FCC Test Report

Report No.:	RF170712E09-1
FCC ID:	2AAAS-NM01
Test Model:	NM01
Received Date:	July 12, 2017
Test Date:	July 22 to 31, 2017
Issued Date:	Aug. 15, 2017
Applicant:	Vivint, Inc.
Address:	4931 North 300 West Provo, Utah 84604 United States
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
RF170712E09-1	Original release.	Aug. 15, 2017

1 Certificate of Conformity

Product:	Vivint 2.4GHz/5GHz WiFi Module
Brand:	Vivint
Test Model:	NM01
Sample Status:	ENGINEERING SAMPLE
Applicant:	Vivint, Inc.
Test Date:	July 22 to 31, 2017
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 : Cindy Hsin , **Date:** Aug. 15, 2017

Cindy Hsin / Specialist

Approved by : , **Date:** Aug. 15, 2017

May Chen / Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -18.64dB at 0.36875MHz.
15.407(b) (1/2/3/4(i/ii)/6)	Radiated Emissions & Band Edge Measurement*	Pass	Meet the requirement of limit. Minimum passing margin is -0.1dB at 10360.00MHz, 15780.00MHz, 15960.00MHz, 15720.00MHz, 10400.00MHz, 15900.00MHz, 11100.00MHz
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	-	Reference only.
15.407(a)(1/2/3)	Peak Power Spectral Density	Pass	Meet the requirement of limit.
15.407(e)	6dB Bandwidth	Pass	Meet the requirement of limit. (U-NII-3 Band only)
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	Antenna connector is I-pex not a standard connector.

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

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.84 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	5.30 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	5.16 dB
	6GHz ~ 18GHz	4.91 dB
	18GHz ~ 40GHz	5.30 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Vivint 2.4GHz/5GHz WiFi Module
Brand	Vivint
Test Model	NM01
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	DC 3.3V from host equipment
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 300Mbps 802.11ac: up to 866.7Mbps
Operating Frequency	**2.4GHz:** 2.412 ~ 2.462GHz **5GHz:** 5.18 ~ 5.24GHz, 5.26 ~ 5.32GHz, 5.5 ~ 5.70GHz, 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): 24 802.11n (HT40), 802.11ac (VHT40): 11 802.11ac (VHT80): 5
Output Power	**2.4GHz:** 553.367mW **5.18 ~ 5.24GHz:** 99.054mW **5.26 ~ 5.32GHz:** 102.513mW **5.50 ~ 5.70GHz:** 75.778mW **5.745 ~ 5.825GHz:** 74.479mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	NA
Data Cable Supplied	NA

Note:

1. 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.		

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

No.	PCB Chain No	Brand	Model	Antenna Gain(dBi)	Frequency range	Antenna Type	Connector type	Cable Length (mm)	Cable Loss (dB)	excluding cable loss Antenna Gain(dBi)
1	Chain 0	NA	TE 2108517-1	2.5	2.4~2.4835GHz	PIFA	I-pex	60	0.5	3
				2	5.15~5.85GHz				1	
2	Chain 1	NA	TE 2108517-1	2	2.4~2.4835GHz	PIFA	I-pex	230	1	3
				1.5	5.15~5.85GHz				1.5	

3. The EUT incorporates a MIMO function.

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

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

3.2 Description of Test Modes

FOR 5180 ~ 5240MHz

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

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

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

Channel	Frequency	Channel	Frequency
38	5190MHz	46	5230MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
42	5210MHz

FOR 5260 ~ 5320MHz

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

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

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

Channel	Frequency	Channel	Frequency
54	5270MHz	62	5310MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
58	5290MHz

FOR 5500 ~ 5700MHz:

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

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

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

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

2 channels are provided for 802.11ac (VHT80):

Channel	Frequency	Channel	Frequency
106	5530MHz	122	5610MHz

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 (HT40):

Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
155	5775MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

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

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

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

Radiated Emission Test (Above 1GHz):

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

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	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6
802.11ac (VHT20)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
802.11ac (VHT40)		54 to 62	54, 62	OFDM	BPSK	13.5
802.11ac (VHT80)		58	58	OFDM	BPSK	29.3
802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6
802.11ac (VHT20)		100 to 140	100, 116, 140	OFDM	BPSK	6.5
802.11ac (VHT40)		102 to 134	102, 110, 134	OFDM	BPSK	13.5
802.11ac (VHT80)		106, 122	106, 122	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.

Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5180-5240	36 to 48	52	OFDM	BPSK	6
	5260-5320	52 to 64				
	5500-5700	100 to 140				
	5745-5825	149 to 165				

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.

Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5180-5240	36 to 48	52	OFDM	BPSK	6
	5260-5320	52 to 64				
	5500-5700	100 to 140				
	5745-5825	149 to 165				

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.

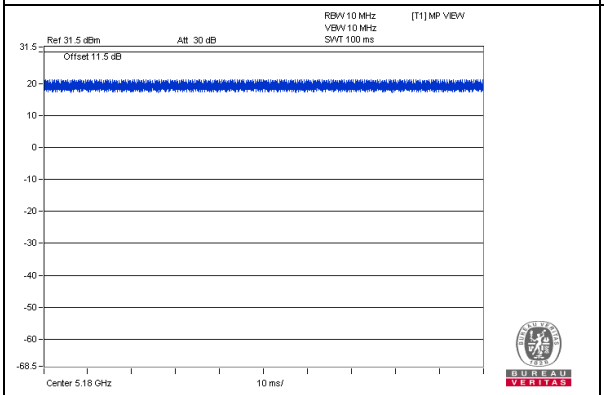
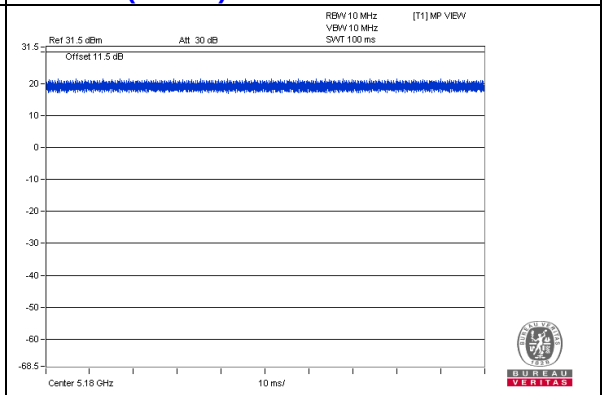
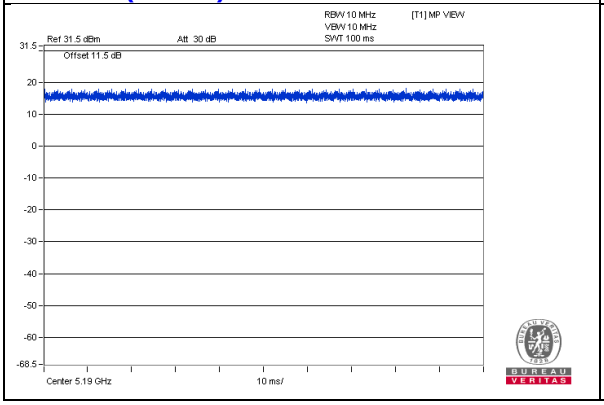
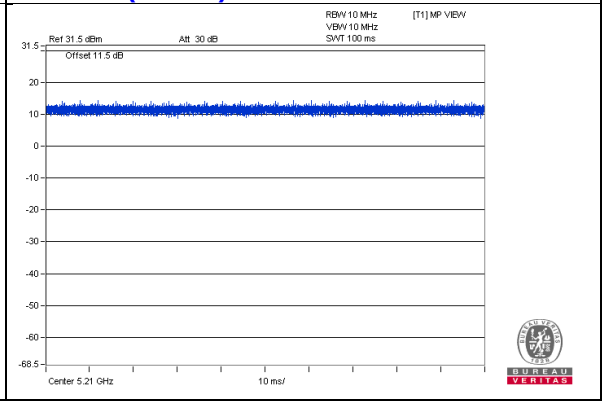
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6
802.11ac (VHT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
802.11ac (VHT40)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11ac (VHT80)		42	42	OFDM	BPSK	29.3
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6
802.11ac (VHT20)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
802.11ac (VHT40)		54 to 62	54, 62	OFDM	BPSK	13.5
802.11ac (VHT80)		58	58	OFDM	BPSK	29.3
802.11a	5500-5700	100 to 140	100, 116, 140	OFDM	BPSK	6
802.11ac (VHT20)		100 to 140	100, 116, 140	OFDM	BPSK	6.5
802.11ac (VHT40)		102 to 134	102, 110, 134	OFDM	BPSK	13.5
802.11ac (VHT80)		106, 122	106, 122	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

Test Condition:

Applicable To	Environmental Conditions	Input Power (SYSTEM)	Tested By
RE≥1G	23deg. C, 66%RH	120Vac, 60Hz	Rey Chen
RE<1G	24deg. C, 63%RH	120Vac, 60Hz	Rey Chen
PLC	25deg. C, 75%RH	120Vac, 60Hz	Andy Ho
APCM	25deg. C, 60%RH	120Vac, 60Hz	Robert Cheng

3.3 Duty Cycle of Test Signal

Duty cycle of test signal is 100 %, duty factor is not required.

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.

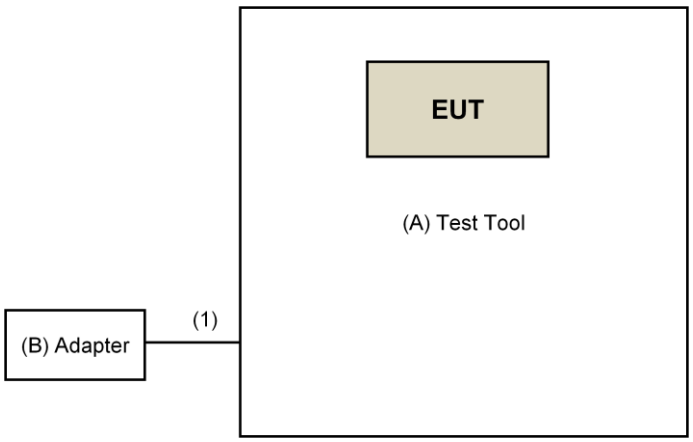
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Test Tool	TRANWO	NA	NA	NA	Supplied by client
B.	Adapter	HONOR	ADS-40SF-12 12030GPCU	NA	NA	Supplied by client

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.	DC Cable	1	1.5	No	0	Supplied by client

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standard

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

FCC Part 15, Subpart E (15.407)
KDB 789033 D02 General UNII Test Procedure New Rules v01r04
KDB 662911 D01 Multiple Transmitter Output v02r01
ANSI C63.10-2013

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

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 v01r04</td><td colspan="2">Field Strength at 3m</td></tr>
<tr><td>PK:74 (dBμV/m)</td><td>AV:54 (dBμV/m)</td></tr>
<tr><td>Frequency Band</td><td colspan="2">Applicable To</td><td>EIRP Limit</td><td>Equivalent Field Strength at 3m</td></tr>
<tr><td>5150~5250 MHz</td><td colspan="2">15.407(b)(1)</td><td rowspan="3">PK:-27 (dBm/MHz)</td><td rowspan="3">PK:68.2(dBμV/m)</td></tr>
<tr><td>5250~5350 MHz</td><td colspan="2">15.407(b)(2)</td></tr>
<tr><td>5470~5725 MHz</td><td colspan="2">15.407(b)(3)</td></tr>
<tr><td rowspan="2">5725~5850 MHz</td><td>☒</td><td>15.407(b)(4)(i)</td><td>PK:-27 (dBm/MHz) *1
PK:10 (dBm/MHz) *2
PK:15.6 (dBm/MHz) *3
PK:27 (dBm/MHz) *4</td><td>PK: 68.2(dBμV/m) *1
PK:105.2 (dBμV/m) *2
PK: 110.8(dBμV/m) *3
PK:122.2 (dBμV/m) *4</td></tr>
<tr><td>☐</td><td>15.407(b)(4)(ii)</td><td colspan="2">Emission limits in section 15.247(d)</td></tr>
<tr><td colspan="5">*1 beyond 75 MHz or more above of the band edge.
*2 below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.
*3 below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.
*4 from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.</td></tr>
</table>

Note:

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

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

4.1.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Keysight	N9038A	MY54450088	July 08, 2017	July 07, 2018
Pre-Amplifier(*) EMCI	EMC001340	980142	Jan. 20, 2016	Jan. 19, 2018
Loop Antenna(*) Electro-Metrics	EM-6879	264	Dec. 16, 2016	Dec. 15, 2018
RF Cable	NA	LOOPCAB-001 LOOPCAB-002	Jan. 17, 2017	Jan. 16, 2018
Pre-Amplifier Mini-Circuits	ZFL-1000VH2B	AMP-ZFL-01	Nov. 10, 2016	Nov. 09, 2017
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-406	Dec. 13, 2016	Dec. 12, 2017
RF Cable	8D	966-4-1 966-4-2 966-4-3	Apr. 01, 2017	Mar. 31, 2018
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-4-01	Oct. 05, 2016	Oct. 04, 2017
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-783	Dec. 27, 2016	Dec. 26, 2017
Pre-Amplifier EMCI	EMC12630SE	980385	Feb. 02, 2017	Feb. 01, 2018
RF Cable	EMC104-SM-SM-1200 EMC104-SM-SM-2000 EMC104-SM-SM-5000	160923 150318 150321	Feb. 02, 2017 Mar. 29, 2017 Mar. 29, 2017	Feb. 01, 2018 Mar. 28, 2018 Mar. 28, 2018
Pre-Amplifier EMCI	EMC184045SE	980387	Feb. 02, 2017	Feb. 01, 2018
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170608	Dec. 15, 2016	Dec. 14, 2017
RF Cable	SUCOFLEX 102	36432/2 36433/2	Jan. 15, 2017	Jan. 14, 2018
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208410	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP02	NA	NA
Spectrum Analyzer R&S	FSP40	100060	May 11, 2017	May 10, 2018
Power meter Anritsu	ML2495A	1014008	May 11, 2017	May 10, 2018
Power sensor Anritsu	MA2411B	0917122	May 11, 2017	May 10, 2018
AC Power Source Extech Electronics	6205	1440452	NA	NA
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	Jan. 11, 2017	Jan. 10, 2018
DC Power Supply Topward	6603D	795558	NA	NA
Digital Multimeter FLUKE	87III	73680266	Nov. 10, 2016	Nov. 09, 2017

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. *The calibration interval of the above test instruments is 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. The test was performed in 966 Chamber No. 4.
4. The CANADA Site Registration No. is 20331-2
5. Loop antenna was used for all emissions below 30 MHz.
6 Tested Date: July 29 to 31, 2017

4.1.3 Test Procedure

For Radiated emission below 30MHz

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

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

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

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

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

NOTE:

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

For Radiated emission above 30MHz

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

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

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

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

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

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

Note:

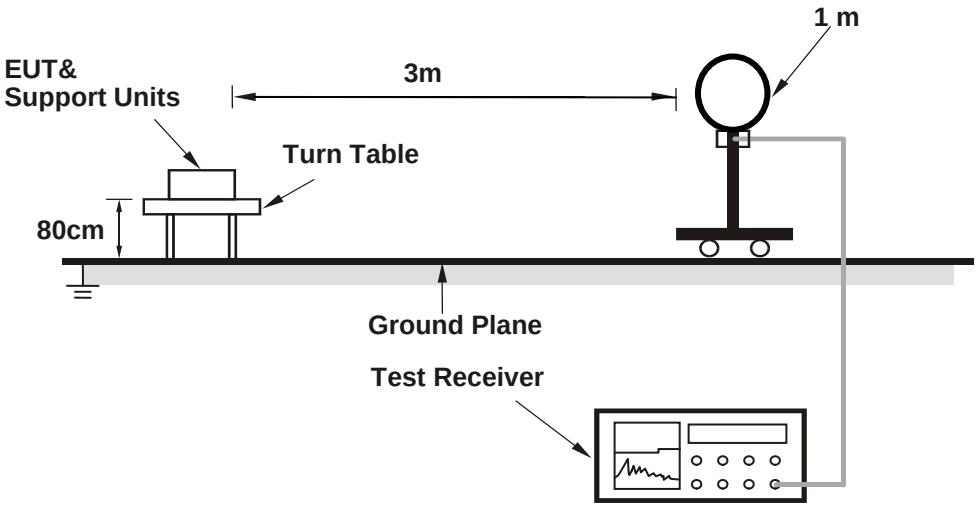
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

4.1.4 Deviation from Test Standard

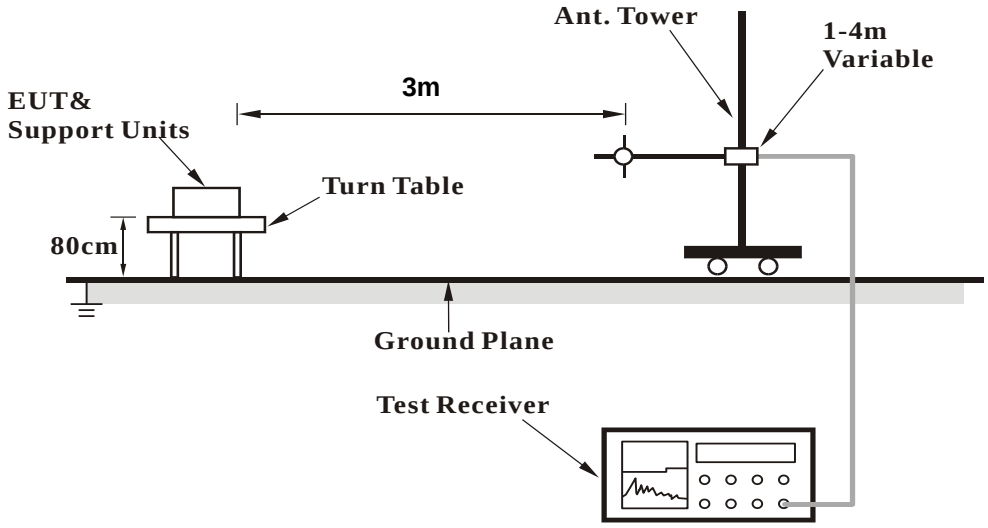
No deviation.

4.1.5 Test Setup

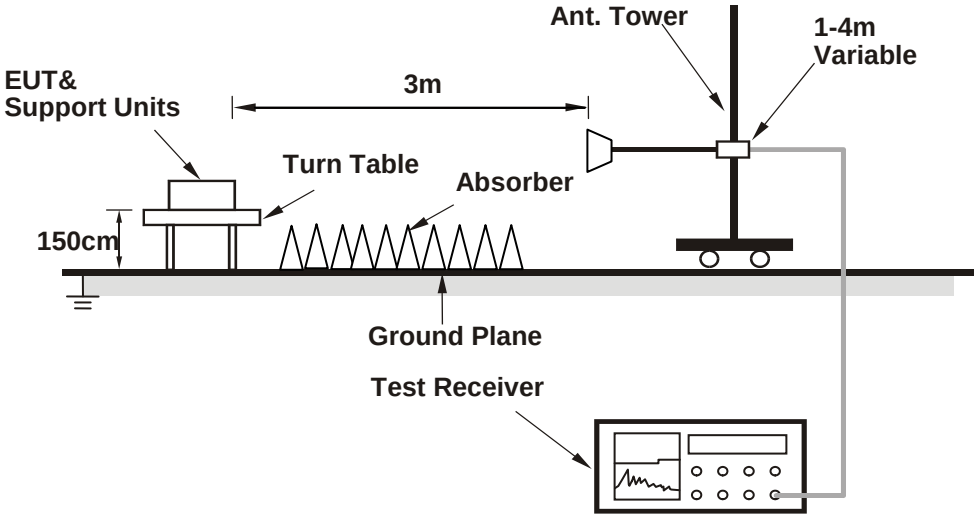
For Radiated Emission below 30MHz



For Radiated Emission 30MHz to 1GHz



For Radiated Emission above 1GHz



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

4.1.6 EUT Operating Condition

a. The EUT is placed on testing table.
b. Contorlling software (Telnet paste2.4G&5G.txt command) has been activated to set the EUT on specific status.

4.1.7 Test Results

Above 1GHz Data:

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	5150.00	52.2 PK	74.0	-21.8	1.01 H	216	48.2	4.0
2	5150.00	42.2 AV	54.0	-11.8	1.01 H	216	38.2	4.0
3	*5180.00	105.4 PK			1.01 H	216	101.4	4.0
4	*5180.00	96.1 AV			1.01 H	216	92.1	4.0
5	#10360.00	66.9 PK	74.0	-7.1	1.21 H	102	53.3	13.6
6	**#10360.00**	**53.9 AV**	**54.0**	**-0.1**	**1.21 H**	**102**	**40.3**	**13.6**
7	15540.00	55.7 PK	74.0	-18.3	2.94 H	353	42.5	13.2
8	15540.00	41.8 AV	54.0	-12.2	2.94 H	353	28.6	13.2
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	49.2 PK	74.0	-24.8	2.32 V	73	45.2	4.0
2	5150.00	40.3 AV	54.0	-13.7	2.32 V	73	36.3	4.0
3	*5180.00	101.6 PK			2.32 V	73	97.6	4.0
4	*5180.00	94.5 AV			2.32 V	73	90.5	4.0
5	#10360.00	66.1 PK	74.0	-7.9	2.17 V	358	52.5	13.6
6	#10360.00	53.1 AV	54.0	-0.9	2.17 V	358	39.5	13.6
7	15540.00	54.2 PK	74.0	-19.8	1.37 V	242	41.0	13.2
8	15540.00	40.6 AV	54.0	-13.4	1.37 V	242	27.4	13.2

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	104.4 PK			1.01 H	217	100.4	4.0
2	*5200.00	95.3 AV			1.01 H	217	91.3	4.0
3	#10400.00	66.7 PK	74.0	-7.3	1.10 H	104	53.1	13.6
4	**#10400.00**	**53.9 AV**	**54.0**	**-0.1**	**1.10 H**	**104**	**40.3**	**13.6**
5	15600.00	55.4 PK	74.0	-18.6	2.98 H	351	42.0	13.4
6	15600.00	41.6 AV	54.0	-12.4	2.98 H	351	28.2	13.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	100.6 PK			2.36 V	67	96.6	4.0
2	*5200.00	93.9 AV			2.36 V	67	89.9	4.0
3	#10400.00	66.4 PK	74.0	-7.6	2.18 V	348	52.8	13.6
4	#10400.00	53.3 AV	54.0	-0.7	2.18 V	348	39.7	13.6
5	15600.00	61.7 PK	74.0	-12.3	2.64 V	351	48.3	13.4
6	15600.00	48.5 AV	54.0	-5.5	2.64 V	351	35.1	13.4

REMARKS:

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

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	104.9 PK			1.10 H	220	100.7	4.2
2	*5240.00	97.8 AV			1.10 H	220	93.6	4.2
3	5350.00	49.8 PK	74.0	-24.2	1.10 H	220	45.4	4.4
4	5350.00	38.7 AV	54.0	-15.3	1.10 H	220	34.3	4.4
5	#10480.00	59.7 PK	74.0	-14.3	1.16 H	102	46.0	13.7
6	#10480.00	45.9 AV	54.0	-8.1	1.16 H	102	32.2	13.7
7	15720.00	60.9 PK	74.0	-13.1	2.84 H	349	46.9	14.0
8	15720.00	47.4 AV	54.0	-6.6	2.84 H	349	33.4	14.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	101.0 PK			2.34 V	78	96.8	4.2
2	*5240.00	96.3 AV			2.34 V	78	92.1	4.2
3	5350.00	46.9 PK	74.0	-27.1	2.34 V	64	42.5	4.4
4	5350.00	36.8 AV	54.0	-17.2	2.34 V	64	32.4	4.4
5	#10480.00	54.6 PK	74.0	-19.4	1.42 V	245	40.9	13.7
6	#10480.00	41.0 AV	54.0	-13.0	1.42 V	245	27.3	13.7
7	15720.00	66.5 PK	74.0	-7.5	2.59 V	351	52.5	14.0
8	15720.00	53.8 AV	54.0	-0.2	2.59 V	351	39.8	14.0

REMARKS:

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

CHANNEL	TX Channel 52	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	49.8 PK	74.0	-24.2	1.38 H	231	45.8	4.0
2	5150.00	36.3 AV	54.0	-17.7	1.38 H	231	32.3	4.0
3	*5260.00	104.4 PK			1.38 H	231	100.2	4.2
4	*5260.00	96.7 AV			1.38 H	231	92.5	4.2
5	#10520.00	59.6 PK	74.0	-14.4	1.23 H	134	45.8	13.8
6	#10520.00	46.0 AV	54.0	-8.0	1.23 H	134	32.2	13.8
7	15780.00	60.7 PK	74.0	-13.3	2.02 H	344	46.6	14.1
8	15780.00	47.1 AV	54.0	-6.9	2.02 H	344	33.0	14.1
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	49.5 PK	74.0	-24.5	1.22 V	321	45.5	4.0
2	5150.00	36.0 AV	54.0	-18.0	1.22 V	321	32.0	4.0
3	*5260.00	103.3 PK			1.22 V	321	99.1	4.2
4	*5260.00	95.0 AV			1.22 V	321	90.8	4.2
5	#10520.00	54.0 PK	74.0	-20.0	1.35 V	230	40.2	13.8
6	#10520.00	40.3 AV	54.0	-13.7	1.35 V	230	26.5	13.8
7	15780.00	65.9 PK	74.0	-8.1	3.49 V	356	51.8	14.1
8	**15780.00**	**53.9 AV**	**54.0**	**-0.1**	**3.49 V**	**356**	**39.8**	**14.1**

REMARKS:

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

CHANNEL	TX Channel 60	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	102.9 PK			1.42 H	233	98.6	4.3
2	*5300.00	96.2 AV			1.42 H	233	91.9	4.3
3	10600.00	59.9 PK	74.0	-14.1	1.17 H	122	46.1	13.8
4	10600.00	46.2 AV	54.0	-7.8	1.17 H	122	32.4	13.8
5	15900.00	63.8 PK	74.0	-10.2	1.98 H	142	50.6	13.2
6	15900.00	49.7 AV	54.0	-4.3	1.98 H	142	36.5	13.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	101.7 PK			1.28 V	313	97.4	4.3
2	*5300.00	94.5 AV			1.28 V	313	90.2	4.3
3	10600.00	62.7 PK	74.0	-11.3	2.45 V	352	48.9	13.8
4	10600.00	50.3 AV	54.0	-3.7	2.45 V	352	36.5	13.8
5	15900.00	68.2 PK	74.0	-5.8	2.63 V	350	55.0	13.2
6	15900.00	53.8 AV	54.0	-0.2	2.63 V	350	40.6	13.2

REMARKS:

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

CHANNEL	TX Channel 64	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	103.2 PK			1.45 H	222	98.9	4.3
2	*5320.00	95.9 AV			1.45 H	222	91.6	4.3
3	5350.00	53.0 PK	74.0	-21.0	1.45 H	222	48.6	4.4
4	5350.00	41.3 AV	54.0	-12.7	1.45 H	222	36.9	4.4
5	10640.00	59.8 PK	74.0	-14.2	1.19 H	130	45.8	14.0
6	10640.00	46.1 AV	54.0	-7.9	1.19 H	130	32.1	14.0
7	15960.00	63.8 PK	74.0	-10.2	2.91 H	348	50.3	13.5
8	15960.00	50.8 AV	54.0	-3.2	2.91 H	348	37.3	13.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	102.1 PK			1.28 V	334	97.8	4.3
2	*5320.00	94.3 AV			1.28 V	334	90.0	4.3
3	5350.00	50.1 PK	74.0	-23.9	1.28 V	334	45.7	4.4
4	5350.00	39.4 AV	54.0	-14.6	1.28 V	334	35.0	4.4
5	10640.00	63.1 PK	74.0	-10.9	3.93 V	152	49.1	14.0
6	10640.00	50.1 AV	54.0	-3.9	3.93 V	152	36.1	14.0
7	15960.00	68.6 PK	74.0	-5.4	2.78 V	349	55.1	13.5
8	**15960.00**	**53.9 AV**	**54.0**	**-0.1**	**2.78 V**	**349**	**40.4**	**13.5**

REMARKS:

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

CHANNEL	TX Channel 100	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	48.8 PK	74.0	-25.2	1.35 H	250	44.3	4.5
2	#5470.00	39.2 AV	54.0	-14.8	1.35 H	250	34.7	4.5
3	*5500.00	94.2 PK			1.35 H	250	89.7	4.5
4	*5500.00	86.7 AV			1.35 H	250	82.2	4.5
5	11000.00	59.0 PK	74.0	-15.0	2.96 H	232	44.2	14.8
6	11000.00	47.9 AV	54.0	-6.1	2.96 H	232	33.1	14.8
7	#16500.00	49.5 PK	74.0	-24.5	2.53 H	360	33.9	15.6
8	#16500.00	36.5 AV	54.0	-17.5	2.53 H	360	20.9	15.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	45.9 PK	74.0	-28.1	1.18 V	318	41.4	4.5
2	#5470.00	37.4 AV	54.0	-16.6	1.18 V	318	32.9	4.5
3	*5500.00	93.1 PK			1.18 V	318	88.6	4.5
4	*5500.00	85.2 AV			1.18 V	318	80.7	4.5
5	11000.00	63.9 PK	74.0	-10.1	1.18 V	128	49.1	14.8
6	11000.00	53.6 AV	54.0	-0.4	1.18 V	128	38.8	14.8
7	#16500.00	46.9 PK	74.0	-27.1	1.50 V	181	31.3	15.6
8	#16500.00	37.2 AV	54.0	-16.8	1.50 V	181	21.6	15.6

REMARKS:

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

CHANNEL	TX Channel 116	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	95.5 PK			1.01 H	250	90.9	4.6
2	*5580.00	88.6 AV			1.01 H	250	84.0	4.6
3	11160.00	62.8 PK	74.0	-11.2	2.99 H	227	48.4	14.4
4	11160.00	52.6 AV	54.0	-1.4	2.99 H	227	38.2	14.4
5	#16740.00	63.7 PK	74.0	-10.3	2.50 H	360	47.2	16.5
6	#16740.00	53.0 AV	54.0	-1.0	2.50 H	360	36.5	16.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	94.4 PK			1.25 V	323	89.8	4.6
2	*5580.00	87.4 AV			1.25 V	323	82.8	4.6
3	11160.00	66.8 PK	74.0	-7.2	1.17 V	132	52.4	14.4
4	11160.00	53.6 AV	54.0	-0.4	1.17 V	132	39.2	14.4
5	#16740.00	64.3 PK	74.0	-9.7	1.28 V	181	47.8	16.5
6	#16740.00	49.3 AV	54.0	-4.7	1.28 V	181	32.8	16.5

REMARKS:

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

CHANNEL	TX Channel 140	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	100.8 PK			1.32 H	252	96.0	4.8
2	*5700.00	92.7 AV			1.32 H	252	87.9	4.8
3	#5725.00	49.7 PK	74.0	-24.3	1.32 H	252	44.8	4.9
4	#5725.00	40.3 AV	54.0	-13.7	1.32 H	252	35.4	4.9
5	11400.00	60.0 PK	74.0	-14.0	1.26 H	143	45.6	14.4
6	11400.00	46.1 AV	54.0	-7.9	1.26 H	143	31.7	14.4
7	#17100.00	60.3 PK	74.0	-13.7	2.03 H	345	41.8	18.5
8	#17100.00	46.9 AV	54.0	-7.1	2.03 H	345	28.4	18.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	99.6 PK			1.16 V	317	94.8	4.8
2	*5700.00	91.2 AV			1.16 V	317	86.4	4.8
3	#5725.00	46.8 PK	74.0	-27.2	1.16 V	317	41.9	4.9
4	#5725.00	38.5 AV	54.0	-15.5	1.16 V	317	33.6	4.9
5	11400.00	60.8 PK	74.0	-13.2	1.33 V	169	46.4	14.4
6	11400.00	49.6 AV	54.0	-4.4	1.33 V	169	35.2	14.4
7	#17100.00	65.2 PK	74.0	-8.8	1.20 V	132	46.7	18.5
8	#17100.00	53.6 AV	54.0	-0.4	1.20 V	132	35.1	18.5

REMARKS:

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

CHANNEL	TX Channel 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	#5622.64	51.7 PK	68.2	-16.5	1.12 H	232	47.0	4.7
2	*5745.00	98.0 PK			1.12 H	232	93.0	5.0
3	*5745.00	91.2 AV			1.12 H	232	86.2	5.0
4	#6007.86	51.2 PK	68.2	-17.0	1.12 H	232	45.5	5.7
5	11490.00	63.6 PK	74.0	-10.4	1.08 H	226	49.5	14.1
6	11490.00	52.4 AV	54.0	-1.6	1.08 H	226	38.3	14.1
7	#17235.00	67.3 PK	74.0	-6.7	1.95 H	166	49.0	18.3
8	#17235.00	53.7 AV	54.0	-0.3	1.95 H	166	35.4	18.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5603.72	51.9 PK	68.2	-16.3	1.04 V	159	47.3	4.6
2	*5745.00	94.1 PK			1.04 V	159	89.1	5.0
3	*5745.00	87.0 AV			1.04 V	159	82.0	5.0
4	#5936.40	50.7 PK	68.2	-17.5	1.04 V	159	45.3	5.4
5	11490.00	63.8 PK	74.0	-10.2	1.17 V	134	49.7	14.1
6	11490.00	51.2 AV	54.0	-2.8	1.17 V	134	37.1	14.1
7	#17235.00	66.8 PK	74.0	-7.2	1.30 V	176	48.5	18.3
8	#17235.00	52.4 AV	54.0	-1.6	1.30 V	176	34.1	18.3

REMARKS:

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

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	#5556.41	51.8 PK	68.2	-16.4	1.09 H	233	47.2	4.6
2	*5785.00	98.5 PK			1.09 H	233	93.5	5.0
3	*5785.00	90.9 AV			1.09 H	233	85.9	5.0
4	#5979.06	51.4 PK	68.2	-16.8	1.09 H	233	45.9	5.5
5	11570.00	64.3 PK	74.0	-9.7	1.10 H	224	50.3	14.0
6	11570.00	52.9 AV	54.0	-1.1	1.10 H	224	38.9	14.0
7	#17355.00	68.3 PK	74.0	-5.7	1.93 H	167	49.4	18.9
8	#17355.00	53.6 AV	54.0	-0.4	1.93 H	167	34.7	18.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5601.02	52.0 PK	68.2	-16.2	1.12 V	134	47.4	4.6
2	*5785.00	95.7 PK			1.12 V	134	90.7	5.0
3	*5785.00	88.6 AV			1.12 V	134	83.6	5.0
4	#5996.82	50.6 PK	68.2	-17.6	1.12 V	134	45.0	5.6
5	11570.00	64.5 PK	74.0	-9.5	1.21 V	150	50.5	14.0
6	11570.00	51.7 AV	54.0	-2.3	1.21 V	150	37.7	14.0
7	#17355.00	67.2 PK	74.0	-6.8	1.31 V	167	48.3	18.9
8	#17355.00	53.1 AV	54.0	-0.9	1.31 V	167	34.2	18.9

REMARKS:

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

CHANNEL	TX Channel 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	#5634.91	51.6 PK	68.2	-16.6	1.01 H	235	46.8	4.8
2	*5825.00	98.4 PK			1.01 H	235	93.2	5.2
3	*5825.00	90.5 AV			1.01 H	235	85.3	5.2
4	#5982.11	51.1 PK	68.2	-17.1	1.01 H	235	45.5	5.6
5	11650.00	64.1 PK	74.0	-9.9	1.10 H	217	50.0	14.1
6	11650.00	52.6 AV	54.0	-1.4	1.10 H	217	38.5	14.1
7	#17475.00	68.1 PK	74.0	-5.9	2.00 H	172	48.4	19.7
8	#17475.00	53.7 AV	54.0	-0.3	2.00 H	172	34.0	19.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5552.68	52.3 PK	68.2	-15.9	1.40 V	162	47.8	4.5
2	*5825.00	94.5 PK			1.40 V	162	89.3	5.2
3	*5825.00	87.3 AV			1.40 V	162	82.1	5.2
4	#6000.83	50.5 PK	68.2	-17.7	1.40 V	162	44.9	5.6
5	11650.00	63.7 PK	74.0	-10.3	1.16 V	147	49.6	14.1
6	11650.00	51.4 AV	54.0	-2.6	1.16 V	147	37.3	14.1
7	#17475.00	67.1 PK	74.0	-6.9	1.26 V	183	47.4	19.7
8	#17475.00	52.9 AV	54.0	-1.1	1.26 V	183	33.2	19.7

REMARKS:

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

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	54.8 PK	74.0	-19.2	1.06 H	216	50.8	4.0
2	5150.00	43.4 AV	54.0	-10.6	1.06 H	216	39.4	4.0
3	*5180.00	104.2 PK			1.06 H	216	100.2	4.0
4	*5180.00	96.4 AV			1.06 H	216	92.4	4.0
5	#10360.00	68.4 PK	74.0	-5.6	1.19 H	99	54.8	13.6
6	**#10360.00**	**53.9 AV**	**54.0**	**-0.1**	**1.19 H**	**99**	**40.3**	**13.6**
7	15540.00	64.8 PK	74.0	-9.2	1.99 H	202	51.6	13.2
8	15540.00	51.0 AV	54.0	-3.0	1.99 H	202	37.8	13.2
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	51.9 PK	74.0	-22.1	2.37 V	78	47.9	4.0
2	5150.00	41.6 AV	54.0	-12.4	2.37 V	78	37.6	4.0
3	*5180.00	100.4 PK			2.37 V	78	96.4	4.0
4	*5180.00	94.7 AV			2.37 V	78	90.7	4.0
5	#10360.00	65.3 PK	74.0	-8.7	1.35 V	345	51.7	13.6
6	#10360.00	50.8 AV	54.0	-3.2	1.35 V	345	37.2	13.6
7	15540.00	60.9 PK	74.0	-13.1	2.06 V	142	47.7	13.2
8	15540.00	46.9 AV	54.0	-7.1	2.06 V	142	33.7	13.2

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	102.6 PK			1.04 H	229	98.6	4.0
2	*5200.00	95.2 AV			1.04 H	229	91.2	4.0
3	#10400.00	68.0 PK	74.0	-6.0	1.16 H	105	54.4	13.6
4	**#10400.00**	**53.9 AV**	**54.0**	**-0.1**	**1.16 H**	**105**	**40.3**	**13.6**
5	15600.00	60.5 PK	74.0	-13.5	1.98 H	201	47.1	13.4
6	15600.00	48.5 AV	54.0	-5.5	1.98 H	201	35.1	13.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5200.00	98.6 PK			2.26 V	65	94.6	4.0
2	*5200.00	93.6 AV			2.26 V	65	89.6	4.0
3	#10400.00	64.9 PK	74.0	-9.1	1.41 V	360	51.3	13.6
4	#10400.00	50.5 AV	54.0	-3.5	1.41 V	360	36.9	13.6
5	15600.00	60.4 PK	74.0	-13.6	2.03 V	144	47.0	13.4
6	15600.00	46.7 AV	54.0	-7.3	2.03 V	144	33.3	13.4

REMARKS:

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

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	105.8 PK			1.06 H	195	101.6	4.2
2	*5240.00	98.0 AV			1.06 H	195	93.8	4.2
3	5350.00	49.6 PK	74.0	-24.4	1.06 H	195	45.2	4.4
4	5350.00	38.5 AV	54.0	-15.5	1.06 H	195	34.1	4.4
5	#10480.00	66.9 PK	74.0	-7.1	1.07 H	111	53.2	13.7
6	#10480.00	53.2 AV	54.0	-0.8	1.07 H	111	39.5	13.7
7	15720.00	60.8 PK	74.0	-13.2	2.01 H	191	46.8	14.0
8	15720.00	48.6 AV	54.0	-5.4	2.01 H	191	34.6	14.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	102.4 PK			2.35 V	58	98.2	4.2
2	*5240.00	96.5 AV			2.35 V	58	92.3	4.2
3	5350.00	46.7 PK	74.0	-27.3	2.35 V	58	42.3	4.4
4	5350.00	36.8 AV	54.0	-17.2	2.35 V	58	32.4	4.4
5	#10480.00	65.0 PK	74.0	-9.0	1.41 V	344	51.3	13.7
6	#10480.00	50.4 AV	54.0	-3.6	1.41 V	344	36.7	13.7
7	15720.00	68.3 PK	74.0	-5.7	2.66 V	341	54.3	14.0
8	**15720.00**	**53.9 AV**	**54.0**	**-0.1**	**2.66 V**	**341**	**39.9**	**14.0**

REMARKS:

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

CHANNEL	TX Channel 52	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	48.7 PK	74.0	-25.3	1.11 H	196	44.7	4.0
2	5150.00	38.6 AV	54.0	-15.4	1.11 H	196	34.6	4.0
3	*5260.00	105.2 PK			1.11 H	196	101.0	4.2
4	*5260.00	97.3 AV			1.11 H	196	93.1	4.2
5	#10520.00	67.0 PK	74.0	-7.0	1.06 H	121	53.2	13.8
6	#10520.00	53.1 AV	54.0	-0.9	1.06 H	121	39.3	13.8
7	15780.00	61.4 PK	74.0	-12.6	2.04 H	202	47.3	14.1
8	15780.00	49.1 AV	54.0	-4.9	2.04 H	202	35.0	14.1
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	45.8 PK	74.0	-28.2	2.62 V	99	41.8	4.0
2	5150.00	36.8 AV	54.0	-17.2	2.62 V	99	32.8	4.0
3	*5260.00	102.1 PK			2.62 V	99	97.9	4.2
4	*5260.00	95.8 AV			2.62 V	99	91.6	4.2
5	#10520.00	65.2 PK	74.0	-8.8	1.46 V	343	51.4	13.8
6	#10520.00	50.5 AV	54.0	-3.5	1.46 V	343	36.7	13.8
7	15780.00	68.3 PK	74.0	-5.7	2.63 V	340	54.2	14.1
8	15780.00	53.7 AV	54.0	-0.3	2.63 V	340	39.6	14.1

REMARKS:

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

CHANNEL	TX Channel 60	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	103.8 PK			1.09 H	222	99.5	4.3
2	*5300.00	96.3 AV			1.09 H	222	92.0	4.3
3	10600.00	66.9 PK	74.0	-7.1	1.09 H	125	53.1	13.8
4	10600.00	53.2 AV	54.0	-0.8	1.09 H	125	39.4	13.8
5	15900.00	60.9 PK	74.0	-13.1	2.02 H	200	47.7	13.2
6	15900.00	48.6 AV	54.0	-5.4	2.02 H	200	35.4	13.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	100.2 PK			2.37 V	87	95.9	4.3
2	*5300.00	94.6 AV			2.37 V	87	90.3	4.3
3	10600.00	64.6 PK	74.0	-9.4	1.42 V	345	50.8	13.8
4	10600.00	50.2 AV	54.0	-3.8	1.42 V	345	36.4	13.8
5	15900.00	69.0 PK	74.0	-5.0	2.63 V	340	55.8	13.2
6	**15900.00**	**53.9 AV**	**54.0**	**-0.1**	**2.63 V**	**340**	**40.7**	**13.2**

REMARKS:

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

CHANNEL	TX Channel 64	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	103.5 PK			1.05 H	195	99.2	4.3
2	*5320.00	95.8 AV			1.05 H	195	91.5	4.3
3	5350.00	50.9 PK	74.0	-23.1	1.05 H	195	46.5	4.4
4	5350.00	40.7 AV	54.0	-13.3	1.05 H	195	36.3	4.4
5	10640.00	66.8 PK	74.0	-7.2	1.04 H	106	52.8	14.0
6	10640.00	52.8 AV	54.0	-1.2	1.04 H	106	38.8	14.0
7	15960.00	61.1 PK	74.0	-12.9	2.08 H	195	47.6	13.5
8	15960.00	48.9 AV	54.0	-5.1	2.08 H	195	35.4	13.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	99.8 PK			2.28 V	61	95.5	4.3
2	*5320.00	94.2 AV			2.28 V	61	89.9	4.3
3	5350.00	47.8 PK	74.0	-26.2	2.28 V	61	43.4	4.4
4	5350.00	38.9 AV	54.0	-15.1	2.28 V	61	34.5	4.4
5	10640.00	64.7 PK	74.0	-9.3	1.49 V	346	50.7	14.0
6	10640.00	50.2 AV	54.0	-3.8	1.49 V	346	36.2	14.0
7	15960.00	68.8 PK	74.0	-5.2	2.64 V	340	55.3	13.5
8	15960.00	53.8 AV	54.0	-0.2	2.64 V	340	40.3	13.5

REMARKS:

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

CHANNEL	TX Channel 100	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	50.3 PK	74.0	-23.7	1.10 H	201	45.8	4.5
2	#5470.00	38.9 AV	54.0	-15.1	1.10 H	201	34.4	4.5
3	*5500.00	96.8 PK			1.10 H	201	92.3	4.5
4	*5500.00	89.3 AV			1.10 H	201	84.8	4.5
5	11000.00	59.3 PK	74.0	-14.7	3.01 H	239	44.5	14.8
6	11000.00	48.3 AV	54.0	-5.7	3.01 H	239	33.5	14.8
7	#16500.00	49.2 PK	74.0	-24.8	2.57 H	360	33.6	15.6
8	#16500.00	36.3 AV	54.0	-17.7	2.57 H	360	20.7	15.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	47.4 PK	74.0	-26.6	2.31 V	74	42.9	4.5
2	#5470.00	37.2 AV	54.0	-16.8	2.31 V	74	32.7	4.5
3	*5500.00	93.1 PK			2.31 V	74	88.6	4.5
4	*5500.00	87.7 AV			2.31 V	74	83.2	4.5
5	11000.00	62.9 PK	74.0	-11.1	1.03 V	131	48.1	14.8
6	11000.00	53.6 AV	54.0	-0.4	1.03 V	131	38.8	14.8
7	#16500.00	46.3 PK	74.0	-27.7	1.52 V	185	30.7	15.6
8	#16500.00	36.8 AV	54.0	-17.2	1.52 V	185	21.2	15.6

REMARKS:

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

CHANNEL	TX Channel 116	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	97.4 PK			1.01 H	228	92.8	4.6
2	*5580.00	90.1 AV			1.01 H	228	85.5	4.6
3	11160.00	63.0 PK	74.0	-11.0	3.02 H	224	48.6	14.4
4	11160.00	52.5 AV	54.0	-1.5	3.02 H	224	38.1	14.4
5	#16740.00	63.4 PK	74.0	-10.6	2.51 H	355	46.9	16.5
6	#16740.00	52.6 AV	54.0	-1.4	2.51 H	355	36.1	16.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	93.7 PK			2.32 V	79	89.1	4.6
2	*5580.00	88.6 AV			2.32 V	79	84.0	4.6
3	11160.00	66.6 PK	74.0	-7.4	2.58 V	170	52.2	14.4
4	11160.00	53.7 AV	54.0	-0.3	2.58 V	170	39.3	14.4
5	#16740.00	64.6 PK	74.0	-9.4	2.72 V	360	48.1	16.5
6	#16740.00	49.4 AV	54.0	-4.6	2.72 V	360	32.9	16.5

REMARKS:

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

CHANNEL	TX Channel 140	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	100.0 PK			1.24 H	172	95.2	4.8
2	*5700.00	92.6 AV			1.24 H	172	87.8	4.8
3	#5725.00	50.2 PK	74.0	-23.8	1.24 H	172	45.3	4.9
4	#5725.00	42.6 AV	54.0	-11.4	1.24 H	172	37.7	4.9
5	11400.00	63.8 PK	74.0	-10.2	1.21 H	153	49.4	14.4
6	11400.00	53.0 AV	54.0	-1.0	1.21 H	153	38.6	14.4
7	#17100.00	62.3 PK	74.0	-11.7	2.02 H	347	43.8	18.5
8	#17100.00	51.0 AV	54.0	-3.0	2.02 H	347	32.5	18.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	96.3 PK			2.37 V	70	91.5	4.8
2	*5700.00	91.1 AV			2.37 V	70	86.3	4.8
3	#5725.00	47.3 PK	74.0	-26.7	2.37 V	70	42.4	4.9
4	#5725.00	40.7 AV	54.0	-13.3	2.37 V	70	35.8	4.9
5	11400.00	65.2 PK	74.0	-8.8	2.57 V	182	50.8	14.4
6	11400.00	50.2 AV	54.0	-3.8	2.57 V	182	35.8	14.4
7	#17100.00	67.9 PK	74.0	-6.1	2.76 V	360	49.4	18.5
8	#17100.00	53.5 AV	54.0	-0.5	2.76 V	360	35.0	18.5

REMARKS:

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

CHANNEL	TX Channel 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	#5618.04	51.3 PK	68.2	-16.9	1.39 H	176	46.6	4.7
2	*5745.00	100.1 PK			1.39 H	176	95.1	5.0
3	*5745.00	91.7 AV			1.39 H	176	86.7	5.0
4	#5952.54	52.1 PK	68.2	-16.1	1.39 H	176	46.7	5.4
5	11490.00	65.5 PK	74.0	-8.5	1.22 H	229	51.4	14.1
6	11490.00	50.5 AV	54.0	-3.5	1.22 H	229	36.4	14.1
7	#17235.00	67.8 PK	74.0	-6.2	2.02 H	178	49.5	18.3
8	#17235.00	53.2 AV	54.0	-0.8	2.02 H	178	34.9	18.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5623.85	51.6 PK	68.2	-16.6	1.41 V	131	46.9	4.7
2	*5745.00	96.2 PK			1.41 V	131	91.2	5.0
3	*5745.00	88.7 AV			1.41 V	131	83.7	5.0
4	#5925.25	50.6 PK	68.2	-17.6	1.41 V	131	45.2	5.4
5	11490.00	63.3 PK	74.0	-10.7	2.14 V	183	49.2	14.1
6	11490.00	49.3 AV	54.0	-4.7	2.14 V	183	35.2	14.1
7	#17235.00	64.3 PK	74.0	-9.7	1.38 V	184	46.0	18.3
8	#17235.00	51.3 AV	54.0	-2.7	1.38 V	184	33.0	18.3

REMARKS:

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

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	#5569.34	52.0 PK	68.2	-16.2	1.32 H	176	47.4	4.6
2	*5785.00	101.0 PK			1.32 H	176	96.0	5.0
3	*5785.00	91.8 AV			1.32 H	176	86.8	5.0
4	#5984.71	50.4 PK	68.2	-17.8	1.32 H	176	44.8	5.6
5	11570.00	65.7 PK	74.0	-8.3	1.19 H	241	51.7	14.0
6	11570.00	50.9 AV	54.0	-3.1	1.19 H	241	36.9	14.0
7	#17355.00	67.9 PK	74.0	-6.1	1.98 H	170	49.0	18.9
8	#17355.00	53.2 AV	54.0	-0.8	1.98 H	170	34.3	18.9
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5592.05	51.4 PK	68.2	-16.8	1.43 V	154	46.8	4.6
2	*5785.00	94.2 PK			1.43 V	154	89.2	5.0
3	*5785.00	86.4 AV			1.43 V	154	81.4	5.0
4	#5954.15	51.2 PK	68.2	-17.0	1.43 V	154	45.8	5.4
5	11570.00	63.4 PK	74.0	-10.6	2.08 V	173	49.4	14.0
6	11570.00	49.3 AV	54.0	-4.7	2.08 V	173	35.3	14.0
7	#17355.00	65.0 PK	74.0	-9.0	1.41 V	170	46.1	18.9
8	#17355.00	51.7 AV	54.0	-2.3	1.41 V	170	32.8	18.9

REMARKS:

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

CHANNEL	TX Channel 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	#5634.56	51.5 PK	68.2	-16.7	1.00 H	233	46.7	4.8
2	*5825.00	99.9 PK			1.00 H	233	94.7	5.2
3	*5825.00	90.8 AV			1.00 H	233	85.6	5.2
4	#5980.39	50.6 PK	68.2	-17.6	1.00 H	233	45.1	5.5
5	11650.00	65.0 PK	74.0	-9.0	1.24 H	232	50.9	14.1
6	11650.00	50.1 AV	54.0	-3.9	1.24 H	232	36.0	14.1
7	#17475.00	68.2 PK	74.0	-5.8	2.08 H	177	48.5	19.7
8	#17475.00	53.6 AV	54.0	-0.4	2.08 H	177	33.9	19.7
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5576.33	51.3 PK	68.2	-16.9	1.20 V	133	46.7	4.6
2	*5825.00	95.2 PK			1.20 V	133	90.0	5.2
3	*5825.00	87.8 AV			1.20 V	133	82.6	5.2
4	#5929.09	52.0 PK	68.2	-16.2	1.20 V	133	46.6	5.4
5	11650.00	63.3 PK	74.0	-10.7	2.13 V	187	49.2	14.1
6	11650.00	49.3 AV	54.0	-4.7	2.13 V	187	35.2	14.1
7	#17475.00	64.7 PK	74.0	-9.3	1.40 V	171	45.0	19.7
8	#17475.00	51.8 AV	54.0	-2.2	1.40 V	171	32.1	19.7

REMARKS:

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

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	64.9 PK	74.0	-9.1	2.56 H	210	60.9	4.0
2	**5150.00**	**53.9 AV**	**54.0**	**-0.1**	**2.56 H**	**210**	**49.9**	**4.0**
3	*5190.00	102.4 PK			2.56 H	210	98.4	4.0
4	*5190.00	93.3 AV			2.56 H	210	89.3	4.0
5	5350.00	49.6 PK	74.0	-24.4	2.56 H	210	45.2	4.4
6	5350.00	37.2 AV	54.0	-16.8	2.56 H	210	32.8	4.4
7	#10380.00	64.3 PK	74.0	-9.7	1.26 H	98	50.7	13.6
8	#10380.00	52.8 AV	54.0	-1.2	1.26 H	98	39.2	13.6
9	15570.00	54.7 PK	74.0	-19.3	2.09 H	8	41.4	13.3
10	15570.00	42.7 AV	54.0	-11.3	2.09 H	8	29.4	13.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	62.2 PK	74.0	-11.8	1.24 V	305	58.2	4.0
2	5150.00	51.7 AV	54.0	-2.3	1.24 V	305	47.7	4.0
3	*5190.00	99.6 PK			1.24 V	305	95.6	4.0
4	*5190.00	90.8 AV			1.24 V	305	86.8	4.0
5	5350.00	49.4 PK	74.0	-24.6	1.24 V	305	45.0	4.4
6	5350.00	37.0 AV	54.0	-17.0	1.24 V	305	32.6	4.4
7	#10380.00	62.8 PK	74.0	-11.2	2.18 V	135	49.2	13.6
8	#10380.00	51.6 AV	54.0	-2.4	2.18 V	135	38.0	13.6
9	15570.00	59.7 PK	74.0	-14.3	2.85 V	336	46.4	13.3
10	15570.00	47.5 AV	54.0	-6.5	2.85 V	336	34.2	13.3

REMARKS:

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

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	48.9 PK	74.0	-25.1	2.70 H	241	44.9	4.0
2	5150.00	38.4 AV	54.0	-15.6	2.70 H	241	34.4	4.0
3	*5230.00	102.6 PK			2.70 H	241	98.4	4.2
4	*5230.00	93.7 AV			2.70 H	241	89.5	4.2
5	5350.00	50.7 PK	74.0	-23.3	2.70 H	241	46.3	4.4
6	5350.00	37.7 AV	54.0	-16.3	2.70 H	241	33.3	4.4
7	#10460.00	65.2 PK	74.0	-8.8	1.27 H	105	51.5	13.7
8	#10460.00	53.6 AV	54.0	-0.4	1.27 H	105	39.9	13.7
9	15690.00	55.8 PK	74.0	-18.2	2.04 H	22	41.8	14.0
10	15690.00	43.5 AV	54.0	-10.5	2.04 H	22	29.5	14.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	48.6 PK	74.0	-25.4	1.20 V	305	44.6	4.0
2	5150.00	38.2 AV	54.0	-15.8	1.20 V	305	34.2	4.0
3	*5230.00	99.9 PK			1.20 V	305	95.7	4.2
4	*5230.00	91.3 AV			1.20 V	305	87.1	4.2
5	5350.00	50.4 PK	74.0	-23.6	1.20 V	305	46.0	4.4
6	5350.00	37.5 AV	54.0	-16.5	1.20 V	305	33.1	4.4
7	#10460.00	63.5 PK	74.0	-10.5	2.19 V	120	49.8	13.7
8	#10460.00	52.2 AV	54.0	-1.8	2.19 V	120	38.5	13.7
9	15690.00	60.6 PK	74.0	-13.4	2.81 V	322	46.6	14.0
10	15690.00	48.2 AV	54.0	-5.8	2.81 V	322	34.2	14.0

REMARKS:

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

CHANNEL	TX Channel 54	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4806.00	49.5 PK	74.0	-24.5	2.68 H	236	46.3	3.2
2	4806.00	40.3 AV	54.0	-13.7	2.68 H	236	37.1	3.2
3	*5270.00	103.9 PK			2.68 H	236	99.7	4.2
4	*5270.00	94.5 AV			2.68 H	236	90.3	4.2
5	5350.00	51.9 PK	74.0	-22.1	2.68 H	236	47.5	4.4
6	5350.00	38.5 AV	54.0	-15.5	2.68 H	236	34.1	4.4
7	#10540.00	65.5 PK	74.0	-8.5	1.21 H	99	51.8	13.7
8	#10540.00	53.8 AV	54.0	-0.2	1.21 H	99	40.1	13.7
9	15810.00	55.9 PK	74.0	-18.1	2.03 H	17	41.9	14.0
10	15810.00	43.7 AV	54.0	-10.3	2.03 H	17	29.7	14.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4806.00	49.3 PK	74.0	-24.7	1.27 V	316	46.1	3.2
2	4806.00	40.1 AV	54.0	-13.9	1.27 V	316	36.9	3.2
3	*5270.00	101.2 PK			1.27 V	316	97.0	4.2
4	*5270.00	92.1 AV			1.27 V	316	87.9	4.2
5	5350.00	51.6 PK	74.0	-22.4	1.27 V	316	47.2	4.4
6	5350.00	38.2 AV	54.0	-15.8	1.27 V	316	33.8	4.4
7	#10540.00	63.6 PK	74.0	-10.4	2.20 V	129	49.9	13.7
8	#10540.00	52.1 AV	54.0	-1.9	2.20 V	129	38.4	13.7
9	15810.00	60.6 PK	74.0	-13.4	2.83 V	318	46.6	14.0
10	15810.00	47.9 AV	54.0	-6.1	2.83 V	318	33.9	14.0

REMARKS:

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

CHANNEL	TX Channel 62	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	102.8 PK			2.66 H	236	98.5	4.3
2	*5310.00	93.5 AV			2.66 H	236	89.2	4.3
3	5350.00	65.2 PK	74.0	-8.8	2.66 H	236	60.8	4.4
4	5350.00	53.7 AV	54.0	-0.3	2.66 H	236	49.3	4.4
5	10620.00	63.9 PK	74.0	-10.1	1.29 H	85	50.0	13.9
6	10620.00	52.5 AV	54.0	-1.5	1.29 H	85	38.6	13.9
7	15930.00	54.6 PK	74.0	-19.4	2.03 H	6	41.3	13.3
8	15930.00	42.3 AV	54.0	-11.7	2.03 H	6	29.0	13.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	100.0 PK			1.24 V	313	95.7	4.3
2	*5310.00	91.4 AV			1.24 V	313	87.1	4.3
3	5350.00	62.6 PK	74.0	-11.4	1.24 V	313	58.2	4.4
4	5350.00	51.5 AV	54.0	-2.5	1.24 V	313	47.1	4.4
5	10620.00	63.9 PK	74.0	-10.1	2.16 V	117	50.0	13.9
6	10620.00	52.4 AV	54.0	-1.6	2.16 V	117	38.5	13.9
7	15930.00	61.3 PK	74.0	-12.7	2.76 V	313	48.0	13.3
8	15930.00	48.7 AV	54.0	-5.3	2.76 V	313	35.4	13.3

REMARKS:

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

CHANNEL	TX Channel 102	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	68.9 PK	74.0	-5.1	2.64 H	230	64.4	4.5
2	#5470.00	53.8 AV	54.0	-0.2	2.64 H	230	49.3	4.5
3	*5510.00	99.2 PK			2.64 H	230	94.6	4.6
4	*5510.00	90.1 AV			2.64 H	230	85.5	4.6
5	11020.00	63.7 PK	74.0	-10.3	2.17 H	119	49.0	14.7
6	11020.00	52.2 AV	54.0	-1.8	2.17 H	119	37.5	14.7
7	#16530.00	61.1 PK	74.0	-12.9	2.71 H	300	45.3	15.8
8	#16530.00	48.7 AV	54.0	-5.3	2.71 H	300	32.9	15.8
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	66.1 PK	74.0	-7.9	1.24 V	293	61.6	4.5
2	#5470.00	51.7 AV	54.0	-2.3	1.24 V	293	47.2	4.5
3	*5510.00	96.5 PK			1.24 V	293	91.9	4.6
4	*5510.00	87.7 AV			1.24 V	293	83.1	4.6
5	11020.00	64.2 PK	74.0	-9.8	1.28 V	87	49.5	14.7
6	11020.00	52.6 AV	54.0	-1.4	1.28 V	87	37.9	14.7
7	#16530.00	54.9 PK	74.0	-19.1	2.08 V	3	39.1	15.8
8	#16530.00	42.5 AV	54.0	-11.5	2.08 V	3	26.7	15.8

REMARKS:

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

CHANNEL	TX Channel 110	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5550.00	102.8 PK			2.63 H	218	98.3	4.5
2	*5550.00	93.8 AV			2.63 H	218	89.3	4.5
3	11100.00	59.8 PK	74.0	-14.2	3.07 H	230	45.4	14.4
4	11100.00	48.7 AV	54.0	-5.3	3.07 H	230	34.3	14.4
5	#16650.00	48.8 PK	74.0	-25.2	2.56 H	360	32.4	16.4
6	#16650.00	36.1 AV	54.0	-17.9	2.56 H	360	19.7	16.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5550.00	100.1 PK			1.29 V	303	95.6	4.5
2	*5550.00	91.5 AV			1.29 V	303	87.0	4.5
3	11100.00	63.3 PK	74.0	-10.7	1.02 V	121	48.9	14.4
4	**11100.00**	**53.9 AV**	**54.0**	**-0.1**	**1.02 V**	**121**	**39.5**	**14.4**
5	#16650.00	46.0 PK	74.0	-28.0	1.57 V	191	29.6	16.4
6	#16650.00	36.5 AV	54.0	-17.5	1.57 V	191	20.1	16.4

REMARKS:

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

CHANNEL	TX Channel 134	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	102.1 PK			2.61 H	210	97.3	4.8
2	*5670.00	93.2 AV			2.61 H	210	88.4	4.8
3	#5725.00	50.5 PK	74.0	-23.5	2.61 H	210	45.6	4.9
4	#5725.00	42.8 AV	54.0	-11.2	2.61 H	210	37.9	4.9
5	11340.00	60.0 PK	74.0	-14.0	3.04 H	225	45.6	14.4
6	11340.00	49.2 AV	54.0	-4.8	3.04 H	225	34.8	14.4
7	#17010.00	48.7 PK	74.0	-25.3	2.54 H	360	30.5	18.2
8	#17010.00	36.2 AV	54.0	-17.8	2.54 H	360	18.0	18.2
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	99.4 PK			1.21 V	307	94.6	4.8
2	*5670.00	91.2 AV			1.21 V	307	86.4	4.8
3	#5725.00	47.1 PK	74.0	-26.9	1.21 V	307	42.2	4.9
4	#5725.00	40.3 AV	54.0	-13.7	1.21 V	307	35.4	4.9
5	11340.00	63.5 PK	74.0	-10.5	1.00 V	129	49.1	14.4
6	11340.00	53.7 AV	54.0	-0.3	1.00 V	129	39.3	14.4
7	#17010.00	45.7 PK	74.0	-28.3	1.52 V	206	27.5	18.2
8	#17010.00	36.4 AV	54.0	-17.6	1.52 V	206	18.2	18.2

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
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	#5599.15	52.3 PK	68.2	-15.9	1.06 H	157	47.7	4.6
2	*5755.00	98.2 PK			1.06 H	157	93.2	5.0
3	*5755.00	92.6 AV			1.06 H	157	87.6	5.0
4	#5941.95	51.1 PK	68.2	-17.1	1.06 H	157	45.7	5.4
5	11510.00	62.7 PK	74.0	-11.3	1.07 H	135	48.7	14.0
6	11510.00	52.5 AV	54.0	-1.5	1.07 H	135	38.5	14.0
7	#17265.00	67.8 PK	74.0	-6.2	2.04 H	176	49.3	18.5
8	#17265.00	53.8 AV	54.0	-0.2	2.04 H	176	35.3	18.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5626.81	52.4 PK	68.2	-15.8	1.21 V	134	47.7	4.7
2	*5755.00	94.5 PK			1.21 V	134	89.5	5.0
3	*5755.00	87.2 AV			1.21 V	134	82.2	5.0
4	#5995.38	51.0 PK	68.2	-17.2	1.21 V	134	45.4	5.6
5	11510.00	61.8 PK	74.0	-12.2	2.33 V	180	47.8	14.0
6	11510.00	50.9 AV	54.0	-3.1	2.33 V	180	36.9	14.0
7	#17265.00	64.5 PK	74.0	-9.5	2.13 V	152	46.0	18.5
8	#17265.00	53.0 AV	54.0	-1.0	2.13 V	152	34.5	18.5

REMARKS:

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

CHANNEL	TX Channel 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	#5623.76	52.4 PK	68.2	-15.8	1.04 H	158	47.7	4.7
2	*5795.00	97.6 PK			1.04 H	158	92.5	5.1
3	*5795.00	91.5 AV			1.04 H	158	86.4	5.1
4	#5984.29	51.6 PK	68.2	-16.6	1.04 H	158	46.0	5.6
5	11590.00	63.1 PK	74.0	-10.9	1.02 H	127	49.1	14.0
6	11590.00	52.7 AV	54.0	-1.3	1.02 H	127	38.7	14.0
7	#17385.00	67.5 PK	74.0	-6.5	2.06 H	173	48.4	19.1
8	#17385.00	53.6 AV	54.0	-0.4	2.06 H	173	34.5	19.1
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5648.52	51.9 PK	68.2	-16.3	1.18 V	101	47.1	4.8
2	*5795.00	93.1 PK			1.18 V	101	88.0	5.1
3	*5795.00	85.8 AV			1.18 V	101	80.7	5.1
4	#5934.24	51.0 PK	68.2	-17.2	1.18 V	101	45.6	5.4
5	11590.00	61.4 PK	74.0	-12.6	2.39 V	185	47.4	14.0
6	11590.00	50.5 AV	54.0	-3.5	2.39 V	185	36.5	14.0
7	#17385.00	64.5 PK	74.0	-9.5	2.10 V	159	45.4	19.1
8	#17385.00	53.1 AV	54.0	-0.9	2.10 V	159	34.0	19.1

REMARKS:

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

802.11ac (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	64.5 PK	74.0	-9.5	2.58 H	212	60.5	4.0
2	5150.00	53.6 AV	54.0	-0.4	2.58 H	212	49.6	4.0
3	*5210.00	97.7 PK			2.58 H	212	93.6	4.1
4	*5210.00	89.8 AV			2.58 H	212	85.7	4.1
5	5350.00	51.2 PK	74.0	-22.8	2.58 H	212	46.8	4.4
6	5350.00	38.5 AV	54.0	-15.5	2.58 H	212	34.1	4.4
7	#10420.00	56.8 PK	74.0	-17.2	1.20 H	105	43.2	13.6
8	#10420.00	45.8 AV	54.0	-8.2	1.20 H	105	32.2	13.6
9	15630.00	58.5 PK	74.0	-15.5	1.94 H	191	44.9	13.6
10	15630.00	45.6 AV	54.0	-8.4	1.94 H	191	32.0	13.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	62.2 PK	74.0	-11.8	1.45 V	307	58.2	4.0
2	5150.00	50.4 AV	54.0	-3.6	1.45 V	307	46.4	4.0
3	*5210.00	95.4 PK			1.45 V	307	91.3	4.1
4	*5210.00	86.7 AV			1.45 V	307	82.6	4.1
5	5350.00	50.2 PK	74.0	-23.8	1.45 V	307	45.8	4.4
6	5350.00	38.3 AV	54.0	-15.7	1.45 V	307	33.9	4.4
7	#10420.00	55.6 PK	74.0	-18.4	1.24 V	138	42.0	13.6
8	#10420.00	43.5 AV	54.0	-10.5	1.24 V	138	29.9	13.6
9	15630.00	54.5 PK	74.0	-19.5	1.06 V	193	40.9	13.6
10	15630.00	42.6 AV	54.0	-11.4	1.06 V	193	29.0	13.6

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4845.00	53.3 PK	74.0	-20.7	2.57 H	216	50.0	3.3
2	4845.00	43.2 AV	54.0	-10.8	2.57 H	216	39.9	3.3
3	*5290.00	100.1 PK			2.57 H	216	95.8	4.3
4	*5290.00	90.5 AV			2.57 H	216	86.2	4.3
5	5350.00	65.9 PK	74.0	-8.1	2.57 H	216	61.5	4.4
6	5350.00	53.7 AV	54.0	-0.3	2.57 H	216	49.3	4.4
7	#10580.00	57.8 PK	74.0	-16.2	1.25 H	100	43.9	13.9
8	#10580.00	46.8 AV	54.0	-7.2	1.25 H	100	32.9	13.9
9	15870.00	59.6 PK	74.0	-14.4	1.89 H	189	46.2	13.4
10	15870.00	46.6 AV	54.0	-7.4	1.89 H	189	33.2	13.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	4845.00	52.4 PK	74.0	-21.6	1.47 V	318	49.1	3.3
2	4845.00	42.9 AV	54.0	-11.1	1.47 V	318	39.6	3.3
3	*5290.00	97.9 PK			1.47 V	318	93.6	4.3
4	*5290.00	87.4 AV			1.47 V	318	83.1	4.3
5	5350.00	63.6 PK	74.0	-10.4	1.47 V	318	59.2	4.4
6	5350.00	50.5 AV	54.0	-3.5	1.47 V	318	46.1	4.4
7	#10580.00	55.3 PK	74.0	-18.7	1.26 V	151	41.4	13.9
8	#10580.00	45.6 AV	54.0	-8.4	1.26 V	151	31.7	13.9
9	15870.00	58.3 PK	74.0	-15.7	1.01 V	202	44.9	13.4
10	15870.00	44.5 AV	54.0	-9.5	1.01 V	202	31.1	13.4

REMARKS:

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

CHANNEL	TX Channel 106	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	67.8 PK	74.0	-6.2	2.60 H	214	63.3	4.5
2	#5470.00	53.6 AV	54.0	-0.4	2.60 H	214	49.1	4.5
3	*5530.00	97.5 PK			2.60 H	214	93.0	4.5
4	*5530.00	88.4 AV			2.60 H	214	83.9	4.5
5	#5725.00	55.3 PK	74.0	-18.7	2.60 H	214	50.4	4.9
6	#5725.00	37.3 AV	54.0	-16.7	2.60 H	214	32.4	4.9
7	11060.00	57.3 PK	74.0	-16.7	1.31 H	114	42.8	14.5
8	11060.00	46.3 AV	54.0	-7.7	1.31 H	114	31.8	14.5
9	#16590.00	59.1 PK	74.0	-14.9	1.85 H	188	42.5	16.6
10	#16590.00	46.1 AV	54.0	-7.9	1.85 H	188	29.5	16.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	65.5 PK	74.0	-8.5	1.46 V	306	61.0	4.5
2	#5470.00	50.4 AV	54.0	-3.6	1.46 V	306	45.9	4.5
3	*5530.00	95.3 PK			1.46 V	306	90.8	4.5
4	*5530.00	85.4 AV			1.46 V	306	80.9	4.5
5	#5725.00	54.2 PK	74.0	-19.8	1.46 V	306	49.3	4.9
6	#5725.00	37.1 AV	54.0	-16.9	1.46 V	306	32.2	4.9
7	11060.00	56.2 PK	74.0	-17.8	1.19 V	127	41.7	14.5
8	11060.00	44.9 AV	54.0	-9.1	1.19 V	127	30.4	14.5
9	#16590.00	57.2 PK	74.0	-16.8	1.01 V	197	40.6	16.6
10	#16590.00	44.2 AV	54.0	-9.8	1.01 V	197	27.6	16.6

REMARKS:

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

CHANNEL	TX Channel 122	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5610.00	92.6 PK			2.68 H	201	87.9	4.7
2	*5610.00	84.9 AV			2.68 H	201	80.2	4.7
3	#5725.00	51.5 PK	74.0	-22.5	2.68 H	201	46.6	4.9
4	#5725.00	39.7 AV	54.0	-14.3	2.68 H	201	34.8	4.9
5	11220.00	67.8 PK	74.0	-6.2	1.16 H	222	53.4	14.4
6	11220.00	53.8 AV	54.0	-0.2	1.16 H	222	39.4	14.4
7	#16830.00	57.3 PK	74.0	-16.7	1.02 H	216	40.3	17.0
8	#16830.00	46.9 AV	54.0	-7.1	1.02 H	216	29.9	17.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5610.00	90.4 PK			1.49 V	294	85.7	4.7
2	*5610.00	81.9 AV			1.49 V	294	77.2	4.7
3	#5725.00	50.4 PK	74.0	-23.6	1.49 V	294	45.5	4.9
4	#5725.00	39.5 AV	54.0	-14.5	1.49 V	294	34.6	4.9
5	11220.00	58.7 PK	74.0	-15.3	1.29 V	208	44.3	14.4
6	11220.00	51.9 AV	54.0	-2.1	1.29 V	208	37.5	14.4
7	#16830.00	60.2 PK	74.0	-13.8	1.23 V	202	43.2	17.0
8	#16830.00	53.0 AV	54.0	-1.0	1.23 V	202	36.0	17.0

REMARKS:

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

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	#5636.70	52.4 PK	68.2	-15.8	1.06 H	244	47.6	4.8
2	*5775.00	92.5 PK			1.06 H	244	87.5	5.0
3	*5775.00	84.7 AV			1.06 H	244	79.7	5.0
4	#5959.00	51.1 PK	68.2	-17.1	1.06 H	244	45.6	5.5
5	11550.00	57.5 PK	74.0	-16.5	1.21 H	167	43.5	14.0
6	11550.00	48.3 AV	54.0	-5.7	1.21 H	167	34.3	14.0
7	#17325.00	67.8 PK	74.0	-6.2	2.01 H	148	49.2	18.6
8	#17325.00	53.8 AV	54.0	-0.2	2.01 H	148	35.2	18.6
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5559.75	51.9 PK	68.2	-16.3	1.19 V	103	47.3	4.6
2	*5775.00	93.9 PK			1.19 V	103	88.9	5.0
3	*5775.00	84.2 AV			1.19 V	103	79.2	5.0
4	#5989.93	51.7 PK	68.2	-16.5	1.19 V	103	46.1	5.6
5	11550.00	61.4 PK	74.0	-12.6	2.42 V	199	47.4	14.0
6	11550.00	50.8 AV	54.0	-3.2	2.42 V	199	36.8	14.0
7	#17325.00	64.5 PK	74.0	-9.5	2.10 V	169	45.9	18.6
8	#17325.00	53.2 AV	54.0	-0.8	2.10 V	169	34.6	18.6

REMARKS:

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

Below 1GHz Data:

802.11a

CHANNEL	TX Channel 52	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 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	44.90	35.2 QP	40.0	-4.8	1.00 H	254	43.1	-7.9
2	107.20	33.2 QP	43.5	-10.3	2.50 H	302	44.5	-11.3
3	238.90	35.1 QP	46.0	-10.9	2.50 H	245	45.1	-10.0
4	357.90	32.9 QP	46.0	-13.1	1.50 H	248	39.2	-6.3
5	801.90	32.8 QP	46.0	-13.2	3.00 H	180	30.3	2.5
6	902.05	34.9 QP	46.0	-11.1	1.50 H	12	30.9	4.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	44.90	33.9 QP	40.0	-6.1	1.50 V	254	41.8	-7.9
2	87.70	33.9 QP	40.0	-6.1	2.50 V	180	48.1	-14.2
3	108.97	33.9 QP	43.5	-9.6	2.50 V	158	45.0	-11.1
4	237.96	31.2 QP	46.0	-14.8	1.00 V	214	41.2	-10.0
5	342.90	28.4 QP	46.0	-17.6	2.00 V	168	35.0	-6.6
6	805.61	28.1 QP	46.0	-17.9	1.00 V	274	25.6	2.5

REMARKS:

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

4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

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

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

4.2.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver R&S	ESCS 30	847124/029	Oct. 24, 2016	Oct. 23, 2017
Line-Impedance Stabilization Network (for EUT) R&S	ESH3-Z5	848773/004	Oct. 26, 2016	Oct. 25, 2017
Line-Impedance Stabilization Network (for Peripheral) R&S	ENV216	100072	June 03, 2017	June 02, 2018
50 ohms Terminator	N/A	EMC-02	Sep. 29, 2016	Sep. 28, 2017
RF Cable	5D-FB	COCCAB-001	Sep. 30, 2016	Sep. 29, 2017
10 dB PAD Mini-Circuits	HAT-10+	CONATT-004	June 18, 2017	June 17, 2018
Software BVADT	BVADT_Cond_ V7.3.7.4	NA	NA	NA

Note:

1. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Shielded Room No. 1.
3 Tested Date: July 29, 2017

4.2.3 Test Procedure

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

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

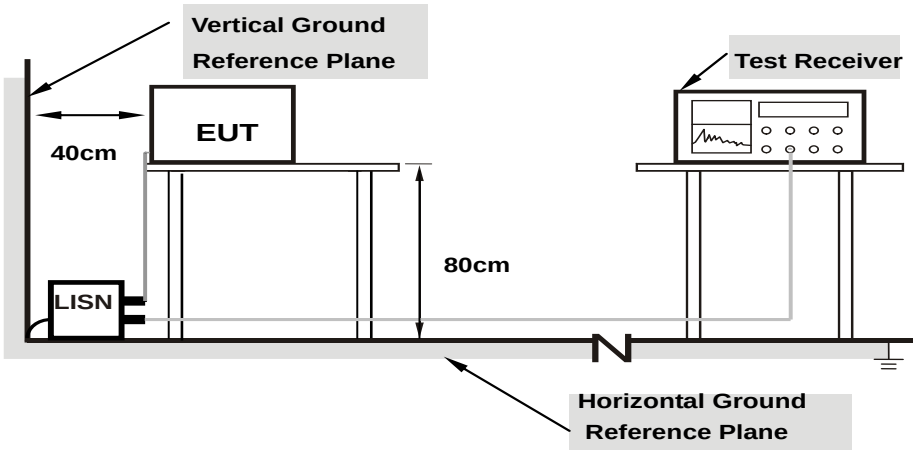
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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.

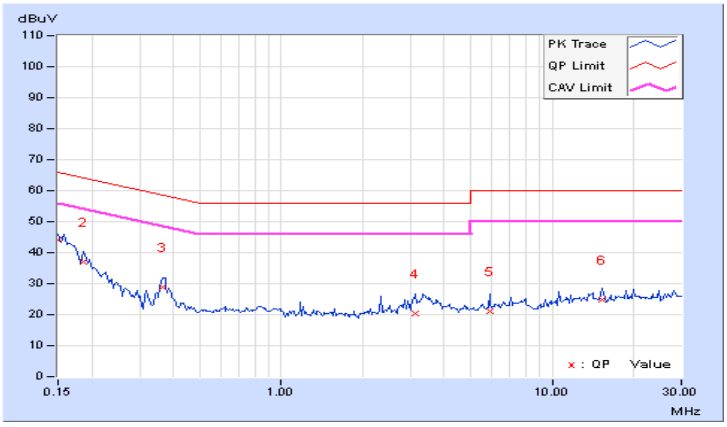
4.2.7 Test Results

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	10.08	34.05	20.33	44.13	30.41	66.00	56.00	-21.87	-25.59
2	0.18516	10.07	26.94	13.26	37.01	23.33	64.25	54.25	-27.24	-30.92
3	0.36484	10.11	18.89	15.09	29.00	25.20	58.62	48.62	-29.62	-23.42
4	3.13672	10.28	10.02	-1.30	20.30	8.98	56.00	46.00	-35.70	-37.02
5	5.87500	10.50	10.47	10.16	20.97	20.66	60.00	50.00	-39.03	-29.34
6	15.26563	11.21	13.73	12.78	24.94	23.99	60.00	50.00	-35.06	-26.01

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.

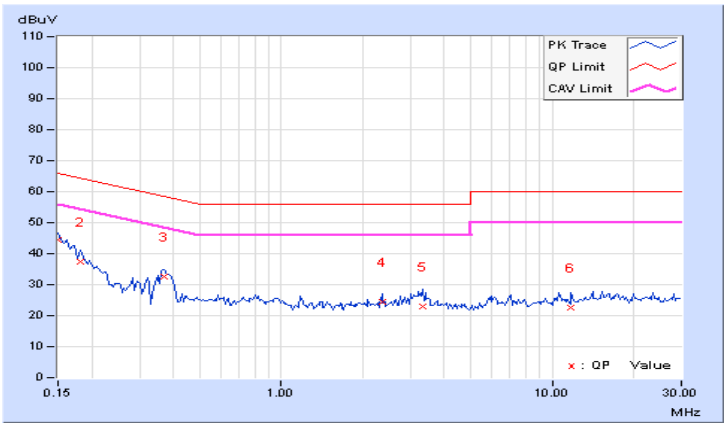


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

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	10.07	34.41	20.55	44.48	30.62	66.00	56.00	-21.52	-25.38
2	0.18125	10.05	27.24	13.85	37.29	23.90	64.43	54.43	-27.14	-30.53
3	**0.36875**	**10.11**	**22.66**	**19.78**	**32.77**	**29.89**	**58.53**	**48.53**	**-25.76**	**-18.64**
4	2.35156	10.22	14.06	11.47	24.28	21.69	56.00	46.00	-31.72	-24.31
5	3.31641	10.25	12.61	3.64	22.86	13.89	56.00	46.00	-33.14	-32.11
6	11.74609	10.80	11.94	9.97	22.74	20.77	60.00	50.00	-37.26	-29.23

REMARKS:

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



4.3 Transmit Power Measurment

4.3.1 Limits of Transmit Power Measurement

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

*B is the 26 dB emission bandwidth in megahertz

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

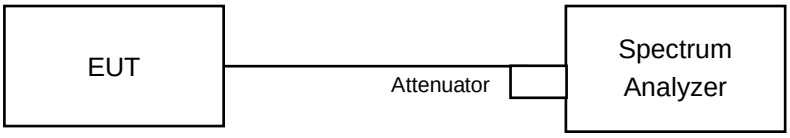
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};
Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

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

4.3.2 Test Setup

FOR POWER OUTPUT MEASUREMENT

FOR 26dB OCCUPIED BANDWIDTH



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

For Average Power Measurement

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

FOR 26dB OCCUPIED BANDWIDTH

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

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Condition

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

4.3.7 Test Result

802.11a

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	14.78	15.36	64.417	18.09	24.00	Pass
40	5200	14.42	15.14	60.328	17.81	24.00	Pass
48	5240	16.53	17.23	97.823	19.90	24.00	Pass
52	5260	16.69	17.47	102.513	20.11	24.00	Pass
60	5300	16.11	16.55	86.018	19.35	24.00	Pass
64	5320	15.98	16.48	84.091	19.25	24.00	Pass
100	5500	10.22	9.81	20.092	13.03	24.00	Pass
116	5580	11.48	12.51	31.884	15.04	24.00	Pass
140	5700	13.69	13.81	47.432	16.76	24.00	Pass
149	5745	13.30	13.50	43.767	16.41	30.00	Pass
157	5785	13.55	13.62	45.66	16.60	30.00	Pass
165	5825	13.14	13.40	42.484	16.28	30.00	Pass

26dB BANDWIDTH:

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	24.11	23.52
60	5300	23.20	22.97
64	5320	20.33	20.74
100	5500	20.22	20.55
116	5580	20.31	20.37
140	5700	20.63	20.33

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	16.80	24.71 > 24
60	5300	16.68	24.61 > 24
64	5320	16.68	24.08 > 24
100	5500	16.68	24.05 > 24
116	5580	16.68	24.07 > 24
140	5700	16.68	24.08 > 24

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				
36	5180	14.80	15.69	67.268	18.28	24.00	Pass
40	5200	14.24	15.33	60.665	17.83	24.00	Pass
48	5240	16.67	17.21	99.054	19.96	24.00	Pass
52	5260	16.82	17.25	101.172	20.05	24.00	Pass
60	5300	15.49	15.92	74.484	18.72	24.00	Pass
64	5320	15.65	16.17	78.128	18.93	24.00	Pass
100	5500	10.24	9.92	20.385	13.09	24.00	Pass
116	5580	12.39	12.36	34.557	15.39	24.00	Pass
140	5700	13.63	13.81	47.111	16.73	24.00	Pass
149	5745	13.65	13.69	46.562	16.68	30.00	Pass
157	5785	13.56	13.72	46.249	16.65	30.00	Pass
165	5825	13.36	13.59	44.533	16.49	30.00	Pass

26dB BANDWIDTH:

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	20.72	20.67
60	5300	20.36	20.21
64	5320	20.34	20.36
100	5500	20.46	20.41
116	5580	20.36	20.38
140	5700	20.47	20.36

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	17.64	24.15 > 24
60	5300	17.64	24.05 > 24
64	5320	17.64	24.08 > 24
100	5500	17.64	24.09 > 24
116	5580	17.64	24.08 > 24
140	5700	17.64	24.08 > 24

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	14.59	15.36	63.13	18.00	24.00	Pass
46	5230	16.10	16.71	87.619	19.43	24.00	Pass
54	5270	16.19	16.72	88.58	19.47	24.00	Pass
62	5310	15.14	15.53	68.386	18.35	24.00	Pass
102	5510	15.66	15.37	71.248	18.53	24.00	Pass
110	5550	15.75	15.82	75.778	18.80	24.00	Pass
134	5670	15.83	15.72	75.607	18.79	24.00	Pass
151	5755	15.73	15.69	74.479	18.72	30.00	Pass
159	5795	15.45	15.55	70.967	18.51	30.00	Pass

26dB BANDWIDTH:

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
54	5270	46.87	46.41
62	5310	43.28	42.23
102	5510	42.25	42.37
110	5550	42.33	43.31
134	5670	46.08	47.56

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
54	5270	36.48	27.66 > 24
62	5310	36.48	27.25 > 24
102	5510	36.48	27.25 > 24
110	5550	36.48	27.26 > 24
134	5670	36.24	27.63 > 24

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				
42	5210	12.58	13.57	40.864	16.11	24.00	Pass
58	5290	14.61	14.95	60.168	17.79	24.00	Pass
106	5530	13.91	13.62	47.618	16.78	24.00	Pass
122	5610	15.56	15.87	74.612	18.73	24.00	Pass
155	5775	15.12	15.30	66.393	18.22	30.00	Pass

26dB BANDWIDTH:

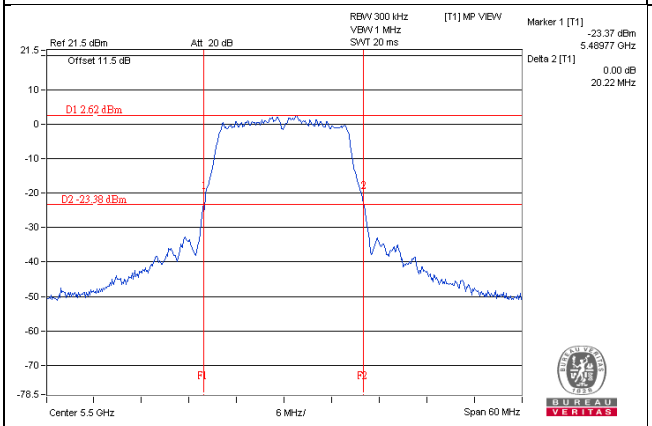
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
58	5290	81.76	81.87
106	5530	81.71	81.76
122	5610	86.95	87.28

Note: For U-NII-2A, U-NII-2C Band output power limitation is determined based on 26dBc bandwidth

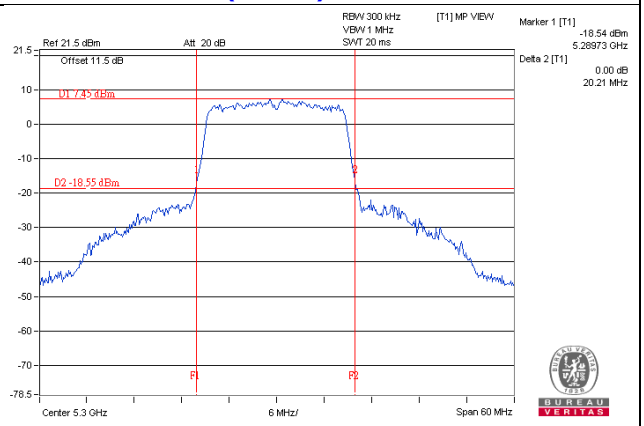
Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
58	5290	74.88	30.12 > 24
106	5530	75.36	30.12 > 24
122	5610	74.88	30.39 > 24

Spectrum Plot of Worst Value

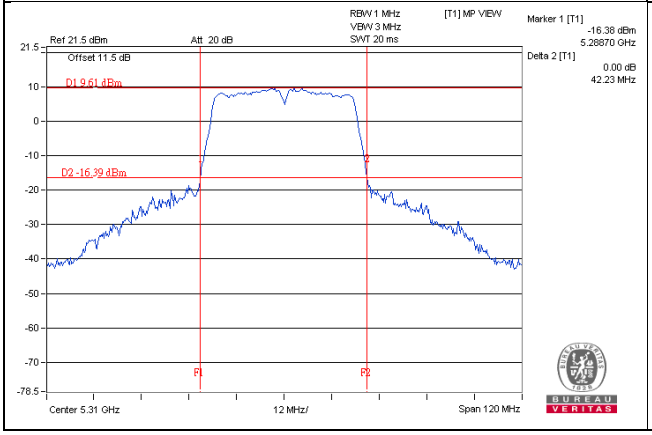
802.11a_Chain 0 / CH100



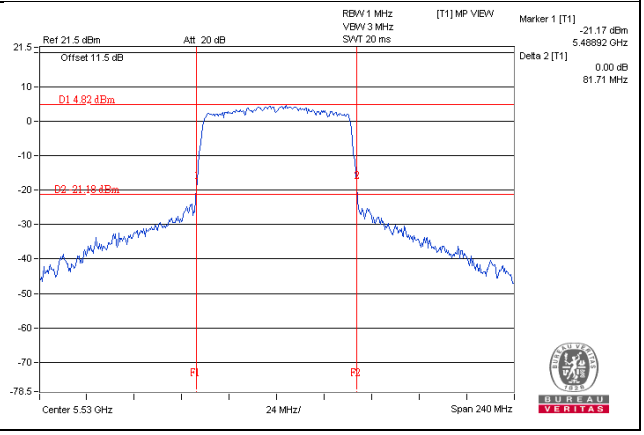
802.11ac (VHT20)_Chain 1 / CH60



802.11ac (VHT40) _Chain 1 / CH62

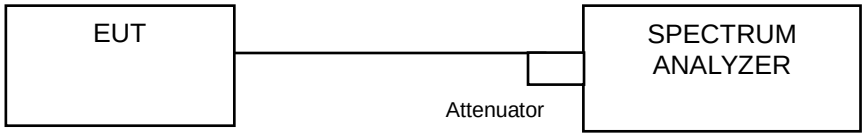


802.11ac (VHT80) _Chain 0 / CH106



4.4 Occupied Bandwidth Measurement

4.4.1 Test Setup



4.4.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.3 Test Procedure

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

4.4.4 Test Results

802.11a

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		CHAIN 0	CHAIN 1
36	5180	16.68	16.68
40	5200	16.68	16.68
48	5240	16.80	16.56
52	5260	16.80	16.92
60	5300	16.80	16.68
64	5320	16.80	16.68
100	5500	16.68	16.80
116	5580	16.80	16.68
140	5700	16.68	16.68
149	5745	16.68	16.68
157	5785	16.68	16.68
165	5825	16.68	16.68

802.11ac (VHT20)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		CHAIN 0	CHAIN 1
36	5180	17.76	17.76
40	5200	17.76	17.64
48	5240	17.76	17.76
52	5260	17.76	17.64
60	5300	17.64	17.64
64	5320	17.64	17.64
100	5500	17.64	17.76
116	5580	17.64	17.64
140	5700	17.64	17.64
149	5745	17.76	17.64
157	5785	17.76	17.76
165	5825	17.64	17.64

802.11ac (VHT40)

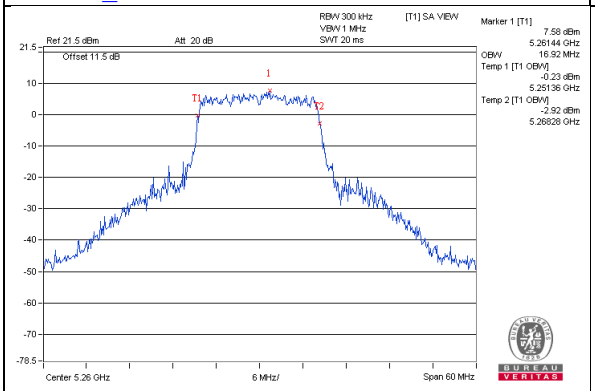
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		CHAIN 0	CHAIN 1
38	5190	36.48	36.48
46	5230	36.72	36.24
54	5270	36.48	36.48
62	5310	37.68	36.48
102	5510	36.48	36.48
110	5550	36.48	36.48
134	5670	36.48	36.24
151	5755	36.48	36.48
159	5795	36.72	36.48

802.11ac (VHT80)

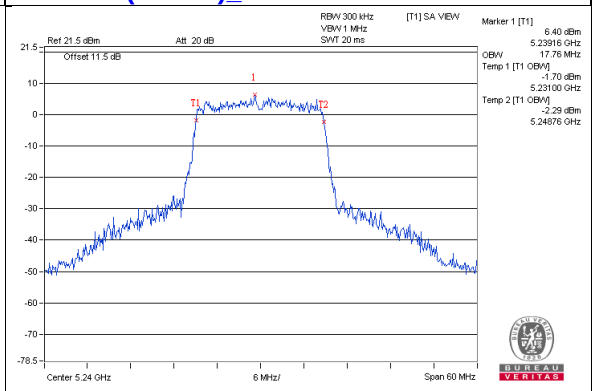
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		CHAIN 0	CHAIN 1
42	5210	75.36	74.88
58	5290	74.88	75.36
106	5530	75.36	75.36
122	5610	74.88	75.36
155	5775	75.84	75.84

Spectrum Plot of Worst Value

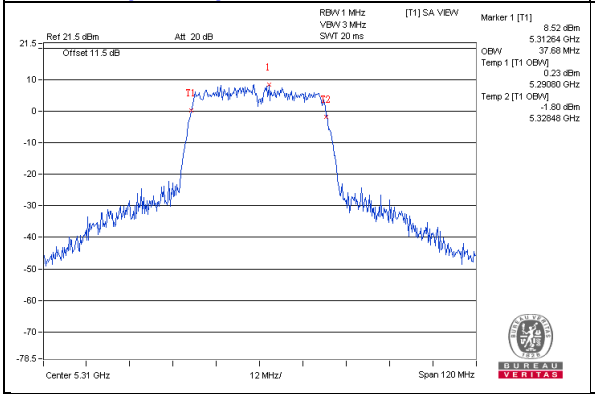
802.11a_Chain1 / CH52



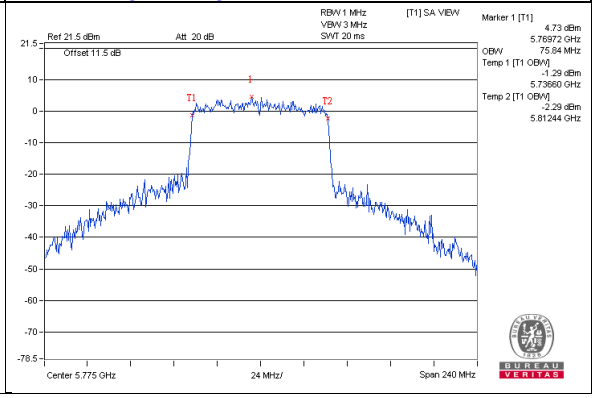
802.11ac (VHT20)_Chain1 / CH48



802.11ac (VHT40)_Chain0 / CH62

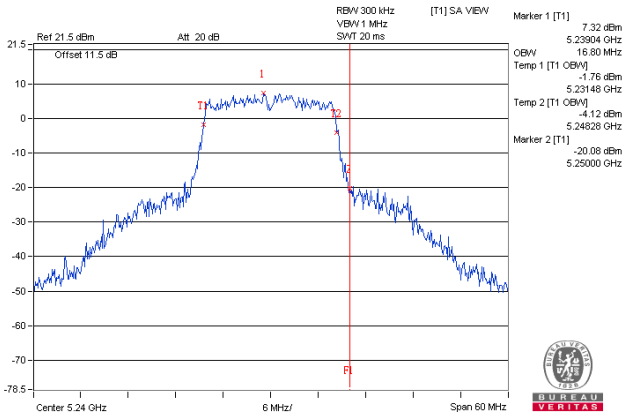


802.11ac (VHT80)_Chain1 / CH155

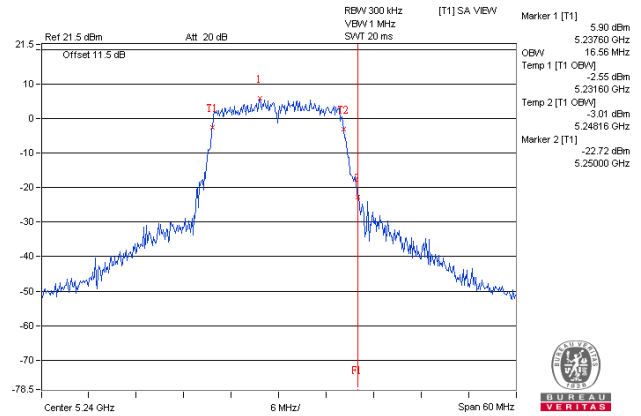


Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2A band)

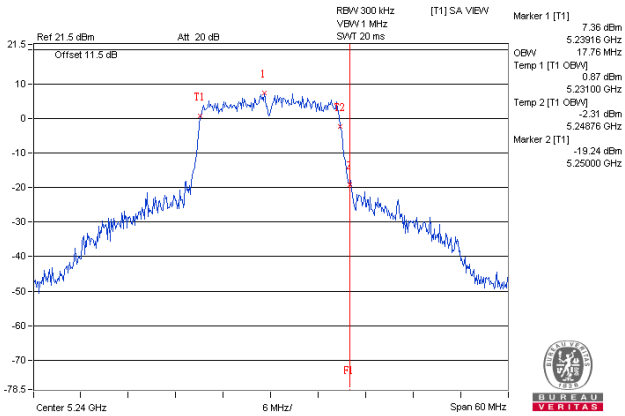
802.11a _Chain0 / CH48



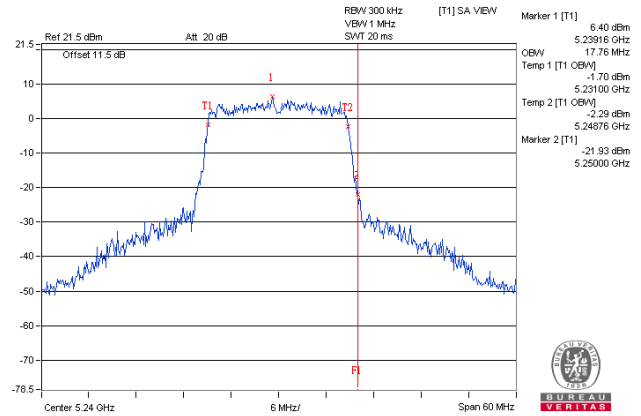
802.11a _Chain1 / CH48



802.11ac (VHT20) _Chain0 / CH48

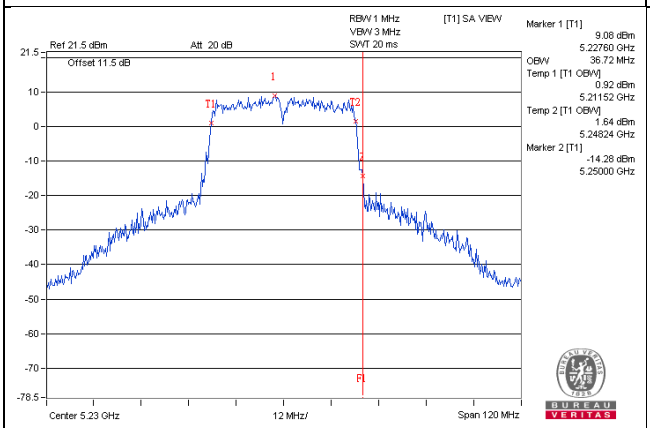


802.11ac (VHT20) _Chain1 / CH48

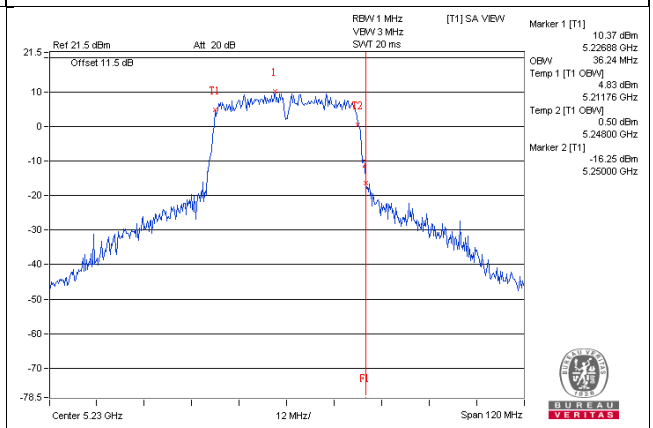


Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2A band)

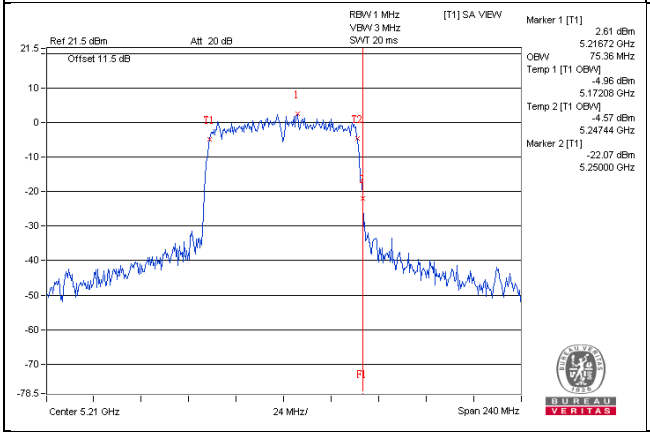
802.11ac (VHT40) _Chain0 / CH46



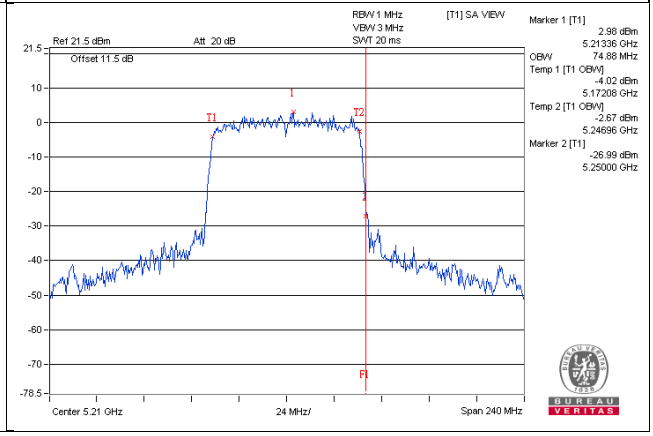
802.11ac (VHT40) _Chain1 / CH46



802.11ac (VHT80) _Chain0 / CH42

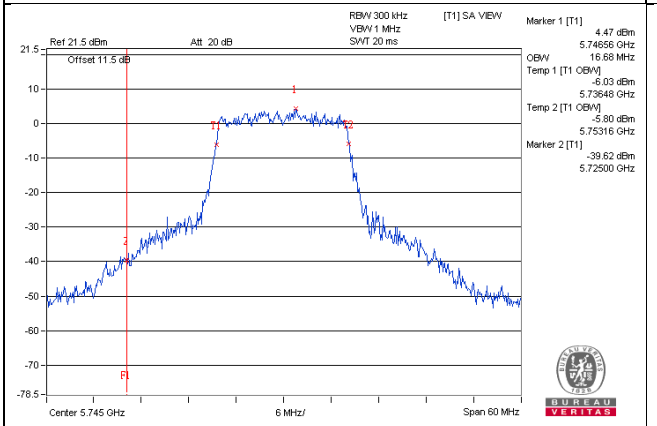


802.11ac (VHT80) _Chain1 / CH42

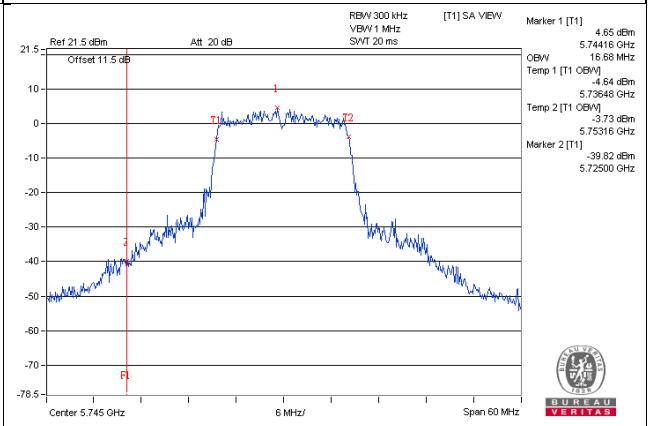


Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2C band)

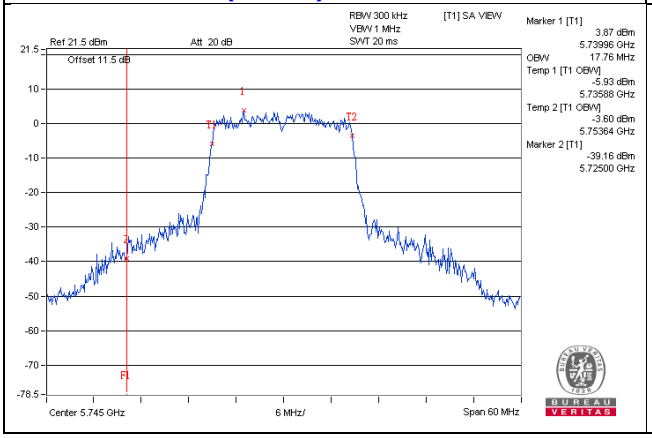
802.11a_Chain0 / CH149



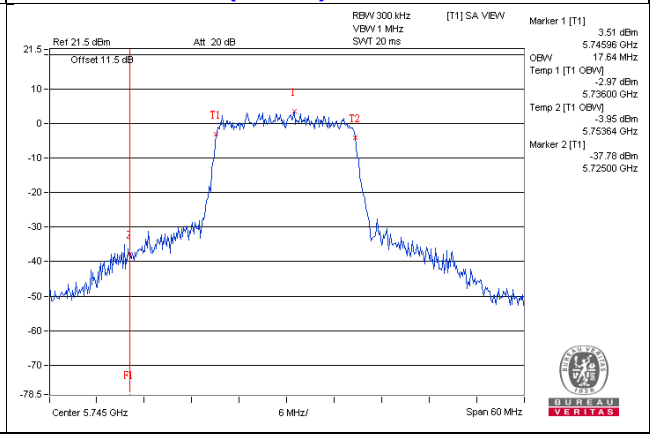
802.11a_Chain1 / CH149



802.11ac (VHT20) _Chain0 / CH149

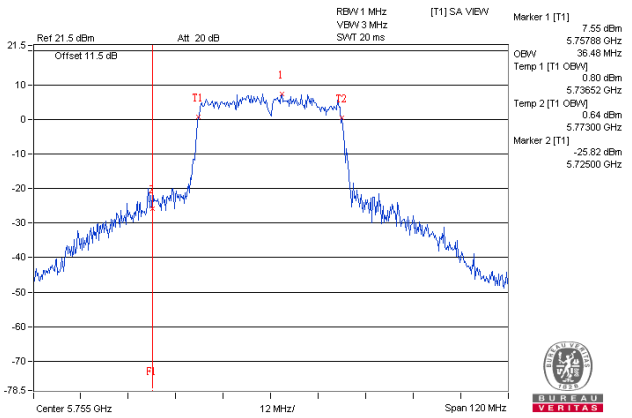


802.11ac (VHT20) _Chain1 / CH149

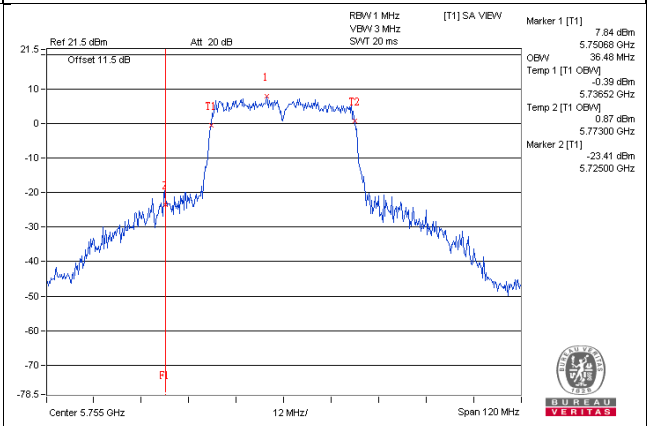


Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2C band)

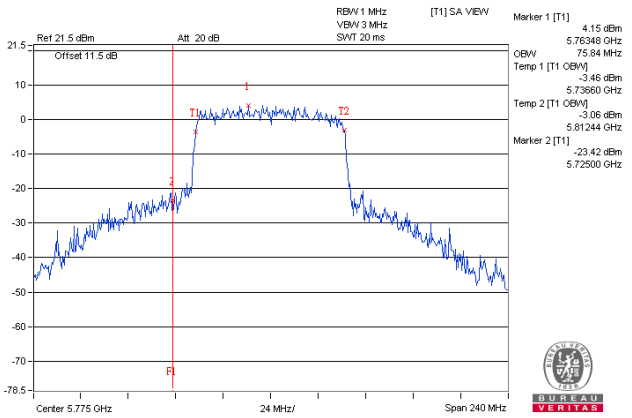
802.11ac (VHT40) _Chain0 / CH151



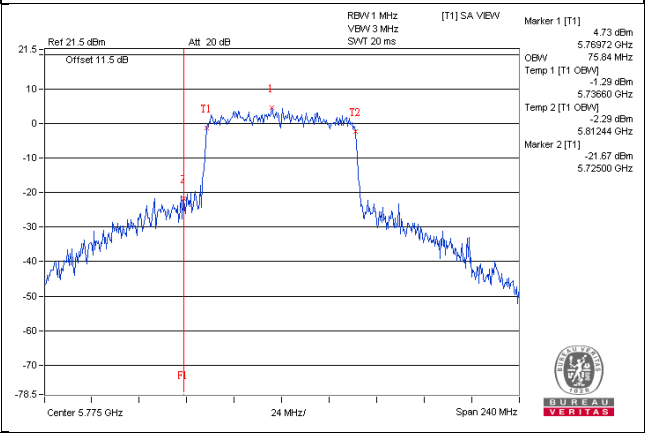
802.11ac (VHT40) _Chain1 / CH151



802.11ac (VHT80) _Chain0 / CH155



802.11ac (VHT80) _Chain1 / CH155

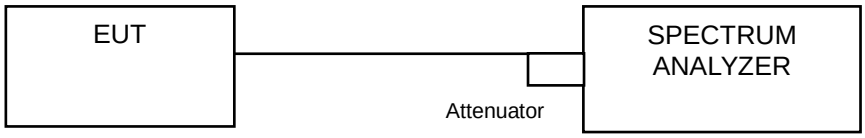


4.5 Peak Power Spectral Density Measurement

4.5.1 Limits of Peak Power Spectral Density Measurement

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

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

For UNII-1, U-NII-2A, UNII-2C:

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 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 UNII-1, U-NII-2A, UNII-2C:

802.11a

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)		Total Power Density (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1			
36	5180	2.04	2.31	5.19	11.00	Pass
40	5200	1.95	2.22	5.10	11.00	Pass
48	5240	3.95	2.24	6.19	11.00	Pass
52	5260	3.98	4.44	7.23	11.00	Pass
60	5300	3.62	3.41	6.53	11.00	Pass
64	5320	3.73	3.38	6.57	11.00	Pass
100	5500	-2.36	-3.14	0.28	11.00	Pass
116	5580	-0.83	-0.16	2.53	11.00	Pass
140	5700	0.80	0.36	3.60	11.00	Pass

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

2. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 4.76dBi < 6dBi , so the power density limit shall not be reduced.

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			
36	5180	1.09	1.70	4.42	11.00	Pass
40	5200	0.85	2.07	4.51	11.00	Pass
48	5240	3.41	2.29	5.90	11.00	Pass
52	5260	3.52	4.12	6.84	11.00	Pass
60	5300	2.01	2.75	5.41	11.00	Pass
64	5320	2.09	2.73	5.43	11.00	Pass
100	5500	-3.79	-3.85	-0.81	11.00	Pass
116	5580	-1.37	-1.31	1.67	11.00	Pass
140	5700	-0.01	0.04	3.03	11.00	Pass

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

2. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 4.76dBi < 6dBi , so the power density limit shall not be reduced.

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			
38	5190	-1.79	-1.05	1.61	11.00	Pass
46	5230	-0.07	0.52	3.25	11.00	Pass
54	5270	0.16	0.53	3.36	11.00	Pass
62	5310	-1.27	-0.88	1.94	11.00	Pass
102	5510	-0.51	-0.95	2.29	11.00	Pass
110	5550	-0.06	0.12	3.04	11.00	Pass
134	5670	-1.29	-0.67	2.04	11.00	Pass

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

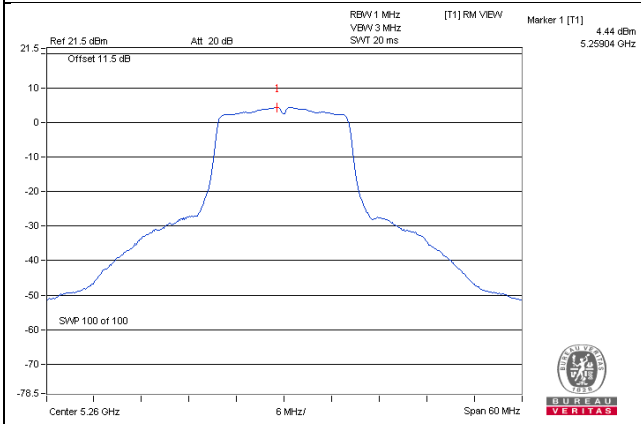
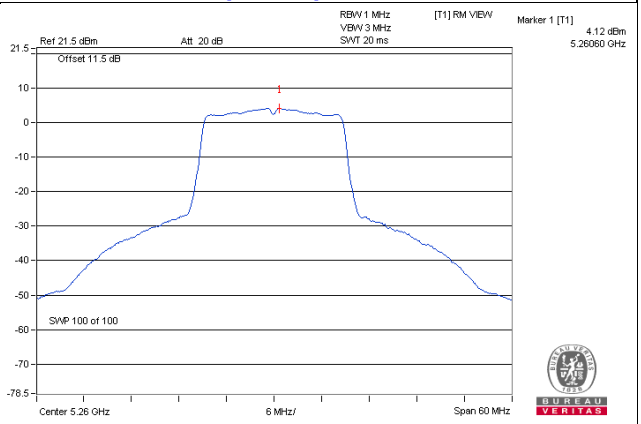
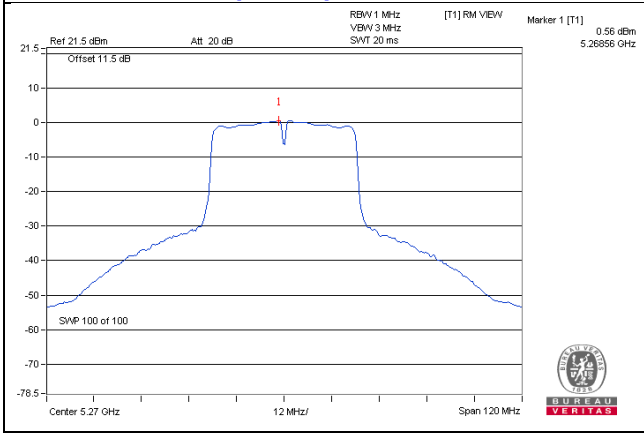
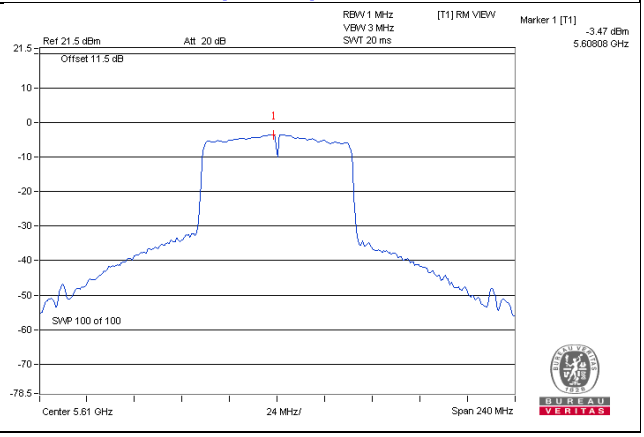
2. Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$)^2 / 2] = 4.76dBi < 6dBi , so the power density limit shall not be reduced.

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)		Total Power Density (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1			
42	5210	-6.74	-6.22	-3.46	11.00	Pass
58	5290	-5.30	-4.82	-2.04	11.00	Pass
106	5530	-5.81	-5.79	-2.79	11.00	Pass
122	5610	-4.22	-3.47	-0.82	11.00	Pass

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

2. Directional gain = 10 log[($10^{G1/20}$ + $10^{G2/20}$)^2 / 2] = 4.76dBi < 6dBi , so the power density limit shall not be reduced.

Spectrum Plot of Worst Value	
802.11a_Chain 1 / CH52	**802.11ac (VHT20)_Chain 1 / CH52**
	
802.11ac (VHT40)_Chain 1 / CH54	**802.11ac (VHT80)_Chain 1 / CH122**
	

For UNII-3:

802.11a

TX chain	Channel	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	10 log (N=2) dB	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
0	149	5745	-7.12	-4.90	3.01	-1.89	30.00	Pass
	157	5785	-7.16	-4.94	3.01	-1.93	30.00	Pass
	165	5825	-7.53	-5.31	3.01	-2.30	30.00	Pass
1	149	5745	-7.21	-4.99	3.01	-1.98	30.00	Pass
	157	5785	-7.30	-5.08	3.01	-2.07	30.00	Pass
	165	5825	-7.51	-5.29	3.01	-2.28	30.00	Pass

Note: 1. Directional gain = 10 log[(10$^{G1/20}$ + 10$^{G2/20}$)^2 / 2] = 4.76dBi < 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=2) dB	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
0	149	5745	-7.52	-5.30	3.01	-2.29	30.00	Pass
	157	5785	-8.16	-5.94	3.01	-2.93	30.00	Pass
	165	5825	-7.75	-5.53	3.01	-2.52	30.00	Pass
1	149	5745	-8.17	-5.95	3.01	-2.94	30.00	Pass
	157	5785	-7.68	-5.46	3.01	-2.45	30.00	Pass
	165	5825	-8.22	-6.00	3.01	-2.99	30.00	Pass

Note: 1. Directional gain = 10 log[(10$^{G1/20}$ + 10$^{G2/20}$)^2 / 2] = 4.76dBi < 6dBi , so the power density limit shall not be reduced.

802.11ac (VHT40)

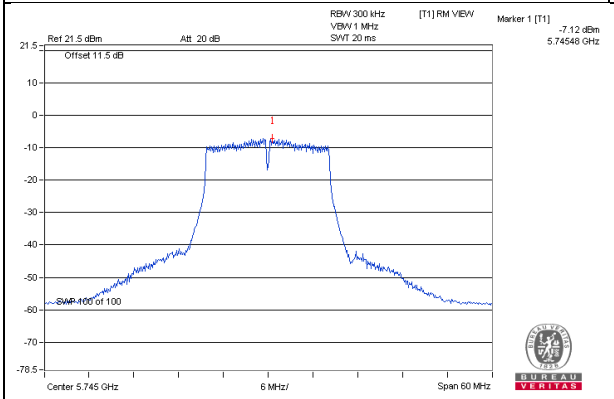
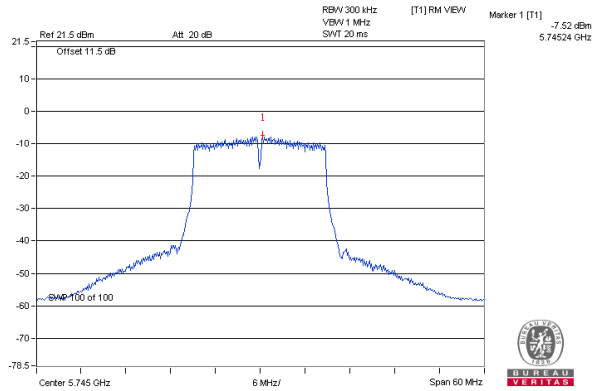
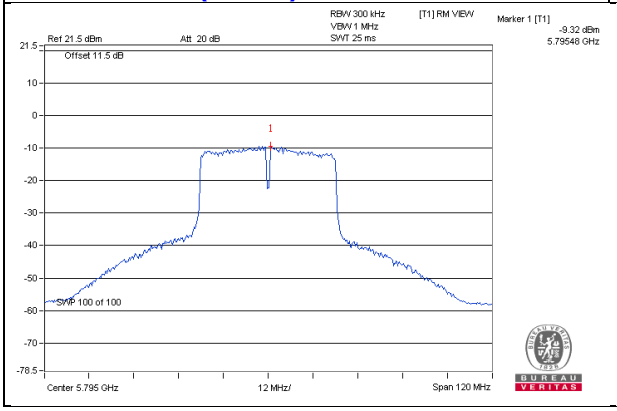
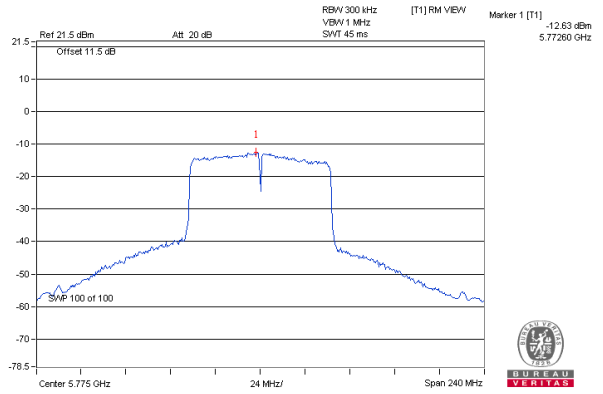
TX chain	Channel	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	10 log (N=2) dB	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
0	151	5755	-9.82	-7.60	3.01	-4.59	30.00	Pass
	159	5795	-10.12	-7.90	3.01	-4.89	30.00	Pass
1	151	5755	-9.71	-7.49	3.01	-4.48	30.00	Pass
	159	5795	-9.32	-7.10	3.01	-4.09	30.00	Pass

Note: 1. Directional gain = 10 log[(10$^{G1/20}$ + 10$^{G2/20}$)^2 / 2] = 4.76dBi < 6dBi , so the power density limit shall not be reduced.

802.11ac (VHT80)

TX chain	Channel	Freq. (MHz)	PSD (dBm/300kHz)	PSD (dBm/500kHz)	10 log (N=2) dB	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
0	155	5775	-12.83	-10.61	3.01	-7.60	30.00	Pass
1	155	5775	-12.63	-10.41	3.01	-7.40	30.00	Pass

Note: 1. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20})^2$ / 2] = 4.76dBi < 6dBi , so the power density limit shall not be reduced.

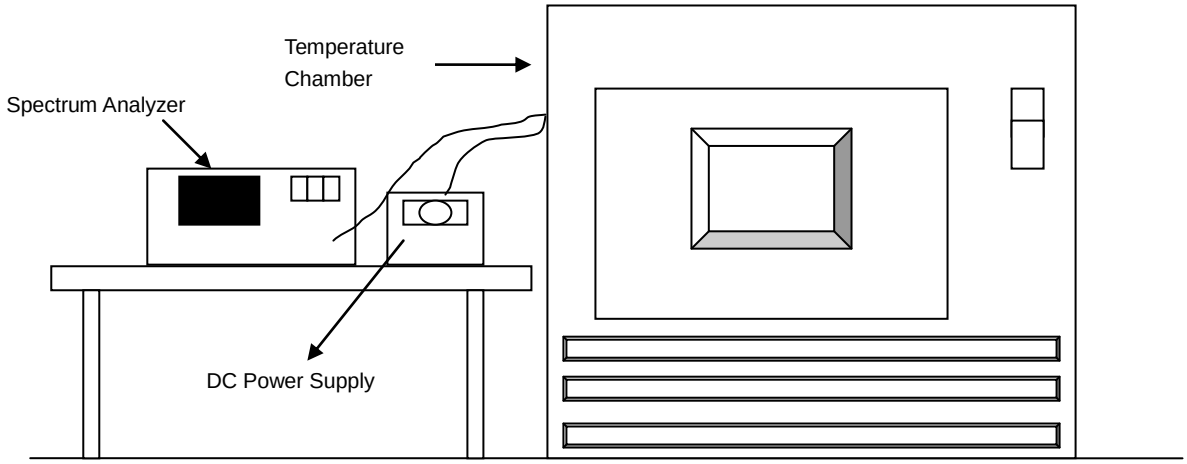
Spectrum Plot of Worst Value	
802.11a – Chain 0: CH 149	**802.11ac (VHT20) – Chain 0: CH 149**
	
802.11ac (VHT40) – Chain 1: CH 159	**802.11ac (VHT80) – Chain 1: CH 155**
	

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 DC 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	3.3	5179.994	PASS	5179.9945	PASS	5179.9941	PASS	5179.9954	PASS
40	3.3	5180.006	PASS	5180.0033	PASS	5180.0071	PASS	5180.0032	PASS
30	3.3	5179.9909	PASS	5179.9878	PASS	5179.9901	PASS	5179.9896	PASS
20	3.3	5179.9979	PASS	5179.997	PASS	5179.9961	PASS	5179.9962	PASS
10	3.3	5180.0134	PASS	5180.0156	PASS	5180.0132	PASS	5180.017	PASS
0	3.3	5180.0048	PASS	5180.0056	PASS	5180.0062	PASS	5180.0056	PASS
-10	3.3	5179.9937	PASS	5179.9899	PASS	5179.9912	PASS	5179.9923	PASS
-20	3.3	5179.9914	PASS	5179.9947	PASS	5179.9953	PASS	5179.9905	PASS
-30	3.3	5179.981	PASS	5179.9821	PASS	5179.9775	PASS	5179.9782	PASS

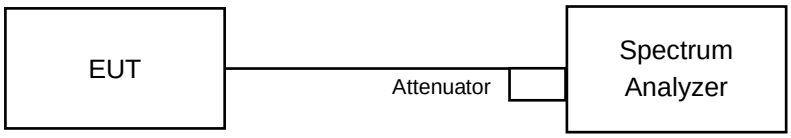
Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
TEMP. (℃)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	3.795	5179.9978	PASS	5179.9979	PASS	5179.9965	PASS	5179.9953	PASS
	3.3	5179.9979	PASS	5179.997	PASS	5179.9961	PASS	5179.9962	PASS
	2.805	5179.9974	PASS	5179.9967	PASS	5179.9952	PASS	5179.9955	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		
149	5745	16.57	16.48	0.5	PASS
157	5785	16.52	16.55	0.5	PASS
165	5825	16.54	16.52	0.5	PASS

802.11ac (VHT20)

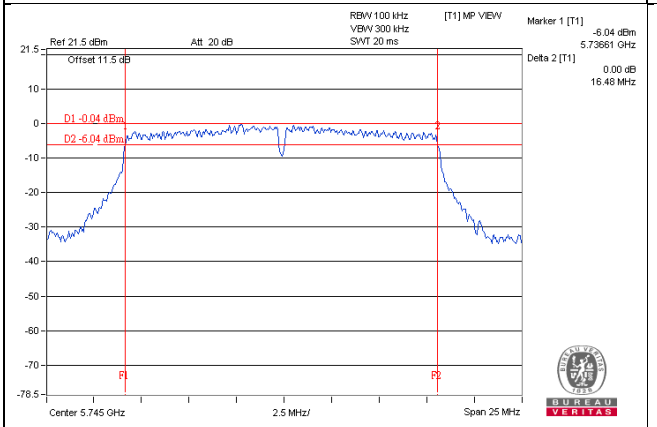
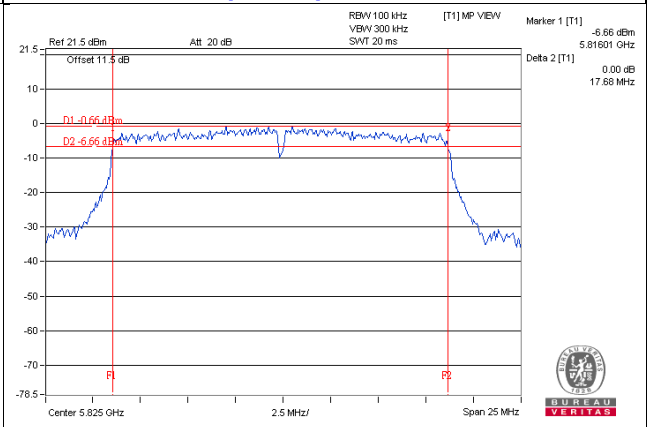
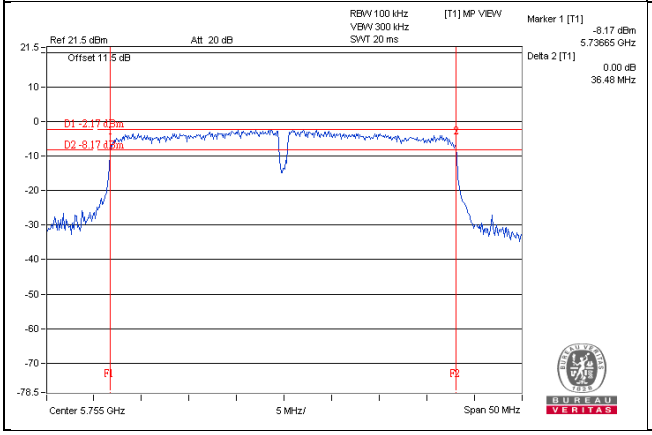
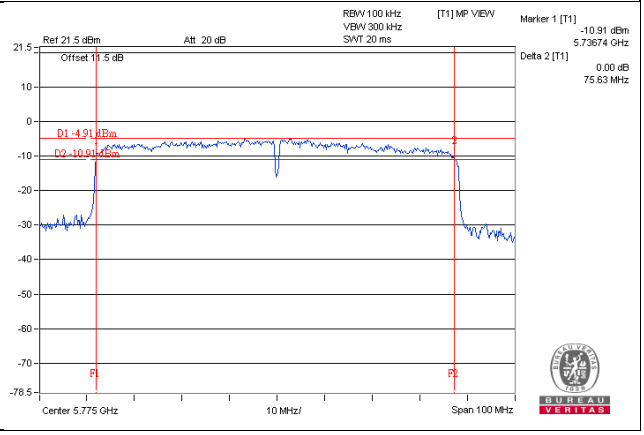
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
149	5745	17.70	17.69	0.5	PASS
157	5785	17.69	17.70	0.5	PASS
165	5825	17.71	17.68	0.5	PASS

802.11ac (VHT40)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
151	5755	36.48	36.48	0.5	PASS
159	5795	36.48	36.48	0.5	PASS

802.11ac (VHT80)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
155	5775	75.64	75.63	0.5	PASS

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

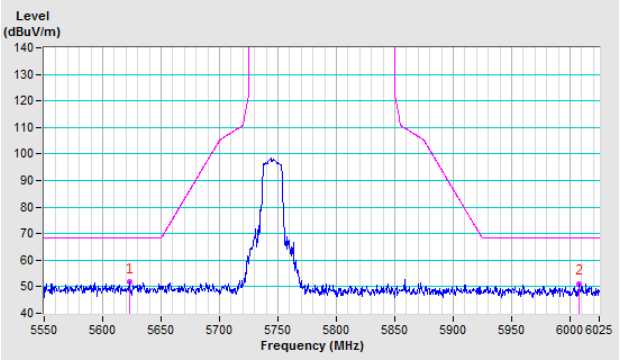
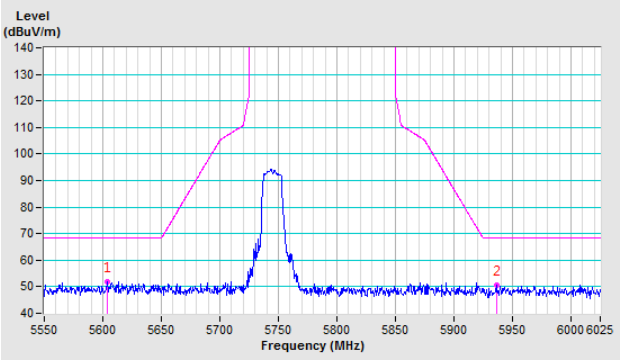
5 Pictures of Test Arrangements

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

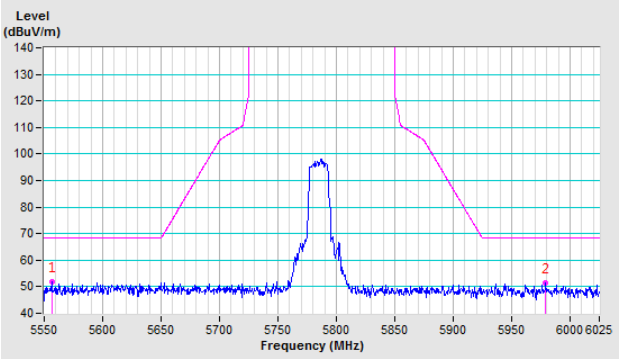
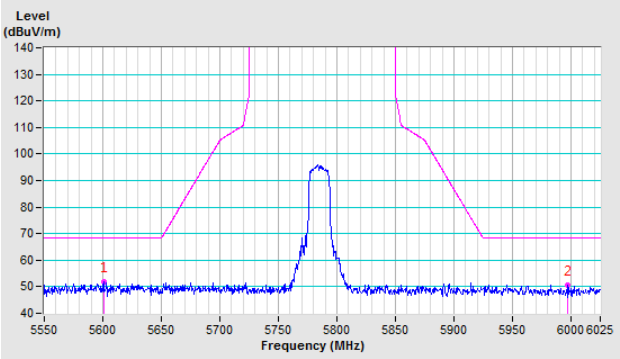
Annex A- Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band)

802.11a

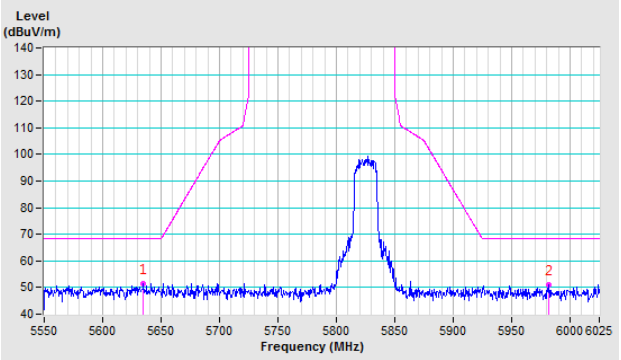
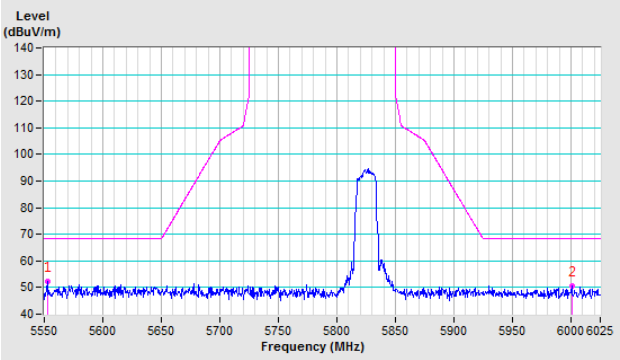
CH 149 5745 MHz

Horizontal	Vertical
	

CH 157 5785 MHz

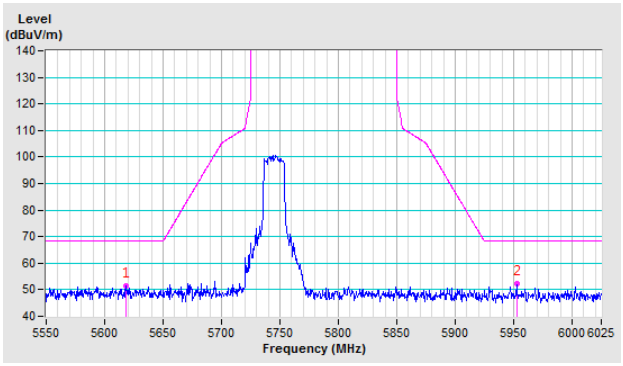
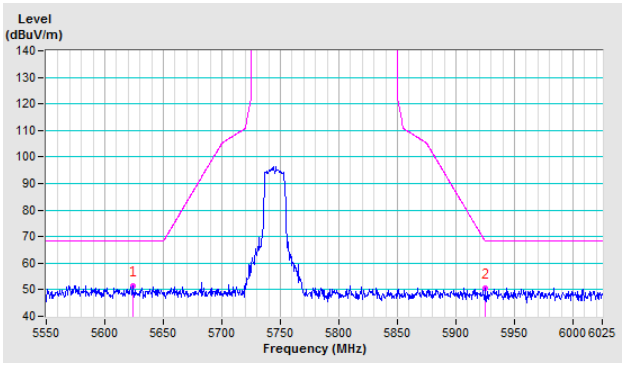
Horizontal	Vertical
	

CH 165 5825 MHz

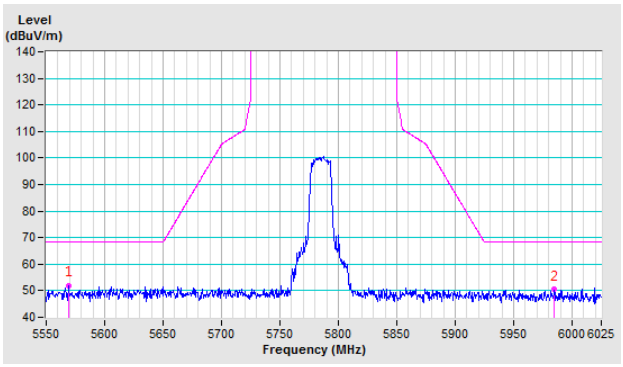
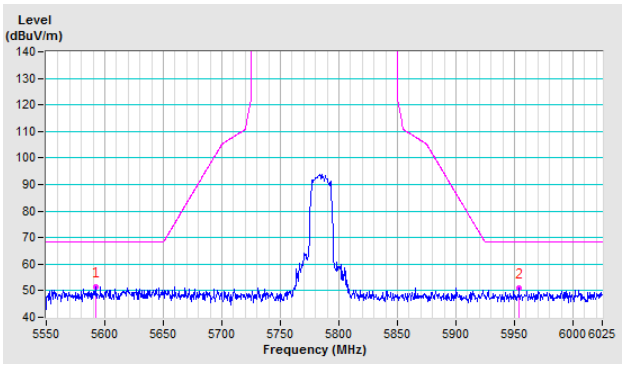
Horizontal	Vertical
	

802.11ac (VHT20)

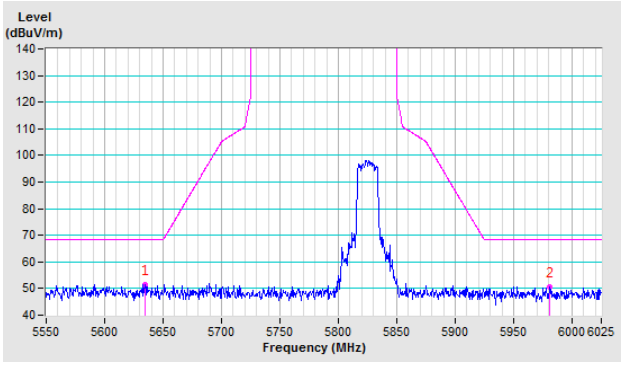
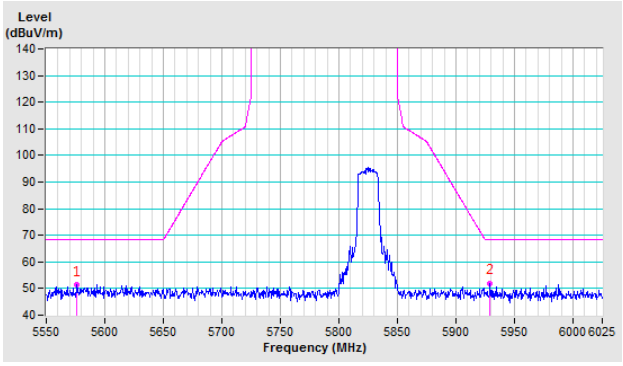
CH 149 5745 MHz

Horizontal	Vertical
	

CH 157 5785 MHz

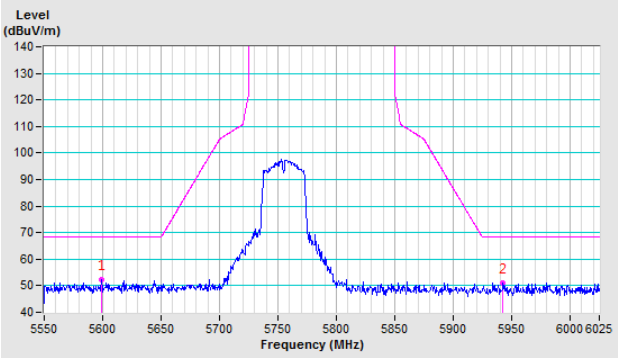
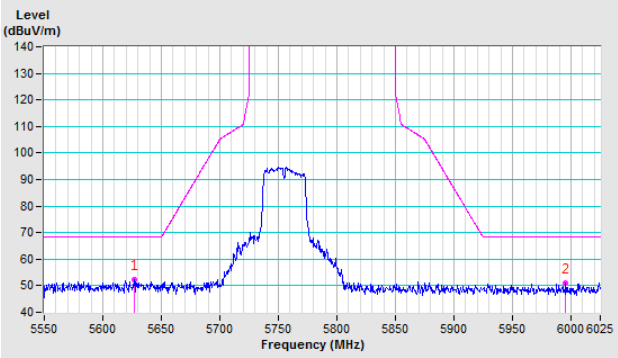
Horizontal	Vertical
	

CH 165 5825 MHz

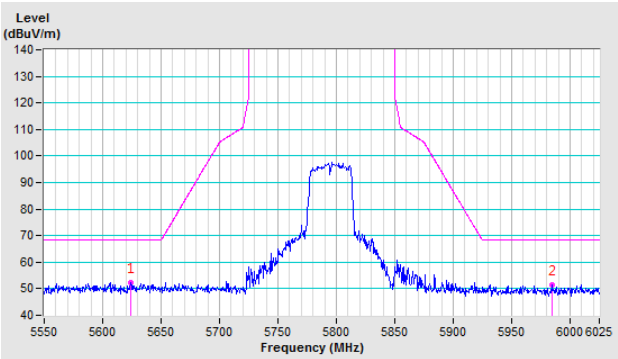
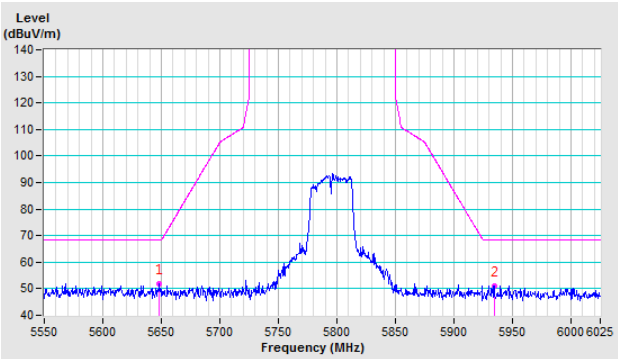
Horizontal	Vertical
	

802.11ac (VHT40)

CH 151 5755 MHz

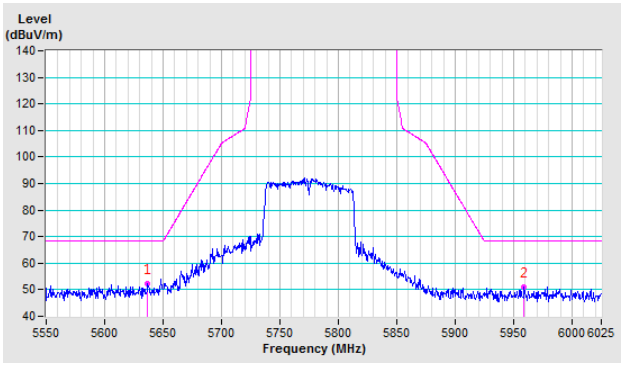
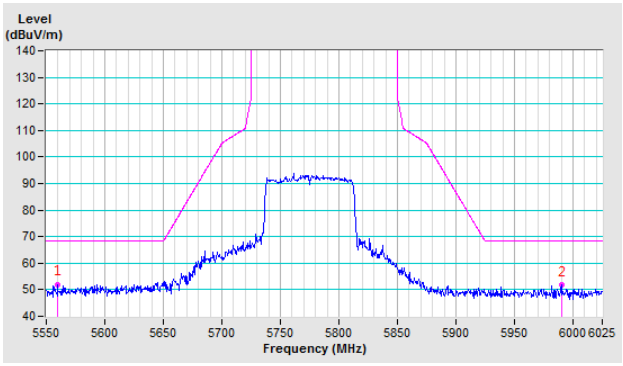
Horizontal	Vertical
	

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:

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

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

Hwa Ya EMC/RF/Safety Lab
Tel: 886-3-3183232
Fax: 886-3-3270892

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

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

--- END ---