FCC Test Report

Report No.:	RF160419E08-1
FCC ID:	PY326200345
Test Model:	WAC740
Received Date:	Apr. 19, 2016
Test Date:	June 30 to July 12, 2016
Issued Date:	July 28, 2016
Applicant:	NETGEAR, Inc.
Address:	350 East Plumeria Drive San Jose, CA 95134
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.
Test Location (1):	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.
Test Location (2):	No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan R.O.C.

Table of Contents

Release Control Record

Issue No.	Description	Date Issued
RF160419E08-1	Original release.	July 28, 2016

1 Certificate of Conformity

Product:	ProSAFE Dual Band Wireless AC Access Point
Brand:	NETGEAR
Test Model:	WAC740
Sample Status:	ENGINEERING SAMPLE
Applicant:	NETGEAR, Inc.
Test Date:	June 30 to July 12, 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:** July 28, 2016

Wendy Wu / Specialist

Approved by : _____ , **Date:** July 28, 2016

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 -3.18dB at 0.56016MHz.
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 -0.10dB at 5150.00MHz, 5647.00MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	Pass	Meet the requirement of limit.
15.407(a)(1/2/3)	Peak Power Spectral Density	Pass	Meet the requirement of limit.
15.407(e)	6dB bandwidth	Pass	Meet the requirement of limit. (U-NII-3 Band only)
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	Antenna connector is RSMA and i-pex (MHF) not a standard connector.

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

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expended Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.83 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	5.19 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	3.43 dB
	6GHz ~ 18GHz	3.49 dB
	18GHz ~ 40GHz	4.11 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	ProSAFE Dual Band Wireless AC Access Point
Brand	NETGEAR
Test Model	WAC740
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	12Vdc from power adapter or 48-55Vdc from POE
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode only.
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: up to 11Mbps 802.11a/g: up to 54Mbps 802.11n: up to 600Mbps 802.11ac: up to 1733.3Mbps
Operating Frequency	**2.4GHz:** 2.412 ~ 2.462GHz **5GHz:** 5.18 ~ 5.24GHz and 5.745 ~ 5.825GHz
Number of Channel	**2.4GHz:** 802.11b, 802.11g, 802.11n (HT20): 11 802.11n (HT40): 7 **5GHz:** 802.11a, 802.11n (HT20), 802.11ac (VHT20): 9 802.11n (HT40), 802.11ac (VHT40): 4 802.11ac (VHT80): 2
Output Power	**2.4GHz:** **CDD Mode:** 970.785mW **Beamforming Mode:** 602.839mW **5GHz:** **5.18GHz ~ 5.24GHz:** **CDD Mode:** 819.499mW **Beamforming Mode:** 819.499mW **5.745GHz ~ 5.825GHz:** **CDD Mode:** 909.707mW **Beamforming Mode:** 909.707mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter x 1
Data Cable Supplied	NA

Note:

1. The EUT must be supplied with POE or a power adapter and following different models could be chosen as following table:

Adapter				
No	Brand Name	Model No.	PN	Spec.
1	NETGEAR	2ABL030F 1	332-10758-01	Input: 100-120Vac, 50/60Hz, 0.9A Output: 12Vdc, 2.5A Power cord (Unshielded, 1.8m)
2		ADS-40FPA-12	332-10759-01	Input: 100-120Vac, 60Hz, 0.9A Output: 12Vdc, 2.5A Power cord (Unshielded, 1.8m)
POE (test only, not for sale)				
No	Brand Name	Model No.	PN	Spec.
1	Microsemi Corp.	PD-9001-10G/AC	NA	Input: 100-240V, 50-60Hz, 1.5A Output: 55V, 0.63A
Note: From the above adapters & POE, the radiated emission worse case was found in POE. Therefore only the test data of the mode was recorded in this report.				

2. Simultaneously transmission condition.

Condition	Technology	
1	WLAN (2.4GHz)	WLAN (5GHz)
Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.		

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

External Antenna

Transmitter Circuit (For 2.4G)	Transmitter Circuit (For 5G)	Brand	Model	Antenna Gain(dBi) <including cable loss>	Frequency range (MHz ~ MHz)	Antenna Type	Connecter Type	Cable Loss(db)	Cable Length (mm)
Chain (0)	Chain (3)	Master Wave Tech	98364PRSX004	-0.2	2.4~2.4835	Dipole	R-SMA	1	172
				0	5.15~5.25			1.5	
				0.1	5.25~5.35			1.5	
				-0.8	5.47~5.725			1.5	
				-1	5.725~5.85			1.5	
Chain (1)	Chain (2)	Master Wave Tech	98364PRSX004	0	2.4~2.4835	Dipole	R-SMA	0.8	175
				0.1	5.15~5.25			1.4	
				0.2	5.25~5.35			1.4	
				-0.7	5.47~5.725			1.4	
				-0.9	5.725~5.85			1.4	
Chain (2)	Chain (1)	Master Wave Tech	98364PRSX004	0	2.4~2.4835	Dipole	R-SMA	0.8	145
				0.2	5.15~5.25			1.3	
				0.3	5.25~5.35			1.3	
				-0.6	5.47~5.725			1.3	
				-0.8	5.725~5.85			1.3	
Chain (3)	Chain (0)	Master Wave Tech	98364PRSX004	0	2.4~2.4835	Dipole	R-SMA	0.8	135
				0.1	5.15~5.25			1.4	
				0.2	5.25~5.35			1.4	
				-0.7	5.47~5.725			1.4	
				-0.9	5.725~5.85			1.4	

Internal Antenna

Transmitter Circuit	Brand	Model	Antenna Gain(dBi)	Frequency range (MHz ~ MHz)	Antenna Type	Connecter Type
Chain (0)	NA	NA	5	2.4~2.4835	PIFA	i-pex(MHF)
			6	5.15~5.25		
			6	5.25~5.35		
			6	5.47~5.725		
			6	5.725~5.85		
Chain (1)	NA	NA	5	2.4~2.4835	PIFA	i-pex(MHF)
			6	5.15~5.25		
			6	5.25~5.35		
			6	5.47~5.725		
			6	5.725~5.85		
Chain (2)	NA	NA	5	2.4~2.4835	PIFA	i-pex(MHF)
			6	5.15~5.25		
			6	5.25~5.35		
			6	5.47~5.725		
			6	5.725~5.85		
Chain (3)	NA	NA	5	2.4~2.4835	PIFA	i-pex(MHF)
			6	5.15~5.25		
			6	5.25~5.35		
			6	5.47~5.725		
			6	5.725~5.85		

4. The EUT incorporates a MIMO function.

2.4GHz Band			
MODULATION MODE	**DATA RATE (MCS)**	**TX & RX CONFIGURATION**	
802.11b	1 ~ 11Mbps	4TX	4RX
802.11g	6 ~ 54Mbps	4TX	4RX
802.11n (HT20)	MCS 0~7	4TX	4RX
	MCS 8~15	4TX	4RX
	MCS16~23	4TX	4RX
	MCS 24~31	4TX	4RX
802.11n (HT40)	MCS 0~7	4TX	4RX
	MCS 8~15	4TX	4RX
	MCS16~23	4TX	4RX
	MCS 24~31	4TX	4RX
5GHz Band			
MODULATION MODE	**DATA RATE (MCS)**	**TX & RX CONFIGURATION**	
802.11a	6 ~ 54Mbps	4TX	4RX
802.11n (HT20)	MCS 0~7	4TX	4RX
	MCS 8~15	4TX	4RX
	MCS16~23	4TX	4RX
	MCS 24~31	4TX	4RX
802.11n (HT40)	MCS 0~7	4TX	4RX
	MCS 8~15	4TX	4RX
	MCS16~23	4TX	4RX
	MCS 24~31	4TX	4RX
802.11ac (VHT20)	MCS 0~8, Nss=1	4TX	4RX
	MCS 0~8, Nss=2	4TX	4RX
	MCS 0~9, Nss=3	4TX	4RX
	MCS 0~8, Nss=4	4TX	4RX
802.11ac (VHT40)	MCS 0~9, Nss=1	4TX	4RX
	MCS 0~9, Nss=2	4TX	4RX
	MCS 0~9, Nss=3	4TX	4RX
	MCS 0~9, Nss=4	4TX	4RX
802.11ac (VHT80)	MCS 0~9, Nss=1	4TX	4RX
	MCS 0~9, Nss=2	4TX	4RX
	MCS 0~9, Nss=3	4TX	4RX
	MCS 0~9, Nss=4	4TX	4RX

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)

5. The Directional gain table:

Frequency	Max Gain (dBi)
5180-5240	6.04
5745-5825	5.67

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.

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

3.2 Description of Test Modes

FOR 5180 ~ 5240MHz

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

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

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

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
42	5210MHz

FOR 5745 ~ 5825MHz:

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

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

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

Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
155	5775MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE≥1G	RE<1G	PLC	APCM	
1	√	√	√	√	Power from POE + Internal antenna
2	√	√	-	-	Power from POE + External antenna
3	-	-	√	-	Power from adapter 1 + Internal antenna
4	-	-	√	-	Power from adapter 2 + Internal antenna

Where RE≥1G: Radiated Emission above 1GHz & Bandedge Measurement **RE<1G:** Radiated Emission below 1GHz

PLC: Power Line Conducted Emission **APCM:** Antenna Port Conducted Measurement

NOTE: 1. The EUT had been pre-tested on the positioned of each 2 axis. The worst case was found when positioned on **Y-plane (Internal antenna) & X-plane (External antenna for above 1GHz) & Y-plane (External antenna for below 1GHz).**

2. "-"means no effect.

Radiated Emission Test (Above 1GHz):

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

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

CDD Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6
802.11ac (VHT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
802.11ac (VHT40)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11ac (VHT80)		42	42	OFDM	BPSK	29.3
802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6
802.11ac (VHT20)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
802.11ac (VHT40)		151 to 159	151, 159	OFDM	BPSK	13.5
802.11ac (VHT80)		155	155	OFDM	BPSK	29.3

Radiated Emission Test (Below 1GHz):

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

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

CDD Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11ac (VHT20)	5745-5825	149 to 165	157	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.

CDD Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11ac (VHT20)	5745-5825	149 to 165	157	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.

CDD Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6
802.11ac (VHT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
802.11ac (VHT40)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11ac (VHT80)		42	42	OFDM	BPSK	29.3
802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6
802.11ac (VHT20)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
802.11ac (VHT40)		151 to 159	151, 159	OFDM	BPSK	13.5
802.11ac (VHT80)		155	155	OFDM	BPSK	29.3
Beamforming Mode (Output power only)						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11ac (VHT20)	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6.5
802.11ac (VHT40)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11ac (VHT80)		42	42	OFDM	BPSK	29.3
802.11ac (VHT20)	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6.5
802.11ac (VHT40)		151 to 159	151, 159	OFDM	BPSK	13.5
802.11ac (VHT80)		155	155	OFDM	BPSK	29.3

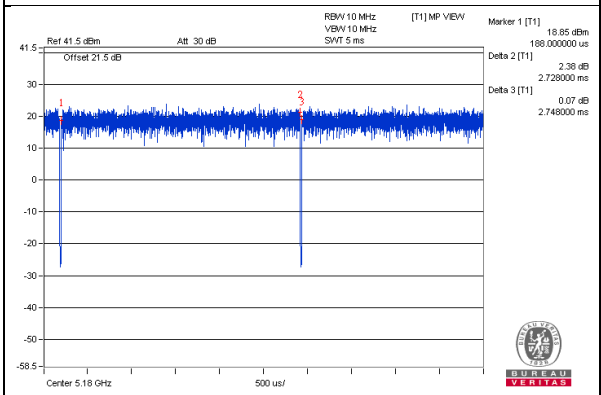
Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested By
RE≥1G	21deg. C, 65%RH	120Vac, 60Hz	Robert Cheng
RE<1G	24deg. C, 66%RH	120Vac, 60Hz	Russell Yeh
PLC	24deg. C, 65%RH	120Vac, 60Hz	Jyunchun Lin
APCM	25deg. C, 60%RH	120Vac, 60Hz	Anderson Chen

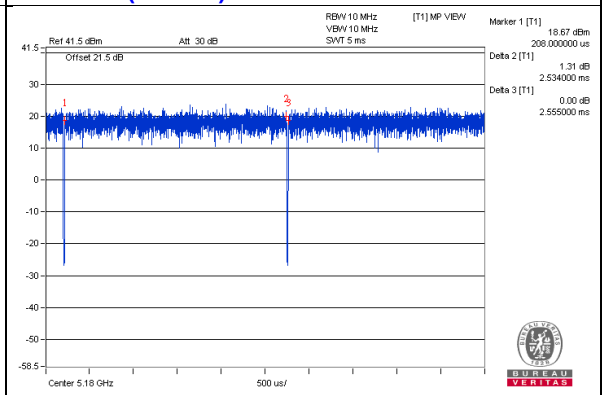
3.3 Duty Cycle of Test Signal

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 = 2.728 ms/2.748 ms = 0.993
802.11ac (VHT20): Duty cycle = 2.534 ms/2.555 ms = 0.992
802.11ac (VHT40): Duty cycle = 1.24 ms/1.26 ms = 0.984
802.11ac (VHT80): Duty cycle = 0.599 ms/0.618 ms = 0.969, Duty factor = 10 * log(1/0.969) = 0.14

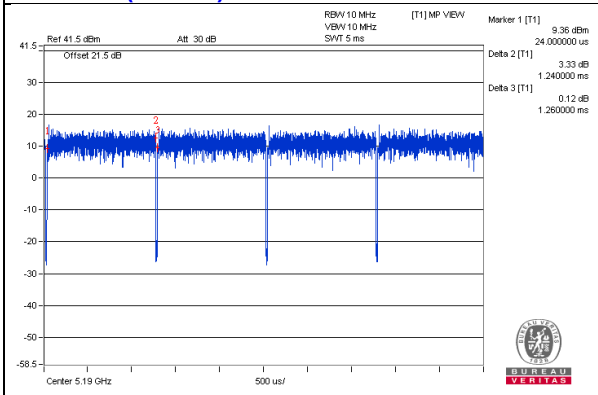
802.11a



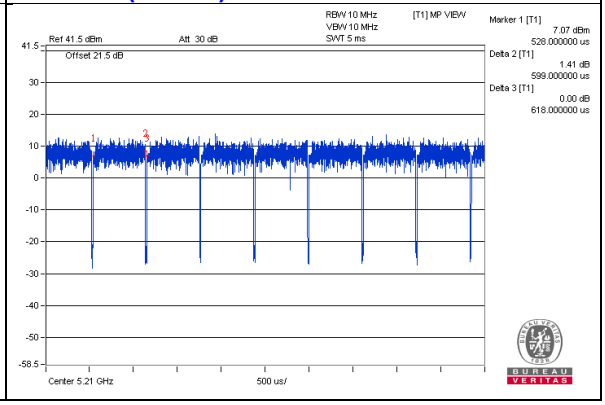
802.11ac (VHT20)



802.11ac (VHT40)



802.11ac (VHT80)



3.4 Description of Support Units

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

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook Computer	DELL	E5430	HYV4VY1	FCC DoC	Provided by Lab
B.	POE	Microsemi Corp.	PD-9001-10G/AC	NA	NA	Supplied by client
C.	HUB	ZyXEL	ES-116P	S060H02000215	FCC DoC	Provided by Lab

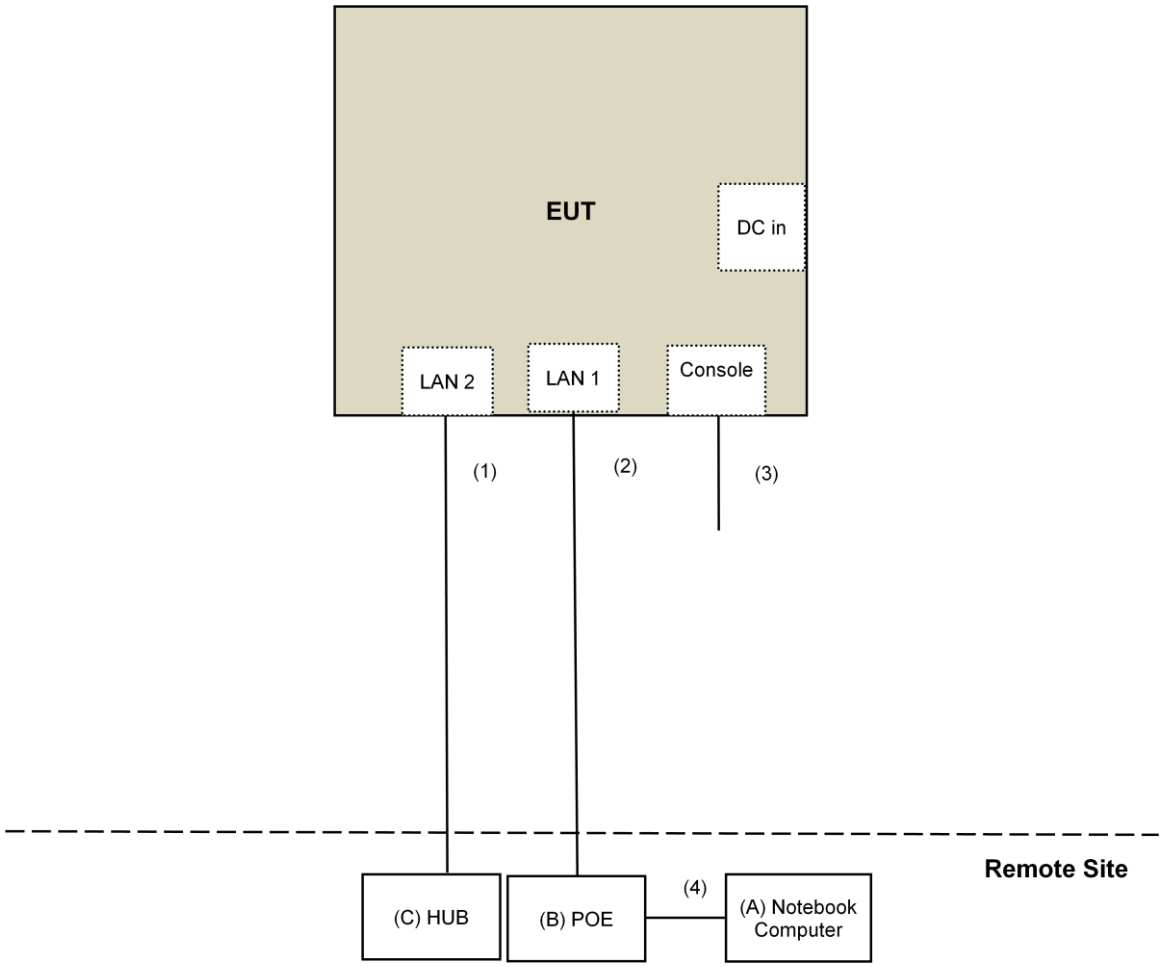
Note:

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

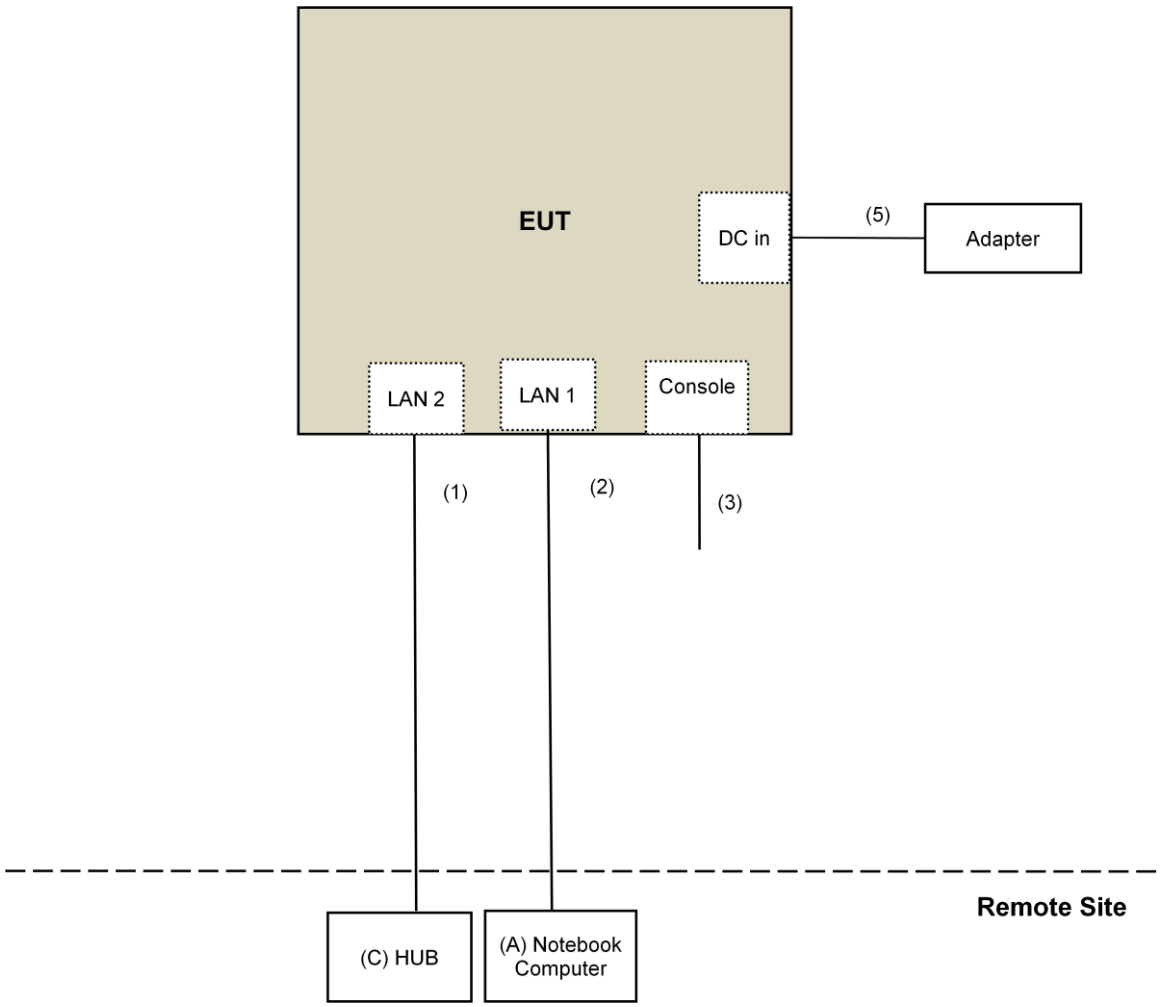
ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	RJ-45 Cable	1	10	No	0	Provided by Lab
2.	RJ-45 Cable	1	10	No	0	Provided by Lab
3.	RJ45 to RS232 Cable	1	1.5	No	0	Provided by Lab
4.	RJ-45 Cable	1	1	No	0	Supplied by client
5.	DC Cable	1	1.8	No	0	Supplied by client

3.4.1 Configuration of System under Test

POE Mode:



Adapter Mode:



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 v01r02
KDB 662911 D01 Multiple Transmitter Output v02r01
ANSI C63.10-2013

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

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

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

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

NOTE:

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

Limits of unwanted emission out of the restricted bands

<table>
<tr><td colspan="2">Applicable To</td><td colspan="2">Limit</td></tr>
<tr><td colspan="2" rowspan="2">789033 D02 General UNII Test Procedure New Rules v01r02</td><td colspan="2">Field Strength at 3m</td></tr>
<tr><td>PK:74 (dBμV/m)</td><td>AV:54 (dBμV/m)</td></tr>
<tr><td>Frequency Band</td><td colspan="2">Applicable To</td><td>EIRP Limit</td><td>Equivalent Field Strength at 3m</td></tr>
<tr><td>5150~5250 MHz</td><td colspan="2">15.407(b)(1)</td><td rowspan="3">PK:-27 (dBm/MHz)</td><td rowspan="3">PK:68.2(dBμV/m)</td></tr>
<tr><td>5250~5350 MHz</td><td colspan="2">15.407(b)(2)</td></tr>
<tr><td>5470~5725 MHz</td><td colspan="2">15.407(b)(3)</td></tr>
<tr><td rowspan="2">5725~5850 MHz</td><td>☒</td><td>15.407(b)(4)(i)</td><td>PK:-27 (dBm/MHz) *1
PK:10 (dBm/MHz) *2
PK:15.6 (dBm/MHz) *3
PK:27 (dBm/MHz) *4</td><td>PK: 68.2(dBμV/m) *1
PK:105.2 (dBμV/m) *2
PK: 110.8(dBμV/m) *3
PK:122.2 (dBμV/m) *4</td></tr>
<tr><td>☐</td><td>15.407(b)(4)(ii)</td><td colspan="2">Emission limits in section 15.247(d)</td></tr>
<tr><td colspan="5">*1 beyond 75 MHz or more above of the band edge.
*2 below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.
*3 below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.
*4 from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.</td></tr>
</table>

Note:

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

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

4.1.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Agilent	N9038A	MY54450088	July 24, 2015	July 23, 2016
Pre-Amplifier(*) EMCI	EMC001340	980142	Jan. 20, 2016	Jan. 19, 2018
Loop Antenna(*) Electro-Metrics	EM-6879	264	Dec. 16, 2014	Dec. 15, 2016
RF Cable	NA	LOOPCAB-001 LOOPCAB-002	Jan. 18, 2016	Jan. 17, 2017
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-01	Nov. 11, 2015	Nov. 10, 2016
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
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-783	Jan. 19, 2016	Jan. 18, 2017
Pre-Amplifier Agilent	8449B	3008A01922	Sep. 19, 2015	Sep. 18, 2016
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_V8.7.07	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	FSP40	100060	May 11, 2016	May 10, 2017
Power meter Anritsu	ML2495A	1014008	May 5, 2016	May 4, 2017
Power sensor Anritsu	MA2411B	0917122	May 5, 2016	May 4, 2017
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	Jan. 15, 2016	Jan. 14, 2017
AC Power Source Extech Electronics	6205	1440452	NA	NA
Digital Multimeter FLUKE	87III	73680266	Nov. 10, 2015	Nov. 09, 2016

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. *The calibration interval of the above test instruments is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. The test was performed in 966 Chamber No. 4.
4. The FCC Site Registration No. is 292998
5. The CANADA Site Registration No. is 20331-2
6 Loop antenna was used for all emissions below 30 MHz.
7. Tested Date: June 30 to July 11, 2016

4.1.3 Test Procedure

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

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

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

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

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

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

Note:

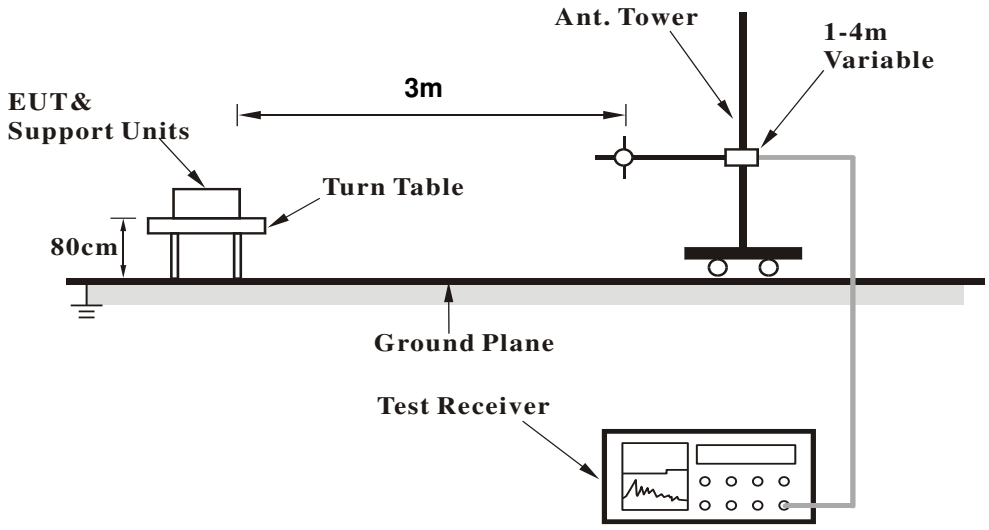
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

4.1.4 Deviation from Test Standard

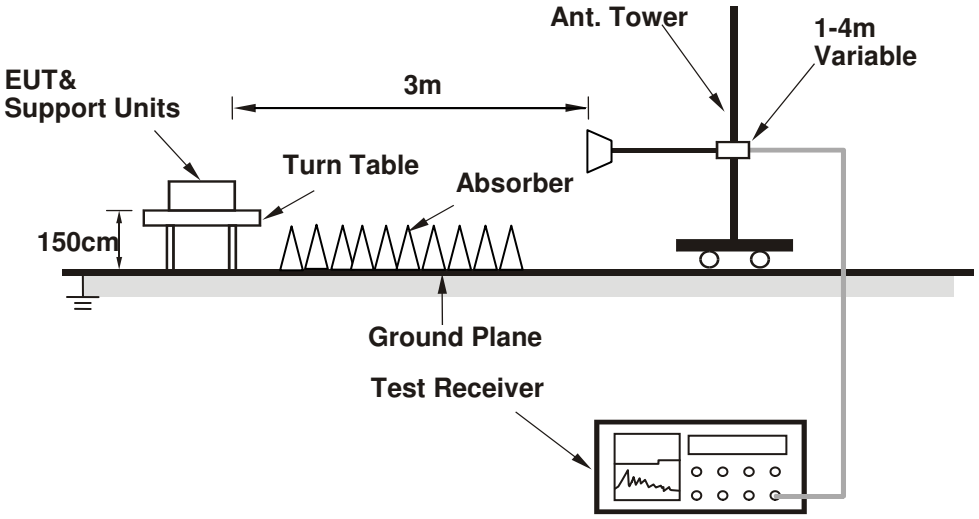
No deviation.

4.1.5 Test Setup

<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



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

4.1.6 EUT Operating Condition

a. Connected the EUT with the Notebook Computer which is placed on remote site.
b. Contorlling software (MTool REL 2.0.2.7) has been activated to set the EUT on specific status.

4.1.7 Test Results (Mode 1)

Above 1GHz Data:

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	71.00 PK	74.00	-3.00	3.67 H	175	69.40	1.60
2	5150.00	50.60 AV	54.00	-3.40	3.67 H	175	49.00	1.60
3	*5180.00	119.20 PK			3.67 H	175	117.50	1.70
4	*5180.00	109.00 AV			3.67 H	175	107.30	1.70
5	#10360.00	50.50 PK	74.00	-23.50	2.10 H	155	38.80	11.70
6	#10360.00	39.70 AV	54.00	-14.30	2.10 H	155	28.00	11.70
7	15540.00	52.20 PK	74.00	-21.80	2.15 H	143	38.90	13.30
8	15540.00	40.70 AV	54.00	-13.30	2.15 H	143	27.40	13.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	70.30 PK	74.00	-3.70	3.72 V	156	68.70	1.60
2	5150.00	50.20 AV	54.00	-3.80	3.72 V	156	48.60	1.60
3	*5180.00	117.20 PK			3.72 V	156	115.50	1.70
4	*5180.00	107.30 AV			3.72 V	156	105.60	1.70
5	#10360.00	51.10 PK	74.00	-22.90	1.39 V	226	39.40	11.70
6	#10360.00	39.50 AV	54.00	-14.50	1.39 V	226	27.80	11.70
7	15540.00	57.20 PK	74.00	-16.80	1.38 V	138	43.90	13.30
8	15540.00	41.20 AV	54.00	-12.80	1.38 V	138	27.90	13.30

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	124.10 PK			2.35 H	205	122.30	1.80
2	*5200.00	112.70 AV			2.35 H	205	110.90	1.80
3	#10400.00	55.80 PK	74.00	-18.20	2.10 H	162	43.90	11.90
4	#10400.00	43.50 AV	54.00	-10.50	2.10 H	162	31.60	11.90
5	15600.00	52.90 PK	74.00	-21.10	2.10 H	152	39.60	13.30
6	15600.00	42.00 AV	54.00	-12.00	2.10 H	152	28.70	13.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	121.60 PK			3.72 V	149	119.80	1.80
2	*5200.00	111.60 AV			3.72 V	149	109.80	1.80
3	#10400.00	55.90 PK	74.00	-18.10	1.35 V	212	44.00	11.90
4	#10400.00	43.60 AV	54.00	-10.40	1.35 V	212	31.70	11.90
5	15600.00	59.10 PK	74.00	-14.90	1.43 V	146	45.80	13.30
6	15600.00	43.20 AV	54.00	-10.80	1.43 V	146	29.90	13.30

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	58.30 PK	74.00	-15.70	2.32 H	188	56.70	1.60
2	5150.00	46.80 AV	54.00	-7.20	2.32 H	188	45.20	1.60
3	*5240.00	121.00 PK			2.32 H	188	119.20	1.80
4	*5240.00	111.70 AV			2.32 H	188	109.90	1.80
5	5400.00	59.80 PK	74.00	-14.20	2.32 H	188	57.60	2.20
6	5400.00	47.10 AV	54.00	-6.90	2.32 H	188	44.90	2.20
7	#10480.00	51.10 PK	74.00	-22.90	2.12 H	151	38.90	12.20
8	#10480.00	40.20 AV	54.00	-13.80	2.12 H	151	28.00	12.20
9	15720.00	54.20 PK	74.00	-19.80	2.13 H	161	41.00	13.20
10	15720.00	41.10 AV	54.00	-12.90	2.13 H	161	27.90	13.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	55.40 PK	74.00	-18.60	3.77 V	156	53.80	1.60
2	5150.00	44.50 AV	54.00	-9.50	3.77 V	156	42.90	1.60
3	*5240.00	119.10 PK			3.77 V	156	117.30	1.80
4	*5240.00	109.10 AV			3.77 V	156	107.30	1.80
5	5400.00	56.20 PK	74.00	-17.80	3.77 V	164	54.00	2.20
6	5400.00	46.50 AV	54.00	-7.50	3.77 V	164	44.30	2.20
7	#10480.00	51.70 PK	74.00	-22.30	1.32 V	222	39.50	12.20
8	#10480.00	40.60 AV	54.00	-13.40	1.32 V	222	28.40	12.20
9	15720.00	58.10 PK	74.00	-15.90	1.43 V	140	44.90	13.20
10	15720.00	42.10 AV	54.00	-11.90	1.43 V	140	28.90	13.20

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5577.55	61.60 PK	68.20	-6.60	2.27 H	181	59.10	2.50
2	*5745.00	113.00 PK			2.27 H	181	110.20	2.80
3	*5745.00	112.30 AV			2.27 H	181	109.50	2.80
4	#5977.02	62.90 PK	68.20	-5.30	2.27 H	181	59.70	3.20
5	11490.00	62.50 PK	74.00	-11.50	2.26 H	187	49.00	13.50
6	11490.00	51.00 AV	54.00	-3.00	2.26 H	187	37.50	13.50
7	#17235.00	59.60 PK	74.00	-14.40	1.99 H	178	41.20	18.40
8	#17235.00	47.80 AV	54.00	-6.20	1.99 H	178	29.40	18.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5587.52	62.80 PK	68.20	-5.40	3.68 V	154	60.30	2.50
2	*5745.00	122.00 PK			3.68 V	161	119.20	2.80
3	*5745.00	111.90 AV			3.68 V	161	109.10	2.80
4	#5991.75	64.10 PK	68.20	-4.10	3.68 V	154	60.70	3.40
5	11490.00	61.80 PK	74.00	-12.20	2.49 V	184	48.30	13.50
6	11490.00	49.40 AV	54.00	-4.60	2.49 V	184	35.90	13.50
7	#17235.00	57.00 PK	74.00	-17.00	1.41 V	187	38.60	18.40
8	#17235.00	46.00 AV	54.00	-8.00	1.41 V	187	27.60	18.40

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5550.95	60.30 PK	68.20	-7.90	2.22 H	182	57.80	2.50
2	*5785.00	122.60 PK			2.22 H	182	119.70	2.90
3	*5785.00	111.50 AV			2.22 H	182	108.60	2.90
4	#6018.82	62.80 PK	68.20	-5.40	2.22 H	182	59.40	3.40
5	11570.00	62.60 PK	74.00	-11.40	2.30 H	172	49.40	13.20
6	11570.00	50.90 AV	54.00	-3.10	2.30 H	172	37.70	13.20
7	#17355.00	59.40 PK	74.00	-14.60	2.00 H	169	40.30	19.10
8	#17355.00	47.50 AV	54.00	-6.50	2.00 H	169	28.40	19.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5551.90	65.20 PK	68.20	-3.00	3.68 V	154	62.70	2.50
2	*5785.00	122.40 PK			3.68 V	154	119.50	2.90
3	*5785.00	111.10 AV			3.68 V	154	108.20	2.90
4	#6021.68	60.60 PK	68.20	-7.60	3.68 V	154	57.20	3.40
5	11570.00	61.90 PK	74.00	-12.10	2.43 V	180	48.70	13.20
6	11570.00	49.60 AV	54.00	-4.40	2.43 V	180	36.40	13.20
7	#17355.00	57.10 PK	74.00	-16.90	1.44 V	189	38.00	19.10
8	#17355.00	46.10 AV	54.00	-7.90	1.44 V	189	27.00	19.10

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5576.73	61.70 PK	68.20	-6.50	3.58 H	156	59.20	2.50
2	*5825.00	122.50 PK			2.22 H	180	119.60	2.90
3	*5825.00	111.80 AV			2.22 H	180	108.90	2.90
4	#5923.92	66.30 PK	69.00	-2.70	3.58 H	156	63.20	3.10
5	11650.00	62.50 PK	74.00	-11.50	2.27 H	177	49.30	13.20
6	11650.00	50.90 AV	54.00	-3.10	2.27 H	177	37.70	13.20
7	#17475.00	59.50 PK	74.00	-14.50	2.04 H	176	40.10	19.40
8	#17475.00	47.70 AV	54.00	-6.30	2.04 H	176	28.30	19.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5588.58	60.00 PK	68.20	-8.20	2.22 V	180	57.50	2.50
2	*5825.00	122.00 PK			3.58 V	156	119.10	2.90
3	*5825.00	111.80 AV			3.58 V	156	108.90	2.90
4	#5928.99	63.30 PK	68.20	-4.90	2.22 V	180	60.20	3.10
5	11650.00	61.40 PK	74.00	-12.60	2.43 V	174	48.20	13.20
6	11650.00	49.40 AV	54.00	-4.60	2.43 V	174	36.20	13.20
7	#17475.00	57.10 PK	74.00	-16.90	1.46 V	193	37.70	19.40
8	#17475.00	45.80 AV	54.00	-8.20	1.46 V	193	26.40	19.40

REMARKS:

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

802.11ac (VHT20)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	73.70 PK	74.00	-0.30	2.31 H	183	72.10	1.60
2	5150.00	49.50 AV	54.00	-4.50	2.31 H	183	47.90	1.60
3	*5180.00	119.10 PK			2.31 H	183	117.40	1.70
4	*5180.00	107.60 AV			2.31 H	183	105.90	1.70
5	#10360.00	50.50 PK	74.00	-23.50	2.14 H	160	38.80	11.70
6	#10360.00	40.00 AV	54.00	-14.00	2.14 H	160	28.30	11.70
7	15540.00	51.90 PK	74.00	-22.10	2.06 H	155	38.60	13.30
8	15540.00	40.50 AV	54.00	-13.50	2.06 H	155	27.20	13.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	70.10 PK	74.00	-3.90	3.74 V	166	68.50	1.60
2	5150.00	50.30 AV	54.00	-3.70	3.74 V	166	48.70	1.60
3	*5180.00	117.50 PK			3.74 V	166	115.80	1.70
4	*5180.00	106.50 AV			3.74 V	166	104.80	1.70
5	#10360.00	50.70 PK	74.00	-23.30	1.32 V	221	39.00	11.70
6	#10360.00	39.10 AV	54.00	-14.90	1.32 V	221	27.40	11.70
7	15540.00	57.30 PK	74.00	-16.70	1.44 V	132	44.00	13.30
8	15540.00	41.30 AV	54.00	-12.70	1.44 V	132	28.00	13.30

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	123.50 PK			2.39 H	207	121.70	1.80
2	*5200.00	112.20 AV			2.39 H	207	110.40	1.80
3	#10400.00	56.20 PK	74.00	-17.80	2.06 H	171	44.30	11.90
4	#10400.00	43.60 AV	54.00	-10.40	2.06 H	171	31.70	11.90
5	15600.00	53.10 PK	74.00	-20.90	2.04 H	137	39.80	13.30
6	15600.00	42.30 AV	54.00	-11.70	2.04 H	137	29.00	13.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	121.10 PK			3.71 V	165	119.30	1.80
2	*5200.00	111.20 AV			3.71 V	165	109.40	1.80
3	#10400.00	55.90 PK	74.00	-18.10	1.30 V	199	44.00	11.90
4	#10400.00	43.40 AV	54.00	-10.60	1.30 V	199	31.50	11.90
5	15600.00	59.20 PK	74.00	-14.80	1.39 V	153	45.90	13.30
6	15600.00	43.30 AV	54.00	-10.70	1.39 V	153	30.00	13.30

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	58.70 PK	74.00	-15.30	2.35 H	197	57.10	1.60
2	5150.00	47.00 AV	54.00	-7.00	2.35 H	197	45.40	1.60
3	*5240.00	122.80 PK			2.35 H	197	121.00	1.80
4	*5240.00	111.60 AV			2.35 H	197	109.80	1.80
5	5400.00	59.90 PK	74.00	-14.10	2.35 H	197	57.70	2.20
6	5400.00	47.00 AV	54.00	-7.00	2.35 H	197	44.80	2.20
7	#10480.00	51.30 PK	74.00	-22.70	2.05 H	160	39.10	12.20
8	#10480.00	40.50 AV	54.00	-13.50	2.05 H	160	28.30	12.20
9	15720.00	53.80 PK	74.00	-20.20	2.05 H	158	40.60	13.20
10	15720.00	41.00 AV	54.00	-13.00	2.05 H	158	27.80	13.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	55.20 PK	74.00	-18.80	3.71 V	142	53.60	1.60
2	5150.00	44.50 AV	54.00	-9.50	3.71 V	142	42.90	1.60
3	*5240.00	121.60 PK			3.71 V	142	119.80	1.80
4	*5240.00	110.10 AV			3.71 V	142	108.30	1.80
5	5400.00	55.70 PK	74.00	-18.30	3.71 V	142	53.50	2.20
6	5400.00	46.20 AV	54.00	-7.80	3.71 V	142	44.00	2.20
7	#10480.00	51.40 PK	74.00	-22.60	1.34 V	217	39.20	12.20
8	#10480.00	40.20 AV	54.00	-13.80	1.34 V	217	28.00	12.20
9	15720.00	57.70 PK	74.00	-16.30	1.39 V	158	44.50	13.20
10	15720.00	42.00 AV	54.00	-12.00	1.39 V	158	28.80	13.20

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5650.70	65.70 PK	68.70	-3.00	2.36 H	209	63.10	2.60
2	*5745.00	121.50 PK			2.36 H	209	118.70	2.80
3	*5745.00	111.60 AV			2.36 H	209	108.80	2.80
4	#5976.07	65.90 PK	68.20	-2.30	2.36 H	209	62.70	3.20
5	11490.00	63.10 PK	74.00	-10.90	2.35 H	181	49.60	13.50
6	11490.00	51.30 AV	54.00	-2.70	2.35 H	181	37.80	13.50
7	#17235.00	59.60 PK	74.00	-14.40	1.98 H	168	41.20	18.40
8	#17235.00	47.60 AV	54.00	-6.40	1.98 H	168	29.20	18.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5648.32	66.10 PK	68.20	-2.10	3.65 V	156	63.50	2.60
2	*5745.00	120.40 PK			3.66 V	156	117.60	2.80
3	*5745.00	110.50 AV			3.66 V	156	107.70	2.80
4	#5988.90	63.50 PK	68.20	-4.70	3.65 V	156	60.10	3.40
5	11490.00	61.90 PK	74.00	-12.10	2.47 V	167	48.40	13.50
6	11490.00	49.70 AV	54.00	-4.30	2.47 V	167	36.20	13.50
7	#17235.00	57.40 PK	74.00	-16.60	1.44 V	202	39.00	18.40
8	#17235.00	46.20 AV	54.00	-7.80	1.44 V	202	27.80	18.40

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5621.25	61.30 PK	68.20	-6.90	2.37 H	198	58.70	2.60
2	*5785.00	122.30 PK			2.37 H	198	119.40	2.90
3	*5785.00	111.30 AV			2.37 H	198	108.40	2.90
4	#6017.87	64.20 PK	68.20	-4.00	2.37 H	198	60.80	3.40
5	11570.00	62.30 PK	74.00	-11.70	2.31 H	185	49.10	13.20
6	11570.00	50.90 AV	54.00	-3.10	2.31 H	185	37.70	13.20
7	#17355.00	59.30 PK	74.00	-14.70	2.05 H	182	40.20	19.10
8	#17355.00	47.60 AV	54.00	-6.40	2.05 H	182	28.50	19.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5632.18	61.00 PK	68.20	-7.20	3.75 V	141	58.40	2.60
2	*5785.00	121.50 PK			3.75 V	141	118.60	2.90
3	*5785.00	110.20 AV			3.75 V	141	107.30	2.90
4	#6019.30	63.10 PK	68.20	-5.10	3.75 V	141	59.70	3.40
5	11570.00	62.00 PK	74.00	-12.00	2.38 V	159	48.80	13.20
6	11570.00	49.90 AV	54.00	-4.10	2.38 V	159	36.70	13.20
7	#17355.00	56.90 PK	74.00	-17.10	1.40 V	185	37.80	19.10
8	#17355.00	45.70 AV	54.00	-8.30	1.40 V	185	26.60	19.10

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5574.70	64.50 PK	68.20	-3.70	2.30 H	190	62.00	2.50
2	*5825.00	123.30 PK			2.30 H	190	120.40	2.90
3	*5825.00	111.50 AV			2.30 H	190	108.60	2.90
4	#5938.07	68.00 PK	68.20	-0.20	2.30 H	190	64.90	3.10
5	11650.00	62.60 PK	74.00	-11.40	2.28 H	184	49.40	13.20
6	11650.00	50.90 AV	54.00	-3.10	2.28 H	184	37.70	13.20
7	#17475.00	59.60 PK	74.00	-14.40	1.99 H	170	40.20	19.40
8	#17475.00	47.60 AV	54.00	-6.40	1.99 H	170	28.20	19.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5589.43	59.70 PK	68.20	-8.50	3.77 V	158	57.20	2.50
2	*5825.00	120.90 PK			3.77 V	158	118.00	2.90
3	*5825.00	110.30 AV			3.77 V	158	107.40	2.90
4	#5932.37	65.00 PK	68.20	-3.20	3.77 V	158	61.90	3.10
5	11650.00	61.60 PK	74.00	-12.40	2.49 V	167	48.40	13.20
6	11650.00	49.80 AV	54.00	-4.20	2.49 V	167	36.60	13.20
7	#17475.00	57.30 PK	74.00	-16.70	1.40 V	187	37.90	19.40
8	#17475.00	46.20 AV	54.00	-7.80	1.40 V	187	26.80	19.40

REMARKS:

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

802.11ac (VHT40)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	72.00 PK	74.00	-2.00	2.33 H	207	70.40	1.60
2	5150.00	51.50 AV	54.00	-2.50	2.33 H	207	49.90	1.60
3	*5190.00	112.60 PK			2.33 H	207	110.80	1.80
4	*5190.00	101.20 AV			2.33 H	207	99.40	1.80
5	#10380.00	50.80 PK	74.00	-23.20	2.09 H	154	39.00	11.80
6	#10380.00	39.80 AV	54.00	-14.20	2.09 H	154	28.00	11.80
7	15570.00	51.20 PK	74.00	-22.80	2.12 H	147	37.90	13.30
8	15570.00	39.90 AV	54.00	-14.10	2.12 H	147	26.60	13.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	71.80 PK	74.00	-2.20	3.73 V	171	70.20	1.60
2	5150.00	51.10 AV	54.00	-2.90	3.73 V	171	49.50	1.60
3	*5190.00	111.40 PK			3.73 V	171	109.60	1.80
4	*5190.00	100.10 AV			3.73 V	171	98.30	1.80
5	#10380.00	50.60 PK	74.00	-23.40	1.33 V	211	38.80	11.80
6	#10380.00	39.50 AV	54.00	-14.50	1.33 V	211	27.70	11.80
7	15570.00	50.60 PK	74.00	-23.40	1.49 V	161	37.30	13.30
8	15570.00	39.40 AV	54.00	-14.60	1.49 V	161	26.10	13.30

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	69.20 PK	74.00	-4.80	2.41 H	184	67.60	1.60
2	5150.00	51.60 AV	54.00	-2.40	2.41 H	184	50.00	1.60
3	*5230.00	117.60 PK			2.41 H	184	115.80	1.80
4	*5230.00	106.70 AV			2.41 H	184	104.90	1.80
5	5381.00	62.10 PK	74.00	-11.90	2.41 H	184	59.90	2.20
6	5381.00	51.30 AV	54.00	-2.70	2.41 H	184	49.10	2.20
7	#10460.00	50.80 PK	74.00	-23.20	2.15 H	155	38.70	12.10
8	#10460.00	39.50 AV	54.00	-14.50	2.15 H	155	27.40	12.10
9	15690.00	51.40 PK	74.00	-22.60	2.09 H	143	38.20	13.20
10	15690.00	40.20 AV	54.00	-13.80	2.09 H	143	27.00	13.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	67.60 PK	74.00	-6.40	3.66 V	148	66.00	1.60
2	5150.00	50.80 AV	54.00	-3.20	3.66 V	148	49.20	1.60
3	*5230.00	116.20 PK			3.66 V	148	114.40	1.80
4	*5230.00	105.80 AV			3.66 V	148	104.00	1.80
5	5381.00	61.10 PK	74.00	-12.90	3.66 V	148	58.90	2.20
6	5381.00	50.60 AV	54.00	-3.40	3.66 V	148	48.40	2.20
7	#10460.00	50.90 PK	74.00	-23.10	1.36 V	225	38.80	12.10
8	#10460.00	39.70 AV	54.00	-14.30	1.36 V	225	27.60	12.10
9	15690.00	51.20 PK	74.00	-22.80	1.45 V	159	38.00	13.20
10	15690.00	40.00 AV	54.00	-14.00	1.45 V	159	26.80	13.20

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5647.85	67.30 PK	68.20	-0.90	2.41 H	186	64.70	2.60
2	*5755.00	117.80 PK			2.41 H	186	114.90	2.90
3	*5755.00	106.70 AV			2.41 H	186	103.80	2.90
4	#5926.20	63.50 PK	68.20	-4.70	2.41 H	186	60.40	3.10
5	11510.00	50.20 PK	74.00	-23.80	2.09 H	162	36.70	13.50
6	11510.00	39.30 AV	54.00	-14.70	2.09 H	162	25.80	13.50
7	#17265.00	51.30 PK	74.00	-22.70	2.15 H	160	32.80	18.50
8	#17265.00	40.00 AV	54.00	-14.00	2.15 H	160	21.50	18.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5638.35	65.90 PK	68.20	-2.30	3.66 V	146	63.30	2.60
2	*5755.00	115.30 PK			3.66 V	146	112.40	2.90
3	*5755.00	105.20 AV			3.66 V	146	102.30	2.90
4	#5927.62	62.20 PK	68.20	-6.00	3.66 V	146	59.10	3.10
5	11510.00	50.30 PK	74.00	-23.70	1.36 V	200	36.80	13.50
6	11510.00	39.50 AV	54.00	-14.50	1.36 V	200	26.00	13.50
7	#17265.00	51.60 PK	74.00	-22.40	1.37 V	154	33.10	18.50
8	#17265.00	40.20 AV	54.00	-13.80	1.37 V	154	21.70	18.50

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5647.37	63.50 PK	68.20	-4.70	2.40 H	191	60.90	2.60
2	*5795.00	117.70 PK			2.40 H	191	114.80	2.90
3	*5795.00	106.40 AV			2.40 H	191	103.50	2.90
4	#5924.77	65.90 PK	68.40	-2.50	2.40 H	191	62.80	3.10
5	11590.00	51.10 PK	74.00	-22.90	2.15 H	177	38.00	13.10
6	11590.00	39.90 AV	54.00	-14.10	2.15 H	177	26.80	13.10
7	#17385.00	51.30 PK	74.00	-22.70	2.15 H	165	32.00	19.30
8	#17385.00	39.80 AV	54.00	-14.20	2.15 H	165	20.50	19.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5632.18	61.40 PK	68.20	-6.80	3.73 V	167	58.80	2.60
2	*5795.00	115.80 PK			3.73 V	167	112.90	2.90
3	*5795.00	105.50 AV			3.73 V	167	102.60	2.90
4	#5938.07	63.90 PK	68.20	-4.30	3.73 V	167	60.80	3.10
5	11590.00	50.70 PK	74.00	-23.30	1.39 V	209	37.60	13.10
6	11590.00	40.00 AV	54.00	-14.00	1.39 V	209	26.90	13.10
7	#17385.00	51.40 PK	74.00	-22.60	1.38 V	161	32.10	19.30
8	#17385.00	40.40 AV	54.00	-13.60	1.38 V	161	21.10	19.30

REMARKS:

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

802.11ac (VHT80)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	71.40 PK	74.00	-2.60	2.34 H	196	69.80	1.60
2	5150.00	51.80 AV	54.00	-2.20	2.34 H	196	50.20	1.60
3	*5210.00	109.10 PK			2.34 H	196	107.30	1.80
4	*5210.00	97.00 AV			2.34 H	196	95.20	1.80
5	5355.00	56.80 PK	74.00	-17.20	2.34 H	196	54.60	2.20
6	5355.00	44.40 AV	54.00	-9.60	2.34 H	196	42.20	2.20
7	#10420.00	51.00 PK	74.00	-23.00	2.04 H	155	39.00	12.00
8	#10420.00	40.20 AV	54.00	-13.80	2.04 H	155	28.20	12.00
9	15630.00	51.50 PK	74.00	-22.50	2.06 H	157	38.20	13.30
10	15630.00	40.30 AV	54.00	-13.70	2.06 H	157	27.00	13.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	71.00 PK	74.00	-3.00	3.71 V	169	69.40	1.60
2	5150.00	51.40 AV	54.00	-2.60	3.71 V	169	49.80	1.60
3	*5210.00	107.60 PK			3.71 V	169	105.80	1.80
4	*5210.00	95.80 AV			3.71 V	169	94.00	1.80
5	5355.00	56.10 PK	74.00	-17.90	3.71 V	169	53.90	2.20
6	5355.00	43.90 AV	54.00	-10.10	3.71 V	169	41.70	2.20
7	#10420.00	51.40 PK	74.00	-22.60	1.29 V	208	39.40	12.00
8	#10420.00	40.30 AV	54.00	-13.70	1.29 V	208	28.30	12.00
9	15630.00	51.80 PK	74.00	-22.20	1.41 V	157	38.50	13.30
10	15630.00	40.30 AV	54.00	-13.70	1.41 V	157	27.00	13.30

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5651.65	68.80 PK	69.40	-0.60	2.42 H	207	66.20	2.60
2	*5775.00	112.90 PK			2.42 H	207	110.00	2.90
3	*5775.00	100.20 AV			2.42 H	207	97.30	2.90
4	#5929.05	67.40 PK	68.20	-0.80	2.42 H	207	64.30	3.10
5	11550.00	51.40 PK	74.00	-22.60	2.12 H	155	38.10	13.30
6	11550.00	40.10 AV	54.00	-13.90	2.12 H	155	26.80	13.30
7	#17325.00	50.80 PK	74.00	-23.20	2.07 H	160	31.90	18.90
8	#17325.00	39.50 AV	54.00	-14.50	2.07 H	160	20.60	18.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5649.75	66.30 PK	68.20	-1.90	3.74 V	164	63.70	2.60
2	*5775.00	111.20 PK			3.74 V	164	108.30	2.90
3	*5775.00	99.60 AV			3.74 V	164	96.70	2.90
4	#5928.10	66.10 PK	68.20	-2.10	3.74 V	164	63.00	3.10
5	11550.00	51.10 PK	74.00	-22.90	1.37 V	205	37.80	13.30
6	11550.00	40.00 AV	54.00	-14.00	1.37 V	205	26.70	13.30
7	#17325.00	51.10 PK	74.00	-22.90	1.44 V	149	32.20	18.90
8	#17325.00	39.90 AV	54.00	-14.10	1.44 V	149	21.00	18.90

REMARKS:

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

Below 1GHz Data:

802.11ac (VHT20)

CHANNEL	TX Channel 157	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	below 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	109.15	28.40 QP	43.50	-15.10	2.50 H	135	39.93	-11.53
2	125.08	30.75 QP	43.50	-12.75	2.50 H	135	41.03	-10.28
3	257.11	30.92 QP	46.00	-15.08	1.00 H	110	40.56	-9.64
4	326.03	33.84 QP	46.00	-12.16	1.00 H	83	40.95	-7.11
5	401.01	29.38 QP	46.00	-16.62	1.50 H	294	34.82	-5.44
6	608.87	29.32 QP	46.00	-16.68	1.00 H	294	29.69	-0.37
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	108.24	24.49 QP	43.50	-19.01	1.00 V	210	36.07	-11.58
2	125.73	29.78 QP	43.50	-13.72	1.00 V	336	40.05	-10.27
3	241.51	31.40 QP	46.00	-14.60	1.00 V	90	41.55	-10.15
4	331.84	38.37 QP	46.00	-7.63	1.00 V	314	45.38	-7.01
5	401.11	32.42 QP	46.00	-13.58	1.00 V	310	37.85	-5.43
6	609.44	30.28 QP	46.00	-15.72	1.00 V	360	30.64	-0.36

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

4.1.8 Test Results (Mode 2)

Above 1GHz Data:

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	71.30 PK	74.00	-2.70	1.00 H	347	69.70	1.60
2	5150.00	52.10 AV	54.00	-1.90	1.00 H	347	50.50	1.60
3	*5180.00	118.50 PK			1.00 H	347	116.80	1.70
4	*5180.00	109.70 AV			1.00 H	347	108.00	1.70
5	#10360.00	51.10 PK	74.00	-22.90	2.91 H	346	39.40	11.70
6	#10360.00	39.80 AV	54.00	-14.20	2.91 H	346	28.10	11.70
7	15540.00	51.20 PK	74.00	-22.80	1.57 H	104	37.90	13.30
8	15540.00	39.90 AV	54.00	-14.10	1.57 H	104	26.60	13.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	72.10 PK	74.00	-1.90	2.70 V	87	70.50	1.60
2	5150.00	53.50 AV	54.00	-0.50	2.70 V	87	51.90	1.60
3	*5180.00	121.30 PK			2.70 V	87	119.60	1.70
4	*5180.00	110.90 AV			2.70 V	87	109.20	1.70
5	#10360.00	50.20 PK	74.00	-23.80	3.04 V	144	38.50	11.70
6	#10360.00	39.50 AV	54.00	-14.50	3.04 V	144	27.80	11.70
7	15540.00	51.70 PK	74.00	-22.30	2.09 V	182	38.40	13.30
8	15540.00	40.40 AV	54.00	-13.60	2.09 V	182	27.10	13.30

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	122.80 PK			1.05 H	352	121.00	1.80
2	*5200.00	112.10 AV			1.05 H	352	110.30	1.80
3	#10400.00	51.40 PK	74.00	-22.60	2.93 H	360	39.50	11.90
4	#10400.00	40.10 AV	54.00	-13.90	2.93 H	360	28.20	11.90
5	15600.00	50.90 PK	74.00	-23.10	1.66 H	110	37.60	13.30
6	15600.00	39.50 AV	54.00	-14.50	1.66 H	110	26.20	13.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	124.20 PK			2.65 V	86	122.40	1.80
2	*5200.00	113.10 AV			2.65 V	86	111.30	1.80
3	#10400.00	56.00 PK	74.00	-18.00	2.94 V	139	44.10	11.90
4	#10400.00	43.70 AV	54.00	-10.30	2.94 V	139	31.80	11.90
5	15600.00	53.30 PK	74.00	-20.70	1.98 V	188	40.00	13.30
6	15600.00	41.90 AV	54.00	-12.10	1.98 V	188	28.60	13.30

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	121.20 PK			1.04 H	349	119.40	1.80
2	*5240.00	110.60 AV			1.04 H	349	108.80	1.80
3	5399.00	51.20 PK	74.00	-22.80	1.04 H	349	49.00	2.20
4	5399.00	41.20 AV	54.00	-12.80	1.04 H	349	39.00	2.20
5	#10480.00	52.10 PK	74.00	-21.90	2.95 H	360	39.90	12.20
6	#10480.00	41.10 AV	54.00	-12.90	2.95 H	360	28.90	12.20
7	15720.00	51.60 PK	74.00	-22.40	1.64 H	86	38.40	13.20
8	15720.00	40.00 AV	54.00	-14.00	1.64 H	86	26.80	13.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	122.70 PK			2.53 V	93	120.90	1.80
2	*5240.00	111.80 AV			2.53 V	93	110.00	1.80
3	5399.00	57.20 PK	74.00	-16.80	2.59 V	91	55.00	2.20
4	5399.00	47.40 AV	54.00	-6.60	2.59 V	91	45.20	2.20
5	#10480.00	56.20 PK	74.00	-17.80	2.79 V	136	44.00	12.20
6	#10480.00	44.10 AV	54.00	-9.90	2.79 V	136	31.90	12.20
7	15720.00	53.70 PK	74.00	-20.30	2.95 V	155	40.50	13.20
8	15720.00	42.10 AV	54.00	-11.90	2.95 V	155	28.90	13.20

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5616.00	60.10 PK	68.20	-8.10	1.00 H	254	57.50	2.60
2	*5745.00	112.40 PK			1.00 H	254	109.60	2.80
3	*5745.00	101.80 AV			1.00 H	254	99.00	2.80
4	#5991.70	60.80 PK	68.20	-7.40	1.00 H	254	57.40	3.40
5	11490.00	54.20 PK	74.00	-19.80	2.95 H	345	40.70	13.50
6	11490.00	42.80 AV	54.00	-11.20	2.95 H	345	29.30	13.50
7	#17235.00	54.20 PK	74.00	-19.80	1.68 H	85	35.80	18.40
8	#17235.00	41.80 AV	54.00	-12.20	1.68 H	85	23.40	18.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5644.00	62.40 PK	68.20	-5.80	2.48 V	147	59.80	2.60
2	*5745.00	124.80 PK			2.48 V	147	122.00	2.80
3	*5745.00	113.90 AV			2.48 V	147	111.10	2.80
4	#5990.32	63.60 PK	68.20	-4.60	2.48 V	147	60.20	3.40
5	11490.00	57.70 PK	74.00	-16.30	2.99 V	143	44.20	13.50
6	11490.00	45.60 AV	54.00	-8.40	2.99 V	143	32.10	13.50
7	#17235.00	54.50 PK	74.00	-19.50	2.03 V	196	36.10	18.40
8	#17235.00	42.60 AV	54.00	-11.40	2.03 V	196	24.20	18.40

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5600.80	59.90 PK	68.20	-8.30	1.00 H	232	57.40	2.50
2	*5785.00	112.30 PK			1.00 H	232	109.40	2.90
3	*5785.00	101.90 AV			1.00 H	232	99.00	2.90
4	#5948.10	60.10 PK	68.20	-8.10	1.00 H	232	56.90	3.20
5	11570.00	54.30 PK	74.00	-19.70	2.96 H	356	41.10	13.20
6	11570.00	43.00 AV	54.00	-11.00	2.96 H	356	29.80	13.20
7	#17355.00	54.30 PK	74.00	-19.70	1.65 H	78	35.20	19.10
8	#17355.00	42.10 AV	54.00	-11.90	1.65 H	78	23.00	19.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5621.00	60.70 PK	68.20	-7.50	2.40 V	145	58.10	2.60
2	*5785.00	124.30 PK			2.40 V	145	121.40	2.90
3	*5785.00	113.50 AV			2.40 V	145	110.60	2.90
4	#5950.00	63.00 PK	68.20	-5.20	2.40 V	145	59.80	3.20
5	11570.00	59.50 PK	74.00	-14.50	1.80 V	159	46.30	13.20
6	11570.00	46.00 AV	54.00	-8.00	1.80 V	159	32.80	13.20
7	#17355.00	54.40 PK	74.00	-19.60	1.66 V	45	35.30	19.10
8	#17355.00	42.40 AV	54.00	-11.60	1.66 V	45	23.30	19.10

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5626.00	60.10 PK	68.20	-8.10	1.00 H	260	57.50	2.60
2	*5825.00	112.50 PK			1.00 H	260	109.60	2.90
3	*5825.00	102.00 AV			1.00 H	260	99.10	2.90
4	#5951.80	61.20 PK	68.20	-7.00	1.00 H	260	58.00	3.20
5	11650.00	54.10 PK	74.00	-19.90	2.94 H	342	40.90	13.20
6	11650.00	43.00 AV	54.00	-11.00	2.94 H	342	29.80	13.20
7	#17475.00	54.30 PK	74.00	-19.70	1.70 H	76	34.90	19.40
8	#17475.00	42.00 AV	54.00	-12.00	1.70 H	76	22.60	19.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5575.00	62.50 PK	68.20	-5.70	2.50 V	150	60.00	2.50
2	*5825.00	124.40 PK			2.50 V	150	121.50	2.90
3	*5825.00	113.30 AV			2.50 V	150	110.40	2.90
4	#5923.82	66.80 PK	69.10	-2.30	2.50 V	150	63.70	3.10
5	#5930.00	63.90 PK	68.20	-4.30	2.50 V	150	60.80	3.10
6	11650.00	57.60 PK	74.00	-16.40	2.99 V	149	44.40	13.20
7	11650.00	45.50 AV	54.00	-8.50	2.99 V	149	32.30	13.20
8	#17475.00	54.70 PK	74.00	-19.30	2.08 V	182	35.30	19.40
9	#17475.00	42.70 AV	54.00	-11.30	2.08 V	182	23.30	19.40

REMARKS:

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

802.11ac (VHT20)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	70.30 PK	74.00	-3.70	1.04 H	358	68.70	1.60
2	5150.00	51.30 AV	54.00	-2.70	1.04 H	358	49.70	1.60
3	*5180.00	115.70 PK			1.04 H	358	114.00	1.70
4	*5180.00	107.80 AV			1.04 H	358	106.10	1.70
5	#10360.00	50.90 PK	74.00	-23.10	2.97 H	360	39.20	11.70
6	#10360.00	39.70 AV	54.00	-14.30	2.97 H	360	28.00	11.70
7	15540.00	51.10 PK	74.00	-22.90	1.58 H	94	37.80	13.30
8	15540.00	39.80 AV	54.00	-14.20	1.58 H	94	26.50	13.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	73.30 PK	74.00	-0.70	2.64 V	96	71.70	1.60
2	**5150.00**	**53.90 AV**	**54.00**	**-0.10**	**2.64 V**	**96**	**52.30**	**1.60**
3	*5180.00	117.00 PK			2.64 V	96	115.30	1.70
4	*5180.00	109.20 AV			2.64 V	96	107.50	1.70
5	#10360.00	51.20 PK	74.00	-22.80	3.01 V	143	39.50	11.70
6	#10360.00	39.80 AV	54.00	-14.20	3.01 V	143	28.10	11.70
7	15540.00	51.10 PK	74.00	-22.90	2.13 V	179	37.80	13.30
8	15540.00	39.40 AV	54.00	-14.60	2.13 V	179	26.10	13.30

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	122.90 PK			1.04 H	338	121.10	1.80
2	*5200.00	112.10 AV			1.04 H	338	110.30	1.80
3	#10400.00	51.20 PK	74.00	-22.80	2.98 H	346	39.30	11.90
4	#10400.00	40.20 AV	54.00	-13.80	2.98 H	346	28.30	11.90
5	15600.00	51.60 PK	74.00	-22.40	1.62 H	90	38.30	13.30
6	15600.00	40.00 AV	54.00	-14.00	1.62 H	90	26.70	13.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	124.70 PK			2.59 V	100	122.90	1.80
2	*5200.00	113.40 AV			2.59 V	100	111.60	1.80
3	#10400.00	56.50 PK	74.00	-17.50	2.88 V	148	44.60	11.90
4	#10400.00	44.50 AV	54.00	-9.50	2.88 V	148	32.60	11.90
5	15600.00	53.20 PK	74.00	-20.80	2.00 V	177	39.90	13.30
6	15600.00	41.90 AV	54.00	-12.10	2.00 V	177	28.60	13.30

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	121.20 PK			1.10 H	339	119.40	1.80
2	*5240.00	110.80 AV			1.10 H	339	109.00	1.80
3	5394.00	50.20 PK	74.00	-23.80	1.10 H	339	48.00	2.20
4	5394.00	40.10 AV	54.00	-13.90	1.10 H	339	37.90	2.20
5	#10480.00	50.70 PK	74.00	-23.30	2.97 H	360	38.50	12.20
6	#10480.00	39.80 AV	54.00	-14.20	2.97 H	360	27.60	12.20
7	15720.00	51.30 PK	74.00	-22.70	1.59 H	102	38.10	13.20
8	15720.00	39.90 AV	54.00	-14.10	1.59 H	102	26.70	13.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	122.90 PK			2.59 V	91	121.10	1.80
2	*5240.00	112.10 AV			2.59 V	91	110.30	1.80
3	5394.00	56.80 PK	74.00	-17.20	2.59 V	91	54.60	2.20
4	5394.00	47.10 AV	54.00	-6.90	2.59 V	91	44.90	2.20
5	#10480.00	56.60 PK	74.00	-17.40	2.84 V	141	44.40	12.20
6	#10480.00	44.40 AV	54.00	-9.60	2.84 V	141	32.20	12.20
7	15720.00	54.30 PK	74.00	-19.70	2.91 V	150	41.10	13.20
8	15720.00	42.50 AV	54.00	-11.50	2.91 V	150	29.30	13.20

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5565.60	59.30 PK	68.20	-8.90	1.01 H	243	56.80	2.50
2	*5745.00	112.10 PK			1.01 H	241	109.30	2.80
3	*5745.00	101.50 AV			1.01 H	241	98.70	2.80
4	#5960.40	60.40 PK	68.20	-7.80	1.01 H	241	57.20	3.20
5	11490.00	54.50 PK	74.00	-19.50	3.00 H	348	41.00	13.50
6	11490.00	42.90 AV	54.00	-11.10	3.00 H	348	29.40	13.50
7	#17235.00	54.10 PK	74.00	-19.90	1.71 H	71	35.70	18.40
8	#17235.00	41.70 AV	54.00	-12.30	1.71 H	71	23.30	18.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5647.37	67.40 PK	68.20	-0.80	2.46 V	149	64.80	2.60
2	*5745.00	123.90 PK			2.46 V	149	121.10	2.80
3	*5745.00	113.20 AV			2.46 V	149	110.40	2.80
4	#5992.00	64.20 PK	68.20	-4.00	2.46 V	149	60.80	3.40
5	11490.00	57.90 PK	74.00	-16.10	2.99 V	154	44.40	13.50
6	11490.00	45.60 AV	54.00	-8.40	2.99 V	154	32.10	13.50
7	#17235.00	54.70 PK	74.00	-19.30	1.98 V	184	36.30	18.40
8	#17235.00	42.70 AV	54.00	-11.30	1.98 V	184	24.30	18.40

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5630.70	61.10 PK	68.20	-7.10	1.02 H	241	58.50	2.60
2	*5785.00	112.70 PK			1.02 H	241	109.80	2.90
3	*5785.00	102.00 AV			1.02 H	241	99.10	2.90
4	#6008.30	62.10 PK	68.20	-6.10	1.02 H	241	58.70	3.40
5	11570.00	54.00 PK	74.00	-20.00	2.92 H	360	40.80	13.20
6	11570.00	42.80 AV	54.00	-11.20	2.92 H	360	29.60	13.20
7	#17355.00	54.90 PK	74.00	-19.10	1.62 H	77	35.80	19.10
8	#17355.00	42.50 AV	54.00	-11.50	1.62 H	77	23.40	19.10
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5629.00	63.50 PK	68.20	-4.70	2.47 V	152	60.90	2.60
2	*5785.00	124.40 PK			2.47 V	152	121.50	2.90
3	*5785.00	113.40 AV			2.47 V	152	110.50	2.90
4	#6018.00	63.10 PK	68.20	-5.10	2.47 V	152	59.70	3.40
5	11570.00	57.30 PK	74.00	-16.70	3.05 V	134	44.10	13.20
6	11570.00	45.30 AV	54.00	-8.70	3.05 V	134	32.10	13.20
7	#17355.00	54.60 PK	74.00	-19.40	2.04 V	187	35.50	19.10
8	#17355.00	42.80 AV	54.00	-11.20	2.04 V	187	23.70	19.10

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5567.50	60.10 PK	68.20	-8.10	1.00 H	235	57.60	2.50
2	*5825.00	112.40 PK			1.00 H	239	109.50	2.90
3	*5825.00	102.10 AV			1.00 H	239	99.20	2.90
4	#5996.50	60.80 PK	68.20	-7.40	1.00 H	238	57.40	3.40
5	11650.00	54.30 PK	74.00	-19.70	2.94 H	345	41.10	13.20
6	11650.00	43.10 AV	54.00	-10.90	2.94 H	345	29.90	13.20
7	#17475.00	54.70 PK	74.00	-19.30	1.63 H	89	35.30	19.40
8	#17475.00	42.20 AV	54.00	-11.80	1.63 H	89	22.80	19.40
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5590.00	63.70 PK	68.20	-4.50	2.40 V	130	61.20	2.50
2	*5825.00	124.70 PK			2.40 V	130	121.80	2.90
3	*5825.00	113.80 AV			2.40 V	130	110.90	2.90
4	#5939.00	63.60 PK	68.20	-4.60	2.40 V	130	60.50	3.10
5	11650.00	57.70 PK	74.00	-16.30	2.95 V	130	44.50	13.20
6	11650.00	45.80 AV	54.00	-8.20	2.95 V	130	32.60	13.20
7	#17475.00	54.00 PK	74.00	-20.00	2.01 V	205	34.60	19.40
8	#17475.00	42.20 AV	54.00	-11.80	2.01 V	205	22.80	19.40

REMARKS:

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

802.11ac (VHT40)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	70.30 PK	74.00	-3.70	1.07 H	348	68.70	1.60
2	5150.00	51.30 AV	54.00	-2.70	1.07 H	348	49.70	1.60
3	*5190.00	110.20 PK			1.07 H	348	108.40	1.80
4	*5190.00	101.40 AV			1.07 H	348	99.60	1.80
5	#10380.00	51.20 PK	74.00	-22.80	2.93 H	360	39.40	11.80
6	#10380.00	40.00 AV	54.00	-14.00	2.93 H	360	28.20	11.80
7	15570.00	51.10 PK	74.00	-22.90	1.61 H	95	37.80	13.30
8	15570.00	39.60 AV	54.00	-14.40	1.61 H	95	26.30	13.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	72.40 PK	74.00	-1.60	2.57 V	96	70.80	1.60
2	**5150.00**	**53.90 AV**	**54.00**	**-0.10**	**2.57 V**	**96**	**52.30**	**1.60**
3	*5190.00	111.40 PK			2.57 V	96	109.60	1.80
4	*5190.00	102.80 AV			2.57 V	96	101.00	1.80
5	#10380.00	51.10 PK	74.00	-22.90	3.04 V	158	39.30	11.80
6	#10380.00	39.80 AV	54.00	-14.20	3.04 V	158	28.00	11.80
7	15570.00	51.20 PK	74.00	-22.80	2.09 V	184	37.90	13.30
8	15570.00	39.40 AV	54.00	-14.60	2.09 V	184	26.10	13.30

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	69.50 PK	74.00	-4.50	1.09 H	335	67.90	1.60
2	5150.00	50.70 AV	54.00	-3.30	1.09 H	335	49.10	1.60
3	*5230.00	115.30 PK			1.09 H	335	113.50	1.80
4	*5230.00	107.50 AV			1.09 H	335	105.70	1.80
5	5395.00	59.70 PK	74.00	-14.30	1.09 H	335	57.50	2.20
6	5395.00	49.20 AV	54.00	-4.80	1.09 H	335	47.00	2.20
7	#10460.00	51.30 PK	74.00	-22.70	2.89 H	360	39.20	12.10
8	#10460.00	39.80 AV	54.00	-14.20	2.89 H	360	27.70	12.10
9	15690.00	51.20 PK	74.00	-22.80	1.60 H	83	38.00	13.20
10	15690.00	39.80 AV	54.00	-14.20	1.60 H	83	26.60	13.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	69.00 PK	74.00	-5.00	2.61 V	97	67.40	1.60
2	5150.00	53.60 AV	54.00	-0.40	2.61 V	97	52.00	1.60
3	*5230.00	117.00 PK			2.61 V	97	115.20	1.80
4	*5230.00	109.20 AV			2.61 V	97	107.40	1.80
5	5395.00	61.00 PK	74.00	-13.00	2.61 V	97	58.80	2.20
6	5395.00	51.60 AV	54.00	-2.40	2.61 V	97	49.40	2.20
7	#10460.00	50.90 PK	74.00	-23.10	2.95 V	140	38.80	12.10
8	#10460.00	39.70 AV	54.00	-14.30	2.95 V	140	27.60	12.10
9	15690.00	51.30 PK	74.00	-22.70	2.16 V	169	38.10	13.20
10	15690.00	39.70 AV	54.00	-14.30	2.16 V	169	26.50	13.20

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5648.00	56.40 PK	68.20	-11.80	1.03 H	245	53.80	2.60
2	*5755.00	107.20 PK			1.03 H	245	104.30	2.90
3	*5755.00	96.70 AV			1.03 H	245	93.80	2.90
4	#5931.90	56.20 PK	68.20	-12.00	1.03 H	245	53.10	3.10
5	11510.00	51.50 PK	74.00	-22.50	2.91 H	360	38.00	13.50
6	11510.00	40.50 AV	54.00	-13.50	2.91 H	360	27.00	13.50
7	#17265.00	51.50 PK	74.00	-22.50	1.58 H	98	33.00	18.50
8	#17265.00	39.90 AV	54.00	-14.10	1.58 H	98	21.40	18.50
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5648.00	67.80 PK	68.20	-0.40	2.45 V	146	65.20	2.60
2	*5755.00	116.50 PK			2.45 V	146	113.60	2.90
3	*5755.00	105.60 AV			2.45 V	146	102.70	2.90
4	#5933.00	61.40 PK	68.20	-6.80	2.45 V	146	58.30	3.10
5	11510.00	51.00 PK	74.00	-23.00	3.05 V	131	37.50	13.50
6	11510.00	39.40 AV	54.00	-14.60	3.05 V	131	25.90	13.50
7	#17265.00	50.80 PK	74.00	-23.20	2.09 V	179	32.30	18.50
8	#17265.00	39.20 AV	54.00	-14.80	2.09 V	179	20.70	18.50

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5631.70	55.80 PK	68.20	-12.40	1.00 H	254	53.20	2.60
2	*5795.00	107.00 PK			1.00 H	254	104.10	2.90
3	*5795.00	96.40 AV			1.00 H	254	93.50	2.90
4	#5940.00	56.70 PK	68.20	-11.50	1.00 H	254	53.60	3.10
5	11590.00	50.70 PK	74.00	-23.30	2.94 H	360	37.60	13.10
6	11590.00	39.70 AV	54.00	-14.30	2.94 H	360	26.60	13.10
7	#17385.00	50.80 PK	74.00	-23.20	1.58 H	93	31.50	19.30
8	#17385.00	39.50 AV	54.00	-14.50	1.58 H	93	20.20	19.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5646.00	62.70 PK	68.20	-5.50	2.45 V	146	60.10	2.60
2	*5795.00	117.50 PK			2.45 V	146	114.60	2.90
3	*5795.00	106.20 AV			2.45 V	146	103.30	2.90
4	#5923.35	68.80 PK	69.40	-0.60	2.45 V	146	65.70	3.10
5	#5927.00	67.50 PK	68.20	-0.70	2.45 V	146	64.40	3.10
6	11590.00	51.30 PK	74.00	-22.70	3.05 V	134	38.20	13.10
7	11590.00	39.80 AV	54.00	-14.20	3.05 V	134	26.70	13.10
8	#17385.00	50.90 PK	74.00	-23.10	2.09 V	168	31.60	19.30
9	#17385.00	39.40 AV	54.00	-14.60	2.09 V	168	20.10	19.30

REMARKS:

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

802.11ac (VHT80)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	70.20 PK	74.00	-3.80	1.04 H	342	68.60	1.60
2	5150.00	51.00 AV	54.00	-3.00	1.04 H	342	49.40	1.60
3	*5210.00	106.30 PK			1.04 H	342	104.50	1.80
4	*5210.00	97.60 AV			1.04 H	342	95.80	1.80
5	5355.00	54.70 PK	74.00	-19.30	1.04 H	342	52.50	2.20
6	5355.00	44.90 AV	54.00	-9.10	1.04 H	342	42.70	2.20
7	#10420.00	51.30 PK	74.00	-22.70	2.90 H	353	39.30	12.00
8	#10420.00	40.00 AV	54.00	-14.00	2.90 H	353	28.00	12.00
9	15630.00	51.50 PK	74.00	-22.50	1.59 H	87	38.20	13.30
10	15630.00	39.90 AV	54.00	-14.10	1.59 H	87	26.60	13.30
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	68.30 PK	74.00	-5.70	2.59 V	93	66.70	1.60
2	5150.00	53.60 AV	54.00	-0.40	2.59 V	93	52.00	1.60
3	*5210.00	107.70 PK			2.59 V	93	105.90	1.80
4	*5210.00	98.90 AV			2.59 V	93	97.10	1.80
5	5355.00	55.40 PK	74.00	-18.60	2.59 V	93	53.20	2.20
6	5355.00	46.60 AV	54.00	-7.40	2.59 V	93	44.40	2.20
7	#10420.00	51.40 PK	74.00	-22.60	2.96 V	134	39.40	12.00
8	#10420.00	39.80 AV	54.00	-14.20	2.96 V	134	27.80	12.00
9	15630.00	51.10 PK	74.00	-22.90	2.14 V	175	37.80	13.30
10	15630.00	39.60 AV	54.00	-14.40	2.14 V	175	26.30	13.30

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5647.00	60.20 PK	68.20	-8.00	1.03 H	245	57.60	2.60
2	*5775.00	102.80 PK			1.03 H	245	99.90	2.90
3	*5775.00	90.70 AV			1.03 H	245	87.80	2.90
4	#5933.00	56.60 PK	68.20	-11.60	1.03 H	245	53.50	3.10
5	11550.00	51.60 PK	74.00	-22.40	2.95 H	360	38.30	13.30
6	11550.00	40.10 AV	54.00	-13.90	2.95 H	360	26.80	13.30
7	#17325.00	50.90 PK	74.00	-23.10	1.66 H	98	32.00	18.90
8	#17325.00	39.40 AV	54.00	-14.60	1.66 H	98	20.50	18.90
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	**#5647.00**	**68.10 PK**	**68.20**	**-0.10**	**2.46 V**	**146**	**65.50**	**2.60**
2	*5775.00	111.20 PK			2.46 V	146	108.30	2.90
3	*5775.00	102.80 AV			2.46 V	146	99.90	2.90
4	#5933.00	65.90 PK	68.20	-2.30	2.49 V	146	62.80	3.10
5	11550.00	51.60 PK	74.00	-22.40	3.05 V	137	38.30	13.30
6	11550.00	40.30 AV	54.00	-13.70	3.05 V	137	27.00	13.30
7	#17325.00	50.80 PK	74.00	-23.20	2.11 V	191	31.90	18.90
8	#17325.00	39.00 AV	54.00	-15.00	2.11 V	191	20.10	18.90

REMARKS:

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

Below 1GHz Data:

802.11ac (VHT20)

CHANNEL	TX Channel 157	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	below 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	111.00	28.92 QP	43.50	-14.58	2.50 H	129	40.26	-11.34
2	127.00	30.45 QP	43.50	-13.05	2.50 H	235	40.59	-10.14
3	257.39	31.60 QP	46.00	-14.40	1.00 H	260	41.23	-9.63
4	325.70	33.41 QP	46.00	-12.59	1.00 H	266	40.53	-7.12
5	401.05	30.30 QP	46.00	-15.70	1.50 H	309	35.73	-5.43
6	608.69	30.33 QP	46.00	-15.67	1.00 H	304	30.70	-0.37
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	108.34	24.47 QP	43.50	-19.03	1.00 V	214	36.04	-11.57
2	126.00	29.42 QP	43.50	-14.08	1.00 V	359	39.69	-10.27
3	241.19	31.25 QP	46.00	-14.75	1.00 V	210	41.40	-10.15
4	331.38	38.32 QP	46.00	-7.68	1.00 V	319	45.33	-7.01
5	401.47	32.87 QP	46.00	-13.13	1.00 V	310	38.29	-5.42
6	609.62	30.96 QP	46.00	-15.04	1.00 V	71	31.32	-0.36

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. 23, 2015	Oct. 22, 2016
Line-Impedance Stabilization Network (for EUT) R&S	ESH3-Z5	848773/004	Oct. 28, 2015	Oct. 27, 2016
RF Cable	5D-FB	COACAB-002	Mar. 04, 2016	Mar. 03, 2017
10 dB PAD Mini-Circuits	HAT-10+	CONATT-004	June 20, 2016	June 19, 2017
Software BVADT	BVADT_Cond_ V7.3.7.3	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: July 12, 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.

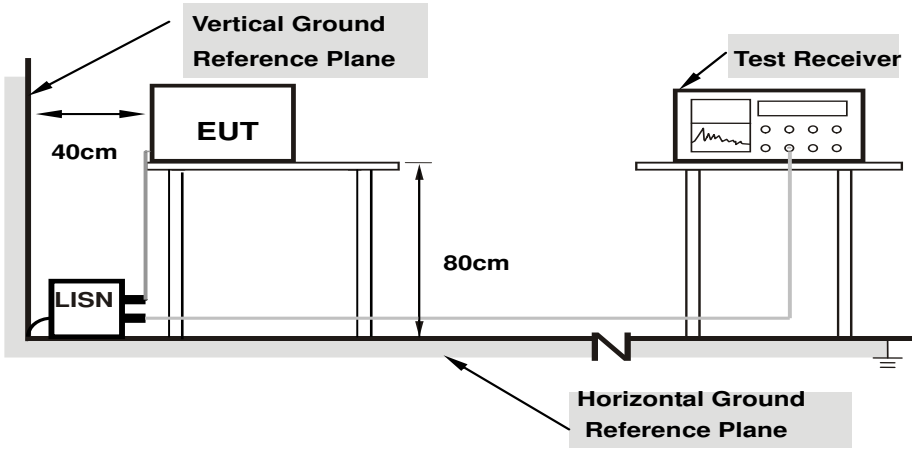
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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.

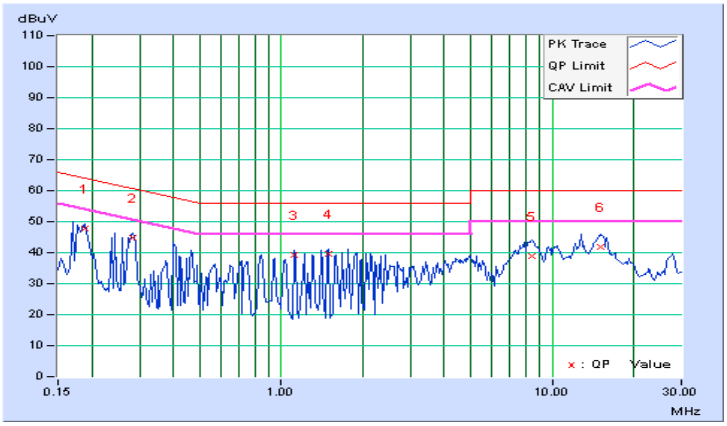
4.2.7 Test Results (Mode 1)

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

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18906	10.22	37.39	35.85	47.61	46.07	64.08	54.08	-16.47	-8.01
2	0.28281	10.22	34.49	34.12	44.71	44.34	60.73	50.73	-16.02	-6.39
3	1.11803	10.27	28.88	24.49	39.15	34.76	56.00	46.00	-16.85	-11.24
4	1.49219	10.28	29.51	22.90	39.79	33.18	56.00	46.00	-16.21	-12.82
5	8.46094	10.54	28.39	16.55	38.93	27.09	60.00	50.00	-21.07	-22.91
6	15.02734	11.07	30.66	19.98	41.73	31.05	60.00	50.00	-18.27	-18.95

REMARKS:

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

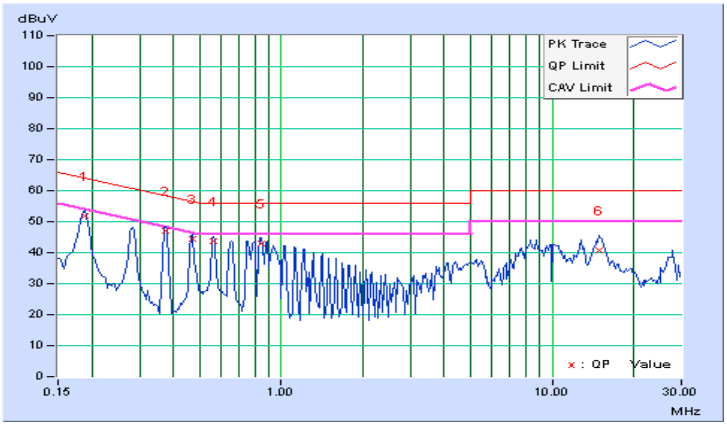


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.18906	10.21	41.52	40.54	51.73	50.75	64.08	54.08	-12.35	-3.33
2	0.37266	10.20	36.85	35.03	47.05	45.23	58.44	48.44	-11.39	-3.21
3	0.47031	10.20	34.16	33.04	44.36	43.24	56.51	46.51	-12.14	-3.26
4	**0.56016**	**10.21**	**33.32**	**32.61**	**43.53**	**42.82**	**56.00**	**46.00**	**-12.47**	**-3.18**
5	0.84531	10.23	32.78	29.62	43.01	39.85	56.00	46.00	-12.99	-6.15
6	14.94141	10.89	29.73	18.57	40.62	29.46	60.00	50.00	-19.38	-20.54

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.



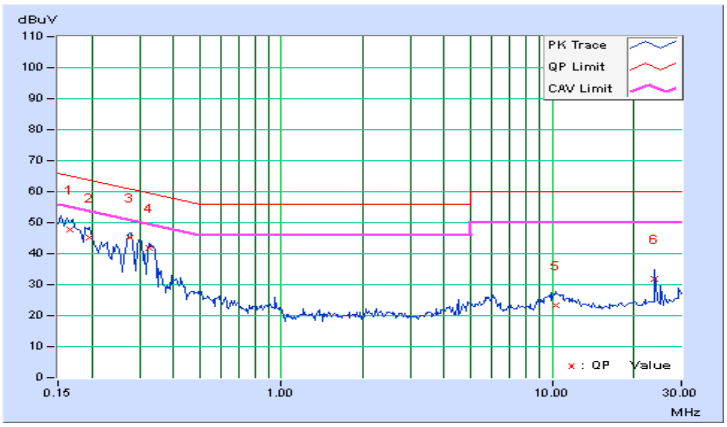
4.2.8 Test Results (Mode 3)

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

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16691	10.21	37.62	26.33	47.83	36.54	65.11	55.11	-17.28	-18.57
2	0.19687	10.22	34.79	24.84	45.01	35.06	63.74	53.74	-18.73	-18.68
3	0.27500	10.22	34.89	32.00	45.11	42.22	60.97	50.97	-15.86	-8.75
4	0.32578	10.22	31.47	24.29	41.69	34.51	59.56	49.56	-17.87	-15.05
5	10.25391	10.64	12.54	8.08	23.18	18.72	60.00	50.00	-36.82	-31.28
6	24.00000	11.43	20.40	19.94	31.83	31.37	60.00	50.00	-28.17	-18.63

REMARKS:

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

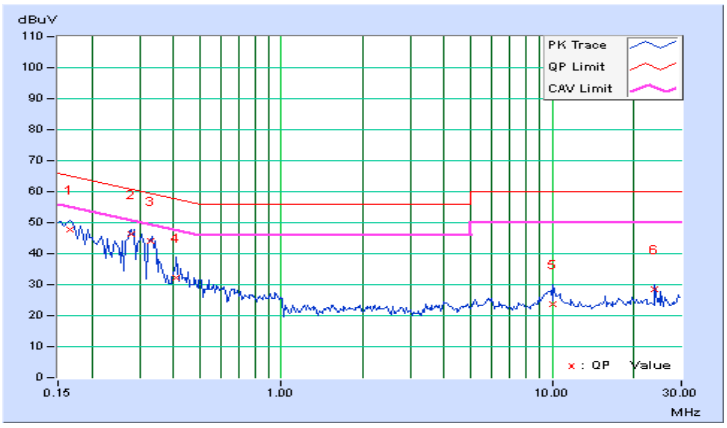


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16562	10.20	37.66	26.35	47.86	36.55	65.18	55.18	-17.32	-18.63
2	0.27891	10.21	36.14	33.33	46.35	43.54	60.85	50.85	-14.50	-7.31
3	0.32934	10.20	33.74	29.30	43.94	39.50	59.47	49.47	-15.52	-9.96
4	0.41172	10.20	21.86	15.36	32.06	25.56	57.61	47.61	-25.55	-22.05
5	10.12109	10.51	13.18	8.73	23.69	19.24	60.00	50.00	-36.31	-30.76
6	24.00000	11.13	17.51	17.06	28.64	28.19	60.00	50.00	-31.36	-21.81

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.



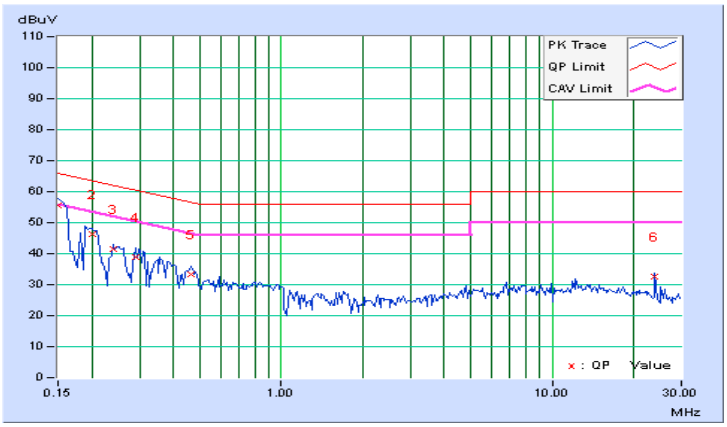
4.2.9 Test Results (Mode 4)

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

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.21	45.52	32.28	55.73	42.49	66.00	56.00	-10.27	-13.51
2	0.20078	10.22	35.92	21.12	46.14	31.34	63.58	53.58	-17.44	-22.24
3	0.23984	10.22	31.20	17.40	41.42	27.62	62.10	52.10	-20.68	-24.48
4	0.29063	10.22	28.80	16.14	39.02	26.36	60.51	50.51	-21.49	-24.15
5	0.46250	10.22	23.14	13.52	33.36	23.74	56.65	46.65	-23.28	-22.90
6	24.00000	11.43	21.33	20.78	32.76	32.21	60.00	50.00	-27.24	-17.79

REMARKS:

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

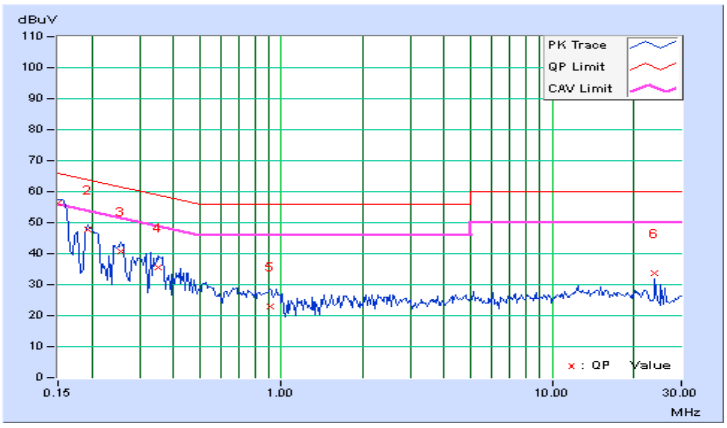


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.19	45.95	32.56	56.14	42.75	66.00	56.00	-9.86	-13.25
2	0.19297	10.21	37.47	20.22	47.68	30.43	63.91	53.91	-16.23	-23.48
3	0.25547	10.21	30.65	16.07	40.86	26.28	61.58	51.58	-20.72	-25.30
4	0.34922	10.20	25.23	8.20	35.43	18.40	58.98	48.98	-23.55	-30.58
5	0.90781	10.23	12.68	2.95	22.91	13.18	56.00	46.00	-33.09	-32.82
6	24.00000	11.13	22.72	22.17	33.85	33.30	60.00	50.00	-26.15	-16.70

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)

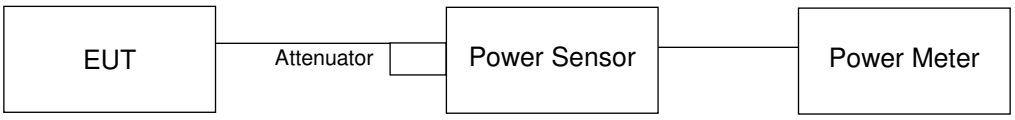
*B is the 26 dB emission bandwidth in megahertz

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



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

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.

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

CDD Mode

802.11a

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	18.67	18.31	18.61	18.59	286.273	24.57	29.96	Pass
40	5200	23.52	23.41	22.37	23.01	816.755	29.12	29.96	Pass
48	5240	20.71	20.74	20.81	20.38	465.986	26.68	29.96	Pass
149	5745	23.90	23.29	23.52	23.31	897.969	29.53	30.00	Pass
157	5785	23.94	23.20	23.51	23.38	898.831	29.54	30.00	Pass
165	5825	23.96	23.15	23.56	23.46	904.23	29.56	30.00	Pass

Note: 1. For UNII-1: Directional gain = 6.04dBi > 6dBi , so the power limit shall be reduced to 30-(6.04-6) = 29.96dBm
2. For UNII-3: Directional gain = 5.67dBi < 6dBi , so the power limit shall not be reduced.

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	Chain 2	Chain 3				
36	5180	17.43	17.08	17.49	17.42	217.698	23.38	29.96	Pass
40	5200	23.53	23.42	22.39	23.03	819.499	29.14	29.96	Pass
48	5240	21.67	21.79	21.87	21.37	588.804	27.70	29.96	Pass
149	5745	23.88	23.57	23.51	23.15	902.779	29.56	30.00	Pass
157	5785	23.96	23.56	23.52	23.20	909.707	29.59	30.00	Pass
165	5825	23.89	23.26	23.54	23.51	907.074	29.58	30.00	Pass

Note: 1. For UNII-1: Directional gain = 6.04dBi > 6dBi , so the power limit shall be reduced to 30-(6.04-6) = 29.96dBm
2. For UNII-3: Directional gain = 5.67dBi < 6dBi , so the power limit shall not be reduced.

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	Chain 2	Chain 3				
38	5190	13.96	13.68	14.08	13.41	95.738	19.81	29.96	Pass
46	5230	19.80	20.01	20.20	19.62	392.065	25.93	29.96	Pass
151	5755	21.42	21.36	21.38	21.35	549.311	27.40	30.00	Pass
159	5795	21.52	21.40	21.44	21.30	554.156	27.44	30.00	Pass

Note: 1. For UNII-1: Directional gain = 6.04dBi > 6dBi , so the power limit shall be reduced to 30-(6.04-6) = 29.96dBm
2. For UNII-3: Directional gain = 5.67dBi < 6dBi , so the power limit shall not be reduced.

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	13.21	13.49	13.36	12.55	82.943	19.19	29.96	Pass
155	5775	19.27	19.90	19.36	18.94	346.893	25.40	30.00	Pass

Note: 1. For UNII-1: Directional gain = 6.04dBi > 6dBi , so the power limit shall be reduced to 30-(6.04-6) = 29.96dBm
2. For UNII-3: Directional gain = 5.67dBi < 6dBi , so the power limit shall not be reduced.

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	Chain 2	Chain 3				
36	5180	17.43	17.08	17.49	17.42	217.698	23.38	29.96	Pass
40	5200	23.53	23.42	22.39	23.03	819.499	29.14	29.96	Pass
48	5240	21.67	21.79	21.87	21.37	588.804	27.70	29.96	Pass
149	5745	23.88	23.57	23.51	23.15	902.779	29.56	30.00	Pass
157	5785	23.96	23.56	23.52	23.20	909.707	29.59	30.00	Pass
165	5825	23.89	23.26	23.54	23.51	907.074	29.58	30.00	Pass

Note: 1. For UNII-1: Directional gain = 6.04dBi > 6dBi , so the power limit shall be reduced to 30-(6.04-6) = 29.96dBm
2. For UNII-3: Directional gain = 5.67dBi < 6dBi , so the power limit shall not to be reduced.

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	Chain 2	Chain 3				
38	5190	13.96	13.68	14.08	13.41	95.738	19.81	29.96	Pass
46	5230	19.80	20.01	20.20	19.62	392.065	25.93	29.96	Pass
151	5755	21.42	21.36	21.38	21.35	549.311	27.40	30.00	Pass
159	5795	21.52	21.40	21.44	21.30	554.156	27.44	30.00	Pass

Note: 1. For UNII-1: Directional gain = 6.04dBi > 6dBi , so the power limit shall be reduced to 30-(6.04-6) = 29.96dBm
2. For UNII-3: Directional gain = 5.67dBi < 6dBi , so the power limit shall not to be reduced.

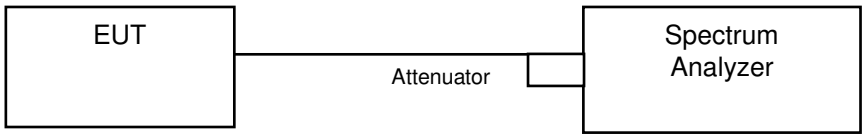
802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	13.21	13.49	13.36	12.55	82.943	19.19	29.96	Pass
155	5775	19.27	19.90	19.36	18.94	346.893	25.40	30.00	Pass

Note: 1. For UNII-1: Directional gain = 6.04dBi > 6dBi , so the power limit shall be reduced to 30-(6.04-6) = 29.96dBm
2. For UNII-3: Directional gain = 5.67dBi < 6dBi , so the power limit shall not to be reduced.

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.

802.11a

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)			
		CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 3
36	5180	17.04	17.08	17.16	17.28
40	5200	26.76	20.88	17.76	23.52
48	5240	18.00	17.76	17.52	17.64
149	5745	22.92	22.92	22.68	24.72
157	5785	23.64	24.00	23.64	25.80
165	5825	25.08	35.16	34.20	27.12

802.11ac (VHT20)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)			
		CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 3
36	5180	18.24	18.12	18.12	18.12
40	5200	29.64	21.48	19.08	26.52
48	5240	19.80	19.68	20.16	19.56
149	5745	37.68	24.96	24.84	26.04
157	5785	25.20	26.16	25.56	27.24
165	5825	26.04	26.52	35.76	27.48

802.11ac (VHT40)

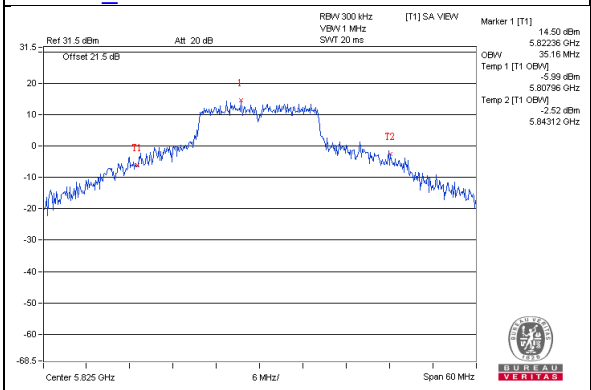
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)			
		CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 3
38	5190	36.72	36.72	36.72	36.96
46	5230	37.20	37.20	37.20	37.20
151	5755	38.16	37.44	38.40	40.08
159	5795	38.16	39.36	42.24	42.72

802.11ac (VHT80)

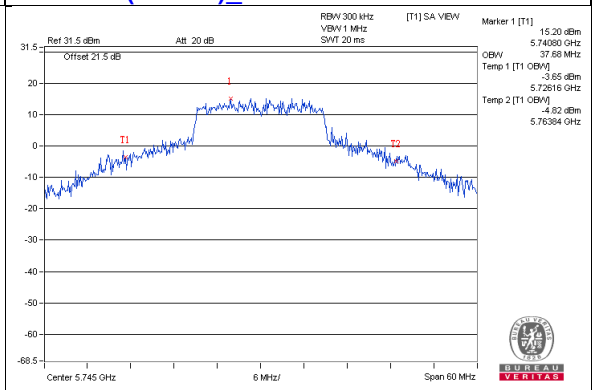
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)			
		CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 3
42	5210	74.88	75.36	74.88	74.88
155	5775	76.32	76.32	76.32	76.32

Spectrum Plot of Worst Value

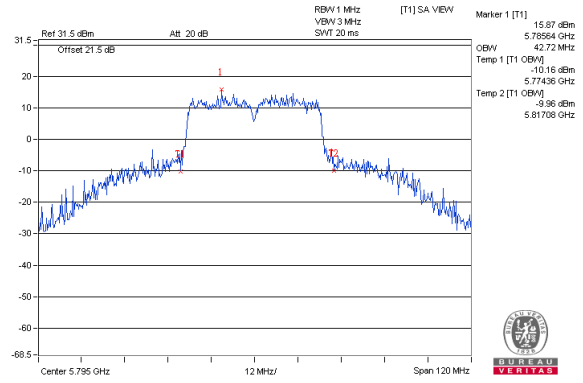
802.11a_Chain1 / CH165



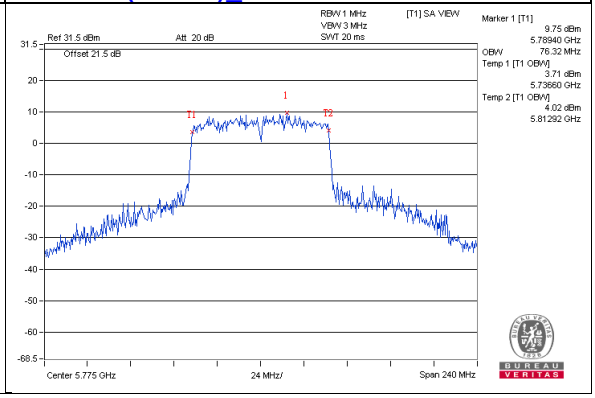
802.11ac (VHT20)_Chain0 / CH149



802.11ac (VHT40)_Chain3 / CH159

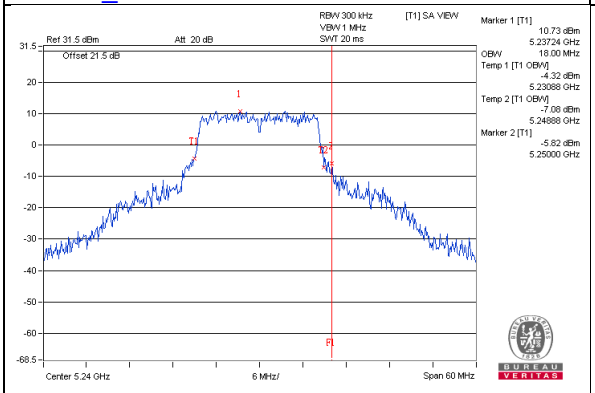


802.11ac (VHT80)_Chain0 / CH155

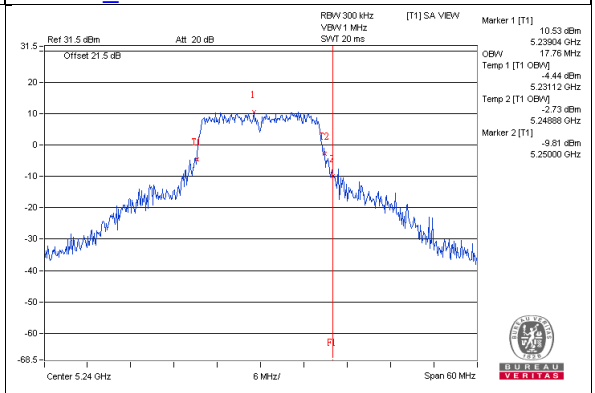


Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2A band)

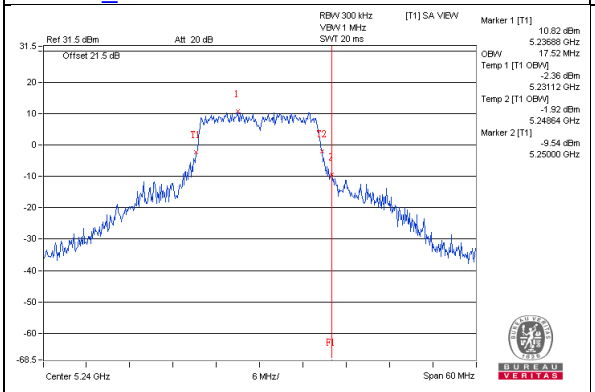
802.11a_Chain0 / CH48



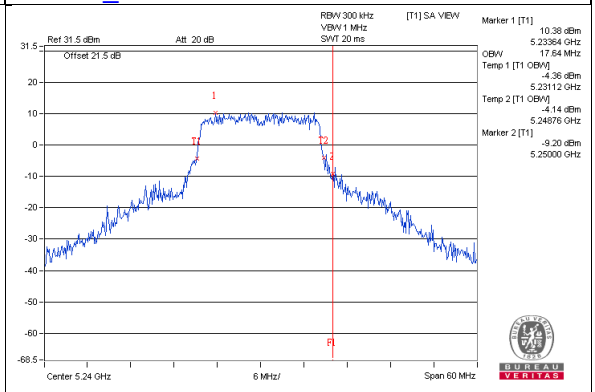
802.11a_Chain1 / CH48



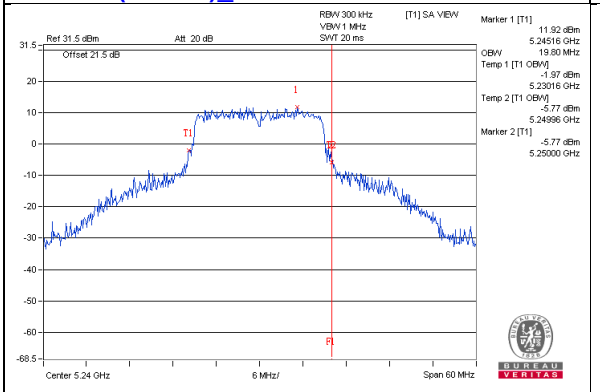
802.11a_Chain2 / CH48



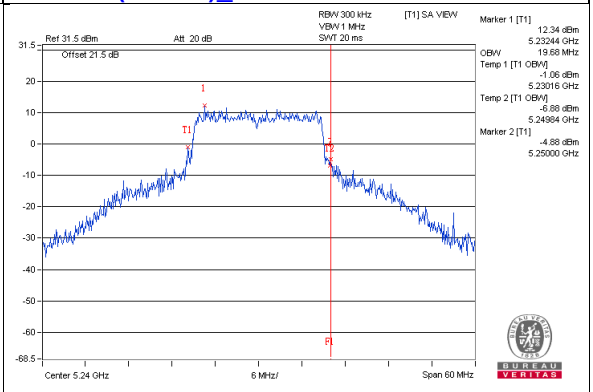
802.11a_Chain3 / CH48



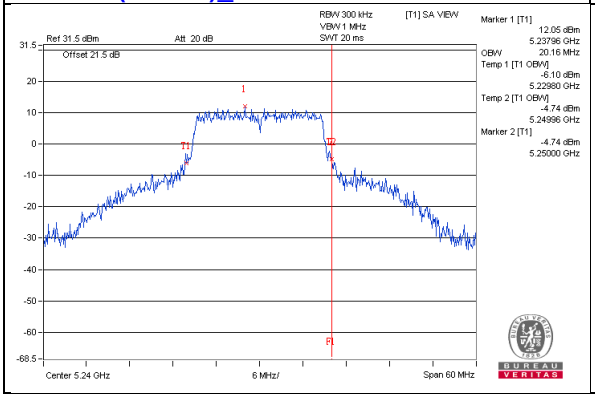
802.11ac(VHT20)_Chain0 / CH48



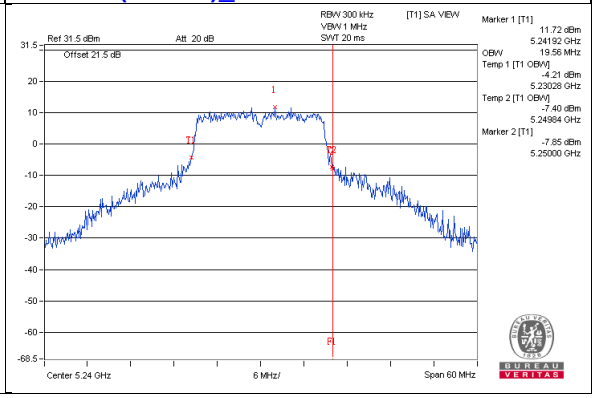
802.11ac(VHT20)_Chain1 / CH48



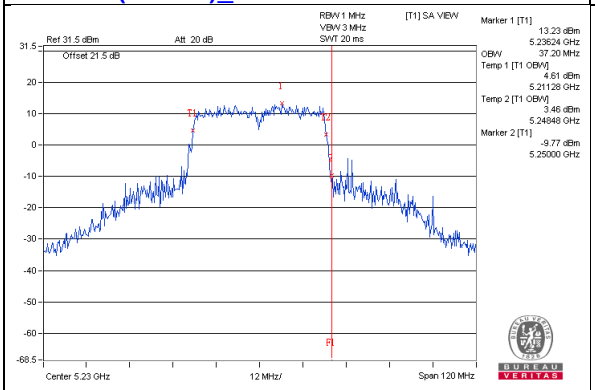
802.11ac(VHT20)_Chain2 / CH48



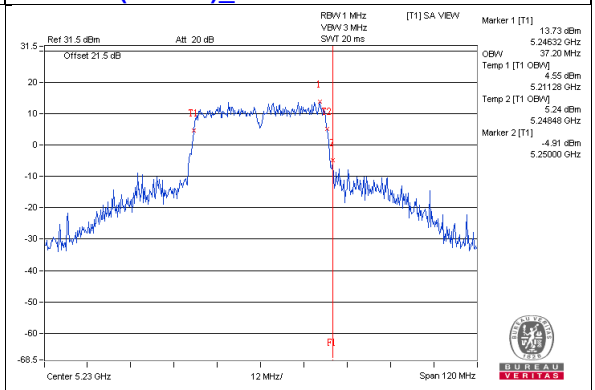
802.11ac(VHT20)_Chain3 / CH48



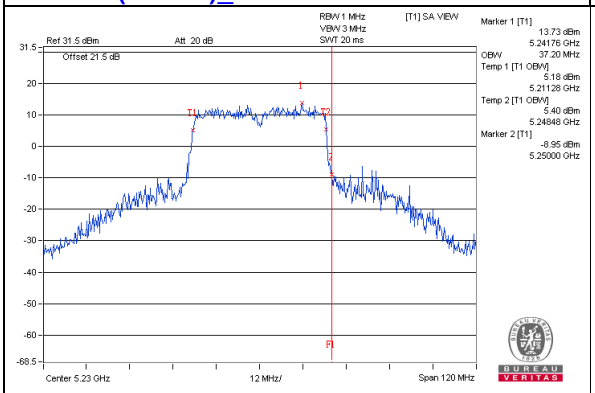
802.11ac(VHT40)_Chain0 / CH46



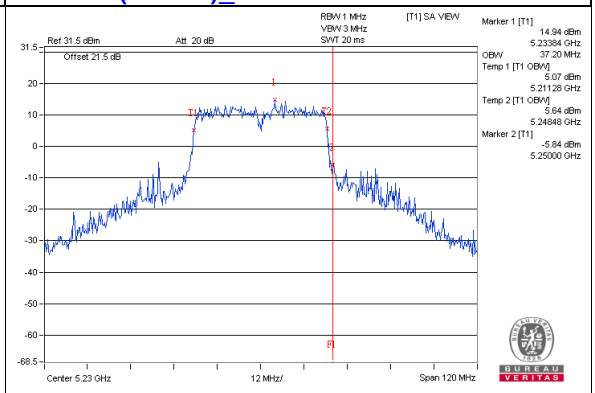
802.11ac(VHT20)_Chain1 / CH46



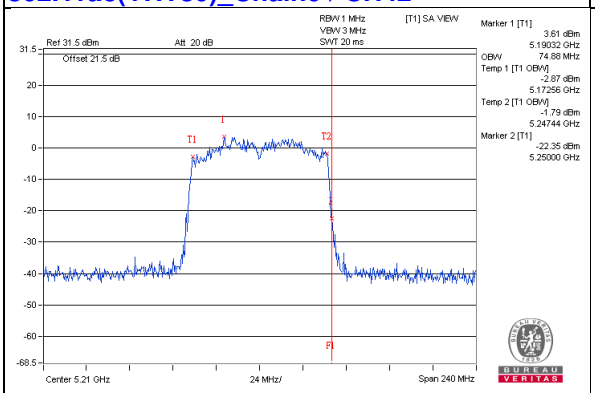
802.11ac(VHT40)_Chain2 / CH46



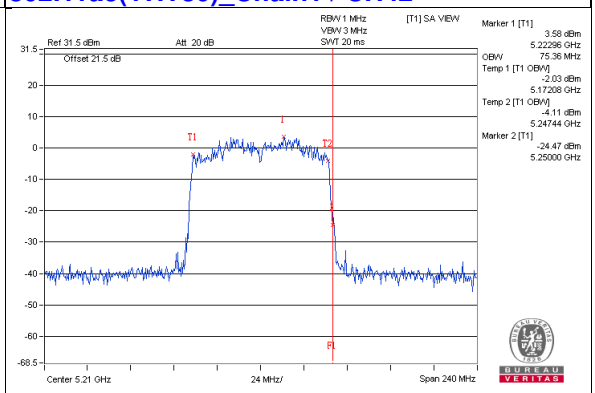
802.11ac(VHT20)_Chain3 / CH46



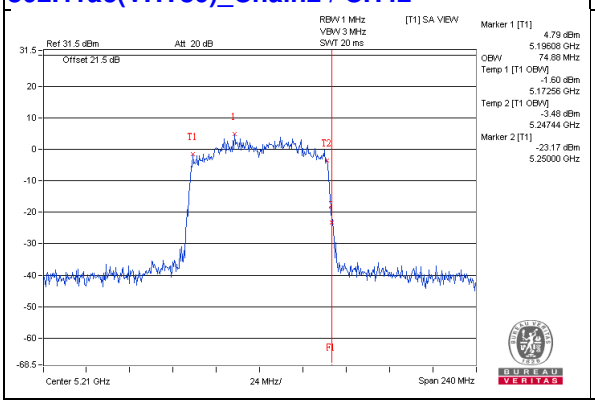
802.11ac(VHT80)_Chain0 / CH42



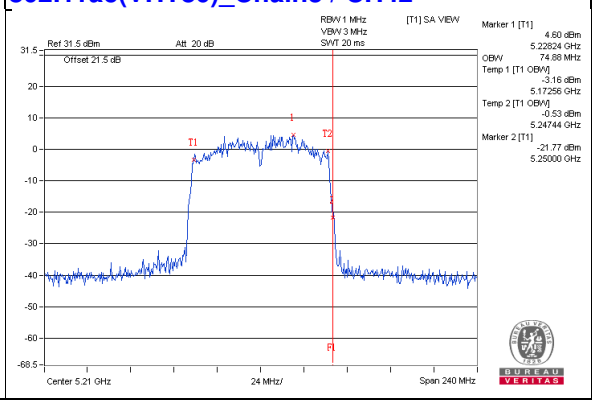
802.11ac(VHT80)_Chain1 / CH42



802.11ac(VHT80)_Chain2 / CH42



802.11ac(VHT80)_Chain3 / CH42

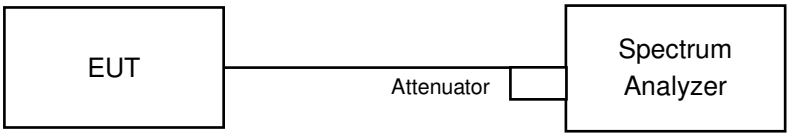


4.5 Peak Power Spectral Density Measurement

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

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

For U-NII-1:

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 U-NII-3:

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

802.11ac (VHT80)

For U-NII-1:

Using method SA-2

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

For U-NII-3:

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

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Same as Item 4.3.6.

4.5.7 Test Results

For U-NII-1:

802.11a

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)				Total Power Density (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3			
36	5180	4.55	4.53	4.42	4.67	10.56	16.96	Pass
40	5200	8.99	8.04	6.82	8.84	14.27	16.96	Pass
48	5240	6.86	6.74	6.62	6.69	12.75	16.96	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 = 6.04dBi > 6dBi , so the power density limit shall be reduced to 17-(6.04-6) = 16.96dBm.

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	Chain 2	Chain 3			
36	5180	3.66	3.33	3.04	3.15	9.32	16.96	Pass
40	5200	9.29	7.61	6.75	8.82	14.25	16.96	Pass
48	5240	7.66	7.03	7.37	7.31	13.37	16.96	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 = 6.04dBi > 6dBi , so the power density limit shall be reduced to 17-(6.04-6) = 16.96dBm.

802.11ac (VHT40)

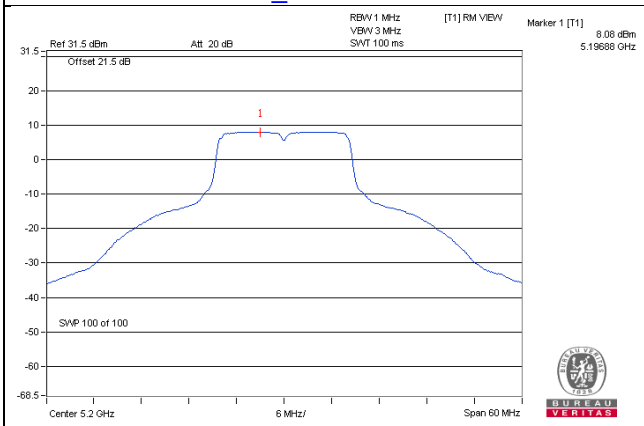
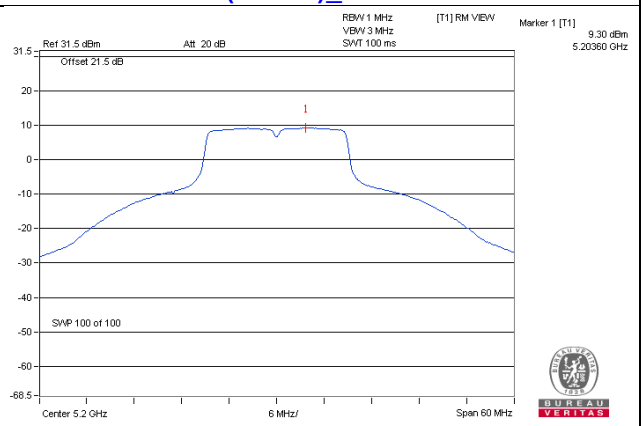
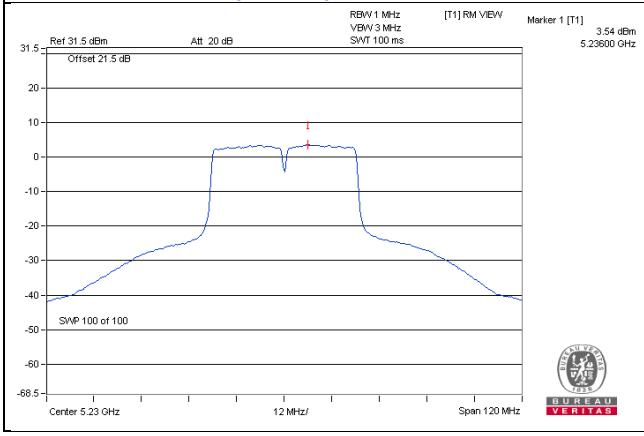
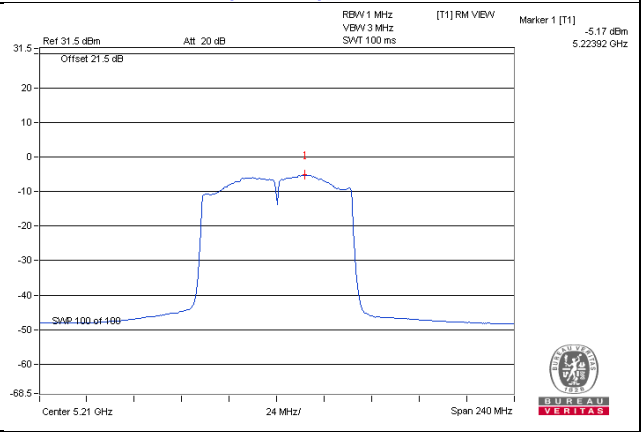
Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)				Total Power Density (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3			
38	5190	-2.81	-2.94	-3.28	-2.98	3.02	16.96	Pass
46	5230	3.54	3.49	3.43	3.52	9.52	16.96	Pass

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 = 6.04dBi > 6dBi , so the power density limit shall be reduced to 17-(6.04-6) = 16.96dBm.

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	Chain 2	Chain 3				
42	5210	-5.22	-5.99	-5.42	-5.17	0.14	0.72	16.96	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 = 6.04dBi > 6dBi , so the power density limit shall be reduced to 17-(6.04-6) = 16.96dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value	
802.11a_Chain 1 / CH40	**802.11ac (VHT20)_Chain 0 / CH40**
	
802.11ac (VHT40)_Chain 0 / CH46	**802.11ac (VHT80)_Chain 3 / CH42**
	

For U-NII-3:

802.11a

TX chain	Channel	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	10 log (N=4) dB	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
0	149	5745	0.45	2.67	6.02	8.69	30.00	Pass
	157	5785	0.41	2.63	6.02	8.65	30.00	Pass
	165	5825	0.50	2.72	6.02	8.74	30.00	Pass
1	149	5745	0.63	2.85	6.02	8.87	30.00	Pass
	157	5785	0.44	2.66	6.02	8.68	30.00	Pass
	165	5825	1.84	4.06	6.02	10.08	30.00	Pass
2	149	5745	0.51	2.73	6.02	8.75	30.00	Pass
	157	5785	0.33	2.55	6.02	8.57	30.00	Pass
	165	5825	1.69	3.91	6.02	9.93	30.00	Pass
3	149	5745	0.59	2.81	6.02	8.83	30.00	Pass
	157	5785	0.48	2.70	6.02	8.72	30.00	Pass
	165	5825	0.50	2.72	6.02	8.74	30.00	Pass

Note: 1. Directional gain = 5.67dBi < 6dBi, so the power density limit shall not be reduced.

802.11ac (VHT20)

TX chain	Channel	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	10 log (N=4) dB	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
0	149	5745	2.42	4.64	6.02	10.66	30.00	Pass
	157	5785	0.66	2.88	6.02	8.90	30.00	Pass
	165	5825	0.21	2.43	6.02	8.45	30.00	Pass
1	149	5745	0.43	2.65	6.02	8.67	30.00	Pass
	157	5785	0.17	2.39	6.02	8.41	30.00	Pass
	165	5825	0.03	2.25	6.02	8.27	30.00	Pass
2	149	5745	0.18	2.40	6.02	8.42	30.00	Pass
	157	5785	-0.09	2.13	6.02	8.15	30.00	Pass
	165	5825	1.37	3.59	6.02	9.61	30.00	Pass
3	149	5745	0.51	2.73	6.02	8.75	30.00	Pass
	157	5785	0.15	2.37	6.02	8.39	30.00	Pass
	165	5825	0.14	2.36	6.02	8.38	30.00	Pass

Note: 1. Directional gain = 5.67dBi < 6dBi, so the power density limit shall not be reduced.

802.11ac (VHT40)

TX chain	Channel	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	10 log (N=4) dB	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
0	151	5755	-4.18	-1.96	6.02	4.06	30.00	Pass
	159	5795	-3.91	-1.69	6.02	4.33	30.00	Pass
1	151	5755	-4.50	-2.28	6.02	3.74	30.00	Pass
	159	5795	-4.38	-2.16	6.02	3.86	30.00	Pass
2	151	5755	-4.24	-2.02	6.02	4.00	30.00	Pass
	159	5795	-4.12	-1.90	6.02	4.12	30.00	Pass
3	149	5745	-3.82	-1.60	6.02	4.42	30.00	Pass
	151	5755	-4.08	-1.86	6.02	4.16	30.00	Pass

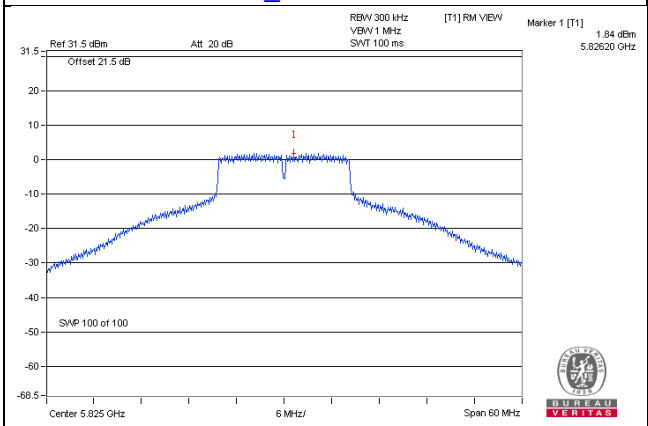
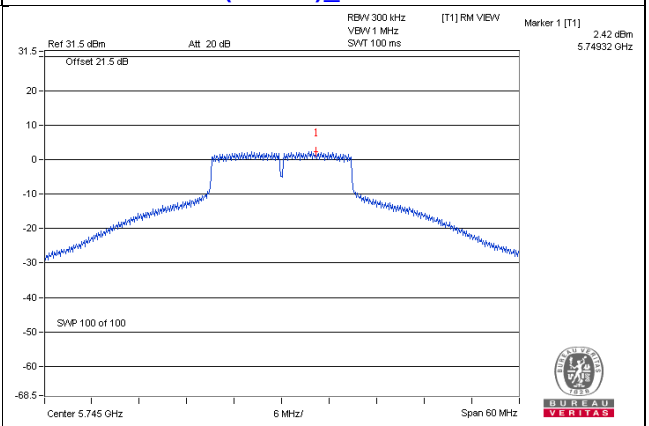
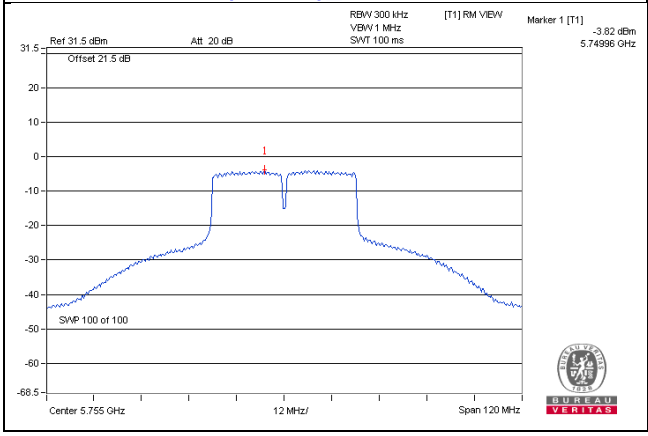
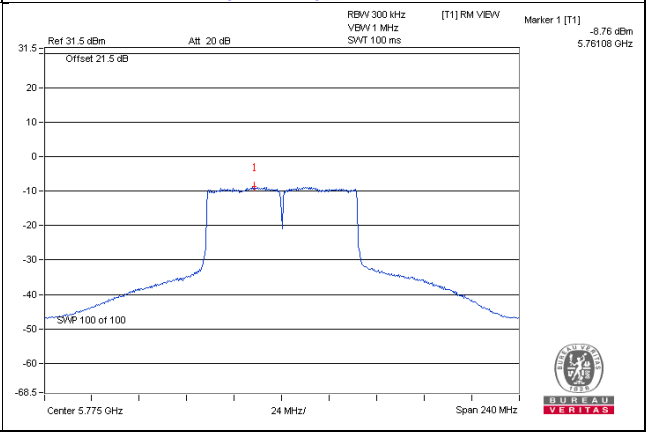
Note: 1. Directional gain = 5.67dBi < 6dBi, so the power density limit shall not be reduced.

802.11ac (VHT80)

TX chain	Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor		10 log (N=4) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	155	5775	-8.77	-6.55	6.02	0.14	-0.39	30.00	Pass
1	155	5775	-8.82	-6.60	6.02	0.14	-0.44	30.00	Pass
2	155	5775	-9.15	-6.93	6.02	0.14	-0.77	30.00	Pass
	155	5775	-8.76	-6.54	6.02	0.14	-0.38	30.00	Pass

Note: 1. Directional gain = 5.67dBi < 6dBi, so the power density limit shall not be reduced.

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

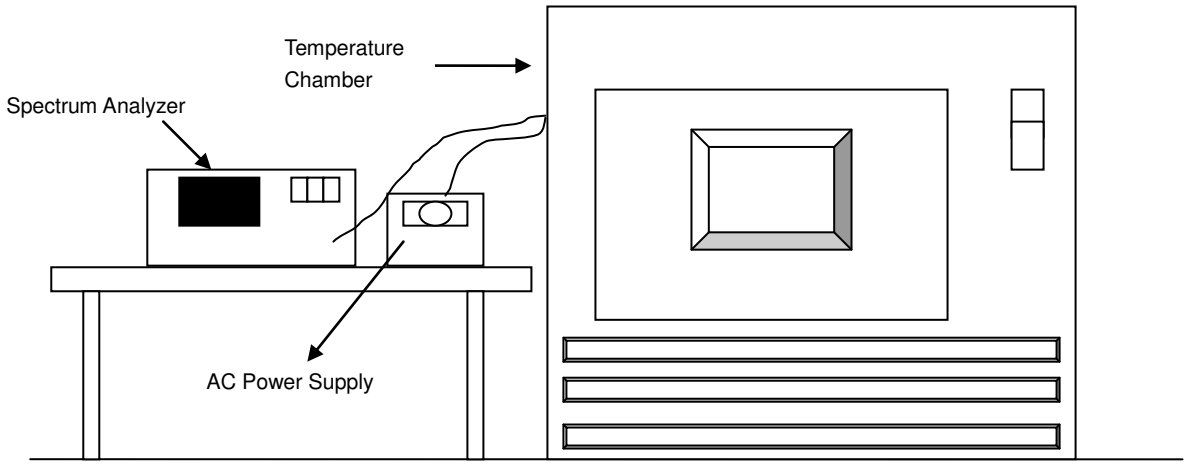
Spectrum Plot of Worst Value	
802.11a_Chain 1 / CH165	**802.11ac (VHT20)_Chain 0 / CH149**
	
802.11ac (VHT40)_Chain 3 / CH151	**802.11ac (VHT80)_Chain 3 / CH155**
	

4.6 Frequency Stability Measurement

4.6.1 Limits of Frequency Stability Measurement

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

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

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

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

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

4.6.7 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 5180 MHz									
TEMP. (℃)	Power Supply (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	5179.9835	Pass	5179.9828	Pass	5179.9844	Pass	5179.981	Pass
40	120	5180.0008	Pass	5179.9972	Pass	5179.9978	Pass	5180.0016	Pass
30	120	5180.0233	Pass	5180.0247	Pass	5180.023	Pass	5180.0232	Pass
20	120	5180.0219	Pass	5180.0199	Pass	5180.023	Pass	5180.0207	Pass
10	120	5179.9987	Pass	5179.9983	Pass	5180.0015	Pass	5180.0016	Pass
0	120	5179.9882	Pass	5179.9878	Pass	5179.9851	Pass	5179.9847	Pass
-10	120	5180.0057	Pass	5180.0065	Pass	5180.0079	Pass	5180.0056	Pass
-20	120	5179.9904	Pass	5179.9921	Pass	5179.9909	Pass	5179.9917	Pass
-30	120	5179.985	Pass	5179.9894	Pass	5179.9882	Pass	5179.9869	Pass

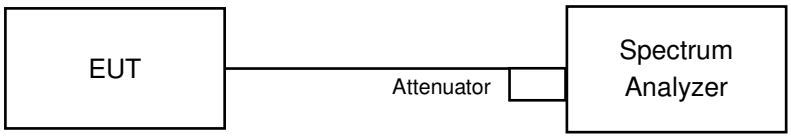
Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
TEMP. (℃)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	138	5180.0212	Pass	5180.0204	Pass	5180.0224	Pass	5180.0205	Pass
	120	5180.0219	Pass	5180.0199	Pass	5180.023	Pass	5180.0207	Pass
	102	5180.0213	Pass	5180.0207	Pass	5180.0227	Pass	5180.0212	Pass

4.7 6dB Bandwidth Measurment

4.7.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

4.7.2 Test Setup



4.7.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.7.4 Test Procedure

MEASUREMENT PROCEDURE REF

a. Set resolution bandwidth (RBW) = 100kHz
b. Set the video bandwidth (VBW) ≥ 3 x RBW, Detector = Peak.
c. Trace mode = max hold.
d. Sweep = auto couple.
e. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

4.7.5 Deviation from Test Standard

No deviation.

4.7.6 EUT Operating Condition

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

4.7.7 Test Results

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
149	5745	16.39	16.40	16.37	16.40	0.5	Pass
157	5785	16.39	16.42	16.40	16.38	0.5	Pass
165	5825	16.40	16.35	16.40	16.36	0.5	Pass

802.11ac (VHT20)

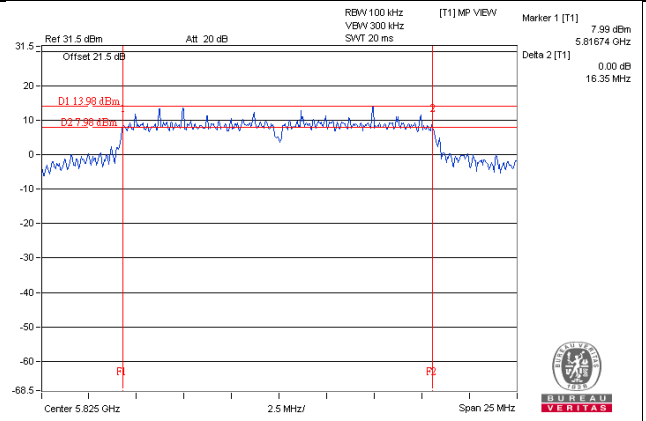
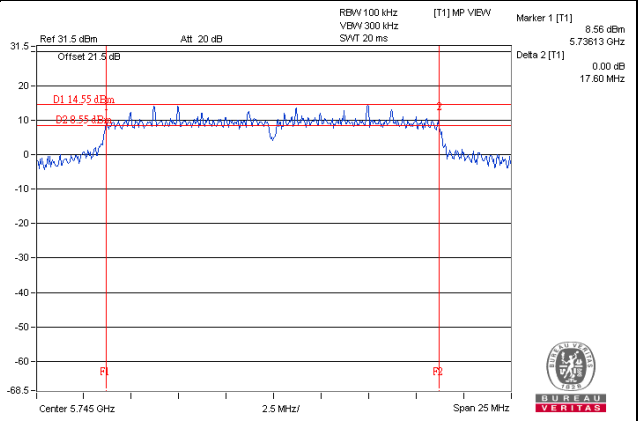
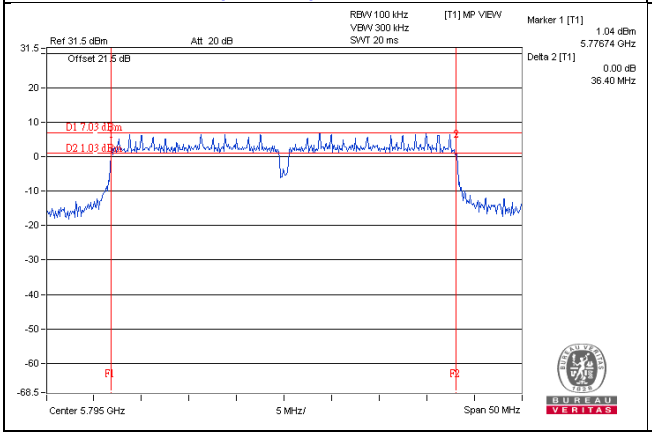
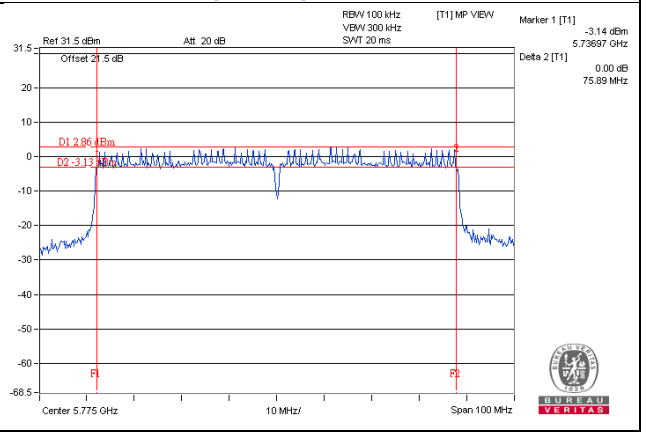
Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
149	5745	17.60	17.66	17.67	17.65	0.5	Pass
157	5785	17.63	17.64	17.64	17.63	0.5	Pass
165	5825	17.64	17.66	17.68	17.63	0.5	Pass

802.11ac (VHT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
151	5755	36.45	36.47	36.44	36.45	0.5	Pass
159	5795	36.45	36.44	36.40	36.44	0.5	Pass

802.11ac (VHT80)

Channel	Frequency (MHz)	6dB Bandwidth (MHZ)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
155	5775	75.89	76.46	76.45	76.42	0.5	Pass

Spectrum Plot of Worst Value	
802.11a / Chain 1 : CH165	**802.11ac(VHT20) / Chain 0 : CH149**
	
802.11ac(VHT40) / Chain 2 : CH159	**802.11ac(VHT80) / Chain 0 : CH155**
	

5 Pictures of Test Arrangements

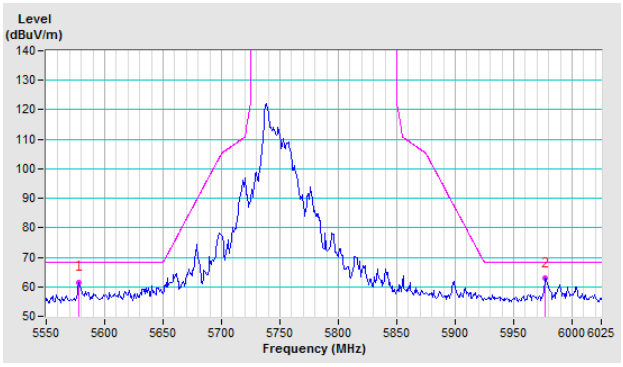
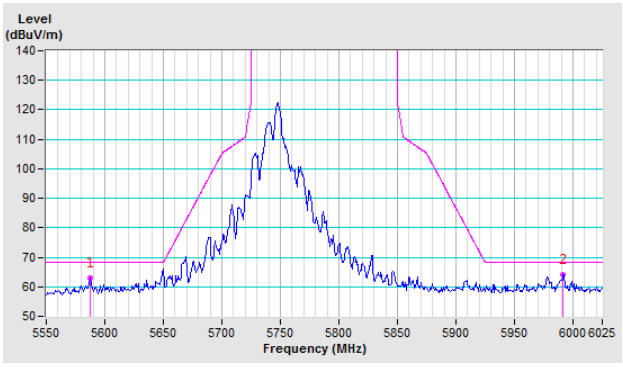
Please refer to the attached file (Test Setup Photo).

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

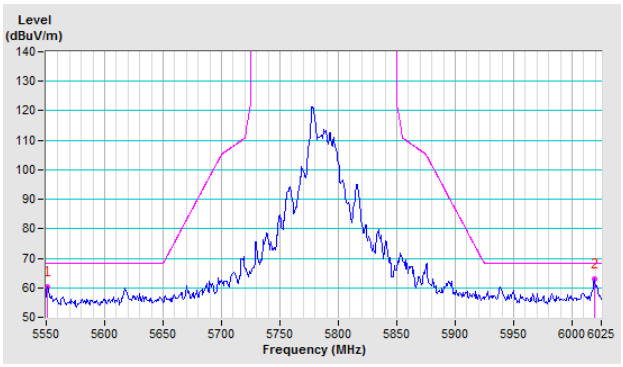
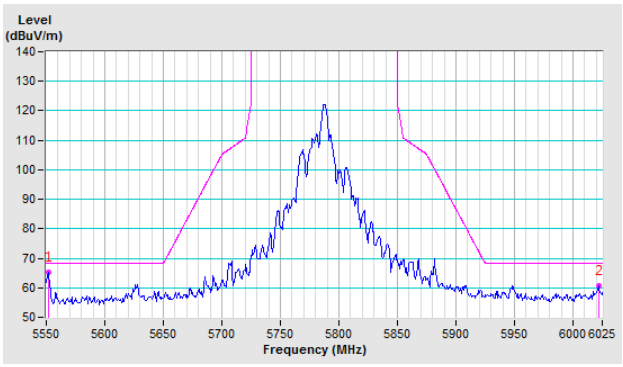
Internal antenna

802.11a

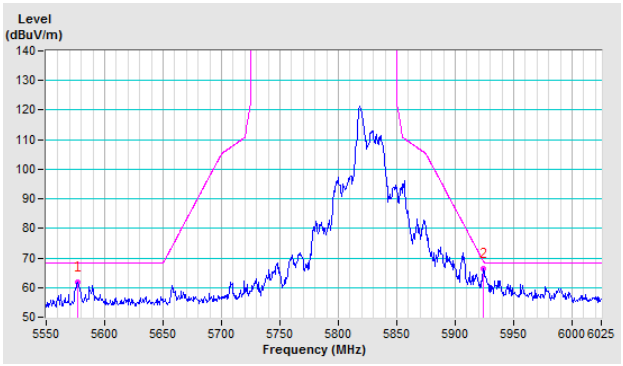
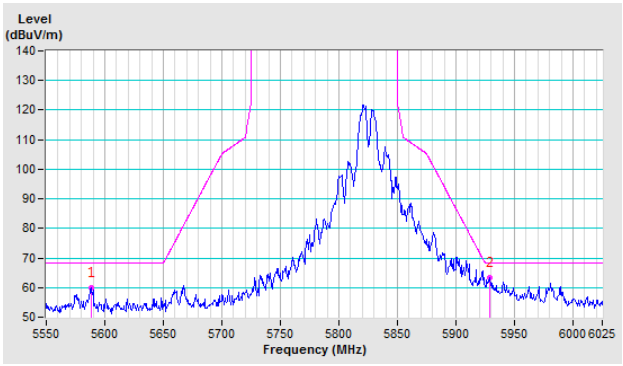
CH 149 5745 MHz

Horizontal	Vertical
	

CH 157 5785 MHz

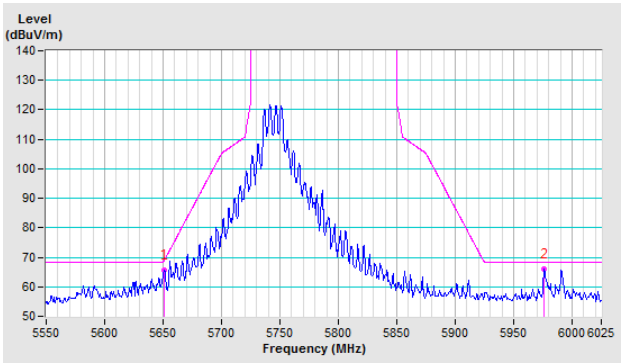
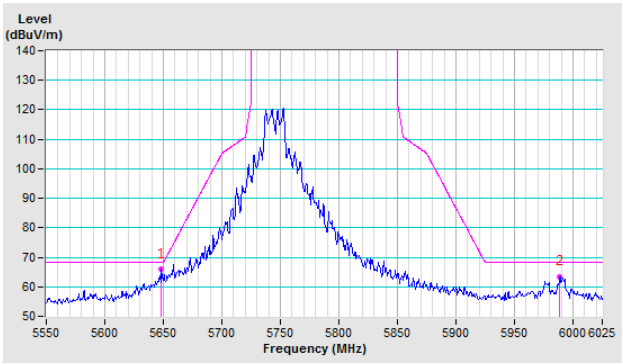
Horizontal	Vertical
	

CH 165 5825 MHz

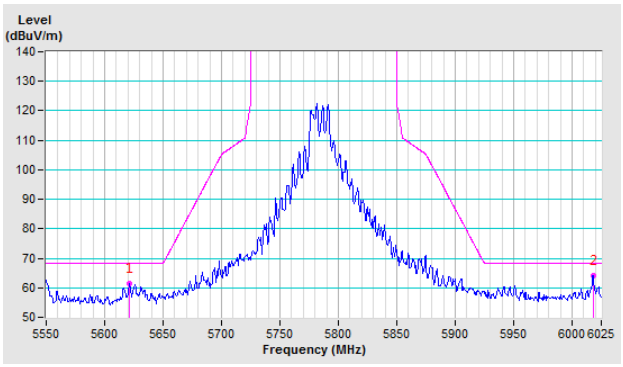
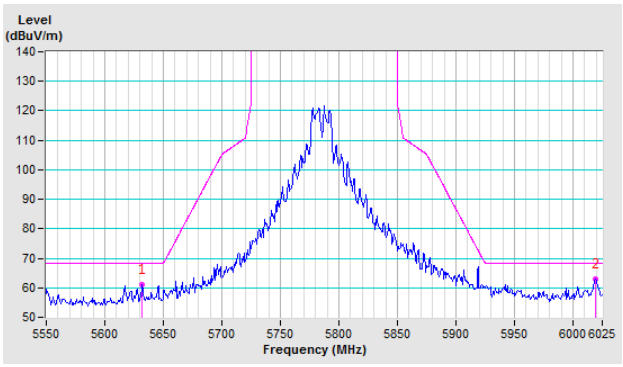
Horizontal	Vertical
	

802.11ac (VHT20)

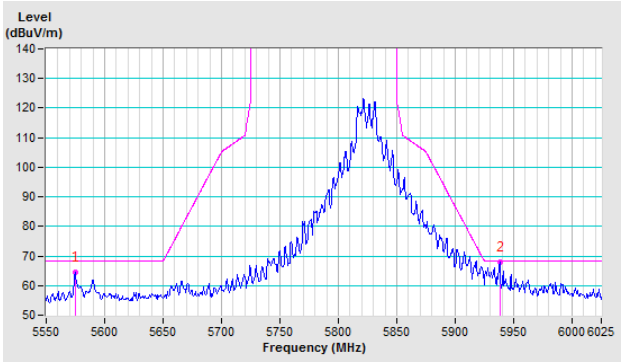
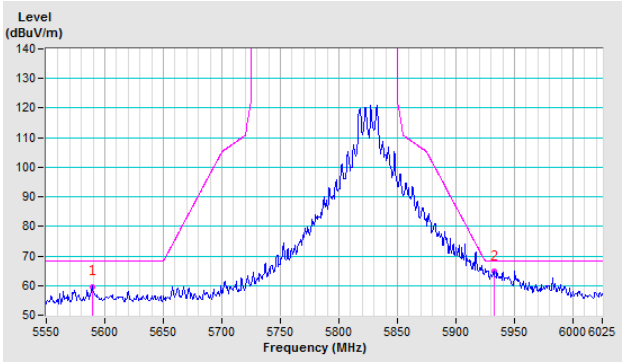
CH 149 5745 MHz

Horizontal	Vertical
	

CH 157 5785 MHz

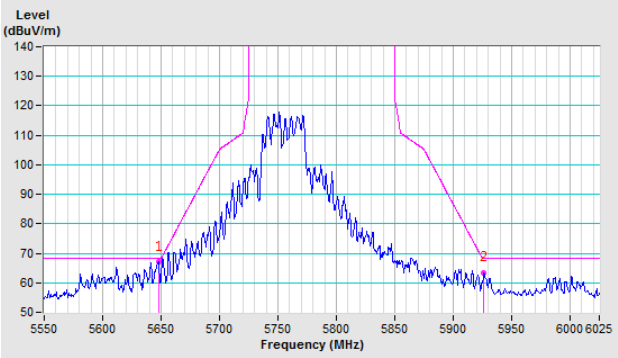
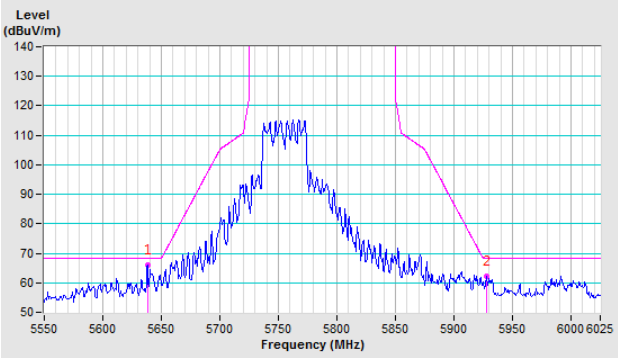
Horizontal	Vertical
	

CH 165 5825 MHz

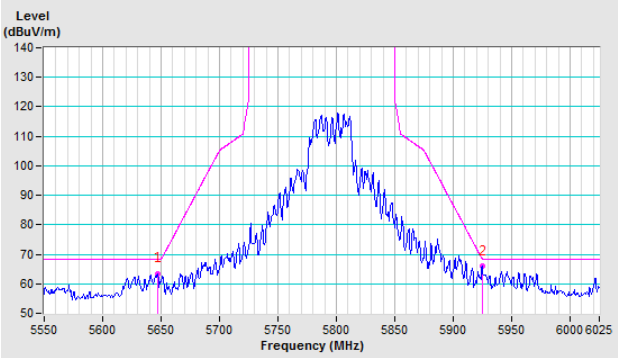
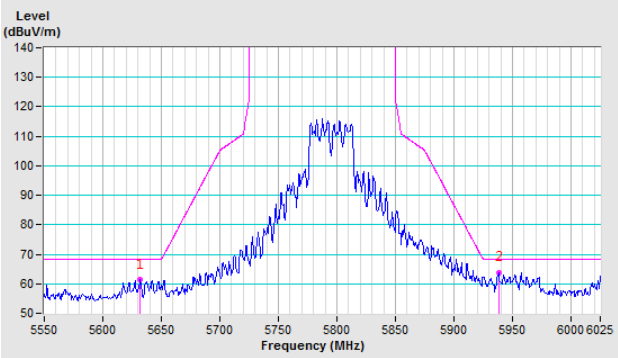
Horizontal	Vertical
	

802.11ac (VHT40)

CH 151 5755 MHz

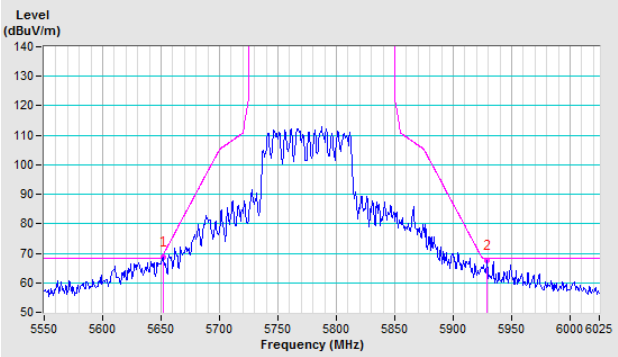
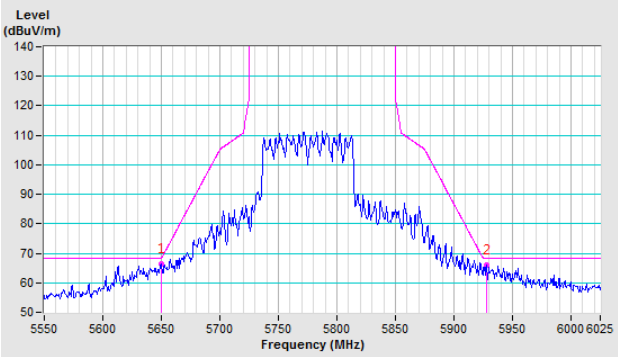
Horizontal	Vertical
	

CH 159 5795 MHz

Horizontal	Vertical
	

802.11ac (VHT80)

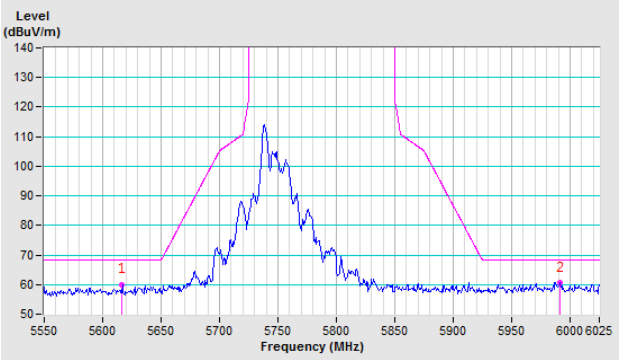
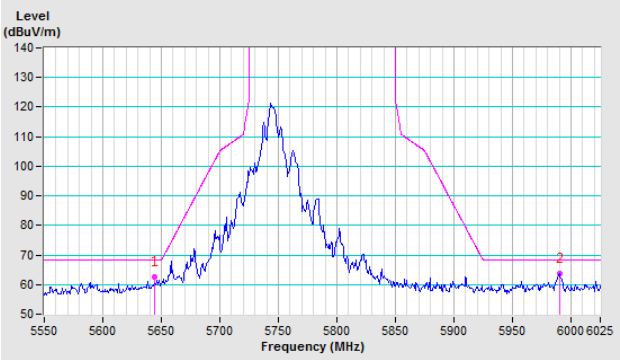
CH 155 5775 MHz

Horizontal	Vertical
	

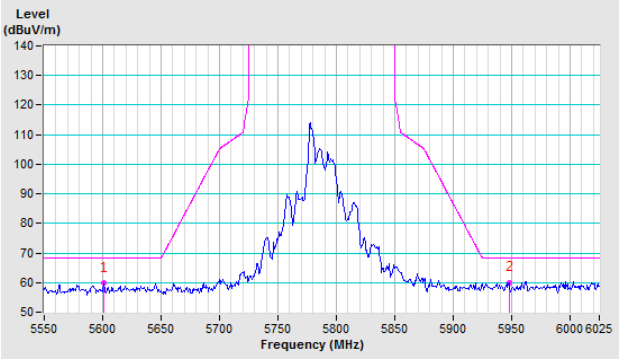
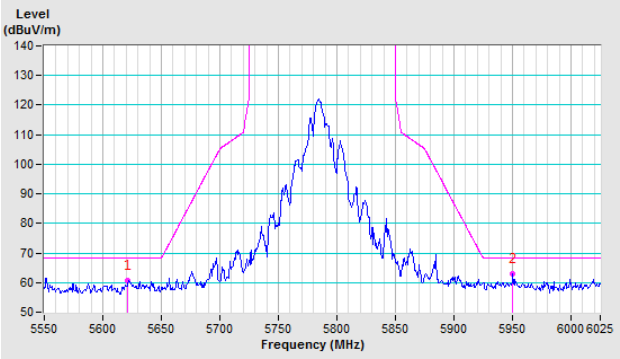
External antenna

802.11a

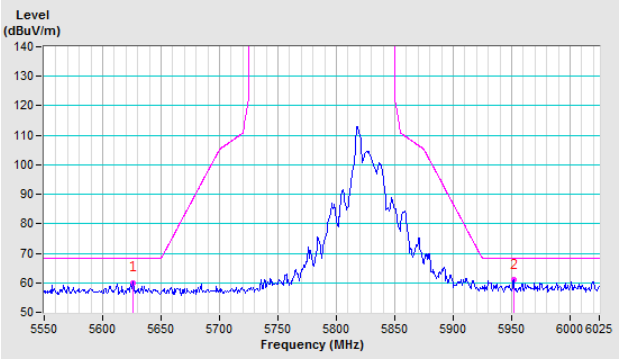
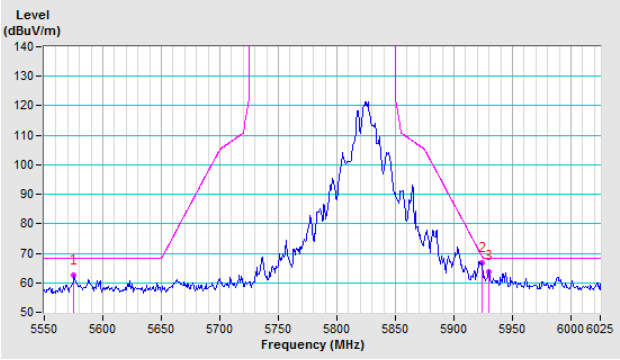
CH 149 5745 MHz

Horizontal	Vertical
	

CH 157 5785 MHz

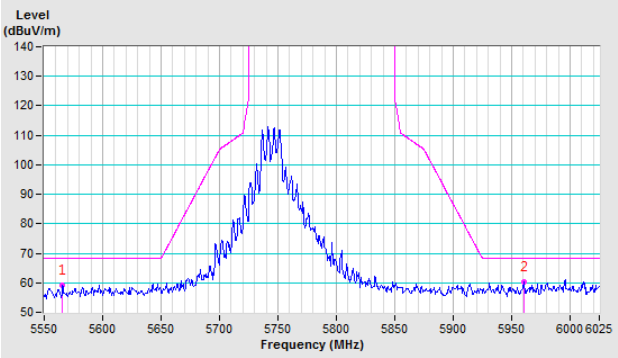
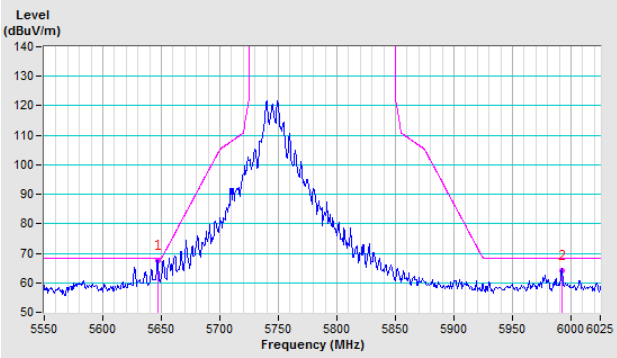
Horizontal	Vertical
	

CH 165 5825 MHz

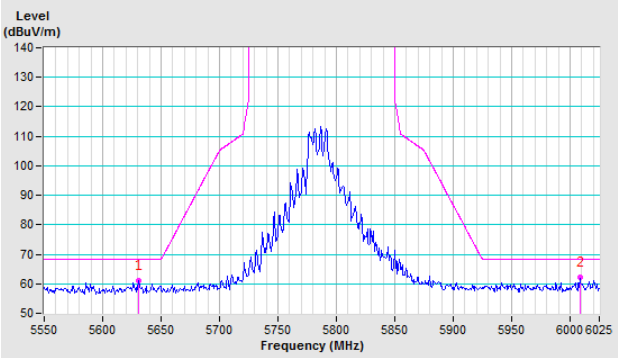
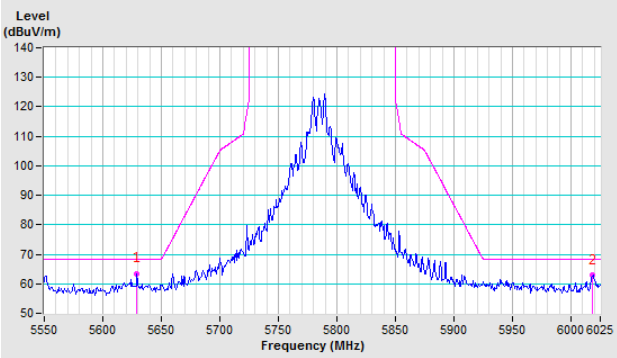
Horizontal	Vertical
	

802.11ac (VHT20)

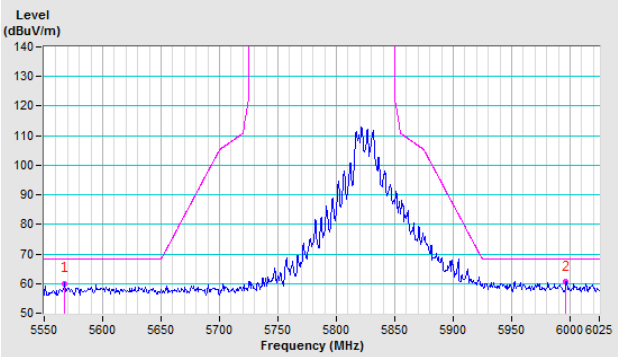
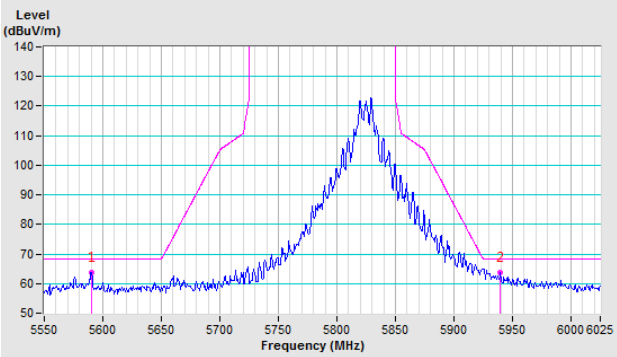
CH 149 5745 MHz

Horizontal	Vertical
	

CH 157 5785 MHz

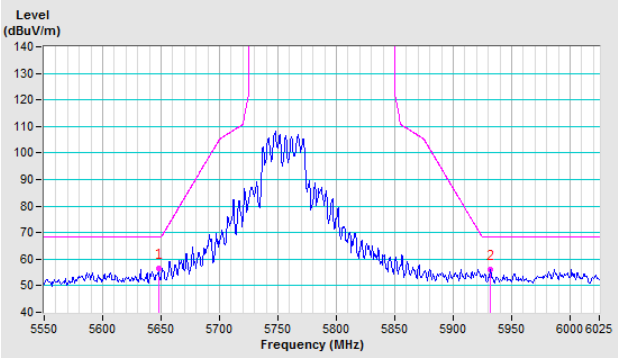
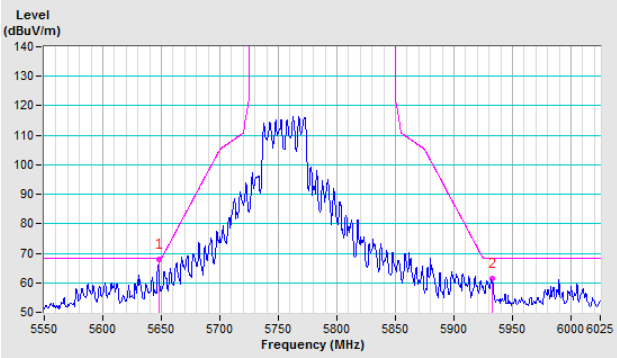
Horizontal	Vertical
	

CH 165 5825 MHz

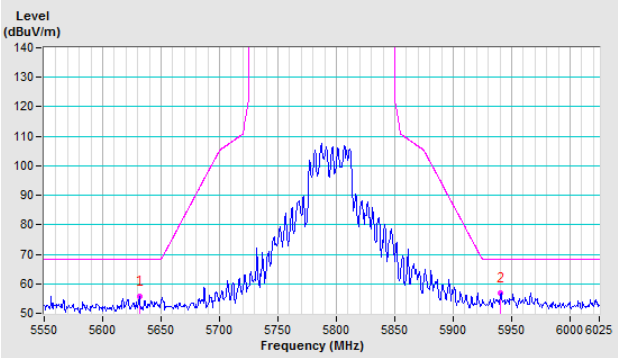
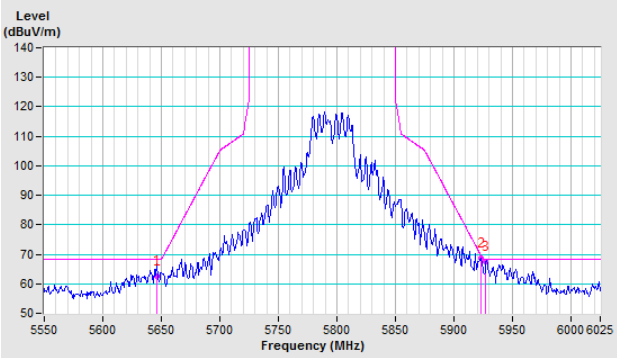
Horizontal	Vertical
	

802.11ac (VHT40)

CH 151 5755 MHz

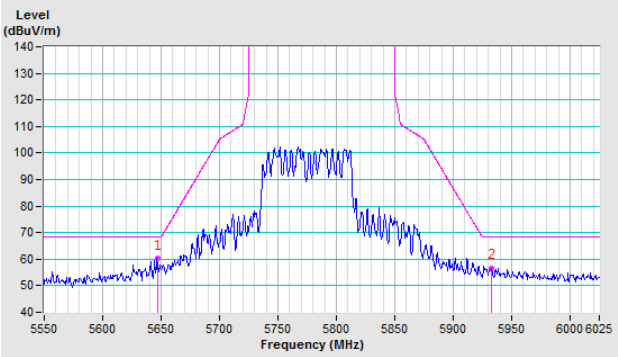
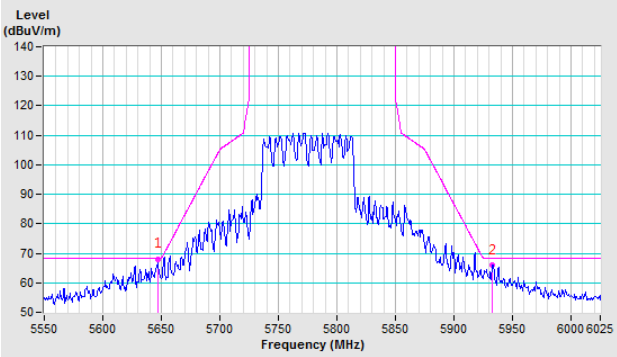
Horizontal	Vertical
	

CH 159 5795 MHz

Horizontal	Vertical
	

802.11ac (VHT80)

CH 155 5775 MHz

Horizontal	Vertical
	

Appendix – Information on the Testing Laboratories

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

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

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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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