FCC Test Report (DFS Band)

Report No.: RF161125E01B-1

FCC ID: PY316400361

Test Model: RBW30

Received Date: Dec. 02, 2016

Test Date: Dec. 01 to 22, 2016

Issued Date: Mar. 27, 2017

Applicant: NETGEAR, Inc.

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

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Release Control Record

Issue No.	Description	Date Issued
RF161125E01B-1	Original release.	

1 Certificate of Conformity

Product: Orbi Wall Plug Satellite

Brand: NETGEAR

Test Model: RBW30

Sample Status: ENGINEERING SAMPLE

Applicant: NETGEAR, Inc.

Test Date: Dec. 01 to 22, 2016

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

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

Prepared by : _____ , **Date:** Mar. 27, 2017
Midoli Peng / Specialist

Approved by : _____ , **Date:** Mar. 27, 2017
May Chen / 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 -16.88dB at 1.40625MHz.
15.407(b) (1/2/3/4(i/ii)/6)	Radiated Emissions & Band Edge Measurement*	Pass	Meet the requirement of limit. Minimum passing margin is -0.1dB at 5725.00MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	-	Reference only.
15.407(a)(1/2/3)	Peak Power Spectral Density	Pass	Meet the requirement of limit.
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	No antenna connector is used.

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.83 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	5.34 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	3.41 dB
	6GHz ~ 18GHz	3.49 dB
	18GHz ~ 40GHz	3.30 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT (DFS Band)

Product	Orbi Wall Plug Satellite
Brand	NETGEAR
Test Model	RBW30
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	AC 100-240V, 60/50Hz, 0.2A
Modulation Type	64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode
Modulation Technology	OFDM
Transfer Rate	802.11a: up to 54Mbps 802.11n: up to 300Mbps 802.11ac: up to 866.7Mbps
Operating Frequency	5.26GHz ~ 5.32GHz, 5.50GHz ~ 5.70GHz
Number of Channel	15 for 802.11a, 802.11n (HT20), 802.11ac (VHT20) 7 for 802.11n (HT40), 802.11ac (VHT40) 3 for 802.11ac (VHT80)
Output Power	**5.26GHz ~ 5.32GHz:** **CDD Mode** 204.674mW **Beamforming Mode** 247.69mW **5.50GHz ~ 5.70GHz:** **CDD Mode** 224.824mW **Beamforming Mode** 237.807mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	NA
Data Cable Supplied	NA

Note:

1. This report is prepared for FCC class II permissive change. The difference compared with the Report No.: RF161125E01-1 as the following:
   - Add DFS band <5.26GHz ~ 5.32GHz, 5.50GHz ~ 5.70GHz>
2. According to above condition, all test items need to be performed. And all data weres verified to meet the requirements.

3. EUT has below passive filter as following table:

	Spec	With gasket
Main source	CIROCOMM TECHNOLOGY CORP. Part No.: 01152351J41F110 Part No.: 01156971J41F110	X
		V
Second source	JIA XING GLEAD ELECTRONICS CO., LTD Part No.: DFD5235S180DC Part No.: DFD5697S360DC	X
From the above source, the worst case was found in **Main source with gasket.** Therefore only the test data were recorded in this report.		

4. The EUT has three radio transceivers, radio 1 is WLAN technologies for dual band (2.4GHz & 5GHz-UNII-3), radio 2 is WLAN technology for single band (5GHz-UNII-1), and radio 3 is Bluetooth low energy (BT-LE) technology only.
5. Simultaneously transmission condition.

Condition	Technology		
1	WLAN (Radio 1) (2.4GHz) + 5GHz-UNII-2C + 5GHz-UNII-3)	WLAN (Radio 2) (5GHz-UNII-1 + 5GHz-UNII-2A)	Bluetooth (Radio 3)
Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.			

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

WLAN (Radio 1) Antenna				
Antenna No.	Ant. Gain(dBi)	Frequency range (GHz)	Antenna Type	Connecter Type
1	3	2.4~2.4835	PIFA	NA
	4.5	5.47~5.725		
	4.4	5.725~5.85		
2	3.5	2.4~2.4835	PIFA	NA
	3.9	5.47~5.725		
	4	5.725~5.85		
WLAN (Radio 2) Antenna				
Antenna No.	Ant. Gain(dBi)	Frequency range (GHz)	Antenna Type	Connecter Type
3	3.6	5.15~5.25	PIFA	NA
	3.7	5.25~5.35		
4	3.2	5.15~5.25	PIFA	NA
	3.3	5.25~5.35		
Bluetooth (Radio 3) Antenna				
Antenna No.	Ant. Gain(dBi)	Frequency range (GHz)	Antenna Type	Connecter Type
5	2.1	2.4~2.4835	Chip	NA

7. The Directional gain table:

Frequency (MHz)	Max Gain (dBi)
5260 ~ 5320	3.81
5500 ~ 5700	5.66

Note:

1. Non-TxBF mode & TxBF mode antenna gain refer to KDB 662911 F 2) f) (ii)

$$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{SS}} \left\{ \sum_{k=1}^{N_{ANT}} g_{j,k} \right\}^2}{N_{ANT}} \right]$$

where

Each antenna is driven by no more than one spatial stream;

N_{SS} = the number of independent spatial streams of data;

N_{ANT} = the total number of antennas

$g_{j,k} = 10^{G_k/20}$ if the kth antenna is being fed by spatial stream j, or zero if it is not;

G_k is the gain in dBi of the kth antenna.

2. Above directional gain were calculated from actual measurement data.

8. The EUT incorporates a MIMO function.

2.4GHz Band			
MODULATION MODE	**DATA RATE (MCS)**	**TX & RX CONFIGURATION**	
802.11b	1 ~ 11Mbps	2TX	2RX
802.11g	6 ~ 54Mbps	2TX	2RX
802.11n (HT20)	MCS 0~7	2TX	2RX
	MCS 8~15	2TX	2RX
802.11n (HT40)	MCS 0~7	2TX	2RX
	MCS 8~15	2TX	2RX
VHT20	MCS0~8 Nss=1	2TX	2RX
	MCS0~8 Nss=2	2TX	2RX
VHT40	MCS0~9 Nss=1	2TX	2RX
	MCS0~9 Nss=2	2TX	2RX
5GHz Band			
MODULATION MODE	**DATA RATE (MCS)**	**TX & RX CONFIGURATION**	
802.11a	6 ~ 54Mbps	2TX	2RX
802.11n (HT20)	MCS 0~7	2TX	2RX
	MCS 8~15	2TX	2RX
802.11n (HT40)	MCS 0~7	2TX	2RX
	MCS 8~15	2TX	2RX
802.11ac (VHT20)	MCS0~8 Nss=1	2TX	2RX
	MCS0~8 Nss=2	2TX	2RX
802.11ac (VHT40)	MCS0~9 Nss=1	2TX	2RX
	MCS0~9 Nss=2	2TX	2RX
802.11ac (VHT80)	MCS0~9 Nss=1	2TX	2RX
	MCS0~9 Nss=2	2TX	2RX

Note:
1. All of modulation mode support beamforming function except 802.11a/b/g modulation mode.
2. 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)
3. The EUT support Beamforming and CDD mode, therefore both mode were investigated and the worst case scenario was identified. The worst case data were presented in test report

9. 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 5260 ~ 5320MHz

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

Channel	Frequency	Channel	Frequency
52	5260 MHz	60	5300 MHz
56	5280 MHz	64	5320 MHz

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

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
58	5290 MHz

FOR 5500 ~ 5700MHz

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

Channel	Frequency	Channel	Frequency
100	5500 MHz	124	5620 MHz
104	5520 MHz	128	5640 MHz
108	5540 MHz	132	5660 MHz
112	5560 MHz	136	5680 MHz
116	5580 MHz	140	5700 MHz
120	5600 MHz		

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

Channel	Frequency	Channel	Frequency
102	5510 MHz	126	5630 MHz
110	5550 MHz	134	5670 MHz
118	5590 MHz		

2 channels are provided for 802.11ac (VHT80):

Channel	Frequency	Channel	Frequency
106	5530 MHz	122	5610 MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

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

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

NOTE:
1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Y-plane**.

Radiated Emission Test (Above 1GHz):

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

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

Radio 2						
CDD Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6
Beamforming Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11ac (VHT20)	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.5
802.11ac (VHT40)		54 to 62	54, 62	OFDM	BPSK	13.5
802.11ac (VHT80)		58	58	OFDM	BPSK	29.3
Radio 1						
CDD Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6
Beamforming Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11ac (VHT20)	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.5
802.11ac (VHT40)		102 to 134	102, 110, 134	OFDM	BPSK	13.5
802.11ac (VHT80)		106 to 122	106, 122	OFDM	BPSK	29.3

Radiated Emission Test (Below 1GHz):

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

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

Radio 2						
Beamforming Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11ac (VHT40)	5260-5320	54 to 62	54	OFDM	BPSK	6.5
Radio 1						
Beamforming Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11ac (VHT40)	5500-5700	102 to 134	110	OFDM	BPSK	6.5

Power Line Conducted Emission Test:

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

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

Radio 2						
Beamforming Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11ac (VHT40)	5260-5320	54 to 62	54	OFDM	BPSK	6.5
Radio 1						
Beamforming Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11ac (VHT40)	5500-5700	102 to 134	110	OFDM	BPSK	6.5

Antenna Port Conducted Measurement:

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

Radio 2						
CDD Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6
Beamforming Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11ac (VHT20)	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6.5
802.11ac (VHT40)		54 to 62	54, 62	OFDM	BPSK	13.5
802.11ac (VHT80)		58	58	OFDM	BPSK	29.3
Radio 1						
CDD Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6
Beamforming Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11ac (VHT20)	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6.5
802.11ac (VHT40)		102 to 134	102, 110, 134	OFDM	BPSK	13.5
802.11ac (VHT80)		106 to 122	106, 122	OFDM	BPSK	29.3

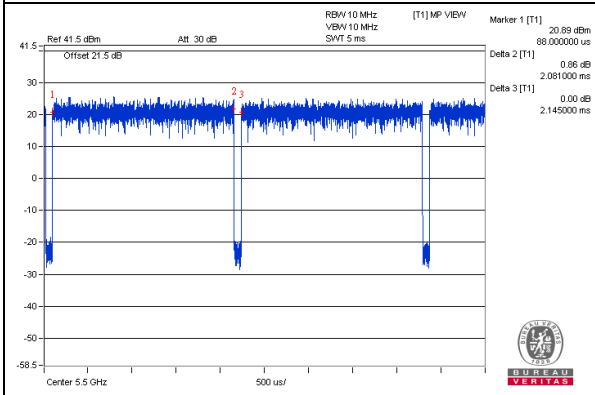
Test Condition:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE≥1G	25deg. C, 71%RH	120Vac, 60Hz	Terry Huang
RE<1G	25deg. C, 68%RH	120Vac, 60Hz	Andy Ho
PLC	25deg. C, 75%RH	120Vac, 60Hz	Andy Ho
APCM	25deg. C, 60%RH	120Vac, 60Hz	Anderson Chen

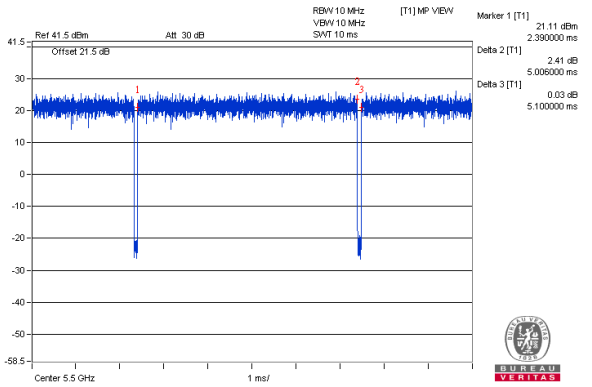
3.3 Duty Cycle of Test Signal

If duty cycle of test signal is ≥ 98 %, duty factor is not required.
If duty cycle of test signal is < 98%, duty factor shall be considered.
802.11a: Duty cycle = 2.081 ms/2.145 ms = 0.97, Duty factor = 10 * log(1/0.97) = 0.13
802.11ac (VHT20): Duty cycle = 5.006 ms/5.1 ms = 0.982
802.11ac (VHT40): Duty cycle = 2.433 ms/2.52 ms = 0.965, Duty factor = 10 * log(1/0.965) = 0.15
802.11ac (VHT80): Duty cycle = 1.145 ms/1.234 ms = 0.928, Duty factor = 10 * log(1/0.928) = 0.33

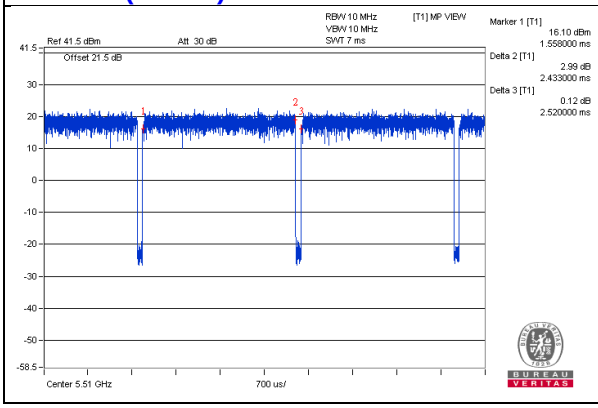
802.11a



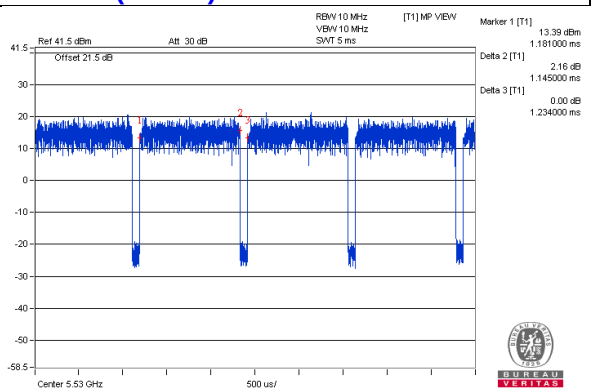
802.11ac (VHT20)



802.11ac (VHT40)



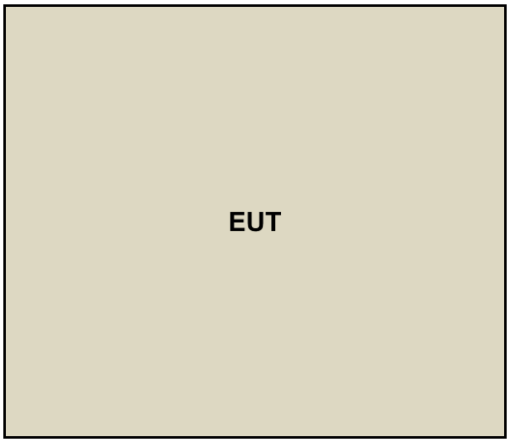
802.11ac (VHT80)



3.4 Description of Support Units

The EUT has been tested as an independent unit.

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standard

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

FCC Part 15, Subpart E (15.407)
KDB 789033 D02 General UNII Test Procedure New Rules v01r03
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 Procedure New Rules v01r03			Field Strength at 3m	
			PK:74 (dBμV/m)	AV:54 (dBμV/m)
Frequency Band	Applicable To		EIRP Limit	Equivalent Field Strength at 3m
5150~5250 MHz	15.407(b)(1)		PK:-27 (dBm/MHz)	PK:68.2(dBμV/m)
5250~5350 MHz	15.407(b)(2)			
5470~5725 MHz	15.407(b)(3)			
5725~5850 MHz	☒	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)	Emission limits in section 15.247(d)	

*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.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Keysight	N9038A	MY54450088	July 20, 2016	July 19, 2017
Pre-Amplifier(*) EMCI	EMC001340	980142	Jan. 20, 2016	Jan. 19, 2018
Loop Antenna(*) Electro-Metrics	EM-6879	264	Dec. 16, 2016	Dec. 15, 2018
RF Cable	NA	LOOPCAB-001 LOOPCAB-002	Jan. 18, 2016	Jan. 17, 2017
Pre-Amplifier Mini-Circuits	ZFL-1000VH2 B	AMP-ZFL-01	Nov. 10, 2016	Nov. 09, 2017
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-406	Jan. 04, 2016	Jan. 03, 2017
RF Cable	8D	966-4-1 966-4-2 966-4-3	Apr. 02, 2016	Apr. 01, 2017
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-4-01	Oct. 05, 2016	Oct. 04, 2017
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-783	Jan. 19, 2016	Jan. 18, 2017
Pre-Amplifier Agilent	8449B	3008A01922	Sep. 18, 2016	Sep. 17, 2017
RF Cable	EMC104-SM-SM-2000 EMC104-SM-SM-5000 EMC104-SM-SM-5000	150318 150323 150324	Mar. 30, 2016	Mar. 29, 2017
Pre-Amplifier EMCI	EMC184045	980143	Jan. 15, 2016	Jan. 14, 2017
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170608	Jan. 08, 2016	Jan. 07, 2017
RF Cable	SUCOFLEX 102	36432/2 36441/2	Jan. 16, 2016	Jan. 15, 2017
Software	ADT_Radiated _V8.7.08	NA	NA	NA
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208410	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP02	NA	NA
Spectrum Analyzer R&S	FSv40	100964	June 28, 2016	June 27, 2017
Power meter Anritsu	ML2495A	1014008	May 5, 2016	May 04, 2017
Power sensor Anritsu	MA2411B	0917122	May 5, 2016	May 04, 2017
AC Power Source Extech Electronics	6205	1440452	NA	NA
Temperature & Humidity Chamber Giant Force	GTH-150-40-S P-AR	MAA0812-008	Jan. 15, 2016	Jan. 14, 2017
Digital Multimeter FLUKE	87III	73680266	Nov. 10, 2016	Nov. 09, 2017

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 calibration interval of the above test instruments is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3 Loop antenna was used for all emissions below 30 MHz.
4. The test was performed in 966 Chamber No. 4.
5. The FCC Site Registration No. is 292998
6. The CANADA Site Registration No. is 20331-2
6. Tested Date: Dec. 20 to 22, 2016

4.1.3 Test Procedure

For Radiated emission below 30MHz

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

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

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

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

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

NOTE:

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

For Radiated emission above 30MHz

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

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

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

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

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

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

Note:

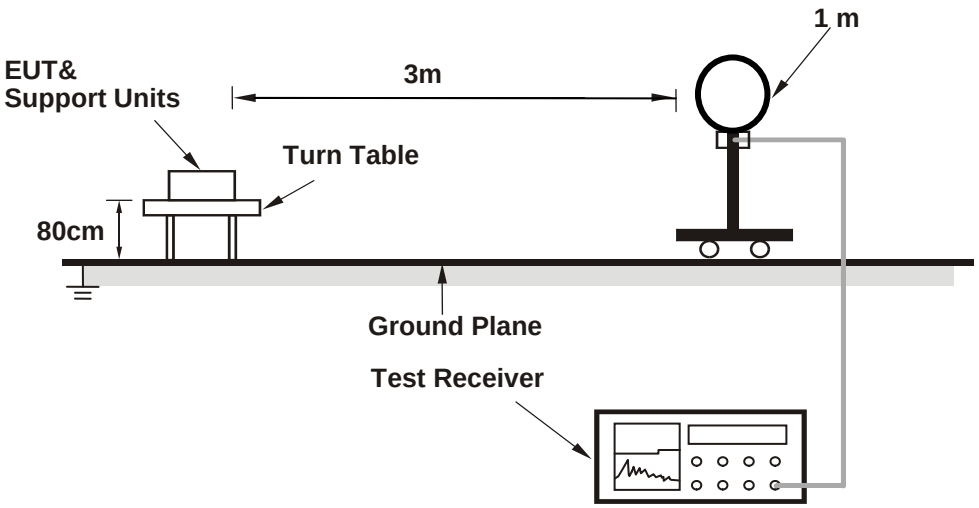
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98%) or 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

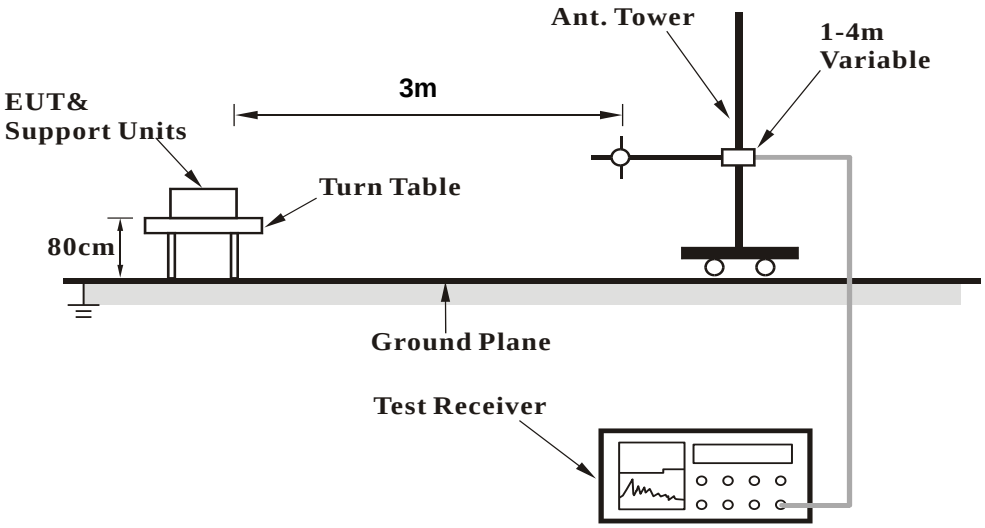
No deviation.

4.1.5 Test Setup

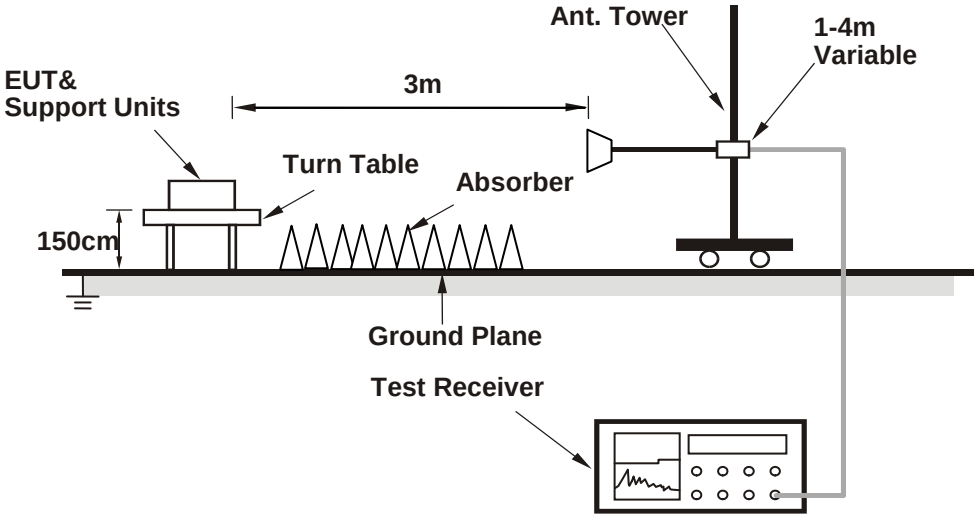
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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

4.1.6 EUT Operating Condition

1 Turn on the power of EUT.

2 The communication partner run test program “QRCT3.0.187.0” to enable EUT under transmission/receiving condition continuously at specific channel frequency.

4.1.7 Test Results

Above 1GHz Data:

Radio 2

802.11a

CHANNEL	TX Channel 52	**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	51.4 PK	74.0	-22.6	1.63 H	318	48.4	3.0
2	5150.00	40.1 AV	54.0	-13.9	1.63 H	318	37.1	3.0
3	*5260.00	109.7 PK			1.63 H	318	106.6	3.1
4	*5260.00	101.1 AV			1.63 H	318	98.0	3.1
5	5350.00	49.4 PK	74.0	-24.6	1.63 H	318	46.2	3.2
6	5350.00	38.1 AV	54.0	-15.9	1.63 H	318	34.9	3.2
7	#10520.00	56.5 PK	74.0	-17.5	1.67 H	245	43.6	12.9
8	#10520.00	45.2 AV	54.0	-8.8	1.67 H	245	32.3	12.9
9	15780.00	57.3 PK	74.0	-16.7	1.67 H	150	42.5	14.8
10	15780.00	44.7 AV	54.0	-9.3	1.67 H	150	29.9	14.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	5150.00	54.8 PK	74.0	-19.2	1.98 V	61	51.8	3.0
2	5150.00	42.2 AV	54.0	-11.8	1.98 V	61	39.2	3.0
3	*5260.00	113.2 PK			1.98 V	61	110.1	3.1
4	*5260.00	103.2 AV			1.98 V	61	100.1	3.1
5	5350.00	52.9 PK	74.0	-21.1	1.98 V	61	49.7	3.2
6	5350.00	40.1 AV	54.0	-13.9	1.98 V	61	36.9	3.2
7	#10520.00	57.6 PK	74.0	-16.4	2.81 V	199	44.7	12.9
8	#10520.00	46.0 AV	54.0	-8.0	2.81 V	199	33.1	12.9
9	15780.00	59.1 PK	74.0	-14.9	1.74 V	268	44.3	14.8
10	15780.00	47.5 AV	54.0	-6.5	1.74 V	268	32.7	14.8

REMARKS:

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

CHANNEL	TX Channel 60	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	*5300.00	110.3 PK			1.68 H	333	107.2	3.1
2	*5300.00	102.0 AV			1.68 H	333	98.9	3.1
3	5350.00	48.8 PK	74.0	-25.2	1.68 H	333	45.6	3.2
4	5350.00	38.7 AV	54.0	-15.3	1.68 H	333	35.5	3.2
5	10600.00	57.3 PK	74.0	-16.7	1.65 H	243	44.3	13.0
6	10600.00	45.7 AV	54.0	-8.3	1.65 H	243	32.7	13.0
7	15900.00	57.6 PK	74.0	-16.4	1.71 H	137	43.3	14.3
8	15900.00	45.1 AV	54.0	-8.9	1.71 H	137	30.8	14.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	113.8 PK			1.98 V	65	110.7	3.1
2	*5300.00	104.1 AV			1.98 V	65	101.0	3.1
3	5350.00	52.3 PK	74.0	-21.7	1.98 V	65	49.1	3.2
4	5350.00	40.8 AV	54.0	-13.2	1.98 V	65	37.6	3.2
5	10600.00	57.7 PK	74.0	-16.3	2.81 V	204	44.7	13.0
6	10600.00	46.2 AV	54.0	-7.8	2.81 V	204	33.2	13.0
7	15900.00	59.3 PK	74.0	-14.7	1.71 V	275	45.0	14.3
8	15900.00	47.8 AV	54.0	-6.2	1.71 V	275	33.5	14.3

REMARKS:

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

CHANNEL	TX Channel 64	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	*5320.00	110.9 PK			1.72 H	337	107.7	3.2
2	*5320.00	102.4 AV			1.72 H	337	99.2	3.2
3	5350.00	55.9 PK	74.0	-18.1	1.72 H	337	52.7	3.2
4	5350.00	44.0 AV	54.0	-10.0	1.72 H	337	40.8	3.2
5	10640.00	57.7 PK	74.0	-16.3	1.68 H	256	44.7	13.0
6	10640.00	46.0 AV	54.0	-8.0	1.68 H	256	33.0	13.0
7	15960.00	58.1 PK	74.0	-15.9	1.77 H	139	43.6	14.5
8	15960.00	45.4 AV	54.0	-8.6	1.77 H	139	30.9	14.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	114.4 PK			1.98 V	69	111.2	3.2
2	*5320.00	104.5 AV			1.98 V	69	101.3	3.2
3	5350.00	59.0 PK	74.0	-15.0	1.98 V	69	55.8	3.2
4	5350.00	46.1 AV	54.0	-7.9	1.98 V	69	42.9	3.2
5	10640.00	57.8 PK	74.0	-16.2	2.80 V	213	44.8	13.0
6	10640.00	46.2 AV	54.0	-7.8	2.80 V	213	33.2	13.0
7	15960.00	58.9 PK	74.0	-15.1	1.77 V	278	44.4	14.5
8	15960.00	47.1 AV	54.0	-6.9	1.77 V	278	32.6	14.5

REMARKS:

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

802.11ac (VHT20)

CHANNEL	TX Channel 52	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	53.4 PK	74.0	-20.6	1.67 H	345	50.4	3.0
2	5150.00	41.6 AV	54.0	-12.4	1.67 H	345	38.6	3.0
3	*5260.00	113.5 PK			1.67 H	345	110.4	3.1
4	*5260.00	103.9 AV			1.67 H	345	100.8	3.1
5	5350.00	51.7 PK	74.0	-22.3	1.67 H	345	48.5	3.2
6	5350.00	40.1 AV	54.0	-13.9	1.67 H	345	36.9	3.2
7	#10520.00	56.7 PK	74.0	-17.3	1.76 H	252	43.8	12.9
8	#10520.00	45.1 AV	54.0	-8.9	1.76 H	252	32.2	12.9
9	15780.00	57.0 PK	74.0	-17.0	1.65 H	165	42.2	14.8
10	15780.00	44.6 AV	54.0	-9.4	1.65 H	165	29.8	14.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	56.8 PK	74.0	-17.2	1.98 V	61	53.8	3.0
2	5150.00	43.7 AV	54.0	-10.3	1.98 V	61	40.7	3.0
3	*5260.00	116.9 PK			1.98 V	61	113.8	3.1
4	*5260.00	106.0 AV			1.98 V	61	102.9	3.1
5	5350.00	55.1 PK	74.0	-18.9	1.98 V	61	51.9	3.2
6	5350.00	41.8 AV	54.0	-12.2	1.98 V	61	38.6	3.2
7	#10520.00	57.4 PK	74.0	-16.6	2.92 V	187	44.5	12.9
8	#10520.00	46.2 AV	54.0	-7.8	2.92 V	187	33.3	12.9
9	15780.00	59.5 PK	74.0	-14.5	1.63 V	271	44.7	14.8
10	15780.00	47.7 AV	54.0	-6.3	1.63 V	271	32.9	14.8

REMARKS:

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

CHANNEL	TX Channel 60	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	*5300.00	111.1 PK			1.71 H	347	108.0	3.1
2	*5300.00	101.5 AV			1.71 H	347	98.4	3.1
3	5350.00	49.8 PK	74.0	-24.2	1.71 H	347	46.6	3.2
4	5350.00	39.3 AV	54.0	-14.7	1.71 H	347	36.1	3.2
5	10600.00	57.2 PK	74.0	-16.8	1.77 H	251	44.2	13.0
6	10600.00	45.4 AV	54.0	-8.6	1.77 H	251	32.4	13.0
7	15900.00	56.9 PK	74.0	-17.1	1.63 H	151	42.6	14.3
8	15900.00	44.6 AV	54.0	-9.4	1.63 H	151	30.3	14.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	114.5 PK			1.98 V	65	111.4	3.1
2	*5300.00	103.6 AV			1.98 V	65	100.5	3.1
3	5350.00	53.2 PK	74.0	-20.8	1.98 V	65	50.0	3.2
4	5350.00	40.3 AV	54.0	-13.7	1.98 V	65	37.1	3.2
5	10600.00	57.3 PK	74.0	-16.7	2.96 V	180	44.3	13.0
6	10600.00	46.4 AV	54.0	-7.6	2.96 V	180	33.4	13.0
7	15900.00	58.9 PK	74.0	-15.1	1.62 V	260	44.6	14.3
8	15900.00	47.4 AV	54.0	-6.6	1.62 V	260	33.1	14.3

REMARKS:

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

CHANNEL	TX Channel 64	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	*5320.00	111.0 PK			1.76 H	349	107.8	3.2
2	*5320.00	100.9 AV			1.76 H	349	97.7	3.2
3	5350.00	54.2 PK	74.0	-19.8	1.76 H	349	51.0	3.2
4	5350.00	43.1 AV	54.0	-10.9	1.76 H	349	39.9	3.2
5	10640.00	57.4 PK	74.0	-16.6	1.72 H	264	44.4	13.0
6	10640.00	45.7 AV	54.0	-8.3	1.72 H	264	32.7	13.0
7	15960.00	56.8 PK	74.0	-17.2	1.65 H	135	42.3	14.5
8	15960.00	44.7 AV	54.0	-9.3	1.65 H	135	30.2	14.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	114.4 PK			1.98 V	68	111.2	3.2
2	*5320.00	103.0 AV			1.98 V	68	99.8	3.2
3	5350.00	57.6 PK	74.0	-16.4	1.98 V	68	54.4	3.2
4	5350.00	45.2 AV	54.0	-8.8	1.98 V	68	42.0	3.2
5	10640.00	57.0 PK	74.0	-17.0	2.93 V	168	44.0	13.0
6	10640.00	46.1 AV	54.0	-7.9	2.93 V	168	33.1	13.0
7	15960.00	59.5 PK	74.0	-14.5	1.62 V	257	45.0	14.5
8	15960.00	47.9 AV	54.0	-6.1	1.62 V	257	33.4	14.5

REMARKS:

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

802.11ac (VHT40)

CHANNEL	TX Channel 54	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	53.4 PK	74.0	-20.6	3.57 H	42	50.4	3.0
2	5150.00	41.4 AV	54.0	-12.6	3.57 H	42	38.4	3.0
3	*5270.00	109.9 PK			3.57 H	42	106.7	3.2
4	*5270.00	100.3 AV			3.57 H	42	97.1	3.2
5	5350.00	51.8 PK	74.0	-22.2	3.57 H	42	48.6	3.2
6	5350.00	41.7 AV	54.0	-12.3	3.57 H	42	38.5	3.2
7	#10540.00	57.0 PK	74.0	-17.0	1.60 H	279	44.1	12.9
8	#10540.00	44.6 AV	54.0	-9.4	1.60 H	279	31.7	12.9
9	15810.00	57.9 PK	74.0	-16.1	1.66 H	187	43.2	14.7
10	15810.00	45.6 AV	54.0	-8.4	1.66 H	187	30.9	14.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	56.8 PK	74.0	-17.2	1.98 V	57	53.8	3.0
2	5150.00	43.5 AV	54.0	-10.5	1.98 V	57	40.5	3.0
3	*5270.00	113.3 PK			1.98 V	57	110.1	3.2
4	*5270.00	102.4 AV			1.98 V	57	99.2	3.2
5	5350.00	55.2 PK	74.0	-18.8	1.98 V	57	52.0	3.2
6	5350.00	43.8 AV	54.0	-10.2	1.98 V	57	40.6	3.2
7	#10540.00	57.5 PK	74.0	-16.5	2.88 V	191	44.6	12.9
8	#10540.00	46.3 AV	54.0	-7.7	2.88 V	191	33.4	12.9
9	15810.00	59.2 PK	74.0	-14.8	1.67 V	276	44.5	14.7
10	15810.00	47.7 AV	54.0	-6.3	1.67 V	276	33.0	14.7

REMARKS:

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

CHANNEL	TX Channel 62	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	*5310.00	109.6 PK			3.61 H	27	106.4	3.2
2	*5310.00	100.1 AV			3.61 H	27	96.9	3.2
3	5350.00	63.2 PK	74.0	-10.8	3.61 H	27	60.0	3.2
4	5350.00	50.4 AV	54.0	-3.6	3.61 H	27	47.2	3.2
5	10620.00	57.2 PK	74.0	-16.8	1.63 H	277	44.2	13.0
6	10620.00	44.9 AV	54.0	-9.1	1.63 H	277	31.9	13.0
7	15930.00	57.7 PK	74.0	-16.3	1.65 H	200	43.3	14.4
8	15930.00	45.3 AV	54.0	-8.7	1.65 H	200	30.9	14.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	113.0 PK			1.98 V	69	109.8	3.2
2	*5310.00	102.2 AV			1.98 V	69	99.0	3.2
3	5350.00	66.8 PK	74.0	-7.2	1.98 V	69	63.6	3.2
4	5350.00	53.5 AV	54.0	-0.5	1.98 V	69	50.3	3.2
5	10620.00	57.9 PK	74.0	-16.1	2.95 V	174	44.9	13.0
6	10620.00	46.6 AV	54.0	-7.4	2.95 V	174	33.6	13.0
7	15930.00	60.0 PK	74.0	-14.0	1.58 V	271	45.6	14.4
8	15930.00	48.2 AV	54.0	-5.8	1.58 V	271	33.8	14.4

REMARKS:

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

802.11ac (VHT80)

CHANNEL	TX Channel 58	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	58.8 PK	74.0	-15.2	2.65 H	321	55.8	3.0
2	5150.00	48.2 AV	54.0	-5.8	2.65 H	321	45.2	3.0
3	*5290.00	103.8 PK			2.65 H	321	100.7	3.1
4	*5290.00	95.2 AV			2.65 H	321	92.1	3.1
5	5350.00	61.4 PK	74.0	-12.6	2.65 H	321	58.2	3.2
6	5350.00	51.4 AV	54.0	-2.6	2.65 H	321	48.2	3.2
7	#10580.00	57.4 PK	74.0	-16.6	1.60 H	235	44.5	12.9
8	#10580.00	45.1 AV	54.0	-8.9	1.60 H	235	32.2	12.9
9	15870.00	56.6 PK	74.0	-17.4	1.64 H	166	42.2	14.4
10	15870.00	44.3 AV	54.0	-9.7	1.64 H	166	29.9	14.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	62.2 PK	74.0	-11.8	1.98 V	66	59.2	3.0
2	5150.00	50.3 AV	54.0	-3.7	1.98 V	66	47.3	3.0
3	*5290.00	107.2 PK			1.98 V	66	104.1	3.1
4	*5290.00	97.3 AV			1.98 V	66	94.2	3.1
5	5350.00	64.8 PK	74.0	-9.2	1.98 V	66	61.6	3.2
6	5350.00	53.5 AV	54.0	-0.5	1.98 V	66	50.3	3.2
7	#10580.00	61.8 PK	74.0	-12.2	1.00 V	264	48.9	12.9
8	#10580.00	50.5 AV	54.0	-3.5	1.00 V	264	37.6	12.9
9	15870.00	55.9 PK	74.0	-18.1	1.17 V	173	41.5	14.4
10	15870.00	45.4 AV	54.0	-8.6	1.17 V	173	31.0	14.4

REMARKS:

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

Radio 1

802.11a

CHANNEL	TX Channel 100	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	#5470.00	63.3 PK	74.0	-10.7	3.98 H	66	59.8	3.5
2	#5470.00	51.3 AV	54.0	-2.7	3.98 H	66	47.8	3.5
3	*5500.00	111.7 PK			3.98 H	66	108.2	3.5
4	*5500.00	103.4 AV			3.98 H	66	99.9	3.5
5	11000.00	61.2 PK	74.0	-12.8	1.06 H	345	47.5	13.7
6	11000.00	51.3 AV	54.0	-2.7	1.06 H	345	37.6	13.7
7	#16500.00	64.4 PK	74.0	-9.6	1.88 H	342	47.9	16.5
8	#16500.00	50.5 AV	54.0	-3.5	1.88 H	342	34.0	16.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	66.8 PK	74.0	-7.2	1.86 V	344	63.3	3.5
2	#5470.00	53.4 AV	54.0	-0.6	1.86 V	344	49.9	3.5
3	*5500.00	115.2 PK			1.86 V	344	111.7	3.5
4	*5500.00	105.5 AV			1.86 V	344	102.0	3.5
5	11000.00	60.4 PK	74.0	-13.6	4.00 V	212	46.7	13.7
6	11000.00	48.8 AV	54.0	-5.2	4.00 V	212	35.1	13.7
7	#16500.00	57.6 PK	74.0	-16.4	1.51 V	188	41.1	16.5
8	#16500.00	44.9 AV	54.0	-9.1	1.51 V	188	28.4	16.5

REMARKS:

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

CHANNEL	TX Channel 116	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	#5470.00	50.3 PK	74.0	-23.7	3.97 H	75	46.8	3.5
2	#5470.00	38.6 AV	54.0	-15.4	3.97 H	75	35.1	3.5
3	*5580.00	113.7 PK			3.97 H	75	110.0	3.7
4	*5580.00	103.6 AV			3.97 H	75	99.9	3.7
5	#5725.00	49.0 PK	74.0	-25.0	3.97 H	75	45.0	4.0
6	#5725.00	39.6 AV	54.0	-14.4	3.97 H	75	35.6	4.0
7	11160.00	61.4 PK	74.0	-12.6	1.01 H	346	47.6	13.8
8	11160.00	51.3 AV	54.0	-2.7	1.01 H	346	37.5	13.8
9	#16740.00	64.5 PK	74.0	-9.5	1.92 H	350	47.0	17.5
10	#16740.00	50.7 AV	54.0	-3.3	1.92 H	350	33.2	17.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	53.7 PK	74.0	-20.3	1.87 V	341	50.2	3.5
2	#5470.00	40.7 AV	54.0	-13.3	1.87 V	341	37.2	3.5
3	*5580.00	117.1 PK			1.87 V	341	113.4	3.7
4	*5580.00	105.7 AV			1.87 V	341	102.0	3.7
5	#5725.00	52.5 PK	74.0	-21.5	1.87 V	341	48.5	4.0
6	#5725.00	40.6 AV	54.0	-13.4	1.87 V	341	36.6	4.0
7	11160.00	60.9 PK	74.0	-13.1	3.95 V	223	47.1	13.8
8	11160.00	49.2 AV	54.0	-4.8	3.95 V	223	35.4	13.8
9	#16740.00	57.6 PK	74.0	-16.4	1.50 V	175	40.1	17.5
10	#16740.00	45.0 AV	54.0	-9.0	1.50 V	175	27.5	17.5

REMARKS:

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

CHANNEL	TX Channel 140	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	*5700.00	110.6 PK			3.93 H	59	106.6	4.0
2	*5700.00	102.2 AV			3.93 H	59	98.2	4.0
3	#5725.00	62.1 PK	74.0	-11.9	3.93 H	59	58.1	4.0
4	#5725.00	51.2 AV	54.0	-2.8	3.93 H	59	47.2	4.0
5	11400.00	61.5 PK	74.0	-12.5	1.01 H	348	47.7	13.8
6	11400.00	51.3 AV	54.0	-2.7	1.01 H	348	37.5	13.8
7	#17100.00	64.6 PK	74.0	-9.4	1.92 H	344	45.5	19.1
8	#17100.00	50.9 AV	54.0	-3.1	1.92 H	344	31.8	19.1
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	*5700.00	114.0 PK			1.92 V	346	110.0	4.0
2	*5700.00	104.3 AV			1.92 V	346	100.3	4.0
3	#5725.00	65.5 PK	74.0	-8.5	1.92 V	346	61.5	4.0
4	#5725.00	53.3 AV	54.0	-0.7	1.92 V	346	49.3	4.0
5	11400.00	61.3 PK	74.0	-12.7	1.00 V	210	47.5	13.8
6	11400.00	50.9 AV	54.0	-3.1	1.00 V	210	37.1	13.8
7	#17100.00	54.6 PK	74.0	-19.4	1.83 V	298	35.5	19.1
8	#17100.00	44.8 AV	54.0	-9.2	1.83 V	298	25.7	19.1

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 (VHT20)

CHANNEL	TX Channel 100	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	#5470.00	64.9 PK	74.0	-9.1	1.79 H	360	61.4	3.5
2	#5470.00	50.4 AV	54.0	-3.6	1.79 H	360	46.9	3.5
3	*5500.00	111.9 PK			1.79 H	360	108.4	3.5
4	*5500.00	103.1 AV			1.79 H	360	99.6	3.5
5	11000.00	62.0 PK	74.0	-12.0	1.04 H	326	48.3	13.7
6	11000.00	51.1 AV	54.0	-2.9	1.04 H	326	37.4	13.7
7	#16500.00	61.9 PK	74.0	-12.1	1.88 H	326	45.4	16.5
8	#16500.00	49.5 AV	54.0	-4.5	1.88 H	326	33.0	16.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	68.3 PK	74.0	-5.7	1.20 V	33	64.8	3.5
2	#5470.00	52.5 AV	54.0	-1.5	1.20 V	33	49.0	3.5
3	*5500.00	115.3 PK			1.20 V	33	111.8	3.5
4	*5500.00	105.2 AV			1.20 V	33	101.7	3.5
5	11000.00	62.1 PK	74.0	-11.9	1.00 V	230	48.4	13.7
6	11000.00	51.0 AV	54.0	-3.0	1.00 V	230	37.3	13.7
7	#16500.00	55.6 PK	74.0	-18.4	1.23 V	153	39.1	16.5
8	#16500.00	45.0 AV	54.0	-9.0	1.23 V	153	28.5	16.5

REMARKS:

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

CHANNEL	TX Channel 116	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	#5470.00	49.6 PK	74.0	-24.4	1.81 H	360	46.1	3.5
2	#5470.00	39.5 AV	54.0	-14.5	1.81 H	360	36.0	3.5
3	*5580.00	112.4 PK			1.81 H	360	108.7	3.7
4	*5580.00	102.4 AV			1.81 H	360	98.7	3.7
5	#5725.00	50.8 PK	74.0	-23.2	1.81 H	360	46.8	4.0
6	#5725.00	40.5 AV	54.0	-13.5	1.81 H	360	36.5	4.0
7	11160.00	65.6 PK	74.0	-8.4	3.33 H	343	51.8	13.8
8	11160.00	52.6 AV	54.0	-1.4	3.33 H	343	38.8	13.8
9	#16740.00	68.2 PK	74.0	-5.8	2.01 H	337	50.7	17.5
10	#16740.00	50.8 AV	54.0	-3.2	2.01 H	337	33.3	17.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	53.0 PK	74.0	-21.0	1.20 V	13	49.5	3.5
2	#5470.00	40.6 AV	54.0	-13.4	1.20 V	13	37.1	3.5
3	*5580.00	115.8 PK			1.20 V	13	112.1	3.7
4	*5580.00	104.5 AV			1.20 V	13	100.8	3.7
5	#5725.00	54.2 PK	74.0	-19.8	1.20 V	13	50.2	4.0
6	#5725.00	41.6 AV	54.0	-12.4	1.20 V	13	37.6	4.0
7	11160.00	67.0 PK	74.0	-7.0	2.76 V	326	53.2	13.8
8	11160.00	52.5 AV	54.0	-1.5	2.76 V	326	38.7	13.8
9	#16740.00	62.0 PK	74.0	-12.0	1.99 V	214	44.5	17.5
10	#16740.00	47.7 AV	54.0	-6.3	1.99 V	214	30.2	17.5

REMARKS:

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

CHANNEL	TX Channel 140	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	*5700.00	111.0 PK			1.78 H	360	107.0	4.0
2	*5700.00	100.9 AV			1.78 H	360	96.9	4.0
3	#5725.00	65.9 PK	74.0	-8.1	1.78 H	360	61.9	4.0
4	#5725.00	51.5 AV	54.0	-2.5	1.78 H	360	47.5	4.0
5	11400.00	65.7 PK	74.0	-8.3	3.37 H	348	51.9	13.8
6	11400.00	52.7 AV	54.0	-1.3	3.37 H	348	38.9	13.8
7	#17100.00	68.4 PK	74.0	-5.6	1.96 H	341	49.3	19.1
8	#17100.00	51.1 AV	54.0	-2.9	1.96 H	341	32.0	19.1
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	*5700.00	114.4 PK			1.20 V	19	110.4	4.0
2	*5700.00	103.0 AV			1.20 V	19	99.0	4.0
3	#5725.00	69.3 PK	74.0	-4.7	1.20 V	19	65.3	4.0
4	#5725.00	53.6 AV	54.0	-0.4	1.20 V	19	49.6	4.0
5	11400.00	66.5 PK	74.0	-7.5	2.76 V	328	52.7	13.8
6	11400.00	52.1 AV	54.0	-1.9	2.76 V	328	38.3	13.8
7	#17100.00	62.4 PK	74.0	-11.6	1.90 V	193	43.3	19.1
8	#17100.00	48.2 AV	54.0	-5.8	1.90 V	193	29.1	19.1

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 102	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	#5466.00	65.7 PK	74.0	-8.3	3.57 H	21	62.2	3.5
2	#5466.00	50.4 AV	54.0	-3.6	3.57 H	21	46.9	3.5
3	*5510.00	108.1 PK			3.57 H	21	104.6	3.5
4	*5510.00	97.0 AV			3.57 H	21	93.5	3.5
5	11020.00	62.3 PK	74.0	-11.7	1.08 H	314	48.6	13.7
6	11020.00	51.5 AV	54.0	-2.5	1.08 H	314	37.8	13.7
7	#16530.00	61.8 PK	74.0	-12.2	1.91 H	322	44.9	16.9
8	#16530.00	49.7 AV	54.0	-4.3	1.91 H	322	32.8	16.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5466.00	67.8 PK	74.0	-6.2	1.20 V	39	64.3	3.5
2	#5466.00	53.5 AV	54.0	-0.5	1.20 V	39	50.0	3.5
3	*5510.00	110.5 PK			1.20 V	39	107.0	3.5
4	*5510.00	100.1 AV			1.20 V	39	96.6	3.5
5	11020.00	62.4 PK	74.0	-11.6	1.03 V	233	48.7	13.7
6	11020.00	51.2 AV	54.0	-2.8	1.03 V	233	37.5	13.7
7	#16530.00	55.8 PK	74.0	-18.2	1.26 V	162	38.9	16.9
8	#16530.00	45.4 AV	54.0	-8.6	1.26 V	162	28.5	16.9

REMARKS:

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

CHANNEL	TX Channel 110	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	#5470.00	61.7 PK	74.0	-12.3	3.51 H	11	58.2	3.5
2	#5470.00	48.5 AV	54.0	-5.5	3.51 H	11	45.0	3.5
3	*5550.00	110.2 PK			3.51 H	11	106.5	3.7
4	*5550.00	99.2 AV			3.51 H	11	95.5	3.7
5	11100.00	62.5 PK	74.0	-11.5	1.07 H	300	48.9	13.6
6	11100.00	51.9 AV	54.0	-2.1	1.07 H	300	38.3	13.6
7	#16650.00	61.5 PK	74.0	-12.5	1.96 H	337	43.9	17.6
8	#16650.00	49.6 AV	54.0	-4.4	1.96 H	337	32.0	17.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	65.1 PK	74.0	-8.9	1.20 V	33	61.6	3.5
2	#5470.00	50.6 AV	54.0	-3.4	1.20 V	33	47.1	3.5
3	*5550.00	112.6 PK			1.20 V	33	108.9	3.7
4	*5550.00	101.5 AV			1.20 V	33	97.8	3.7
5	11100.00	62.3 PK	74.0	-11.7	1.08 V	248	48.7	13.6
6	11100.00	51.0 AV	54.0	-3.0	1.08 V	248	37.4	13.6
7	#16650.00	55.5 PK	74.0	-18.5	1.23 V	158	37.9	17.6
8	#16650.00	45.2 AV	54.0	-8.8	1.23 V	158	27.6	17.6

REMARKS:

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

CHANNEL	TX Channel 134	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	*5670.00	109.8 PK			3.54 H	12	105.9	3.9
2	*5670.00	99.2 AV			3.54 H	12	95.3	3.9
3	#5725.00	66.1 PK	74.0	-7.9	3.54 H	12	62.1	4.0
4	#5725.00	50.8 AV	54.0	-3.2	3.54 H	12	46.8	4.0
5	11340.00	62.8 PK	74.0	-11.2	1.09 H	292	48.7	14.1
6	11340.00	52.0 AV	54.0	-2.0	1.09 H	292	37.9	14.1
7	#17010.00	61.3 PK	74.0	-12.7	1.93 H	342	42.0	19.3
8	#17010.00	49.3 AV	54.0	-4.7	1.93 H	342	30.0	19.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	111.3 PK			1.20 V	20	107.4	3.9
2	*5670.00	101.3 AV			1.20 V	20	97.4	3.9
3	#5725.00	69.5 PK	74.0	-4.5	1.20 V	20	65.5	4.0
4	**#5725.00**	**53.9 AV**	**54.0**	**-0.1**	**1.20 V**	**20**	**49.9**	**4.0**
5	11340.00	62.1 PK	74.0	-11.9	1.02 V	234	48.0	14.1
6	11340.00	50.9 AV	54.0	-3.1	1.02 V	234	36.8	14.1
7	#17010.00	56.3 PK	74.0	-17.7	1.27 V	158	37.0	19.3
8	#17010.00	45.8 AV	54.0	-8.2	1.27 V	158	26.5	19.3

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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 106	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	#5470.00	62.5 PK	74.0	-11.5	2.65 H	321	59.0	3.5
2	#5470.00	51.6 AV	54.0	-2.4	2.65 H	321	48.1	3.5
3	*5530.00	102.1 PK			2.65 H	321	98.5	3.6
4	*5530.00	93.4 AV			2.65 H	321	89.8	3.6
5	11060.00	57.4 PK	74.0	-16.6	1.54 H	259	43.7	13.7
6	11060.00	45.1 AV	54.0	-8.9	1.54 H	259	31.4	13.7
7	#16590.00	56.7 PK	74.0	-17.3	1.61 H	176	39.0	17.7
8	#16590.00	44.3 AV	54.0	-9.7	1.61 H	176	26.6	17.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	65.9 PK	74.0	-8.1	1.13 V	27	62.4	3.5
2	#5470.00	53.7 AV	54.0	-0.3	1.13 V	27	50.2	3.5
3	*5530.00	105.5 PK			1.13 V	27	101.9	3.6
4	*5530.00	95.5 AV			1.13 V	27	91.9	3.6
5	11060.00	61.7 PK	74.0	-12.3	1.01 V	269	48.0	13.7
6	11060.00	50.6 AV	54.0	-3.4	1.01 V	269	36.9	13.7
7	#16590.00	55.6 PK	74.0	-18.4	1.16 V	167	37.9	17.7
8	#16590.00	45.0 AV	54.0	-9.0	1.16 V	167	27.3	17.7

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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 122	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	*5610.00	108.1 PK			3.88 H	229	104.3	3.8
2	*5610.00	97.4 AV			3.88 H	229	93.6	3.8
3	#5725.00	63.9 PK	74.0	-10.1	3.88 H	229	59.9	4.0
4	#5725.00	51.7 AV	54.0	-2.3	3.88 H	229	47.7	4.0
5	11220.00	57.7 PK	74.0	-16.3	1.62 H	263	43.8	13.9
6	11220.00	45.5 AV	54.0	-8.5	1.62 H	263	31.6	13.9
7	#16830.00	56.6 PK	74.0	-17.4	1.64 H	181	38.6	18.0
8	#16830.00	44.6 AV	54.0	-9.4	1.64 H	181	26.6	18.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5610.00	109.6 PK			1.13 V	26	105.8	3.8
2	*5610.00	99.5 AV			1.13 V	26	95.7	3.8
3	#5725.00	67.3 PK	74.0	-6.7	1.13 V	26	63.3	4.0
4	#5725.00	53.8 AV	54.0	-0.2	1.13 V	26	49.8	4.0
5	11220.00	62.2 PK	74.0	-11.8	1.05 V	254	48.3	13.9
6	11220.00	51.2 AV	54.0	-2.8	1.05 V	254	37.3	13.9
7	#16830.00	55.9 PK	74.0	-18.1	1.19 V	173	37.9	18.0
8	#16830.00	45.4 AV	54.0	-8.6	1.19 V	173	27.4	18.0

REMARKS:

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

Below 1GHz Data:

Radio 2

802.11ac (VHT40)

CHANNEL	TX Channel 54	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	30.07	26.4 QP	40.0	-13.6	1.00 H	261	36.0	-9.6
2	100.83	34.0 QP	43.5	-9.5	1.55 H	287	46.5	-12.5
3	236.95	28.5 QP	46.0	-17.5	1.50 H	134	38.6	-10.1
4	341.59	27.4 QP	46.0	-18.6	1.00 H	178	34.0	-6.6
5	812.72	31.6 QP	46.0	-14.4	1.50 H	108	28.7	2.9
6	914.98	31.4 QP	46.0	-14.6	1.00 H	206	27.0	4.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	100.18	28.2 QP	43.5	-15.3	1.50 V	289	40.8	-12.6
2	143.20	31.4 QP	43.5	-12.1	1.00 V	102	39.6	-8.2
3	181.71	25.1 QP	43.5	-18.4	1.50 V	106	35.4	-10.3
4	268.79	25.7 QP	46.0	-20.3	1.50 V	184	34.3	-8.6
5	780.00	35.4 QP	46.0	-10.6	1.00 V	221	32.8	2.6
6	840.00	36.4 QP	46.0	-9.6	1.50 V	206	33.2	3.2

REMARKS:

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

Radio 1

802.11ac (VHT40)

CHANNEL	TX Channel 110	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.07	26.5 QP	40.0	-13.5	1.50 H	271	36.1	-9.6
2	100.85	34.0 QP	43.5	-9.5	1.42 H	265	46.5	-12.5
3	236.95	26.4 QP	46.0	-19.6	1.21 H	117	36.5	-10.1
4	345.74	27.2 QP	46.0	-18.8	1.12 H	243	33.8	-6.6
5	391.28	26.6 QP	46.0	-19.4	1.50 H	187	31.9	-5.3
6	803.60	31.3 QP	46.0	-14.7	1.00 H	225	28.5	2.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	100.16	28.2 QP	43.5	-15.3	1.50 V	203	40.8	-12.6
2	143.21	32.7 QP	43.5	-10.8	1.50 V	223	40.9	-8.2
3	268.80	27.1 QP	46.0	-18.9	1.50 V	308	35.7	-8.6
4	660.01	35.1 QP	46.0	-10.9	1.50 V	226	34.5	0.6
5	780.00	37.4 QP	46.0	-8.6	1.50 V	243	34.8	2.6
6	840.00	37.6 QP	46.0	-8.4	1.00 V	115	34.4	3.2

REMARKS:

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

4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

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

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

4.2.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver R&S	ESCS 30	847124/029	Oct. 24, 2016	Oct. 23, 2017
Line-Impedance Stabilization Network (for EUT) R&S	ESH3-Z5	848773/004	Oct. 26, 2016	Oct. 25, 2017
Line-Impedance Stabilization Network (for Peripheral) R&S	ENV216	100072	June 13, 2016	June 12, 2017
RF Cable	5D-FB	COCCAB-001	Sep. 30, 2016	Sep. 29, 2017
10 dB PAD Mini-Circuits	HAT-10+	CONATT-004	June 20, 2016	June 19, 2017
Software BVADT	BVADT_Cond_ V7.3.7.4	NA	NA	NA

Note:

1. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Shielded Room No. 1.
3 Tested Date: Dec. 01, 2016

4.2.3 Test Procedure

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

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

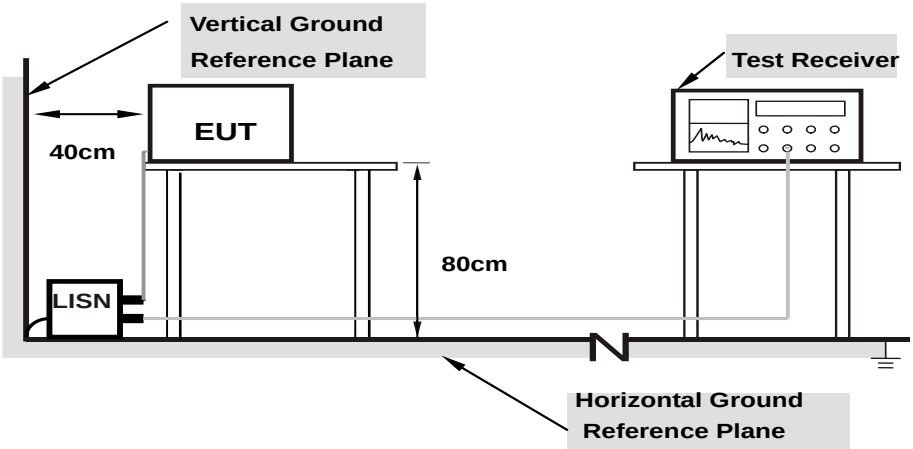
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

NOTE: All modes of operation were investigated and the worst-case emissions are reported.

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Condition

Same as 4.1.6.

4.2.7 Test Results

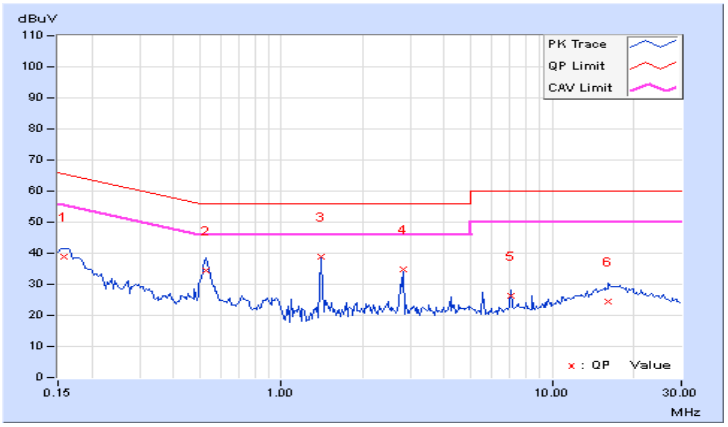
Radio 2

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

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15781	10.20	28.83	17.27	39.03	27.47	65.58	55.58	-26.55	-28.11
2	0.53016	10.25	24.20	13.97	34.45	24.22	56.00	46.00	-21.55	-21.78
3	1.40625	10.30	28.75	18.21	39.05	28.51	56.00	46.00	-16.95	-17.49
4	2.81250	10.30	24.41	13.99	34.71	24.29	56.00	46.00	-21.29	-21.71
5	7.03516	10.52	15.68	6.20	26.20	16.72	60.00	50.00	-33.80	-33.28
6	16.17578	11.39	13.20	5.80	24.59	17.19	60.00	50.00	-35.41	-32.81

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

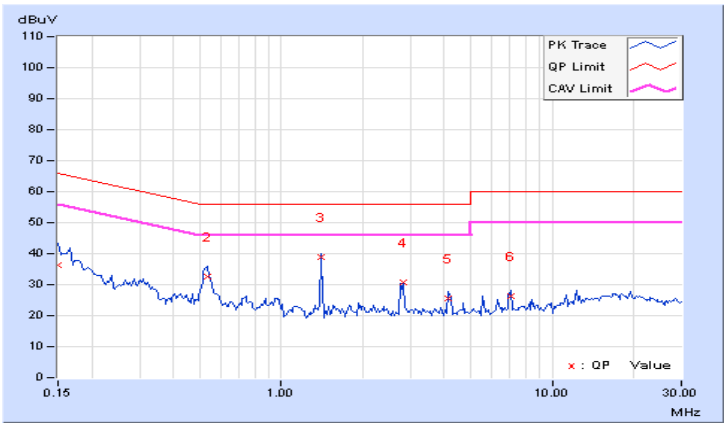


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.19	25.97	11.43	36.16	21.62	66.00	56.00	-29.84	-34.38
2	0.53281	10.24	22.32	17.09	32.56	27.33	56.00	46.00	-23.44	-18.67
3	1.40625	10.28	28.74	18.60	39.02	28.88	56.00	46.00	-16.98	-17.12
4	2.80859	10.27	20.29	11.63	30.56	21.90	56.00	46.00	-25.44	-24.10
5	4.14453	10.23	15.15	7.79	25.38	18.02	56.00	46.00	-30.62	-27.98
6	7.03125	10.43	15.73	8.32	26.16	18.75	60.00	50.00	-33.84	-31.25

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



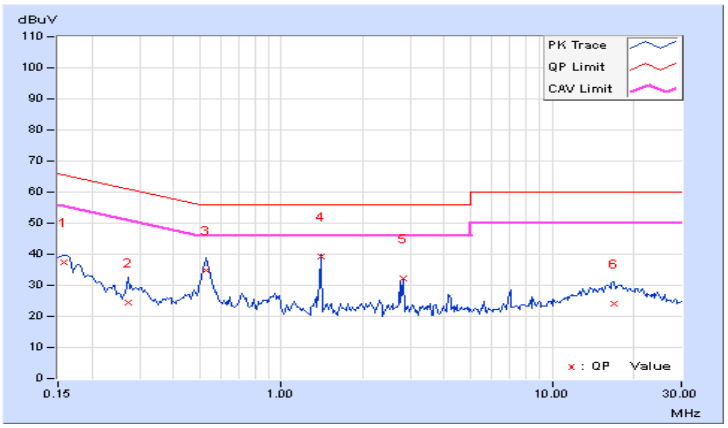
Radio 1

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

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15781	10.20	27.25	15.46	37.45	25.66	65.58	55.58	-28.13	-29.92
2	0.27109	10.21	14.19	6.91	24.40	17.12	61.08	51.08	-36.68	-33.96
3	0.52891	10.25	24.44	14.55	34.69	24.80	56.00	46.00	-21.31	-21.20
4	**1.40625**	**10.30**	**28.82**	**18.36**	**39.12**	**28.66**	**56.00**	**46.00**	**-16.88**	**-17.34**
5	2.80859	10.30	21.94	12.47	32.24	22.77	56.00	46.00	-23.76	-23.23
6	16.84766	11.45	12.62	6.90	24.07	18.35	60.00	50.00	-35.93	-31.65

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

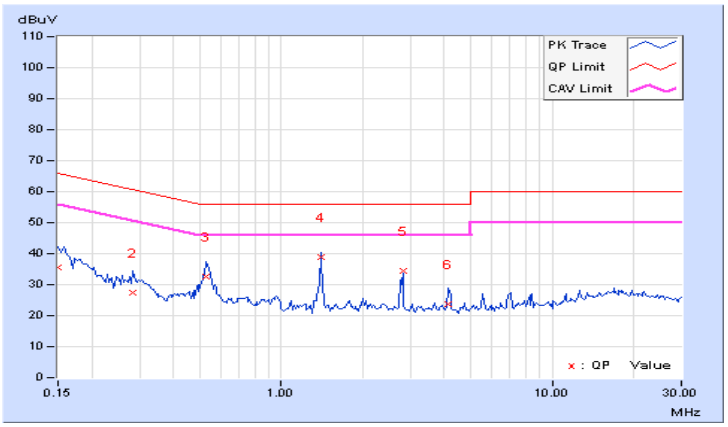


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.19	25.51	11.49	35.70	21.68	66.00	56.00	-30.30	-34.32
2	0.28281	10.20	17.25	7.77	27.45	17.97	60.73	50.73	-33.28	-32.76
3	0.52891	10.24	22.46	17.77	32.70	28.01	56.00	46.00	-23.30	-17.99
4	1.40625	10.28	28.66	18.50	38.94	28.78	56.00	46.00	-17.06	-17.22
5	2.81250	10.27	24.20	14.65	34.47	24.92	56.00	46.00	-21.53	-21.08
6	4.14453	10.23	13.53	6.81	23.76	17.04	56.00	46.00	-32.24	-28.96

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 Measurment

4.3.1 Limits of Transmit Power Measurement

Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p ≦ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
		Fixed point-to-point Access Point	1 Watt (30 dBm)
		Indoor Access Point	1 Watt (30 dBm)
		Mobile and Portable client device	250mW (24 dBm)
U-NII-2A	√		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-2C	√		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-3	---		1 Watt (30 dBm)

*B is the 26 dB emission bandwidth in megahertz

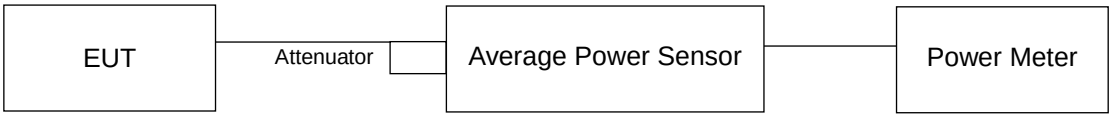
Per KDB 662911 Method of conducted output power measurement on IEEE 802.11 devices,

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

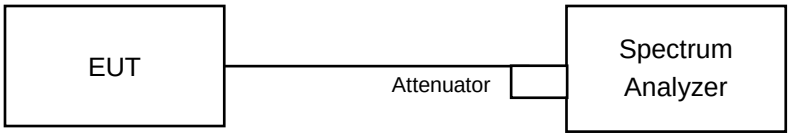
For power measurements on all other devices: Array Gain = 10 log(N_{ANT}/N_{SS}) dB.

4.3.2 Test Setup

FOR POWER OUTPUT MEASUREMENT



FOR 26dB OCCUPIED BANDWIDTH



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

FOR AVERAGE POWER MEASUREMENT

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 26dB OCCUPIED BANDWIDTH

1. Set RBW = approximately 1% of the emission bandwidth.
2. Set the VBW > RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Condition

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

4.3.7 Test Result

Radio 2

CDD Mode

802.11a

POWER OUTPUT:

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
52	5260	19.84	19.70	189.708	22.78	24.00	Pass
60	5300	20.31	19.88	204.674	23.11	24.00	Pass
64	5320	20.21	19.74	199.143	22.99	24.00	Pass

Note: 1. The Max. antenna gain = 3.70dBi < 6dBi, so the power limit shall not be reduced.

26dB BANDWIDTH:

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	28.54	20.35
60	5300	31.56	20.19
64	5320	24.36	20.23

Note: For FCC output power limitation is determined based on 26dB bandwidth.

Power Limit = 11dBm + 10logB < U-NII-2A >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	20.35	24.08 > 24
60	5300	20.19	24.05 > 24
64	5320	20.23	24.05 > 24

Beamforming Mode

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
52	5260	19.58	21.16	221.399	23.45	24.00	Pass
60	5300	20.65	20.24	221.827	23.46	24.00	Pass
64	5320	20.99	19.88	222.878	23.48	24.00	Pass

Note: 1. Directional gain = 3.81dBi < 6dBi, so the power limit shall not be reduced.

26dB BANDWIDTH:

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	27.68	21.97
60	5300	28.60	22.66
64	5320	36.22	21.81

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	21.97	24.41 > 24
60	5300	22.66	24.55 > 24
64	5320	21.81	24.38 > 24

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
54	5270	21.36	20.45	247.69	23.94	24.00	Pass
62	5310	19.61	20.33	199.306	23.00	24.00	Pass

Note: 1. Directional gain = 3.81dBi < 6dBi, so the power limit shall not be reduced.

26dB BANDWIDTH:

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
54	5270	86.29	53.55
62	5310	64.44	41.01

Note: For FCC output power limitation is determined based on 26dB bandwidth.

Power Limit = 11dBm + 10logB < U-NII-2A >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
54	5270	53.55	28.28 > 24
62	5310	41.01	27.12 > 24

802.11ac (VHT80)

OUTPUT POWER:

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
58	5290	16.98	17.01	100.122	20.01	24.00	Pass

Note: 1. Directional gain = 3.81dBi < 6dBi, so the power limit shall not be reduced.

26dB BANDWIDTH:

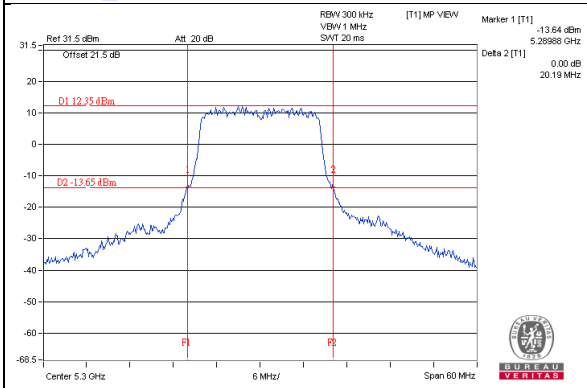
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
58	5290	84.12	85.21

Note: For FCC output power limitation is determined based on 26dB bandwidth.

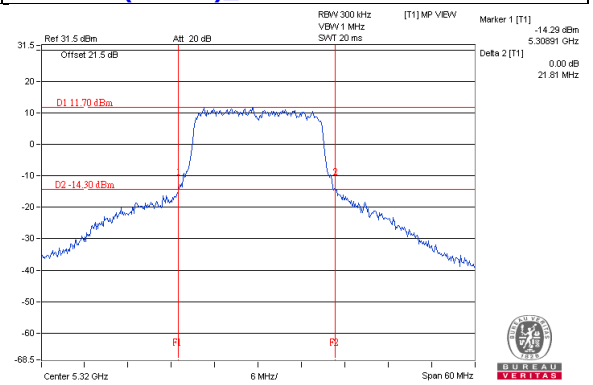
Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
58	5290	84.12	30.24 > 24

Spectrum Plot of Worst Value

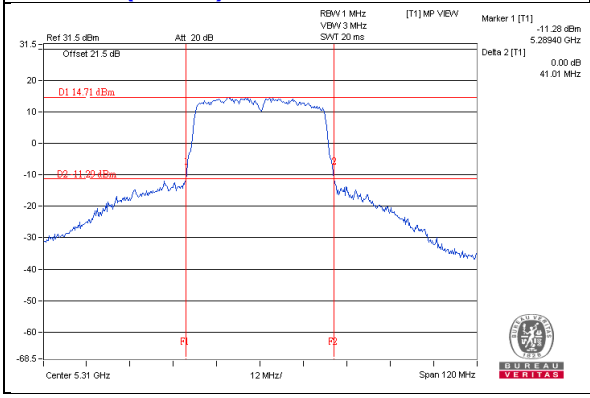
802.11a_Chain 1 / CH60



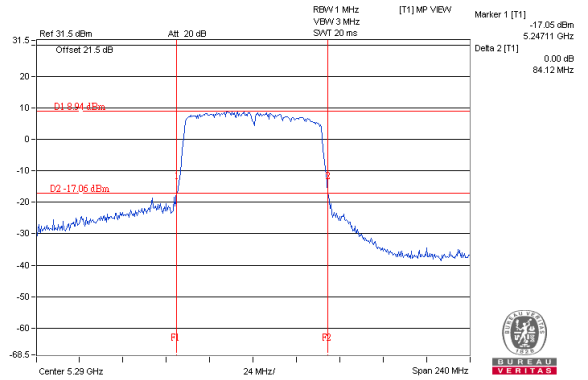
802.11ac (VHT20)_Chain 1 / CH64



802.11ac (VHT40)_Chain 1 / CH62



802.11ac (VHT80)_Chain 0 / CH58



Radio 1

CDD Mode

802.11a

POWER OUTPUT:

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
100	5500	19.94	20.42	208.782	23.20	24.00	Pass
116	5580	20.34	20.67	224.824	23.52	23.86	Pass
140	5700	19.92	20.48	209.861	23.22	23.86	Pass

Note: 1. The Max. antenna gain = 4.5dBi < 6dBi, so the power limit shall not be reduced.

26dB BANDWIDTH:

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
100	5500	20.40	22.79
116	5580	19.36	21.46
140	5700	19.46	19.36

Note: For FCC output power limitation is determined based on 26dB bandwidth.

Power Limit = 11dBm + 10logB < U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
100	5500	20.40	24.09 > 24
116	5580	19.36	23.86 < 24
140	5700	19.36	23.86 < 24

Beamforming Mode

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
100	5500	20.62	20.88	237.807	23.76	24.00	Pass
116	5580	20.33	20.85	229.514	23.61	24.00	Pass
140	5700	20.16	20.85	225.372	23.53	24.00	Pass

Note: 1. Directional gain = 5.66dBi < 6dBi, so the power limit shall not be reduced.

26dB BANDWIDTH:

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
100	5500	20.96	22.91
116	5580	20.61	22.61
140	5700	20.26	20.63

Power Limit = 11dBm + 10logB < U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
100	5500	20.96	24.21 > 24
116	5580	20.61	24.14 > 24
140	5700	20.26	24.06 > 24

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
102	5510	18.86	18.90	154.538	21.89	24.00	Pass
110	5550	20.65	20.81	236.649	23.74	24.00	Pass
134	5670	19.87	19.78	192.111	22.84	24.00	Pass

Note: 1. Directional gain = 5.66dBi < 6dBi, so the power limit shall not be reduced.

26dB BANDWIDTH:

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
102	5510	41.00	41.05
110	5550	40.95	51.46
134	5670	41.21	44.36

Note: For FCC output power limitation is determined based on 26dB bandwidth.

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
102	5510	41.00	27.12 > 24
110	5550	40.95	27.12 > 24
134	5670	41.21	27.15 > 24

802.11ac (VHT80)

OUTPUT POWER:

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
106	5530	15.97	15.86	78.085	18.93	24.00	Pass
122	5610	19.10	19.99	181.053	22.58	24.00	Pass

Note: 1. Directional gain = 5.66dBi < 6dBi, so the power limit shall not be reduced.

26dB BANDWIDTH:

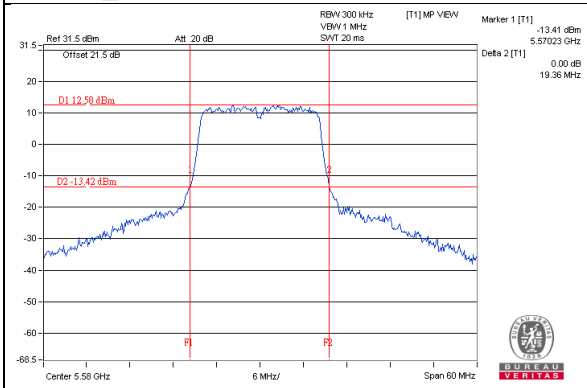
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
106	5530	83.41	83.21
122	5610	84.15	104.02

Note: For FCC output power limitation is determined based on 26dB bandwidth.

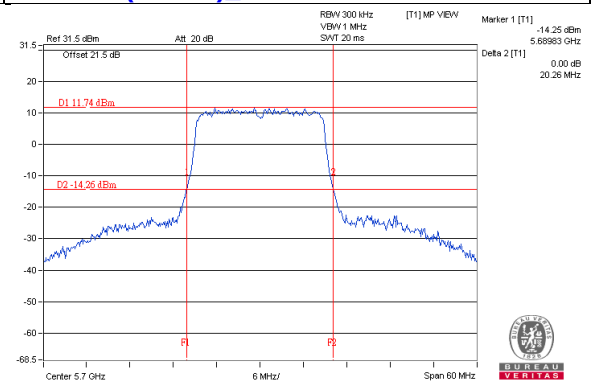
Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
106	5530	83.21	30.2 > 24
122	5610	84.15	30.25 > 24

Spectrum Plot of Worst Value

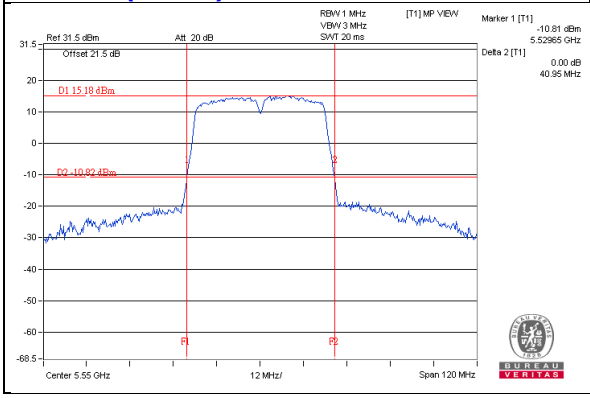
802.11a_Chain 0 / CH116



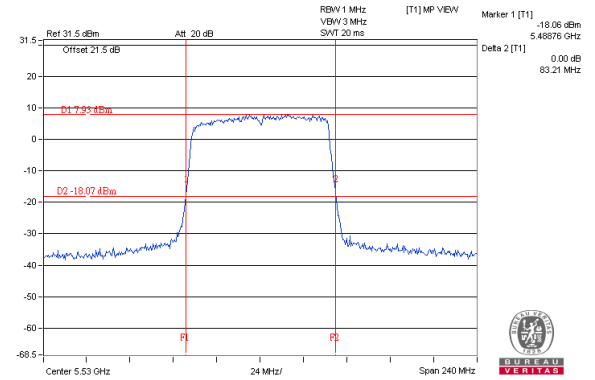
802.11ac (VHT20)_Chain 0 / CH140



802.11ac (VHT40)_Chain 0 / CH110

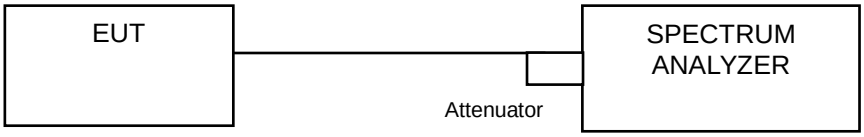


802.11ac (VHT80)_Chain 1 / CH106



4.4 Occupied Bandwidth Measurement

4.4.1 Test Setup



4.4.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.3 Test Procedure

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

4.4.4 Test Results

Radio 2

CDD Mode

802.11a

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	16.80	16.68
60	5300	16.92	16.44
64	5320	16.80	16.56

Beamforming Mode

802.11ac (VHT20)

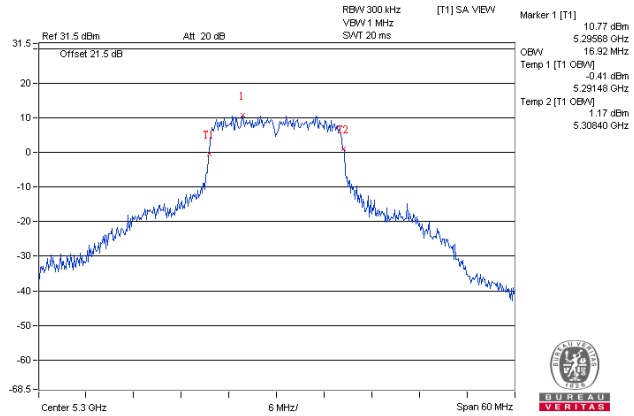
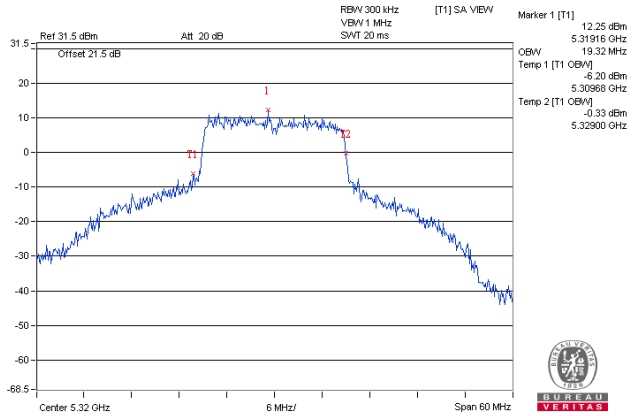
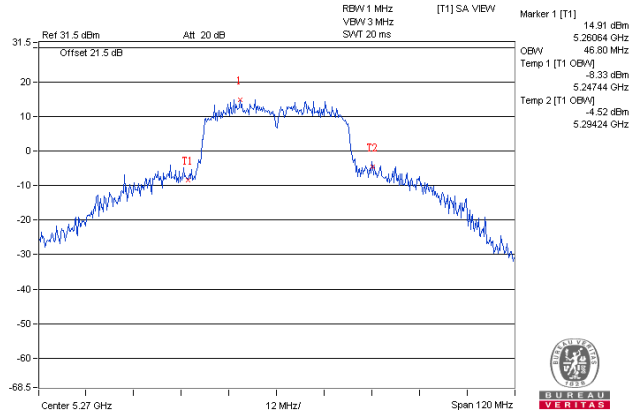
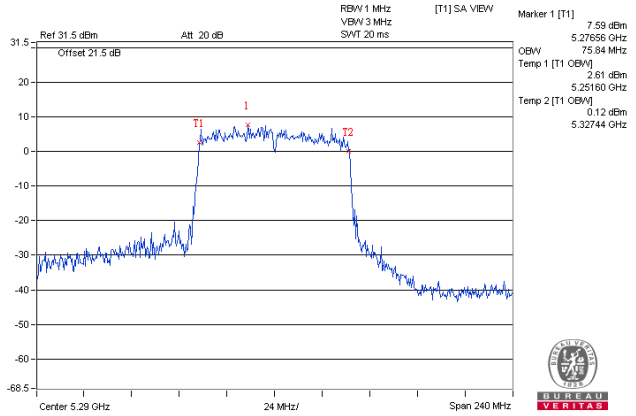
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	18.00	17.76
60	5300	17.88	17.88
64	5320	19.32	17.88

802.11ac (VHT40)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
54	5270	46.80	36.48
62	5310	36.96	36.48

802.11ac (VHT80)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
58	5290	75.84	75.84

Spectrum Plot of Worst Value	
802.11a_Chain 0 / CH60	**802.11ac (VHT20)_ Chain 0 / CH64**
	
802.11ac (VHT40) _Chain 0 / CH54	**802.11ac (VHT80) _Chain 0 / CH58**
	

Radio 1

CDD Mode

802.11a

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
100	5500	16.84	16.68
116	5580	16.84	16.84
140	5700	16.84	16.84

Beamforming Mode

802.11ac (VHT20)

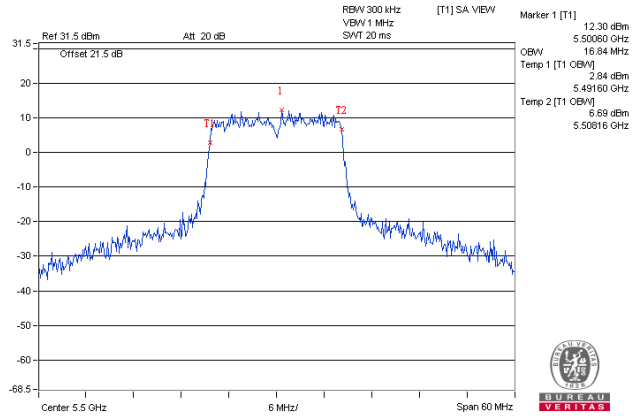
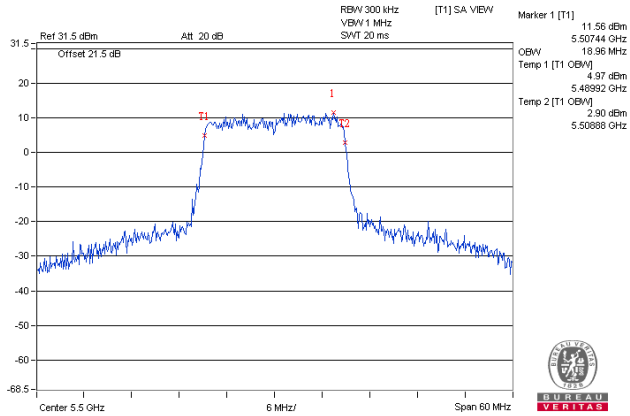
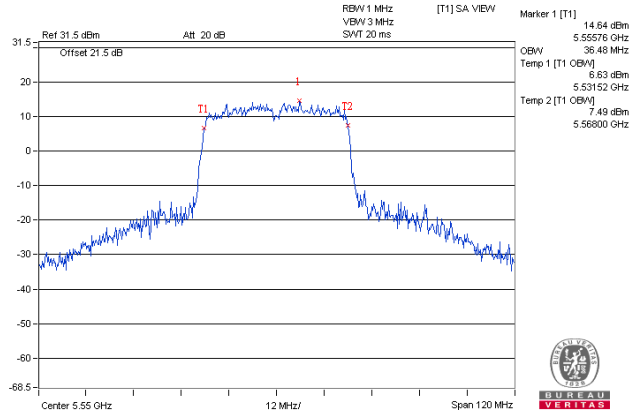
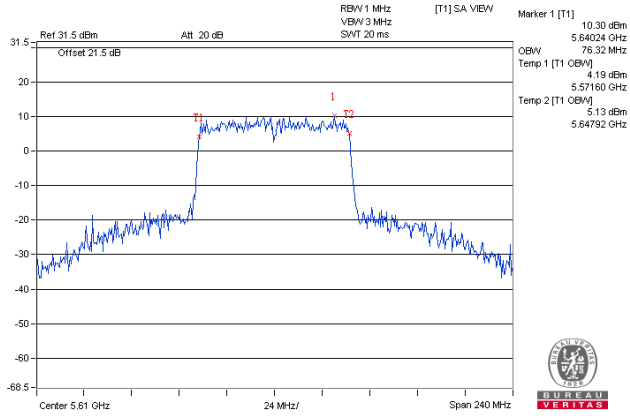
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
100	5500	18.96	18.96
116	5580	18.45	18.46
140	5700	18.50	18.54

802.11ac (VHT40)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
102	5510	36.24	36.24
110	5550	36.24	36.48
134	5670	36.24	36.24

802.11ac (VHT80)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
106	5530	75.36	75.84
122	5610	75.84	76.32

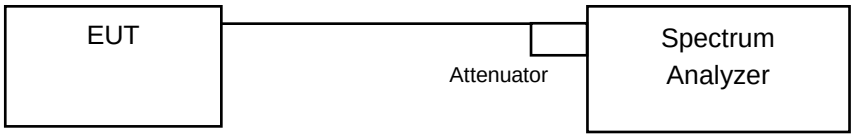
Spectrum Plot of Worst Value	
802.11a_Chain 0 / CH100	**802.11ac (VHT20)_ Chain 0 / CH100**
	
802.11ac (VHT40) _Chain 1 / CH110	**802.11ac (VHT80) _Chain 2 / CH122**
	

4.5 Peak Power Spectral Density Measurement

4.5.1 Limits of Peak Power Spectral Density Measurement

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

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

For 802.11ac (VHT20)

Using method SA-1

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1 MHz, Set VBW ≥ 3 MHz, Detector = RMS
3. Sweep time = auto, trigger set to “free run”.
4. Trace average at least 100 traces in power averaging mode.
5. Record the max value

For 802.11a, 802.11ac (VHT40), 802.11ac (VHT80)

Using method SA-2

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

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Same as Item 4.3.6.

4.5.7 Test Results

Radio 2

CDD Mode

802.11a

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
52	5260	7.70	7.70	0.13	10.84	11.00	Pass
60	5300	7.45	7.17	0.13	10.45	11.00	Pass
64	5320	7.27	7.24	0.13	10.40	11.00	Pass

Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.

2. Directional gain = 3.81dBi < 6dBi, so the power density limit shall not be reduced.

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

Beamforming Mode

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)		Total Power Density (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1			
52	5260	7.76	7.58	10.68	11.00	Pass
60	5300	7.36	7.36	10.37	11.00	Pass
64	5320	7.58	7.29	10.45	11.00	Pass

Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.

2. Directional gain = 3.81dBi < 6dBi, so the power density limit shall not be reduced.

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
54	5270	4.39	3.90	0.15	7.31	11.00	Pass
62	5310	3.26	2.92	0.15	6.26	11.00	Pass

Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.

2. Directional gain = 3.81dBi < 6dBi, so the power density limit shall not be reduced.

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

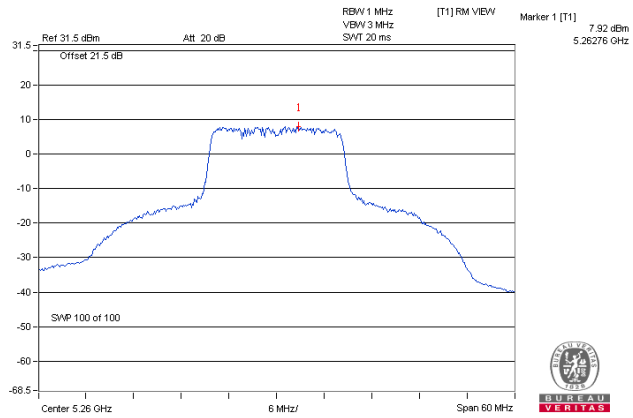
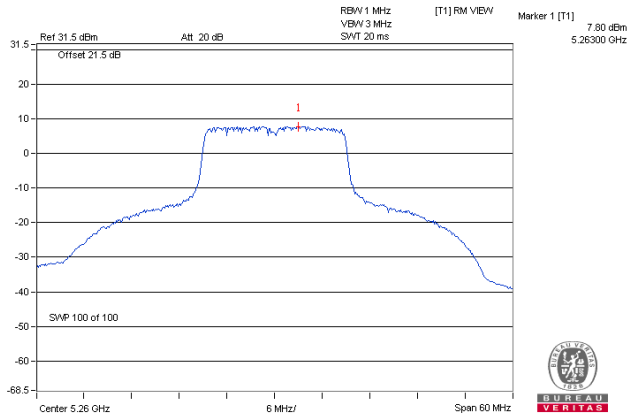
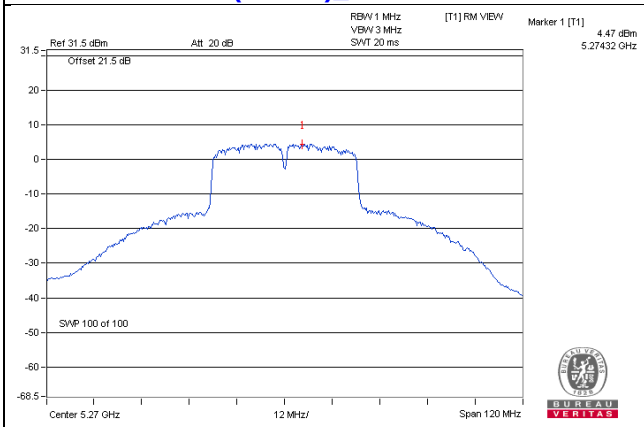
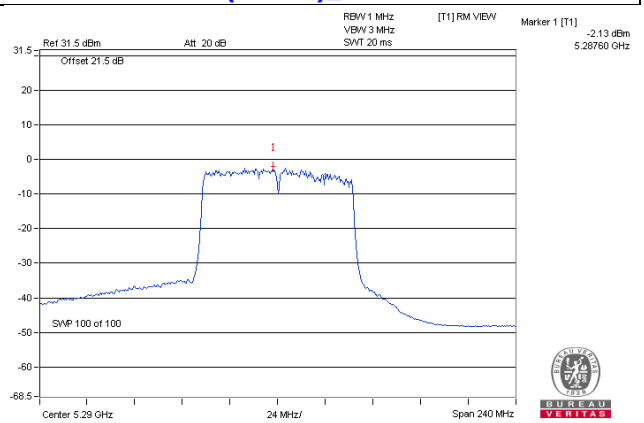
802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
58	5290	-2.13	-2.78	0.33	0.89	11.00	Pass

Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.

2. Directional gain = 3.81dBi < 6dBi, so the power density limit shall not be reduced.

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

Spectrum Plot of Worst Value	
802.11a_Chain 0 / CH52	**802.11ac (VHT20)_Chain 0 / CH52**
	
802.11ac (VHT40)_Chain 0 / CH54	**802.11ac (VHT80)_Chain 0 / CH58**
	

Radio 1

CDD Mode

802.11a

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
100	5500	7.23	7.58	0.13	10.55	11.00	Pass
116	5580	7.06	7.96	0.13	10.68	11.00	Pass
140	5700	7.73	7.71	0.13	10.86	11.00	Pass

Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.

2. Directional gain = 5.66dBi < 6dBi, so the power density limit shall not be reduced.

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

Beamforming Mode

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)		Total Power Density (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1			
100	5500	7.57	7.66	10.63	11.00	Pass
116	5580	7.02	7.93	10.51	11.00	Pass
140	5700	7.22	7.80	10.53	11.00	Pass

Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.

2. Directional gain = 5.66dBi < 6dBi, so the power density limit shall not be reduced.

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
102	5510	2.76	2.40	0.15	5.75	11.00	Pass
118	5590	4.06	4.47	0.15	7.43	11.00	Pass
134	5670	3.34	3.09	0.15	6.38	11.00	Pass

Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.

2. Directional gain = 5.66dBi < 6dBi, so the power density limit shall not be reduced.

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

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
106	5530	-4.18	-4.03	0.33	-0.77	11.00	Pass
122	5610	0.54	0.07	0.33	3.65	11.00	Pass

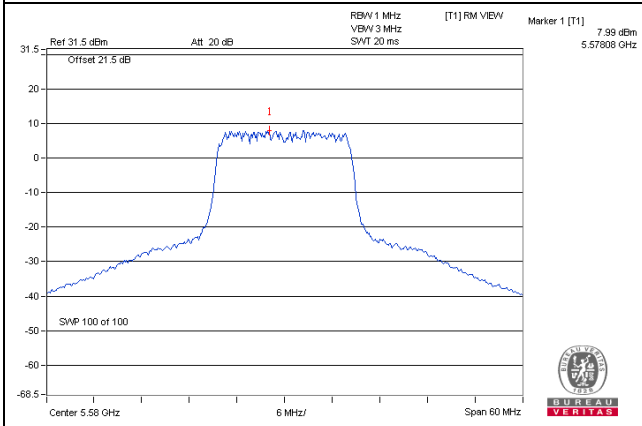
Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.

2. Directional gain = 5.66dBi < 6dBi, so the power density limit shall not be reduced.

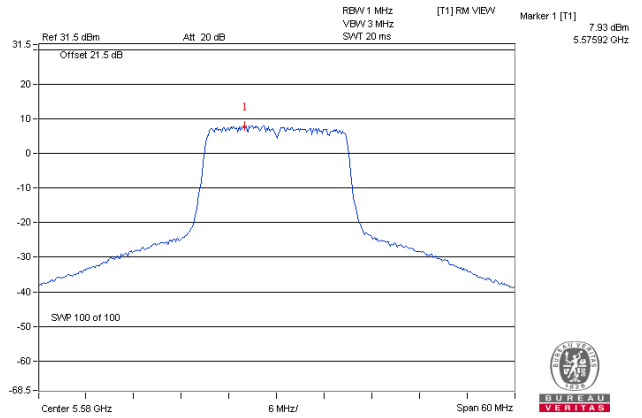
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

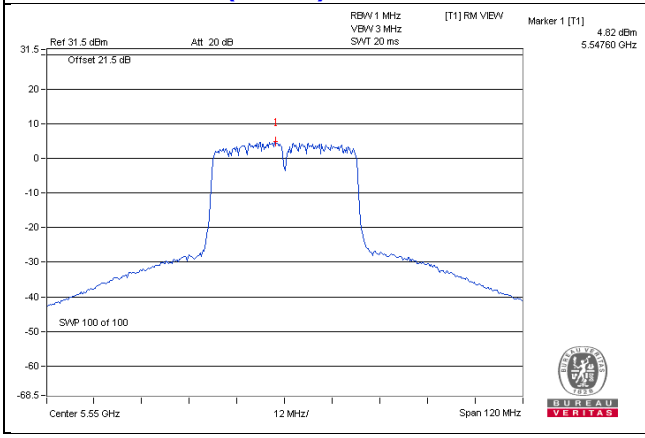
802.11a_Chain 1 / CH116



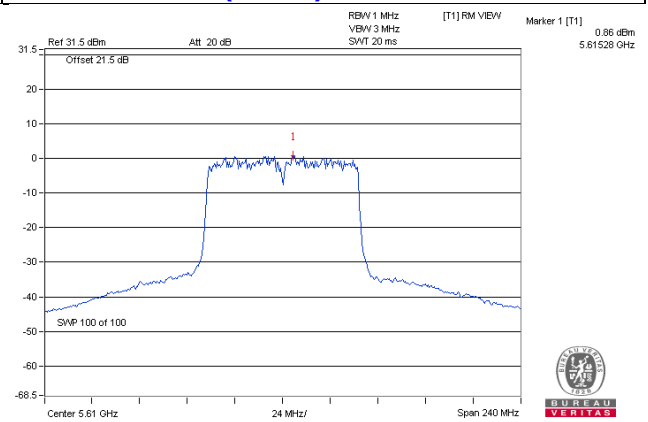
802.11ac (VHT20)_Chain 1 / CH116



802.11ac (VHT40)_Chain 1 / CH110



802.11ac (VHT80)_Chain 0 / CH122

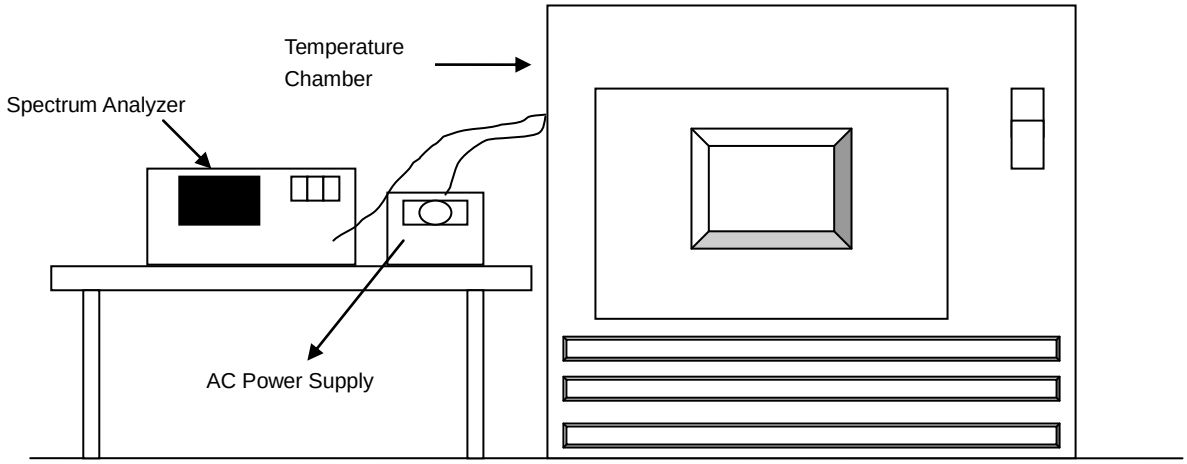


4.6 Frequency Stability Measurement

4.6.1 Limits of Frequency Stability Measurement

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

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

a. The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
b. Turn the EUT on and couple its output to a spectrum analyzer.
c. Turn the EUT off and set the chamber to the highest temperature specified.
d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 Minutes.
e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 Minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.
.

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

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

4.6.7 Test Results

Radio 2

Frequency Stability Versus Temp.									
Operating Frequency: 5260 MHz									
TEMP. (℃)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
50	120	5260.004	Pass	5260.0005	Pass	5260.0019	Pass	5260.0019	Pass
40	120	5260.0113	Pass	5260.0132	Pass	5260.0128	Pass	5260.0139	Pass
30	120	5259.9905	Pass	5259.9909	Pass	5259.9909	Pass	5259.9885	Pass
20	120	5259.9797	Pass	5259.9807	Pass	5259.981	Pass	5259.9831	Pass
10	120	5260.0032	Pass	5260.0025	Pass	5260.0039	Pass	5260.0007	Pass
0	120	5259.9959	Pass	5259.9934	Pass	5259.9924	Pass	5259.9943	Pass
-10	120	5259.9761	Pass	5259.9774	Pass	5259.9768	Pass	5259.9804	Pass
-20	120	5259.9948	Pass	5259.9991	Pass	5259.9985	Pass	5259.9979	Pass
-30	120	5259.9774	Pass	5259.9781	Pass	5259.9802	Pass	5259.9806	Pass

Frequency Stability Versus Voltage									
Operating Frequency: 5260 MHz									
TEMP. (℃)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	138	5259.9802	Pass	5259.9813	Pass	5259.981	Pass	5259.9822	Pass
	120	5259.9797	Pass	5259.9807	Pass	5259.981	Pass	5259.9831	Pass
	102	5259.9803	Pass	5259.9797	Pass	5259.9817	Pass	5259.9827	Pass

Radio 1

Frequency Stability Versus Temp.									
Operating Frequency: 5500 MHz									
TEMP. (℃)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
50	120	5499.9792	PASS	5499.9766	PASS	5499.9768	PASS	5499.9756	Pass
40	120	5499.9876	PASS	5499.9875	PASS	5499.9824	PASS	5499.9856	Pass
30	120	5500.0096	PASS	5500.0063	PASS	5500.0108	PASS	5500.0091	Pass
20	120	5499.9984	PASS	5499.9995	PASS	5500.0028	PASS	5500.003	Pass
10	120	5500.0201	PASS	5500.0243	PASS	5500.0234	PASS	5500.0221	Pass
0	120	5499.9995	PASS	5500.0019	PASS	5500.0029	PASS	5500.0032	Pass
-10	120	5499.9761	PASS	5499.98	PASS	5499.9763	PASS	5499.9811	Pass
-20	120	5499.9832	PASS	5499.9834	PASS	5499.982	PASS	5499.9799	Pass
-30	120	5499.9942	PASS	5499.9935	PASS	5499.9909	PASS	5499.995	Pass

Frequency Stability Versus Voltage									
Operating Frequency: 5500 MHz									
TEMP. (℃)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	138	5499.9987	Pass	5500.0004	Pass	5500.0024	Pass	5500.002	Pass
	120	5499.9984	Pass	5499.9995	Pass	5500.0028	Pass	5500.003	Pass
	102	5499.9989	Pass	5500	Pass	5500.0034	Pass	5500.0021	Pass

5 Pictures of Test Arrangements

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

Appendix – Information on the Testing Laboratories

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

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

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

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

Hwa Ya EMC/RF/Safety Lab
Tel: 886-3-3183232
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Email: service.adt@tw.bureauveritas.com
Web Site: www.bureauveritas-adt.com

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

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