$.
5. $11\text{dBm} + 10\log(37.92) = 26.79\text{ dBm} > 24\text{dBm}$.
6. $11\text{dBm} + 10\log(20.42) = 24.10\text{ dBm} > 24\text{dBm}$.

Chain 1

1. $11\text{dBm} + 10\log(19.76) = 23.95\text{ dBm} < 24\text{dBm}$.
2. $11\text{dBm} + 10\log(19.87) = 23.98\text{ dBm} < 24\text{dBm}$.
3. $11\text{dBm} + 10\log(19.78) = 23.96\text{ dBm} < 24\text{dBm}$.
4. $11\text{dBm} + 10\log(28.82) = 25.60\text{ dBm} > 24\text{dBm}$.
5. $11\text{dBm} + 10\log(37.38) = 26.73\text{ dBm} > 24\text{dBm}$.
6. $11\text{dBm} + 10\log(20.42) = 24.10\text{ dBm} > 24\text{dBm}$.

802.11ac (VHT40)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	14.97	15.03	63.247	18.01	24.00	Pass
46	5230	15.01	15.04	63.614	18.04	24.00	Pass
54	5270	14.93	15.01	62.813	17.98	24.00	Pass
62	5310	15.00	15.02	63.392	18.02	24.00	Pass
102	5510	18.72	19.41	161.770	22.09	24.00	Pass
110	5550	20.05	20.01	201.388	23.04	24.00	Pass
134	5670	19.96	20.08	200.942	23.03	24.00	Pass
151	5755	20.04	20.16	204.678	23.11	30.00	Pass
159	5795	20.03	20.05	201.851	23.05	30.00	Pass

NOTE:

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

Chain 0

1. $11\text{dBm} + 10\log(41.74) = 27.21\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(42.10) = 27.24\text{ dBm} > 24\text{dBm}$.
3. $11\text{dBm} + 10\log(60.50) = 28.82\text{ dBm} > 24\text{dBm}$.
4. $11\text{dBm} + 10\log(72.81) = 29.62\text{ dBm} > 24\text{dBm}$.
5. $11\text{dBm} + 10\log(74.32) = 29.71\text{ dBm} > 24\text{dBm}$.

Chain 1

1. $11\text{dBm} + 10\log(41.62) = 27.19\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(42.16) = 27.25\text{ dBm} > 24\text{dBm}$.
3. $11\text{dBm} + 10\log(58.18) = 28.65\text{ dBm} > 24\text{dBm}$.
4. $11\text{dBm} + 10\log(71.23) = 29.53\text{ dBm} > 24\text{dBm}$.
5. $11\text{dBm} + 10\log(72.94) = 29.63\text{ dBm} > 24\text{dBm}$.

802.11ac (VHT80)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	14.98	15.07	63.614	18.04	24.00	Pass
58	5290	14.97	14.94	62.594	17.97	24.00	Pass
106	5530	19.48	19.06	169.253	22.29	24.00	Pass
155	5775	20.01	20.03	200.924	23.03	30.00	Pass

NOTE:

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

Chain 0

1. $11\text{dBm} + 10\log(82.10) = 30.14\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(113.91) = 31.56\text{ dBm} > 24\text{dBm}$.

Chain 1

1. $11\text{dBm} + 10\log(82.09) = 30.14\text{ dBm} > 24\text{dBm}$.
2. $11\text{dBm} + 10\log(113.94) = 31.57\text{ dBm} > 24\text{dBm}$.

26dB Bandwidth:

802.11a

Channel	Channel Frequency (MHz)	26dBc Bandwidth (MHz)
36	5180	18.79
40	5200	18.94
48	5240	18.89
52	5260	19.02
60	5300	18.88
64	5320	18.89
100	5500	24.83
116	5580	28.73
140	5700	34.12

802.11ac (VHT20)

Channel	Channel Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	19.79	19.86
40	5200	19.78	19.79
48	5240	19.81	19.84
52	5260	19.77	19.76
60	5300	19.85	19.87
64	5320	19.64	19.78
100	5500	28.21	28.82
116	5580	37.92	37.38
140	5700	20.42	20.42

802.11ac (VHT40)

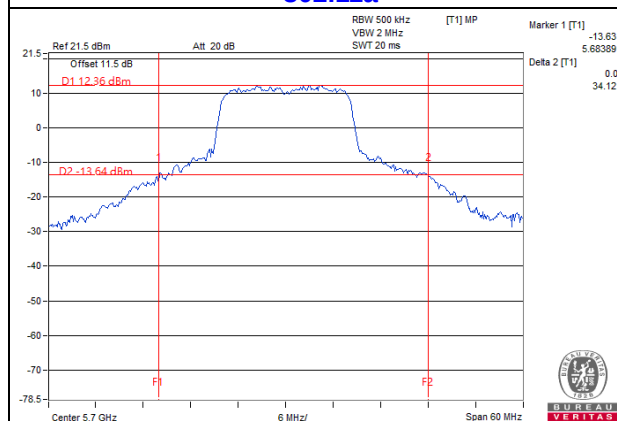
Channel	Channel Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	41.34	41.41
46	5230	42.16	42.20
54	5270	41.74	41.62
62	5310	42.10	42.16
102	5510	60.50	58.18
110	5550	72.81	71.23
134	5670	74.32	72.94

802.11ac (VHT80)

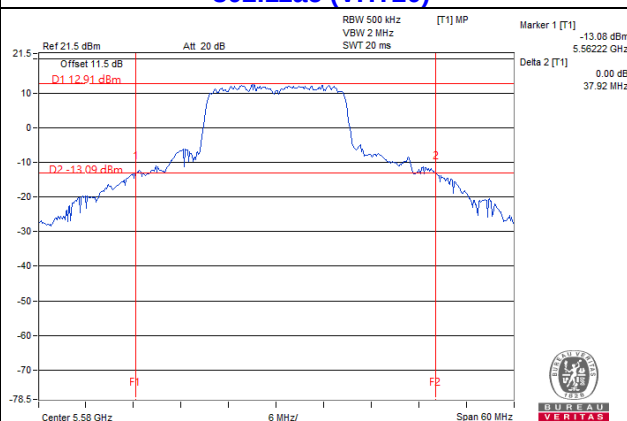
Channel	Channel Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	82.29	82.41
58	5290	82.10	82.09
106	5530	113.91	113.94

Spectrum Plot of Worst Value

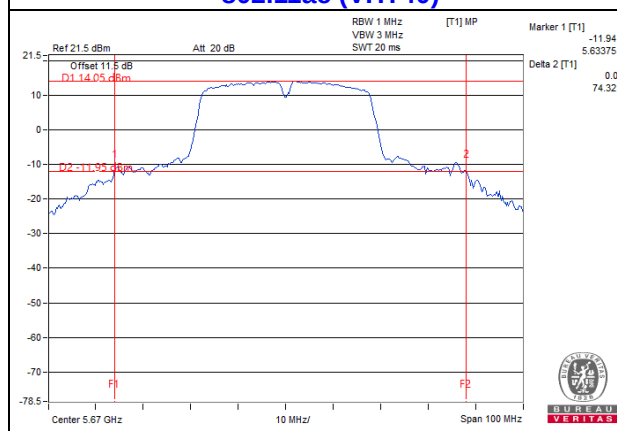
802.11a



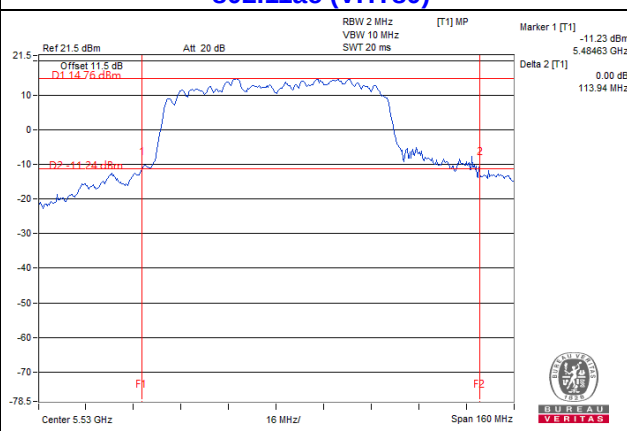
802.11ac (VHT20)



802.11ac (VHT40)



802.11ac (VHT80)



EUT Maximum Conducted Power

802.11a

Frequency Band (MHz)	MAX. Power	
	Output Power(dBm)	Output Power(mW)
5250~5350	17.31	53.827
5470~5725	20.05	101.158

802.11ac VHT20

Frequency Band (MHz)	MAX. Power	
	Output Power(dBm)	Output Power(mW)
5250~5350	17.63	57.947
5470~5725	22.99	198.853

802.11ac VHT40

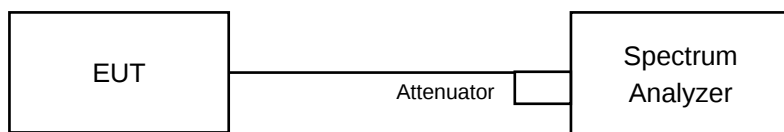
Frequency Band (MHz)	MAX. Power	
	Output Power(dBm)	Output Power(mW)
5250~5350	18.02	63.392
5470~5725	23.04	201.388

802.11ac VHT80

Frequency Band (MHz)	MAX. Power	
	Output Power(dBm)	Output Power(mW)
5250~5350	17.97	62.594
5470~5725	22.29	169.253

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 Result

802.11a

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)
36	5180	16.32
40	5200	16.32
48	5240	16.32
52	5260	16.44
60	5300	16.44
64	5320	16.32
100	5500	16.68
116	5580	16.68
140	5700	16.80
149	5745	16.95
157	5785	17.00
165	5825	16.80

802.11ac (VHT20)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	17.52	17.64
40	5200	17.52	17.52
48	5240	17.52	17.52
52	5260	17.52	17.52
60	5300	17.52	17.52
64	5320	17.52	17.52
100	5500	17.76	17.76
116	5580	18.12	18.00
140	5700	17.64	17.64
149	5745	17.74	17.70
157	5785	17.70	17.70
165	5825	17.80	17.90

802.11ac (VHT40)

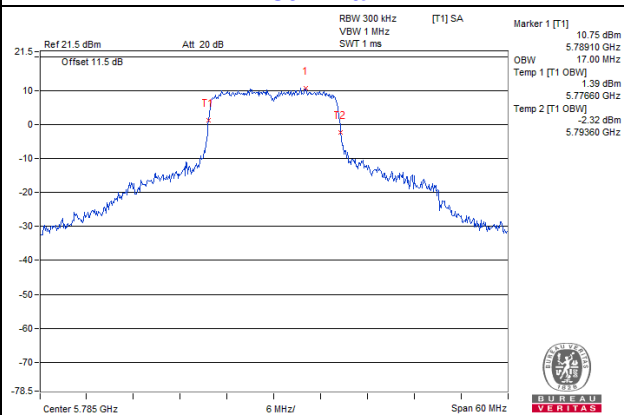
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	36.00	36.00
46	5230	36.40	36.40
54	5270	36.20	36.20
62	5310	36.40	36.40
102	5510	36.40	36.40
110	5550	37.20	37.20
134	5670	36.80	36.80
151	5755	36.52	36.66
159	5795	36.50	36.50

802.11ac (VHT80)

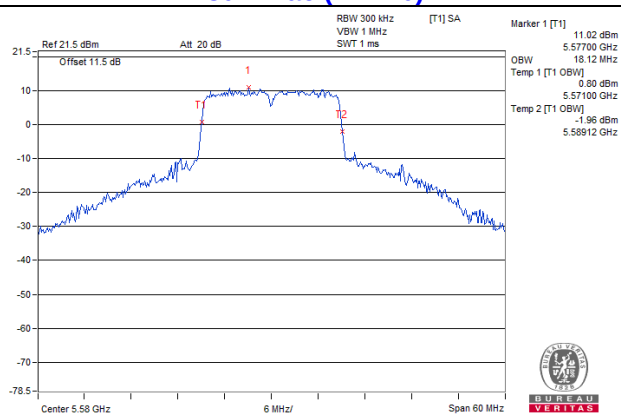
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	74.88	74.88
58	5290	74.64	74.88
106	5530	75.12	75.12
155	5775	75.08	75.32

Spectrum Plot of Worst Value

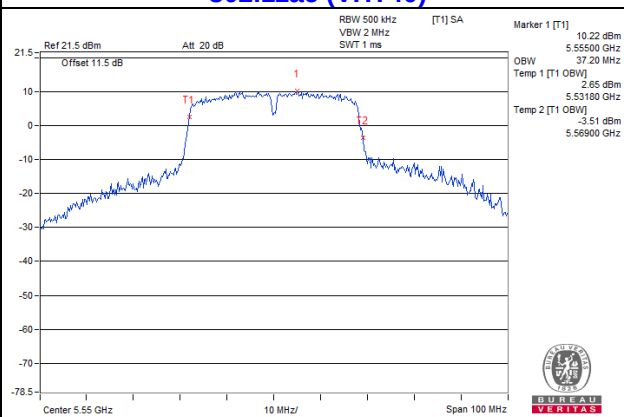
802.11a



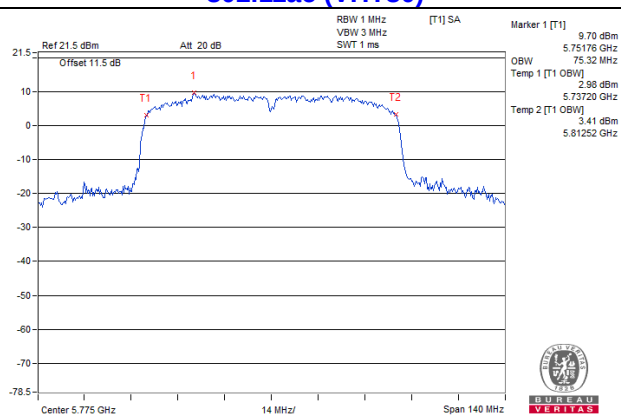
802.11ac (VHT20)



802.11ac (VHT40)

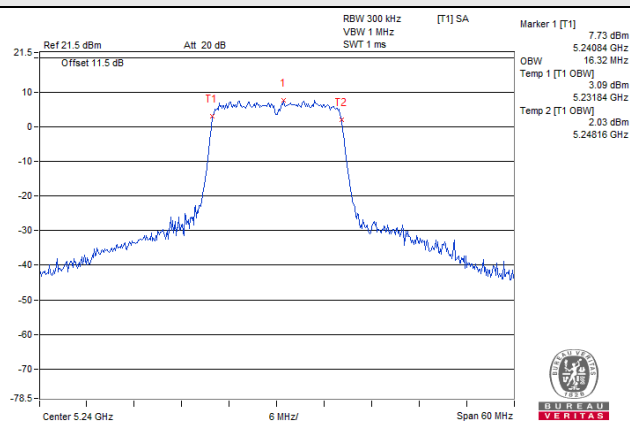


802.11ac (VHT80)

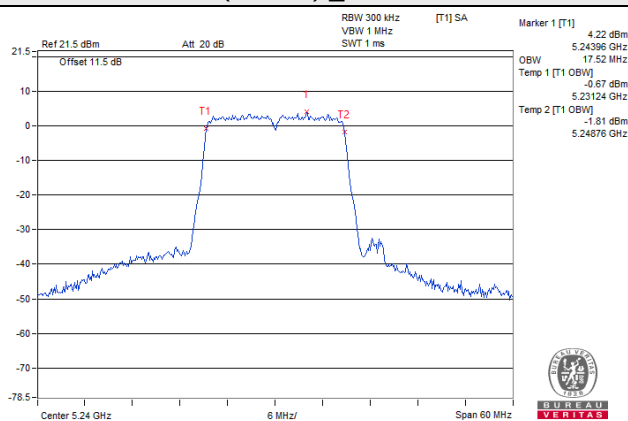


Spectrum Plot for near By DFS Band

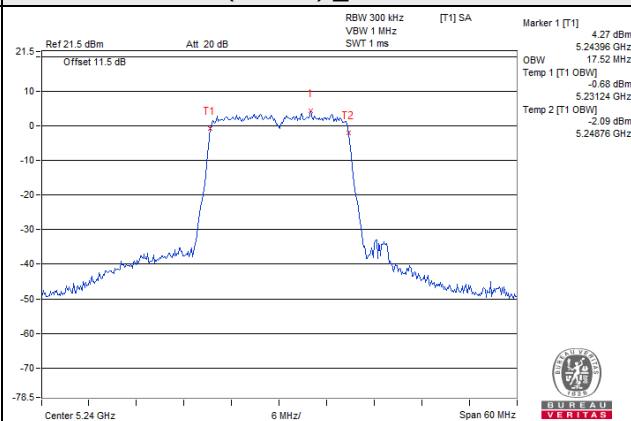
802.11a CH 48



802.11ac (VHT20) _Chain 0 / CH 48

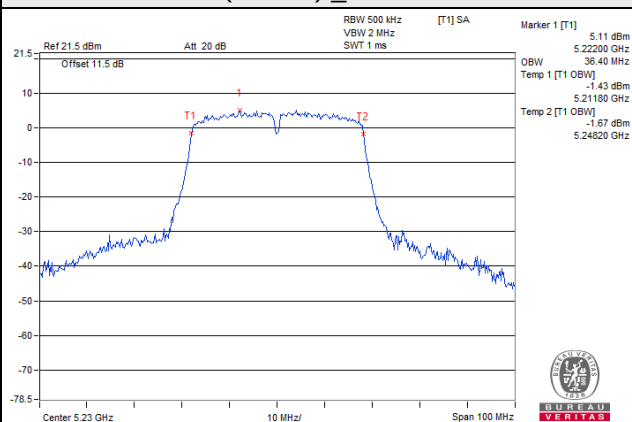


802.11ac (VHT20) _Chain 1 / CH 48

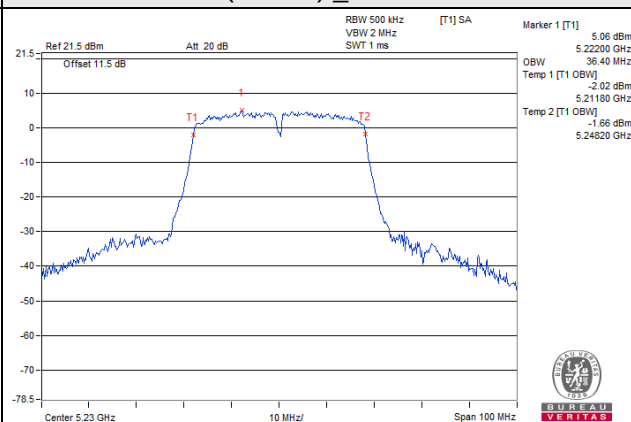


Spectrum Plot for near By DFS Band

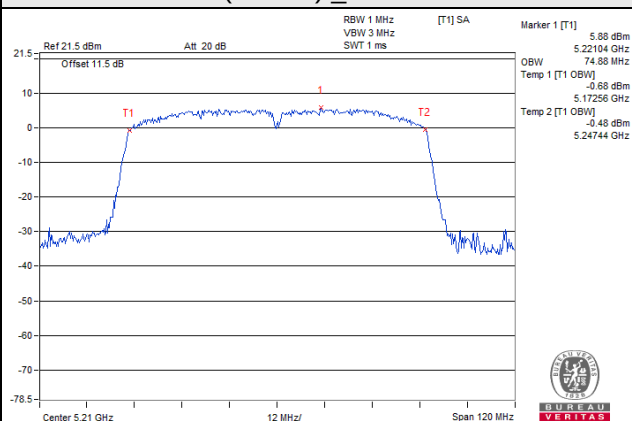
802.11ac (VHT40) _Chain 0 / CH 46



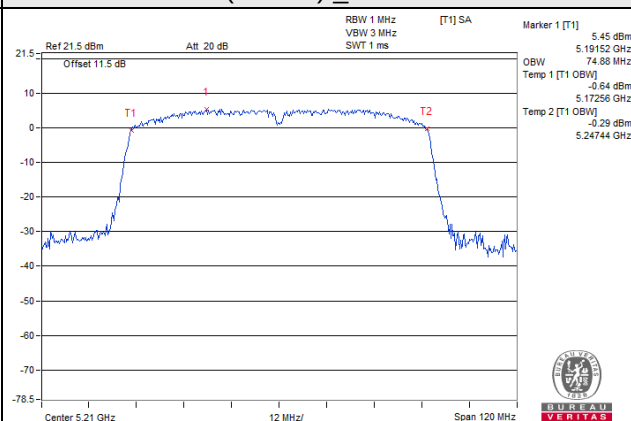
802.11ac (VHT40) _Chain 1 / CH 46



802.11ac (VHT80) _Chain 0 / CH 42

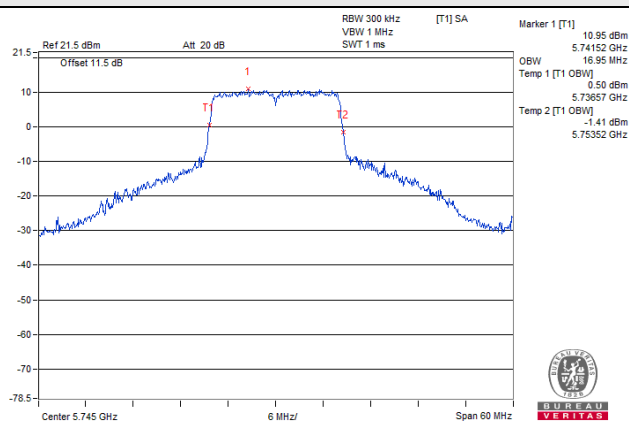


802.11ac (VHT80) _Chain 1 / CH 42

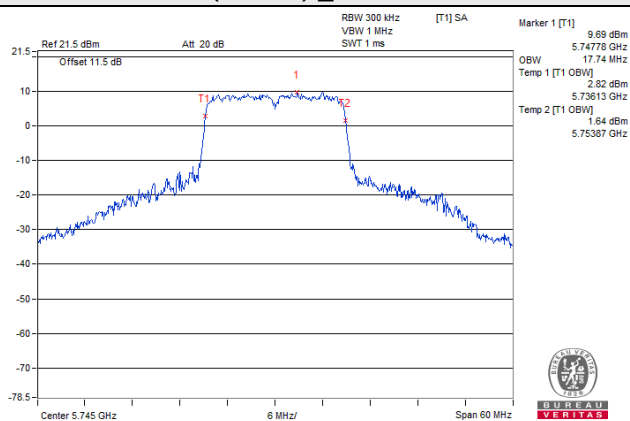


Spectrum Plot for near By DFS Band

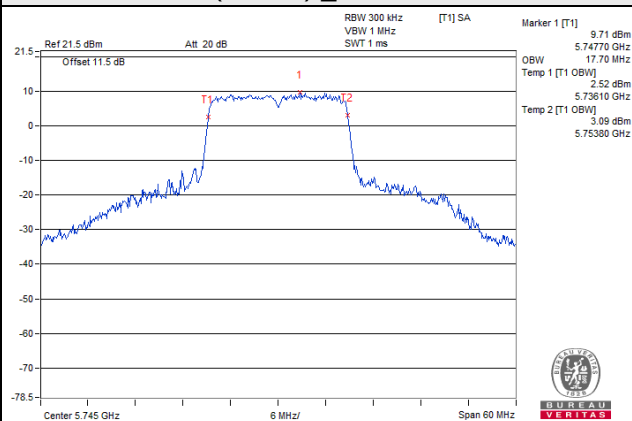
802.11a / CH 149



802.11ac (VHT20) _ Chain 0 / CH 149

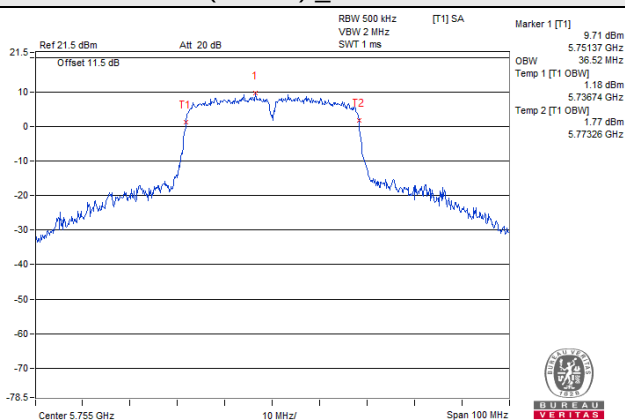


802.11ac (VHT20) _ Chain 1 / CH 149

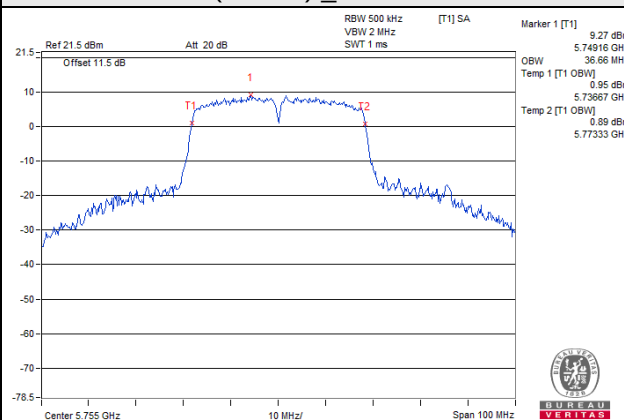


Spectrum Plot for near By DFS Band

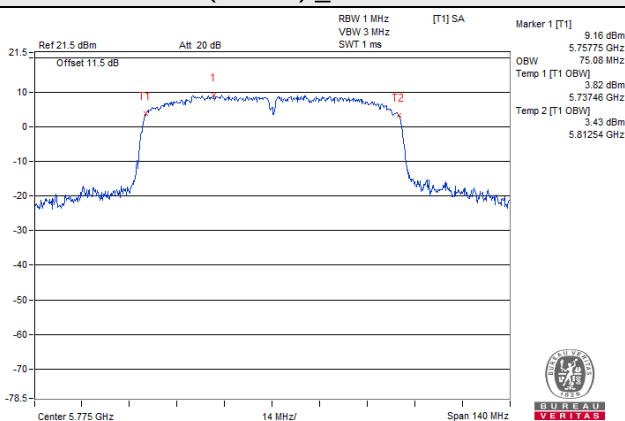
802.11ac (VHT40) _ Chain 0 / CH 151



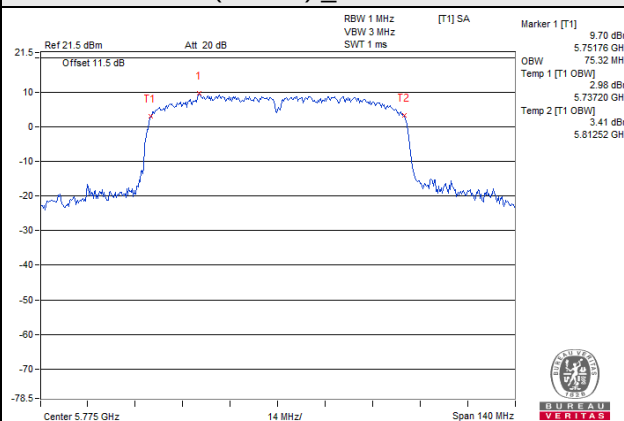
802.11ac (VHT40) _ Chain 1 / CH 151



802.11ac (VHT80) _ Chain 0 / CH 155



802.11ac (VHT80) _ Chain 1 / CH 155

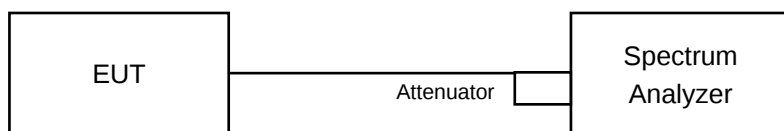


4.5 Peak Power Spectral Density Measurement

4.5.1 Limits of Peak Power Spectral Density Measurement

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

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 = 30 kHz, Set VBW ≥ 1 MHz, Detector = RMS
- 3) Set Channel power measure = 1MHz
- 4) Sweep time = auto, trigger set to "free run".
- 5) Trace average at least 100 traces in power averaging mode.

- a. 6) Record the max value and add 10 log (1/duty cycle)

For U-NII-3 band:

- a. Set span to encompass the entire emission bandwidth (EBW) of the signal.
- b. Set RBW = 500 kHz, Set VBW ≥ 1 MHz, Detector = RMS
- c. Use the peak marker function to determine the maximum power level in any 500 kHz band segment within the fundamental EBW.
- d. Sweep time = auto, trigger set to "free run".
- e. Trace average at least 100 traces in power averaging mode.

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Conditions

Same as 4.3.6.

4.5.7 Test Results

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

802.11a

Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD With Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
36	5180	3.46	0.32	3.78	11.00	Pass
40	5200	3.76	0.32	4.08	11.00	Pass
48	5240	3.41	0.32	3.73	11.00	Pass
52	5260	3.58	0.32	3.90	11.00	Pass
60	5300	3.61	0.32	3.93	11.00	Pass
64	5320	3.17	0.32	3.49	11.00	Pass
100	5500	6.10	0.32	6.42	11.00	Pass
116	5580	6.22	0.32	6.54	11.00	Pass
140	5700	6.13	0.32	6.45	11.00	Pass

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

802.11ac (VHT20)

Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm)		Duty Factor (dB)	Total PSD With Duty Factor (dBm)	MAX. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	-1.35	-1.25	0.49	2.20	9.28	Pass
40	5200	-1.24	-1.40	0.49	2.18	9.28	Pass
48	5240	-1.36	-1.32	0.49	2.16	9.28	Pass
52	5260	0.72	0.63	0.49	4.18	9.28	Pass
60	5300	-0.01	0.00	0.49	3.50	9.28	Pass
64	5320	-0.29	-0.46	0.49	3.13	9.28	Pass
100	5500	5.14	5.01	0.49	8.58	9.28	Pass
116	5580	5.59	5.65	0.49	9.12	9.28	Pass
140	5700	4.49	4.30	0.49	7.90	9.28	Pass

Note:

- 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.
- Directional gain = $4.71\text{dBi} + 10\log(2) = 7.72\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $11 - (7.72 - 6) = 9.28\text{dBm}$.
- Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT40)

Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm)		Duty Factor (dB)	Total PSD With Duty Factor (dBm)	MAX. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	-1.53	-2.01	0.67	1.91	9.28	Pass
46	5230	-1.79	-1.97	0.67	1.80	9.28	Pass
54	5270	-2.32	-2.06	0.67	1.49	9.28	Pass
62	5310	-3.45	-3.55	0.67	0.18	9.28	Pass
102	5510	1.25	1.39	0.67	5.00	9.28	Pass
110	5550	3.69	3.68	0.67	7.36	9.28	Pass
134	5670	4.09	3.49	0.67	7.48	9.28	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. Directional gain = $4.71\text{dBi} + 10\log(2) = 7.72\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $11 - (7.72 - 6) = 9.28\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT80)

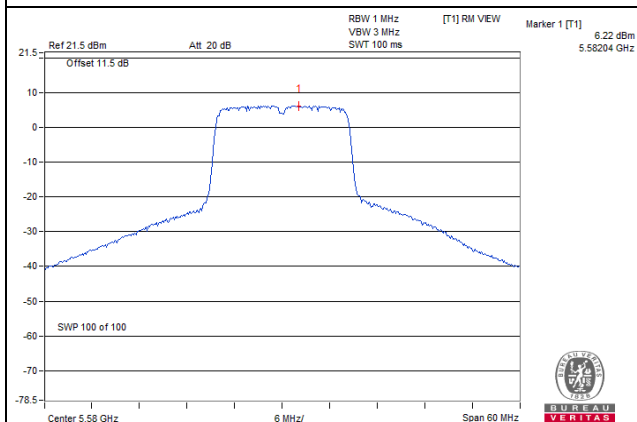
Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm)		Duty Factor (dB)	Total PSD With Duty Factor (dBm)	MAX. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	-5.62	-5.83	1.68	-1.03	9.28	Pass
58	5290	-6.71	-6.83	1.68	-2.08	9.28	Pass
106	5530	-1.04	-1.27	1.68	3.54	9.28	Pass

Note:

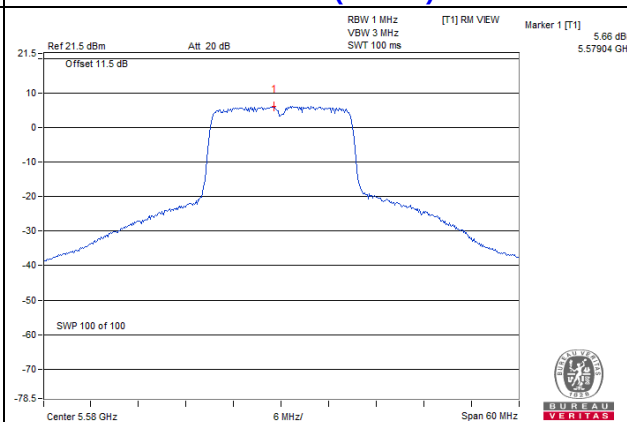
1. Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = $4.71\text{dBi} + 10\log(2) = 7.72\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $11 - (7.72 - 6) = 9.28\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

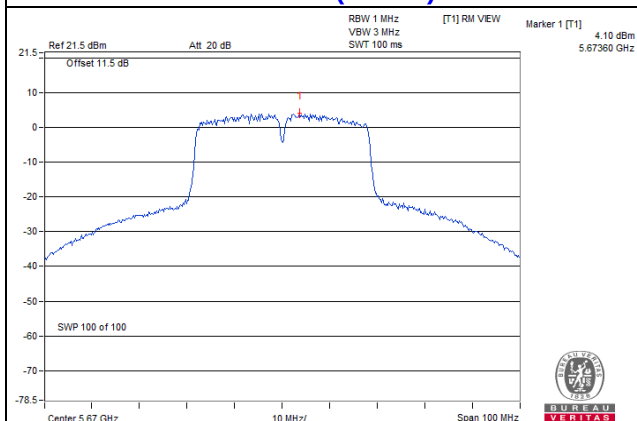
802.11a



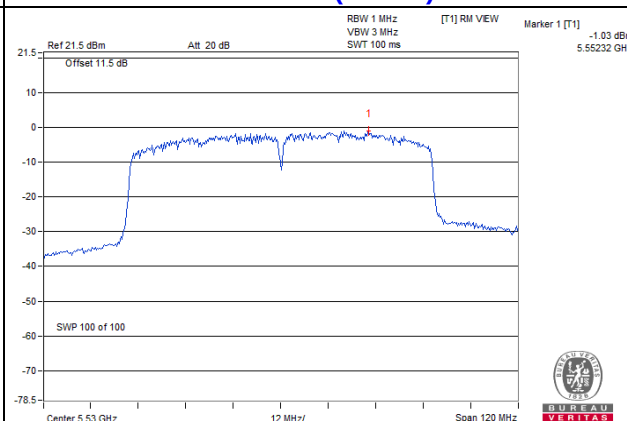
802.11ac (VHT20)



802.11ac (VHT40)



802.11ac (VHT80)



For U-NII-3 band:

802.11a

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/500kHz)	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
149	5745	-1.74	0.32	-1.42	30.00	Pass
157	5785	-2.11	0.32	-1.79	30.00	Pass
165	5825	-2.05	0.32	-1.73	30.00	Pass

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

802.11ac (VHT20)

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/500kHz)		Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
		Chain 0	Chain 1				
149	5745	-3.51	-3.51	0.49	-0.01	28.28	Pass
157	5785	-4.00	-4.14	0.49	-0.57	28.28	Pass
165	5825	-4.11	-4.47	0.49	-0.78	28.28	Pass

Note:

1. Method E) 2) b) of power density measurement of KDB 662911 is using for calculating total power density.
2. Directional gain = $4.71\text{dBi} + 10\log(2) = 7.72\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $30 - (7.72 - 6) = 28.28\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT40)

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/500kHz)		Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
		Chain 0	Chain 1				
151	5755	-6.55	-7.12	0.67	-3.15	28.28	Pass
159	5795	-7.65	-7.63	0.67	-3.96	28.28	Pass

Note:

1. Method E) 2) b) of power density measurement of KDB 662911 is using for calculating total power density.
2. Directional gain = $4.71\text{dBi} + 10\log(2) = 7.72\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $30 - (7.72 - 6) = 28.28\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT80)

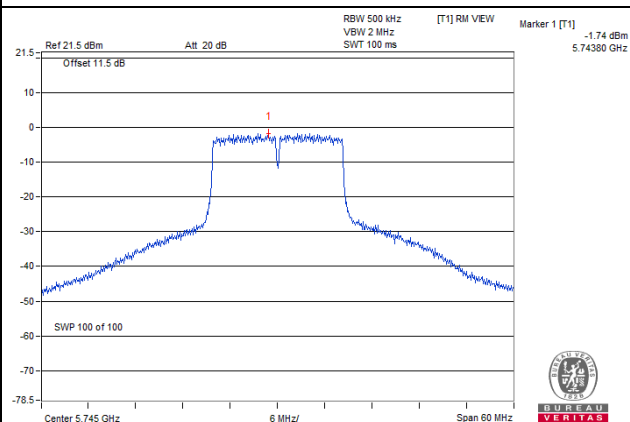
Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/500kHz)		Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
		Chain 0	Chain 1				
155	5775	-11.43	-10.81	1.68	-6.42	28.28	Pass

Note:

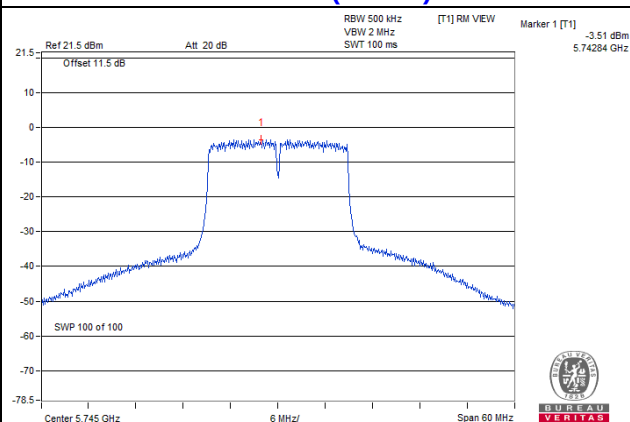
1. Method E) 2) b) of power density measurement of KDB 662911 is using for calculating total power density.
2. Directional gain = $4.71\text{dBi} + 10\log(2) = 7.72\text{dBi} > 6\text{dBi}$, so the power density limit shall be reduced to $30 - (7.72 - 6) = 28.28\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

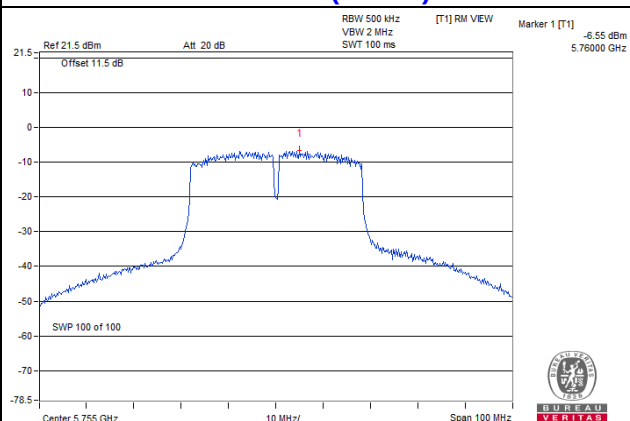
802.11a



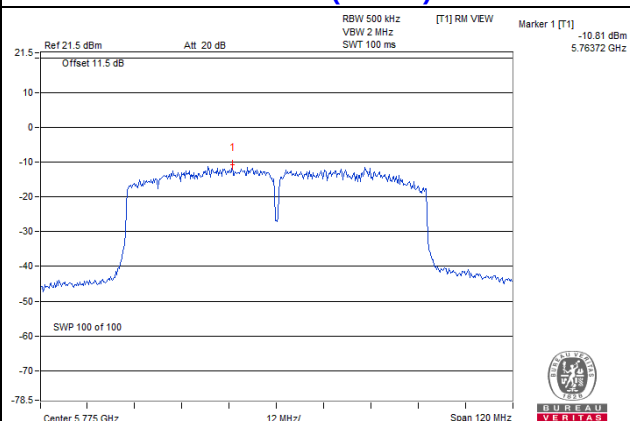
802.11ac (VHT20)



802.11ac (VHT40)



802.11ac (VHT80)

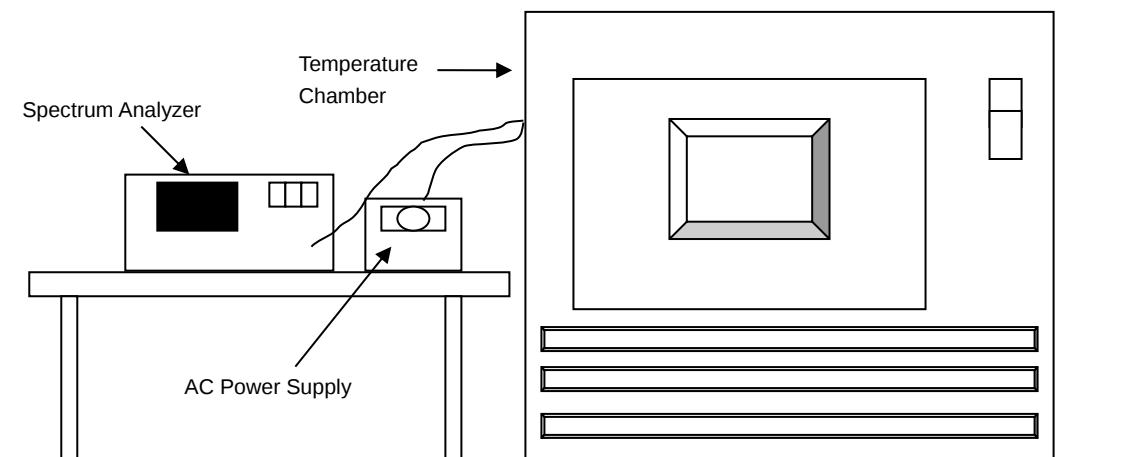


4.6 Frequency Stability

4.6.1 Limits 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

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
ROHDE & SCHWARZ Spectrum Analyzer	FSV 40	101042	Sep. 8, 2020	Sep. 7, 2021
Temperature & Humidity Chamber	GTH-120-40-CP-AR	MAA1306-019	Sep. 9, 2020	Sep. 8, 2021
DIGITAL POWER METER IDRC	CP-240	240515	Sep. 10, 2020	Sep. 9, 2021
AC Power Source ExTech	CFW-105	E000603	NA	NA

NOTE: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.6.4 Test Procedure

- The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
- Turn the EUT on and couple its output to a spectrum analyzer.
- Turn the EUT off and set the chamber to the highest temperature specified.
- Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
- Repeat step d with the temperature chamber set to the next desired temperature.
- 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: 5180MHz									
Temp. (°C)	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
40	120	5180.0043	PASS	5180.0041	PASS	5180.0051	PASS	5180.0062	PASS
30	120	5180.0191	PASS	5180.021	PASS	5180.0205	PASS	5180.0174	PASS
20	120	5179.9795	PASS	5179.9757	PASS	5179.9778	PASS	5179.976	PASS
10	120	5179.9927	PASS	5179.9936	PASS	5179.9918	PASS	5179.9931	PASS
0	120	5180.0114	PASS	5180.0165	PASS	5180.014	PASS	5180.0142	PASS

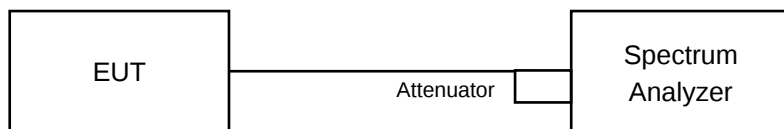
Frequency Stability Versus Voltage									
Operating Frequency: 5180MHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result
20	138	5179.9804	PASS	5179.9753	PASS	5179.9779	PASS	5179.9754	PASS
	120	5179.9795	PASS	5179.9757	PASS	5179.9778	PASS	5179.976	PASS
	102	5179.9794	PASS	5179.9749	PASS	5179.9779	PASS	5179.9752	PASS

4.7 6dB Bandwidth Measurement

4.7.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

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

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

4.7.5 Deviation from Test Standard

No deviation.

4.7.6 EUT Operating Condition

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

4.7.7 Test Results

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	16.34	0.5	Pass
157	5785	16.36	0.5	Pass
165	5825	16.36	0.5	Pass

802.11ac (VHT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
149	5745	17.59	17.60	0.5	Pass
157	5785	17.61	17.60	0.5	Pass
165	5825	17.60	17.61	0.5	Pass

802.11ac (VHT40)

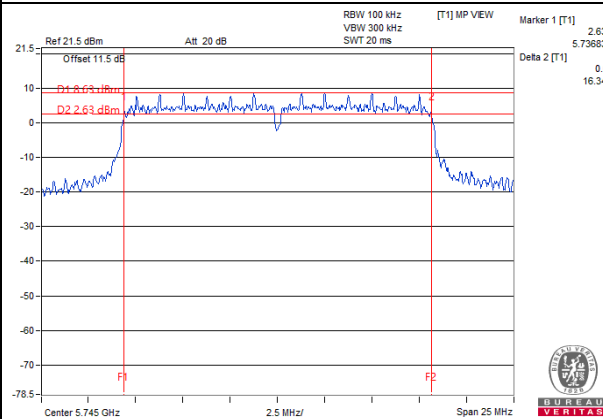
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
151	5755	35.26	35.27	0.5	Pass
159	5795	35.26	35.25	0.5	Pass

802.11ac (VHT80)

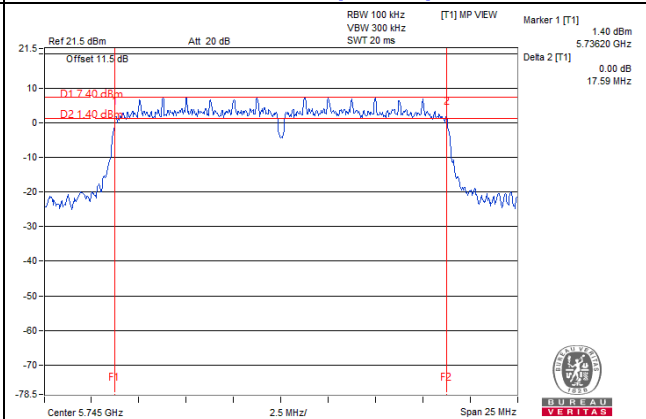
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
155	5775	75.28	75.31	0.5	Pass

Spectrum Plot of Worst Value

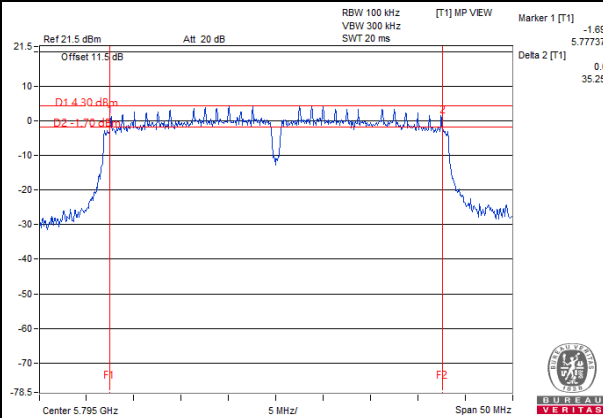
802.11a



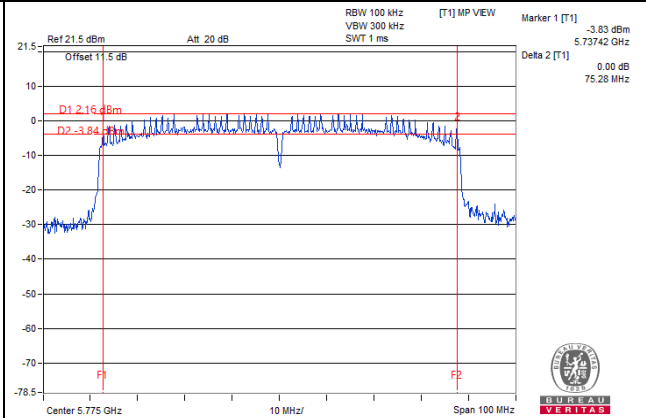
802.11ac (VHT20)



802.11ac (VHT40)



802.11ac (VHT80)



5 Pictures of Test Arrangements

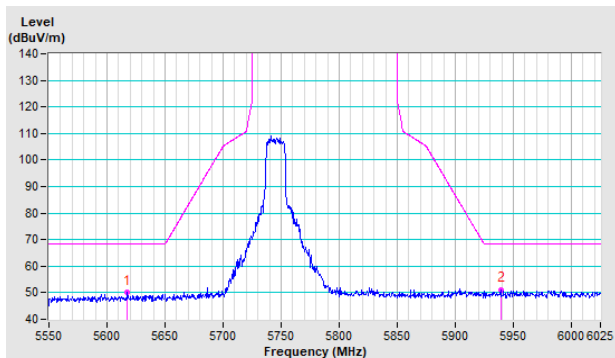
Please refer to the attached file (Test Setup Photo).

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

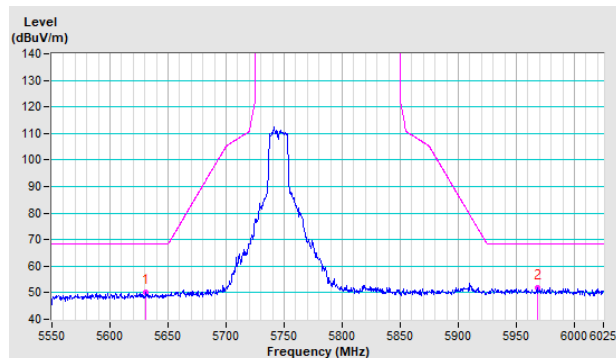
802.11a

CH 149 5745 MHz

Horizontal

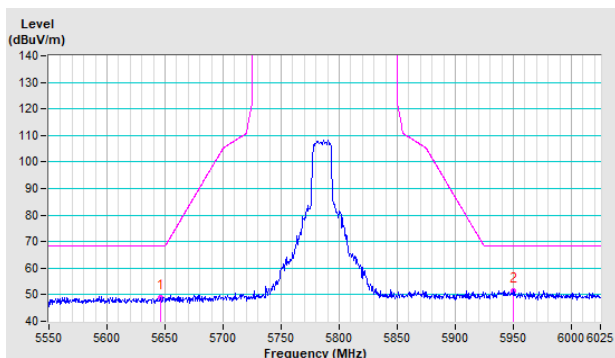


Vertical

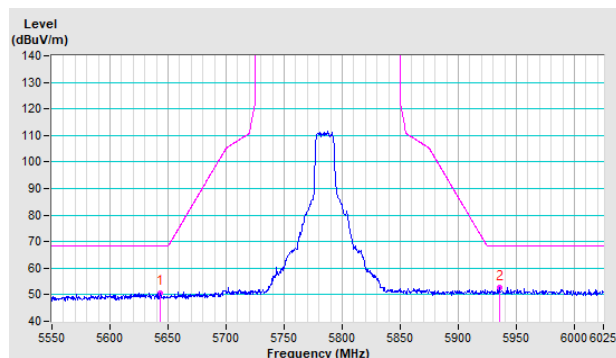


CH 157 5785 MHz

Horizontal

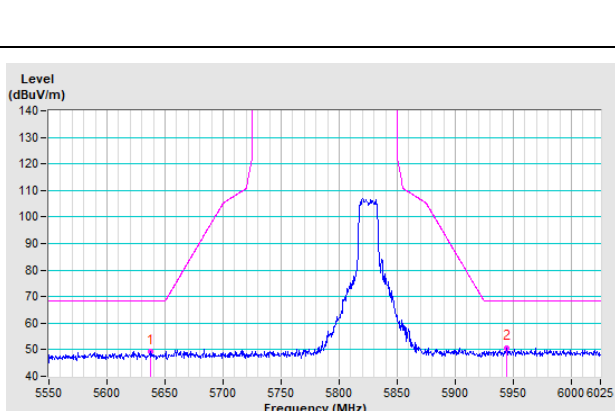


Vertical

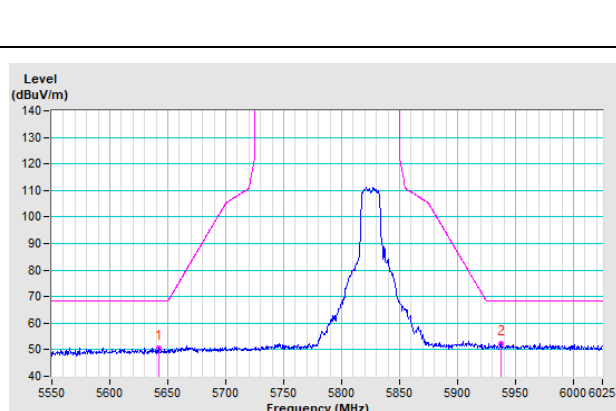


CH 165 5825 MHz

Horizontal



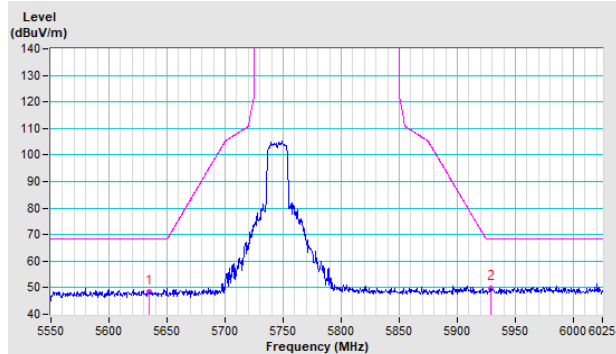
Vertical



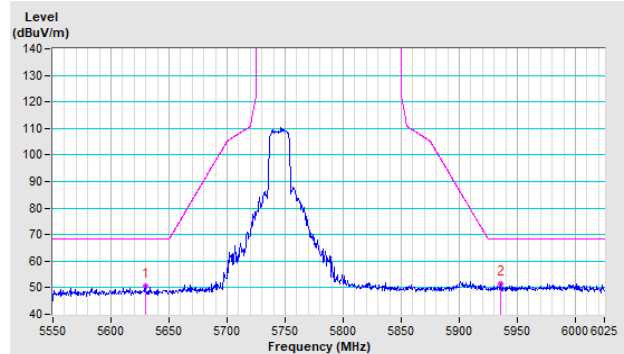
802.11 ac (VHT20)

CH 149 5745 MHz

Horizontal

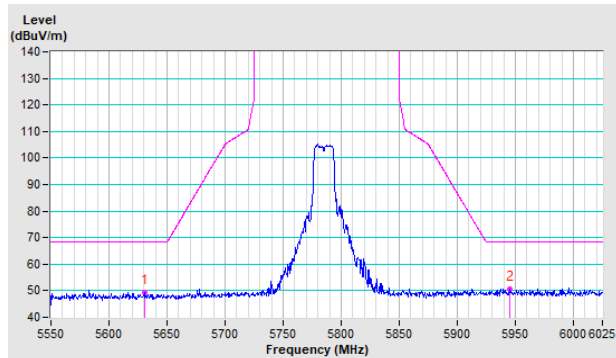


Vertical

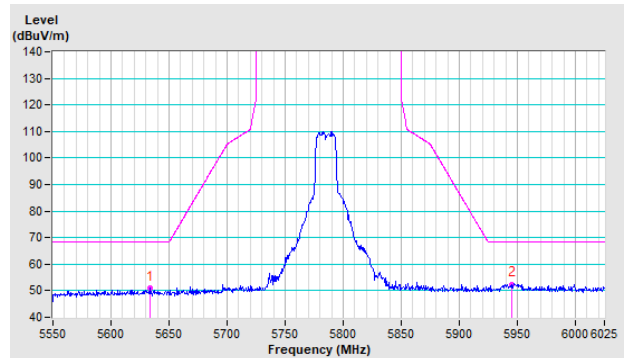


CH 157 5785 MHz

Horizontal

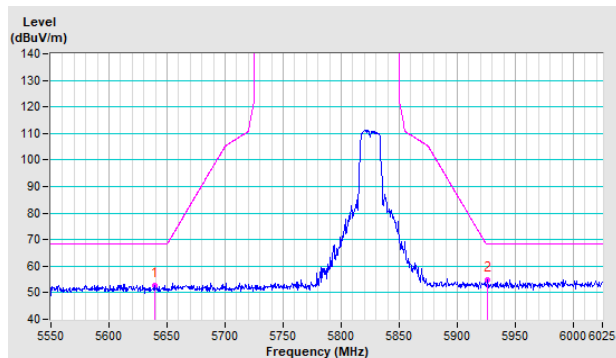


Vertical

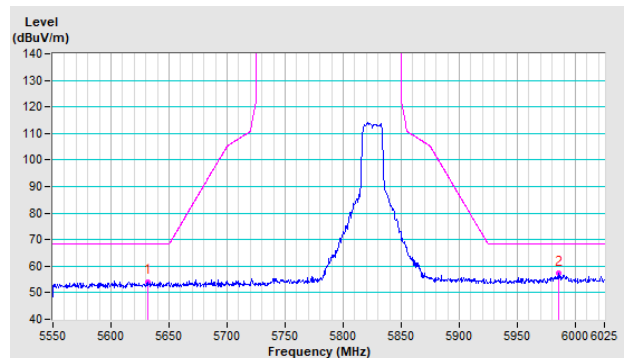


CH 165 5825 MHz

Horizontal



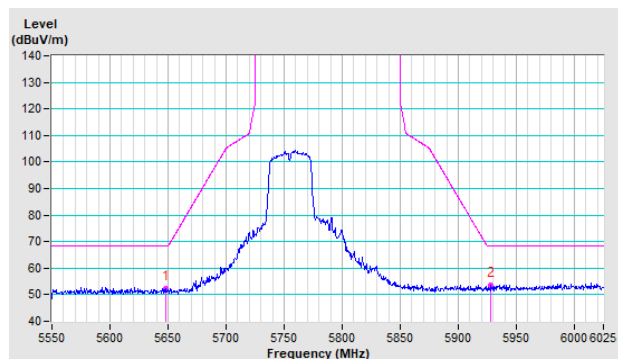
Vertical



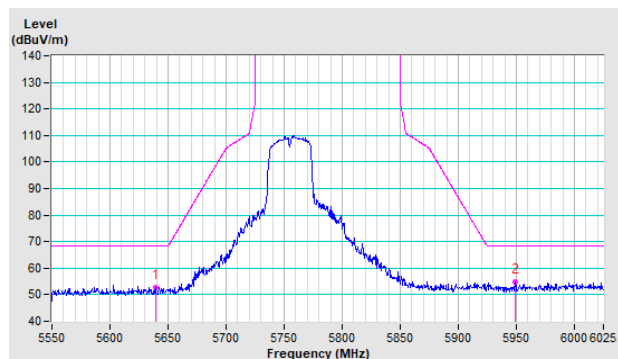
802.11 ac (VHT40)

CH 151 5755 MHz

Horizontal

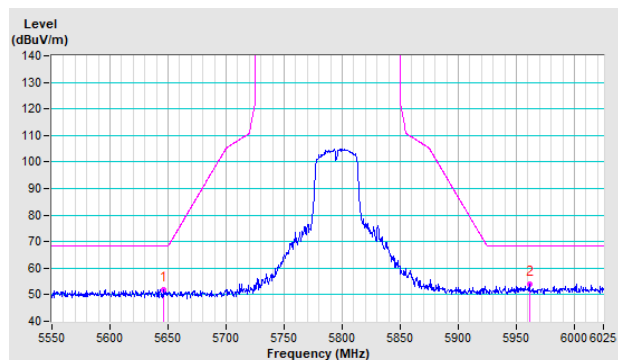


Vertical

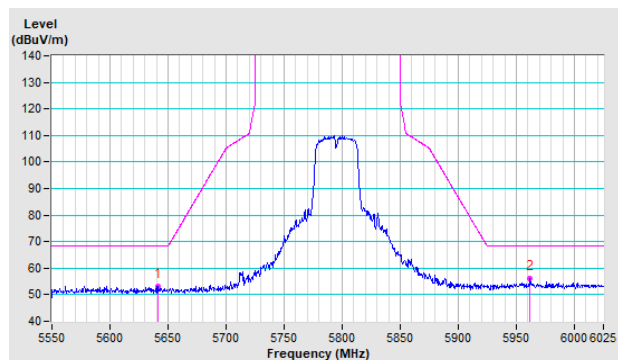


CH 159 5795 MHz

Horizontal



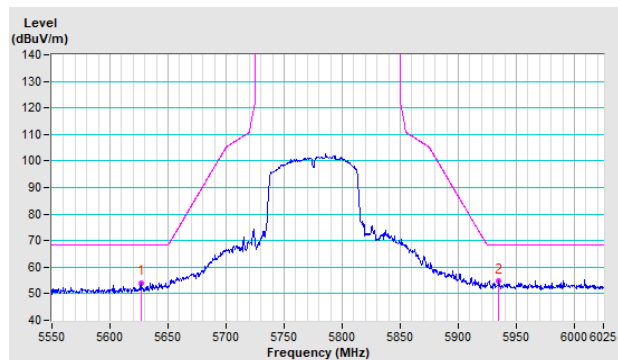
Vertical



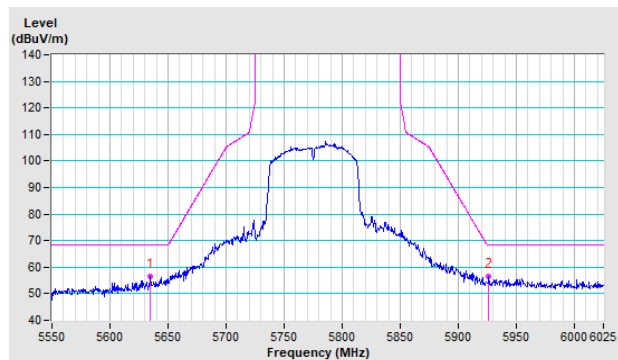
802.11 ac (VHT80)

CH 155 5775 MHz

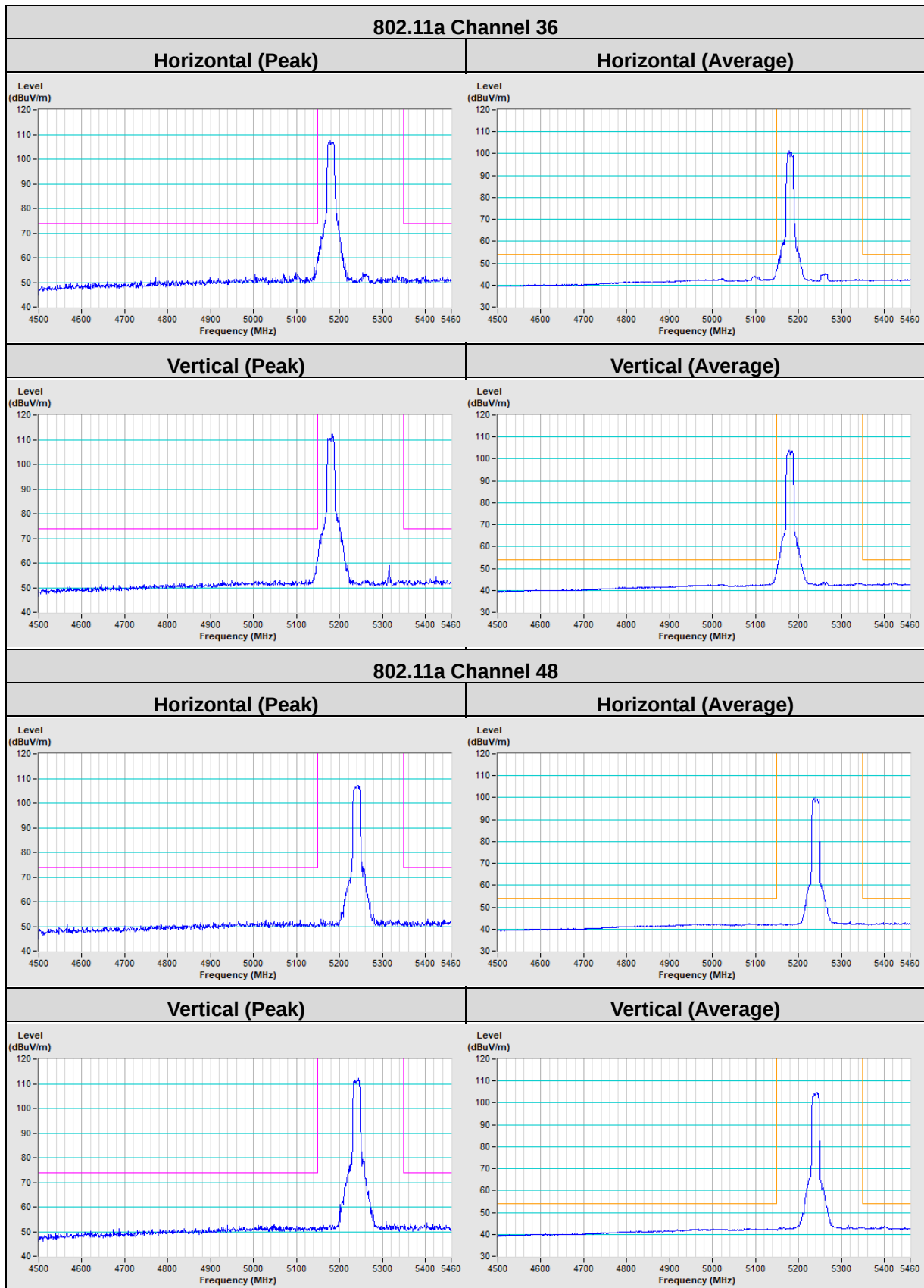
Horizontal

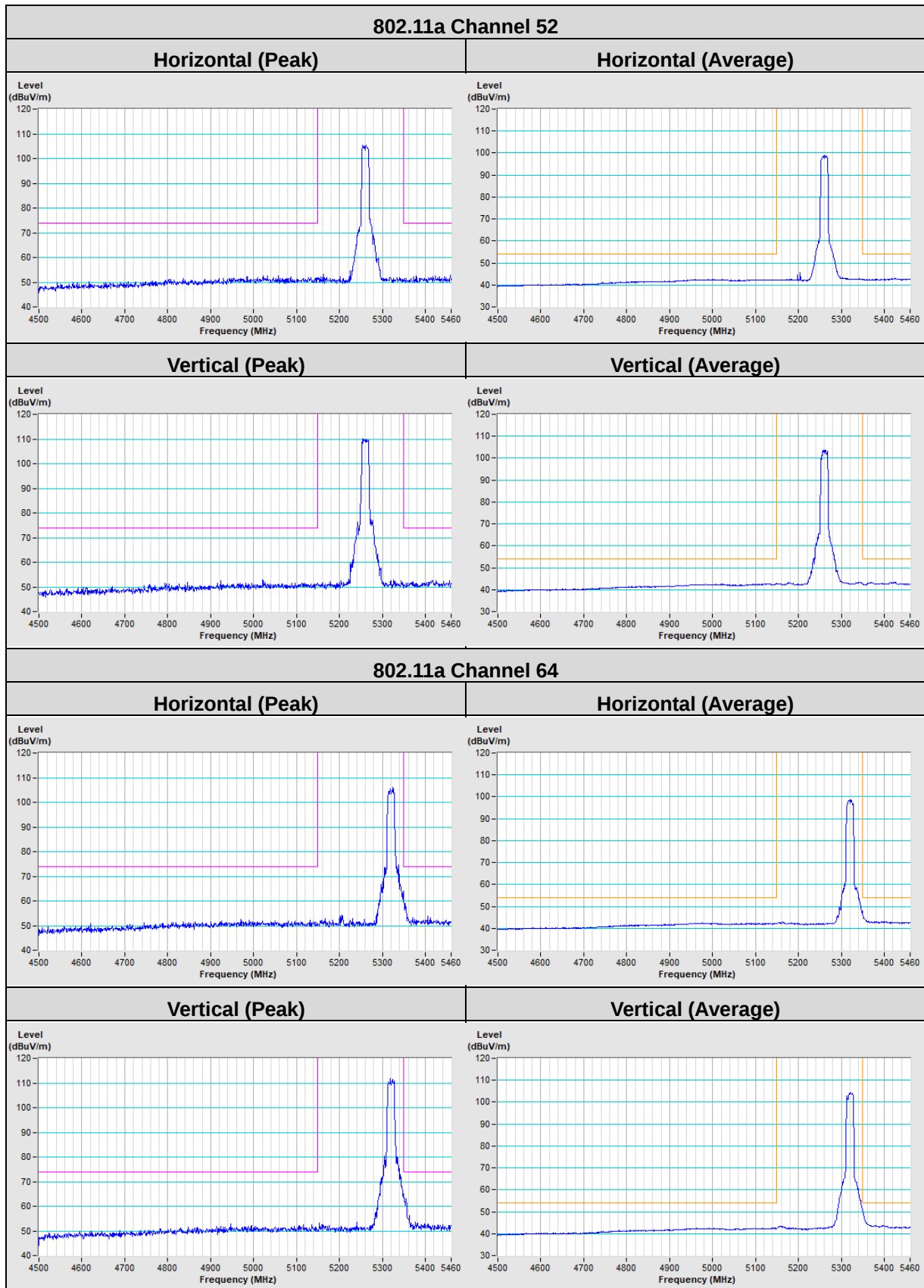


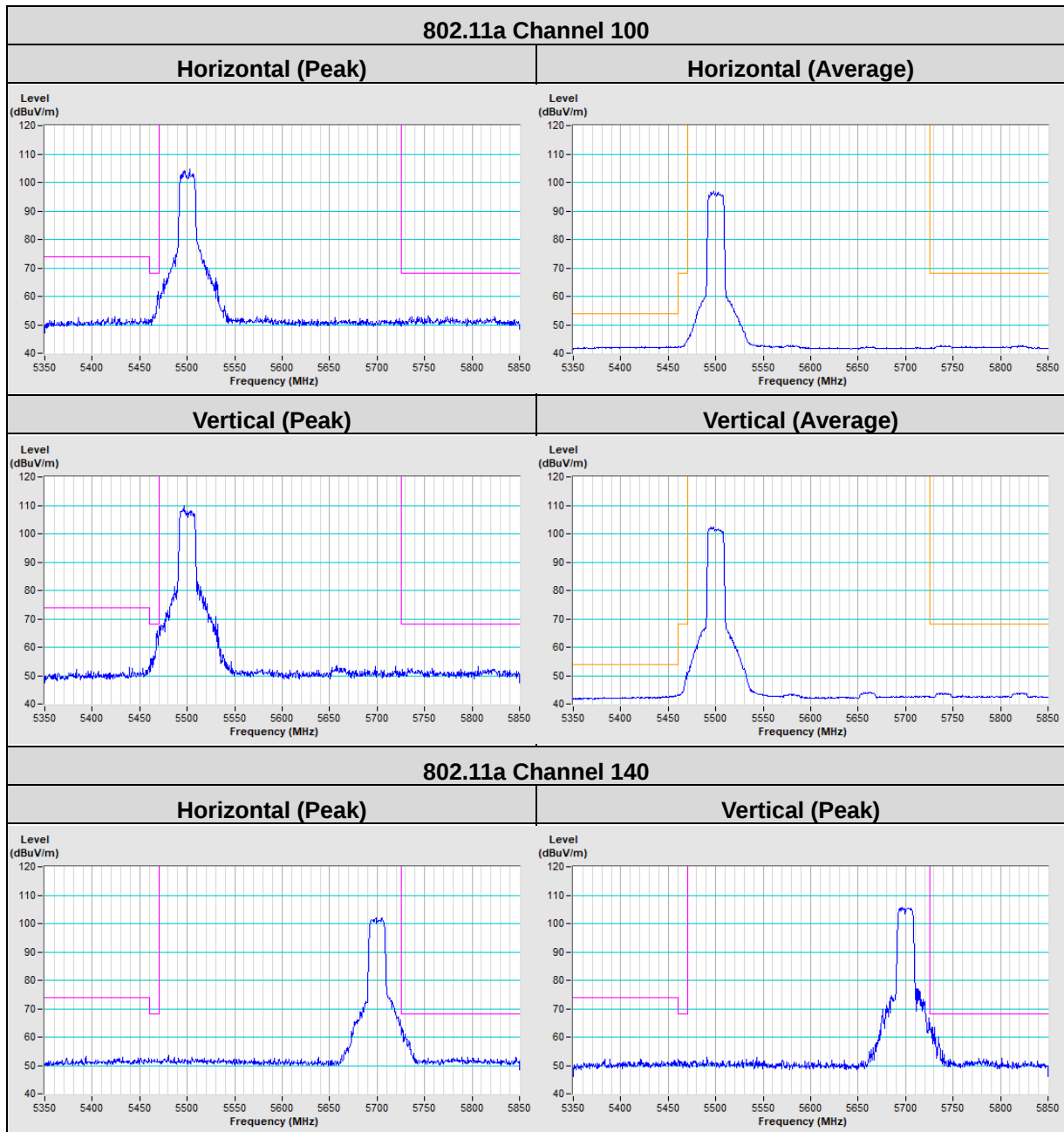
Vertical

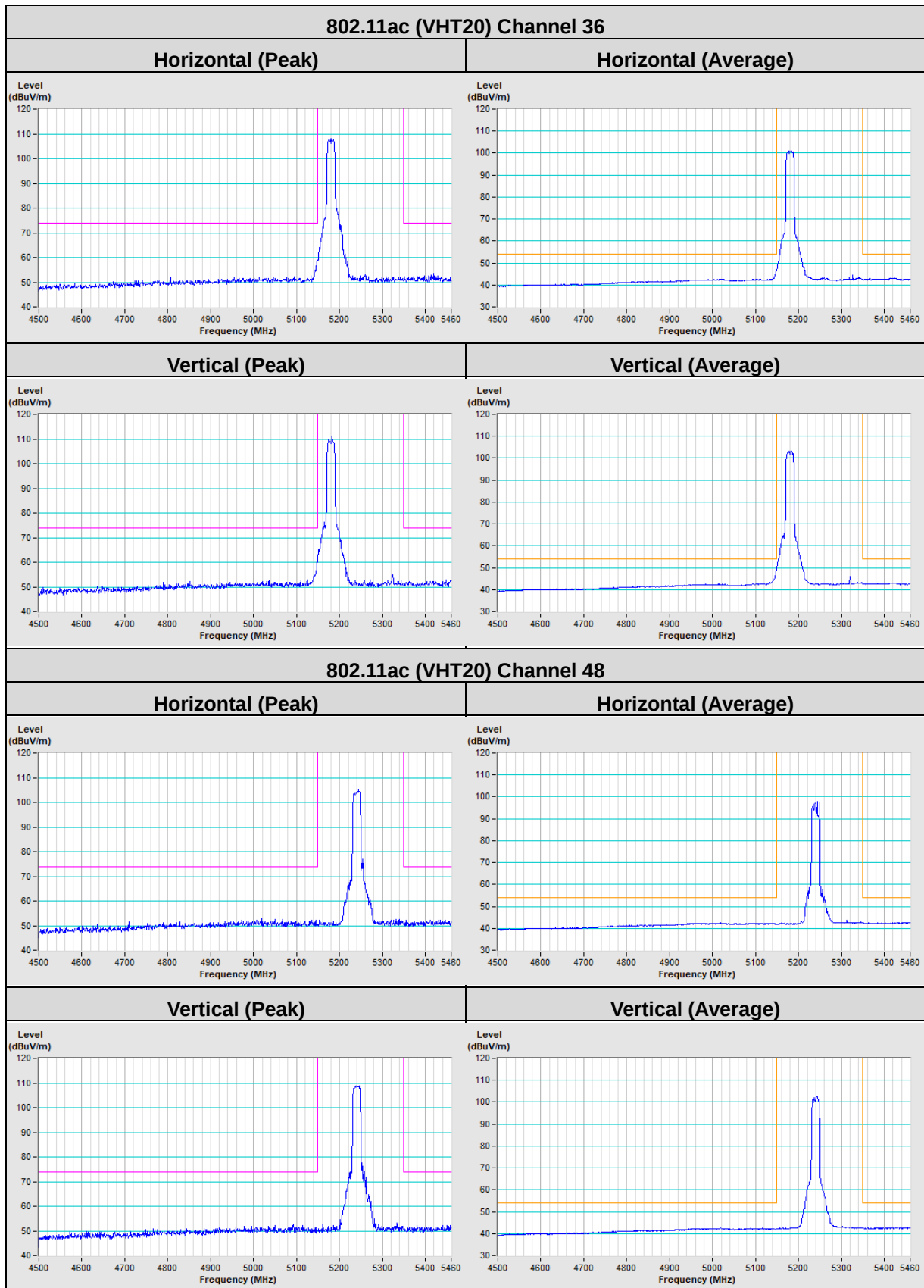


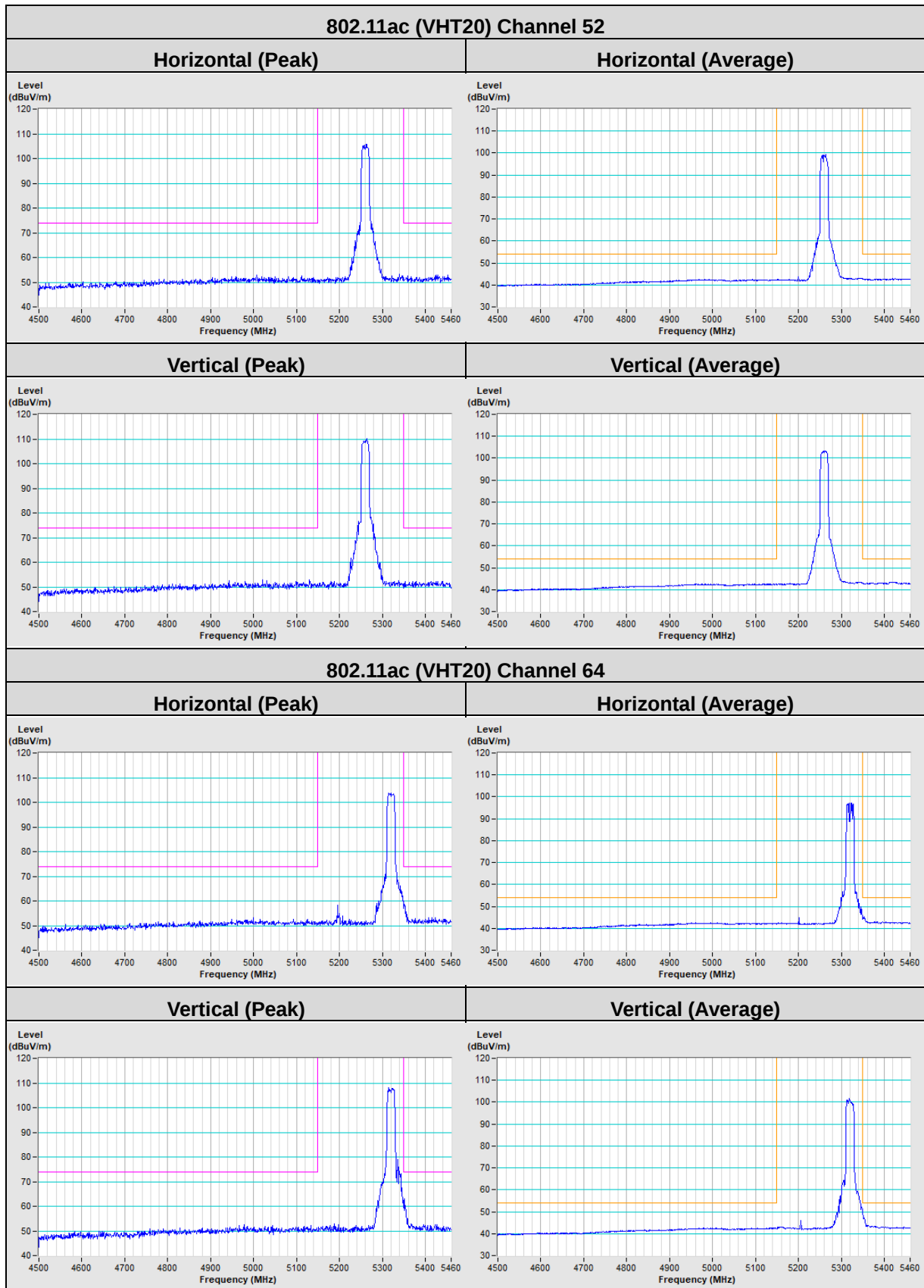
Annex B- Band Edge Measurement

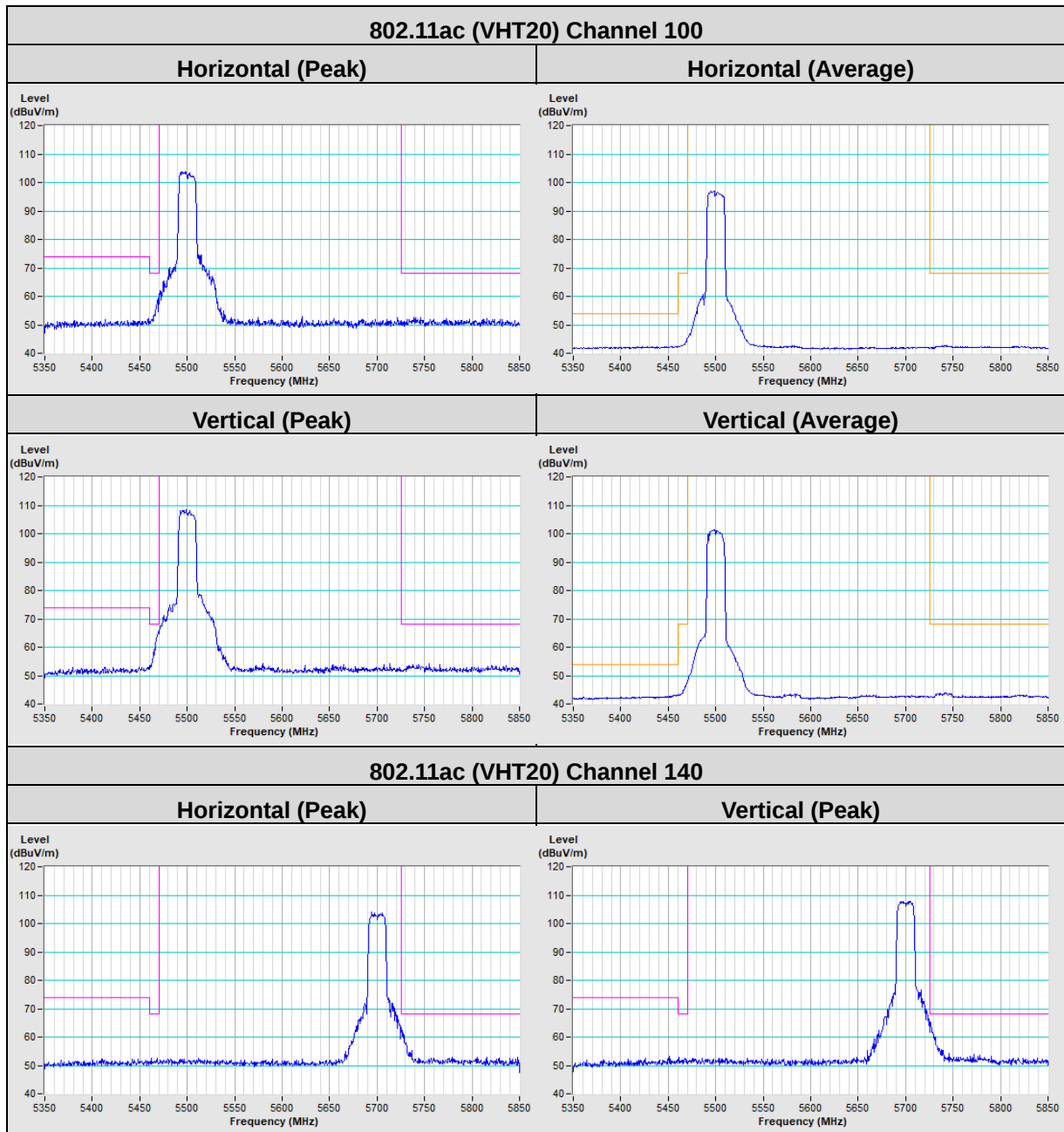


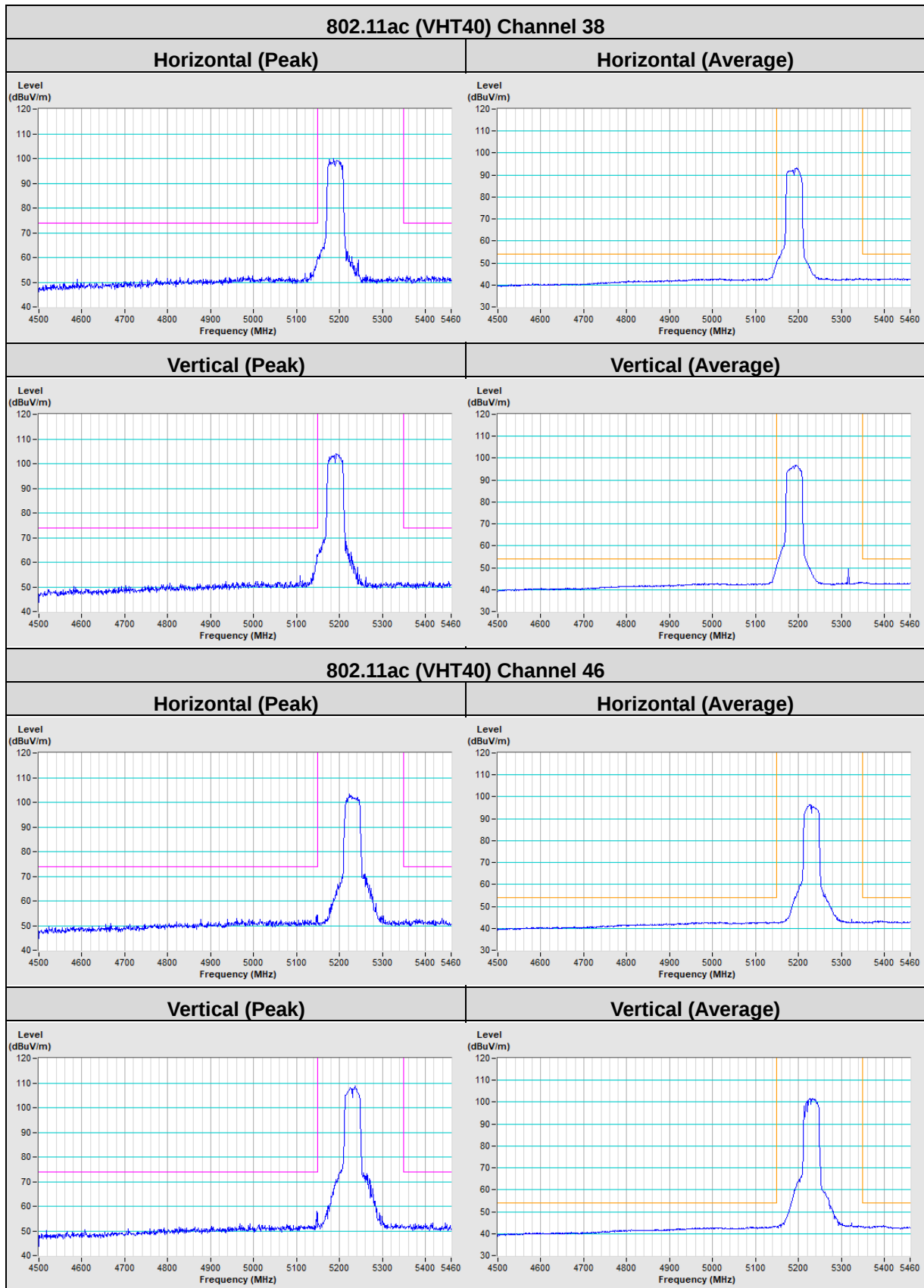


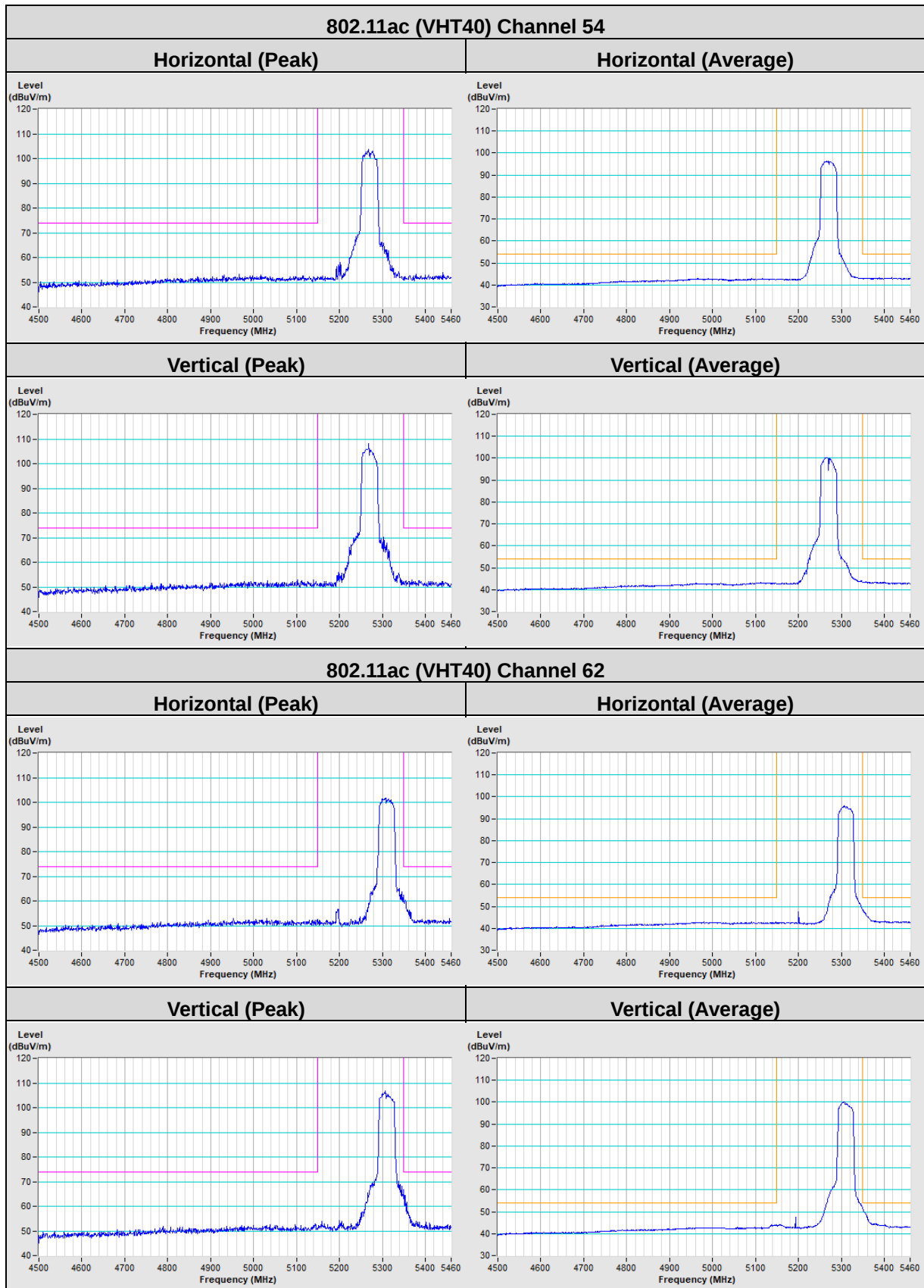


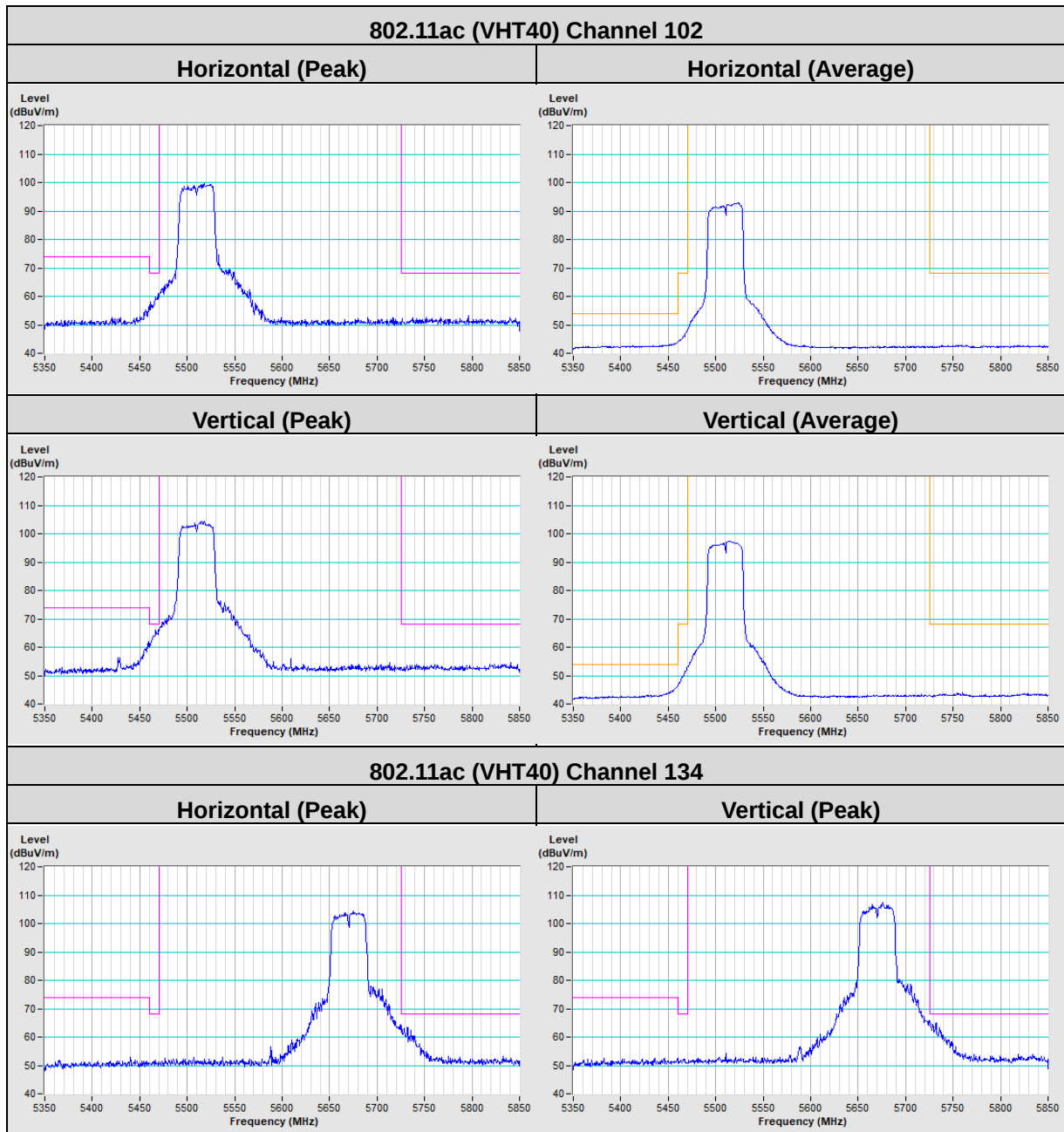


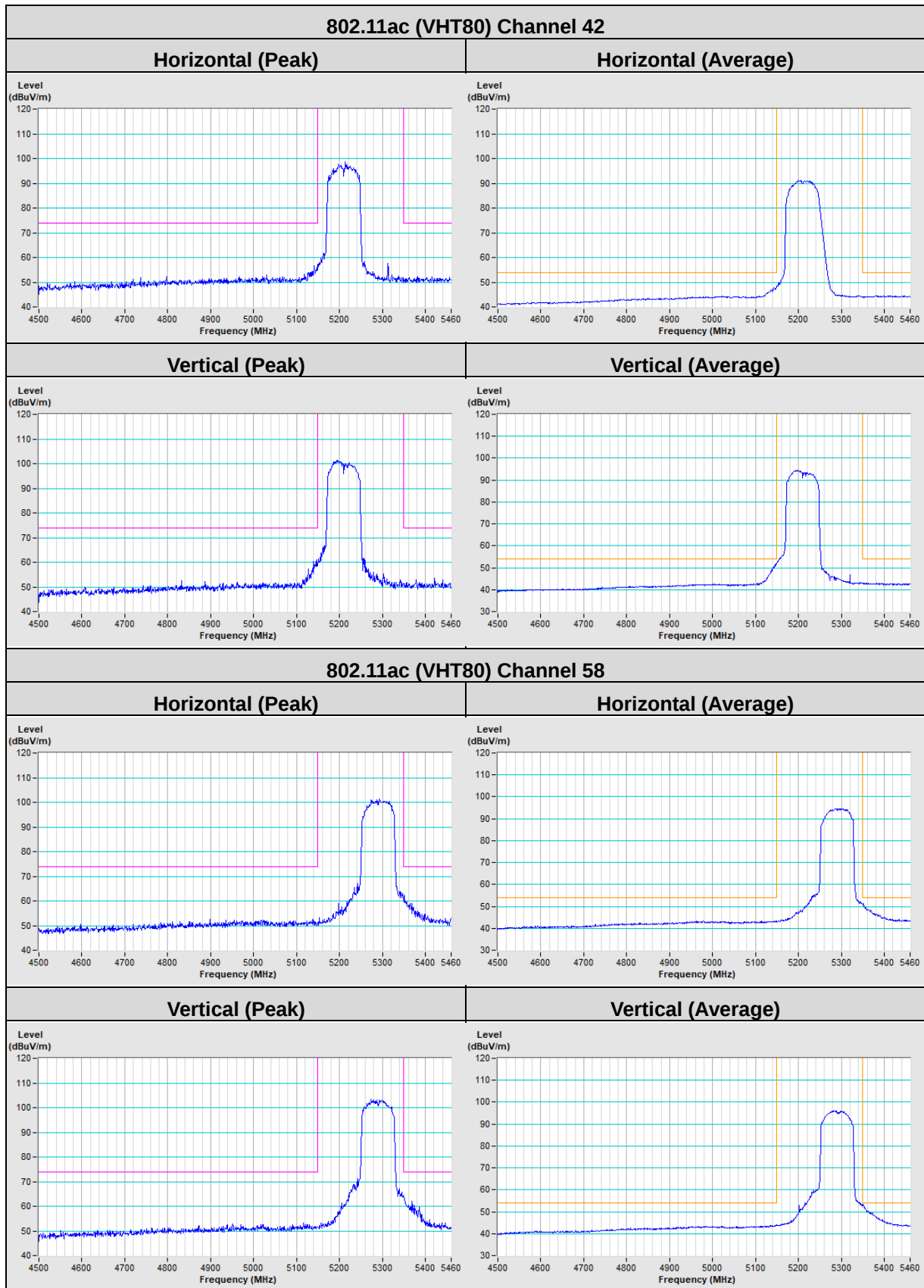


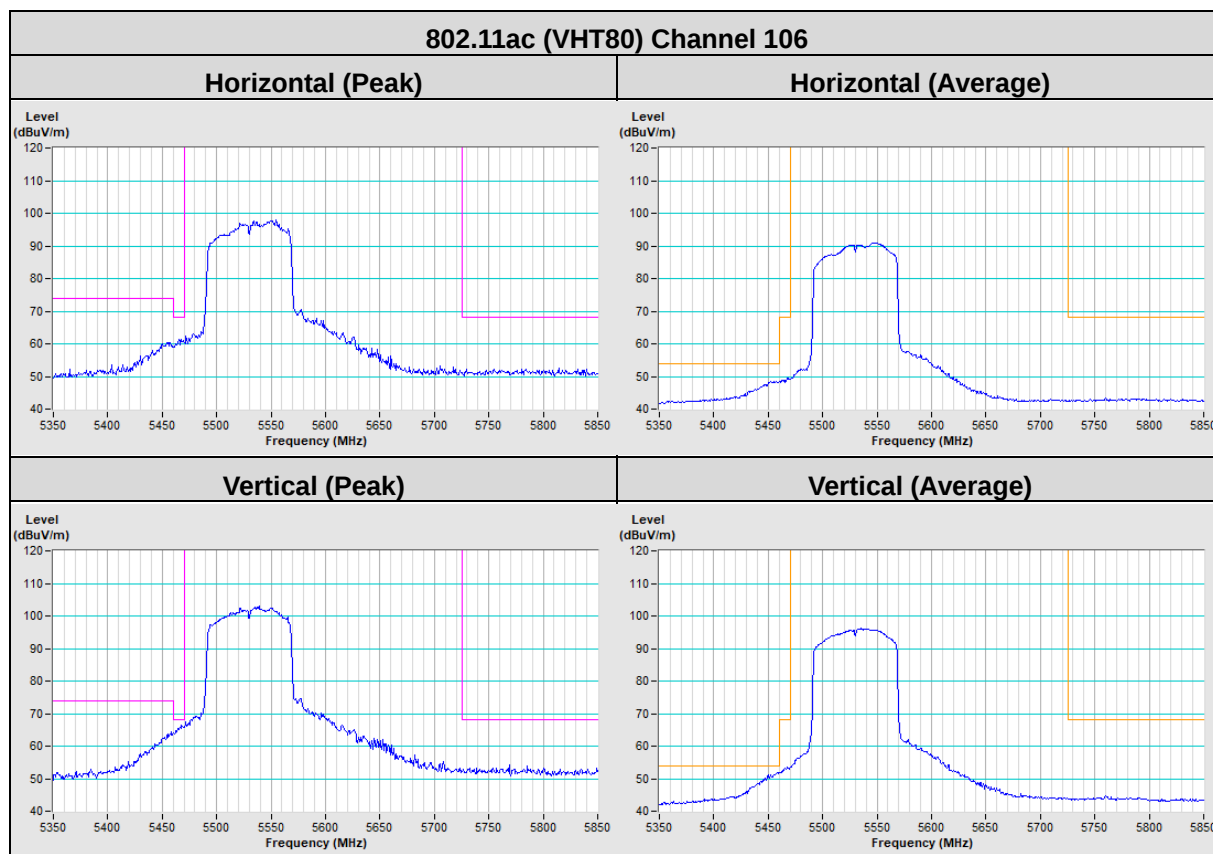












Appendix – Information of the Testing Laboratories

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 and approved according to ISO/IEC 17025.

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

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Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab

Tel: 886-3-6668565

Fax: 886-3-6668323

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Tel: 886-3-3183232

Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

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

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