FCC Test Report

Report No.:	RF170224C10B-1
FCC ID:	MSQ-RPACRR00
Test Model:	RP-AC55
Series Model:	RP-AC1200 (Refer to item 3.1 for more details)
Received Date:	Dec. 13, 2017
Test Date:	Jan. 10 ~ Jan. 16, 2018
Issued Date:	Mar. 07, 2018
Applicant:	ASUSTeK COMPUTER INC.
Address:	4F, NO. 150,Li-Te Rd. Peitou,Taipei 112, 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

Table of Contents

Release Control Record

Issue No.	Description	Date Issued
RF170224C10B-1	Original release.	Mar. 07, 2018

1 Certificate of Conformity

Product:	Dual-band Wireless Repeater
Brand:	ASUS
Test Model:	RP-AC55
Series Model:	RP-AC1200 (Refer to item 3.1 for more details)
Sample Status:	Engineering sample
Applicant:	ASUSTeK COMPUTER INC.
Test Date:	Jan. 10 ~ Jan. 16, 2018
Standards:	47 CFR FCC Part 15, Subpart E (Section 15.407) ANSI C63.10:2013

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by : _____ , **Date:** Mar. 07, 2018

Polly Chien / Specialist

Approved by : _____ , **Date:** Mar. 07, 2018

Bruce Chen / Project Engineer

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -21.63dB at 0.15391MHz.
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 -1.2dB 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.

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	3.59 dB
	200MHz ~1000MHz	3.60 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Dual-band Wireless Repeater (Refer to note for more details)
Brand	ASUS
Test Model	RP-AC55
Series Model	RP-AC1200
Model Difference	Refer to note for more details
Sample Status	Engineering sample
Power Supply Rating	100-240Vac, 50/60Hz, 0.6-1.5A
Modulation Type	256QAM, 64QAM, 16QAM, QPSK, BPSK
Modulation Technology	OFDM
Transfer Rate	802.11a: 54/48/36/24/18/12/9/6Mbps 802.11n: up to 300Mbps 802.11ac: up to 867Mbps
Operating Frequency	5180~5240MHz, 5745~5825MHz
Number of Channel	5180~5240MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 4 802.11n (HT40), 802.11ac (VHT40): 2 802.11ac (VHT80): 1 5745~5825MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 5 802.11n (HT40), 802.11ac (VHT40): 2 802.11ac (VHT80): 1
Output Power	CDD Mode: 5180~5240MHz: 277.896mW 5745~5825MHz: 309.523mW Beamforming Mode: 5180~5240MHz: 266.111mW 5745~5825MHz: 309.523mW
Antenna Type	Dipole antenna with 4.72dBi gain
Antenna Connector	i-pex(MHF)
Accessory Device	NA
Cable Supplied	NA

Note:

1. The following models are provided to this EUT. The model of the RP-AC55 was chosen for final test.

Brand	Model	Description
ASUS	RP-AC55	All models are electrically identical, different model names are for marketing purpose.
	RP-AC1200	

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

Modulation Mode	Beamforming Mode	TX Function
802.11a	Not Support	2TX
802.11n (HT20)	Support	2TX
802.11n (HT40)	Support	2TX
802.11ac (VHT20)	Support	2TX
802.11ac (VHT40)	Support	2TX
802.11ac (VHT80)	Support	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)

* For 802.11n and 802.11ac, CDD mode and Beamforming mode are presented in power output test item. For other test items, CDD mode is the worst case for final tests after pretesting.

3. The WLAN 2.4GHz cound transmit with WLAN 5GHz at the same time except BT.

3.2 Description of Test Modes

5180~5240MHz:

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

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

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

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
42	5210MHz

5745~5825MHz:

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

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

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

Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
155	5775MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

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

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

Note: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **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	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
-	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0
	802.11n (HT20)		36 to 48	36, 40, 48	OFDM	7.2
	802.11n (HT40)		38 to 46	38, 46	OFDM	15.0
	802.11ac (VHT80)		42	42	OFDM	58.5
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	6.0
	802.11n (HT20)		149 to 165	149, 157, 165	OFDM	7.2
	802.11n (HT40)		151 to 159	151, 159	OFDM	15.0
	802.11ac (VHT80)		155	155	OFDM	58.5

Radiated Emission Test (Below 1GHz):

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

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
-	802.11a	5180-5240	36 to 48	36	OFDM	6.0
	802.11a	5745-5825	149 to 165		OFDM	6.0

Power Line Conducted Emission Test:

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

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
-	802.11a	5180-5240	36 to 48	36	OFDM	6.0
	802.11a	5745-5825	149 to 165		OFDM	6.0

Transmit Power Measurement:

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

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
CDD Mode						
-	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0
	802.11n (HT20)		36 to 48	36, 40, 48	OFDM	7.2
	802.11n (HT40)		38 to 46	38, 46	OFDM	15.0
	802.11ac (VHT80)		42	42	OFDM	58.5
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	6.0
	802.11n (HT20)		149 to 165	149, 157, 165	OFDM	7.2
	802.11n (HT40)		151 to 159	151, 159	OFDM	15.0
	802.11ac (VHT80)		155	155	OFDM	58.5
Beamforming Mode						
-	802.11n (HT20)	5180-5240	36 to 48	36, 40, 48	OFDM	7.2
	802.11n (HT40)		38 to 46	38, 46	OFDM	15.0
	802.11ac (VHT80)		42	42	OFDM	58.5
-	802.11n (HT20)	5745-5825	149 to 165	149, 157, 165	OFDM	7.2
	802.11n (HT40)		151 to 159	151, 159	OFDM	15.0
	802.11ac (VHT80)		155	155	OFDM	58.5

Peak Power Spectral Density, Bandwidth and Frequency Stability Measurement:

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

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
-	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0
	802.11n (HT20)		36 to 48	36, 40, 48	OFDM	7.2
	802.11n (HT40)		38 to 46	38, 46	OFDM	15.0
	802.11ac (VHT80)		42	42	OFDM	58.5
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	6.0
	802.11n (HT20)		149 to 165	149, 157, 165	OFDM	7.2
	802.11n (HT40)		151 to 159	151, 159	OFDM	15.0
	802.11ac (VHT80)		155	155	OFDM	58.5

Test Condition:

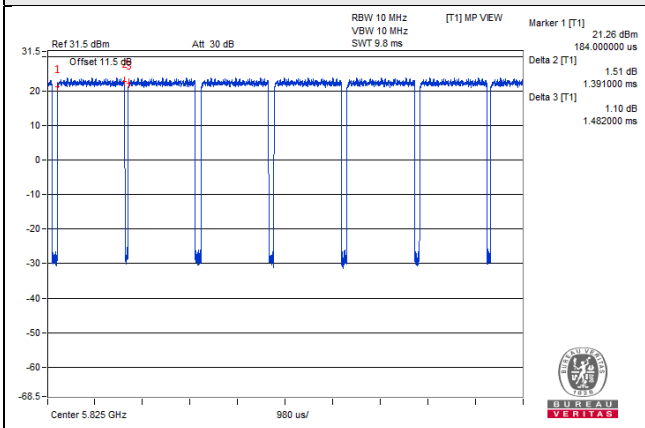
Applicable to	Environmental Conditions	Input Power	Tested by
RE≥1G	25 deg. C, 70% RH	120Vac, 60Hz	Luis Lee
RE<1G	25 deg. C, 66% RH	120Vac, 60Hz	James Yang
PLC	25 deg. C, 75% RH	120Vac, 60Hz	Chris Lin
APCM	25 deg. C, 60% RH	120Vac, 60Hz	Chris Lin

3.3 Duty Cycle of Test Signal

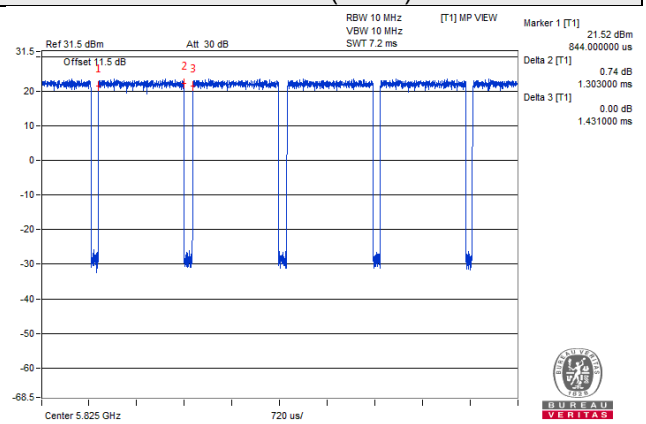
Duty cycle of test signal is < 98%, duty factor is required.

802.11a: Duty cycle = 1.391/1.482 = 0.939, Duty factor = 10 * log(1/0.939) = 0.28
802.11n (HT20): Duty cycle = 1.303/1.431 = 0.911, Duty factor = 10 * log(1/0.911) = 0.41
802.11n (HT40): Duty cycle = 0.645/0.710 = 0.908, Duty factor = 10 * log(1/0.908) = 0.42
802.11ac (VHT80): Duty cycle = 0.323/0.401 = 0.805, Duty factor = 10 * log(1/0.805) = 0.94

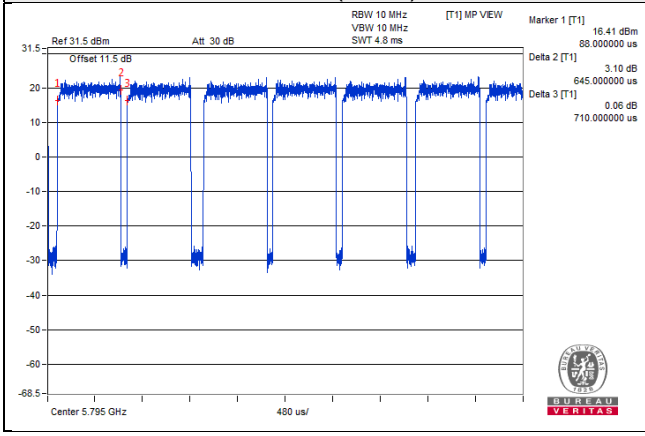
802.11a



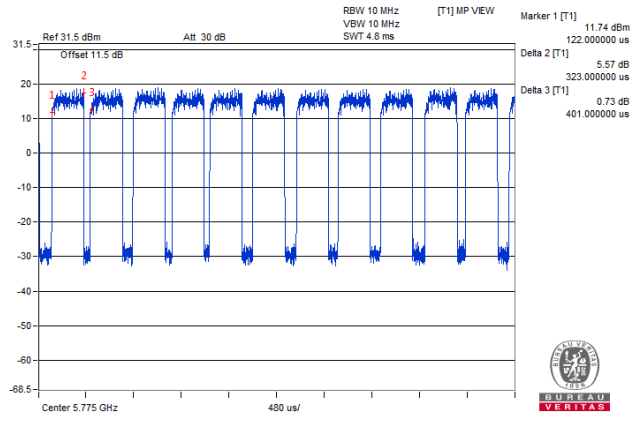
802.11n (HT20)



802.11n (HT40)



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.

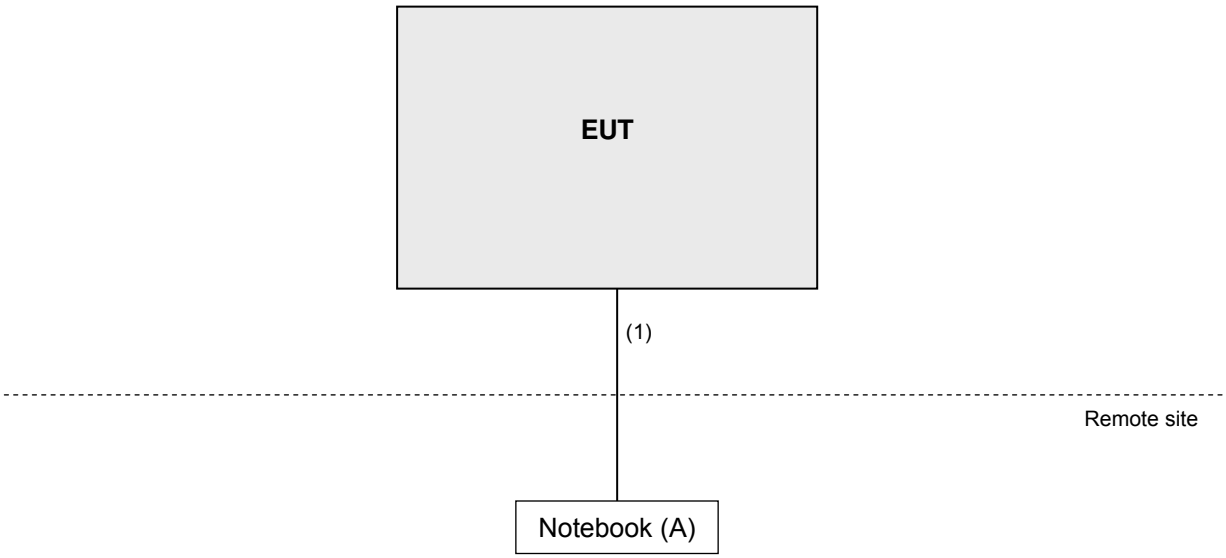
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook	DELL	E5410	1HC2XM1	FCC DoC Approved	-

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Item A acted as a communication partner to transfer data.

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	RJ45, Cat5e	1	5	N	0	-

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standards

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.

Note: The EUT has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

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 v01r04</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 KEYSIGHT	N9038A	MY55420137	Mar. 27, 2017	Mar. 26, 2018
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	May 11, 2017	May 10, 2018
BILOG Antenna SCHWARZBECK	VULB9168	9168-148	Dec. 11, 2017	Dec. 10, 2018
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-1169	Dec. 12, 2017	Dec. 11, 2018
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Dec. 01, 2017	Nov. 30, 2018
Loop Antenna EMCI	EM-6879	269	Aug. 11, 2017	Aug. 10, 2018
Preamplifier Agilent (Below 1GHz)	8447D	2944A10638	Aug. 08, 2017	Aug. 07, 2018
Preamplifier Agilent (Above 1GHz)	8449B	3008A01960	Aug. 08, 2017	Aug. 07, 2018
RF signal cable HUBER+SUHNER&EMCI	SUCOFLEX 104	MY 13380+295012/04	Aug. 08, 2017	Aug. 07, 2018
RF signal cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-(250795/4)	Aug. 08, 2017	Aug. 07, 2018
RF signal cable Woken	8D-FB	Cable-CH9-01	Aug. 01, 2017	Jul. 31, 2018
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower &Turn BV ADT	AT100	AT93021705	NA	NA
Turn Table BV ADT	TT100	TT93021705	NA	NA
Turn Table Controller BV ADT	SC100	SC93021705	NA	NA
High Speed Peak Power Meter	ML2495A	0824012	Aug. 18, 2017	Aug. 17, 2018
Power Sensor	MA2411B	0738171	Aug. 18, 2017	Aug. 17, 2018
26GHz ~ 40GHz Amplifier Agilent	8449B	3008A1960	Aug. 08, 2017	Aug. 07, 2018

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 4.
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 IC7450F-4.

4.1.3 Test Procedures

For Radiated emission below 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. Both X and Y axes of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

Note:

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

For Radiated emission above 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

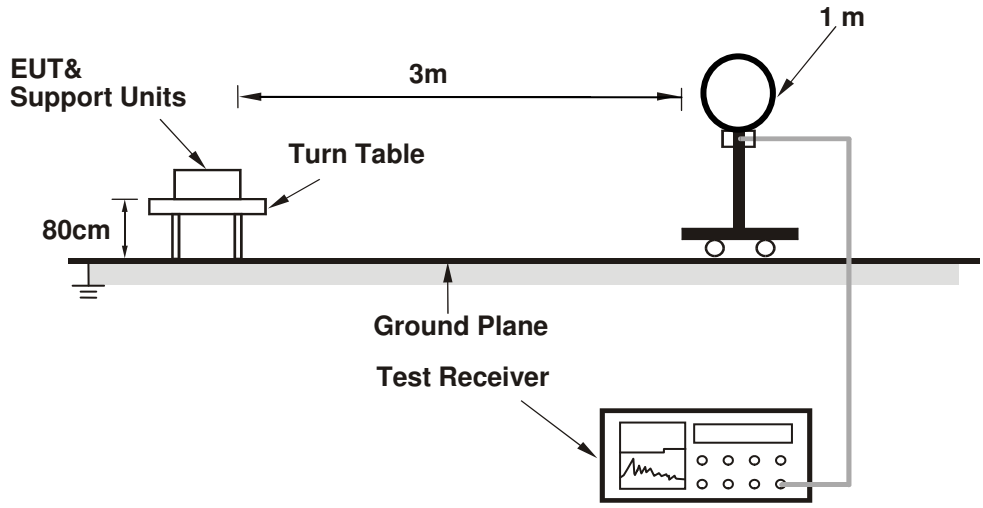
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

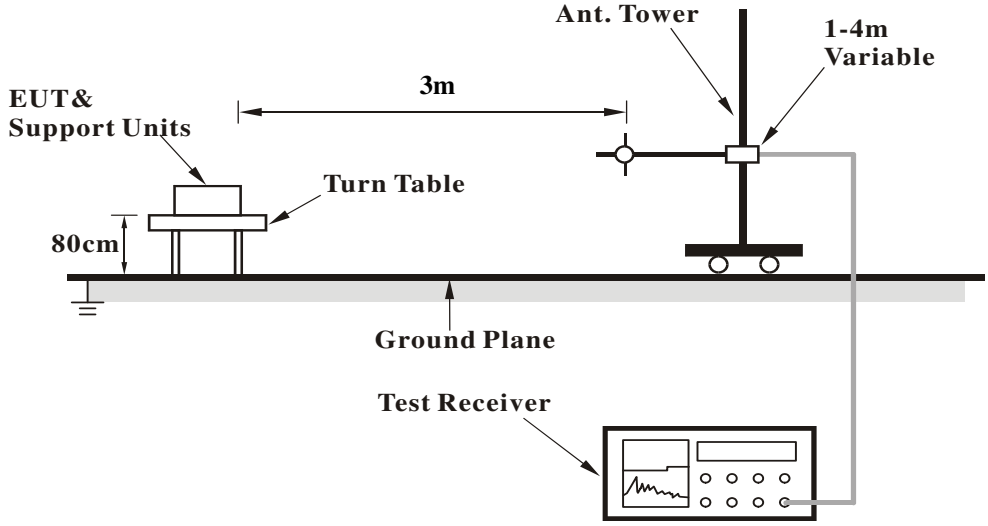
No deviation.

4.1.5 Test Setup

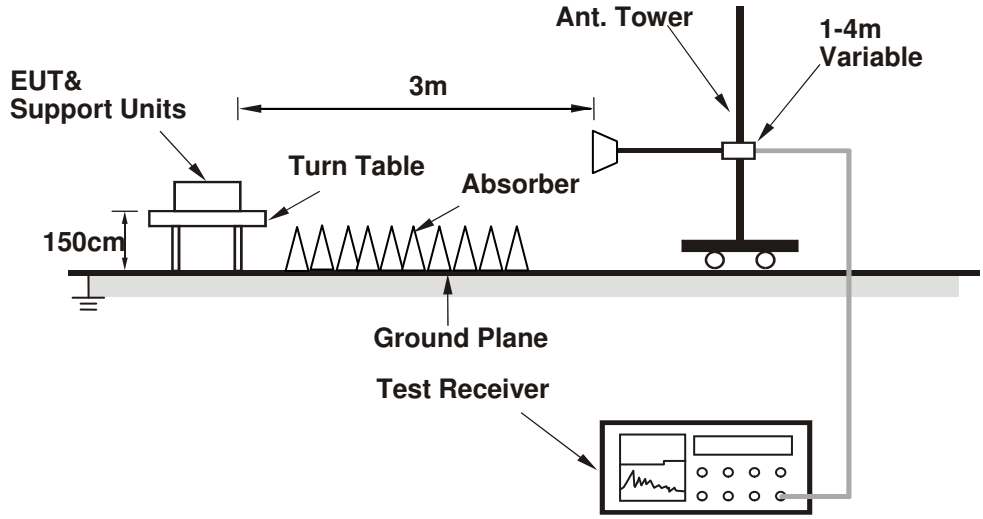
For Radiated emission below 30MHz



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 Conditions

a. Placed the EUT on the testing table.
b. Prepared a notebook to act as a communication partner and placed it outside of testing area.
c. The communication partner connected with EUT via a RJ45 cable and ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
d. The communication partner sent data to EUT by command "PING".

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	54.0 PK	74.0	-20.0	2.81 H	49	51.40	2.60
2	5150.00	42.8 AV	54.0	-11.2	2.81 H	49	40.20	2.60
3	*5180.00	101.2 PK			2.81 H	49	60.30	40.90
4	*5180.00	91.9 AV			2.81 H	49	51.00	40.90
5	#10360.00	59.2 PK	74.0	-14.8	2.80 H	250	44.40	14.80
6	#10360.00	45.9 AV	54.0	-8.1	2.80 H	250	31.10	14.80
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	68.7 PK	74.0	-5.3	2.35 V	26	66.10	2.60
2	5150.00	51.3 AV	54.0	-2.7	2.35 V	26	48.70	2.60
3	*5180.00	115.0 PK			2.35 V	26	74.10	40.90
4	*5180.00	105.4 AV			2.35 V	26	64.50	40.90
5	#10360.00	60.2 PK	74.0	-13.8	2.32 V	259	45.40	14.80
6	#10360.00	47.0 AV	54.0	-7.0	2.32 V	259	32.20	14.80

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	104.2 PK			1.28 H	345	63.30	40.90
2	*5200.00	94.5 AV			1.28 H	345	53.60	40.90
3	#10400.00	59.3 PK	74.0	-14.7	2.11 H	55	44.40	14.90
4	#10400.00	46.5 AV	54.0	-7.5	2.11 H	55	31.60	14.90
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	114.6 PK			2.50 V	19	73.70	40.90
2	*5200.00	104.6 AV			2.50 V	19	63.70	40.90
3	#10400.00	59.3 PK	74.0	-14.7	1.86 V	328	44.40	14.90
4	#10400.00	47.0 AV	54.0	-7.0	1.86 V	328	32.10	14.90

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	102.2 PK			3.27 H	314	61.50	40.70
2	*5240.00	92.6 AV			3.27 H	314	51.90	40.70
3	5350.00	55.6 PK	74.0	-18.4	3.27 H	314	52.80	2.80
4	5350.00	42.7 AV	54.0	-11.3	3.27 H	314	39.90	2.80
5	#10480.00	59.0 PK	74.0	-15.0	1.35 H	223	44.30	14.70
6	#10480.00	45.6 AV	54.0	-8.4	1.35 H	223	30.90	14.70
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	114.9 PK			2.41 V	20	74.20	40.70
2	*5240.00	105.4 AV			2.41 V	20	64.70	40.70
3	5350.00	58.5 PK	74.0	-15.5	2.41 V	20	55.70	2.80
4	5350.00	45.0 AV	54.0	-9.0	2.41 V	20	42.20	2.80
5	#10480.00	59.1 PK	74.0	-14.9	1.56 V	222	44.40	14.70
6	#10480.00	45.9 AV	54.0	-8.1	1.56 V	222	31.20	14.70

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	#5635.20	57.0 PK	68.2	-11.2	1.03 H	166	53.50	3.50
2	*5745.00	105.6 PK			1.03 H	166	63.40	42.20
3	*5745.00	95.6 AV			1.03 H	166	53.40	42.20
4	#5984.80	57.8 PK	68.2	-10.4	1.03 H	166	53.20	4.60
5	11490.00	60.6 PK	74.0	-13.4	1.25 H	333	44.40	16.20
6	11490.00	46.7 AV	54.0	-7.3	1.25 H	333	30.50	16.20
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	#5622.40	57.2 PK	68.2	-11.0	2.69 V	136	53.70	3.50
2	*5745.00	115.2 PK			2.69 V	136	73.00	42.20
3	*5745.00	105.7 AV			2.69 V	136	63.50	42.20
4	#5975.20	58.5 PK	68.2	-9.7	2.69 V	136	53.90	4.60
5	11490.00	58.5 PK	74.0	-15.5	1.27 V	282	42.30	16.20
6	11490.00	46.4 AV	54.0	-7.6	1.27 V	282	30.20	16.20

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	#5619.20	57.2 PK	68.2	-11.0	1.26 H	315	53.70	3.50
2	*5785.00	106.1 PK			1.26 H	315	63.70	42.40
3	*5785.00	97.3 AV			1.26 H	315	54.90	42.40
4	#5995.20	58.4 PK	68.2	-9.8	1.26 H	315	53.70	4.70
5	11570.00	60.1 PK	74.0	-13.9	1.47 H	181	44.10	16.00
6	11570.00	46.9 AV	54.0	-7.1	1.47 H	181	30.90	16.00
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	#5613.60	57.8 PK	68.2	-10.4	3.06 V	116	54.30	3.50
2	*5785.00	114.6 PK			3.06 V	116	72.20	42.40
3	*5785.00	105.3 AV			3.06 V	116	62.90	42.40
4	#5991.20	58.2 PK	68.2	-10.0	3.06 V	116	53.50	4.70
5	11570.00	60.0 PK	74.0	-14.0	1.53 V	66	44.00	16.00
6	11570.00	46.8 AV	54.0	-7.2	1.53 V	66	30.80	16.00

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	#5628.80	57.0 PK	68.2	-11.2	1.27 H	316	53.50	3.50
2	*5825.00	106.9 PK			1.27 H	316	64.10	42.80
3	*5825.00	97.8 AV			1.27 H	316	55.00	42.80
4	#5987.20	58.3 PK	68.2	-9.9	1.27 H	316	53.60	4.70
5	11650.00	59.3 PK	74.0	-14.7	1.49 H	215	43.90	15.40
6	11650.00	46.2 AV	54.0	-7.8	1.49 H	215	30.80	15.40
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	#5620.80	57.2 PK	68.2	-11.0	2.82 V	140	53.70	3.50
2	*5825.00	115.7 PK			2.82 V	140	72.90	42.80
3	*5825.00	106.1 AV			2.82 V	140	63.30	42.80
4	#5968.80	58.7 PK	68.2	-9.5	2.82 V	140	54.10	4.60
5	11650.00	59.7 PK	74.0	-14.3	2.24 V	189	44.30	15.40
6	11650.00	46.4 AV	54.0	-7.6	2.24 V	189	31.00	15.40

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	58.0 PK	74.0	-16.0	1.37 H	343	55.40	2.60
2	5150.00	43.8 AV	54.0	-10.2	1.37 H	343	41.20	2.60
3	*5180.00	102.1 PK			1.37 H	343	61.20	40.90
4	*5180.00	92.5 AV			1.37 H	343	51.60	40.90
5	#10360.00	57.7 PK	74.0	-16.3	2.62 H	122	42.90	14.80
6	#10360.00	45.5 AV	54.0	-8.5	2.62 H	122	30.70	14.80
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	69.0 PK	74.0	-5.0	2.15 V	28	66.40	2.60
2	5150.00	51.9 AV	54.0	-2.1	2.15 V	28	49.30	2.60
3	*5180.00	113.1 PK			2.15 V	28	72.20	40.90
4	*5180.00	103.5 AV			2.15 V	28	62.60	40.90
5	#10360.00	60.3 PK	74.0	-13.7	1.56 V	182	45.50	14.80
6	#10360.00	45.9 AV	54.0	-8.1	1.56 V	182	31.10	14.80

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	102.2 PK			1.02 H	1	61.30	40.90
2	*5200.00	92.5 AV			1.02 H	1	51.60	40.90
3	#10400.00	58.8 PK	74.0	-15.2	1.66 H	302	43.90	14.90
4	#10400.00	45.2 AV	54.0	-8.8	1.66 H	302	30.30	14.90
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	113.6 PK			2.29 V	26	72.70	40.90
2	*5200.00	104.2 AV			2.29 V	26	63.30	40.90
3	#10400.00	58.5 PK	74.0	-15.5	2.50 V	80	43.60	14.90
4	#10400.00	45.2 AV	54.0	-8.8	2.50 V	80	30.30	14.90

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	101.8 PK			1.32 H	343	61.10	40.70
2	*5240.00	92.4 AV			1.32 H	343	51.70	40.70
3	5350.00	56.7 PK	74.0	-17.3	1.32 H	343	53.90	2.80
4	5350.00	43.2 AV	54.0	-10.8	1.32 H	343	40.40	2.80
5	#10480.00	58.1 PK	74.0	-15.9	1.66 H	151	43.40	14.70
6	#10480.00	44.8 AV	54.0	-9.2	1.66 H	151	30.10	14.70
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	113.9 PK			2.19 V	27	73.20	40.70
2	*5240.00	104.5 AV			2.19 V	27	63.80	40.70
3	5350.00	57.4 PK	74.0	-16.6	2.19 V	27	54.60	2.80
4	5350.00	44.1 AV	54.0	-9.9	2.19 V	27	41.30	2.80
5	#10480.00	57.3 PK	74.0	-16.7	1.55 V	36	42.60	14.70
6	#10480.00	45.0 AV	54.0	-9.0	1.55 V	36	30.30	14.70

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	#5602.40	55.7 PK	68.2	-12.5	1.11 H	167	52.10	3.60
2	*5745.00	105.3 PK			1.11 H	167	63.10	42.20
3	*5745.00	95.7 AV			1.11 H	167	53.50	42.20
4	#5944.00	59.3 PK	68.2	-8.9	1.11 H	167	54.80	4.50
5	11490.00	60.2 PK	74.0	-13.8	1.52 H	229	44.00	16.20
6	11490.00	46.6 AV	54.0	-7.4	1.52 H	229	30.40	16.20
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	#5612.80	57.5 PK	68.2	-10.7	2.68 V	132	54.00	3.50
2	*5745.00	114.9 PK			2.68 V	132	72.70	42.20
3	*5745.00	104.9 AV			2.68 V	132	62.70	42.20
4	#5943.20	58.3 PK	68.2	-9.9	2.68 V	132	53.80	4.50
5	11490.00	60.4 PK	74.0	-13.6	2.08 V	191	44.20	16.20
6	11490.00	46.9 AV	54.0	-7.1	2.08 V	191	30.70	16.20

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	#5600.80	56.4 PK	68.2	-11.8	1.02 H	164	52.80	3.60
2	*5785.00	106.3 PK			1.02 H	164	63.90	42.40
3	*5785.00	96.5 AV			1.02 H	164	54.10	42.40
4	#5941.60	57.8 PK	68.2	-10.4	1.02 H	164	53.30	4.50
5	11570.00	59.8 PK	74.0	-14.2	1.56 H	223	43.80	16.00
6	11570.00	46.7 AV	54.0	-7.3	1.56 H	223	30.70	16.00
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	#5612.00	56.8 PK	68.2	-11.4	2.67 V	138	53.30	3.50
2	*5785.00	114.9 PK			2.67 V	138	72.50	42.40
3	*5785.00	105.2 AV			2.67 V	138	62.80	42.40
4	#5968.00	58.5 PK	68.2	-9.7	2.67 V	138	53.90	4.60
5	11570.00	60.0 PK	74.0	-14.0	2.02 V	176	44.00	16.00
6	11570.00	46.6 AV	54.0	-7.4	2.02 V	176	30.60	16.00

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	#5649.60	56.9 PK	68.2	-11.3	1.04 H	166	53.50	3.40
2	*5825.00	106.8 PK			1.04 H	166	64.00	42.80
3	*5825.00	96.8 AV			1.04 H	166	54.00	42.80
4	#5988.80	57.5 PK	68.2	-10.7	1.04 H	166	52.80	4.70
5	11650.00	59.4 PK	74.0	-14.6	1.62 H	208	44.00	15.40
6	11650.00	46.1 AV	54.0	-7.9	1.62 H	208	30.70	15.40
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	#5632.80	56.8 PK	68.2	-11.4	2.45 V	134	53.30	3.50
2	*5825.00	114.8 PK			2.45 V	134	72.00	42.80
3	*5825.00	105.0 AV			2.45 V	134	62.20	42.80
4	#5991.20	57.6 PK	68.2	-10.6	2.45 V	134	52.90	4.70
5	11650.00	59.3 PK	74.0	-14.7	1.99 V	178	43.90	15.40
6	11650.00	45.9 AV	54.0	-8.1	1.99 V	178	30.50	15.40

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	59.3 PK	74.0	-14.7	1.33 H	339	56.70	2.60
2	5150.00	44.3 AV	54.0	-9.7	1.33 H	339	41.70	2.60
3	*5190.00	98.6 PK			1.33 H	339	57.70	40.90
4	*5190.00	88.2 AV			1.33 H	339	47.30	40.90
5	#10380.00	57.5 PK	74.0	-16.5	1.25 H	32	42.70	14.80
6	#10380.00	44.9 AV	54.0	-9.1	1.25 H	32	30.10	14.80
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	71.2 PK	74.0	-2.8	2.38 V	29	68.60	2.60
2	**5150.00**	**52.8 AV**	**54.0**	**-1.2**	**2.38 V**	**29**	**50.20**	**2.60**
3	*5190.00	109.1 PK			2.38 V	29	68.20	40.90
4	*5190.00	99.1 AV			2.38 V	29	58.20	40.90
5	#10380.00	59.2 PK	74.0	-14.8	2.26 V	315	44.40	14.80
6	#10380.00	45.9 AV	54.0	-8.1	2.26 V	315	31.10	14.80

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	99.7 PK			1.53 H	337	59.00	40.70
2	*5230.00	89.2 AV			1.53 H	337	48.50	40.70
3	5350.00	55.2 PK	74.0	-18.8	1.53 H	337	52.40	2.80
4	5350.00	42.4 AV	54.0	-11.6	1.53 H	337	39.60	2.80
5	#10460.00	57.8 PK	74.0	-16.2	1.55 H	226	43.00	14.80
6	#10460.00	44.7 AV	54.0	-9.3	1.55 H	226	29.90	14.80
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	111.2 PK			2.46 V	31	70.50	40.70
2	*5230.00	100.6 AV			2.46 V	31	59.90	40.70
3	5350.00	57.4 PK	74.0	-16.6	2.46 V	31	54.60	2.80
4	5350.00	43.3 AV	54.0	-10.7	2.46 V	31	40.50	2.80
5	#10460.00	58.4 PK	74.0	-15.6	2.53 V	332	43.60	14.80
6	#10460.00	45.2 AV	54.0	-8.8	2.53 V	332	30.40	14.80

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	#5648.00	57.0 PK	68.2	-11.2	1.00 H	163	53.60	3.40
2	*5755.00	103.5 PK			1.00 H	163	61.20	42.30
3	*5755.00	94.0 AV			1.00 H	163	51.70	42.30
4	#5966.40	58.2 PK	68.2	-10.0	1.00 H	163	53.50	4.70
5	11510.00	59.4 PK	74.0	-14.6	1.24 H	285	43.40	16.00
6	11510.00	46.2 AV	54.0	-7.8	1.24 H	285	30.20	16.00
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	#5648.00	59.5 PK	68.2	-8.7	2.64 V	132	56.10	3.40
2	*5755.00	113.1 PK			2.64 V	132	70.80	42.30
3	*5755.00	102.4 AV			2.64 V	132	60.10	42.30
4	#5980.00	57.8 PK	68.2	-10.4	2.64 V	132	53.20	4.60
5	11510.00	59.6 PK	74.0	-14.4	3.07 V	94	43.60	16.00
6	11510.00	46.4 AV	54.0	-7.6	3.07 V	94	30.40	16.00

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	#5631.20	57.6 PK	68.2	-10.6	1.04 H	165	54.10	3.50
2	*5795.00	103.8 PK			1.05 H	165	61.30	42.50
3	*5795.00	94.0 AV			1.05 H	165	51.50	42.50
4	#5996.00	58.0 PK	68.2	-10.2	1.04 H	165	53.30	4.70
5	11590.00	59.3 PK	74.0	-14.7	1.27 H	277	43.50	15.80
6	11590.00	46.1 AV	54.0	-7.9	1.27 H	277	30.30	15.80
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	#5647.20	56.6 PK	68.2	-11.6	2.78 V	139	53.20	3.40
2	*5795.00	113.1 PK			2.78 V	139	70.60	42.50
3	*5795.00	102.4 AV			2.78 V	139	59.90	42.50
4	#5938.40	57.8 PK	68.2	-10.4	2.78 V	139	53.30	4.50
5	11590.00	59.6 PK	74.0	-14.4	3.15 V	89	43.80	15.80
6	11590.00	46.3 AV	54.0	-7.7	3.15 V	89	30.50	15.80

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	49.0 PK	74.0	-25.0	1.48 H	338	46.40	2.60
2	5150.00	45.0 AV	54.0	-9.0	1.48 H	338	42.40	2.60
3	*5210.00	96.5 PK			1.48 H	338	55.70	40.80
4	*5210.00	84.9 AV			1.48 H	338	44.10	40.80
5	5350.00	55.8 PK	74.0	-18.2	1.48 H	338	53.00	2.80
6	5350.00	42.7 AV	54.0	-11.3	1.48 H	338	39.90	2.80
7	#10420.00	58.3 PK	74.0	-15.7	2.63 H	295	43.50	14.80
8	#10420.00	45.4 AV	54.0	-8.6	2.63 H	295	30.60	14.80
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	66.4 PK	74.0	-7.6	2.20 V	26	63.80	2.60
2	5150.00	52.5 AV	54.0	-1.5	2.20 V	26	49.90	2.60
3	*5210.00	107.7 PK			2.20 V	26	66.90	40.80
4	*5210.00	95.8 AV			2.20 V	26	55.00	40.80
5	5350.00	56.6 PK	74.0	-17.4	2.20 V	26	53.80	2.80
6	5350.00	43.5 AV	54.0	-10.5	2.20 V	26	40.70	2.80
7	#10420.00	57.7 PK	74.0	-16.3	1.26 V	56	42.90	14.80
8	#10420.00	45.0 AV	54.0	-9.0	1.26 V	56	30.20	14.80

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	#5628.00	57.0 PK	68.2	-11.2	1.20 H	165	53.50	3.50
2	*5775.00	102.1 PK			1.20 H	165	59.70	42.40
3	*5775.00	91.6 AV			1.20 H	165	49.20	42.40
4	#5930.40	58.6 PK	68.2	-9.6	1.20 H	165	54.10	4.50
5	11550.00	58.7 PK	74.0	-15.3	1.33 H	300	42.70	16.00
6	11550.00	46.2 AV	54.0	-7.8	1.33 H	300	30.20	16.00
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	#5645.60	65.8 PK	68.2	-2.4	2.64 V	137	62.40	3.40
2	*5775.00	110.0 PK			2.64 V	137	67.60	42.40
3	*5775.00	100.7 AV			2.64 V	137	58.30	42.40
4	#5938.40	60.4 PK	68.2	-7.8	2.64 V	137	55.90	4.50
5	11550.00	58.5 PK	74.0	-15.5	3.32 V	105	42.50	16.00
6	11550.00	46.3 AV	54.0	-7.7	3.32 V	105	30.30	16.00

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 Worst-Case Data: 802.11a

CHANNEL	TX Channel 36	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	30.00	32.6 QP	40.0	-7.4	1.51 H	207	47.70	-15.10
2	69.77	27.1 QP	40.0	-12.9	1.51 H	243	42.10	-15.00
3	152.22	25.1 QP	43.5	-18.4	2.00 H	214	38.30	-13.20
4	262.80	26.4 QP	46.0	-19.6	1.01 H	154	40.00	-13.60
5	480.08	32.6 QP	46.0	-13.4	1.51 H	248	42.00	-9.40
6	836.07	35.4 QP	46.0	-10.6	1.51 H	283	38.80	-3.40
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	35.48	33.4 QP	40.0	-6.6	2.00 V	30	48.10	-14.70
2	62.01	31.0 QP	40.0	-9.0	1.00 V	45	45.00	-14.00
3	111.48	25.8 QP	43.5	-17.7	1.00 V	64	42.30	-16.50
4	329.73	21.9 QP	46.0	-24.1	1.50 V	15	33.70	-11.80
5	480.08	31.9 QP	46.0	-14.1	1.00 V	55	41.30	-9.40
6	800.18	33.9 QP	46.0	-12.1	1.50 V	15	38.10	-4.20

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

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	ESCS 30	100288	Aug. 17, 2017	Aug. 16, 2018
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond2-01	Sep. 08, 2017	Sep. 07, 2018
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Jan. 17, 2017	Jan. 16, 2018
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Aug. 02, 2017	Aug. 01, 2018
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Shielded Room 2.
3. The VCCI Site Registration No. is C-2047.

4.2.3 Test Procedures

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.

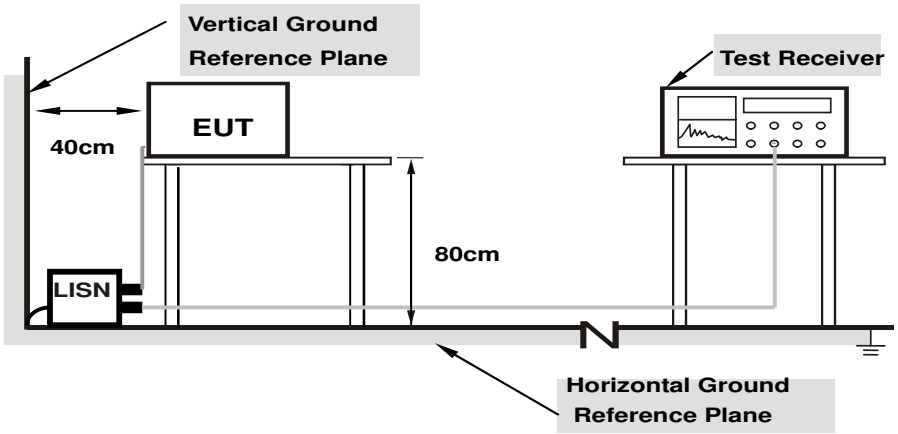
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Conditions

Same as 4.1.6.

4.2.7 Test Results

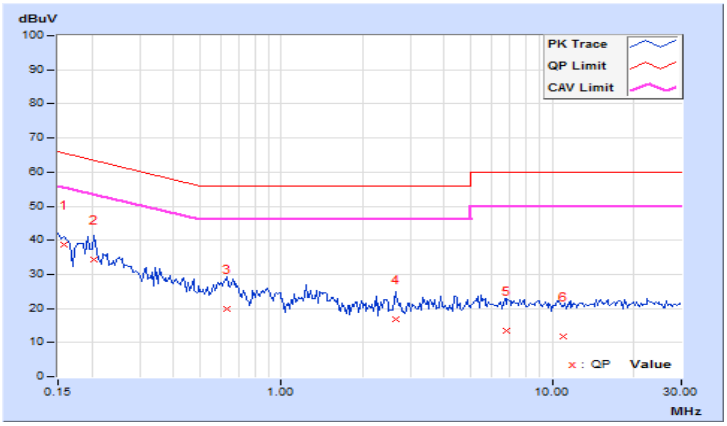
Worst-case data: 802.11a

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

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15781	10.48	28.13	12.82	38.61	23.30	65.58	55.58	-26.97	-32.28
2	0.20469	10.38	23.97	9.85	34.35	20.23	63.42	53.42	-29.07	-33.19
3	0.63047	10.42	9.52	1.92	19.94	12.34	56.00	46.00	-36.06	-33.66
4	2.65625	10.46	6.38	1.78	16.84	12.24	56.00	46.00	-39.16	-33.76
5	6.82031	10.57	2.93	2.62	13.50	13.19	60.00	50.00	-46.50	-36.81
6	11.01563	10.61	1.25	1.10	11.86	11.71	60.00	50.00	-48.14	-38.29

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.

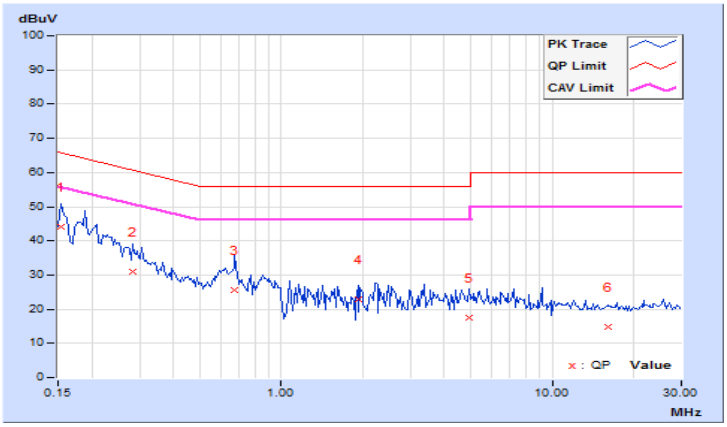


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

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	**0.15391**	**10.37**	**33.79**	**18.46**	**44.16**	**28.83**	**65.79**	**55.79**	**-21.63**	**-26.96**
2	0.28281	10.29	20.80	6.67	31.09	16.96	60.73	50.73	-29.64	-33.77
3	0.67344	10.38	15.06	5.74	25.44	16.12	56.00	46.00	-30.56	-29.88
4	1.92578	10.49	12.56	2.92	23.05	13.41	56.00	46.00	-32.95	-32.59
5	4.93359	10.67	6.83	1.59	17.50	12.26	56.00	46.00	-38.50	-33.74
6	16.01563	10.84	3.93	2.69	14.77	13.53	60.00	50.00	-45.23	-36.47

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)
		Mobile and Portable client device	250mW (24 dBm)
U-NII-2A			250mW (24 dBm) or 11 dBm+10 log B*
U-NII-2C			250mW (24 dBm) or 11 dBm+10 log B*
U-NII-3	√		1 Watt (30 dBm)

*B is the 26 dB emission bandwidth in megahertz

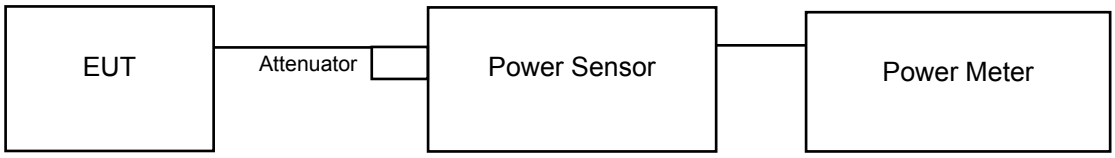
Per KDB 662911 Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};
Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

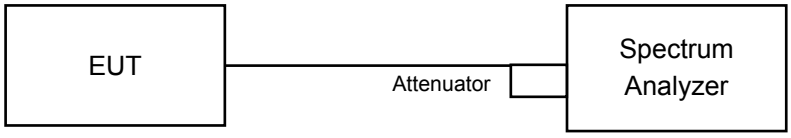
For power measurements on all other devices: Array Gain = 10 log(N_{ANT}/N_{SS}) dB.

4.3.2 Test Setup

For Power Output
802.11a, 802.11n (HT20), 802.11n (HT40)



802.11ac (VHT80)



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 (HT20), 802.11n (HT40)

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 (VHT80)

a. Set span to encompass the entire 26 dB EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal.

b. Set sweep trigger to “free run”.

c. Set RBW = 1 MHz.

d. Set VBW ≥ 3 MHz.

e. Number of points in sweep ≥ 2 Span / RBW.

f. Sweep time ≤ (number of points in sweep) * T

g. Using emission bandwidth to determine the frequency span for integration the channel bandwidth.

h. Detector = RMS.

i. Trace mode = max hold.

j. Allow max hold to run for at least 60 seconds, or longer as needed to allow the trace to stabilize.

k. Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument’s band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at 1 MHz intervals extending across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the spectrum.

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Conditions

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

4.3.7 Test Result

Power Output:

CDD Mode

802.11a

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	21.06	20.68	244.594	23.88	30.00	Pass
40	5200	20.99	20.83	246.663	23.92	30.00	Pass
48	5240	21.60	21.25	**277.896**	24.44	30.00	Pass
149	5745	21.13	21.46	269.677	24.31	30.00	Pass
157	5785	21.06	21.65	273.862	24.38	30.00	Pass
165	5825	21.28	21.72	282.870	24.52	30.00	Pass

802.11n (HT20)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	20.40	20.80	229.874	23.61	30.00	Pass
40	5200	20.47	20.81	231.933	23.65	30.00	Pass
48	5240	21.02	21.45	266.111	24.25	30.00	Pass
149	5745	21.03	21.86	280.227	24.48	30.00	Pass
157	5785	21.23	21.83	285.144	24.55	30.00	Pass
165	5825	21.57	21.88	297.719	24.74	30.00	Pass

802.11n (HT40)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	18.53	19.04	151.453	21.80	30.00	Pass
46	5230	20.60	20.95	239.266	23.79	30.00	Pass
151	5755	21.21	21.99	290.255	24.63	30.00	Pass
159	5795	21.65	22.13	**309.523**	24.91	30.00	Pass

802.11ac (VHT80)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	18.61	19.26	156.944	21.96	30.00	Pass
155	5775	21.08	21.40	266.271	24.25	30.00	Pass

Beamforming Mode

802.11n (HT20)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	20.40	20.80	229.874	23.61	28.27	Pass
40	5200	20.47	20.81	231.933	23.65	28.27	Pass
48	5240	21.02	21.45	**266.111**	24.25	28.27	Pass
149	5745	21.03	21.86	280.227	24.48	28.27	Pass
157	5785	21.23	21.83	285.144	24.55	28.27	Pass
165	5825	21.57	21.88	297.719	24.74	28.27	Pass

Note: Directional gain = 4.72dBi + 10log(2) = 7.73dBi > 6dBi, so the power limit shall be reduced to 30-(7.73-6) = 28.27dBm.

802.11n (HT40)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	18.53	19.04	151.453	21.80	28.27	Pass
46	5230	20.60	20.95	239.266	23.79	28.27	Pass
151	5755	21.21	21.99	290.255	24.63	28.27	Pass
159	5795	21.65	22.13	**309.523**	24.91	28.27	Pass

Note: Directional gain = 4.72dBi + 10log(2) = 7.73dBi > 6dBi, so the power limit shall be reduced to 30-(7.73-6) = 28.27dBm.

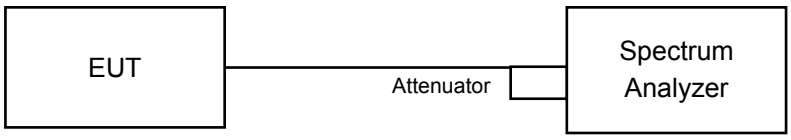
802.11ac (VHT80)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	18.61	19.26	156.944	21.96	28.27	Pass
155	5775	21.08	21.40	266.271	24.25	28.27	Pass

Note: Directional gain = 4.72dBi + 10log(2) = 7.73dBi > 6dBi, so the power limit shall be reduced to 30-(7.73-6) = 28.27dBm.

4.4 Occupied Bandwidth Measurement

4.4.1 Test Setup



4.4.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.3 Test Procedure

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

4.4.4 Test Result

802.11a

Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	17.04	16.92
40	5200	17.04	16.92
48	5240	17.04	16.92
149	5745	17.76	21.84
157	5785	17.88	21.24
165	5825	22.92	22.20

802.11n (HT20)

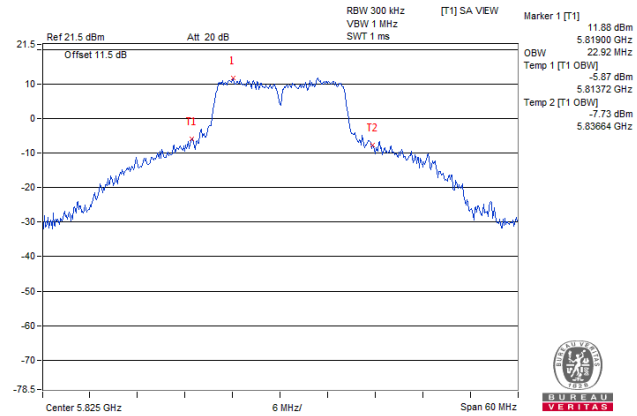
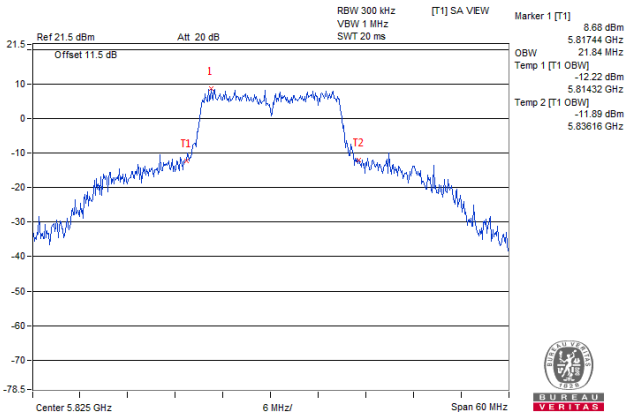
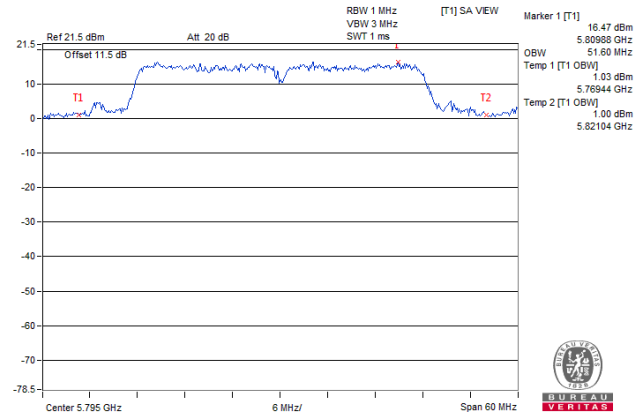
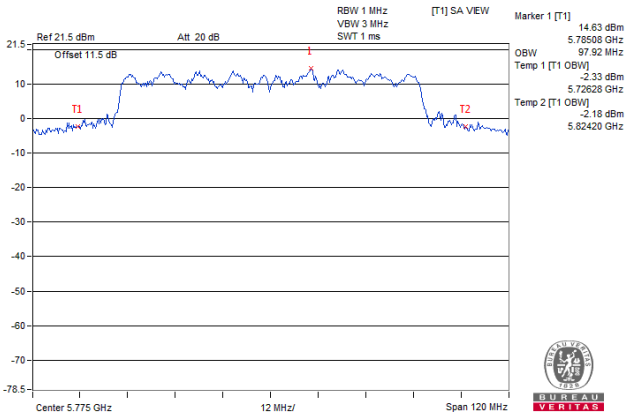
Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	18.00	18.12
40	5200	18.12	18.12
48	5240	18.00	18.12
149	5745	18.60	19.92
157	5785	17.76	21.00
165	5825	18.72	21.84

802.11n (HT40)

Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	37.08	37.66
46	5230	37.56	36.60
151	5755	37.57	51.00
159	5795	37.80	51.60

802.11ac (VHT80)

Chan.	Freq. (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	75.60	77.52
155	5775	75.84	97.92

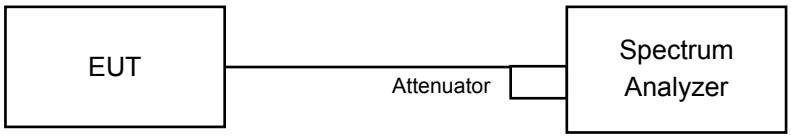
Spectrum Plot of Worst Value	
802.11a	802.11n (HT20)
	
802.11n (HT40)	802.11ac (VHT80)
	

4.5 Peak Power Spectral Density Measurement

4.5.1 Limits of Peak Power Spectral Density Measurement

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

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedures

For U-NII-1 band:

Using method SA-2

a. Set span to encompass the entire emission bandwidth (EBW) of the signal.

b. Set RBW = 1MHz, Set VBW ≥ 3 MHz, Detector = RMS

c. Set Channel power measure = 1MHz

d. Sweep time = auto, trigger set to “free run”.

e. Trace average at least 100 traces in power averaging mode.

f. Record the max value and add 10 log (1/duty cycle)

For U-NII-3 band:

a. Set span to encompass the entire emission bandwidth (EBW) of the signal.

b. Set RBW = 300 kHz, Set VBW ≥ 1 MHz, Detector = RMS

c. Use the peak marker function to determine the maximum power level in any 300 kHz band segment within the fundamental EBW.

d. Scale the observed power level to an equivalent value in 500 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log(500 kHz / 300 kHz)

e. Sweep time = auto, trigger set to “free run”.

f. Trace average at least 100 traces in power averaging mode.

g. Record the max value and add 10 log (1/duty cycle)

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Conditions

Same as 4.3.6.

4.5.7 Test Results

For U-NII-1 band:

802.11a

Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
36	5180	6.69	8.79	0.28	11.15	15.27	Pass
40	5200	7.06	9.02	0.28	11.43	15.27	Pass
48	5240	7.79	9.38	0.28	11.94	15.27	Pass

Note:
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 4.72dBi + 10log(2) = 7.73dBi > 6dBi, so the power density limit shall be reduced to 17-(7.73-6) = 15.27dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT20)

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	5.50	8.26	0.41	10.51	15.27	Pass
40	5200	6.02	8.58	0.41	10.90	15.27	Pass
48	5240	6.65	8.97	0.41	11.38	15.27	Pass

Note:
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 4.72dBi + 10log(2) = 7.73dBi > 6dBi, so the power density limit shall be reduced to 17-(7.73-6) = 15.27dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT40)

Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
38	5190	0.18	3.78	0.42	5.77	15.27	Pass
46	5230	2.98	5.45	0.42	7.82	15.27	Pass

Note:
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 4.72dBi + 10log(2) = 7.73dBi > 6dBi, so the power density limit shall be reduced to 17-(7.73-6) = 15.27dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

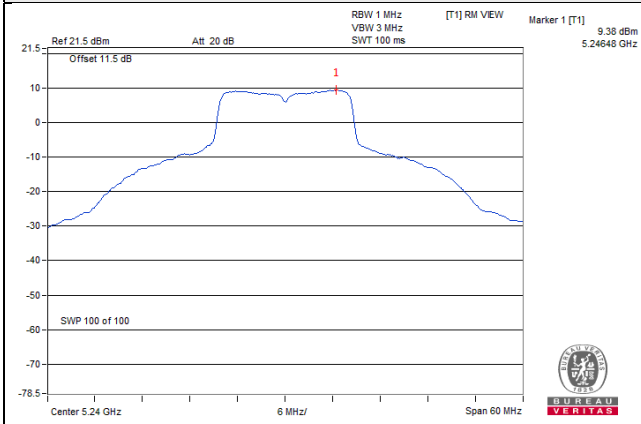
802.11ac (VHT80)

Chan.	Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD with Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
42	5210	-2.08	2.05	0.94	4.41	15.27	Pass

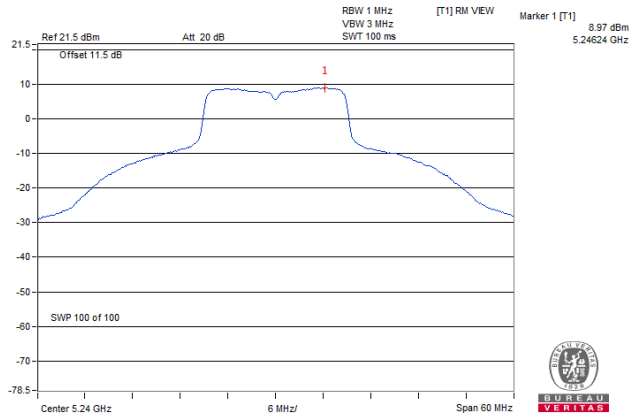
Note:
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 4.72dBi + 10log(2) = 7.73dBi > 6dBi, so the power density limit shall be reduced to 17-(7.73-6) = 15.27dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

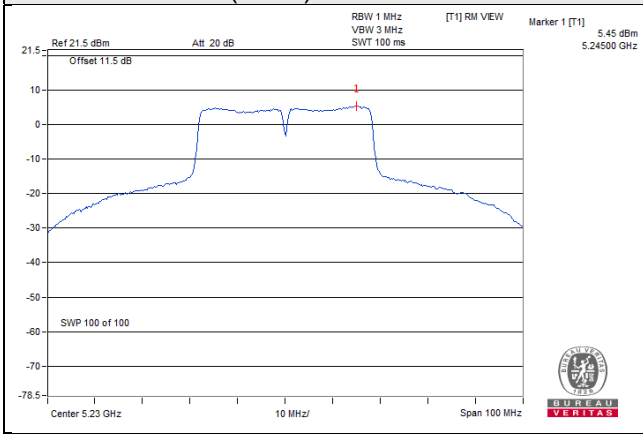
802.11a / Chain 1 / CH 48



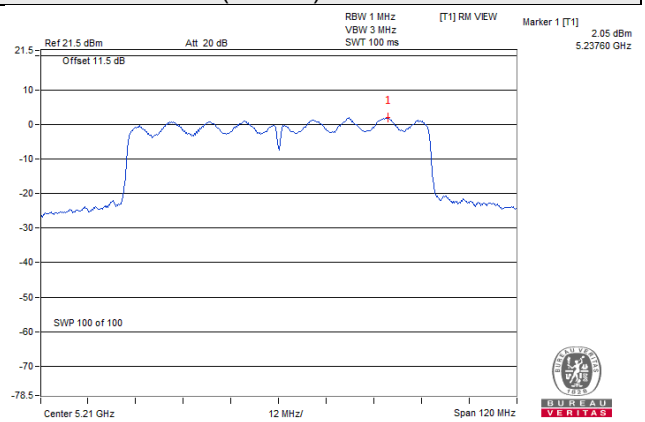
802.11n (HT20) / Chain 1 / CH 48



802.11n (HT40) / Chain 1 / CH 46



802.11ac (VHT80) / Chain 1 / CH 42



For U-NII-3 band:

802.11a

TX chain	Chan.	Freq. (MHz)	PSD W/O Duty Factor		10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/ 500kHz)	Pass / Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	149	5745	-1.18	1.04	3.01	0.28	4.33	28.27	Pass
	157	5785	-0.94	1.28	3.01	0.28	4.57	28.27	Pass
	165	5825	-0.91	1.31	3.01	0.28	4.60	28.27	Pass
1	149	5745	0.65	2.87	3.01	0.28	6.16	28.27	Pass
	157	5785	0.91	3.13	3.01	0.28	6.42	28.27	Pass
	165	5825	0.88	3.10	3.01	0.28	6.39	28.27	Pass

Note:
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 4.72dBi + 10log(2) = 7.73dBi > 6dBi, so the power density limit shall be reduced to 30-(7.73-6) = 28.27dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT20)

TX chain	Chan.	Freq. (MHz)	PSD W/O Duty Factor		10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/ 500kHz)	Pass / Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	149	5745	-7.26	-5.04	3.01	0.41	-1.62	28.27	Pass
	157	5785	-9.21	-6.99	3.01	0.41	-3.57	28.27	Pass
	165	5825	-0.88	1.34	3.01	0.41	4.76	28.27	Pass
1	149	5745	0.50	2.72	3.01	0.41	6.14	28.27	Pass
	157	5785	0.58	2.80	3.01	0.41	6.22	28.27	Pass
	165	5825	0.55	2.77	3.01	0.41	6.19	28.27	Pass

Note:
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 4.72dBi + 10log(2) = 7.73dBi > 6dBi, so the power density limit shall be reduced to 30-(7.73-6) = 28.27dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT40)

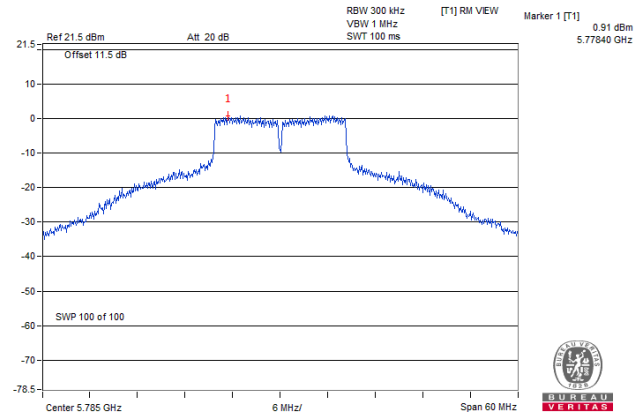
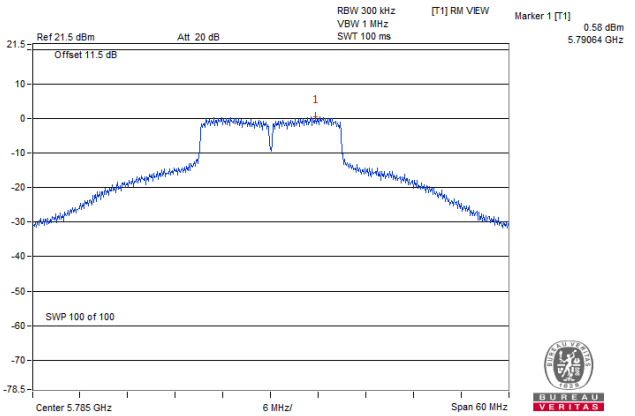
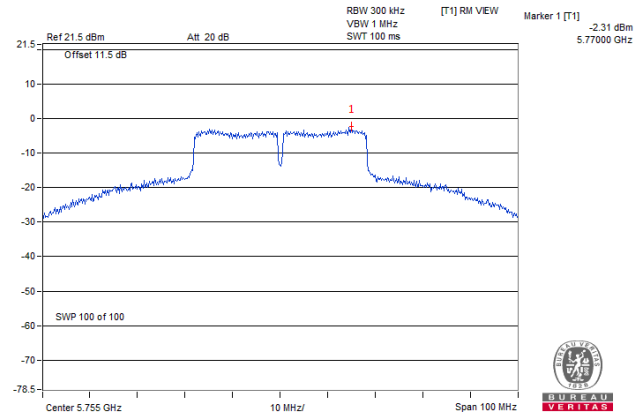
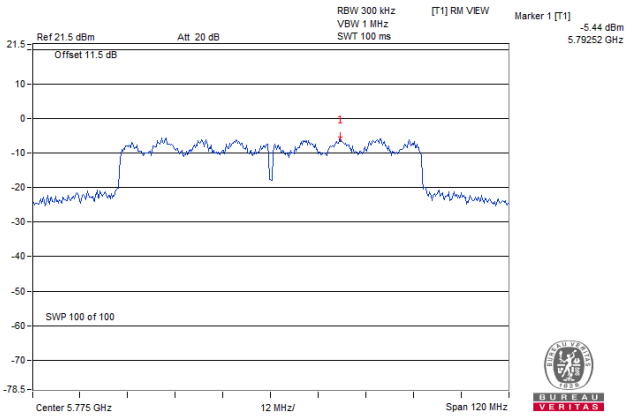
TX chain	Chan.	Freq. (MHz)	PSD W/O Duty Factor		10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/ 500kHz)	Pass / Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	151	5755	-4.94	-2.72	3.01	0.42	0.71	28.27	Pass
	159	5795	-4.39	-2.17	3.01	0.42	1.26	28.27	Pass
1	151	5755	-2.31	-0.09	3.01	0.42	3.34	28.27	Pass
	159	5795	-2.42	-0.20	3.01	0.42	3.23	28.27	Pass

Note:
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 4.72dBi + 10log(2) = 7.73dBi > 6dBi, so the power density limit shall be reduced to 30-(7.73-6) = 28.27dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT80)

TX chain	Chan.	Freq. (MHz)	PSD W/O Duty Factor		10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/ 500kHz)	Pass / Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	155	5775	-7.87	-5.65	3.01	0.94	-1.70	28.27	Pass
1	155	5775	-5.44	-3.22	3.01	0.94	0.73	28.27	Pass

Note:
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 4.72dBi + 10log(2) = 7.73dBi > 6dBi, so the power density limit shall be reduced to 30-(7.73-6) = 28.27dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

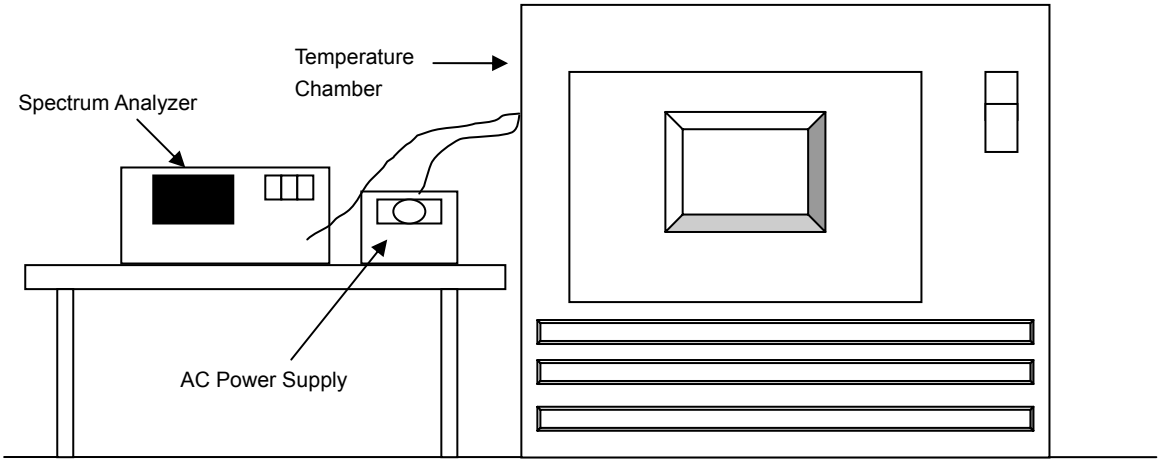
Spectrum Plot of Worst Value	
802.11a	802.11n (HT20)
	
802.11n (HT40)	802.11ac (VHT80)
	

4.6 Frequency Stability

4.6.1 Limits of Frequency Stability Measurement

The frequency of the carrier signal shall be maintained within band of operation

4.6.2 Test Setup



4.6.3 Test Instruments

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: 5180MHz									
Temp. (℃)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
40	120	5180.0239	0.00046	5180.0211	0.00041	5180.0213	0.00041	5180.0231	0.00045
30	120	5180.0264	0.00051	5180.0251	0.00048	5180.0268	0.00052	5180.0274	0.00053
20	120	5179.9985	-0.00003	5179.995	-0.00010	5179.9968	-0.00006	5179.9974	-0.00005
10	120	5179.9902	-0.00019	5179.991	-0.00017	5179.9901	-0.00019	5179.991	-0.00017
0	120	5180.0189	0.00036	5180.0183	0.00035	5180.0199	0.00038	5180.0193	0.00037

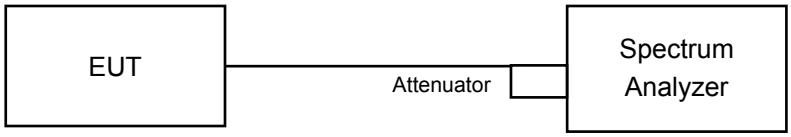
Frequency Stability Versus Voltage									
Operating Frequency: 5180MHz									
Temp. (℃)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
20	138	5179.9897	-0.00020	5179.9903	-0.00019	5179.9907	-0.00018	5179.9904	-0.00019
	120	5179.9902	-0.00019	5179.991	-0.00017	5179.9901	-0.00019	5179.991	-0.00017
	102	5179.9901	-0.00019	5179.992	-0.00015	5179.9906	-0.00018	5179.9905	-0.00018

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	16.59	16.55	0.5	Pass
157	5785	16.62	16.55	0.5	Pass
165	5825	16.35	16.54	0.5	Pass

802.11n (HT20)

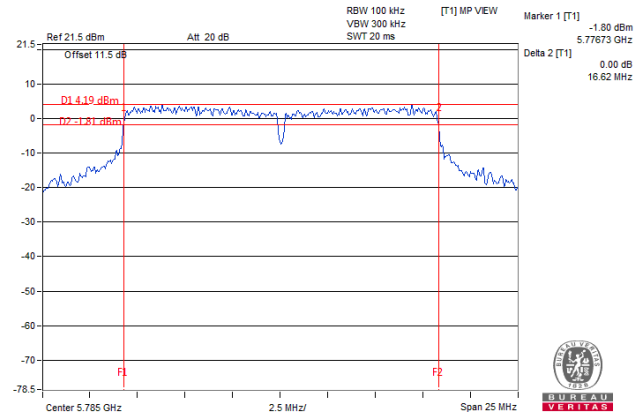
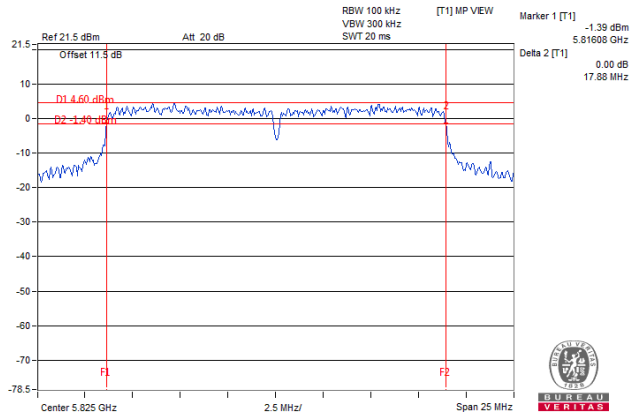
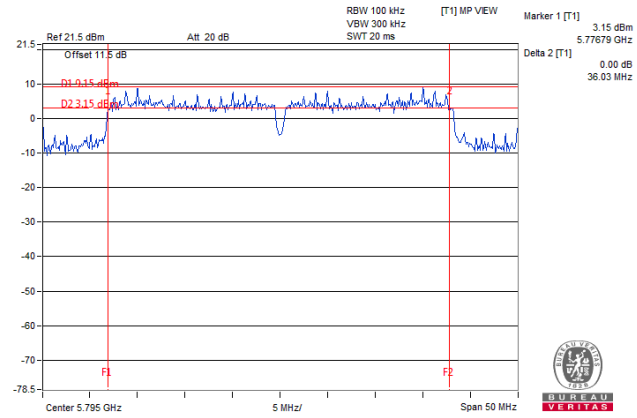
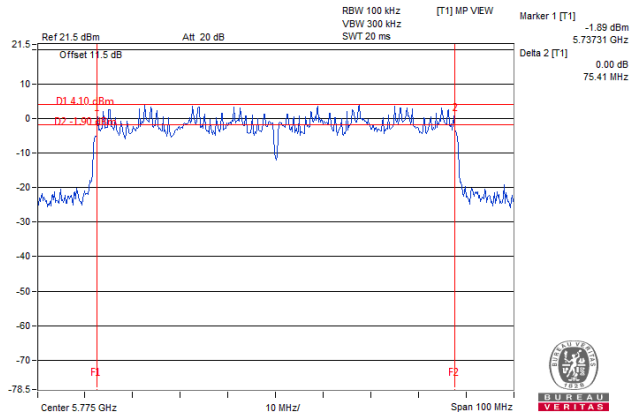
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
149	5745	17.86	17.85	0.5	Pass
157	5785	16.61	17.86	0.5	Pass
165	5825	16.56	17.88	0.5	Pass

802.11n (HT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
151	5755	35.79	35.73	0.5	Pass
159	5795	35.84	36.03	0.5	Pass

802.11ac (VHT80)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
155	5775	75.41	75.39	0.5	Pass

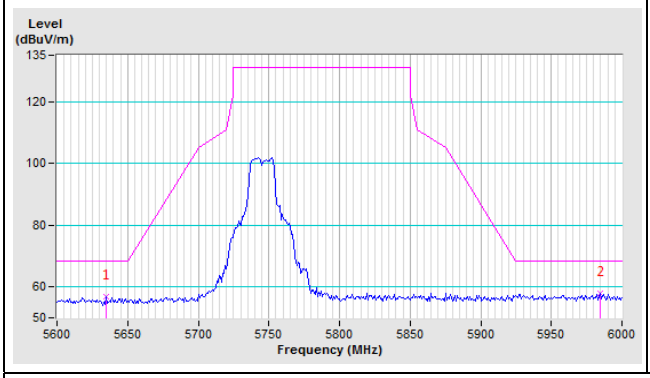
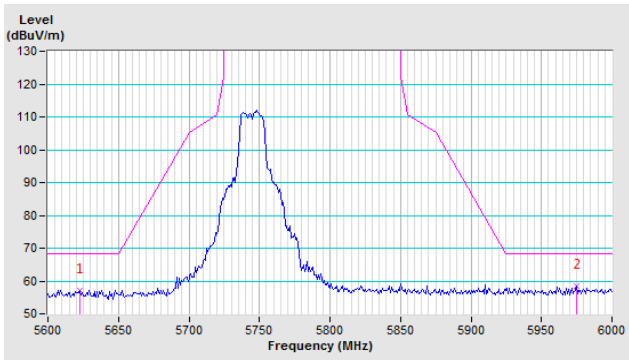
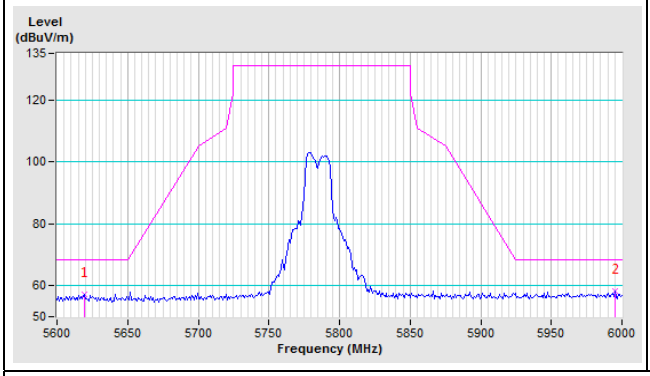
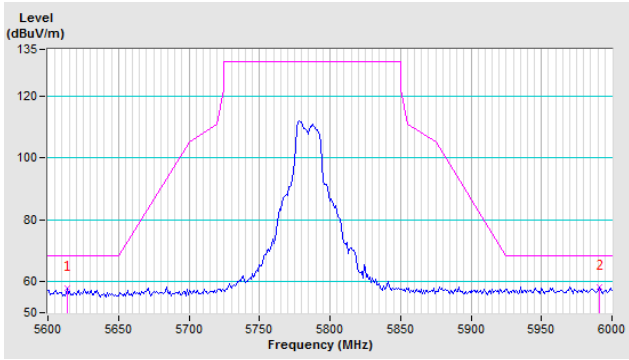
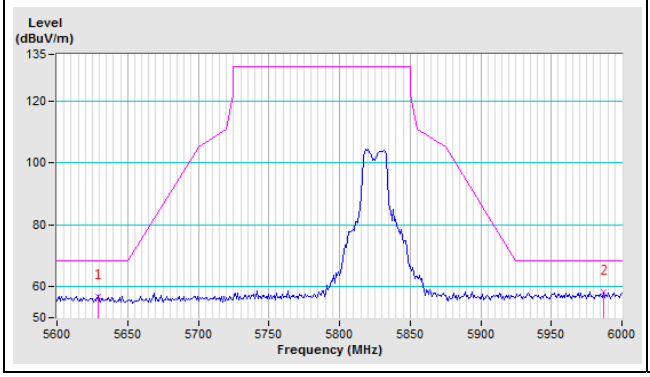
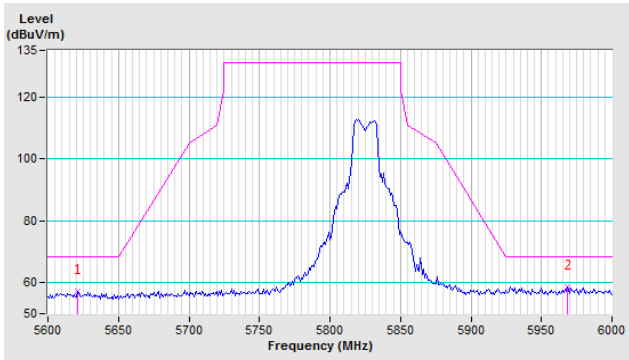
Spectrum Plot of Worst Value	
802.11a	802.11n (HT20)
	
802.11n (HT40)	802.11ac (VHT80)
	

5 Pictures of Test Arrangements

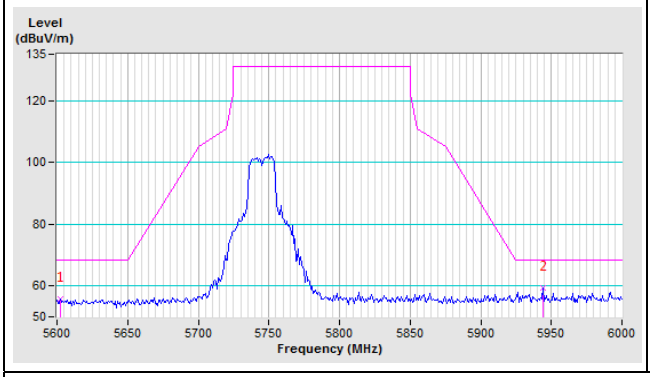
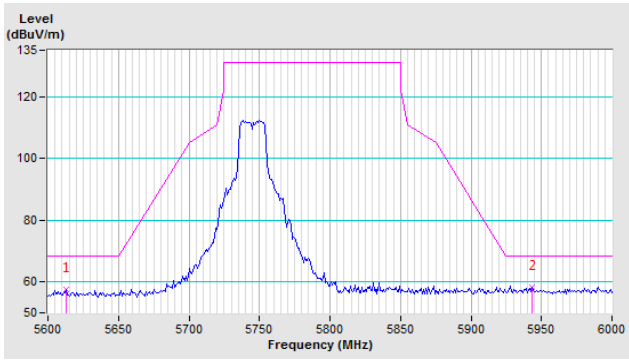
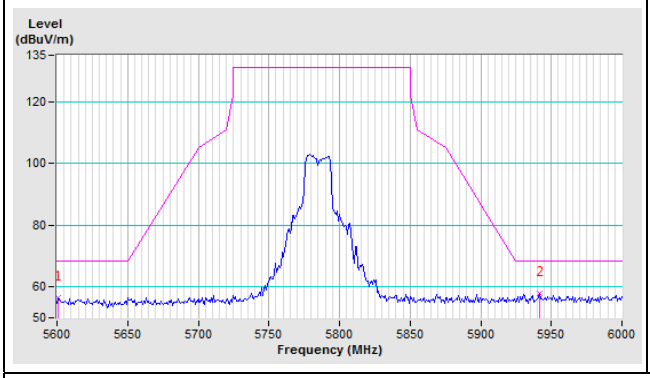
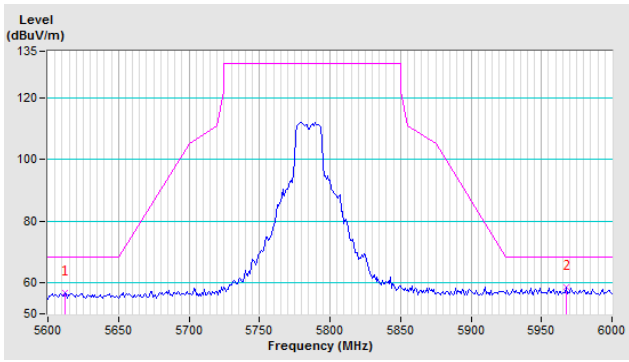
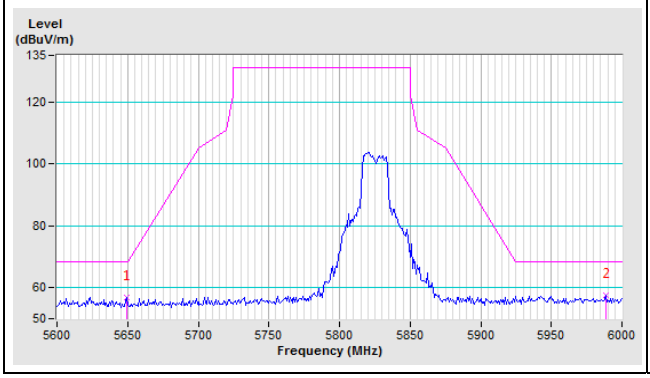
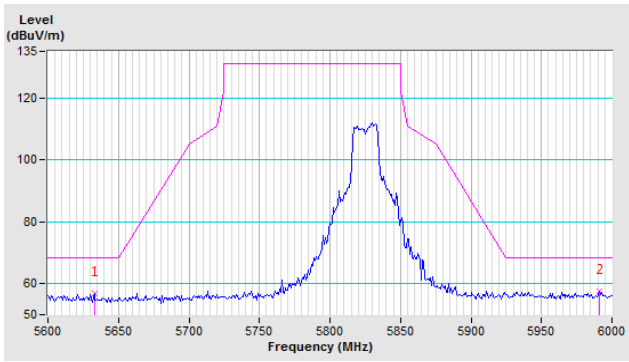
Please refer to the attached file (Test Setup Photo).

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

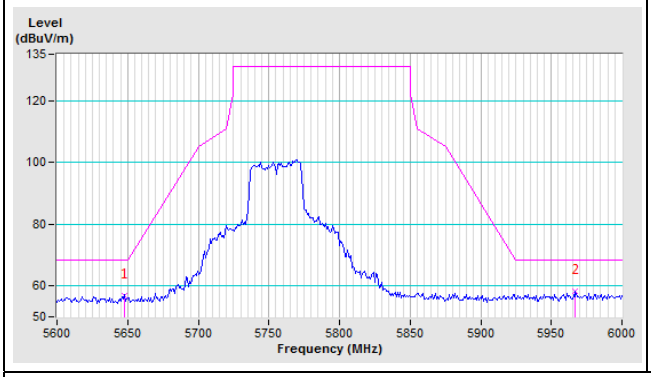
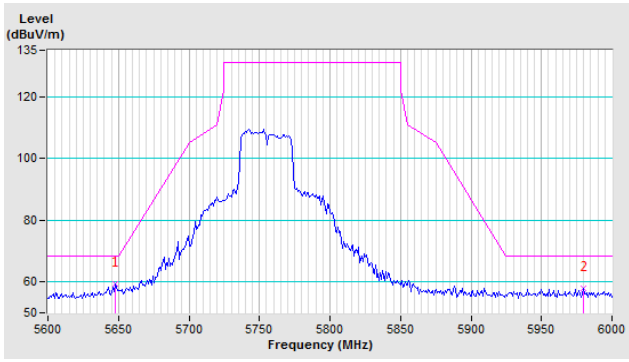
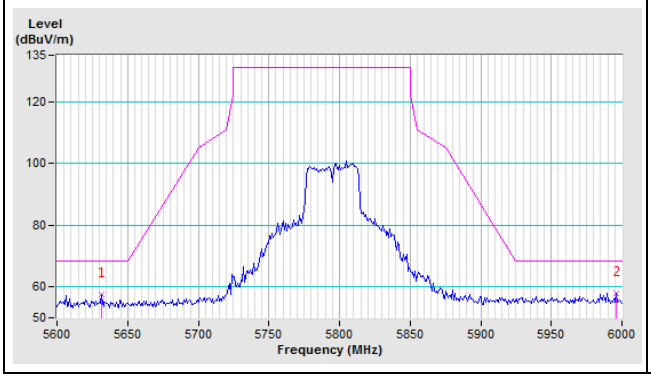
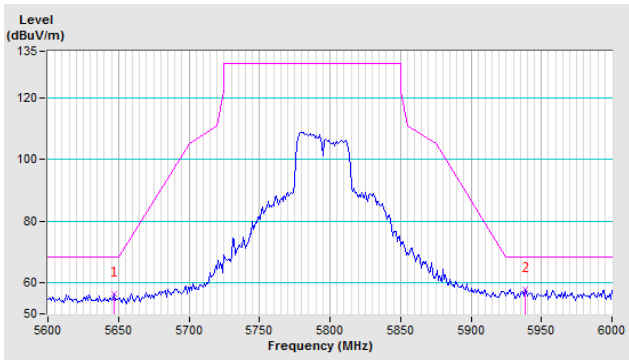
802.11a

CH149	
Horizontal	Vertical
	
CH157	
Horizontal	Vertical
	
CH165	
Horizontal	Vertical
	

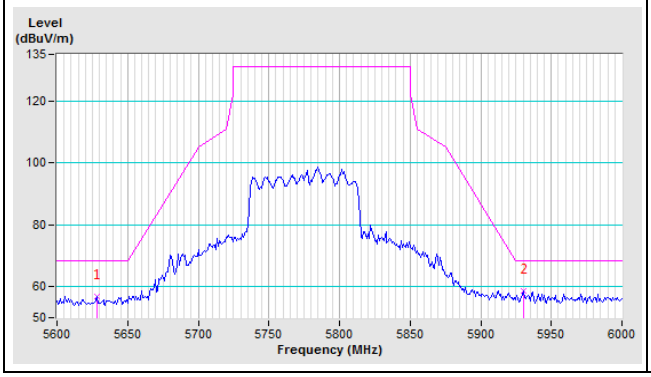
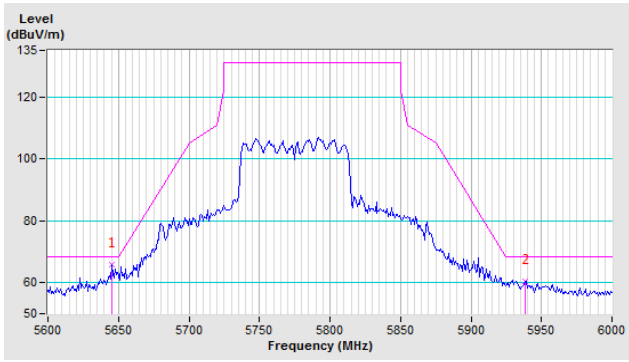
802.11n (HT20)

CH149	
Horizontal	Vertical
	
CH157	
Horizontal	Vertical
	
CH165	
Horizontal	Vertical
	

802.11n (HT40)

CH151	
Horizontal	Vertical
	
CH159	
Horizontal	Vertical
	

802.11ac (VHT80)

CH155	
Horizontal	Vertical
	

Appendix – Information on the Testing Laboratories

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

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

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

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

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