Report No.:	RF190514E01-1
FCC ID:	KA2AP2720A1
Test Model:	DAP-2720
Received Date:	Mar. 16, 2019
Test Date:	Mar. 16 to July 08, 2019
Issued Date:	Dec. 25, 2019
Applicant:	D-Link Corporation
Address:	No.289, Xinhu 3rd Rd., Neihu District, Tapei City 11494, Taiwan
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 R.O.C.
Test Location:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.
FCC Registration / Designation Number:	723255 / TW2022

Table of Contents

Release Control Record

Issue No.	Description	Date Issued
RF190514E01-1	Original release.	Dec. 25, 2019

1 Certificate of Conformity

Product:	Nuclias Connect AC2200 Wave2 Tri Band Access Point
Brand:	D-Link
Test Model:	DAP-2720
Sample Status:	ENGINEERING SAMPLE
Applicant:	D-Link Corporation
Test Date:	Mar. 16 to July 08, 2019
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 : _____ , **Date:** Dec. 25, 2019

Joyce Kuo / Specialist

Approved by : _____ , **Date:** Dec. 25, 2019

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 -4.64dB at 0.38047MHz.
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 -0.1dB at 5150.00MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	-	Reference only.
15.407(a)(1/2/3)	Peak Power Spectral Density	Pass	Meet the requirement of limit.
15.407(e)	6dB bandwidth	Pass	Meet the requirement of limit. (U-NII-3 Band only)
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	Antenna connector is i-pex (MHF) not a standard connector.

*For U-NII-3 band compliance with rule part 15.407(b)(4)(i), the OOBE test plots were recorded in Annex A.

Note:
Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.8 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	4.9 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	5.1 dB
	6GHz ~ 18GHz	4.9 dB
	18GHz ~ 40GHz	5.2 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Nuclias Connect AC2200 Wave2 Tri Band Access Point
Brand	D-Link
Test Model	DAP-2720
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	12Vdc from power adapter or 48~56Vdc from PoE
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode and VHT20/40 in 2.4GHz
Modulation Technology	DSSS,OFDM
Transfer Rate	802.11b: up to 11Mbps 802.11a/g: up to 54Mbps 802.11n: up to 300Mbps 802.11ac: up to 866.7Mbps
Operating Frequency	**2.4GHz:** 2.412GHz ~ 2.462GHz **5GHz:** 5.18GHz ~ 5.24GHz, 5.745GHz ~ 5.825GHz
Number of Channel	**2.4GHz:** 802.11b, 802.11g, 802.11n (HT20),VHT20: 11 802.11n (HT40), VHT40: 7 **5GHz:** 802.11a, 802.11n (HT20), 802.11ac (VHT20): 9 802.11n (HT40), 802.11ac (VHT40): 4 802.11ac (VHT80): 2
Output Power	**2.4GHz:** **CDD Mode:** 552.262mW **Beamforming Mode:** 505.318mW **5GHz:** **CDD Mode:** **5.18 ~ 5.24GHz:** 861.054mW **5.745 ~ 5.825GHz:** 791.834mW **Beamforming Mode** **5.18 ~ 5.24GHz:** 850.38mW **5.745 ~ 5.825GHz:**791.834 mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter x 1
Data Cable Supplied	NA

Note:

1. Simultaneously transmission condition.

Condition	Technology		
1	WLAN 2.4GHz	WLAN 5GHz (low band)	WLAN 5GHz (high band)
Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.			

2. The EUT power needs to be supplied from one power adapter or PoE, the information is as below table:

Adapter :		
Brand	Model No.	Spec.
Asian Power Devices Inc	WA-30P12R	Input: 100-240Vac,50-60Hz, 0.9A Max Output: 12V, 2.5A DC output cable (1.2m, Unshielded)

PoE : (Only for test not for sale)		
Brand	Model No.	Spec.
PHIHONG SWITCHING POWER SUPPLY	POE29U-56D	Input: 100-240Vac, 50-60Hz, 0.8A Output: 56V, 0.536A

3. The EUT was pre-tested under the following modes:

Test Mode	Description
Mode A	Power from PoE
Mode B	Power from adapter

Note: From the above modes, the AC power conducted emissions worst case was found in **Mode A,** the radiated emissions worst case was found in **Mode B**. Therefore only the test data of the mode was recorded in this report.

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

Ant. No.	Chain No.	Brand	Model	Antenna Net Gain (dBi)	Frequency range (GHz)	Antenna Type	Connector Type
2.4G-1	Chain 1	Donggun RF Electronic Technology Co.,Ltd	RF11C02064S	2.91	2.4~2.4835	PIFA	i-pex(MHF)
2.4G-2	Chain 0	Donggun RF Electronic Technology Co.,Ltd	RF11C02064S	2.75	2.4~2.4835	PIFA	i-pex(MHF)
5G-1	Chain 1	Donggun RF Electronic Technology Co.,Ltd	RF11C02064S	2.96	5.15~5.35	PIFA	i-pex(MHF)
5G-2	Chain 0	Donggun RF Electronic Technology Co.,Ltd	RF11C02064S	2.96	5.15~5.35	PIFA	i-pex(MHF)
5G-3	Chain 1	Donggun RF Electronic Technology Co.,Ltd	RF11C02064S	2.78	5.47~5.85	PIFA	i-pex(MHF)
5G-4	Chain 0	Donggun RF Electronic Technology Co.,Ltd	RF11C02064S	2.85	5.47~5.85	PIFA	i-pex(MHF)

5. The EUT incorporates a MIMO function

2.4GHz Band		
MODULATION MODE	**TX & RX CONFIGURATION**	
802.11b	2TX	2RX
802.11g	2TX	2RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX
VHT20	2TX	2RX
VHT40	2TX	2RX
5GHz Band		
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

Note:
1. All of modulation mode support beamforming function except 802.11a/b/g modulation mode.
2. The EUT support Beamforming and CDD mode, therefore both mode were investigated and the worst case scenario was identified. The worst case data were presented in test report.
3. The modulation and bandwidth are similar for 802.11n mode for 20MHz (40MHz) and 802.11ac mode for 20MHz (40MHz), therefore investigated worst case to representative mode in test report. (Final test mode refer section 3.2.1)

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

3.2 Description of Test Modes

FOR 5180 ~ 5240MHz

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

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

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

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
42	5210 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≥1G	RE<1G	PLC	APCM	
1	√	√	√	√	WALN 5GHz Low band
2	√	√	√	√	WALN 5GHz High band

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

Note: The EUT had been pre-tested on the positioned of each 2 axis. The worst case was found when positioned on **X-plane (below 1GHz) & Y-plane (above 1GHz)**.

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.

CDD Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6
802.11ac (VHT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
802.11ac (VHT40)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11ac (VHT80)		42	42	OFDM	BPSK	29.3
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.

CDD Mode (low band)						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5180-5240	36 to 48	40	OFDM	BPSK	6
CDD Mode (high band)						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11ac (VHT40)	5745-5825	151 to 159	159	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.

CDD Mode (low band)						
Mode	**FREQ. Band (MHz)**	**Available Channel**	**Tested Channel**	**Modulation Technology**	**Modulation Type**	**Data Rate (Mbps)**
802.11a	5180-5240	36 to 48	40	OFDM	BPSK	6
CDD Mode (high band)						
Mode	**FREQ. Band (MHz)**	**Available Channel**	**Tested Channel**	**Modulation Technology**	**Modulation Type**	**Data Rate (Mbps)**
802.11ac (VHT40)	5745-5825	151 to 159	159	OFDM	BPSK	13.5

Antenna Port Conducted Measurement:

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

CDD Mode						
Mode	**FREQ. Band (MHz)**	**Available Channel**	**Tested Channel**	**Modulation Technology**	**Modulation Type**	**Data Rate (Mbps)**
802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6
802.11ac (VHT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
802.11ac (VHT40)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11ac (VHT80)		42	42	OFDM	BPSK	29.3
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
Beamforming Mode (output power only)						
Mode	**FREQ. Band (MHz)**	**Available Channel**	**Tested Channel**	**Modulation Technology**	**Modulation Type**	**Data Rate (Mbps)**
802.11ac (VHT20)	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.5
802.11ac (VHT40)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11ac (VHT80)		42	42	OFDM	BPSK	29.3
802.11ac (VHT20)	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.5
802.11ac (VHT40)		151 to 159	151, 159	OFDM	BPSK	13.5
802.11ac (VHT80)		155	155	OFDM	BPSK	29.3

Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested By
RE≥1G	22deg. C, 70%RH	120Vac, 60Hz	Robert Cheng
RE<1G	22deg. C, 69%RH	120Vac, 60Hz	Andy Ho
PLC	24deg. C, 76%RH	120Vac, 60Hz	Andy Ho
APCM	25deg. C, 60%RH	120Vac, 60Hz	Anderson Chen

3.3 Duty Cycle of Test Signal

For low band:

If duty cycle of test signal is ≥ 98 %, duty factor is not required.

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

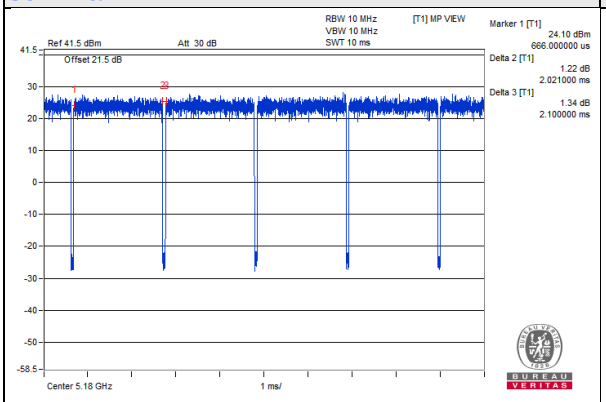
802.11a: Duty cycle = 2.021/2.1 = 0.962, Duty factor = 10 * log(1/ Duty cycle) = 0.17

802.11ac (VHT20): Duty cycle = 4.964/5.049 = 0.983

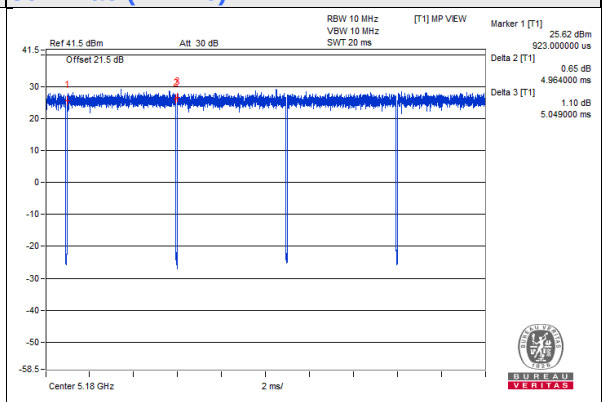
802.11ac (VHT40): Duty cycle = 2.407/2.478 = 0.971, Duty factor = 10 * log(1/ Duty cycle) = 0.13

802.11ac (VHT80): Duty cycle = 1.135/1.198 = 0.947, Duty factor = 10 * log(1/ Duty cycle) = 0.23

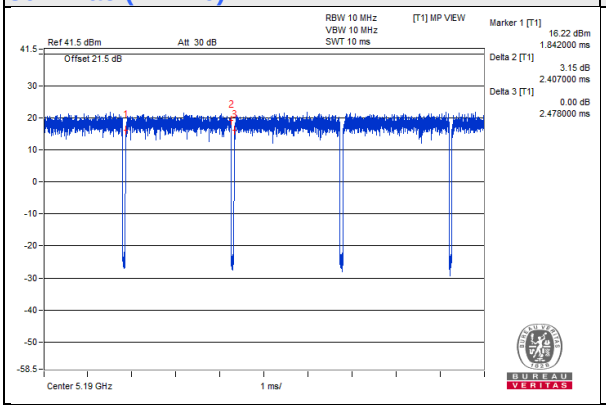
802.11a



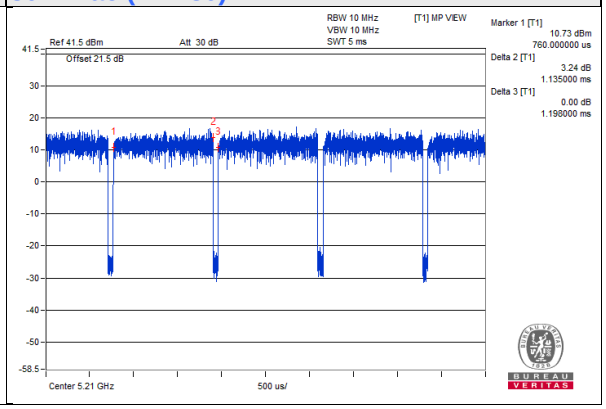
802.11ac (VHT20)



802.11ac (VHT40)

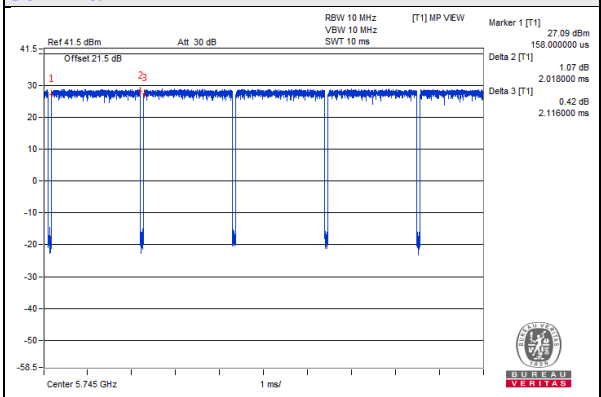


802.11ac (VHT80)

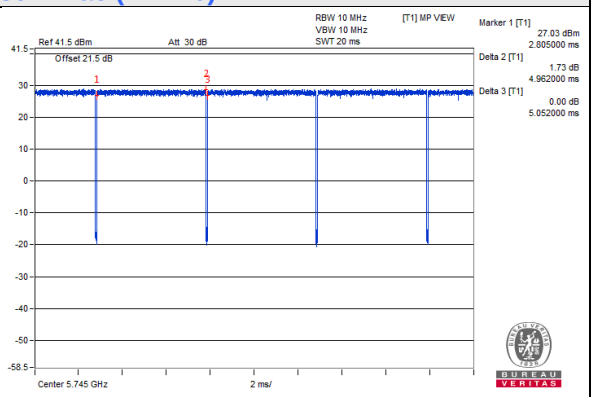


For high band:
If duty cycle of test signal is ≥ 98 %, duty factor is not required.
If duty cycle of test signal is < 98%, duty factor shall be considered.
802.11a: Duty cycle = 2.018/2.116 = 0.954, Duty factor = 10 * log(1/ Duty cycle) = 0.21
802.11ac (VHT20): Duty cycle = 4.962/5.052 = 0.982
802.11ac (VHT40): Duty cycle = 2.406/2.505 = 0.96, Duty factor = 10 * log(1/ Duty cycle) = 0.18
802.11ac (VHT80): Duty cycle = 1.131/1.22 = 0.927, Duty factor = 10 * log(1/ Duty cycle) = 0.33

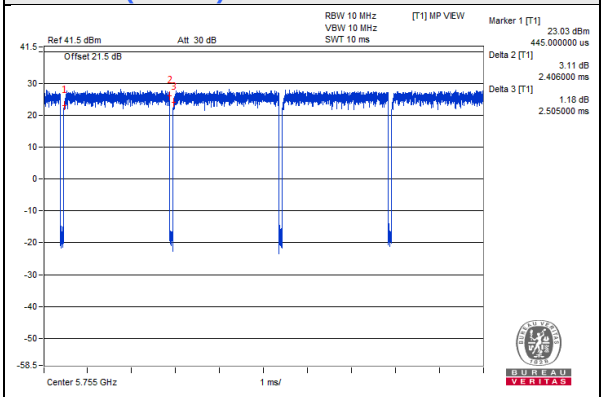
802.11a



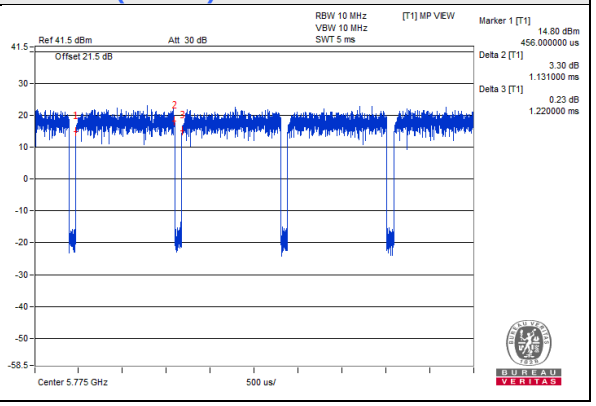
802.11ac (VHT20)



802.11ac (VHT40)



802.11ac (VHT80)



3.4 Description of Support Units

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

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Laptop	DELL	E5430	HYV4VY1	FCC DoC	Provided by Lab
B.	PoE Adapter	PHIHONG	POE29U-56D	NA	NA	Supplied by client

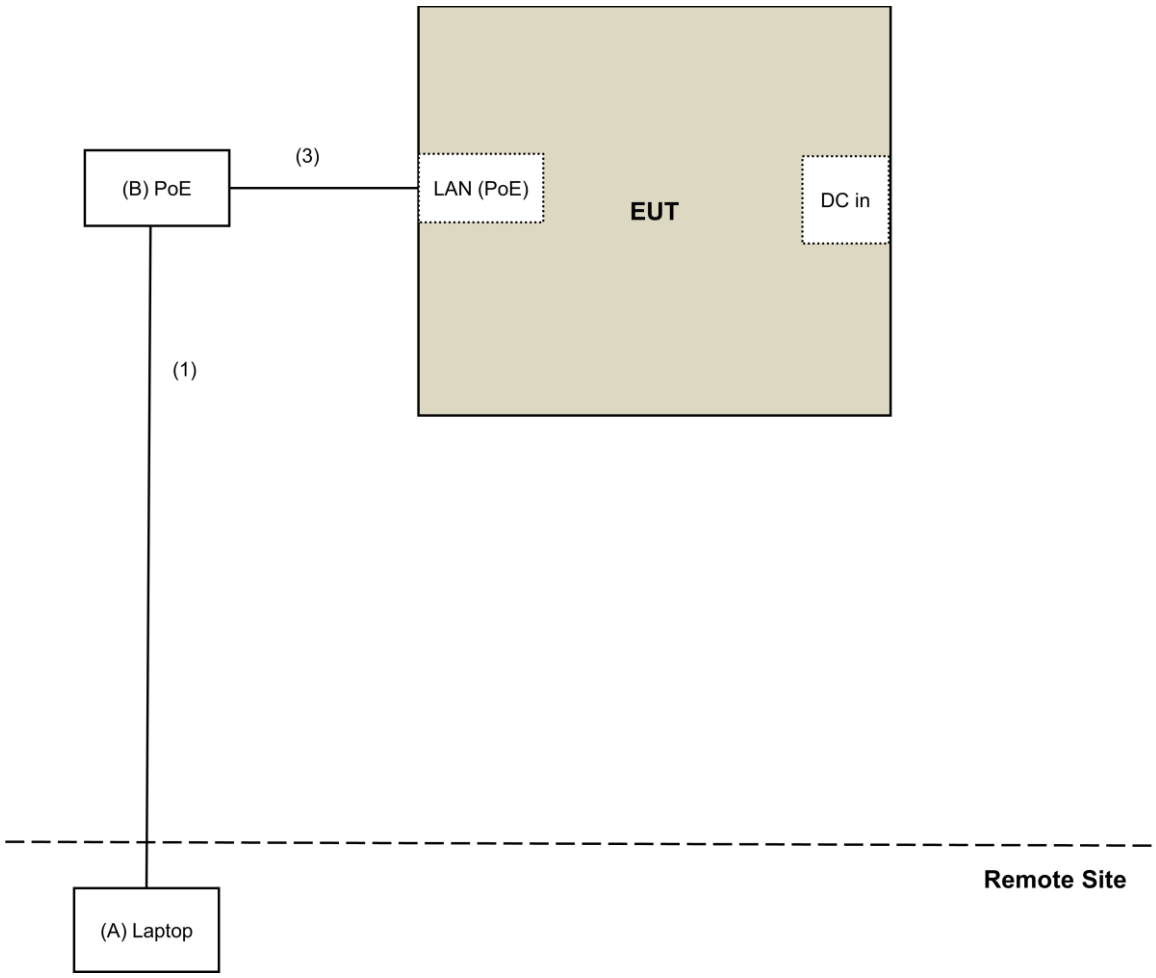
Note:

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

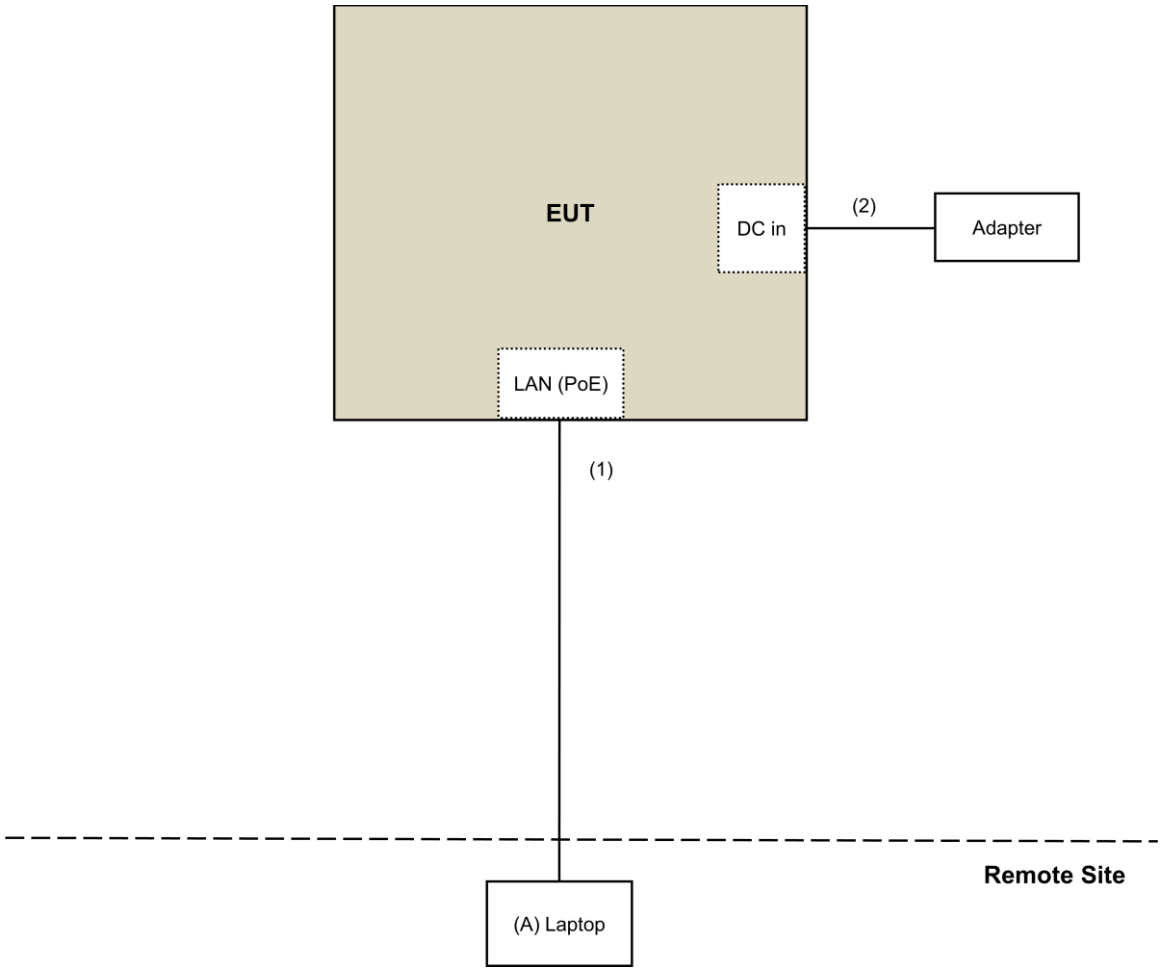
ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	RJ-45 Cable	1	10	No	0	Provided by Lab
2.	DC Cable	1	1.2	No	0	Supplied by client
3.	RJ-45 Cable	1	3	No	0	Provided by Lab

3.4.1 Configuration of System under Test

For Conducted emission:



For other test:



3.5 General Description of Applied Standard

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

FCC Part 15, Subpart E (15.407)
KDB 789033 D02 General UNII Test Procedure New Rules v02r01
KDB 662911 D01 Multiple Transmitter Output v02r01
ANSI C63.10-2013

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

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

<table>
<tr><td colspan="3">Applicable To</td><td colspan="2">Limit</td></tr>
<tr><td colspan="3" rowspan="2">789033 D02 General UNII Test Procedure New Rules v02r01</td><td colspan="2">Field Strength at 3m</td></tr>
<tr><td>PK:74 (dBµV/m)</td><td>AV:54 (dBµV/m)</td></tr>
<tr><td>Frequency Band</td><td colspan="2">Applicable To</td><td>EIRP Limit</td><td>Equivalent Field Strength at 3m</td></tr>
<tr><td>5150~5250 MHz</td><td colspan="2">15.407(b)(1)</td><td rowspan="3">PK:-27 (dBm/MHz)</td><td rowspan="3">PK:68.2(dBµV/m)</td></tr>
<tr><td>5250~5350 MHz</td><td colspan="2">15.407(b)(2)</td></tr>
<tr><td>5470~5725 MHz</td><td colspan="2">15.407(b)(3)</td></tr>
<tr><td rowspan="2">5725~5850 MHz</td><td>☒</td><td>15.407(b)(4)(i)</td><td>PK:-27 (dBm/MHz) *1
PK:10 (dBm/MHz) *2
PK:15.6 (dBm/MHz) *3
PK:27 (dBm/MHz) *4</td><td>PK: 68.2(dBµV/m) *1
PK:105.2 (dBµV/m) *2
PK: 110.8(dBµV/m) *3
PK:122.2 (dBµV/m) *4</td></tr>
<tr><td>☐</td><td>15.407(b)(4)(ii)</td><td colspan="2">Emission limits in section 15.247(d)</td></tr>
<tr><td colspan="5">*1 beyond 75 MHz or more above of the band edge.
*2 below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.
*3 below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.
*4 from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.</td></tr>
</table>

Note:

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

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

4.1.2 Test Instruments

For OOBE test item:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Keysight	N9038A	MY54450088	July 05, 2018	July 04, 2019
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-783	Nov. 25, 2018	Nov. 24, 2019
Pre-Amplifier EMCI	EMC12630SE	980385	Aug. 16, 2018	Aug. 15, 2019
RF Cable	EMC104-SM-SM-1200	160923	Jan. 28, 2019	Jan. 27, 2020
RF Cable	104 RF cable	131215	Jan. 10, 2019	Jan. 09, 2020
RF Cable	EMC104-SM-SM-6000	180418	May 07, 2018	May 06, 2019
Pre-Amplifier EMCI	EMC184045SE	980387	Jan. 28, 2019	Jan. 27, 2020
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170519	Nov. 25, 2018	Nov. 24, 2019
RF Cable	EMC102-KM-KM-1200	160924	Jan. 28, 2019	Jan. 27, 2020
RF Cable	EMC102-KM-KM-1200	160925	Jan. 28, 2019	Jan. 27, 2020
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	NA	NA

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in 966 Chamber No. 4.
3. The CANADA Site Registration No. is 20331-2
4. Tested Date:Mar. 16, 2019

For other test items:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Agilent	N9038A	MY50010156	July 12, 2018	July 11, 2019
Pre-Amplifier EMCI	EMC001340	980142	Jan. 25, 2019	Jan. 24, 2020
Loop Antenna Electro-Metrics	EM-6879	269	Sep. 07, 2018	Sep. 06, 2019
RF Cable	NA	LOOPCAB-001	Jan. 14, 2019	Jan. 13, 2020
RF Cable	NA	LOOPCAB-002	Jan. 14, 2019	Jan. 13, 2020
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-01	Oct. 30, 2018	Oct. 29, 2019
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-406	Nov. 22, 2018	Nov. 21, 2019
RF Cable	8D	966-4-1	Mar. 19, 2019	Mar. 18, 2020
RF Cable	8D	966-4-2	Mar. 19, 2019	Mar. 18, 2020
RF Cable	8D	966-4-3	Mar. 19, 2019	Mar. 18, 2020
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-4-01	Sep. 27, 2018	Sep. 26, 2019
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-783	Nov. 25, 2018	Nov. 24, 2019
Pre-Amplifier EMCI	EMC12630SE	980385	Aug. 16, 2018	Aug. 15, 2019
RF Cable	EMC104-SM-SM-1200	160923	Jan. 28, 2019	Jan. 27, 2020
RF Cable	104 RF cable	131215	Jan. 10, 2019	Jan. 09, 2020
RF Cable	EMC104-SM-SM-6000	180418	May 03, 2019	May 02, 2020
Pre-Amplifier EMCI	EMC184045SE	980387	Jan. 28, 2019	Jan. 27, 2020
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170519	Nov. 25, 2018	Nov. 24, 2019
RF Cable	EMC102-KM-KM-1200	160924	Jan. 28, 2019	Jan. 27, 2020
RF Cable	EMC102-KM-KM-1200	160925	Jan. 28, 2019	Jan. 27, 2020
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	NA	NA
Spectrum Analyzer R&S	FSV40	100964	June 04, 2019	June 03, 2020
Power meter Anritsu	ML2495A	1014008	May 13, 2019	May 12, 2020
Power sensor Anritsu	MA2411B	0917122	May 13, 2019	May 12, 2020
AC Power Source Extech Electronics	6205	1440452	NA	NA
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	Jan. 09, 2019	Jan. 08, 2020
True RMS Clamp Meter FLUKE	325	31130711WS	May 21, 2019	May 20, 2020
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 15, 2019	Apr. 14, 2020

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. Loop antenna was used for all emissions below 30 MHz.
4. Tested Date: June 26 to July 08, 2019

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:

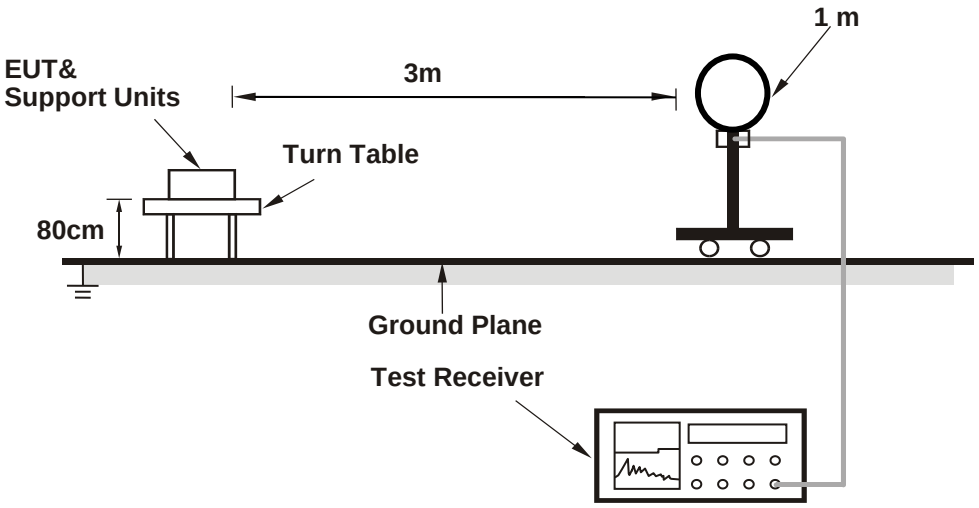
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98%) or 10Hz (Duty cycle ≥ 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

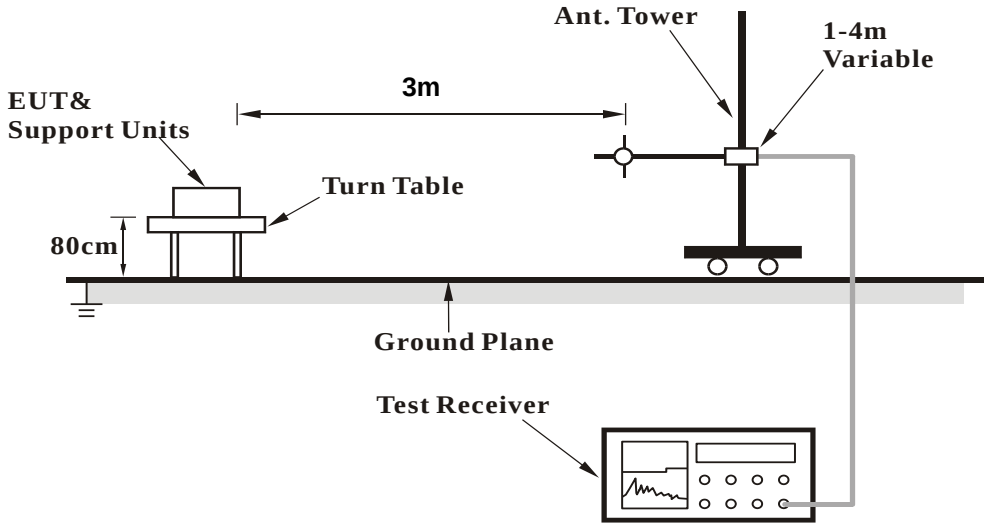
No deviation.

4.1.5 Test Setup

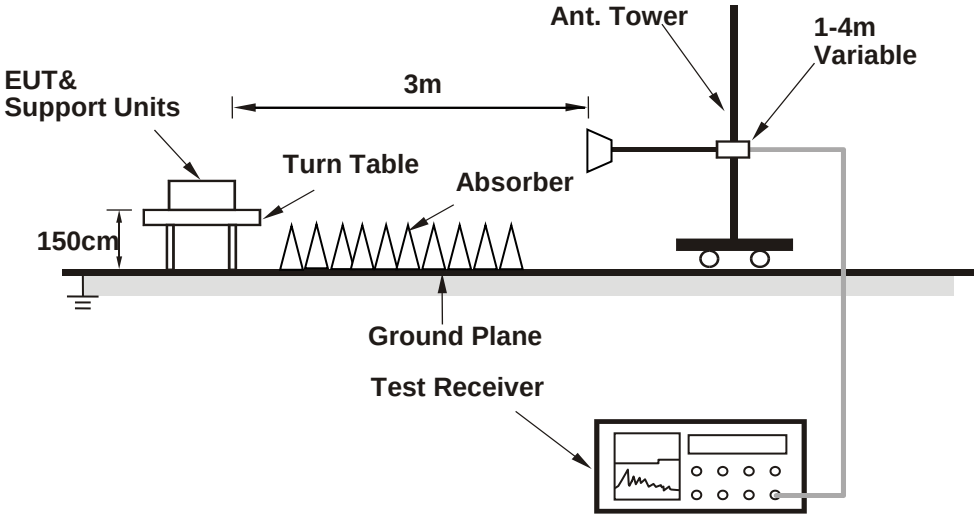
For Radiated emission below 30MHz



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 remote site.
b. Controlling software (QDART-Connectivity 1.0.44) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results (Mode 1)

Above 1GHz Data:

802.11a

CHANNEL	TX Channel 36	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	5150.00	65.4 PK	74.0	-8.6	1.75 H	243	61.9	3.5
2	5150.00	53.6 AV	54.0	-0.4	1.75 H	243	50.1	3.5
3	*5180.00	120.0 PK			1.75 H	243	116.6	3.4
4	*5180.00	109.8 AV			1.75 H	243	106.4	3.4
5	#10360.00	46.3 PK	68.2	-21.9	1.62 H	192	33.2	13.1
6	15540.00	45.9 PK	74.0	-28.1	2.55 H	243	32.3	13.6
7	15540.00	33.8 AV	54.0	-20.2	2.55 H	243	20.2	13.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	5150.00	61.3 PK	74.0	-12.7	1.49 V	152	57.8	3.5
2	5150.00	48.6 AV	54.0	-5.4	1.49 V	152	45.1	3.5
3	*5180.00	114.0 PK			1.49 V	152	110.6	3.4
4	*5180.00	104.5 AV			1.49 V	152	101.1	3.4
5	#10360.00	43.5 PK	68.2	-24.7	1.64 V	217	30.4	13.1
6	15540.00	46.3 PK	74.0	-27.7	2.86 V	29	32.7	13.6
7	15540.00	36.0 AV	54.0	-18.0	2.86 V	29	22.4	13.6

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.

CHANNEL	TX Channel 40	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	66.0 PK	74.0	-8.0	1.77 H	243	62.5	3.5
2	5150.00	53.6 AV	54.0	-0.4	1.77 H	243	50.1	3.5
3	*5200.00	121.7 PK			1.77 H	243	118.3	3.4
4	*5200.00	112.1 AV			1.77 H	243	108.7	3.4
5	#10400.00	46.8 PK	68.2	-21.4	1.55 H	255	33.4	13.4
6	15600.00	52.0 PK	74.0	-22.0	2.03 H	241	38.6	13.4
7	15600.00	39.3 AV	54.0	-14.7	2.03 H	241	25.9	13.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	60.6 PK	74.0	-13.4	1.52 V	155	57.1	3.5
2	5150.00	48.2 AV	54.0	-5.8	1.52 V	155	44.7	3.5
3	*5200.00	115.1 PK			1.52 V	155	111.7	3.4
4	*5200.00	106.6 AV			1.52 V	155	103.2	3.4
5	#10400.00	43.6 PK	68.2	-24.6	1.67 V	204	30.2	13.4
6	15600.00	46.1 PK	74.0	-27.9	2.89 V	26	32.7	13.4
7	15600.00	35.7 AV	54.0	-18.3	2.89 V	26	22.3	13.4

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.

CHANNEL	TX Channel 48	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	52.9 PK	74.0	-21.1	1.25 H	238	49.4	3.5
2	5150.00	40.4 AV	54.0	-13.6	1.25 H	238	36.9	3.5
3	*5240.00	122.9 PK			1.25 H	238	119.9	3.0
4	*5240.00	112.8 AV			1.25 H	238	109.8	3.0
5	5350.00	51.1 PK	74.0	-22.9	1.25 H	238	47.8	3.3
6	5350.00	39.7 AV	54.0	-14.3	1.25 H	238	36.4	3.3
7	#10480.00	46.9 PK	68.2	-21.3	1.03 H	182	33.4	13.5
8	15720.00	54.8 PK	74.0	-19.2	1.62 H	260	42.0	12.8
9	15720.00	42.1 AV	54.0	-11.9	1.62 H	260	29.3	12.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	48.6 PK	74.0	-25.4	1.47 V	164	45.1	3.5
2	5150.00	36.9 AV	54.0	-17.1	1.47 V	164	33.4	3.5
3	*5240.00	114.6 PK			1.47 V	164	111.6	3.0
4	*5240.00	106.2 AV			1.47 V	164	103.2	3.0
5	5350.00	48.3 PK	74.0	-25.7	1.47 V	164	45.0	3.3
6	5350.00	36.4 AV	54.0	-17.6	1.47 V	164	33.1	3.3
7	#10480.00	43.8 PK	68.2	-24.4	1.65 V	213	30.3	13.5
8	15720.00	46.6 PK	74.0	-27.4	2.88 V	42	33.8	12.8
9	15720.00	36.5 AV	54.0	-17.5	2.88 V	42	23.7	12.8

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.

802.11ac (VHT20)

CHANNEL	TX Channel 36	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	66.3 PK	74.0	-7.7	1.80 H	250	62.8	3.5
2	5150.00	53.6 AV	54.0	-0.4	1.80 H	250	50.1	3.5
3	*5180.00	120.5 PK			1.80 H	250	117.1	3.4
4	*5180.00	109.2 AV			1.80 H	250	105.8	3.4
5	#10360.00	47.2 PK	68.2	-21.0	1.20 H	179	34.1	13.1
6	15540.00	46.0 PK	74.0	-28.0	1.46 H	254	32.4	13.6
7	15540.00	35.2 AV	54.0	-18.8	1.46 H	254	21.6	13.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	60.9 PK	74.0	-13.1	1.49 V	136	57.4	3.5
2	5150.00	48.7 AV	54.0	-5.3	1.49 V	136	45.2	3.5
3	*5180.00	117.9 PK			1.49 V	136	114.5	3.4
4	*5180.00	103.0 AV			1.49 V	136	99.6	3.4
5	#10360.00	42.9 PK	68.2	-25.3	1.66 V	194	29.8	13.1
6	15540.00	46.7 PK	74.0	-27.3	2.87 V	33	33.1	13.6
7	15540.00	36.1 AV	54.0	-17.9	2.87 V	33	22.5	13.6

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.

CHANNEL	TX Channel 40	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	67.8 PK	74.0	-6.2	1.73 H	236	64.3	3.5
2	**5150.00**	**53.9 AV**	**54.0**	**-0.1**	**1.73 H**	**236**	**50.4**	**3.5**
3	*5200.00	123.0 PK			1.73 H	236	119.6	3.4
4	*5200.00	112.2 AV			1.73 H	236	108.8	3.4
5	#10400.00	47.1 PK	68.2	-21.1	1.06 H	181	33.7	13.4
6	15600.00	51.9 PK	74.0	-22.1	1.77 H	165	38.5	13.4
7	15600.00	37.6 AV	54.0	-16.4	1.77 H	165	24.2	13.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	60.6 PK	74.0	-13.4	1.49 V	153	57.1	3.5
2	5150.00	48.4 AV	54.0	-5.6	1.49 V	153	44.9	3.5
3	*5200.00	114.5 PK			1.49 V	153	111.1	3.4
4	*5200.00	105.8 AV			1.49 V	153	102.4	3.4
5	#10400.00	42.9 PK	68.2	-25.3	1.73 V	211	29.5	13.4
6	15600.00	46.4 PK	74.0	-27.6	2.80 V	35	33.0	13.4
7	15600.00	35.8 AV	54.0	-18.2	2.80 V	35	22.4	13.4

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.

CHANNEL	TX Channel 48	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5120.00	54.4 PK	74.0	-19.6	1.00 H	246	51.0	3.4
2	5120.00	43.3 AV	54.0	-10.7	1.00 H	246	39.9	3.4
3	*5240.00	123.4 PK			1.00 H	246	120.4	3.0
4	*5240.00	112.5 AV			1.00 H	246	109.5	3.0
5	5350.00	52.6 PK	74.0	-21.4	1.00 H	246	49.3	3.3
6	5350.00	40.9 AV	54.0	-13.1	1.00 H	246	37.6	3.3
7	#10480.00	47.5 PK	68.2	-20.7	1.03 H	182	34.0	13.5
8	15720.00	49.9 PK	74.0	-24.1	1.21 H	179	37.1	12.8
9	15720.00	36.9 AV	54.0	-17.1	1.21 H	179	24.1	12.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	47.9 PK	74.0	-26.1	1.55 V	142	44.4	3.5
2	5150.00	35.7 AV	54.0	-18.3	1.55 V	142	32.2	3.5
3	*5240.00	114.2 PK			1.55 V	142	111.2	3.0
4	*5240.00	105.9 AV			1.55 V	142	102.9	3.0
5	5350.00	49.3 PK	74.0	-24.7	1.55 V	142	46.0	3.3
6	5350.00	37.6 AV	54.0	-16.4	1.55 V	142	34.3	3.3
7	#10480.00	43.1 PK	68.2	-25.1	1.71 V	212	29.6	13.5
8	15720.00	45.8 PK	74.0	-28.2	2.88 V	29	33.0	12.8
9	15720.00	35.5 AV	54.0	-18.5	2.88 V	29	22.7	12.8

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.

802.11ac (VHT40)

CHANNEL	TX Channel 38	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	64.5 PK	74.0	-9.5	1.77 H	237	61.0	3.5
2	5150.00	53.5 AV	54.0	-0.5	1.77 H	237	50.0	3.5
3	*5190.00	114.6 PK			1.77 H	237	111.2	3.4
4	*5190.00	104.2 AV			1.77 H	237	100.8	3.4
5	5350.00	52.8 PK	74.0	-21.2	1.77 H	237	49.5	3.3
6	5350.00	40.1 AV	54.0	-13.9	1.77 H	237	36.8	3.3
7	#10380.00	46.8 PK	68.2	-21.4	1.43 H	205	33.5	13.3
8	15570.00	45.8 PK	74.0	-28.2	1.91 H	215	32.4	13.4
9	15570.00	34.5 AV	54.0	-19.5	1.91 H	215	21.1	13.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	60.4 PK	74.0	-13.6	1.47 V	160	56.9	3.5
2	5150.00	48.1 AV	54.0	-5.9	1.47 V	160	44.6	3.5
3	*5190.00	99.1 PK			1.47 V	160	95.7	3.4
4	*5190.00	98.7 AV			1.47 V	160	95.3	3.4
5	5350.00	50.4 PK	74.0	-23.6	1.47 V	160	47.1	3.3
6	5350.00	39.5 AV	54.0	-14.5	1.47 V	160	36.2	3.3
7	#10380.00	43.0 PK	68.2	-25.2	1.78 V	230	29.7	13.3
8	15570.00	45.3 PK	74.0	-28.7	2.82 V	30	31.9	13.4
9	15570.00	35.0 AV	54.0	-19.0	2.82 V	30	21.6	13.4

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.

CHANNEL	TX Channel 46	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	120.8 PK			1.01 H	248	117.7	3.1
2	*5230.00	111.7 AV			1.01 H	248	108.6	3.1
3	5350.00	57.0 PK	74.0	-17.0	1.01 H	248	53.7	3.3
4	5350.00	45.2 AV	54.0	-8.8	1.01 H	248	41.9	3.3
5	#10460.00	49.3 PK	68.2	-18.9	1.87 H	249	35.8	13.5
6	15690.00	54.4 PK	74.0	-19.6	1.66 H	231	41.5	12.9
7	15690.00	43.1 AV	54.0	-10.9	1.66 H	231	30.2	12.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	115.2 PK			1.52 V	150	112.1	3.1
2	*5230.00	106.2 AV			1.52 V	150	103.1	3.1
3	5350.00	51.2 PK	74.0	-22.8	1.52 V	150	47.9	3.3
4	5350.00	39.8 AV	54.0	-14.2	1.52 V	150	36.5	3.3
5	#10460.00	43.5 PK	68.2	-24.7	1.68 V	211	30.0	13.5
6	15690.00	46.8 PK	74.0	-27.2	2.85 V	23	33.9	12.9
7	15690.00	36.2 AV	54.0	-17.8	2.85 V	23	23.3	12.9

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.

802.11ac (VHT80)

CHANNEL	TX Channel 42	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	65.1 PK	74.0	-8.9	1.04 H	247	61.6	3.5
2	5150.00	53.5 AV	54.0	-0.5	1.04 H	247	50.0	3.5
3	*5210.00	110.2 PK			1.04 H	247	106.9	3.3
4	*5210.00	101.2 AV			1.04 H	247	97.9	3.3
5	5350.00	53.1 PK	74.0	-20.9	1.04 H	247	49.8	3.3
6	5350.00	42.4 AV	54.0	-11.6	1.04 H	247	39.1	3.3
7	#10420.00	46.5 PK	68.2	-21.7	1.05 H	184	33.0	13.5
8	15630.00	45.5 PK	74.0	-28.5	1.14 H	98	32.3	13.2
9	15630.00	34.6 AV	54.0	-19.4	1.14 H	98	21.4	13.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	60.2 PK	74.0	-13.8	1.49 V	140	56.7	3.5
2	5150.00	48.1 AV	54.0	-5.9	1.49 V	140	44.6	3.5
3	*5210.00	104.8 PK			1.49 V	140	101.5	3.3
4	*5210.00	95.7 AV			1.49 V	140	92.4	3.3
5	5350.00	50.2 PK	74.0	-23.8	1.49 V	140	46.9	3.3
6	5350.00	39.1 AV	54.0	-14.9	1.49 V	140	35.8	3.3
7	#10420.00	42.8 PK	68.2	-25.4	1.68 V	221	29.3	13.5
8	15630.00	45.6 PK	74.0	-28.4	2.81 V	20	32.4	13.2
9	15630.00	35.6 AV	54.0	-18.4	2.81 V	20	22.4	13.2

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:

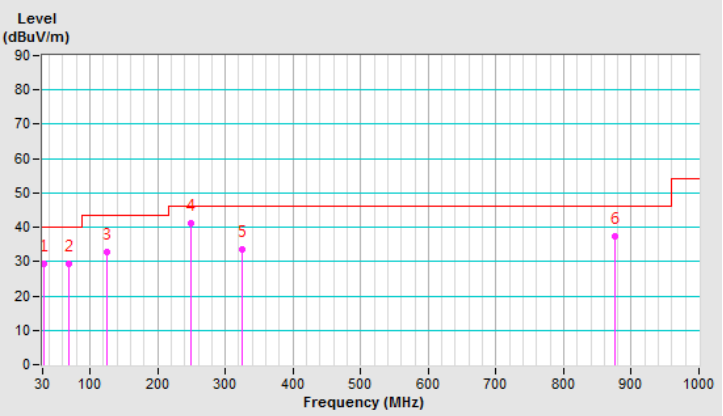
802.11a

CHANNEL	TX Channel 40	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	31.02	29.4 QP	40.0	-10.6	1.10 H	263	39.1	-9.7
2	69.07	29.5 QP	40.0	-10.5	1.00 H	302	39.8	-10.3
3	125.04	32.7 QP	43.5	-10.8	2.60 H	313	42.1	-9.4
4	250.00	41.1 QP	46.0	-4.9	1.00 H	143	49.7	-8.6
5	323.96	33.6 QP	46.0	-12.4	1.00 H	145	39.8	-6.2
6	874.99	37.3 QP	46.0	-8.7	1.50 H	302	31.7	5.6

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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.

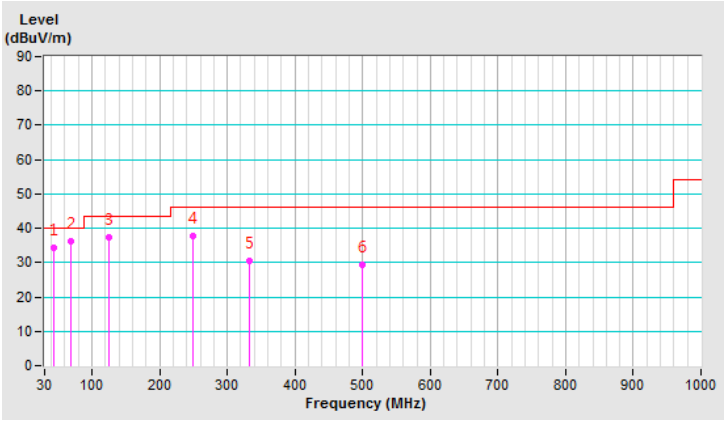


CHANNEL	TX Channel 40	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	43.90	34.2 QP	40.0	-5.8	1.00 V	264	42.5	-8.3
2	69.40	36.1 QP	40.0	-3.9	1.06 V	311	46.4	-10.3
3	125.01	37.5 QP	43.5	-6.0	1.00 V	263	46.9	-9.4
4	250.02	37.6 QP	46.0	-8.4	1.66 V	149	46.3	-8.7
5	331.96	30.4 QP	46.0	-15.6	1.14 V	265	36.4	-6.0
6	499.99	29.5 QP	46.0	-16.5	1.00 V	269	31.3	-1.8

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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.



4.1.8 Test Results (Mode 2)

Above 1GHz Data:

802.11a

CHANNEL	TX Channel 149	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	#5643.37	63.1 PK	68.2	-5.1	1.00 H	121	59.5	3.6
2	*5745.00	123.0 PK			1.00 H	113	119.1	3.9
3	*5745.00	111.6 AV			1.00 H	113	107.7	3.9
4	#5947.71	61.5 PK	68.2	-6.7	1.00 H	121	57.1	4.4
5	11490.00	49.5 PK	74.0	-24.5	1.24 H	128	35.3	14.2
6	11490.00	38.0 AV	54.0	-16.0	1.24 H	128	23.8	14.2
7	#17235.00	56.0 PK	68.2	-12.2	1.66 H	251	38.7	17.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	#5581.54	61.7 PK	68.2	-6.5	3.30 V	332	58.0	3.7
2	*5745.00	117.2 PK			3.30 V	332	113.3	3.9
3	*5745.00	105.6 AV			3.30 V	332	101.7	3.9
4	#5989.47	64.7 PK	68.2	-3.5	3.30 V	332	60.3	4.4
5	11490.00	43.6 PK	74.0	-30.4	1.59 V	210	29.4	14.2
6	11490.00	33.4 AV	54.0	-20.6	1.59 V	210	19.2	14.2
7	#17235.00	46.0 PK	68.2	-22.2	2.88 V	24	28.7	17.3

REMARKS:

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

CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5633.79	62.8 PK	68.2	-5.4	1.00 H	113	59.2	3.6
2	*5785.00	124.3 PK			1.00 H	113	120.3	4.0
3	*5785.00	111.5 AV			1.00 H	113	107.5	4.0
4	#6001.67	63.0 PK	68.2	-5.2	1.00 H	113	58.6	4.4
5	11570.00	49.5 PK	74.0	-24.5	1.25 H	117	35.3	14.2
6	11570.00	37.8 AV	54.0	-16.2	1.25 H	117	23.6	14.2
7	#17355.00	56.5 PK	68.2	-11.7	1.65 H	252	38.8	17.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5585.79	62.1 PK	68.2	-6.1	3.18 V	341	58.4	3.7
2	*5785.00	117.0 PK			3.33 V	331	113.0	4.0
3	*5785.00	105.4 AV			3.33 V	331	101.4	4.0
4	#5937.96	62.7 PK	68.2	-5.5	3.18 V	341	58.4	4.3
5	11570.00	43.6 PK	74.0	-30.4	1.70 V	231	29.4	14.2
6	11570.00	33.1 AV	54.0	-20.9	1.70 V	231	18.9	14.2
7	#17355.00	46.5 PK	68.2	-21.7	2.88 V	44	28.8	17.7

REMARKS:

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

CHANNEL	TX Channel 165	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5578.62	61.7 PK	68.2	-6.5	1.02 H	113	58.0	3.7
2	*5825.00	124.3 PK			1.02 H	113	120.1	4.2
3	*5825.00	112.1 AV			1.02 H	113	107.9	4.2
4	#5987.90	62.1 PK	68.2	-6.1	1.02 H	113	57.7	4.4
5	11650.00	50.0 PK	74.0	-24.0	1.27 H	132	36.1	13.9
6	11650.00	38.3 AV	54.0	-15.7	1.27 H	132	24.4	13.9
7	#17475.00	56.1 PK	68.2	-12.1	1.65 H	250	37.3	18.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5564.57	62.9 PK	68.2	-5.3	3.24 V	339	59.2	3.7
2	*5825.00	117.6 PK			3.25 V	339	113.4	4.2
3	*5825.00	105.9 AV			3.25 V	339	101.7	4.2
4	#5993.25	63.2 PK	68.2	-5.0	3.24 V	339	58.8	4.4
5	11650.00	43.1 PK	74.0	-30.9	1.59 V	218	29.2	13.9
6	11650.00	33.1 AV	54.0	-20.9	1.59 V	218	19.2	13.9
7	#17475.00	46.4 PK	68.2	-21.8	2.86 V	21	27.6	18.8

REMARKS:

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

802.11ac (VHT20)

CHANNEL	TX Channel 149	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5607.31	62.4 PK	68.2	-5.8	1.01 H	119	58.7	3.7
2	*5745.00	123.2 PK			1.01 H	119	119.3	3.9
3	*5745.00	112.8 AV			1.01 H	119	108.9	3.9
4	#5998.06	62.4 PK	68.2	-5.8	1.01 H	119	58.0	4.4
5	11490.00	49.3 PK	74.0	-24.7	1.30 H	118	35.1	14.2
6	11490.00	38.1 AV	54.0	-15.9	1.30 H	118	23.9	14.2
7	#17235.00	55.9 PK	68.2	-12.3	1.61 H	249	38.6	17.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5595.89	62.8 PK	68.2	-5.4	2.99 V	333	59.1	3.7
2	*5745.00	117.1 PK			3.11 V	322	113.2	3.9
3	*5745.00	105.8 AV			3.11 V	322	101.9	3.9
4	#5991.86	64.4 PK	68.2	-3.8	2.99 V	333	60.0	4.4
5	11490.00	43.2 PK	74.0	-30.8	1.64 V	231	29.0	14.2
6	11490.00	33.2 AV	54.0	-20.8	1.64 V	231	19.0	14.2
7	#17235.00	46.4 PK	68.2	-21.8	2.85 V	19	29.1	17.3

REMARKS:

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

CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5628.34	61.2 PK	68.2	-7.0	1.03 H	113	57.6	3.6
2	*5785.00	123.1 PK			1.03 H	113	119.1	4.0
3	*5785.00	112.7 AV			1.03 H	113	108.7	4.0
4	#5963.17	62.4 PK	68.2	-5.8	1.03 H	113	58.0	4.4
5	11570.00	49.3 PK	74.0	-24.7	1.29 H	137	35.1	14.2
6	11570.00	37.9 AV	54.0	-16.1	1.29 H	137	23.7	14.2
7	#17355.00	56.1 PK	68.2	-12.1	1.65 H	244	38.4	17.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5587.04	63.5 PK	68.2	-4.7	3.11 V	321	59.8	3.7
2	*5785.00	116.9 PK			3.38 V	336	112.9	4.0
3	*5785.00	105.6 AV			3.38 V	336	101.6	4.0
4	#5979.25	63.7 PK	68.2	-4.5	3.11 V	321	59.3	4.4
5	11570.00	43.7 PK	74.0	-30.3	1.62 V	208	29.5	14.2
6	11570.00	33.5 AV	54.0	-20.5	1.62 V	208	19.3	14.2
7	#17355.00	46.4 PK	68.2	-21.8	2.84 V	30	28.7	17.7

REMARKS:

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

CHANNEL	TX Channel 165	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5581.03	62.3 PK	68.2	-5.9	1.07 H	114	58.6	3.7
2	*5825.00	123.6 PK			1.07 H	114	119.4	4.2
3	*5825.00	113.1 AV			1.07 H	114	108.9	4.2
4	#5933.22	62.1 PK	68.2	-6.1	1.07 H	114	57.8	4.3
5	11000.00	51.3 PK	74.0	-22.7	1.00 H	128	36.9	14.4
6	11000.00	42.9 AV	54.0	-11.1	1.00 H	128	28.5	14.4
7	11650.00	50.0 PK	74.0	-24.0	1.22 H	135	36.1	13.9
8	11650.00	38.4 AV	54.0	-15.6	1.22 H	135	24.5	13.9
9	#17475.00	56.3 PK	68.2	-11.9	1.69 H	252	37.5	18.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5576.12	62.8 PK	68.2	-5.4	3.23 V	341	59.1	3.7
2	*5825.00	116.5 PK			3.41 V	332	112.3	4.2
3	*5825.00	105.1 AV			3.41 V	332	100.9	4.2
4	#5955.48	63.7 PK	68.2	-4.5	3.23 V	341	59.3	4.4
5	11650.00	43.5 PK	74.0	-30.5	1.65 V	205	29.6	13.9
6	11650.00	33.5 AV	54.0	-20.5	1.65 V	205	19.6	13.9
7	#17475.00	45.8 PK	68.2	-22.4	2.83 V	40	27.0	18.8

REMARKS:

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

802.11ac (VHT40)

CHANNEL	TX Channel 151	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5649.70	63.2 PK	68.2	-5.0	1.00 H	114	59.6	3.6
2	*5755.00	120.8 PK			1.00 H	114	116.9	3.9
3	*5755.00	111.3 AV			1.00 H	114	107.4	3.9
4	#5932.65	61.8 PK	68.2	-6.4	1.00 H	114	57.5	4.3
5	11510.00	49.5 PK	74.0	-24.5	1.21 H	141	35.3	14.2
6	11510.00	37.9 AV	54.0	-16.1	1.21 H	141	23.7	14.2
7	#17265.00	56.4 PK	68.2	-11.8	1.68 H	242	39.2	17.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5574.80	62.4 PK	68.2	-5.8	3.07 V	311	58.7	3.7
2	*5755.00	116.3 PK			3.09 V	326	112.4	3.9
3	*5755.00	106.7 AV			3.09 V	326	102.8	3.9
4	#5991.74	64.1 PK	68.2	-4.1	3.07 V	311	59.7	4.4
5	11510.00	44.1 PK	74.0	-29.9	1.66 V	228	29.9	14.2
6	11510.00	33.7 AV	54.0	-20.3	1.66 V	228	19.5	14.2
7	#17265.00	46.0 PK	68.2	-22.2	2.83 V	34	28.8	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.

CHANNEL	TX Channel 159	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5605.17	61.4 PK	68.2	-6.8	1.00 H	115	57.7	3.7
2	*5795.00	120.9 PK			1.00 H	115	116.9	4.0
3	*5795.00	111.7 AV			1.00 H	115	107.7	4.0
4	#5939.08	63.6 PK	68.2	-4.6	1.00 H	115	59.3	4.3
5	11590.00	48.7 PK	74.0	-25.3	1.08 H	125	34.5	14.2
6	11590.00	38.2 AV	54.0	-15.8	1.08 H	125	24.0	14.2
7	#17385.00	55.3 PK	68.2	-12.9	1.63 H	250	37.5	17.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5585.85	62.8 PK	68.2	-5.4	3.17 V	316	59.1	3.7
2	*5795.00	115.9 PK			3.12 V	337	111.9	4.0
3	*5795.00	106.2 AV			3.12 V	337	102.2	4.0
4	#6005.43	64.3 PK	68.2	-3.9	3.17 V	316	59.9	4.4
5	11590.00	44.0 PK	74.0	-30.0	1.60 V	224	29.8	14.2
6	11590.00	33.6 AV	54.0	-20.4	1.60 V	224	19.4	14.2
7	#17385.00	46.1 PK	68.2	-22.1	2.89 V	17	28.3	17.8

REMARKS:

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

802.11ac (VHT80)

CHANNEL	TX Channel 155	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5637.79	66.5 PK	68.2	-1.7	1.00 H	115	62.9	3.6
2	*5775.00	113.3 PK			1.00 H	115	109.4	3.9
3	*5775.00	104.2 AV			1.00 H	115	100.3	3.9
4	#5933.84	63.6 PK	68.2	-4.6	1.00 H	115	59.3	4.3
5	11550.00	49.1 PK	74.0	-24.9	1.29 H	144	34.9	14.2
6	11550.00	37.6 AV	54.0	-16.4	1.29 H	144	23.4	14.2
7	#17325.00	55.9 PK	68.2	-12.3	1.68 H	257	38.5	17.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5647.76	63.4 PK	68.2	-4.8	1.31 V	334	59.8	3.6
2	*5775.00	108.3 PK			3.32 V	336	104.4	3.9
3	*5775.00	99.6 AV			3.32 V	336	95.7	3.9
4	#5975.43	64.9 PK	68.2	-3.3	1.31 V	334	60.5	4.4
5	11550.00	43.4 PK	74.0	-30.6	1.63 V	221	29.2	14.2
6	11550.00	33.2 AV	54.0	-20.8	1.63 V	221	19.0	14.2
7	#17325.00	46.8 PK	68.2	-21.4	2.91 V	29	29.4	17.4

REMARKS:

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

Below 1GHz Data:

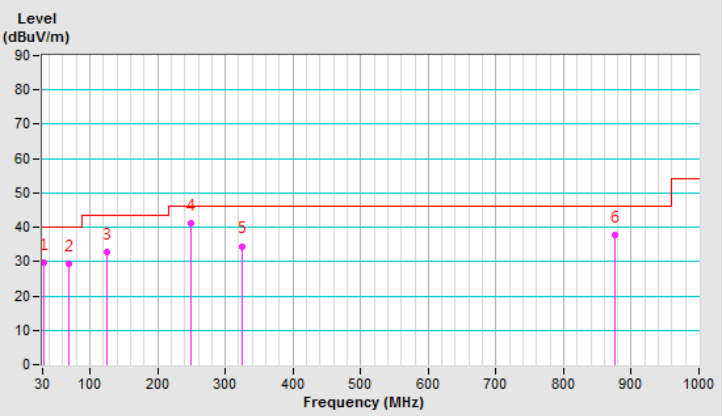
802.11ac (VHT40)

CHANNEL	TX Channel 159	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	31.02	29.6 QP	40.0	-10.4	1.13 H	226	39.3	-9.7
2	69.07	29.5 QP	40.0	-10.5	1.00 H	302	39.8	-10.3
3	125.04	32.9 QP	43.5	-10.6	2.56 H	117	42.3	-9.4
4	250.00	41.1 QP	46.0	-4.9	1.00 H	173	49.7	-8.6
5	323.96	34.5 QP	46.0	-11.5	1.05 H	271	40.7	-6.2
6	874.99	37.6 QP	46.0	-8.4	1.85 H	237	32.0	5.6

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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.

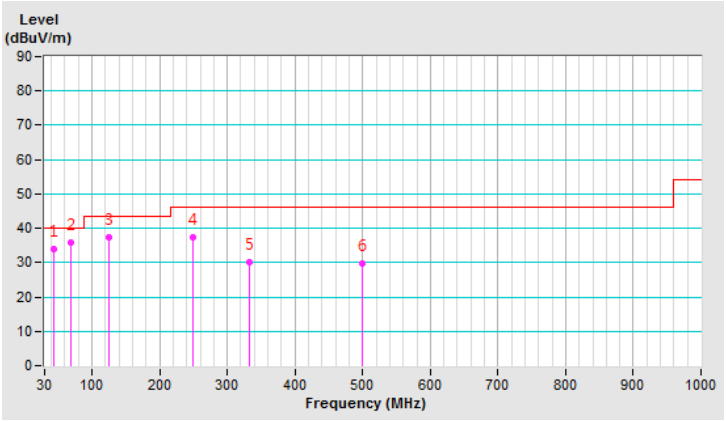


CHANNEL	TX Channel 159	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	43.90	33.9 QP	40.0	-6.1	1.21 V	295	42.2	-8.3
2	69.40	35.9 QP	40.0	-4.1	1.24 V	295	46.2	-10.3
3	125.01	37.3 QP	43.5	-6.2	1.00 V	195	46.7	-9.4
4	250.02	37.3 QP	46.0	-8.7	1.54 V	231	46.0	-8.7
5	331.96	30.2 QP	46.0	-15.8	1.53 V	341	36.2	-6.0
6	499.99	29.7 QP	46.0	-16.3	1.00 V	146	31.5	-1.8

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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	Oct. 24, 2018	Oct. 23, 2019
Line-Impedance Stabilization Network (for EUT) R&S	ESH3-Z5	848773/004	Oct. 22, 2018	Oct. 21, 2019
Line-Impedance Stabilization Network (for Peripheral) R&S	ESH3-Z5	835239/001	Mar. 17, 2019	Mar. 16, 2020
50 ohms Terminator	N/A	3	Oct. 22, 2018	Oct. 21, 2019
RF Cable	5D-FB	COCCAB-001	Sep. 28, 2018	Sep. 27, 2019
Fixed attenuator EMCI	STI02-2200-10	003	Mar. 14, 2019	Mar. 13, 2020
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: June 26, 2019

4.2.3 Test Procedure

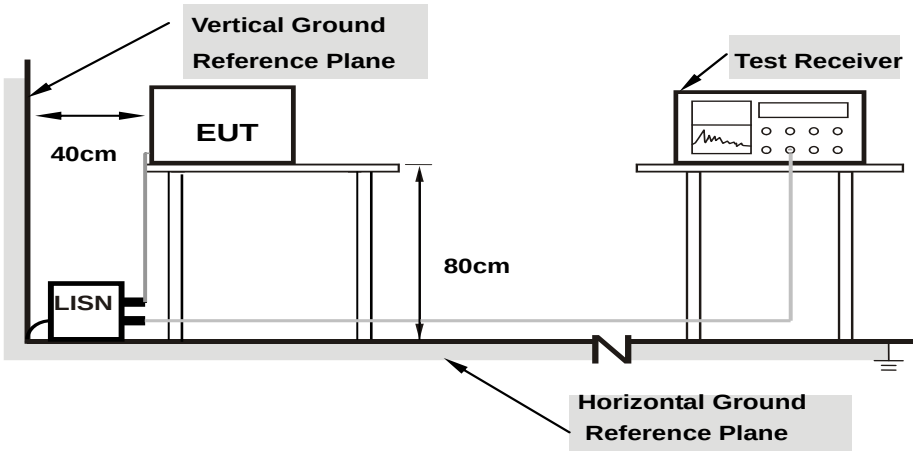
a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
c. The frequency range from 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.

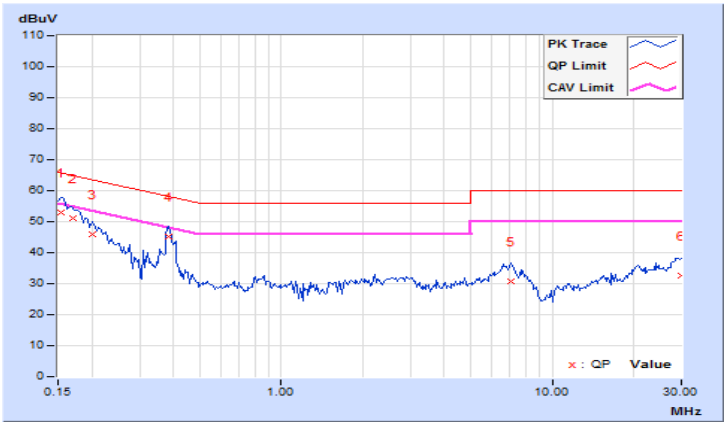
4.2.7 Test Results (Mode 1)

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

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	10.02	43.04	29.17	53.06	39.19	65.79	55.79	-12.73	-16.60
2	0.16953	10.03	41.20	25.61	51.23	35.64	64.98	54.98	-13.75	-19.34
3	0.20078	10.04	35.99	21.36	46.03	31.40	63.58	53.58	-17.55	-22.18
4	0.38438	10.07	35.01	31.10	45.08	41.17	58.18	48.18	-13.10	-7.01
5	7.02734	10.39	20.39	15.77	30.78	26.16	60.00	50.00	-29.22	-23.84
6	30.00000	11.23	21.28	16.48	32.51	27.71	60.00	50.00	-27.49	-22.29

Remarks:

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

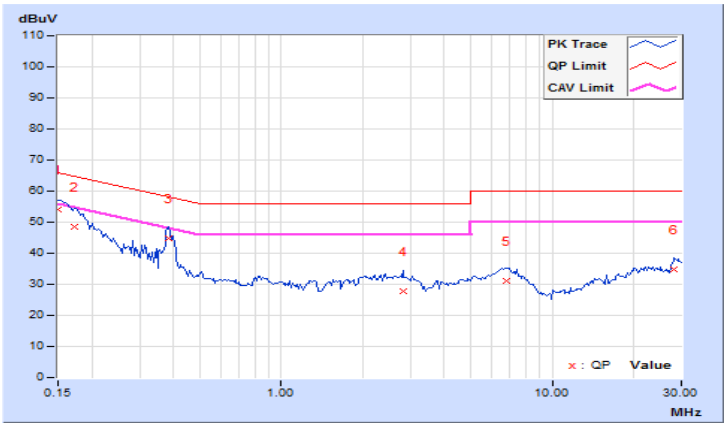


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.93	44.04	29.63	53.97	39.56	66.00	56.00	-12.03	-16.44
2	0.17344	9.93	38.49	25.63	48.42	35.56	64.79	54.79	-16.37	-19.23
3	0.38438	9.96	34.82	30.70	44.78	40.66	58.18	48.18	-13.40	-7.52
4	2.82813	10.07	17.89	13.83	27.96	23.90	56.00	46.00	-28.04	-22.10
5	6.75391	10.24	20.74	16.29	30.98	26.53	60.00	50.00	-29.02	-23.47
6	28.24219	10.96	23.79	20.58	34.75	31.54	60.00	50.00	-25.25	-18.46

Remarks:

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



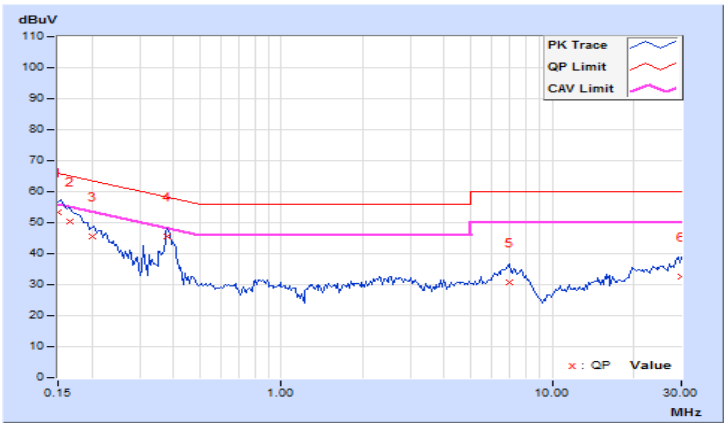
4.2.8 Test Results (Mode 2)

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

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.02	43.49	29.22	53.51	39.24	66.00	56.00	-12.49	-16.76
2	0.16562	10.03	40.29	25.67	50.32	35.70	65.18	55.18	-14.86	-19.48
3	0.20078	10.04	35.36	20.76	45.40	30.80	63.58	53.58	-18.18	-22.78
4	**0.38047**	**10.07**	**35.31**	**33.56**	**45.38**	**43.63**	**58.27**	**48.27**	**-12.89**	**-4.64**
5	6.92578	10.39	20.40	16.10	30.79	26.49	60.00	50.00	-29.21	-23.51
6	30.00000	11.23	21.30	16.42	32.53	27.65	60.00	50.00	-27.47	-22.35

Remarks:

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

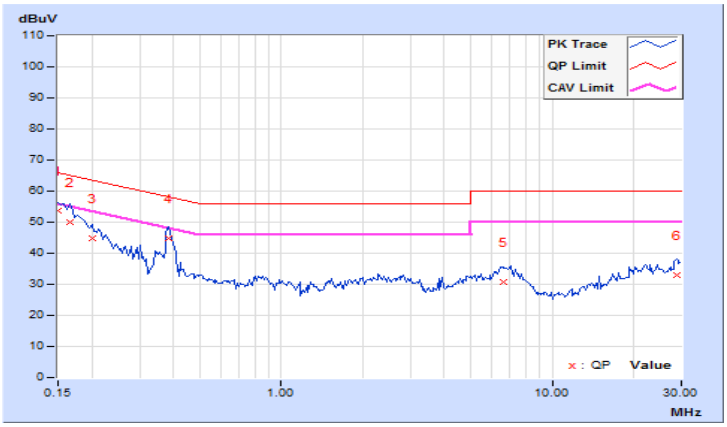


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.93	43.61	29.38	53.54	39.31	66.00	56.00	-12.46	-16.69
2	0.16562	9.93	40.17	26.08	50.10	36.01	65.18	55.18	-15.08	-19.17
3	0.20078	9.94	35.02	20.44	44.96	30.38	63.58	53.58	-18.62	-23.20
4	0.38438	9.96	34.76	30.54	44.72	40.50	58.18	48.18	-13.46	-7.68
5	6.58594	10.23	20.45	16.20	30.68	26.43	60.00	50.00	-29.32	-23.57
6	28.71875	10.96	22.01	18.98	32.97	29.94	60.00	50.00	-27.03	-20.06

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 ≦ 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 ≥ 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

4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

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.

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 (Mode 1)

CDD Mode

802.11a

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	23.24	23.21	420.274	26.24	30.00	Pass
40	5200	26.34	26.34	861.054	29.35	30.00	Pass
48	5240	26.18	26.29	840.552	29.25	30.00	Pass

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	23.28	23.54	438.758	26.42	30.00	Pass
40	5200	26.11	25.98	804.597	29.06	30.00	Pass
48	5240	25.87	25.86	771.845	28.88	30.00	Pass

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	20.21	20.29	211.859	23.26	30.00	Pass
46	5230	26.20	26.37	850.38	29.30	30.00	Pass

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	17.83	17.76	120.378	20.81	30.00	Pass

Beamforming Mode

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	23.28	23.54	438.758	26.42	30.00	Pass
40	5200	26.11	25.98	804.597	29.06	30.00	Pass
48	5240	25.87	25.86	771.845	28.88	30.00	Pass

Note: Directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 5.97dBi < 6dBi , so the power limit shall not be reduced.

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	20.21	20.29	211.859	23.26	30.00	Pass
46	5230	26.20	26.37	850.38	29.30	30.00	Pass

Note: Directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 5.97dBi < 6dBi , so the power limit shall not be reduced.

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	17.83	17.76	120.378	20.81	30.00	Pass

Note: Directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 5.97dBi < 6dBi , so the power limit shall not be reduced.

4.3.8 Test Results (Mode 2)

CDD Mode

802.11a

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
149	5745	25.03	25.49	672.417	28.28	30.00	Pass
157	5785	25.15	25.60	690.419	28.39	30.00	Pass
165	5825	25.47	25.61	716.286	28.55	30.00	Pass

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
149	5745	25.02	25.59	679.93	28.32	30.00	Pass
157	5785	25.24	25.61	698.11	28.44	30.00	Pass
165	5825	26.00	25.71	770.499	28.87	30.00	Pass

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
151	5755	25.18	25.84	713.317	28.53	30.00	Pass
159	5795	25.88	26.07	791.834	28.99	30.00	Pass

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
155	5775	21.01	21.15	256.5	24.09	30.00	Pass

Beamforming Mode

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
149	5745	25.02	25.59	679.93	28.32	30.00	Pass
157	5785	25.24	25.61	698.11	28.44	30.00	Pass
165	5825	26.00	25.71	770.499	28.87	30.00	Pass

Note: Directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$)^2 / 2] = 5.83dBi < 6dBi , so the power limit shall not be reduced.

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
151	5755	25.18	25.84	713.317	28.53	30.00	Pass
159	5795	25.88	26.07	791.834	28.99	30.00	Pass

Note: Directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$)^2 / 2] = 5.83dBi < 6dBi , so the power limit shall not be reduced.

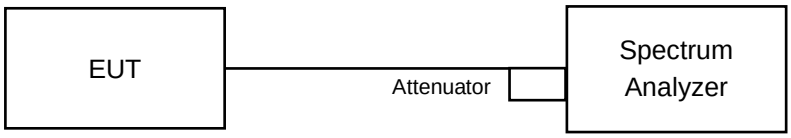
802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
155	5775	21.01	21.15	256.5	24.09	30.00	Pass

Note: Directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$)^2 / 2] = 5.83dBi < 6dBi , so the power limit shall not be reduced.

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 (Mode 1)

802.11a

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	16.56	16.44
40	5200	16.68	16.68
48	5240	18.84	17.76

802.11ac (VHT20)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	17.64	17.76
40	5200	17.76	17.88
48	5240	18.24	18.24

802.11ac (VHT40)

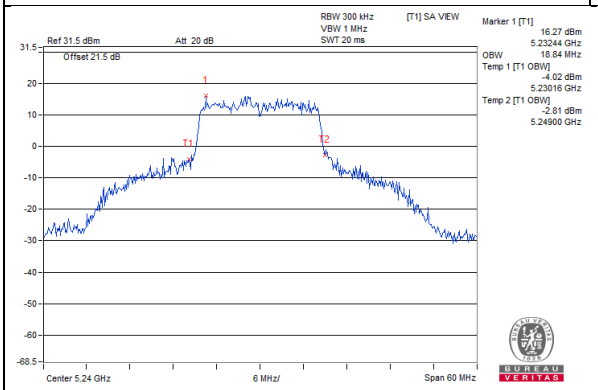
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	36.24	36.24
46	5230	37.68	37.20

802.11ac (VHT80)

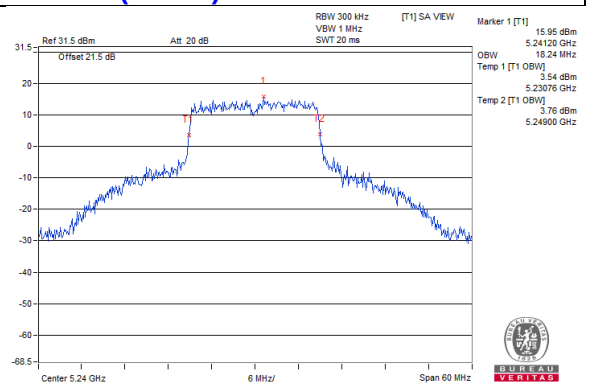
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	75.84	76.32

Spectrum Plot of Max Value

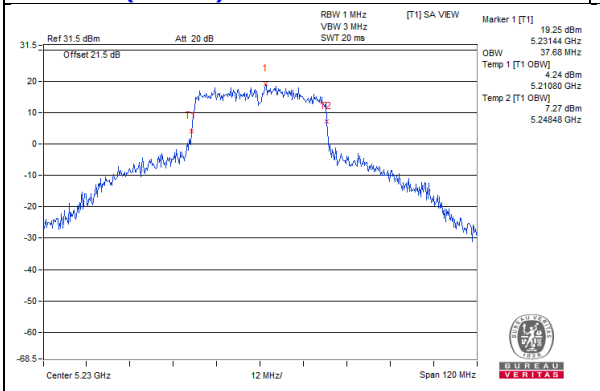
802.11a / Chain 0 : CH48



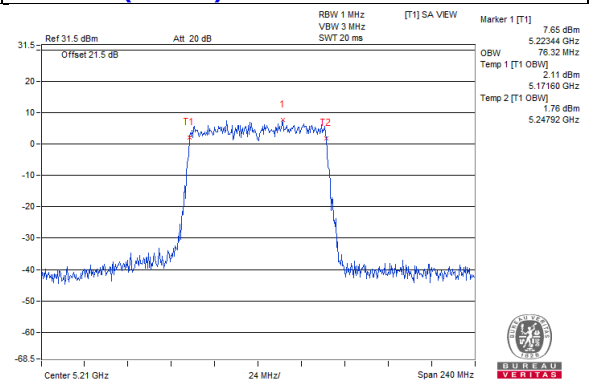
802.11ac (VHT20) / Chain 0: CH48



802.11ac (VHT40) / Chain 0: CH46



802.11ac (VHT80) / Chain 1 : CH42



4.4.5 Test Results (Mode 2)

802.11a

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
149	5745	23.52	16.68
157	5785	24.12	17.16
165	5825	26.64	18.96

802.11ac (VHT20)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
149	5745	24.48	18.12
157	5785	25.68	18.24
165	5825	27.96	19.56

802.11ac (VHT40)

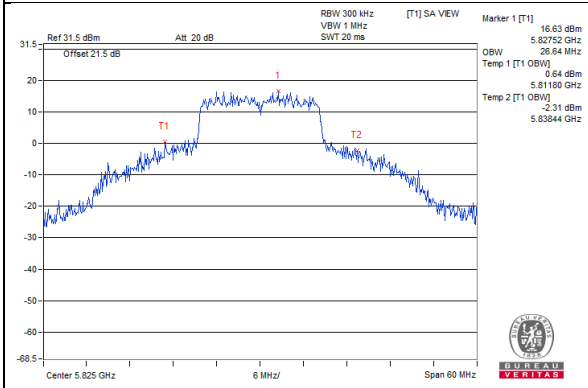
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
151	5755	46.08	37.20
159	5795	53.04	38.64

802.11ac (VHT80)

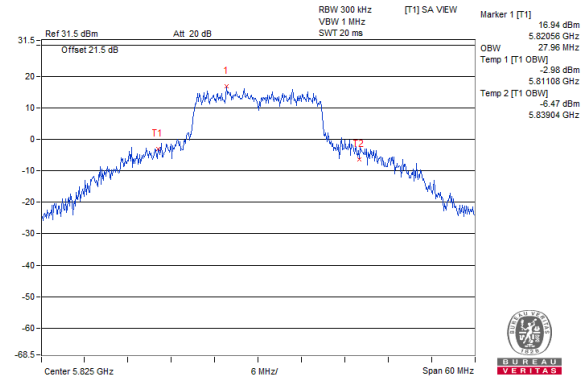
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
155	5775	75.84	75.84

Spectrum Plot of Max Value

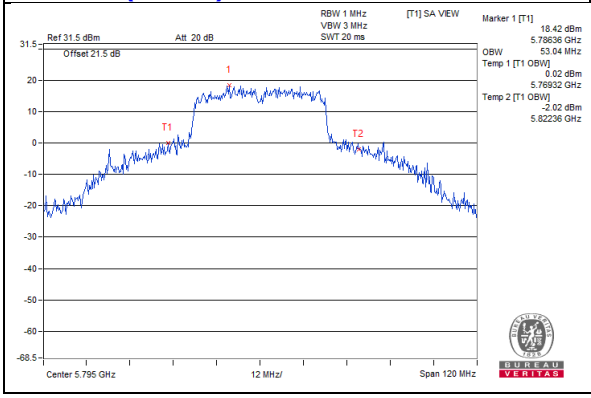
802.11a / Chain 0 : CH165



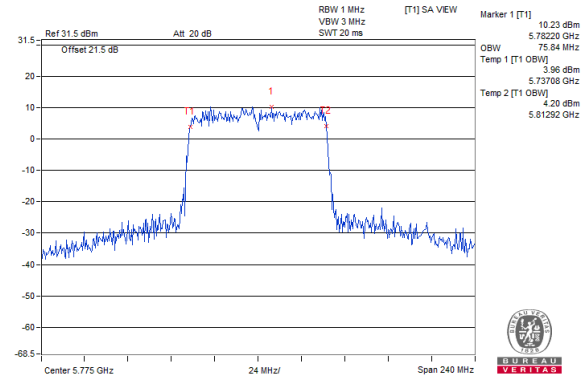
802.11ac (VHT20) / Chain 0: CH165



802.11ac (VHT40) / Chain 0: CH159

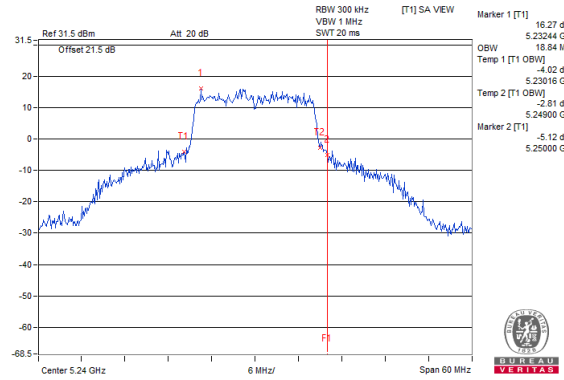


802.11ac (VHT80) / Chain 0 : CH155

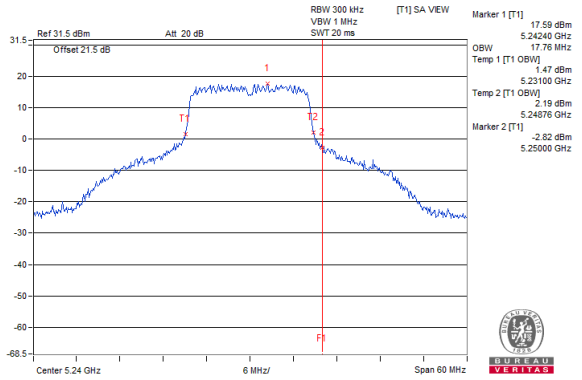


Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2A band)

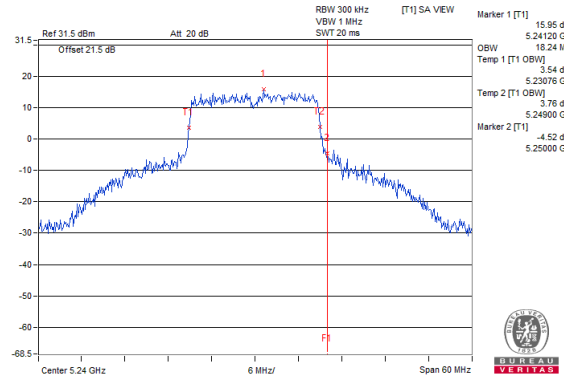
802.11a_Chain0 / CH48



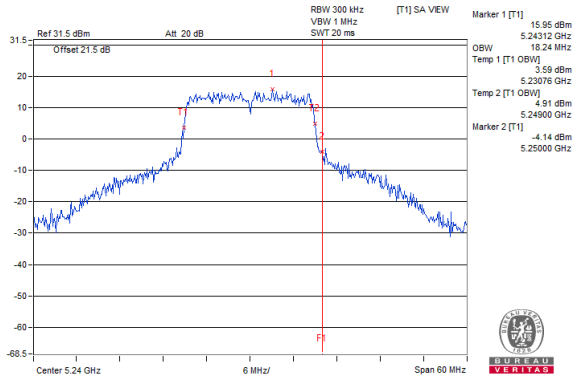
802.11a_Chain1 / CH48



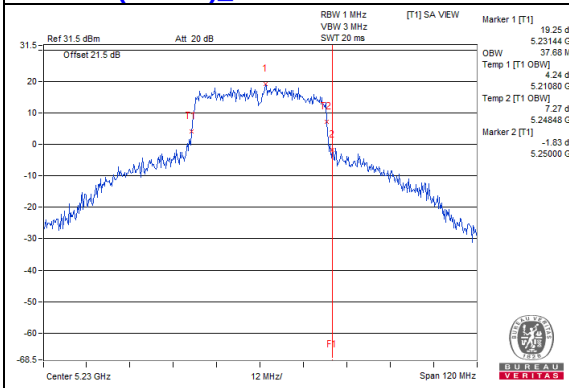
802.11ac(VHT20)_Chain0 / CH48



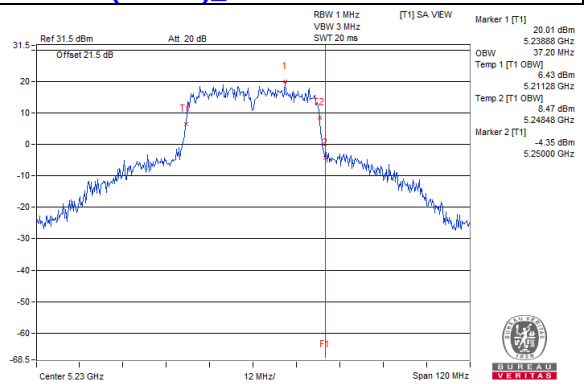
802.11ac(VHT20)_Chain1 / CH48



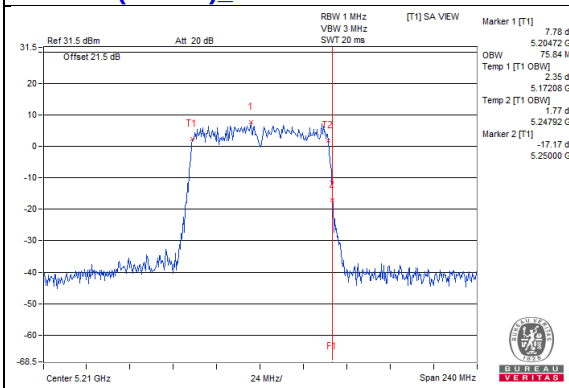
802.11ac(VHT40)_Chain0 / CH46



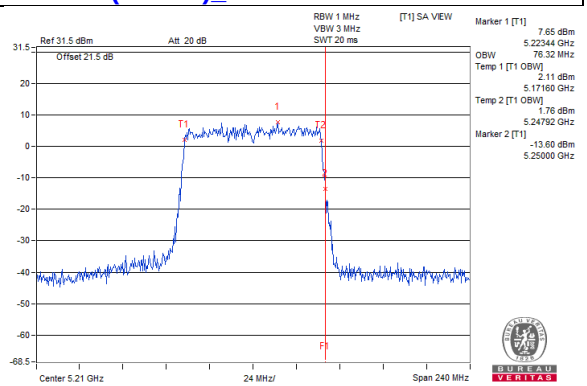
802.11ac(VHT40)_Chain1 / CH46



802.11ac(VHT80)_Chain0 / CH42

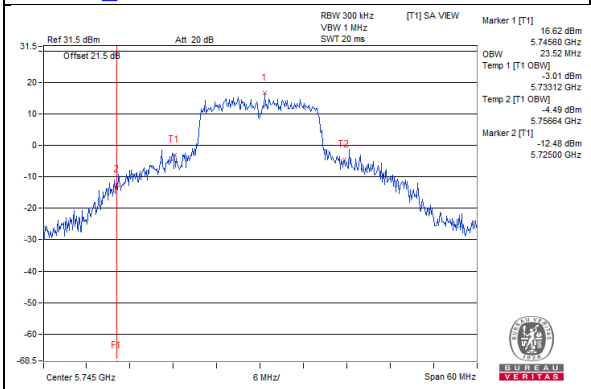


802.11ac(VHT80)_Chain1 / CH42

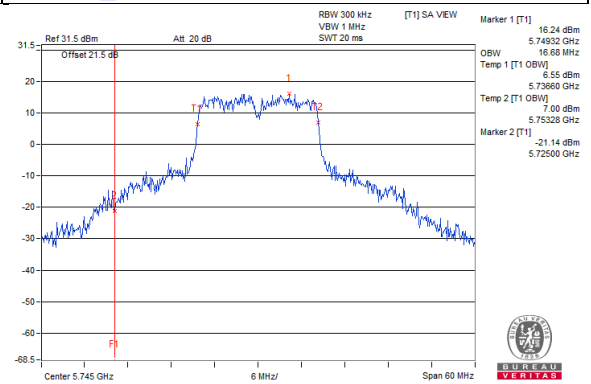


Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2C band)

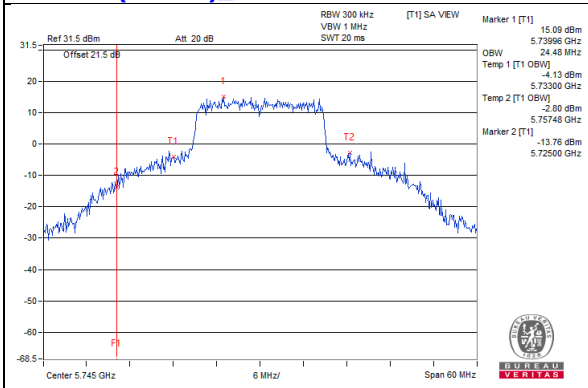
802.11a_Chain0 / CH149



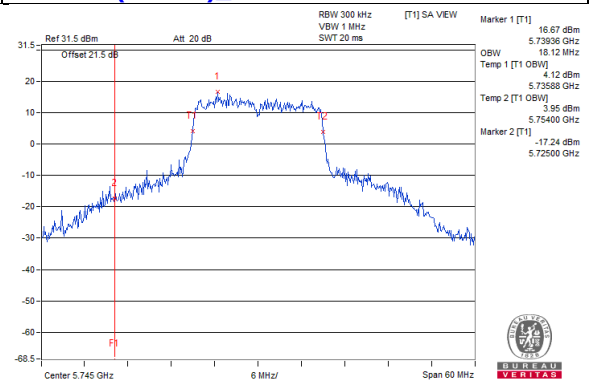
802.11a_Chain1 / CH149



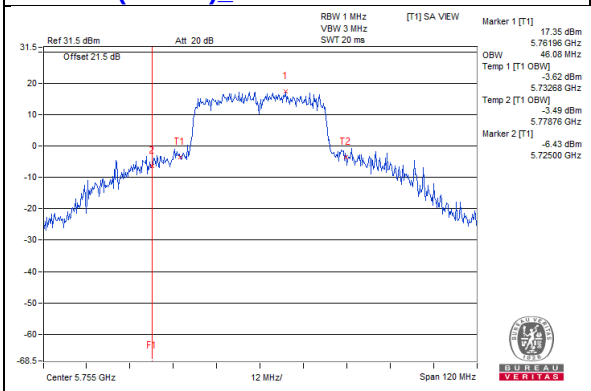
802.11ac(VHT20)_Chain0 / CH149



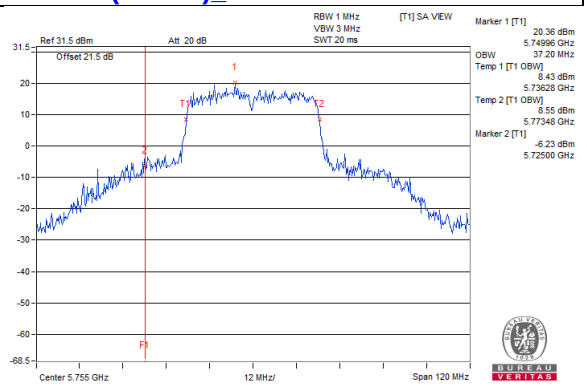
802.11ac(VHT20)_Chain1 / CH149



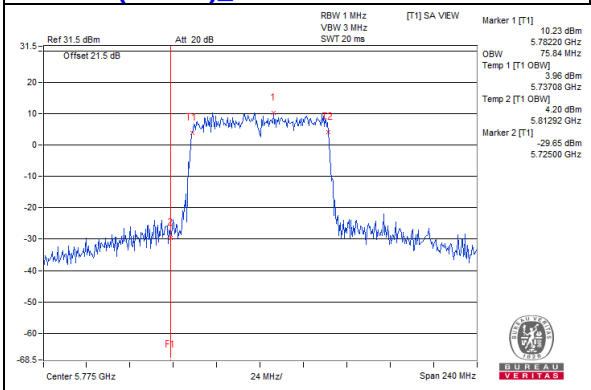
802.11ac(VHT40)_Chain0 / CH151



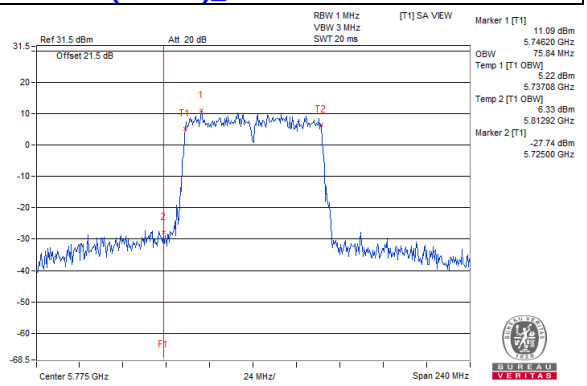
802.11ac(VHT40)_Chain1 / CH151



802.11ac(VHT80)_Chain0 / CH155



802.11ac(VHT80)_Chain1 / CH155

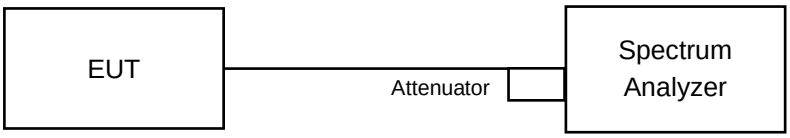


4.5 Peak Power Spectral Density Measurement

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 802.11ac (VHT20):

For U-NII-1 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 (reducing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log(500 kHz/300kHz)
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

For other:

For U-NII-1 band:

Using method SA-2

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1 MHz, Set VBW ≥ 3 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 and add 10 log (1/duty cycle)

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 (reducing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log(500kHz/300kHz)
5. Sweep time = auto, trigger set to “free run”.
6. Trace average at least 100 traces in power averaging mode.
7. Record the max value and add 10 log (1/duty cycle)

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Same as Item 4.3.6.

4.5.7 Test Results (Mode 1)

802.11a

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
36	5180	8.69	9.56	0.17	12.33	17.00	Pass
40	5200	12.08	11.20	0.17	14.84	17.00	Pass
48	5240	11.58	11.41	0.17	14.68	17.00	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. Directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 5.97dBi < 6dBi, so the power density limit shall not be reduced.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)		Total Power Density (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1			
36	5180	9.91	9.58	12.76	17.00	Pass
40	5200	11.51	11.32	14.43	17.00	Pass
48	5240	11.04	11.08	14.07	17.00	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. Directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 5.97dBi < 6dBi, so the power density limit shall not be reduced.

802.11ac (VHT40)

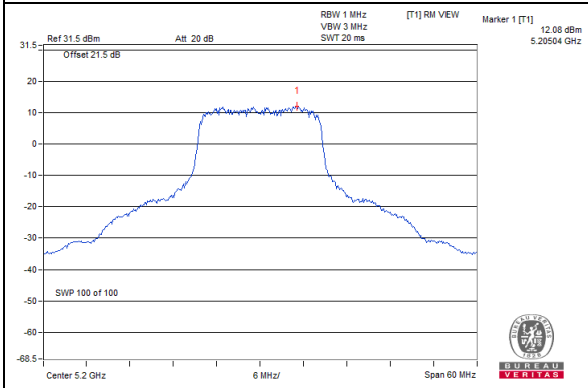
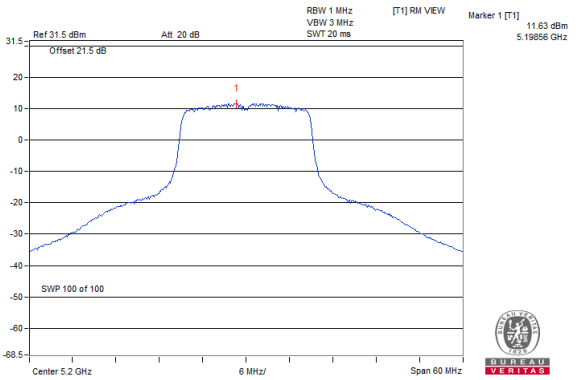
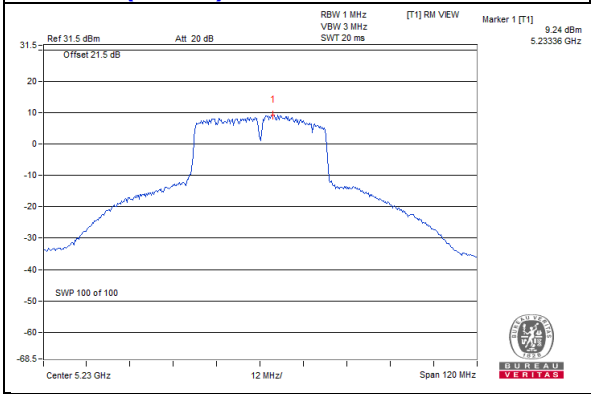
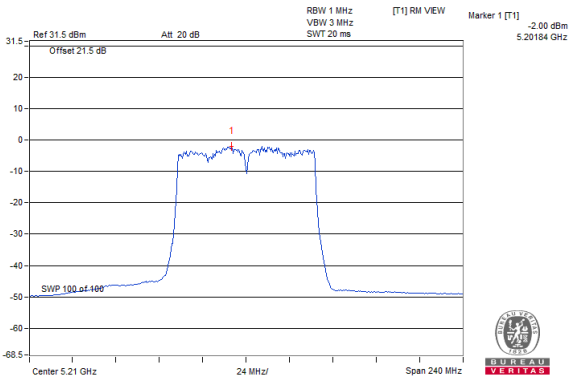
Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
38	5190	4.21	4.11	0.13	7.30	17.00	Pass
46	5230	9.21	8.87	0.13	12.18	17.00	Pass

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. Directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 5.97dBi < 6dBi, so the power density limit shall not be reduced.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
42	5210	-2.27	-2.83	0.23	0.70	17.00	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. Directional gain = 10 log[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 5.97dBi < 6dBi, so the power density limit shall not be reduced.
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value	
802.11a / Chain 0 : CH40	802.11ac (VHT20) / Chain 0 : CH40
	
802.11ac (VHT40) / Chain 0: CH46	802.11ac (VHT80) / Chain 0 : CH42
	

4.5.8 Test Results (Mode 2)

802.11a

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/300kHz)		Duty Factor (dB)	Total PSD With Duty Factor		Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/ 500kHz)	Pass /Fail
		Chain 0	Chain 1		mW/ 300kHz	dBm/ 300kHz			
149	5745	2.76	3.20	0.21	4.1704	6.20	8.42	30.00	Pass
157	5785	3.13	3.68	0.21	4.6025	6.63	8.85	30.00	Pass
165	5825	3.60	3.50	0.21	4.7496	6.77	8.99	30.00	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[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 5.83dBi < 6dBi, so the power density limit shall not be reduced.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT20)

Chan.	Freq. (MHz)	PSD (dBm/300kHz)		Total PSD		Total PSD (dBm/500kHz)	Limit (dBm/ 500kHz)	Pass /Fail
		Chain 0	Chain 1	mW/ 300kHz	dBm/ 300kHz			
149	5745	2.76	3.50	4.1267	6.16	8.38	30.00	Pass
157	5785	3.11	3.34	4.2042	6.24	8.46	30.00	Pass
165	5825	3.33	3.58	4.4331	6.47	8.69	30.00	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[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 5.83dBi < 6dBi, so the power density limit shall not be reduced.

802.11ac (VHT40)

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/300kHz)		Duty Factor (dB)	Total PSD With Duty Factor		Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/ 500kHz)	Pass /Fail
		Chain 0	Chain 1		mW/ 300kHz	dBm/ 300kHz			
151	5755	-0.65	0.52	0.18	2.07	3.16	5.38	30.00	Pass
159	5795	0.03	0.70	0.18	2.2716	3.56	5.78	30.00	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[$(10^{G0/20} + 10^{G1/20})^2$ / 2] = 5.83dBi < 6dBi, so the power density limit shall not be reduced.
3. Refer to section 3.3 for duty cycle spectrum plot.

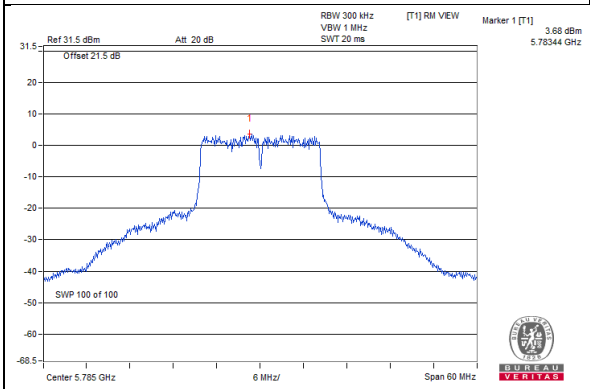
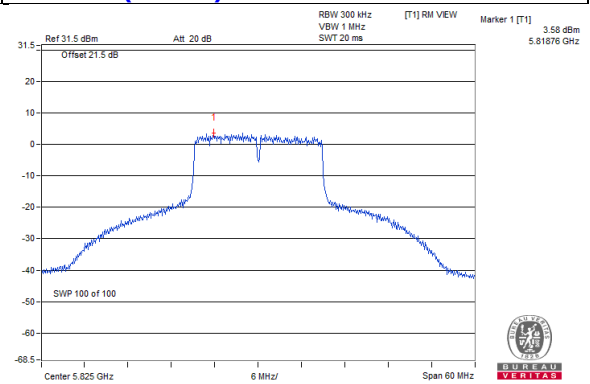
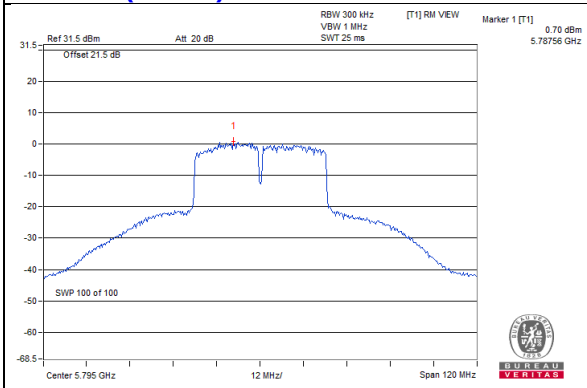
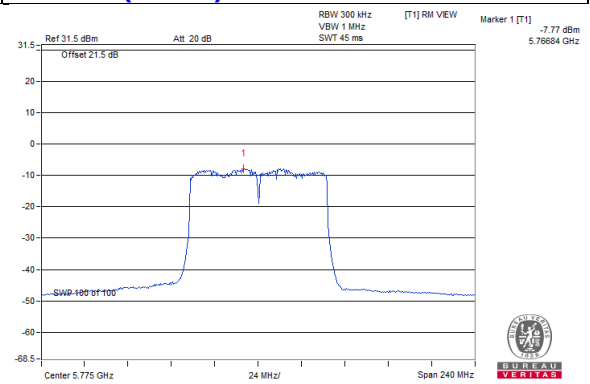
802.11ac (VHT80)

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/300kHz)		Duty Factor (dB)	Total PSD With Duty Factor		Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/ 500kHz)	Pass /Fail
		Chain 0	Chain 1		mW/ 300kHz	dBm/ 300kHz			
155	5775	-7.87	-7.77	0.33	0.3564	-4.48	-2.26	30.00	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[($10^{G0/20}$ + $10^{G1/20}$)^2 / 2] = 5.83dBi < 6dBi, so the power density limit shall not be reduced.

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

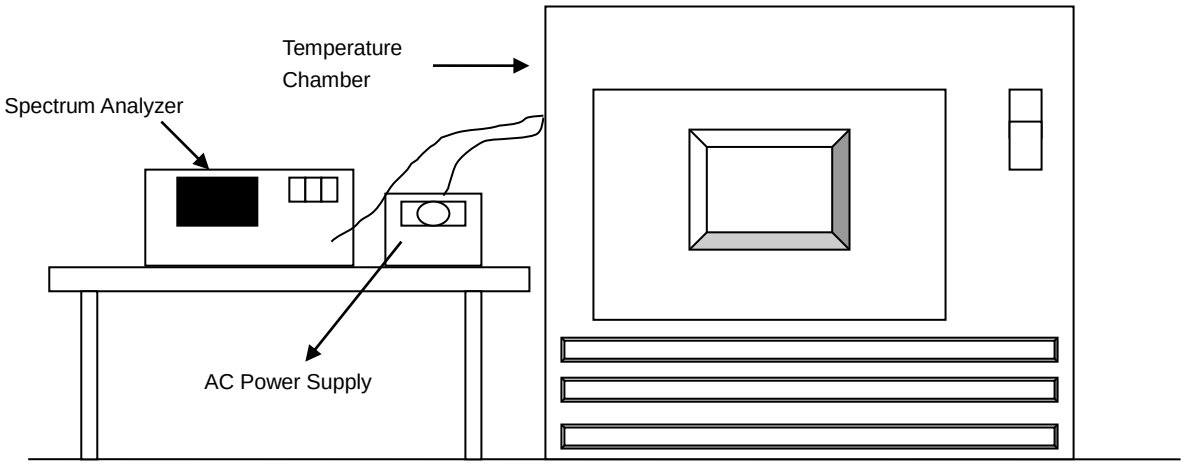
Spectrum Plot of Worst Value	
802.11a / Chain 1 : CH157	802.11ac (VHT20) / Chain 1 : CH165
	
802.11ac (VHT40) / Chain 1 : CH159	802.11ac (VHT80) / Chain 1 : CH155
	

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

a. The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.

b. Turn the EUT on and couple its output to a spectrum analyzer.

c. Turn the EUT off and set the chamber to the highest temperature specified.

d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 0, 2, 5, and 10 Minutes.

e. Repeat step (d) with the temperature chamber set to the next desired temperature until measurements down to the lowest specified temperature have been completed.

f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 Minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

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

4.6.7 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 5180 MHz									
TEMP. (℃)	Power Supply (Vac)	0 Minute		2 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
50	120	5180.0193	PASS	5180.0208	PASS	5180.0199	PASS	5180.0201	PASS
40	120	5180.016	PASS	5180.0195	PASS	5180.0175	PASS	5180.0181	PASS
30	120	5180.0009	PASS	5180.0021	PASS	5179.9992	PASS	5180.0013	PASS
20	120	5180.017	PASS	5180.0135	PASS	5180.0127	PASS	5180.0148	PASS
10	120	5179.9816	PASS	5179.9808	PASS	5179.9794	PASS	5179.9778	PASS
0	120	5180.0002	PASS	5179.9976	PASS	5180.0005	PASS	5179.9957	PASS
-10	120	5180.0124	PASS	5180.0126	PASS	5180.015	PASS	5180.0155	PASS
-20	120	5179.9934	PASS	5179.9944	PASS	5179.994	PASS	5179.9951	PASS
-30	120	5180.0105	PASS	5180.0093	PASS	5180.009	PASS	5180.0097	PASS

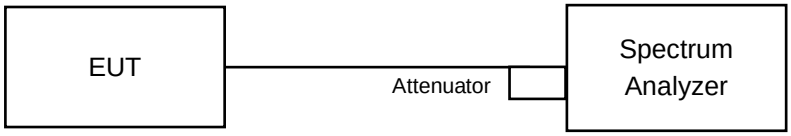
Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
TEMP. (℃)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	138	5180.0163	PASS	5180.014	PASS	5180.0122	PASS	5180.0152	PASS
	120	5180.017	PASS	5180.0135	PASS	5180.0127	PASS	5180.0148	PASS
	102	5180.0163	PASS	5180.0125	PASS	5180.0125	PASS	5180.0145	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

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

4.7.5 Deviation from Test Standard

No deviation.

4.7.6 EUT Operating Condition

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

4.7.7 Test Results

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
149	5745	16.37	16.40	0.5	Pass
157	5785	16.36	16.41	0.5	Pass
165	5825	16.38	16.38	0.5	Pass

802.11ac (VHT20)

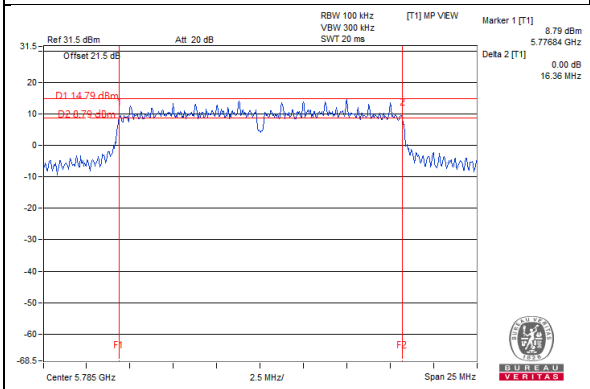
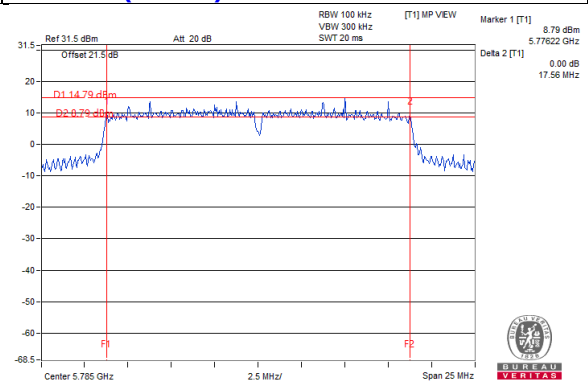
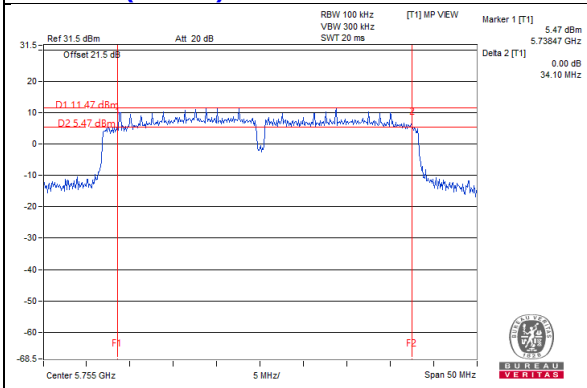
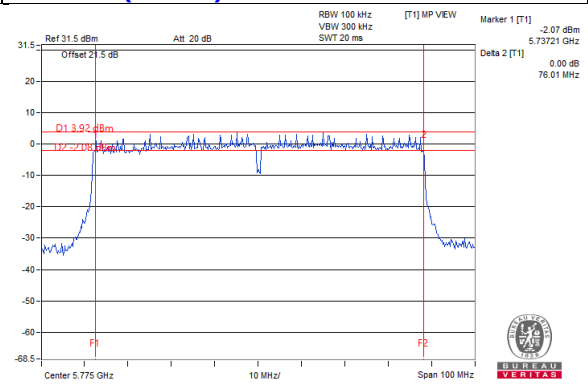
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
149	5745	17.57	17.62	0.5	Pass
157	5785	17.56	17.65	0.5	Pass
165	5825	17.62	17.63	0.5	Pass

802.11ac (VHT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
151	5755	35.11	34.10	0.5	Pass
159	5795	36.11	35.23	0.5	Pass

802.11ac (VHT80)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
155	5775	76.01	76.03	0.5	Pass

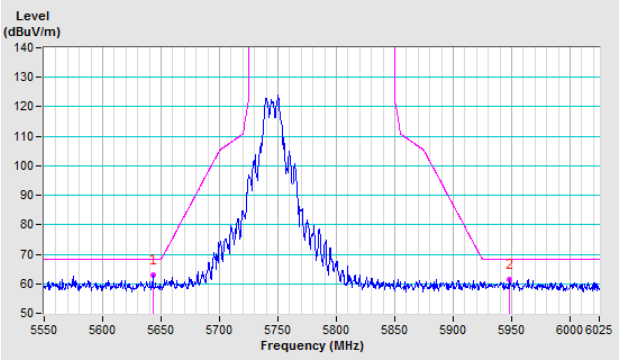
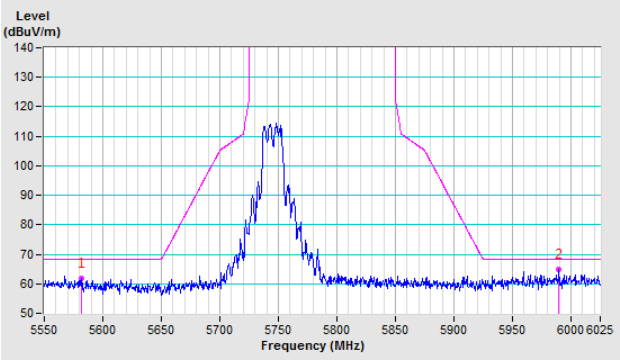
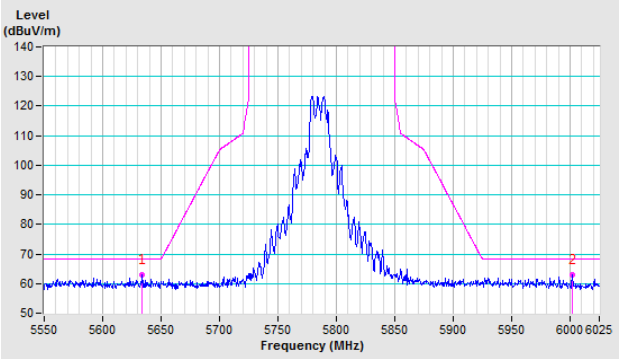
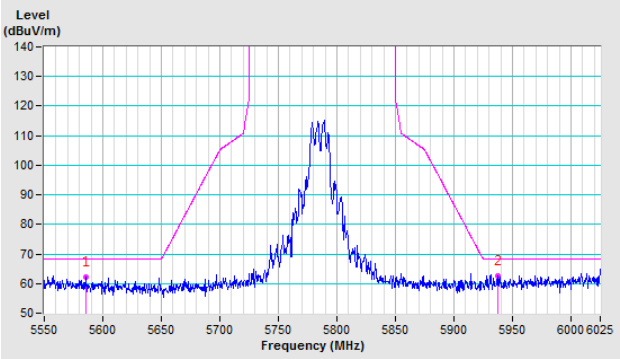
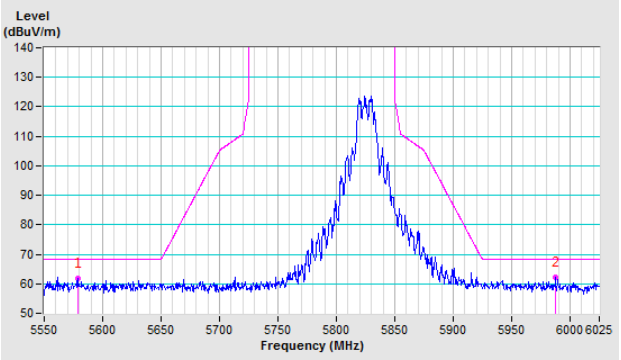
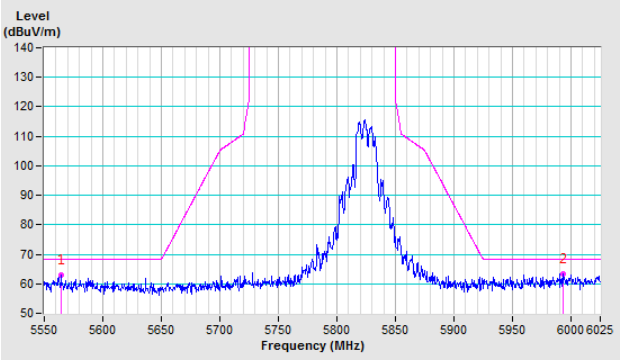
Spectrum Plot of Worst Value	
802.11a / Chain 0 : CH157	802.11ac (VHT20) / Chain 0 : CH157
	
802.11ac (VHT40) / Chain 1 : CH151	802.11ac (VHT80) / Chain 0 : CH155
	

5 Pictures of Test Arrangements

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

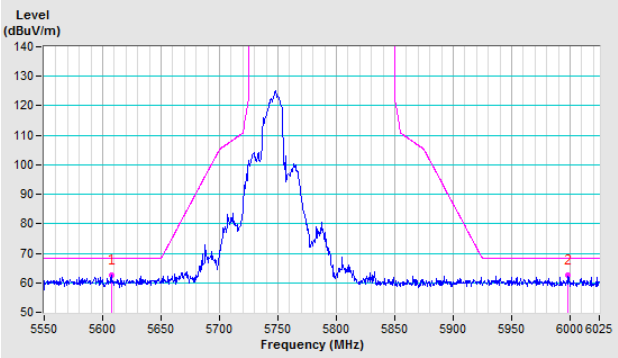
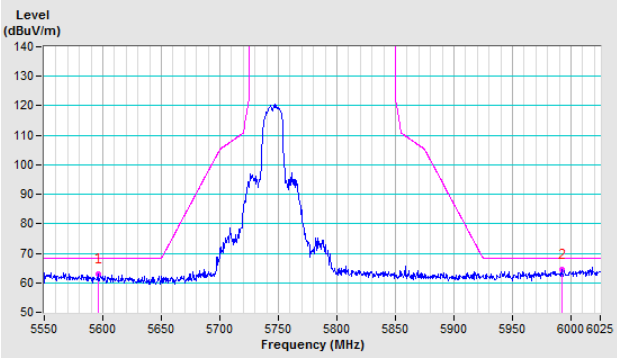
Annex A- Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band)

802.11a

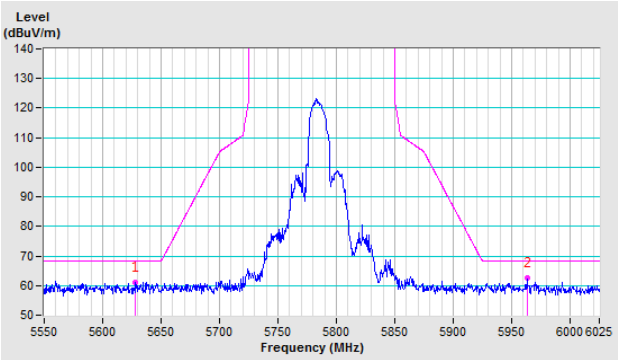
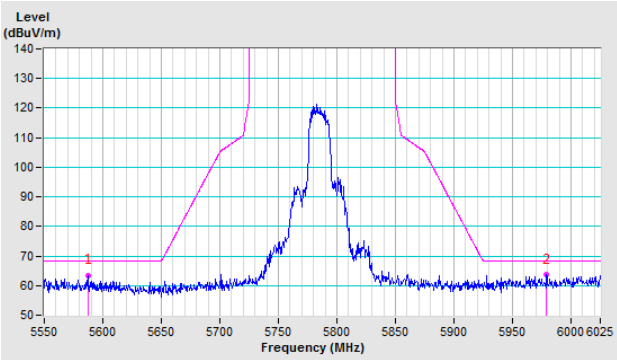
CH 149 5745 MHz	
Horizontal	**Vertical**
	
CH 157 5785 MHz	
Horizontal	**Vertical**
	
CH 165 5825 MHz	
Horizontal	**Vertical**
	

802.11ac (VHT20)

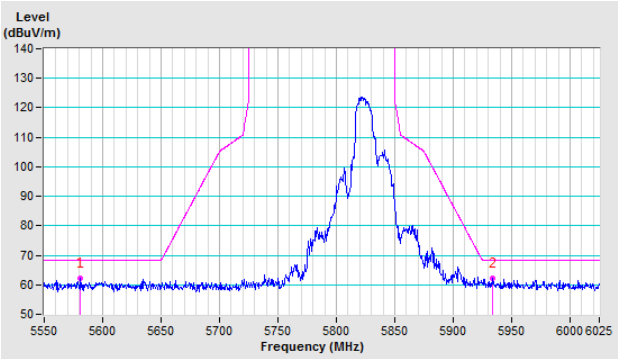
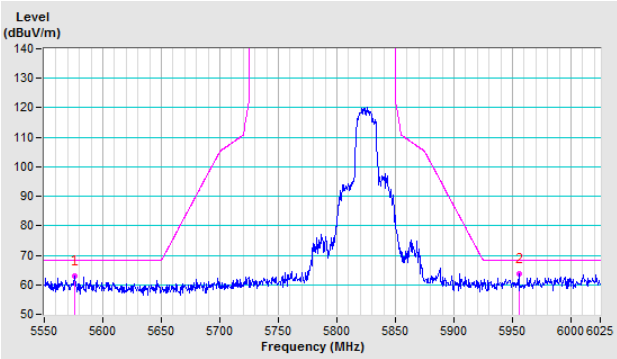
CH 149 5745 MHz

Horizontal	Vertical
	

CH 157 5785 MHz

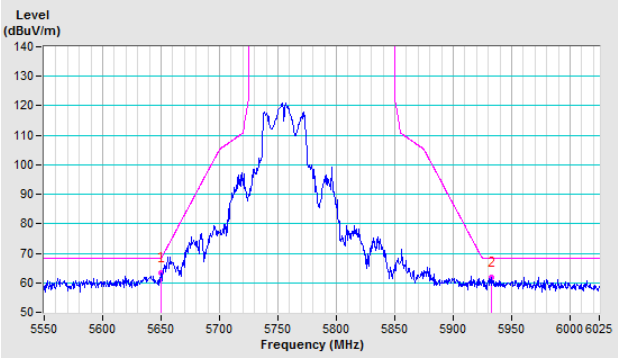
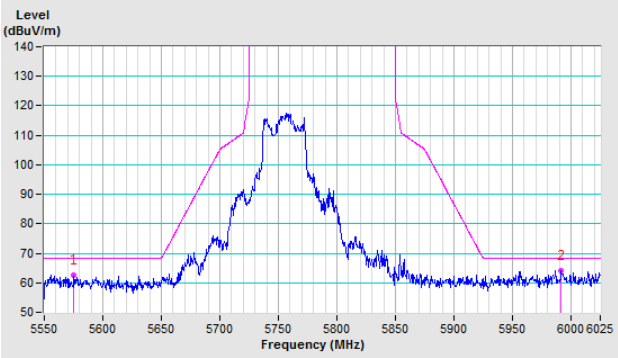
Horizontal	Vertical
	

CH 165 5825 MHz

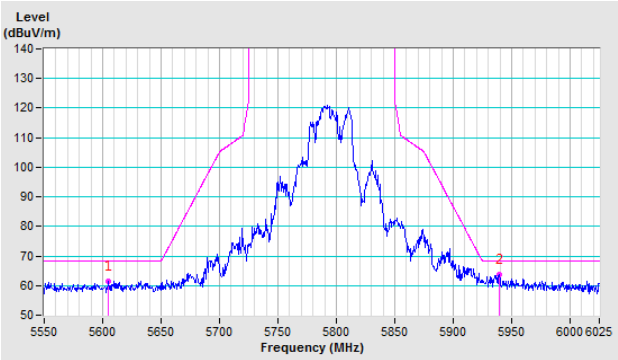
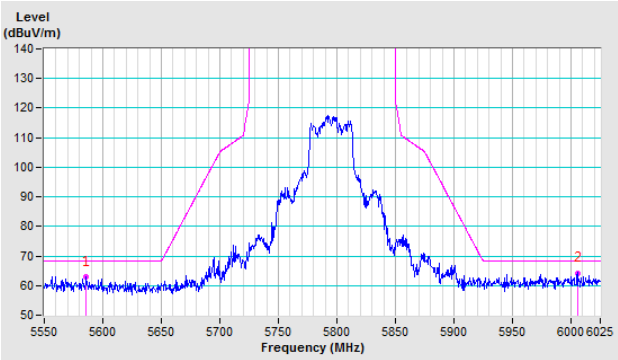
Horizontal	Vertical
	

802.11ac (VHT40)

CH 151 5755 MHz

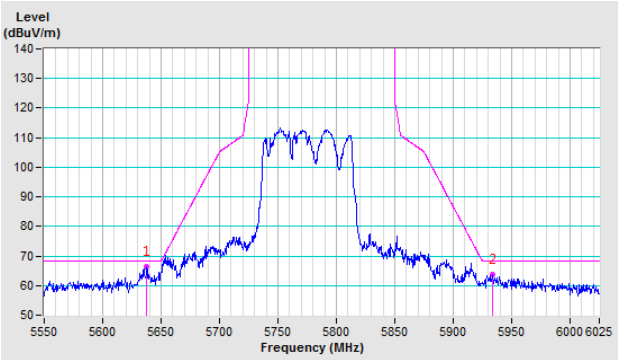
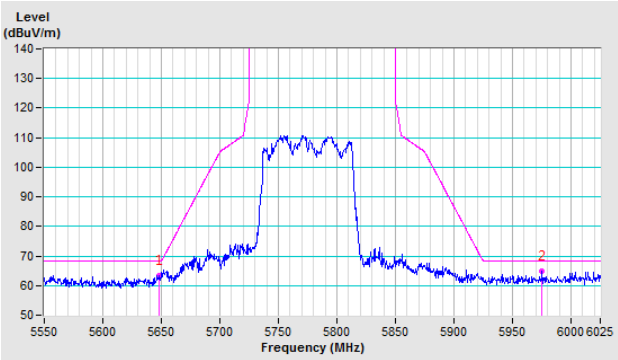
Horizontal	Vertical
	

CH 159 5795 MHz

Horizontal	Vertical
	

802.11ac (VHT80)

CH 155 5775 MHz

Horizontal	Vertical
	

Appendix – Information of the Testing Laboratories

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

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

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

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