FCC Test Report

Report No.:	RF160205C08-1
FCC ID:	PY315200317
Test Model:	EX7300
Received Date:	Feb. 04, 2016
Test Date:	Feb. 23 ~ Mar. 17, 2016
Issued Date:	Mar. 18, 2016
Applicant:	NETGEAR, INC.
Address:	350 East Plumeria Drive San Jose, CA 95134
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.)

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Release Control Record

Issue No.	Description	Date Issued
RF160205C08-1	Original release.	Mar. 18, 2016

1 Certificate of Conformity

Product:	Nighthawk X4 AC2200 WiFi Range Extender
Brand:	NETGEAR
Test Model:	EX7300
Sample Status:	Engineering sample
Applicant:	NETGEAR, INC.
Test Date:	Feb. 23 ~ Mar. 17, 2016
Standard:	47 CFR FCC Part 15, Subpart E (Section 15.407) ANSI C63.10:2013

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

Prepared by : _____ , **Date:** Mar. 18, 2016

Suntee Liu / Specialist

Approved by : _____ , **Date:** Mar. 18, 2016

Ken Liu / Senior 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 -12.70dB at 0.54112MHz.
15.407(b) (1/2/3/4/6)	Radiated Emissions & Band Edge Measurement	PASS	Meet the requirement of limit. Minimum passing margin is -0.1dB at 5861.00, 5714.90, 5150.00MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	PASS	Meet the requirement of limit.
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.

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	Expended Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.44 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	Nighthawk X4 AC2200 WiFi Range Extender
Brand	NETGEAR
Test Model	EX7300
Sample Status	Engineering sample
Power Supply Rating	100-240Vac
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 600Mbps 802.11ac: up to 1733Mbps
Operating Frequency	5180 ~ 5240MHz, 5745 ~ 5825MHz
Number of Channel	5180 ~ 5240MHz: 4 for 802.11a, 802.11n (HT20), 802.11ac (VHT20) 2 for 802.11n (HT40), 802.11ac (VHT40) 1 for 802.11ac (VHT80) 5745 ~ 5825MHz: 5 for 802.11a, 802.11n (HT20), 802.11ac (VHT20) 2 for 802.11n (HT40), 802.11ac (VHT40) 1 for 802.11ac (VHT80)
Output Power	CDD Mode: 5180 ~ 5240MHz: 636.257mW 5745 ~ 5825MHz: 751.864mW Beamforming Mode: 5180 ~ 5240MHz: 508.828mW 5745 ~ 5825MHz: 429.555mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	NA
Data Cable Supplied	NA

Note:

1. The EUT incorporates a MIMO function. Physically, the EUT provides 4 completed transmitters and 4 receivers.

Band	Modulation Mode	Beamforming Mode	TX Function
2.4GHz	802.11b	Not Support	3TX
	802.11g	Not Support	3TX
	802.11n (HT20)	Not Support	3TX
	802.11n (HT40)	Not Support	3TX
5GHz	802.11a	Not Support	4TX
	802.11n (HT20)	Support	4TX
	802.11n (HT40)	Support	4TX
	802.11ac (VHT20)	Support	4TX
	802.11ac (VHT40)	Support	4TX
	802.11ac (VHT80)	Support	4TX

* 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 5GHz band 802.11n and 802.11ac, CDD mode is the worst case for final radiated emission and power line conducted emission tests after pretesting CDD mode and beamforming mode.

2. The EUT uses following antennas.

Antenna Type	Chain 0/1/2: PIFA, Chain 3: PCB																
	Antenna Connector					NA											
Antenna Gain (dBi)																	
Chain	Frequency (MHz)																
	2412	2422	2437	2452	2462	5180	5200	5240	5190	5230	5210	5745	5785	5825	5755	5795	5775
0	2.5	2.5	3	3.5	4	1.7	2.2	2.5	1.9	2.2	2.2	3.7	4	4	3.9	4	4
1	1.5	1.7	2.1	2.3	2.4	3.6	3.6	3.8	3.6	3.7	3.7	4	4.2	4.1	4.1	4.2	4.2
2	3.1	3.3	3.6	4	4	2.6	2.7	3.1	2.6	3	3	2.5	2.9	3.1	2.5	3	2.9
3	-	-	-	-	-	2.3	2.4	2.5	2.3	2.5	2.4	3.2	3	3.2	3.2	3.1	3

3.2 Description of Test Modes

FOR 5180 ~ 5240MHz:

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

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

2 channels are provided for 802.11n (HT40), 802.11ac (40MHz):

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
42	5210MHz

FOR 5745 ~ 5825MHz:

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

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

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

Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
155	5775MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable to				Description
	RE≥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 Z-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	6.0
-	802.11ac (VHT20)		36 to 48	36, 40, 48	OFDM	BPSK	7.2
-	802.11ac (VHT40)		38 to 46	38, 46	OFDM	BPSK	15.0
-	802.11ac (VHT80)		42	42	OFDM	BPSK	130.0
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.0
-	802.11ac (VHT20)		149 to 165	149, 157, 165	OFDM	BPSK	7.2
-	802.11ac (VHT40)		151 to 159	151, 159	OFDM	BPSK	15.0
-	802.11ac (VHT80)		155	155	OFDM	BPSK	130.0

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	157	OFDM	BPSK	6.0
	802.11a	5745-5825	149 to 165		OFDM	BPSK	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	FREQ. BAND (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
-	802.11a	5180-5320	36 to 64	157	OFDM	BPSK	6.0
	802.11a	5745-5825	149 to 165		OFDM	BPSK	6.0

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)
-	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
-	802.11ac (VHT20)		36 to 48	36, 40, 48	OFDM	BPSK	7.2
-	802.11ac (VHT40)		38 to 46	38, 46	OFDM	BPSK	15.0
-	802.11ac (VHT80)		42	42	OFDM	BPSK	130.0
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.0
-	802.11ac (VHT20)		149 to 165	149, 157, 165	OFDM	BPSK	7.2
-	802.11ac (VHT40)		151 to 159	151, 159	OFDM	BPSK	15.0
-	802.11ac (VHT80)		155	155	OFDM	BPSK	130.0

Test Condition:

Applicable to	Environmental Conditions	Input Power	Tested by
RE≥1G	23 deg. C, 66% RH 22 deg. C, 66% RH 23 deg. C, 66% RH	120Vac, 60Hz	Alan Wu Chris Lin
RE<1G	23 deg. C, 64% RH	120Vac, 60Hz	Chris Lin
PLC	24 deg. C, 64% RH	120Vac, 60Hz	Chris Lin
APCM	25 deg. C, 60% RH	120Vac, 60Hz	Frank Liu

3.3 Duty Cycle of Test Signal

CDD Mode

802.11ac (VHT20): Duty cycle of test signal is ≥ 98%, duty factor is not required.

802.11a, 802.11ac (VHT40), 802.11ac (VHT80): Duty cycle of test signal is < 98%, duty factor shall be considered.

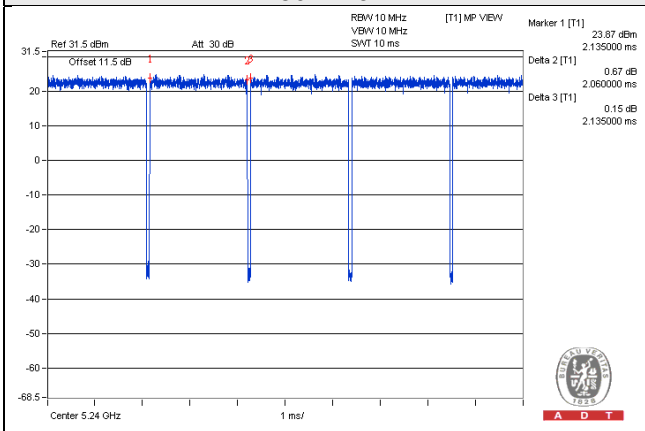
802.11a: Duty cycle = 2.06/2.135 = 0.965, Duty factor = 10 * log(1/0.965) = 0.16

802.11ac (VHT20): Duty cycle = 5/5.075 = 0.985

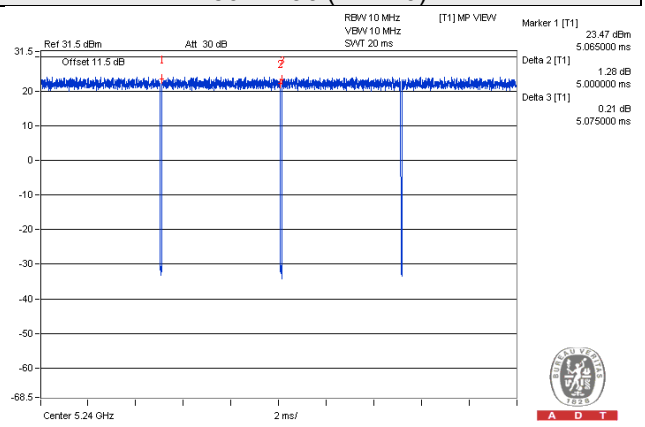
802.11ac (VHT40): Duty cycle = 2.425/2.52 = 0.962, Duty factor = 10 * log(1/0.962) = 0.17

802.11ac (VHT80): Duty cycle = 1.144/1.224 = 0.935, Duty factor = 10 * log(1/0.935) = 0.29

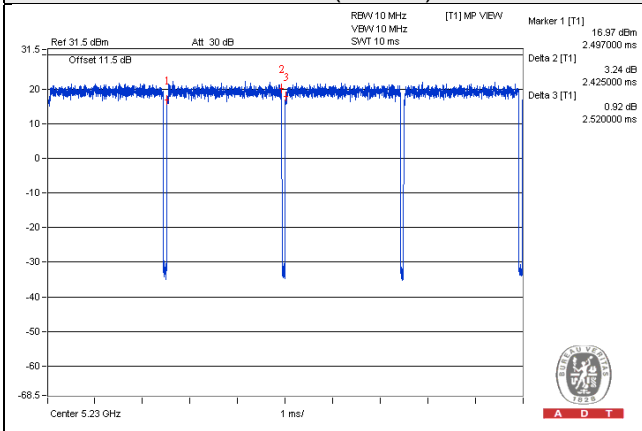
802.11a



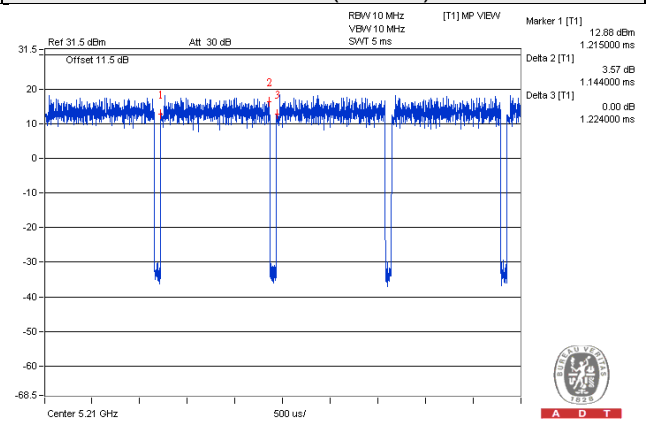
802.11ac (VHT20)



802.11ac (VHT40)



802.11ac (VHT80)



Beamforming Mode

802.11ac (VHT20): Duty cycle of test signal is ≥ 98%, duty factor is not required.

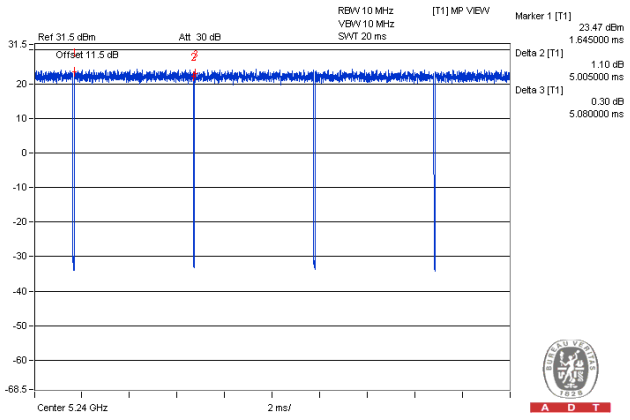
802.11ac (VHT40), 802.11ac (VHT80): Duty cycle of test signal is < 98%, duty factor shall be considered.

802.11ac (VHT20): Duty cycle = 5.005/5.08 = 0.985

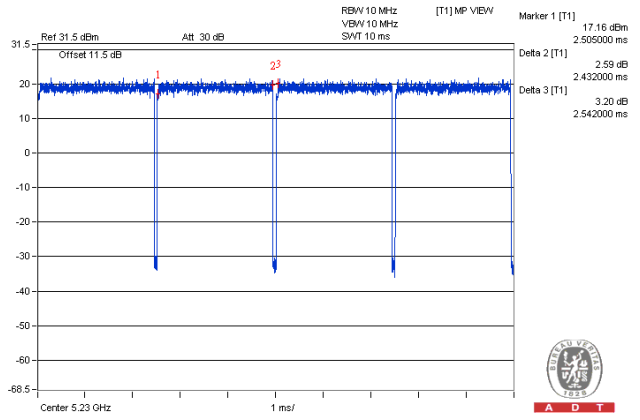
802.11ac (VHT40): Duty cycle = 2.432/2.542 = 0.957, Duty factor = 10 * log(1/0.957) = 0.19

802.11ac (VHT80): Duty cycle = 1.145/1.217 = 0.941, Duty factor = 10 * log(1/0.941) = 0.26

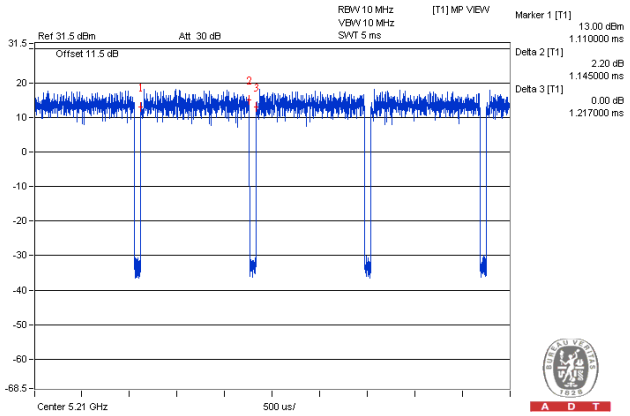
802.11ac (VHT20)



802.11ac (VHT40)



802.11ac (VHT80)



3.4 Description of Support Units

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

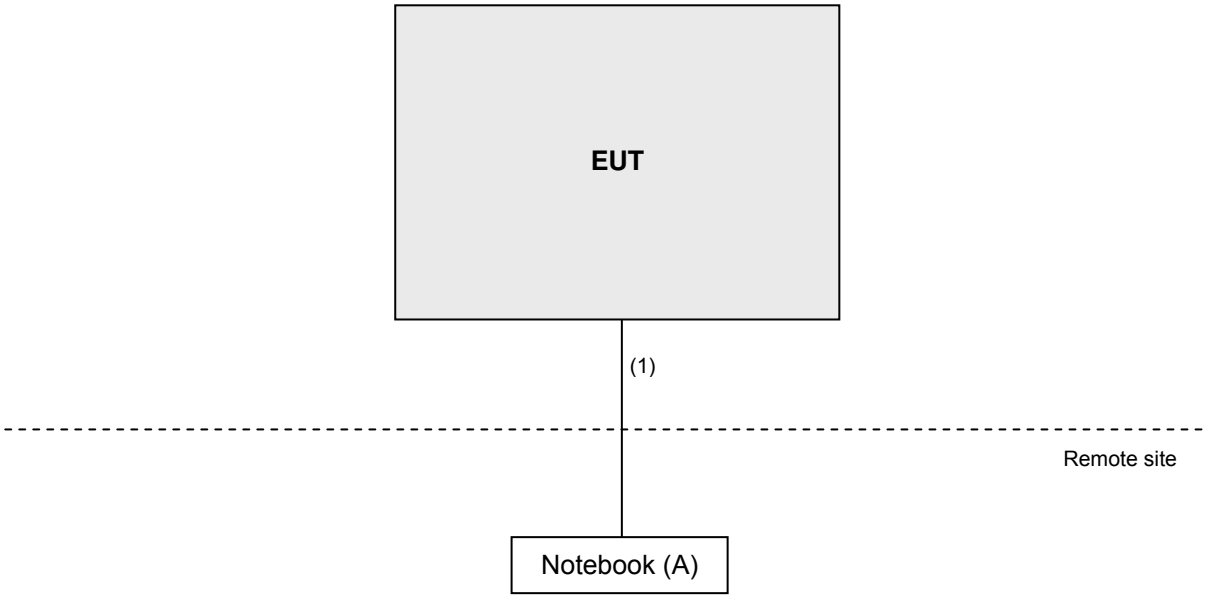
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook	DELL	E5410	BPQ7MQ1	FCC DoC Approved	-

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	1	5	N	0	-

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)
789033 D02 General UNII Test Procedures New Rules v01r01
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

Applicable To	Limit	
789033 D02 General UNII Test Procedures New Rules v01r01	Field Strength at 3m	
	PK:74 (dBμV/m)	AV:54 (dBμV/m)
Applicable To	EIRP Limit	Equivalent Field Strength at 3m
15.407(b)(1)	PK: -27 (dBm/MHz)	PK: 68.2 (dBμV/m)
15.407(b)(2)		
15.407(b)(3)		
15.407(b)(4)	PK: -27 (dBm/MHz) *1 PK: -17 (dBm/MHz) *2	PK: 68.2 (dBμV/m) *1 PK: 78.2 (dBμV/m) *2

NOTE: *1 beyond 10MHz of the band edge *2 within 10 MHz of band edge

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	ESCI	100424	Oct. 12, 2015	Oct. 11, 2016
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Jul. 08, 2015	Jul. 07, 2016
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Jan. 07, 2016	Jan. 06, 2017
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-1170	Jan. 08, 2016	Jan. 07, 2017
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Jan. 18, 2016	Jan. 17, 2017
Preamplifier Agilent	8449B	3008A01960	Aug. 09, 2015	Aug. 08, 2016
Preamplifier Agilent	8447D	2944A10631	Aug. 09, 2015	Aug. 08, 2016
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH4-02(295012+ 309220)	Aug. 09, 2015	Aug. 08, 2016
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH4-03(250724)	Aug. 09, 2015	Aug. 08, 2016
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	010303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021703	NA	NA
Turn Table BV ADT	TT100	TT93021703	NA	NA
Turn Table Controller BV ADT	SC100.	SC93021703	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	815221	Oct. 18, 2015	Oct. 17, 2016
High Speed Peak Power Meter	ML2495A	0824011	Jul. 09, 2015	Jul. 08, 2016
Power Sensor	MA2411B	0738171	Jul. 09, 2015	Jul. 08, 2016

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 Site Registration No. is 460141.
5. The IC Site Registration No. is IC7450F-4.

4.1.3 Test Procedure

a. The EUT was placed on the top of a rotating table 0.8 meters (for below 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:

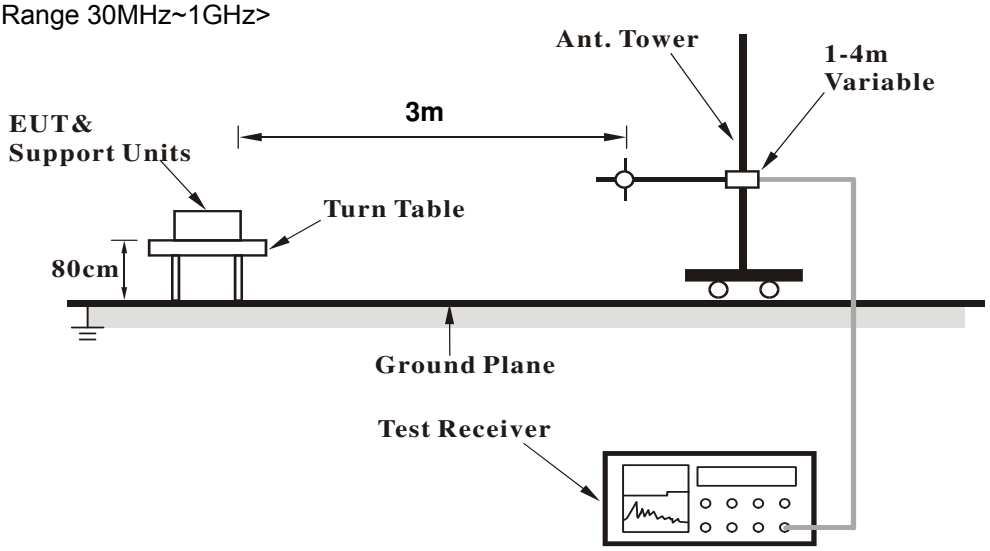
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for RMS Average (Duty cycle < 98%) for Average detection (AV) at frequency above 1GHz, then the measurement results was added to a correction factor (10 log(1/duty cycle)).
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz.
5. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

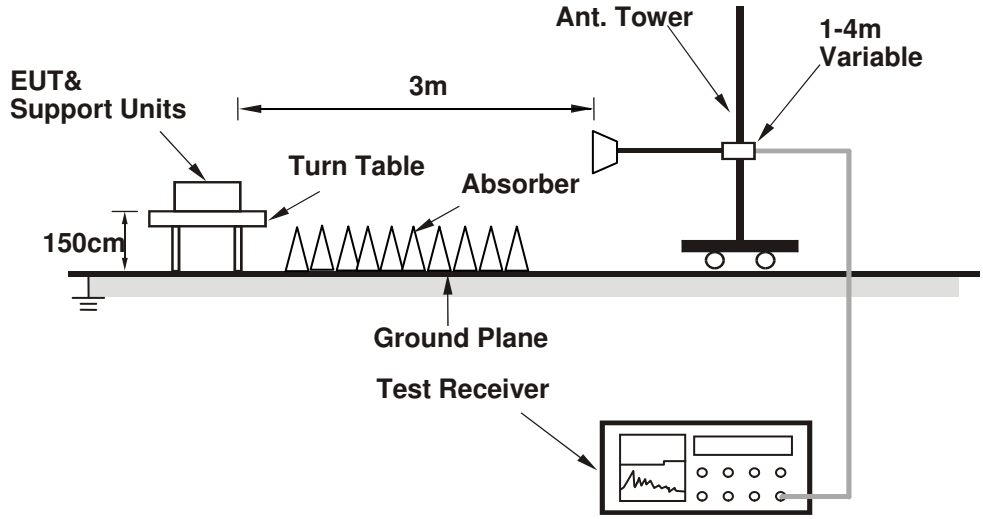
No deviation.

4.1.5 Test Setup

<Frequency Range 30MHz~1GHz>



<Frequency Range 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".
e. The necessary accessories enable the system in full functions.

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	65.7 PK	74.0	-8.3	2.15 H	165	60.20	5.50
2	5150.00	53.7 AV	54.0	-0.3	2.15 H	165	48.20	5.50
3	*5180.00	117.6 PK			2.15 H	165	78.10	39.50
4	*5180.00	108.1 AV			2.15 H	165	68.60	39.50
5	#10360.00	60.0 PK	74.0	-14.0	1.00 H	45	42.50	17.50
6	#10360.00	47.0 AV	54.0	-7.0	1.00 H	45	29.50	17.50
7	15540.00	65.3 PK	74.0	-8.7	1.43 H	31	46.90	18.40
8	15540.00	52.2 AV	54.0	-1.8	1.43 H	31	33.80	18.40
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	5150.00	65.0 PK	74.0	-9.0	1.02 V	163	59.50	5.50
2	5150.00	50.3 AV	54.0	-3.7	1.02 V	163	44.80	5.50
3	*5180.00	116.9 PK			1.02 V	163	77.40	39.50
4	*5180.00	106.0 AV			1.02 V	163	66.50	39.50
5	#10360.00	59.5 PK	74.0	-14.5	1.00 V	174	42.00	17.50
6	#10360.00	46.6 AV	54.0	-7.4	1.00 V	174	29.10	17.50
7	15540.00	64.2 PK	74.0	-9.8	1.30 V	64	45.80	18.40
8	15540.00	52.0 AV	54.0	-2.0	1.30 V	64	33.60	18.40

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)
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	119.5 PK			1.15 H	159	79.90	39.60
2	*5200.00	109.3 AV			1.15 H	159	69.70	39.60
3	#10400.00	60.8 PK	74.0	-13.2	1.00 H	48	42.80	18.00
4	#10400.00	47.9 AV	54.0	-6.1	1.00 H	48	29.90	18.00
5	15600.00	65.1 PK	74.0	-8.9	1.32 H	30	46.40	18.70
6	15600.00	53.6 AV	54.0	-0.4	1.32 H	30	34.90	18.70
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	*5200.00	118.1 PK			1.10 V	165	78.50	39.60
2	*5200.00	107.6 AV			1.10 V	165	68.00	39.60
3	#10400.00	60.6 PK	74.0	-13.4	1.00 V	177	42.60	18.00
4	#10400.00	47.6 AV	54.0	-6.4	1.00 V	177	29.60	18.00
5	15600.00	64.6 PK	74.0	-9.4	1.31 V	65	45.90	18.70
6	15600.00	53.3 AV	54.0	-0.7	1.31 V	65	34.60	18.70

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)
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	118.5 PK			1.84 H	163	78.90	39.60
2	*5240.00	108.0 AV			1.84 H	163	68.40	39.60
3	5350.00	59.6 PK	74.0	-14.4	1.84 H	163	53.90	5.70
4	5350.00	47.0 AV	54.0	-7.0	1.84 H	163	41.30	5.70
5	#10480.00	60.4 PK	74.0	-13.6	1.00 H	40	42.40	18.00
6	#10480.00	47.4 AV	54.0	-6.6	1.00 H	40	29.40	18.00
7	15720.00	68.2 PK	74.0	-5.8	1.77 H	46	49.70	18.50
8	15720.00	53.7 AV	54.0	-0.3	1.77 H	46	35.20	18.50
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	118.2 PK			1.05 V	166	78.60	39.60
2	*5240.00	107.2 AV			1.05 V	166	67.60	39.60
3	5350.00	59.2 PK	74.0	-14.8	1.05 V	166	53.50	5.70
4	5350.00	46.7 AV	54.0	-7.3	1.05 V	166	41.00	5.70
5	#10480.00	60.0 PK	74.0	-14.0	1.00 V	171	42.00	18.00
6	#10480.00	46.9 AV	54.0	-7.1	1.00 V	171	28.90	18.00
7	15720.00	64.9 PK	74.0	-9.1	1.33 V	61	46.40	18.50
8	15720.00	53.0 AV	54.0	-1.0	1.33 V	61	34.50	18.50

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)
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	#5714.00	67.7 PK	74.0	-6.3	1.00 H	128	61.50	6.20
2	#5714.00	53.8 AV	54.0	-0.2	1.00 H	128	47.60	6.20
3	#5722.00	76.9 PK	78.2	-1.3	1.00 H	128	70.60	6.30
4	#5725.00	77.2 PK	78.2	-1.0	1.00 H	128	70.90	6.30
5	*5745.00	118.8 PK			1.00 H	128	78.40	40.40
6	*5745.00	109.2 AV			1.00 H	128	68.80	40.40
7	11490.00	60.8 PK	74.0	-13.2	1.07 H	45	41.50	19.30
8	11490.00	48.3 AV	54.0	-5.7	1.07 H	45	29.00	19.30
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	#5714.00	61.2 PK	74.0	-12.8	1.04 V	0	55.00	6.20
2	#5714.00	48.2 AV	54.0	-5.8	1.04 V	0	42.00	6.20
3	#5722.00	69.1 PK	78.2	-9.1	1.04 V	0	62.80	6.30
4	#5725.00	64.3 PK	78.2	-13.9	1.04 V	0	58.00	6.30
5	*5745.00	115.0 PK			1.04 V	0	74.60	40.40
6	*5745.00	103.8 AV			1.04 V	0	63.40	40.40
7	11490.00	59.9 PK	74.0	-14.1	1.47 V	85	40.60	19.30
8	11490.00	47.8 AV	54.0	-6.2	1.61 V	178	29.50	18.30

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)
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	*5785.00	120.8 PK			1.06 H	127	80.30	40.50
2	*5785.00	110.8 AV			1.06 H	127	70.30	40.50
3	11570.00	60.6 PK	74.0	-13.4	1.47 H	85	41.60	19.00
4	11570.00	47.9 AV	54.0	-6.1	1.47 H	85	28.90	19.00
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	*5785.00	115.9 PK			3.64 V	352	75.40	40.50
2	*5785.00	105.4 AV			3.64 V	352	64.90	40.50
3	11570.00	59.1 PK	74.0	-14.9	1.07 V	54	40.10	19.00
4	11570.00	46.5 AV	54.0	-7.5	1.07 V	54	27.50	19.00

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)
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	*5825.00	118.7 PK			1.18 H	127	78.10	40.60
2	*5825.00	108.1 AV			1.18 H	127	67.50	40.60
3	#5850.00	69.0 PK	78.2	-9.2	1.18 H	127	62.40	6.60
4	#5853.00	76.4 PK	78.2	-1.8	1.18 H	127	69.80	6.60
5	#5861.00	68.4 PK	74.0	-5.6	1.18 H	127	61.80	6.60
6	**#5861.00**	**53.9 AV**	**54.0**	**-0.1**	**1.18 H**	**127**	**47.30**	**6.60**
7	11650.00	60.1 PK	74.0	-13.9	1.07 H	54	41.60	18.50
8	11650.00	47.2 AV	54.0	-6.8	1.07 H	54	28.70	18.50
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	*5825.00	113.1 PK			1.00 V	355	72.50	40.60
2	*5825.00	103.2 AV			1.00 V	355	62.60	40.60
3	#5850.00	57.4 PK	78.2	-20.8	1.00 V	350	50.80	6.60
4	#5853.00	68.1 PK	78.2	-10.1	1.00 V	355	61.50	6.60
5	#5861.00	62.0 PK	74.0	-12.0	1.00 V	355	55.40	6.60
6	#5861.00	47.9 AV	54.0	-6.1	1.00 V	355	41.30	6.60
7	11650.00	59.1 PK	74.0	-14.9	1.07 V	41	40.60	18.50
8	11650.00	45.9 AV	54.0	-8.1	1.07 V	41	27.40	18.50

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)
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 (VHT20)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	67.5 PK	74.0	-6.5	1.86 H	164	62.00	5.50
2	5150.00	53.8 AV	54.0	-0.2	1.86 H	164	48.30	5.50
3	*5180.00	118.3 PK			1.86 H	164	78.80	39.50
4	*5180.00	107.6 AV			1.86 H	164	68.10	39.50
5	#10360.00	59.6 PK	74.0	-14.4	1.00 H	42	42.10	17.50
6	#10360.00	46.9 AV	54.0	-7.1	1.00 H	42	29.40	17.50
7	15540.00	65.2 PK	74.0	-8.8	1.40 H	32	46.80	18.40
8	15540.00	52.1 AV	54.0	-1.9	1.40 H	32	33.70	18.40
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	5150.00	63.6 PK	74.0	-10.4	1.05 V	162	58.10	5.50
2	5150.00	49.3 AV	54.0	-4.7	1.05 V	162	43.80	5.50
3	*5180.00	116.4 PK			1.05 V	162	76.90	39.50
4	*5180.00	105.2 AV			1.05 V	162	65.70	39.50
5	#10360.00	59.3 PK	74.0	-14.7	1.00 V	172	41.80	17.50
6	#10360.00	46.2 AV	54.0	-7.8	1.00 V	172	28.70	17.50
7	15540.00	64.0 PK	74.0	-10.0	1.32 V	64	45.60	18.40
8	15540.00	51.8 AV	54.0	-2.2	1.32 V	64	33.40	18.40

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)
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	119.0 PK			1.74 H	160	79.40	39.60
2	*5200.00	108.5 AV			1.74 H	160	68.90	39.60
3	#10400.00	60.4 PK	74.0	-13.6	1.00 H	40	42.40	18.00
4	#10400.00	47.7 AV	54.0	-6.3	1.00 H	40	29.70	18.00
5	15600.00	68.6 PK	74.0	-5.4	1.46 H	29	49.90	18.70
6	15600.00	53.7 AV	54.0	-0.3	1.46 H	29	35.00	18.70
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	*5200.00	117.6 PK			1.00 V	164	78.00	39.60
2	*5200.00	107.3 AV			1.00 V	164	67.70	39.60
3	#10400.00	59.8 PK	74.0	-14.2	1.00 V	171	41.80	18.00
4	#10400.00	47.4 AV	54.0	-6.6	1.00 V	171	29.40	18.00
5	15600.00	67.8 PK	74.0	-6.2	1.30 V	61	49.10	18.70
6	15600.00	53.0 AV	54.0	-1.0	1.30 V	61	34.30	18.70

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)
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	118.1 PK			1.82 H	158	78.50	39.60
2	*5240.00	107.4 AV			1.82 H	158	67.80	39.60
3	5350.00	59.5 PK	74.0	-14.5	1.82 H	158	53.80	5.70
4	5350.00	47.1 AV	54.0	-6.9	1.82 H	158	41.40	5.70
5	#10480.00	59.9 PK	74.0	-14.1	1.00 H	49	41.90	18.00
6	#10480.00	47.1 AV	54.0	-6.9	1.00 H	49	29.10	18.00
7	15720.00	68.0 PK	74.0	-6.0	1.37 H	30	49.50	18.50
8	**15720.00**	**53.9 AV**	**54.0**	**-0.1**	**1.37 H**	**30**	**35.40**	**18.50**
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	116.9 PK			1.28 V	164	77.30	39.60
2	*5240.00	106.2 AV			1.28 V	164	66.60	39.60
3	5350.00	59.2 PK	74.0	-14.8	1.28 V	164	53.50	5.70
4	5350.00	46.8 AV	54.0	-7.2	1.28 V	164	41.10	5.70
5	#10480.00	59.5 PK	74.0	-14.5	1.00 V	178	41.50	18.00
6	#10480.00	46.8 AV	54.0	-7.2	1.00 V	178	28.80	18.00
7	15720.00	67.5 PK	74.0	-6.5	1.36 V	68	49.00	18.50
8	15720.00	52.9 AV	54.0	-1.1	1.36 V	68	34.40	18.50

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)
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	#5714.90	68.2 PK	74.0	-5.8	1.13 H	41	62.00	6.20
2	#5714.90	53.7 AV	54.0	-0.3	1.13 H	41	47.50	6.20
3	#5722.90	76.7 PK	78.2	-1.5	1.13 H	41	70.40	6.30
4	#5725.00	74.6 PK	78.2	-3.6	1.13 H	41	68.30	6.30
5	*5745.00	118.9 PK			1.13 H	41	78.50	40.40
6	*5745.00	107.9 AV			1.13 H	41	67.50	40.40
7	11490.00	60.3 PK	74.0	-13.7	1.00 H	50	41.00	19.30
8	11490.00	47.6 AV	54.0	-6.4	1.00 H	50	28.30	19.30
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	#5714.90	61.4 PK	74.0	-12.6	3.28 V	88	55.20	6.20
2	#5714.90	48.0 AV	54.0	-6.0	3.28 V	88	41.80	6.20
3	#5722.90	70.4 PK	78.2	-7.8	3.28 V	88	64.10	6.30
4	#5725.00	65.4 PK	78.2	-12.8	3.28 V	88	59.10	6.30
5	*5745.00	116.3 PK			3.28 V	88	75.90	40.40
6	*5745.00	105.5 AV			3.28 V	88	65.10	40.40
7	11490.00	59.2 PK	74.0	-14.8	1.00 V	171	39.90	19.30
8	11490.00	46.0 AV	54.0	-8.0	1.00 V	171	26.70	19.30

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)
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	*5785.00	119.9 PK			1.16 H	51	79.40	40.50
2	*5785.00	109.1 AV			1.16 H	51	68.60	40.50
3	11570.00	60.8 PK	74.0	-13.2	1.00 H	43	41.80	19.00
4	11570.00	48.0 AV	54.0	-6.0	1.00 H	43	29.00	19.00
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	*5785.00	117.1 PK			3.34 V	122	76.60	40.50
2	*5785.00	106.5 AV			3.34 V	122	66.00	40.50
3	11570.00	59.7 PK	74.0	-14.3	1.00 V	174	40.70	19.00
4	11570.00	46.6 AV	54.0	-7.4	1.00 V	174	27.60	19.00

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)
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	*5825.00	118.1 PK			1.16 H	40	77.50	40.60
2	*5825.00	107.4 AV			1.16 H	40	66.80	40.60
3	#5850.00	63.2 PK	78.2	-15.0	1.16 H	40	56.60	6.60
4	#5852.10	71.3 PK	78.2	-6.9	1.16 H	40	64.70	6.60
5	#5860.10	68.6 PK	74.0	-5.4	1.16 H	40	62.00	6.60
6	#5860.10	53.8 AV	54.0	-0.2	1.16 H	40	47.20	6.60
7	11650.00	60.2 PK	74.0	-13.8	1.00 H	57	41.70	18.50
8	11650.00	47.4 AV	54.0	-6.6	1.00 H	57	28.90	18.50
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	*5825.00	116.2 PK			3.28 V	76	75.60	40.60
2	*5825.00	104.9 AV			3.28 V	76	64.30	40.60
3	#5850.00	60.8 PK	78.2	-17.4	3.28 V	76	54.20	6.60
4	#5852.10	68.9 PK	78.2	-9.3	3.28 V	76	62.30	6.60
5	#5860.10	63.4 PK	74.0	-10.6	3.28 V	76	56.80	6.60
6	#5860.10	50.2 AV	54.0	-3.8	3.28 V	76	43.60	6.60
7	11650.00	59.1 PK	74.0	-14.9	1.00 V	178	40.60	18.50
8	11650.00	46.3 AV	54.0	-7.7	1.00 V	178	27.80	18.50

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)
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.

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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	69.3 PK	74.0	-4.7	1.79 H	161	63.80	5.50
2	5150.00	53.7 AV	54.0	-0.3	1.79 H	161	48.20	5.50
3	*5190.00	112.9 PK			1.79 H	161	73.40	39.50
4	*5190.00	102.6 AV			1.79 H	161	63.10	39.50
5	#10380.00	59.7 PK	74.0	-14.3	1.00 H	47	41.90	17.80
6	#10380.00	47.2 AV	54.0	-6.8	1.00 H	47	29.40	17.80
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	68.4 PK	74.0	-5.6	1.10 V	162	62.90	5.50
2	5150.00	52.8 AV	54.0	-1.2	1.10 V	162	47.30	5.50
3	*5190.00	112.3 PK			1.10 V	162	72.80	39.50
4	*5190.00	101.7 AV			1.10 V	162	62.20	39.50
5	#10380.00	58.7 PK	74.0	-15.3	1.00 V	176	40.90	17.80
6	#10380.00	46.2 AV	54.0	-7.8	1.00 V	176	28.40	17.80

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)
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	5150.00	60.0 PK	74.0	-14.0	2.15 H	161	54.50	5.50
2	5150.00	47.9 AV	54.0	-6.1	2.15 H	161	42.40	5.50
3	*5230.00	116.1 PK			2.15 H	161	76.50	39.60
4	*5230.00	105.7 AV			2.15 H	161	66.10	39.60
5	#10460.00	59.7 PK	74.0	-14.3	1.00 H	41	41.70	18.00
6	#10460.00	46.8 AV	54.0	-7.2	1.00 H	41	28.80	18.00
7	15690.00	66.6 PK	74.0	-7.4	1.65 H	46	48.00	18.60
8	15690.00	53.6 AV	54.0	-0.4	1.65 H	46	35.00	18.60
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	59.5 PK	74.0	-14.5	1.14 V	162	54.00	5.50
2	5150.00	47.6 AV	54.0	-6.4	1.14 V	162	42.10	5.50
3	*5230.00	114.3 PK			1.14 V	162	74.70	39.60
4	*5230.00	104.0 AV			1.14 V	162	64.40	39.60
5	#10460.00	59.1 PK	74.0	-14.9	1.00 V	171	41.10	18.00
6	#10460.00	46.4 AV	54.0	-7.6	1.00 V	171	28.40	18.00
7	15690.00	66.2 PK	74.0	-7.8	1.30 V	61	47.60	18.60
8	15690.00	52.6 AV	54.0	-1.4	1.30 V	61	34.00	18.60

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)
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	#5714.90	69.3 PK	74.0	-4.7	1.05 H	40	63.10	6.20
2	**#5714.90**	**53.9 AV**	**54.0**	**-0.1**	**1.05 H**	**40**	**47.70**	**6.20**
3	#5722.90	70.3 PK	78.2	-7.9	1.05 H	40	64.00	6.30
4	#5725.00	62.6 PK	78.2	-15.6	1.05 H	40	56.30	6.30
5	*5755.00	113.4 PK			1.05 H	40	72.90	40.50
6	*5755.00	103.5 AV			1.05 H	40	63.00	40.50
7	11510.00	59.7 PK	74.0	-14.3	1.00 H	52	40.60	19.10
8	11510.00	47.8 AV	54.0	-6.2	1.00 H	52	28.70	19.10
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	#5714.90	60.4 PK	74.0	-13.6	2.29 V	94	54.20	6.20
2	#5714.90	47.6 AV	54.0	-6.4	2.29 V	94	41.40	6.20
3	#5722.90	65.9 PK	78.2	-12.3	2.29 V	94	59.60	6.30
4	#5725.00	58.6 PK	78.2	-19.6	2.29 V	94	52.30	6.30
5	*5755.00	110.9 PK			2.29 V	94	70.40	40.50
6	*5755.00	100.5 AV			2.29 V	94	60.00	40.50
7	11510.00	59.1 PK	74.0	-14.9	1.00 V	175	40.00	19.10
8	11510.00	45.9 AV	54.0	-8.1	1.00 V	175	26.80	19.10

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)
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	*5795.00	115.4 PK			1.00 H	39	74.90	40.50
2	*5795.00	105.4 AV			1.00 H	39	64.90	40.50
3	#5850.00	60.1 PK	78.2	-18.1	1.00 H	39	53.50	6.60
4	#5852.10	68.7 PK	78.2	-9.5	1.00 H	39	62.10	6.60
5	#5860.10	67.2 PK	74.0	-6.8	1.00 H	39	60.60	6.60
6	#5860.10	53.7 AV	54.0	-0.3	1.00 H	39	47.10	6.60
7	11590.00	59.7 PK	74.0	-14.3	1.00 H	51	41.00	18.70
8	11590.00	47.2 AV	54.0	-6.8	1.00 H	51	28.50	18.70
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	*5795.00	111.8 PK			3.01 V	121	71.30	40.50
2	*5795.00	101.0 AV			3.01 V	121	60.50	40.50
3	#5850.00	51.7 PK	78.2	-26.5	3.01 V	121	45.10	6.60
4	#5852.10	58.8 PK	78.2	-19.4	3.01 V	121	52.20	6.60
5	#5860.10	59.5 PK	74.0	-14.5	3.01 V	121	52.90	6.60
6	#5860.10	46.4 AV	54.0	-7.6	3.01 V	121	39.80	6.60
7	11590.00	58.9 PK	74.0	-15.1	1.00 V	177	40.20	18.70
8	11590.00	46.1 AV	54.0	-7.9	1.00 V	177	27.40	18.70

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)
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	67.9 PK	74.0	-6.1	1.32 H	161	62.40	5.50
2	**5150.00**	**53.9 AV**	**54.0**	**-0.1**	**1.32 H**	**161**	**48.40**	**5.50**
3	*5210.00	107.1 PK			1.32 H	161	67.50	39.60
4	*5210.00	96.9 AV			1.32 H	161	57.30	39.60
5	#10420.00	59.2 PK	74.0	-14.8	1.00 H	40	41.20	18.00
6	#10420.00	46.8 AV	54.0	-7.2	1.00 H	40	28.80	18.00
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	5150.00	66.5 PK	74.0	-7.5	1.08 V	164	61.00	5.50
2	5150.00	53.3 AV	54.0	-0.7	1.08 V	164	47.80	5.50
3	*5210.00	106.6 PK			1.08 V	164	67.00	39.60
4	*5210.00	96.2 AV			1.08 V	164	56.60	39.60
5	#10420.00	58.2 PK	74.0	-15.8	1.00 V	171	40.20	18.00
6	#10420.00	45.4 AV	54.0	-8.6	1.00 V	171	27.40	18.00

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)
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	#5714.90	70.5 PK	74.0	-3.5	1.11 H	41	64.30	6.20
2	#5714.90	53.6 AV	54.0	-0.4	1.11 H	41	47.40	6.20
3	#5722.90	72.8 PK	78.2	-5.4	1.11 H	41	66.50	6.30
4	#5725.00	60.4 PK	78.2	-17.8	1.11 H	41	54.10	6.30
5	*5775.00	109.3 PK			1.11 H	41	68.80	40.50
6	*5775.00	98.9 AV			1.11 H	41	58.40	40.50
7	11550.00	59.6 PK	74.0	-14.4	1.00 H	58	40.60	19.00
8	11550.00	47.5 AV	54.0	-6.5	1.00 H	58	28.50	19.00
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	#5714.90	66.0 PK	74.0	-8.0	3.31 V	59	59.80	6.20
2	#5714.90	49.7 AV	54.0	-4.3	3.31 V	59	43.50	6.20
3	#5722.90	70.3 PK	78.2	-7.9	3.31 V	59	64.00	6.30
4	#5725.00	59.3 PK	78.2	-18.9	3.31 V	59	53.00	6.30
5	*5775.00	106.2 PK			3.31 V	59	65.70	40.50
6	*5775.00	96.1 AV			3.31 V	59	55.60	40.50
7	11550.00	58.4 PK	74.0	-15.6	1.00 V	171	39.40	19.00
8	11550.00	45.2 AV	54.0	-8.8	1.00 V	171	26.20	19.00

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)
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 157	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	39.60	32.0 QP	40.0	-8.0	2.00 H	6	46.70	-14.70
2	124.98	32.2 QP	43.5	-11.3	2.00 H	157	48.00	-15.80
3	330.66	33.0 QP	46.0	-13.0	1.01 H	145	45.10	-12.10
4	499.48	29.4 QP	46.0	-16.6	1.51 H	192	38.80	-9.40
5	625.60	35.2 QP	46.0	-10.8	1.51 H	232	41.80	-6.60
6	730.38	33.8 QP	46.0	-12.2	1.51 H	176	38.40	-4.60
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	157.97	30.5 QP	43.5	-13.0	1.01 V	171	44.20	-13.70
2	299.62	34.0 QP	46.0	-12.0	2.00 V	285	46.80	-12.80
3	499.48	29.0 QP	46.0	-17.0	1.51 V	208	38.40	-9.40
4	625.60	34.5 QP	46.0	-11.5	1.01 V	304	41.10	-6.60
5	872.03	31.3 QP	46.0	-14.7	1.01 V	6	33.50	-2.20

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)
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	ESCI	100613	Nov. 16, 2015	Nov. 15, 2016
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond1-01	Dec. 26, 2015	Dec. 25, 2016
LISN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Feb. 26, 2016	Feb. 25, 2017
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 24, 2015	Jul. 23, 2016
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 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.

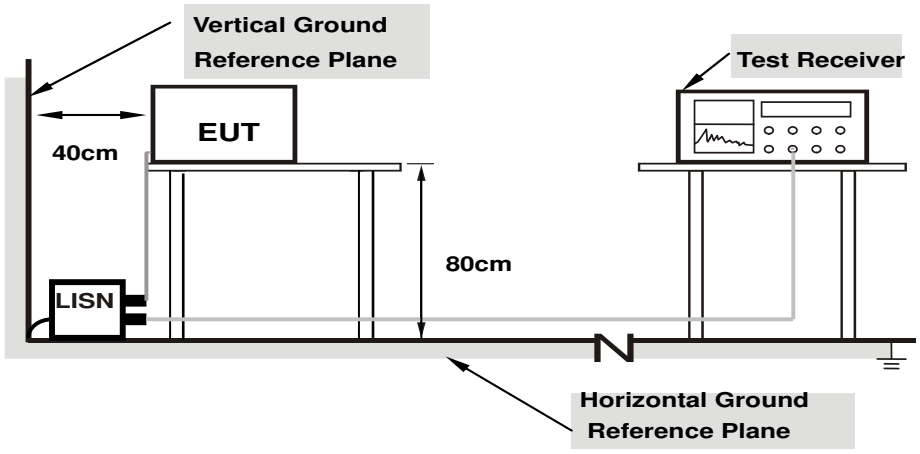
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

NOTE: 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.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

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.

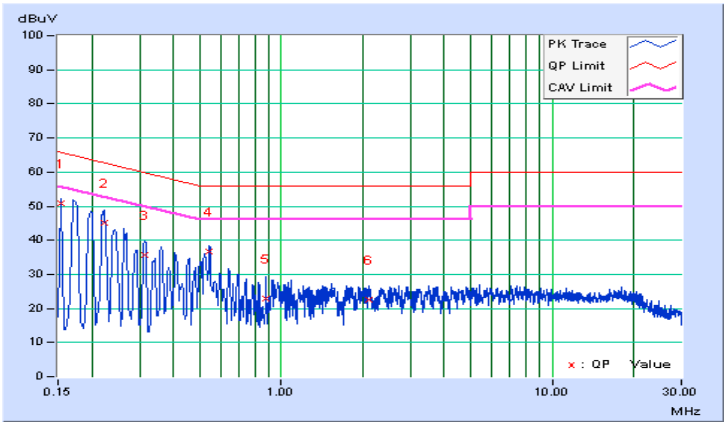
4.2.7 Test Results

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

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15400	10.08	40.87	25.40	50.95	35.48	65.78	55.78	-14.84	-20.31
2	0.22200	10.09	34.97	21.60	45.06	31.69	62.74	52.74	-17.68	-21.05
3	0.31365	10.13	25.56	12.21	35.69	22.34	59.87	49.87	-24.18	-27.53
4	0.54255	10.20	26.64	18.50	36.84	28.70	56.00	46.00	-19.16	-17.30
5	0.87800	10.27	12.76	3.25	23.03	13.52	56.00	46.00	-32.97	-32.48
6	2.11000	10.38	12.06	4.25	22.44	14.63	56.00	46.00	-33.56	-31.37

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.

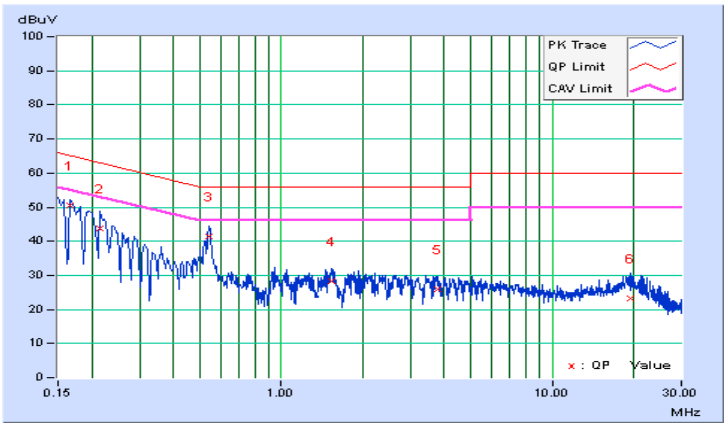


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

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	0.16600	10.08	40.36	27.33	50.44	37.41	65.16	55.16	-14.71	-17.74
2	0.21406	10.09	33.53	19.93	43.62	30.02	63.05	53.05	-19.43	-23.03
3	**0.54112**	**10.25**	**31.03**	**23.05**	**41.28**	**33.30**	**56.00**	**46.00**	**-14.72**	**-12.70**
4	1.53197	10.34	18.00	9.36	28.34	19.70	56.00	46.00	-27.66	-26.30
5	3.76198	10.57	15.32	5.99	25.89	16.56	56.00	46.00	-30.11	-29.44
6	19.35400	11.53	11.75	6.12	23.28	17.65	60.00	50.00	-36.72	-32.35

REMARKS:

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



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)

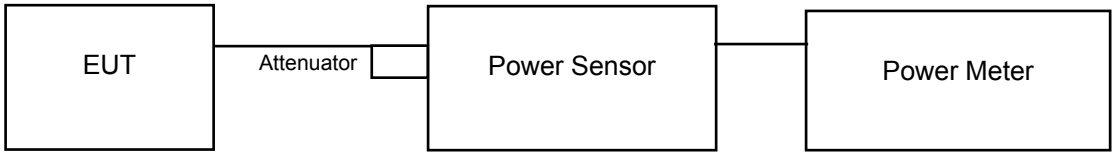
*B is the 26 dB emission bandwidth in megahertz

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 $N_{ANT} \geq 5$.

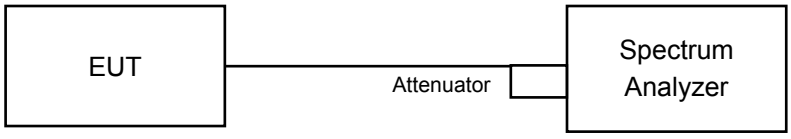
For power measurements on all other devices: Array Gain = 10 log(NANT/NSS) dB.

4.3.2 Test Setup

For Power Output Measurement



For 26dB and Occupied Bandwidth



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

For Average Power Measurement

For 802.11a, 802.11ac (VHT20), 802.11ac (VHT40)

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

For 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.

For Occupied Bandwidth

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 300 kHz RBW and 1MHz VBW. 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.

4.3.5 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

Channel	Frequency (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	20.67	21.49	21.18	21.07	516.768	27.13	30	Pass
40	5200	21.70	22.33	22.00	22.01	**636.257**	28.04	30	Pass
48	5240	21.25	21.38	21.29	21.55	548.231	27.39	30	Pass
149	5745	21.11	21.17	21.13	21.32	525.277	27.20	30	Pass
157	5785	22.72	22.85	22.62	22.77	**751.864**	28.76	30	Pass
165	5825	21.34	21.37	21.12	21.49	543.581	27.35	30	Pass

802.11ac (VHT20)

Channel	Frequency (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	20.96	21.24	21.05	21.12	514.553	27.11	30	Pass
40	5200	21.56	22.12	21.82	21.98	615.965	27.90	30	Pass
48	5240	21.15	21.57	21.03	20.95	525.082	27.20	30	Pass
149	5745	21.26	21.07	20.49	21.34	509.686	27.07	30	Pass
157	5785	22.71	22.95	22.48	22.68	746.244	28.73	30	Pass
165	5825	21.09	21.27	21.19	21.24	527.064	27.22	30	Pass

802.11ac (VHT40)

Channel	Frequency (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	19.55	19.59	19.69	19.73	368.231	25.66	30	Pass
46	5230	21.11	21.57	21.44	21.62	557.198	27.46	30	Pass
151	5755	19.53	20.18	20.05	19.44	383.035	25.83	30	Pass
159	5795	20.22	20.37	20.23	20.41	429.429	26.33	30	Pass

802.11ac (VHT80)

Channel	Frequency (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	19.62	19.75	19.77	19.83	377.031	25.76	30	Pass
155	5775	19.27	20.17	19.28	19.45	361.348	25.58	30	Pass

Beamforming Mode

802.11ac (VHT20)

Channel	Frequency (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	20.71	21.15	20.88	21.13	500.258	26.99	27.40	Pass
40	5200	21.23	20.94	20.76	20.95	500.479	26.99	27.24	Pass
48	5240	20.73	21.12	20.61	21.01	488.987	26.89	26.99	Pass
149	5745	20.19	20.22	20.47	20.27	427.511	26.31	26.61	Pass
157	5785	20.10	20.12	20.54	20.25	424.296	26.28	26.44	Pass
165	5825	20.36	20.15	20.50	20.22	**429.555**	26.33	26.37	Pass

Note:

5180MHz: Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$ + ... + $10^{GN/20}$)^2/N] = 8.60dBi > 6dBi, so the limit shall be reduced to 30-(8.60-6) = 27.40dBm.

5200MHz: Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$ + ... + $10^{GN/20}$)^2/N] = 8.76dBi > 6dBi, so the limit shall be reduced to 30-(8.76-6) = 27.24dBm.

5240MHz: Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$ + ... + $10^{GN/20}$)^2/N] = 9.01dBi > 6dBi, so the limit shall be reduced to 30-(9.01-6) = 26.99dBm.

5745MHz: Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$ + ... + $10^{GN/20}$)^2/N] = 9.39dBi > 6dBi, so the limit shall be reduced to 30-(9.39-6) = 26.61dBm.

5785MHz: Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$ + ... + $10^{GN/20}$)^2/N] = 9.56dBi > 6dBi, so the limit shall be reduced to 30-(9.56-6) = 26.44dBm.

5825MHz: Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$ + ... + $10^{GN/20}$)^2/N] = 9.63dBi > 6dBi, so the limit shall be reduced to 30-(9.63-6) = 26.37dBm.

802.11ac (VHT40)

Channel	Frequency (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	18.95	19.59	19.39	19.69	349.522	25.43	27.36	Pass
46	5230	20.89	20.95	20.92	21.40	**508.828**	27.07	27.11	Pass
151	5755	19.51	19.55	19.62	19.50	360.235	25.57	26.53	Pass
159	5795	20.19	20.33	20.27	20.34	426.924	26.30	26.39	Pass

Note:

5190MHz: Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$ + ... + $10^{GN/20}$)^2/N] = 8.64dBi > 6dBi, so the limit shall be reduced to 30-(8.64-6) = 27.36dBm.

5230MHz: Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$ + ... + $10^{GN/20}$)^2/N] = 8.89dBi > 6dBi, so the limit shall be reduced to 30-(8.89-6) = 27.11dBm.

5755MHz: Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$ + ... + $10^{GN/20}$)^2/N] = 9.47dBi > 6dBi, so the limit shall be reduced to 30-(9.47-6) = 26.53dBm.

5795MHz: Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$ + ... + $10^{GN/20}$)^2/N] = 9.61dBi > 6dBi, so the limit shall be reduced to 30-(9.61-6) = 26.39dBm.

802.11ac (VHT80)

Channel	Frequency (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	19.02	19.35	19.17	19.42	336.000	25.26	27.13	Pass
155	5775	19.37	19.41	19.34	19.45	347.800	25.41	26.44	Pass

Note:

5210MHz: Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$ + ... + $10^{GN/20}$)^2/N] = 8.87dBi > 6dBi, so the limit shall be reduced to 30-(8.87-6) = 27.13dBm.

5775MHz: Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$ + ... + $10^{GN/20}$)^2/N] = 9.56dBi > 6dBi, so the limit shall be reduced to 30-(9.56-6) = 26.44dBm.

26dB Bandwidth:

CDD Mode

802.11a

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)				Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3	
36	5180	20.76	20.84	20.05	30.94	Pass
40	5200	22.53	22.30	22.47	34.61	Pass
48	5240	22.74	20.75	22.24	29.29	Pass

802.11ac (VHT20)

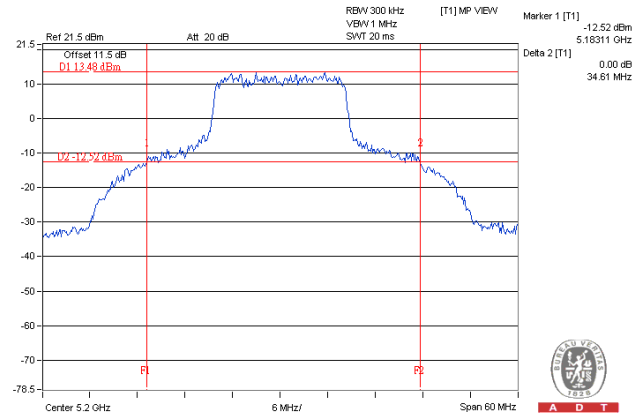
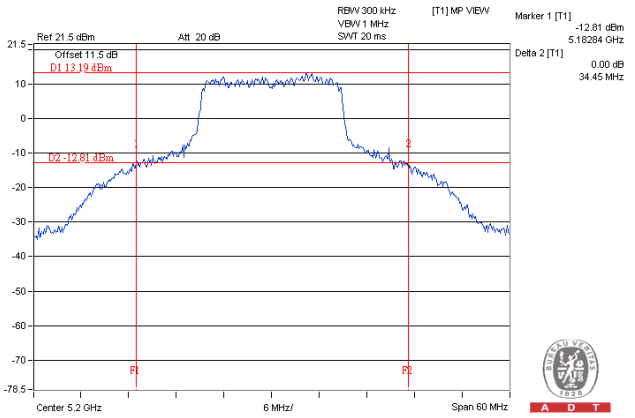
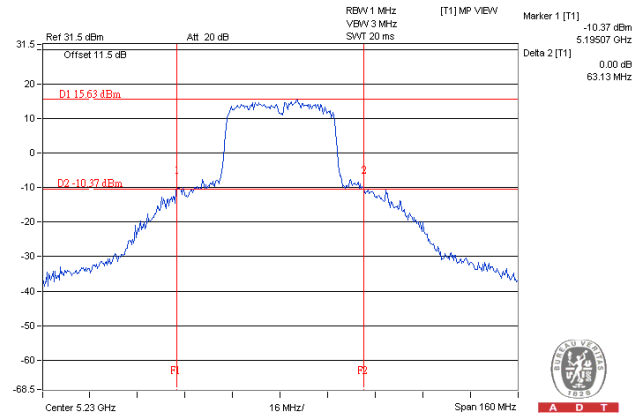
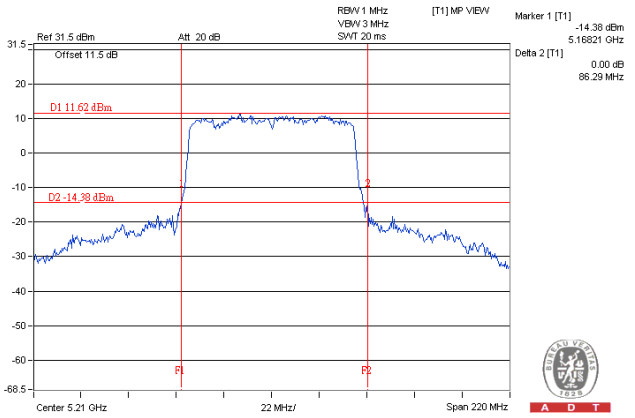
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)				Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3	
36	5180	20.94	21.86	20.77	27.92	Pass
40	5200	20.91	22.48	26.15	34.45	Pass
48	5240	21.79	20.52	21.87	24.52	Pass

802.11ac (VHT40)

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)				Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3	
38	5190	41.03	40.66	40.50	40.85	Pass
46	5230	51.67	41.15	52.88	63.13	Pass

802.11ac (VHT80)

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)				Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3	
42	5210	85.83	86.29	85.40	84.44	Pass

Spectrum Plot of Worst Value	
802.11a	802.11ac (VHT20)
	
802.11ac (VHT40)	802.11ac (VHT80)
	

Beamforming Mode

802.11ac (VHT20)

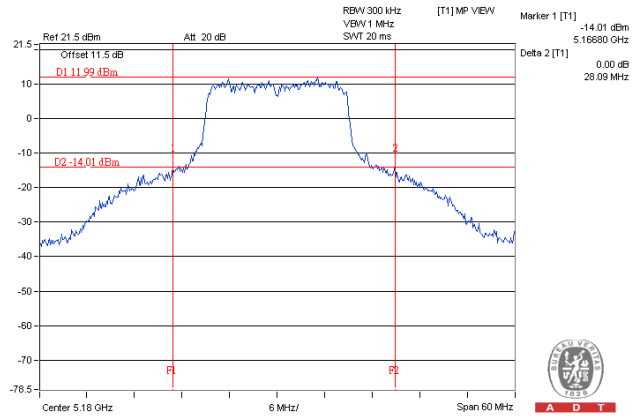
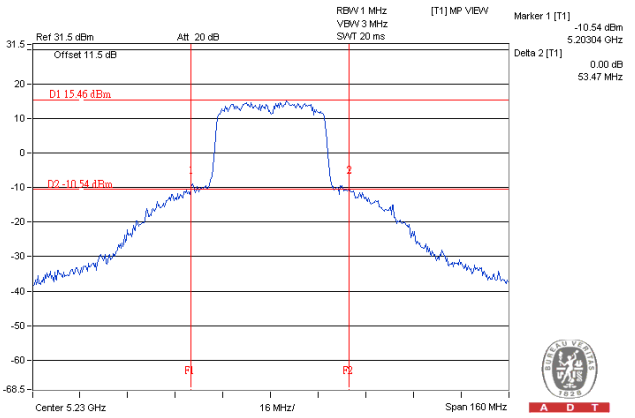
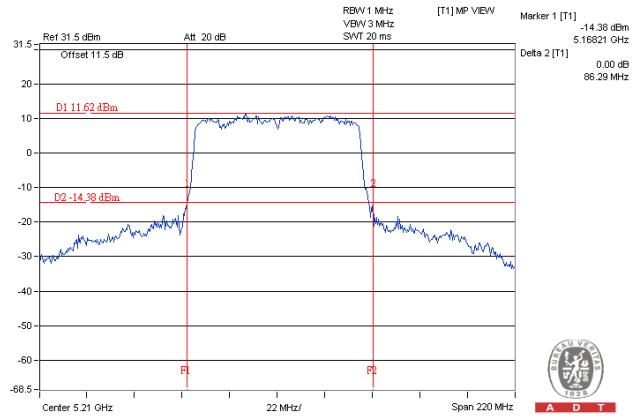
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)				Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3	
36	5180	21.27	21.21	21.05	28.09	Pass
40	5200	21.32	20.87	21.19	22.76	Pass
48	5240	21.26	20.84	20.71	23.46	Pass

802.11ac (VHT40)

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)				Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3	
38	5190	40.92	40.66	40.62	40.74	Pass
46	5230	41.03	41.15	41.09	53.47	Pass

802.11ac (VHT80)

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)				Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3	
42	5210	84.55	86.29	84.53	84.75	Pass

Spectrum Plot of Worst Value	
802.11ac (VHT20)	802.11ac (VHT40)
	
802.11ac (VHT80)	
	

Occupied Bandwidth:

CDD Mode

802.11a

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
36	5180	16.56	16.68	16.56	16.80
40	5200	16.80	16.68	16.68	17.88
48	5240	16.68	16.44	16.68	16.80
149	5745	17.16	24.96	18.48	16.68
157	5785	29.52	39.24	20.28	19.32
165	5825	29.88	29.64	17.04	17.28

802.11ac (VHT20)

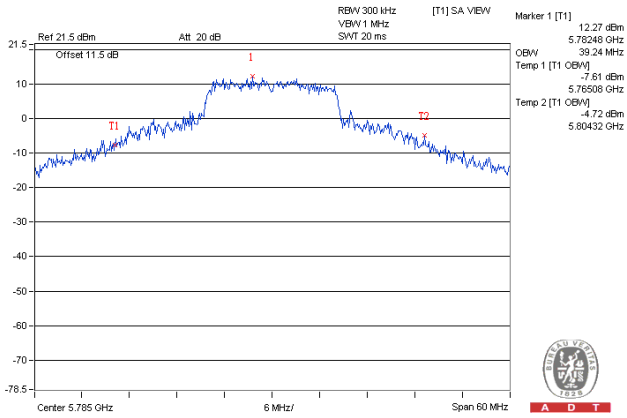
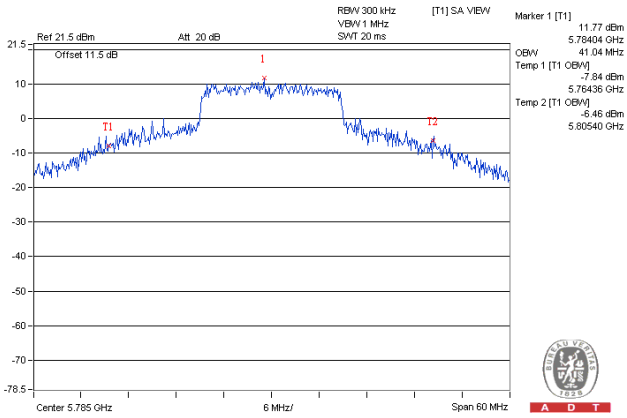
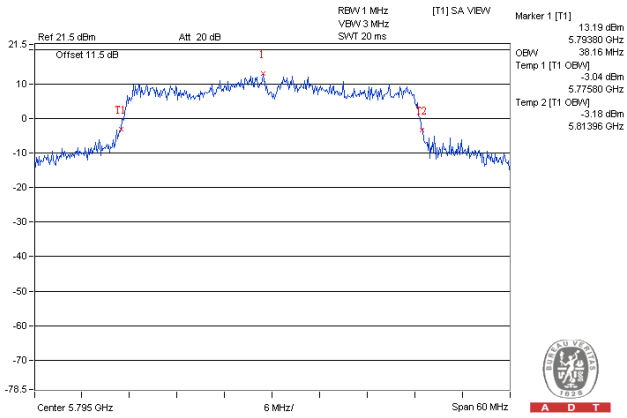
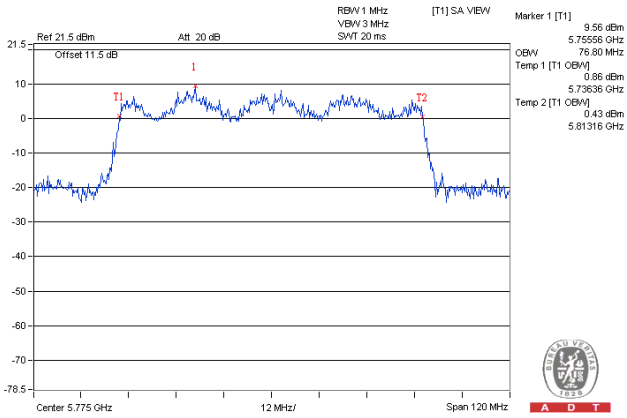
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
36	5180	17.64	17.64	17.76	17.88
40	5200	17.76	17.76	17.88	18.24
48	5240	17.76	17.64	17.76	17.88
149	5745	17.76	18.84	18.12	17.64
157	5785	26.16	41.04	19.80	18.60
165	5825	21.60	20.76	17.88	17.88

802.11ac (VHT40)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
38	5190	36.12	36.24	36.12	36.24
46	5230	36.36	36.36	36.36	36.48
151	5755	36.36	36.84	36.24	36.36
159	5795	37.20	38.16	36.48	36.48

802.11ac (VHT80)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
42	5210	75.84	76.08	76.08	75.84
155	5775	76.08	76.80	75.84	76.08

Spectrum Plot of Worst Value	
802.11a	802.11ac (VHT20)
	
802.11ac (VHT40)	802.11ac (VHT80)
	

Beamforming Mode

802.11ac (VHT20)

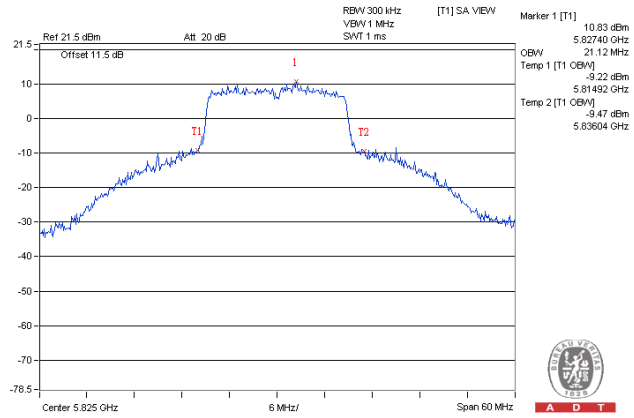
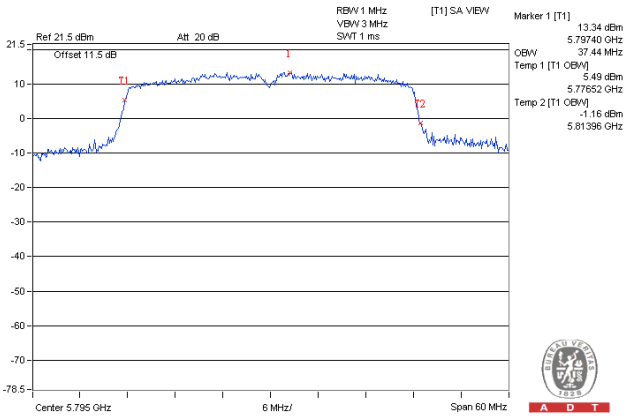
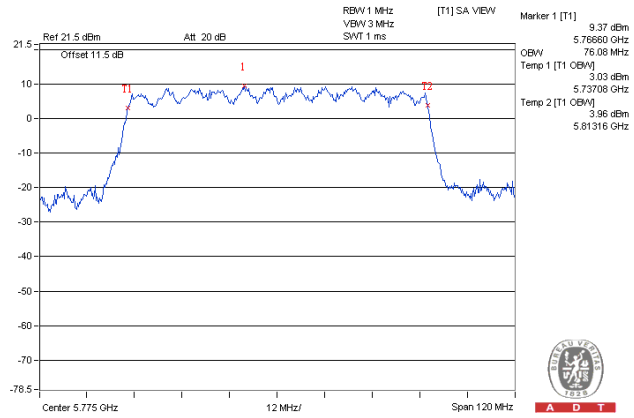
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
36	5180	17.88	17.64	17.76	17.88
40	5200	17.76	17.64	17.76	17.88
48	5240	17.76	17.64	17.64	17.88
149	5745	17.65	17.91	17.91	17.74
157	5785	17.76	17.88	18.00	18.12
165	5825	17.76	17.88	17.88	21.12

802.11ac (VHT40)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
38	5190	36.24	36.24	36.24	36.24
46	5230	36.24	36.36	36.24	36.48
151	5755	36.12	36.24	36.00	36.24
159	5795	36.48	36.36	36.24	37.44

802.11ac (VHT80)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
42	5210	75.84	76.08	76.08	75.84
155	5775	76.08	75.84	75.84	76.08

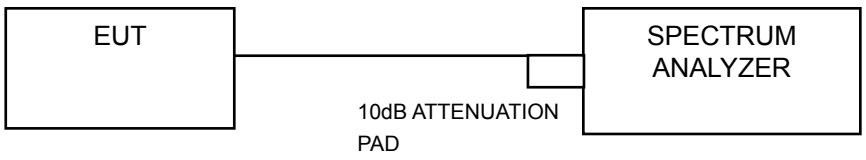
Spectrum Plot of Worst Value	
802.11ac (VHT20)	802.11ac (VHT40)
	
802.11ac (VHT80)	
	

4.4 Peak Power Spectral Density Measurement

4.4.1 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

4.4.2 Test Setup



4.4.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.4 Test Procedure

For U-NII-1 band:
Using method SA-1
1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
2) Set RBW = 30 kHz, Set VBW ≥ 1 MHz, Detector = RMS
3) Set Channel power measure = 1MHz
4) Sweep time = auto, trigger set to “free run”.
5) Trace average at least 100 traces in power averaging mode.
6) Record the max value

For U-NII-3 band:
1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
2) Set RBW = 500 kHz, Set VBW ≥ 3 RBW, 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)
6) 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)

4.4.5 Deviation from Test Standard

No deviation.

4.4.6 EUT Operating Condition

Same as Item 4.3.6.

4.4.7 Test Results

For U-NII-1 Band

CDD Mode

802.11a

Chan.	Freq. (MHz)	PSD (dBm)				Total PSD w/o duty factor (dBm)	Duty factor	Total PSD with duty factor (dBm)	Max. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3					
36	5180	5.04	6.43	5.79	5.32	11.69	0.16	11.85	14.40	Pass
40	5200	6.39	7.41	6.92	6.66	12.88	0.16	13.04	14.24	Pass
48	5240	6.59	6.85	6.59	6.23	12.59	0.16	12.75	13.99	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. 5180MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 8.60dBi > 6dBi, so the limit shall be reduced to 17-(8.60-6) = 14.40dBm.
   5200MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 8.76dBi > 6dBi, so the limit shall be reduced to 17-(8.76-6) = 14.24dBm.
   5240MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 9.01dBi > 6dBi, so the limit shall be reduced to 17-(9.01-6) = 13.99dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT20)

Chan.	Freq. (MHz)	PSD (dBm)				Total PSD (dBm)	Max. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3			
36	5180	5.07	5.83	5.38	5.16	11.39	14.40	Pass
40	5200	5.86	6.90	6.25	6.69	12.46	14.24	Pass
48	5240	5.51	5.77	5.43	5.56	11.59	13.99	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. 5180MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 8.60dBi > 6dBi, so the limit shall be reduced to 17-(8.60-6) = 14.40dBm.
   5200MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 8.76dBi > 6dBi, so the limit shall be reduced to 17-(8.76-6) = 14.24dBm.
   5240MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 9.01dBi > 6dBi, so the limit shall be reduced to 17-(9.01-6) = 13.99dBm.

802.11ac (VHT40)

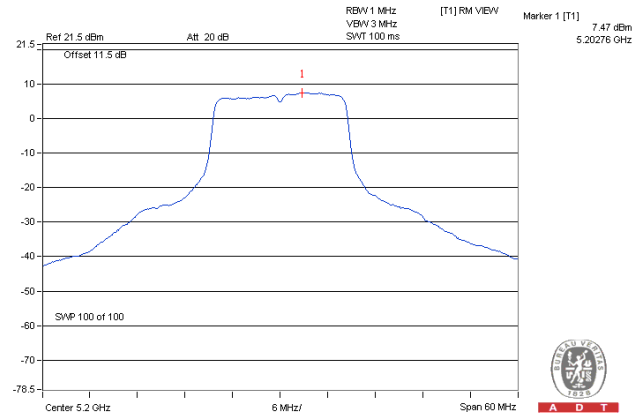
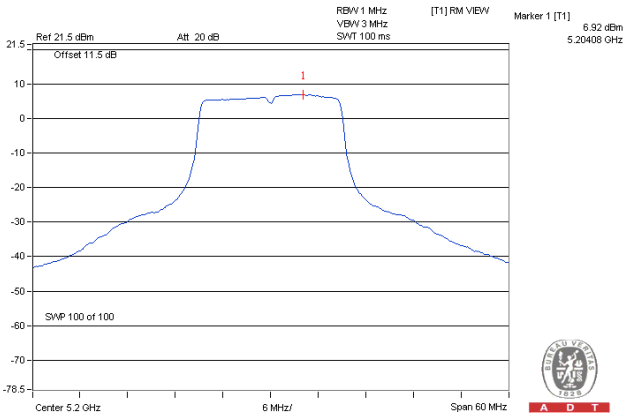
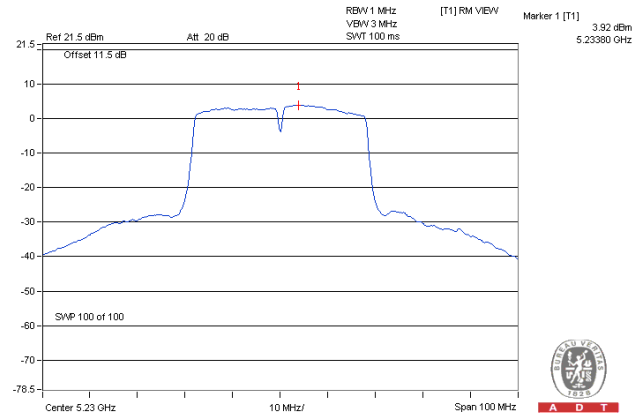
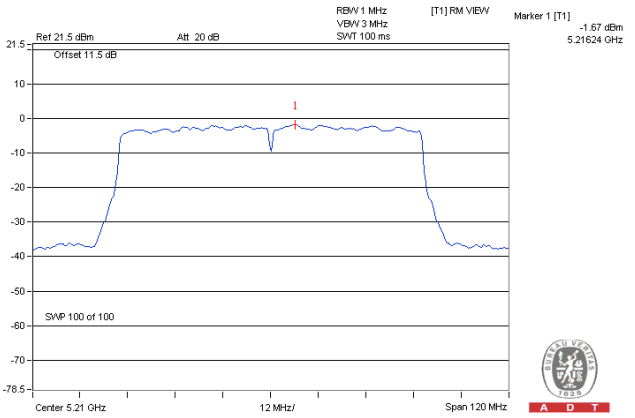
Chan.	Freq. (MHz)	PSD (dBm)				Total PSD w/o duty factor (dBm)	Duty factor	Total PSD with duty factor (dBm)	Max. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3					
38	5190	0.63	1.87	0.93	1.86	7.38	0.17	7.55	14.36	Pass
46	5230	3.39	3.92	3.35	3.62	9.59	0.17	9.76	14.11	Pass

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. 5190MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 8.64dBi > 6dBi, so the limit shall be reduced to 17-(8.64-6) = 14.36dBm.
   5230MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 8.89dBi > 6dBi, so the limit shall be reduced to 17-(8.89-6) = 14.11dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT80)

Chan.	Freq. (MHz)	PSD (dBm)				Total PSD w/o duty factor (dBm)	Duty factor	Total PSD with duty factor (dBm)	Max. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3					
42	5210	-2.34	-1.87	-3.02	-1.67	3.83	0.29	4.12	14.13	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. 5210MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 8.87dBi > 6dBi, so the limit shall be reduced to 17-(8.87-6) = 14.13dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value	
802.11a / Ch 40 / Chain 1	802.11ac (VHT20) / Ch 40 / Chain 1
	
802.11ac (VHT40)	802.11ac (VHT80)
	

Beamforming Mode

802.11ac (VHT20)

Chan.	Freq. (MHz)	PSD (dBm)				Total PSD (dBm)	Max. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3			
36	5180	4.56	6.08	5.99	5.44	11.58	14.40	Pass
40	5200	4.94	6.06	6.09	5.68	11.74	14.24	Pass
48	5240	5.46	5.88	5.93	5.91	11.82	13.99	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. 5180MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 8.60dBi > 6dBi, so the limit shall be reduced to 17-(8.60-6) = 14.40dBm.
   5200MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 8.76dBi > 6dBi, so the limit shall be reduced to 17-(8.76-6) = 14.24dBm.
   5240MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 9.01dBi > 6dBi, so the limit shall be reduced to 17-(9.01-6) = 13.99dBm.

802.11ac (VHT40)

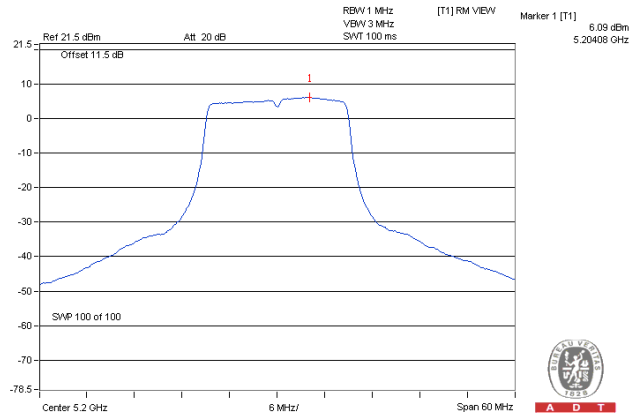
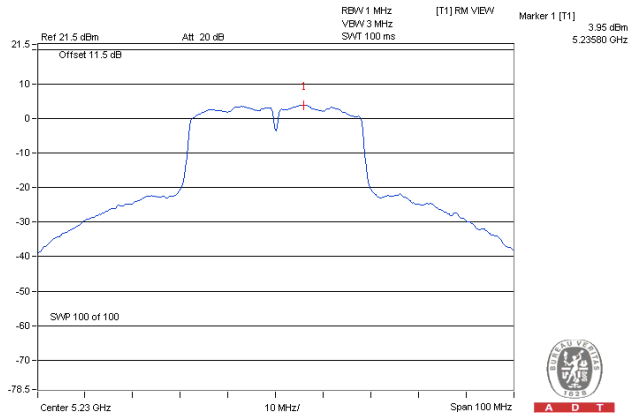
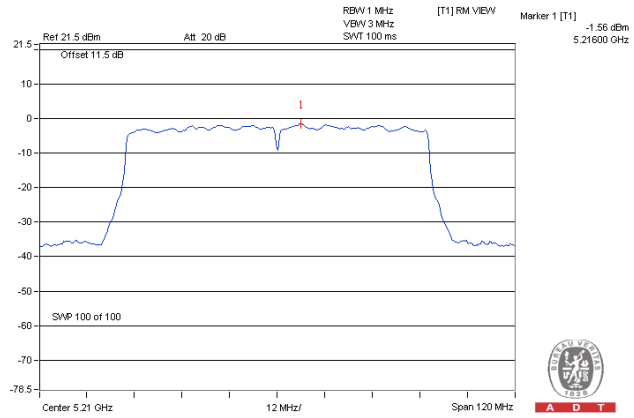
Chan.	Freq. (MHz)	PSD (dBm)				Total PSD w/o duty factor (dBm)	Duty factor	Total PSD with duty factor (dBm)	Max. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3					
38	5190	1.81	1.89	1.89	2.03	7.93	0.19	8.12	14.36	Pass
46	5230	3.29	3.76	3.37	3.81	9.59	0.19	9.78	14.11	Pass

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. 5190MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 8.64dBi > 6dBi, so the limit shall be reduced to 17-(8.64-6) = 14.36dBm.
   5230MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 8.89dBi > 6dBi, so the limit shall be reduced to 17-(8.89-6) = 14.11dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT80)

Chan.	Freq. (MHz)	PSD (dBm)				Total PSD w/o duty factor (dBm)	Duty factor	Total PSD with duty factor (dBm)	Max. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3					
42	5210	-1.93	-1.97	-1.67	-1.56	4.25	0.26	4.51	14.13	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. 5210MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 8.87dBi > 6dBi, so the limit shall be reduced to 17-(8.87-6) = 14.13dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value	
802.11ac (VHT20)	802.11ac (VHT40) / Ch 46 / Chain 3
	
802.11ac (VHT80)	
	

For U-NII-3 Band

CDD Mode

802.11a

TX chain	Channel	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	10 log (N=4) dB	Duty factor	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
0	149	5745	-0.75	1.47	6.02	0.16	7.65	26.61	Pass
	157	5785	-0.30	1.92	6.02	0.16	8.10	26.44	Pass
	165	5825	-1.26	0.96	6.02	0.16	7.14	26.37	Pass
1	149	5745	-0.80	1.42	6.02	0.16	7.60	26.61	Pass
	157	5785	-0.67	1.55	6.02	0.16	7.73	26.44	Pass
	165	5825	-1.85	0.37	6.02	0.16	6.55	26.37	Pass
2	149	5745	0.09	2.31	6.02	0.16	8.49	26.61	Pass
	157	5785	0.62	2.84	6.02	0.16	9.02	26.44	Pass
	165	5825	-0.07	2.15	6.02	0.16	8.33	26.37	Pass
3	149	5745	-0.25	1.97	6.02	0.16	8.15	26.61	Pass
	157	5785	-0.40	1.82	6.02	0.16	8.00	26.44	Pass
	165	5825	-1.17	1.05	6.02	0.16	7.23	26.37	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. 5745MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 9.39dBi > 6dBi, so the limit shall be reduced to 30-(9.39-6) = 26.61dBm.
   5785MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 9.56dBi > 6dBi, so the limit shall be reduced to 30-(9.56-6) = 26.44dBm.
   5825MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 9.63dBi > 6dBi, so the limit shall be reduced to 30-(9.63-6) = 26.37dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT20)

TX chain	Channel	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	10 log (N=4) dB	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
0	149	5745	-2.06	0.16	6.02	6.18	26.61	Pass
	157	5785	-1.06	1.16	6.02	7.18	26.44	Pass
	165	5825	-2.28	-0.06	6.02	5.96	26.37	Pass
1	149	5745	-1.70	0.52	6.02	6.54	26.61	Pass
	157	5785	-0.96	1.26	6.02	7.28	26.44	Pass
	165	5825	-2.52	-0.30	6.02	5.72	26.37	Pass
2	149	5745	-0.54	1.68	6.02	7.70	26.61	Pass
	157	5785	0.05	2.27	6.02	8.29	26.44	Pass
	165	5825	-0.98	1.24	6.02	7.26	26.37	Pass
3	149	5745	-1.06	1.16	6.02	7.18	26.61	Pass
	157	5785	-0.58	1.64	6.02	7.66	26.44	Pass
	165	5825	-1.57	0.65	6.02	6.67	26.37	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. 5745MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 9.39dBi > 6dBi, so the limit shall be reduced to 30-(9.39-6) = 26.61dBm.
   5785MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 9.56dBi > 6dBi, so the limit shall be reduced to 30-(9.56-6) = 26.44dBm.
   5825MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 9.63dBi > 6dBi, so the limit shall be reduced to 30-(9.63-6) = 26.37dBm.

802.11ac (VHT40)

TX chain	Channel	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	10 log (N=4) dB	Duty factor	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
0	151	5755	-6.51	-4.29	6.02	0.17	1.90	26.53	Pass
	159	5795	-5.44	-3.22	6.02	0.17	2.97	26.39	Pass
1	151	5755	-5.38	-3.16	6.02	0.17	3.03	26.53	Pass
	159	5795	-5.19	-2.97	6.02	0.17	3.22	26.39	Pass
2	151	5755	-5.14	-2.92	6.02	0.17	3.27	26.53	Pass
	159	5795	-3.98	-1.76	6.02	0.17	4.43	26.39	Pass
3	151	5755	-5.40	-3.18	6.02	0.17	3.01	26.53	Pass
	159	5795	-4.82	-2.60	6.02	0.17	3.59	26.39	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. 5755MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 9.47dBi > 6dBi, so the limit shall be reduced to 30-(9.47-6) = 26.53dBm.
   5795MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 9.61dBi > 6dBi, so the limit shall be reduced to 30-(9.61-6) = 26.39dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT80)

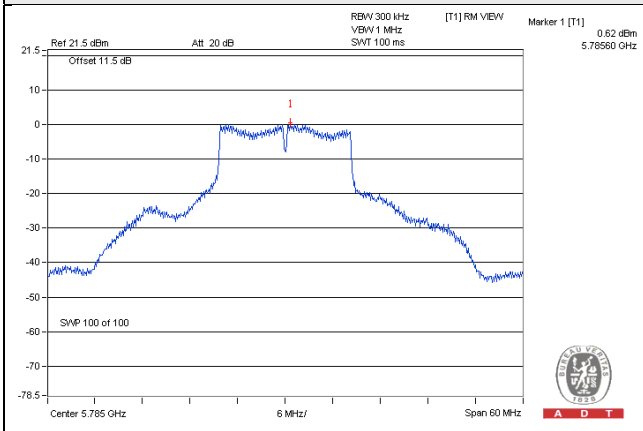
TX chain	Channel	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	10 log (N=4) dB	Duty factor	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
0	155	5775	-10.32	-8.10	6.02	0.29	-1.79	26.44	Pass
1	155	5775	-9.34	-7.12	6.02	0.29	-0.81	26.44	Pass
2	155	5775	-10.03	-7.81	6.02	0.29	-1.50	26.44	Pass
3	155	5775	-9.66	-7.44	6.02	0.29	-1.13	26.44	Pass

Note:

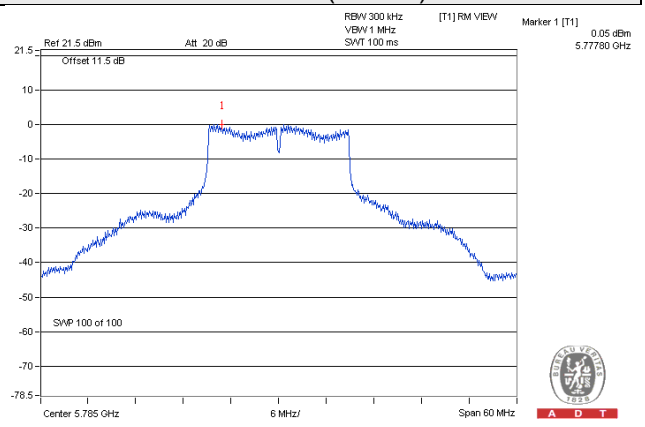
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. 5755MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 9.56dBi > 6dBi, so the limit shall be reduced to 30-(9.56-6) = 26.44dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

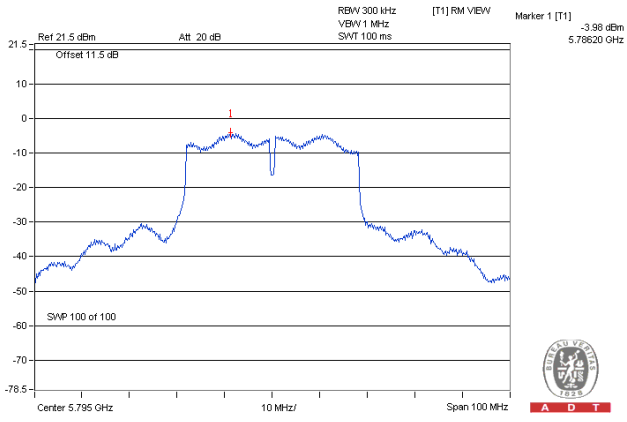
802.11a



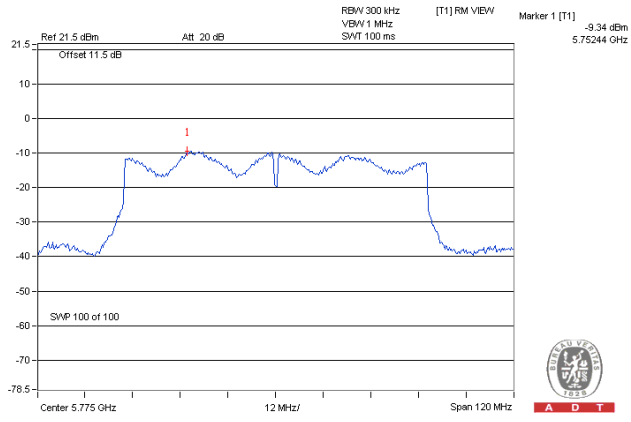
802.11ac (VHT20)



802.11ac (VHT40)



802.11ac (VHT80)



Beamforming Mode

802.11ac (VHT20)

TX chain	Channel	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	10 log (N=4) dB	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
0	149	5745	-2.09	0.13	6.02	6.15	26.61	Pass
	157	5785	-2.20	0.02	6.02	6.04	26.44	Pass
	165	5825	-2.22	0.00	6.02	6.02	26.37	Pass
1	149	5745	-1.48	0.74	6.02	6.76	26.61	Pass
	157	5785	-1.79	0.43	6.02	6.45	26.44	Pass
	165	5825	-1.85	0.37	6.02	6.39	26.37	Pass
2	149	5745	-1.48	0.74	6.02	6.76	26.61	Pass
	157	5785	-1.92	0.30	6.02	6.32	26.44	Pass
	165	5825	-1.86	0.36	6.02	6.38	26.37	Pass
3	149	5745	-2.69	-0.47	6.02	5.55	26.61	Pass
	157	5785	-2.65	-0.43	6.02	5.59	26.44	Pass
	165	5825	-2.72	-0.50	6.02	5.52	26.37	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. 5745MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 9.39dBi > 6dBi, so the limit shall be reduced to 30-(9.39-6) = 26.61dBm.
   5785MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 9.56dBi > 6dBi, so the limit shall be reduced to 30-(9.56-6) = 26.44dBm.
   5825MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 9.63dBi > 6dBi, so the limit shall be reduced to 30-(9.63-6) = 26.37dBm.

802.11ac (VHT40)

TX chain	Channel	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	10 log (N=4) dB	Duty factor	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
0	151	5755	-5.69	-3.47	6.02	0.19	2.74	26.53	Pass
	159	5795	-4.73	-2.51	6.02	0.19	3.70	26.39	Pass
1	151	5755	-5.05	-2.83	6.02	0.19	3.38	26.53	Pass
	159	5795	-4.11	-1.89	6.02	0.19	4.32	26.39	Pass
2	151	5755	-5.28	-3.06	6.02	0.19	3.15	26.53	Pass
	159	5795	-5.37	-3.15	6.02	0.19	3.06	26.39	Pass
3	151	5755	-6.62	-4.40	6.02	0.19	1.81	26.53	Pass
	159	5795	-5.59	-3.37	6.02	0.19	2.84	26.39	Pass

Note:

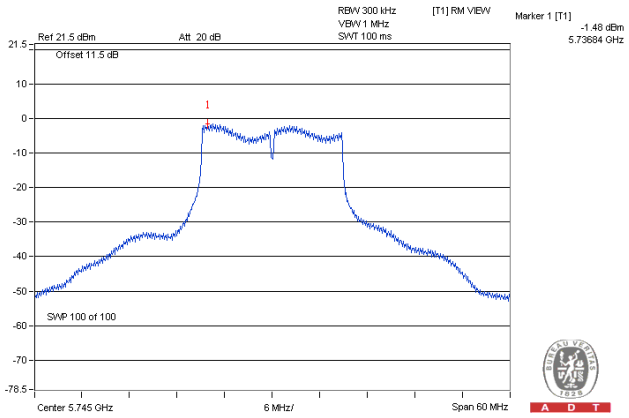
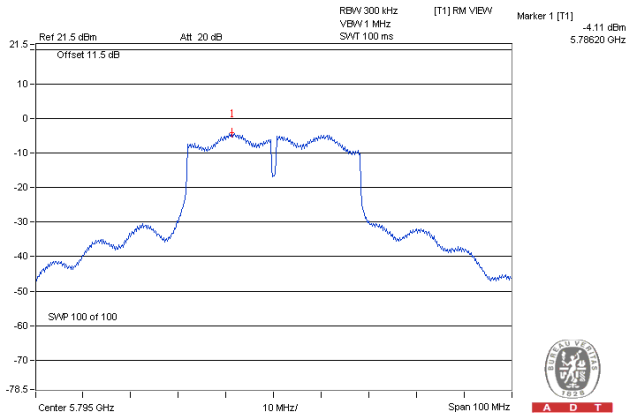
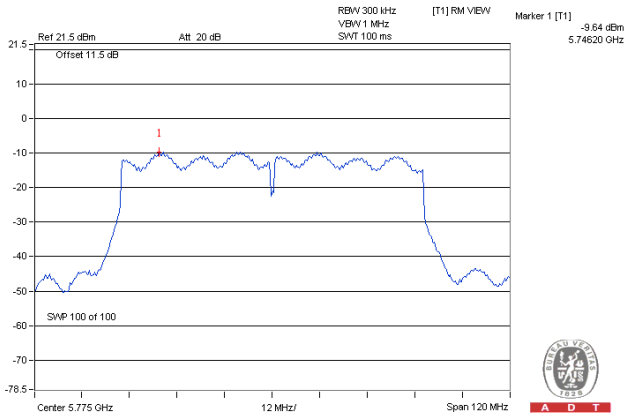
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. 5755MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 9.47dBi > 6dBi, so the limit shall be reduced to 30-(9.47-6) = 26.53dBm.
   5795MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 9.61dBi > 6dBi, so the limit shall be reduced to 30-(9.61-6) = 26.39dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT80)

TX chain	Channel	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	10 log (N=4) dB	Duty factor	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
0	155	5775	-9.98	-7.76	6.02	0.26	-1.48	26.44	Pass
1	155	5775	-9.64	-7.42	6.02	0.26	-1.14	26.44	Pass
2	155	5775	-9.72	-7.50	6.02	0.26	-1.22	26.44	Pass
3	155	5775	-10.57	-8.35	6.02	0.26	-2.07	26.44	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. 5755MHz: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/N$] = 9.56dBi > 6dBi, so the limit shall be reduced to 30-(9.56-6) = 26.44dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

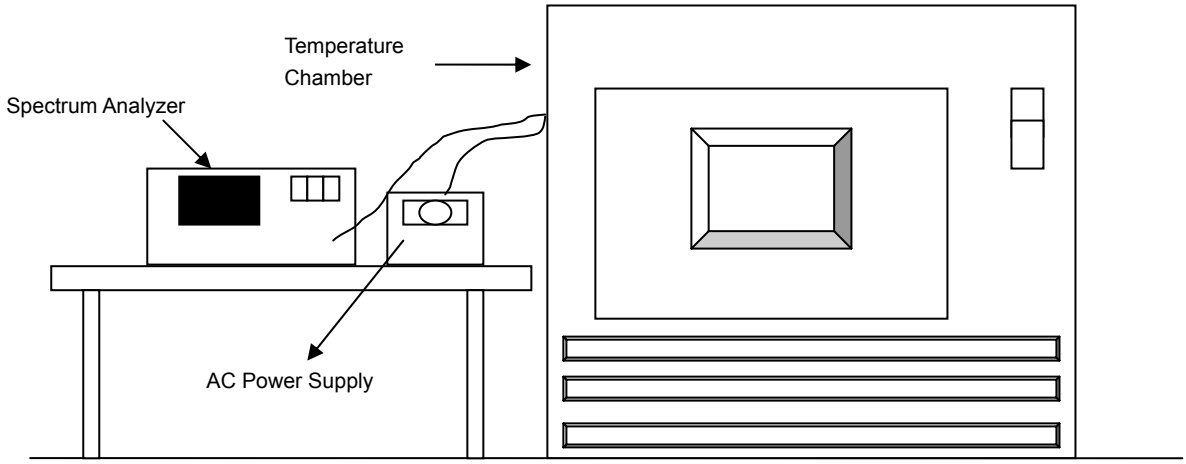
Spectrum Plot of Worst Value	
802.11ac (VHT20)	802.11ac (VHT40)
	
802.11ac (VHT80) / Ch 155 / Chain 1	
	

4.5 Frequency Stability

4.5.1 Limits of Frequency Stability Measurement

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

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

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.

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

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

4.5.7 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 (%)
50	120	5179.9777	-0.00043	5179.9776	-0.00043	5179.9772	-0.00044	5179.9782	-0.00042
40	120	5179.9897	-0.00020	5179.9905	-0.00018	5179.9888	-0.00022	5179.9868	-0.00025
30	120	5180.0082	0.00016	5180.0096	0.00019	5180.0098	0.00019	5180.0073	0.00014
20	120	5179.9915	-0.00016	5179.995	-0.00010	5179.9938	-0.00012	5179.993	-0.00014
10	120	5179.987	-0.00025	5179.9844	-0.00030	5179.9895	-0.00020	5179.9863	-0.00026
0	120	5179.9883	-0.00023	5179.9859	-0.00027	5179.9853	-0.00028	5179.9893	-0.00021
-10	120	5180.0023	0.00004	5180.0013	0.00003	5180.0004	0.00001	5180.0003	0.00001
-20	120	5179.9911	-0.00017	5179.9889	-0.00021	5179.9874	-0.00024	5179.9875	-0.00024
-30	120	5179.9953	-0.00009	5179.991	-0.00017	5179.9959	-0.00008	5179.9935	-0.00013

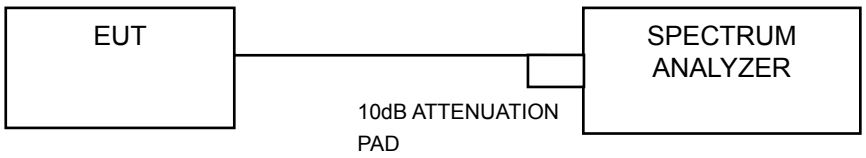
Frequency Stability Versus Voltage									
Operating Frequency: 5180MHz									
Temp. (℃)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
20	138	5179.9919	-0.00016	5179.9953	-0.00009	5179.9944	-0.00011	5179.9925	-0.00014
	120	5179.9915	-0.00016	5179.995	-0.00010	5179.9938	-0.00012	5179.993	-0.00014
	102	5179.9907	-0.00018	5179.9948	-0.00010	5179.9939	-0.00012	5179.9921	-0.00015

4.6 6dB Bandwidth Measurement

4.6.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

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. 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

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

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

4.6.7 Test Results

CDD Mode

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
149	5745	16.01	15.17	15.74	15.69	0.5	Pass
157	5785	15.71	16.37	15.76	15.74	0.5	Pass
165	5825	15.93	16.28	15.79	15.76	0.5	Pass

802.11ac (VHT20)

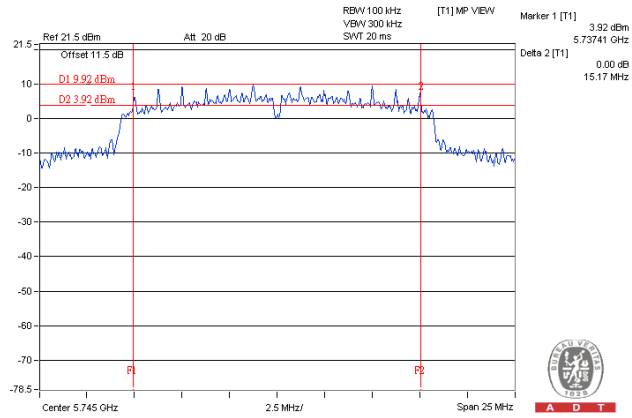
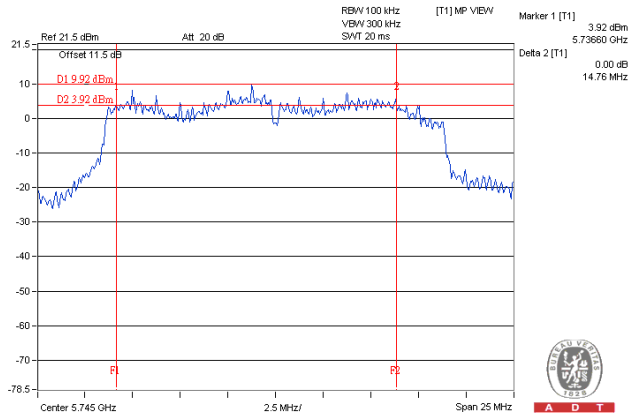
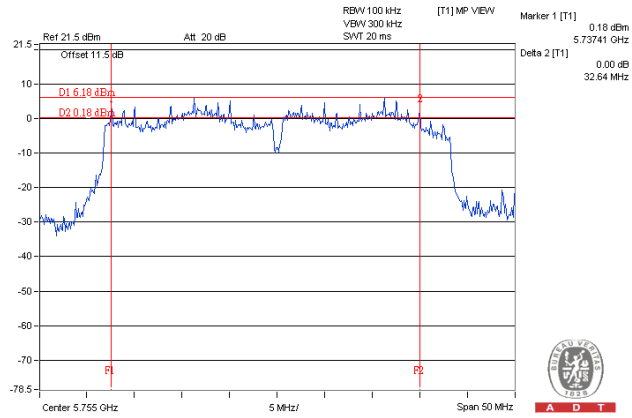
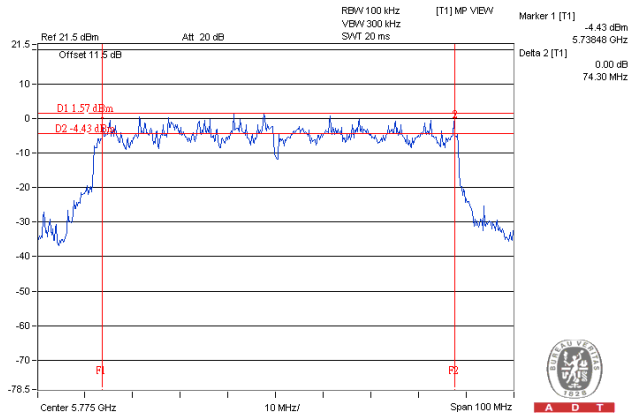
Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
149	5745	16.60	15.12	16.37	14.76	0.5	Pass
157	5785	16.35	17.61	17.00	16.35	0.5	Pass
165	5825	15.98	15.93	16.37	16.36	0.5	Pass

802.11ac (VHT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
151	5755	33.97	35.22	32.64	35.75	0.5	Pass
159	5795	35.04	35.06	35.18	33.86	0.5	Pass

802.11ac (VHT80)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
155	5775	75.37	75.43	75.37	74.30	0.5	Pass

Spectrum Plot of Worst Value	
802.11a	802.11ac (VHT20)
	
802.11ac (VHT40)	802.11ac (VHT80)
	

Beamforming Mode

802.11ac (VHT20)

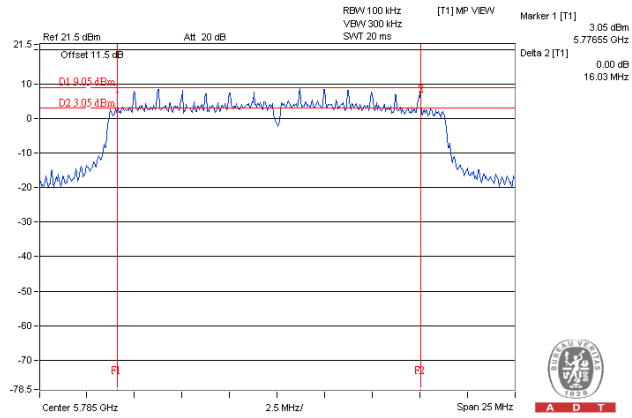
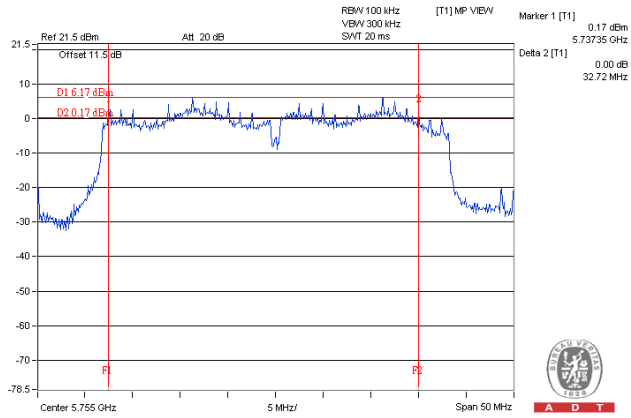
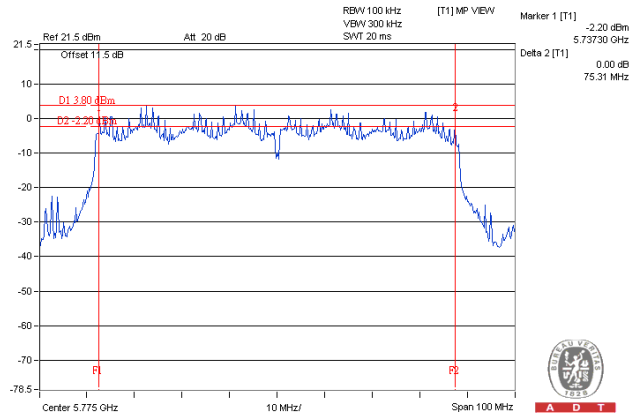
Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
149	5745	16.34	16.34	16.33	16.36	0.5	Pass
157	5785	16.34	16.38	16.36	16.03	0.5	Pass
165	5825	16.35	16.95	17.18	16.33	0.5	Pass

802.11ac (VHT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
151	5755	33.94	32.76	32.72	35.17	0.5	Pass
159	5795	33.92	35.19	35.18	35.22	0.5	Pass

802.11ac (VHT80)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
155	5775	75.82	75.31	75.33	75.42	0.5	Pass

Spectrum Plot of Worst Value	
802.11ac (VHT20)	802.11ac (VHT40)
	
802.11ac (VHT80)	
	

5 Pictures of Test Arrangements

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

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

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