

## FCC Test Report (WLAN)

**Report No.:** RFACXM-WTW-P21060766-1

**FCC ID:** 2AEUPBHASG001

**Test Model:** 5F48E9

**Received Date:** 2021/7/12

**Test Date:** 2021/7/20 ~ 2021/8/28

**Issued Date:** 2021/11/3

**Applicant:** Ring LLC

**Address:** 1523 26th Street, Santa Monica CA 90404 USA

**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch  
Hsin Chu Laboratory

**Lab Address:** E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,  
Taiwan

**Test Location:** E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,  
Taiwan

**FCC Registration /  
Designation Number:** 723255 / TW2022



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### Release Control Record

Issue No.	Description	Date Issued
RFACXM-WTW-P21060766-1	Original release.	2021/11/3

## 1 Certificate of Conformity

**Product:** Amazon Sidewalk Bridge Pro by Ring

**Brand:** Ring LLC

**Test Model:** 5F48E9

**Sample Status:** Engineering sample

**Applicant:** Ring LLC

**Test Date:** 2021/1/15 ~ 2021/8/18

**Standard:** 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 EMC characteristics under the conditions specified in this report.

**Prepared by :** Cherry Chuo , **Date:** 2021/11/3  
Cherry Chuo / Specialist

**Approved by :** Clark Lin , **Date:** 2021/11/3  
Clark Lin / Technical Manager

## 2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -5.13dB at 0.40781 MHz.
15.407(b) (1/2/3/4(i/ii)/6)	Radiated Emissions & Band Edge Measurement*	Pass	Meet the requirement of limit. Minimum passing margin is -0.1 dB at 5149.30 MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	-	Reference only.
15.407(a)(1/2/3)	Peak Power Spectral Density	Pass	Meet the requirement of limit.
15.407(e)	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:

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

### 2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) ( $\pm$ )
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.9 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.1 dB
	30MHz ~ 1GHz	5.5 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	5.1 dB
	18GHz ~ 40GHz	5.3 dB

### 2.2 Modification Record

There were no modifications required for compliance.

### 3 General Information

#### 3.1 General Description of EUT

Product	Amazon Sidewalk Bridge Pro by Ring
Brand	Ring LLC
Test Model	5F48E9
Status of EUT	Engineering sample
Power Supply Rating	DC 6V from battery or DC 53V from POE
Modulation Type	64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode
Modulation Technology	OFDM
Transfer Rate	802.11a: up to 54 Mbps 802.11n: up to 300 Mbps 802.11ac: up to 866.7 Mbps
Operating Frequency	5.18~5.32GHz, 5.50~5.72GHz, 5.745 ~ 5.825GHz
Number of Channel	802.11a, 802.11n (HT20), 802.11ac (VHT20): 25 802.11n (HT40), 802.11ac (VHT40): 12 802.11ac (VHT80): 6
Output Power	5.18 ~ 5.24 GHz: 128.911 mW 5.26 ~ 5.32GHz: 63.359 mW 5.5 ~ 5.72GHz: 65.17 mW 5.745 ~ 5.825 GHz: 248.331 mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	NA
Cable Supplied	NA

Note:

1. The EUT has below radios as following table:

Radio 1	Radio 2	Radio 3	Radio 4
WLAN 2.4GHz+ WLAN 5GHz+ Bluetooth	WWAN (LTE)	GPS	LoRa + FSK

2. The EUT contains certified WWAN (LTE) modular which FCC ID: ZMONL668AM00.

3. Simultaneously transmission condition.

Condition	Technology			
1	WLAN (2.4GHz)	LoRa	Bluetooth	-
2	WLAN (5GHz)	LoRa	Bluetooth	-
3	WLAN (2.4GHz)	FSK	Bluetooth	-
4	WLAN (5GHz)	FSK	Bluetooth	-
5	LTE	LoRa	Bluetooth	-
6	LTE	FSK	Bluetooth	-
7	WLAN (2.4GHz)	LoRa	FSK	Bluetooth
8	WLAN (5GHz)	LoRa	FSK	Bluetooth
9	LTE	LoRa	FSK	Bluetooth

Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.

4. The EUT must be supplied with a battery and following below table:

Brand	Model No.	Spec.
WELLTECH ENERGY INC.	5F48E9	6 Vdc, 3100 mAh

5. The antennas provided to the EUT, please refer to the following table:

RF Chain No	Brand	Model	Antenna Net Gain (dBi)	Frequency Range	Antenna Type	Connector Type	Cable Length (mm)
WiFi 0	Inpaq	RFPCA520814IM LB301	8.04	2.4~2.4835 GHz	PIFA	i-pex(MHF)	149
			8.81	5.15~5.85 GHz			
WiFi 1	Inpaq	RFPCA501016IM LB301	8.26	2.4~2.4835 GHz	PIFA	i-pex(MHF)	165
			8.64	5.15~5.85 GHz			
BT	Inpaq	RFPCA520815IM AB301	6.88	2.4~2.4835 GHz	PIFA	i-pex(MHF)	210
LoRa/FSK (Outdoor)	Inpaq	RFDPA563600AF RBX01	5.5	902~928 MHz	Dipole	R-N type(F)	1000
LoRa/FSK (Indoor)	Inpaq	FDPA161500AMU B801	2.8	902~928 MHz	Dipole	R-N type(M)	NA
GPS(L1)	Inpaq	RFPCA621512IM TB301	7.26	1575 MHz	PIFA	i-pex(MHF)	NA
GPS(L5)	Inpaq	RFPCA711620IM TB301	6.06	1176 MHz	PIFA	i-pex(MHF)	NA

6. The EUT incorporates a MIMO function:

MODULATION MODE	TX & RX CONFIGURATION	
802.11a	2TX	2RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX
802.11ac (VHT20)	2TX	2RX
802.11ac (VHT40)	2TX	2RX
802.11ac (VHT80)	2TX	2RX

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

8. 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.

### 3.2 Description of Test Modes

#### FOR 5180 ~ 5320MHz

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

Channel	Frequency	Channel	Frequency
36	5180 MHz	52	5260 MHz
40	5200 MHz	56	5280 MHz
44	5220 MHz	60	5300 MHz
48	5240 MHz	64	5320 MHz

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

Channel	Frequency	Channel	Frequency
38	5190 MHz	54	5270 MHz
46	5230 MHz	62	5310 MHz

2 channel is provided for 802.11ac (VHT80):

Channel	Frequency	Channel	Frequency
42	5210 MHz	58	5290 MHz

#### FOR 5500 ~ 5720MHz

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

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

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

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

3 channels are provided for 802.11ac (VHT80):

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

**FOR 5745 ~ 5825MHz:**

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

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

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

Channel	Frequency	Channel	Frequency
151	5755 MHz	159	5795 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
155	5775 MHz

### 3.2.1 Test Mode Applicability and Tested Channel Detail

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

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

#### **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.

Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5180-5320	36 to 64	36, 40, 48, 52, 60, 64	OFDM	BPSK	6
802.11ac (VHT20)		36 to 64	36, 40, 48, 52, 60, 64	OFDM	BPSK	6.5
802.11ac (VHT40)		38 to 62	38, 46, 54, 62	OFDM	BPSK	13.5
802.11ac (VHT80)		42, 58	42, 58	OFDM	BPSK	29.3
802.11a	5500-5720	100 to 144	100, 116, 140, 144	OFDM	BPSK	6
802.11ac (VHT20)		100 to 144	100, 116, 140, 144	OFDM	BPSK	6.5
802.11ac (VHT40)		102 to 142	102, 110, 134, 142	OFDM	BPSK	13.5
802.11ac (VHT80)		106 to 138	106, 122, 138	OFDM	BPSK	29.3
802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6
802.11ac (VHT20)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
802.11ac (VHT40)		151 to 159	151, 159	OFDM	BPSK	13.5
802.11ac (VHT80)		155	155	OFDM	BPSK	29.3

#### **Radiated Emission Test (Below 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.

Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11ac (VHT40)	5180-5320 5500-5720 5745-5825	38 to 62 102 to 142 151 to 159	151	OFDM	BPSK	13.5

### Power Line Conducted Emission Test:

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

Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11ac (VHT40)	5180-5320	38 to 62	151	OFDM	BPSK	13.5
	5500-5720	102 to 142				
	5745-5825	151 to 159				

### 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.

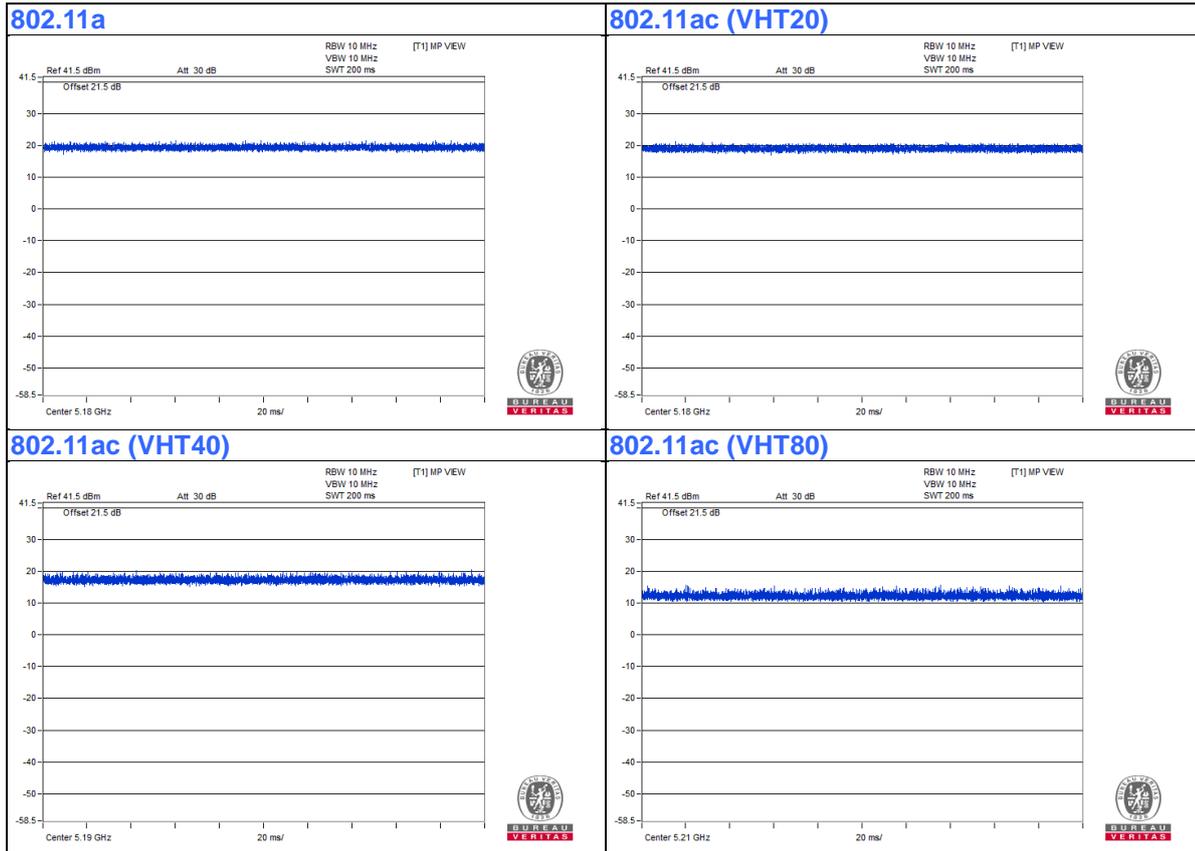
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5180-5320	36 to 64	36, 40, 48, 52, 60, 64	OFDM	BPSK	6
802.11ac (VHT20)		36 to 64	36, 40, 48, 52, 60, 64	OFDM	BPSK	6.5
802.11ac (VHT40)		38 to 62	38, 46, 54, 62	OFDM	BPSK	13.5
802.11ac (VHT80)		42, 58	42, 58	OFDM	BPSK	29.3
802.11a	5500-5720	100 to 144	100, 116, 140, 144	OFDM	BPSK	6
802.11ac (VHT20)		100 to 144	100, 116, 140, 144	OFDM	BPSK	6.5
802.11ac (VHT40)		102 to 142	102, 110, 134, 142	OFDM	BPSK	13.5
802.11ac (VHT80)		106 to 138	106, 122, 138	OFDM	BPSK	29.3
802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6
802.11ac (VHT20)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
802.11ac (VHT40)		151 to 159	151, 159	OFDM	BPSK	13.5
802.11ac (VHT80)		155	155	OFDM	BPSK	29.3

### Test Condition:

Applicable To	Environmental Conditions	INPUT POWER (System)	Tested By
RE $\geq$ 1G	25deg. C, 75%RH	120Vac, 60Hz	Tom Yang
RE $<$ 1G	25deg. C, 67%RH	120Vac, 60Hz	Sampson Chen
PLC	26deg. C, 61%RH	120Vac, 60Hz	Sampson Chen
APCM	25deg. C, 60%RH	120Vac, 60Hz	Leon Dai

### 3.3 Duty Cycle of Test Signal

Duty cycle of test signal is 100 %, duty factor is not required.



### 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.	Laptop	Lenovo	20U5S01X00 L14	PF-1ANPYA	N/A	Provided by Lab
B.	PoE Adapter	Gospower	G0545-530-060-PSE1000	N/A	N/A	Supplied by client

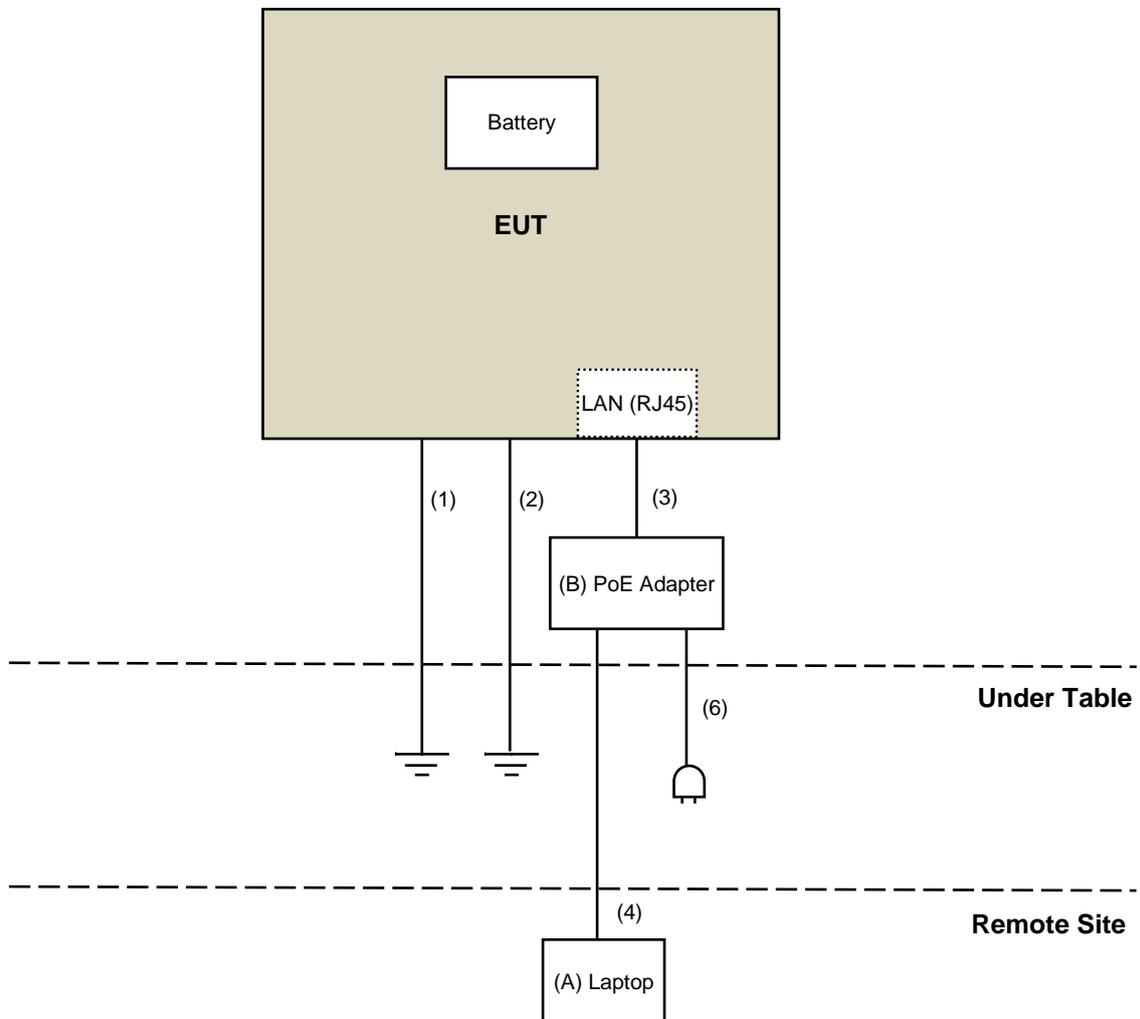
Note:

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

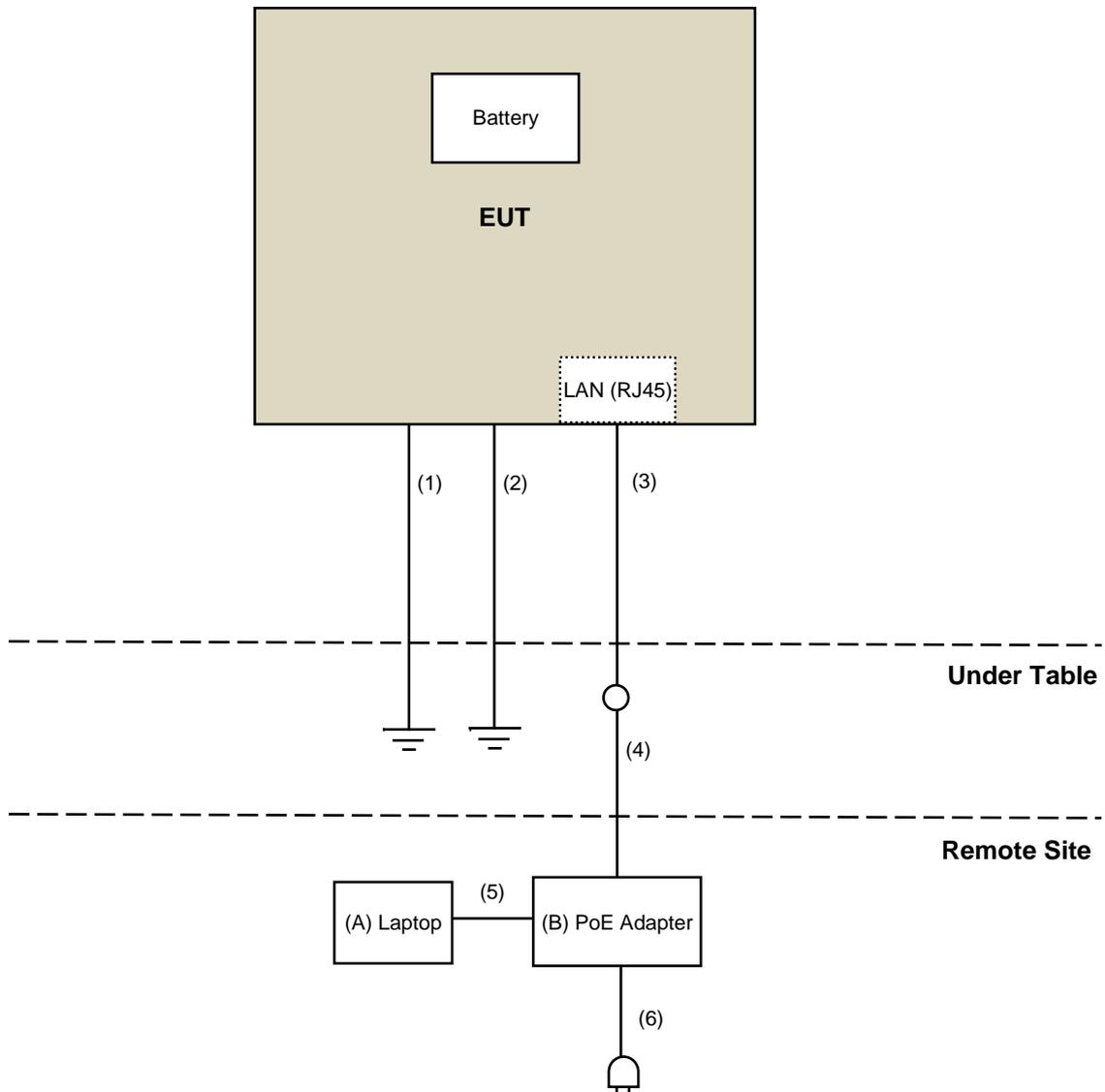
ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	GND Cable	1	2	Yes	0	Provided by Lab
2.	GND Cable	1	2	Yes	0	Provided by Lab
3.	RJ-45 Cable	1	1	No	0	Supplied by client
4.	RJ-45 Cable	1	10	No	0	Provided by Lab
5.	RJ-45 Cable	1	1.5	No	0	Provided by Lab
6.	AC Cable	1	1	No	0	Supplied by client

### 3.4.1 Configuration of System under Test

#### For AC Power Conducted Emission test:



**For Radiated Emission test:**



### 3.5 General Description of Applied Standard and References

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

**Test Standard:**

**FCC Part 15, Subpart E (15.407)**

**ANSI C63.10-2013**

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

**References Test Guidance:**

**KDB 789033 D02 General UNII Test Procedure New Rules v02r01**

**KDB 662911 D01 Multiple Transmitter Output v02r01**

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

## 4 Test Types and Results

### 4.1 Radiated Emission and Bandedge Measurement

#### 4.1.1 Limits of Radiated Emission and Bandedge Measurement

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

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

#### NOTE:

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

Limits of unwanted emission out of the restricted bands

Applicable To		Limit	
789033 D02 General UNII Test Procedure New Rules v02r01		Field Strength at 3m	
		PK:74 (dBuV/m)	AV:54 (dBuV/m)
Frequency Band	Applicable To	EIRP Limit	Equivalent Field Strength at 3m
5150~5250 MHz	15.407(b)(1)	PK:-27 (dBm/MHz)	PK:68.2(dBuV/m)
5250~5350 MHz	15.407(b)(2)		
5470~5725 MHz	15.407(b)(3)		
5725~5850 MHz	15.407(b)(4)(i)	PK:-27 (dBm/MHz) <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(dBuV/m) <sup>*1</sup> PK:105.2 (dBuV/m) <sup>*2</sup> PK: 110.8(dBuV/m) <sup>*3</sup> PK:122.2 (dBuV/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:

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

## 4.1.2 Test Instruments

**For Radiated Emission and Band-Edge & OOB Test:**

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Agilent	N9038A	MY51210202	2020/12/1	2021/11/30
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	NA	NA
Pre_Amplifier EMCI	EMC001340	980142	2021/5/24	2022/5/23
LOOP ANTENNA Electro-Metrics	EM-6879	264	2021/3/5	2022/3/4
RF Coaxial Cable JYEBO	5D-FB	LOOPCAB-001	2021/1/7	2022/1/6
RF Coaxial Cable JYEBO	5D-FB	LOOPCAB-002	2021/1/7	2022/1/6
Pre_Amplifier EMCI	EMC330N	980701	2021/3/10	2022/3/9
Trilog Broadband Antenna Schwarzbeck	VULB 9168	9168-406	2020/11/6	2021/11/5
RF Coaxial Cable COMMATE/PEWC	8D	966-4-1	2021/3/17	2022/3/16
RF Coaxial Cable COMMATE/PEWC	8D	966-4-2	2021/3/17	2022/3/16
RF Coaxial Cable COMMATE/PEWC	8D	966-4-3	2021/3/17	2022/3/16
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-ATT5-03	2021/1/11	2022/1/10
Horn Antenna SCHWARZBECK	BBHA 9120D	9120D-783	2020/11/22	2021/11/21
Pre_Amplifier EMCI	EMC 12630 SE	980638	2021/4/7	2022/4/6
RF Cable-Frequency Range : 1-26.5GHz EMCI	EMC104-SM-SM-1200	160922	2020/12/25	2021/12/24
RF Coaxial Cable EMCI	EMC104-SM-SM-2000	180502	2021/4/26	2022/4/25
RF Coaxial Cable EMCI	EMC104-SM-SM-6000	180418	2021/4/26	2022/4/25
Pre_Amplifier EMCI	EMC184045SE	980387	2021/1/11	2022/1/10
SHF-EHF Horn Schwarzbeck	BBHA 9170	BBHA9170519	2020/11/22	2021/11/21
RF Cable-Frequency range: 1-40GHz EMCI	EMC102-KM-KM-1200	160924	2021/1/11	2022/1/10
RF cable (40GHz) EMCI	EMC-KM-KM-4000	200214	2021/3/10	2022/3/9

**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 966 Chamber No. 4.
3. Tested Date: 2021/7/13 ~ 2021/8/16

**For other test items:**

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSV40	101516	2021/3/8	2022/3/7
Power Meter Anritsu	ML2495A	1529002	2021/6/21	2022/6/20
Pulse Power Sensor Anritsu	MA2411B	1339443	2021/5/31	2022/5/30
Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	2021/4/13	2022/4/12
Software	ADT_RF Test Software V6.6.5.4	NA	NA	NA
DC POWER SUPPLY Topward	6603D	795558	NA	NA
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	2021/1/14	2022/1/13
True RMS Clamp Meter Fluke	325	31130711WS	2021/6/2	2022/6/1

- NOTE:**
1. The test was performed in Oven room 2.
  2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
  3. Tested Date: 2021/8/28

#### 4.1.3 Test Procedure

##### **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 detects 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:**

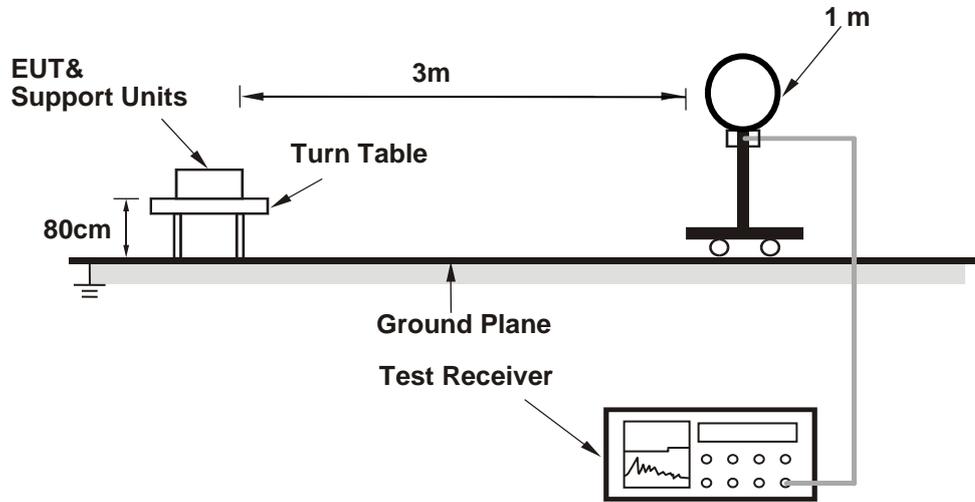
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

#### 4.1.4 Deviation from Test Standard

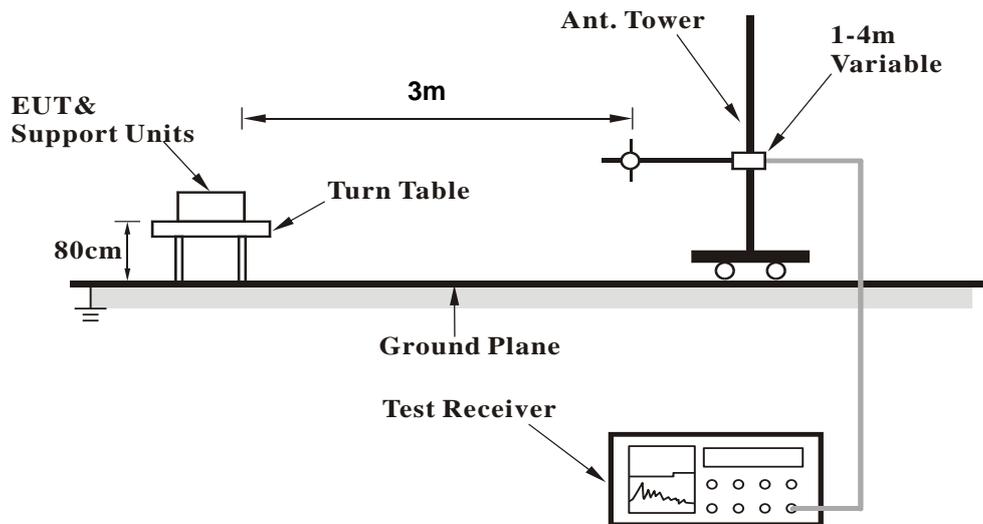
No deviation.

#### 4.1.5 Test Setup

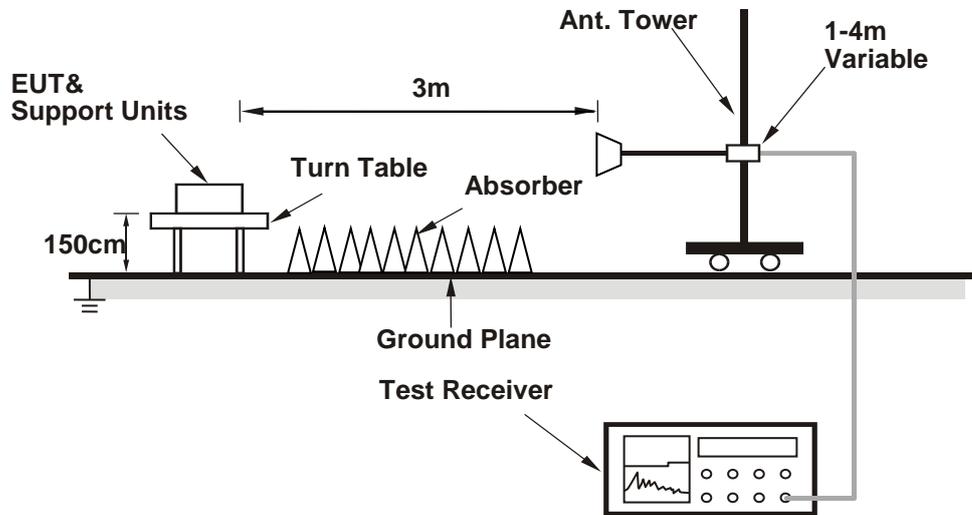
##### For Radiated emission below 30MHz



##### 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 Condition

- a. Connected the EUT with the Laptop which is placed on the testing table.
- b. Controlling software (Run Putty.exe Paste DD\_WiFi\_TX.Command.txt Command) has been activated to set the EUT under transmission condition continuously.

#### 4.1.7 Test Results

##### Above 1GHz Data

<b>RF Mode</b>	TX 802.11a	<b>Channel</b>	CH 36 : 5180 MHz
<b>Frequency Range</b>	1GHz ~ 40GHz	<b>Detector Function</b>	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	5146.80	64.2 PK	74.0	-9.8	1.87 H	316	62.7	1.5
2	5146.80	52.4 AV	54.0	-1.6	1.87 H	316	50.9	1.5
3	*5180.00	115.1 PK			1.87 H	316	113.7	1.4
4	*5180.00	106.8 AV			1.87 H	316	105.4	1.4
5	#10360.00	57.7 PK	68.2	-10.5	1.42 H	359	47.0	10.7
6	15540.00	49.6 PK	74.0	-24.4	1.45 H	341	37.6	12.0
7	15540.00	38.4 AV	54.0	-15.6	1.45 H	341	26.4	12.0
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	5148.75	65.7 PK	74.0	-8.3	1.11 V	320	64.2	1.5
2	5148.75	53.3 AV	54.0	-0.7	1.11 V	320	51.8	1.5
3	*5180.00	116.0 PK			1.11 V	320	114.6	1.4
4	*5180.00	106.6 AV			1.11 V	320	105.2	1.4
5	#10360.00	60.7 PK	68.2	-7.5	1.64 V	350	50.0	10.7
6	15540.00	51.1 PK	74.0	-22.9	1.82 V	351	39.1	12.0
7	15540.00	39.4 AV	54.0	-14.6	1.82 V	351	27.4	12.0

#### Remarks:

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

<b>RF Mode</b>	TX 802.11a	<b>Channel</b>	CH 40 : 5200 MHz
<b>Frequency Range</b>	1GHz ~ 40GHz	<b>Detector Function</b>	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	5148.96	55.4 PK	74.0	-18.6	1.91 H	308	53.9	1.5
2	5148.96	43.2 AV	54.0	-10.8	1.91 H	308	41.7	1.5
3	*5200.00	118.9 PK			1.91 H	308	117.3	1.6
4	*5200.00	109.9 AV			1.91 H	308	108.3	1.6
5	5353.67	55.3 PK	74.0	-18.7	1.91 H	308	54.0	1.3
6	5353.67	43.2 AV	54.0	-10.8	1.91 H	308	41.9	1.3
7	#10400.00	64.5 PK	68.2	-3.7	1.46 H	5	53.6	10.9
8	15600.00	57.8 PK	74.0	-16.2	1.46 H	342	45.8	12.0
9	15600.00	44.1 AV	54.0	-9.9	1.46 H	342	32.1	12.0

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	5148.96	66.8 PK	74.0	-7.2	1.32 V	321	65.3	1.5
2	5148.96	52.1 AV	54.0	-1.9	1.32 V	321	50.6	1.5
3	*5200.00	119.8 PK			1.32 V	321	118.2	1.6
4	*5200.00	110.7 AV			1.32 V	321	109.1	1.6
5	5353.67	53.2 PK	74.0	-20.8	1.32 V	321	51.9	1.3
6	5353.67	42.3 AV	54.0	-11.7	1.32 V	321	41.0	1.3
7	#10400.00	64.4 PK	68.2	-3.8	1.48 V	360	53.5	10.9
8	15600.00	57.6 PK	74.0	-16.4	1.23 V	357	45.6	12.0
9	15600.00	46.5 AV	54.0	-7.5	1.23 V	357	34.5	12.0

**Remarks:**

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

<b>RF Mode</b>	TX 802.11a	<b>Channel</b>	CH 48 : 5240 MHz
<b>Frequency Range</b>	1GHz ~ 40GHz	<b>Detector Function</b>	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	118.5 PK			1.86 H	313	117.3	1.2
2	*5240.00	109.7 AV			1.86 H	313	108.5	1.2
3	5350.00	55.2 PK	74.0	-18.8	1.86 H	313	53.9	1.3
4	5350.00	43.5 AV	54.0	-10.5	1.86 H	313	42.2	1.3
5	#10480.00	57.5 PK	68.2	-10.7	1.42 H	345	46.6	10.9
6	15720.00	49.6 PK	74.0	-24.4	1.44 H	329	37.7	11.9
7	15720.00	38.5 AV	54.0	-15.5	1.44 H	329	26.6	11.9

**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	*5240.00	118.8 PK			1.08 V	342	117.6	1.2
2	*5240.00	110.0 AV			1.08 V	342	108.8	1.2
3	5350.00	54.9 PK	74.0	-19.1	1.08 V	342	53.6	1.3
4	5350.00	43.8 AV	54.0	-10.2	1.08 V	342	42.5	1.3
5	#10480.00	60.4 PK	68.2	-7.8	1.64 V	344	49.5	10.9
6	15720.00	50.4 PK	74.0	-23.6	1.83 V	360	38.5	11.9
7	15720.00	39.0 AV	54.0	-15.0	1.83 V	360	27.1	11.9

**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.

<b>RF Mode</b>	TX 802.11a	<b>Channel</b>	CH 52 : 5260 MHz
<b>Frequency Range</b>	1GHz ~ 40GHz	<b>Detector Function</b>	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	55.8 PK	74.0	-18.2	1.82 H	311	54.3	1.5
2	5150.00	43.6 AV	54.0	-10.4	1.82 H	311	42.1	1.5
3	*5260.00	118.3 PK			1.82 H	311	117.2	1.1
4	*5260.00	109.4 AV			1.82 H	311	108.3	1.1
5	#10520.00	57.3 PK	68.2	-10.9	1.45 H	360	46.4	10.9
6	15780.00	50.1 PK	74.0	-23.9	1.50 H	341	38.3	11.8
7	15780.00	38.8 AV	54.0	-15.2	1.50 H	341	27.0	11.8

**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	5150.00	54.7 PK	74.0	-19.3	1.25 V	327	53.2	1.5
2	5150.00	43.8 AV	54.0	-10.2	1.25 V	327	42.3	1.5
3	*5260.00	119.8 PK			1.25 V	327	118.7	1.1
4	*5260.00	110.9 AV			1.25 V	327	109.8	1.1
5	#10520.00	60.3 PK	68.2	-7.9	1.68 V	352	49.4	10.9
6	15780.00	51.3 PK	74.0	-22.7	1.86 V	343	39.5	11.8
7	15780.00	39.8 AV	54.0	-14.2	1.86 V	343	28.0	11.8

**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.

<b>RF Mode</b>	TX 802.11a	<b>Channel</b>	CH 60 : 5300 MHz
<b>Frequency Range</b>	1GHz ~ 40GHz	<b>Detector Function</b>	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	119.0 PK			1.91 H	330	117.8	1.2
2	*5300.00	109.9 AV			1.91 H	330	108.7	1.2
3	10600.00	57.0 PK	74.0	-17.0	1.46 H	360	46.0	11.0
4	10600.00	46.1 AV	54.0	-7.9	1.46 H	360	35.1	11.0
5	15900.00	49.3 PK	74.0	-24.7	1.39 H	327	37.1	12.2
6	15900.00	38.0 AV	54.0	-16.0	1.39 H	327	25.8	12.2

**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	*5300.00	120.3 PK			1.17 V	335	119.1	1.2
2	*5300.00	111.0 AV			1.17 V	335	109.8	1.2
3	10600.00	60.5 PK	74.0	-13.5	1.70 V	348	49.5	11.0
4	10600.00	47.9 AV	54.0	-6.1	1.70 V	348	36.9	11.0
5	15900.00	51.3 PK	74.0	-22.7	1.80 V	360	39.1	12.2
6	15900.00	39.7 AV	54.0	-14.3	1.80 V	360	27.5	12.2

**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.

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

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	114.5 PK			1.75 H	319	113.3	1.2
2	*5320.00	106.0 AV			1.75 H	319	104.8	1.2
3	5353.30	62.5 PK	74.0	-11.5	1.75 H	319	61.2	1.3
4	5353.30	51.0 AV	54.0	-3.0	1.75 H	319	49.7	1.3
5	10640.00	57.5 PK	74.0	-16.5	1.46 H	360	46.4	11.1
6	10640.00	46.1 AV	54.0	-7.9	1.46 H	360	35.0	11.1
7	15960.00	49.6 PK	74.0	-24.4	1.48 H	333	37.4	12.2
8	15960.00	38.7 AV	54.0	-15.3	1.48 H	333	26.5	12.2

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	*5320.00	116.1 PK			1.09 V	340	114.9	1.2
2	*5320.00	106.6 AV			1.09 V	340	105.4	1.2
3	5454.29	66.5 PK	74.0	-7.5	1.09 V	340	65.0	1.5
4	5454.29	52.7 AV	54.0	-1.3	1.09 V	340	51.2	1.5
5	10640.00	60.3 PK	74.0	-13.7	1.65 V	358	49.2	11.1
6	10640.00	47.8 AV	54.0	-6.2	1.65 V	358	36.7	11.1
7	15960.00	51.4 PK	74.0	-22.6	1.85 V	348	39.2	12.2
8	15960.00	39.7 AV	54.0	-14.3	1.85 V	348	27.5	12.2

**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.

<b>RF Mode</b>	TX 802.11a	<b>Channel</b>	CH 100 : 5500 MHz
<b>Frequency Range</b>	1GHz ~ 40GHz	<b>Detector Function</b>	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	5459.30	59.9 PK	74.0	-14.1	1.95 H	314	58.4	1.5
2	5459.30	48.2 AV	54.0	-5.8	1.95 H	314	46.7	1.5
3	#5468.10	64.3 PK	68.2	-3.9	1.95 H	314	62.8	1.5
4	*5500.00	115.1 PK			1.95 H	314	113.6	1.5
5	*5500.00	106.6 AV			1.95 H	314	105.1	1.5
6	11000.00	58.2 PK	74.0	-15.8	1.44 H	360	46.4	11.8
7	11000.00	46.6 AV	54.0	-7.4	1.44 H	360	34.8	11.8
8	#16500.00	49.6 PK	68.2	-18.6	1.44 H	342	35.5	14.1

**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	5460.00	62.1 PK	74.0	-11.9	1.22 V	321	60.6	1.5
2	5460.00	50.8 AV	54.0	-3.2	1.22 V	321	49.3	1.5
3	#5469.51	66.6 PK	68.2	-1.6	1.22 V	321	65.1	1.5
4	*5500.00	116.6 PK			1.22 V	321	115.1	1.5
5	*5500.00	107.8 AV			1.22 V	321	106.3	1.5
6	11000.00	60.5 PK	74.0	-13.5	1.61 V	345	48.7	11.8
7	11000.00	47.7 AV	54.0	-6.3	1.61 V	345	35.9	11.8
8	#16500.00	51.1 PK	68.2	-17.1	1.84 V	359	37.0	14.1

**Remarks:**

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

<b>RF Mode</b>	TX 802.11a	<b>Channel</b>	CH 116 : 5580 MHz
<b>Frequency Range</b>	1GHz ~ 40GHz	<b>Detector Function</b>	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	114.7 PK			1.87 H	303	113.0	1.7
2	*5580.00	106.4 AV			1.87 H	303	104.7	1.7
3	11160.00	57.5 PK	74.0	-16.5	1.42 H	344	45.6	11.9
4	11160.00	46.2 AV	54.0	-7.8	1.42 H	344	34.3	11.9
5	#16740.00	49.1 PK	68.2	-19.1	1.50 H	327	33.3	15.8

**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	*5580.00	117.1 PK			1.23 V	320	115.4	1.7
2	*5580.00	108.0 AV			1.23 V	320	106.3	1.7
3	11160.00	60.3 PK	74.0	-13.7	1.68 V	336	48.4	11.9
4	11160.00	47.5 AV	54.0	-6.5	1.68 V	336	35.6	11.9
5	#16740.00	51.0 PK	68.2	-17.2	1.77 V	360	35.2	15.8

**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.

<b>RF Mode</b>	TX 802.11a	<b>Channel</b>	CH 140 : 5700 MHz
<b>Frequency Range</b>	1GHz ~ 40GHz	<b>Detector Function</b>	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	114.9 PK			1.90 H	304	113.0	1.9
2	*5700.00	105.3 AV			1.90 H	304	103.4	1.9
3	#5725.00	55.8 PK	68.2	-12.4	1.90 H	304	53.8	2.0
4	11400.00	58.1 PK	74.0	-15.9	1.40 H	360	45.5	12.6
5	11400.00	46.8 AV	54.0	-7.2	1.40 H	360	34.2	12.6
6	#17100.00	49.4 PK	68.2	-18.8	1.40 H	355	33.0	16.4

**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	*5700.00	115.6 PK			1.26 V	330	113.7	1.9
2	*5700.00	105.9 AV			1.26 V	330	104.0	1.9
3	#5725.00	67.5 PK	68.2	-0.7	1.26 V	330	65.5	2.0
4	11400.00	61.1 PK	74.0	-12.9	1.68 V	334	48.5	12.6
5	11400.00	48.3 AV	54.0	-5.7	1.68 V	334	35.7	12.6
6	#17100.00	51.1 PK	68.2	-17.1	1.87 V	348	34.7	16.4

**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.

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

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

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	56.1 PK	74.0	-17.9	1.87 H	315	54.6	1.5
2	5460.00	43.9 AV	54.0	-10.1	1.87 H	315	42.4	1.5
3	#5470.00	55.6 PK	68.2	-12.6	1.87 H	315	54.1	1.5
4	*5720.00	118.9 PK			1.87 H	315	116.9	2.0
5	*5720.00	109.5 AV			1.87 H	315	107.5	2.0
6	#5850.00	55.4 PK	68.2	-12.8	1.87 H	315	53.1	2.3
7	11440.00	57.6 PK	74.0	-16.4	1.38 H	360	45.0	12.6
8	11440.00	46.6 AV	54.0	-7.4	1.38 H	360	34.0	12.6
9	#17160.00	49.5 PK	68.2	-18.7	1.46 H	333	32.9	16.6

**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	5460.00	54.6 PK	74.0	-19.4	1.22 V	313	53.1	1.5
2	5460.00	43.4 AV	54.0	-10.6	1.22 V	313	41.9	1.5
3	#5470.00	54.8 PK	68.2	-13.4	1.22 V	313	53.3	1.5
4	*5720.00	120.3 PK			1.22 V	313	118.3	2.0
5	*5720.00	110.8 AV			1.22 V	313	108.8	2.0
6	#5850.00	54.8 PK	68.2	-13.4	1.22 V	313	52.5	2.3
7	11440.00	60.7 PK	74.0	-13.3	1.65 V	360	48.1	12.6
8	11440.00	47.8 AV	54.0	-6.2	1.65 V	360	35.2	12.6
9	#17160.00	50.9 PK	68.2	-17.3	1.85 V	360	34.3	16.6

**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.

<b>RF Mode</b>	TX 802.11a	<b>Channel</b>	CH 149 : 5745 MHz
<b>Frequency Range</b>	1GHz ~ 40GHz	<b>Detector Function</b>	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	#5628.34	53.1 PK	68.2	-15.1	2.00 H	355	48.6	4.5
2	*5745.00	117.5 PK			2.00 H	355	115.4	2.1
3	*5745.00	108.5 AV			2.00 H	355	106.4	2.1
4	#5926.28	53.0 PK	68.2	-15.2	2.00 H	355	47.9	5.1
5	11490.00	57.6 PK	74.0	-16.4	1.45 H	352	45.0	12.6
6	11490.00	46.4 AV	54.0	-7.6	1.45 H	352	33.8	12.6
7	#17235.00	50.0 PK	68.2	-18.2	1.44 H	326	33.2	16.8

**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	#5650.00	56.7 PK	68.2	-11.5	1.52 V	317	52.2	4.5
2	*5745.00	119.8 PK			1.52 V	317	117.7	2.1
3	*5745.00	110.3 AV			1.52 V	317	108.2	2.1
4	#5931.41	53.6 PK	68.2	-14.6	1.52 V	317	48.5	5.1
5	11490.00	66.9 PK	74.0	-7.1	1.18 V	355	54.3	12.6
6	11490.00	53.5 AV	54.0	-0.5	1.18 V	355	40.9	12.6
7	#17235.00	56.2 PK	68.2	-12.0	1.22 V	355	39.4	16.8

**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.

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

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

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5639.64	53.6 PK	68.2	-14.6	1.96 H	356	49.1	4.5
2	*5785.00	117.6 PK			1.96 H	356	115.4	2.2
3	*5785.00	109.0 AV			1.96 H	356	106.8	2.2
4	#5942.39	53.9 PK	68.2	-14.3	1.96 H	356	48.8	5.1
5	11570.00	57.7 PK	74.0	-16.3	1.46 H	359	45.3	12.4
6	11570.00	46.2 AV	54.0	-7.8	1.46 H	359	33.8	12.4
7	#17355.00	50.2 PK	68.2	-18.0	1.42 H	351	32.7	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	#5630.64	54.4 PK	68.2	-13.8	1.58 V	317	49.9	4.5
2	*5785.00	119.6 PK			1.58 V	317	117.4	2.2
3	*5785.00	110.4 AV			1.58 V	317	108.2	2.2
4	#5935.85	55.4 PK	68.2	-12.8	1.58 V	317	50.3	5.1
5	11570.00	66.2 PK	74.0	-7.8	1.27 V	359	53.8	12.4
6	11570.00	52.8 AV	54.0	-1.2	1.27 V	359	40.4	12.4
7	#17355.00	55.4 PK	68.2	-12.8	1.20 V	340	37.9	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.

<b>RF Mode</b>	TX 802.11a	<b>Channel</b>	CH 165 : 5825 MHz
<b>Frequency Range</b>	1GHz ~ 40GHz	<b>Detector Function</b>	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	#5640.97	52.3 PK	68.2	-15.9	2.00 H	353	47.8	4.5
2	*5825.00	118.1 PK			2.00 H	353	115.9	2.2
3	*5825.00	108.8 AV			2.00 H	353	106.6	2.2
4	#5956.89	53.5 PK	68.2	-14.7	2.00 H	353	48.3	5.2
5	11650.00	57.5 PK	74.0	-16.5	1.40 H	360	45.2	12.3
6	11650.00	46.2 AV	54.0	-7.8	1.40 H	360	33.9	12.3
7	#17475.00	49.3 PK	68.2	-18.9	1.43 H	333	30.9	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	#5640.29	54.0 PK	68.2	-14.2	1.48 V	317	49.5	4.5
2	*5825.00	119.6 PK			1.48 V	317	117.4	2.2
3	*5825.00	110.2 AV			1.48 V	317	108.0	2.2
4	#5929.76	55.9 PK	68.2	-12.3	1.48 V	317	50.8	5.1
5	11650.00	66.4 PK	74.0	-7.6	1.21 V	357	54.1	12.3
6	11650.00	53.2 AV	54.0	-0.8	1.21 V	357	40.9	12.3
7	#17475.00	55.9 PK	68.2	-12.3	1.19 V	354	37.5	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.

<b>RF Mode</b>	TX 802.11ac (VHT20)	<b>Channel</b>	CH 36 : 5180 MHz
<b>Frequency Range</b>	1GHz ~ 40GHz	<b>Detector Function</b>	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	65.3 PK	74.0	-8.7	1.77 H	323	63.8	1.5
2	5150.00	53.8 AV	54.0	-0.2	1.77 H	323	52.3	1.5
3	*5180.00	115.8 PK			1.77 H	323	114.4	1.4
4	*5180.00	106.1 AV			1.77 H	323	104.7	1.4
5	#10360.00	57.6 PK	68.2	-10.6	1.47 H	350	46.9	10.7
6	15540.00	49.2 PK	74.0	-24.8	1.39 H	331	37.2	12.0
7	15540.00	38.2 AV	54.0	-15.8	1.39 H	331	26.2	12.0

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

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	65.5 PK	74.0	-8.5	1.27 V	320	64.0	1.5
2	5150.00	53.5 AV	54.0	-0.5	1.27 V	320	52.0	1.5
3	*5180.00	115.5 PK			1.27 V	320	114.1	1.4
4	*5180.00	106.1 AV			1.27 V	320	104.7	1.4
5	#10360.00	61.1 PK	68.2	-7.1	1.70 V	354	50.4	10.7
6	15540.00	51.5 PK	74.0	-22.5	1.77 V	354	39.5	12.0
7	15540.00	39.8 AV	54.0	-14.2	1.77 V	354	27.8	12.0

**Remarks:**

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

<b>RF Mode</b>	TX 802.11ac (VHT20)	<b>Channel</b>	CH 40 : 5200 MHz
<b>Frequency Range</b>	1GHz ~ 40GHz	<b>Detector Function</b>	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	5148.71	55.7 PK	74.0	-18.3	1.87 H	307	54.2	1.5
2	5148.71	43.9 AV	54.0	-10.1	1.87 H	307	42.4	1.5
3	*5200.00	119.7 PK			1.87 H	307	118.1	1.6
4	*5200.00	110.2 AV			1.87 H	307	108.6	1.6
5	5354.78	55.9 PK	74.0	-18.1	1.87 H	307	54.6	1.3
6	5354.78	43.7 AV	54.0	-10.3	1.87 H	307	42.4	1.3
7	#10400.00	57.9 PK	68.2	-10.3	1.44 H	355	47.0	10.9
8	15600.00	49.9 PK	74.0	-24.1	1.40 H	344	37.9	12.0
9	15600.00	38.6 AV	54.0	-15.4	1.40 H	344	26.6	12.0

**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	5148.71	65.4 PK	74.0	-8.6	1.23 V	321	63.9	1.5
2	5148.71	52.7 AV	54.0	-1.3	1.23 V	321	51.2	1.5
3	*5200.00	120.3 PK			1.23 V	321	118.7	1.6
4	*5200.00	110.6 AV			1.23 V	321	109.0	1.6
5	5354.78	54.2 PK	74.0	-19.8	1.23 V	321	52.9	1.3
6	5354.78	42.6 AV	54.0	-11.4	1.23 V	321	41.3	1.3
7	#10400.00	60.3 PK	68.2	-7.9	1.58 V	360	49.4	10.9
8	15600.00	50.9 PK	74.0	-23.1	1.83 V	359	38.9	12.0
9	15600.00	39.3 AV	54.0	-14.7	1.83 V	359	27.3	12.0

**Remarks:**

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

<b>RF Mode</b>	TX 802.11ac (VHT20)	<b>Channel</b>	CH 48 : 5240 MHz
<b>Frequency Range</b>	1GHz ~ 40GHz	<b>Detector Function</b>	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	118.0 PK			1.81 H	307	116.8	1.2
2	*5240.00	109.1 AV			1.81 H	307	107.9	1.2
3	5350.00	56.0 PK	74.0	-18.0	1.81 H	307	54.7	1.3
4	5350.00	43.9 AV	54.0	-10.1	1.81 H	307	42.6	1.3
5	#10480.00	57.9 PK	68.2	-10.3	1.43 H	351	47.0	10.9
6	15720.00	49.5 PK	74.0	-24.5	1.45 H	330	37.6	11.9
7	15720.00	38.4 AV	54.0	-15.6	1.45 H	330	26.5	11.9

**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	*5240.00	118.4 PK			1.21 V	320	117.2	1.2
2	*5240.00	109.3 AV			1.21 V	320	108.1	1.2
3	5350.00	55.3 PK	74.0	-18.7	1.21 V	320	54.0	1.3
4	5350.00	43.5 AV	54.0	-10.5	1.21 V	320	42.2	1.3
5	#10480.00	61.0 PK	68.2	-7.2	1.61 V	346	50.1	10.9
6	15720.00	51.0 PK	74.0	-23.0	1.84 V	360	39.1	11.9
7	15720.00	39.5 AV	54.0	-14.5	1.84 V	360	27.6	11.9

**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.

<b>RF Mode</b>	TX 802.11ac (VHT20)	<b>Channel</b>	CH 52 : 5260 MHz
<b>Frequency Range</b>	1GHz ~ 40GHz	<b>Detector Function</b>	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	55.0 PK	74.0	-19.0	1.89 H	329	53.5	1.5
2	5150.00	43.0 AV	54.0	-11.0	1.89 H	329	41.5	1.5
3	*5260.00	119.9 PK			1.89 H	329	118.8	1.1
4	*5260.00	110.5 AV			1.89 H	329	109.4	1.1
5	#10520.00	57.4 PK	68.2	-10.8	1.40 H	357	46.5	10.9
6	15780.00	49.8 PK	74.0	-24.2	1.49 H	352	38.0	11.8
7	15780.00	38.4 AV	54.0	-15.6	1.49 H	352	26.6	11.8

**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	5150.00	55.0 PK	74.0	-19.0	1.23 V	314	53.5	1.5
2	5150.00	44.0 AV	54.0	-10.0	1.23 V	314	42.5	1.5
3	*5260.00	120.6 PK			1.23 V	314	119.5	1.1
4	*5260.00	111.0 AV			1.23 V	314	109.9	1.1
5	#10520.00	60.6 PK	68.2	-7.6	1.60 V	335	49.7	10.9
6	15780.00	50.8 PK	74.0	-23.2	1.88 V	343	39.0	11.8
7	15780.00	39.2 AV	54.0	-14.8	1.88 V	343	27.4	11.8

**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.

<b>RF Mode</b>	TX 802.11ac (VHT20)	<b>Channel</b>	CH 60 : 5300 MHz
<b>Frequency Range</b>	1GHz ~ 40GHz	<b>Detector Function</b>	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	119.8 PK			1.81 H	309	118.6	1.2
2	*5300.00	110.2 AV			1.81 H	309	109.0	1.2
3	10600.00	57.6 PK	74.0	-16.4	1.41 H	350	46.6	11.0
4	10600.00	46.3 AV	54.0	-7.7	1.41 H	350	35.3	11.0
5	15900.00	49.4 PK	74.0	-24.6	1.43 H	344	37.2	12.2
6	15900.00	38.4 AV	54.0	-15.6	1.43 H	344	26.2	12.2

**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	*5300.00	119.6 PK			1.26 V	321	118.4	1.2
2	*5300.00	110.2 AV			1.26 V	321	109.0	1.2
3	10600.00	60.7 PK	74.0	-13.3	1.65 V	344	49.7	11.0
4	10600.00	47.7 AV	54.0	-6.3	1.65 V	344	36.7	11.0
5	15900.00	51.5 PK	74.0	-22.5	1.87 V	342	39.3	12.2
6	15900.00	39.5 AV	54.0	-14.5	1.87 V	342	27.3	12.2

**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.

<b>RF Mode</b>	TX 802.11ac (VHT20)	<b>Channel</b>	CH 64 : 5320 MHz
<b>Frequency Range</b>	1GHz ~ 40GHz	<b>Detector Function</b>	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	113.4 PK			1.68 H	318	112.2	1.2
2	*5320.00	104.8 AV			1.68 H	318	103.6	1.2
3	5350.90	64.9 PK	74.0	-9.1	1.68 H	318	63.6	1.3
4	5350.90	53.7 AV	54.0	-0.3	1.68 H	318	52.4	1.3
5	10640.00	57.7 PK	74.0	-16.3	1.39 H	351	46.6	11.1
6	10640.00	46.2 AV	54.0	-7.8	1.39 H	351	35.1	11.1
7	15960.00	50.2 PK	74.0	-23.8	1.47 H	329	38.0	12.2
8	15960.00	38.7 AV	54.0	-15.3	1.47 H	329	26.5	12.2

**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	*5320.00	115.8 PK			1.13 V	319	114.6	1.2
2	*5320.00	105.9 AV			1.13 V	319	104.7	1.2
3	5350.00	66.9 PK	74.0	-7.1	1.13 V	319	65.6	1.3
4	5350.00	53.3 AV	54.0	-0.7	1.13 V	319	52.0	1.3
5	10640.00	60.8 PK	74.0	-13.2	1.61 V	339	49.7	11.1
6	10640.00	48.2 AV	54.0	-5.8	1.61 V	339	37.1	11.1
7	15960.00	51.0 PK	74.0	-23.0	1.83 V	348	38.8	12.2
8	15960.00	39.5 AV	54.0	-14.5	1.83 V	348	27.3	12.2

**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.

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

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

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	59.2 PK	74.0	-14.8	1.93 H	308	57.7	1.5
2	5460.00	48.6 AV	54.0	-5.4	1.93 H	308	47.1	1.5
3	#5470.00	64.4 PK	68.2	-3.8	1.93 H	308	62.9	1.5
4	*5500.00	114.7 PK			1.93 H	308	113.2	1.5
5	*5500.00	106.1 AV			1.93 H	308	104.6	1.5
6	11000.00	57.9 PK	74.0	-16.1	1.48 H	360	46.1	11.8
7	11000.00	46.6 AV	54.0	-7.4	1.48 H	360	34.8	11.8
8	#16500.00	48.9 PK	68.2	-19.3	1.49 H	346	34.8	14.1

**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	5457.15	61.8 PK	74.0	-12.2	1.27 V	332	60.3	1.5
2	5457.15	48.8 AV	54.0	-5.2	1.27 V	332	47.3	1.5
3	#5468.00	66.2 PK	68.2	-2.0	1.27 V	332	64.7	1.5
4	*5500.00	116.2 PK			1.27 V	332	114.7	1.5
5	*5500.00	106.9 AV			1.27 V	332	105.4	1.5
6	11000.00	60.4 PK	74.0	-13.6	1.64 V	343	48.6	11.8
7	11000.00	47.5 AV	54.0	-6.5	1.64 V	343	35.7	11.8
8	#16500.00	51.1 PK	68.2	-17.1	1.81 V	353	37.0	14.1

**Remarks:**

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

<b>RF Mode</b>	TX 802.11ac (VHT20)	<b>Channel</b>	CH 116 : 5580 MHz
<b>Frequency Range</b>	1GHz ~ 40GHz	<b>Detector Function</b>	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	120.1 PK			1.88 H	304	118.4	1.7
2	*5580.00	110.6 AV			1.88 H	304	108.9	1.7
3	11160.00	57.2 PK	74.0	-16.8	1.40 H	358	45.3	11.9
4	11160.00	46.2 AV	54.0	-7.8	1.40 H	358	34.3	11.9
5	#16740.00	49.5 PK	68.2	-18.7	1.49 H	330	33.7	15.8

**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	*5580.00	119.7 PK			1.26 V	309	118.0	1.7
2	*5580.00	110.6 AV			1.26 V	309	108.9	1.7
3	11160.00	60.1 PK	74.0	-13.9	1.66 V	354	48.2	11.9
4	11160.00	47.4 AV	54.0	-6.6	1.66 V	354	35.5	11.9
5	#16740.00	51.3 PK	68.2	-16.9	1.82 V	347	35.5	15.8

**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.

<b>RF Mode</b>	TX 802.11ac (VHT20)	<b>Channel</b>	CH 140 : 5700 MHz
<b>Frequency Range</b>	1GHz ~ 40GHz	<b>Detector Function</b>	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	119.6 PK			1.92 H	306	117.7	1.9
2	*5700.00	110.2 AV			1.92 H	306	108.3	1.9
3	#5725.00	55.9 PK	68.2	-12.3	1.92 H	306	53.9	2.0
4	11400.00	57.4 PK	74.0	-16.6	1.40 H	348	44.8	12.6
5	11400.00	46.4 AV	54.0	-7.6	1.40 H	348	33.8	12.6
6	#17100.00	49.6 PK	68.2	-18.6	1.47 H	341	33.2	16.4

**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	*5700.00	119.6 PK			1.19 V	311	117.7	1.9
2	*5700.00	110.1 AV			1.19 V	311	108.2	1.9
3	#5725.00	54.9 PK	68.2	-13.3	1.19 V	311	52.9	2.0
4	11400.00	60.1 PK	74.0	-13.9	1.60 V	353	47.5	12.6
5	11400.00	47.5 AV	54.0	-6.5	1.60 V	353	34.9	12.6
6	#17100.00	51.2 PK	68.2	-17.0	1.82 V	358	34.8	16.4

**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.

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

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

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	55.2 PK	74.0	-18.8	1.86 H	327	53.7	1.5
2	5460.00	43.5 AV	54.0	-10.5	1.86 H	327	42.0	1.5
3	#5470.00	55.3 PK	68.2	-12.9	1.86 H	327	53.8	1.5
4	*5720.00	119.6 PK			1.86 H	327	117.6	2.0
5	*5720.00	109.7 AV			1.86 H	327	107.7	2.0
6	#5850.00	56.0 PK	68.2	-12.2	1.86 H	327	53.7	2.3
7	11440.00	57.3 PK	74.0	-16.7	1.37 H	360	44.7	12.6
8	11440.00	46.2 AV	54.0	-7.8	1.37 H	360	33.6	12.6
9	#17160.00	50.1 PK	68.2	-18.1	1.39 H	352	33.5	16.6

**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	5460.00	54.6 PK	74.0	-19.4	1.00 V	44	53.1	1.5
2	5460.00	43.4 AV	54.0	-10.6	1.00 V	44	41.9	1.5
3	#5470.00	55.6 PK	68.2	-12.6	1.00 V	44	54.1	1.5
4	*5720.00	119.1 PK			1.00 V	44	117.1	2.0
5	*5720.00	109.8 AV			1.00 V	44	107.8	2.0
6	#5850.00	55.1 PK	68.2	-13.1	1.00 V	44	52.8	2.3
7	11440.00	60.7 PK	74.0	-13.3	1.63 V	343	48.1	12.6
8	11440.00	47.8 AV	54.0	-6.2	1.63 V	343	35.2	12.6
9	#17160.00	50.7 PK	68.2	-17.5	1.81 V	336	34.1	16.6

**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.

<b>RF Mode</b>	TX 802.11ac (VHT20)	<b>Channel</b>	CH 149 : 5745 MHz
<b>Frequency Range</b>	1GHz ~ 40GHz	<b>Detector Function</b>	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	#5577.11	53.1 PK	68.2	-15.1	1.97 H	356	48.6	4.5
2	*5745.00	116.7 PK			1.97 H	356	114.6	2.1
3	*5745.00	108.4 AV			1.97 H	356	106.3	2.1
4	#5933.61	53.1 PK	68.2	-15.1	1.97 H	356	48.0	5.1
5	11490.00	57.7 PK	74.0	-16.3	1.44 H	360	45.1	12.6
6	11490.00	46.4 AV	54.0	-7.6	1.44 H	360	33.8	12.6
7	#17235.00	49.2 PK	68.2	-19.0	1.40 H	353	32.4	16.8

**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	#5643.84	56.4 PK	68.2	-11.8	1.53 V	316	54.6	1.8
2	*5745.00	119.4 PK			1.53 V	316	117.3	2.1
3	*5745.00	110.2 AV			1.53 V	316	108.1	2.1
4	#5940.30	53.5 PK	68.2	-14.7	1.53 V	316	51.2	2.3
5	11490.00	66.4 PK	74.0	-7.6	1.22 V	355	53.8	12.6
6	11490.00	52.9 AV	54.0	-1.1	1.22 V	355	40.3	12.6
7	#17235.00	55.4 PK	68.2	-12.8	1.21 V	346	38.6	16.8

**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.

<b>RF Mode</b>	TX 802.11ac (VHT20)	<b>Channel</b>	CH 157 : 5785 MHz
<b>Frequency Range</b>	1GHz ~ 40GHz	<b>Detector Function</b>	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	#5595.45	52.5 PK	68.2	-15.7	1.99 H	355	48.0	4.5
2	*5785.00	117.9 PK			1.99 H	355	115.7	2.2
3	*5785.00	108.6 AV			1.99 H	355	106.4	2.2
4	#5934.27	52.9 PK	68.2	-15.3	1.99 H	355	47.8	5.1
5	11570.00	58.2 PK	74.0	-15.8	1.37 H	345	45.8	12.4
6	11570.00	46.9 AV	54.0	-7.1	1.37 H	345	34.5	12.4
7	#17355.00	49.6 PK	68.2	-18.6	1.40 H	347	32.1	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	#5640.51	55.7 PK	68.2	-12.5	1.48 V	317	51.2	4.5
2	*5785.00	119.0 PK			1.48 V	317	116.8	2.2
3	*5785.00	110.3 AV			1.48 V	317	108.1	2.2
4	#5934.86	55.0 PK	68.2	-13.2	1.48 V	317	49.9	5.1
5	11570.00	66.2 PK	74.0	-7.8	1.22 V	347	53.8	12.4
6	11570.00	53.0 AV	54.0	-1.0	1.22 V	347	40.6	12.4
7	#17355.00	55.7 PK	68.2	-12.5	1.14 V	353	38.2	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.

<b>RF Mode</b>	TX 802.11ac (VHT20)	<b>Channel</b>	CH 165 : 5825 MHz
<b>Frequency Range</b>	1GHz ~ 40GHz	<b>Detector Function</b>	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	#5648.11	51.7 PK	68.2	-16.5	2.00 H	354	47.2	4.5
2	*5825.00	117.9 PK			2.00 H	354	115.7	2.2
3	*5825.00	109.0 AV			2.00 H	354	106.8	2.2
4	#5926.77	54.2 PK	68.2	-14.0	2.00 H	354	49.1	5.1
5	11650.00	57.0 PK	74.0	-17.0	1.42 H	360	44.7	12.3
6	11650.00	46.0 AV	54.0	-8.0	1.42 H	360	33.7	12.3
7	#17475.00	49.3 PK	68.2	-18.9	1.48 H	352	30.9	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	#5603.69	53.0 PK	68.2	-15.2	1.54 V	315	51.3	1.7
2	*5825.00	119.6 PK			1.54 V	315	117.4	2.2
3	*5825.00	110.0 AV			1.54 V	315	107.8	2.2
4	#5937.93	56.5 PK	68.2	-11.7	1.54 V	315	54.2	2.3
5	11650.00	66.8 PK	74.0	-7.2	1.22 V	358	54.5	12.3
6	11650.00	53.4 AV	54.0	-0.6	1.22 V	358	41.1	12.3
7	#17475.00	56.6 PK	68.2	-11.6	1.18 V	346	38.2	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.

<b>RF Mode</b>	TX 802.11ac (VHT40)	<b>Channel</b>	CH 38 : 5190 MHz
<b>Frequency Range</b>	1GHz ~ 40GHz	<b>Detector Function</b>	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	61.0 PK	74.0	-13.0	1.75 H	324	59.5	1.5
2	5150.00	51.9 AV	54.0	-2.1	1.75 H	324	50.4	1.5
3	*5190.00	110.3 PK			1.75 H	324	108.9	1.4
4	*5190.00	100.8 AV			1.75 H	324	99.4	1.4
5	#10380.00	58.0 PK	68.2	-10.2	1.44 H	357	47.2	10.8
6	15570.00	49.8 PK	74.0	-24.2	1.40 H	354	37.7	12.1
7	15570.00	38.7 AV	54.0	-15.3	1.40 H	354	26.6	12.1

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	5149.34	63.1 PK	74.0	-10.9	1.15 V	318	61.6	1.5
2	5149.34	51.7 AV	54.0	-2.3	1.15 V	318	50.2	1.5
3	*5190.00	110.0 PK			1.15 V	318	108.6	1.4
4	*5190.00	99.5 AV			1.15 V	318	98.1	1.4
5	#10380.00	61.1 PK	68.2	-7.1	1.59 V	359	50.3	10.8
6	15570.00	51.1 PK	74.0	-22.9	1.84 V	339	39.0	12.1
7	15570.00	39.6 AV	54.0	-14.4	1.84 V	339	27.5	12.1

**Remarks:**

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

<b>RF Mode</b>	TX 802.11ac (VHT40)	<b>Channel</b>	CH 46 : 5230 MHz
<b>Frequency Range</b>	1GHz ~ 40GHz	<b>Detector Function</b>	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	5148.74	55.6 PK	74.0	-18.4	1.90 H	310	54.1	1.5
2	5148.74	43.8 AV	54.0	-10.2	1.90 H	310	42.3	1.5
3	*5230.00	115.7 PK			1.90 H	310	114.4	1.3
4	*5230.00	106.2 AV			1.90 H	310	104.9	1.3
5	5353.42	54.9 PK	74.0	-19.1	1.90 H	310	53.6	1.3
6	5353.42	42.9 AV	54.0	-11.1	1.90 H	310	41.6	1.3
7	#10460.00	57.9 PK	68.2	-10.3	1.39 H	360	47.0	10.9
8	15690.00	50.1 PK	74.0	-23.9	1.40 H	343	38.2	11.9
9	15690.00	38.6 AV	54.0	-15.4	1.40 H	343	26.7	11.9

**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	5148.74	63.6 PK	74.0	-10.4	1.12 V	320	62.1	1.5
2	5148.74	53.0 AV	54.0	-1.0	1.12 V	320	51.5	1.5
3	*5230.00	116.1 PK			1.12 V	320	114.8	1.3
4	*5230.00	106.7 AV			1.12 V	320	105.4	1.3
5	5353.42	56.8 PK	74.0	-17.2	1.12 V	320	55.5	1.3
6	5353.42	45.2 AV	54.0	-8.8	1.12 V	320	43.9	1.3
7	#10460.00	60.7 PK	68.2	-7.5	1.67 V	355	49.8	10.9
8	15690.00	51.1 PK	74.0	-22.9	1.87 V	346	39.2	11.9
9	15690.00	39.4 AV	54.0	-14.6	1.87 V	346	27.5	11.9

**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.

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

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

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	54.9 PK	74.0	-19.1	1.86 H	322	53.4	1.5
2	5150.00	43.0 AV	54.0	-11.0	1.86 H	322	41.5	1.5
3	*5270.00	111.9 PK			1.86 H	322	110.8	1.1
4	*5270.00	102.8 AV			1.86 H	322	101.7	1.1
5	#10540.00	58.1 PK	68.2	-10.1	1.38 H	360	47.1	11.0
6	15810.00	49.4 PK	74.0	-24.6	1.42 H	354	37.6	11.8
7	15810.00	38.1 AV	54.0	-15.9	1.42 H	354	26.3	11.8

**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	5150.00	58.6 PK	74.0	-15.4	1.15 V	318	57.1	1.5
2	5150.00	44.8 AV	54.0	-9.2	1.15 V	318	43.3	1.5
3	*5270.00	112.2 PK			1.15 V	318	111.1	1.1
4	*5270.00	103.4 AV			1.15 V	318	102.3	1.1
5	#10540.00	60.4 PK	68.2	-7.8	1.60 V	338	49.4	11.0
6	15810.00	50.9 PK	74.0	-23.1	1.80 V	340	39.1	11.8
7	15810.00	39.0 AV	54.0	-15.0	1.80 V	340	27.2	11.8

**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.

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

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

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5310.00	110.0 PK			1.69 H	321	108.8	1.2
2	*5310.00	100.7 AV			1.69 H	321	99.5	1.2
3	5350.00	61.7 PK	74.0	-12.3	1.69 H	321	60.4	1.3
4	5350.00	51.1 AV	54.0	-2.9	1.69 H	321	49.8	1.3
5	10620.00	57.8 PK	74.0	-16.2	1.40 H	360	46.7	11.1
6	10620.00	46.6 AV	54.0	-7.4	1.40 H	360	35.5	11.1
7	15930.00	48.9 PK	74.0	-25.1	1.47 H	342	36.8	12.1
8	15930.00	38.0 AV	54.0	-16.0	1.47 H	342	25.9	12.1

**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	*5310.00	110.9 PK			1.22 V	318	109.7	1.2
2	*5310.00	102.1 AV			1.22 V	318	100.9	1.2
3	5353.54	62.9 PK	74.0	-11.1	1.22 V	318	61.6	1.3
4	5353.54	50.2 AV	54.0	-3.8	1.22 V	318	48.9	1.3
5	10620.00	60.6 PK	74.0	-13.4	1.58 V	354	49.5	11.1
6	10620.00	47.6 AV	54.0	-6.4	1.58 V	354	36.5	11.1
7	15930.00	50.7 PK	74.0	-23.3	1.84 V	352	38.6	12.1
8	15930.00	39.2 AV	54.0	-14.8	1.84 V	352	27.1	12.1

**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.

<b>RF Mode</b>	TX 802.11ac (VHT40)	<b>Channel</b>	CH 102 : 5510 MHz
<b>Frequency Range</b>	1GHz ~ 40GHz	<b>Detector Function</b>	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	58.9 PK	74.0	-15.1	1.96 H	311	57.4	1.5
2	5460.00	47.7 AV	54.0	-6.3	1.96 H	311	46.2	1.5
3	#5470.00	61.6 PK	68.2	-6.6	1.96 H	311	60.1	1.5
4	*5510.00	111.3 PK			1.96 H	311	109.8	1.5
5	*5510.00	101.9 AV			1.96 H	311	100.4	1.5
6	11020.00	57.5 PK	74.0	-16.5	1.37 H	357	45.7	11.8
7	11020.00	46.5 AV	54.0	-7.5	1.37 H	357	34.7	11.8
8	#16530.00	50.0 PK	68.2	-18.2	1.51 H	356	35.7	14.3

**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	60.3 PK	74.0	-13.7	1.19 V	333	58.8	1.5
2	5460.00	48.7 AV	54.0	-5.3	1.19 V	333	47.2	1.5
3	#5470.00	65.2 PK	68.2	-3.0	1.19 V	333	63.7	1.5
4	*5510.00	114.3 PK			1.19 V	333	112.8	1.5
5	*5510.00	103.4 AV			1.19 V	333	101.9	1.5
6	11020.00	61.0 PK	74.0	-13.0	1.69 V	354	49.2	11.8
7	11020.00	48.4 AV	54.0	-5.6	1.69 V	354	36.6	11.8
8	#16530.00	51.7 PK	68.2	-16.5	1.77 V	344	37.4	14.3

**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.

<b>RF Mode</b>	TX 802.11ac (VHT40)	<b>Channel</b>	CH 110 : 5550 MHz
<b>Frequency Range</b>	1GHz ~ 40GHz	<b>Detector Function</b>	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	112.2 PK			1.85 H	309	110.7	1.5
2	*5550.00	103.0 AV			1.85 H	309	101.5	1.5
3	11100.00	57.3 PK	74.0	-16.7	1.37 H	360	45.4	11.9
4	11100.00	46.3 AV	54.0	-7.7	1.37 H	360	34.4	11.9
5	#16650.00	50.0 PK	68.2	-18.2	1.47 H	338	34.7	15.3

**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	*5550.00	114.2 PK			1.22 V	333	112.7	1.5
2	*5550.00	104.8 AV			1.22 V	333	103.3	1.5
3	11100.00	60.4 PK	74.0	-13.6	1.67 V	347	48.5	11.9
4	11100.00	47.5 AV	54.0	-6.5	1.67 V	347	35.6	11.9
5	#16650.00	51.3 PK	68.2	-16.9	1.87 V	337	36.0	15.3

**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.

<b>RF Mode</b>	TX 802.11ac (VHT40)	<b>Channel</b>	CH 134 : 5670 MHz
<b>Frequency Range</b>	1GHz ~ 40GHz	<b>Detector Function</b>	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	112.1 PK			1.86 H	301	110.2	1.9
2	*5670.00	102.8 AV			1.86 H	301	100.9	1.9
3	#5725.00	55.0 PK	68.2	-13.2	1.86 H	301	53.0	2.0
4	11340.00	57.6 PK	74.0	-16.4	1.48 H	360	45.2	12.4
5	11340.00	46.2 AV	54.0	-7.8	1.48 H	360	33.8	12.4
6	#17010.00	49.9 PK	68.2	-18.3	1.41 H	338	33.3	16.6

**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	*5670.00	115.0 PK			1.36 V	331	113.1	1.9
2	*5670.00	104.9 AV			1.36 V	331	103.0	1.9
3	#5725.00	65.6 PK	68.2	-2.6	1.36 V	331	63.6	2.0
4	11340.00	61.0 PK	74.0	-13.0	1.65 V	343	48.6	12.4
5	11340.00	48.3 AV	54.0	-5.7	1.65 V	343	35.9	12.4
6	#17010.00	51.3 PK	68.2	-16.9	1.87 V	356	34.7	16.6

**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.

<b>RF Mode</b>	TX 802.11ac (VHT40)	<b>Channel</b>	CH 142 : 5710 MHz
<b>Frequency Range</b>	1GHz ~ 40GHz	<b>Detector Function</b>	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	60.8 PK	74.0	-13.2	1.84 H	313	59.3	1.5
2	5460.00	49.2 AV	54.0	-4.8	1.84 H	313	47.7	1.5
3	#5470.00	61.7 PK	68.2	-6.5	1.84 H	313	60.2	1.5
4	*5710.00	115.8 PK			1.84 H	313	113.8	2.0
5	*5710.00	106.5 AV			1.84 H	313	104.5	2.0
6	#5850.00	60.8 PK	68.2	-7.4	1.84 H	313	58.5	2.3
7	11420.00	57.8 PK	74.0	-16.2	1.43 H	360	45.2	12.6
8	11420.00	47.1 AV	54.0	-6.9	1.43 H	360	34.5	12.6
9	#17130.00	49.2 PK	68.2	-19.0	1.37 H	313	32.7	16.5

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

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	60.6 PK	74.0	-13.4	1.22 V	307	59.1	1.5
2	5460.00	49.2 AV	54.0	-4.8	1.22 V	307	47.7	1.5
3	#5470.00	61.9 PK	68.2	-6.3	1.22 V	307	60.4	1.5
4	*5710.00	116.2 PK			1.22 V	307	114.2	2.0
5	*5710.00	106.9 AV			1.22 V	307	104.9	2.0
6	#5850.00	60.8 PK	68.2	-7.4	1.22 V	307	58.5	2.3
7	11420.00	60.3 PK	74.0	-13.7	1.60 V	360	47.7	12.6
8	11420.00	47.8 AV	54.0	-6.2	1.60 V	360	35.2	12.6
9	#17130.00	51.5 PK	68.2	-16.7	1.81 V	346	35.0	16.5

**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.

<b>RF Mode</b>	TX 802.11ac (VHT40)	<b>Channel</b>	CH 151 : 5755 MHz
<b>Frequency Range</b>	1GHz ~ 40GHz	<b>Detector Function</b>	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	#5649.29	58.9 PK	68.2	-9.3	2.00 H	357	54.4	4.5
2	*5755.00	114.7 PK			2.00 H	357	112.6	2.1
3	*5755.00	105.9 AV			2.00 H	357	103.8	2.1
4	#5944.02	52.4 PK	68.2	-15.8	2.00 H	357	47.3	5.1
5	11510.00	57.7 PK	74.0	-16.3	1.43 H	350	45.1	12.6
6	11510.00	46.8 AV	54.0	-7.2	1.43 H	350	34.2	12.6
7	#17265.00	49.3 PK	68.2	-18.9	1.43 H	325	32.5	16.8

**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	#5634.95	63.7 PK	68.2	-4.5	1.50 V	316	59.2	4.5
2	*5755.00	116.9 PK			1.50 V	316	114.8	2.1
3	*5755.00	108.1 AV			1.50 V	316	106.0	2.1
4	#5935.89	55.7 PK	68.2	-12.5	1.50 V	316	50.6	5.1
5	11510.00	66.7 PK	74.0	-7.3	1.23 V	360	54.1	12.6
6	11510.00	53.2 AV	54.0	-0.8	1.23 V	360	40.6	12.6
7	#17265.00	57.0 PK	68.2	-11.2	1.18 V	339	40.2	16.8

**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.

<b>RF Mode</b>	TX 802.11ac (VHT40)	<b>Channel</b>	CH 159 : 5795 MHz
<b>Frequency Range</b>	1GHz ~ 40GHz	<b>Detector Function</b>	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	#5616.96	55.3 PK	68.2	-12.9	2.06 H	356	50.8	4.5
2	*5795.00	114.6 PK			2.06 H	356	112.4	2.2
3	*5795.00	106.0 AV			2.06 H	356	103.8	2.2
4	#5927.59	58.3 PK	68.2	-9.9	2.06 H	356	53.2	5.1
5	11590.00	57.4 PK	74.0	-16.6	1.36 H	348	45.0	12.4
6	11590.00	46.0 AV	54.0	-8.0	1.36 H	348	33.6	12.4
7	#17385.00	49.9 PK	68.2	-18.3	1.50 H	356	32.0	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	#5621.46	57.8 PK	68.2	-10.4	1.54 V	317	53.3	4.5
2	*5795.00	116.6 PK			1.54 V	317	114.4	2.2
3	*5795.00	107.7 AV			1.54 V	317	105.5	2.2
4	#5924.93	61.2 PK	68.3	-7.1	1.54 V	317	56.1	5.1
5	11590.00	66.6 PK	74.0	-7.4	1.16 V	353	54.2	12.4
6	11590.00	53.1 AV	54.0	-0.9	1.16 V	353	40.7	12.4
7	#17385.00	56.2 PK	68.2	-12.0	1.14 V	343	38.3	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.
6. " # ": The radiated frequency is out of the restricted band.

<b>RF Mode</b>	TX 802.11ac (VHT80)	<b>Channel</b>	CH 42 : 5210 MHz
<b>Frequency Range</b>	1GHz ~ 40GHz	<b>Detector Function</b>	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	64.1 PK	74.0	-9.9	1.76 H	322	62.6	1.5
2	5150.00	53.5 AV	54.0	-0.5	1.76 H	322	52.0	1.5
3	*5210.00	105.7 PK			1.76 H	322	104.3	1.4
4	*5210.00	96.0 AV			1.76 H	322	94.6	1.4
5	5360.10	52.0 PK	74.0	-22.0	1.76 H	322	50.6	1.4
6	5360.10	40.5 AV	54.0	-13.5	1.76 H	322	39.1	1.4
7	#10420.00	57.2 PK	68.2	-11.0	1.45 H	357	46.3	10.9
8	15630.00	49.2 PK	74.0	-24.8	1.50 H	348	37.2	12.0
9	15630.00	38.2 AV	54.0	-15.8	1.50 H	348	26.2	12.0

**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	5149.30	67.1 PK	74.0	-6.9	1.26 V	319	65.6	1.5
2	<b>5149.30</b>	<b>53.9 AV</b>	<b>54.0</b>	<b>-0.1</b>	<b>1.26 V</b>	<b>319</b>	<b>52.4</b>	<b>1.5</b>
3	*5210.00	106.0 PK			1.26 V	319	104.6	1.4
4	*5210.00	95.6 AV			1.26 V	319	94.2	1.4
5	5350.00	54.0 PK	74.0	-20.0	1.26 V	319	52.7	1.3
6	5350.00	41.3 AV	54.0	-12.7	1.26 V	319	40.0	1.3
7	#10420.00	61.0 PK	68.2	-7.2	1.64 V	350	50.1	10.9
8	15630.00	51.1 PK	74.0	-22.9	1.83 V	351	39.1	12.0
9	15630.00	39.5 AV	54.0	-14.5	1.83 V	351	27.5	12.0

**Remarks:**

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

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

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

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	54.6 PK	74.0	-19.4	1.75 H	318	53.1	1.5
2	5150.00	44.8 AV	54.0	-9.2	1.75 H	318	43.3	1.5
3	*5290.00	105.2 PK			1.75 H	318	104.1	1.1
4	*5290.00	96.6 AV			1.75 H	318	95.5	1.1
5	5350.00	55.4 PK	74.0	-18.6	1.75 H	318	54.1	1.3
<b>6</b>	<b>5350.00</b>	<b>53.9 AV</b>	<b>54.0</b>	<b>-0.1</b>	<b>1.75 H</b>	<b>318</b>	<b>52.6</b>	<b>1.3</b>
7	#10580.00	58.2 PK	68.2	-10.0	1.39 H	360	47.2	11.0
8	15870.00	49.3 PK	74.0	-24.7	1.50 H	326	37.1	12.2
9	15870.00	38.3 AV	54.0	-15.7	1.50 H	326	26.1	12.2

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

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	57.3 PK	74.0	-16.7	1.22 V	321	55.8	1.5
2	5150.00	45.0 AV	54.0	-9.0	1.22 V	321	43.5	1.5
3	*5290.00	107.5 PK			1.22 V	321	106.4	1.1
4	*5290.00	97.4 AV			1.22 V	321	96.3	1.1
5	5353.80	65.8 PK	74.0	-8.2	1.22 V	321	64.5	1.3
<b>6</b>	<b>5353.80</b>	<b>53.9 AV</b>	<b>54.0</b>	<b>-0.1</b>	<b>1.22 V</b>	<b>321</b>	<b>52.6</b>	<b>1.3</b>
7	#10580.00	60.5 PK	68.2	-7.7	1.62 V	340	49.5	11.0
8	15870.00	50.5 PK	74.0	-23.5	1.82 V	341	38.3	12.2
9	15870.00	38.9 AV	54.0	-15.1	1.82 V	341	26.7	12.2

**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.

<b>RF Mode</b>	TX 802.11ac (VHT80)	<b>Channel</b>	CH 106 : 5530 MHz
<b>Frequency Range</b>	1GHz ~ 40GHz	<b>Detector Function</b>	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	5454.00	58.4 PK	74.0	-15.6	1.94 H	310	56.9	1.5
2	5454.00	52.1 AV	54.0	-1.9	1.94 H	310	50.6	1.5
3	#5470.00	60.0 PK	68.2	-8.2	1.94 H	310	58.5	1.5
4	*5530.00	107.7 PK			1.94 H	310	106.2	1.5
5	*5530.00	98.0 AV			1.94 H	310	96.5	1.5
6	#5791.10	53.2 PK	68.2	-15.0	1.94 H	310	51.1	2.1
7	11060.00	57.7 PK	74.0	-16.3	1.41 H	360	45.8	11.9
8	11060.00	46.4 AV	54.0	-7.6	1.41 H	360	34.5	11.9
9	#16590.00	49.6 PK	68.2	-18.6	1.45 H	337	34.7	14.9

**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	5458.20	64.9 PK	74.0	-9.1	1.25 V	318	63.4	1.5
2	5458.20	53.6 AV	54.0	-0.4	1.25 V	318	52.1	1.5
3	#5470.00	65.2 PK	68.2	-3.0	1.25 V	318	63.7	1.5
4	*5530.00	109.5 PK			1.25 V	318	108.0	1.5
5	*5530.00	100.0 AV			1.25 V	318	98.5	1.5
6	#5731.80	52.5 PK	68.2	-15.7	1.25 V	318	50.4	2.1
7	11060.00	60.7 PK	74.0	-13.3	1.64 V	338	48.8	11.9
8	11060.00	48.0 AV	54.0	-6.0	1.64 V	338	36.1	11.9
9	#16590.00	50.9 PK	68.2	-17.3	1.83 V	360	36.0	14.9

**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.

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

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

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5610.00	110.5 PK			1.86 H	326	108.8	1.7
2	*5610.00	100.8 AV			1.86 H	326	99.1	1.7
3	#5725.00	55.7 PK	68.2	-12.5	1.86 H	326	53.7	2.0
4	11220.00	57.6 PK	74.0	-16.4	1.44 H	352	45.6	12.0
5	11220.00	46.3 AV	54.0	-7.7	1.44 H	352	34.3	12.0
6	#16830.00	50.3 PK	68.2	-17.9	1.48 H	355	34.1	16.2

**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	*5610.00	112.0 PK			1.50 V	317	110.3	1.7
2	*5610.00	102.3 AV			1.50 V	317	100.6	1.7
3	#5725.00	68.0 PK	68.2	-0.2	1.50 V	317	66.0	2.0
4	11220.00	60.6 PK	74.0	-13.4	1.69 V	344	48.6	12.0
5	11220.00	47.5 AV	54.0	-6.5	1.69 V	344	35.5	12.0
6	#16830.00	50.7 PK	68.2	-17.5	1.78 V	360	34.5	16.2

**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.

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

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

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	55.4 PK	74.0	-18.6	1.86 H	322	53.9	1.5
2	5460.00	43.4 AV	54.0	-10.6	1.86 H	322	41.9	1.5
3	#5470.00	56.9 PK	68.2	-11.3	1.86 H	322	55.4	1.5
4	*5690.00	111.4 PK			1.86 H	322	109.5	1.9
5	*5690.00	101.9 AV			1.86 H	322	100.0	1.9
6	#5850.00	59.6 PK	68.2	-8.6	1.86 H	322	57.3	2.3
7	11380.00	57.6 PK	74.0	-16.4	1.47 H	360	45.1	12.5
8	11380.00	46.6 AV	54.0	-7.4	1.47 H	360	34.1	12.5
9	#17070.00	49.2 PK	68.2	-19.0	1.48 H	329	32.8	16.4

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

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	54.9 PK	74.0	-19.1	1.47 V	318	53.4	1.5
2	5460.00	43.1 AV	54.0	-10.9	1.47 V	318	41.6	1.5
3	#5470.00	57.2 PK	68.2	-11.0	1.47 V	318	55.7	1.5
4	*5690.00	113.3 PK			1.47 V	318	111.4	1.9
5	*5690.00	103.4 AV			1.47 V	318	101.5	1.9
6	#5850.00	63.5 PK	68.2	-4.7	1.47 V	318	61.2	2.3
7	11380.00	60.4 PK	74.0	-13.6	1.59 V	339	47.9	12.5
8	11380.00	47.6 AV	54.0	-6.4	1.59 V	339	35.1	12.5
9	#17070.00	51.7 PK	68.2	-16.5	1.78 V	346	35.3	16.4

**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.

<b>RF Mode</b>	TX 802.11ac (VHT80)	<b>Channel</b>	CH 155 : 5775 MHz
<b>Frequency Range</b>	1GHz ~ 40GHz	<b>Detector Function</b>	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	#5646.39	62.1 PK	68.2	-6.1	2.04 H	354	57.6	4.5
2	*5775.00	110.9 PK			2.04 H	354	108.7	2.2
3	*5775.00	101.8 AV			2.04 H	354	99.6	2.2
4	#5927.83	59.4 PK	68.2	-8.8	2.04 H	354	54.3	5.1
5	11550.00	58.1 PK	74.0	-15.9	1.43 H	360	45.7	12.4
6	11550.00	47.0 AV	54.0	-7.0	1.43 H	360	34.6	12.4
7	#17325.00	50.3 PK	68.2	-17.9	1.47 H	343	33.1	17.2

**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	#5648.70	67.7 PK	68.2	-0.5	1.58 V	316	65.9	1.8
2	*5775.00	114.3 PK			1.58 V	316	112.1	2.2
3	*5775.00	103.5 AV			1.58 V	316	101.3	2.2
4	#5926.82	64.6 PK	68.2	-3.6	1.58 V	316	62.4	2.2
5	11550.00	66.5 PK	74.0	-7.5	1.17 V	360	54.1	12.4
6	11550.00	52.9 AV	54.0	-1.1	1.17 V	360	40.5	12.4
7	#17325.00	56.0 PK	68.2	-12.2	1.17 V	355	38.8	17.2

**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.

### Below 1GHz Data

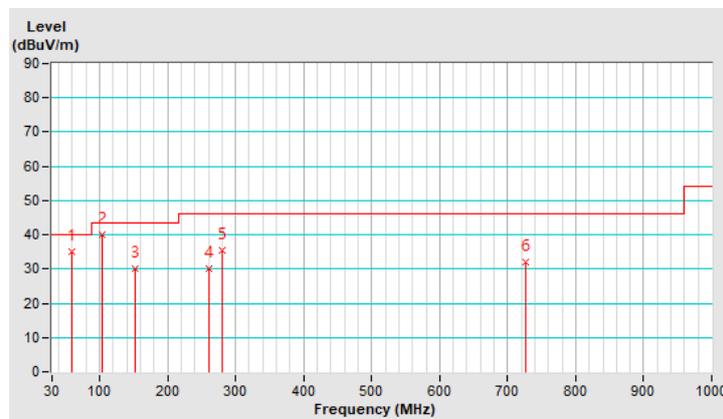
<b>RF Mode</b>	TX 802.11ac (VHT40)	<b>Channel</b>	CH 151 : 5755 MHz
<b>Frequency Range</b>	9kHz ~ 1GHz	<b>Detector Function</b>	Quasi-Peak (QP)

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

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	59.50	34.9 QP	40.0	-5.1	3.00 H	157	48.0	-13.1
2	104.36	40.0 QP	43.5	-3.5	2.00 H	74	55.7	-15.7
3	152.25	30.1 QP	43.5	-13.4	2.00 H	50	42.1	-12.0
4	261.67	30.0 QP	46.0	-16.0	1.00 H	136	42.3	-12.3
5	279.62	35.4 QP	46.0	-10.6	1.00 H	259	46.8	-11.4
6	727.34	32.0 QP	46.0	-14.0	3.00 H	5	32.0	0.0

#### 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 of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



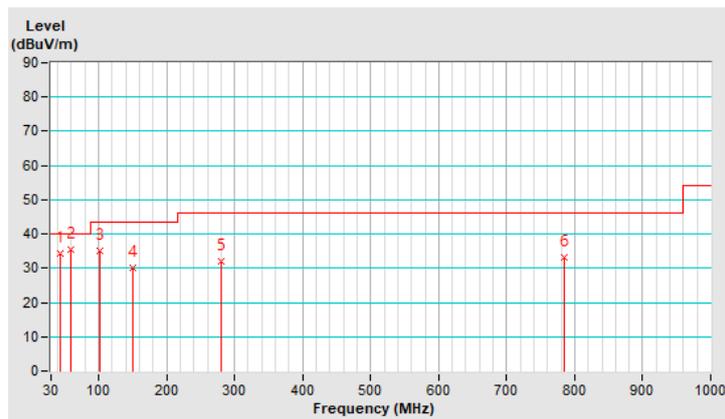
<b>RF Mode</b>	TX 802.11ac (VHT40)	<b>Channel</b>	CH 151 : 5755 MHz
<b>Frequency Range</b>	9kHz ~ 1GHz	<b>Detector Function</b>	Quasi-Peak (QP)

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

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	43.46	34.4 QP	40.0	-5.6	1.00 V	338	47.1	-12.7
2	58.42	35.5 QP	40.0	-4.5	1.00 V	252	48.6	-13.1
3	101.74	35.2 QP	43.5	-8.3	1.00 V	77	51.5	-16.3
4	151.13	30.1 QP	43.5	-13.4	1.00 V	78	42.1	-12.0
5	281.08	31.9 QP	46.0	-14.1	1.50 V	55	43.2	-11.3
6	785.13	33.3 QP	46.0	-12.7	3.00 V	332	32.0	1.3

**Remarks:**

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



## 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.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver R&S	ESCS 30	847124/029	2020/10/20	2021/10/19
LISN R&S	ESH3-Z5	848773/004	2020/10/27	2021/10/26
LISN R & S	ESH3-Z5	835239/001	2021/3/26	2022/3/25
50 ohms Terminator	50	3	2020/10/26	2021/10/25
RF Coaxial Cable JYEBO	5D-FB	COCCAB-001	2020/9/26	2021/9/25
Fixed attenuator STI	STI02-2200-10	005	2020/8/29	2021/8/28
Software BVADT	BVADT_Cond_ V7.3.7.4	NA	NA	NA

**Note:**

1. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Conduction 1.
3. Tested Date: 2021/8/26

#### 4.2.3 Test Procedure

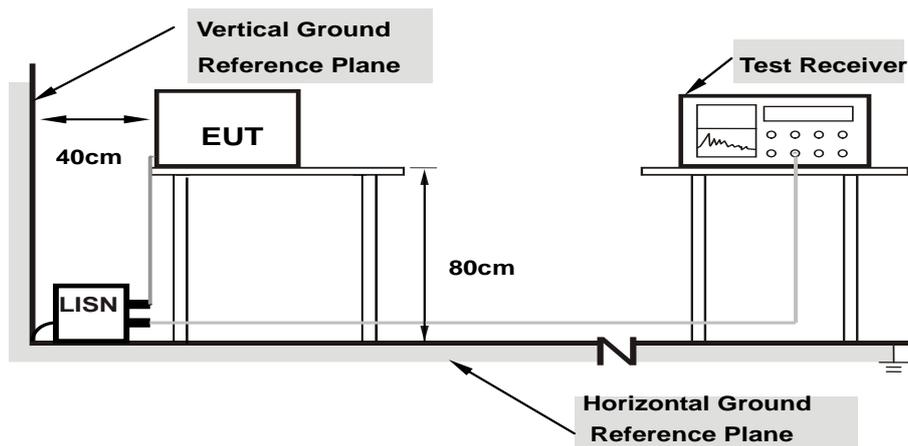
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance 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:** All modes of operation were investigated and the worst-case emissions are reported.

#### 4.2.4 Deviation from Test Standard

No deviation.

#### 4.2.5 Test Setup



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

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

#### 4.2.6 EUT Operating Condition

Same as 4.1.6.

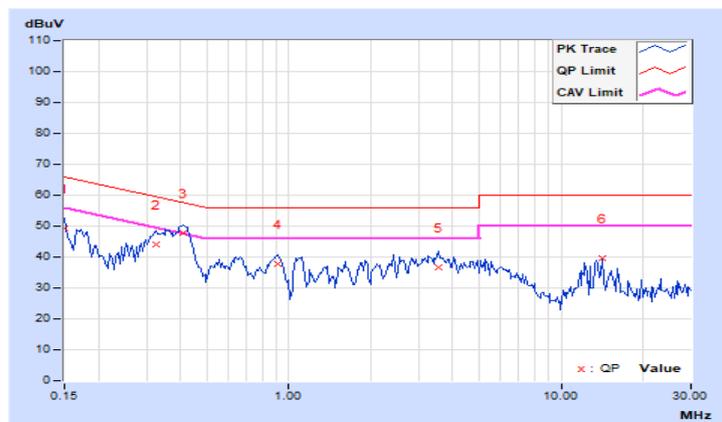
## 4.2.7 Test Results

<b>RF Mode</b>	TX 802.11ac (VHT40)	<b>Channel</b>	CH 151 : 5755 MHz
<b>Frequency Range</b>	150kHz ~ 30MHz	<b>Detector Function &amp; Resolution Bandwidth</b>	Quasi-Peak (QP) / Average (AV), 9kHz

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.95	39.22	22.38	49.17	32.33	66.00	56.00	-16.83	-23.67
2	0.32578	9.98	34.01	27.78	43.99	37.76	59.56	49.56	-15.57	-11.80
<b>3</b>	<b>0.40781</b>	<b>9.99</b>	<b>37.61</b>	<b>32.57</b>	<b>47.60</b>	<b>42.56</b>	<b>57.69</b>	<b>47.69</b>	<b>-10.09</b>	<b>-5.13</b>
4	0.91172	10.02	27.67	22.71	37.69	32.73	56.00	46.00	-18.31	-13.27
5	3.52734	10.15	26.65	17.43	36.80	27.58	56.00	46.00	-19.20	-18.42
6	14.15234	10.78	28.96	25.72	39.74	36.50	60.00	50.00	-20.26	-13.50

## 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

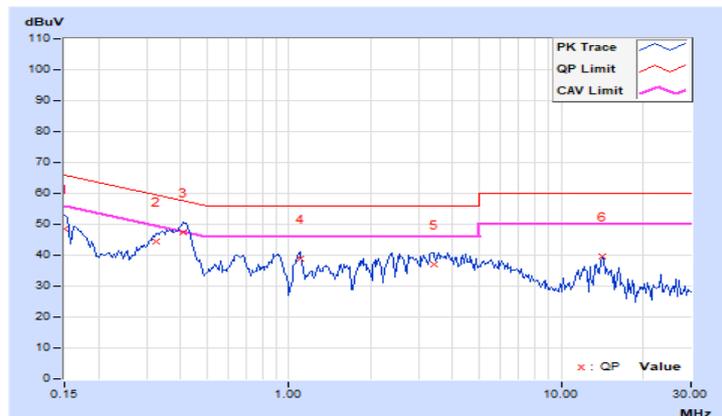


<b>RF Mode</b>	TX 802.11ac (VHT40)	<b>Channel</b>	CH 151 : 5755 MHz
<b>Frequency Range</b>	150kHz ~ 30MHz	<b>Detector Function &amp; Resolution Bandwidth</b>	Quasi-Peak (QP) / Average (AV), 9kHz

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.92	38.51	31.39	48.43	41.31	66.00	56.00	-17.57	-14.69
2	0.32578	9.96	34.58	28.29	44.54	38.25	59.56	49.56	-15.02	-11.31
3	0.40781	9.96	37.47	32.13	47.43	42.09	57.69	47.69	-10.26	-5.60
4	1.09766	10.00	28.96	24.20	38.96	34.20	56.00	46.00	-17.04	-11.80
5	3.39453	10.10	27.12	20.59	37.22	30.69	56.00	46.00	-18.78	-15.31
6	14.21484	10.60	28.99	25.59	39.59	36.19	60.00	50.00	-20.41	-13.81

**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)
	√	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.

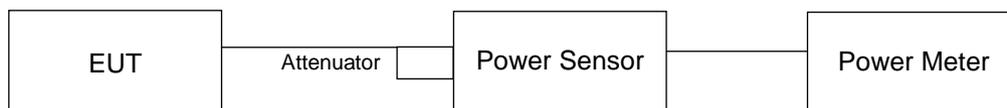
#### 4.3.2 Test Setup

##### FOR POWER OUTPUT MEASUREMENT

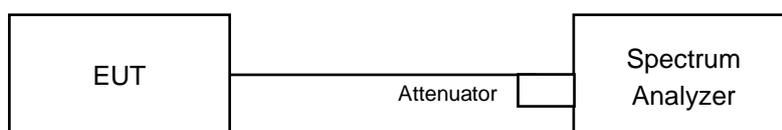
For channel straddling 5725MHz:



For other channels:



##### FOR 26dB OCCUPIED BANDWIDTH



#### 4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

#### 4.3.4 Test Procedure

##### **FOR POWER OUTPUT MEASUREMENT**

##### **For channel straddling 5725MHz:**

Follow FCC KDB 789033 UNII test procedure:

##### Method SA-1

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1MHz.
3. Set the VBW  $\geq 3 \times$  RBW.
4. Number of points in sweep  $\geq 2 \text{ Span} / \text{RBW}$ .
5. Sweep time = auto.
6. Set trigger to free run (duty cycle  $\geq 98$  percent)
7. Detector = RMS.
8. Trace average at least 100 traces in power averaging mode
9. Compute power by integrating the spectrum across the 26 dB EBW of the signal.

##### **For other channels:**

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

##### **FOR 26dB OCCUPIED BANDWIDTH**

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

#### 4.3.5 Deviation from Test Standard

No deviation.

#### 4.3.6 EUT Operating Condition

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

## 4.3.7 Test Results

**POWER OUTPUT**
**802.11a**

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	15.28	15.02	65.497	18.16	21.19	Pass
40	5200	15.42	14.95	66.095	18.20	21.19	Pass
48	5240	15.26	15.06	65.636	18.17	21.19	Pass
52	5260	14.90	14.73	60.62	17.83	21.19	Pass
60	5300	15.01	14.77	61.687	17.90	21.19	Pass
64	5320	15.16	14.85	63.359	18.02	21.19	Pass
100	5500	14.95	14.77	61.252	17.87	21.19	Pass
116	5580	14.98	14.82	61.816	17.91	21.19	Pass
140	5700	15.20	14.88	63.874	18.05	21.19	Pass
*144 (U-NII-2C Band)	5720	14.39	13.83	51.634	17.13	19.99	Pass
*144 (U-NII-3 Band)	5720	6.93	6.27	9.168	9.62	27.19	Pass
149	5745	20.75	20.41	228.751	23.59	27.19	Pass
157	5785	20.72	20.51	230.493	23.63	27.19	Pass
165	5825	20.69	20.57	231.245	23.64	27.19	Pass

Note: \* Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

1. For U-NII-1 band: The max. gain is 8.81dBi > 6dBi, therefore the limit needs to reduce, so the power limit shall be reduced to  $24 - (8.81 - 6) = 21.19\text{dBm}$ .
2. For U-NII-2A, U-NII-2C band: The max. gain is 8.81dBi > 6dBi, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(8.81-6)".
3. For U-NII-3 band: The max. gain is 8.81dBi > 6dBi, therefore the limit needs to reduce, so the power limit shall be reduced to  $30 - (8.81 - 6) = 27.19\text{dBm}$ .

**Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth**

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	20.27	24.06 > 24
60	5300	20.45	24.1 > 24
64	5320	20.27	24.06 > 24
100	5500	20.42	24.1 > 24
116	5580	20.45	24.1 > 24
140	5700	20.29	24.07 > 24
144 (U-NII-2C Band)	5720	15.17	22.8 < 24

**802.11ac (VHT20)**

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	15.19	14.77	63.029	18.00	21.19	Pass
40	5200	15.15	14.85	63.283	18.01	21.19	Pass
48	5240	15.11	15.02	64.203	18.08	21.19	Pass
52	5260	14.73	14.64	58.824	17.70	21.19	Pass
60	5300	14.89	14.62	59.805	17.77	21.19	Pass
64	5320	14.90	14.59	59.677	17.76	21.19	Pass
100	5500	15.07	14.66	61.378	17.88	21.19	Pass
116	5580	14.94	14.74	60.974	17.85	21.19	Pass
140	5700	15.01	14.88	62.457	17.96	21.19	Pass
*144 (U-NII-2C Band)	5720	14.23	13.85	50.751	17.05	20.02	Pass
*144 (U-NII-3 Band)	5720	7.23	6.81	10.082	10.04	27.19	Pass
149	5745	20.53	20.43	223.387	23.49	27.19	Pass
157	5785	20.51	20.57	226.485	23.55	27.19	Pass
165	5825	20.58	20.53	227.267	23.57	27.19	Pass

Note: \* Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

1. For U-NII-1 band: The max. gain is 8.81dBi > 6dBi, , therefore the limit needs to reduce, so the power limit shall be reduced to  $24-(8.81-6) = 21.19\text{dBm}$ .
2. For U-NII-2A, U-NII-2C band: The max. gain is 8.81dBi > 6dBi, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(8.81-6)".
3. For U-NII-3 band: The max. gain is 8.81dBi > 6dBi, , therefore the limit needs to reduce, so the power limit shall be reduced to  $30-(8.81-6) = 27.19\text{dBm}$ .

**Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth**

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	20.68	24.15 > 24
60	5300	20.72	24.16 > 24
64	5320	20.43	24.1 > 24
100	5500	20.65	24.14 > 24
116	5580	20.69	24.15 > 24
140	5700	20.58	24.13 > 24
144 (U-NII-2C Band)	5720	15.25	22.83 < 24

**802.11ac (VHT40)**

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	15.99	15.70	76.873	18.86	21.19	Pass
46	5230	18.24	17.94	128.911	21.10	21.19	Pass
54	5270	14.83	14.55	58.919	17.70	21.19	Pass
62	5310	14.91	14.72	60.623	17.83	21.19	Pass
102	5510	15.04	14.93	63.033	18.00	21.19	Pass
110	5550	15.08	14.90	63.114	18.00	21.19	Pass
134	5670	15.11	15.02	64.203	18.08	21.19	Pass
*142 (U-NII-2C Band)	5710	14.40	14.02	52.777	17.22	21.19	Pass
*142 (U-NII-3 Band)	5710	2.33	1.91	3.262	5.13	27.19	Pass
151	5755	20.93	20.95	248.331	23.95	27.19	Pass
159	5795	20.90	20.88	245.488	23.90	27.19	Pass

Note: \* Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

1. For U-NII-1 band: The max. gain is 8.81dBi > 6dBi, , therefore the limit needs to reduce, so the power limit shall be reduced to  $24 - (8.81 - 6) = 21.19\text{dBm}$ .
2. For U-NII-2A, U-NII-2C band: The max. gain is 8.81dBi > 6dBi, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(8.81-6)".
3. For U-NII-3 band: The max. gain is 8.81dBi > 6dBi, , therefore the limit needs to reduce, so the power limit shall be reduced to  $30 - (8.81 - 6) = 27.19\text{dBm}$ .

**Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth**

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
54	5270	42.03	27.23 > 24
62	5310	41.77	27.2 > 24
102	5510	41.78	27.2 > 24
110	5550	42.05	27.23 > 24
134	5670	41.93	27.22 > 24
142 (U-NII-2C Band)	5710	35.91	26.55 > 24

**802.11ac (VHT80)**

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	13.74	13.16	44.361	16.47	21.19	Pass
58	5290	15.01	14.83	62.105	17.93	21.19	Pass
106	5530	15.17	15.06	64.948	18.13	21.19	Pass
122	5610	15.17	15.09	65.17	18.14	21.19	Pass
*138 (U-NII-2C Band)	5690	14.21	13.90	50.91	17.07	21.19	Pass
*138 (U-NII-3 Band)	5690	-0.82	-1.36	1.5591	1.93	27.19	Pass
155	5775	19.63	19.57	182.407	22.61	27.19	Pass

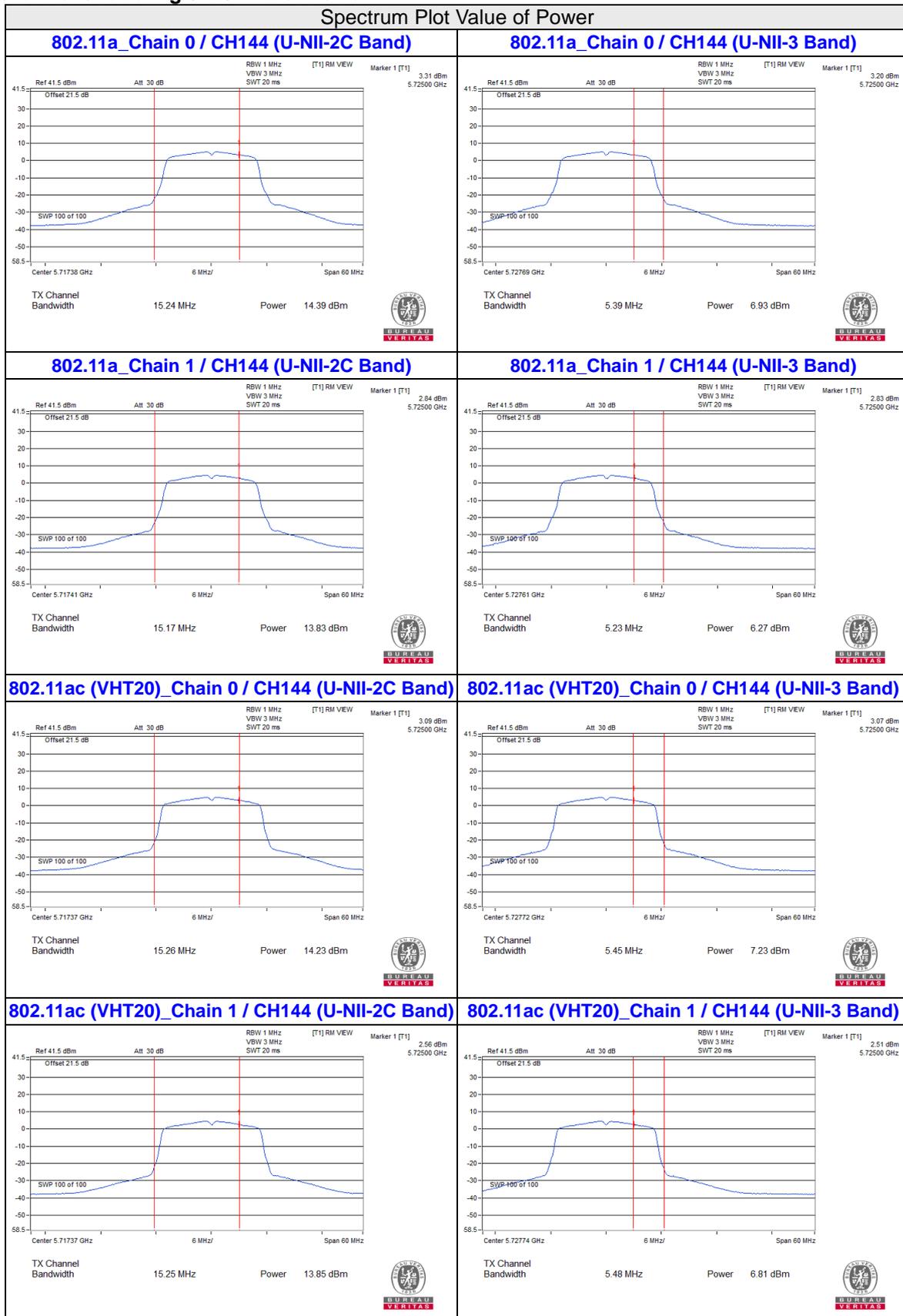
Note: \* Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

1. For U-NII-1 band: The max. gain is 8.81dBi > 6dBi, , therefore the limit needs to reduce, so the power limit shall be reduced to  $24 - (8.81 - 6) = 21.19\text{dBm}$ .
2. For U-NII-2A, U-NII-2C band: The max. gain is 8.81dBi > 6dBi, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(8.81-6)".
3. For U-NII-3 band: The max. gain is 8.81dBi > 6dBi, , therefore the limit needs to reduce, so the power limit shall be reduced to  $30 - (8.81 - 6) = 27.19\text{dBm}$ .

**Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth**

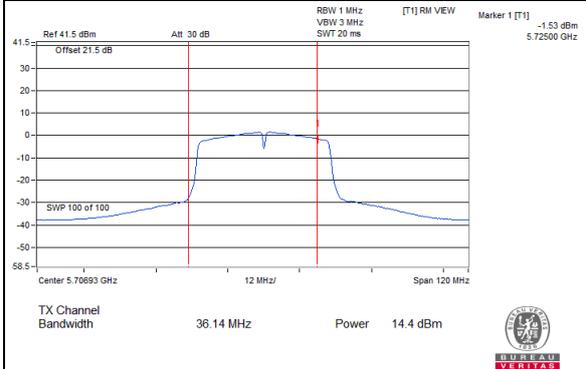
Power Limit = $11\text{dBm} + 10\log B < \text{U-NII-2A, U-NII-2C} >$			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
58	5290	81.61	30.11 > 24
106	5530	82.15	30.14 > 24
122	5610	81.65	30.11 > 24
138 (U-NII-2C Band)	5690	75.86	29.8 > 24

For channel straddling 5725MHz of Power

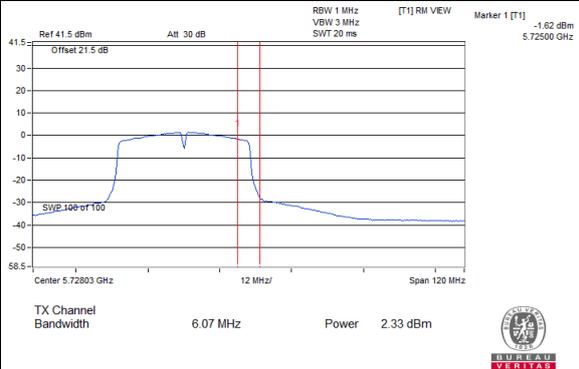


### Spectrum Plot Value of Power

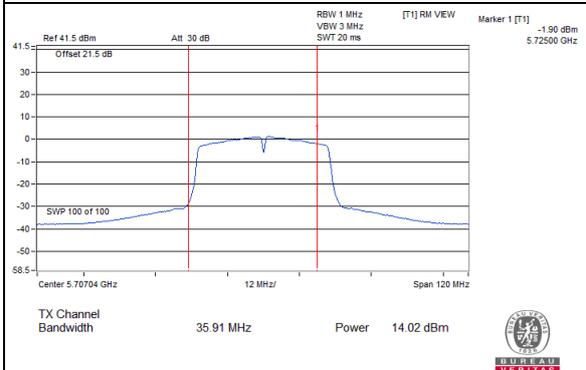
**802.11ac (VHT40)\_Chain 0 / CH142 (U-NII-2C Band)**



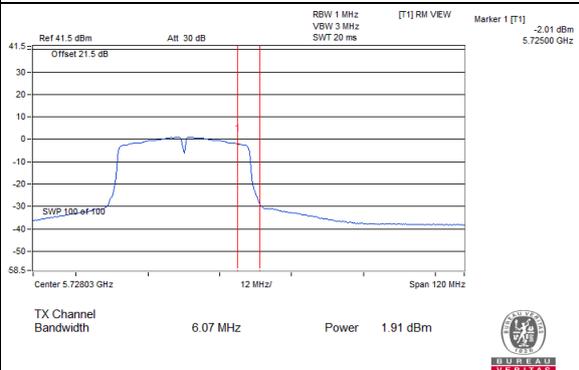
**802.11ac (VHT40)\_Chain 0 / CH142 (U-NII-3 Band)**



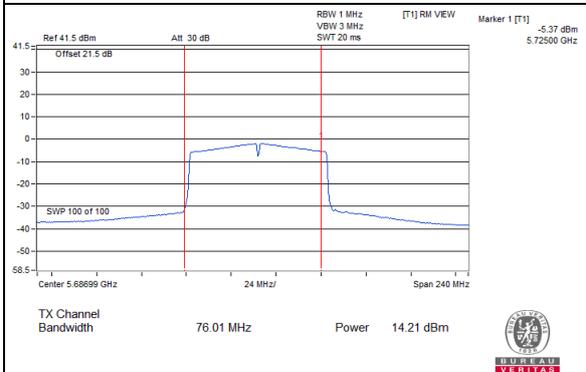
**802.11ac (VHT40)\_Chain 1 / CH142 (U-NII-2C Band)**



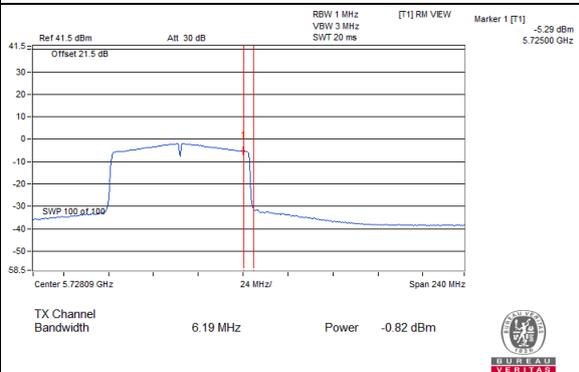
**802.11ac (VHT40)\_Chain 1 / CH142 (U-NII-3 Band)**



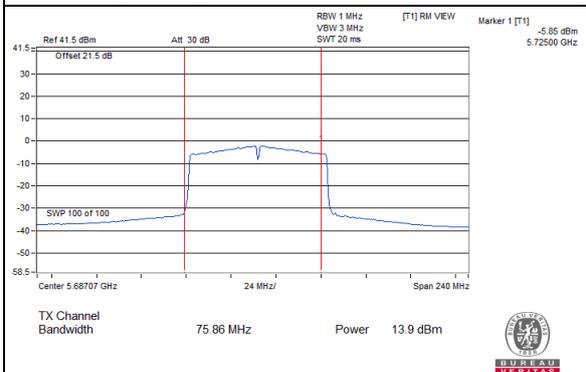
**802.11ac (VHT80)\_Chain 0 / CH138 (U-NII-2C Band)**



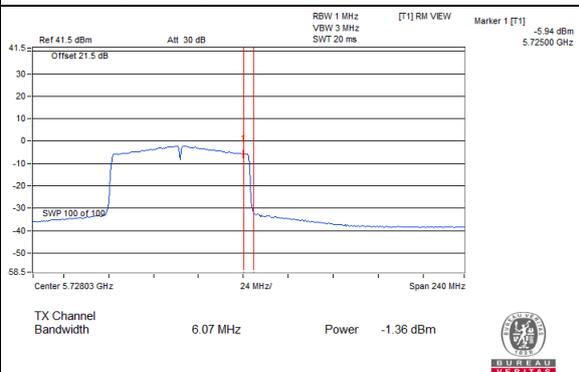
**802.11ac (VHT80)\_Chain 0 / CH138 (U-NII-3 Band)**



**802.11ac (VHT80)\_Chain 1 / CH138 (U-NII-2C Band)**



**802.11ac (VHT80)\_Chain 1 / CH138 (U-NII-3 Band)**



## 26dB OCCUPIED BANDWIDTH

### 802.11a

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	
		Chain0	Chain1
36	5180	20.39	20.44
40	5200	20.43	20.5
48	5240	20.59	20.51
52	5260	20.27	20.51
60	5300	20.45	20.49
64	5320	20.48	20.27
100	5500	20.49	20.42
116	5580	20.45	20.64
140	5700	20.5	20.29
144 (U-NII-2C Band)	5720	15.24	15.17
144 (U-NII-3 Band)	5720	5.39	5.23
149	5745	39.83	32.95
157	5785	39.06	35.46
165	5825	38.29	33.73

### 802.11ac (VHT20)

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	
		Chain0	Chain1
36	5180	20.56	20.64
40	5200	20.81	20.74
48	5240	20.75	20.57
52	5260	20.8	20.68
60	5300	20.74	20.72
64	5320	20.72	20.43
100	5500	20.68	20.65
116	5580	20.8	20.69
140	5700	20.84	20.58
144 (U-NII-2C Band)	5720	15.26	15.25
144 (U-NII-3 Band)	5720	5.45	5.48
149	5745	40.15	38.32
157	5785	38.07	37.46
165	5825	38.07	36.76

**802.11ac (VHT40)**

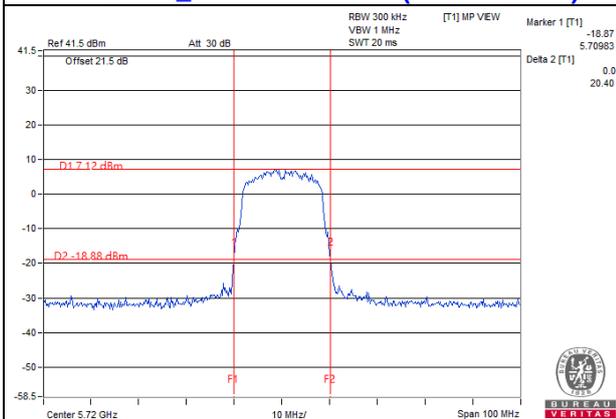
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	
		Chain0	Chain1
38	5190	42.08	41.95
46	5230	54.9	46.17
54	5270	42.19	42.03
62	5310	42.16	41.77
102	5510	41.93	41.78
110	5550	42.13	42.05
134	5670	42.13	41.93
142 (U-NII-2C Band)	5710	36.14	35.91
142 (U-NII-3 Band)	5710	6.07	6.07
151	5755	81.24	91.04
159	5795	79.69	71.75

**802.11ac (VHT80)**

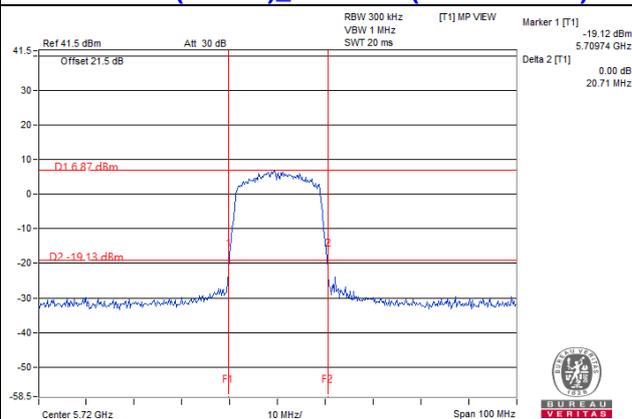
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	
		Chain0	Chain1
42	5210	82.13	81.62
58	5290	82.33	81.61
106	5530	82.68	82.15
122	5610	81.65	81.78
138 (U-NII-2C Band)	5690	76.01	75.86
138 (U-NII-3 Band)	5690	6.19	6.07
155	5775	111.59	123.06

Spectrum Plot of Worst Value

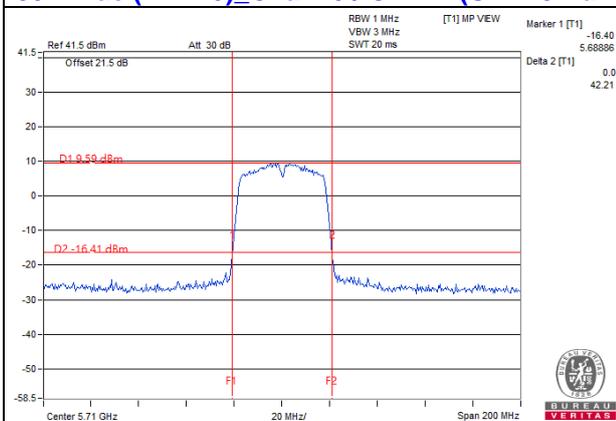
802.11a\_Chain 1 / CH144 (U-NII-3 Band)



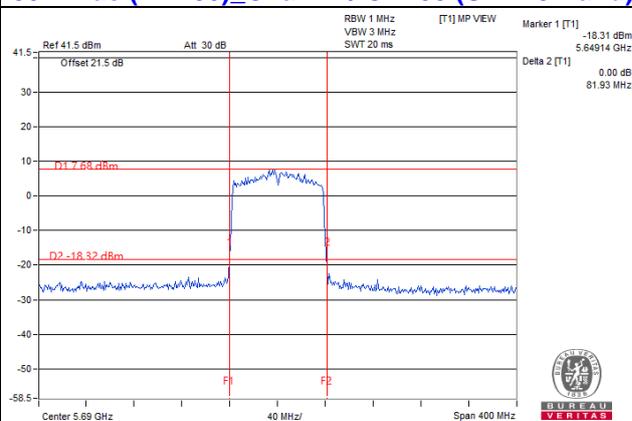
802.11ac (VHT20)\_Chain 0 / (U-NII-3 Band)



802.11ac (VHT40)\_Chain 0 / CH142 (U-NII-3 Band)



802.11ac (VHT80)\_Chain 1 / CH138 (U-NII-3 Band)

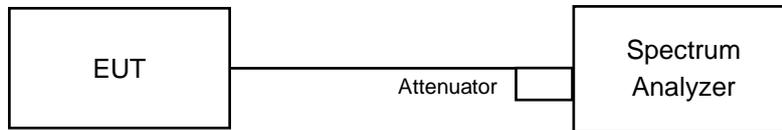


Note:

- For CH144 (U-NII-3) = Delta 2 - (5725MHz - Marker 1)
- For CH142 (U-NII-3) = Delta 2 - (5725MHz - Marker 1)
- For CH138 (U-NII-3) = Delta 2 - (5725MHz - Marker 1)

## 4.4 Occupied Bandwidth Measurement

### 4.4.1 Test Setup



### 4.4.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

### 4.4.3 Test Procedure

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

#### 4.4.4 Test Results

##### 802.11a

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	16.56	16.56
40	5200	16.68	16.56
48	5240	16.8	16.56
52	5260	16.56	16.56
60	5300	16.56	16.56
64	5320	16.56	16.68
100	5500	16.56	16.56
116	5580	16.68	16.56
140	5700	16.68	16.56
144 (U-NII-2C Band)	5720	13.4	13.4
144 (U-NII-3 Band)	5720	3.4	3.28
149	5745	17.88	17.16
157	5785	17.4	17.52
165	5825	17.4	17.28

##### 802.11ac (VHT20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	17.76	17.76
40	5200	17.64	17.76
48	5240	17.76	17.76
52	5260	17.76	17.76
60	5300	17.64	17.76
64	5320	17.76	17.76
100	5500	17.76	17.76
116	5580	17.76	17.76
140	5700	17.52	17.76
144 (U-NII-2C Band)	5720	14	13.88
144 (U-NII-3 Band)	5720	3.88	3.88
149	5745	18.36	18.48
157	5785	18.36	18.24
165	5825	18.36	18.36

### 802.11ac (VHT40)

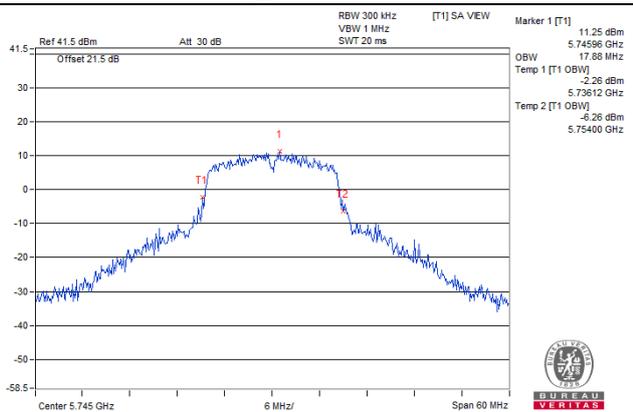
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	36.48	36.48
46	5230	36.48	36.48
54	5270	36.24	36.72
62	5310	36.24	36.24
102	5510	36.48	36.24
110	5550	36.24	36.24
134	5670	36.72	36.48
142 (U-NII-2C Band)	5710	33.24	33.24
142 (U-NII-3 Band)	5710	3.24	3.24
151	5755	37.44	37.2
159	5795	37.2	37.68

### 802.11ac (VHT80)

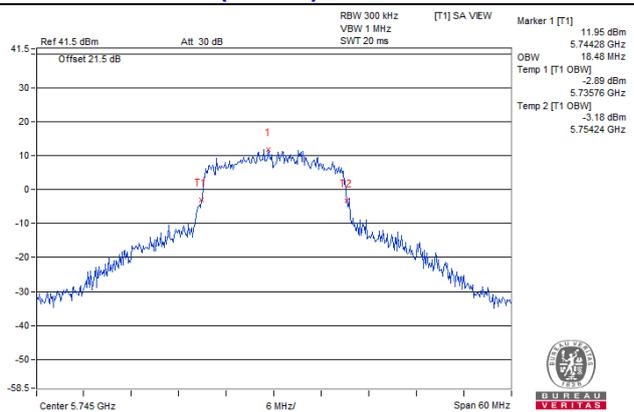
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	75.36	75.84
58	5290	75.36	75.84
106	5530	75.84	75.84
122	5610	75.84	76.32
138 (U-NII-2C Band)	5690	72.92	72.92
138 (U-NII-3 Band)	5690	2.44	2.92
155	5775	76.32	76.32

Spectrum Plot of Max. Value

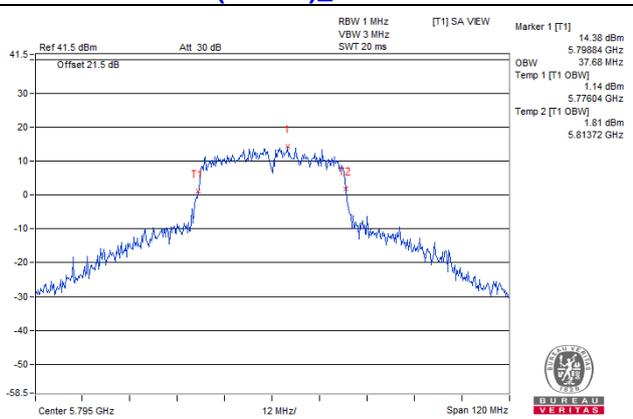
802.11a\_Chain 0 / CH149



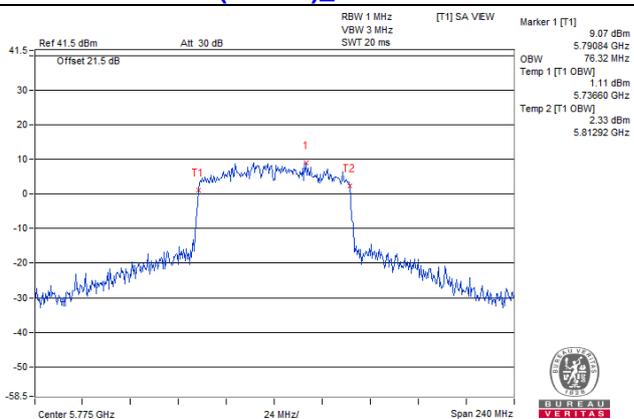
802.11ac (VHT20)\_Chain 1 / CH149



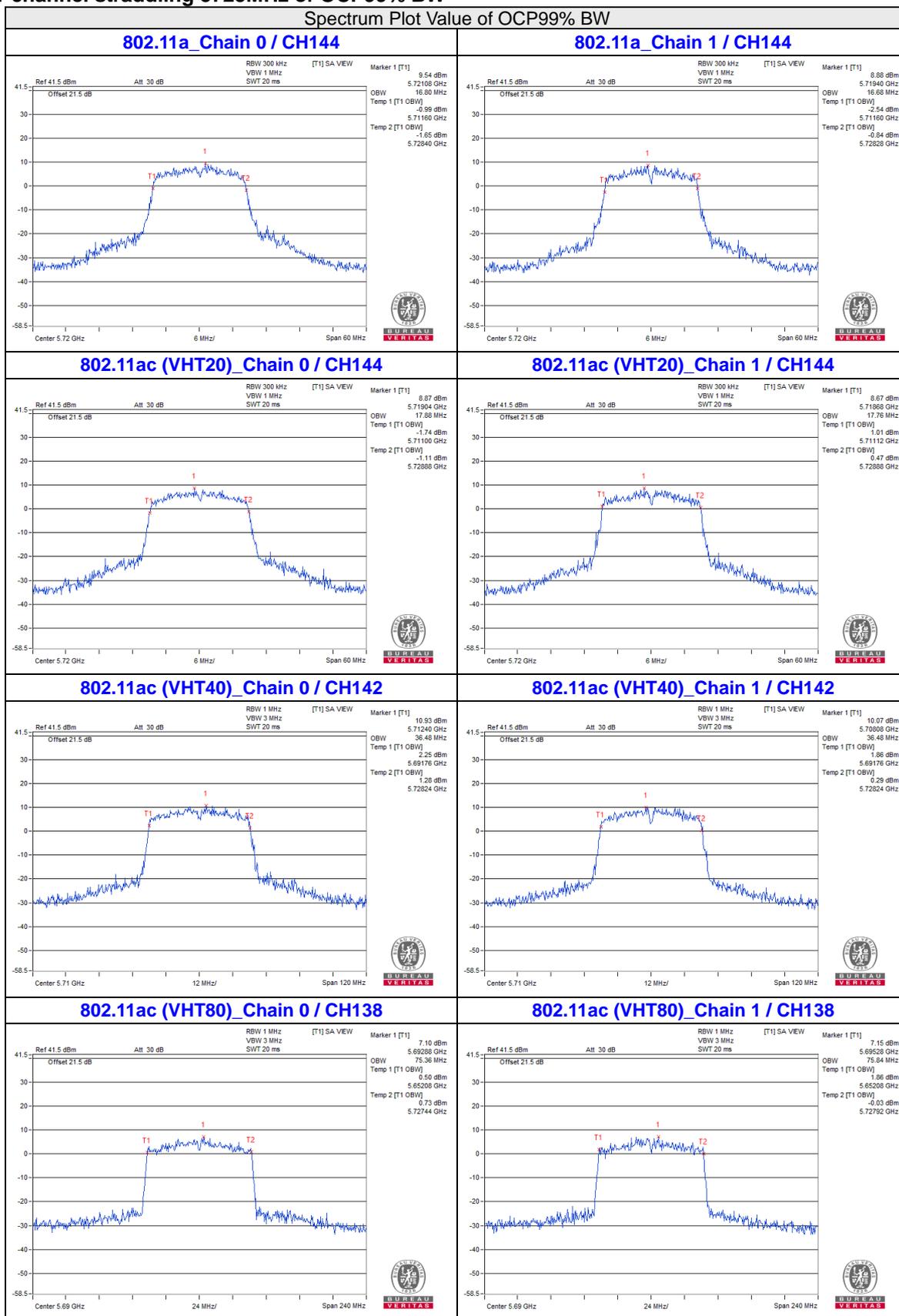
802.11ac (VHT40)\_Chain 1 / CH159



802.11ac (VHT80)\_Chain 0 / CH155

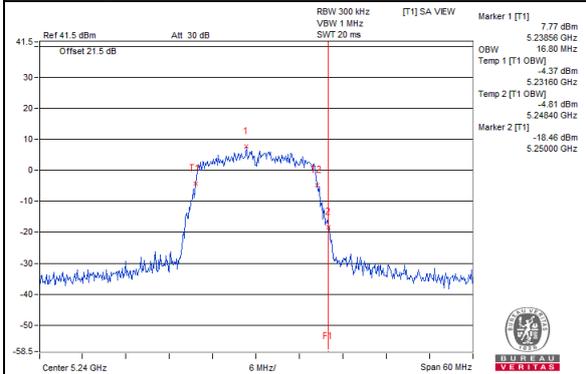


For channel straddling 5725MHz of OCP99% BW

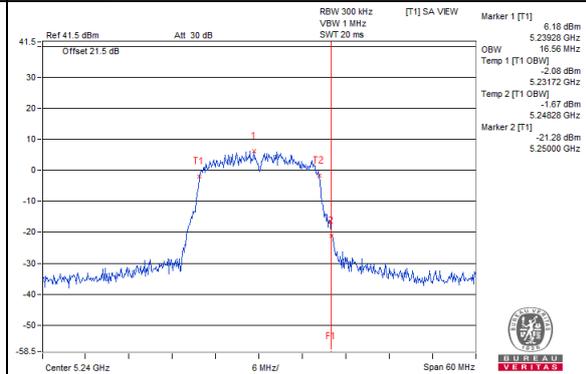


**Spectrum Plot for near by DFS band  
(DFS is required, if 99% OCP straddle into U-NII-2A band)**

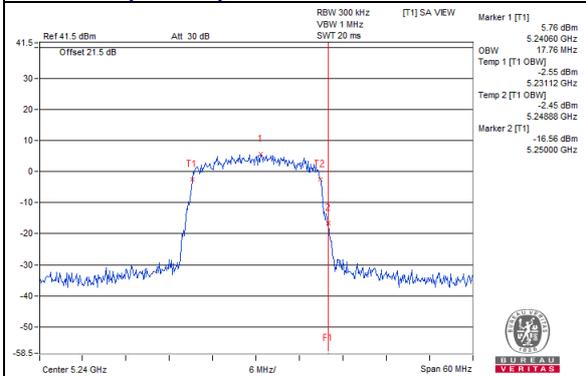
**802.11a\_Chain 0 / CH48**



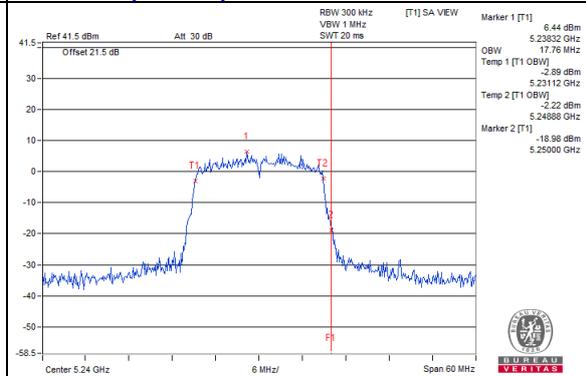
**802.11a\_Chain 1 / CH48**



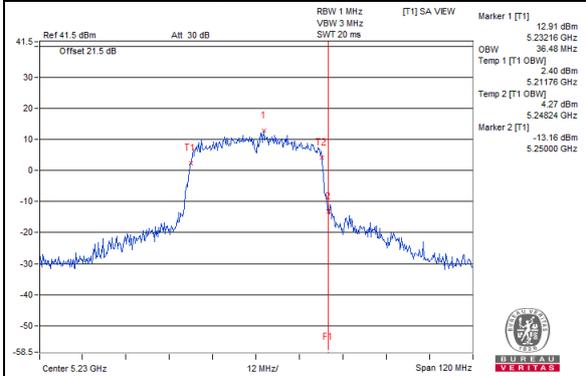
**802.11ac (VHT20)\_Chain 0 / CH48**



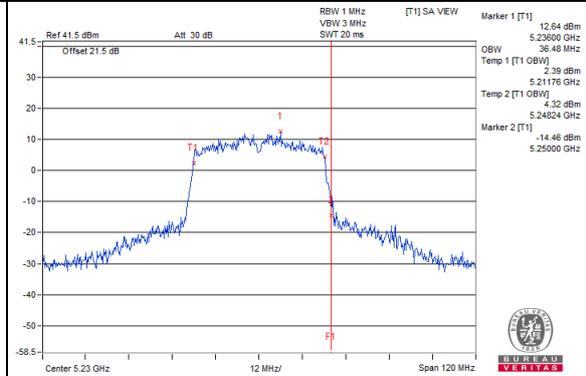
**802.11ac (VHT20)\_Chain 1 / CH48**



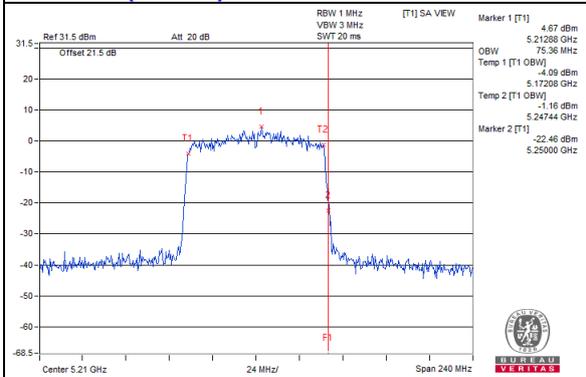
**802.11ac (VHT40)\_Chain 0 / CH46**



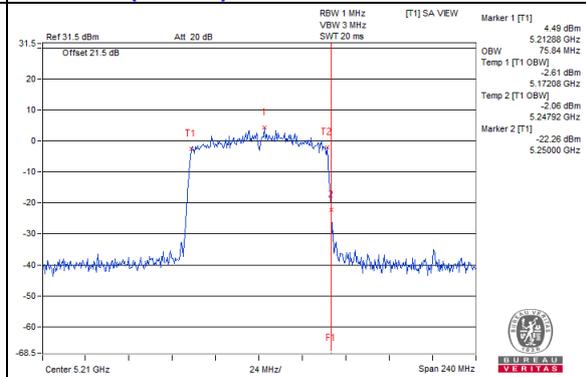
**802.11ac (VHT40)\_Chain 1 / CH46**



**802.11ac (VHT80)\_Chain 0 / CH42**

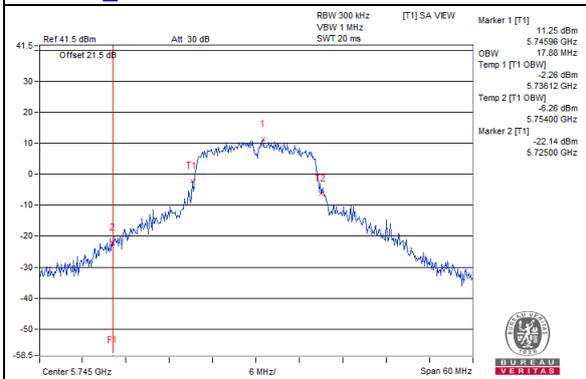


**802.11ac (VHT80)\_Chain 1 / CH42**

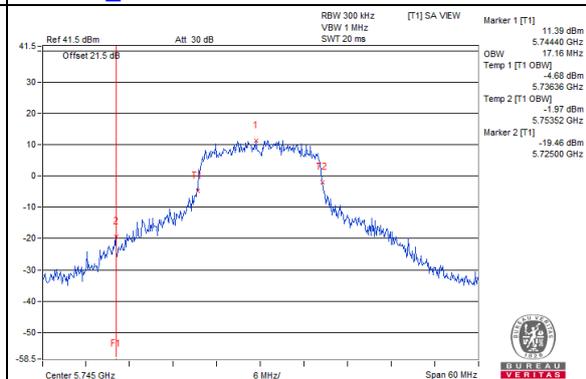


**Spectrum Plot for near by DFS band  
(DFS is required, if 99% OCP straddle into U-NII-2C band)**

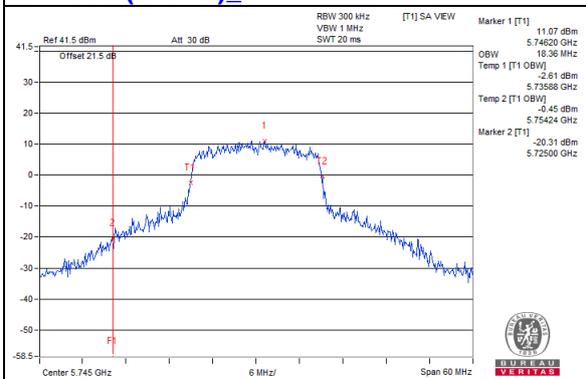
**802.11a\_Chain 0 / CH149**



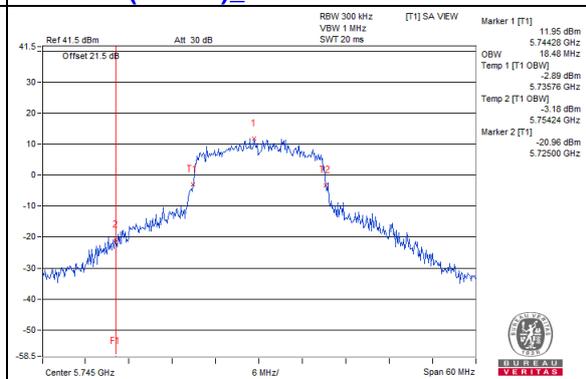
**802.11a\_Chain 1 / CH149**



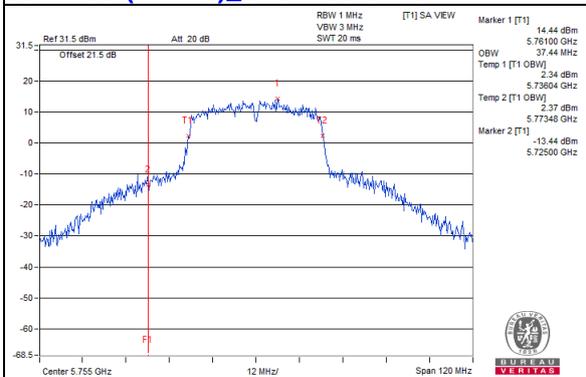
**802.11ac (VHT20)\_Chain 0 / CH149**



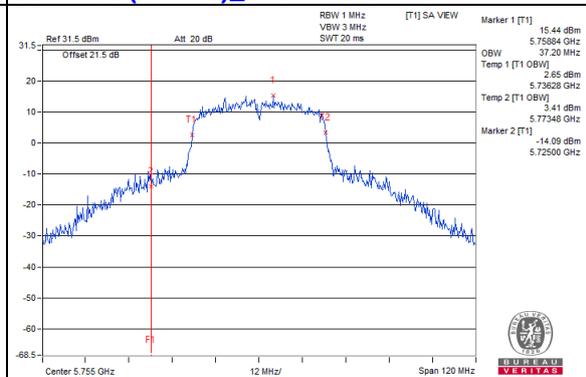
**802.11ac (VHT20)\_Chain 1 / CH149**



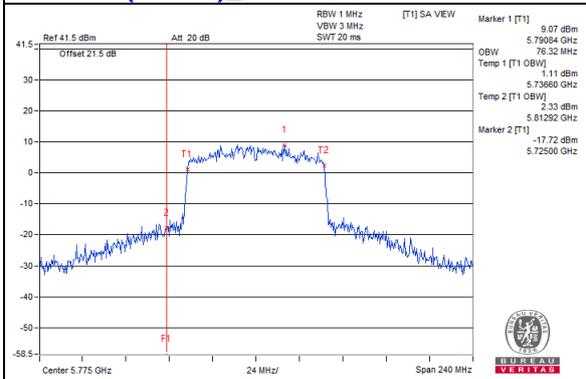
**802.11ac (VHT40)\_Chain 0 / CH151**



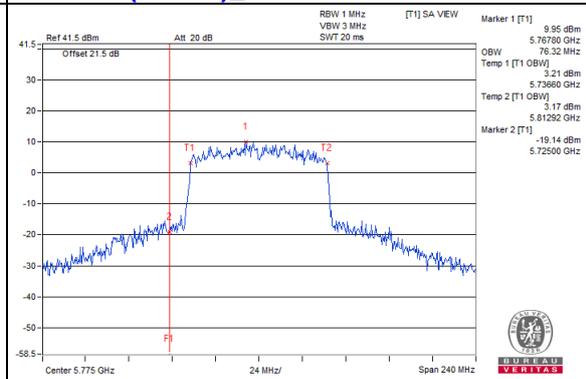
**802.11ac (VHT40)\_Chain 1 / CH151**



**802.11ac (VHT80)\_Chain 0 / CH155**



**802.11ac (VHT80)\_Chain 1 / CH155**

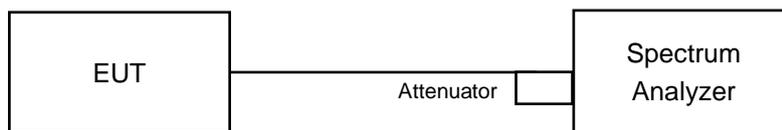


## 4.5 Peak Power Spectral Density Measurement

### 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	
	√	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 Procedure

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

Using method SA-1

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

#### For U-NII-3 band:

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

#### 4.5.5 Deviation from Test Standard

No deviation.

#### 4.5.6 EUT Operating Condition

Same as Item 4.3.6.

#### 4.5.7 Test Results

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

##### 802.11a

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)		Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1			
36	5180	1.47	1.97	4.74	5.26	Pass
40	5200	1.57	1.24	4.42	5.26	Pass
48	5240	1.81	1.85	4.84	5.26	Pass
52	5260	1.55	1.35	4.46	5.26	Pass
60	5300	1.80	1.61	4.72	5.26	Pass
64	5320	1.98	1.76	4.88	5.26	Pass
100	5500	2.15	2.18	5.18	5.26	Pass
116	5580	2.29	1.78	5.05	5.26	Pass
140	5700	1.70	2.12	4.92	5.26	Pass
144 (U-NII-2C Band)	5720	1.74	1.96	4.86	5.26	Pass

- Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For UNII-1: Directional gain =  $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 11.74\text{dBi} > 6\text{dBi}$ , so the power density limit shall be reduced to  $11 - (11.74 - 6) = 5.26\text{dBm}$ .
3. For UNII-2A: Directional gain =  $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 11.74\text{dBi} > 6\text{dBi}$ , so the power density limit shall be reduced to  $11 - (11.74 - 6) = 5.26\text{dBm}$ .
4. For UNII-2C: Directional gain =  $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 11.74\text{dBi} > 6\text{dBi}$ , so the power density limit shall be reduced to  $11 - (11.74 - 6) = 5.26\text{dBm}$ .

### 802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)		Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1			
36	5180	2.10	2.27	5.20	5.26	Pass
40	5200	2.21	1.97	5.10	5.26	Pass
48	5240	2.55	1.42	5.03	5.26	Pass
52	5260	1.97	2.10	5.05	5.26	Pass
60	5300	2.21	2.16	5.20	5.26	Pass
64	5320	2.37	1.57	5.00	5.26	Pass
100	5500	2.63	1.63	5.17	5.26	Pass
116	5580	2.27	1.78	5.04	5.26	Pass
140	5700	2.06	2.00	5.04	5.26	Pass
144 (U-NII-2C Band)	5720	2.08	1.86	4.98	5.26	Pass

- Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For UNII-1: Directional gain =  $10 \log[(10^{G_{0/20}} + 10^{G_{1/20}})^2 / 2] = 11.74\text{dBi} > 6\text{dBi}$ , so the power density limit shall be reduced to  $11 - (11.74 - 6) = 5.26\text{dBm}$ .
3. For UNII-2A: Directional gain =  $10 \log[(10^{G_{0/20}} + 10^{G_{1/20}})^2 / 2] = 11.74\text{dBi} > 6\text{dBi}$ , so the power density limit shall be reduced to  $11 - (11.74 - 6) = 5.26\text{dBm}$ .
4. For UNII-2C: Directional gain =  $10 \log[(10^{G_{0/20}} + 10^{G_{1/20}})^2 / 2] = 11.74\text{dBi} > 6\text{dBi}$ , so the power density limit shall be reduced to  $11 - (11.74 - 6) = 5.26\text{dBm}$ .

### 802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)		Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1			
38	5190	0.00	-0.06	2.98	5.26	Pass
46	5230	1.57	1.66	4.63	5.26	Pass
54	5270	-0.78	-0.84	2.20	5.26	Pass
62	5310	-0.75	-0.67	2.30	5.26	Pass
102	5510	-0.45	-0.88	2.35	5.26	Pass
110	5550	-0.19	-0.64	2.60	5.26	Pass
134	5670	-0.91	-0.59	2.26	5.26	Pass
142 (U-NII-2C Band)	5710	-0.95	-0.83	2.12	5.26	Pass

- Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For UNII-1: Directional gain =  $10 \log[(10^{G_{0/20}} + 10^{G_{1/20}})^2 / 2] = 11.74\text{dBi} > 6\text{dBi}$ , so the power density limit shall be reduced to  $11 - (11.74 - 6) = 5.26\text{dBm}$ .
3. For UNII-2A: Directional gain =  $10 \log[(10^{G_{0/20}} + 10^{G_{1/20}})^2 / 2] = 11.74\text{dBi} > 6\text{dBi}$ , so the power density limit shall be reduced to  $11 - (11.74 - 6) = 5.26\text{dBm}$ .
4. For UNII-2C: Directional gain =  $10 \log[(10^{G_{0/20}} + 10^{G_{1/20}})^2 / 2] = 11.74\text{dBi} > 6\text{dBi}$ , so the power density limit shall be reduced to  $11 - (11.74 - 6) = 5.26\text{dBm}$ .

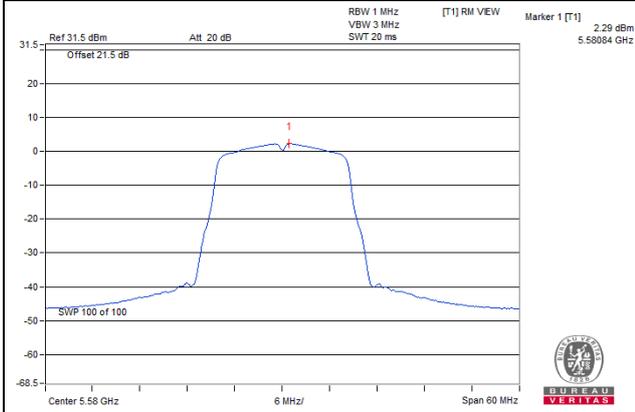
**802.11ac (VHT80)**

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)		Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1			
42	5210	-5.12	-5.48	-2.29	5.26	Pass
58	5290	-3.64	-3.57	-0.59	5.26	Pass
106	5530	-3.71	-3.61	-0.65	5.26	Pass
122	5610	-3.27	-3.54	-0.39	5.26	Pass
138 (U-NII-2C Band)	5690	-3.83	-3.94	-0.87	5.26	Pass

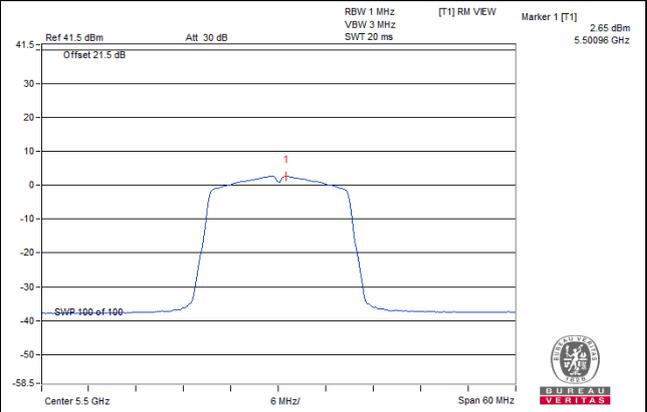
- Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For UNII-1: Directional gain =  $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 11.74\text{dBi} > 6\text{dBi}$ , so the power density limit shall be reduced to  $11 - (11.74 - 6) = 5.26\text{dBm}$ .
3. For UNII-2A: Directional gain =  $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 11.74\text{dBi} > 6\text{dBi}$ , so the power density limit shall be reduced to  $11 - (11.74 - 6) = 5.26\text{dBm}$ .
4. For UNII-2C: Directional gain =  $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 11.74\text{dBi} > 6\text{dBi}$ , so the power density limit shall be reduced to  $11 - (11.74 - 6) = 5.26\text{dBm}$ .

Spectrum Plot of Worst Value

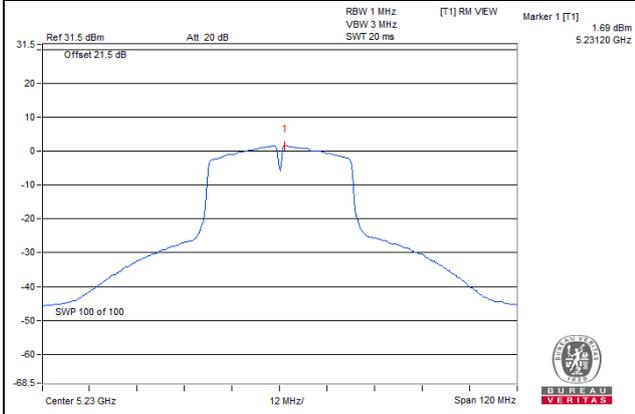
802.11a\_Chain 0 / CH116



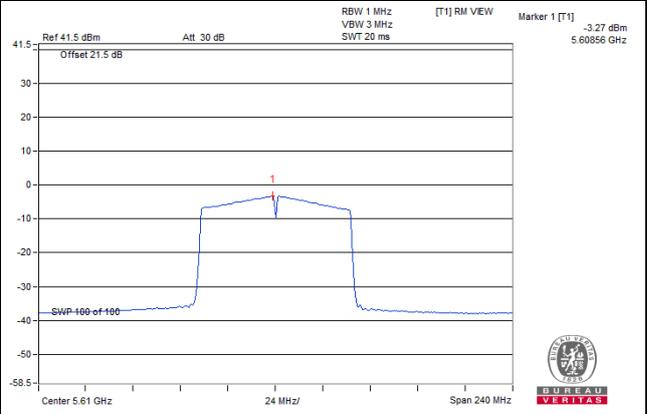
802.11ac (VHT20)\_Chain 0 / CH100



802.11ac (VHT40)\_Chain 1 / CH46



802.11ac (VHT80)\_Chain 0 / CH122



**For U-NII-3 band:**

**802.11a**

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)		Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Pass / Fail
		Chain 0	Chain 1				
144 (U-NII-3 Band)	5720	-8.05	-8.33	-5.18	-2.96	24.26	Pass
149	5745	-0.37	0.01	2.83	5.05	24.26	Pass
157	5785	-0.31	-0.23	2.74	4.96	24.26	Pass
165	5825	-0.09	-0.28	2.83	5.05	24.26	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.  
 2. Directional gain =  $10 \log[(10^{G_0/20} + 10^{G_1/20})^2 / 2]$  = 11.74dBi > 6dBi, so the power density limit shall be reduced to  $30-(11.74-6)$  = 24.26 dBm/500kHz.

**802.11ac (VHT20)**

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)		Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Pass / Fail
		Chain 0	Chain 1				
144 (U-NII-3 Band)	5720	-8.31	-8.07	-5.18	-2.96	24.26	Pass
149	5745	-0.12	-0.57	2.67	4.89	24.26	Pass
157	5785	-0.57	-0.53	2.46	4.68	24.26	Pass
165	5825	-0.37	-0.46	2.60	4.82	24.26	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.  
 2. Directional gain =  $10 \log[(10^{G_0/20} + 10^{G_1/20})^2 / 2]$  = 11.74dBi > 6dBi, so the power density limit shall be reduced to  $30-(11.74-6)$  = 24.26 dBm/500kHz.

**802.11ac (VHT40)**

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)		Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Pass / Fail
		Chain 0	Chain 1				
142 (U-NII-3 Band)	5710	-12.67	-12.68	-9.66	-7.44	24.26	Pass
151	5755	-3.55	-3.59	-0.56	1.66	24.26	Pass
159	5795	-4.01	-3.39	-0.68	1.54	24.26	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.  
 2. Directional gain =  $10 \log[(10^{G_0/20} + 10^{G_1/20})^2 / 2]$  = 11.74dBi > 6dBi, so the power density limit shall be reduced to  $30-(11.74-6)$  = 24.26 dBm/500kHz.

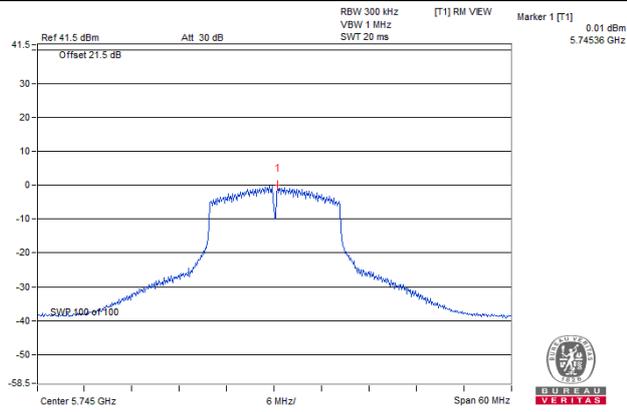
**802.11ac (VHT80)**

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)		Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Pass / Fail
		Chain 0	Chain 1				
138 (U-NII-3 Band)	5710	-16.06	-16.60	-13.31	-11.09	24.26	Pass
155	5755	-8.21	-7.96	-5.07	-2.85	24.26	Pass

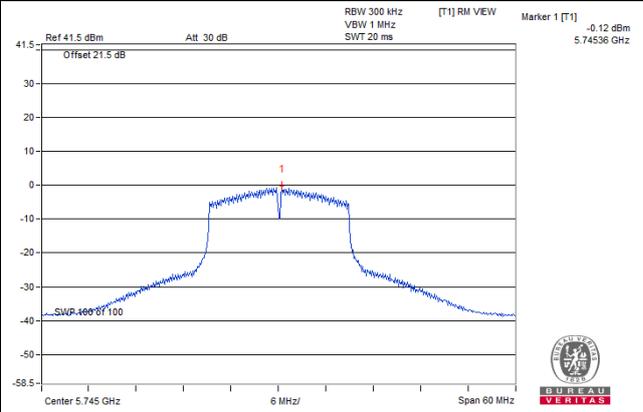
Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.  
 2. Directional gain =  $10 \log[(10^{G_0/20} + 10^{G_1/20})^2 / 2]$  = 11.74dBi > 6dBi, so the power density limit shall be reduced to  $30-(11.74-6)$  = 24.26 dBm/500kHz.

Spectrum Plot of Worst Value

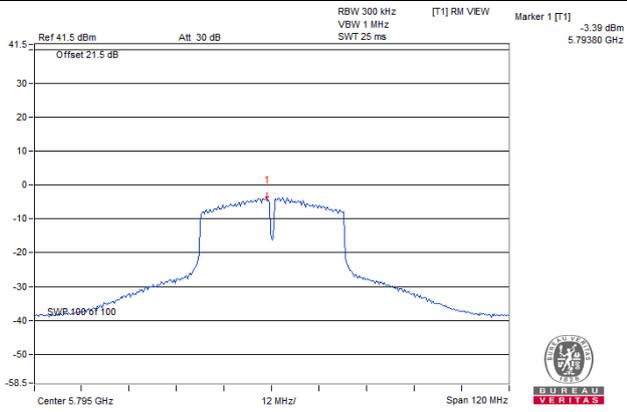
802.11a\_Chain 1 / CH149



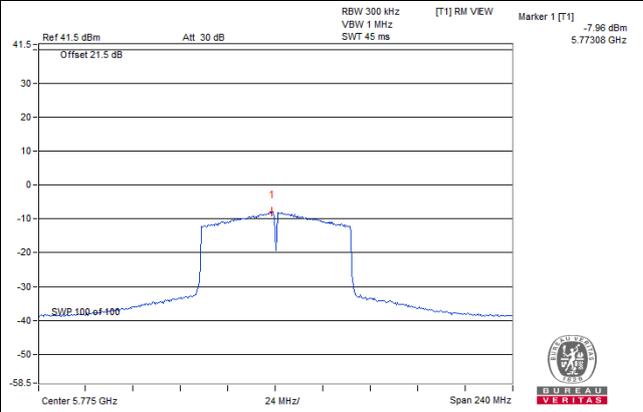
802.11ac (VHT20)\_Chain 0 / CH149



802.11ac (VHT40)\_Chain 1 / CH159



802.11ac (VHT80)\_Chain 1 / CH155

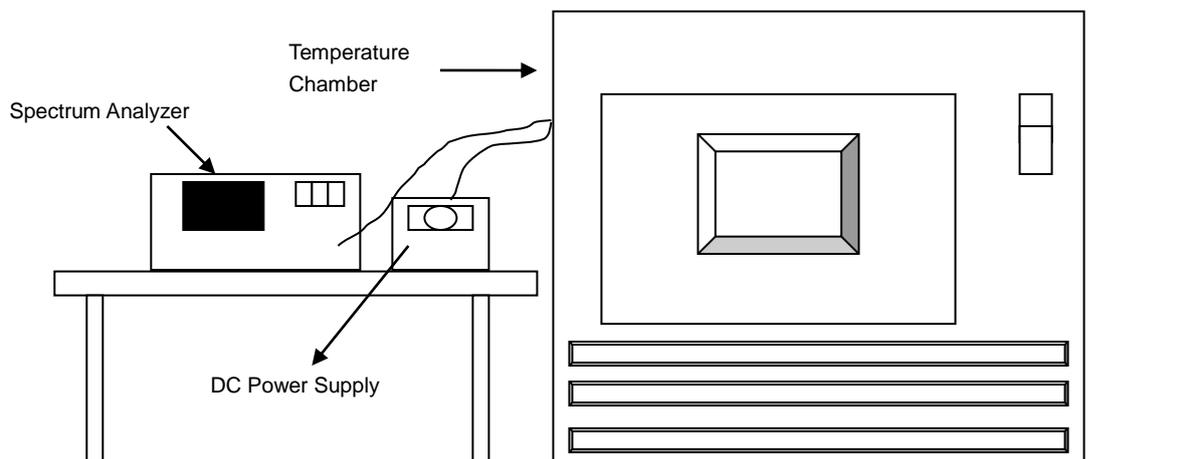


## 4.6 Frequency Stability Measurement

### 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

Refer to section 4.1.2 to get information of above instrument.

### 4.6.4 Test Procedure

- The EUT was placed inside the environmental test chamber and powered by nominal 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: 5180 MHz									
TEMP. (°C)	Power Supply (Vdc)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
55	6	5180.0093	Pass	5180.011	Pass	5180.0082	Pass	5180.0085	Pass
50	6	5180.0066	Pass	5180.0063	Pass	5180.0053	Pass	5180.0036	Pass
40	6	5179.985	Pass	5179.9827	Pass	5179.9861	Pass	5179.982	Pass
30	6	5179.9904	Pass	5179.9914	Pass	5179.9897	Pass	5179.9877	Pass
20	6	5180.0207	Pass	5180.0233	Pass	5180.0205	Pass	5180.0225	Pass
10	6	5180.0137	Pass	5180.0146	Pass	5180.0173	Pass	5180.0139	Pass
0	6	5180.0103	Pass	5180.0102	Pass	5180.0092	Pass	5180.0117	Pass
-10	6	5179.9826	Pass	5179.9846	Pass	5179.9835	Pass	5179.9847	Pass

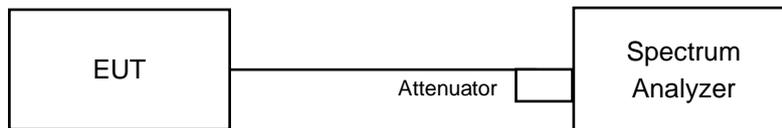
Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
TEMP. (°C)	Power Supply (Vdc)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	6.9	5180.0217	Pass	5180.0236	Pass	5180.0201	Pass	5180.0216	Pass
	6	5180.0207	Pass	5180.0233	Pass	5180.0205	Pass	5180.0225	Pass
	5.1	5180.0203	Pass	5180.0232	Pass	5180.0197	Pass	5180.0231	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

#### MEASUREMENT PROCEDURE REF

- 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)		Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
144 (U-NII-3 Band)	5720	3.22	3.23	0.5	Pass
149	5745	16.43	16.42	0.5	Pass
157	5785	16.41	16.38	0.5	Pass
165	5825	16.38	16.4	0.5	Pass

##### 802.11ac (VHT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
144 (U-NII-3 Band)	5720	3.86	3.84	0.5	Pass
149	5745	17.7	17.64	0.5	Pass
157	5785	17.68	17.68	0.5	Pass
165	5825	17.64	17.67	0.5	Pass

##### 802.11ac (VHT40)

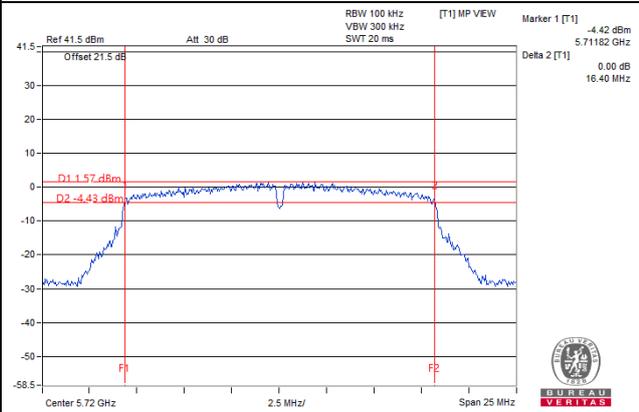
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
142 (U-NII-3 Band)	5710	3.23	3.22	0.5	Pass
151	5755	36.36	36.4	0.5	Pass
159	5795	36.44	36.46	0.5	Pass

##### 802.11ac (VHT80)

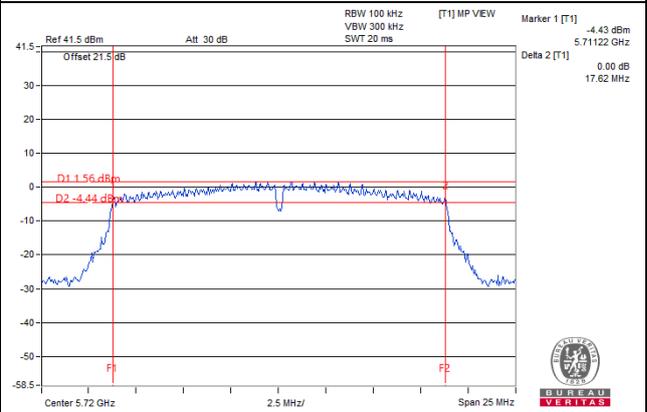
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
138 (U-NII-3 Band)	5690	3.37	3.39	0.5	Pass
155	5775	76.63	76.59	0.5	Pass

Spectrum Plot of Worst Value

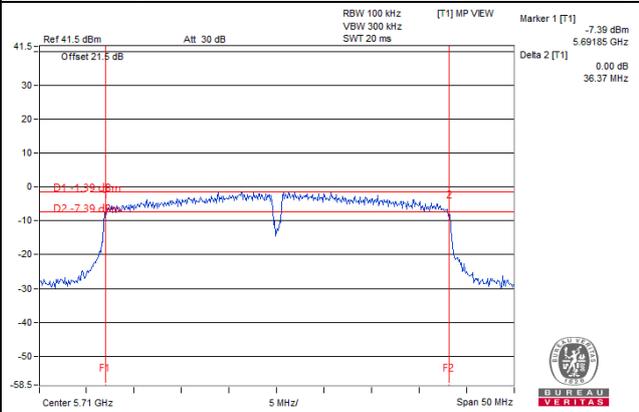
802.11a\_Chain 0 / CH144 (U-NII-3 Band)



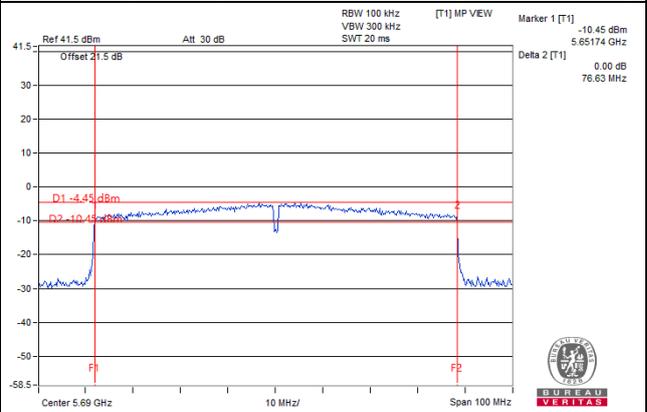
802.11ac (VHT20)\_Chain 1 / CH144 (U-NII-3 Band)



802.11ac (VHT40)\_Chain 1 / CH142 (U-NII-3 Band)



802.11ac (VHT80)\_Chain 0 / CH138 (U-NII-3 Band)



Note: The 6dB bandwidth above 5725MHz = Marker 1 + Delta 2 - 5725MHz

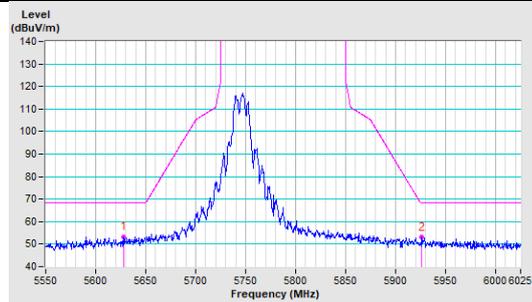
## 5 Pictures of Test Arrangements

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

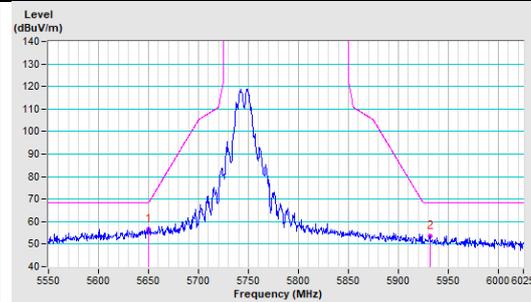
## Annex A - Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band)

### 802.11a CH 149 : 5745 MHz

Horizontal

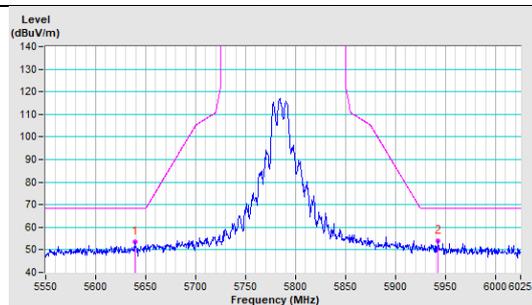


Vertical

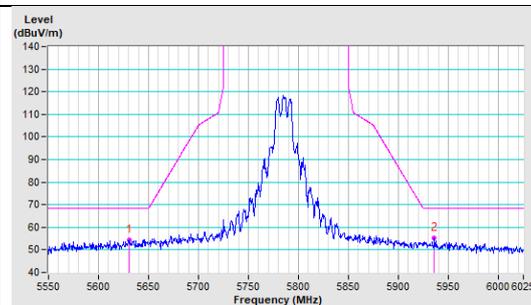


### 802.11a CH 157 : 5785 MHz

Horizontal

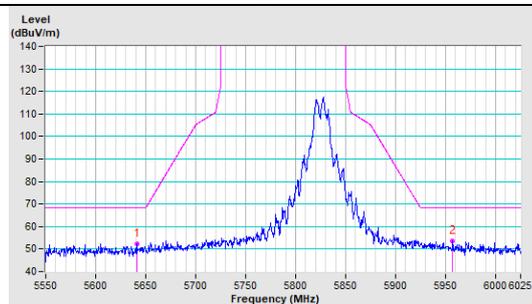


Vertical

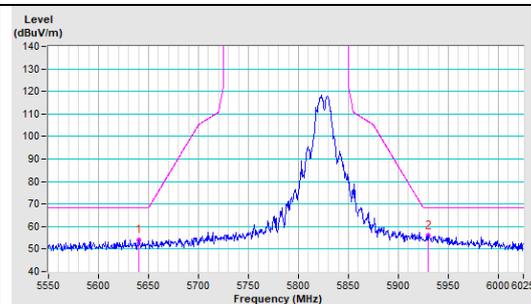


### 802.11a CH 165 : 5825 MHz

Horizontal

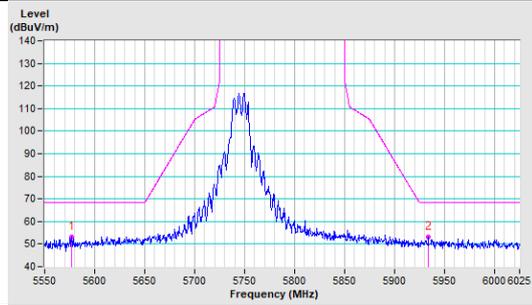


Vertical

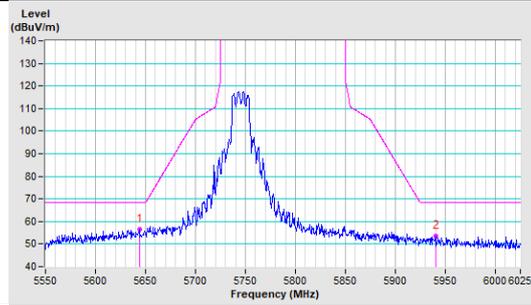


**802.11ac (VHT20) CH 149 : 5745 MHz**

**Horizontal**

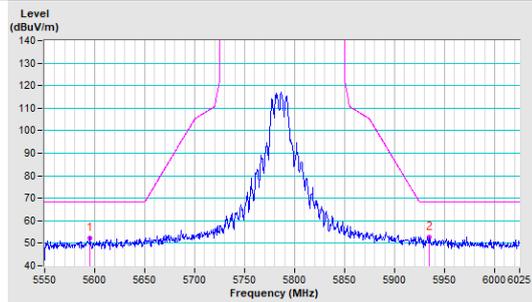


**Vertical**

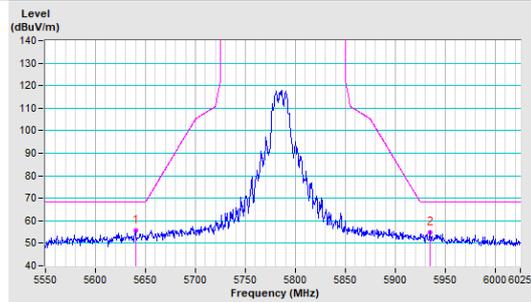


**802.11ac (VHT20) CH 157 : 5785 MHz**

**Horizontal**

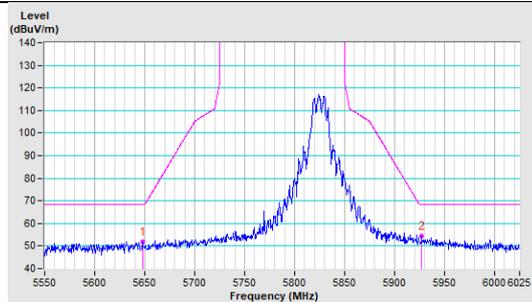


**Vertical**

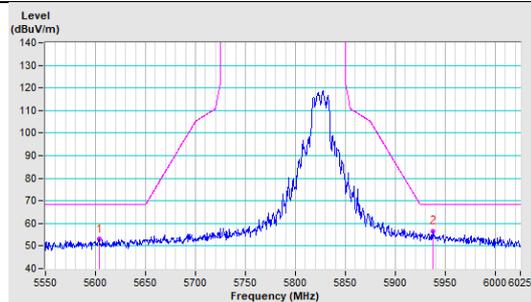


**802.11ac (VHT20) CH 165 : 5825 MHz**

**Horizontal**

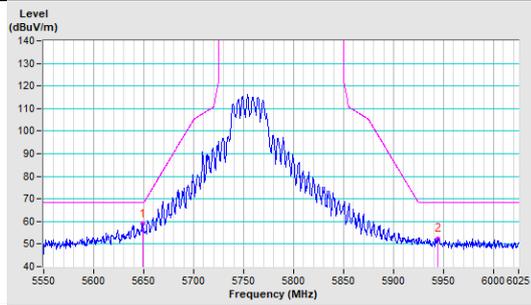


**Vertical**

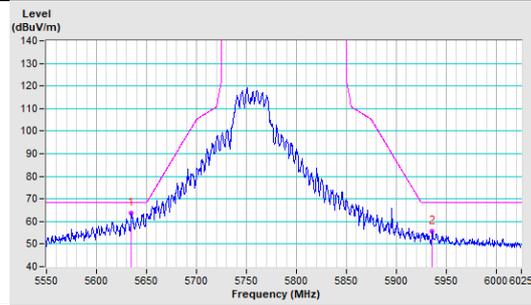


**802.11ac (VHT40) CH 151 : 5755 MHz**

**Horizontal**

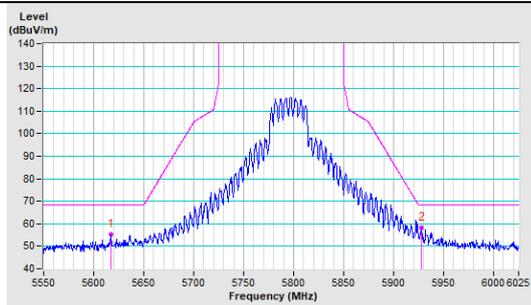


**Vertical**

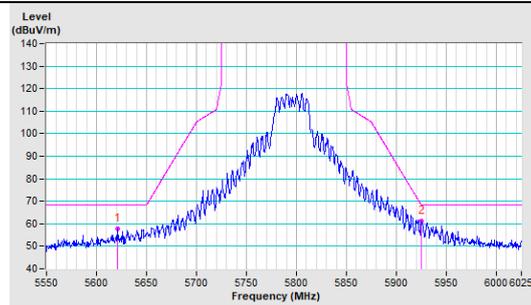


**802.11ac (VHT40) CH 159 : 5795 MHz**

**Horizontal**

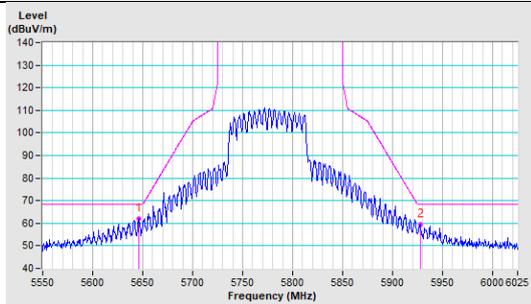


**Vertical**

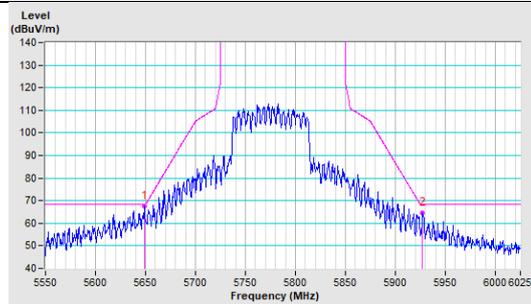


**802.11ac (VHT80) CH 155 : 5775 MHz**

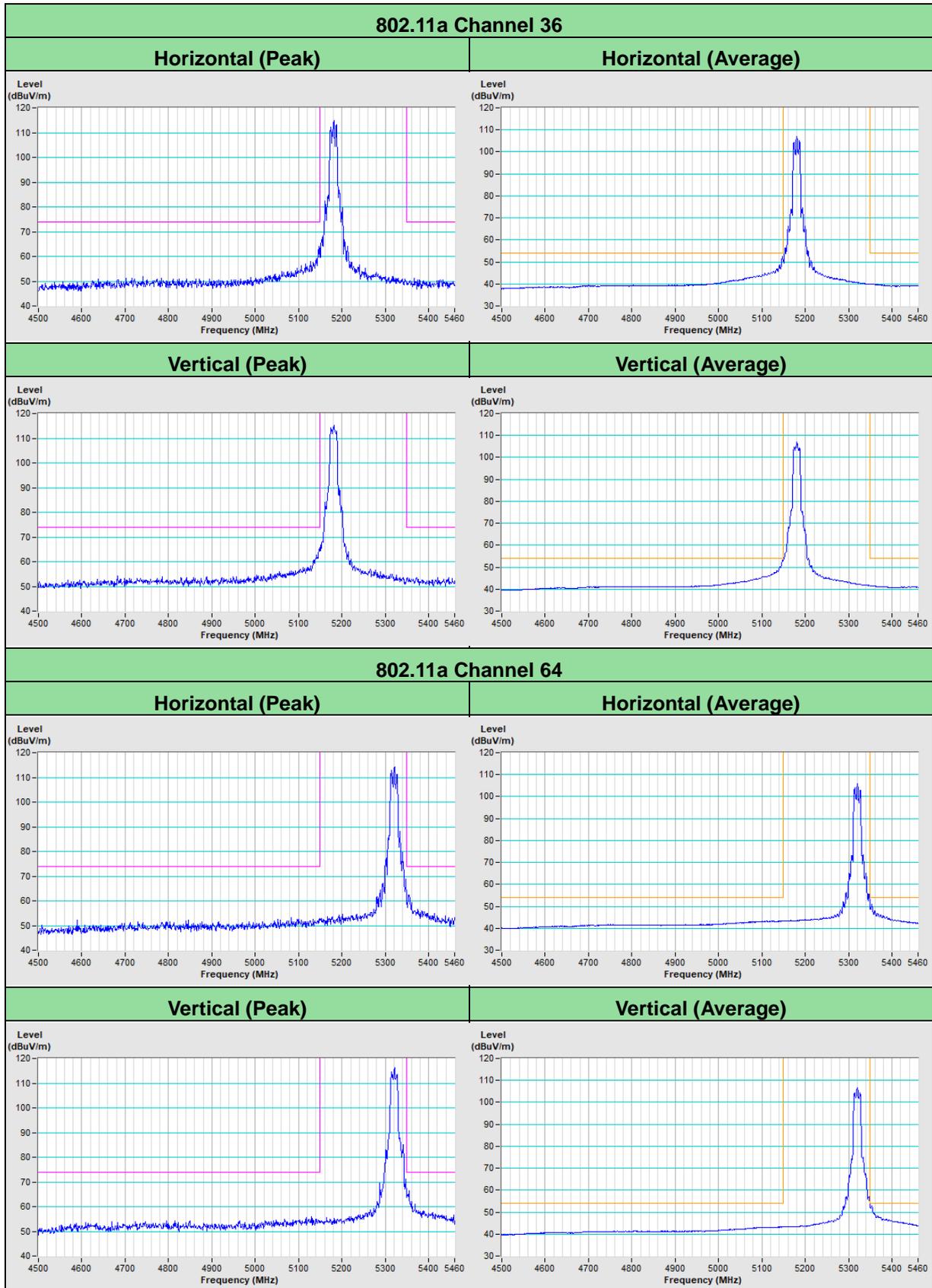
**Horizontal**



**Vertical**

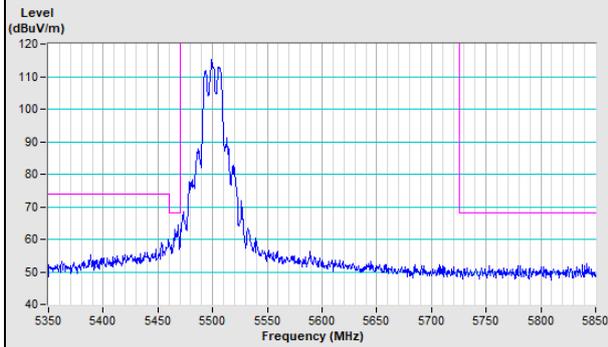


### Annex B - Band-Edge Measurement (For U-NII-1, U-NII-2A, U-NII-2C band)

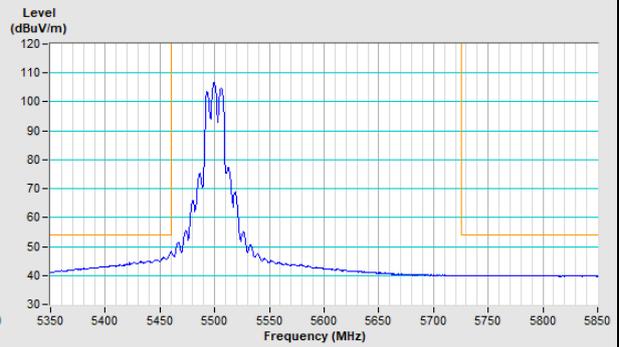


### 802.11a Channel 100

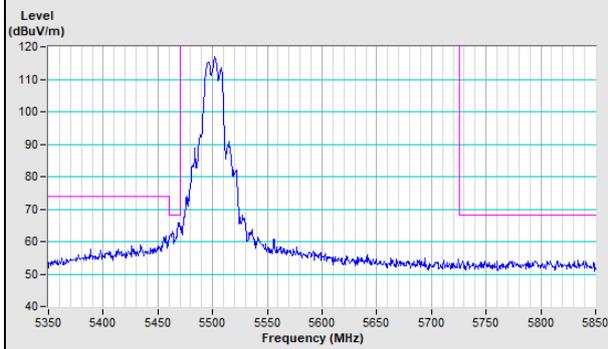
#### Horizontal (Peak)



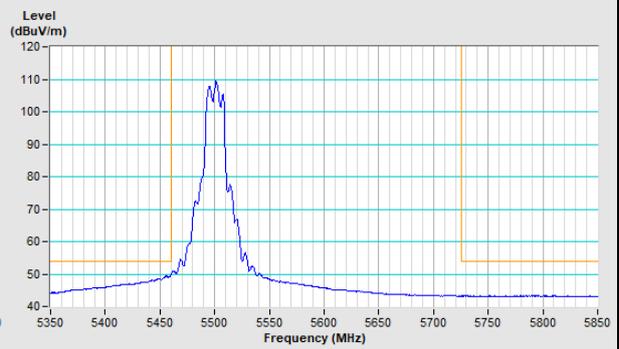
#### Horizontal (Average)



#### Vertical (Peak)

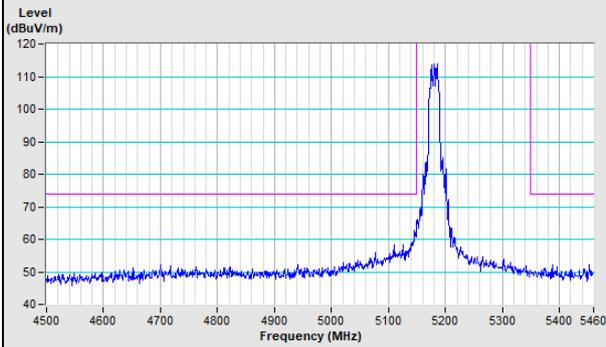


#### Vertical (Average)

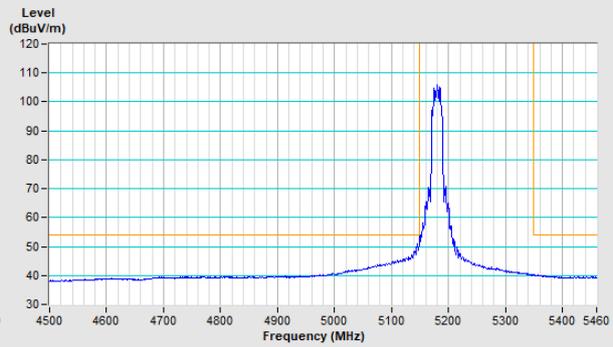


### 802.11ac (VHT20) Channel 36

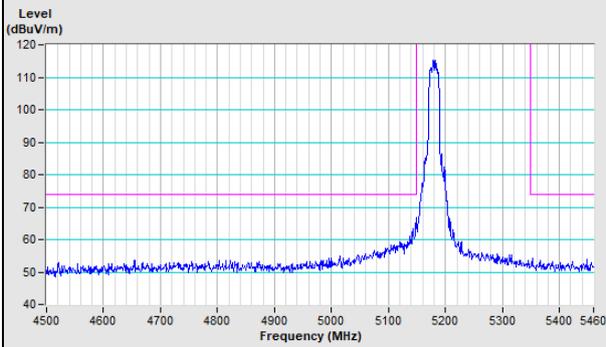
#### Horizontal (Peak)



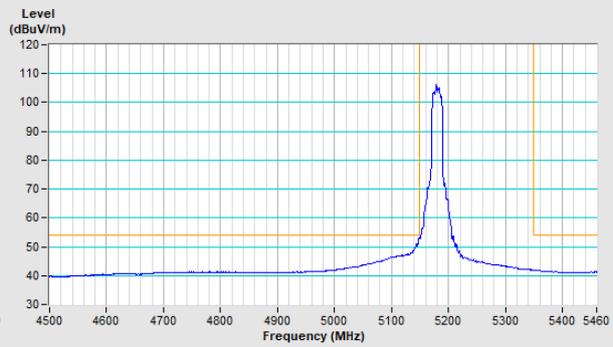
#### Horizontal (Average)



#### Vertical (Peak)

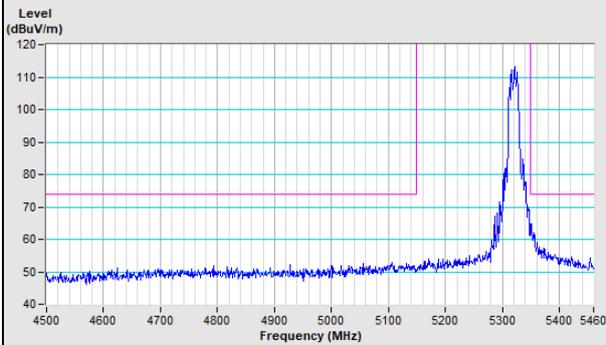


#### Vertical (Average)

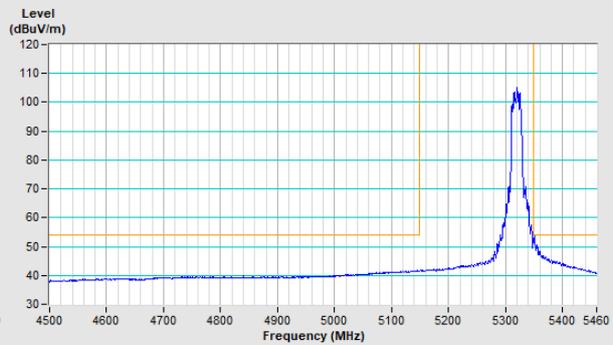


### 802.11ac (VHT20) Channel 64

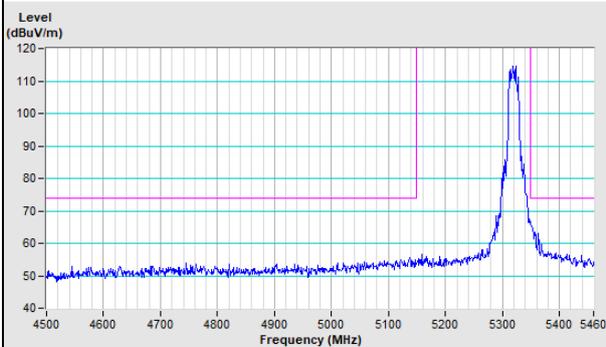
#### Horizontal (Peak)



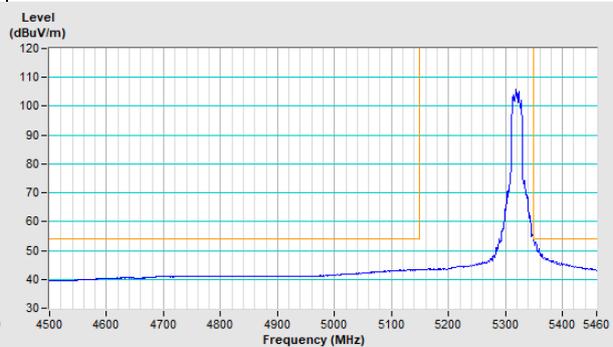
#### Horizontal (Average)



#### Vertical (Peak)

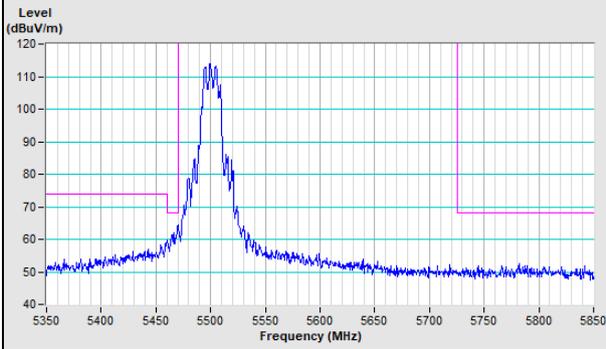


#### Vertical (Average)

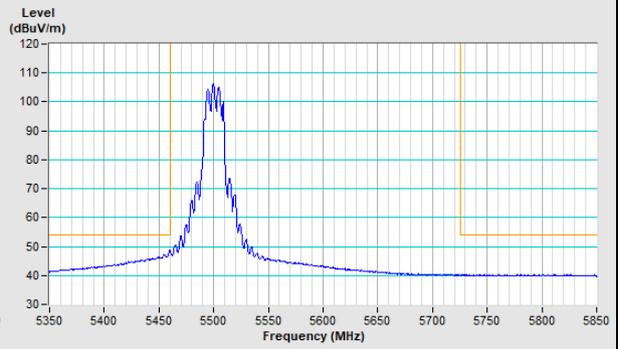


### 802.11ac (VHT20) Channel 100

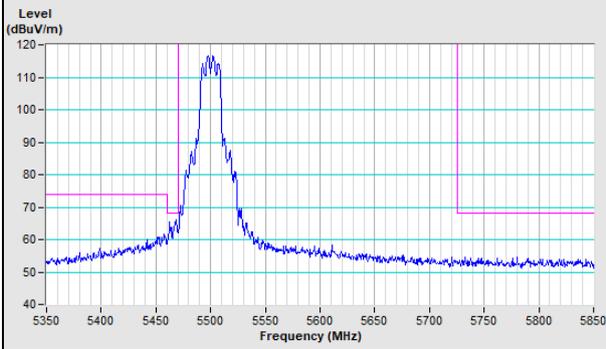
**Horizontal (Peak)**



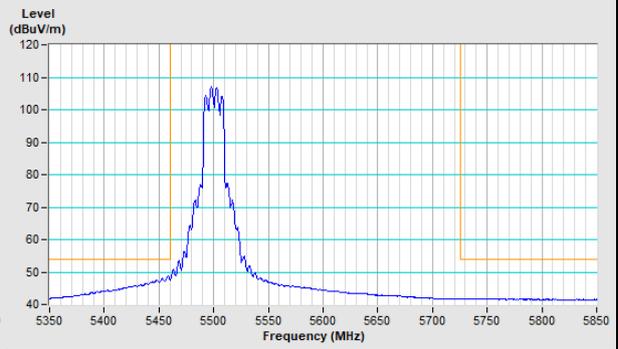
**Horizontal (Average)**



**Vertical (Peak)**

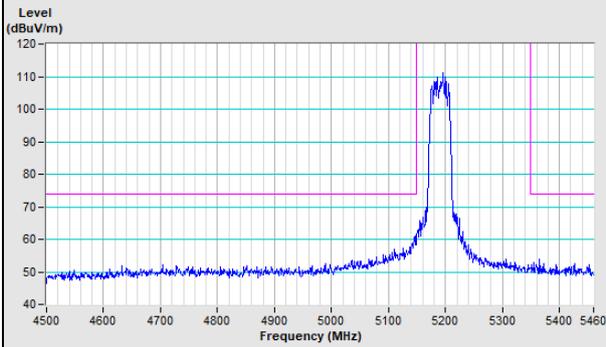


**Vertical (Average)**

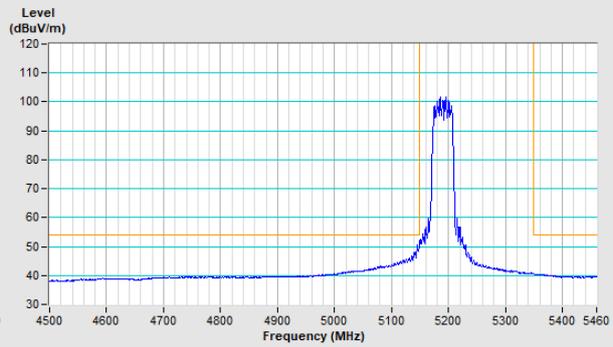


### 802.11ac (VHT40) Channel 38

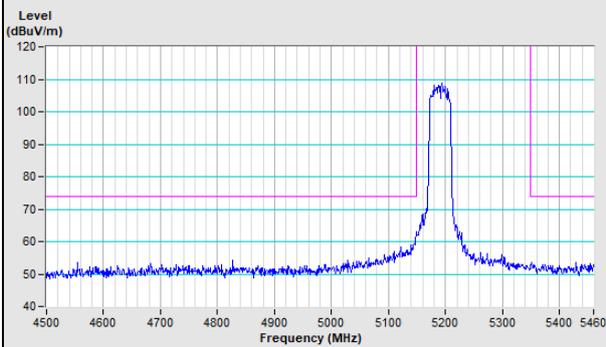
#### Horizontal (Peak)



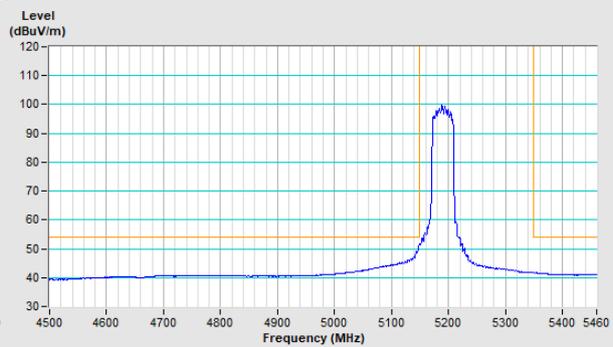
#### Horizontal (Average)



#### Vertical (Peak)

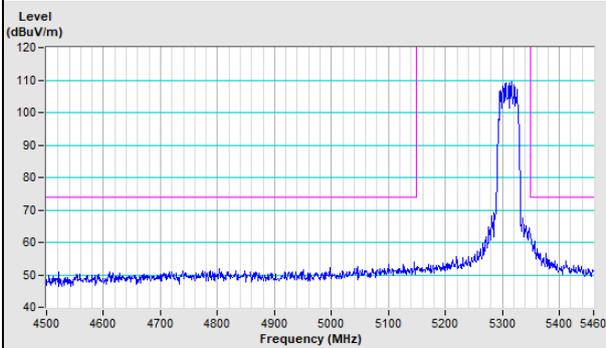


#### Vertical (Average)

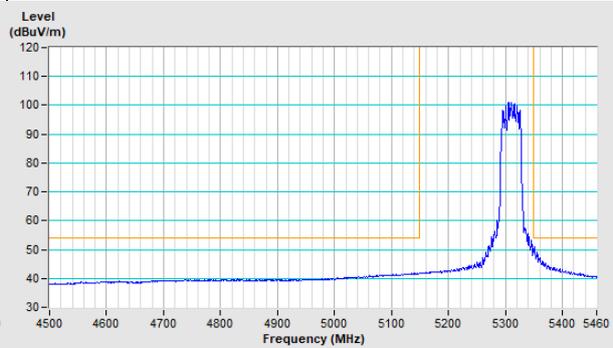


### 802.11ac (VHT40) Channel 62

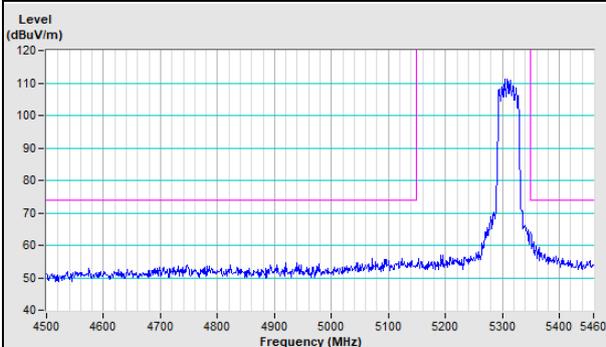
#### Horizontal (Peak)



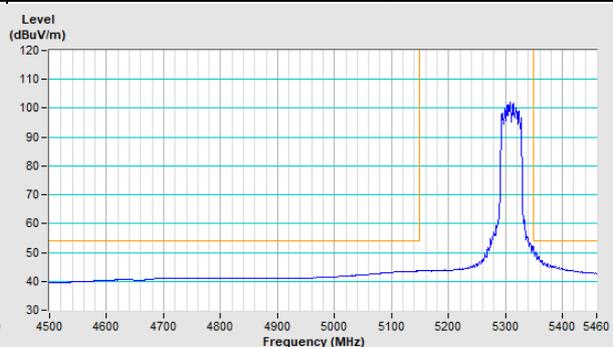
#### Horizontal (Average)



#### Vertical (Peak)

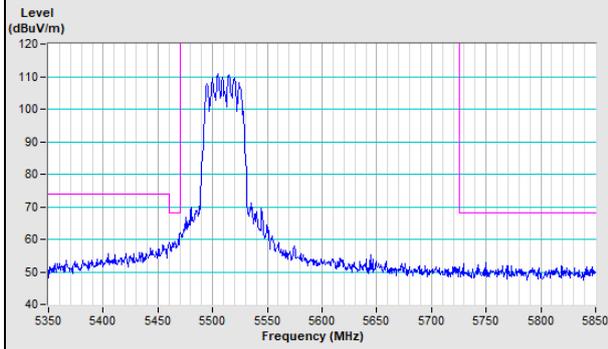


#### Vertical (Average)

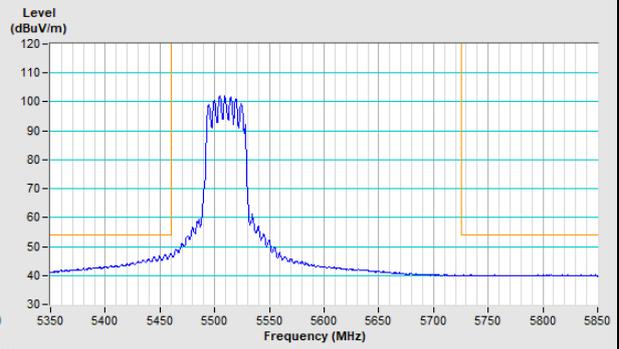


### 802.11ac (VHT40) Channel 102

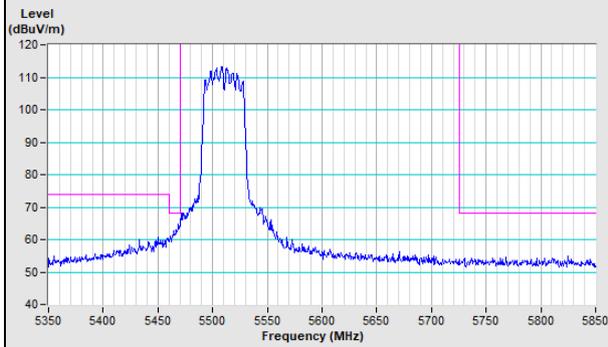
#### Horizontal (Peak)



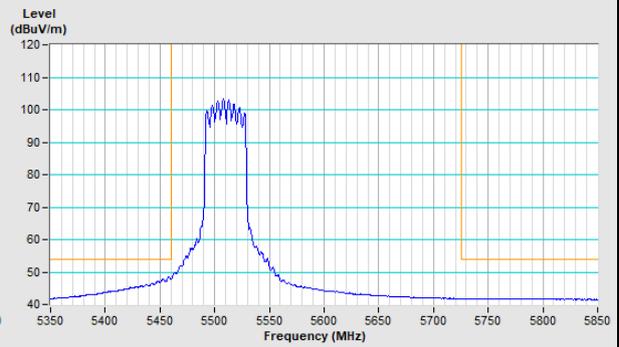
#### Horizontal (Average)



#### Vertical (Peak)

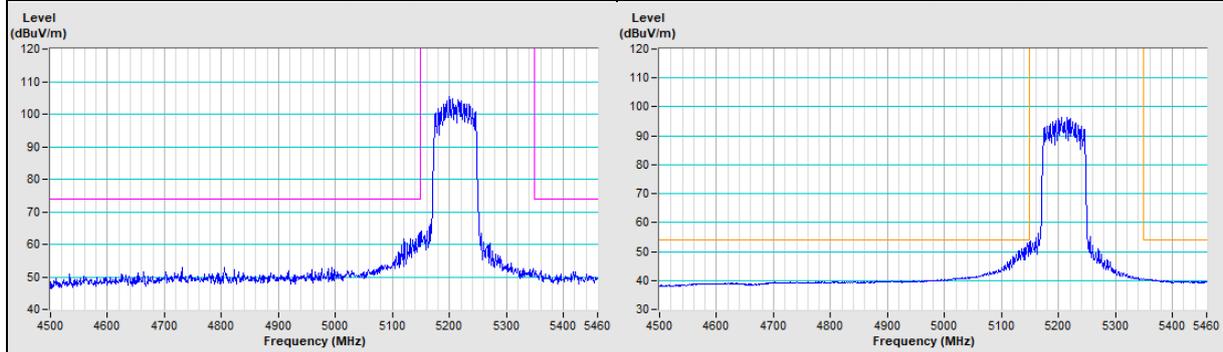


#### Vertical (Average)

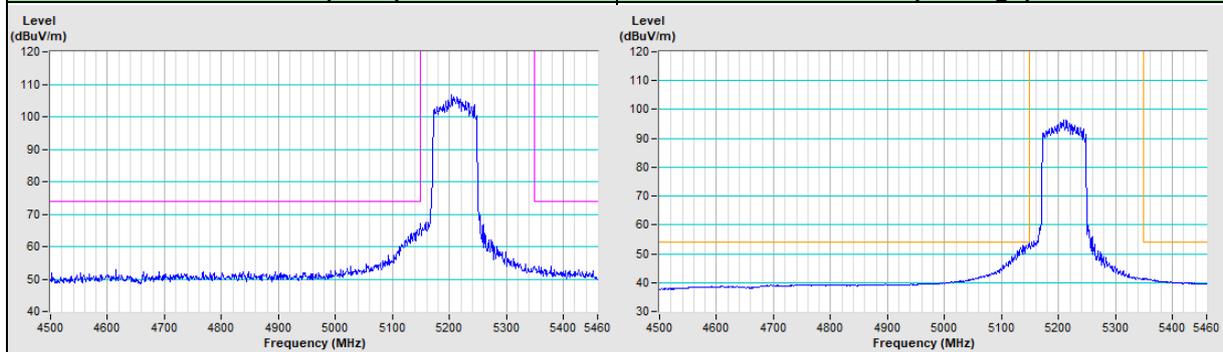


### 802.11ac (VHT80) Channel 42

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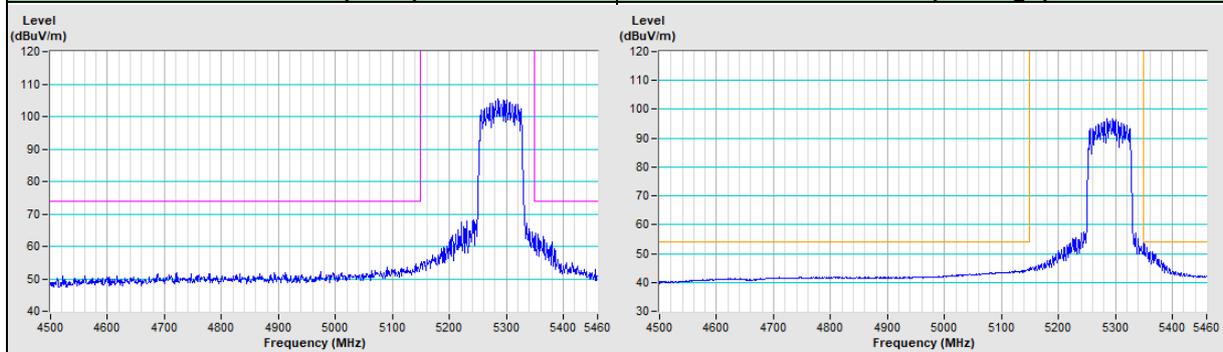


<b>Vertical (Peak)</b>	<b>Vertical (Average)</b>
------------------------	---------------------------

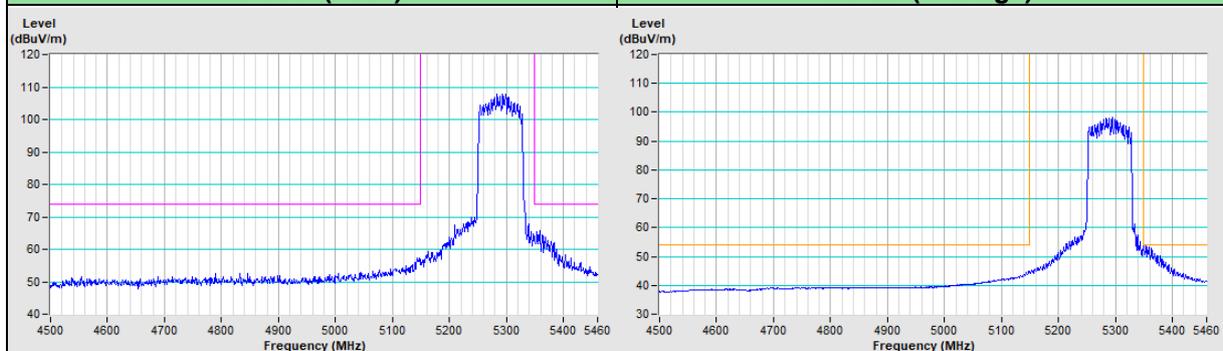


### 802.11ac (VHT80) Channel 58

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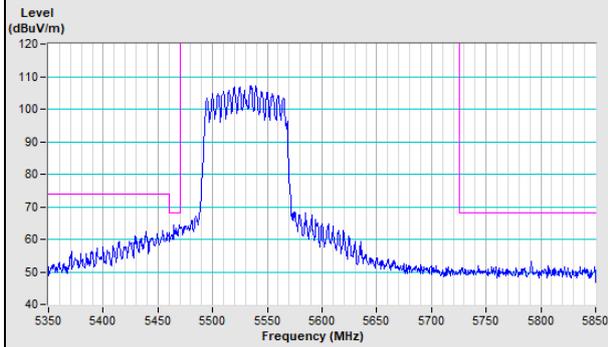


<b>Vertical (Peak)</b>	<b>Vertical (Average)</b>
------------------------	---------------------------

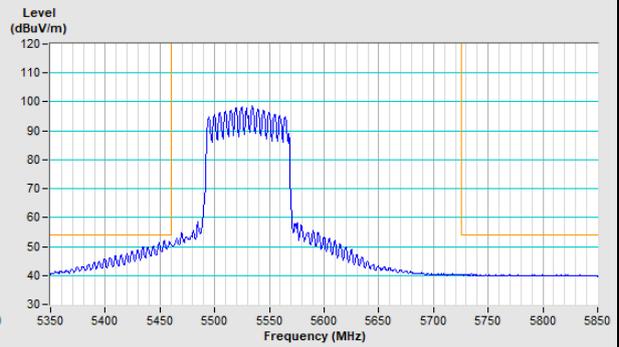


### 802.11ac (VHT80) Channel 106

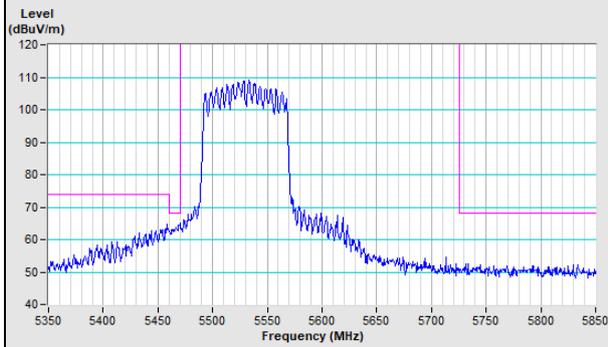
#### Horizontal (Peak)



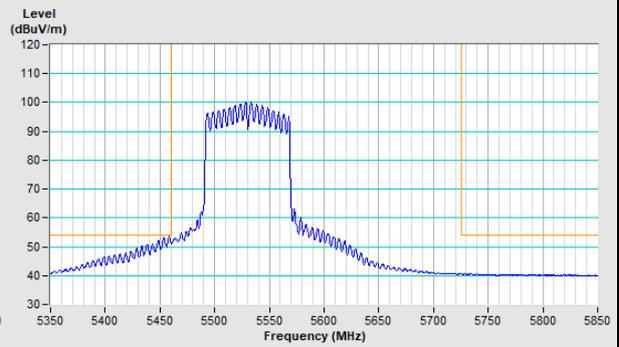
#### Horizontal (Average)



#### 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 according to ISO/IEC 17025.

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

**Lin Kou EMC/RF Lab**

Tel: 886-2-26052180

Fax: 886-2-26051924

**Hsin Chu EMC/RF/Telecom Lab**

Tel: 886-3-6668565

Fax: 886-3-6668323

**Hwa Ya EMC/RF/Safety Lab**

Tel: 886-3-3183232

Fax: 886-3-3270892

**Email:** [service.adt@tw.bureauveritas.com](mailto:service.adt@tw.bureauveritas.com)

**Web Site:** [www.bureauveritas-adt.com](http://www.bureauveritas-adt.com)

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

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