FCC Test Report

Report No.:	RF181001C30-5
FCC ID:	PANCL8822BUV2
Test Model:	CL-8822BU-V2
Received Date:	Oct. 1, 2018
Test Date:	Oct. 30 ~ Nov. 13, 2018
Issued Date:	Dec. 26, 2018
Applicant:	CC&C Technologies, Inc.
Address:	8F,No.150, Jian Yi Rd, Zhonghe District, New Taipei City, 235, Taiwan
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C.)
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)
FCC Registration / Designation Number:	788550 / TW0003

Testing Laboratory
2021

Table of Contents

Release Control Record

Issue No.	Description	Date Issued
RF181001C30-5	Original release.	Dec. 26, 2018

1 Certificate of Conformity

Product:	11ac 2T2R+BT dongle
Brand:	CC&C
Test Model:	CL-8822BU-V2
Sample Status:	Mass product
Applicant:	CC&C Technologies, Inc.
Test Date:	Oct. 30 ~ Nov. 13, 2018
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 RF characteristics under the conditions specified in this report.

Prepared by : Celia Chen , **Date:** Dec. 26, 2018

Celia Chen / Supervisor

Approved by : Rex. Lai , **Date:** Dec. 26, 2018

Rex Lai / Associate Technical Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -19.94dB at 0.17737MHz.
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 -1.0dB at 10360.00MHz.
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	No antenna connector is used.

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

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	2.94 dB
Radiated Emissions up to 1 GHz	30MHz ~ 200MHz	3.86 dB
	200MHz ~1000MHz	3.87 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	11ac 2T2R+BT dongle
Brand	CC&C
Test Model	CL-8822BU-V2
Status of EUT	Mass product
Power Supply Rating	5Vdc
Modulation Type	64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode only.
Modulation Technology	OFDM
Transfer Rate	802.11a: 54/48/36/24/18/12/9/6Mbps 802.11n: up to 300Mbps 802.11ac: up to 866.7Mbps
Operating Frequency	5180 ~ 5240MHz, 5745 ~ 5825MHz
Number of Channel	**5180 ~ 5240MHz** 4 for 802.11a, 802.11n (20MHz), 802.11ac (20MHz) 2 for 802.11n (40MHz), 802.11ac (40MHz) 1 for 802.11ac (80MHz) **5745 ~ 5825MHz** 5 for 802.11a, 802.11n (20MHz) 802.11ac (20MHz) 2 for 802.11n (40MHz) 802.11ac (40MHz) 1 for 802.11ac (80MHz)
Output Power	**5180 ~ 5240MHz:** 154.479Mw **5745 ~ 5825MHz:** 152.943mW
Antenna Type	Refer to Note as below
Antenna Connector	Refer to Note as below
Accessory Device	N/A
Data Cable Supplied	N/A

Note:

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

Modulation Mode	TX FUNCTION
802.11a	1TX
802.11n (20MHz)	2TX
802.11n (40MHz)	2TX
802.11ac (20MHz)	2TX
802.11ac (40MHz)	2TX
802.11ac (80MHz)	2TX

* 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)

2. The EUT uses following antenna.

Transmitter Circuit	Brand	Model	Antenna Type	2.4G gain (dBi)	5G gain (dBi)	Connector Type
Chain(0)	CC&C Technologies, INC.	N65-Ant-0	Print	2.91	B1: 3.36 B2: 3.29 B3: 3.23 B4: 2.4	NA
Chain(1)	CC&C Technologies, INC.	N65-Ant-1	Print	2.05	B1: 3.13 B2: 2.72 B3: 2.15 B4: 2.64	

3. 2.4GHz & 5GHz technologies cannot transmit at same time.
   WLAN & BT technologies cannot transmit at same time.

4. 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 (20MHz), 802.11ac (20MHz):

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

2 channels are provided for 802.11n (40MHz), 802.11ac (40MHz):

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (80MHz):

Channel	Frequency
42	5210MHz

FOR 5745 ~ 5825MHz:

5 channels are provided for 802.11a, 802.11n (20MHz), 802.11ac (20MHz):

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

2 channels are provided for 802.11n (40MHz), 802.11ac (40MHz):

Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

1 channel is provided for 802.11ac (80MHz):

Channel	Frequency
155	5775MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable To				Description
	RE≥1G	RE<1G	PLC	APCM	
-	√	√	√	√	-

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 3 axis. The worst case was found when positioned on **X-plane**.

Radiated Emission Test (Above 1GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	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
-	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
-	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	13.5
-	802.11ac (80MHz)		42	42	OFDM	BPSK	29.3
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6
-	802.11n (20MHz)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
-	802.11n (40MHz)		151 to 159	151, 159	OFDM	BPSK	13.5
-	802.11ac (80MHz)		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.

EUT Configure Mode	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
-	802.11a	5745-5825	149 to 165		OFDM	BPSK	6

Power Line Conducted Emission Test:

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

EUT Configure Mode	Mode	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
-	802.11a	5745-5825	149 to 165		OFDM	BPSK	6

Antenna Port Conducted Measurement:

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

EUT Configure Mode	Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)	Remark
-	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6	1TX
-	802.11n (20MHz)		36 to 48	36, 40, 48	OFDM	BPSK	6.5	1TX / 2TX
-	802.11n (40MHz)		38 to 46	38, 46	OFDM	BPSK	13.5	1TX / 2TX
-	802.11ac (80MHz)		42	42	OFDM	BPSK	29.3	1TX / 2TX
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6	1TX
-	802.11n (20MHz)		149 to 165	149, 157, 165	OFDM	BPSK	6.5	1TX / 2TX
-	802.11n (40MHz)		151 to 159	151, 159	OFDM	BPSK	13.5	1TX / 2TX
-	802.11ac (80MHz)		155	155	OFDM	BPSK	29.3	1TX / 2TX

Test Condition:

Applicable To	Environmental Conditions	Input Power (System)	Tested by
RE≥1G	24deg. C, 66%RH	120Vac, 60Hz	Willy Cheng
RE<1G	22deg. C, 66%RH	120Vac, 60Hz	Adair Peng
PLC	23deg. C, 66%RH	120Vac, 60Hz	Adair Peng
APCM	25deg. C, 60%RH	120Vac, 60Hz	Frank Chiu

3.3 Duty Cycle of Test Signal

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

For 1TX

802.11a: Duty cycle = 1.36/1.416 = 0.96, Duty factor = 10 * log(1/0.96) = 0.18

802.11n (20MHz): Duty cycle = 1.271/1.326 = 0.959, Duty factor = 10 * log(1/0.959) = 0.18

802.11n (40MHz): Duty cycle = 0.63/0.685 = 0.92, Duty factor = 10 * log(1/0.92) = 0.36

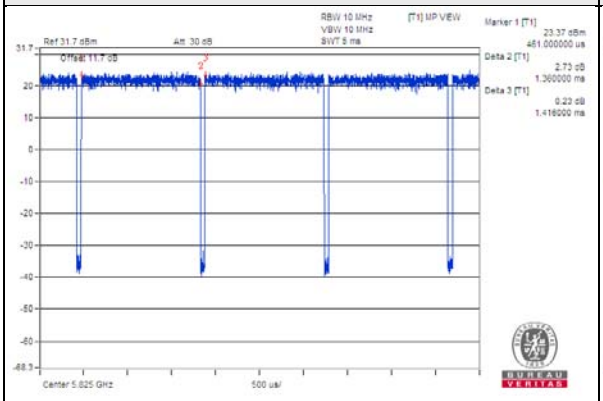
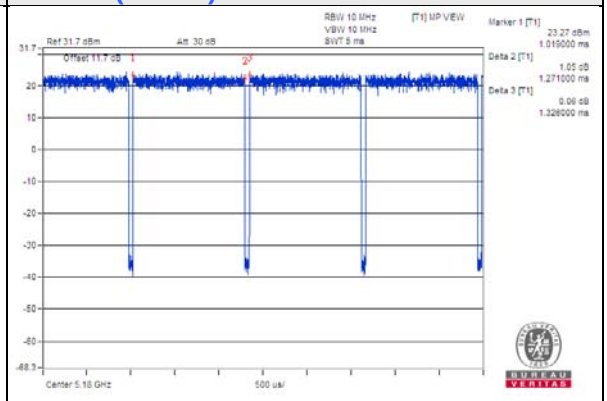
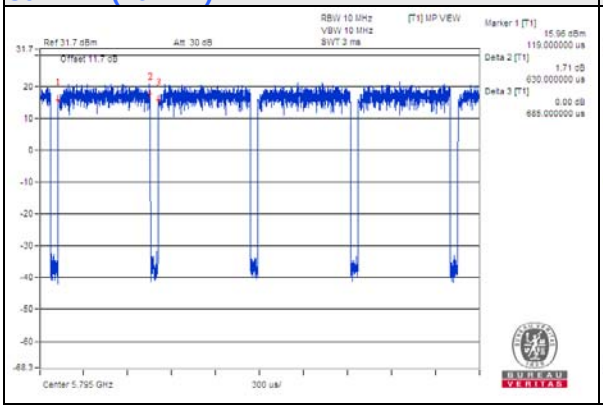
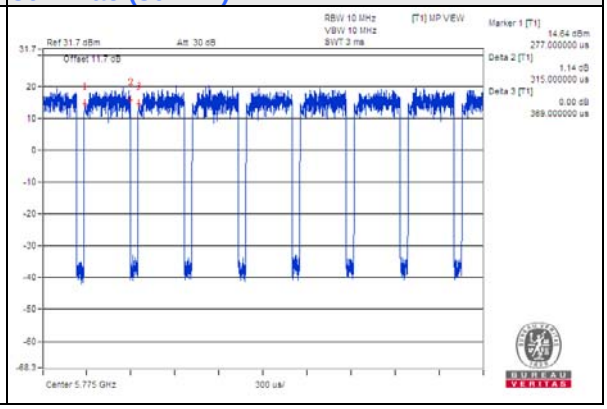
802.11ac (80MHz): Duty cycle = 0.315/0.369 = 0.854, Duty factor = 10 * log(1/0.854) = 0.69

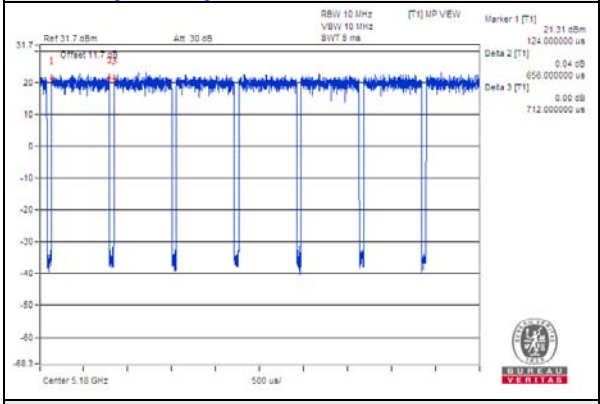
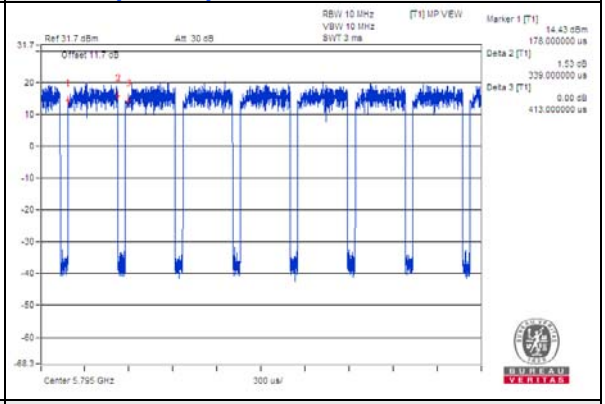
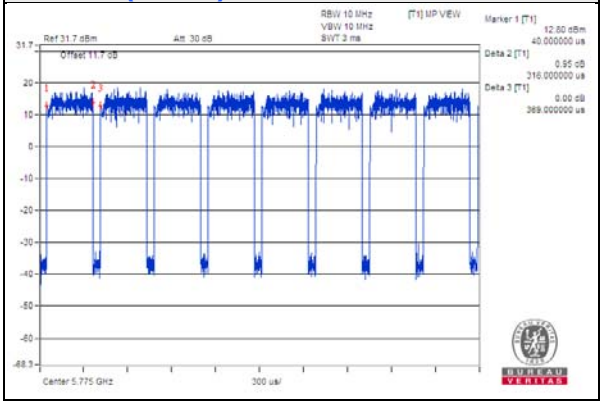
For 2TX

802.11n (20MHz): Duty cycle = 0.656/0.712 = 0.921, Duty factor = 10 * log(1/0.921) = 0.36

802.11n (40MHz): Duty cycle = 0.339/0.413 = 0.821, Duty factor = 10 * log(1/0.821) = 0.86

802.11ac (80MHz): Duty cycle = 0.316/0.369 = 0.856, Duty factor = 10 * log(1/0.856) = 0.67

1TX	
802.11a	802.11n (20MHz)
	
802.11n (40MHz)	802.11ac (80MHz)
	

2TX	
802.11n (20MHz)	802.11n (40MHz)
	
802.11ac (80MHz)	
	

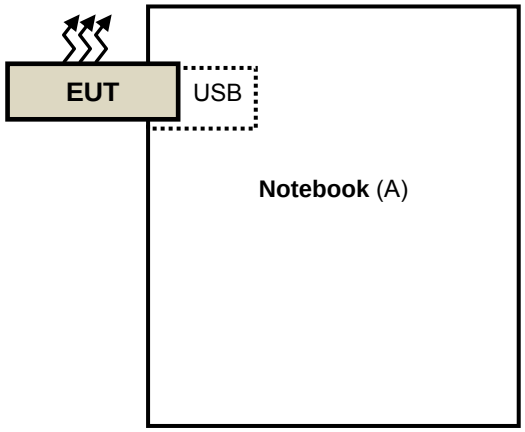
3.4 Description of Support Units

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

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook	DELL	Inspiron 14R	6LRKKW1	FCC DoC Approved	Provided by Lab

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

3.4.1 Configuration of System under 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

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESIB7	100187	May 29, 2018	May 28, 2019
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100041	Dec. 12, 2017	Dec. 11, 2018
BILOG Antenna SCHWARZBECK	VULB9168	9168-171	Nov. 22, 2017	Nov. 21, 2018
			Nov. 22, 2018	Nov. 21, 2019
HORN Antenna SCHWARZBECK	9120D	209	Dec. 13, 2017	Dec. 12, 2018
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Dec. 01, 2017	Nov. 30, 2018
Loop Antenna EMCI	EM-6879	269	Sep. 07, 2018	Sep. 06, 2019
Loop Antenna TESEQ	HLA 6121	45745	Jun. 14, 2018	Jun. 13, 2019
Preamplifier Agilent (Below 1GHz)	8447D	2944A10738	Aug. 21, 2018	Aug. 20, 2019
Preamplifier Agilent (Above 1GHz)	8449B	3008A02465	Apr. 03, 2018	Apr. 02, 2019
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH3-03 (223653/4)	Aug. 21, 2018	Aug. 20, 2019
RF signal cable HUBER+SUHNER& EMCI	SUCOFLEX 104&EMC104-SM- SM-8000	Cable-CH3-03 (309224+170907)	Aug. 21, 2018	Aug. 20, 2019
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021702	NA	NA
Turn Table BV ADT	TT100	TT93021702	NA	NA
Turn Table Controller BV ADT	SC100	SC93021702	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Pre-amplifier (18GHz-40GHz) EMC	EMC184045B	980175	Nov. 14, 2017	Nov. 13, 2018
USB Wideband Power Sensor KEYSIGHT	U2021XA	MY55050005/MY5519 0004/MY55190007/MY 55210005	Jul. 17, 2018	Jul. 16, 2019

Note:
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 3.
3. The horn antenna and preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Designation Number is TW0003. The number will be varied with the Lab location and scope as attached.
5. The IC Site Registration No. is 7450F-3.

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:

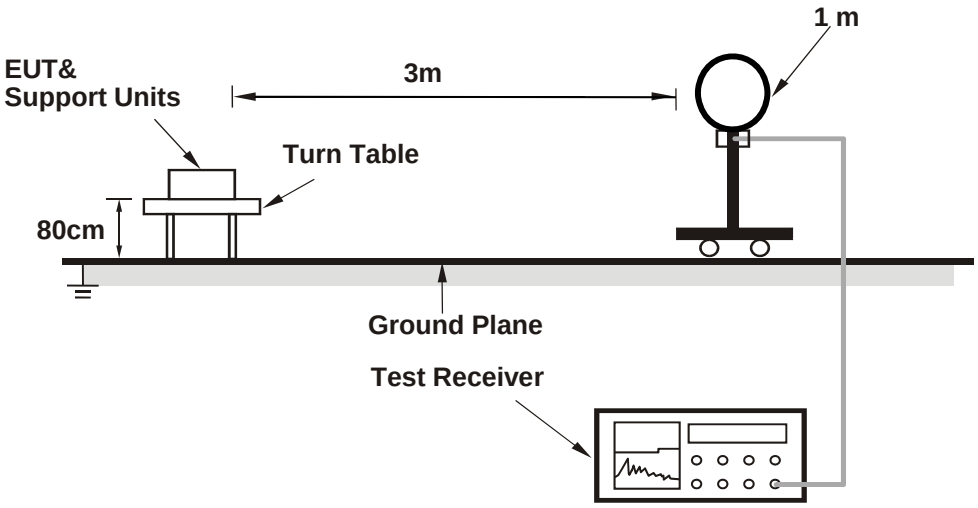
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
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

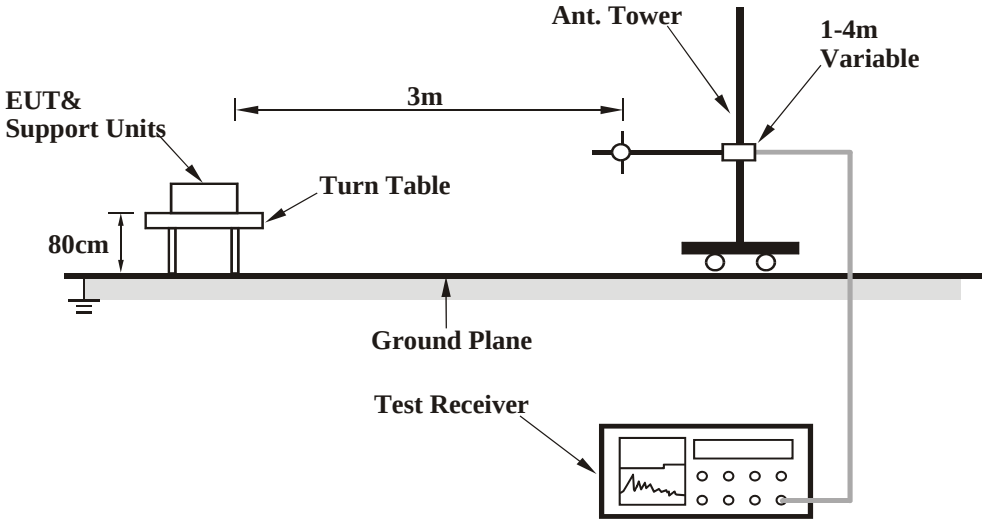
No deviation.

4.1.5 Test Setup

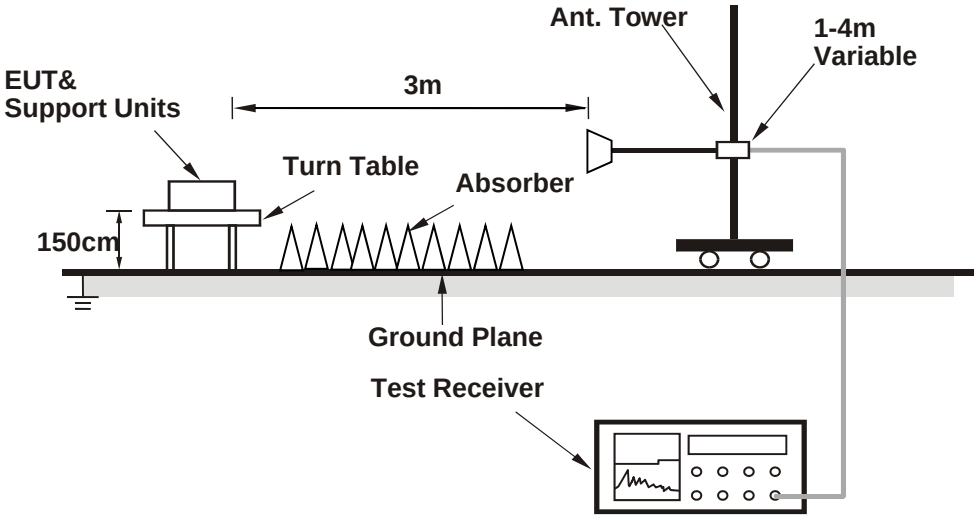
For Radiated emission below 30MHz



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. Plugged the EUT into notebook and placed them on the testing table.
b. The notebook system ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results

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	65.9 PK	74.0	-8.1	3.88 H	308	62.4	3.5
2	5150.00	51.1 AV	54.0	-2.9	3.88 H	308	47.6	3.5
3	*5180.00	108.5 PK			3.59 H	309	69.3	39.2
4	*5180.00	98.7 AV			3.59 H	309	59.5	39.2
5	#10360.00	62.8 PK	68.2	-5.4	3.06 H	319	47.4	15.4
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	64.7 PK	74.0	-9.3	2.20 V	78	61.2	3.5
2	5150.00	49.6 AV	54.0	-4.4	2.20 V	78	46.1	3.5
3	*5180.00	108.2 PK			2.18 V	84	69.0	39.2
4	*5180.00	98.7 AV			2.18 V	84	59.5	39.2
5	#10360.00	64.4 PK	68.2	-3.8	3.91 V	350	49.0	15.4

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. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
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	*5200.00	109.7 PK			1.26 H	317	70.4	39.3
2	*5200.00	99.7 AV			1.26 H	317	60.4	39.3
3	#10400.00	62.8 PK	68.2	-5.4	3.47 H	324	47.2	15.6
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	*5200.00	105.2 PK			2.91 V	46	65.9	39.3
2	*5200.00	95.5 AV			2.91 V	46	56.2	39.3
3	#10400.00	63.8 PK	68.2	-4.4	3.69 V	360	48.2	15.6

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
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	*5240.00	109.3 PK			1.47 H	311	70.2	39.1
2	*5240.00	99.3 AV			1.47 H	311	60.2	39.1
3	5350.00	57.2 PK	74.0	-16.8	1.96 H	283	53.5	3.7
4	5350.00	43.1 AV	54.0	-10.9	1.96 H	283	39.4	3.7
5	#10480.00	62.9 PK	68.2	-5.3	1.16 H	249	46.7	16.2
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	*5240.00	107.3 PK			2.27 V	79	68.2	39.1
2	*5240.00	97.6 AV			2.27 V	79	58.5	39.1
3	5350.00	57.1 PK	74.0	-16.9	2.03 V	116	53.4	3.7
4	5350.00	42.9 AV	54.0	-11.1	2.03 V	116	39.2	3.7
5	#10480.00	64.5 PK	68.2	-3.7	3.69 V	351	48.3	16.2

REMARKS:

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

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	#5608.97	54.3 PK	68.2	-13.9	3.39 H	326	50.1	4.2
2	*5745.00	107.7 PK			3.39 H	326	67.9	39.8
3	*5745.00	97.9 AV			3.39 H	326	58.1	39.8
4	#5984.62	57.2 PK	68.2	-11.0	3.39 H	326	52.2	5.0
5	11490.00	61.7 PK	74.0	-12.3	1.00 H	230	44.9	16.8
6	11490.00	47.8 AV	54.0	-6.2	1.00 H	230	31.0	16.8
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	#5603.21	54.9 PK	68.2	-13.3	2.34 V	78	50.7	4.2
2	*5745.00	109.0 PK			2.34 V	79	69.2	39.8
3	*5745.00	99.1 AV			2.34 V	79	59.3	39.8
4	#5991.03	57.6 PK	68.2	-10.6	2.34 V	78	52.6	5.0
5	11490.00	64.4 PK	74.0	-9.6	1.15 V	271	47.6	16.8
6	11490.00	51.0 AV	54.0	-3.0	1.15 V	271	34.2	16.8

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
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	#5617.31	54.6 PK	68.2	-13.6	3.34 H	326	50.4	4.2
2	*5785.00	108.6 PK			3.34 H	326	68.5	40.1
3	*5785.00	98.6 AV			3.34 H	326	58.5	40.1
4	#5964.74	56.8 PK	68.2	-11.4	3.34 H	326	52.0	4.8
5	11570.00	62.9 PK	74.0	-11.1	1.01 H	229	45.9	17.0
6	11570.00	48.9 AV	54.0	-5.1	1.01 H	229	31.9	17.0
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	#5600.00	54.5 PK	68.2	-13.7	2.29 V	79	50.3	4.2
2	*5785.00	109.0 PK			2.29 V	79	68.9	40.1
3	*5785.00	99.4 AV			2.29 V	79	59.3	40.1
4	#5997.44	57.3 PK	68.2	-10.9	2.29 V	79	52.3	5.0
5	11570.00	65.0 PK	74.0	-9.0	1.09 V	273	48.0	17.0
6	11570.00	52.0 AV	54.0	-2.0	1.09 V	273	35.0	17.0

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
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	#5603.85	54.6 PK	68.2	-13.6	3.46 H	326	50.4	4.2
2	*5825.00	108.5 PK			3.46 H	326	68.2	40.3
3	*5825.00	98.5 AV			3.46 H	326	58.2	40.3
4	#5971.15	57.0 PK	68.2	-11.2	3.46 H	326	52.1	4.9
5	11650.00	62.4 PK	74.0	-11.6	1.00 H	225	45.8	16.6
6	11650.00	49.3 AV	54.0	-4.7	1.00 H	225	32.7	16.6
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	#5610.90	54.8 PK	68.2	-13.4	2.18 V	78	50.6	4.2
2	*5825.00	109.7 PK			2.18 V	78	69.4	40.3
3	*5825.00	99.9 AV			2.18 V	78	59.6	40.3
4	#5995.51	57.4 PK	68.2	-10.8	2.18 V	78	52.4	5.0
5	11650.00	65.3 PK	74.0	-8.7	1.11 V	271	48.7	16.6
6	11650.00	52.5 AV	54.0	-1.5	1.11 V	271	35.9	16.6

REMARKS:

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

802.11n (HT20)

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	63.5 PK	74.0	-10.5	1.12 H	222	60.0	3.5
2	5150.00	46.8 AV	54.0	-7.2	1.12 H	222	43.3	3.5
3	*5180.00	107.6 PK			1.48 H	308	68.4	39.2
4	*5180.00	98.1 AV			1.48 H	308	58.9	39.2
5	**#10360.00**	**67.2 PK**	**68.2**	**-1.0**	**1.14 H**	**250**	**51.8**	**15.4**
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	57.7 PK	74.0	-16.3	3.94 V	359	54.2	3.5
2	5150.00	42.4 AV	54.0	-11.6	3.94 V	359	38.9	3.5
3	*5180.00	100.5 PK			3.88 V	359	61.3	39.2
4	*5180.00	91.2 AV			3.88 V	359	52.0	39.2
5	#10360.00	66.0 PK	68.2	-2.2	3.87 V	340	50.6	15.4

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. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
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	*5200.00	107.4 PK			1.29 H	306	68.1	39.3
2	*5200.00	97.6 AV			1.29 H	306	58.3	39.3
3	#10400.00	66.5 PK	68.2	-1.7	1.12 H	248	50.9	15.6
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	*5200.00	105.5 PK			2.17 V	88	66.2	39.3
2	*5200.00	95.9 AV			2.17 V	88	56.6	39.3
3	#10400.00	65.2 PK	68.2	-3.0	3.37 V	276	49.6	15.6

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
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	*5240.00	105.5 PK			3.85 H	331	66.4	39.1
2	*5240.00	95.9 AV			3.85 H	331	56.8	39.1
3	5350.00	56.1 PK	74.0	-17.9	2.76 H	302	52.4	3.7
4	5350.00	42.7 AV	54.0	-11.3	2.76 H	302	39.0	3.7
5	#10480.00	66.5 PK	68.2	-1.7	1.10 H	250	50.3	16.2
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	*5240.00	106.4 PK			2.36 V	76	67.3	39.1
2	*5240.00	96.7 AV			2.36 V	76	57.6	39.1
3	5350.00	56.3 PK	74.0	-17.7	2.03 V	132	52.6	3.7
4	5350.00	43.0 AV	54.0	-11.0	2.03 V	132	39.3	3.7
5	#10480.00	64.9 PK	68.2	-3.3	3.62 V	270	48.7	16.2

REMARKS:

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

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	#5600.64	54.6 PK	68.2	-13.6	2.64 H	209	50.4	4.2
2	*5745.00	106.8 PK			2.64 H	209	67.0	39.8
3	*5745.00	97.4 AV			2.64 H	209	57.6	39.8
4	#5996.15	57.0 PK	68.2	-11.2	2.64 H	209	52.0	5.0
5	11490.00	66.4 PK	74.0	-7.6	2.36 H	322	49.6	16.8
6	11490.00	50.9 AV	54.0	-3.1	2.36 H	322	34.1	16.8
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	#5620.51	54.3 PK	68.2	-13.9	3.36 V	90	50.1	4.2
2	*5745.00	107.7 PK			3.36 V	90	67.9	39.8
3	*5745.00	98.2 AV			3.36 V	90	58.4	39.8
4	#5976.92	56.9 PK	68.2	-11.3	3.36 V	90	51.9	5.0
5	11490.00	68.0 PK	74.0	-6.0	3.88 V	249	51.2	16.8
6	11490.00	52.9 AV	54.0	-1.1	3.88 V	249	36.1	16.8

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
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	#5616.67	54.0 PK	68.2	-14.2	2.88 H	203	49.8	4.2
2	*5785.00	107.2 PK			2.88 H	203	67.1	40.1
3	*5785.00	97.7 AV			2.88 H	203	57.6	40.1
4	#5982.69	57.2 PK	68.2	-11.0	2.88 H	203	52.2	5.0
5	11570.00	65.5 PK	74.0	-8.5	2.64 H	311	48.5	17.0
6	11570.00	50.9 AV	54.0	-3.1	2.64 H	311	33.9	17.0
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	#5644.23	54.2 PK	68.2	-14.0	2.64 V	21	49.9	4.3
2	*5785.00	100.8 PK			2.64 V	21	60.7	40.1
3	*5785.00	91.3 AV			2.64 V	21	51.2	40.1
4	#5975.64	56.9 PK	68.2	-11.3	2.64 V	21	51.9	5.0
5	11570.00	67.0 PK	74.0	-7.0	3.73 V	249	50.0	17.0
6	11570.00	52.8 AV	54.0	-1.2	3.73 V	249	35.8	17.0

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
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	#5619.23	54.8 PK	68.2	-13.4	2.96 H	197	50.6	4.2
2	*5825.00	107.4 PK			2.96 H	197	67.1	40.3
3	*5825.00	97.6 AV			2.96 H	197	57.3	40.3
4	#5988.46	57.5 PK	68.2	-10.7	2.96 H	197	52.5	5.0
5	11650.00	63.3 PK	74.0	-10.7	2.71 H	332	46.7	16.6
6	11650.00	50.8 AV	54.0	-3.2	2.71 H	332	34.2	16.6
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	#5608.97	54.3 PK	68.2	-13.9	2.37 V	39	50.1	4.2
2	*5825.00	104.8 PK			2.37 V	39	64.5	40.3
3	*5825.00	95.4 AV			2.37 V	39	55.1	40.3
4	#5972.44	57.5 PK	68.2	-10.7	2.37 V	39	52.5	5.0
5	11650.00	65.4 PK	74.0	-8.6	2.64 V	241	48.8	16.6
6	11650.00	52.3 AV	54.0	-1.7	2.64 V	241	35.7	16.6

REMARKS:

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

802.11n (HT40)

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	67.8 PK	74.0	-6.2	2.48 H	301	64.3	3.5
2	5150.00	52.8 AV	54.0	-1.2	2.48 H	301	49.3	3.5
3	*5190.00	104.1 PK			3.56 H	308	64.8	39.3
4	*5190.00	94.6 AV			3.56 H	308	55.3	39.3
5	#10380.00	62.9 PK	68.2	-5.3	3.37 H	350	47.4	15.5
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	68.5 PK	74.0	-5.5	2.65 V	63	65.0	3.5
2	5150.00	52.5 AV	54.0	-1.5	2.65 V	63	49.0	3.5
3	*5190.00	104.8 PK			2.64 V	70	65.5	39.3
4	*5190.00	95.2 AV			2.64 V	70	55.9	39.3
5	#10380.00	62.0 PK	68.2	-6.2	3.30 V	266	46.5	15.5

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
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	104.1 PK			1.22 H	306	65.0	39.1
2	*5230.00	94.4 AV			1.22 H	306	55.3	39.1
3	5350.00	56.9 PK	74.0	-17.1	1.31 H	346	53.2	3.7
4	5350.00	42.9 AV	54.0	-11.1	1.31 H	346	39.2	3.7
5	#10460.00	62.9 PK	68.2	-5.3	1.25 H	252	46.9	16.0
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	100.4 PK			2.59 V	126	61.3	39.1
2	*5230.00	91.2 AV			2.59 V	126	52.1	39.1
3	5350.00	57.1 PK	74.0	-16.9	2.33 V	79	53.4	3.7
4	5350.00	42.8 AV	54.0	-11.2	2.33 V	79	39.1	3.7
5	#10460.00	63.3 PK	68.2	-4.9	3.22 V	266	47.3	16.0

REMARKS:

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

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	#5614.74	54.2 PK	68.2	-14.0	3.35 H	140	50.0	4.2
2	*5755.00	103.7 PK			3.35 H	140	63.9	39.8
3	*5755.00	94.3 AV			3.35 H	140	54.5	39.8
4	#5983.33	56.6 PK	68.2	-11.6	3.35 H	140	51.6	5.0
5	11510.00	63.4 PK	74.0	-10.6	2.43 H	325	46.5	16.9
6	11510.00	51.6 AV	54.0	-2.4	2.43 H	325	34.7	16.9
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	#5648.08	54.7 PK	68.2	-13.5	3.22 V	85	50.4	4.3
2	*5755.00	103.8 PK			3.22 V	85	64.0	39.8
3	*5755.00	94.5 AV			3.22 V	85	54.7	39.8
4	#5987.18	56.6 PK	68.2	-11.6	3.22 V	85	51.6	5.0
5	11510.00	65.3 PK	74.0	-8.7	3.78 V	249	48.4	16.9
6	11510.00	52.6 AV	54.0	-1.4	3.78 V	249	35.7	16.9

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. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
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	#5603.21	53.7 PK	68.2	-14.5	3.45 H	150	49.5	4.2
2	*5795.00	103.7 PK			3.45 H	150	63.6	40.1
3	*5795.00	93.9 AV			3.45 H	150	53.8	40.1
4	#5948.72	56.9 PK	68.2	-11.3	3.45 H	150	52.1	4.8
5	11590.00	62.2 PK	74.0	-11.8	2.78 H	332	45.2	17.0
6	11590.00	50.1 AV	54.0	-3.9	2.78 H	332	33.1	17.0
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	#5625.64	54.0 PK	68.2	-14.2	2.51 V	68	49.8	4.2
2	*5795.00	104.1 PK			2.51 V	68	64.0	40.1
3	*5795.00	94.5 AV			2.51 V	68	54.4	40.1
4	#5988.46	57.2 PK	68.2	-11.0	2.51 V	68	52.2	5.0
5	11590.00	64.8 PK	74.0	-9.2	3.92 V	248	47.8	17.0
6	11590.00	52.5 AV	54.0	-1.5	3.92 V	248	35.5	17.0

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
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	67.1 PK	74.0	-6.9	2.16 H	300	63.6	3.5
2	5150.00	52.6 AV	54.0	-1.4	2.16 H	300	49.1	3.5
3	*5210.00	100.8 PK			2.45 H	296	61.6	39.2
4	*5210.00	91.1 AV			2.45 H	296	51.9	39.2
5	5350.00	57.8 PK	74.0	-16.2	2.63 H	310	54.1	3.7
6	5350.00	43.1 AV	54.0	-10.9	2.63 H	310	39.4	3.7
7	#10420.00	60.0 PK	68.2	-8.2	2.42 H	261	44.3	15.7
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	5150.00	66.8 PK	74.0	-7.2	2.36 V	62	63.3	3.5
2	5150.00	52.2 AV	54.0	-1.8	2.36 V	62	48.7	3.5
3	*5210.00	101.8 PK			2.64 V	69	62.6	39.2
4	*5210.00	92.2 AV			2.64 V	69	53.0	39.2
5	5350.00	56.7 PK	74.0	-17.3	2.03 V	76	53.0	3.7
6	5350.00	43.3 AV	54.0	-10.7	2.03 V	76	39.6	3.7
7	#10420.00	57.2 PK	68.2	-11.0	1.74 V	303	41.5	15.7

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. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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	#5626.28	54.6 PK	68.2	-13.6	2.88 H	203	50.4	4.2
2	#5650.00	57.1 PK	68.2	-11.1	2.96 H	183	52.8	4.3
3	*5775.00	101.4 PK			2.88 H	203	61.4	40.0
4	*5775.00	91.9 AV			2.88 H	203	51.9	40.0
5	#5925.00	64.2 PK	68.2	-4.0	2.96 H	231	59.3	4.9
6	#5933.33	61.8 PK	68.2	-6.4	2.88 H	203	56.9	4.9
7	11550.00	64.5 PK	74.0	-9.5	2.64 H	346	47.5	17.0
8	11550.00	51.8 AV	54.0	-2.2	2.64 H	346	34.8	17.0
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	#5635.90	57.0 PK	68.2	-11.2	3.34 V	90	52.8	4.2
2	#5650.00	58.4 PK	68.2	-9.8	3.26 V	51	54.1	4.3
3	*5775.00	103.5 PK			3.34 V	90	63.5	40.0
4	*5775.00	93.7 AV			3.34 V	90	53.7	40.0
5	#5925.00	60.6 PK	68.2	-7.6	3.51 V	115	55.7	4.9
6	#5933.97	59.4 PK	68.2	-8.8	3.34 V	90	54.5	4.9
7	11550.00	65.2 PK	74.0	-8.8	3.84 V	248	48.2	17.0
8	11550.00	52.4 AV	54.0	-1.6	3.84 V	248	35.4	17.0

REMARKS:

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

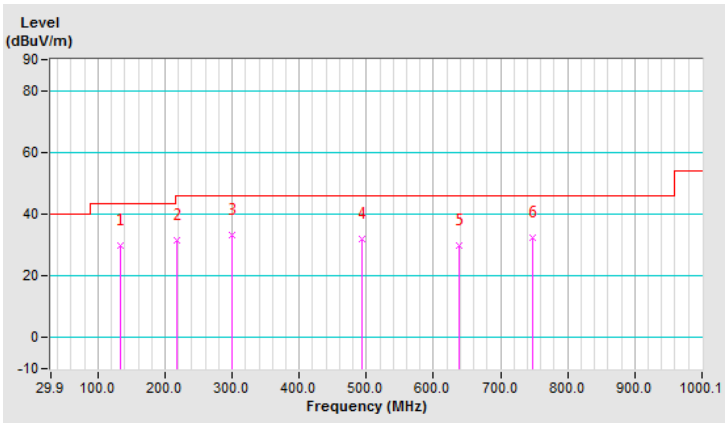
Below 1GHz Data:

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	132.95	30.0 QP	43.5	-13.5	2.00 H	55	40.4	-10.4
2	218.50	31.6 QP	46.0	-14.4	1.01 H	43	42.9	-11.3
3	300.16	33.4 QP	46.0	-12.6	1.01 H	54	40.8	-7.4
4	492.64	31.9 QP	46.0	-14.1	2.00 H	84	35.6	-3.7
5	638.46	30.0 QP	46.0	-16.0	1.01 H	358	30.4	-0.4
6	747.34	32.2 QP	46.0	-13.8	1.01 H	332	30.4	1.8

REMARKS:

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

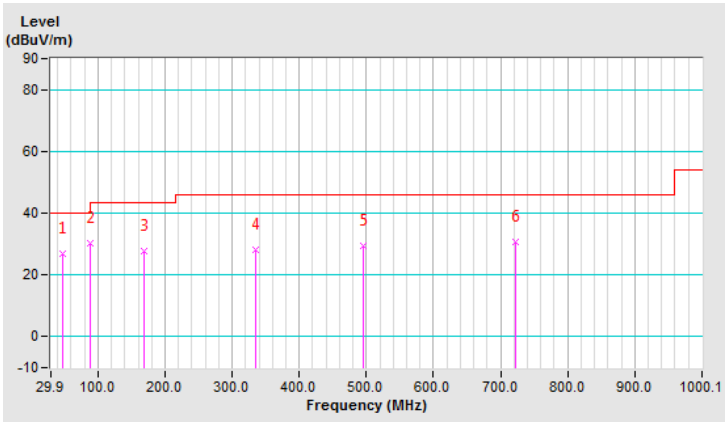


CHANNEL	TX Channel 40	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	47.40	26.7 QP	40.0	-13.3	1.00 V	312	36.1	-9.4
2	88.23	30.1 QP	43.5	-13.4	1.50 V	66	44.8	-14.7
3	167.94	27.6 QP	43.5	-15.9	1.00 V	207	36.8	-9.2
4	335.15	28.3 QP	46.0	-17.7	1.50 V	117	34.9	-6.6
5	494.58	29.5 QP	46.0	-16.5	2.00 V	3	33.1	-3.6
6	722.07	30.6 QP	46.0	-15.4	2.00 V	283	29.6	1.0

REMARKS:

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



4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Note: 1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCS30	100291	Sep. 03, 2018	Sep. 02, 2019
RF signal cable Woken	5D-FB	Cable-cond1-01	Sep. 05, 2018	Sep. 04, 2019
LISN ROHDE & SCHWARZ (EUT)	ENV216	101826	Feb. 26, 2018	Feb. 25, 2019
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Aug. 19, 2018	Aug. 18, 2019
Software ADT	BV ADT_Cond_ V7.3.7.4	NA	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Shielded Room 1.
3. The VCCI Site Registration No. is C-2040.

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.

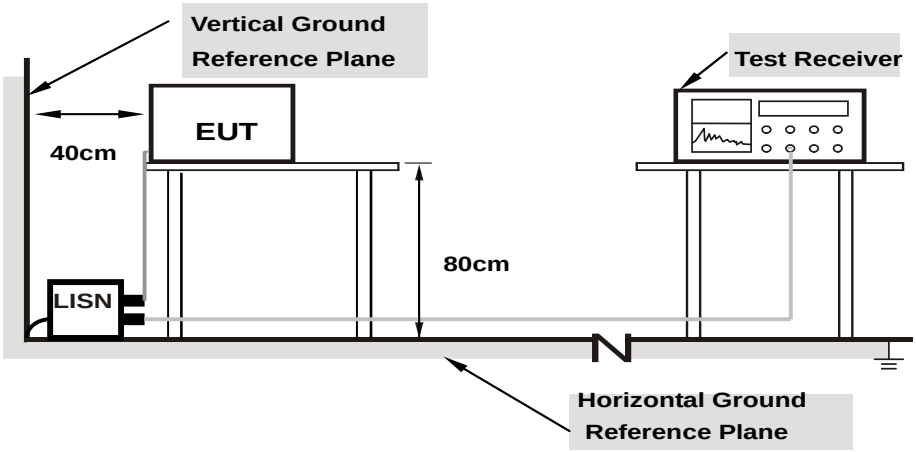
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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.

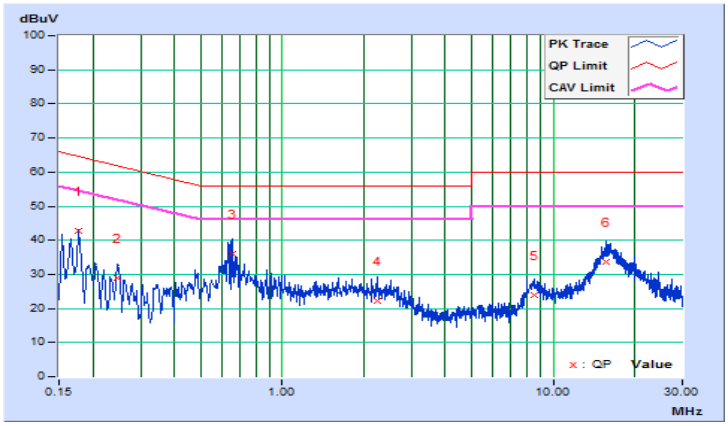
4.2.7 Test Results

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

No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17737	10.05	32.66	15.80	42.71	25.85	64.61	54.61	-21.90	-28.76
2	0.24775	10.05	18.76	8.08	28.81	18.13	61.83	51.83	-33.02	-33.70
3	0.65830	10.05	25.81	12.12	35.86	22.17	56.00	46.00	-20.14	-23.83
4	2.23794	10.13	12.13	5.67	22.26	15.80	56.00	46.00	-33.74	-30.20
5	8.50958	10.49	13.40	6.57	23.89	17.06	60.00	50.00	-36.11	-32.94
6	15.70789	10.92	22.59	17.04	33.51	27.96	60.00	50.00	-26.49	-22.04

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

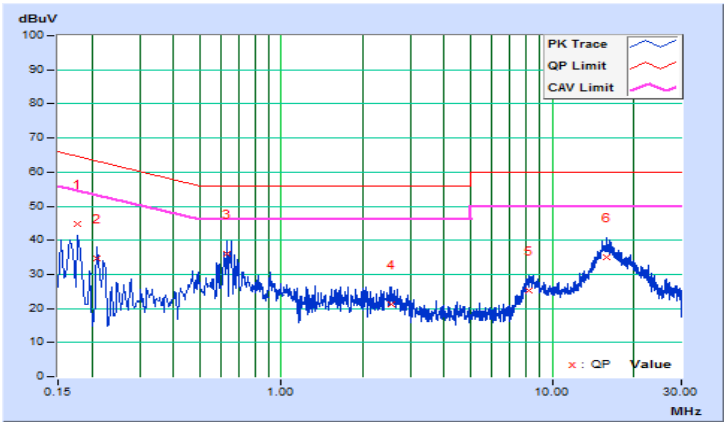


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	**0.17737**	**10.04**	**34.63**	**17.52**	**44.67**	**27.56**	**64.61**	**54.61**	**-19.94**	**-27.05**
2	0.20865	10.04	24.78	10.93	34.82	20.97	63.26	53.26	-28.44	-32.29
3	0.63093	10.05	26.00	12.36	36.05	22.41	56.00	46.00	-19.95	-23.59
4	2.55074	10.14	11.03	4.14	21.17	14.28	56.00	46.00	-34.83	-31.72
5	8.24770	10.41	14.79	8.30	25.20	18.71	60.00	50.00	-34.80	-31.29
6	15.90339	10.75	24.10	18.38	34.85	29.13	60.00	50.00	-25.15	-20.87

Remarks:

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



4.3 Transmit Power Measurement

4.3.1 Limits of Transmit Power Measurement

Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p ≦ 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

For Average Power Measurement

For 802.11a, 802.11n (20MHz), 802.11n (40MHz)

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

For 802.11ac (80MHz)

1) Set span to encompass the entire 26 dB EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal.
2) Set sweep trigger to “free run”.
3) Set RBW = 1 MHz.
4) Set VBW ≥ 3 MHz
5) Number of points in sweep ≥ 2 Span / RBW.
6) Sweep time ≤ (number of points in sweep) * T
7) Using emission bandwidth to determine the frequency span for integration the channel bandwidth.
8)Detector = RMS.
9) Trace mode = max hold.
10) Allow max hold to run for at least 60 seconds, or longer as needed to allow the trace to stabilize.

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 Result

Power Output:

For 1TX

802.11a

Channel	Channel Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass/Fail
36	5180	80.91	19.08	24	Pass
40	5200	81.846	19.13	24	Pass
48	5240	62.087	17.93	24	Pass
149	5745	96.383	19.84	30	Pass
157	5785	93.756	19.72	30	Pass
165	5825	92.257	19.65	30	Pass

802.11n (20MHz)

Channel	Channel Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass/Fail
36	5180	80.538	19.06	24	Pass
40	5200	76.384	18.83	24	Pass
48	5240	64.863	18.12	24	Pass
149	5745	79.616	19.01	30	Pass
157	5785	77.268	18.88	30	Pass
165	5825	73.621	18.67	30	Pass

802.11n (HT40)

Channel	Channel Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass/Fail
38	5190	76.033	18.81	24	Pass
46	5230	81.846	19.13	24	Pass
151	5755	67.453	18.29	30	Pass
159	5795	65.013	18.13	30	Pass

802.11ac (VHT80)

Channel	Channel Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass/Fail
42	5210	79.983	19.03	24	Pass
155	5775	76.384	18.83	30	Pass

For 2TX

802.11n (20MHz)

CHAN.	FREQ. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass/Fail
		CHAIN 0	CHAIN 1				
36	5180	18.46	19.26	**154.479**	21.89	24	Pass
40	5200	18.22	19.01	145.99	21.64	24	Pass
48	5240	17.35	18.31	122.089	20.87	24	Pass
149	5745	18.45	19.14	152.019	21.82	30	Pass
157	5785	18.32	19.09	149.016	21.73	30	Pass
165	5825	18.22	18.87	143.464	21.57	30	Pass

802.11n (40MHz)

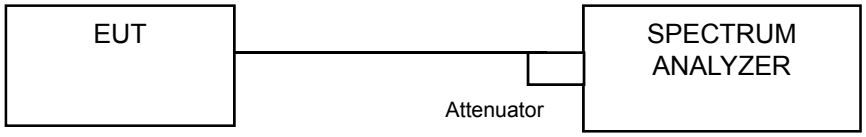
CHAN.	FREQ. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass/Fail
		CHAIN 0	CHAIN 1				
38	5190	18.04	19.02	143.479	21.57	24	Pass
46	5230	18.40	19.26	153.516	21.86	24	Pass
151	5755	17.81	18.42	129.897	21.14	30	Pass
159	5795	17.67	18.28	125.777	21.00	30	Pass

802.11ac (80MHz)

CHAN.	FREQ. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass/Fail
		CHAIN 0	CHAIN 1				
42	5210	17.61	18.22	124.051	20.94	24	Pass
155	5775	18.53	19.12	**152.943**	21.85	30	Pass

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

For 1TX

802.11a

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)
36	5180	23.52
40	5200	23.28
48	5240	18.66
149	5745	24.61
157	5785	24.71
165	5825	25.29

802.11n (20MHz)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)
36	5180	24.12
40	5200	22.80
48	5240	19.13
149	5745	22.69
157	5785	22.88
165	5825	21.63

802.11n (40MHz)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)
38	5190	37.92
46	5230	38.52
151	5755	37.69
159	5795	37.31

802.11ac (80MHz)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)
42	5210	76.08
155	5775	77.69

For 2TX

802.11n (20MHz)

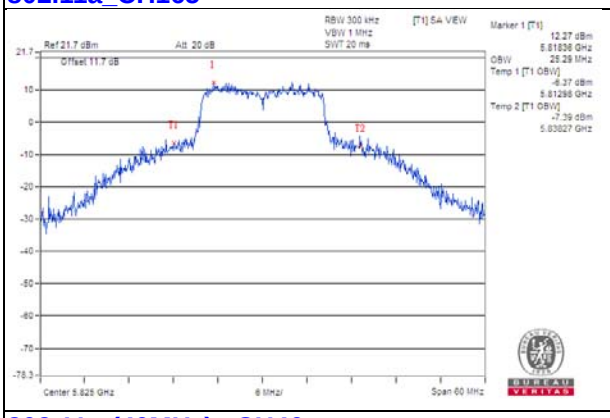
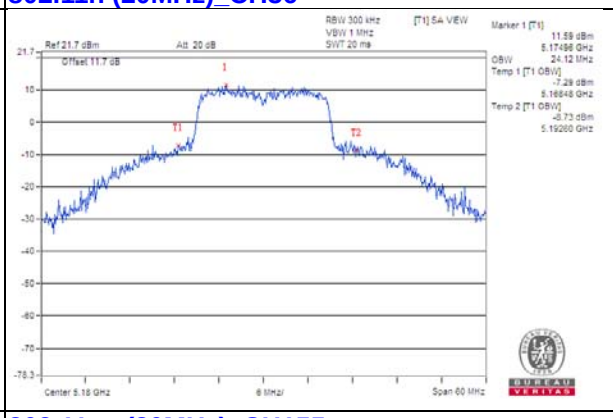
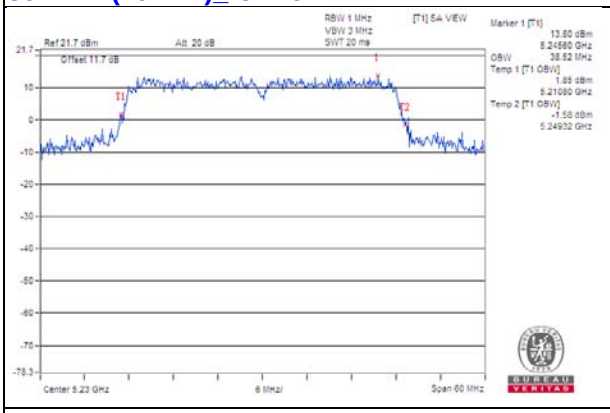
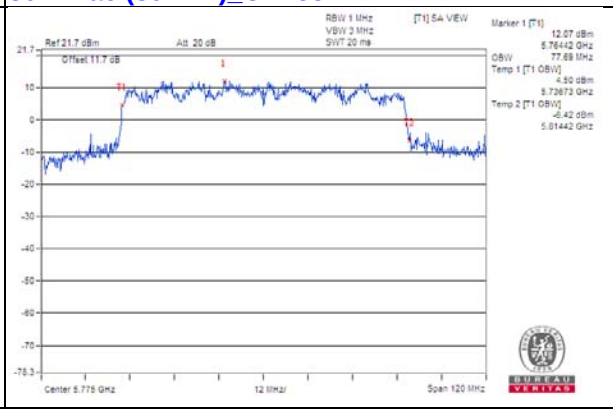
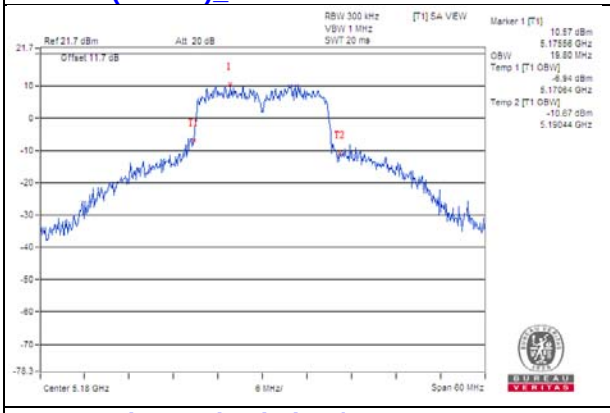
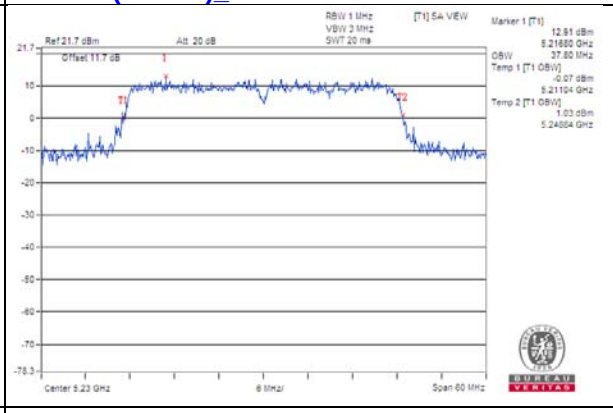
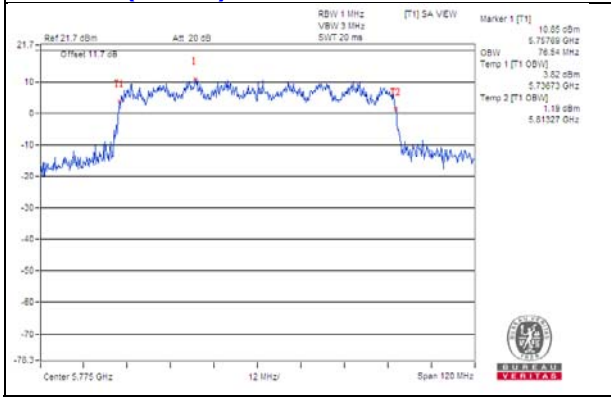
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	19.44	19.80
40	5200	18.36	18.24
48	5240	19.04	18.56
149	5745	18.56	18.37
157	5785	18.84	18.46
165	5825	18.46	18.17

802.11n (40MHz)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	37.32	37.08
46	5230	37.80	37.20
151	5755	37.12	36.92
159	5795	37.02	36.74

802.11ac (80MHz)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	76.08	75.84
155	5775	76.35	76.54

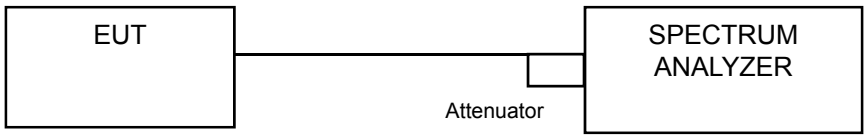
Spectrum Plot of Worst Value	
1TX	
802.11a_CH165	802.11n (20MHz)_CH36
	
802.11n (40MHz)_ CH46	802.11ac (80MHz)_CH155
	
2TX	
802.11n (20MHz)_Chain1 / CH36	802.11n (40MHz)_Chain0 / CH46
	
802.11ac (80MHz)_Chain1 / CH155	
	

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 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(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 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

For U-NII-1:
1TX

802.11a

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD With Duty Factor (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
36	5180	7.28	0.18	7.46	11	Pass
40	5200	7.07	0.18	7.25	11	Pass
48	5240	6.55	0.18	6.73	11	Pass

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

802.11n (20MHz)

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD With Duty Factor (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
36	5180	7.13	0.18	7.31	11	Pass
40	5200	6.96	0.18	7.14	11	Pass
48	5240	5.87	0.18	6.05	11	Pass

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

802.11n (40MHz)

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD With Duty Factor (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
38	5190	3.46	0.36	3.82	11	Pass
46	5230	3.63	0.36	3.99	11	Pass

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

802.11ac (80MHz)

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)	Duty Factor (dB)	PSD With Duty Factor (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
42	5210	0.94	0.69	1.63	11	Pass

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

2TX

802.11n (20MHz)

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm)		Duty Factor (dB)	Total PSD With Duty Factor (dBm)	MAX. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	5.70	5.79	0.36	9.11	10.74	Pass
40	5200	5.00	4.99	0.36	8.36	10.74	Pass
48	5240	4.48	4.57	0.36	7.89	10.74	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[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 6.26dBi > 6dBi , so the power density limit shall be reduced to 11-(6.26-6) = 10.74dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (40MHz)

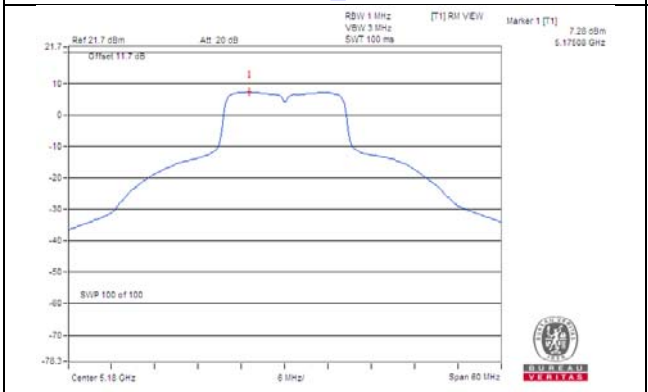
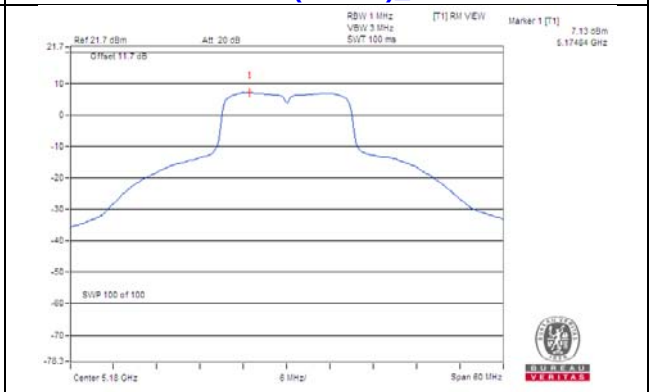
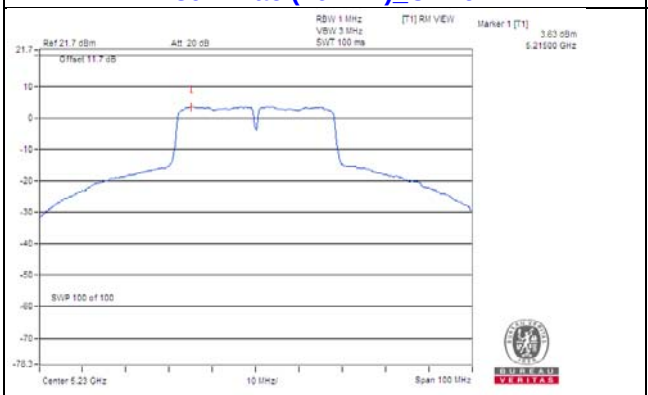
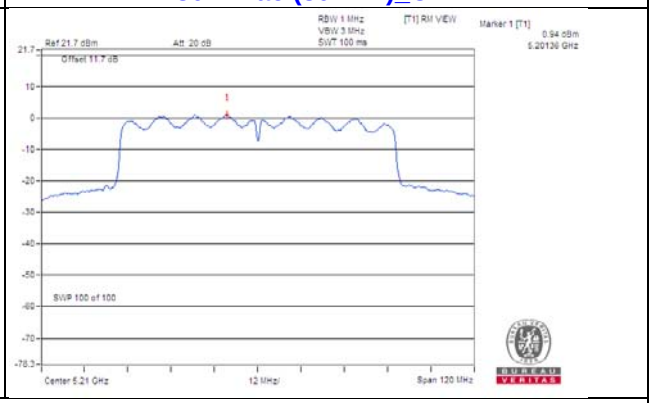
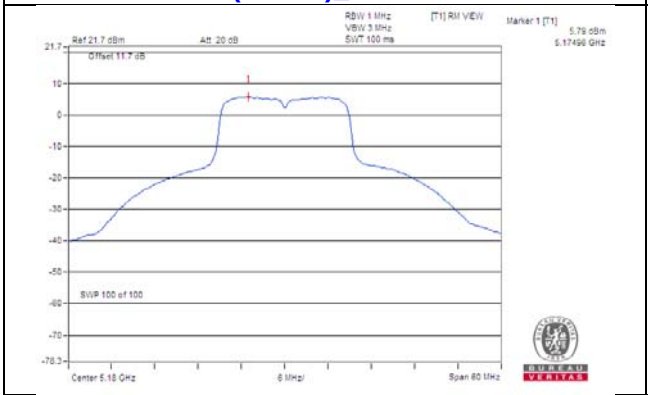
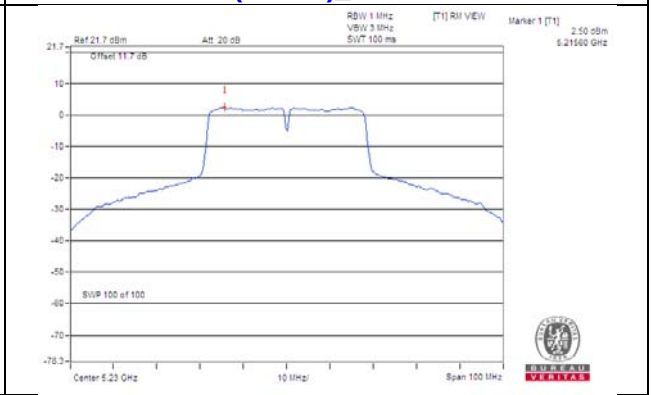
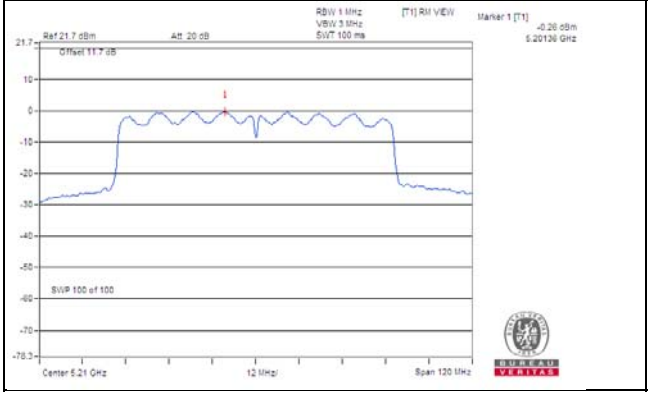
Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm)		Duty Factor (dB)	Total PSD With Duty Factor (dBm)	MAX. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	1.94	1.77	0.86	5.72	10.74	Pass
46	5230	1.99	2.50	0.86	6.12	10.74	Pass

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[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 6.26dBi > 6dBi , so the power density limit shall be reduced to 11-(6.26-6) = 10.74dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (80MHz)

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm)		Duty Factor (dB)	Total PSD With Duty Factor (dBm)	MAX. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	-0.27	-0.89	0.67	3.11	10.74	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[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 6.26dBi > 6dBi , so the power density limit shall be reduced to 11-(6.26-6) = 10.74dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value	
1TX	
802.11a_CH36	**802.11ac (20MHz)_CH36**
	
802.11ac (40MHz)_CH46	**802.11ac (80MHz)_CH42**
	
2TX	
802.11ac (20MHz)_Chain 1 / CH36	**802.11ac (40MHz)_Chain 1 / CH46**
	
802.11ac (80MHz)_Chain 0 / CH42	
	

For U-NII-3:

1TX

802.11a

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor		Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
		(dBm/300kHz)	(dBm/500kHz)				
149	5745	0.11	2.33	0.18	2.51	30	Pass
157	5785	-0.04	2.18	0.18	2.36	30	Pass
165	5825	-0.35	1.87	0.18	2.05	30	Pass

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

802.11n (20MHz)

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor		Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
		(dBm/300kHz)	(dBm/500kHz)				
149	5745	-0.37	1.85	0.18	2.03	30	Pass
157	5785	-0.52	1.70	0.18	1.88	30	Pass
165	5825	-1.16	1.06	0.18	1.24	30	Pass

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

802.11n (40MHz)

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor		Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
		(dBm/300kHz)	(dBm/500kHz)				
151	5755	-4.83	-2.61	0.36	-2.25	30	Pass
159	5795	-5.63	-3.41	0.36	-3.05	30	Pass

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

802.11ac (80MHz)

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor		Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
		(dBm/300kHz)	(dBm/500kHz)				
155	5775	-5.70	-3.48	0.69	-2.79	30	Pass

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

2TX

802.11n (20MHz)

TX chain	Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor		10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	149	5745	-2.39	-0.17	3.01	0.36	3.20	30	Pass
	157	5785	-2.54	-0.32	3.01	0.36	3.05	30	Pass
	165	5825	-2.83	-0.61	3.01	0.36	2.76	30	Pass
1	149	5745	-2.48	-0.26	3.01	0.36	3.11	30	Pass
	157	5785	-2.70	-0.48	3.01	0.36	2.89	30	Pass
	165	5825	-3.16	-0.94	3.01	0.36	2.43	30	Pass

Note: 1. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 5.53dBi < 6dBi , so the power spectral density limit doesn't reduce.

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

802.11n (40MHz)

TX chain	Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor		10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	151	5755	-6.34	-4.12	3.01	0.86	-0.25	30	Pass
	159	5795	-7.13	-4.91	3.01	0.86	-1.04	30	Pass
1	151	5755	-6.77	-4.55	3.01	0.86	-0.68	30	Pass
	159	5795	-7.25	-5.03	3.01	0.86	-1.16	30	Pass

Note: 1. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 5.53dBi < 6dBi , so the power spectral density limit doesn't reduce.

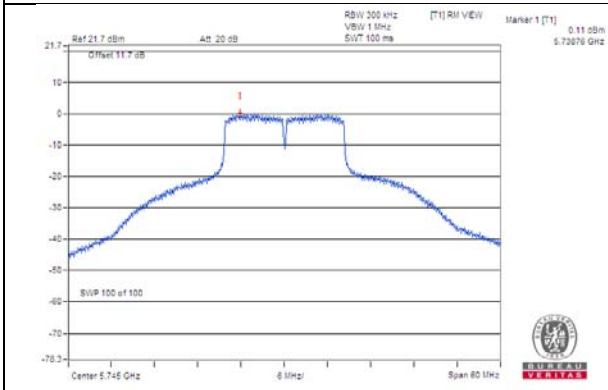
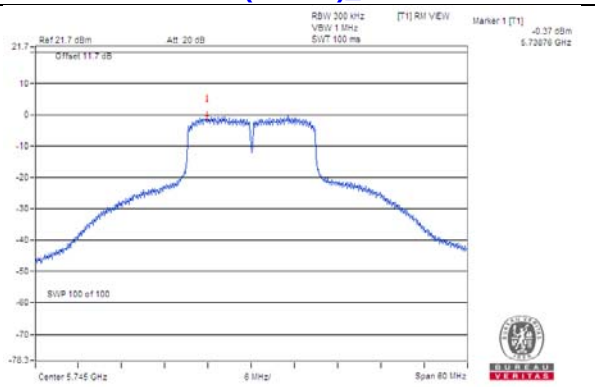
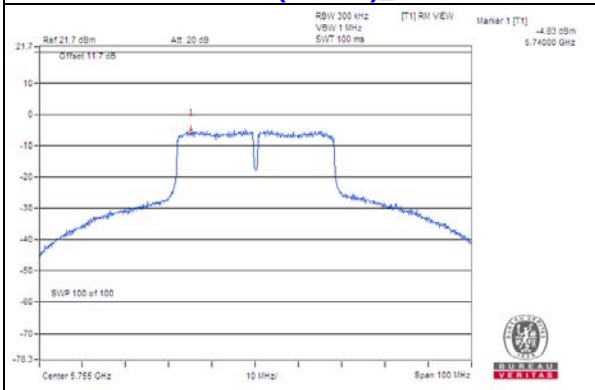
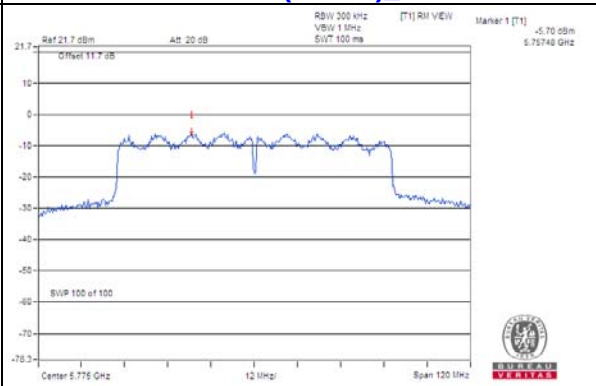
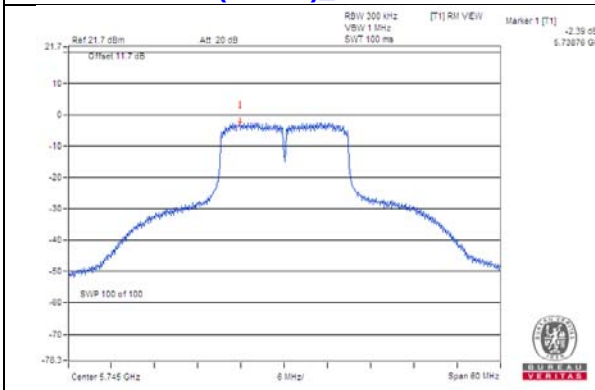
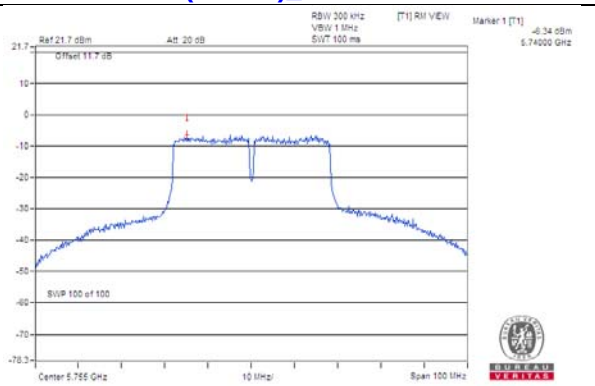
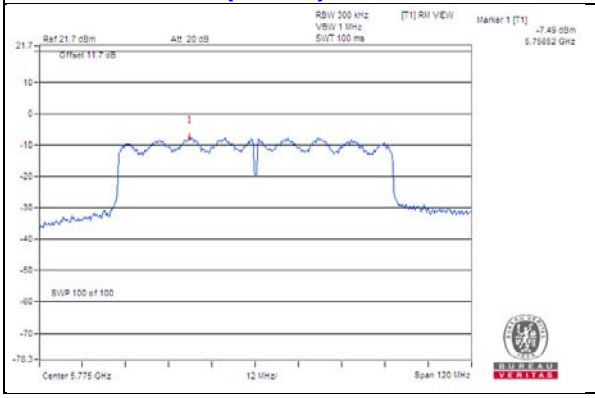
2. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (80MHz)

TX chain	Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor		10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	155	5775	-7.61	-5.39	3.01	0.67	-1.71	30	Pass
1	155	5775	-7.49	-5.27	3.01	0.67	-1.59	30	Pass

Note: 1. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 5.53dBi < 6dBi , so the power spectral density limit doesn't reduce.

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

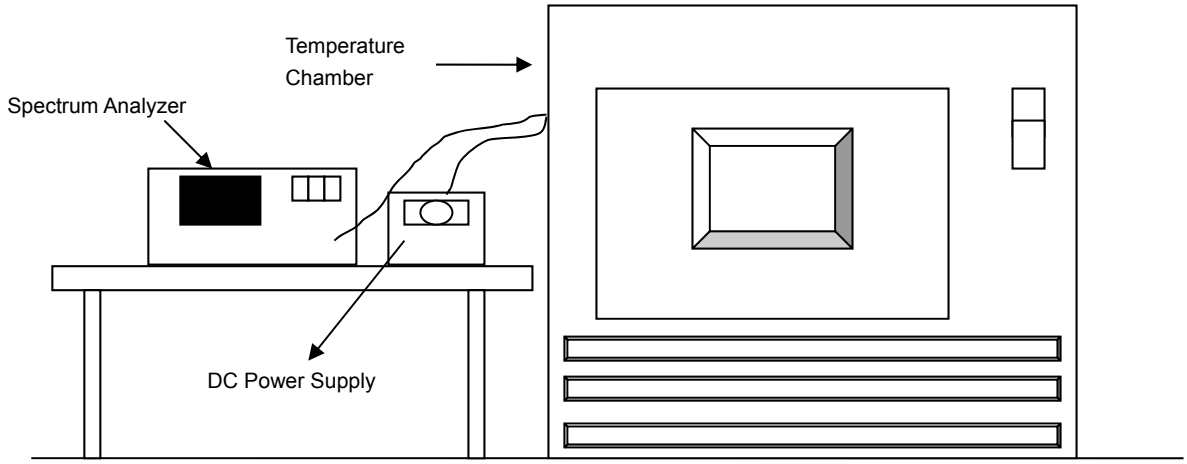
Spectrum Plot of Worst Value	
1TX	
802.11a_CH149	**802.11n (20MHz)_CH149**
	
802.11n (40MHz)_CH151	**802.11ac (80MHz)_CH155**
	
2TX	
802.11n (20MHz)_Chain 0 / CH149	**802.11n (40MHz)_Chain 0 / CH151**
	
802.11ac (80MHz)_Chain 1 / CH155	
	

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 2, 5, and 10 Minutes.
e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
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 (Vdc)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
50	5	5179.9779	Pass	5179.9742	Pass	5179.9767	Pass	5179.9779	Pass
40	5	5179.9869	Pass	5179.9886	Pass	5179.9876	Pass	5179.9882	Pass
30	5	5180.0186	Pass	5180.018	Pass	5180.0188	Pass	5180.0208	Pass
20	5	5179.9937	Pass	5179.994	Pass	5179.9929	Pass	5179.994	Pass
10	5	5180.016	Pass	5180.0181	Pass	5180.0163	Pass	5180.0165	Pass
0	5	5179.984	Pass	5179.9793	Pass	5179.9842	Pass	5179.9817	Pass
-10	5	5179.9757	Pass	5179.9725	Pass	5179.9727	Pass	5179.9753	Pass
-20	5	5180.0081	Pass	5180.0117	Pass	5180.0093	Pass	5180.009	Pass
-30	5	5179.9986	Pass	5180.0028	Pass	5179.9998	Pass	5179.9988	Pass

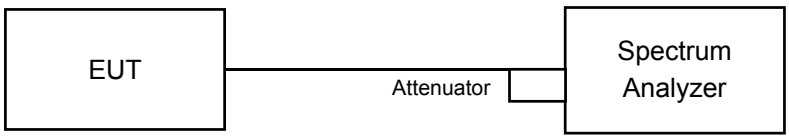
Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
TEMP. (℃)	Power Supply (Vdc)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	5.25	5179.9938	Pass	5179.994	Pass	5179.9923	Pass	5179.9942	PASS
	5	5179.9937	Pass	5179.994	Pass	5179.9929	Pass	5179.994	PASS
	4.75	5179.994	Pass	5179.993	Pass	5179.9933	Pass	5179.9939	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

1TX

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	16.07	0.5	PASS
157	5785	16.32	0.5	PASS
165	5825	16.10	0.5	PASS

802.11n (20MHz)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
149	5745	16.56	0.5	PASS
157	5785	16.32	0.5	PASS
165	5825	16.33	0.5	PASS

802.11n (40MHz)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
151	5755	35.75	0.5	PASS
159	5795	35.79	0.5	PASS

802.11ac (80MHz)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Minimum Limit (MHz)	Pass / Fail
155	5775	75.39	0.5	PASS

2TX

802.11n (20MHz)

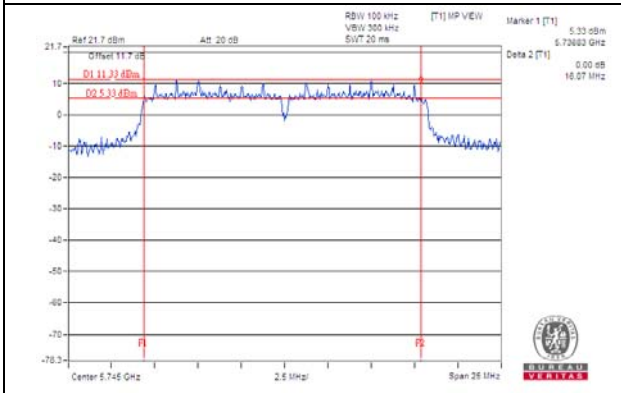
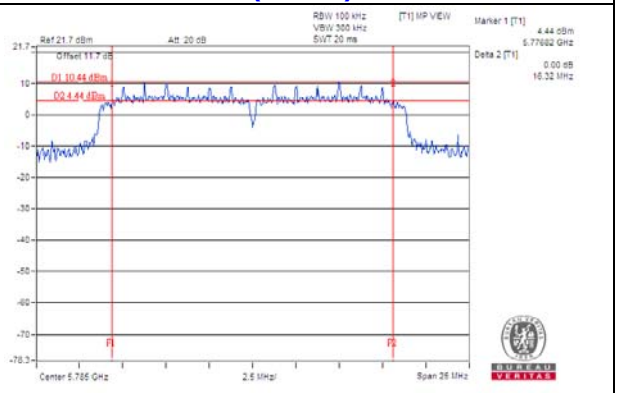
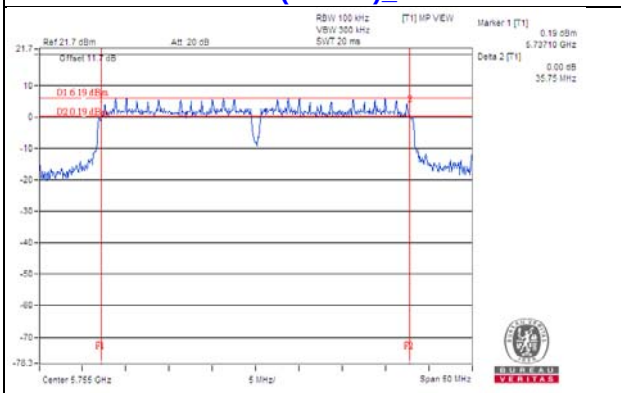
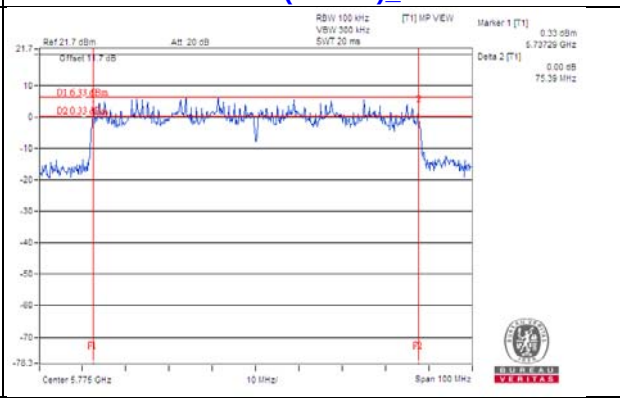
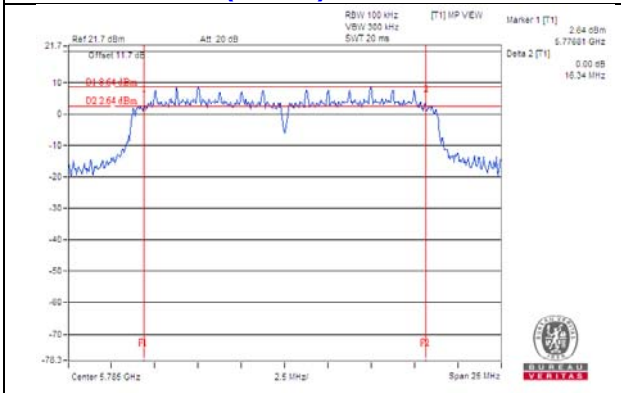
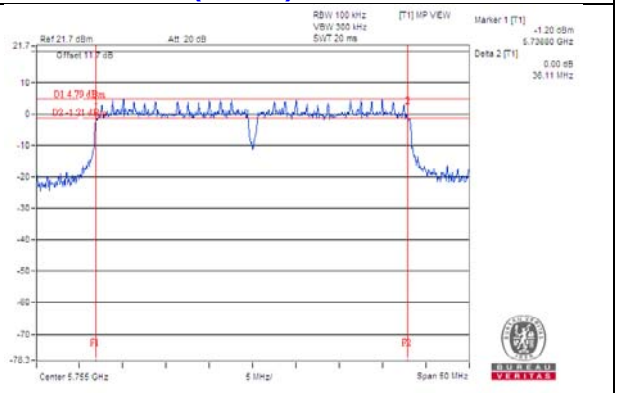
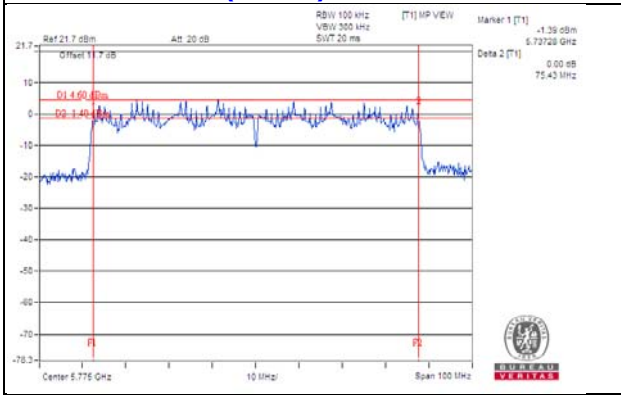
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
149	5745	16.54	17.64	0.5	PASS
157	5785	16.34	17.65	0.5	PASS
165	5825	16.57	17.66	0.5	PASS

802.11n (40MHz)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
151	5755	36.11	36.49	0.5	PASS
159	5795	36.15	36.47	0.5	PASS

802.11ac (80MHz)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
155	5775	75.43	76.43	0.5	PASS

Spectrum Plot of Worst Value	
1TX	
802.11a_CH149	**802.11ac (20MHz)_CH157**
	
802.11ac (40MHz)_ CH151	**802.11ac (80MHz)_CH155**
	
2TX	
802.11ac (20MHz)_Chain 0 / CH157	**802.11ac (40MHz)_Chain 0 / CH151**
	
802.11ac (80MHz)_Chain 0 / CH155	
	

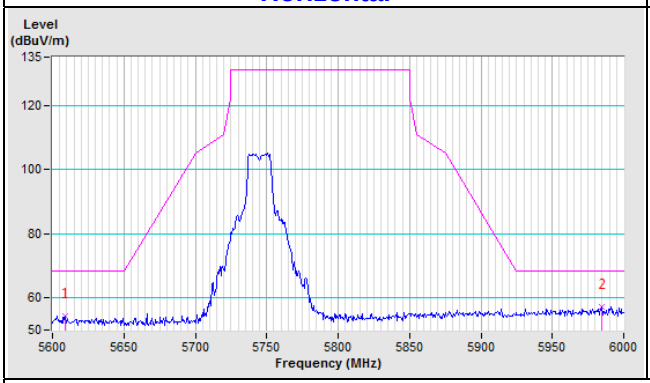
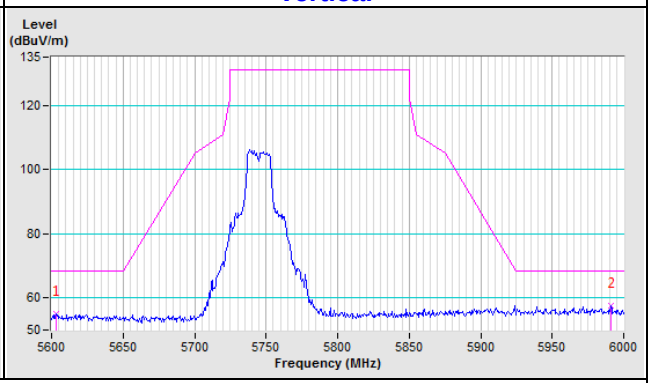
5 Pictures of Test Arrangements

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

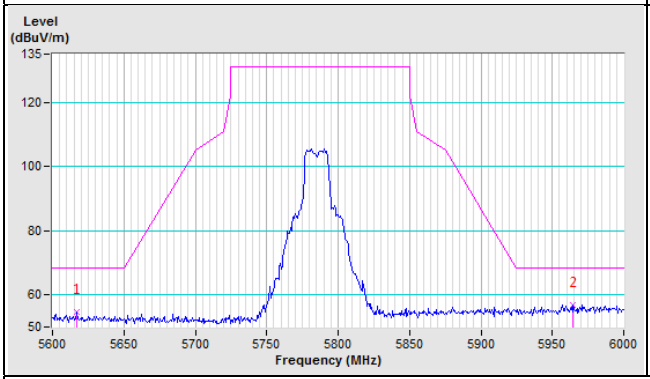
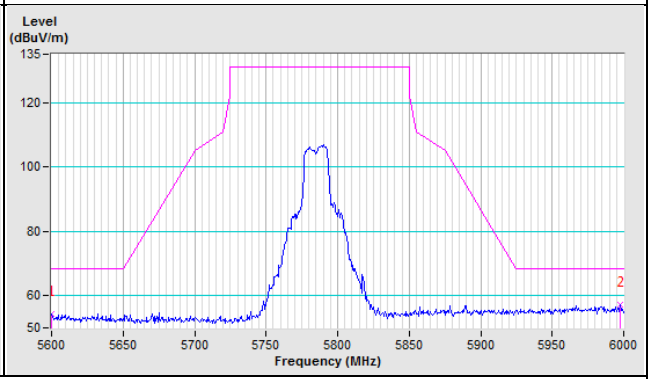
Annex A- Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band)

802.11a

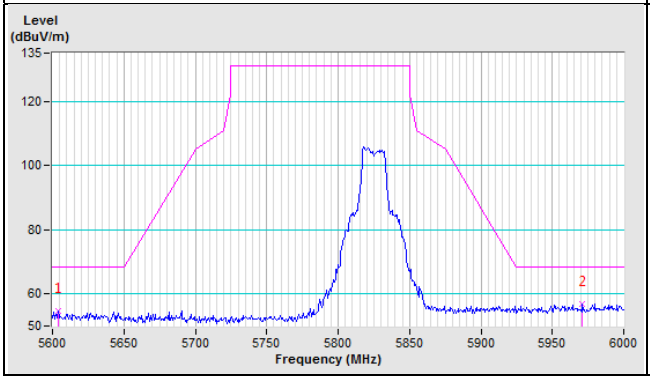
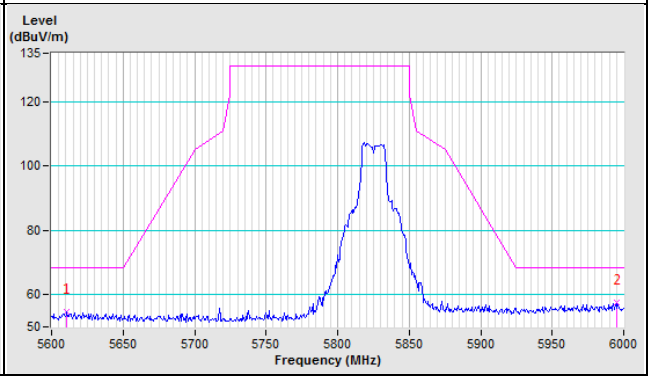
CH149

Horizontal	Vertical
	

CH157

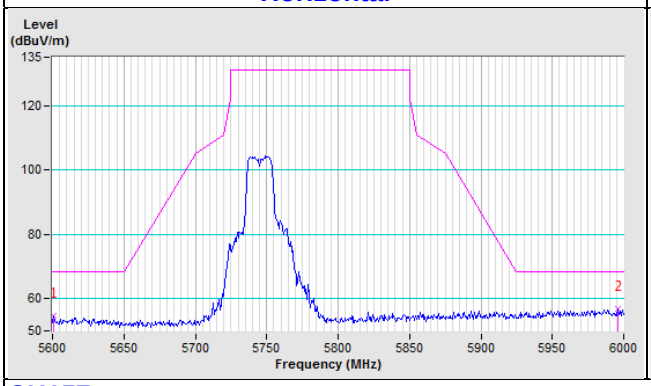
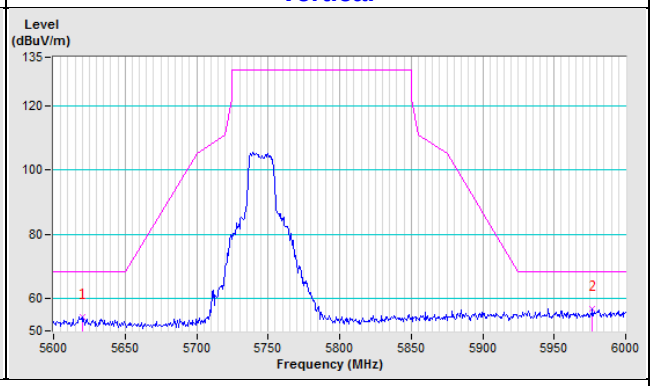
Horizontal	Vertical
	

CH165

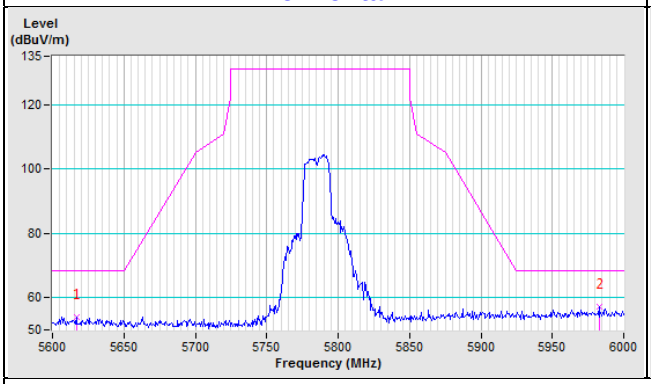
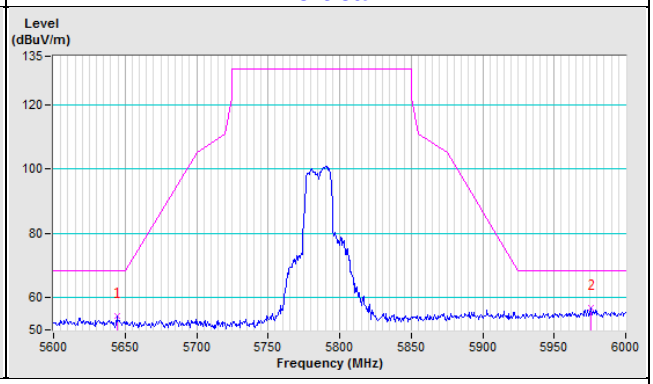
Horizontal	Vertical
	

802.11n (20MHz)

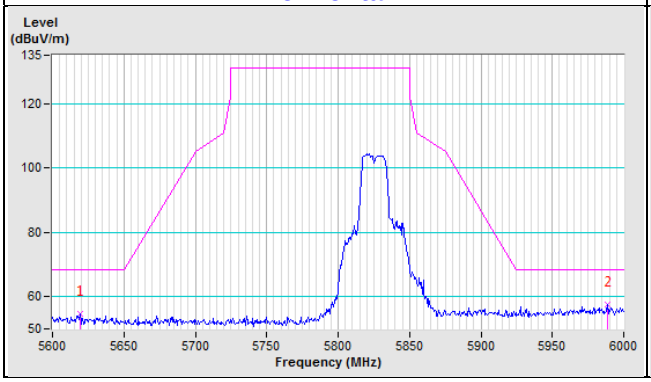
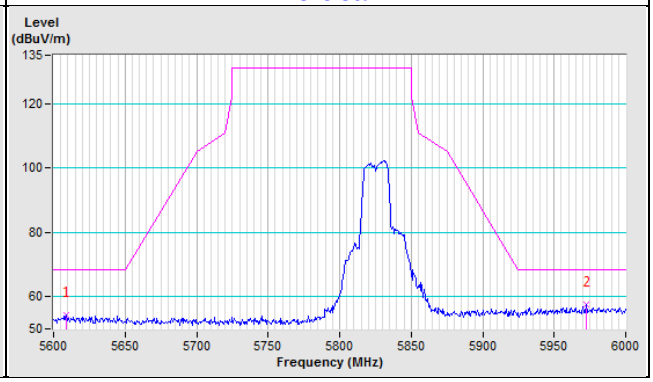
CH149

Horizontal	Vertical
	

CH157

Horizontal	Vertical
	

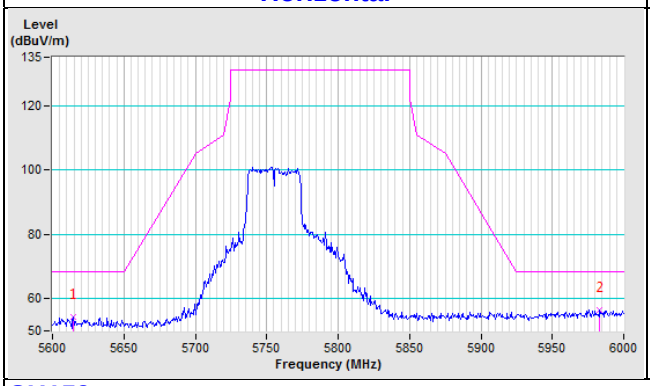
CH165

Horizontal	Vertical
	

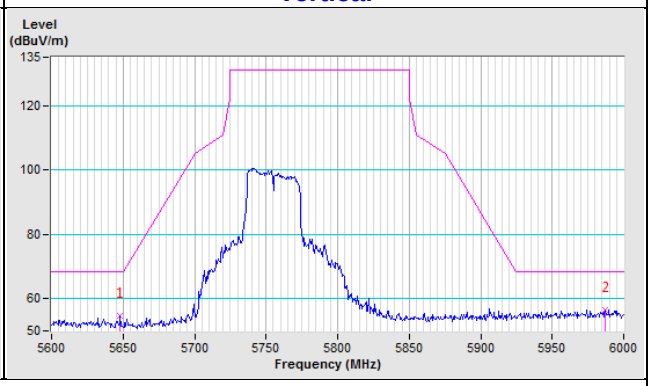
802.11n (40MHz)

CH151

Horizontal

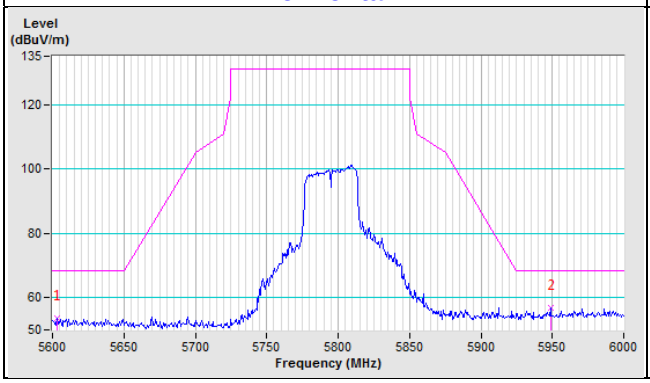


Vertical

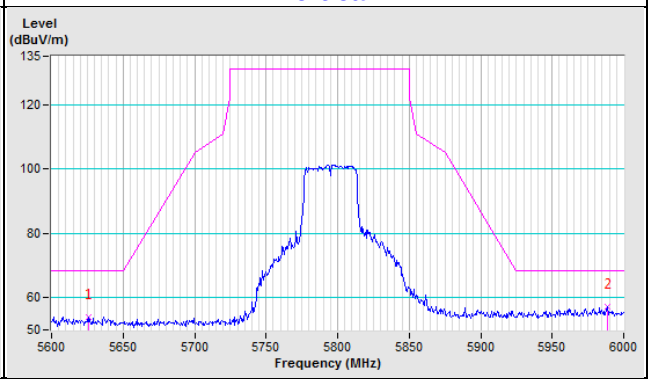


CH159

Horizontal



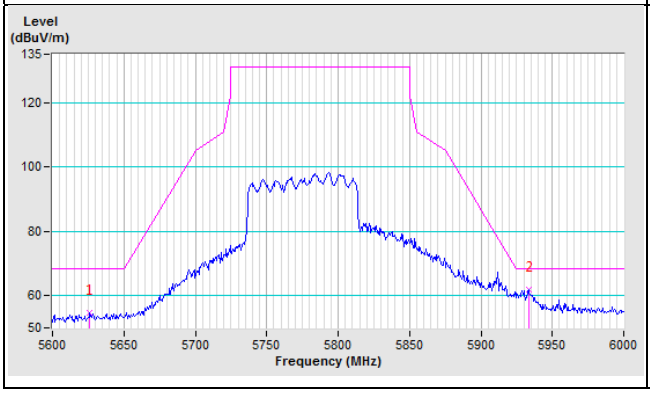
Vertical



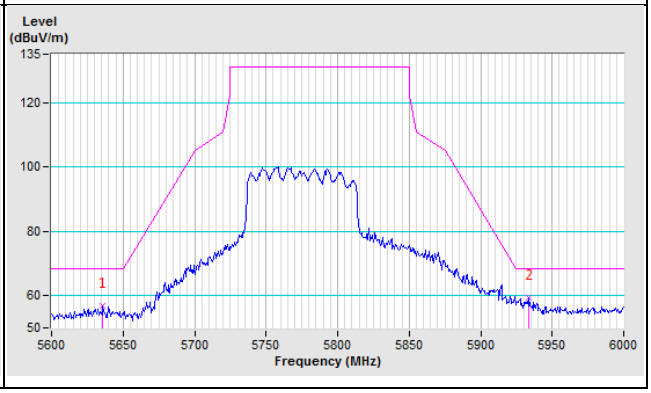
802.11ac (80MHz)

CH155

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:

Linkou EMC/RF Lab
Tel: 886-2-26052180
Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab
Tel: 886-3-6668565
Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab
Tel: 886-3-3183232
Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com
Web Site: www.bureauveritas-adt.com

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

--- END ---