

## FCC Test Report

**Report No.:** RFBCIB-WTW-P22010514-1

**FCC ID:** 2AA3N-TTR03

**Test Model:** PLTN-TTR01-3

**Received Date:** Jan. 14, 2022

**Test Date:** Jan. 31 ~ Apr. 28, 2022

**Issued Date:** May 19, 2022

**Applicant:** Peloton Interactive Inc.

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**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch  
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33383, TAIWAN

**FCC Registration /  
Designation Number:** 788550 / TW0003



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## Table of Contents

<b>Release Control Record</b> .....	<b>4</b>
<b>1 Certificate of Conformity</b> .....	<b>5</b>
<b>2 Summary of Test Results</b> .....	<b>6</b>
2.1 Measurement Uncertainty.....	6
2.2 Modification Record.....	6
<b>3 General Information</b> .....	<b>7</b>
3.1 General Description of EUT.....	7
3.2 Description of Test Modes.....	9
3.2.1 Test Mode Applicability and Tested Channel Detail.....	11
3.3 Duty Cycle of Test Signal.....	13
3.4 Description of Support Units.....	14
3.4.1 Configuration of System under Test.....	14
3.5 General Description of Applied Standards and References.....	15
<b>4 Test Types and Results</b> .....	<b>16</b>
4.1 Radiated Emission and Bandedge Measurement.....	16
4.1.1 Limits of Radiated Emission and Bandedge Measurement.....	16
4.1.2 Test Instruments.....	17
4.1.3 Test Procedures.....	18
4.1.4 Deviation from Test Standard.....	19
4.1.5 Test Setup.....	19
4.1.6 EUT Operating Conditions.....	20
4.1.7 Test Results.....	21
4.2 Conducted Emission Measurement.....	62
4.2.1 Limits of Conducted Emission Measurement.....	62
4.2.2 Test Instruments.....	62
4.2.3 Test Procedures.....	63
4.2.4 Deviation from Test Standard.....	63
4.2.5 Test Setup.....	63
4.2.6 EUT Operating Conditions.....	63
4.2.7 Test Results.....	64
4.3 Transmit Power Measurement.....	68
4.3.1 Limits of Transmit Power Measurement.....	68
4.3.2 Test Setup.....	68
4.3.3 Test Instruments.....	68
4.3.4 Test Procedure.....	69
4.3.5 Deviation from Test Standard.....	69
4.3.6 EUT Operating Conditions.....	69
4.3.7 Test Result.....	70
4.4 Occupied Bandwidth Measurement.....	77
4.4.1 Test Setup.....	77
4.4.2 Test Instruments.....	77
4.4.3 Test Procedure.....	77
4.4.4 Test Result.....	78
4.5 Peak Power Spectral Density Measurement.....	83
4.5.1 Limits of Peak Power Spectral Density Measurement.....	83
4.5.2 Test Setup.....	83
4.5.3 Test Instruments.....	83
4.5.4 Test Procedures.....	83
4.5.5 Deviation from Test Standard.....	84
4.5.6 EUT Operating Conditions.....	84
4.5.7 Test Results.....	85
4.6 Frequency Stability.....	91
4.6.1 Limits of Frequency Stability Measurement.....	91

4.6.2	Test Setup.....	91
4.6.3	Test Instruments .....	91
4.6.4	Test Procedure .....	91
4.6.5	Deviation from Test Standard .....	92
4.6.6	EUT Operating Condition .....	92
4.6.7	Test Results .....	92
4.7	6dB Bandwidth Measurement.....	93
4.7.1	Limits of 6dB Bandwidth Measurement.....	93
4.7.2	Test Setup.....	93
4.7.3	Test Instruments .....	93
4.7.4	Test Procedure .....	93
4.7.5	Deviation from Test Standard .....	93
4.7.6	EUT Operating Condition .....	93
4.7.7	Test Results .....	94
<b>5</b>	<b>Pictures of Test Arrangements.....</b>	<b>96</b>
	<b>Annex A- Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band).....</b>	<b>97</b>
	<b>Annex B- Band Edge Measurement.....</b>	<b>100</b>
	<b>Appendix – Information of the Testing Laboratories .....</b>	<b>111</b>

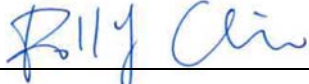
### Release Control Record

Issue No.	Description	Date Issued
RFBCIB-WTW-P22010514-1	Original release	May 19, 2022

## 1 Certificate of Conformity

**Product:** Peloton Tablet  
**Brand:** PELOTON  
**Test Model:** PLTN-TTR01-3  
**Sample Status:** Engineering sample  
**Applicant:** Peloton Interactive Inc.  
**Test Date:** Jan. 31 ~ Apr. 28, 2022  
**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 :** , **Date:** May 19, 2022  
Polly Chien / Specialist

**Approved by :** , **Date:** May 19, 2022  
Jeremy Lin / Project Engineer

## 2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(9)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -12.56dB at 1.39729MHz.
15.407(b)(1/2/3/4(i/ii)/9)	Radiated Emissions & Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -0.2dB at 5350.00MHz & 5725.00MHz.
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 i-pex(MHF) not a standard connector.

Note:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. For U-NII-3 band compliance with rule part 15.407(b)(4)(i), the OOB test plots were recorded in Annex A.
3. For U-NII-1, U-NII-2A and 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.

### 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) ( $\pm$ )
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.94 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.04 dB
	30MHz ~ 200MHz	3.59 dB
	200MHz ~ 1000MHz	3.60 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

### 2.2 Modification Record

There were no modifications required for compliance.

### 3 General Information

#### 3.1 General Description of EUT

Product	Peloton Tablet
Brand	PELTON
Test Model	PLTN-TTR01-3
Sample Status	Engineering sample
Power Supply Rating	20Vdc from adapter
Modulation Type	256QAM, 64QAM, 16QAM, QPSK, BPSK
Modulation Technology	OFDM
Transfer Rate	802.11a: 54/48/36/24/18/12/9/6Mbps 802.11n: up to 300Mbps 802.11ac: up to 867Mbps
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: 106.252mW 5260 ~ 5320MHz: 114.377mW 5500 ~ 5700MHz: 245.998mW 5745 ~ 5825MHz: 438.589mW
Antenna Type	Refer to note
Antenna Connector	Refer to note
Accessory Device	NA
Cable Supplied	NA

**Note:**

1. The EUT incorporates a MIMO function. Physically, the EUT provides 2 completed transmitters and 2 receivers.

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

\* The modulation and bandwidth are similar for 802.11n mode for 20MHz/40MHz and 802.11ac mode for 20MHz/40MHz/80MHz, therefore investigated worst case to representative mode in test report. (Final test mode refer section 3.2.1)

2. The EUT consumes power from the following adapters (Support units).

Adapter 1	
Brand	PELTON
Model	FSP065-APDC8R01
Input Power	100-240Vac, 50-60Hz, 1.7A
Output Power	5Vdc, 3A or 9Vdc, 3A or 20Vdc, 3.25A, 65W Max.
Power Line	AC: 1.7m non-shielded power cable without core DC: 1.5m non-shielded power cable without core attached on adapter

Adapter 2	
Brand	PELTON
Model	A20-065N5A
Input Power	100-240Vac, 50-60Hz, 1.7A
Output Power	5Vdc, 3A or 9Vdc, 3A or 20Vdc, 3.25A, 65W Max.
Power Line	AC: 1.7m non-shielded power cable without core DC: 1.5m non-shielded power cable without core attached on adapter

\* After the pretesting adapter, adapter 1 is found to be the worst case test mode and chosen for final test.

3. The following antennas were provided to the EUT.

Ant. No.	Brand	Model	Type	Connector	Gain (dBi)	
					2.4G	5G
Main	Peloton	UI8(Topaz)	PIFA	i-pex(MHF)	-0.19	0.58
AUX	Peloton	UI8(Topaz)	PIFA	i-pex(MHF)	0.28	2.34

\* The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

4. Spurious emission of the simultaneous operation mode as below and the test data please refer to report no.: RFBCIB-WTW-P22010514 -6.

No	Mode
1	WLAN 2.4GHz + WLAN 5GHz
2	BT + WLAN 5GHz
3	ANT+ + WLAN 5GHz



### 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

#### For 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

#### For 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	134	5670 MHz
110	5550 MHz		

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
106	5530 MHz

For 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	
A	√	√	√	√	EUT + Adapter
B	-	√	√	-	EUT + Exercise Bike + Adapter

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:

- For radiated emission (below 1GHz) and power line conducted emission test items chosen the worst maximum fundamental emission level channel.
- "-" means no effect.

#### **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)	TX Function
A	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0	2TX
	802.11ac (VHT20)		36 to 48	36, 40, 48	OFDM	13.5	2TX
	802.11ac (VHT40)		38 to 46	38, 46	OFDM	15.0	2TX
	802.11ac (VHT80)		42	42	OFDM	29.3	2TX
A	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	6.0	2TX
	802.11ac (VHT20)		52 to 64	52, 60, 64	OFDM	13.5	2TX
	802.11ac (VHT40)		54 to 62	54, 62	OFDM	15.0	2TX
	802.11ac (VHT80)		58	58	OFDM	29.3	2TX
A	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	6.0	2TX
	802.11ac (VHT20)		100 to 140	100, 116, 140	OFDM	13.5	2TX
	802.11ac (VHT40)		102 to 134	102, 110, 134	OFDM	15.0	2TX
	802.11ac (VHT80)		106	106	OFDM	29.3	2TX
A	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	6.0	2TX
	802.11ac (VHT20)		149 to 165	149, 157, 165	OFDM	13.5	2TX
	802.11ac (VHT40)		151 to 159	151, 159	OFDM	15.0	2TX
	802.11ac (VHT80)		155	155	OFDM	29.3	2TX

#### **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)	TX Function
A, B	802.11ac (VHT40)	5745-5825	151 to 159	151	OFDM	15.0	2TX

**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)	TX Function
A, B	802.11ac (VHT40)	5745-5825	151 to 159	151	OFDM	15.0	2TX

**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)	TX Function
A	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0	2TX
	802.11ac (VHT20)		36 to 48	36, 40, 48	OFDM	13.5	2TX
	802.11ac (VHT40)		38 to 46	38, 46	OFDM	15.0	2TX
	802.11ac (VHT80)		42	42	OFDM	29.3	2TX
A	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	6.0	2TX
	802.11ac (VHT20)		52 to 64	52, 60, 64	OFDM	13.5	2TX
	802.11ac (VHT40)		54 to 62	54, 62	OFDM	15.0	2TX
	802.11ac (VHT80)		58	58	OFDM	29.3	2TX
A	802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	6.0	2TX
	802.11ac (VHT20)		100 to 140	100, 116, 140	OFDM	13.5	2TX
	802.11ac (VHT40)		102 to 134	102, 110, 134	OFDM	15.0	2TX
	802.11ac (VHT80)		106	106	OFDM	29.3	2TX
A	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	6.0	2TX
	802.11ac (VHT20)		149 to 165	149, 157, 165	OFDM	13.5	2TX
	802.11ac (VHT40)		151 to 159	151, 159	OFDM	15.0	2TX
	802.11ac (VHT80)		155	155	OFDM	29.3	2TX

**Test Condition:**

Applicable to	Environmental Conditions	Input Power	Tested by
RE≥1G	21 deg. C, 67% RH	120Vac, 60Hz	Greg Lin
RE<1G	21 deg. C, 67% RH	120Vac, 60Hz	Jones Chang, Rex Wang
PLC	22 deg. C, 65% RH, 25 deg. C, 75% RH	120Vac, 60Hz	Jones Chang, Rex Wang
APCM	25 deg. C, 60% RH	120Vac, 60Hz	Ivan Tseng

### 3.3 Duty Cycle of Test Signal

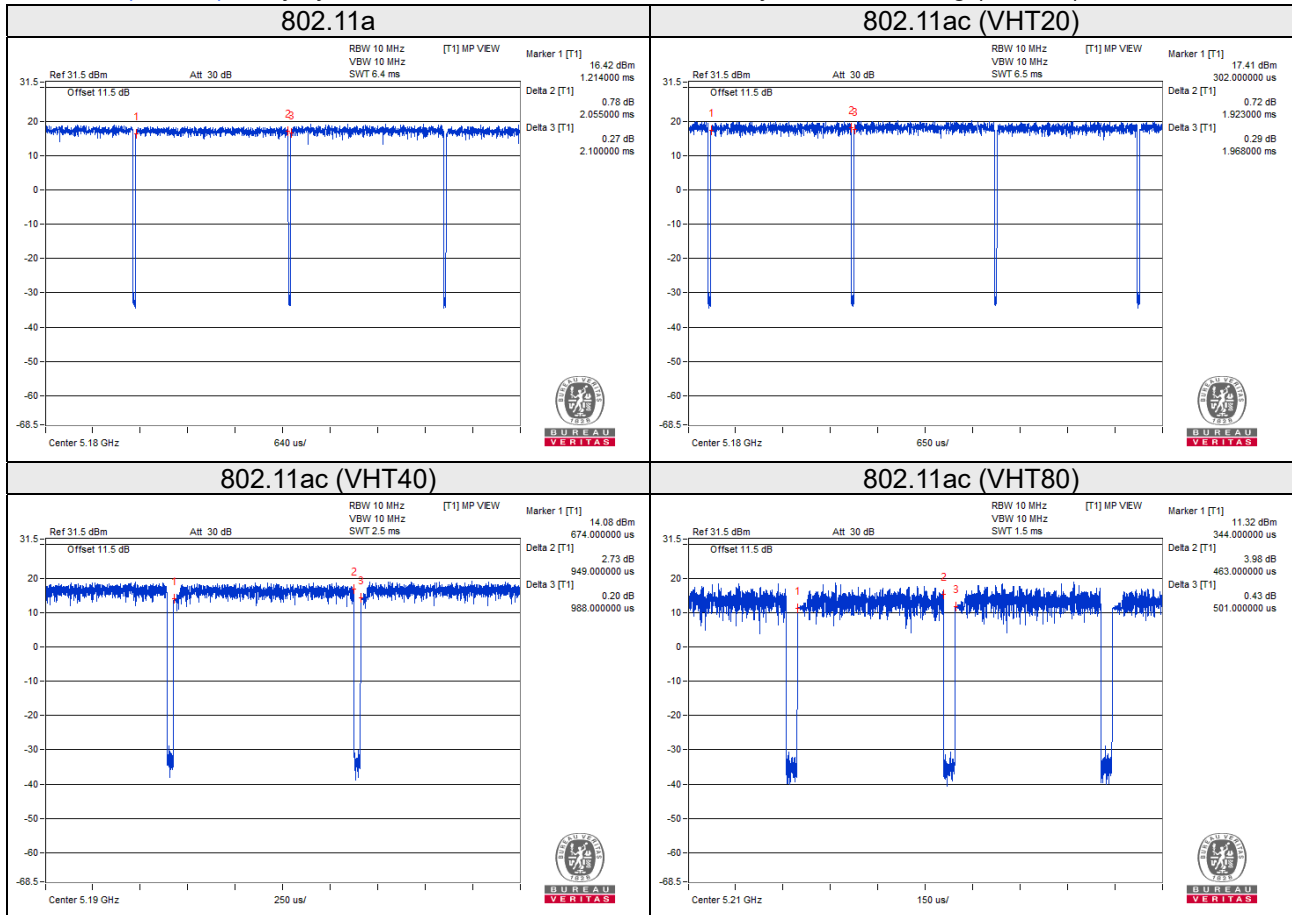
Duty cycle of test signal is < 98%, duty factor is required.

802.11a: Duty cycle = 2.055ms/2.100ms = 0.979, Duty factor =  $10 * \log(1/0.979) = 0.09$

802.11ac (VHT20): Duty cycle = 1.923ms/1.968ms = 0.977, Duty factor =  $10 * \log(1/0.977) = 0.10$

802.11ac (VHT40): Duty cycle = 0.949ms/0.988ms = 0.961, Duty factor =  $10 * \log(1/0.961) = 0.17$

802.11ac (VHT80): Duty cycle = 0.463ms/0.501ms = 0.924, Duty factor =  $10 * \log(1/0.924) = 0.34$



### 3.4 Description of Support Units

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

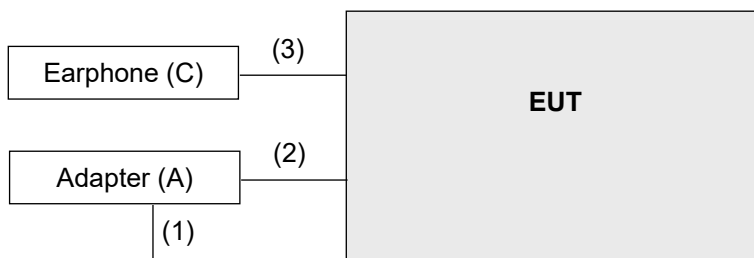
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Adapter	PELTON	FSP065-APDC8R01	NA	NA	Provided by manufacturer
B.	Peloton Bike	PELTON	PL-02	NA	NA	Provided by manufacturer
C.	Earphone	APPLE	MB770FEB	NA	NA	-

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

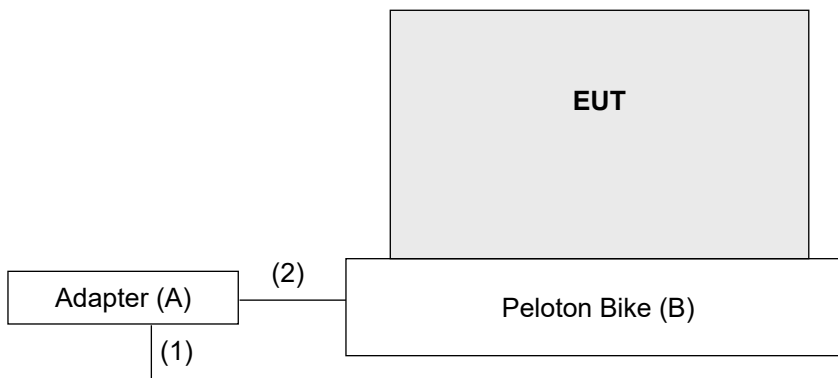
ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	AC Power cable	1	1.7	N	0	Provided by manufacturer
2.	DC Power cable	1	1.5	N	0	Provided by manufacturer
3.	Earphone cable	1	1.2	Y	0	-

#### 3.4.1 Configuration of System under Test

Test Mode A



Test Mode B



### **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 (dBµV/m)	AV: 54 (dBµV/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(dBµV/m)
5250~5350 MHz	15.407(b)(2)		
5470~5725 MHz	15.407(b)(3)		
5725~5850 MHz	<input checked="" type="checkbox"/> 15.407(b)(4)(i)	PK: -27 (dBm/MHz) <sup>*1</sup> PK: 10 (dBm/MHz) <sup>*2</sup> PK: 15.6 (dBm/MHz) <sup>*3</sup> PK: 27 (dBm/MHz) <sup>*4</sup>	PK: 68.2(dBµV/m) <sup>*1</sup> PK: 105.2 (dBµV/m) <sup>*2</sup> PK: 110.8(dBµV/m) <sup>*3</sup> PK: 122.2 (dBµV/m) <sup>*4</sup>
<sup>*1</sup> beyond 75 MHz or more above of the band edge.		<sup>*2</sup> below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.	
<sup>*3</sup> below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.		<sup>*4</sup> 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:

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



#### 4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver KEYSIGHT	N9038A	MY55420137	Apr. 09, 2021	Apr. 08, 2022
			Apr. 27, 2022	Apr. 26, 2023
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Jun. 10, 2021	Jun. 09, 2022
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Oct. 28, 2021	Oct. 27, 2022
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-1169	Nov. 14, 2021	Nov. 13, 2022
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Oct. 26, 2021	Oct. 25, 2022
Loop Antenna TESEQ	HLA 6121	45745	Jul. 21, 2021	Jul. 20, 2022
Preamplifier Agilent (Below 1GHz)	8447D	2944A10638	Jun. 05, 2021	Jun. 04, 2022
Preamplifier Agilent (Above 1GHz)	8449B	3008A01962	Oct. 05, 2021	Oct. 04, 2022
RF signal cable HUBER+SUHNER&EMCI	SUCOFLEX 104 & EMC104-SM-SM800 0	CABLE-CH9-02 (248780+171006)	Jan. 15, 2022	Jan. 14, 2023
RF signal cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-(250795/ 4)	Jan. 15, 2022	Jan. 14, 2023
RF signal cable Woken	8D-FB	Cable-CH9-01	Jun. 05, 2021	Jun. 04, 2022
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower & Turn BV ADT	AT100	AT93021705	NA	NA
Turn Table BV ADT	TT100	TT93021705	NA	NA
Turn Table Controller BV ADT	SC100	SC93021705	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Peak Power Analyzer KEYSIGHT	8990B	MY51000485	Jan. 18, 2022	Jan. 17, 2023
Wideband Power Sensor KEYSIGHT	N1923A	MY58020002	Jan. 17, 2022	Jan. 16, 2023
Pre-amplifier (18GHz-40GHz) EMC	EMC184045B	980175	Sep. 04, 2021	Sep. 03, 2022

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.  
2. The test was performed in HwaYa Chamber 9.

### 4.1.3 Test Procedures

#### For Radiated emission below 30MHz

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

Note:

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

#### For Radiated emission above 30MHz

- a. 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.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test-receiver system was set to peak and average 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:

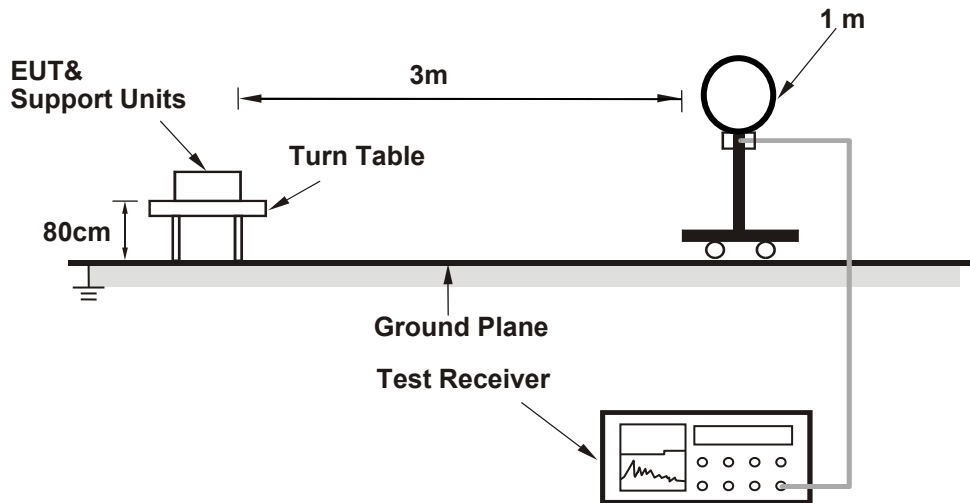
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. 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 = 1kHz; 802.11ac (VHT20): RBW = 1MHz, VBW = 1kHz;  
802.11ac (VHT40): RBW = 1MHz, VBW = 3kHz; 802.11ac (VHT80): RBW = 1MHz, VBW = 3kHz)
4. All modes of operation were investigated and the worst-case emissions are reported.

**4.1.4 Deviation from Test Standard**

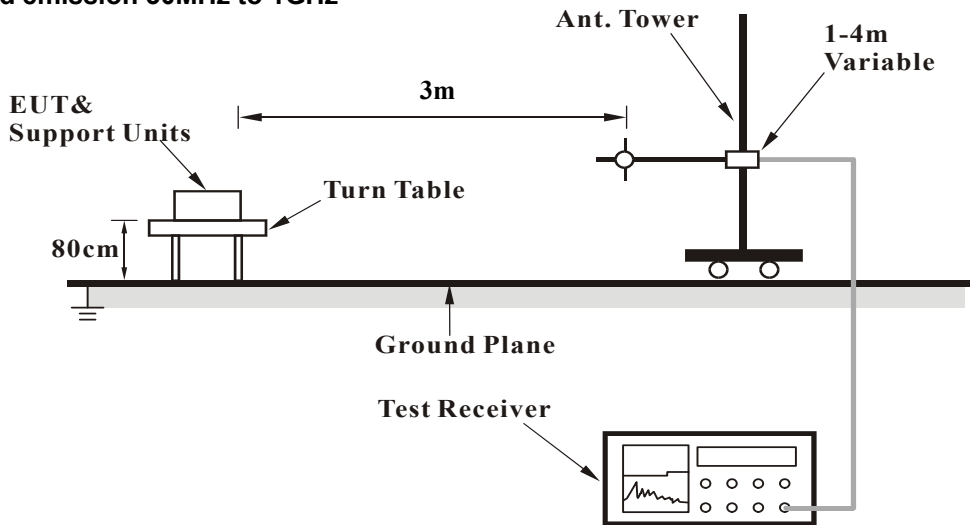
No deviation.

**4.1.5 Test Setup**

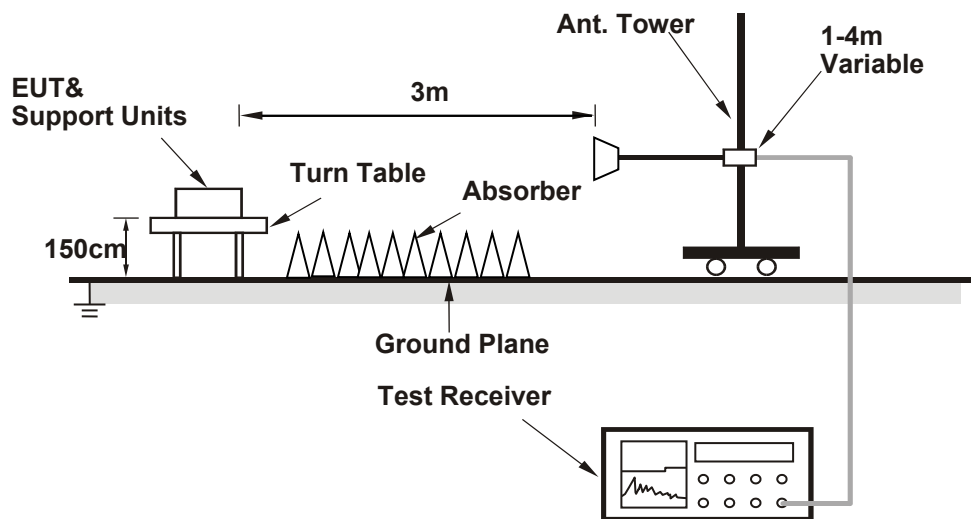
**For Radiated emission below 30MHz**



**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**

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

#### 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	63.5 PK	74.0	-10.5	1.87 H	9	57.9	5.6
2	5150.00	50.4 AV	54.0	-3.6	1.87 H	9	44.8	5.6
3	*5180.00	113.5 PK			1.87 H	9	73.5	40.0
4	*5180.00	103.6 AV			1.87 H	9	63.6	40.0
5	#10360.00	59.9 PK	68.2	-8.3	2.27 H	108	42.4	17.5

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	63.9 PK	74.0	-10.1	1.68 V	235	58.3	5.6
2	5150.00	50.9 AV	54.0	-3.1	1.68 V	235	45.3	5.6
3	*5180.00	114.4 PK			1.68 V	235	74.4	40.0
4	*5180.00	104.5 AV			1.68 V	235	64.5	40.0
5	#10360.00	60.1 PK	68.2	-8.1	1.74 V	308	42.6	17.5

##### Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " \* ": Fundamental frequency.
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	114.1 PK			1.81 H	9	74.1	40.0
2	*5200.00	104.1 AV			1.81 H	9	64.1	40.0
3	#10400.00	59.9 PK	68.2	-8.3	2.23 H	107	42.4	17.5

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5200.00	114.8 PK			1.59 V	236	74.8	40.0
2	*5200.00	104.9 AV			1.59 V	236	64.9	40.0
3	#10400.00	60.2 PK	68.2	-8.0	1.73 V	302	42.7	17.5

**Remarks:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " \* ": Fundamental frequency.
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	114.8 PK			1.76 H	13	74.9	39.9
2	*5240.00	104.8 AV			1.76 H	13	64.9	39.9
3	5350.00	56.5 PK	74.0	-17.5	1.76 H	13	51.2	5.3
4	5350.00	43.6 AV	54.0	-10.4	1.76 H	13	38.3	5.3
5	#10480.00	60.1 PK	68.2	-8.1	2.17 H	105	42.5	17.6

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	115.8 PK			1.86 V	228	75.9	39.9
2	*5240.00	105.9 AV			1.86 V	228	66.0	39.9
3	5350.00	57.2 PK	74.0	-16.8	1.86 V	228	51.9	5.3
4	5350.00	43.7 AV	54.0	-10.3	1.86 V	228	38.4	5.3
5	#10480.00	60.4 PK	68.2	-7.8	1.77 V	312	42.8	17.6

**Remarks:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " \* " : Fundamental frequency.
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	56.8 PK	74.0	-17.2	1.88 H	16	51.2	5.6
2	5150.00	43.5 AV	54.0	-10.5	1.88 H	16	37.9	5.6
3	*5260.00	114.7 PK			1.88 H	16	74.8	39.9
4	*5260.00	104.9 AV			1.88 H	16	65.0	39.9
5	#10520.00	60.0 PK	68.2	-8.2	2.23 H	102	42.4	17.6

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	57.2 PK	74.0	-16.8	2.00 V	231	51.6	5.6
2	5150.00	43.9 AV	54.0	-10.1	2.00 V	231	38.3	5.6
3	*5260.00	115.7 PK			2.00 V	231	75.8	39.9
4	*5260.00	105.8 AV			2.00 V	231	65.9	39.9
5	#10520.00	60.4 PK	68.2	-7.8	1.74 V	323	42.8	17.6

**Remarks:**

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



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

**Antenna Polarity & Test Distance : Horizontal at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	114.5 PK			1.84 H	17	74.9	39.6
2	*5300.00	104.7 AV			1.84 H	17	65.1	39.6
3	10600.00	60.4 PK	74.0	-13.6	2.17 H	115	42.4	18.0
4	10600.00	47.1 AV	54.0	-6.9	2.17 H	115	29.1	18.0

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	115.7 PK			1.84 V	236	76.1	39.6
2	*5300.00	105.8 AV			1.84 V	236	66.2	39.6
3	10600.00	60.9 PK	74.0	-13.1	1.79 V	316	42.9	18.0
4	10600.00	47.6 AV	54.0	-6.4	1.79 V	316	29.6	18.0

**Remarks:**

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

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	112.5 PK			1.82 H	10	72.9	39.6
2	*5320.00	102.7 AV			1.82 H	10	63.1	39.6
3	5350.00	64.5 PK	74.0	-9.5	1.82 H	10	59.2	5.3
4	5350.00	50.1 AV	54.0	-3.9	1.82 H	10	44.8	5.3
5	10640.00	60.2 PK	74.0	-13.8	2.21 H	95	42.3	17.9
6	10640.00	47.0 AV	54.0	-7.0	2.21 H	95	29.1	17.9

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	113.4 PK			1.97 V	232	73.8	39.6
2	*5320.00	103.7 AV			1.97 V	232	64.1	39.6
3	5350.00	65.5 PK	74.0	-8.5	1.97 V	232	60.2	5.3
4	5350.00	50.8 AV	54.0	-3.2	1.97 V	232	45.5	5.3
5	10640.00	60.5 PK	74.0	-13.5	1.77 V	312	42.6	17.9
6	10640.00	47.3 AV	54.0	-6.7	1.77 V	312	29.4	17.9

**Remarks:**

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

RF Mode	TX 802.11a	Channel	CH 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	62.0 PK	74.0	-12.0	1.95 H	24	55.8	6.2
2	5460.00	46.9 AV	54.0	-7.1	1.95 H	24	40.7	6.2
3	#5470.00	66.9 PK	68.2	-1.3	1.95 H	24	60.7	6.2
4	*5500.00	115.9 PK			1.95 H	24	75.4	40.5
5	*5500.00	106.1 AV			1.95 H	24	65.6	40.5
6	11000.00	61.0 PK	74.0	-13.0	2.19 H	107	42.2	18.8
7	11000.00	47.9 AV	54.0	-6.1	2.19 H	107	29.1	18.8

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	62.8 PK	74.0	-11.2	3.17 V	224	56.6	6.2
2	5460.00	47.8 AV	54.0	-6.2	3.17 V	224	41.6	6.2
3	#5470.00	67.7 PK	68.2	-0.5	3.17 V	224	61.5	6.2
4	*5500.00	116.8 PK			3.17 V	224	76.3	40.5
5	*5500.00	107.0 AV			3.17 V	224	66.5	40.5
6	11000.00	61.3 PK	74.0	-12.7	1.82 V	301	42.5	18.8
7	11000.00	48.1 AV	54.0	-5.9	1.82 V	301	29.3	18.8

**Remarks:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " \* ": Fundamental frequency.
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	117.0 PK			2.02 H	29	76.7	40.3
2	*5580.00	107.2 AV			2.02 H	29	66.9	40.3
3	11160.00	60.7 PK	74.0	-13.3	2.43 H	127	42.6	18.1
4	11160.00	47.4 AV	54.0	-6.6	2.43 H	127	29.3	18.1

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5580.00	118.0 PK			3.28 V	246	77.7	40.3
2	*5580.00	108.1 AV			3.28 V	246	67.8	40.3
3	11160.00	61.0 PK	74.0	-13.0	1.93 V	334	42.9	18.1
4	11160.00	47.7 AV	54.0	-6.3	1.93 V	334	29.6	18.1

**Remarks:**

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

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

**Antenna Polarity & Test Distance : Horizontal at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	114.4 PK			1.87 H	34	73.7	40.7
2	*5700.00	104.9 AV			1.87 H	34	64.2	40.7
3	#5725.00	67.1 PK	68.2	-1.1	1.87 H	34	60.6	6.5
4	11400.00	61.4 PK	74.0	-12.6	2.05 H	211	42.6	18.8
5	11400.00	48.7 AV	54.0	-5.3	2.05 H	211	29.9	18.8

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	118.5 PK			3.48 V	177	77.8	40.7
2	*5700.00	108.9 AV			3.48 V	177	68.2	40.7
3	#5725.00	67.8 PK	68.2	-0.4	3.48 V	177	61.3	6.5
4	11400.00	62.1 PK	74.0	-11.9	2.53 V	132	43.3	18.8
5	11400.00	49.5 AV	54.0	-4.5	2.53 V	132	30.7	18.8

**Remarks:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " \* " : Fundamental frequency.
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	#5646.80	63.2 PK	68.2	-5.0	1.90 H	16	57.2	6.0
2	*5745.00	120.3 PK			1.90 H	16	79.4	40.9
3	*5745.00	110.5 AV			1.90 H	16	69.6	40.9
4	#5966.80	65.7 PK	68.2	-2.5	1.90 H	16	58.8	6.9
5	11490.00	61.2 PK	74.0	-12.8	2.36 H	117	42.6	18.6
6	11490.00	48.1 AV	54.0	-5.9	2.36 H	117	29.5	18.6

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5648.80	62.8 PK	68.2	-5.4	3.42 V	173	56.8	6.0
2	*5745.00	121.3 PK			3.42 V	173	80.4	40.9
3	*5745.00	111.4 AV			3.42 V	173	70.5	40.9
4	#5933.60	64.9 PK	68.2	-3.3	3.42 V	173	57.9	7.0
5	11490.00	61.8 PK	74.0	-12.2	1.81 V	326	43.2	18.6
6	11490.00	48.3 AV	54.0	-5.7	1.81 V	326	29.7	18.6

**Remarks:**

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

RF Mode	TX 802.11a	Channel	CH 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	#5643.20	63.4 PK	68.2	-4.8	1.92 H	12	57.4	6.0
2	*5785.00	120.1 PK			1.92 H	12	79.1	41.0
3	*5785.00	110.2 AV			1.92 H	12	69.2	41.0
4	#5932.00	64.7 PK	68.2	-3.5	1.92 H	12	57.7	7.0
5	11570.00	60.9 PK	74.0	-13.1	2.27 H	104	42.5	18.4
6	11570.00	47.7 AV	54.0	-6.3	2.27 H	104	29.3	18.4

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5645.20	63.0 PK	68.2	-5.2	3.47 V	170	57.0	6.0
2	*5785.00	121.2 PK			3.47 V	170	80.2	41.0
3	*5785.00	111.2 AV			3.47 V	170	70.2	41.0
4	#5996.80	64.8 PK	68.2	-3.4	3.47 V	170	57.9	6.9
5	11570.00	61.5 PK	74.0	-12.5	1.93 V	308	43.1	18.4
6	11570.00	48.2 AV	54.0	-5.8	1.93 V	308	29.8	18.4

**Remarks:**

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

RF Mode	TX 802.11a	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	#5607.20	63.5 PK	68.2	-4.7	1.94 H	17	57.5	6.0
2	*5825.00	119.4 PK			1.94 H	17	78.2	41.2
3	*5825.00	109.6 AV			1.94 H	17	68.4	41.2
4	#5965.60	64.8 PK	68.2	-3.4	1.94 H	17	57.9	6.9
5	11650.00	60.6 PK	74.0	-13.4	2.26 H	104	42.4	18.2
6	11650.00	47.4 AV	54.0	-6.6	2.26 H	104	29.2	18.2

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5638.40	63.6 PK	68.2	-4.6	3.54 V	170	57.6	6.0
2	*5825.00	120.4 PK			3.54 V	170	79.2	41.2
3	*5825.00	110.5 AV			3.54 V	170	69.3	41.2
4	#5925.60	64.9 PK	68.2	-3.3	3.54 V	170	57.8	7.1
5	11650.00	61.0 PK	74.0	-13.0	1.77 V	314	42.8	18.2
6	11650.00	47.8 AV	54.0	-6.2	1.77 V	314	29.6	18.2

**Remarks:**

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



RF Mode	TX 802.11ac (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	65.0 PK	74.0	-9.0	1.92 H	11	59.4	5.6
2	5150.00	50.3 AV	54.0	-3.7	1.92 H	11	44.7	5.6
3	*5180.00	113.7 PK			1.92 H	11	73.7	40.0
4	*5180.00	103.3 AV			1.92 H	11	63.3	40.0
5	#10360.00	59.8 PK	68.2	-8.4	2.18 H	106	42.3	17.5

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	66.5 PK	74.0	-7.5	1.84 V	234	60.9	5.6
2	5150.00	51.0 AV	54.0	-3.0	1.84 V	234	45.4	5.6
3	*5180.00	114.8 PK			1.84 V	234	74.8	40.0
4	*5180.00	104.3 AV			1.84 V	234	64.3	40.0
5	#10360.00	60.1 PK	68.2	-8.1	1.77 V	312	42.6	17.5

**Remarks:**

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

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

**Antenna Polarity & Test Distance : Horizontal at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5200.00	115.3 PK			1.83 H	15	75.3	40.0
2	*5200.00	104.8 AV			1.83 H	15	64.8	40.0
3	#10400.00	59.9 PK	68.2	-8.3	2.21 H	107	42.4	17.5

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5200.00	116.3 PK			1.82 V	238	76.3	40.0
2	*5200.00	105.8 AV			1.82 V	238	65.8	40.0
3	#10400.00	60.4 PK	68.2	-7.8	1.68 V	307	42.9	17.5

**Remarks:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " \* ": Fundamental frequency.
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	114.6 PK			1.88 H	17	74.7	39.9
2	*5240.00	104.3 AV			1.88 H	17	64.4	39.9
3	5350.00	57.0 PK	74.0	-17.0	1.88 H	17	51.7	5.3
4	5350.00	43.4 AV	54.0	-10.6	1.88 H	17	38.1	5.3
5	#10480.00	59.9 PK	68.2	-8.3	2.17 H	113	42.3	17.6

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5240.00	115.7 PK			1.91 V	232	75.8	39.9
2	*5240.00	105.4 AV			1.91 V	232	65.5	39.9
3	5350.00	57.4 PK	74.0	-16.6	1.91 V	232	52.1	5.3
4	5350.00	43.6 AV	54.0	-10.4	1.91 V	232	38.3	5.3
5	#10480.00	60.3 PK	68.2	-7.9	1.69 V	316	42.7	17.6

**Remarks:**

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

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

**Antenna Polarity & Test Distance : Horizontal at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	56.4 PK	74.0	-17.6	1.83 H	18	50.8	5.6
2	5150.00	43.5 AV	54.0	-10.5	1.83 H	18	37.9	5.6
3	*5260.00	114.5 PK			1.83 H	18	74.6	39.9
4	*5260.00	104.6 AV			1.83 H	18	64.7	39.9
5	#10520.00	60.0 PK	68.2	-8.2	2.21 H	107	42.4	17.6

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	57.1 PK	74.0	-16.9	2.03 V	233	51.5	5.6
2	5150.00	44.0 AV	54.0	-10.0	2.03 V	233	38.4	5.6
3	*5260.00	115.6 PK			2.03 V	233	75.7	39.9
4	*5260.00	105.7 AV			2.03 V	233	65.8	39.9
5	#10520.00	60.4 PK	68.2	-7.8	1.79 V	324	42.8	17.6

**Remarks:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " \* " : Fundamental frequency.
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	114.6 PK			1.76 H	16	75.0	39.6
2	*5300.00	104.7 AV			1.76 H	16	65.1	39.6
3	10600.00	60.3 PK	74.0	-13.7	2.28 H	105	42.3	18.0
4	10600.00	47.1 AV	54.0	-6.9	2.28 H	105	29.1	18.0

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	115.6 PK			1.97 V	234	76.0	39.6
2	*5300.00	105.7 AV			1.97 V	234	66.1	39.6
3	10600.00	60.8 PK	74.0	-13.2	1.69 V	303	42.8	18.0
4	10600.00	47.6 AV	54.0	-6.4	1.69 V	303	29.6	18.0

**Remarks:**

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

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	111.8 PK			1.81 H	17	72.2	39.6
2	*5320.00	101.5 AV			1.81 H	17	61.9	39.6
3	5350.00	64.5 PK	74.0	-9.5	1.81 H	17	59.2	5.3
4	5350.00	50.1 AV	54.0	-3.9	1.81 H	17	44.8	5.3
5	10640.00	60.0 PK	74.0	-14.0	2.27 H	106	42.1	17.9
6	10640.00	46.8 AV	54.0	-7.2	2.27 H	106	28.9	17.9

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	112.7 PK			1.99 V	232	73.1	39.6
2	*5320.00	102.4 AV			1.99 V	232	62.8	39.6
3	5350.00	65.6 PK	74.0	-8.4	1.99 V	232	60.3	5.3
4	5350.00	50.9 AV	54.0	-3.1	1.99 V	232	45.6	5.3
5	10640.00	60.4 PK	74.0	-13.6	1.71 V	324	42.5	17.9
6	10640.00	47.1 AV	54.0	-6.9	1.71 V	324	29.2	17.9

**Remarks:**

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

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

**Antenna Polarity & Test Distance : Horizontal at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	60.4 PK	74.0	-13.6	1.94 H	13	54.2	6.2
2	5460.00	46.9 AV	54.0	-7.1	1.94 H	13	40.7	6.2
3	#5470.00	64.0 PK	68.2	-4.2	1.94 H	13	57.8	6.2
4	*5500.00	116.0 PK			1.94 H	13	75.5	40.5
5	*5500.00	105.9 AV			1.94 H	13	65.4	40.5
6	11000.00	60.8 PK	74.0	-13.2	2.35 H	116	42.0	18.8
7	11000.00	47.6 AV	54.0	-6.4	2.35 H	116	28.8	18.8

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	61.8 PK	74.0	-12.2	3.33 V	188	55.6	6.2
2	5460.00	48.1 AV	54.0	-5.9	3.33 V	188	41.9	6.2
3	#5470.00	67.5 PK	68.2	-0.7	3.33 V	188	61.3	6.2
4	*5500.00	117.2 PK			3.33 V	188	76.7	40.5
5	*5500.00	106.9 AV			3.33 V	188	66.4	40.5
6	11000.00	61.3 PK	74.0	-12.7	1.87 V	316	42.5	18.8
7	11000.00	48.1 AV	54.0	-5.9	1.87 V	316	29.3	18.8

**Remarks:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " \* ": Fundamental frequency.
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	116.8 PK			1.87 H	18	76.5	40.3
2	*5580.00	106.6 AV			1.87 H	18	66.3	40.3
3	11160.00	60.5 PK	74.0	-13.5	2.28 H	117	42.4	18.1
4	11160.00	47.3 AV	54.0	-6.7	2.28 H	117	29.2	18.1

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5580.00	118.0 PK			3.24 V	237	77.7	40.3
2	*5580.00	107.7 AV			3.24 V	237	67.4	40.3
3	11160.00	60.9 PK	74.0	-13.1	1.87 V	303	42.8	18.1
4	11160.00	47.7 AV	54.0	-6.3	1.87 V	303	29.6	18.1

**Remarks:**

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



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	114.2 PK			1.85 H	34	73.5	40.7
2	*5700.00	104.4 AV			1.85 H	34	63.7	40.7
3	#5725.00	66.2 PK	68.2	-2.0	1.85 H	34	59.7	6.5
4	11400.00	61.3 PK	74.0	-12.7	2.02 H	199	42.5	18.8
5	11400.00	48.9 AV	54.0	-5.1	2.02 H	199	30.1	18.8

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	117.9 PK			3.48 V	175	77.2	40.7
2	*5700.00	108.4 AV			3.48 V	175	67.7	40.7
<b>3</b>	<b>#5725.00</b>	<b>68.0 PK</b>	<b>68.2</b>	<b>-0.2</b>	<b>3.48 V</b>	<b>175</b>	<b>61.5</b>	<b>6.5</b>
4	11400.00	62.0 PK	74.0	-12.0	1.93 V	304	43.2	18.8
5	11400.00	49.3 AV	54.0	-4.7	1.93 V	304	30.5	18.8

**Remarks:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " \* " : Fundamental frequency.
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	#5632.80	63.9 PK	68.2	-4.3	1.93 H	18	57.9	6.0
2	*5745.00	119.3 PK			1.93 H	18	78.4	40.9
3	*5745.00	109.0 AV			1.93 H	18	68.1	40.9
4	#5996.40	64.9 PK	68.2	-3.3	1.93 H	18	58.0	6.9
5	11490.00	60.9 PK	74.0	-13.1	2.19 H	98	42.3	18.6
6	11490.00	47.8 AV	54.0	-6.2	2.19 H	98	29.2	18.6

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5602.00	64.3 PK	68.2	-3.9	3.43 V	171	58.3	6.0
2	*5745.00	120.3 PK			3.43 V	171	79.4	40.9
3	*5745.00	109.9 AV			3.43 V	171	69.0	40.9
4	#5994.80	64.7 PK	68.2	-3.5	3.43 V	171	57.8	6.9
5	11490.00	61.3 PK	74.0	-12.7	1.85 V	317	42.7	18.6
6	11490.00	48.2 AV	54.0	-5.8	1.85 V	317	29.6	18.6

**Remarks:**

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

RF Mode	TX 802.11ac (VHT20)	Channel	CH 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	#5642.00	63.3 PK	68.2	-4.9	1.92 H	14	57.3	6.0
2	*5785.00	119.6 PK			1.92 H	14	78.6	41.0
3	*5785.00	109.2 AV			1.92 H	14	68.2	41.0
4	#5960.80	64.9 PK	68.2	-3.3	1.92 H	14	58.0	6.9
5	11570.00	60.9 PK	74.0	-13.1	2.26 H	107	42.5	18.4
6	11570.00	47.8 AV	54.0	-6.2	2.26 H	107	29.4	18.4

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5645.20	63.0 PK	68.2	-5.2	3.48 V	172	57.0	6.0
2	*5785.00	120.4 PK			3.48 V	172	79.4	41.0
3	*5785.00	110.1 AV			3.48 V	172	69.1	41.0
4	#5988.00	65.6 PK	68.2	-2.6	3.48 V	172	58.7	6.9
5	11570.00	61.3 PK	74.0	-12.7	1.74 V	306	42.9	18.4
6	11570.00	48.1 AV	54.0	-5.9	1.74 V	306	29.7	18.4

**Remarks:**

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

RF Mode	TX 802.11ac (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	#5601.20	62.9 PK	68.2	-5.3	1.90 H	18	56.9	6.0
2	*5825.00	118.8 PK			1.90 H	18	77.6	41.2
3	*5825.00	108.5 AV			1.90 H	18	67.3	41.2
4	#5944.00	65.4 PK	68.2	-2.8	1.90 H	18	58.4	7.0
5	11650.00	60.5 PK	74.0	-13.5	2.35 H	121	42.3	18.2
6	11650.00	47.3 AV	54.0	-6.7	2.35 H	121	29.1	18.2

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5623.60	63.5 PK	68.2	-4.7	3.44 V	168	57.5	6.0
2	*5825.00	120.0 PK			3.44 V	168	78.8	41.2
3	*5825.00	109.5 AV			3.44 V	168	68.3	41.2
4	#5996.40	64.8 PK	68.2	-3.4	3.44 V	168	57.9	6.9
5	11650.00	60.9 PK	74.0	-13.1	1.84 V	326	42.7	18.2
6	11650.00	47.7 AV	54.0	-6.3	1.84 V	326	29.5	18.2

**Remarks:**

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

RF Mode	TX 802.11ac (VHT40)	Channel	CH 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	61.6 PK	74.0	-12.4	1.80 H	10	56.0	5.6
2	5150.00	50.6 AV	54.0	-3.4	1.80 H	10	45.0	5.6
3	*5190.00	108.2 PK			1.80 H	10	68.2	40.0
4	*5190.00	98.8 AV			1.80 H	10	58.8	40.0
5	#10380.00	60.2 PK	68.2	-8.0	2.01 H	209	42.6	17.6

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	65.8 PK	74.0	-8.2	2.90 V	187	60.2	5.6
2	5150.00	53.2 AV	54.0	-0.8	2.90 V	187	47.6	5.6
3	*5190.00	110.1 PK			2.90 V	187	70.1	40.0
4	*5190.00	100.3 AV			2.90 V	187	60.3	40.0
5	#10380.00	60.7 PK	68.2	-7.5	1.83 V	297	43.1	17.6

**Remarks:**

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

RF Mode	TX 802.11ac (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	5150.00	62.3 PK	74.0	-11.7	1.86 H	18	56.7	5.6
2	5150.00	49.8 AV	54.0	-4.2	1.86 H	18	44.2	5.6
3	*5230.00	110.5 PK			1.86 H	18	70.5	40.0
4	*5230.00	100.2 AV			1.86 H	18	60.2	40.0
5	#10460.00	59.4 PK	68.2	-8.8	2.36 H	117	41.9	17.5

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	63.4 PK	74.0	-10.6	1.73 V	232	57.8	5.6
2	5150.00	50.5 AV	54.0	-3.5	1.73 V	232	44.9	5.6
3	*5230.00	111.3 PK			1.73 V	232	71.3	40.0
4	*5230.00	101.1 AV			1.73 V	232	61.1	40.0
5	#10460.00	59.8 PK	68.2	-8.4	1.79 V	311	42.3	17.5

**Remarks:**

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

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

**Antenna Polarity & Test Distance : Horizontal at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5270.00	112.2 PK			1.83 H	15	72.4	39.8
2	*5270.00	101.9 AV			1.83 H	15	62.1	39.8
3	5350.00	63.7 PK	74.0	-10.3	1.83 H	15	58.4	5.3
4	5350.00	50.1 AV	54.0	-3.9	1.83 H	15	44.8	5.3
5	#10540.00	59.7 PK	68.2	-8.5	2.27 H	98	42.0	17.7

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5270.00	113.2 PK			1.87 V	230	73.4	39.8
2	*5270.00	102.9 AV			1.87 V	230	63.1	39.8
3	5350.00	64.4 PK	74.0	-9.6	1.87 V	230	59.1	5.3
4	5350.00	50.5 AV	54.0	-3.5	1.87 V	230	45.2	5.3
5	#10540.00	60.1 PK	68.2	-8.1	1.65 V	308	42.4	17.7

**Remarks:**

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

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

**Antenna Polarity & Test Distance : Horizontal at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5310.00	108.5 PK			1.86 H	15	68.9	39.6
2	*5310.00	98.5 AV			1.86 H	15	58.9	39.6
3	5350.00	66.4 PK	74.0	-7.6	1.86 H	15	61.1	5.3
4	5350.00	52.4 AV	54.0	-1.6	1.86 H	15	47.1	5.3
5	10620.00	59.9 PK	74.0	-14.1	2.27 H	108	41.9	18.0
6	10620.00	46.7 AV	54.0	-7.3	2.27 H	108	28.7	18.0

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5310.00	109.6 PK			2.81 V	233	70.0	39.6
2	*5310.00	99.5 AV			2.81 V	233	59.9	39.6
3	5350.00	67.8 PK	74.0	-6.2	2.81 V	233	62.5	5.3
4	5350.00	53.4 AV	54.0	-0.6	2.81 V	233	48.1	5.3
5	10620.00	60.2 PK	74.0	-13.8	1.73 V	327	42.2	18.0
6	10620.00	47.1 AV	54.0	-6.9	1.73 V	327	29.1	18.0

**Remarks:**

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



RF Mode	TX 802.11ac (VHT40)	Channel	CH 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	63.9 PK	74.0	-10.1	1.98 H	17	57.7	6.2
2	5460.00	51.4 AV	54.0	-2.6	1.98 H	17	45.2	6.2
3	#5470.00	66.9 PK	68.2	-1.3	1.98 H	17	60.7	6.2
4	*5510.00	111.1 PK			1.98 H	17	70.6	40.5
5	*5510.00	101.2 AV			1.98 H	17	60.7	40.5
6	11020.00	60.5 PK	74.0	-13.5	2.34 H	116	41.8	18.7
7	11020.00	47.4 AV	54.0	-6.6	2.34 H	116	28.7	18.7

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	65.0 PK	74.0	-9.0	3.56 V	189	58.8	6.2
2	5460.00	52.3 AV	54.0	-1.7	3.56 V	189	46.1	6.2
3	#5470.00	67.8 PK	68.2	-0.4	3.56 V	189	61.6	6.2
4	*5510.00	112.0 PK			3.56 V	189	71.5	40.5
5	*5510.00	102.1 AV			3.56 V	189	61.6	40.5
6	11020.00	60.8 PK	74.0	-13.2	1.76 V	307	42.1	18.7
7	11020.00	47.6 AV	54.0	-6.4	1.76 V	307	28.9	18.7

**Remarks:**

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

RF Mode	TX 802.11ac (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	115.0 PK			1.89 H	9	74.6	40.4
2	*5550.00	104.7 AV			1.89 H	9	64.3	40.4
3	11100.00	59.6 PK	74.0	-14.4	2.28 H	103	41.8	17.8
4	11100.00	46.5 AV	54.0	-7.5	2.28 H	103	28.7	17.8

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5550.00	116.0 PK			3.26 V	189	75.6	40.4
2	*5550.00	105.6 AV			3.26 V	189	65.2	40.4
3	11100.00	60.3 PK	74.0	-13.7	1.83 V	318	42.5	17.8
4	11100.00	47.0 AV	54.0	-7.0	1.83 V	318	29.2	17.8

**Remarks:**

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

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

**Antenna Polarity & Test Distance : Horizontal at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5670.00	110.7 PK			1.53 H	16	70.3	40.4
2	*5670.00	101.1 AV			1.53 H	16	60.7	40.4
3	#5725.00	66.4 PK	68.2	-1.8	1.53 H	16	59.9	6.5
4	11340.00	59.8 PK	74.0	-14.2	1.96 H	203	40.9	18.9
5	11340.00	47.6 AV	54.0	-6.4	1.96 H	203	28.7	18.9

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5670.00	113.6 PK			3.39 V	187	73.2	40.4
2	*5670.00	104.1 AV			3.39 V	187	63.7	40.4
3	#5725.00	67.5 PK	68.2	-0.7	3.26 V	190	61.0	6.5
4	11340.00	61.8 PK	74.0	-12.2	1.91 V	336	42.9	18.9
5	11340.00	48.3 AV	54.0	-5.7	1.91 V	336	29.4	18.9

**Remarks:**

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

RF Mode	TX 802.11ac (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	#5636.40	65.9 PK	68.2	-2.3	1.82 H	23	59.9	6.0
2	*5755.00	117.0 PK			1.82 H	23	76.1	40.9
3	*5755.00	106.7 AV			1.82 H	23	65.8	40.9
4	#5956.80	65.5 PK	68.2	-2.7	1.82 H	23	58.7	6.8
5	11510.00	60.7 PK	74.0	-13.3	2.38 H	97	42.2	18.5
6	11510.00	47.5 AV	54.0	-6.5	2.38 H	97	29.0	18.5

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5642.00	66.6 PK	68.2	-1.6	3.41 V	172	60.6	6.0
2	*5755.00	117.8 PK			3.41 V	172	76.9	40.9
3	*5755.00	107.6 AV			3.41 V	172	66.7	40.9
4	#5969.60	64.9 PK	68.2	-3.3	3.41 V	172	58.0	6.9
5	11510.00	61.1 PK	74.0	-12.9	1.81 V	325	42.6	18.5
6	11510.00	47.9 AV	54.0	-6.1	1.81 V	325	29.4	18.5

**Remarks:**

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

RF Mode	TX 802.11ac (VHT40)	Channel	CH 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	#5630.80	63.6 PK	68.2	-4.6	1.98 H	15	57.6	6.0
2	*5795.00	116.8 PK			1.98 H	15	75.7	41.1
3	*5795.00	106.6 AV			1.98 H	15	65.5	41.1
4	#5932.40	65.4 PK	68.2	-2.8	1.98 H	15	58.4	7.0
5	11590.00	60.3 PK	74.0	-13.7	2.36 H	108	42.0	18.3
6	11590.00	47.1 AV	54.0	-6.9	2.36 H	108	28.8	18.3

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5641.60	63.7 PK	68.2	-4.5	3.46 V	172	57.7	6.0
2	*5795.00	117.9 PK			3.46 V	172	76.8	41.1
3	*5795.00	107.6 AV			3.46 V	172	66.5	41.1
4	#5935.20	66.4 PK	68.2	-1.8	3.46 V	172	59.4	7.0
5	11590.00	60.8 PK	74.0	-13.2	1.79 V	317	42.5	18.3
6	11590.00	47.5 AV	54.0	-6.5	1.79 V	317	29.2	18.3

**Remarks:**

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

RF Mode	TX 802.11ac (VHT80)	Channel	CH 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	61.6 PK	74.0	-12.4	1.54 H	20	56.0	5.6
2	5150.00	50.3 AV	54.0	-3.7	1.54 H	20	44.7	5.6
3	*5210.00	104.3 PK			1.54 H	20	64.3	40.0
4	*5210.00	95.0 AV			1.54 H	20	55.0	40.0
5	#10420.00	59.1 PK	68.2	-9.1	1.98 H	202	41.6	17.5

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	65.9 PK	74.0	-8.1	2.77 V	191	60.3	5.6
2	5150.00	53.2 AV	54.0	-0.8	2.77 V	191	47.6	5.6
3	*5210.00	106.9 PK			2.77 V	191	66.9	40.0
4	*5210.00	97.3 AV			2.77 V	191	57.3	40.0
5	#10420.00	60.1 PK	68.2	-8.1	1.76 V	331	42.6	17.5

**Remarks:**

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

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

**Antenna Polarity & Test Distance : Horizontal at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5290.00	102.5 PK			1.65 H	13	62.8	39.7
2	*5290.00	93.5 AV			1.65 H	13	53.8	39.7
3	5350.00	62.6 PK	74.0	-11.4	1.65 H	13	57.3	5.3
4	5350.00	51.1 AV	54.0	-2.9	1.65 H	13	45.8	5.3
5	#10580.00	59.5 PK	68.2	-8.7	1.95 H	201	41.7	17.8

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5290.00	104.6 PK			3.01 V	228	64.9	39.7
2	*5290.00	95.0 AV			3.01 V	228	55.3	39.7
3	5350.00	65.0 PK	74.0	-9.0	3.01 V	228	59.7	5.3
<b>4</b>	<b>5350.00</b>	<b>53.8 AV</b>	<b>54.0</b>	<b>-0.2</b>	<b>3.01 V</b>	<b>228</b>	<b>48.5</b>	<b>5.3</b>
5	#10580.00	60.2 PK	68.2	-8.0	1.97 V	306	42.4	17.8

**Remarks:**

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " \* " : Fundamental frequency.
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	64.1 PK	74.0	-9.9	1.88 H	15	57.9	6.2
2	5460.00	52.4 AV	54.0	-1.6	1.88 H	15	46.2	6.2
3	#5470.00	64.3 PK	68.2	-3.9	1.88 H	15	58.1	6.2
4	*5530.00	108.1 PK			1.88 H	15	67.7	40.4
5	*5530.00	98.2 AV			1.88 H	15	57.8	40.4
6	#5725.00	57.7 PK	68.2	-10.5	1.88 H	15	51.2	6.5
7	11060.00	59.9 PK	74.0	-14.1	2.27 H	118	41.6	18.3
8	11060.00	46.8 AV	54.0	-7.2	2.27 H	118	28.5	18.3

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	66.1 PK	74.0	-7.9	3.41 V	187	59.9	6.2
2	5460.00	53.3 AV	54.0	-0.7	3.41 V	187	47.1	6.2
3	#5470.00	66.9 PK	68.2	-1.3	3.41 V	188	60.7	6.2
4	*5530.00	109.1 PK			3.41 V	187	68.7	40.4
5	*5530.00	99.2 AV			3.41 V	187	58.8	40.4
6	#5725.00	57.8 PK	68.2	-10.4	3.41 V	187	51.3	6.5
7	11060.00	60.2 PK	74.0	-13.8	1.94 V	307	41.9	18.3
8	11060.00	47.1 AV	54.0	-6.9	1.94 V	307	28.8	18.3

**Remarks:**

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



RF Mode	TX 802.11ac (VHT80)	Channel	CH 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	#5648.00	66.6 PK	68.2	-1.6	1.89 H	17	60.6	6.0
2	*5775.00	110.7 PK			1.89 H	17	69.7	41.0
3	*5775.00	100.2 AV			1.89 H	17	59.2	41.0
4	#5937.20	65.1 PK	68.2	-3.1	1.89 H	17	58.1	7.0
5	11550.00	60.3 PK	74.0	-13.7	2.39 H	114	41.9	18.4
6	11550.00	47.1 AV	54.0	-6.9	2.39 H	114	28.7	18.4

**Antenna Polarity & Test Distance : Vertical at 3 m**

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5644.40	67.6 PK	68.2	-0.6	3.37 V	168	61.6	6.0
2	*5775.00	111.6 PK			3.37 V	168	70.6	41.0
3	*5775.00	101.2 AV			3.37 V	168	60.2	41.0
4	#5930.00	66.5 PK	68.2	-1.7	3.37 V	168	59.5	7.0
5	11550.00	60.7 PK	74.0	-13.3	1.78 V	305	42.3	18.4
6	11550.00	47.5 AV	54.0	-6.5	1.78 V	305	29.1	18.4

**Remarks:**

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

Below 1GHz Worst-Case Data:

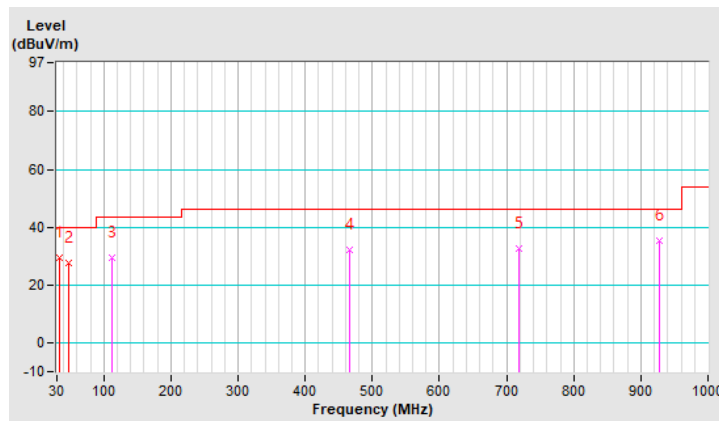
802.11ac (VHT40)

CHANNEL	TX Channel 151	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	A

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	34.01	29.4 QP	40.0	-10.6	1.00 H	121	39.9	-10.6
2	48.50	27.5 QP	40.0	-12.5	1.00 H	7	36.5	-9.0
3	112.45	29.5 QP	43.5	-14.0	1.50 H	255	41.4	-11.9
4	466.50	32.2 QP	46.0	-13.8	1.50 H	5	35.4	-3.2
5	717.73	32.6 QP	46.0	-13.4	1.50 H	325	31.3	1.3
6	927.25	35.3 QP	46.0	-10.7	2.00 H	13	29.2	6.1

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz
4. Margin value = Emission Level – Limit value
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

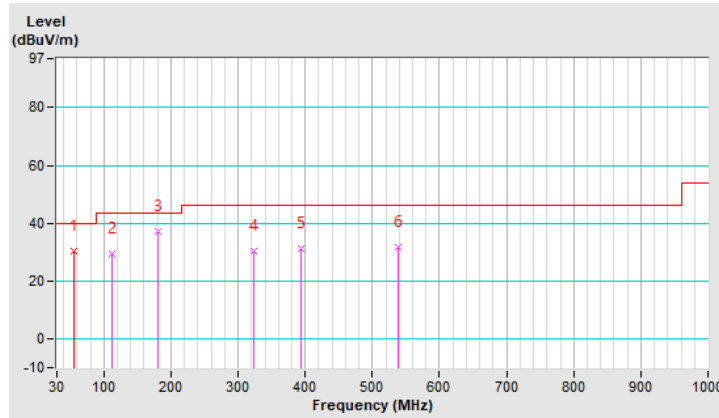


CHANNEL	TX Channel 151	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	A

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	55.34	30.2 QP	40.0	-9.8	1.00 V	244	39.3	-9.2
2	112.45	29.4 QP	43.5	-14.1	1.00 V	304	41.3	-11.9
3	181.32	37.2 QP	43.5	-6.3	1.50 V	135	47.6	-10.4
4	322.94	30.5 QP	46.0	-15.5	1.50 V	11	36.8	-6.3
5	394.72	31.4 QP	46.0	-14.6	1.50 V	337	36.4	-5.0
6	538.28	31.7 QP	46.0	-14.3	2.00 V	316	33.5	-1.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz
4. Margin value = Emission Level – Limit value
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

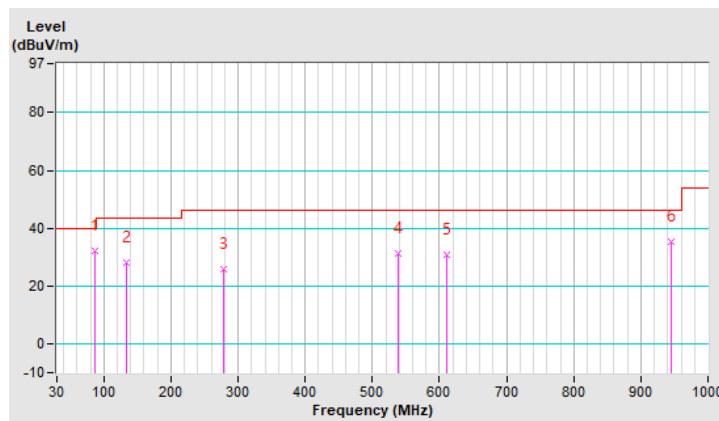


CHANNEL	TX Channel 151	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	B

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	87.23	32.3 QP	40.0	-7.7	1.25 H	227	47.0	-14.7
2	133.79	28.1 QP	43.5	-15.4	1.50 H	18	37.9	-9.8
3	279.29	25.6 QP	46.0	-20.4	1.25 H	34	33.1	-7.5
4	538.28	31.2 QP	46.0	-14.8	2.00 H	19	33.0	-1.8
5	611.03	30.6 QP	46.0	-15.4	1.50 H	309	30.8	-0.2
6	944.71	35.5 QP	46.0	-10.5	1.50 H	211	29.3	6.2

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz
4. Margin value = Emission Level – Limit value
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

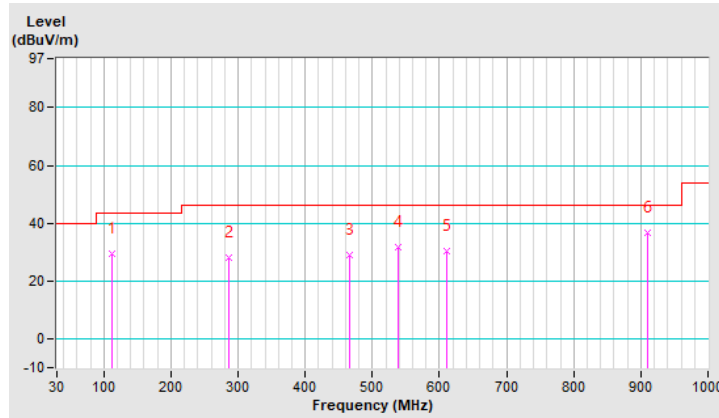


CHANNEL	TX Channel 151	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz	TEST MODE	B

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	112.45	29.4 QP	43.5	-14.1	1.00 V	304	41.3	-11.9
2	287.05	28.0 QP	46.0	-18.0	1.50 V	30	35.3	-7.3
3	466.50	28.9 QP	46.0	-17.1	1.00 V	339	32.1	-3.2
4	538.28	31.7 QP	46.0	-14.3	1.00 V	316	33.5	-1.8
5	610.06	30.4 QP	46.0	-15.6	1.50 V	25	30.6	-0.2
6	909.79	36.5 QP	46.0	-9.5	2.00 V	2	30.9	5.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz
4. Margin value = Emission Level – Limit value
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
Test Receiver ROHDE & SCHWARZ	ESR3	102412	Jan. 22, 2022	Jan. 21, 2023
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond2-01	Sep. 04, 2021	Sep. 03, 2022
LISN/AMN ROHDE & SCHWARZ (EUT)	ESH3-Z5	100312	Sep. 17, 2021	Sep. 16, 2022
LISN/AMN ROHDE & SCHWARZ (Peripheral)	ENV216	101196	Apr. 26, 2021	Apr. 25, 2022
Software ADT	BV ADT_Cond_ V7.3.7.4	NA	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The test was performed in HwaYa Shielded Room 2 (Conduction 2).

3. The VCCI Site Registration No. is C-12047.

4. Teste date: Jan. 31 ~ Feb. 28, 2022

#### 4.2.3 Test Procedures

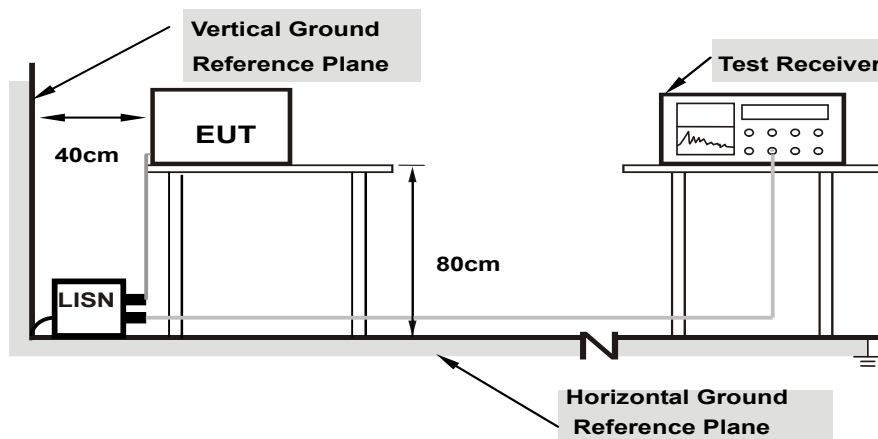
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

Worst-case data:

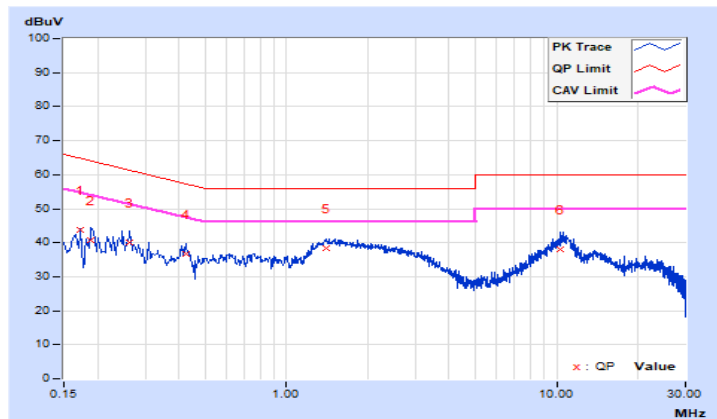
802.11ac (VHT40)

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	A		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.17346	9.69	33.93	21.79	43.62	31.48	64.79
2	0.18910	9.69	30.94	20.34	40.63	30.03	64.08	54.08	-23.45	-24.05
3	0.26339	9.69	30.29	22.21	39.98	31.90	61.32	51.32	-21.34	-19.42
4	0.42370	9.68	26.98	20.17	36.66	29.85	57.38	47.38	-20.72	-17.53
5	1.40902	9.70	28.77	22.99	38.47	32.69	56.00	46.00	-17.53	-13.31
6	10.30036	9.79	28.41	22.80	38.20	32.59	60.00	50.00	-21.80	-17.41

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.



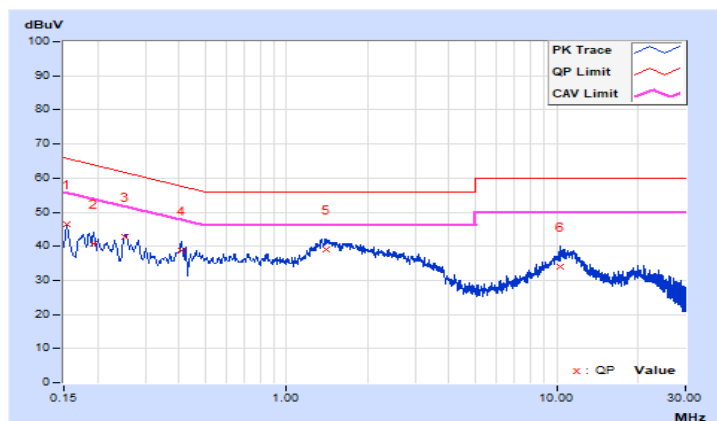


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	A		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.15391	9.69	36.88	26.57	46.57	36.26	65.79
2	0.19301	9.69	30.93	21.22	40.62	30.91	63.91	53.91	-23.29	-23.00
3	0.25391	9.69	32.98	24.34	42.67	34.03	61.63	51.63	-18.96	-17.60
4	0.40806	9.68	29.17	23.08	38.85	32.76	57.69	47.69	-18.84	-14.93
<b>5</b>	<b>1.39729</b>	<b>9.71</b>	<b>29.48</b>	<b>23.73</b>	<b>39.19</b>	<b>33.44</b>	<b>56.00</b>	<b>46.00</b>	<b>-16.81</b>	<b>-12.56</b>
6	10.25344	9.80	24.30	18.44	34.10	28.24	60.00	50.00	-25.90	-21.76

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.

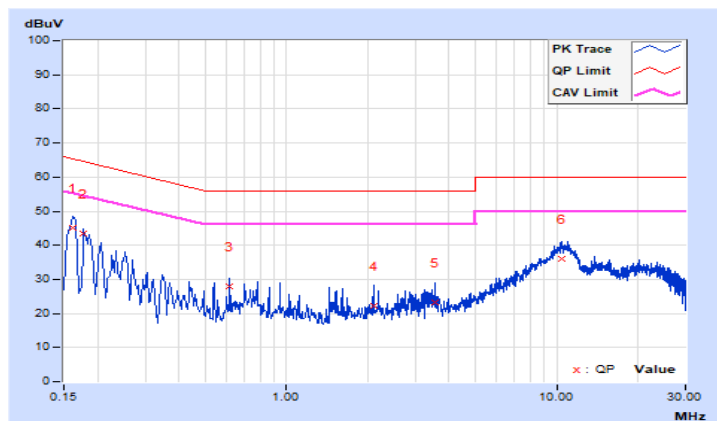


Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.16190	9.71	35.55	17.31	45.26	27.02	65.37
2	0.17800	9.72	33.80	18.53	43.52	28.25	64.58	54.58	-21.06	-26.33
3	0.61800	9.76	18.17	7.34	27.93	17.10	56.00	46.00	-28.07	-28.90
4	2.10600	9.79	12.31	4.24	22.10	14.03	56.00	46.00	-33.90	-31.97
5	3.56600	9.81	13.46	7.57	23.27	17.38	56.00	46.00	-32.73	-28.62
6	10.44200	9.87	26.25	21.22	36.12	31.09	60.00	50.00	-23.88	-18.91

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.

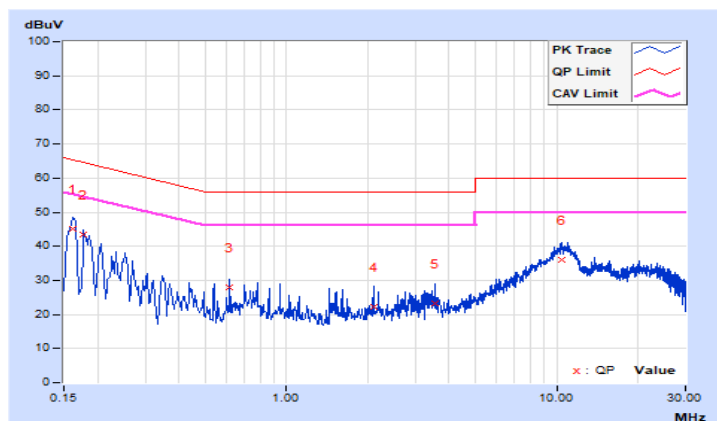


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.16190	9.71	35.55	17.31	45.26	27.02	65.37
2	0.17800	9.72	33.80	18.53	43.52	28.25	64.58	54.58	-21.06	-26.33
3	0.61800	9.76	18.17	7.34	27.93	17.10	56.00	46.00	-28.07	-28.90
4	2.10600	9.79	12.31	4.24	22.10	14.03	56.00	46.00	-33.90	-31.97
5	3.56600	9.81	13.46	7.57	23.27	17.38	56.00	46.00	-32.73	-28.62
6	10.44200	9.87	26.25	21.22	36.12	31.09	60.00	50.00	-23.88	-18.91

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  $N_{ANT} \leq 4$ ;

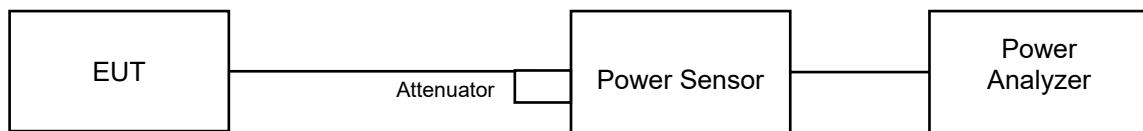
Array Gain = 0 dB (i.e., no array gain) for channel widths  $\geq 40$  MHz for any  $N_{ANT}$ ;

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

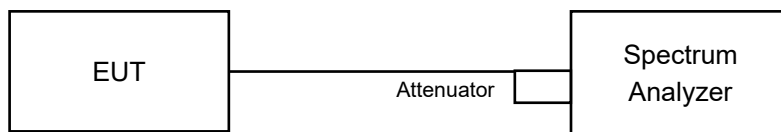
For power measurements on all other devices: Array Gain =  $10 \log(N_{ANT}/N_{SS})$  dB.

#### 4.3.2 Test Setup

For Power Output



For 26dB Bandwidth



#### 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

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

#### 4.3.5 Deviation from Test Standard

No deviation.

#### 4.3.6 EUT Operating Conditions

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

### 4.3.7 Test Result

Power Output:  
802.11a

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	14.98	15.52	67.123	18.27	24.00	Pass
40	5200	14.96	15.50	66.814	18.25	24.00	Pass
48	5240	14.31	14.52	55.291	17.43	24.00	Pass
52	5260	17.30	17.83	<b>114.377</b>	20.58	24.00	Pass
60	5300	17.09	17.65	109.379	20.39	24.00	Pass
64	5320	17.07	17.61	108.610	20.36	24.00	Pass
100	5500	20.31	21.10	236.224	23.73	24.00	Pass
116	5580	20.37	20.91	232.203	23.66	24.00	Pass
140	5700	19.97	20.32	206.958	23.16	24.00	Pass
149	5745	23.10	23.63	434.849	26.38	30.00	Pass
157	5785	23.07	23.71	437.732	26.41	30.00	Pass
165	5825	22.97	23.81	<b>438.589</b>	26.42	30.00	Pass

Note:

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

Chain 0

1.  $11\text{dBm} + 10\log(24.93) = 24.96 > 24\text{dBm}$
2.  $11\text{dBm} + 10\log(24.80) = 24.94 > 24\text{dBm}$
3.  $11\text{dBm} + 10\log(24.58) = 24.90 > 24\text{dBm}$
4.  $11\text{dBm} + 10\log(32.57) = 26.12 > 24\text{dBm}$
5.  $11\text{dBm} + 10\log(29.49) = 25.69 > 24\text{dBm}$
6.  $11\text{dBm} + 10\log(28.87) = 25.60 > 24\text{dBm}$

Chain 1

1.  $11\text{dBm} + 10\log(24.91) = 24.96 > 24\text{dBm}$
2.  $11\text{dBm} + 10\log(24.77) = 24.93 > 24\text{dBm}$
3.  $11\text{dBm} + 10\log(24.80) = 24.94 > 24\text{dBm}$
4.  $11\text{dBm} + 10\log(37.00) = 26.68 > 24\text{dBm}$
5.  $11\text{dBm} + 10\log(33.56) = 26.25 > 24\text{dBm}$
6.  $11\text{dBm} + 10\log(33.42) = 26.24 > 24\text{dBm}$

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	15.20	15.61	69.505	18.42	24.00	Pass
40	5200	14.75	15.31	63.816	18.05	24.00	Pass
48	5240	14.31	14.67	56.286	17.50	24.00	Pass
52	5260	17.02	17.63	108.293	20.35	24.00	Pass
60	5300	16.93	17.52	105.811	20.25	24.00	Pass
64	5320	16.83	17.61	105.871	20.25	24.00	Pass
100	5500	20.32	20.91	230.957	23.64	24.00	Pass
116	5580	20.61	21.17	<b>245.998</b>	23.91	24.00	Pass
140	5700	19.53	19.96	188.826	22.76	24.00	Pass
149	5745	23.07	23.40	421.544	26.25	30.00	Pass
157	5785	23.20	23.34	424.704	26.28	30.00	Pass
165	5825	22.91	23.51	419.822	26.23	30.00	Pass

Note:

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

Chain 0

1.  $11\text{dBm} + 10\log(24.99) = 24.97 > 24\text{dBm}$
2.  $11\text{dBm} + 10\log(24.54) = 24.89 > 24\text{dBm}$
3.  $11\text{dBm} + 10\log(25.59) = 25.08 > 24\text{dBm}$
4.  $11\text{dBm} + 10\log(29.45) = 25.69 > 24\text{dBm}$
5.  $11\text{dBm} + 10\log(29.43) = 25.68 > 24\text{dBm}$
6.  $11\text{dBm} + 10\log(28.64) = 25.56 > 24\text{dBm}$

Chain 1

1.  $11\text{dBm} + 10\log(25.65) = 25.09 > 24\text{dBm}$
2.  $11\text{dBm} + 10\log(25.66) = 25.09 > 24\text{dBm}$
3.  $11\text{dBm} + 10\log(25.88) = 25.12 > 24\text{dBm}$
4.  $11\text{dBm} + 10\log(34.85) = 26.42 > 24\text{dBm}$
5.  $11\text{dBm} + 10\log(34.70) = 26.40 > 24\text{dBm}$
6.  $11\text{dBm} + 10\log(29.49) = 25.69 > 24\text{dBm}$

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	16.30	16.71	89.539	19.52	24.00	Pass
46	5230	16.98	17.51	<b>106.252</b>	20.26	24.00	Pass
54	5270	16.97	17.53	106.398	20.27	24.00	Pass
62	5310	17.05	17.68	109.313	20.39	24.00	Pass
102	5510	18.72	19.40	161.570	22.08	24.00	Pass
110	5550	20.49	20.88	234.405	23.70	24.00	Pass
134	5670	19.91	20.37	206.842	23.16	24.00	Pass
151	5755	23.10	23.34	419.948	26.23	30.00	Pass
159	5795	22.95	23.27	409.567	26.12	30.00	Pass

Note:

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

Chain 0

1.  $11\text{dBm} + 10\log(42.14) = 27.24 > 24\text{dBm}$
2.  $11\text{dBm} + 10\log(42.11) = 27.24 > 24\text{dBm}$
3.  $11\text{dBm} + 10\log(42.06) = 27.23 > 24\text{dBm}$
4.  $11\text{dBm} + 10\log(52.17) = 28.17 > 24\text{dBm}$
5.  $11\text{dBm} + 10\log(49.57) = 27.95 > 24\text{dBm}$

Chain 1

1.  $11\text{dBm} + 10\log(42.04) = 27.23 > 24\text{dBm}$
2.  $11\text{dBm} + 10\log(42.17) = 27.25 > 24\text{dBm}$
3.  $11\text{dBm} + 10\log(42.31) = 27.26 > 24\text{dBm}$
4.  $11\text{dBm} + 10\log(63.20) = 29.00 > 24\text{dBm}$
5.  $11\text{dBm} + 10\log(49.98) = 27.98 > 24\text{dBm}$



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	16.02	16.28	82.456	19.16	24.00	Pass
58	5290	14.42	14.91	58.644	17.68	24.00	Pass
106	5530	18.01	18.41	132.584	21.22	24.00	Pass
155	5775	21.20	21.70	279.737	24.47	30.00	Pass

Note:

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

Chain 0

1.  $11\text{dBm} + 10\log(84.24) = 30.25 > 24\text{dBm}$
2.  $11\text{dBm} + 10\log(84.57) = 30.27 > 24\text{dBm}$

Chain 1

1.  $11\text{dBm} + 10\log(84.57) = 30.27 > 24\text{dBm}$
2.  $11\text{dBm} + 10\log(85.67) = 30.32 > 24\text{dBm}$

26dB Bandwidth:

802.11a

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	24.93	24.91
60	5300	24.80	24.77
64	5320	24.58	24.80
100	5500	32.57	37.00
116	5580	29.49	33.56
140	5700	28.87	33.42

802.11ac (VHT20)

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	24.99	25.65
60	5300	24.54	25.66
64	5320	25.59	25.88
100	5500	29.45	34.85
116	5580	29.43	34.70
140	5700	28.64	29.49

802.11ac (VHT40)

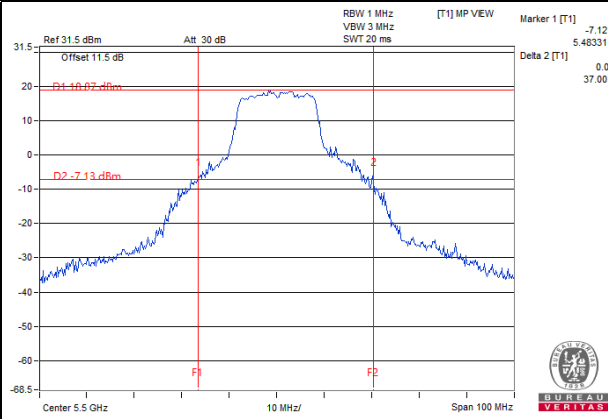
Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
54	5270	42.14	42.04
62	5310	42.11	42.17
102	5510	42.06	42.31
110	5550	52.17	63.20
134	5670	49.57	49.98

802.11ac (VHT80)

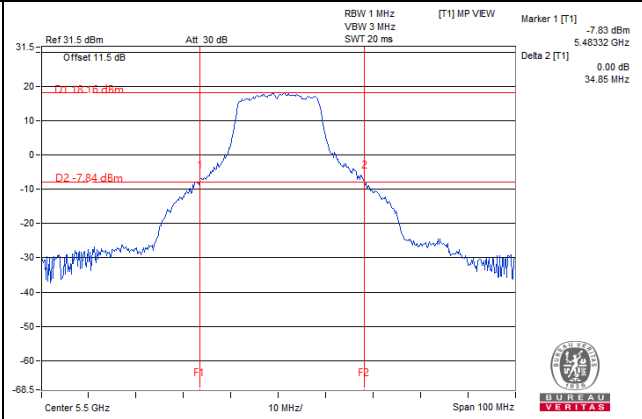
Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
58	5290	84.24	84.57
106	5530	84.57	85.67

### Spectrum Plot of Worst Value

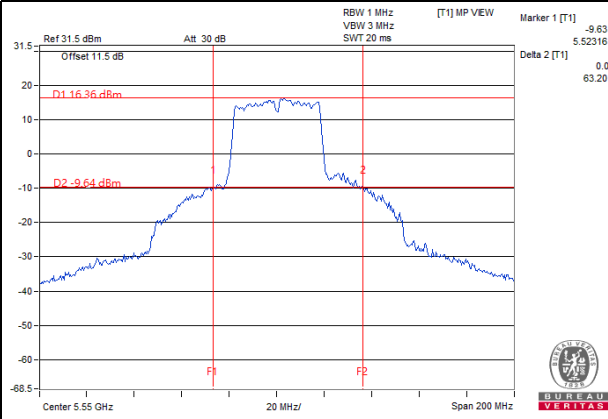
#### 802.11a



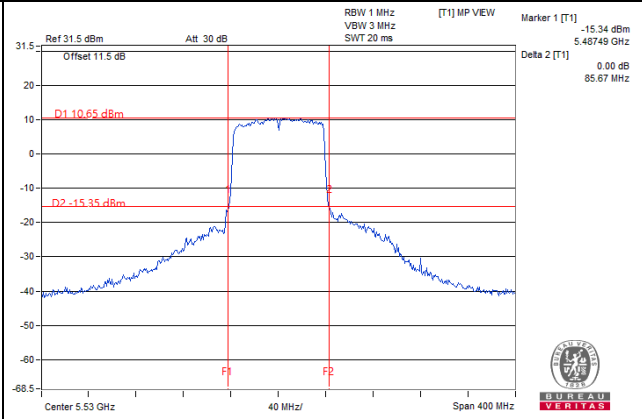
#### 802.11ac (VHT20)



#### 802.11ac (VHT40)



#### 802.11ac (VHT80)



### EUT Maximum Conducted Power

#### 802.11a

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	114.377	20.58
5470~5725	236.224	23.73

#### 802.11ac (VHT20)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	108.293	20.35
5470~5725	245.998	23.91

#### 802.11ac (VHT40)

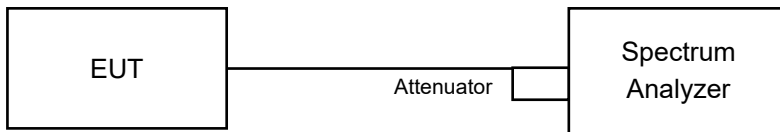
Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	109.313	20.39
5470~5725	234.405	23.70

#### 802.11ac (VHT80)

Frequency Band (MHz)	Max. Power	
	Output Power (mW)	Output Power (dBm)
5250~5350	58.644	17.68
5470~5725	132.584	21.22

## 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 sampling. 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

Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	16.68	16.80
40	5200	16.80	16.80
48	5240	16.68	16.68
52	5260	16.92	16.80
60	5300	16.80	16.80
64	5320	16.80	16.80
100	5500	21.00	20.82
116	5580	19.98	20.34
140	5700	19.62	19.74
149	5745	25.20	24.36
157	5785	24.96	24.36
165	5825	23.76	26.52

##### 802.11ac (VHT20)

Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	17.76	18.00
40	5200	17.76	18.00
48	5240	18.00	18.00
52	5260	18.00	18.00
60	5300	18.00	18.00
64	5320	18.00	18.00
100	5500	19.56	19.56
116	5580	19.86	19.92
140	5700	18.24	18.36
149	5745	25.20	25.44
157	5785	25.32	24.72
165	5825	27.24	26.88

802.11ac (VHT40)

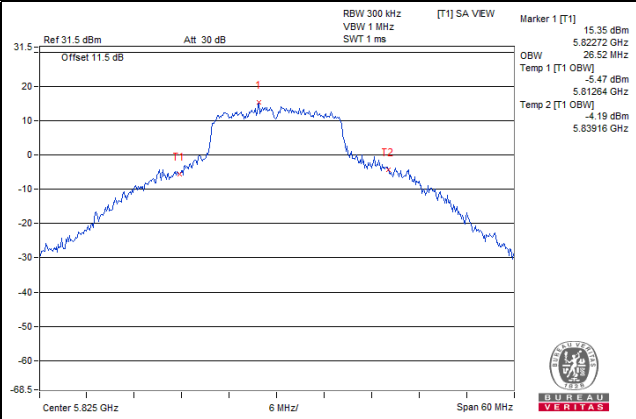
Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	36.48	36.48
46	5230	36.72	36.72
54	5270	36.48	36.60
62	5310	36.48	36.48
102	5510	36.48	36.60
110	5550	36.96	37.20
134	5670	36.72	36.96
151	5755	52.80	54.72
159	5795	41.76	42.36

802.11ac (VHT80)

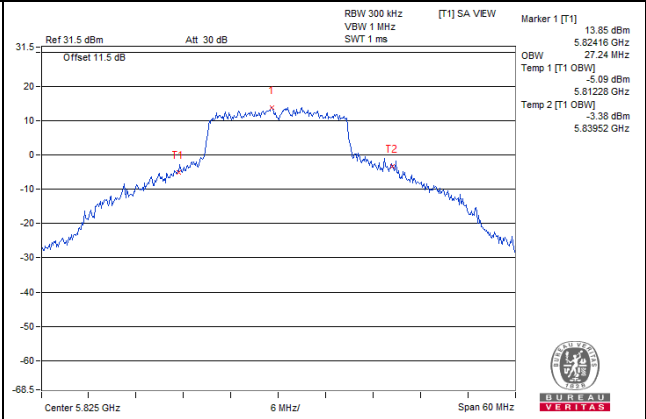
Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	75.84	75.84
58	5290	75.84	75.84
106	5530	75.84	75.84
155	5775	86.40	97.44

### Spectrum Plot of Worst Value

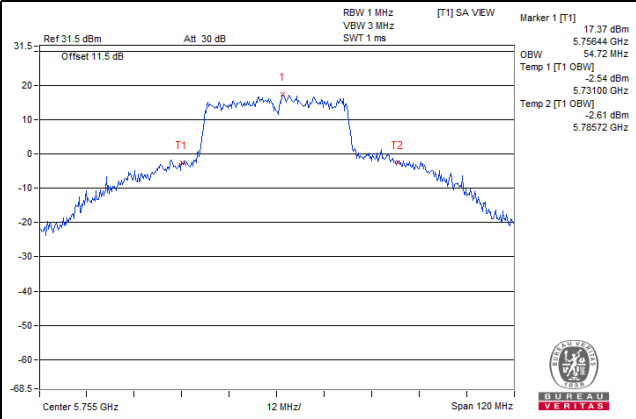
#### 802.11a



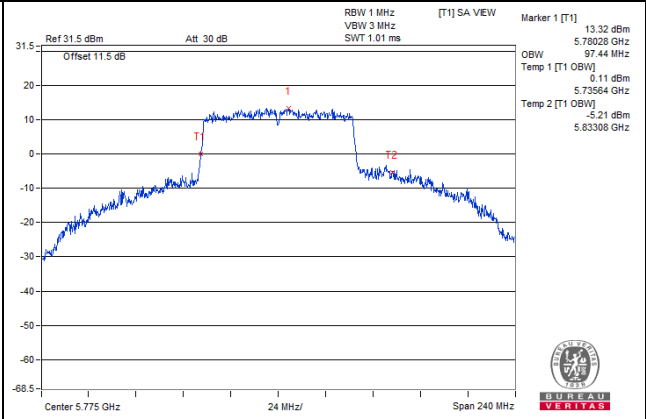
#### 802.11ac (VHT20)



#### 802.11ac (VHT40)



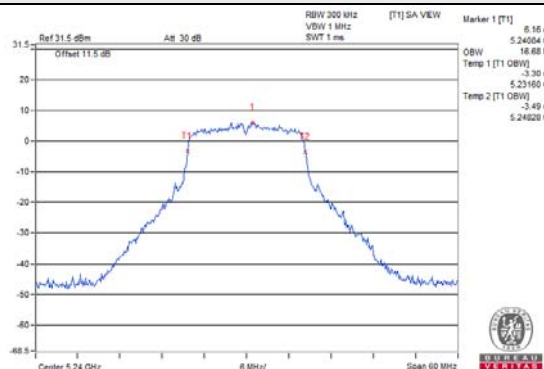
#### 802.11ac (VHT80)



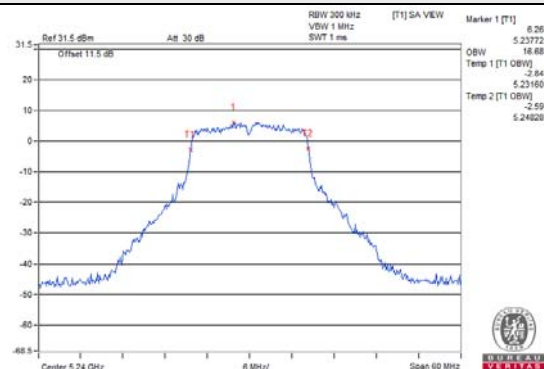


Spectrum Plot for near By DFS Band

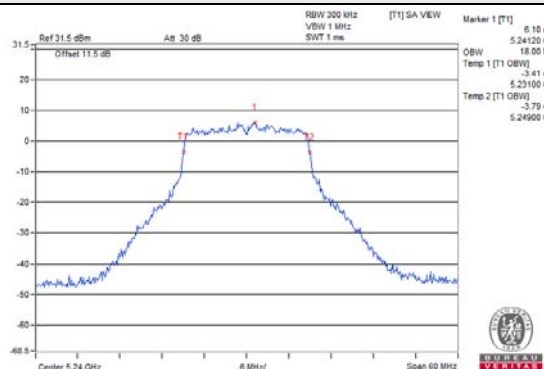
802.11a / Chain 0 / CH 48



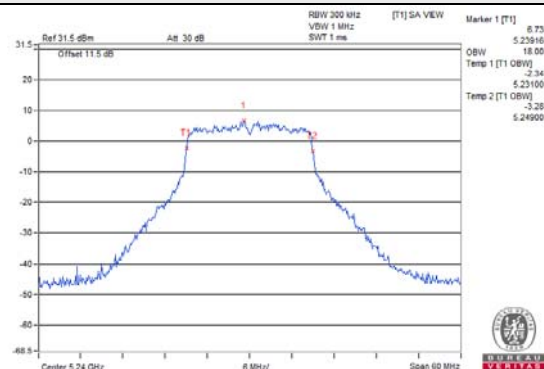
802.11a / Chain 1 / CH 48



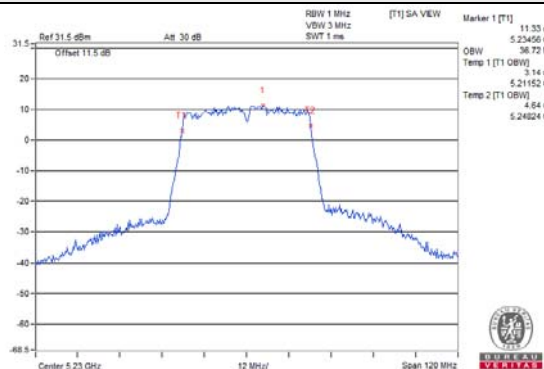
802.11n (HT20) / Chain 0 / CH 48



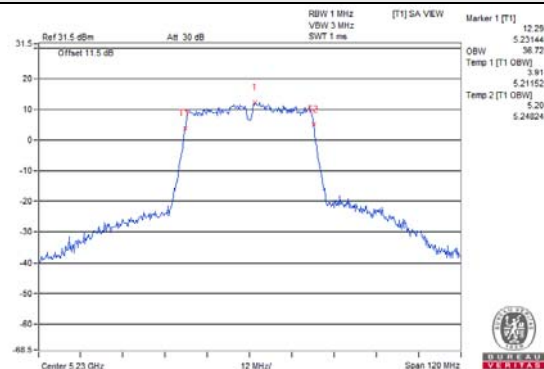
802.11n (HT20) / Chain 1 / CH 48



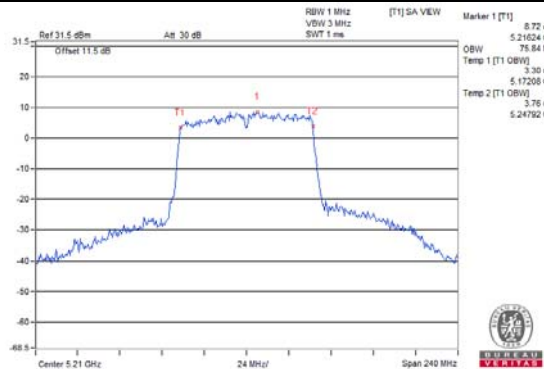
802.11n (HT40) / Chain 0 / CH 46



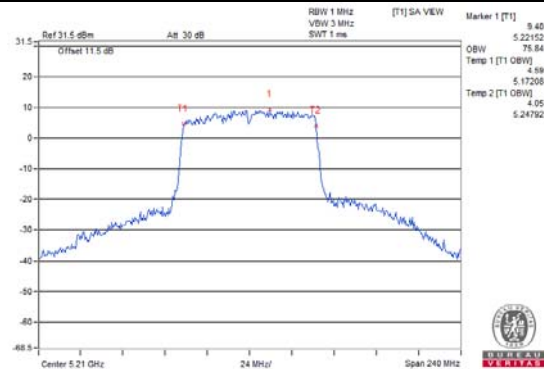
802.11n (HT40) / Chain 1 / CH 46



802.11ac (VHT80) / Chain 0 / CH 42

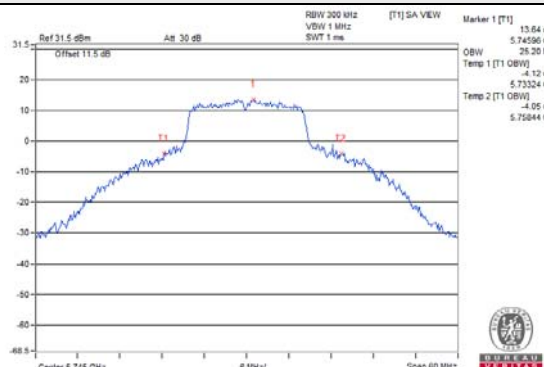


802.11ac (VHT80) / Chain 1 / CH 42

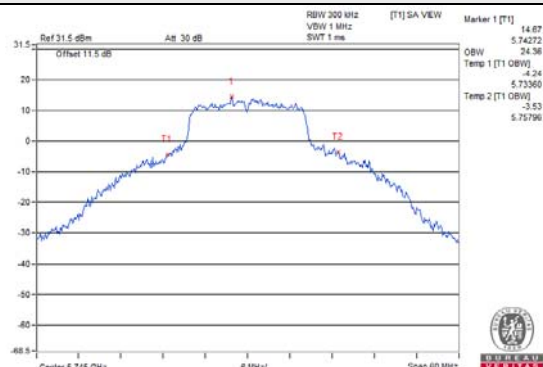


**Spectrum Plot for near By DFS Band**

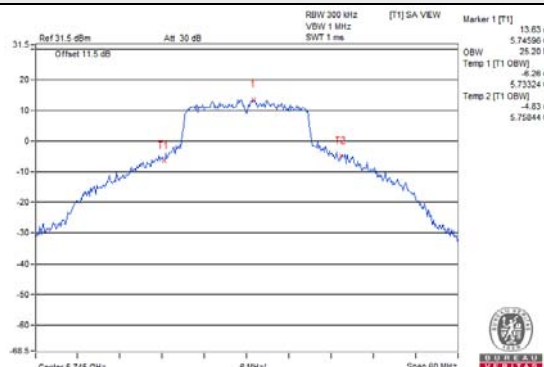
**802.11a / Chain 0 / CH 149**



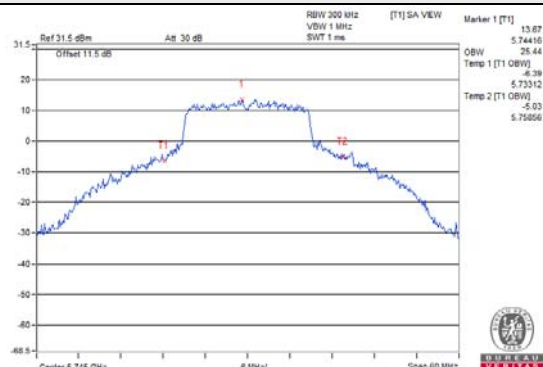
**802.11a / Chain 1 / CH 149**



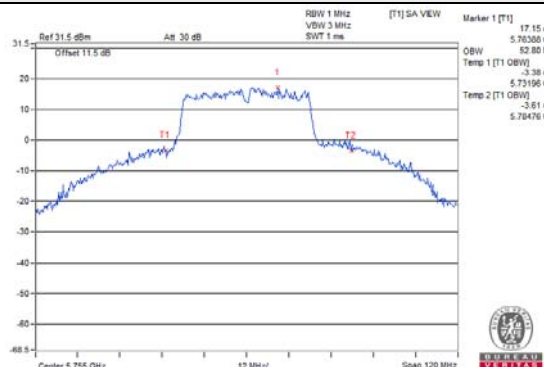
**802.11n (HT20) / Chain 0 / CH 149**



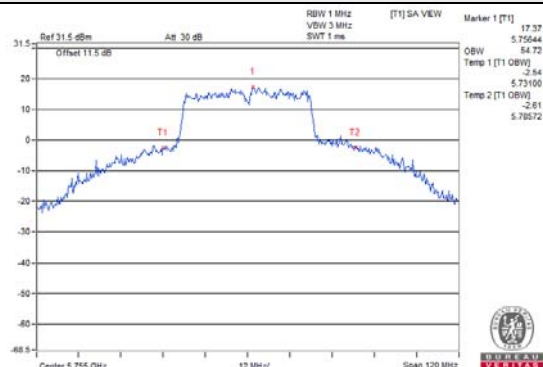
**802.11n (HT20) / Chain 1 / CH 149**



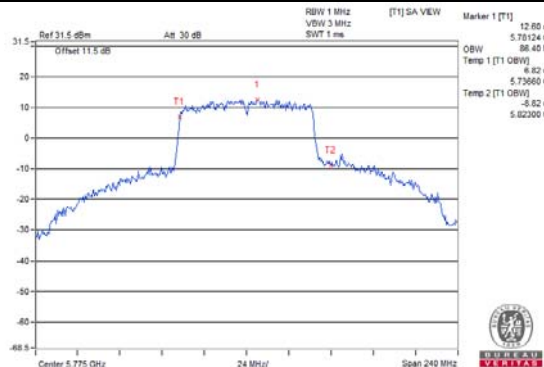
**802.11n (HT40) / Chain 0 / CH 151**



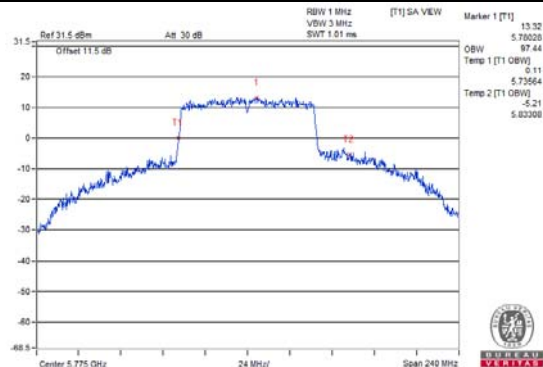
**802.11n (HT40) / Chain 1 / CH 151**



**802.11ac (VHT80) / Chain 0 / CH 155**



**802.11ac (VHT80) / Chain 1 / CH 155**

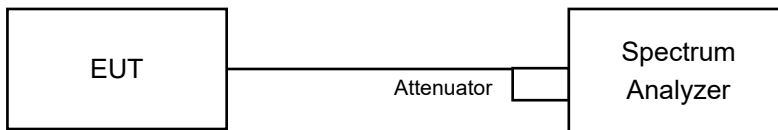


## 4.5 Peak Power Spectral Density Measurement

### 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 and U-NII-2C band:

Duty cycle of test signal is < 98%

Using method SA-2

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

For U-NII-3 band:

Duty cycle of test signal is < 98%

- a. Set span to encompass the entire emission bandwidth (EBW) of the signal.
- b. Set RBW = 300 kHz, Set VBW  $\geq$  1 MHz, Detector = RMS
- c. Use the peak marker function to determine the maximum power level in any 300 kHz band segment within the fundamental EBW.
- d. Scale the observed power level to an equivalent value in 500 kHz by adjusting (increasing) the measured power by a bandwidth correction factor (BWCF) where  $BWCF = 10\log(500 \text{ kHz} / 300 \text{ kHz})$
- e. Sweep time = auto, trigger set to "free run".
- f. Trace average at least 100 traces in power averaging mode.
- g. Record the max value and add  $10 \log (1/\text{duty cycle})$

#### 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 and U-NII-2C band:

##### 802.11a

Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
36	5180	1.82	2.29	0.09	5.16	11.00	Pass
40	5200	1.71	2.25	0.09	5.09	11.00	Pass
48	5240	1.12	1.28	0.09	4.30	11.00	Pass
52	5260	4.12	4.62	0.09	7.48	11.00	Pass
60	5300	3.88	4.30	0.09	7.20	11.00	Pass
64	5320	3.90	4.47	0.09	7.29	11.00	Pass
100	5500	7.15	7.76	0.09	10.57	11.00	Pass
116	5580	7.17	7.71	0.09	10.55	11.00	Pass
140	5700	6.84	6.97	0.09	10.01	11.00	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 =  $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 4.51 \text{ dBi} < 6 \text{ dBi}$ , so the power density limit not need to reduce.
- Refer to section 3.3 for duty cycle spectrum plot.

##### 802.11ac (VHT20)

Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
36	5180	2.10	2.32	0.10	5.32	11.00	Pass
40	5200	1.59	2.01	0.10	4.92	11.00	Pass
48	5240	1.08	1.51	0.10	4.41	11.00	Pass
52	5260	3.95	4.32	0.10	7.25	11.00	Pass
60	5300	3.68	4.23	0.10	7.07	11.00	Pass
64	5320	3.65	4.43	0.10	7.17	11.00	Pass
100	5500	7.23	7.59	0.10	10.52	11.00	Pass
116	5580	7.41	7.85	0.10	10.75	11.00	Pass
140	5700	6.34	6.69	0.10	9.63	11.00	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 =  $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 4.51 \text{ dBi} < 6 \text{ dBi}$ , so the power density limit not need to reduce.
- Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT40)

Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
38	5190	0.23	0.54	0.17	3.57	11.00	Pass
46	5230	0.86	1.32	0.17	4.28	11.00	Pass
54	5270	0.82	1.23	0.17	4.21	11.00	Pass
62	5310	0.99	1.56	0.17	4.46	11.00	Pass
102	5510	2.34	3.23	0.17	5.99	11.00	Pass
110	5550	4.23	4.55	0.17	7.57	11.00	Pass
134	5670	3.72	4.19	0.17	7.14	11.00	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 =  $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 4.51 \text{ dBi} < 6 \text{ dBi}$ , so the power density limit not need to reduce.
- Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT80)

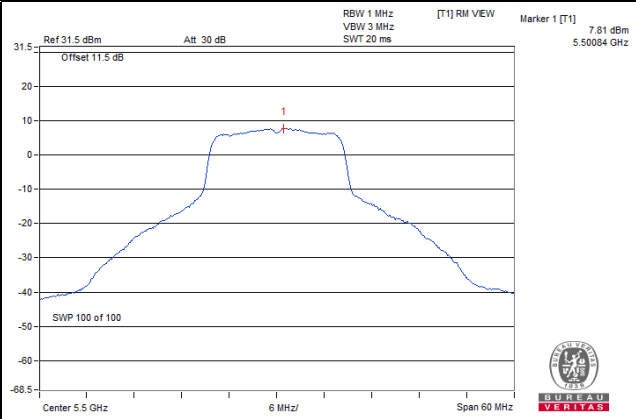
Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
42	5210	-3.10	-2.95	0.34	0.33	11.00	Pass
58	5290	-4.93	-4.23	0.34	-1.22	11.00	Pass
106	5530	-1.18	-0.86	0.34	2.33	11.00	Pass

Note:

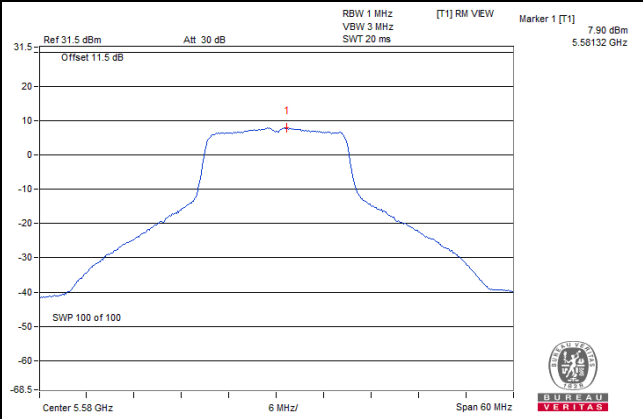
- Method E) 2) a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
- Directional Gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 4.51 \text{ dBi} < 6 \text{ dBi}$ , so the power density limit not need to reduce.
- Refer to section 3.3 for duty cycle spectrum plot.

### Spectrum Plot of Worst Value

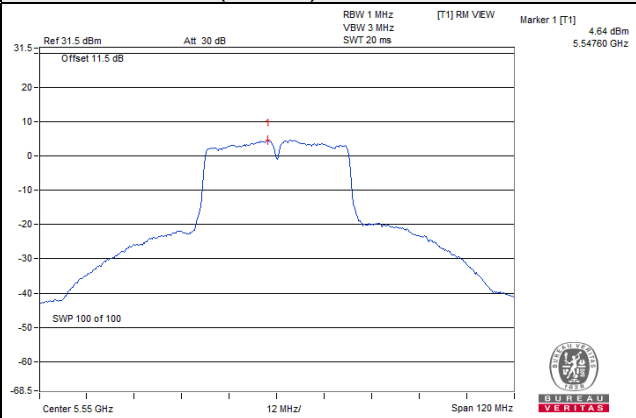
**802.11a / Chain 1 / CH 100**



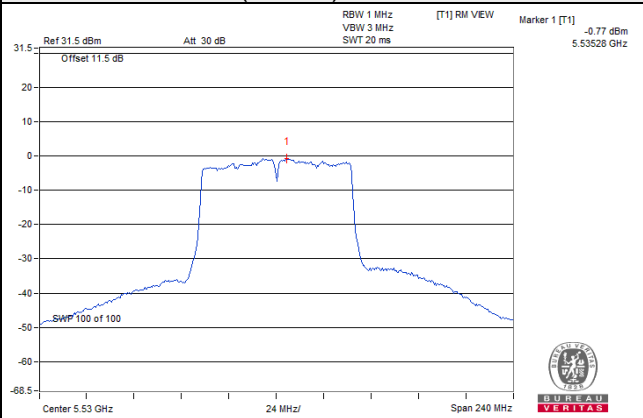
**802.11ac (VHT20) / Chain 1 / CH 116**



**802.11ac (VHT40) / Chain 1 / CH 110**



**802.11ac (VHT80) / Chain 1 / 106**



For U-NII-3 band:

802.11a

TX chain	Chan.	Freq. (MHz)	PSD W/O Duty Factor		10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	149	5745	6.33	8.55	3.01	0.09	11.65	30.00	Pass
	157	5785	6.24	8.46	3.01	0.09	11.56	30.00	Pass
	165	5825	6.18	8.40	3.01	0.09	11.50	30.00	Pass
1	149	5745	6.66	8.88	3.01	0.09	11.98	30.00	Pass
	157	5785	6.71	8.93	3.01	0.09	12.03	30.00	Pass
	165	5825	6.81	9.03	3.01	0.09	12.13	30.00	Pass

Note:

- Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density, Measure and add 10 log (N<sub>ANT</sub>) dB.
- Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 4.51\text{dBi} < 6\text{dBi}$ , so the power density limit not need to reduce.
- Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT20)

TX chain	Chan.	Freq. (MHz)	PSD W/O Duty Factor		10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	149	5745	5.58	7.80	3.01	0.10	10.91	30.00	Pass
	157	5785	5.64	7.86	3.01	0.10	10.97	30.00	Pass
	165	5825	5.39	7.61	3.01	0.10	10.72	30.00	Pass
1	149	5745	5.88	8.10	3.01	0.10	11.21	30.00	Pass
	157	5785	5.72	7.94	3.01	0.10	11.05	30.00	Pass
	165	5825	5.94	8.16	3.01	0.10	11.27	30.00	Pass

Note:

- Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density, Measure and add 10 log (N<sub>ANT</sub>) dB.
- Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 4.51\text{dBi} < 6\text{dBi}$ , so the power density limit not need to reduce.
- Refer to section 3.3 for duty cycle spectrum plot.



802.11ac (VHT40)

TX chain	Chan.	Freq. (MHz)	PSD W/O Duty Factor		10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	151	5755	2.82	5.04	3.01	0.17	8.22	30.00	Pass
	159	5795	2.69	4.91	3.01	0.17	8.09	30.00	Pass
1	151	5755	3.07	5.29	3.01	0.17	8.47	30.00	Pass
	159	5795	2.98	5.20	3.01	0.17	8.38	30.00	Pass

Note:

1. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density, Measure and add 10 log (N<sub>ANT</sub>) dB.
2. Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 4.51\text{dBi} < 6\text{dBi}$ , so the power density limit not need to reduce.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT80)

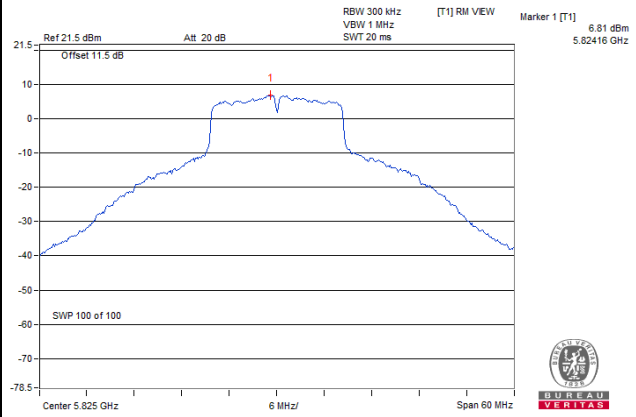
TX chain	Chan.	Freq. (MHz)	PSD W/O Duty Factor		10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	155	5775	-1.17	1.05	3.01	0.34	4.40	30.00	Pass
1	155	5775	-0.70	1.52	3.01	0.34	4.87	30.00	Pass

Note:

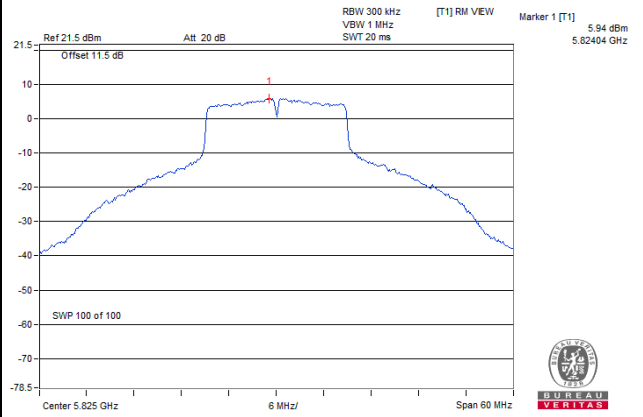
1. Method E) 2) c) of power density measurement of KDB 662911 is using for calculating total power density, Measure and add 10 log (N<sub>ANT</sub>) dB.
2. Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 4.51\text{dBi} < 6\text{dBi}$ , so the power density limit not need to reduce.
3. Refer to section 3.3 for duty cycle spectrum plot.

### Spectrum Plot of Worst Value

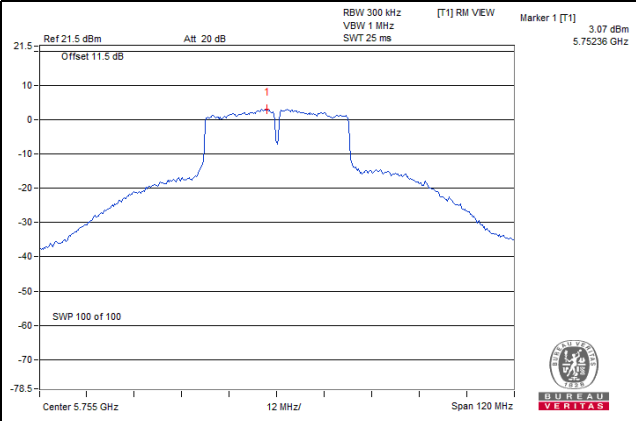
#### 802.11a



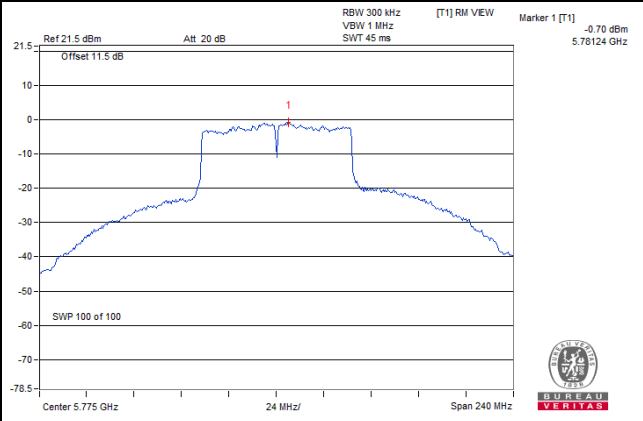
#### 802.11ac (VHT20)



#### 802.11ac (VHT40)



#### 802.11ac (VHT80)

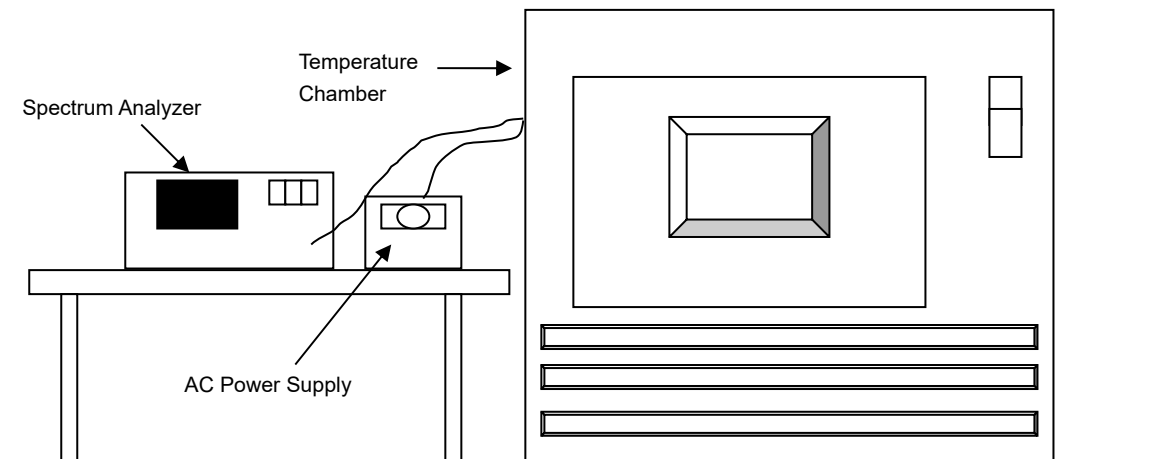


## 4.6 Frequency Stability

### 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
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Sep. 15, 2021	Sep. 14, 2022
WIT Standard Temperature And Humidity Chamber	TH-4S-C	W981030	Jun. 01, 2021	May 31, 2022
Digital Multimeter Fluke	87-III	70360755	Jul. 07, 2021	Jul. 06, 2022
AC Power Supply Extech	CFW-105	E000603	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. Tested date: Apr. 28, 2022

### 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 until measurements down to the lowest specified temperature have been completed.
- The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

#### 4.6.5 Deviation from Test Standard

No deviation.

#### 4.6.6 EUT Operating Condition

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

#### 4.6.7 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 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	5180.0020	Pass	5179.9997	Pass	5179.9986	Pass	5179.9983	Pass
30	120	5179.9952	Pass	5179.9952	Pass	5179.9973	Pass	5179.9945	Pass
20	120	5179.9806	Pass	5179.9799	Pass	5179.9814	Pass	5179.9795	Pass
10	120	5180.0020	Pass	5180.0014	Pass	5180.0061	Pass	5180.0059	Pass
0	120	5180.0051	Pass	5180.0010	Pass	5180.0031	Pass	5180.0053	Pass

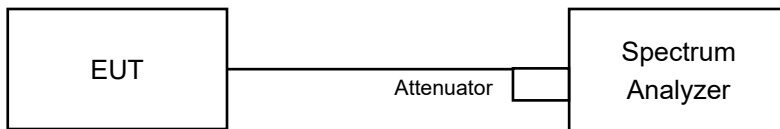
Frequency Stability Versus Voltage									
Operating Frequency: 5180MHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result	Measured Frequency (MHz)	Result
20	138	5179.9835	Pass	5179.9834	Pass	5179.9827	Pass	5179.9823	Pass
	120	5179.9806	Pass	5179.9799	Pass	5179.9814	Pass	5179.9795	Pass
	102	5179.9898	Pass	5179.9890	Pass	5179.9930	Pass	5179.9928	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
		Chain 0	Chain 1		
149	5745	15.67	15.83	0.5	Pass
157	5785	15.75	15.49	0.5	Pass
165	5825	16.06	15.75	0.5	Pass

##### 802.11ac (VHT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
149	5745	16.90	17.26	0.5	Pass
157	5785	17.22	17.19	0.5	Pass
165	5825	17.23	17.23	0.5	Pass

##### 802.11ac (VHT40)

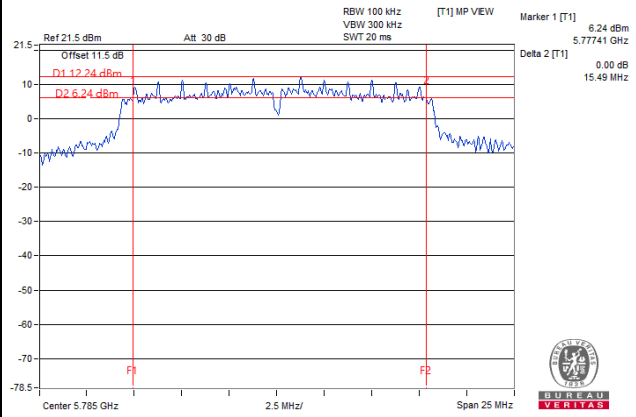
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
151	5755	35.53	35.31	0.5	Pass
159	5795	35.57	35.49	0.5	Pass

##### 802.11ac (VHT80)

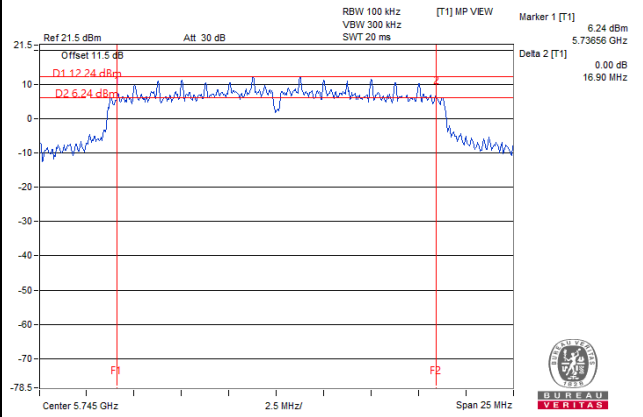
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
155	5775	75.44	75.21	0.5	Pass

### Spectrum Plot of Worst Value

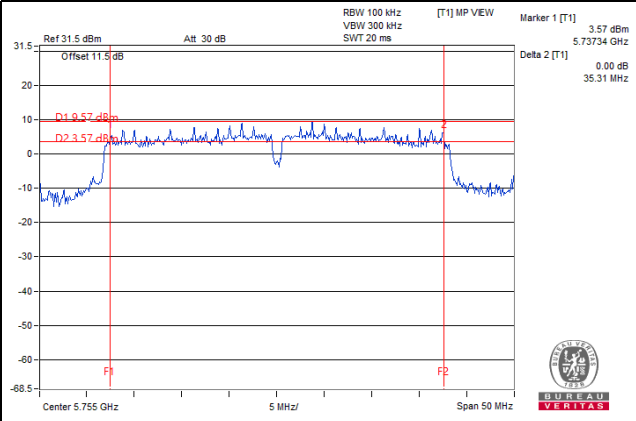
#### 802.11a



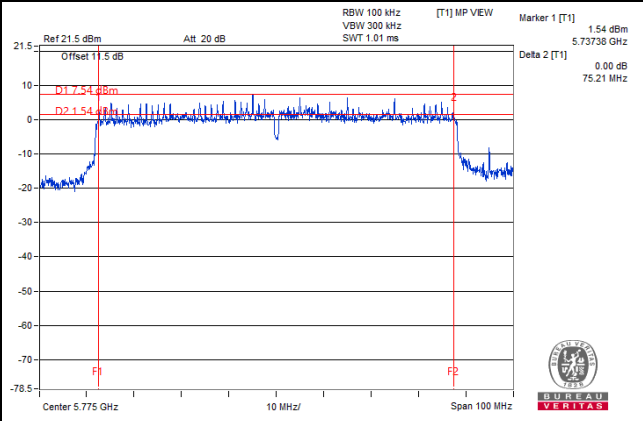
#### 802.11ac (VHT20)



#### 802.11ac (VHT40)



#### 802.11ac (VHT80)



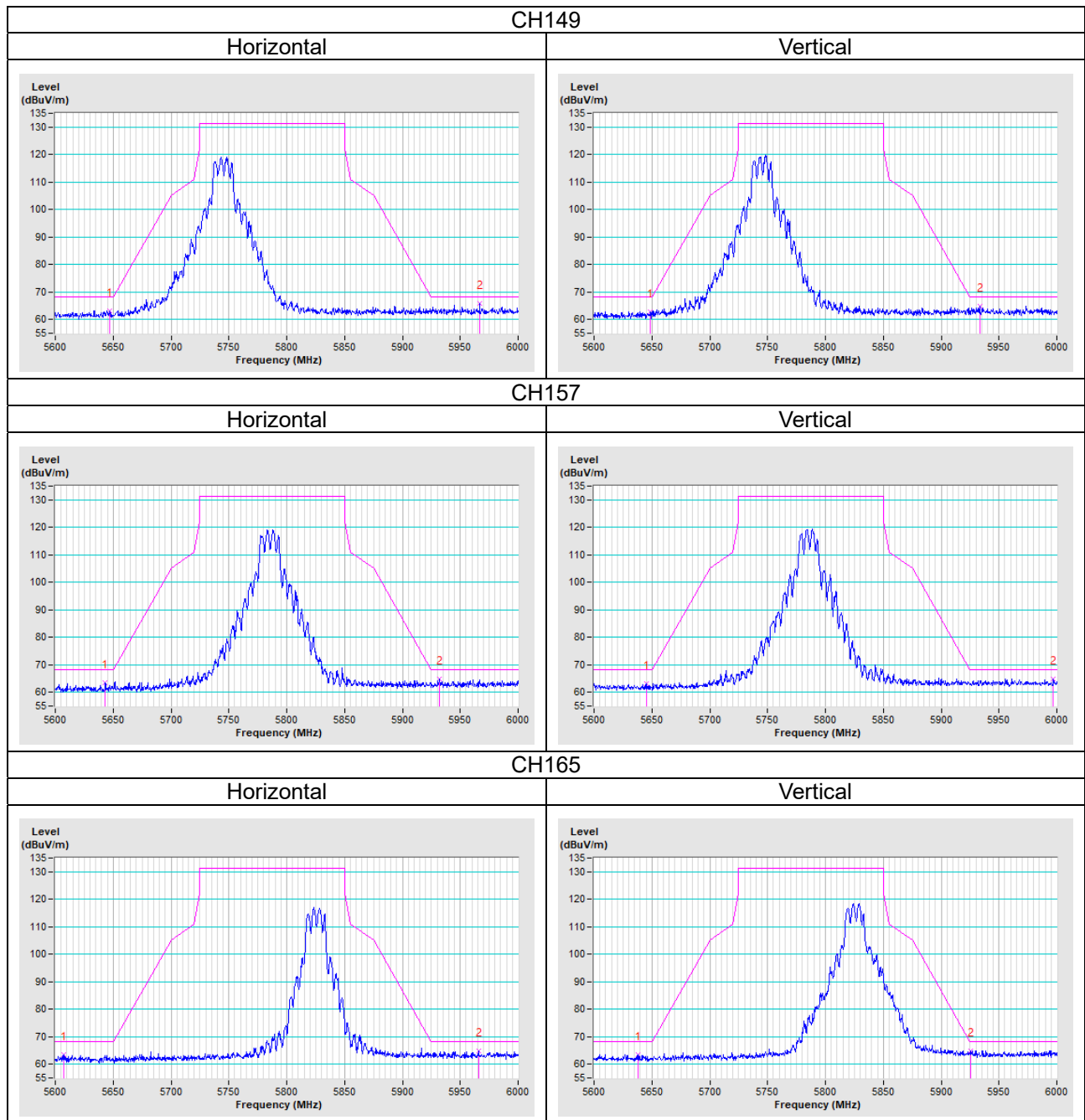
## 5 Pictures of Test Arrangements

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



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

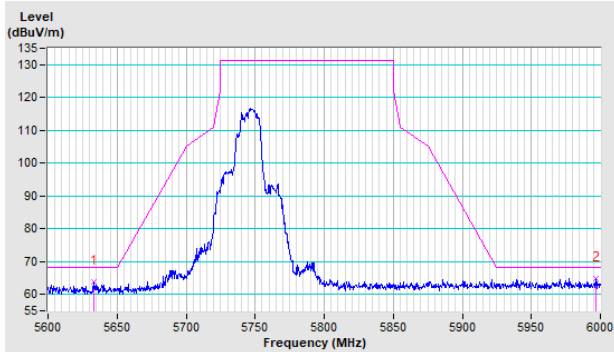
802.11a



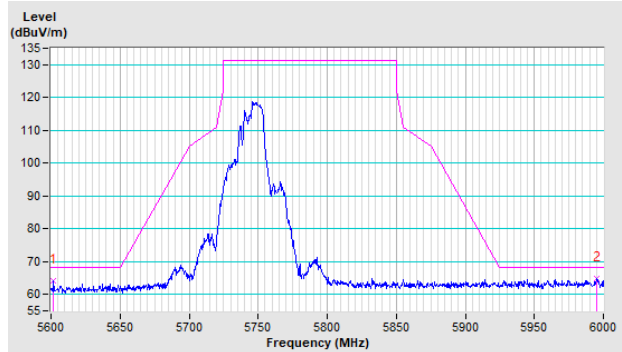
802.11ac (VHT20)

CH149

Horizontal

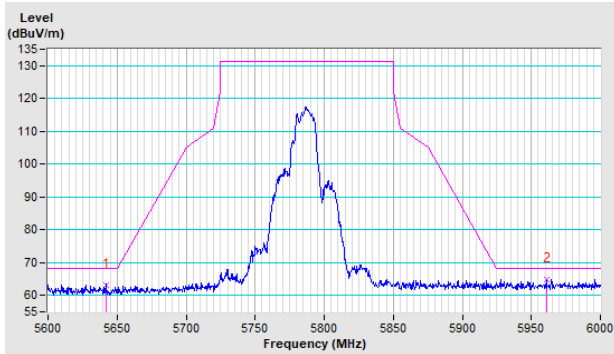


Vertical

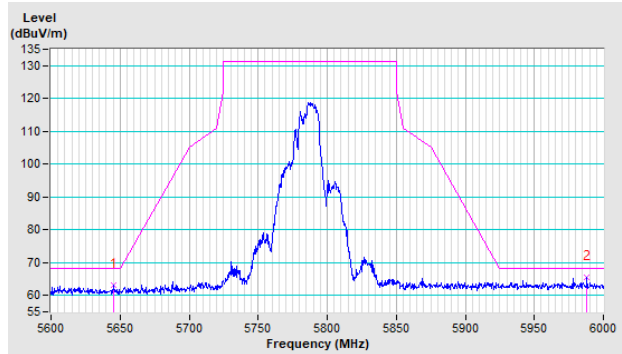


CH157

Horizontal

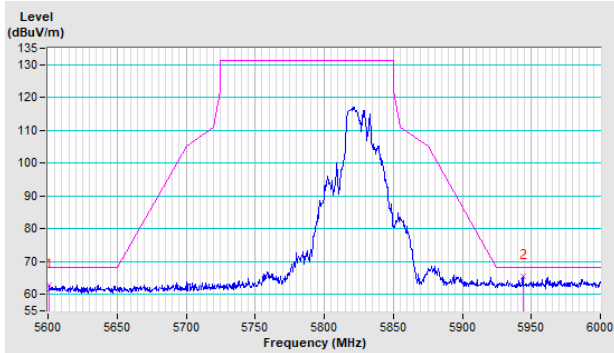


Vertical

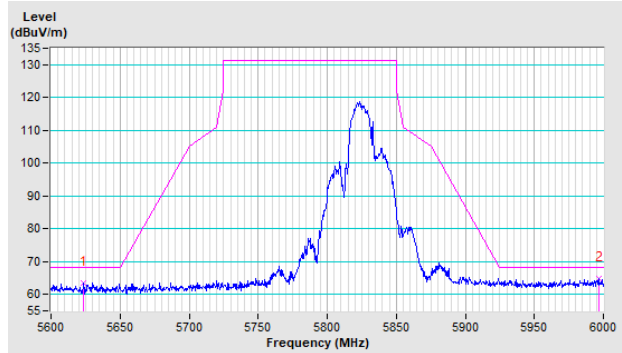


CH165

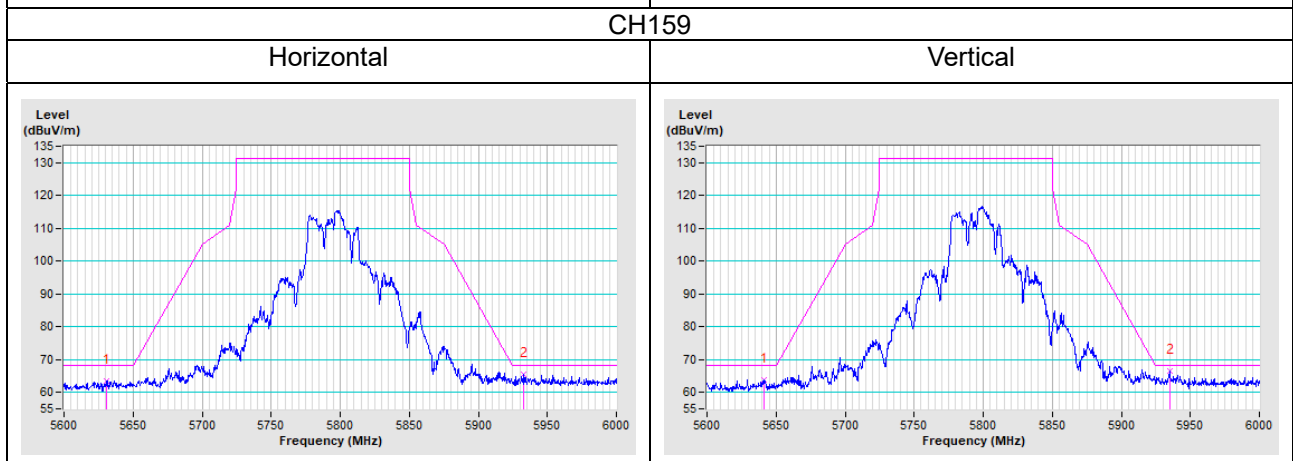
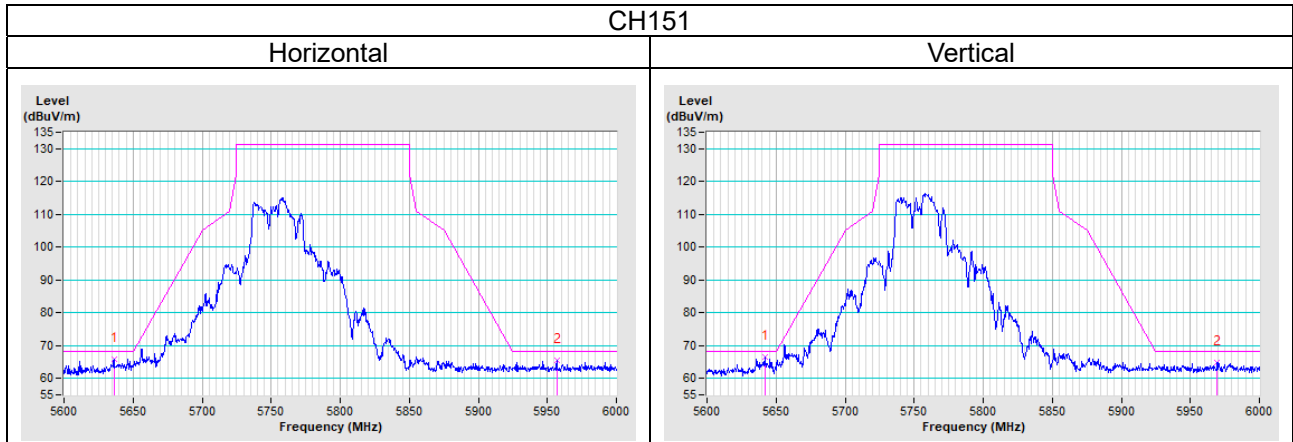
Horizontal



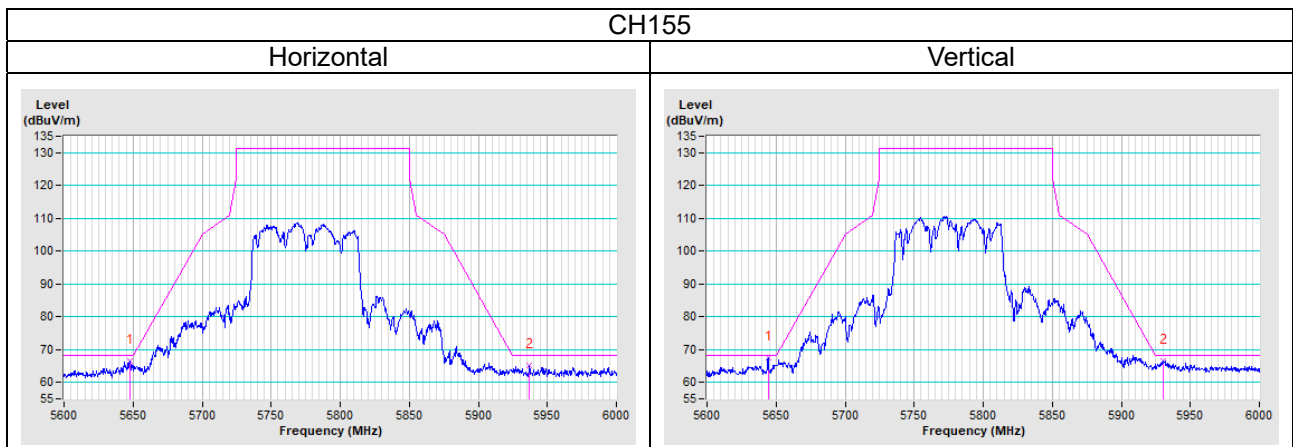
Vertical



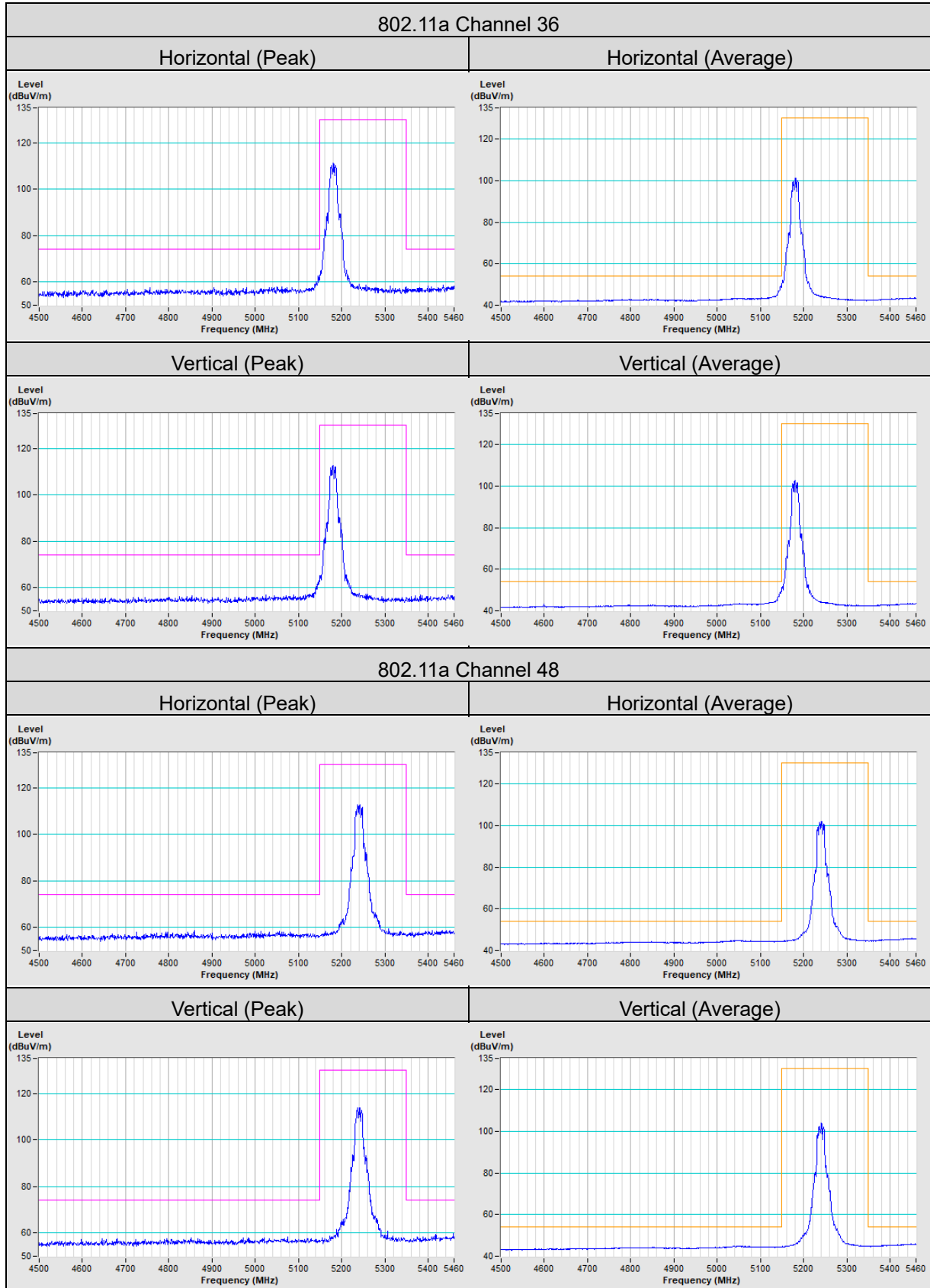
802.11ac (VHT40)



802.11ac (VHT80)

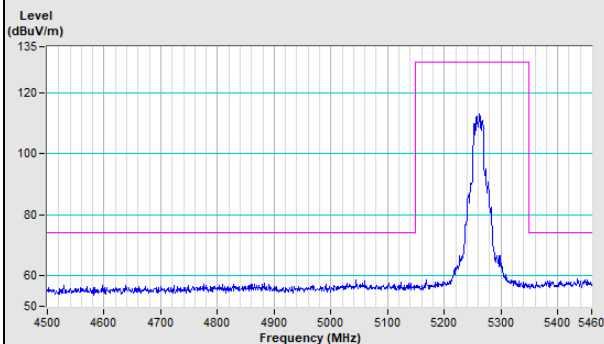


## Annex B- Band Edge Measurement

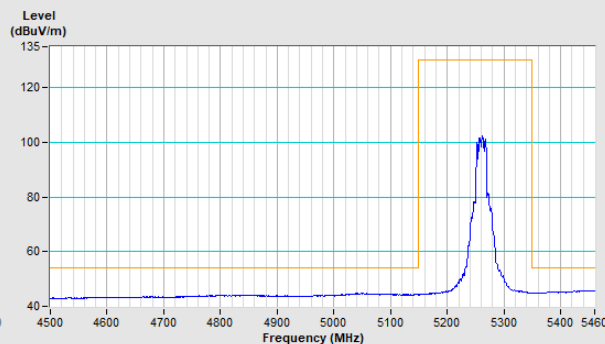


### 802.11a Channel 52

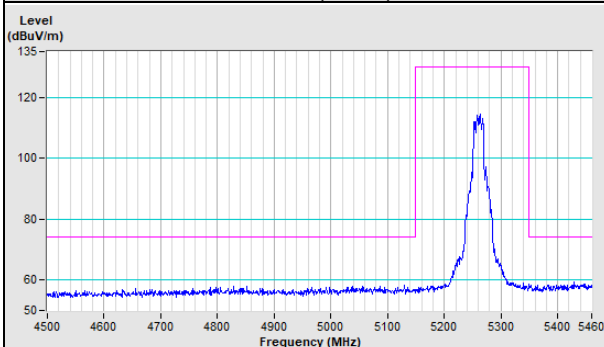
Horizontal (Peak)



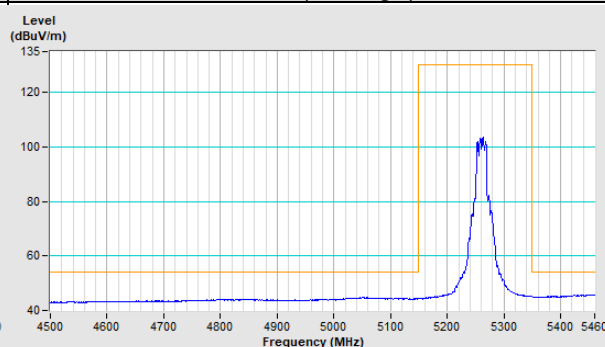
Horizontal (Average)



Vertical (Peak)

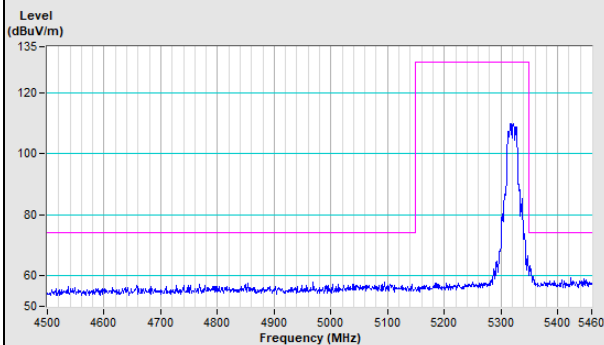


Vertical (Average)

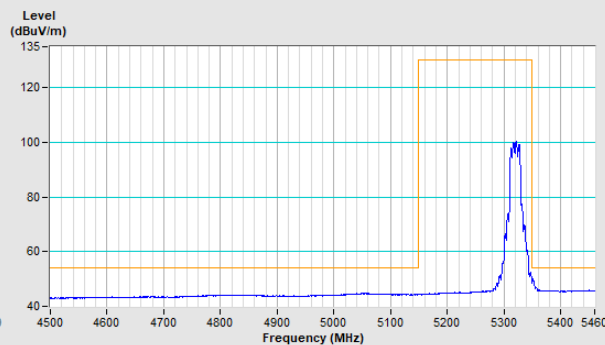


### 802.11a Channel 64

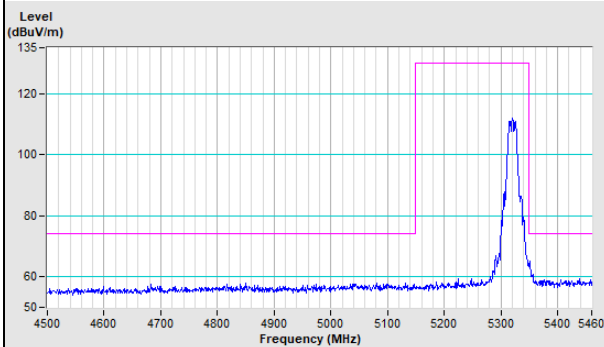
Horizontal (Peak)



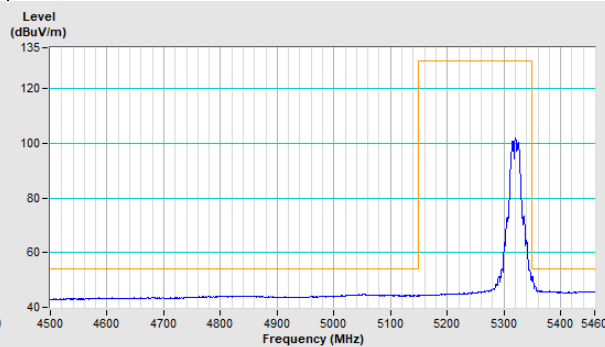
Horizontal (Average)



Vertical (Peak)

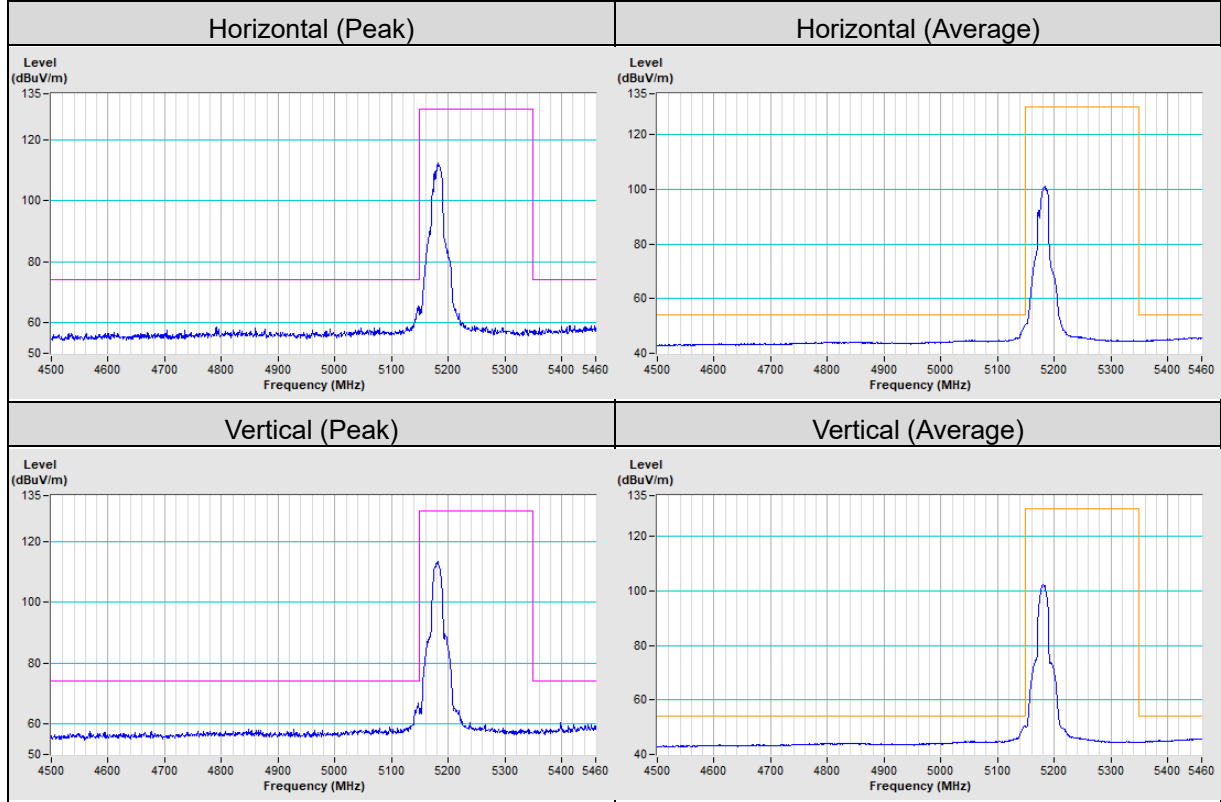


Vertical (Average)

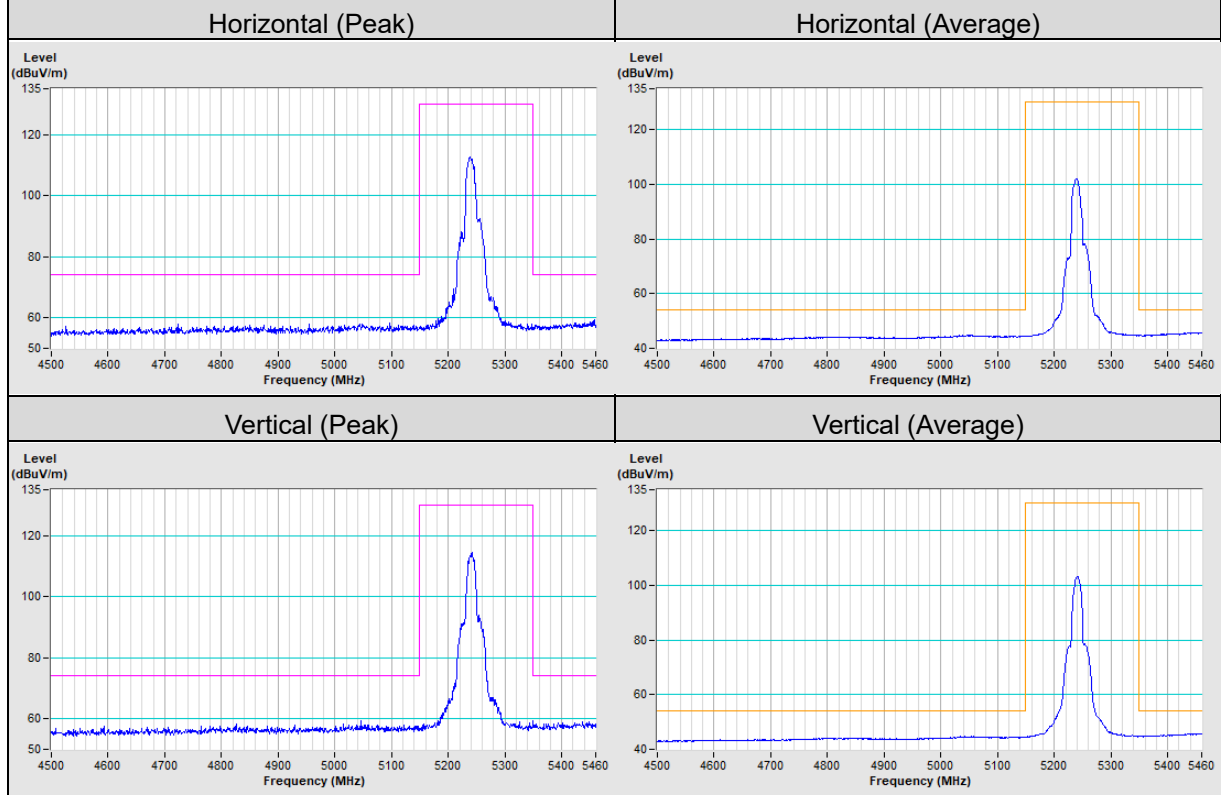




### 802.11ac (VHT20) Channel 36

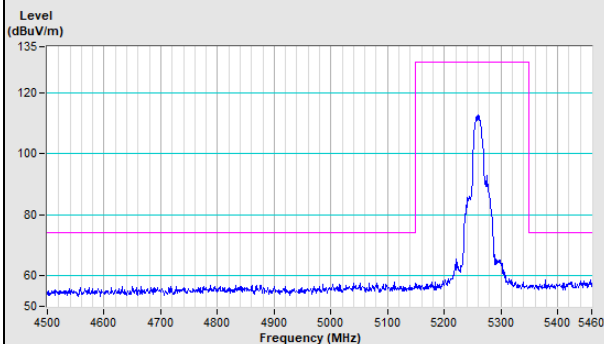


### 802.11ac (VHT20) Channel 48

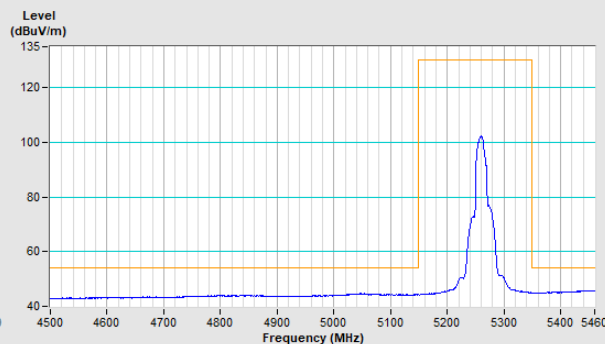


### 802.11ac (VHT20) Channel 52

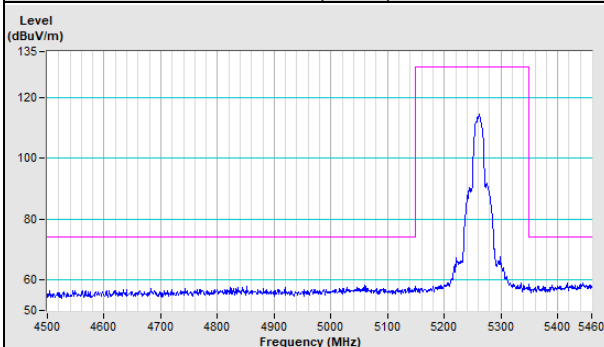
Horizontal (Peak)



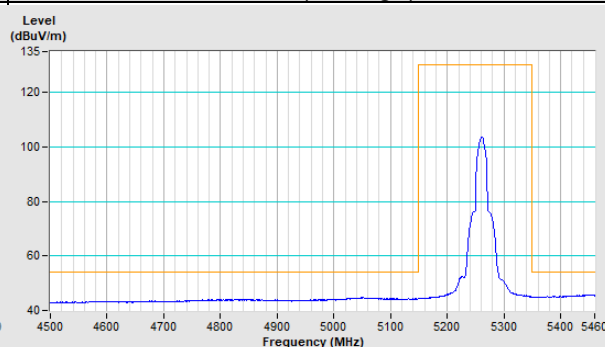
Horizontal (Average)



Vertical (Peak)

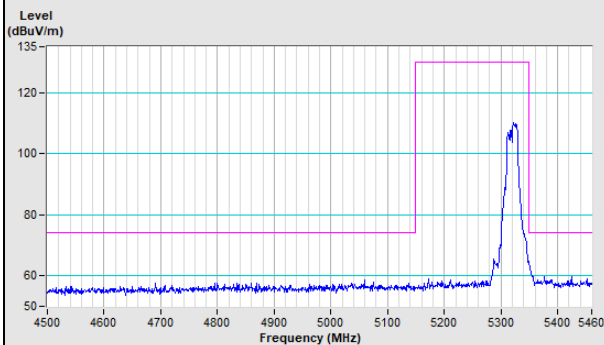


Vertical (Average)

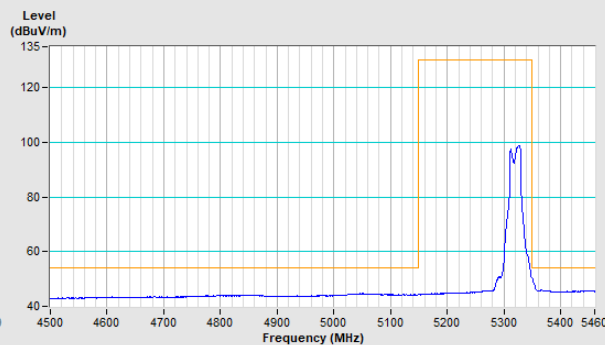


### 802.11ac (VHT20) Channel 64

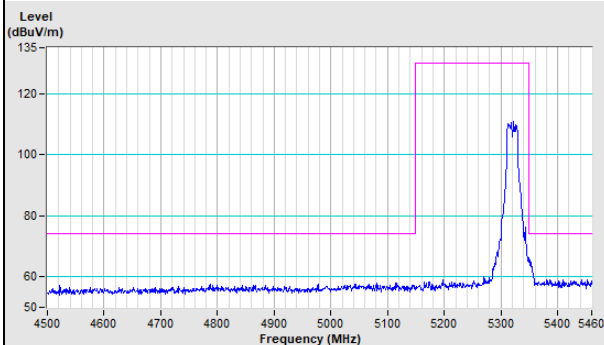
Horizontal (Peak)



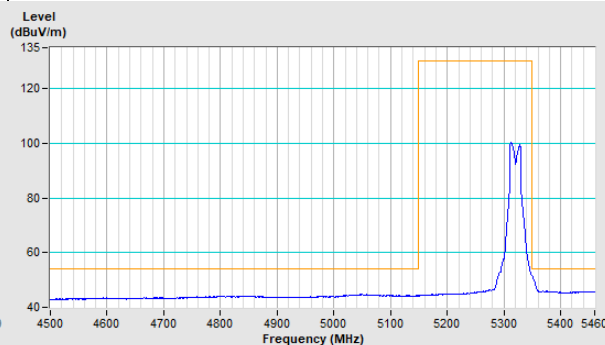
Horizontal (Average)



Vertical (Peak)



Vertical (Average)

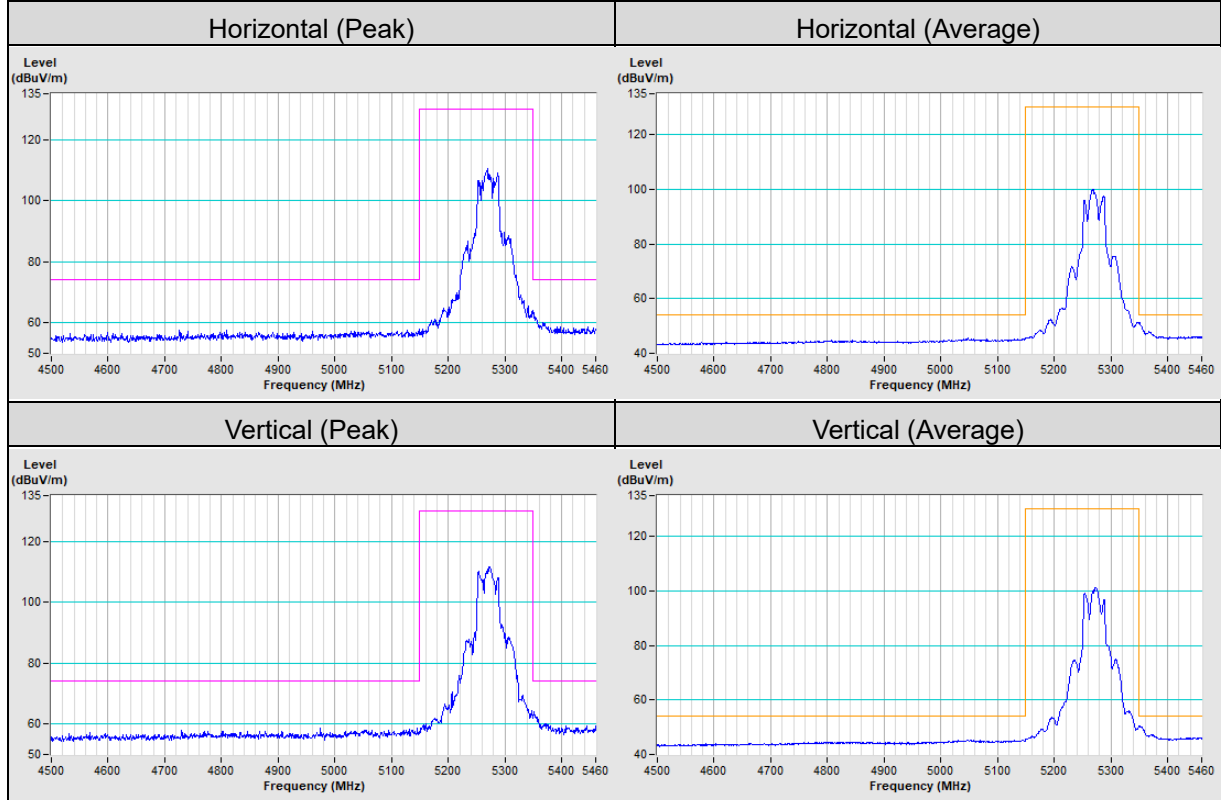




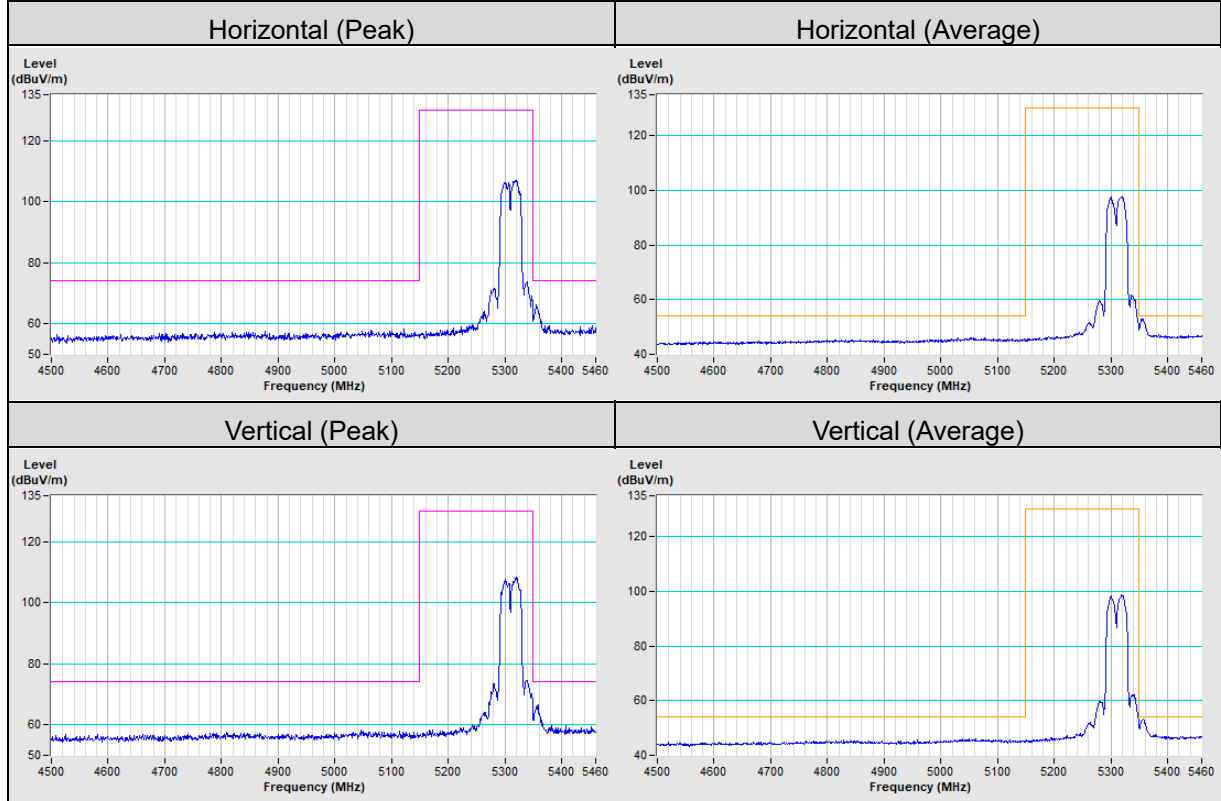




### 802.11ac (VHT40) Channel 54

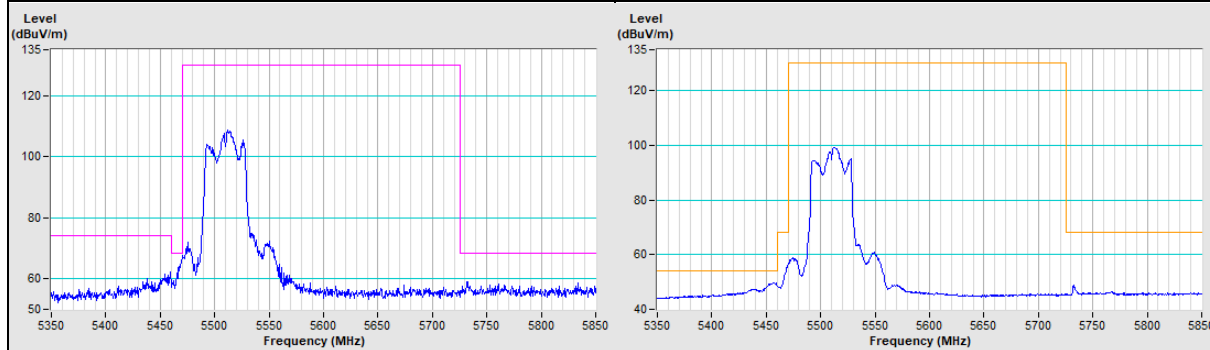


### 802.11ac (VHT40) Channel 62

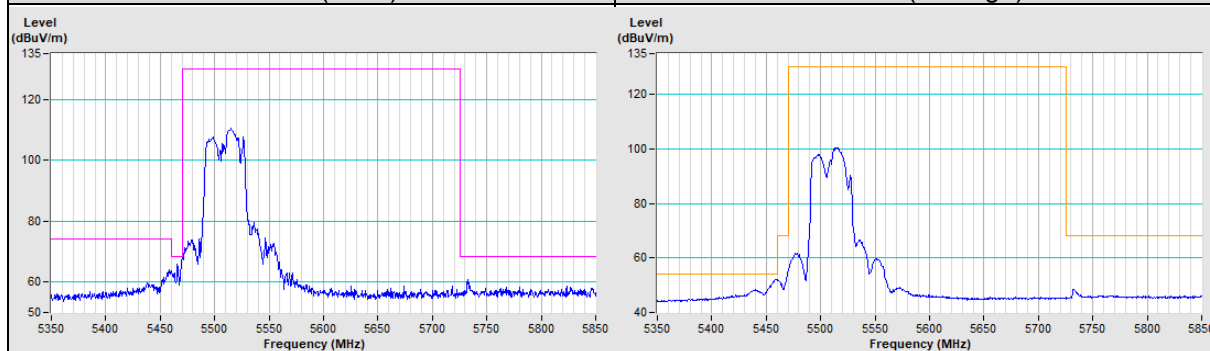


**802.11ac (VHT40) Channel 102**

<b>Horizontal (Peak)</b>	<b>Horizontal (Average)</b>
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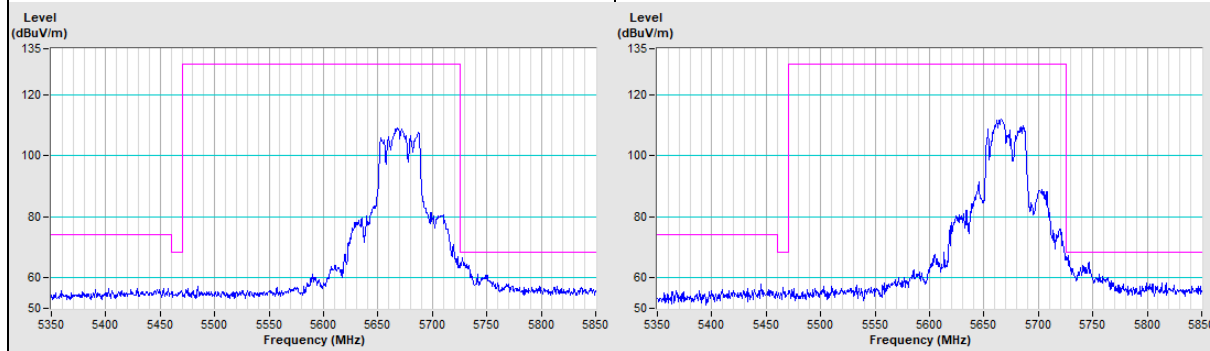


<b>Vertical (Peak)</b>	<b>Vertical (Average)</b>
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**802.11ac (VHT40) Channel 134**

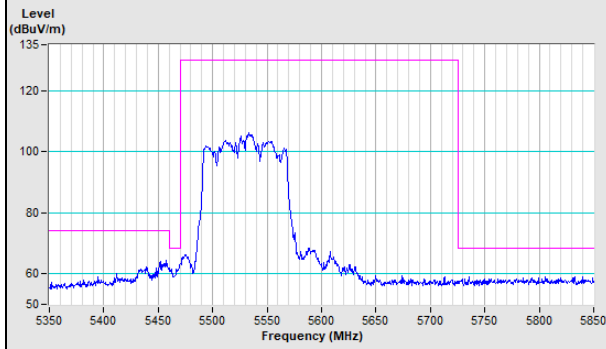
<b>Horizontal (Peak)</b>	<b>Vertical (Peak)</b>
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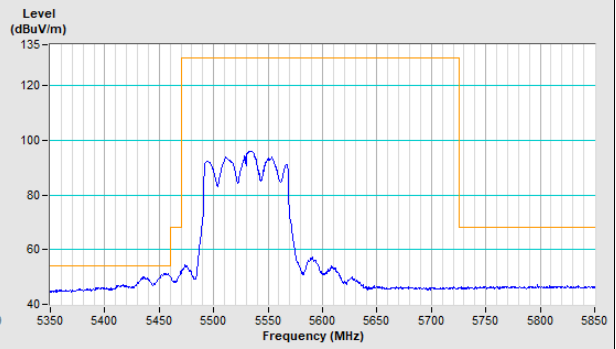


802.11ac (VHT80) Channel 106

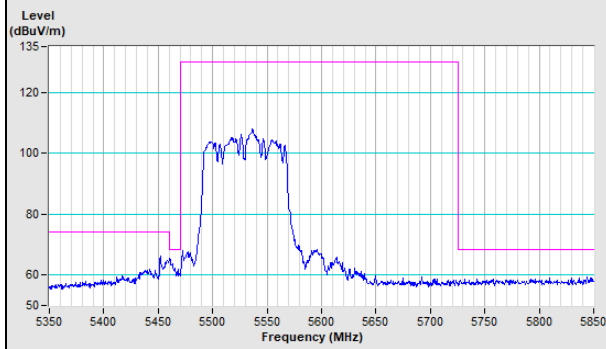
Horizontal (Peak)



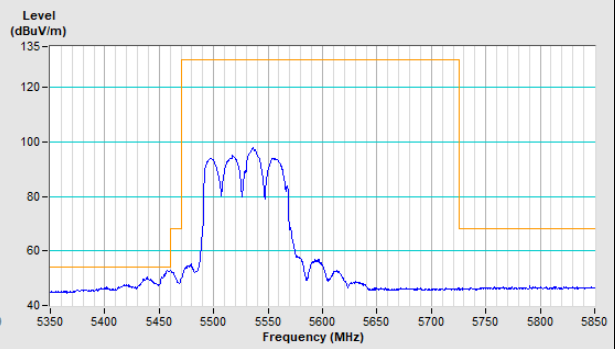
Horizontal (Average)



Vertical (Peak)



Vertical (Average)



## 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.

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

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