FCC Test Report

Report No.: RF160418C29-1

FCC ID: GZ5NVG4XXQ

Test Model: NVG468MQ

Series Model: NVG448BQ

Received Date: Apr. 18, 2016

Test Date: Apr. 23 ~ May 05, 2016

Issued Date: May 12, 2016

Applicant: ARRIS Group, Inc.

Address: 2500 Walsh Ave. Santa Clara, CA 95051,United States

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

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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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The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.

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Release Control Record

Issue No.	Description	Date Issued
RF160418C29-1	Original release	May 12, 2016

1 Certificate of Conformity

Product: Ethernet and FTTH Gateway

Brand: ARRIS

Test Model: NVG468MQ

Series Model: NVG448BQ

Sample Status: Engineering sample

Applicant: ARRIS Group, Inc.

Test Date: Apr. 23 ~ May 05, 2016

Standards: 47 CFR FCC Part 15, Subpart E (Section 15.407)
ANSI C63.10:2013

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

Prepared by : _____ , **Date:** May 12, 2016
Polly Chien / Specialist

Approved by : _____ , **Date:** May 12, 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 -6.02dB at 0.63484MHz.
15.407(b) (1/2/3/4(i/ii)/6)	Radiated Emissions & Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -0.4dB at 5150.00MHz & 11490.00MHz.
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	Antenna connector is i-pex(MHF) not a standard connector.

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

2.1 Measurement Uncertainty

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

Measurement	Frequency	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	Ethernet and FTTH Gateway
Brand	ARRIS
Test Model	NVG468MQ
Series Model	NVG448BQ
Model Difference	Refer to Note
Status of EUT	Engineering sample
Power Supply Rating	12Vdc from adapter
Modulation Type	256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDM
Modulation Technology	OFDM
Transfer Rate	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0Mbps 802.11n: up to 600.0Mbps 802.11ac: up to 1733.3Mbps
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: 282.605mW 5745 ~ 5825MHz: 298.884mW Beamforming Mode: 5180 ~ 5240MHz: 307.49mW 5745 ~ 5825MHz: 299.513mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Refer to Note
Data Cable Supplied	NA

Note:

1. All models are listed as below.

Brand	Model	Difference					
		Accessory			I/O port		
		Item	Brand	Model	Item	Number	Function
ARRIS	NVG468MQ	Switch Adapter Power cord: 1.8m non-shielded cable w/o ferrite core	Ktec	KSAS0361200250HU	MOCA 2.0	1	For Local Area Network
					USB 3.0	1	For Mass Storage
					LAN (RJ45)	4	For Local Area Network
		Stand	FOXCONN	447.00105.005	WAN (RJ45)	1	For Wild Area Network
		Ethernet Cable (2m non-shielded cable w/o ferrite core)	NIEN-YI	NYS1097	VOIP (RJ14)	1	For Internet Voice Phone
					DC JACK	1	For Power Supply Input
	NVG448BQ	Switch Adapter Power cord: 1.8m non-shielded cable w/o ferrite core	Ktec	KSAS0361200250HU	VDSL (RJ14)	1	For Wideband/Internet connection
					USB 3.0	1	For Mass Storage
					LAN (RJ45)	4	For Local Area Network
		Stand	FOXCONN	447.00105.005	WAN (RJ45)	1	For Wild Area Network
		Ethernet Cable (2m non-shielded cable w/o ferrite core)	NIEN-YI	NYS1097	VOIP (RJ14)	1	For Internet Voice Phone
		RJ14 Cable (4.5m non-shielded cable w/o ferrite core)	NIEN-YI	NYS1131	DC JACK	1	For Power Supply Input

* After the pretest, the model: NVG468MQ is found to be the worst case model and therefore all tests had been performed to this model. NVG448BQ is not the worst case, therefore tests on conducted and radiated emission below 1GHz test were performed for this model.

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

Modulation Mode	TX FUNCTION	Beamforming mode
802.11a	4TX	Not support
802.11n (HT20)	4TX	Support
802.11n (HT40)	4TX	Support
802.11ac (VHT20)	4TX	Support
802.11ac (VHT40)	4TX	Support
802.11ac (VHT80)	4TX	Support

* The modulation and bandwidth are similar for 802.11n mode for 20MHz / 40MHz and 802.11ac mode for 20MHz / 40MHz, therefore investigated worst case to representative mode in test report. (Final test mode refer section 3.2.1)

* For 802.11n and 802.11ac, beamforming mode is the worst case for final radiated emission below 1GHz and power line conducted emission tests after pretesting.

3. The following antennas were provided to the EUT.

Antenna Type	PIFA	
Antenna Connector	i-pex (MHF)	
Gain (dBi)	Frequency (MHz)	
	2400-2500	5150-5850
Ant. 1	4.00	-
Ant. 2	4.48	-
Ant. 3	2.52	-
Ant. 4	-	3.97
Ant. 5	-	3.18
Ant. 6	-	4.56
Ant. 7	-	4.43

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

3.2 Description of Test Modes

For 5180 ~ 5240MHz

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

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

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

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
42	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	
A	√	√	√	√	Model: NVG468MQ
B	-	√	√	-	Model: NVG448BQ

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:
1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Z-plane**.
2. "-" means no effect.

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)
A	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
A	802.11ac (VHT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
A	802.11ac (VHT40)		38 to 46	38, 46	OFDM	BPSK	13.5
A	802.11ac (VHT80)		42	42	OFDM	BPSK	117
A	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.0
A	802.11ac (VHT20)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
A	802.11ac (VHT40)		151 to 159	151, 159	OFDM	BPSK	13.5
A	802.11ac (VHT80)		155	155	OFDM	BPSK	117

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)
A, B	802.11a	5180-5240	36 to 48	165	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)
A, B	802.11a	5180-5240	36 to 48	165	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)
A	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.0
A	802.11ac (VHT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
A	802.11ac (VHT40)		38 to 46	38, 46	OFDM	BPSK	13.5
A	802.11ac (VHT80)		42	42	OFDM	BPSK	117
A	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.0
A	802.11ac (VHT20)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
A	802.11ac (VHT40)		151 to 159	151, 159	OFDM	BPSK	13.5
A	802.11ac (VHT80)		155	155	OFDM	BPSK	117

Test Condition:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	25deg. C, 65%RH	120Vac, 60Hz	Chris Lin
RE<1G	16deg. C, 70%RH	120Vac, 60Hz	Nick Hsu
PLC	16deg. C, 70%RH	120Vac, 60Hz	Nick Hsu
APCM	25deg. C, 60%RH	120Vac, 60Hz	Antony Lee

3.3 Duty Cycle of Test Signal

CDD Mode

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

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

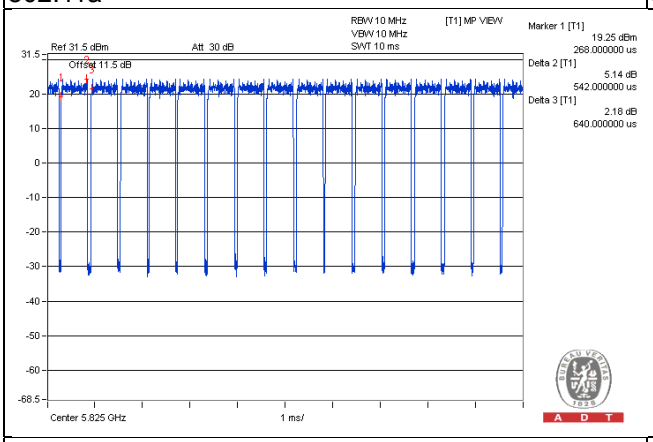
802.11a: Duty cycle = 0.542/0.640 = 0.847, Duty factor = 10 * log(1/0.847) = 0.72

802.11ac (VHT20): Duty cycle = 4.938/5.026 = 0.982

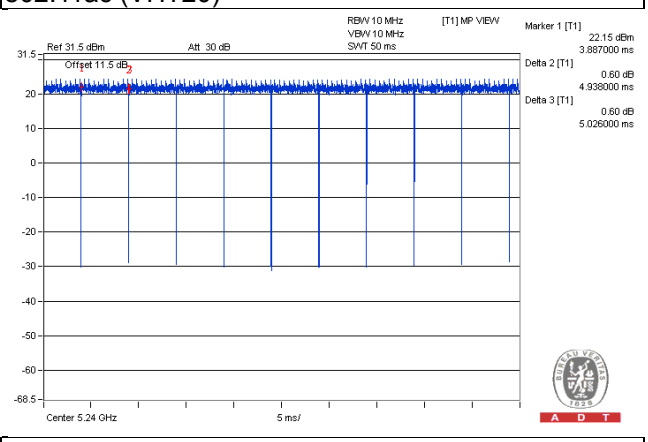
802.11ac (VHT40): Duty cycle = 9.450/9.575 = 0.987

802.11ac (VHT80): Duty cycle = 4.338/4.475 = 0.969, Duty factor = 10 * log(1/0.969) = 0.14

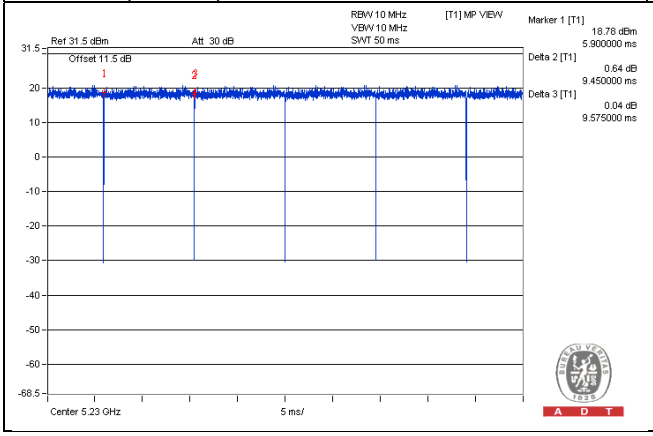
802.11a



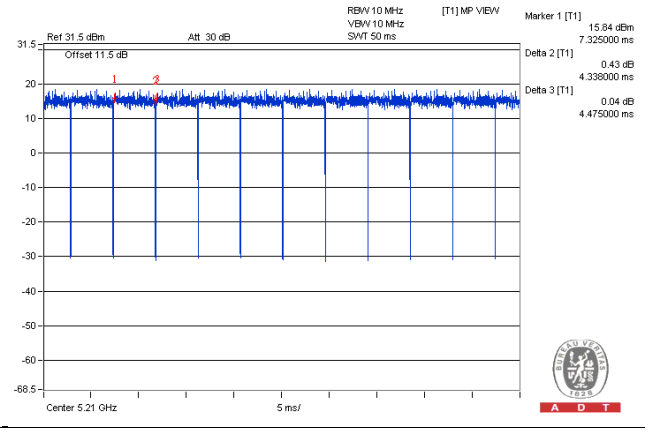
802.11ac (VHT20)



802.11ac (VHT40)



802.11ac (VHT80)



Beamforming Mode

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

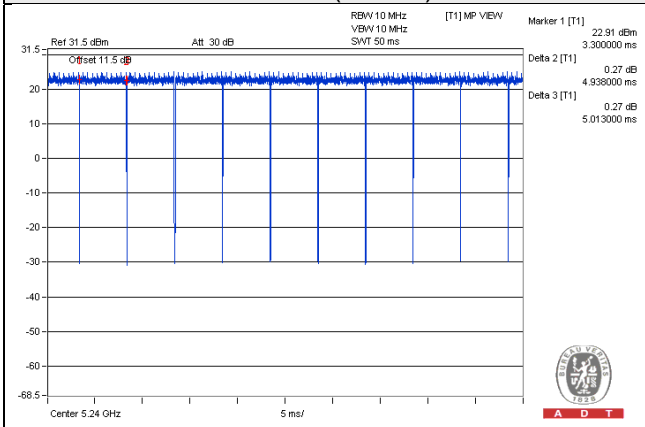
Duty cycle of test signal is < 98%, duty factor shall be considered.

802.11ac (VHT20): Duty cycle = 4.938/5.013 = 0.985

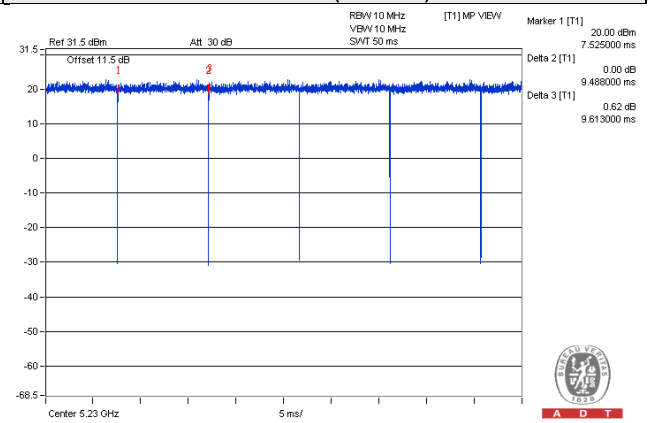
802.11ac (VHT40): Duty cycle = 9.488/9.613 = 0.987

802.11ac (VHT80): Duty cycle = 4.388/4.513 = 0.972, Duty factor = 10 * log(1/0.972) = 0.12

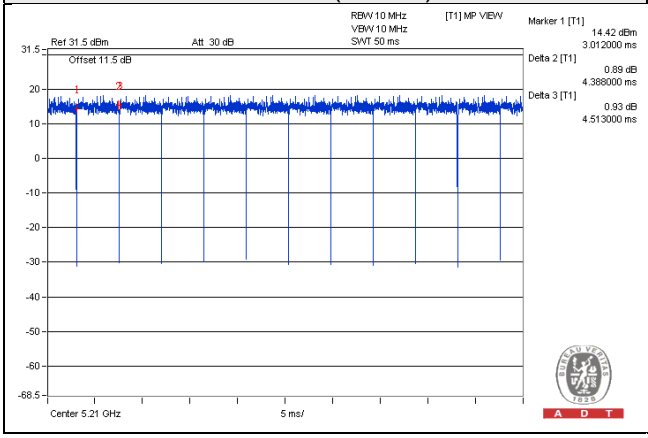
802.11ac (VHT20)



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.	USB HDD	WD	WDBACY5000ABL-01	WXS1CC1D3606	NA	-
B.	Notebook	DELL	E5410	1HC2XM1	FCC DoC Approved	-
C.	LAN Load	NA	NA	NA	NA	-
D.	RJ14 Load	NA	NA	NA	NA	-
E.	RJ11 Load	NA	NA	NA	NA	-
F.	50ohm Load	NA	NA	NA	NA	-

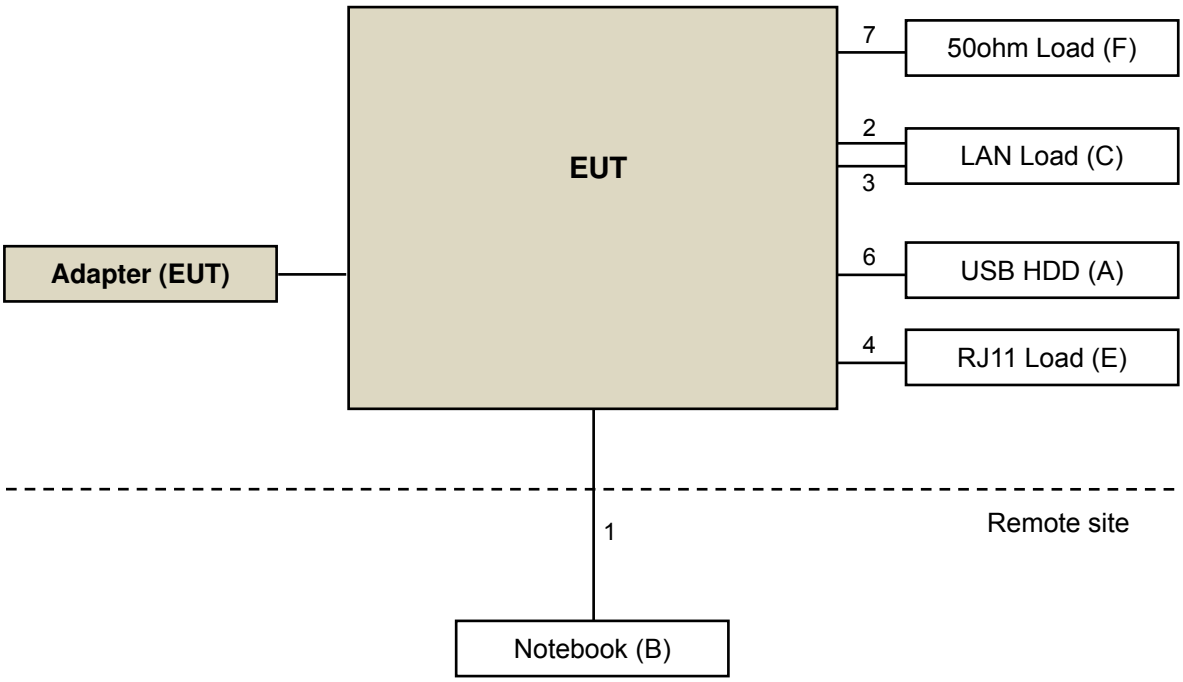
Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Items B acted as communication partners to transfer data.

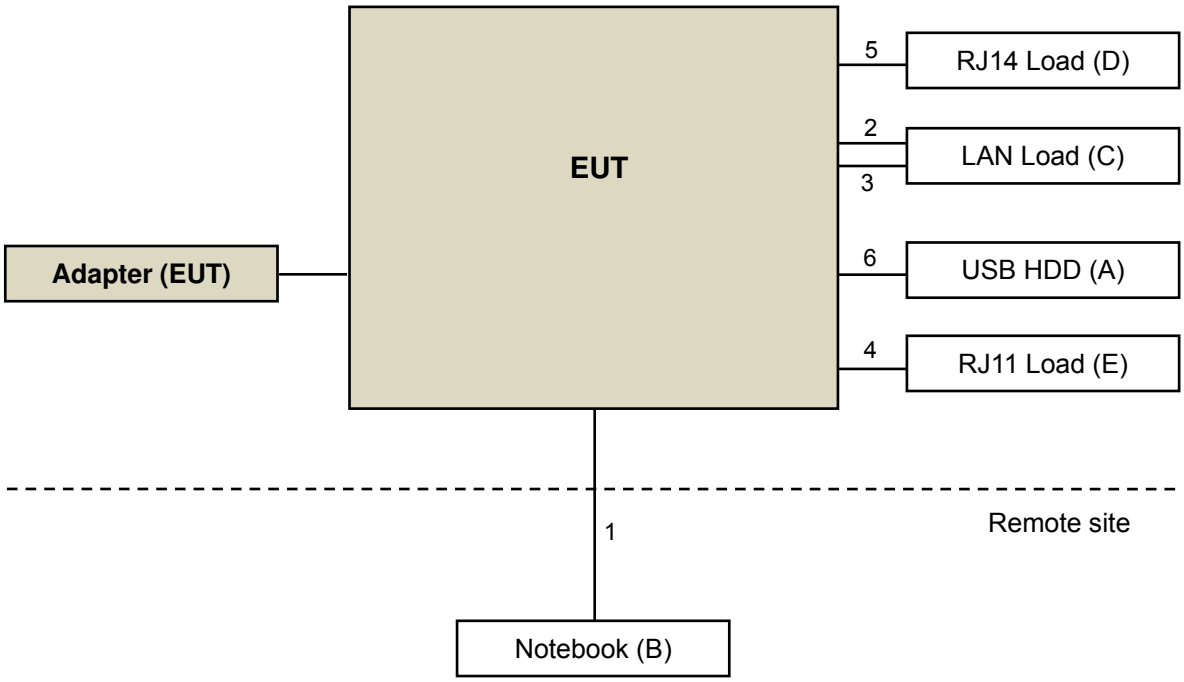
ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	RJ45 cable	1	10	N	0	-
2.	RJ45 cable	3	1	N	0	-
3.	RJ45 cable	1	2	N	0	Accessory of EUT
4.	RJ11 cable	1	1.8	N	0	-
5.	RJ14 cable	1	4.5	N	0	Accessory of EUT
6.	USB cable	1	0.5	N	0	-
7.	Coaxial cable	1	1.8	Y	0	-

3.4.1 Configuration of System under Test

Test Mode A



Test Mode B



3.5 General Description of Applied Standards

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

FCC Part 15, Subpart E (15.407)
KDB 789033 D02 General UNII Test Procedures New Rules v01r02
KDB 662911 D01 Multiple Transmitter Output v02r01
ANSI C63.10-2013

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

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

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

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

NOTE:

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

LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

APPLICABLE TO	LIMIT	
789033 D02 General UNII Test Procedures New Rules v01r02	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)(i)	PK:-27 (dBm/MHz) *1 PK:10 (dBm/MHz) *2 PK:15.6 (dBm/MHz) *3 PK:27 (dBm/MHz) *4	PK: 68.2(dBμV/m) *1 PK:105.2 (dBμV/m) *2 PK: 110.8(dBμV/m) *3 PK:122.2 (dBμV/m) *4
15.407(b)(4)(ii)	FIELD STRENGTH at 3m / § 15.247(d),	
	PK:74 (dBμV/m)	AV:54 (dBμV/m)

*1 beyond 75 MHz or more above of the band edge.

*2 below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.

*3 below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.

*4 from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

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

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

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	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
Turn Table BV ADT	TT100	TT93021705	NA	NA
Turn Table Controller BV ADT	SC100	SC93021705	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
WIT Standard Temperature And Humidity Chamber	TH-4S-C	W981030	Jun. 08, 2015	Jun. 07, 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 Procedures

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:

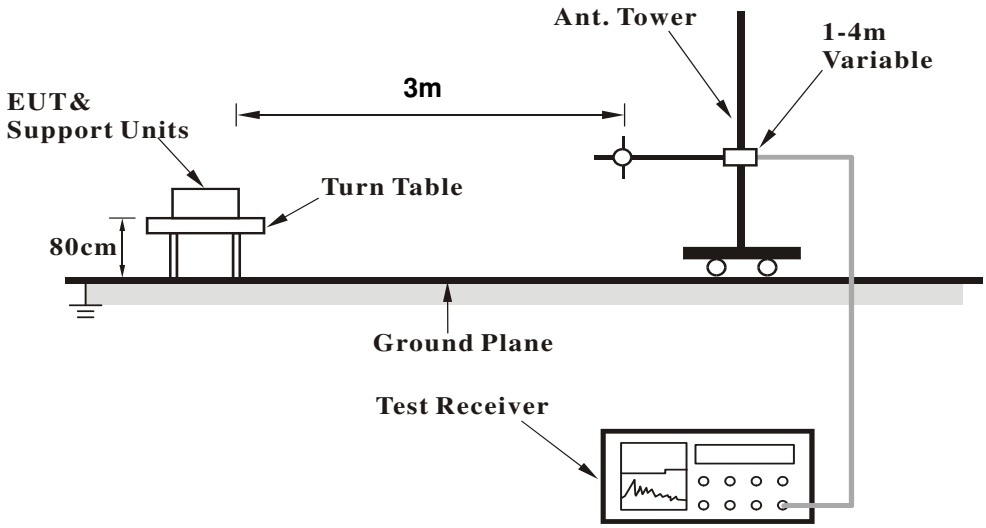
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

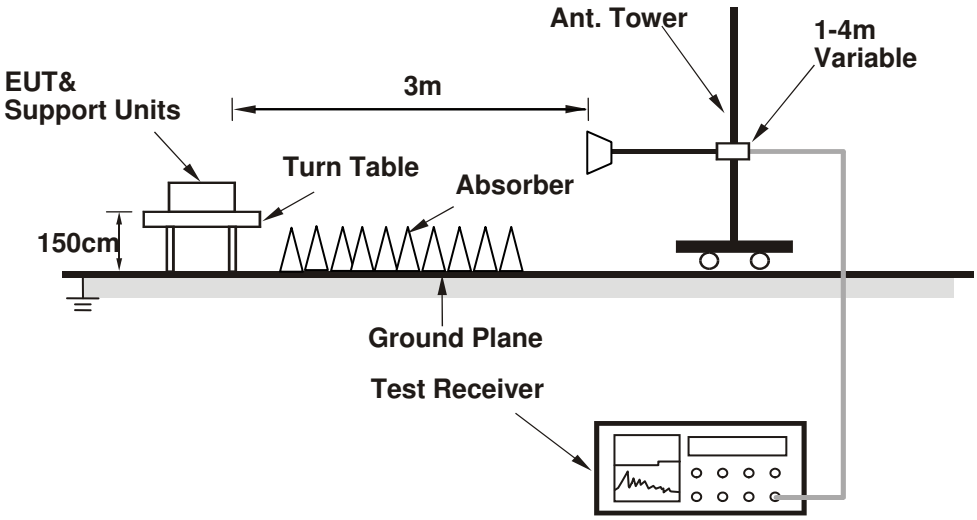
No deviation.

4.1.5 Test Set Up

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

4.1.7 Test Results

Above 1GHz Data:

CDD Mode

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	62.7 PK	74.0	-11.3	1.74 H	15	56.00	6.70
2	5150.00	48.7 AV	54.0	-5.3	1.74 H	15	42.00	6.70
3	*5180.00	114.7 PK			1.85 H	6	74.00	40.70
4	*5180.00	104.0 AV			1.85 H	6	63.30	40.70
5	#10360.00	60.2 PK	74.0	-13.8	1.47 H	85	43.00	17.20
6	#10360.00	47.3 AV	54.0	-6.7	1.47 H	85	30.10	17.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	62.7 PK	74.0	-11.3	2.05 V	250	56.00	6.70
2	5150.00	49.7 AV	54.0	-4.3	2.05 V	250	43.00	6.70
3	*5180.00	115.8 PK			1.98 V	223	75.10	40.70
4	*5180.00	106.0 AV			1.98 V	223	65.30	40.70
5	#10360.00	58.8 PK	74.0	-15.2	1.47 V	87	41.60	17.20
6	#10360.00	47.1 AV	54.0	-6.9	1.47 V	87	29.90	17.20

Remarks:

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

CHANNEL	TX Channel 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	114.4 PK			1.95 H	3	73.60	40.80
2	*5200.00	104.8 AV			1.95 H	3	64.00	40.80
3	#10400.00	58.9 PK	74.0	-15.1	1.54 H	87	41.30	17.60
4	#10400.00	47.7 AV	54.0	-6.3	1.54 H	87	30.10	17.60
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	*5200.00	115.8 PK			1.56 V	224	75.00	40.80
2	*5200.00	105.8 AV			1.56 V	224	65.00	40.80
3	#10400.00	61.2 PK	74.0	-12.8	1.47 V	85	43.60	17.60
4	#10400.00	49.1 AV	54.0	-4.9	1.47 V	85	31.50	17.60

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	114.7 PK			1.80 H	19	73.90	40.80
2	*5240.00	104.5 AV			1.80 H	19	63.70	40.80
3	5350.00	59.9 PK	74.0	-14.1	1.71 H	25	52.90	7.00
4	5350.00	47.1 AV	54.0	-6.9	1.71 H	25	40.10	7.00
5	#10480.00	59.2 PK	74.0	-14.8	1.05 H	127	41.30	17.90
6	#10480.00	47.8 AV	54.0	-6.2	1.05 H	127	29.90	17.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	115.5 PK			1.94 V	225	74.70	40.80
2	*5240.00	105.9 AV			1.94 V	225	65.10	40.80
3	5350.00	61.6 PK	74.0	-12.4	2.15 V	239	54.60	7.00
4	5350.00	47.9 AV	54.0	-6.1	2.15 V	239	40.90	7.00
5	#10480.00	61.5 PK	74.0	-12.5	1.47 V	85	43.60	17.90
6	#10480.00	48.0 AV	54.0	-6.0	1.47 V	85	30.10	17.90

Remarks:

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

CHANNEL	TX Channel 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	#5634.40	59.3 PK	68.2	-8.9	1.82 H	179	53.20	6.10
2	*5745.00	114.2 PK			1.82 H	179	73.80	40.40
3	*5745.00	104.5 AV			1.82 H	179	64.10	40.40
4	#5992.80	60.3 PK	68.2	-7.9	1.82 H	179	53.60	6.70
5	11490.00	67.3 PK	74.0	-6.7	1.25 H	317	48.00	19.30
6	11490.00	52.7 AV	54.0	-1.3	1.25 H	317	33.40	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	#5615.20	60.1 PK	68.2	-8.1	1.76 V	193	54.00	6.10
2	*5745.00	115.0 PK			1.76 V	193	74.60	40.40
3	*5745.00	105.3 AV			1.76 V	193	64.90	40.40
4	#5984.00	60.0 PK	68.2	-8.2	1.76 V	193	53.30	6.70
5	11490.00	68.0 PK	74.0	-6.0	1.16 V	315	48.70	19.30
6	11490.00	52.7 AV	54.0	-1.3	1.16 V	315	33.40	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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	113.7 PK			1.15 H	179	73.20	40.50
2	*5785.00	104.4 AV			1.15 H	179	63.90	40.50
3	11570.00	66.2 PK	74.0	-7.8	1.00 H	307	47.20	19.00
4	11570.00	51.8 AV	54.0	-2.2	1.00 H	307	32.80	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	116.2 PK			1.95 V	195	75.70	40.50
2	*5785.00	106.3 AV			1.95 V	195	65.80	40.50
3	11570.00	66.6 PK	74.0	-7.4	1.05 V	310	47.60	19.00
4	11570.00	52.3 AV	54.0	-1.7	1.05 V	310	33.30	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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.

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	#5624.00	59.0 PK	68.2	-9.2	1.73 H	180	52.90	6.10
2	*5825.00	114.0 PK			1.73 H	180	73.40	40.60
3	*5825.00	104.3 AV			1.73 H	180	63.70	40.60
4	#5992.80	59.8 PK	68.2	-8.4	1.73 H	180	53.10	6.70
5	11650.00	60.7 PK	74.0	-13.3	1.00 H	140	42.20	18.50
6	11650.00	50.7 AV	54.0	-3.3	1.00 H	140	32.20	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	#5639.20	58.3 PK	68.2	-9.9	1.81 V	189	52.20	6.10
2	*5825.00	116.1 PK			1.81 V	189	75.50	40.60
3	*5825.00	106.1 AV			1.81 V	189	65.50	40.60
4	#5980.00	60.7 PK	68.2	-7.5	1.81 V	189	54.00	6.70
5	11650.00	66.6 PK	74.0	-7.4	1.07 V	82	48.10	18.50
6	11650.00	53.0 AV	54.0	-1.0	1.07 V	82	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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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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	62.3 PK	74.0	-11.7	1.85 H	15	55.60	6.70
2	5150.00	49.3 AV	54.0	-4.7	1.85 H	15	42.60	6.70
3	*5180.00	113.3 PK			1.95 H	6	72.60	40.70
4	*5180.00	103.0 AV			1.95 H	6	62.30	40.70
5	#10360.00	60.2 PK	74.0	-13.8	1.47 H	87	43.00	17.20
6	#10360.00	47.6 AV	54.0	-6.4	1.47 H	87	30.40	17.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	60.3 PK	74.0	-13.7	2.47 V	246	53.60	6.70
2	5150.00	46.8 AV	54.0	-7.2	2.47 V	246	40.10	6.70
3	*5180.00	114.7 PK			2.06 V	222	74.00	40.70
4	*5180.00	104.1 AV			2.06 V	222	63.40	40.70
5	#10360.00	58.4 PK	74.0	-15.6	1.07 V	41	41.20	17.20
6	#10360.00	47.1 AV	54.0	-6.9	1.07 V	41	29.90	17.20

Remarks:

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

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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	113.5 PK			2.13 H	5	72.70	40.80
2	*5200.00	103.1 AV			2.13 H	5	62.30	40.80
3	#10400.00	59.6 PK	74.0	-14.4	1.47 H	85	42.00	17.60
4	#10400.00	48.0 AV	54.0	-6.0	1.47 H	85	30.40	17.60
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	*5200.00	114.2 PK			2.05 V	226	73.40	40.80
2	*5200.00	104.3 AV			2.05 V	226	63.50	40.80
3	#10400.00	59.2 PK	74.0	-14.8	1.18 V	206	41.60	17.60
4	#10400.00	48.0 AV	54.0	-6.0	1.18 V	206	30.40	17.60

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	114.3 PK			2.16 H	219	73.50	40.80
2	*5240.00	104.0 AV			2.16 H	219	63.20	40.80
3	5350.00	60.6 PK	74.0	-13.4	1.47 H	84	53.60	7.00
4	5350.00	47.1 AV	54.0	-6.9	1.47 H	84	40.10	7.00
5	#10480.00	59.5 PK	74.0	-14.5	1.47 H	87	41.60	17.90
6	#10480.00	48.3 AV	54.0	-5.7	1.47 H	87	30.40	17.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	115.3 PK			1.93 V	222	74.50	40.80
2	*5240.00	104.6 AV			1.93 V	222	63.80	40.80
3	5350.00	60.0 PK	74.0	-14.0	1.82 V	210	53.00	7.00
4	5350.00	47.1 AV	54.0	-6.9	1.82 V	210	40.10	7.00
5	#10480.00	58.8 PK	74.0	-15.2	1.47 V	85	40.90	17.90
6	#10480.00	47.6 AV	54.0	-6.4	1.47 V	85	29.70	17.90

Remarks:

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

CHANNEL	TX Channel 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	#5624.00	58.5 PK	68.2	-9.7	2.06 H	178	52.40	6.10
2	*5745.00	113.2 PK			2.06 H	178	72.80	40.40
3	*5745.00	102.8 AV			2.06 H	178	62.40	40.40
4	#5946.40	59.3 PK	68.2	-8.9	2.06 H	178	52.60	6.70
5	11490.00	61.0 PK	74.0	-13.0	1.00 H	283	41.70	19.30
6	11490.00	48.5 AV	54.0	-5.5	1.00 H	283	29.20	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	#5618.40	59.2 PK	68.2	-9.0	1.86 V	180	53.10	6.10
2	*5745.00	113.7 PK			1.86 V	180	73.30	40.40
3	*5745.00	103.2 AV			1.86 V	180	62.80	40.40
4	#5983.20	60.7 PK	68.2	-7.5	1.86 V	180	54.00	6.70
5	11490.00	61.8 PK	74.0	-12.2	1.00 V	313	42.50	19.30
6	11490.00	48.5 AV	54.0	-5.5	1.00 V	313	29.20	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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	112.6 PK			1.83 H	180	72.10	40.50
2	*5785.00	102.6 AV			1.83 H	180	62.10	40.50
3	11570.00	61.6 PK	74.0	-12.4	1.00 H	280	42.60	19.00
4	11570.00	48.9 AV	54.0	-5.1	1.00 H	280	29.90	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	113.7 PK			1.80 V	191	73.20	40.50
2	*5785.00	103.5 AV			1.80 V	191	63.00	40.50
3	11570.00	63.6 PK	74.0	-10.4	1.11 V	310	44.60	19.00
4	11570.00	48.8 AV	54.0	-5.2	1.11 V	310	29.80	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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5619.20	58.8 PK	68.2	-9.4	1.87 H	180	52.70	6.10
2	*5825.00	112.5 PK			1.87 H	180	71.90	40.60
3	*5825.00	102.3 AV			1.87 H	180	61.70	40.60
4	#5962.40	59.7 PK	68.2	-8.5	1.87 H	180	53.00	6.70
5	11650.00	60.6 PK	74.0	-13.4	1.10 H	112	42.10	18.50
6	11650.00	48.3 AV	54.0	-5.7	1.10 H	112	29.80	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	#5646.40	58.6 PK	68.2	-9.6	1.88 V	181	52.50	6.10
2	*5825.00	113.3 PK			1.88 V	181	72.70	40.60
3	*5825.00	103.1 AV			1.88 V	181	62.50	40.60
4	#5978.40	60.9 PK	68.2	-7.3	1.88 V	181	54.20	6.70
5	11650.00	62.2 PK	74.0	-11.8	1.00 V	67	43.70	18.50
6	11650.00	48.4 AV	54.0	-5.6	1.00 V	67	29.90	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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

802.11ac (VHT40)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	48.2 PK	74.0	-25.8	2.26 H	26	41.50	6.70
2	5150.00	46.6 AV	54.0	-7.4	2.26 H	26	39.90	6.70
3	*5190.00	109.9 PK			2.19 H	19	69.20	40.70
4	*5190.00	100.3 AV			2.19 H	19	59.60	40.70
5	#10380.00	58.1 PK	74.0	-15.9	1.17 H	41	40.60	17.50
6	#10380.00	47.2 AV	54.0	-6.8	1.17 H	41	29.70	17.50
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	5150.00	70.5 PK	74.0	-3.5	1.39 V	215	63.80	6.70
2	5150.00	51.3 AV	54.0	-2.7	1.39 V	215	44.60	6.70
3	*5190.00	111.9 PK			1.97 V	223	71.20	40.70
4	*5190.00	101.7 AV			1.97 V	223	61.00	40.70
5	#10380.00	60.1 PK	74.0	-13.9	1.47 V	41	42.60	17.50
6	#10380.00	47.6 AV	54.0	-6.4	1.47 V	41	30.10	17.50

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	111.3 PK			1.90 H	10	70.50	40.80
2	*5230.00	101.3 AV			1.90 H	10	60.50	40.80
3	5350.00	60.0 PK	74.0	-14.0	1.74 H	16	53.00	7.00
4	5350.00	47.1 AV	54.0	-6.9	1.74 H	16	40.10	7.00
5	#10460.00	60.4 PK	74.0	-13.6	1.85 H	20	42.60	17.80
6	#10460.00	48.2 AV	54.0	-5.8	1.85 H	20	30.40	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	*5230.00	111.8 PK			1.77 V	226	71.00	40.80
2	*5230.00	101.3 AV			1.77 V	226	60.50	40.80
3	5350.00	62.6 PK	74.0	-11.4	1.86 V	239	55.60	7.00
4	5350.00	47.5 AV	54.0	-6.5	1.86 V	239	40.50	7.00
5	#10460.00	60.4 PK	74.0	-13.6	1.47 V	85	42.60	17.80
6	#10460.00	48.2 AV	54.0	-5.8	1.47 V	85	30.40	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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5636.80	48.4 PK	68.2	-19.8	1.08 H	180	42.30	6.10
2	*5755.00	108.5 PK			1.08 H	180	68.00	40.50
3	*5755.00	98.4 AV			1.08 H	180	57.90	40.50
4	#5995.20	48.6 PK	68.2	-19.6	1.08 H	180	41.90	6.70
5	11510.00	61.0 PK	74.0	-13.0	1.47 H	82	41.90	19.10
6	11510.00	49.0 AV	54.0	-5.0	1.47 H	82	29.90	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	#5616.80	58.3 PK	68.2	-9.9	1.10 V	285	52.20	6.10
2	*5755.00	109.8 PK			1.10 V	285	69.30	40.50
3	*5755.00	100.0 AV			1.10 V	285	59.50	40.50
4	#5932.80	59.2 PK	68.2	-9.0	1.10 V	285	52.50	6.70
5	11510.00	61.7 PK	74.0	-12.3	1.47 V	85	42.60	19.10
6	11510.00	50.0 AV	54.0	-4.0	1.47 V	85	30.90	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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5627.20	58.8 PK	68.2	-9.4	1.92 H	180	52.70	6.10
2	*5795.00	110.2 PK			1.92 H	180	69.70	40.50
3	*5795.00	100.0 AV			1.92 H	180	59.50	40.50
4	#5944.80	59.7 PK	68.2	-8.5	1.92 H	180	53.00	6.70
5	11590.00	60.0 PK	74.0	-14.0	1.47 H	85	41.30	18.70
6	11590.00	48.6 AV	54.0	-5.4	1.47 H	85	29.90	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	#5640.00	58.2 PK	68.2	-10.0	1.92 V	184	52.10	6.10
2	*5795.00	110.8 PK			1.92 V	184	70.30	40.50
3	*5795.00	101.0 AV			1.92 V	184	60.50	40.50
4	#5956.00	59.2 PK	68.2	-9.0	1.92 V	184	52.50	6.70
5	11590.00	61.7 PK	74.0	-12.3	1.48 V	56	43.00	18.70
6	11590.00	49.1 AV	54.0	-4.9	1.48 V	56	30.40	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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

802.11ac (VHT80)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	72.2 PK	74.0	-1.8	1.84 H	23	65.50	6.70
2	5150.00	52.3 AV	54.0	-1.7	1.84 H	23	45.60	6.70
3	*5210.00	107.0 PK			1.91 H	18	66.20	40.80
4	*5210.00	97.2 AV			1.91 H	18	56.40	40.80
5	#10420.00	58.2 PK	74.0	-15.8	1.47 H	84	40.50	17.70
6	#10420.00	47.1 AV	54.0	-6.9	1.47 H	84	29.40	17.70
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	5150.00	71.4 PK	74.0	-2.6	1.84 V	220	64.70	6.70
2	**5150.00**	**53.6 AV**	**54.0**	**-0.4**	**1.84 V**	**220**	**46.90**	**6.70**
3	*5210.00	107.3 PK			1.86 V	225	66.50	40.80
4	*5210.00	97.5 AV			1.86 V	225	56.70	40.80
5	#10420.00	60.7 PK	74.0	-13.3	1.74 V	85	43.00	17.70
6	#10420.00	47.8 AV	54.0	-6.2	1.74 V	85	30.10	17.70

Remarks:

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

CHANNEL	TX Channel 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	#5618.40	58.6 PK	68.2	-9.6	1.12 H	183	52.50	6.10
2	*5775.00	104.1 PK			1.12 H	183	63.60	40.50
3	*5775.00	94.2 AV			1.12 H	183	53.70	40.50
4	#5980.80	59.5 PK	68.2	-8.7	1.12 H	183	52.80	6.70
5	11550.00	60.9 PK	74.0	-13.1	1.47 H	85	41.90	19.00
6	11550.00	48.9 AV	54.0	-5.1	1.47 H	85	29.90	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	#5614.00	58.9 PK	68.2	-9.3	1.82 V	263	52.80	6.10
2	*5775.00	106.6 PK			1.82 V	263	66.10	40.50
3	*5775.00	96.6 AV			1.82 V	263	56.10	40.50
4	#5940.00	58.7 PK	68.2	-9.5	1.82 V	263	52.00	6.70
5	11550.00	61.6 PK	74.0	-12.4	1.26 V	39	42.60	19.00
6	11550.00	49.1 AV	54.0	-4.9	1.26 V	39	30.10	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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

Beamforming Mode

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	62.1 PK	74.0	-11.9	1.71 H	15	56.60	5.50
2	5150.00	49.5 AV	54.0	-4.5	1.71 H	15	44.00	5.50
3	*5180.00	111.8 PK			1.67 H	3	72.30	39.50
4	*5180.00	100.9 AV			1.67 H	3	61.40	39.50
5	#10360.00	58.1 PK	74.0	-15.9	1.47 H	84	40.60	17.50
6	#10360.00	47.4 AV	54.0	-6.6	1.47 H	84	29.90	17.50
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	5150.00	65.4 PK	74.0	-8.6	1.90 V	215	59.90	5.50
2	5150.00	52.0 AV	54.0	-2.0	1.90 V	215	46.50	5.50
3	*5180.00	113.7 PK			1.86 V	209	74.20	39.50
4	*5180.00	102.1 AV			1.86 V	209	62.60	39.50
5	#10360.00	60.1 PK	74.0	-13.9	1.47 V	85	42.60	17.50
6	#10360.00	48.4 AV	54.0	-5.6	1.47 V	85	30.90	17.50

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

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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	112.4 PK			1.80 H	9	72.80	39.60
2	*5200.00	100.5 AV			1.80 H	9	60.90	39.60
3	#10400.00	58.6 PK	74.0	-15.4	1.47 H	85	40.60	18.00
4	#10400.00	47.9 AV	54.0	-6.1	1.47 H	85	29.90	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	*5200.00	113.4 PK			1.76 V	223	73.80	39.60
2	*5200.00	102.4 AV			1.76 V	223	62.80	39.60
3	#10400.00	60.6 PK	74.0	-13.4	1.74 V	85	42.60	18.00
4	#10400.00	48.6 AV	54.0	-5.4	1.74 V	85	30.60	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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	112.2 PK			2.07 H	3	72.60	39.60
2	*5240.00	101.0 AV			2.07 H	3	61.40	39.60
3	5350.00	58.9 PK	74.0	-15.1	2.25 H	23	53.20	5.70
4	5350.00	45.8 AV	54.0	-8.2	2.25 H	23	40.10	5.70
5	#10480.00	58.1 PK	74.0	-15.9	1.47 H	85	40.10	18.00
6	#10480.00	47.8 AV	54.0	-6.2	1.47 H	85	29.80	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	*5240.00	111.3 PK			1.15 V	296	71.70	39.60
2	*5240.00	99.8 AV			1.15 V	296	60.20	39.60
3	5350.00	58.7 PK	74.0	-15.3	1.29 V	325	53.00	5.70
4	5350.00	47.2 AV	54.0	-6.8	1.29 V	325	41.50	5.70
5	#10480.00	61.0 PK	74.0	-13.0	1.49 V	226	43.00	18.00
6	#10480.00	48.1 AV	54.0	-5.9	1.49 V	226	30.10	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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5632.80	58.0 PK	68.2	-10.2	2.10 H	178	51.90	6.10
2	*5745.00	114.3 PK			2.10 H	178	73.90	40.40
3	*5745.00	102.6 AV			2.10 H	178	62.20	40.40
4	#5938.40	57.6 PK	68.2	-10.6	2.10 H	178	50.90	6.70
5	11490.00	65.1 PK	74.0	-8.9	2.12 H	5	45.80	19.30
6	11490.00	52.0 AV	54.0	-2.0	2.12 H	5	32.70	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	#5613.60	58.4 PK	68.2	-9.8	1.56 V	315	52.30	6.10
2	*5745.00	114.4 PK			1.56 V	315	74.00	40.40
3	*5745.00	103.2 AV			1.56 V	315	62.80	40.40
4	#5936.00	60.1 PK	68.2	-8.1	1.56 V	315	53.40	6.70
5	11490.00	68.6 PK	74.0	-5.4	1.10 V	313	49.30	19.30
6	**11490.00**	**53.6 AV**	**54.0**	**-0.4**	**1.10 V**	**313**	**34.30**	**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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5785.00	113.1 PK			1.19 H	184	72.60	40.50
2	*5785.00	101.6 AV			1.19 H	184	61.10	40.50
3	11570.00	63.0 PK	74.0	-11.0	1.47 H	82	44.00	19.00
4	11570.00	51.9 AV	54.0	-2.1	1.47 H	82	32.90	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	112.5 PK			2.01 V	171	72.00	40.50
2	*5785.00	101.2 AV			2.01 V	171	60.70	40.50
3	11570.00	67.1 PK	74.0	-6.9	1.10 V	311	48.10	19.00
4	11570.00	52.8 AV	54.0	-1.2	1.10 V	311	33.80	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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5631.20	47.8 PK	68.2	-20.4	1.00 H	182	41.70	6.10
2	*5825.00	114.2 PK			1.00 H	182	73.60	40.60
3	*5825.00	102.8 AV			1.00 H	182	62.20	40.60
4	#5980.00	49.0 PK	68.2	-19.2	1.00 H	182	42.30	6.70
5	11650.00	62.1 PK	74.0	-11.9	1.47 H	52	43.60	18.50
6	11650.00	51.9 AV	54.0	-2.1	1.47 H	52	33.40	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	#5618.40	58.8 PK	68.2	-9.4	1.95 V	189	52.70	6.10
2	*5825.00	114.2 PK			1.95 V	189	73.60	40.60
3	*5825.00	102.7 AV			1.95 V	189	62.10	40.60
4	#5985.60	59.7 PK	68.2	-8.5	1.95 V	189	53.00	6.70
5	11650.00	64.5 PK	74.0	-9.5	1.40 V	83	46.00	18.50
6	11650.00	52.9 AV	54.0	-1.1	1.40 V	83	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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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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	69.1 PK	74.0	-4.9	2.23 H	21	63.60	5.50
2	5150.00	52.6 AV	54.0	-1.4	2.23 H	21	47.10	5.50
3	*5190.00	109.4 PK			2.03 H	7	69.90	39.50
4	*5190.00	97.9 AV			2.03 H	7	58.40	39.50
5	#10380.00	58.1 PK	74.0	-15.9	1.05 H	126	40.30	17.80
6	#10380.00	47.7 AV	54.0	-6.3	1.05 H	126	29.90	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	70.0 PK	74.0	-4.0	1.09 V	256	64.50	5.50
2	5150.00	53.0 AV	54.0	-1.0	1.09 V	256	47.50	5.50
3	*5190.00	108.3 PK			1.87 V	221	68.80	39.50
4	*5190.00	96.5 AV			1.87 V	221	57.00	39.50
5	#10380.00	60.8 PK	74.0	-13.2	1.47 V	84	43.00	17.80
6	#10380.00	47.9 AV	54.0	-6.1	1.47 V	84	30.10	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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	111.5 PK			1.33 H	0	71.90	39.60
2	*5230.00	100.1 AV			1.33 H	0	60.50	39.60
3	5350.00	59.7 PK	74.0	-14.3	1.52 H	16	54.00	5.70
4	5350.00	45.8 AV	54.0	-8.2	1.52 H	16	40.10	5.70
5	#10460.00	59.8 PK	74.0	-14.2	1.07 H	41	41.80	18.00
6	#10460.00	47.9 AV	54.0	-6.1	1.07 H	41	29.90	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	*5230.00	112.3 PK			1.87 V	229	72.70	39.60
2	*5230.00	102.0 AV			1.87 V	229	62.40	39.60
3	5350.00	60.7 PK	74.0	-13.3	1.92 V	248	55.00	5.70
4	5350.00	48.5 AV	54.0	-5.5	1.92 V	248	42.80	5.70
5	#10460.00	61.0 PK	74.0	-13.0	1.28 V	41	43.00	18.00
6	#10460.00	48.2 AV	54.0	-5.8	1.28 V	41	30.20	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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5604.80	59.0 PK	68.2	-9.2	1.31 H	175	53.10	5.90
2	*5755.00	112.3 PK			1.31 H	175	71.80	40.50
3	*5755.00	100.4 AV			1.31 H	175	59.90	40.50
4	#5928.80	59.2 PK	68.2	-9.0	1.31 H	175	52.50	6.70
5	11510.00	62.4 PK	74.0	-11.6	2.09 H	8	43.30	19.10
6	11510.00	51.9 AV	54.0	-2.1	2.09 H	8	32.80	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	#5642.40	58.4 PK	68.2	-9.8	1.75 V	294	52.30	6.10
2	*5755.00	109.4 PK			1.75 V	294	68.90	40.50
3	*5755.00	98.2 AV			1.75 V	294	57.70	40.50
4	#5998.40	59.0 PK	68.2	-9.2	1.75 V	294	52.30	6.70
5	11510.00	65.2 PK	74.0	-8.8	1.07 V	311	46.10	19.10
6	11510.00	52.6 AV	54.0	-1.4	1.07 V	311	33.50	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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5620.00	59.4 PK	68.2	-8.8	1.20 H	183	53.30	6.10
2	*5795.00	111.8 PK			1.20 H	183	71.30	40.50
3	*5795.00	100.9 AV			1.20 H	183	60.40	40.50
4	#5948.80	59.7 PK	68.2	-8.5	1.20 H	183	52.90	6.80
5	11590.00	62.3 PK	74.0	-11.7	1.46 H	58	43.60	18.70
6	11590.00	51.7 AV	54.0	-2.3	1.46 H	58	33.00	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	#5624.80	58.6 PK	68.2	-9.6	1.94 V	171	52.50	6.10
2	*5795.00	112.2 PK			1.94 V	171	71.70	40.50
3	*5795.00	101.5 AV			1.94 V	171	61.00	40.50
4	#5949.60	59.6 PK	68.2	-8.6	1.94 V	171	52.80	6.80
5	11590.00	64.7 PK	74.0	-9.3	1.00 V	330	46.00	18.70
6	11590.00	52.5 AV	54.0	-1.5	1.00 V	330	33.80	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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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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	68.5 PK	74.0	-5.5	1.09 H	65	63.00	5.50
2	5150.00	52.0 AV	54.0	-2.0	1.09 H	65	46.50	5.50
3	*5210.00	106.1 PK			1.00 H	45	66.50	39.60
4	*5210.00	95.4 AV			1.00 H	45	55.80	39.60
5	#10420.00	58.9 PK	74.0	-15.1	1.47 H	84	40.90	18.00
6	#10420.00	47.4 AV	54.0	-6.6	1.47 H	84	29.40	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	70.6 PK	74.0	-3.4	1.33 V	315	65.10	5.50
2	5150.00	53.0 AV	54.0	-1.0	1.33 V	315	47.50	5.50
3	*5210.00	106.6 PK			2.12 V	173	67.00	39.60
4	*5210.00	95.1 AV			2.12 V	173	55.50	39.60
5	#10420.00	61.0 PK	74.0	-13.0	1.52 V	98	43.00	18.00
6	#10420.00	48.1 AV	54.0	-5.9	1.52 V	98	30.10	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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5624.80	60.7 PK	68.2	-7.5	1.13 H	180	54.60	6.10
2	*5775.00	108.5 PK			1.13 H	180	68.00	40.50
3	*5775.00	97.7 AV			1.13 H	180	57.20	40.50
4	#5932.80	59.3 PK	68.2	-8.9	1.13 H	180	52.60	6.70
5	11550.00	62.9 PK	74.0	-11.1	1.45 H	89	43.90	19.00
6	11550.00	50.5 AV	54.0	-3.5	1.45 H	89	31.50	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	#5623.20	58.7 PK	68.2	-9.5	1.95 V	170	52.60	6.10
2	*5775.00	109.9 PK			1.95 V	170	69.40	40.50
3	*5775.00	99.0 AV			1.95 V	170	58.50	40.50
4	#5956.80	59.6 PK	68.2	-8.6	1.95 V	170	52.90	6.70
5	11550.00	62.6 PK	74.0	-11.4	1.16 V	312	43.60	19.00
6	11550.00	51.0 AV	54.0	-3.0	1.16 V	312	32.00	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) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

Below 1GHz Worst-Case Data:

Beamforming Mode

802.11a

CHANNEL	TX Channel 165	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz	TEST MODE	A

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	57.12	30.7 QP	40.0	-9.3	2.00 H	312	45.30	-14.60
2	138.78	32.4 QP	43.5	-11.1	2.00 H	245	47.10	-14.70
3	337.10	37.7 QP	46.0	-8.3	1.00 H	266	49.10	-11.40
4	375.98	38.2 QP	46.0	-7.8	1.00 H	118	48.80	-10.60
5	624.85	39.6 QP	46.0	-6.4	1.50 H	296	44.80	-5.20
6	875.67	39.0 QP	46.0	-7.0	1.50 H	186	39.80	-0.80
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	31.84	35.2 QP	40.0	-4.8	1.00 V	174	51.50	-16.30
2	136.84	32.2 QP	43.5	-11.3	1.00 V	149	47.10	-14.90
3	375.98	39.7 QP	46.0	-6.3	1.50 V	38	50.30	-10.60
4	500.42	39.8 QP	46.0	-6.2	1.00 V	68	48.00	-8.20
5	624.85	43.0 QP	46.0	-3.0	1.00 V	108	48.20	-5.20
6	875.67	40.9 QP	46.0	-5.1	1.00 V	5	41.70	-0.80

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

CHANNEL	TX Channel 165	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz	TEST MODE	B

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	171.83	35.2 QP	43.5	-8.3	1.50 H	247	49.60	-14.40
2	257.38	36.5 QP	46.0	-9.5	1.00 H	205	50.60	-14.10
3	337.10	40.8 QP	46.0	-5.2	1.00 H	262	52.20	-11.40
4	370.15	39.6 QP	46.0	-6.4	1.00 H	107	50.40	-10.80
5	875.67	39.8 QP	46.0	-6.2	1.00 H	186	40.60	-0.80
6	1000.10	43.8 QP	54.0	-10.2	2.00 H	192	42.70	1.10
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	31.84	35.1 QP	40.0	-4.9	1.00 V	224	51.40	-16.30
2	201.00	32.4 QP	43.5	-11.1	1.00 V	117	48.80	-16.40
3	257.38	34.1 QP	46.0	-11.9	1.00 V	43	48.20	-14.10
4	337.10	37.2 QP	46.0	-8.8	1.50 V	3	48.60	-11.40
5	385.70	37.6 QP	46.0	-8.4	1.50 V	3	48.10	-10.50
6	875.67	38.9 QP	46.0	-7.1	1.00 V	153	39.70	-0.80

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value

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 Procedures

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

b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

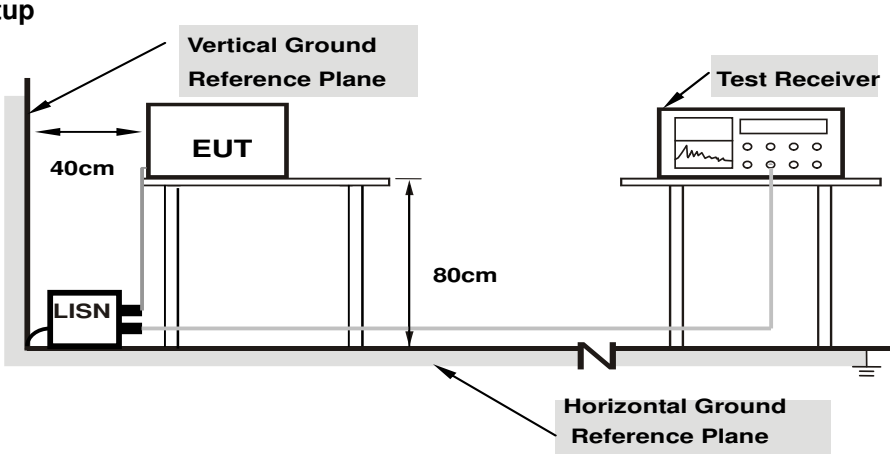
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Conditions

Same as 4.1.6.

4.2.7 Test Results

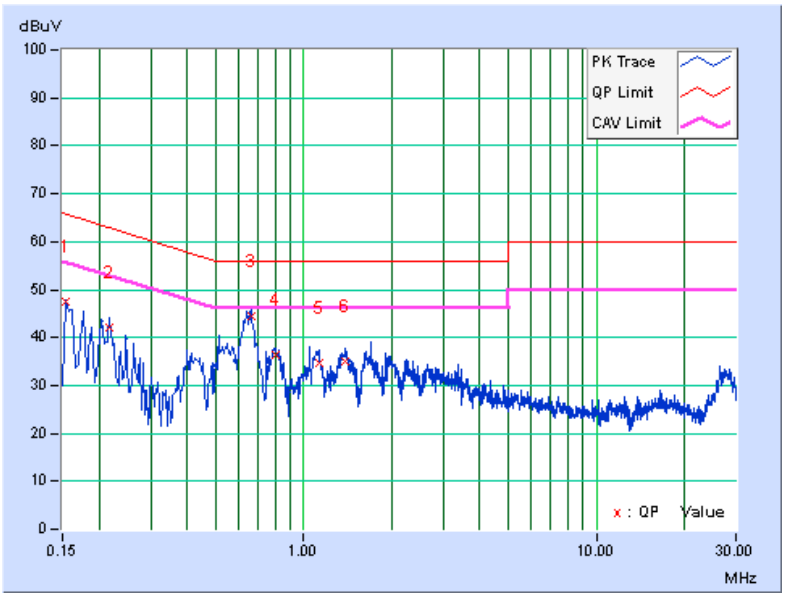
Beamforming Mode

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

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	10.02	37.62	27.48	47.64	37.50	65.79	55.79	-18.15	-18.29
2	0.21647	10.04	31.88	19.07	41.92	29.11	62.95	52.95	-21.04	-23.85
3	0.66221	10.15	34.13	26.15	44.28	36.30	56.00	46.00	-11.72	-9.70
4	0.80307	10.17	26.15	18.75	36.32	28.92	56.00	46.00	-19.68	-17.08
5	1.13141	10.21	24.45	16.55	34.66	26.76	56.00	46.00	-21.34	-19.24
6	1.39289	10.23	24.73	16.98	34.96	27.21	56.00	46.00	-21.04	-18.79

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.

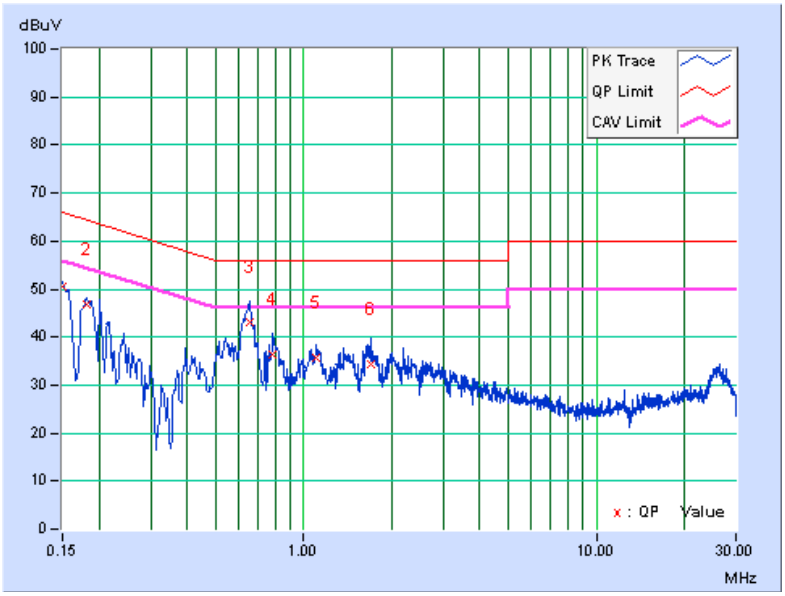


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	A		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.03	40.63	28.44	50.66	38.47	66.00	56.00	-15.34	-17.53
2	0.18122	10.03	36.67	24.83	46.70	34.86	64.43	54.43	-17.73	-19.57
3	0.65439	10.16	32.78	23.45	42.94	33.61	56.00	46.00	-13.06	-12.39
4	0.78342	10.18	26.29	17.39	36.47	27.57	56.00	46.00	-19.53	-18.43
5	1.10404	10.22	25.47	16.94	35.69	27.16	56.00	46.00	-20.31	-18.84
6	1.69836	10.26	24.15	16.31	34.41	26.57	56.00	46.00	-21.59	-19.43

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.

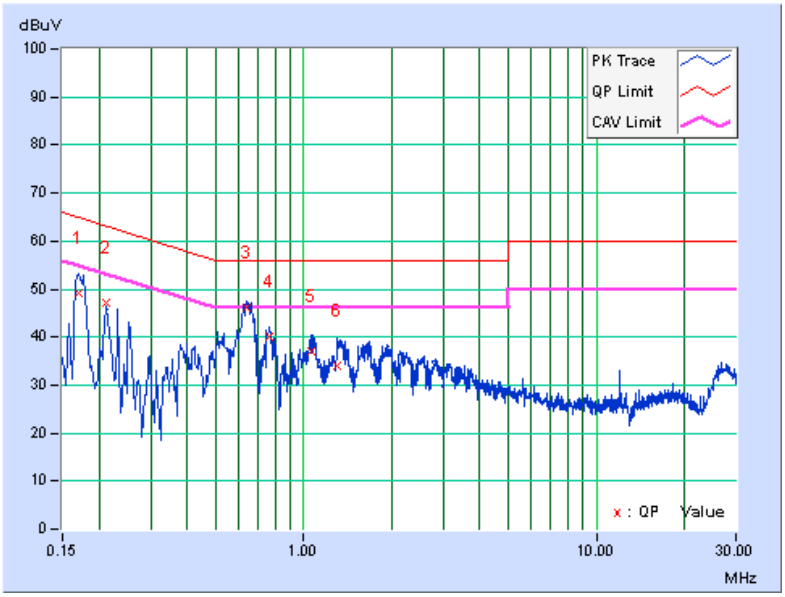


Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16967	10.02	39.05	22.32	49.07	32.34	64.98	54.98	-15.91	-22.64
2	0.21256	10.04	37.14	27.79	47.18	37.83	63.10	53.10	-15.93	-15.28
3	**0.63484**	**10.15**	**35.86**	**29.83**	**46.01**	**39.98**	**56.00**	**46.00**	**-9.99**	**-6.02**
4	0.76386	10.17	29.98	22.46	40.15	32.63	56.00	46.00	-15.85	-13.37
5	1.05712	10.20	26.87	15.73	37.07	25.93	56.00	46.00	-18.93	-20.07
6	1.29563	10.22	23.87	14.17	34.09	24.39	56.00	46.00	-21.91	-21.61

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.

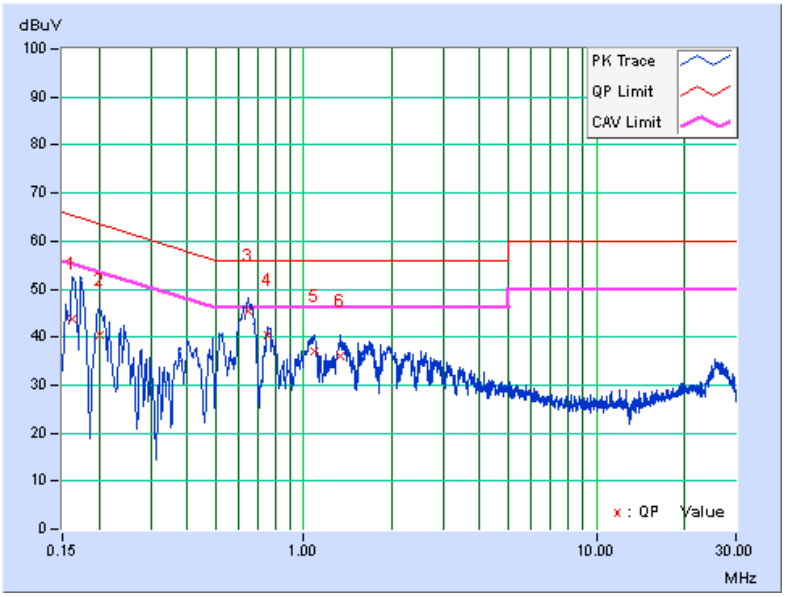


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16181	10.03	33.75	19.16	43.78	29.19	65.37	55.37	-21.59	-26.18
2	0.20084	10.04	30.51	14.87	40.55	24.91	63.58	53.58	-23.03	-28.67
3	0.65044	10.16	35.18	24.45	45.34	34.61	56.00	46.00	-10.66	-11.39
4	0.75585	10.18	30.21	22.63	40.39	32.81	56.00	46.00	-15.61	-13.19
5	1.08840	10.22	26.88	18.41	37.10	28.63	56.00	46.00	-18.90	-17.37
6	1.33891	10.23	25.83	17.05	36.06	27.28	56.00	46.00	-19.94	-18.72

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

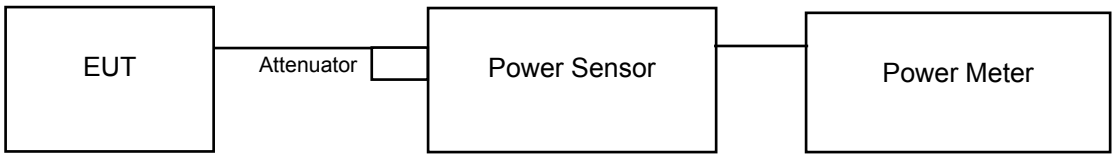
4.3.1 Limits of Transmit Power Measurement

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)

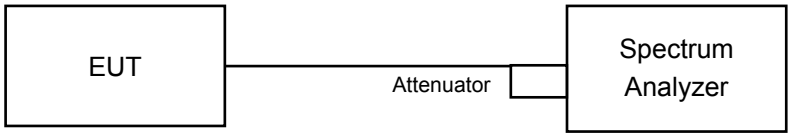
*B is the 26 dB emission bandwidth in megahertz

4.3.2 Test Setup

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



For 802.11ac (VHT80)



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

For Average Power Measurement

For 802.11a, 802.11ac (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.
k. Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument’s band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at 1 MHz intervals extending across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the spectrum.

4.3.5 Deviation fromTest 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	18.21	18.61	18.18	18.48	275.068	24.39	30.00	Pass
40	5200	18.14	18.86	18.16	18.49	278.172	24.44	30.00	Pass
48	5240	18.01	18.94	18.14	18.80	**282.605**	24.51	30.00	Pass
149	5745	18.22	19.08	18.68	18.92	299.057	24.76	30.00	Pass
157	5785	18.08	19.07	18.65	18.73	292.920	24.67	30.00	Pass
165	5825	18.59	19.10	18.34	18.87	**298.884**	24.76	30.00	Pass

NOTE: Antenna gain = 4.56 < 6dBi, so the power limit doesn't reduced.

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	17.18	17.98	17.28	17.92	230.446	23.63	30.00	Pass
40	5200	17.38	17.93	17.12	17.84	229.126	23.60	30.00	Pass
48	5240	17.05	17.92	17.03	17.94	225.339	23.53	30.00	Pass
149	5745	16.61	17.42	16.81	17.31	202.822	23.07	30.00	Pass
157	5785	16.24	17.22	16.59	17.16	192.400	22.84	30.00	Pass
165	5825	16.52	17.14	16.91	17.11	197.131	22.95	30.00	Pass

NOTE: Antenna gain = 4.56 < 6dBi, so the power limit doesn't reduced.

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	17.02	17.51	16.74	17.41	209.001	23.20	30.00	Pass
46	5230	16.63	17.34	17.01	17.26	203.671	23.09	30.00	Pass
151	5755	16.95	17.91	17.45	17.92	228.881	23.60	30.00	Pass
159	5795	17.31	17.81	17.16	17.95	228.595	23.59	30.00	Pass

NOTE: Antenna gain = 4.56 < 6dBi, so the power limit doesn't reduced.

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	16.45	17.01	16.58	16.67	186.342	22.70	30.00	Pass
155	5775	16.12	17.41	16.81	17.28	197.436	22.95	30.00	Pass

NOTE: Antenna gain = 4.56 < 6dBi, so the power limit doesn't reduced.

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	17.94	19.01	17.79	18.72	276.436	24.42	25.93	Pass
40	5200	17.71	19.16	18.07	19.11	287.025	24.58	25.93	Pass
48	5240	17.73	19.15	18.10	18.92	284.065	24.53	25.93	Pass
149	5745	17.11	18.29	17.85	18.33	247.888	23.94	25.93	Pass
157	5785	16.38	17.35	16.77	17.28	198.766	22.98	25.93	Pass
165	5825	17.55	18.92	18.49	17.86	266.594	24.26	25.93	Pass

NOTE: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2/4$]= 10.07 dBi > 6dBi, so the power limit shall be reduced to 30-(10.07-6) = 25.93dBm.

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	17.11	17.65	16.54	17.32	208.647	23.19	25.93	Pass
46	5230	17.87	19.32	18.66	19.41	**307.490**	24.88	25.93	Pass
151	5755	17.21	18.01	17.55	18.39	241.752	23.83	25.93	Pass
159	5795	18.11	19.03	18.55	19.11	297.781	24.74	25.93	Pass

NOTE: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2/4$]= 10.07 dBi > 6dBi, so the power limit shall be reduced to 30-(10.07-6) = 25.93dBm.

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	15.55	16.89	15.92	15.99	163.560	22.14	25.93	Pass
155	5775	18.11	19.01	18.73	19.06	**299.513**	24.76	25.93	Pass

NOTE: Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2/4$]= 10.07 dBi > 6dBi, so the power limit shall be reduced to 30-(10.07-6) = 25.93dBm.

26dB Bandwidth:

CDD Mode

802.11a

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)				Pass / Fail
		CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 3	
36	5180	22.96	24.52	23.20	23.55	Pass
40	5200	23.02	24.65	23.34	23.54	Pass
48	5240	23.07	24.70	23.26	23.54	Pass

802.11ac (VHT20)

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)				Pass / Fail
		CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 3	
36	5180	24.97	25.36	24.21	24.19	Pass
40	5200	24.73	25.22	23.95	24.10	Pass
48	5240	24.78	25.54	24.10	24.21	Pass

802.11ac (VHT40)

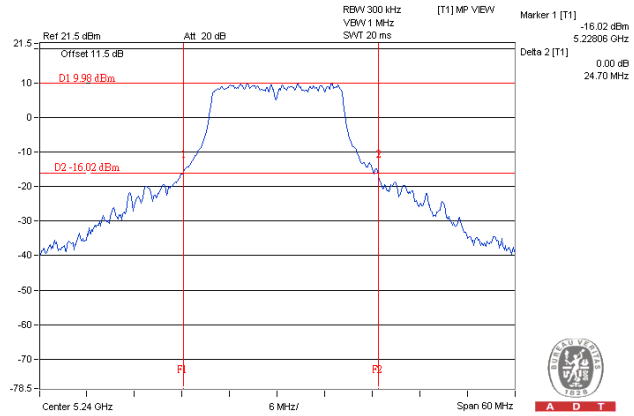
Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)				Pass / Fail
		CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 3	
38	5190	44.19	44.35	43.51	43.72	Pass
46	5230	44.67	44.36	43.97	43.66	Pass

802.11ac (VHT80)

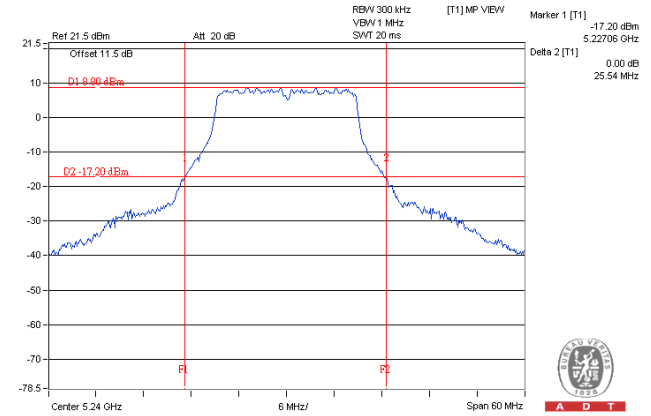
Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)				Pass / Fail
		CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 3	
42	5210	84.16	84.09	83.71	83.33	Pass

Spectrum Plot of Worst Value

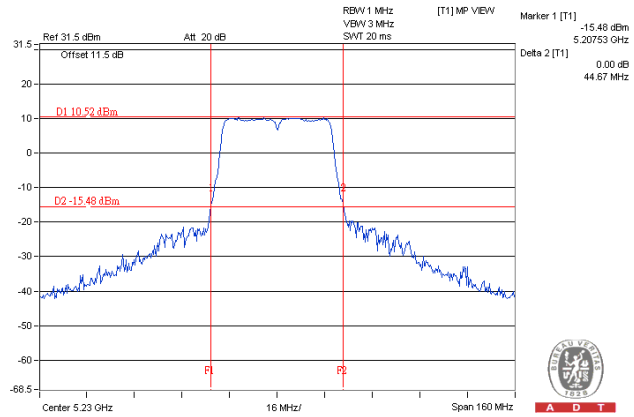
802.11a



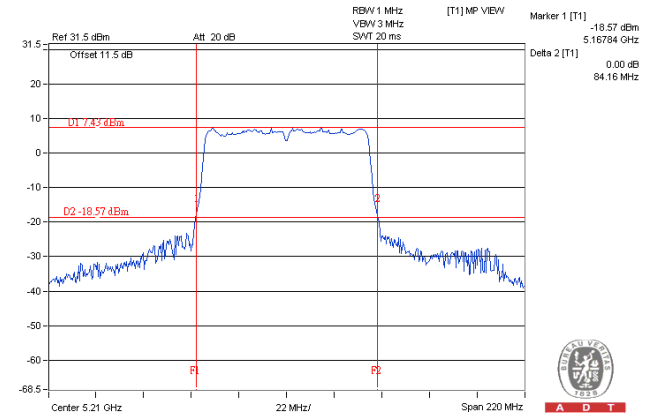
802.11ac (VHT20)



802.11ac (VHT40)



802.11ac (VHT80)



Beamforming Mode

802.11ac (VHT20)

Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)				Pass / Fail
		CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 3	
36	5180	25.11	25.79	23.99	24.27	Pass
40	5200	24.99	25.75	24.03	24.18	Pass
48	5240	25.08	25.78	23.92	24.28	Pass

802.11ac (VHT40)

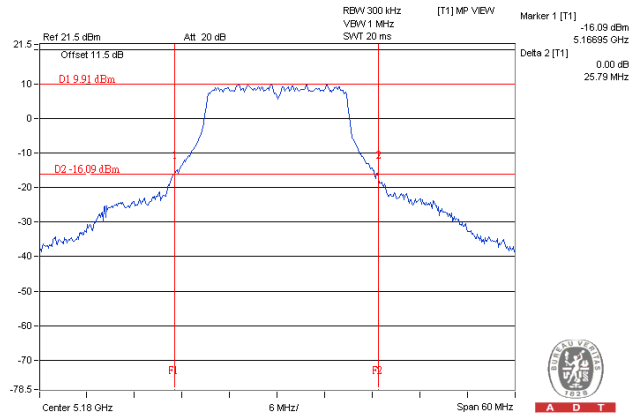
Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)				Pass / Fail
		CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 3	
38	5190	44.45	51.03	44.20	44.11	Pass
46	5230	44.40	52.94	46.25	44.43	Pass

802.11ac (VHT80)

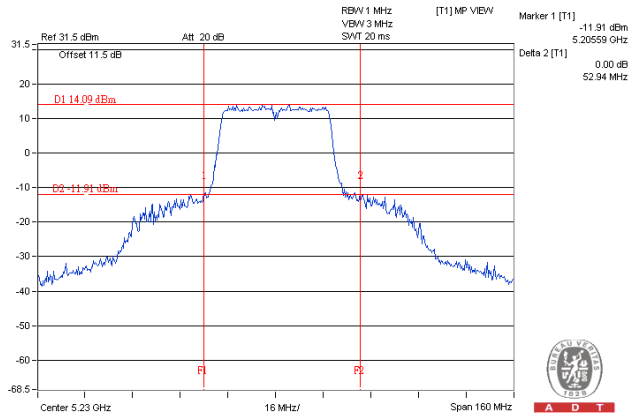
Chan.	Freq. (MHz)	26dBc Bandwidth (MHz)				Pass / Fail
		CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 3	
42	5210	83.96	83.31	83.52	82.76	Pass

Spectrum Plot of Worst Value

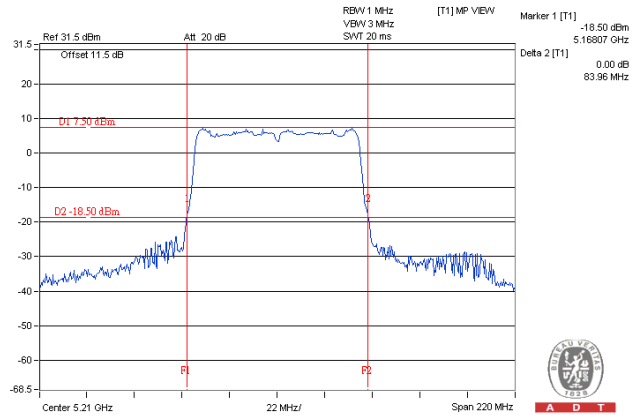
802.11ac (VHT20)



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	16.80	17.04	16.92	17.04
40	5200	16.92	17.04	17.04	17.04
48	5240	16.92	17.16	17.04	17.04
149	5745	16.87	16.87	17.13	17.22
157	5785	16.92	16.92	17.16	17.04
165	5825	16.92	16.92	17.04	17.04

802.11ac (VHT20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
36	5180	18.24	18.24	18.00	18.00
40	5200	18.24	18.24	18.12	18.12
48	5240	18.24	18.24	18.12	18.00
149	5745	18.24	18.24	18.00	18.12
157	5785	18.24	18.24	18.12	18.12
165	5825	18.24	18.12	18.00	18.00

802.11ac (VHT40)

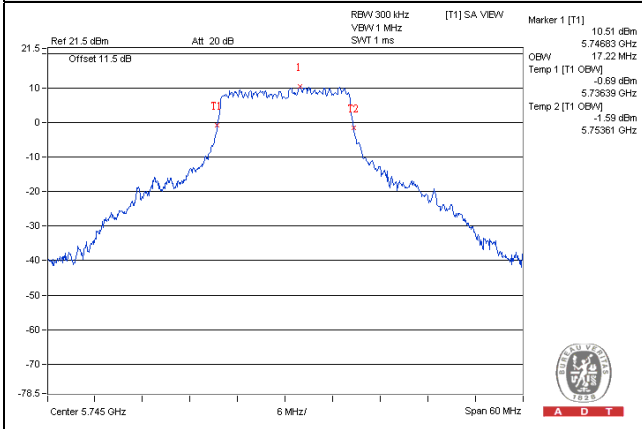
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
38	5190	37.08	37.08	37.08	36.84
46	5230	37.20	37.20	37.08	36.96
151	5755	37.32	37.20	37.08	36.96
159	5795	37.20	37.20	37.20	37.20

802.11ac (VHT80)

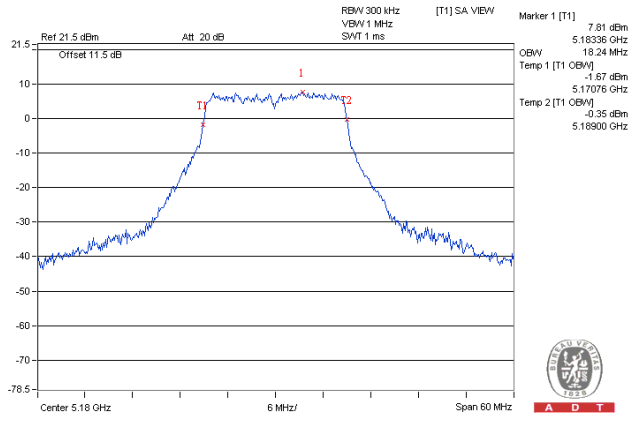
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
42	5210	75.60	75.60	75.60	75.36
155	5775	75.60	75.60	75.60	75.84

Spectrum Plot of Worst Value

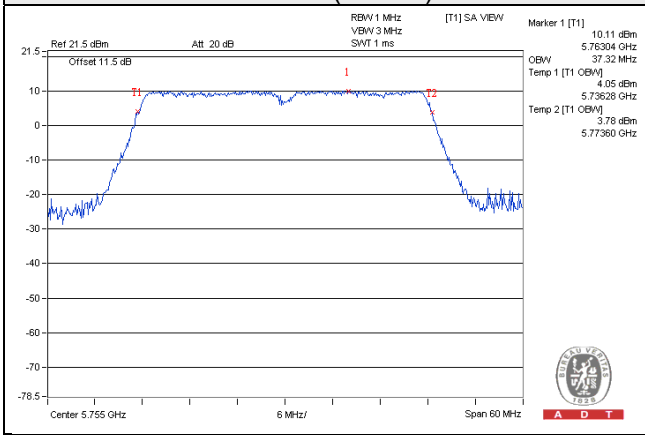
802.11a



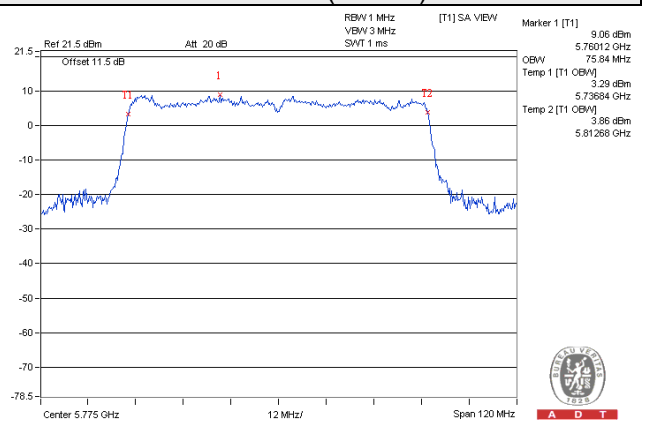
802.11ac (VHT20)



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	18.24	18.12	18.12	18.12
40	5200	18.24	18.24	18.12	18.12
48	5240	18.24	18.24	18.12	18.12
149	5745	18.17	18.24	18.12	18.12
157	5785	18.24	18.24	18.12	18.12
165	5825	18.24	18.24	18.00	18.12

802.11ac (VHT40)

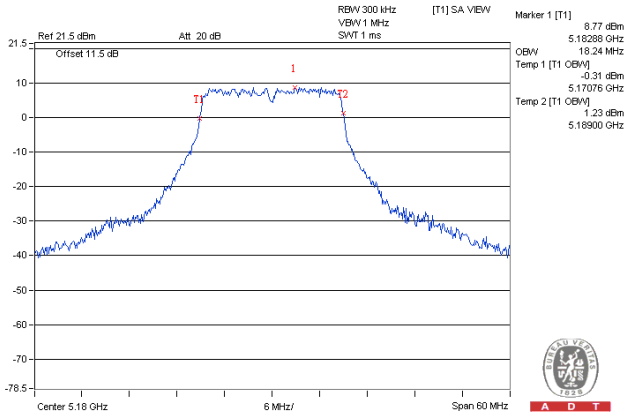
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
38	5190	37.08	37.08	36.96	36.96
46	5230	37.20	37.20	37.08	36.96
151	5755	37.20	37.20	37.32	37.08
159	5795	37.20	37.32	37.20	37.20

802.11ac (VHT80)

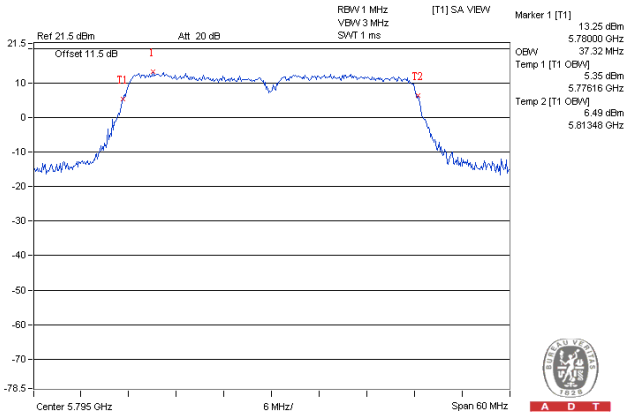
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)			
		Chain 0	Chain 1	Chain 2	Chain 3
42	5210	75.60	75.36	75.36	75.60
155	5775	75.84	75.84	76.08	76.08

Spectrum Plot of Worst Value

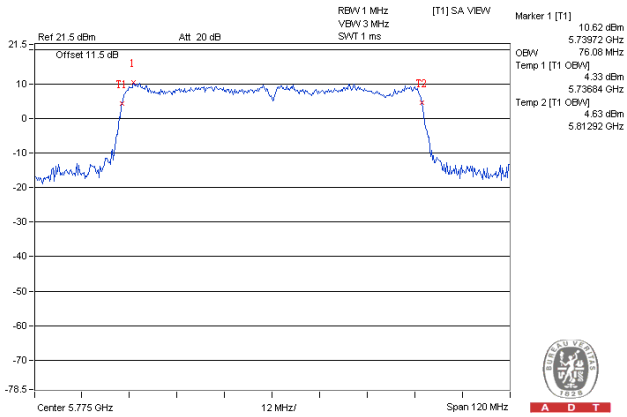
802.11ac (VHT20)



802.11ac (VHT40)



802.11ac (VHT80)

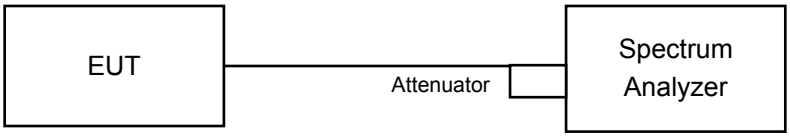


4.4 Peak Power Spectral Density Measurement

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 Procedures

For U-NII-1 band:

Using method SA-2

a. Set span to encompass the entire emission bandwidth (EBW) of the signal.
b. Set RBW = 1 MHz, Set VBW ≥ 3 MHz, Detector = RMS
c. Sweep time = auto, trigger set to “free run”.
d. Trace average at least 100 traces in power averaging mode.
e. Record the max value and add 10 log (1/duty cycle)

For U-NII-3 band:

a. Set span to encompass the entire emission bandwidth (EBW) of the signal.
b. Set RBW = 300 kHz, Set VBW ≥ 1 MHz, Detector = RMS
c. Use the peak marker function to determine the maximum power level in any 300 kHz band segment within the fundamental EBW.
d. Scale the observed power level to an equivalent value in 500 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log(500 kHz/300kHz)
e. Sweep time = auto, trigger set to “free run”.
f. Trace average at least 100 traces in power averaging mode.
g. Record the max value and add 10 log (1/duty cycle)

4.4.5 Deviation from Test Standard

No deviation.

4.4.6 EUT Operating Conditions

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	4.71	5.24	4.68	4.97	10.93	0.72	11.65	12.93	Pass
40	5200	4.61	5.15	4.68	4.97	10.88	0.72	11.60	12.93	Pass
48	5240	4.70	4.92	4.43	4.89	10.76	0.72	11.48	12.93	Pass

Note:
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$] = 10.07dBi > 6dBi, therefore the limit shall be reduced to 17-(10.07-6) = 12.93dBm.
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	3.88	4.19	4.03	4.34	10.13	12.93	Pass
40	5200	3.71	4.54	3.81	4.46	10.17	12.93	Pass
48	5240	3.95	4.44	3.73	4.39	10.16	12.93	Pass

Note:
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$] = 10.07dBi > 6dBi, therefore the limit shall be reduced to 17-(10.07-6) = 12.93dBm.

802.11ac (VHT40)

Chan.	Freq. (MHz)	PSD (dBm)				Total PSD (dBm)	Max. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3			
38	5190	0.40	0.84	0.43	0.71	6.62	12.93	Pass
46	5230	0.41	0.81	0.31	0.49	6.53	12.93	Pass

Note:
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$] = 10.07dBi > 6dBi, therefore the limit shall be reduced to 17-(10.07-6) = 12.93dBm.

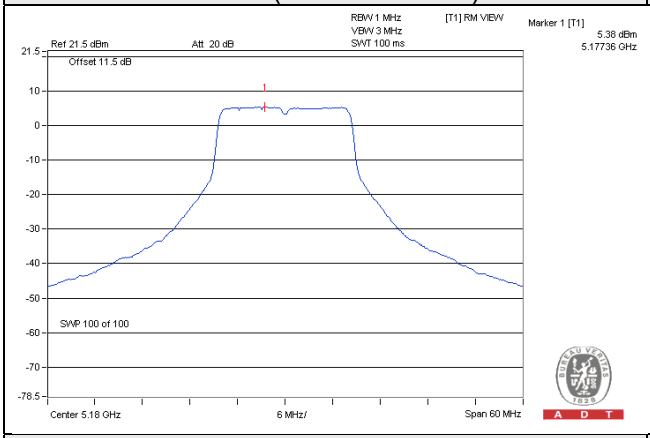
802.11ac (VHT80)

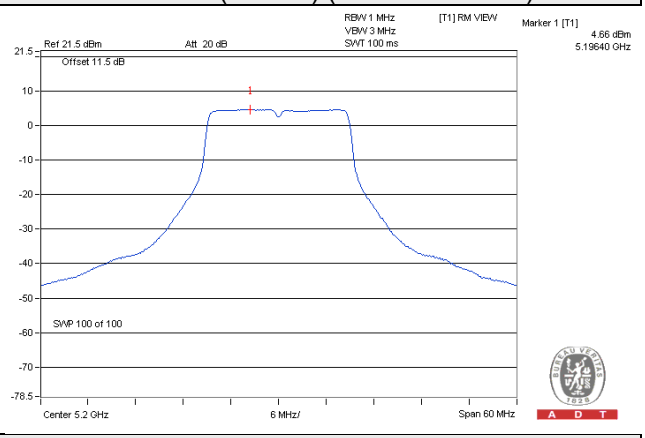
Chan.	Freq. (MHz)	PSD (dBm)				Total PSD w/o duty factor (dBm)	Duty factor	Total PSD with duty factor (dBm)	Max. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3					
42	5210	-2.79	-1.39	-2.47	-2.24	3.69	0.14	3.83	12.93	Pass

Note:

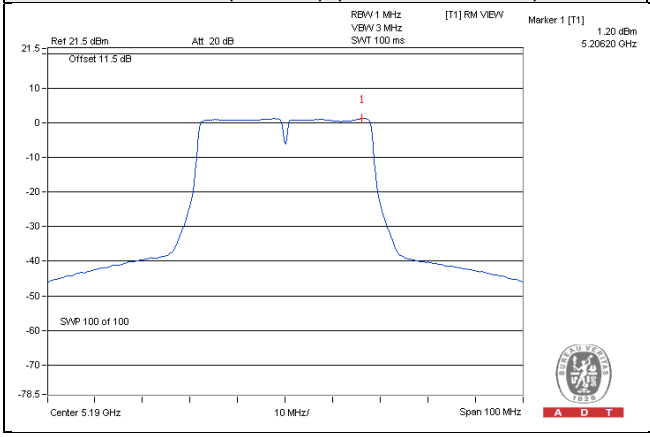
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$] = 10.07dBi > 6dBi, therefore the limit shall be reduced to 17-(10.07-6) = 12.93dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

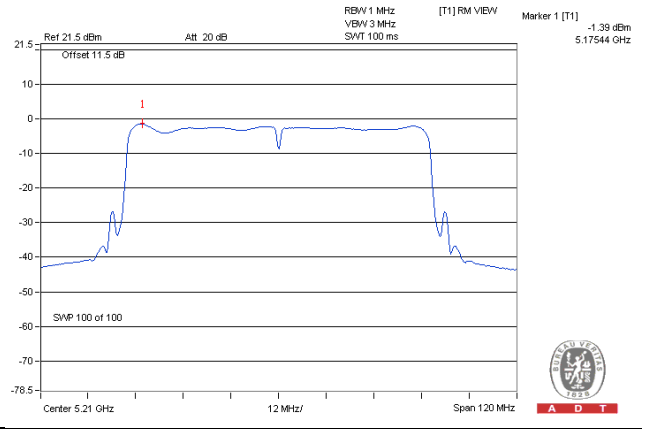
Spectrum Plot of Worst Value	
802.11a (Chain 1 / CH 36)	802.11ac (VHT20) (Chain 1 / CH 40)





802.11ac (VHT40) (Chain 1 / CH 38)	802.11ac (VHT80) (Chain 1 / CH 42)





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	5.03	5.30	4.88	5.33	11.16	12.93	Pass
40	5200	5.16	5.61	4.93	5.33	11.29	12.93	Pass
48	5240	5.24	5.57	4.54	5.10	11.15	12.93	Pass

Note:
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$] = 10.07dBi > 6dBi, therefore the limit shall be reduced to 17-(10.07-6) = 12.93dBm.

802.11ac (VHT40)

Chan.	Freq. (MHz)	PSD (dBm)				Total PSD (dBm)	Max. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3			
38	5190	0.73	3.01	0.77	0.91	7.49	12.93	Pass
46	5230	2.29	2.75	2.37	2.73	8.56	12.93	Pass

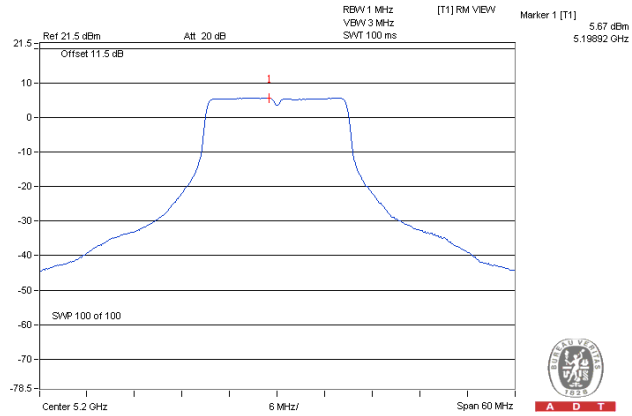
Note:
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$] = 10.07dBi > 6dBi, therefore the limit shall be reduced to 17-(10.07-6) = 12.93dBm.

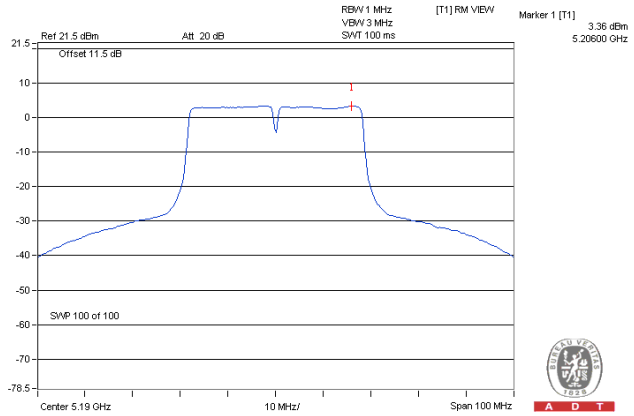
802.11ac (VHT80)

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	-2.96	-2.14	-3.29	-2.87	3.23	0.12	3.35	12.93	Pass

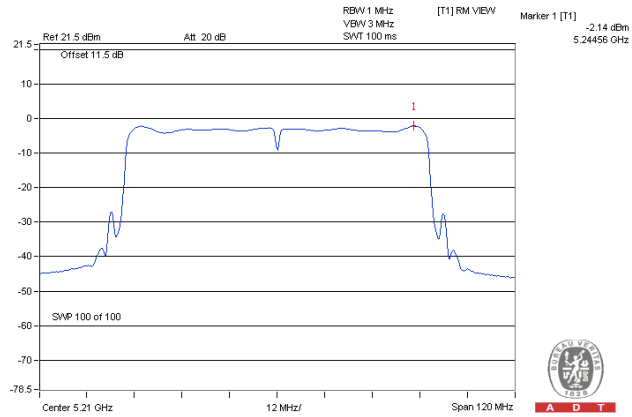
Note:
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$] = 10.07dBi > 6dBi, therefore the limit shall be reduced to 17-(10.07-6) = 12.93dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value	
802.11ac (VHT20) (Chain 1 / CH 40)	802.11ac (VHT40) (Chain 1 / CH 38)





802.11ac (VHT80) (Chain 1 / CH 42)	



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	-3.35	-1.13	6.02	0.72	5.61	25.93	Pass
	157	5785	-3.51	-1.29	6.02	0.72	5.45	25.93	Pass
	165	5825	-3.67	-1.45	6.02	0.72	5.29	25.93	Pass
1	149	5745	-3.48	-1.26	6.02	0.72	5.48	25.93	Pass
	157	5785	-3.55	-1.33	6.02	0.72	5.41	25.93	Pass
	165	5825	-3.54	-1.32	6.02	0.72	5.42	25.93	Pass
2	149	5745	-3.07	-0.85	6.02	0.72	5.89	25.93	Pass
	157	5785	-3.31	-1.09	6.02	0.72	5.65	25.93	Pass
	165	5825	-3.30	-1.08	6.02	0.72	5.66	25.93	Pass
3	149	5745	-2.42	-0.20	6.02	0.72	6.54	25.93	Pass
	157	5785	-2.50	-0.28	6.02	0.72	6.46	25.93	Pass
	165	5825	-2.45	-0.23	6.02	0.72	6.51	25.93	Pass

Note:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$] = 10.07dBi > 6dBi, therefore the limit shall be reduced to 30-(10.07-6) = 25.93dBm.
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	-5.04	-2.82	6.02	3.20	25.93	Pass
	157	5785	-5.38	-3.16	6.02	2.86	25.93	Pass
	165	5825	-5.27	-3.05	6.02	2.97	25.93	Pass
1	149	5745	-5.48	-3.26	6.02	2.76	25.93	Pass
	157	5785	-5.41	-3.19	6.02	2.83	25.93	Pass
	165	5825	-5.31	-3.09	6.02	2.93	25.93	Pass
2	149	5745	-4.64	-2.42	6.02	3.60	25.93	Pass
	157	5785	-4.83	-2.61	6.02	3.41	25.93	Pass
	165	5825	-4.62	-2.40	6.02	3.62	25.93	Pass
3	149	5745	-4.14	-1.92	6.02	4.10	25.93	Pass
	157	5785	-3.87	-1.65	6.02	4.37	25.93	Pass
	165	5825	-3.54	-1.32	6.02	4.70	25.93	Pass

Note:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$] = 10.07dBi > 6dBi, therefore the limit shall be reduced to 30-(10.07-6) = 25.93dBm.

802.11ac (VHT40)

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	151	5755	-8.20	-5.98	6.02	0.04	25.93	Pass
	159	5795	-8.45	-6.23	6.02	-0.21	25.93	Pass
1	151	5755	-8.19	-5.97	6.02	0.05	25.93	Pass
	159	5795	-8.52	-6.30	6.02	-0.28	25.93	Pass
2	151	5755	-7.83	-5.61	6.02	0.41	25.93	Pass
	159	5795	-7.89	-5.67	6.02	0.35	25.93	Pass
3	151	5755	-7.08	-4.86	6.02	1.16	25.93	Pass
	159	5795	-7.18	-4.96	6.02	1.06	25.93	Pass

Note:

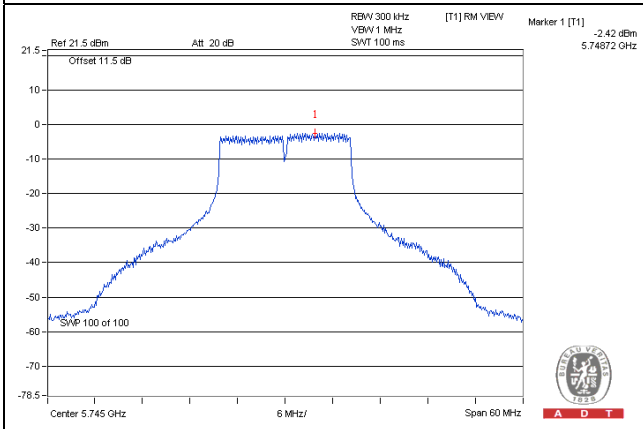
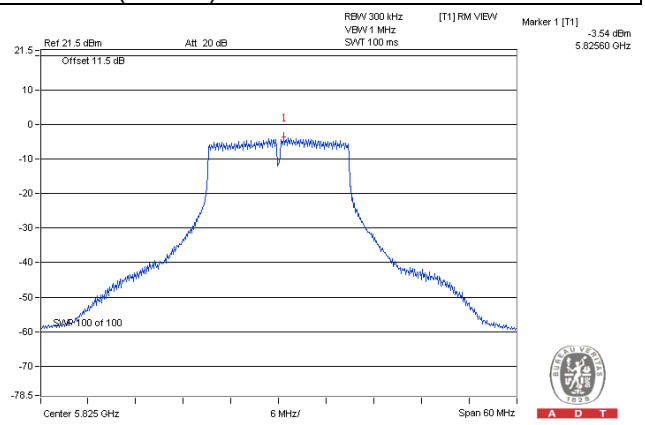
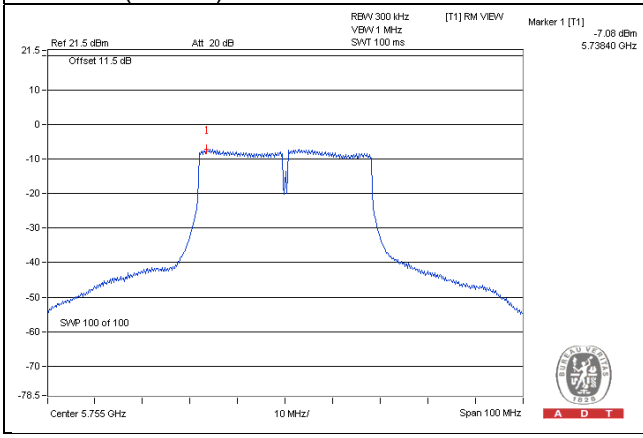
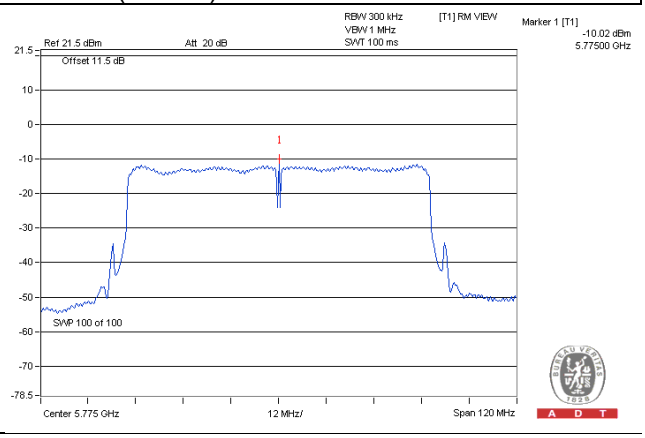
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$] = 10.07dBi > 6dBi, therefore the limit shall be reduced to 30-(10.07-6) = 25.93dBm.

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	-10.61	-8.39	6.02	0.14	-2.23	25.93	Pass
1	155	5775	-10.02	-7.80	6.02	0.14	-1.64	25.93	Pass
2	155	5775	-11.10	-8.88	6.02	0.14	-2.72	25.93	Pass
3	155	5775	-10.32	-8.10	6.02	0.14	-1.94	25.93	Pass

Note:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$] = 10.07dBi > 6dBi, therefore the limit shall be reduced to 30-(10.07-6) = 25.93dBm.
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	-3.89	-1.67	6.02	4.35	25.93	Pass
	157	5785	-4.95	-2.73	6.02	3.29	25.93	Pass
	165	5825	-3.86	-1.64	6.02	4.38	25.93	Pass
1	149	5745	-3.53	-1.31	6.02	4.71	25.93	Pass
	157	5785	-4.01	-1.79	6.02	4.23	25.93	Pass
	165	5825	-3.06	-0.84	6.02	5.18	25.93	Pass
2	149	5745	-3.70	-1.48	6.02	4.54	25.93	Pass
	157	5785	-4.41	-2.19	6.02	3.83	25.93	Pass
	165	5825	-3.62	-1.40	6.02	4.62	25.93	Pass
3	149	5745	-3.26	-1.04	6.02	4.98	25.93	Pass
	157	5785	-3.72	-1.50	6.02	4.52	25.93	Pass
	165	5825	-2.73	-0.51	6.02	5.51	25.93	Pass

Note:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$] = 10.07dBi > 6dBi, therefore the limit shall be reduced to 30-(10.07-6) = 25.93dBm.

802.11ac (VHT40)

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	151	5755	-6.78	-4.56	6.02	1.46	25.93	Pass
	159	5795	-6.53	-4.31	6.02	1.71	25.93	Pass
1	151	5755	-5.78	-3.56	6.02	2.46	25.93	Pass
	159	5795	-5.88	-3.66	6.02	2.36	25.93	Pass
2	151	5755	-6.62	-4.40	6.02	1.62	25.93	Pass
	159	5795	-6.81	-4.59	6.02	1.43	25.93	Pass
3	151	5755	-6.09	-3.87	6.02	2.15	25.93	Pass
	159	5795	-6.09	-3.87	6.02	2.15	25.93	Pass

Note:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$] = 10.07dBi > 6dBi, therefore the limit shall be reduced to 30-(10.07-6) = 25.93dBm.

802.11ac (VHT80)

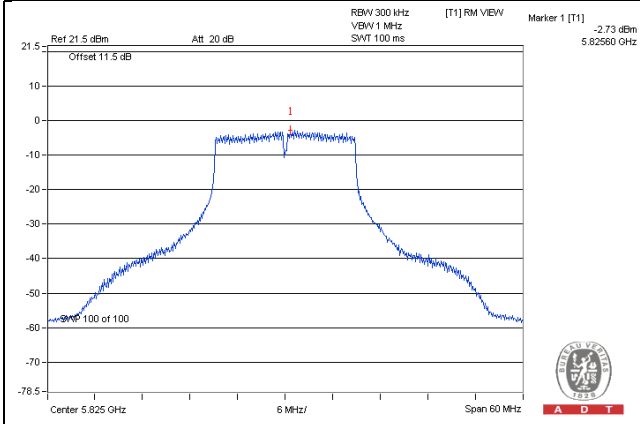
TX chain	Channel	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	10 log (N=4) dB	Duty factor	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
0	155	5775	-7.48	-5.26	6.02	0.12	0.88	25.93	Pass
1	155	5775	-8.01	-5.79	6.02	0.12	0.35	25.93	Pass
2	155	5775	-9.07	-6.85	6.02	0.12	-0.71	25.93	Pass
3	155	5775	-7.86	-5.64	6.02	0.12	0.50	25.93	Pass

Note:

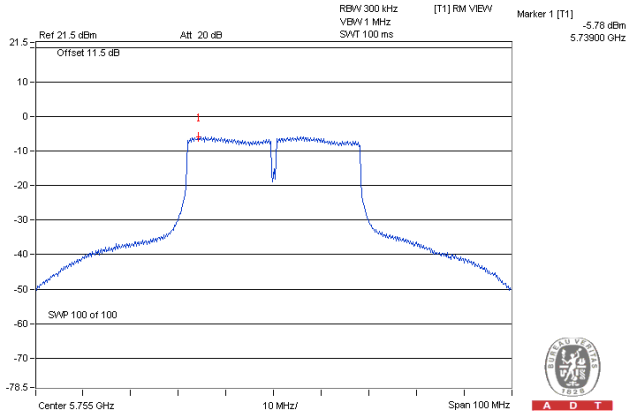
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4$] = 10.07dBi > 6dBi, therefore the limit shall be reduced to 30-(10.07-6) = 25.93dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

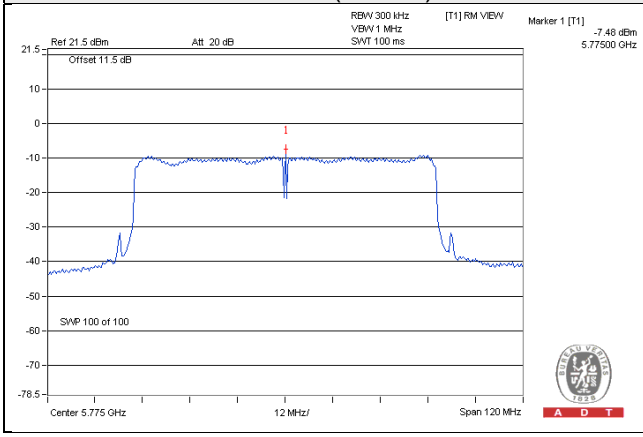
802.11ac (VHT20)



802.11ac (VHT40)



802.11ac (VHT80)

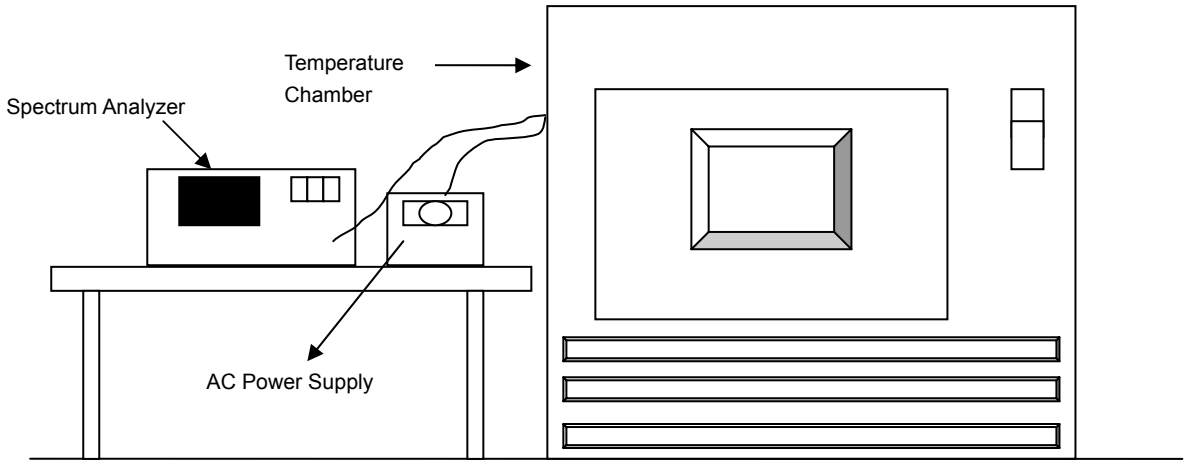


4.5 Frequency Stability

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	5179.9870	-0.00025	5179.9875	-0.00024	5179.9862	-0.00027	5179.9879	-0.00023
40	120	5180.0145	0.00028	5180.0121	0.00023	5180.0127	0.00025	5180.0147	0.00028
30	120	5180.0085	0.00016	5180.0061	0.00012	5180.0077	0.00015	5180.0046	0.00009
20	120	5179.9932	-0.00013	5179.9948	-0.00010	5179.9921	-0.00015	5179.9914	-0.00017
10	120	5179.9898	-0.00020	5179.9940	-0.00012	5179.9898	-0.00020	5179.9917	-0.00016
0	120	5179.9952	-0.00009	5179.9957	-0.00008	5179.9949	-0.00010	5179.9951	-0.00009
-10	120	5180.0006	0.00001	5180.0045	0.00009	5180.0050	0.00010	5180.0039	0.00008
-20	120	5180.0061	0.00012	5180.0075	0.00014	5180.0036	0.00007	5180.0064	0.00012
-30	120	5180.0233	0.00045	5180.0218	0.00042	5180.0241	0.00047	5180.0223	0.00043

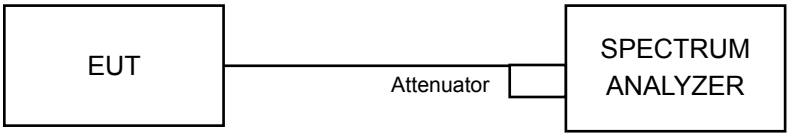
Frequency Stability Versus Voltage									
Operating Frequency: 5180MHz									
Temp. (℃)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
20	138	5179.9926	-0.00014	5179.995	-0.00010	5179.992	-0.00015	5179.9908	-0.00018
	120	5179.9932	-0.00013	5179.9948	-0.00010	5179.9921	-0.00015	5179.9914	-0.00017
	102	5179.9942	-0.00011	5179.9951	-0.00009	5179.9922	-0.00015	5179.9923	-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

MEASUREMENT PROCEDURE REF

a. Set resolution bandwidth (RBW) = 100kHz

b. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.

c. Trace mode = max hold.

d. Sweep = auto couple.

e. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

4.6.5 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	16.39	16.39	16.39	16.39	0.5	Pass
157	5785	16.40	16.41	16.41	16.40	0.5	Pass
165	5825	16.41	16.41	16.41	16.41	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	17.66	17.66	17.68	17.68	0.5	Pass
157	5785	17.66	17.65	17.67	17.66	0.5	Pass
165	5825	17.66	17.67	17.67	17.66	0.5	Pass

802.11ac (VHT40)

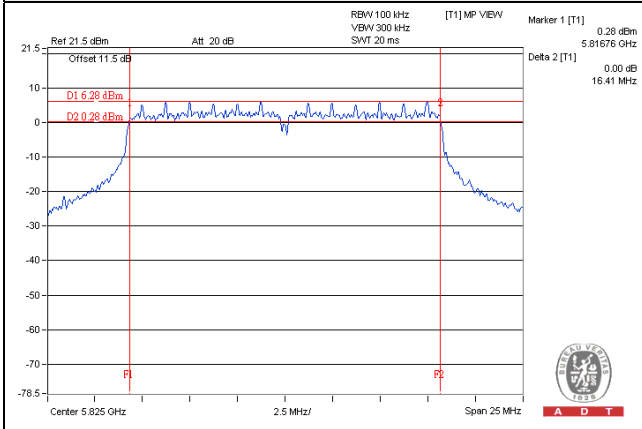
Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
151	5755	36.51	36.48	36.53	36.48	0.5	Pass
159	5795	36.51	36.50	36.53	36.50	0.5	Pass

802.11ac (VHT80)

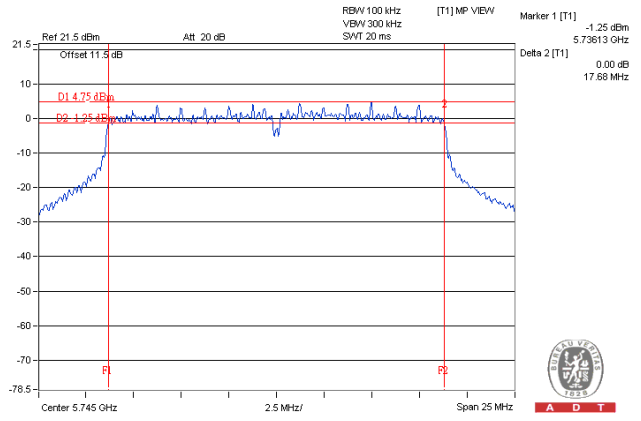
Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
155	5775	75.72	75.96	75.58	75.64	0.5	Pass

Spectrum Plot of Worst Value

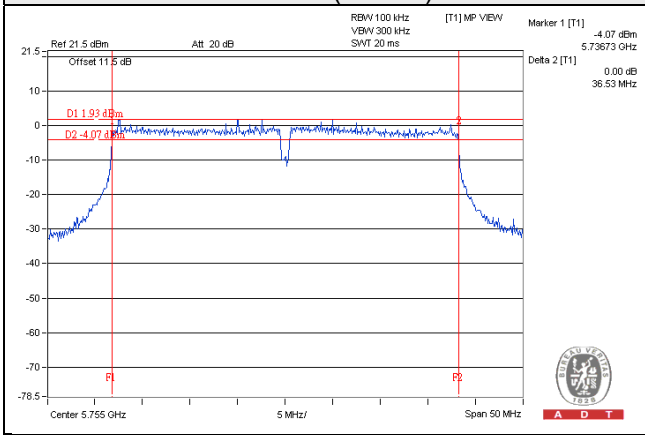
802.11a



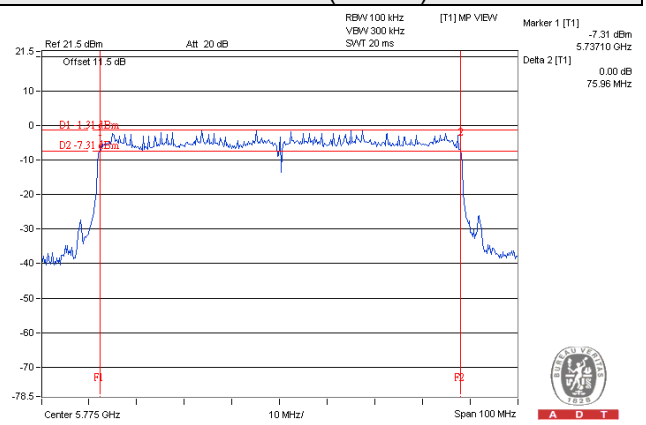
802.11ac (VHT20)



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	17.63	17.67	17.66	17.66	0.5	Pass
157	5785	17.67	17.67	17.68	17.67	0.5	Pass
165	5825	17.67	17.68	17.68	17.65	0.5	Pass

802.11ac (VHT40)

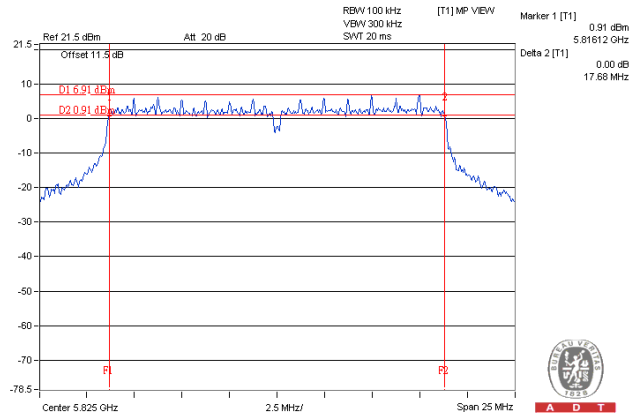
Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
151	5755	36.50	36.48	36.51	36.46	0.5	Pass
159	5795	36.50	36.48	36.54	36.50	0.5	Pass

802.11ac (VHT80)

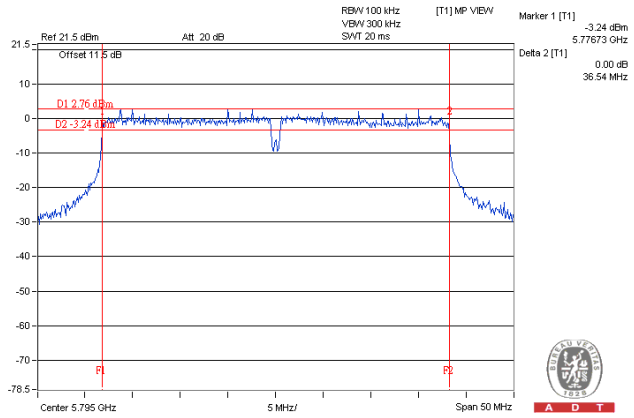
Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
155	5775	75.82	75.56	75.67	75.43	0.5	Pass

Spectrum Plot of Worst Value

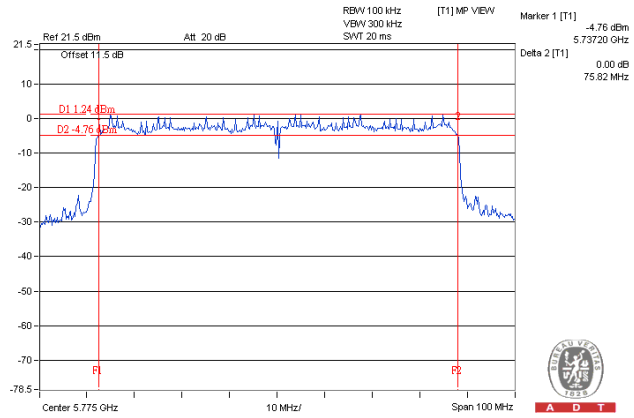
802.11ac (VHT20)



802.11ac (VHT40)



802.11ac (VHT80)



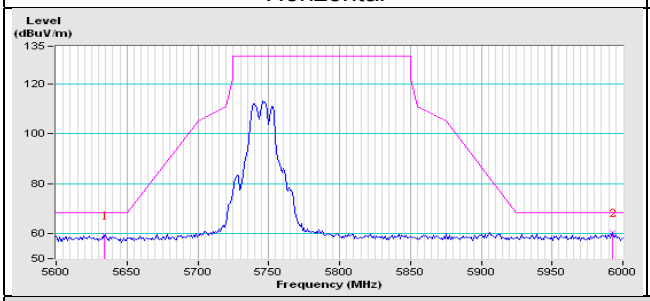
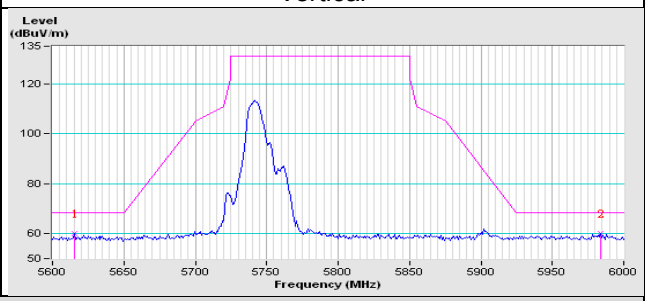
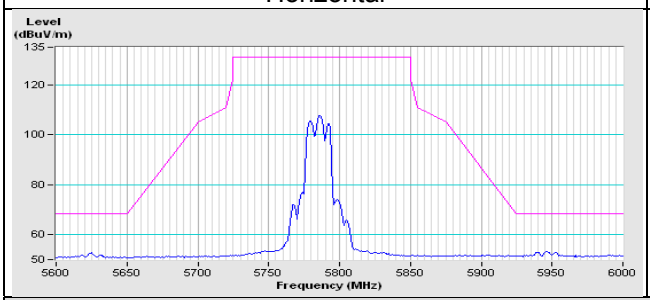
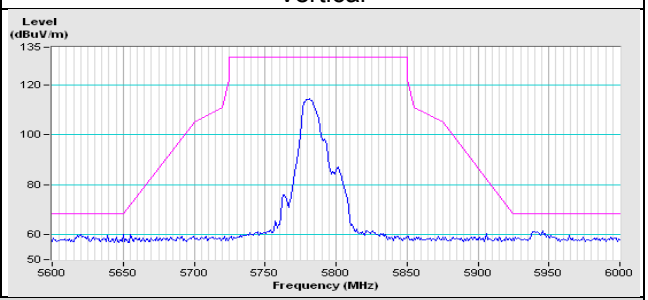
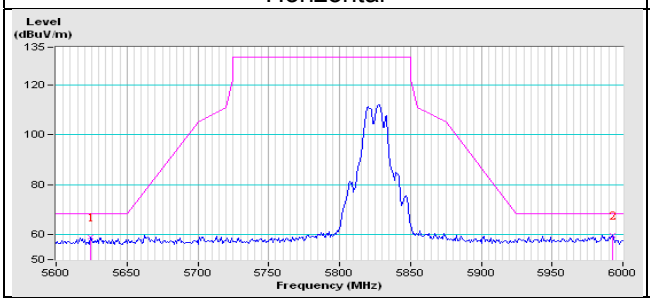
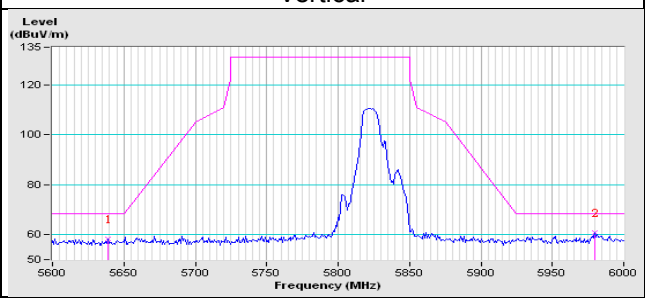
5 Pictures of Test Arrangements

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

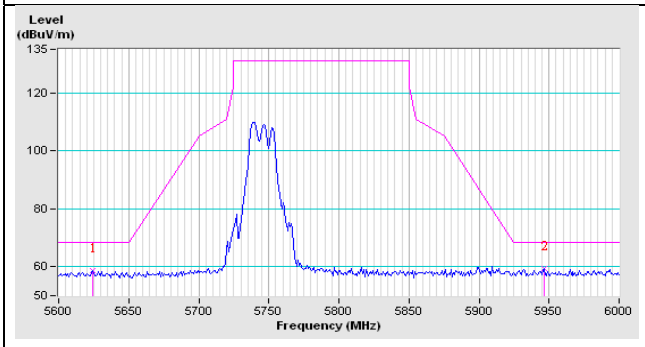
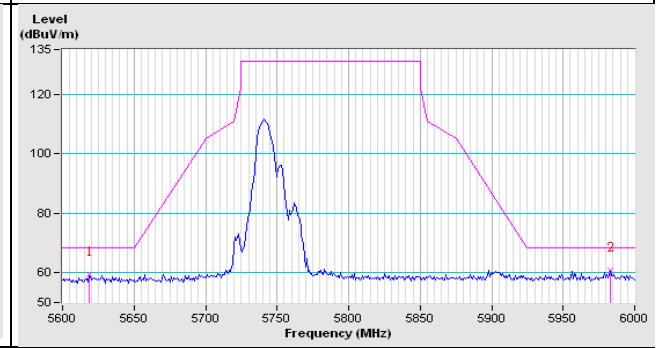
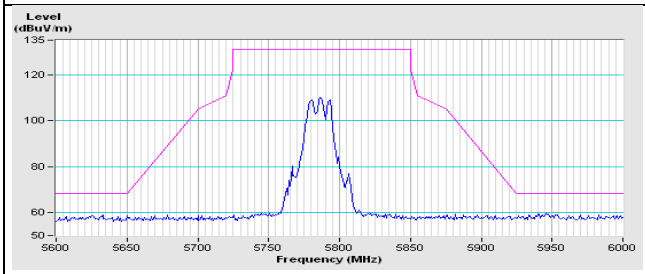
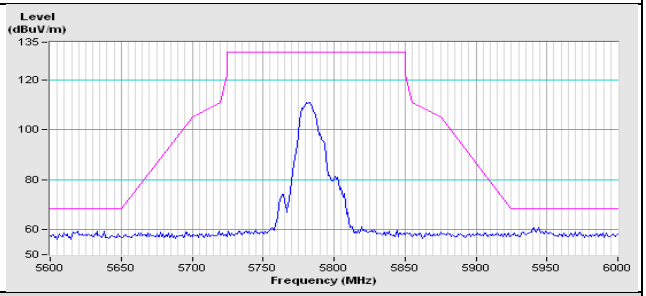
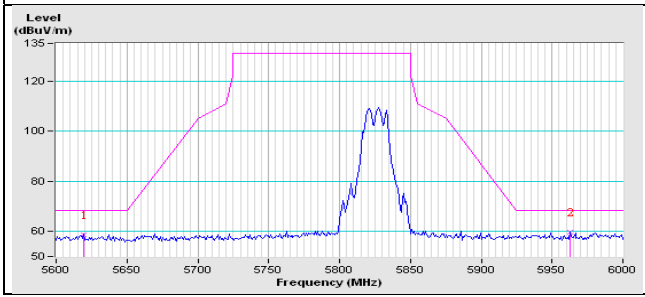
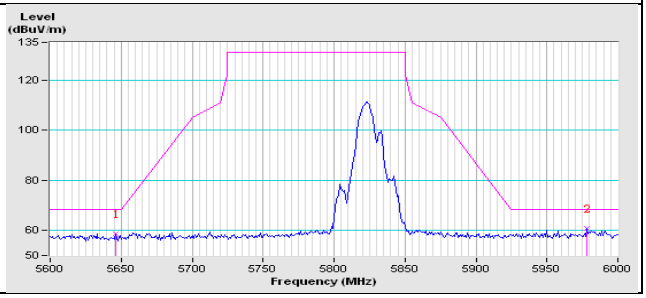
Annex A- Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band)

CDD Mode

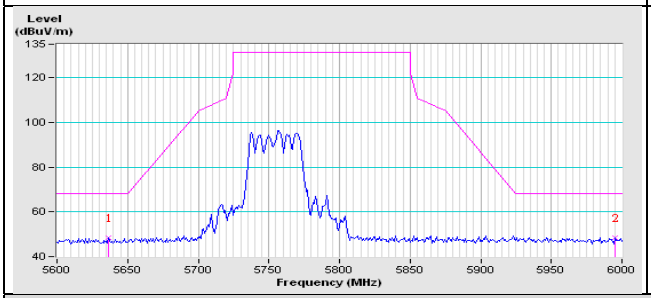
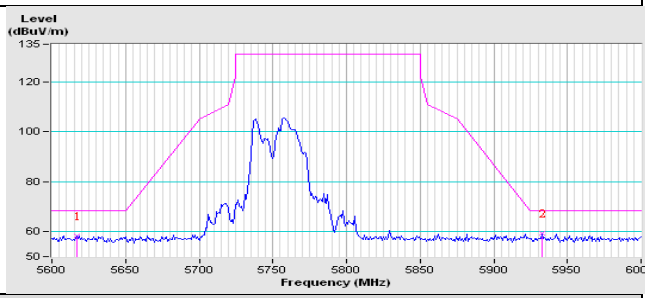
802.11a

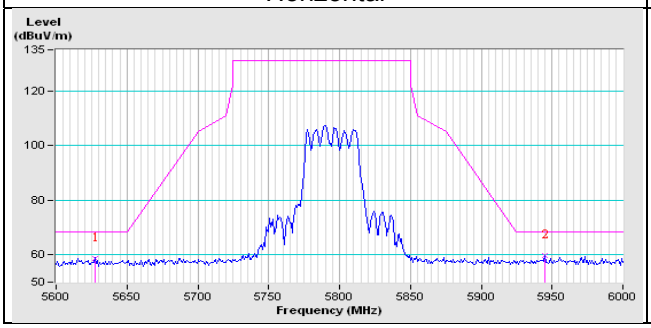
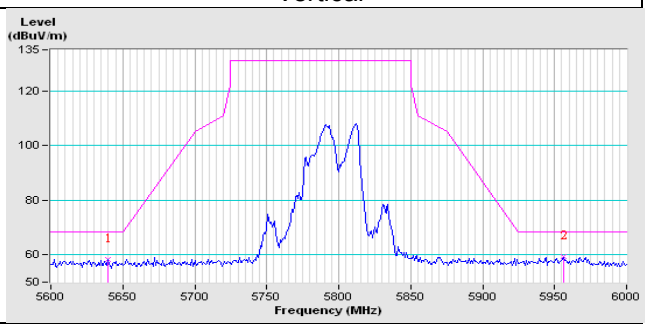
CH149	
Horizontal	Vertical
	
CH157	
Horizontal	Vertical
	
CH165	
Horizontal	Vertical
	

802.11ac (VHT20)

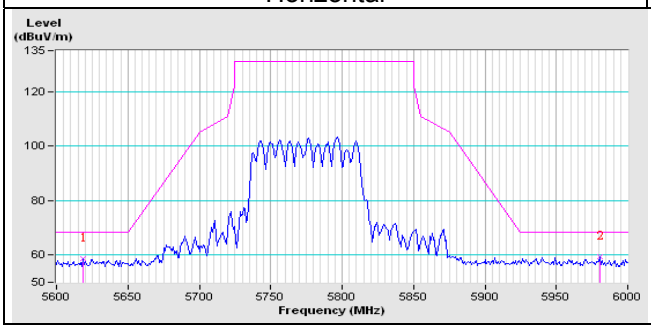
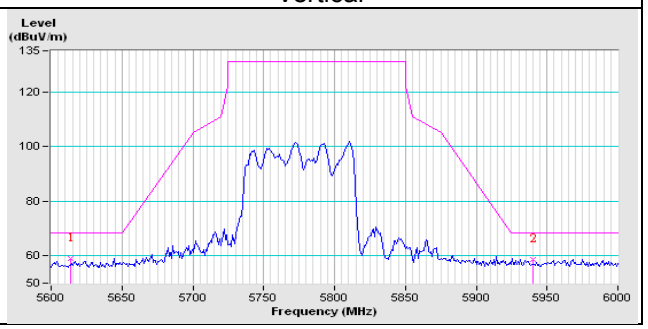
CH149	
Horizontal	Vertical
	
CH157	
Horizontal	Vertical
	
CH165	
Horizontal	Vertical
	

802.11ac (VHT40)

CH151	
Horizontal	Vertical
	

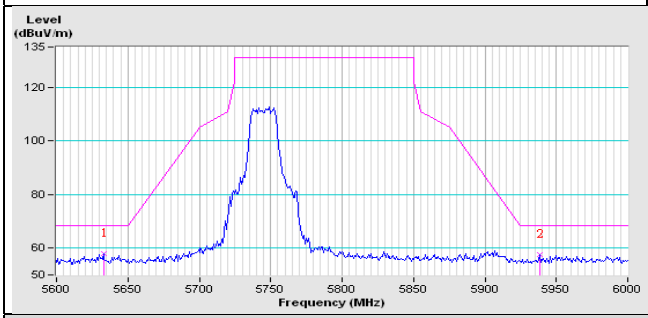
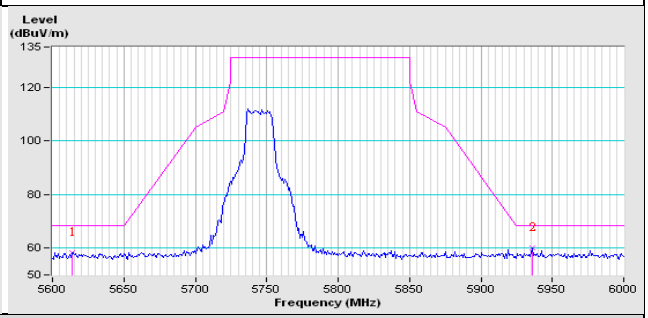
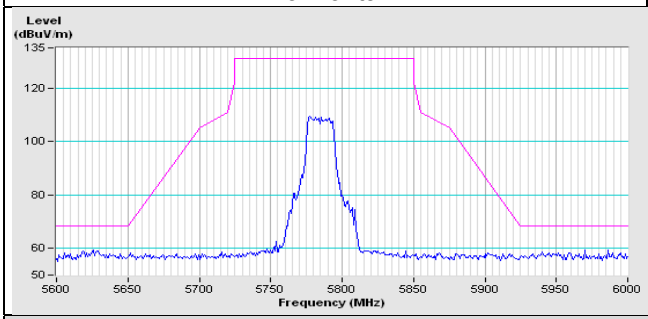
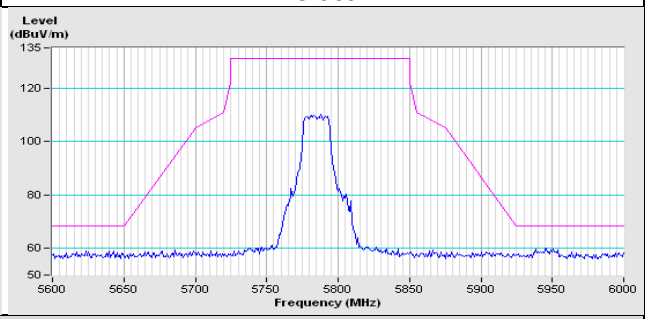
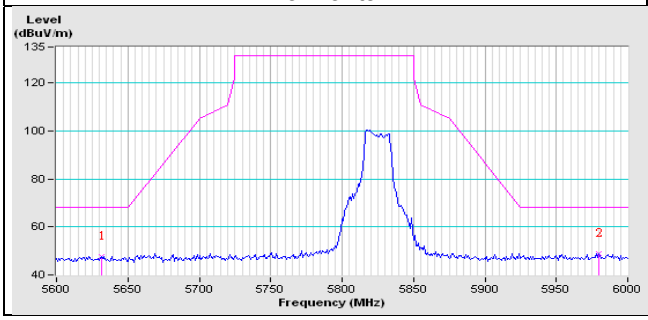
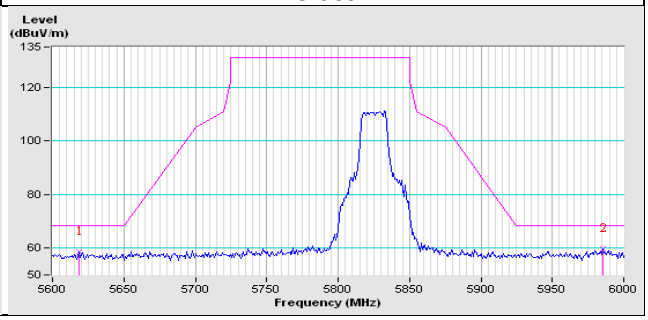
CH159	
Horizontal	Vertical
	

802.11ac (VHT80)

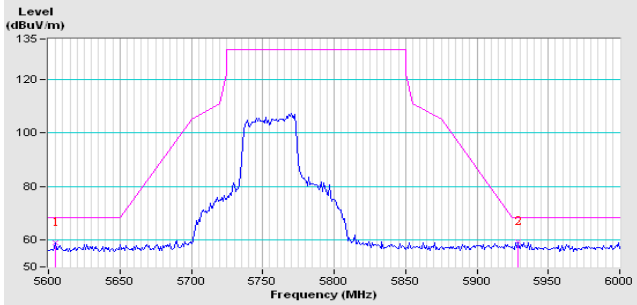
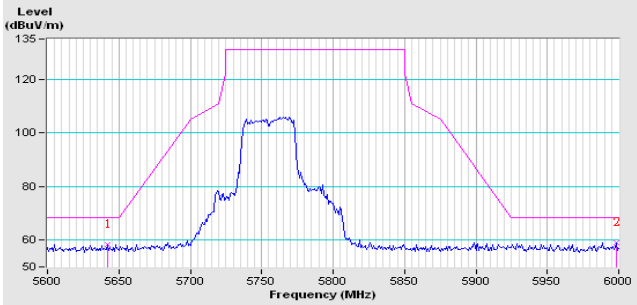
CH155	
Horizontal	Vertical
	

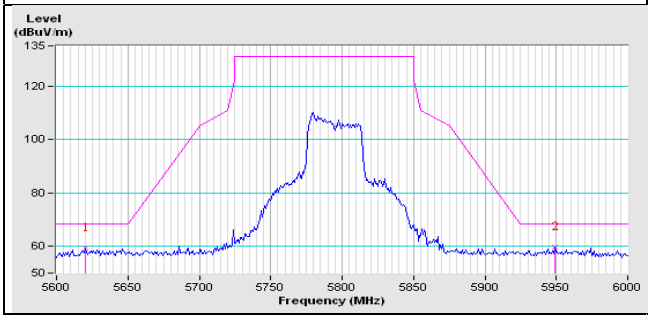
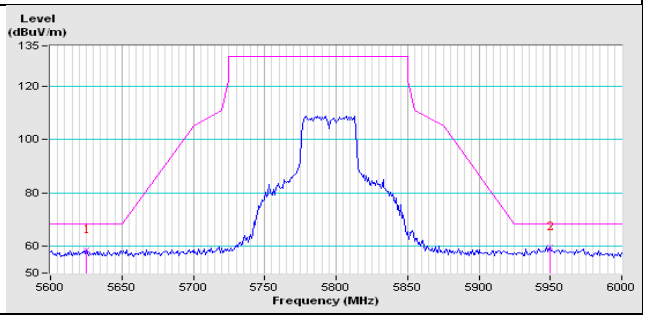
Beamforming Mode

802.11ac (VHT20)

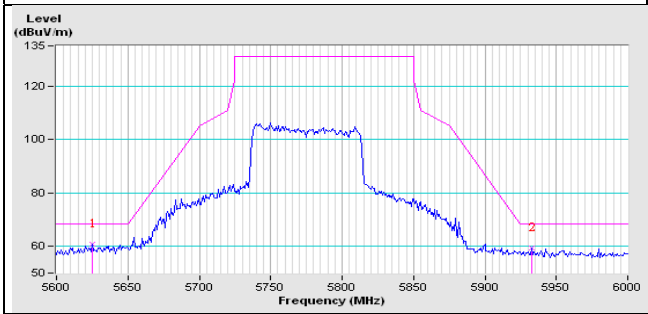
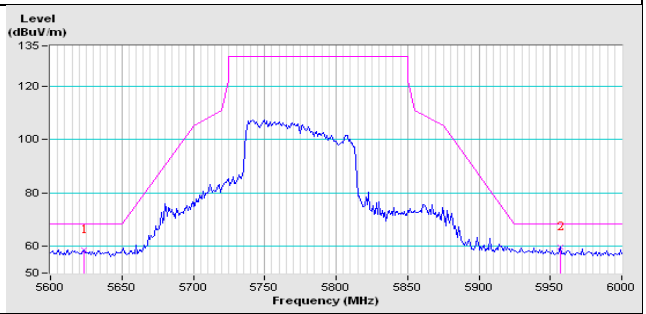
CH149	
Horizontal	Vertical
	
CH157	
Horizontal	Vertical
	
CH165	
Horizontal	Vertical
	

802.11ac (VHT40)

CH151	
Horizontal	Vertical
	

CH159	
Horizontal	Vertical
	

802.11ac (VHT80)

CH155	
Horizontal	Vertical
	

Appendix – Information on the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are 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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Fax: 886-3-3270892

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

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

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