FCC Test Report

Report No.:	RF170320E01B-1
FCC ID:	H8NTCG310
Test Model:	TCG310
Series Model:	TCG310, TCG310XXXXXX (X=0~9,A-Z,a-z,” -” ,” .” or blank for marketing)
Received Date:	Aug. 07, 2017
Test Date:	Aug. 15 to Sep. 06, 2017
Issued Date:	Sep. 14, 2017
Applicant:	ASKEY COMPUTER CORP.
Address:	10F, NO.119, JIANKANG RD., ZHONGHE DIST., NEW TAIPEI CITY 23585, TAIWAN, R.O.C.
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.

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Release Control Record

Issue No.	Description	Date Issued
RF170320E01B-1	Original release.	Sep. 14, 2017

1 Certificate of Conformity

Product:	Cable Modem
Brand:	ASKEY
Test Model:	TCG310
Series Model:	TCG310, TCG310XXXXXX (X=0~9,A-Z,a-z,"-","."or blank for marketing)
Sample Status:	ENGINEERING SAMPLE
Applicant:	ASKEY COMPUTER CORP.
Test Date:	Aug. 15 to Sep. 06, 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 : _____ , **Date:** Sep. 14, 2017

Wendy Wu / Specialist

Approved by : _____ , **Date:** Sep. 14, 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 -11.48dB at 0.36484MHz.
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 5150MHz.
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(MHF) not a standard connector.

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

2.1 Measurement Uncertainty

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

Measurement	Frequency	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	Cable Modem
Brand	ASKEY
Test Model	TCG310
Series Model	TCG310, TCG310XXXXXX (X=0~9,A-Z,a-z," -" ," ." or blank for marketing)
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	DC 12V from power adapter
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode only
Modulation Technology	DSSS,OFDM
Transfer Rate	802.11b: up to 11Mbps 802.11a/g: up to 54Mbps 802.11n: up to 600Mbps 802.11ac: up to 1733.3Mbps
Operating Frequency	**2.4GHz:** 2.412 ~ 2.462GHz **5GHz:** 5.18GHz ~ 5.24GHz, 5.745GHz ~ 5.825GHz
Number of Channel	**2.4GHz:** 802.11b, 802.11g, 802.11n (HT20): 11 802.11n (HT40): 7 **5GHz:** 802.11a, 802.11n (HT20), 802.11ac (VHT20): 9 802.11n (HT40), 802.11ac (VHT40): 4 802.11ac (VHT80): 2
Output Power	**2.4GHz:** **CDD Mode:** 409.643mW **Beamforming Mode:** 290.116mW **5.18 ~ 5.24GHz:** **CDD Mode:** 431.54mW **Beamforming Mode:** 330.994mW **5.745 ~ 5.825GHz:** **CDD Mode:** 715.803mW **Beamforming Mode:** 343.532mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter x 1
Data Cable Supplied	NA

Note:

1. The EUT has below model names, which are identical to each other in all aspects except for the following:

Brand	Model No.	Different
ASKEY	TCG310	For Marketing request,"XXXXXX" just for used to ship to different customers to do the difference, Not related to the hardware, RF features, institutions.
	TCG310XXXXXX (X=0~9,A-Z,a-z," -" ," ." or blank for marketing)	

From the above models, model: **TCG310** was selected as representative model for the test and its data was recorded in this report.

2. Simultaneously transmission condition.

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

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

No	Brand Name	Model No.	Spec.
1	LEI	MU42-3120350-A1	Input: 100-240Vac, 50/60Hz, 1.5A Output: 12Vdc, 3.5A DC output cable: 1.5m, unshielded
2	Sunny	SYS1570-4212-W2	Input: 100-240Vac, 50-60Hz, 1.5A Output: 12Vdc, 3.5A DC output cable: 1.5m, unshielded
Note: From the above adapters, the worst radiated test was found in **Adapter 1**. Therefore only the test data of the modes were recorded in this report.			

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

Set 1							
Antenna No.	PCB Chain No.	Brand	Ant. Net Gain(dBi)	Frequency range (GHz)	Antenna Type	Connecter Type	Cable Length (mm)
1	2.4G-chain 3	Askey	3.57	2.4~2.4835	PCB	none	-
	5G-chain 0		3.48	5.15~5.35			
			3.35	5.47~5.725			
			2.79	5.725~5.85			
2	5G-chain 1	HONGBO	3.89	5.15~5.35	Dipole	i-pex(MHF)	95
			4.16	5.47~5.725			
			4.04	5.725~5.85			
3	2.4G-chain 1		3.99	2.4~2.4835	Dipole	i-pex(MHF)	75
	5G-chain 2		3.89	5.15~5.35			
			3.66	5.47~5.725			
			3.83	5.725~5.85			
4	2.4G-chain 0		3.26	2.4~2.4835	Dipole	i-pex(MHF)	295
	5G-chain 3		3.9	5.15~5.35			
			3.92	5.47~5.725			
			4.49	5.725~5.85			

Set 2							
Antenna No.	PCB Chain No.	Brand	Ant. Net Gain(dBi)	Frequency range (GHz)	Antenna Type	Connecter Type	Cable Length (mm)
1	2.4G-chain 3	Askey	3.57	2.4~2.4835	PCB	none	-
	5G-chain 0		3.48	5.15~5.35			
			3.35	5.47~5.725			
			2.79	5.725~5.85			
2	5G-chain 1	TSKY	2.93	5.15~5.35	PIFA	i-pex(MHF)	93
			2.69	5.47~5.725			
			2.76	5.725~5.85			
3	2.4G-chain 1		3.2	2.4~2.4835	PIFA	i-pex(MHF)	71
	5G-chain 2		3.48	5.15~5.35			
			3.23	5.47~5.725			
			3.34	5.725~5.85			
4	2.4G-chain 0		2.12	2.4~2.4835	Dipole	i-pex(MHF)	290
	5G-chain 3		2.61	5.15~5.35			
			2.36	5.47~5.725			
			2.52	5.725~5.85			
Set 3							
Antenna No.	PCB Chain No.	Brand	Ant. Net Gain(dBi)	Frequency range (GHz)	Antenna Type	Connecter Type	Cable Length (mm)
1	2.4G-chain 3	Askey	3.57	2.4~2.4835	PCB	none	-
	5G-chain 0		3.48	5.15~5.35			
			3.35	5.47~5.725			
			2.79	5.725~5.85			
2	5G-chain 1	Master Wave	5.96	5.15~5.35	Dipole	i-pex(MHF)	95
			7.51	5.47~5.725			
			7.39	5.725~5.85			
3	2.4G-chain 1		4.52	2.4~2.4835	Dipole	i-pex(MHF)	58
	5G-chain 2		4.9	5.15~5.35			
			3.95	5.47~5.725			
			3.38	5.725~5.85			
4	2.4G-chain 0		3.41	2.4~2.4835	Dipole	i-pex(MHF)	285
	5G-chain 3		4.23	5.15~5.35			
			4.57	5.47~5.725			
			3.76	5.725~5.85			

5. The EUT incorporates a MIMO function.

For 2.4GHz Band			
MODULATION MODE	**DATA RATE (MCS)**	**TX & RX CONFIGURATION**	
802.11b	1 ~ 11Mbps	1TX Fixed Chain 0	1RX Fixed Chain 0
802.11g	6 ~ 54Mbps	3TX	3RX
802.11n (HT20)	MCS 0~7	3TX	3RX
	MCS 8~15	3TX	3RX
	MCS 16~23	3TX	3RX
802.11n (HT40)	MCS 0~7	3TX	3RX
	MCS 8~15	3TX	3RX
	MCS 16~23	3TX	3RX
5GHz Band			
MODULATION MODE	**DATA RATE (MCS)**	**TX & RX CONFIGURATION**	
802.11a	6 ~ 54Mbps	4TX	4RX
802.11n (HT20)	MCS 0~7	4TX	4RX
	MCS 8~15	4TX	4RX
	MCS 16~23	4TX	4RX
	MCS 24~31	4TX	4RX
802.11n (HT40)	MCS 0~7	4TX	4RX
	MCS 8~15	4TX	4RX
	MCS 16~23	4TX	4RX
	MCS 24~31	4TX	4RX
802.11ac (VHT20)	MCS 0~8, Nss=1	4TX	4RX
	MCS 0~8, Nss=2	4TX	4RX
	MCS 0~9, Nss=3	4TX	4RX
	MCS 0~8, Nss=4	4TX	4RX
802.11ac (VHT40)	MCS 0~9, Nss=1	4TX	4RX
	MCS 0~9, Nss=2	4TX	4RX
	MCS 0~9, Nss=3	4TX	4RX
	MCS 0~9, Nss=4	4TX	4RX
802.11ac (VHT80)	MCS 0~9, Nss=1	4TX	4RX
	MCS 0~9, Nss=2	4TX	4RX
	MCS 0~9, Nss=3	4TX	4RX
	MCS 0~9, Nss=4	4TX	4RX

Note:
1. All of modulation mode support beamforming function except 802.11a/b/g modulation mode.
2. The EUT support Beamforming and CDD mode, therefore both mode were investigated and the worst case scenario was identified. The worst case data were presented in test report.
3. The modulation and bandwidth are similar for 802.11n mode for 20MHz (40MHz) and 802.11ac mode for 20MHz (40MHz), therefore investigated worst case to representative mode in test report. (Final test mode refer section 3.2.1)

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

3.2 Description of Test Modes

FOR 5180 ~ 5240MHz

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

Channel	Frequency	Channel	Frequency
36	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 5745 ~ 5825MHz:

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

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

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

Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
155	5775MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable To				Description
	RE≥1G	RE<1G	PLC	APCM	
1	√	√	√	√	Antenna Set 3 with Adapter 1
2	√	√	-	-	Antenna Set 2 with Adapter 1
3	-	-	√	-	Antenna Set 3 with Adapter 2

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

1. "-" means no effect.

Radiated Emission Test (Above 1GHz):

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

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

Radiated Emission Test (Below 1GHz):

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

CDD Mode						
Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11ac (VHT40)	5180-5240 5745-5825	38 to 46 151 to 159	159	OFDM	BPSK	13.5

Power Line Conducted Emission Test:

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

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

CDD Mode						
Mode	**FREQ. Band (MHz)**	**Available Channel**	**Tested Channel**	**Modulation Technology**	**Modulation Type**	**Data Rate (Mbps)**
802.11ac (VHT40)	5180-5240 5745-5825	38 to 46 151 to 159	159	OFDM	BPSK	13.5

Antenna Port Conducted Measurement:

☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.

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

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

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

Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested By
RE≥1G	23deg. C, 69%RH	120Vac, 60Hz	Andy Ho
RE<1G	24deg. C, 65%RH	120Vac, 60Hz	Jyunchun Lin
PLC	23deg. C, 66%RH	120Vac, 60Hz	Bear Lee
APCM	25deg. C, 66%RH	120Vac, 60Hz	Robert Cheng

3.3 Duty Cycle of Test Signal

Duty cycle of test signal is < 98 %, duty factor is required

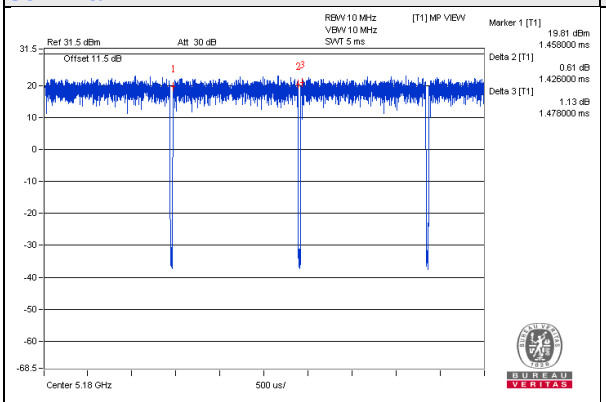
802.11a: Duty cycle = 1.426/1.478 = 0.965, Duty factor = 10 * log(1/0.965) = 0.16

802.11ac (VHT20): Duty cycle = 1.343/1.374 = 0.977, Duty factor = 10 * log(1/0.977) = 0.1

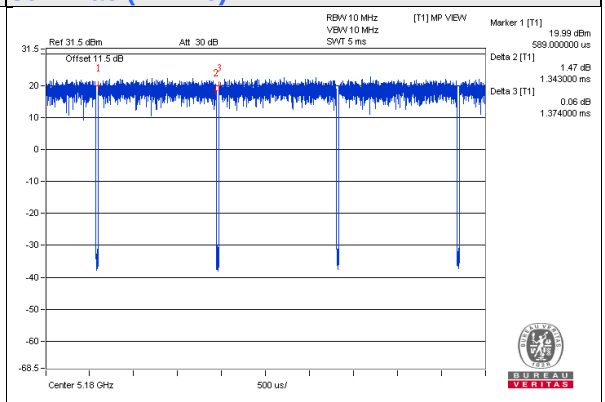
802.11ac (VHT40): Duty cycle = 0.667/0.697 = 0.957, Duty factor = 10 * log(1/0.957) = 0.19

802.11ac (VHT80): Duty cycle = 0.331/0.361 = 0.917, Duty factor = 10 * log(1/0.917) = 0.38

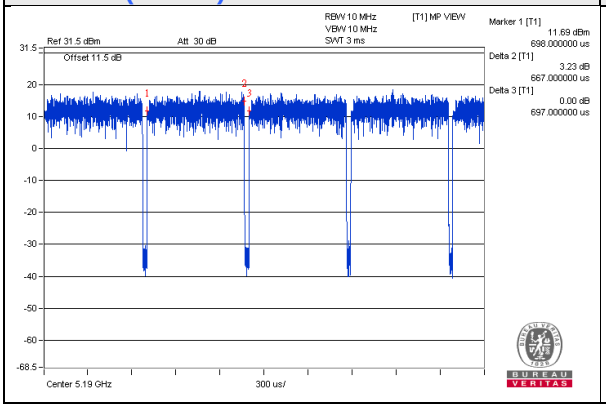
802.11a



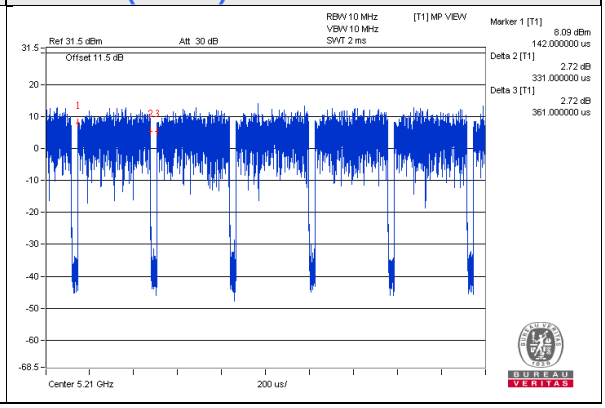
802.11ac (VHT20)



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.

For Conducted Emission Test:

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	CMTS	CASA system	C220	NA	NA	Supplied by client
B.	Laptop	DELL	E5430	HYV4VY1	FCC DoC	Provided by Lab
C.	HUB	ZyXEL	ES-116P	S060H02000215	FCC DoC	Provided by Lab
D.	USB Disk	Nmicro	16G	N/A	N/A	Supplied by client
E.	Telephone	DAISHO	DS-03	N/A	N/A	Provided by Lab
F.	Telephone	Romeo	TE-812	97280903	N/A	Provided by Lab

Note:

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

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	DC Cable	1	1.5	No	0	Supplied by client
2.	Coaxial Cable	1	10	Yes	0	Provided by Lab
3.	RJ-45 Cable	1	10	No	0	Provided by Lab
4.	RJ-45 Cable	3	10	No	0	Provided by Lab
5.	RJ-11 Cable	1	1.8	No	0	Provided by Lab
6.	RJ-11 Cable	1	1.8	No	0	Provided by Lab

For Radiated Emission Test:

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Telephone	WONDER	WD-303	7C17KA 04011	N/A	Provided by Lab
B.	Laptop	HP	Pavilion 14-ab023TU	5CD5340WXZ	N/A	Provided by Lab
C.	USB 3.0 Disk	Nmicro	16G	N/A	N/A	Supplied by client

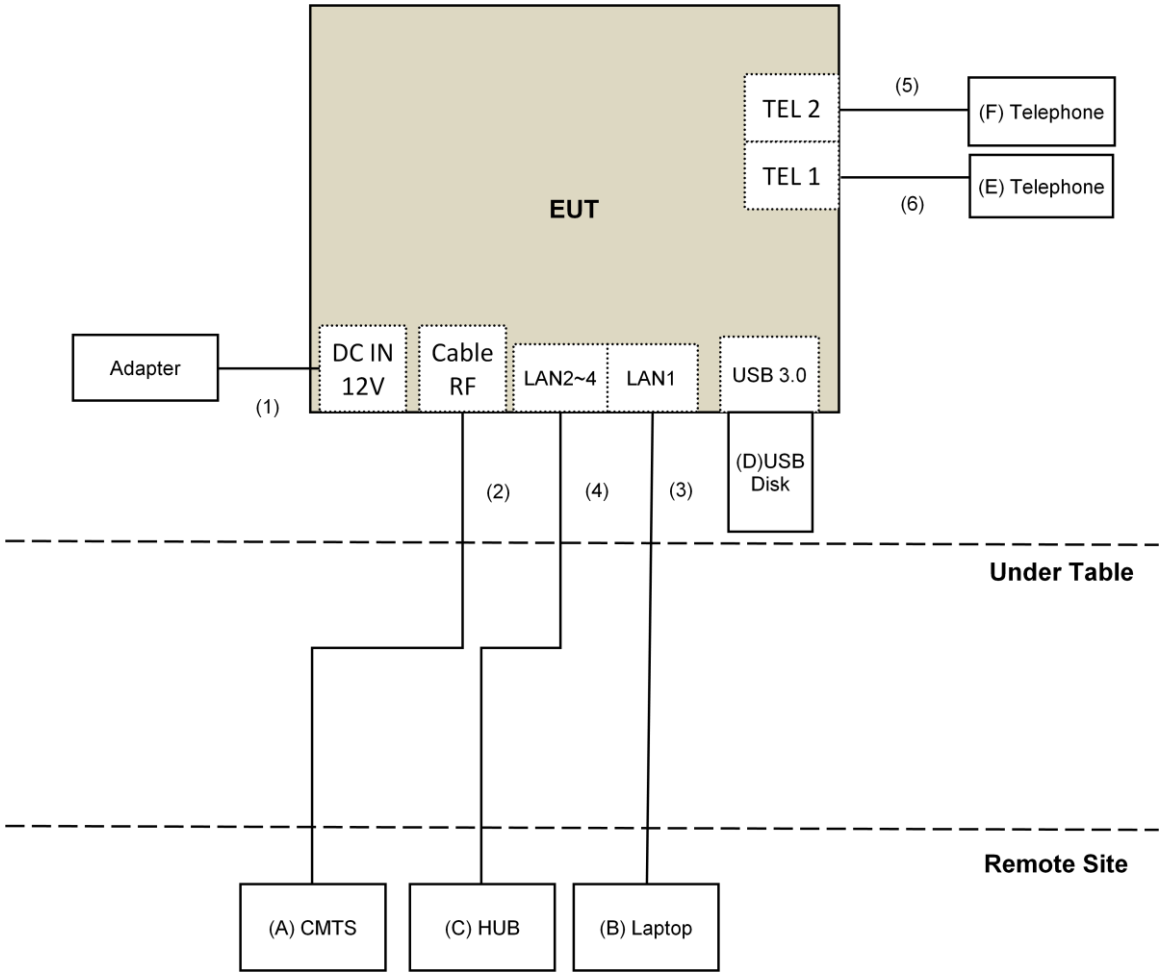
Note:

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
2.	RJ-11 Cable	1	1.8	No	0	Provided by Lab
3.	RJ-45 Cable	1	10	No	0	Provided by Lab
4.	Coaxial Cable	1	10	Yes	0	Provided by Lab

3.4.1 Configuration of System under Test

For Conducted Emission:



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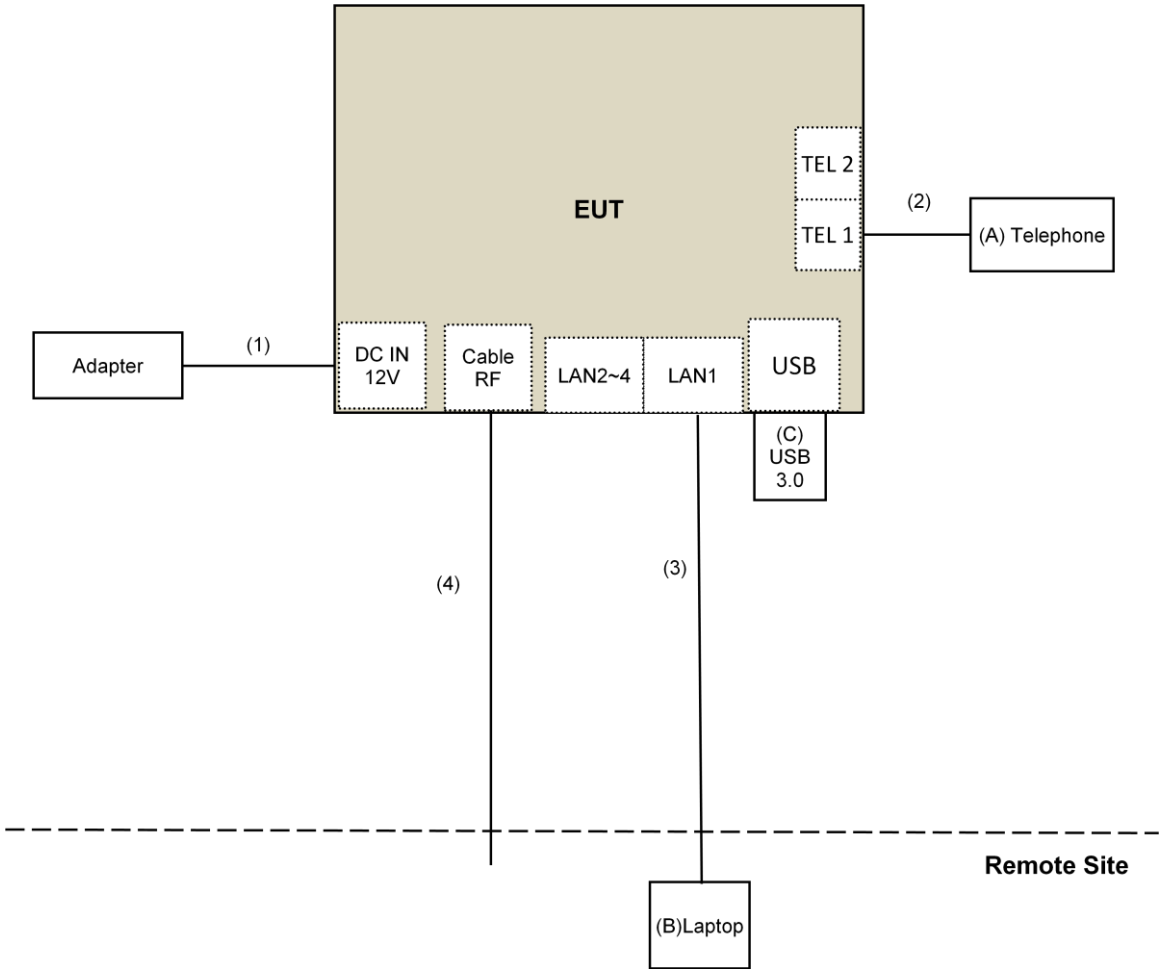


3.5 General Description of Applied Standard

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.

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

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

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

NOTE:

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

Limits of unwanted emission out of the restricted bands

<table>
<tr><td colspan="2">Applicable To</td><td colspan="2">Limit</td></tr>
<tr><td colspan="2" rowspan="2">789033 D02 General UNII Test Procedure New Rules 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	FSV40	100964	July 1, 2017	June 30, 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
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: Aug. 15 to Sep. 06, 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:

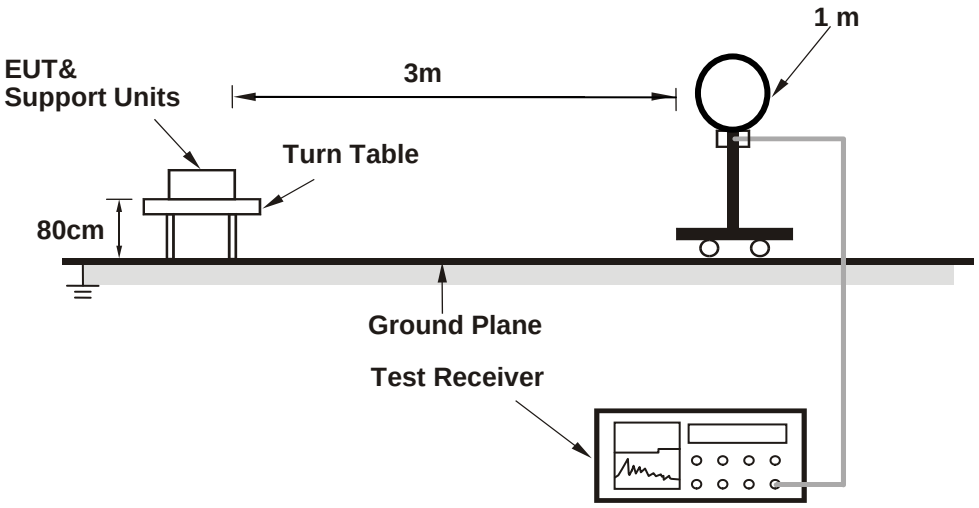
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

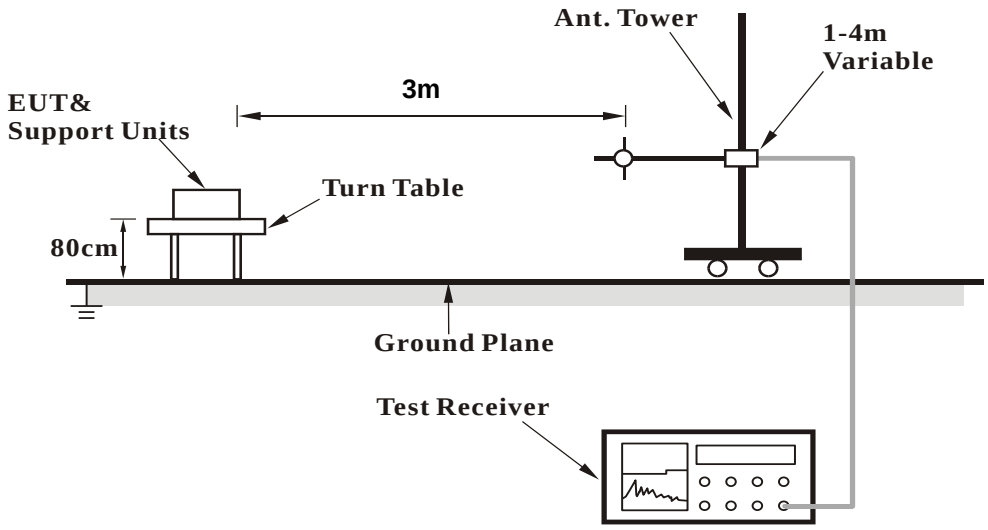
No deviation.

4.1.5 Test Setup

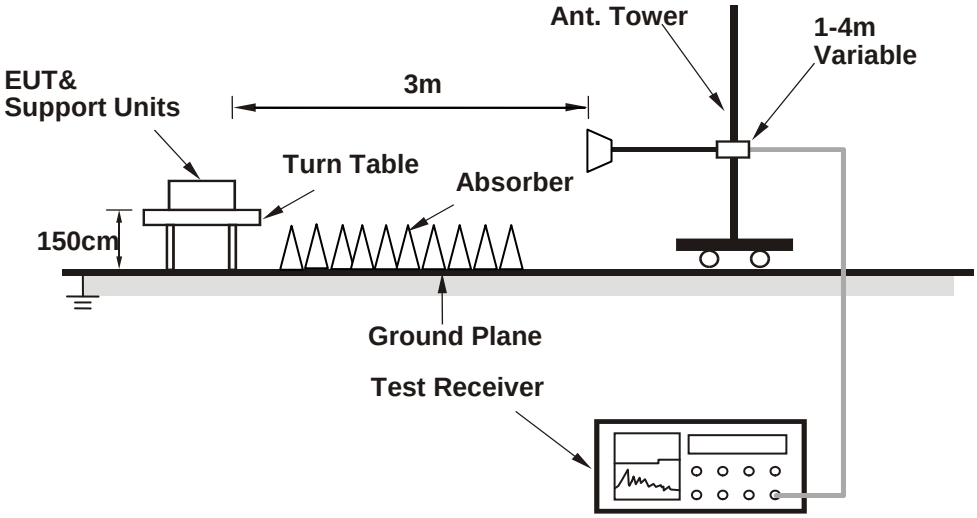
For Radiated emission below 30MHz



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. Connected the EUT with the Laptop which is placed on remote site.
b. Contorlling software (HyperTerminal paste wl.txt command) has been activated to set the EUT on specific status.

4.1.7 Test Results (Mode 1)

Above 1GHz Data:

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	69.5 PK	74.0	-4.5	1.64 H	293	65.5	4.0
2	5150.00	50.6 AV	54.0	-3.4	1.64 H	293	46.6	4.0
3	*5180.00	114.0 PK			1.64 H	293	110.0	4.0
4	*5180.00	103.4 AV			1.64 H	293	99.4	4.0
5	#10360.00	55.3 PK	74.0	-18.7	1.42 H	7	41.7	13.6
6	#10360.00	43.0 AV	54.0	-11.0	1.42 H	7	29.4	13.6
7	15540.00	54.2 PK	74.0	-19.8	2.04 H	28	41.0	13.2
8	15540.00	37.7 AV	54.0	-16.3	2.04 H	28	24.5	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	5150.00	69.1 PK	74.0	-4.9	2.76 V	236	65.1	4.0
2	5150.00	50.7 AV	54.0	-3.3	2.76 V	236	46.7	4.0
3	*5180.00	112.7 PK			2.76 V	236	108.7	4.0
4	*5180.00	103.1 AV			2.76 V	236	99.1	4.0
5	#10360.00	49.8 PK	74.0	-24.2	1.65 V	75	36.2	13.6
6	#10360.00	37.5 AV	54.0	-16.5	1.65 V	75	23.9	13.6
7	15540.00	47.4 PK	74.0	-26.6	1.46 V	58	34.2	13.2
8	15540.00	35.6 AV	54.0	-18.4	1.46 V	58	22.4	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	113.4 PK			1.70 H	309	109.4	4.0
2	*5200.00	103.5 AV			1.70 H	309	99.5	4.0
3	5353.80	52.2 PK	74.0	-21.8	1.70 H	309	47.8	4.4
4	5353.80	43.1 AV	54.0	-10.9	1.70 H	309	38.7	4.4
5	#10400.00	54.7 PK	74.0	-19.3	1.37 H	19	41.1	13.6
6	#10400.00	42.7 AV	54.0	-11.3	1.37 H	19	29.1	13.6
7	15600.00	54.7 PK	74.0	-19.3	2.02 H	21	41.3	13.4
8	15600.00	38.1 AV	54.0	-15.9	2.02 H	21	24.7	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	112.9 PK			1.44 V	243	108.9	4.0
2	*5200.00	103.7 AV			1.44 V	243	99.7	4.0
3	5353.80	52.4 PK	74.0	-21.6	1.44 V	243	48.0	4.4
4	5353.80	43.0 AV	54.0	-11.0	1.44 V	243	38.6	4.4
5	#10400.00	49.5 PK	74.0	-24.5	1.71 V	70	35.9	13.6
6	#10400.00	37.4 AV	54.0	-16.6	1.71 V	70	23.8	13.6
7	15600.00	46.9 PK	74.0	-27.1	1.50 V	46	33.5	13.4
8	15600.00	35.1 AV	54.0	-18.9	1.50 V	46	21.7	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	113.6 PK			1.52 H	250	109.4	4.2
2	*5240.00	104.3 AV			1.52 H	250	100.1	4.2
3	5394.10	52.9 PK	74.0	-21.1	1.52 H	250	48.5	4.4
4	5394.10	43.5 AV	54.0	-10.5	1.52 H	250	39.1	4.4
5	#10480.00	54.8 PK	74.0	-19.2	1.33 H	10	41.1	13.7
6	#10480.00	42.7 AV	54.0	-11.3	1.33 H	10	29.0	13.7
7	15720.00	54.3 PK	74.0	-19.7	2.00 H	9	40.3	14.0
8	15720.00	37.8 AV	54.0	-16.2	2.00 H	9	23.8	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	113.2 PK			1.43 V	243	109.0	4.2
2	*5240.00	103.8 AV			1.43 V	243	99.6	4.2
3	5394.10	52.4 PK	74.0	-21.6	1.43 V	243	48.0	4.4
4	5394.10	43.4 AV	54.0	-10.6	1.43 V	243	39.0	4.4
5	#10480.00	48.9 PK	74.0	-25.1	1.69 V	60	35.2	13.7
6	#10480.00	37.0 AV	54.0	-17.0	1.69 V	60	23.3	13.7
7	15720.00	46.9 PK	74.0	-27.1	1.55 V	51	32.9	14.0
8	15720.00	34.8 AV	54.0	-19.2	1.55 V	51	20.8	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 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	#5512.60	63.0 PK	74.0	-11.0	2.45 H	352	58.4	4.6
2	#5512.60	52.1 AV	54.0	-1.9	2.45 H	352	47.5	4.6
3	*5745.00	120.6 PK			2.57 H	314	115.6	5.0
4	*5745.00	109.9 AV			2.57 H	314	104.9	5.0
5	11490.00	57.7 PK	74.0	-16.3	1.50 H	235	43.6	14.1
6	11490.00	44.9 AV	54.0	-9.1	1.50 H	235	30.8	14.1
7	#17235.00	59.8 PK	74.0	-14.2	1.50 H	300	41.5	18.3
8	#17235.00	47.6 AV	54.0	-6.4	1.50 H	300	29.3	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	#5512.60	57.3 PK	74.0	-16.7	2.96 V	238	52.7	4.6
2	#5512.60	46.8 AV	54.0	-7.2	2.96 V	238	42.2	4.6
3	*5745.00	118.3 PK			2.96 V	238	113.3	5.0
4	*5745.00	108.0 AV			2.96 V	238	103.0	5.0
5	11490.00	58.9 PK	74.0	-15.1	1.00 V	253	44.8	14.1
6	11490.00	45.9 AV	54.0	-8.1	1.00 V	253	31.8	14.1
7	#17235.00	54.0 PK	74.0	-20.0	2.25 V	302	35.7	18.3
8	#17235.00	42.6 AV	54.0	-11.4	2.25 V	302	24.3	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	#5550.00	54.0 PK	74.0	-20.0	1.50 H	360	49.5	4.5
2	#5550.00	46.1 AV	54.0	-7.9	1.50 H	360	41.6	4.5
3	*5785.00	119.2 PK			1.50 H	360	114.2	5.0
4	*5785.00	108.7 AV			1.50 H	360	103.7	5.0
5	#6032.00	54.3 PK	74.0	-19.7	1.50 H	360	48.7	5.6
6	#6032.00	45.0 AV	54.0	-9.0	1.50 H	360	39.4	5.6
7	11570.00	57.9 PK	74.0	-16.1	1.55 H	221	43.9	14.0
8	11570.00	45.0 AV	54.0	-9.0	1.55 H	221	31.0	14.0
9	#17355.00	59.6 PK	74.0	-14.4	1.50 H	299	40.7	18.9
10	#17355.00	47.5 AV	54.0	-6.5	1.50 H	299	28.6	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	#5550.00	52.2 PK	74.0	-21.8	3.26 V	247	47.7	4.5
2	#5550.00	41.1 AV	54.0	-12.9	3.26 V	247	36.6	4.5
3	*5785.00	118.5 PK			3.26 V	247	113.5	5.0
4	*5785.00	107.6 AV			3.26 V	247	102.6	5.0
5	#6032.00	49.1 PK	74.0	-24.9	3.26 V	247	43.5	5.6
6	#6032.00	39.0 AV	54.0	-15.0	3.26 V	247	33.4	5.6
7	11570.00	59.1 PK	74.0	-14.9	1.03 V	250	45.1	14.0
8	11570.00	46.2 AV	54.0	-7.8	1.03 V	250	32.2	14.0
9	#17355.00	53.9 PK	74.0	-20.1	2.27 V	316	35.0	18.9
10	#17355.00	42.2 AV	54.0	-11.8	2.27 V	316	23.3	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	*5825.00	119.7 PK			1.46 H	360	114.5	5.2
2	*5825.00	109.1 AV			1.46 H	360	103.9	5.2
3	#6060.30	58.8 PK	74.0	-15.2	1.46 H	310	53.1	5.7
4	#6060.30	49.5 AV	54.0	-4.5	1.46 H	310	43.8	5.7
5	11650.00	57.7 PK	74.0	-16.3	1.51 H	228	43.6	14.1
6	11650.00	44.6 AV	54.0	-9.4	1.51 H	228	30.5	14.1
7	#17475.00	59.9 PK	74.0	-14.1	1.56 H	312	40.2	19.7
8	#17475.00	47.5 AV	54.0	-6.5	1.56 H	312	27.8	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	*5825.00	117.0 PK			1.50 V	297	111.8	5.2
2	*5825.00	107.4 AV			1.50 V	297	102.2	5.2
3	#6060.30	54.8 PK	74.0	-19.2	1.50 V	297	49.1	5.7
4	#6060.30	44.6 AV	54.0	-9.4	1.50 V	297	38.9	5.7
5	11650.00	58.6 PK	74.0	-15.4	1.00 V	260	44.5	14.1
6	11650.00	45.7 AV	54.0	-8.3	1.00 V	260	31.6	14.1
7	#17475.00	53.8 PK	74.0	-20.2	2.22 V	327	34.1	19.7
8	#17475.00	42.0 AV	54.0	-12.0	2.22 V	327	22.3	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	67.7 PK	74.0	-6.3	1.83 H	297	63.7	4.0
2	5150.00	52.6 AV	54.0	-1.4	1.83 H	297	48.6	4.0
3	*5180.00	116.0 PK			1.83 H	297	112.0	4.0
4	*5180.00	105.5 AV			1.83 H	297	101.5	4.0
5	#10360.00	55.2 PK	74.0	-18.8	1.42 H	19	41.6	13.6
6	#10360.00	43.0 AV	54.0	-11.0	1.42 H	19	29.4	13.6
7	15540.00	54.2 PK	74.0	-19.8	2.03 H	37	41.0	13.2
8	15540.00	37.8 AV	54.0	-16.2	2.03 H	37	24.6	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	67.6 PK	74.0	-6.4	1.55 V	312	63.6	4.0
2	5150.00	51.6 AV	54.0	-2.4	1.55 V	312	47.6	4.0
3	*5180.00	115.5 PK			1.55 V	312	111.5	4.0
4	*5180.00	104.9 AV			1.55 V	312	100.9	4.0
5	#10360.00	49.8 PK	74.0	-24.2	1.69 V	71	36.2	13.6
6	#10360.00	37.3 AV	54.0	-16.7	1.69 V	71	23.7	13.6
7	15540.00	47.3 PK	74.0	-26.7	1.50 V	50	34.1	13.2
8	15540.00	35.3 AV	54.0	-18.7	1.50 V	50	22.1	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	5150.00	60.8 PK	74.0	-13.2	1.50 H	307	56.8	4.0
2	5150.00	43.6 AV	54.0	-10.4	1.50 H	307	39.6	4.0
3	*5200.00	114.6 PK			1.50 H	307	110.6	4.0
4	*5200.00	104.3 AV			1.50 H	307	100.3	4.0
5	5356.30	56.3 PK	74.0	-17.7	1.50 H	307	51.9	4.4
6	5356.30	46.9 AV	54.0	-7.1	1.50 H	307	42.5	4.4
7	#10400.00	55.3 PK	74.0	-18.7	1.44 H	34	41.7	13.6
8	#10400.00	43.4 AV	54.0	-10.6	1.44 H	34	29.8	13.6
9	15600.00	54.0 PK	74.0	-20.0	1.97 H	22	40.6	13.4
10	15600.00	37.6 AV	54.0	-16.4	1.97 H	22	24.2	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	5150.00	59.6 PK	74.0	-14.4	1.58 V	318	55.6	4.0
2	5150.00	43.2 AV	54.0	-10.8	1.58 V	318	39.2	4.0
3	*5200.00	113.5 PK			1.58 V	318	109.5	4.0
4	*5200.00	103.2 AV			1.58 V	318	99.2	4.0
5	5356.30	55.8 PK	74.0	-18.2	1.58 V	318	51.4	4.4
6	5356.30	46.4 AV	54.0	-7.6	1.58 V	318	42.0	4.4
7	#10400.00	50.1 PK	74.0	-23.9	1.66 V	63	36.5	13.6
8	#10400.00	37.3 AV	54.0	-16.7	1.66 V	63	23.7	13.6
9	15600.00	47.0 PK	74.0	-27.0	1.49 V	43	33.6	13.4
10	15600.00	34.9 AV	54.0	-19.1	1.49 V	43	21.5	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	5076.80	54.3 PK	74.0	-19.7	1.81 H	291	50.4	3.9
2	5076.80	44.8 AV	54.0	-9.2	1.81 H	291	40.9	3.9
3	*5240.00	116.8 PK			1.81 H	300	112.6	4.2
4	*5240.00	105.7 AV			1.81 H	300	101.5	4.2
5	5396.60	55.9 PK	74.0	-18.1	1.81 H	297	51.5	4.4
6	5396.60	45.9 AV	54.0	-8.1	1.81 H	297	41.5	4.4
7	#10480.00	53.7 PK	74.0	-20.3	1.45 H	20	40.0	13.7
8	#10480.00	41.9 AV	54.0	-12.1	1.45 H	20	28.2	13.7
9	15720.00	53.0 PK	74.0	-21.0	1.92 H	22	39.0	14.0
10	15720.00	36.3 AV	54.0	-17.7	1.92 H	22	22.3	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	5076.80	53.6 PK	74.0	-20.4	1.60 V	315	49.7	3.9
2	5076.80	43.6 AV	54.0	-10.4	1.60 V	315	39.7	3.9
3	*5240.00	115.6 PK			1.60 V	315	111.4	4.2
4	*5240.00	104.5 AV			1.60 V	315	100.3	4.2
5	5396.60	54.6 PK	74.0	-19.4	1.60 V	315	50.2	4.4
6	5396.60	44.8 AV	54.0	-9.2	1.60 V	315	40.4	4.4
7	#10480.00	48.8 PK	74.0	-25.2	1.69 V	58	35.1	13.7
8	#10480.00	36.1 AV	54.0	-17.9	1.69 V	58	22.4	13.7
9	15720.00	46.7 PK	74.0	-27.3	1.46 V	59	32.7	14.0
10	15720.00	34.4 AV	54.0	-19.6	1.46 V	59	20.4	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 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	#5499.30	61.8 PK	74.0	-12.2	1.50 H	350	57.3	4.5
2	#5499.30	51.8 AV	54.0	-2.2	1.50 H	350	47.3	4.5
3	*5745.00	118.8 PK			1.50 H	318	113.8	5.0
4	*5745.00	108.2 AV			1.50 H	318	103.2	5.0
5	11490.00	58.2 PK	74.0	-15.8	1.56 H	219	44.1	14.1
6	11490.00	45.0 AV	54.0	-9.0	1.56 H	219	30.9	14.1
7	#17235.00	59.3 PK	74.0	-14.7	1.50 H	307	41.0	18.3
8	#17235.00	47.6 AV	54.0	-6.4	1.50 H	307	29.3	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	#5499.30	60.4 PK	74.0	-13.6	1.33 V	290	55.9	4.5
2	#5499.30	50.6 AV	54.0	-3.4	1.33 V	290	46.1	4.5
3	*5745.00	117.7 PK			1.33 V	290	112.7	5.0
4	*5745.00	106.4 AV			1.33 V	290	101.4	5.0
5	11490.00	57.7 PK	74.0	-16.3	1.00 V	246	43.6	14.1
6	11490.00	44.4 AV	54.0	-9.6	1.00 V	246	30.3	14.1
7	#17235.00	53.2 PK	74.0	-20.8	2.30 V	315	34.9	18.3
8	#17235.00	41.4 AV	54.0	-12.6	2.30 V	315	23.1	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	#5538.50	60.0 PK	74.0	-14.0	1.50 H	357	55.5	4.5
2	#5538.50	49.5 AV	54.0	-4.5	1.50 H	357	45.0	4.5
3	*5785.00	120.0 PK			1.50 H	357	115.0	5.0
4	*5785.00	108.4 AV			1.50 H	357	103.4	5.0
5	#6032.90	56.9 PK	74.0	-17.1	1.50 H	357	51.3	5.6
6	#6032.90	47.3 AV	54.0	-6.7	1.50 H	357	41.7	5.6
7	11570.00	57.9 PK	74.0	-16.1	1.52 H	234	43.9	14.0
8	11570.00	44.9 AV	54.0	-9.1	1.52 H	234	30.9	14.0
9	#17355.00	60.0 PK	74.0	-14.0	1.54 H	318	41.1	18.9
10	#17355.00	48.0 AV	54.0	-6.0	1.54 H	318	29.1	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	#5538.50	58.7 PK	74.0	-15.3	1.40 V	290	54.2	4.5
2	#5538.50	48.3 AV	54.0	-5.7	1.40 V	290	43.8	4.5
3	*5785.00	116.6 PK			1.40 V	290	111.6	5.0
4	*5785.00	106.4 AV			1.40 V	290	101.4	5.0
5	#6032.90	55.7 PK	74.0	-18.3	1.40 V	290	50.1	5.6
6	#6032.90	46.1 AV	54.0	-7.9	1.40 V	290	40.5	5.6
7	11570.00	57.8 PK	74.0	-16.2	1.02 V	244	43.8	14.0
8	11570.00	44.4 AV	54.0	-9.6	1.02 V	244	30.4	14.0
9	#17355.00	53.2 PK	74.0	-20.8	2.34 V	322	34.3	18.9
10	#17355.00	41.5 AV	54.0	-12.5	2.34 V	322	22.6	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	*5825.00	120.5 PK			1.20 H	349	115.3	5.2
2	*5825.00	109.3 AV			1.20 H	349	104.1	5.2
3	#6074.60	56.8 PK	74.0	-17.2	1.20 H	348	51.1	5.7
4	#6074.60	48.1 AV	54.0	-5.9	1.20 H	348	42.4	5.7
5	11650.00	57.8 PK	74.0	-16.2	1.57 H	240	43.7	14.1
6	11650.00	44.9 AV	54.0	-9.1	1.57 H	240	30.8	14.1
7	#17475.00	59.8 PK	74.0	-14.2	1.55 H	315	40.1	19.7
8	#17475.00	47.8 AV	54.0	-6.2	1.55 H	315	28.1	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	*5825.00	116.5 PK			1.50 V	289	111.3	5.2
2	*5825.00	105.9 AV			1.50 V	289	100.7	5.2
3	#6074.60	55.2 PK	74.0	-18.8	1.50 V	289	49.5	5.7
4	#6074.60	46.9 AV	54.0	-7.1	1.50 V	289	41.2	5.7
5	11650.00	57.6 PK	74.0	-16.4	1.06 V	250	43.5	14.1
6	11650.00	44.1 AV	54.0	-9.9	1.06 V	250	30.0	14.1
7	#17475.00	53.7 PK	74.0	-20.3	2.39 V	314	34.0	19.7
8	#17475.00	41.8 AV	54.0	-12.2	2.39 V	314	22.1	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	5147.40	68.3 PK	74.0	-5.7	1.50 H	304	64.3	4.0
2	5147.40	53.5 AV	54.0	-0.5	1.50 H	304	49.5	4.0
3	*5190.00	109.9 PK			1.50 H	304	105.9	4.0
4	*5190.00	100.6 AV			1.50 H	304	96.6	4.0
5	5356.70	61.3 PK	74.0	-12.7	1.50 H	304	56.9	4.4
6	5356.70	52.0 AV	54.0	-2.0	1.50 H	304	47.6	4.4
7	#10380.00	54.9 PK	74.0	-19.1	1.43 H	28	41.3	13.6
8	#10380.00	42.5 AV	54.0	-11.5	1.43 H	28	28.9	13.6
9	15570.00	53.8 PK	74.0	-20.2	2.07 H	48	40.5	13.3
10	15570.00	37.3 AV	54.0	-16.7	2.07 H	48	24.0	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	5147.40	64.3 PK	74.0	-9.7	1.50 V	297	60.3	4.0
2	5147.40	50.0 AV	54.0	-4.0	1.50 V	297	46.0	4.0
3	*5190.00	106.6 PK			1.50 V	297	102.6	4.0
4	*5190.00	97.3 AV			1.50 V	297	93.3	4.0
5	5356.70	55.8 PK	74.0	-18.2	1.50 V	297	51.4	4.4
6	5356.70	47.7 AV	54.0	-6.3	1.50 V	297	43.3	4.4
7	#10380.00	50.2 PK	74.0	-23.8	1.75 V	72	36.6	13.6
8	#10380.00	37.8 AV	54.0	-16.2	1.75 V	72	24.2	13.6
9	15570.00	47.0 PK	74.0	-27.0	1.46 V	41	33.7	13.3
10	15570.00	35.1 AV	54.0	-18.9	1.46 V	41	21.8	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	5076.60	61.8 PK	74.0	-12.2	1.50 H	308	57.9	3.9
2	5076.60	52.8 AV	54.0	-1.2	1.50 H	308	48.9	3.9
3	*5230.00	113.8 PK			1.50 H	308	109.6	4.2
4	*5230.00	104.1 AV			1.50 H	308	99.9	4.2
5	5381.60	62.4 PK	74.0	-11.6	1.50 H	308	58.0	4.4
6	5381.60	53.7 AV	54.0	-0.3	1.50 H	308	49.3	4.4
7	#10460.00	54.8 PK	74.0	-19.2	1.40 H	37	41.1	13.7
8	#10460.00	42.5 AV	54.0	-11.5	1.40 H	37	28.8	13.7
9	15690.00	53.4 PK	74.0	-20.6	2.11 H	45	39.4	14.0
10	15690.00	37.1 AV	54.0	-16.9	2.11 H	45	23.1	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	5076.60	58.4 PK	74.0	-15.6	1.47 V	285	54.5	3.9
2	5076.60	49.4 AV	54.0	-4.6	1.47 V	285	45.5	3.9
3	*5230.00	110.5 PK			1.47 V	285	106.3	4.2
4	*5230.00	100.8 AV			1.47 V	285	96.6	4.2
5	5381.60	59.0 PK	74.0	-15.0	1.47 V	285	54.6	4.4
6	5381.60	50.3 AV	54.0	-3.7	1.47 V	285	45.9	4.4
7	#10460.00	50.2 PK	74.0	-23.8	1.80 V	63	36.5	13.7
8	#10460.00	38.1 AV	54.0	-15.9	1.80 V	63	24.4	13.7
9	15690.00	47.1 PK	74.0	-26.9	1.40 V	29	33.1	14.0
10	15690.00	35.0 AV	54.0	-19.0	1.40 V	29	21.0	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 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	*5755.00	116.7 PK			1.26 H	350	111.7	5.0
2	*5755.00	108.1 AV			1.26 H	350	103.1	5.0
3	11510.00	57.9 PK	74.0	-16.1	1.54 H	242	43.9	14.0
4	11510.00	45.1 AV	54.0	-8.9	1.54 H	242	31.1	14.0
5	#17265.00	60.0 PK	74.0	-14.0	1.52 H	328	41.5	18.5
6	#17265.00	48.1 AV	54.0	-5.9	1.52 H	328	29.6	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	*5755.00	111.9 PK			1.50 V	288	106.9	5.0
2	*5755.00	103.7 AV			1.50 V	288	98.7	5.0
3	11510.00	58.1 PK	74.0	-15.9	1.10 V	251	44.1	14.0
4	11510.00	44.5 AV	54.0	-9.5	1.10 V	251	30.5	14.0
5	#17265.00	53.8 PK	74.0	-20.2	2.42 V	313	35.3	18.5
6	#17265.00	41.8 AV	54.0	-12.2	2.42 V	313	23.3	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	*5795.00	117.4 PK			1.50 H	353	112.3	5.1
2	*5795.00	108.9 AV			1.50 H	353	103.8	5.1
3	11590.00	57.8 PK	74.0	-16.2	1.58 H	245	43.8	14.0
4	11590.00	45.0 AV	54.0	-9.0	1.58 H	245	31.0	14.0
5	#17385.00	59.9 PK	74.0	-14.1	1.48 H	334	40.8	19.1
6	#17385.00	48.3 AV	54.0	-5.7	1.48 H	334	29.2	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	*5795.00	111.9 PK			1.50 V	288	106.8	5.1
2	*5795.00	104.6 AV			1.50 V	288	99.5	5.1
3	11590.00	58.4 PK	74.0	-15.6	1.06 V	265	44.4	14.0
4	11590.00	44.8 AV	54.0	-9.2	1.06 V	265	30.8	14.0
5	#17385.00	54.0 PK	74.0	-20.0	2.40 V	320	34.9	19.1
6	#17385.00	41.8 AV	54.0	-12.2	2.40 V	320	22.7	19.1

REMARKS:

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

802.11ac (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	63.0 PK	74.0	-11.0	1.50 H	309	59.0	4.0
2	**5150.00**	**53.9 AV**	**54.0**	**-0.1**	**1.50 H**	**309**	**49.9**	**4.0**
3	*5210.00	107.6 PK			1.50 H	309	103.5	4.1
4	*5210.00	98.5 AV			1.50 H	309	94.4	4.1
5	5350.00	59.2 PK	74.0	-14.8	1.50 H	309	54.8	4.4
6	5350.00	49.4 AV	54.0	-4.6	1.50 H	309	45.0	4.4
7	#10420.00	55.2 PK	74.0	-18.8	1.49 H	13	41.6	13.6
8	#10420.00	42.8 AV	54.0	-11.2	1.49 H	13	29.2	13.6
9	15630.00	53.5 PK	74.0	-20.5	2.12 H	48	39.9	13.6
10	15630.00	36.9 AV	54.0	-17.1	2.12 H	48	23.3	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	59.9 PK	74.0	-14.1	1.51 V	300	55.9	4.0
2	5150.00	50.8 AV	54.0	-3.2	1.51 V	300	46.8	4.0
3	*5210.00	104.5 PK			1.51 V	300	100.4	4.1
4	*5210.00	95.4 AV			1.51 V	300	91.3	4.1
5	5350.00	56.1 PK	74.0	-17.9	1.51 V	300	51.7	4.4
6	5350.00	46.3 AV	54.0	-7.7	1.51 V	300	41.9	4.4
7	#10420.00	50.1 PK	74.0	-23.9	1.72 V	66	36.5	13.6
8	#10420.00	37.8 AV	54.0	-16.2	1.72 V	66	24.2	13.6
9	15630.00	46.8 PK	74.0	-27.2	1.42 V	53	33.2	13.6
10	15630.00	35.0 AV	54.0	-19.0	1.42 V	53	21.4	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 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	*5775.00	110.8 PK			1.09 H	360	105.8	5.0
2	*5775.00	101.5 AV			1.09 H	360	96.5	5.0
3	11550.00	50.8 PK	74.0	-23.2	1.52 H	251	36.8	14.0
4	11550.00	37.9 AV	54.0	-16.1	1.52 H	251	23.9	14.0
5	#17325.00	52.9 PK	74.0	-21.1	1.48 H	336	34.3	18.6
6	#17325.00	41.5 AV	54.0	-12.5	1.48 H	336	22.9	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	*5775.00	106.0 PK			2.18 V	290	101.0	5.0
2	*5775.00	98.1 AV			2.18 V	290	93.1	5.0
3	11550.00	51.2 PK	74.0	-22.8	1.06 V	265	37.2	14.0
4	11550.00	37.6 AV	54.0	-16.4	1.06 V	265	23.6	14.0
5	#17325.00	47.2 PK	74.0	-26.8	2.36 V	330	28.6	18.6
6	#17325.00	35.0 AV	54.0	-19.0	2.36 V	330	16.4	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:

802.11ac (VHT40)

CHANNEL	TX Channel 159	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	33.86	35.8 QP	40.0	-4.2	1.00 H	160	44.5	-8.7
2	108.91	34.6 QP	43.5	-8.9	3.00 H	276	45.7	-11.1
3	217.50	35.4 QP	46.0	-10.6	1.00 H	287	46.8	-11.4
4	512.79	30.7 QP	46.0	-15.3	1.50 H	268	33.1	-2.4
5	656.23	30.6 QP	46.0	-15.4	2.50 H	311	30.2	0.4
6	801.78	31.2 QP	46.0	-14.8	1.00 H	263	28.7	2.5
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	110.07	38.6 QP	43.5	-4.9	1.00 V	346	49.7	-11.1
2	140.00	30.9 QP	43.5	-12.6	1.00 V	40	39.3	-8.4
3	215.85	28.4 QP	43.5	-15.1	1.00 V	165	39.9	-11.5
4	465.34	32.8 QP	46.0	-13.2	1.00 V	90	36.2	-3.4
5	658.51	33.3 QP	46.0	-12.7	1.50 V	286	32.9	0.4
6	931.62	33.3 QP	46.0	-12.7	1.00 V	71	28.8	4.5

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

4.1.8 Test Results (Mode 2)

Above 1GHz Data:

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	5150.00	65.3 PK	74.0	-8.7	2.19 H	274	61.3	4.0
2	5150.00	50.6 AV	54.0	-3.4	2.19 H	274	46.6	4.0
3	*5180.00	115.8 PK			2.19 H	274	111.8	4.0
4	*5180.00	105.8 AV			2.19 H	274	101.8	4.0
5	#10360.00	53.4 PK	74.0	-20.6	2.22 H	309	39.8	13.6
6	#10360.00	42.2 AV	54.0	-11.8	2.22 H	309	28.6	13.6
7	15540.00	51.9 PK	74.0	-22.1	1.69 H	59	38.7	13.2
8	15540.00	39.5 AV	54.0	-14.5	1.69 H	59	26.3	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	65.1 PK	74.0	-8.9	1.42 V	358	61.1	4.0
2	5150.00	48.3 AV	54.0	-5.7	1.42 V	358	44.3	4.0
3	*5180.00	113.4 PK			1.42 V	358	109.4	4.0
4	*5180.00	104.0 AV			1.42 V	358	100.0	4.0
5	#10360.00	50.4 PK	74.0	-23.6	1.53 V	278	36.8	13.6
6	#10360.00	38.3 AV	54.0	-15.7	1.53 V	278	24.7	13.6
7	15540.00	44.1 PK	74.0	-29.9	1.32 V	224	30.9	13.2
8	15540.00	32.3 AV	54.0	-21.7	1.32 V	224	19.1	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	113.6 PK			1.50 H	273	109.6	4.0
2	*5200.00	105.4 AV			1.50 H	273	101.4	4.0
3	5362.00	54.2 PK	74.0	-19.8	2.50 H	256	49.8	4.4
4	5362.00	44.8 AV	54.0	-9.2	2.50 H	256	40.4	4.4
5	#10400.00	53.7 PK	74.0	-20.3	2.26 H	306	40.1	13.6
6	#10400.00	42.4 AV	54.0	-11.6	2.26 H	306	28.8	13.6
7	15600.00	51.5 PK	74.0	-22.5	1.63 H	44	38.1	13.4
8	15600.00	39.1 AV	54.0	-14.9	1.63 H	44	25.7	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	111.8 PK			1.42 V	360	107.8	4.0
2	*5200.00	103.6 AV			1.42 V	360	99.6	4.0
3	5362.00	54.0 PK	74.0	-20.0	1.42 V	360	49.6	4.4
4	5362.00	42.5 AV	54.0	-11.5	1.42 V	360	38.1	4.4
5	#10400.00	50.6 PK	74.0	-23.4	1.50 V	293	37.0	13.6
6	#10400.00	38.3 AV	54.0	-15.7	1.50 V	293	24.7	13.6
7	15600.00	44.6 PK	74.0	-29.4	1.27 V	225	31.2	13.4
8	15600.00	32.5 AV	54.0	-21.5	1.27 V	225	19.1	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	5079.20	54.1 PK	74.0	-19.9	1.58 H	272	50.2	3.9
2	5079.20	43.9 AV	54.0	-10.1	1.58 H	272	40.0	3.9
3	*5240.00	115.7 PK			1.58 H	272	111.5	4.2
4	*5240.00	106.1 AV			1.58 H	272	101.9	4.2
5	5402.00	55.0 PK	74.0	-19.0	2.24 H	275	50.6	4.4
6	5402.00	45.8 AV	54.0	-8.2	2.24 H	275	41.4	4.4
7	#10480.00	53.6 PK	74.0	-20.4	2.21 H	308	39.9	13.7
8	#10480.00	42.1 AV	54.0	-11.9	2.21 H	308	28.4	13.7
9	15720.00	51.7 PK	74.0	-22.3	1.63 H	51	37.7	14.0
10	15720.00	39.6 AV	54.0	-14.4	1.63 H	51	25.6	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	5079.20	53.5 PK	74.0	-20.5	1.38 V	359	49.6	3.9
2	5079.20	41.8 AV	54.0	-12.2	1.38 V	359	37.9	3.9
3	*5240.00	113.9 PK			1.38 V	359	109.7	4.2
4	*5240.00	104.3 AV			1.38 V	359	100.1	4.2
5	5402.00	54.8 PK	74.0	-19.2	1.38 V	359	50.4	4.4
6	5402.00	43.5 AV	54.0	-10.5	1.38 V	359	39.1	4.4
7	#10480.00	50.7 PK	74.0	-23.3	1.50 V	285	37.0	13.7
8	#10480.00	38.2 AV	54.0	-15.8	1.50 V	285	24.5	13.7
9	15720.00	44.8 PK	74.0	-29.2	1.26 V	236	30.8	14.0
10	15720.00	32.8 AV	54.0	-21.2	1.26 V	236	18.8	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 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	#5498.90	60.7 PK	74.0	-13.3	1.43 H	51	56.2	4.5
2	#5498.90	49.9 AV	54.0	-4.1	1.43 H	51	45.4	4.5
3	*5745.00	119.9 PK			1.43 H	23	114.9	5.0
4	*5745.00	109.2 AV			1.43 H	23	104.2	5.0
5	11490.00	56.9 PK	74.0	-17.1	2.06 H	354	42.8	14.1
6	11490.00	45.5 AV	54.0	-8.5	2.06 H	354	31.4	14.1
7	#17235.00	62.9 PK	74.0	-11.1	1.15 H	36	44.6	18.3
8	#17235.00	50.2 AV	54.0	-3.8	1.15 H	36	31.9	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	#5498.90	58.6 PK	74.0	-15.4	2.07 V	296	54.1	4.5
2	#5498.90	47.7 AV	54.0	-6.3	2.07 V	296	43.2	4.5
3	*5745.00	116.1 PK			2.07 V	296	111.1	5.0
4	*5745.00	105.7 AV			2.07 V	296	100.7	5.0
5	11490.00	62.3 PK	74.0	-11.7	1.00 V	253	48.2	14.1
6	11490.00	50.4 AV	54.0	-3.6	1.00 V	253	36.3	14.1
7	#17235.00	52.9 PK	74.0	-21.1	1.50 V	246	34.6	18.3
8	#17235.00	41.5 AV	54.0	-12.5	1.50 V	246	23.2	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	#5547.70	58.5 PK	74.0	-15.5	1.33 H	26	54.0	4.5
2	#5547.70	47.5 AV	54.0	-6.5	1.33 H	26	43.0	4.5
3	*5785.00	119.2 PK			1.33 H	26	114.2	5.0
4	*5785.00	108.7 AV			1.33 H	26	103.7	5.0
5	11570.00	57.3 PK	74.0	-16.7	2.08 H	360	43.3	14.0
6	11570.00	45.7 AV	54.0	-8.3	2.08 H	360	31.7	14.0
7	#17355.00	63.2 PK	74.0	-10.8	1.14 H	42	44.3	18.9
8	#17355.00	50.3 AV	54.0	-3.7	1.14 H	42	31.4	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	#5547.70	56.5 PK	74.0	-17.5	1.11 V	235	52.0	4.5
2	#5547.70	45.2 AV	54.0	-8.8	1.11 V	235	40.7	4.5
3	*5785.00	115.8 PK			1.11 V	235	110.8	5.0
4	*5785.00	105.9 AV			1.11 V	235	100.9	5.0
5	11570.00	62.4 PK	74.0	-11.6	1.01 V	254	48.4	14.0
6	11570.00	50.5 AV	54.0	-3.5	1.01 V	254	36.5	14.0
7	#17355.00	53.2 PK	74.0	-20.8	1.56 V	244	34.3	18.9
8	#17355.00	42.0 AV	54.0	-12.0	1.56 V	244	23.1	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	*5825.00	120.7 PK			1.36 H	24	115.5	5.2
2	*5825.00	109.2 AV			1.36 H	24	104.0	5.2
3	11650.00	57.3 PK	74.0	-16.7	2.13 H	360	43.2	14.1
4	11650.00	45.5 AV	54.0	-8.5	2.13 H	360	31.4	14.1
5	#17475.00	63.9 PK	74.0	-10.1	1.15 H	54	44.2	19.7
6	#17475.00	50.7 AV	54.0	-3.3	1.15 H	54	31.0	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	*5825.00	115.9 PK			1.50 V	64	110.7	5.2
2	*5825.00	105.5 AV			1.50 V	64	100.3	5.2
3	11650.00	63.0 PK	74.0	-11.0	1.03 V	254	48.9	14.1
4	11650.00	50.8 AV	54.0	-3.2	1.03 V	254	36.7	14.1
5	#17475.00	53.8 PK	74.0	-20.2	1.61 V	235	34.1	19.7
6	#17475.00	42.4 AV	54.0	-11.6	1.61 V	235	22.7	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.

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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	5148.50	70.8 PK	74.0	-3.2	3.13 H	66	66.8	4.0
2	5148.50	50.7 AV	54.0	-3.3	3.13 H	66	46.7	4.0
3	*5180.00	113.8 PK			3.13 H	66	109.8	4.0
4	*5180.00	102.8 AV			3.13 H	66	98.8	4.0
5	#10360.00	52.8 PK	74.0	-21.2	2.24 H	320	39.2	13.6
6	#10360.00	41.9 AV	54.0	-12.1	2.24 H	320	28.3	13.6
7	15540.00	51.4 PK	74.0	-22.6	1.73 H	71	38.2	13.2
8	15540.00	39.2 AV	54.0	-14.8	1.73 H	71	26.0	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	5148.50	68.7 PK	74.0	-5.3	1.45 V	360	64.7	4.0
2	5148.50	48.4 AV	54.0	-5.6	1.45 V	360	44.4	4.0
3	*5180.00	111.7 PK			1.45 V	360	107.7	4.0
4	*5180.00	101.6 AV			1.45 V	360	97.6	4.0
5	#10360.00	50.1 PK	74.0	-23.9	1.54 V	273	36.5	13.6
6	#10360.00	38.1 AV	54.0	-15.9	1.54 V	273	24.5	13.6
7	15540.00	43.5 PK	74.0	-30.5	1.26 V	213	30.3	13.2
8	15540.00	31.9 AV	54.0	-22.1	1.26 V	213	18.7	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	112.2 PK			1.50 H	78	108.2	4.0
2	*5200.00	101.5 AV			1.50 H	78	97.5	4.0
3	5366.40	52.6 PK	74.0	-21.4	1.50 H	78	48.2	4.4
4	5366.40	42.5 AV	54.0	-11.5	1.50 H	78	38.1	4.4
5	#10400.00	52.5 PK	74.0	-21.5	2.24 H	327	38.9	13.6
6	#10400.00	41.7 AV	54.0	-12.3	2.24 H	327	28.1	13.6
7	15600.00	51.4 PK	74.0	-22.6	1.71 H	57	38.0	13.4
8	15600.00	39.2 AV	54.0	-14.8	1.71 H	57	25.8	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	110.1 PK			1.40 V	357	106.1	4.0
2	*5200.00	99.7 AV			1.40 V	357	95.7	4.0
3	5366.40	50.5 PK	74.0	-23.5	1.40 V	357	46.1	4.4
4	5366.40	40.3 AV	54.0	-13.7	1.40 V	357	35.9	4.4
5	#10400.00	49.6 PK	74.0	-24.4	1.59 V	289	36.0	13.6
6	#10400.00	37.8 AV	54.0	-16.2	1.59 V	289	24.2	13.6
7	15600.00	43.9 PK	74.0	-30.1	1.23 V	215	30.5	13.4
8	15600.00	32.3 AV	54.0	-21.7	1.23 V	215	18.9	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	113.3 PK			1.67 H	78	109.1	4.2
2	*5240.00	102.8 AV			1.67 H	78	98.6	4.2
3	5394.00	53.6 PK	74.0	-20.4	1.67 H	78	49.2	4.4
4	5394.00	43.0 AV	54.0	-11.0	1.67 H	78	38.6	4.4
5	#10480.00	52.9 PK	74.0	-21.1	2.27 H	323	39.2	13.7
6	#10480.00	42.0 AV	54.0	-12.0	2.27 H	323	28.3	13.7
7	15720.00	51.8 PK	74.0	-22.2	1.71 H	66	37.8	14.0
8	15720.00	39.4 AV	54.0	-14.6	1.71 H	66	25.4	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	111.5 PK			1.41 V	343	107.3	4.2
2	*5240.00	100.8 AV			1.41 V	343	96.6	4.2
3	5394.00	51.5 PK	74.0	-22.5	1.41 V	343	47.1	4.4
4	5394.00	40.8 AV	54.0	-13.2	1.41 V	343	36.4	4.4
5	#10480.00	50.1 PK	74.0	-23.9	1.58 V	273	36.4	13.7
6	#10480.00	38.2 AV	54.0	-15.8	1.58 V	273	24.5	13.7
7	15720.00	43.6 PK	74.0	-30.4	1.25 V	198	29.6	14.0
8	15720.00	32.0 AV	54.0	-22.0	1.25 V	198	18.0	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 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	#5513.70	59.7 PK	74.0	-14.3	1.50 H	63	55.1	4.6
2	#5513.70	49.8 AV	54.0	-4.2	1.50 H	63	45.2	4.6
3	*5745.00	119.4 PK			1.50 H	48	114.4	5.0
4	*5745.00	108.4 AV			1.50 H	48	103.4	5.0
5	11490.00	57.0 PK	74.0	-17.0	2.08 H	360	42.9	14.1
6	11490.00	45.1 AV	54.0	-8.9	2.08 H	360	31.0	14.1
7	#17235.00	63.6 PK	74.0	-10.4	1.18 H	57	45.3	18.3
8	#17235.00	50.3 AV	54.0	-3.7	1.18 H	57	32.0	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	#5513.70	58.5 PK	74.0	-15.5	2.07 V	294	53.9	4.6
2	#5513.70	48.7 AV	54.0	-5.3	2.07 V	294	44.1	4.6
3	*5745.00	120.1 PK			2.07 V	294	115.1	5.0
4	*5745.00	108.5 AV			2.07 V	294	103.5	5.0
5	11490.00	62.9 PK	74.0	-11.1	1.01 V	267	48.8	14.1
6	11490.00	50.5 AV	54.0	-3.5	1.01 V	267	36.4	14.1
7	#17235.00	53.3 PK	74.0	-20.7	1.62 V	224	35.0	18.3
8	#17235.00	42.0 AV	54.0	-12.0	1.62 V	224	23.7	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	#5536.60	58.6 PK	74.0	-15.4	1.50 H	48	54.1	4.5
2	#5536.60	48.7 AV	54.0	-5.3	1.50 H	48	44.2	4.5
3	*5785.00	118.1 PK			1.50 H	48	113.1	5.0
4	*5785.00	107.3 AV			1.50 H	48	102.3	5.0
5	11570.00	56.9 PK	74.0	-17.1	2.14 H	356	42.9	14.0
6	11570.00	45.1 AV	54.0	-8.9	2.14 H	356	31.1	14.0
7	#17355.00	63.9 PK	74.0	-10.1	1.14 H	56	45.0	18.9
8	#17355.00	50.8 AV	54.0	-3.2	1.14 H	56	31.9	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	#5536.60	57.4 PK	74.0	-16.6	2.09 V	282	52.9	4.5
2	#5536.60	47.5 AV	54.0	-6.5	2.09 V	282	43.0	4.5
3	*5785.00	118.8 PK			2.09 V	282	113.8	5.0
4	*5785.00	107.2 AV			2.09 V	282	102.2	5.0
5	11570.00	63.0 PK	74.0	-11.0	1.01 V	241	49.0	14.0
6	11570.00	50.7 AV	54.0	-3.3	1.01 V	241	36.7	14.0
7	#17355.00	53.6 PK	74.0	-20.4	1.64 V	228	34.7	18.9
8	#17355.00	42.0 AV	54.0	-12.0	1.64 V	228	23.1	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	*5825.00	117.8 PK			1.50 H	48	112.6	5.2
2	*5825.00	107.5 AV			1.50 H	48	102.3	5.2
3	#6059.60	56.0 PK	74.0	-18.0	1.66 H	14	50.3	5.7
4	#6059.60	46.9 AV	54.0	-7.1	1.66 H	14	41.2	5.7
5	11650.00	57.4 PK	74.0	-16.6	2.15 H	360	43.3	14.1
6	11650.00	45.6 AV	54.0	-8.4	2.15 H	360	31.5	14.1
7	#17475.00	64.0 PK	74.0	-10.0	1.19 H	66	44.3	19.7
8	#17475.00	51.0 AV	54.0	-3.0	1.19 H	66	31.3	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	*5825.00	118.6 PK			2.12 V	294	113.4	5.2
2	*5825.00	107.3 AV			2.12 V	294	102.1	5.2
3	#6059.60	54.8 PK	74.0	-19.2	2.12 V	294	49.1	5.7
4	#6059.60	45.7 AV	54.0	-8.3	2.12 V	294	40.0	5.7
5	11650.00	63.2 PK	74.0	-10.8	1.02 V	267	49.1	14.1
6	11650.00	51.0 AV	54.0	-3.0	1.02 V	267	36.9	14.1
7	#17475.00	53.9 PK	74.0	-20.1	1.62 V	219	34.2	19.7
8	#17475.00	42.6 AV	54.0	-11.4	1.62 V	219	22.9	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	65.3 PK	74.0	-8.7	1.50 H	70	61.3	4.0
2	5150.00	50.6 AV	54.0	-3.4	1.50 H	70	46.6	4.0
3	*5190.00	108.6 PK			1.50 H	70	104.6	4.0
4	*5190.00	98.8 AV			1.50 H	70	94.8	4.0
5	5356.80	58.7 PK	74.0	-15.3	1.50 H	70	54.3	4.4
6	5356.80	48.9 AV	54.0	-5.1	1.50 H	70	44.5	4.4
7	#10380.00	52.8 PK	74.0	-21.2	2.19 H	325	39.2	13.6
8	#10380.00	42.1 AV	54.0	-11.9	2.19 H	325	28.5	13.6
9	15570.00	51.5 PK	74.0	-22.5	1.67 H	76	38.2	13.3
10	15570.00	39.2 AV	54.0	-14.8	1.67 H	76	25.9	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	63.2 PK	74.0	-10.8	1.40 V	331	59.2	4.0
2	5150.00	48.5 AV	54.0	-5.5	1.40 V	331	44.5	4.0
3	*5190.00	107.4 PK			1.40 V	331	103.4	4.0
4	*5190.00	97.6 AV			1.40 V	331	93.6	4.0
5	5356.80	56.6 PK	74.0	-17.4	1.40 V	331	52.2	4.4
6	5356.80	46.8 AV	54.0	-7.2	1.40 V	331	42.4	4.4
7	#10380.00	50.3 PK	74.0	-23.7	1.56 V	267	36.7	13.6
8	#10380.00	38.0 AV	54.0	-16.0	1.56 V	267	24.4	13.6
9	15570.00	43.3 PK	74.0	-30.7	1.28 V	220	30.0	13.3
10	15570.00	31.5 AV	54.0	-22.5	1.28 V	220	18.2	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	5078.30	57.5 PK	74.0	-16.5	1.70 H	70	53.6	3.9
2	5078.30	48.5 AV	54.0	-5.5	1.70 H	70	44.6	3.9
3	*5230.00	108.4 PK			1.70 H	58	104.2	4.2
4	*5230.00	99.4 AV			1.70 H	58	95.2	4.2
5	5397.10	56.8 PK	74.0	-17.2	1.70 H	58	52.4	4.4
6	5397.10	47.0 AV	54.0	-7.0	1.70 H	58	42.6	4.4
7	#10460.00	53.0 PK	74.0	-21.0	2.25 H	324	39.3	13.7
8	#10460.00	42.0 AV	54.0	-12.0	2.25 H	324	28.3	13.7
9	15690.00	51.0 PK	74.0	-23.0	1.69 H	81	37.0	14.0
10	15690.00	38.8 AV	54.0	-15.2	1.69 H	81	24.8	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	5078.30	56.3 PK	74.0	-17.7	1.42 V	336	52.4	3.9
2	5078.30	47.3 AV	54.0	-6.7	1.42 V	336	43.4	3.9
3	*5230.00	107.1 PK			1.42 V	336	102.9	4.2
4	*5230.00	98.2 AV			1.42 V	336	94.0	4.2
5	5397.10	55.6 PK	74.0	-18.4	1.42 V	336	51.2	4.4
6	5397.10	45.8 AV	54.0	-8.2	1.42 V	336	41.4	4.4
7	#10460.00	50.1 PK	74.0	-23.9	1.54 V	269	36.4	13.7
8	#10460.00	37.9 AV	54.0	-16.1	1.54 V	269	24.2	13.7
9	15690.00	43.4 PK	74.0	-30.6	1.31 V	207	29.4	14.0
10	15690.00	32.0 AV	54.0	-22.0	1.31 V	207	18.0	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 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	*5755.00	114.9 PK			1.32 H	11	109.9	5.0
2	*5755.00	104.9 AV			1.32 H	11	99.9	5.0
3	11510.00	56.5 PK	74.0	-17.5	2.07 H	360	42.5	14.0
4	11510.00	45.1 AV	54.0	-8.9	2.07 H	360	31.1	14.0
5	#17265.00	64.6 PK	74.0	-9.4	1.21 H	93	46.1	18.5
6	**#17265.00**	**51.3 AV**	**54.0**	**-2.7**	**1.21 H**	**93**	**32.8**	**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	*5755.00	112.9 PK			2.11 V	281	107.9	5.0
2	*5755.00	104.5 AV			2.11 V	281	99.5	5.0
3	11510.00	62.1 PK	74.0	-11.9	1.01 V	263	48.1	14.0
4	11510.00	50.0 AV	54.0	-4.0	1.01 V	263	36.0	14.0
5	#17265.00	54.7 PK	74.0	-19.3	1.68 V	216	36.2	18.5
6	#17265.00	43.0 AV	54.0	-11.0	1.68 V	216	24.5	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	*5795.00	117.0 PK			1.38 H	11	111.9	5.1
2	*5795.00	106.8 AV			1.38 H	11	101.7	5.1
3	11590.00	57.0 PK	74.0	-17.0	2.12 H	360	43.0	14.0
4	11590.00	45.5 AV	54.0	-8.5	2.12 H	360	31.5	14.0
5	#17385.00	64.4 PK	74.0	-9.6	1.21 H	79	45.3	19.1
6	#17385.00	51.1 AV	54.0	-2.9	1.21 H	79	32.0	19.1
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5795.00	115.0 PK			2.14 V	296	109.9	5.1
2	*5795.00	106.4 AV			2.14 V	296	101.3	5.1
3	11590.00	62.6 PK	74.0	-11.4	1.00 V	261	48.6	14.0
4	11590.00	50.5 AV	54.0	-3.5	1.00 V	261	36.5	14.0
5	#17385.00	54.4 PK	74.0	-19.6	1.65 V	215	35.3	19.1
6	#17385.00	43.0 AV	54.0	-11.0	1.65 V	215	23.9	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.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5145.30	62.7 PK	74.0	-11.3	1.50 H	61	58.7	4.0
2	5145.30	50.9 AV	54.0	-3.1	1.50 H	61	46.9	4.0
3	*5210.00	104.2 PK			1.50 H	61	100.1	4.1
4	*5210.00	95.3 AV			1.50 H	61	91.2	4.1
5	5350.00	57.0 PK	74.0	-17.0	1.50 H	61	52.6	4.4
6	5350.00	47.3 AV	54.0	-6.7	1.50 H	61	42.9	4.4
7	#10420.00	53.3 PK	74.0	-20.7	2.24 H	322	39.7	13.6
8	#10420.00	42.6 AV	54.0	-11.4	2.24 H	322	29.0	13.6
9	15630.00	51.6 PK	74.0	-22.4	1.68 H	88	38.0	13.6
10	15630.00	39.4 AV	54.0	-14.6	1.68 H	88	25.8	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	5145.30	61.4 PK	74.0	-12.6	1.42 V	342	57.4	4.0
2	5145.30	49.6 AV	54.0	-4.4	1.42 V	342	45.6	4.0
3	*5210.00	103.0 PK			1.42 V	342	98.9	4.1
4	*5210.00	94.1 AV			1.42 V	342	90.0	4.1
5	5350.00	55.7 PK	74.0	-18.3	1.42 V	342	51.3	4.4
6	5350.00	46.0 AV	54.0	-8.0	1.42 V	342	41.6	4.4
7	#10420.00	50.3 PK	74.0	-23.7	1.51 V	263	36.7	13.6
8	#10420.00	37.8 AV	54.0	-16.2	1.51 V	263	24.2	13.6
9	15630.00	43.9 PK	74.0	-30.1	1.30 V	217	30.3	13.6
10	15630.00	31.8 AV	54.0	-22.2	1.30 V	217	18.2	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 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	*5775.00	109.3 PK			1.50 H	54	104.3	5.0
2	*5775.00	99.6 AV			1.50 H	54	94.6	5.0
3	11550.00	51.8 PK	74.0	-22.2	2.17 H	360	37.8	14.0
4	11550.00	40.6 AV	54.0	-13.4	2.17 H	360	26.6	14.0
5	#17325.00	60.2 PK	74.0	-13.8	1.19 H	95	41.6	18.6
6	#17325.00	46.6 AV	54.0	-7.4	1.19 H	95	28.0	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	*5775.00	109.0 PK			2.14 V	298	104.0	5.0
2	*5775.00	101.2 AV			2.14 V	298	96.2	5.0
3	11550.00	58.1 PK	74.0	-15.9	1.00 V	254	44.1	14.0
4	11550.00	45.9 AV	54.0	-8.1	1.00 V	254	31.9	14.0
5	#17325.00	49.6 PK	74.0	-24.4	1.61 V	213	31.0	18.6
6	#17325.00	38.5 AV	54.0	-15.5	1.61 V	213	19.9	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:

802.11ac (VHT40)

CHANNEL	TX Channel 159	**DETECTOR FUNCTION**	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	**FREQ. (MHz)**	**EMISSION LEVEL (dBuV/m)**	**LIMIT (dBuV/m)**	**MARGIN (dB)**	**ANTENNA HEIGHT (m)**	**TABLE ANGLE (Degree)**	**RAW VALUE (dBuV)**	**CORRECTION FACTOR (dB/m)**
1	64.53	31.2 QP	40.0	-8.8	2.50 H	93	40.1	-8.9
2	156.20	26.7 QP	43.5	-16.8	2.00 H	47	34.8	-8.1
3	217.67	32.2 QP	46.0	-13.8	1.50 H	85	43.6	-11.4
4	465.02	27.7 QP	46.0	-18.3	1.00 H	22	31.1	-3.4
5	548.56	29.5 QP	46.0	-16.5	1.50 H	210	31.5	-2.0
6	669.69	30.9 QP	46.0	-15.1	3.00 H	274	30.5	0.4
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	46.08	34.2 QP	40.0	-5.8	1.01 V	39	42.4	-8.2
2	66.76	34.3 QP	40.0	-5.7	1.00 V	221	43.7	-9.4
3	90.89	34.3 QP	43.5	-9.2	1.50 V	280	48.4	-14.1
4	461.65	32.9 QP	46.0	-13.1	1.00 V	127	36.3	-3.4
5	676.55	32.7 QP	46.0	-13.3	1.00 V	318	32.2	0.5
6	923.42	33.4 QP	46.0	-12.6	1.00 V	109	29.0	4.4

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

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	100287	Apr. 19, 2017	Apr. 18, 2018
Line-Impedance Stabilization Network (for EUT) SCHWARZBECK	ESH3-Z5	848773/004	Oct. 26, 2016	Oct. 25, 2017
Line-Impedance Stabilization Network (for Peripheral) R&S	ENV216	100071	Nov. 09, 2016	Nov. 08, 2017
RF Cable	5D-FB	COACAB-001	May 23, 2017	May 22, 2018
10 dB PAD Mini-Circuits	HAT-10+	CONATT-005	June 19, 2017	June 18, 2018
50 ohms Terminator	50	3	Oct. 26, 2016	Oct. 25, 2017
50 ohms Terminator	N/A	EMC-04	Nov. 02, 2016	Nov. 01, 2017
Software BVADT	BVADT_Cond_ V7.3.7.4	NA	NA	NA

Note:
1. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Shielded Room No. D.
3. The VCCI Con D Registration No. is C-20005.
4. Tested Date: Sep. 04, 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.

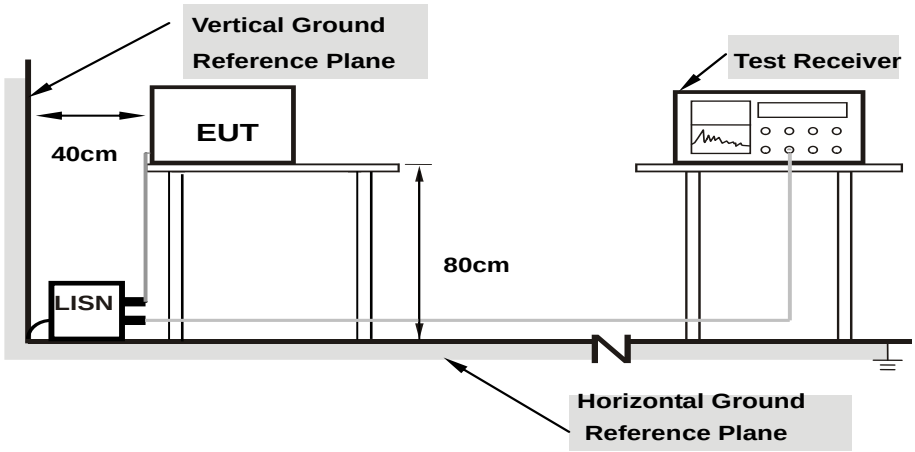
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Condition

Same as 4.1.6.

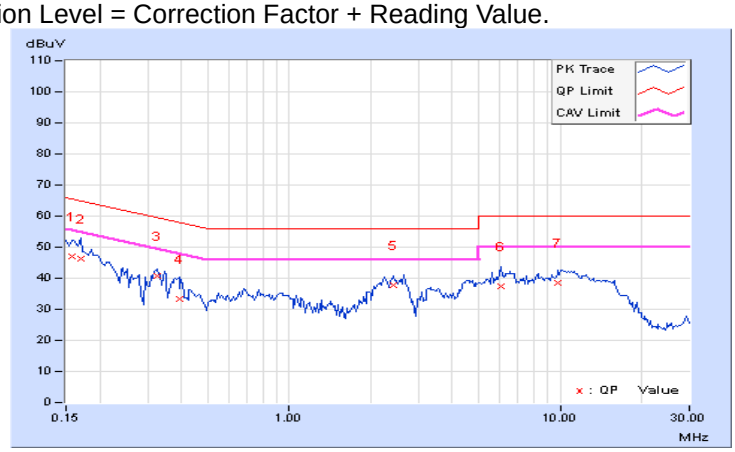
4.2.7 Test Results (Mode 1)

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

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15781	10.14	36.87	23.95	47.01	34.09	65.58	55.58	-18.57	-21.49
2	0.16953	10.13	36.25	25.19	46.38	35.32	64.98	54.98	-18.60	-19.66
3	0.32578	10.15	30.54	25.20	40.69	35.35	59.56	49.56	-18.87	-14.21
4	0.39219	10.18	23.02	18.02	33.20	28.20	58.02	48.02	-24.82	-19.82
5	2.41797	10.31	27.38	19.88	37.69	30.19	56.00	46.00	-18.31	-15.81
6	6.03906	10.47	26.79	21.21	37.26	31.68	60.00	50.00	-22.74	-18.32
7	9.86719	10.58	28.08	23.00	38.66	33.58	60.00	50.00	-21.34	-16.42

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.

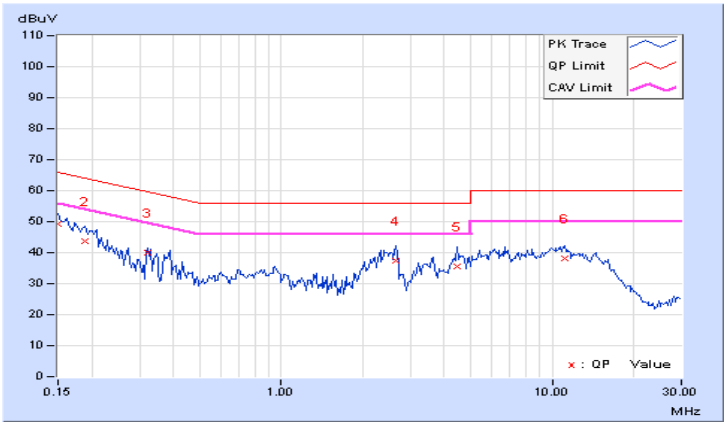


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

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	10.21	38.92	24.61	49.13	34.82	66.00	56.00	-16.87	-21.18
2	0.18906	10.19	33.67	21.42	43.86	31.61	64.08	54.08	-20.22	-22.47
3	0.32188	10.24	29.68	24.14	39.92	34.38	59.66	49.66	-19.74	-15.28
4	2.64844	10.44	26.91	18.15	37.35	28.59	56.00	46.00	-18.65	-17.41
5	4.45703	10.50	25.21	19.75	35.71	30.25	56.00	46.00	-20.29	-15.75
6	11.08984	10.65	27.61	22.89	38.26	33.54	60.00	50.00	-21.74	-16.46

REMARKS:

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



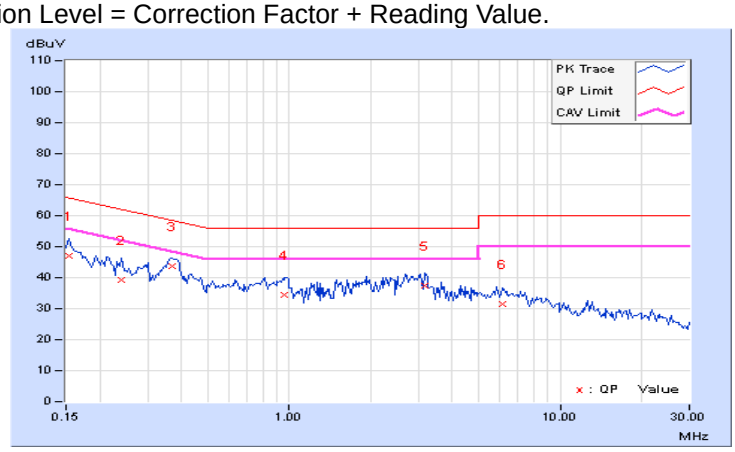
4.2.8 Test Results (Mode 3)

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

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	10.14	36.75	26.64	46.89	36.78	65.79	55.79	-18.90	-19.01
2	0.23984	10.12	29.19	18.36	39.31	28.48	62.10	52.10	-22.79	-23.62
3	0.36875	10.17	33.45	24.41	43.62	34.58	58.53	48.53	-14.91	-13.95
4	0.95469	10.28	24.34	16.08	34.62	26.36	56.00	46.00	-21.38	-19.64
5	3.17188	10.36	27.14	17.43	37.50	27.79	56.00	46.00	-18.50	-18.21
6	6.16016	10.48	21.03	14.25	31.51	24.73	60.00	50.00	-28.49	-25.27

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.

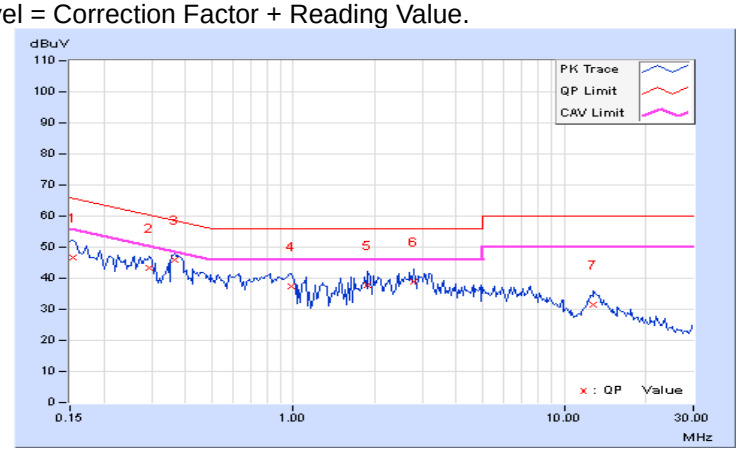


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

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	0.15391	10.20	36.49	26.88	46.69	37.08	65.79	55.79	-19.10	-18.71
2	0.29453	10.23	33.28	26.52	43.51	36.75	60.40	50.40	-16.89	-13.65
3	**0.36484**	**10.26**	**35.53**	**26.88**	**45.79**	**37.14**	**58.62**	**48.62**	**-12.83**	**-11.48**
4	0.98203	10.34	26.89	18.07	37.23	28.41	56.00	46.00	-18.77	-17.59
5	1.89063	10.41	27.23	18.44	37.64	28.85	56.00	46.00	-18.36	-17.15
6	2.79297	10.45	28.48	19.83	38.93	30.28	56.00	46.00	-17.07	-15.72
7	12.85938	10.71	20.65	15.03	31.36	25.74	60.00	50.00	-28.64	-24.26

REMARKS:

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



4.3 Transmit Power Measurment

4.3.1 Limits of Transmit Power Measurement

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

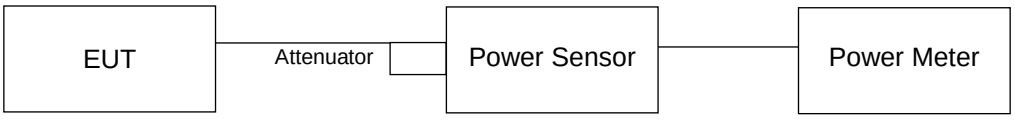
*B is the 26 dB emission bandwidth in megahertz

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

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

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

4.3.2 Test Setup



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

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

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Condition

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

4.3.7 Test Result

CDD Mode

802.11a

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	17.91	19.85	19.89	17.94	318.136	25.03	30.00	Pass
40	5200	17.94	19.97	19.98	18.34	329.317	25.18	30.00	Pass
48	5240	17.97	20.05	19.95	18.40	331.857	25.21	30.00	Pass
149	5745	21.34	21.64	22.60	20.84	585.334	27.67	28.61	Pass
157	5785	21.43	21.63	22.79	20.57	588.674	27.70	28.61	Pass
165	5825	21.55	21.65	22.98	20.62	603.061	27.80	28.61	Pass

Note: 1. UNII-3: Max. gain = 7.39dBi > 6dBi, so the power limit shall be reduced to 30-(7.39-6) = 28.61dBm.

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	17.99	19.92	19.77	18.34	324.202	25.11	30.00	Pass
40	5200	17.89	19.91	19.93	18.44	327.691	25.15	30.00	Pass
48	5240	17.98	19.91	19.99	18.48	330.994	25.20	30.00	Pass
149	5745	22.21	21.66	22.98	20.63	627.116	27.97	28.61	Pass
157	5785	22.24	21.55	22.72	20.53	610.431	27.86	28.61	Pass
165	5825	22.18	21.67	22.97	20.42	620.396	27.93	28.61	Pass

Note: 1. UNII-3: Max. gain = 7.39dBi > 6dBi, so the power limit shall be reduced to 30-(7.39-6) = 28.61dBm.

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	15.90	17.44	17.17	14.99	178.037	22.51	30.00	Pass
46	5230	19.75	20.72	21.04	19.64	431.54	26.35	30.00	Pass
151	5755	18.12	21.41	22.11	19.68	458.672	26.62	28.61	Pass
159	5795	18.83	22.12	25.70	20.21	715.803	28.55	28.61	Pass

Note: 1. UNII-3: Max. gain = 7.39dBi > 6dBi, so the power limit shall be reduced to 30-(7.39-6) = 28.61dBm.

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	14.40	16.98	16.18	14.73	148.642	21.72	30.00	Pass
155	5775	17.86	19.56	20.73	16.71	316.644	25.01	28.61	Pass

Note: 1. UNII-3: Max. gain = 7.39dBi > 6dBi, so the power limit shall be reduced to 30-(7.39-6) = 28.61dBm.

Beamforming Mode

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	17.99	19.92	19.77	18.34	324.202	25.11	25.29	Pass
40	5200	17.89	19.91	19.93	18.44	327.691	25.15	25.29	Pass
48	5240	17.98	19.91	19.99	18.48	330.994	25.20	25.29	Pass
149	5745	19.54	18.97	20.13	17.72	331.031	25.20	25.45	Pass
157	5785	19.63	18.96	20.12	17.96	335.857	25.26	25.45	Pass
165	5825	19.59	19.06	20.35	17.83	340.596	25.32	25.45	Pass

Note: 1. UNII-1: Directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$ + $10^{G2/20}$ + $10^{G3/20}$)^2 / 4] = 10.71dBi > 6dBi , so the power limit shall be reduced to 30-(10.71-6) = 25.29dBm.
2. UNII-3: Directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$ + $10^{G2/20}$ + $10^{G3/20}$)^2 / 4] = 10.55dBi > 6dBi, so the power limit shall be reduced to 30-(10.55-6) = 25.45dBm.

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	15.90	17.44	17.17	14.99	178.037	22.51	25.29	Pass
46	5230	18.41	19.40	19.78	18.38	320.364	25.06	25.29	Pass
151	5755	16.81	20.15	20.86	18.46	343.532	25.36	25.45	Pass
159	5795	16.73	20.02	20.74	18.02	329.524	25.18	25.45	Pass

Note: 1. UNII-1: Directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$ + $10^{G2/20}$ + $10^{G3/20}$)^2 / 4] = 10.71dBi > 6dBi , so the power limit shall be reduced to 30-(10.71-6) = 25.29dBm.
2. UNII-3: Directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$ + $10^{G2/20}$ + $10^{G3/20}$)^2 / 4] = 10.55dBi > 6dBi, so the power limit shall be reduced to 30-(10.55-6) = 25.45dBm.

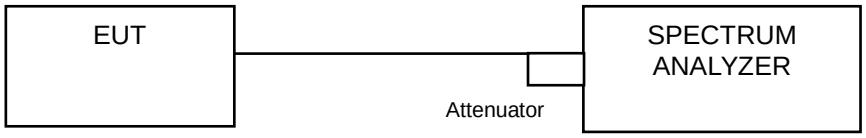
802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Maximum Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	14.40	16.98	16.18	14.73	148.642	21.72	25.29	Pass
155	5775	17.86	19.56	20.73	16.71	316.644	25.01	25.45	Pass

Note: 1. UNII-1: Directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$ + $10^{G2/20}$ + $10^{G3/20}$)^2 / 4] = 10.71dBi > 6dBi , so the power limit shall be reduced to 30-(10.71-6) = 25.29dBm.
2. UNII-3: Directional gain = 10 log[($10^{G0/20}$ + $10^{G1/20}$ + $10^{G2/20}$ + $10^{G3/20}$)^2 / 4] = 10.55dBi > 6dBi, so the power limit shall be reduced to 30-(10.55-6) = 25.45dBm.

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	CHAIN 2	CHAIN 3
36	5180	17.76	17.16	17.16	17.04
40	5200	17.88	17.16	17.04	17.04
48	5240	17.64	17.04	17.04	17.04
149	5745	38.88	18.12	18.12	17.64
157	5785	39.48	17.88	18.00	18.12
165	5825	39.48	18.36	18.00	18.12

802.11ac (VHT20)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)			
		CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 3
36	5180	18.72	18.12	18.12	18.12
40	5200	18.72	18.36	18.12	18.12
48	5240	18.60	18.24	18.24	18.00
149	5745	39.00	18.96	18.84	18.60
157	5785	39.60	18.84	18.84	18.60
165	5825	40.20	18.96	18.96	18.84

802.11ac (VHT40)

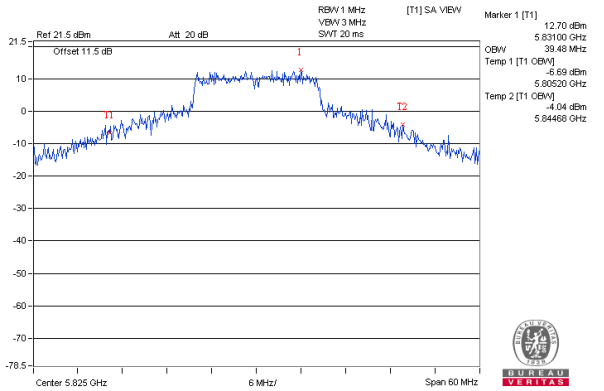
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)			
		CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 3
38	5190	36.72	36.48	36.72	36.72
46	5230	39.12	36.72	36.96	36.72
151	5755	38.16	37.20	37.68	37.20
159	5795	43.20	37.92	45.60	37.44

802.11ac (VHT80)

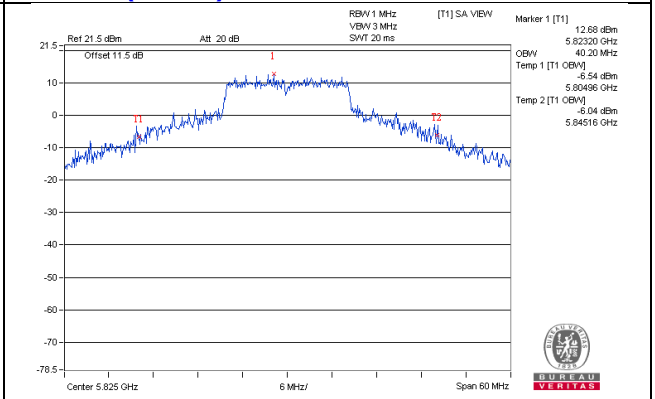
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)			
		CHAIN 0	CHAIN 1	CHAIN 2	CHAIN 3
42	5210	75.36	74.88	75.36	74.88
155	5775	76.80	76.32	75.84	76.32

Spectrum Plot of Worst Value

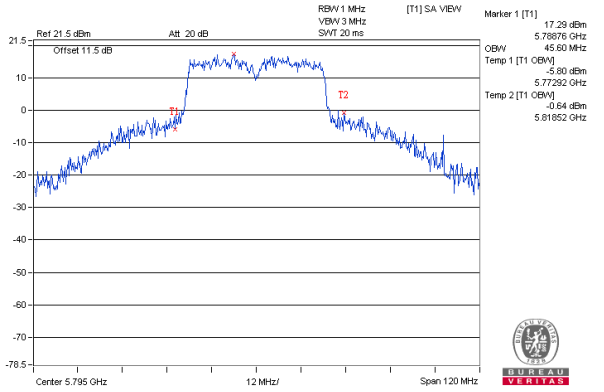
802.11a_Chain0 / CH165



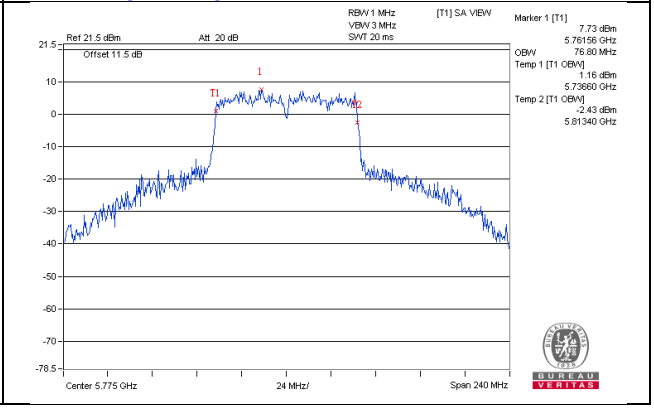
802.11ac (VHT20)_Chain0 / CH165



802.11ac (VHT40)_Chain2 / CH159

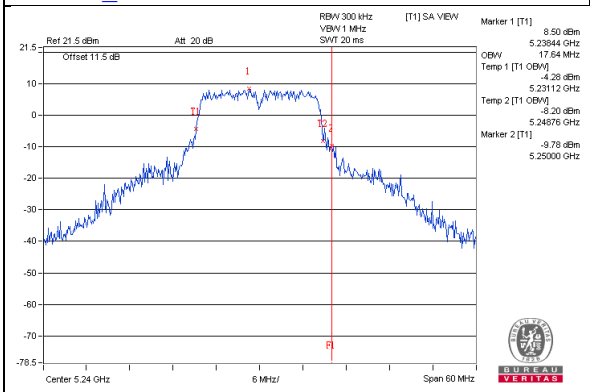


802.11ac (VHT80)_Chain0 / CH155

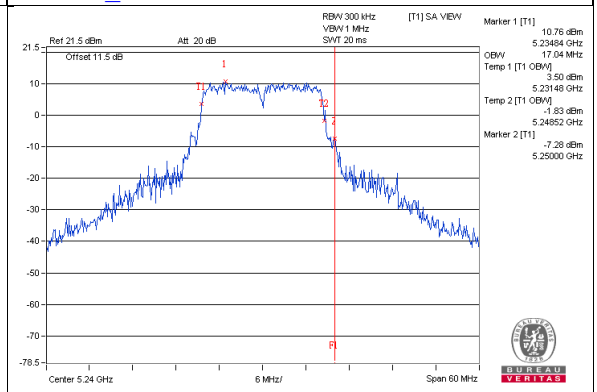


Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2A band)

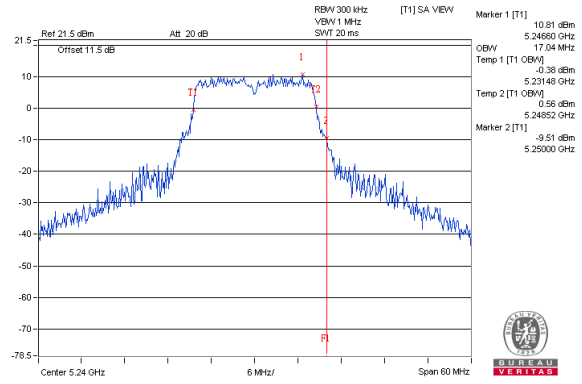
802.11a_Chain0 / CH48



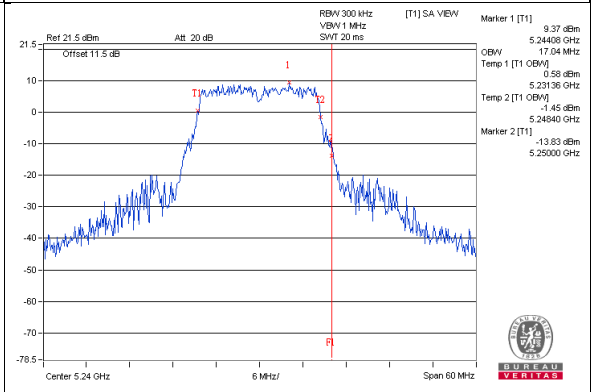
802.11a_Chain1 / CH48



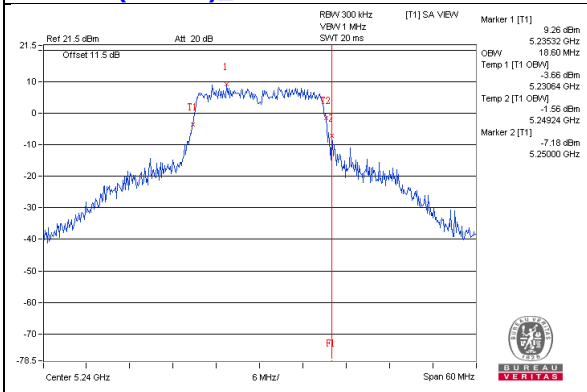
802.11a_Chain2 / CH48



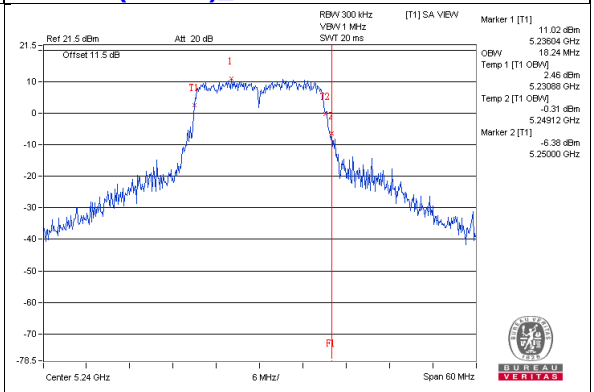
802.11a_Chain3 / CH48



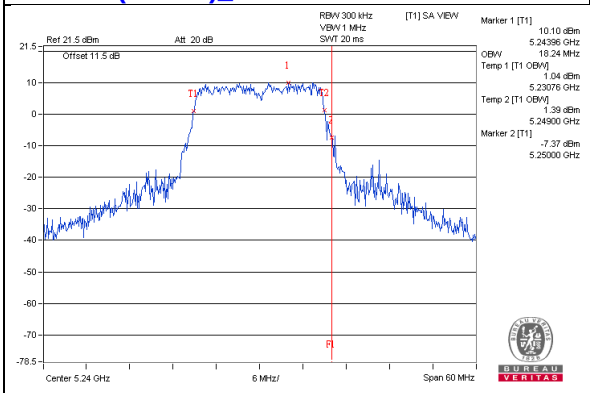
802.11ac(VHT20)_Chain0 / CH48



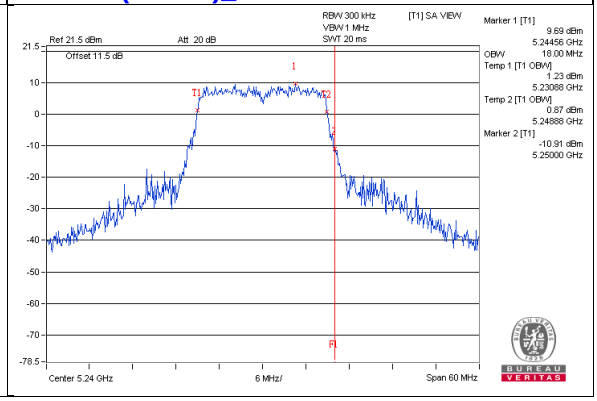
802.11ac(VHT20)_Chain1 / CH48



802.11ac(VHT20)_Chain2 / CH48

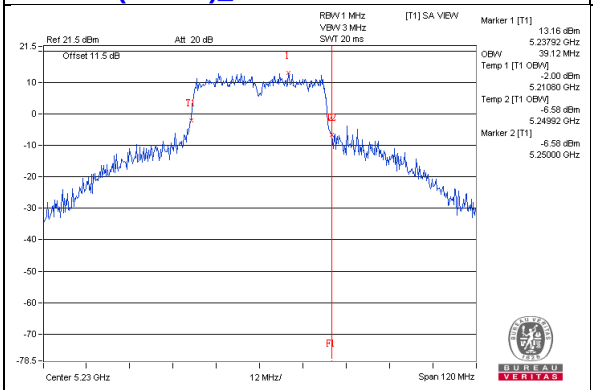


802.11ac(VHT20)_Chain3 / CH48

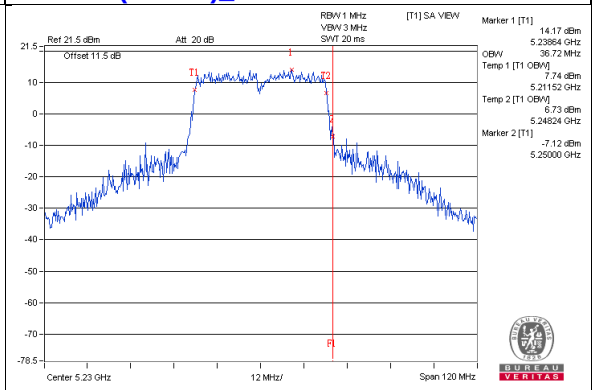


Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2A band)

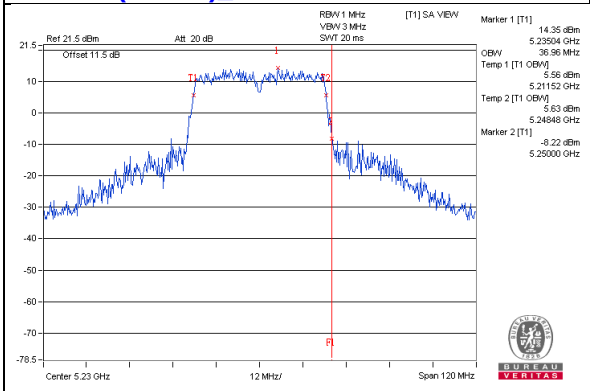
802.11ac(VHT40)_Chain0 / CH46



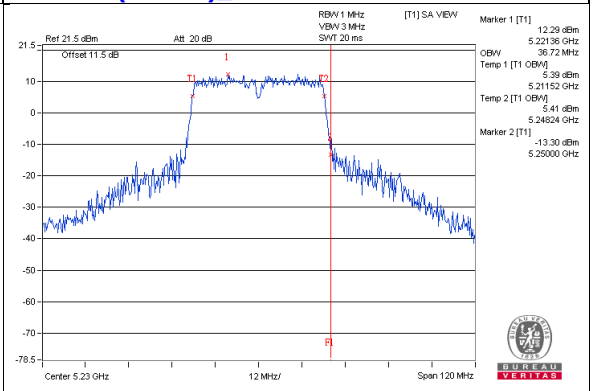
802.11ac(VHT40)_Chain1 / CH46



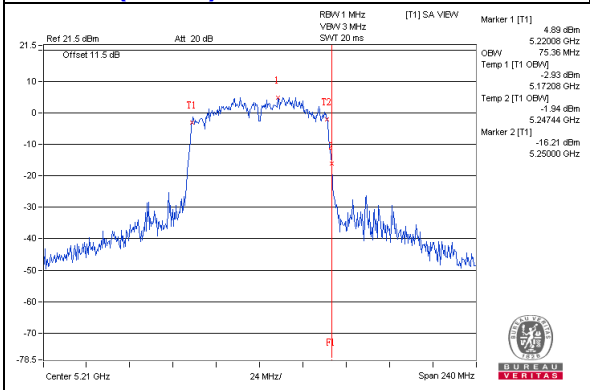
802.11ac(VHT40)_Chain2 / CH46



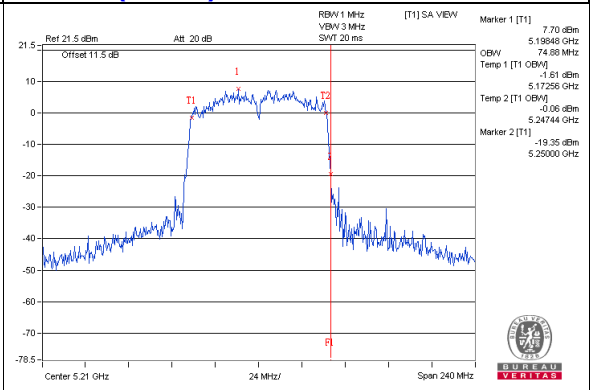
802.11ac(VHT40)_Chain3 / CH46



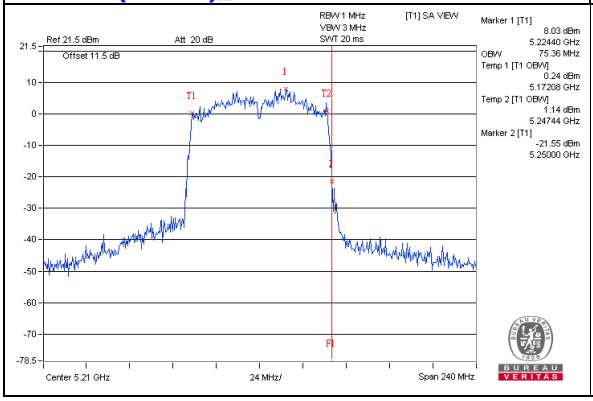
802.11ac(VHT80)_Chain0 / CH42



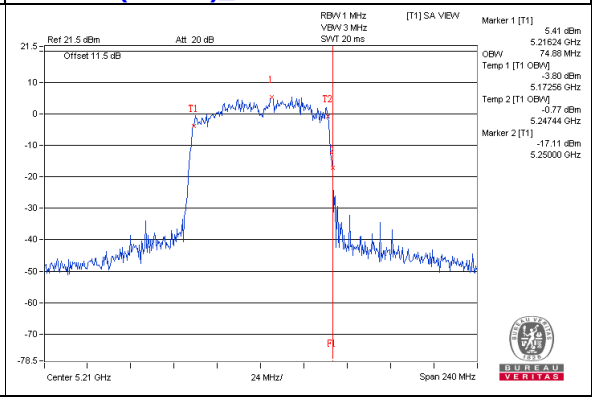
802.11ac(VHT80)_Chain1 / CH42



802.11ac(VHT80)_Chain2 / CH42

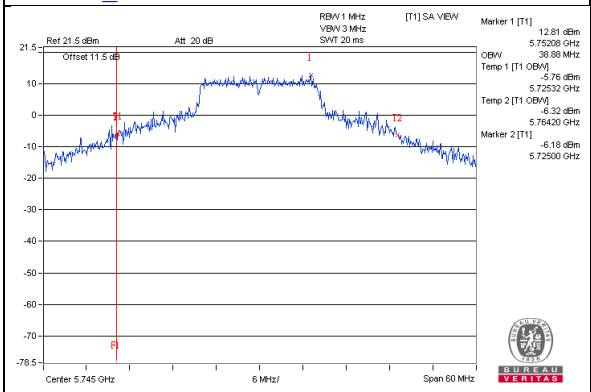


802.11ac(VHT80)_Chain3 / CH42

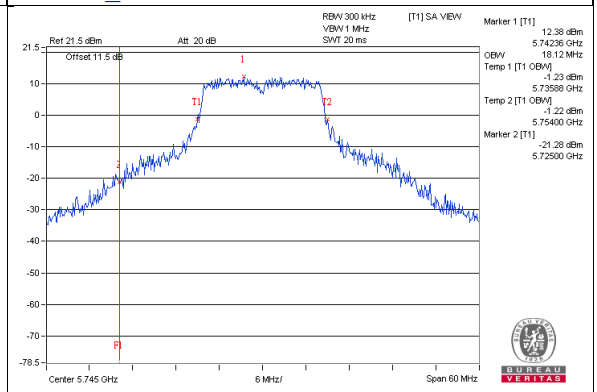


Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2C band)

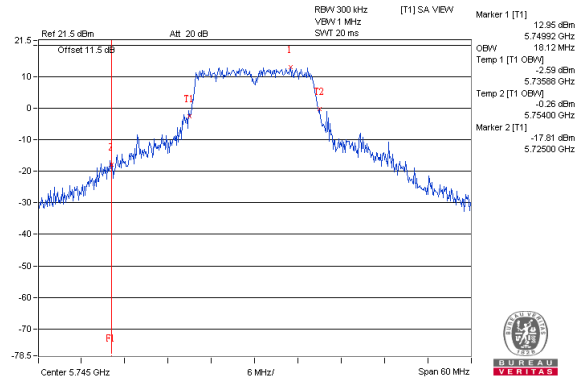
802.11a_Chain0 / CH149



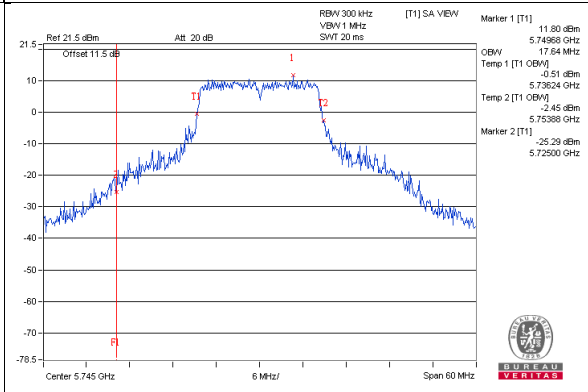
802.11a_Chain1 / CH149



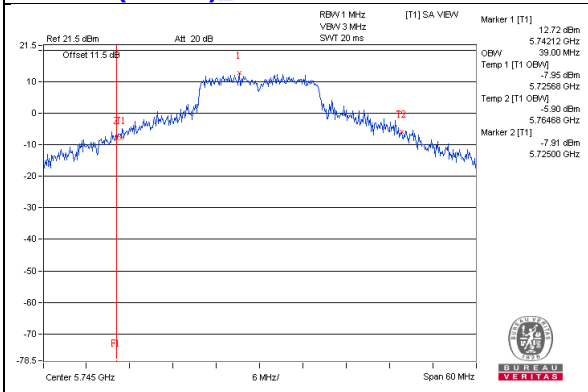
802.11a_Chain2 / CH149



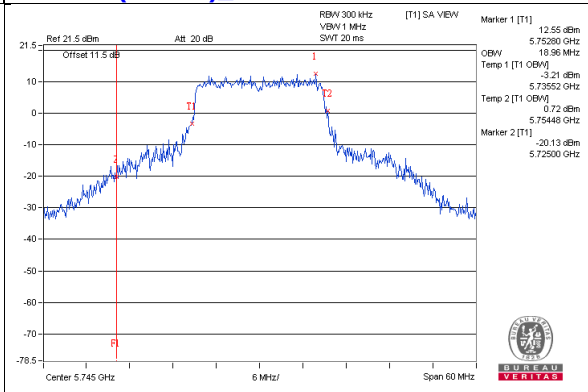
802.11a_Chain3 / CH149



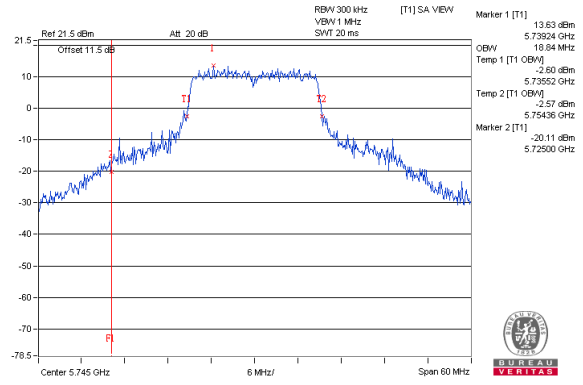
802.11ac(VHT20)_Chain0 / CH149



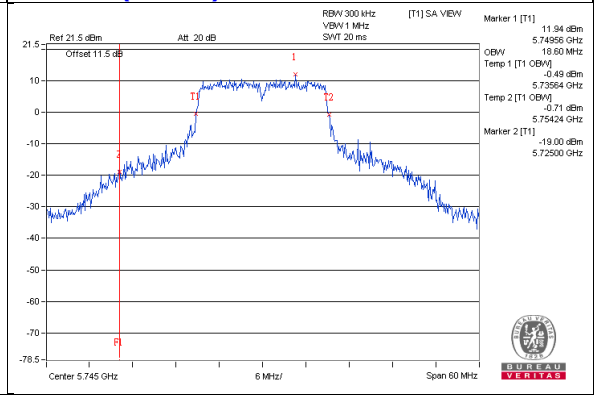
802.11ac(VHT20)_Chain1 / CH149



802.11ac(VHT20)_Chain2 / CH149

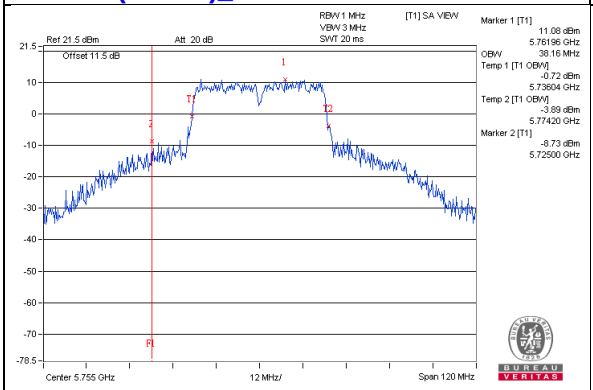


802.11ac(VHT20)_Chain3 / CH149

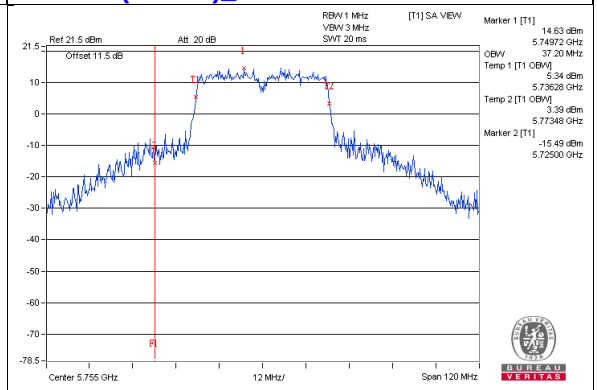


Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2C band)

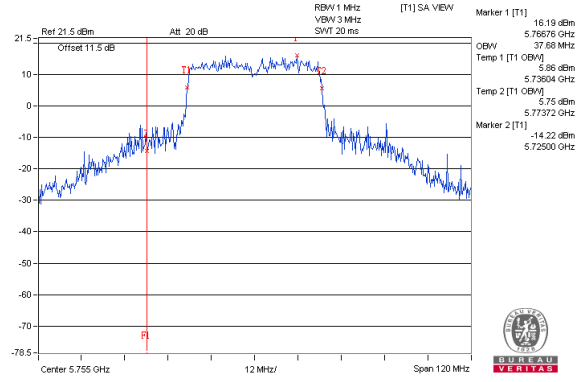
802.11ac(VHT40)_Chain0 / CH151



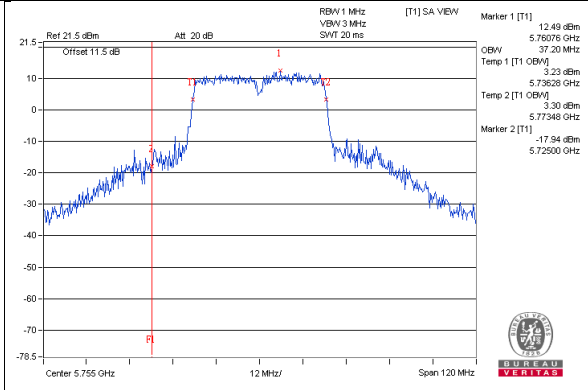
802.11ac(VHT40)_Chain1 / CH151



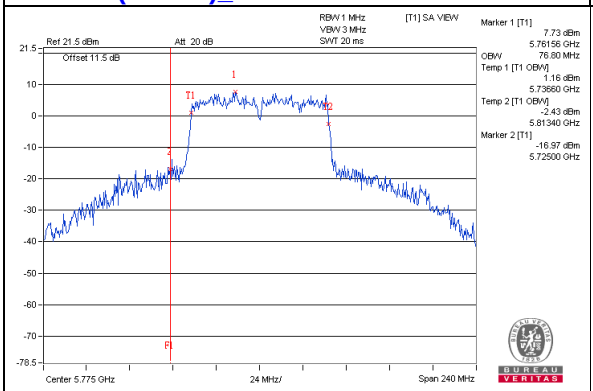
802.11ac(VHT40)_Chain2 / CH151



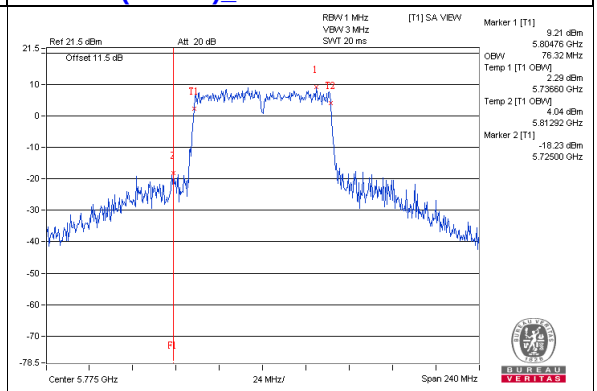
802.11ac(VHT40)_Chain3 / CH151



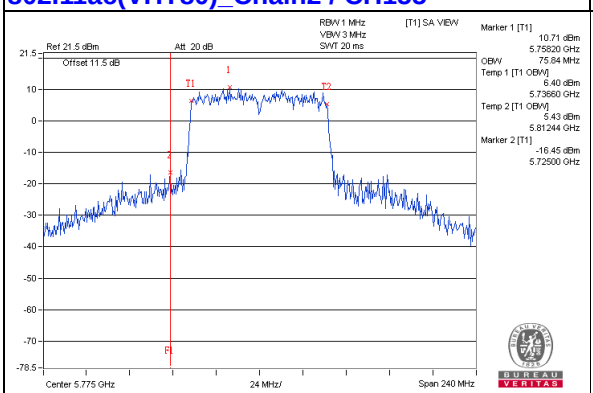
802.11ac(VHT80)_Chain0 / CH155



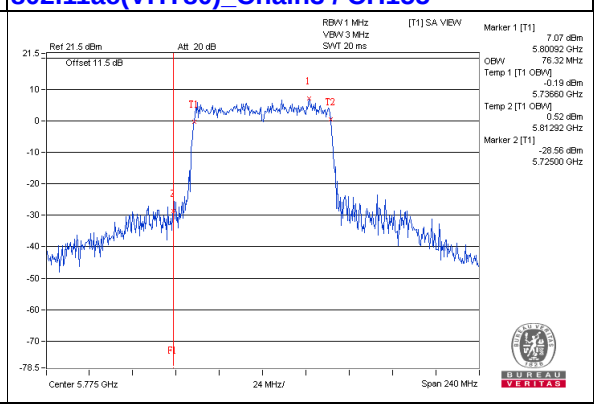
802.11ac(VHT80)_Chain1 / CH155



802.11ac(VHT80)_Chain2 / CH155



802.11ac(VHT80)_Chain3 / CH155

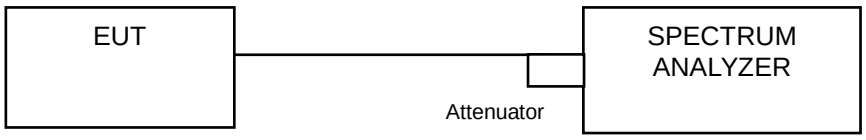


4.5 Peak Power Spectral Density Measurement

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 U-NII-1:

Using method SA-2

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

For U-NII-3:

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

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Same as Item 4.3.6.

4.5.7 Test Results

For U-NII-1:

802.11a

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	4.35	6.79	6.36	4.95	0.16	11.90	12.29	Pass
40	5200	4.73	6.90	6.40	5.17	0.16	12.07	12.29	Pass
48	5240	4.61	6.97	6.58	4.86	0.16	12.05	12.29	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[$(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2$ / 4] = 10.71dBi > 6dBi , so the power density limit shall be reduced to 17-(10.71-6) = 12.29dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
36	5180	4.59	6.86	6.71	4.90	0.10	12.00	12.29	Pass
40	5200	4.73	6.82	6.78	4.89	0.10	12.04	12.29	Pass
48	5240	4.81	6.97	6.75	5.13	0.10	12.14	12.29	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[$(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2$ / 4] = 10.71dBi > 6dBi , so the power density limit shall be reduced to 17-(10.71-6) = 12.29dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT40)

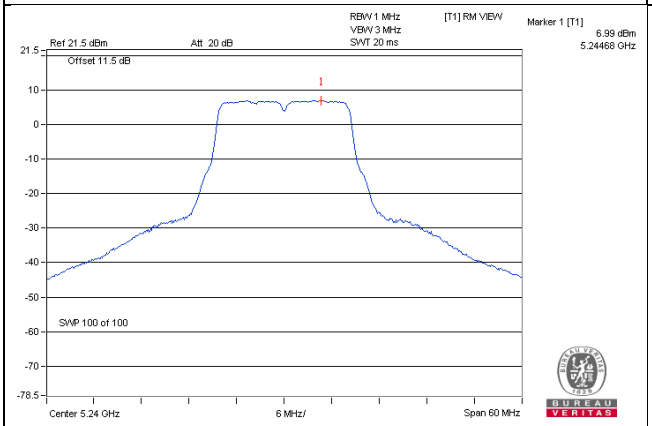
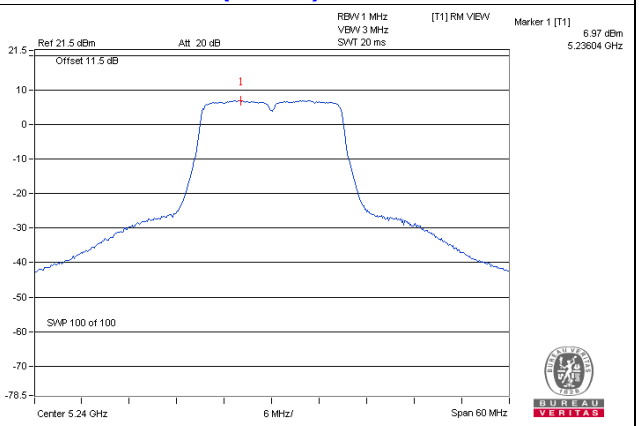
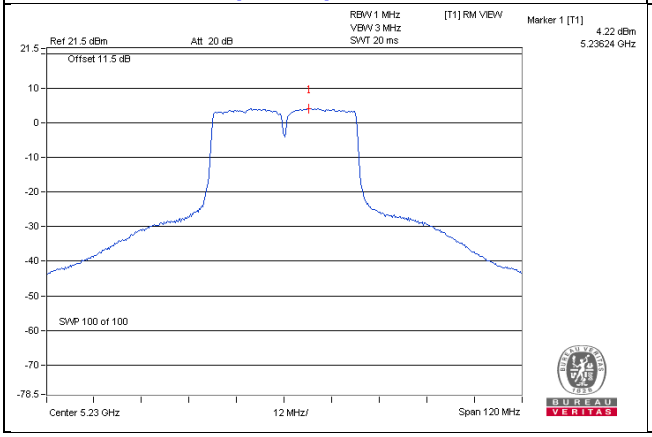
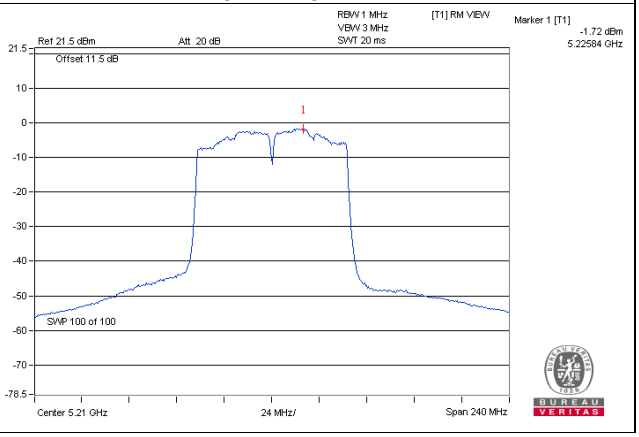
Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
38	5190	-0.92	0.65	0.36	-1.47	0.19	5.95	12.29	Pass
46	5230	2.53	4.22	4.20	2.51	0.19	9.66	12.29	Pass

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[$(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2$ / 4] = 10.71dBi > 6dBi , so the power density limit shall be reduced to 17-(10.71-6) = 12.29dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)				Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	MAX. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3				
42	5210	-3.97	-1.89	-2.45	-4.21	0.38	3.38	12.29	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[$(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2$ / 4] = 10.71dBi > 6dBi , so the power density limit shall be reduced to 17-(10.71-6) = 12.29dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value	
802.11a_Chain 1 / CH48	**802.11ac (VHT20)_Chain 1 / CH48**
	
802.11ac (VHT40)_Chain 1 / CH46	**802.11ac (VHT80)_Chain 1 / CH42**
	

For U-NII-3:

802.11a

TX chain	Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor		10 log (N=4) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	149	5745	0.17	2.39	6.02	0.16	8.57	25.45	Pass
	157	5785	0.23	2.45	6.02	0.16	8.63	25.45	Pass
	165	5825	0.03	2.25	6.02	0.16	8.43	25.45	Pass
1	149	5745	0.20	2.42	6.02	0.16	8.60	25.45	Pass
	157	5785	0.05	2.27	6.02	0.16	8.45	25.45	Pass
	165	5825	0.31	2.53	6.02	0.16	8.71	25.45	Pass
2	149	5745	1.62	3.84	6.02	0.16	10.02	25.45	Pass
	157	5785	1.09	3.31	6.02	0.16	9.49	25.45	Pass
	165	5825	1.53	3.75	6.02	0.16	9.93	25.45	Pass
3	149	5745	-1.21	1.01	6.02	0.16	7.19	25.45	Pass
	157	5785	-1.14	1.08	6.02	0.16	7.26	25.45	Pass
	165	5825	-1.15	1.07	6.02	0.16	7.25	25.45	Pass

Note: 1. Directional gain = 10 log[$(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2$ / 4] = 10.55dBi > 6dBi, so the power density limit shall be reduced to 30-(10.55-6) = 25.45dBm.

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

802.11ac (VHT20)

TX chain	Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor		10 log (N=4) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	149	5745	0.10	2.32	6.02	0.10	8.44	25.45	Pass
	157	5785	0.07	2.29	6.02	0.10	8.41	25.45	Pass
	165	5825	-0.09	2.13	6.02	0.10	8.25	25.45	Pass
1	149	5745	-0.03	2.19	6.02	0.10	8.31	25.45	Pass
	157	5785	-0.03	2.19	6.02	0.10	8.31	25.45	Pass
	165	5825	-0.24	1.98	6.02	0.10	8.10	25.45	Pass
2	149	5745	0.83	3.05	6.02	0.10	9.17	25.45	Pass
	157	5785	0.90	3.12	6.02	0.10	9.24	25.45	Pass
	165	5825	0.97	3.19	6.02	0.10	9.31	25.45	Pass
3	149	5745	-1.23	0.99	6.02	0.10	7.11	25.45	Pass
	157	5785	-1.29	0.93	6.02	0.10	7.05	25.45	Pass
	165	5825	-1.31	0.91	6.02	0.10	7.03	25.45	Pass

Note: 1. Directional gain = 10 log[$(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2$ / 4] = 10.55dBi > 6dBi, so the power density limit shall be reduced to 30-(10.55-6) = 25.45dBm.

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

802.11ac (VHT40)

TX chain	Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor		10 log (N=4) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	151	5755	-6.73	-4.51	6.02	0.19	1.70	25.45	Pass
	159	5795	-6.42	-4.20	6.02	0.19	2.01	25.45	Pass
1	151	5755	-3.48	-1.26	6.02	0.19	4.95	25.45	Pass
	159	5795	-3.26	-1.04	6.02	0.19	5.17	25.45	Pass
2	151	5755	-2.85	-0.63	6.02	0.19	5.58	25.45	Pass
	159	5795	-1.30	0.92	6.02	0.19	7.13	25.45	Pass
3	151	5755	-5.49	-3.27	6.02	0.19	2.94	25.45	Pass
	159	5795	-5.14	-2.92	6.02	0.19	3.29	25.45	Pass

Note: 1. Directional gain = 10 log[$(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2$ / 4] = 10.55dBi > 6dBi, so the power density limit shall be reduced to 30-(10.55-6) = 25.45dBm.

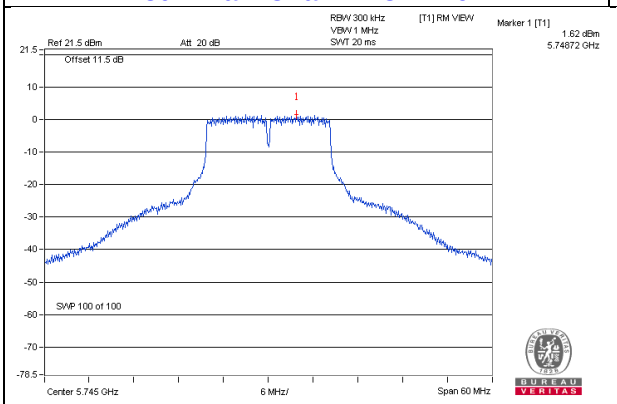
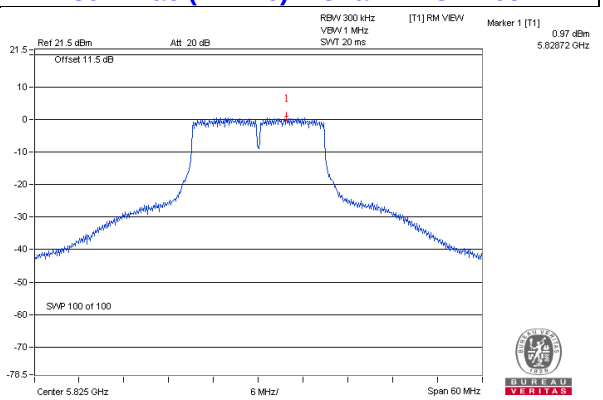
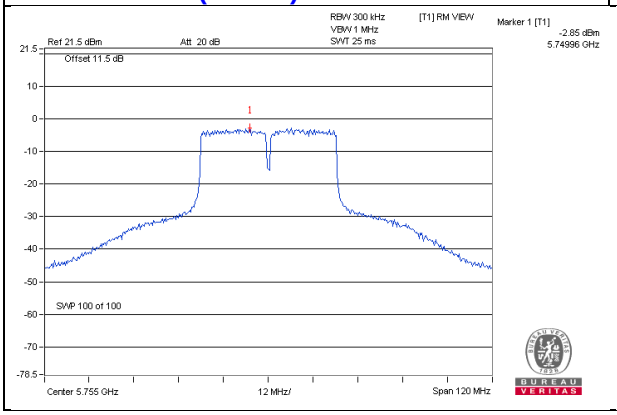
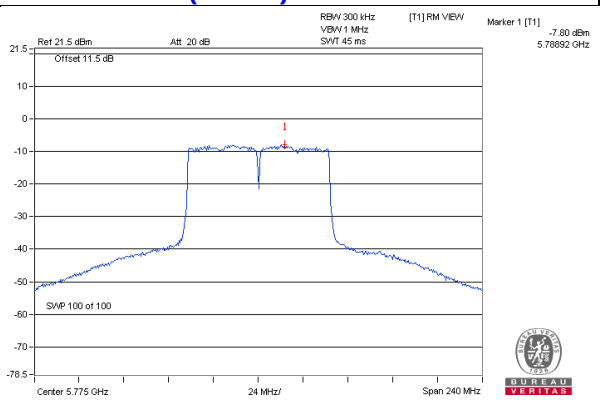
2. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT80)

TX chain	Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor		10 log (N=4) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	155	5775	-10.98	-8.76	6.02	0.38	-2.36	25.45	Pass
1	155	5775	-9.29	-7.07	6.02	0.38	-0.67	25.45	Pass
2	155	5775	-7.80	-5.58	6.02	0.38	0.82	25.45	Pass
3	155	5775	-11.72	-9.50	6.02	0.38	-3.10	25.45	Pass

Note: 1. Directional gain = 10 log[$(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2$ / 4] = 10.55dBi > 6dBi, so the power density limit shall be reduced to 30-(10.55-6) = 25.45dBm.

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

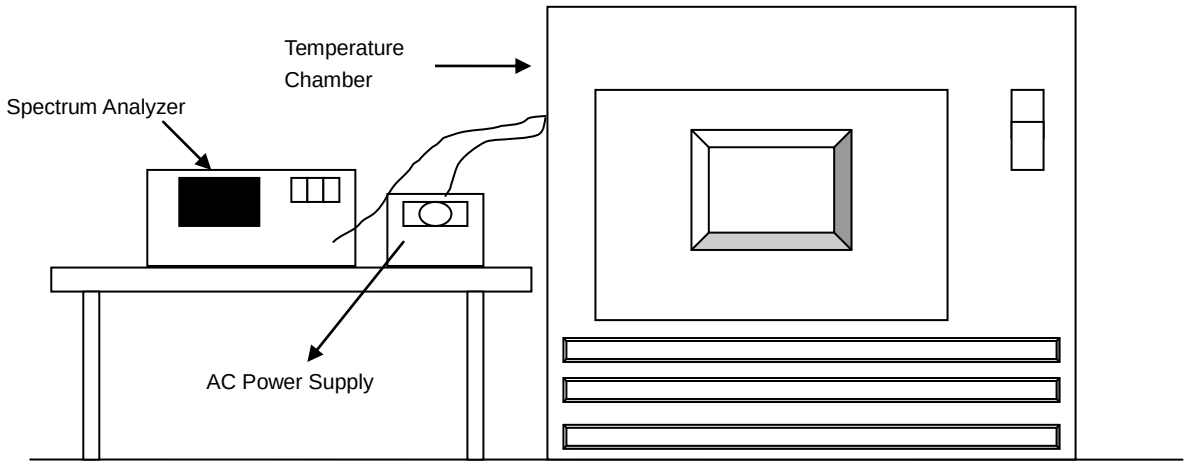
Spectrum Plot of Worst Value	
802.11a – Chain 2: CH 149	**802.11ac (VHT20) – Chain 2: CH 165**
	
802.11ac (VHT40) – Chain 2: CH 155	**802.11ac (VHT80) – Chain 2: CH 155**
	

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

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

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

4.6.7 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 5180 MHz									
TEMP. (℃)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
50	120	5179.9826	Pass	5179.9833	Pass	5179.9811	PASS	5179.9814	Pass
40	120	5180.0127	Pass	5180.0127	Pass	5180.0125	PASS	5180.014	Pass
30	120	5180.0079	Pass	5180.0066	Pass	5180.0072	PASS	5180.0054	Pass
20	120	5180.017	Pass	5180.0174	Pass	5180.0166	PASS	5180.0151	Pass
10	120	5180.0237	Pass	5180.0232	Pass	5180.0275	PASS	5180.0254	Pass
0	120	5179.9938	Pass	5179.9963	Pass	5179.9955	PASS	5179.9927	Pass
-10	120	5180.0195	Pass	5180.0223	Pass	5180.0232	PASS	5180.0191	Pass
-20	120	5180.0074	Pass	5180.0115	Pass	5180.0081	PASS	5180.009	Pass
-30	120	5180.0232	Pass	5180.0224	Pass	5180.0224	PASS	5180.0234	Pass

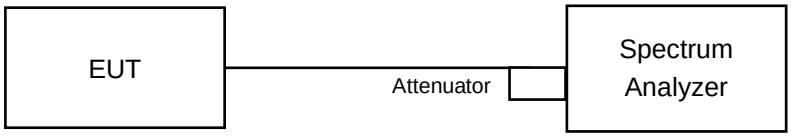
Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
TEMP. (℃)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	138	5180.0174	PASS	5180.0174	PASS	5180.0161	PASS	5180.015	PASS
	120	5180.017	PASS	5180.0174	PASS	5180.0166	PASS	5180.0151	PASS
	102	5180.0175	PASS	5180.017	PASS	5180.0169	PASS	5180.0159	PASS

4.7 6dB Bandwidth Measurment

4.7.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

4.7.2 Test Setup



4.7.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.7.4 Test Procedure

MEASUREMENT PROCEDURE REF

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

4.7.5 Deviation from Test Standard

No deviation.

4.7.6 EUT Operating Condition

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

4.7.7 Test Results

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
149	5745	16.42	16.40	16.40	16.41	0.5	PASS
157	5785	16.44	16.41	16.41	16.40	0.5	PASS
165	5825	16.41	16.41	16.40	16.39	0.5	PASS

802.11ac (VHT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
149	5745	16.39	17.67	17.65	17.67	0.5	PASS
157	5785	16.43	17.65	17.63	17.66	0.5	PASS
165	5825	16.41	17.61	17.64	17.61	0.5	PASS

802.11ac (VHT40)

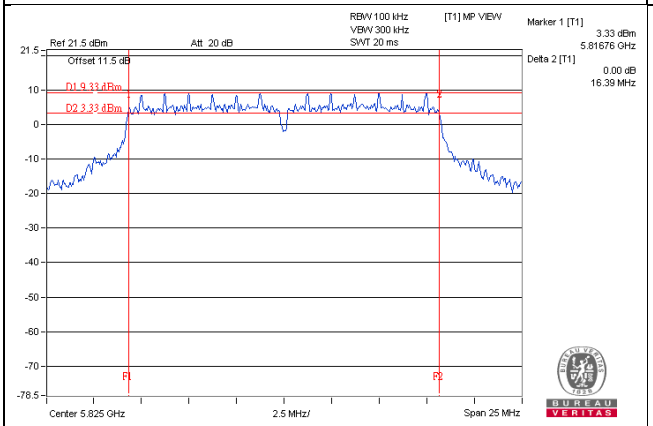
Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
151	5755	36.43	36.44	36.47	36.47	0.5	PASS
159	5795	36.45	36.41	36.44	36.44	0.5	PASS

802.11ac (VHT80)

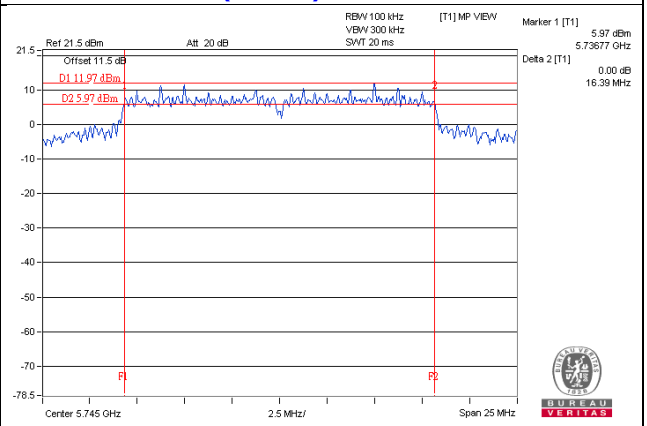
Channel	Frequency (MHz)	6dB Bandwidth (MHz)				Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1	Chain 2	Chain 3		
155	5775	76.01	76.30	76.34	76.07	0.5	PASS

Spectrum Plot of Worst Value

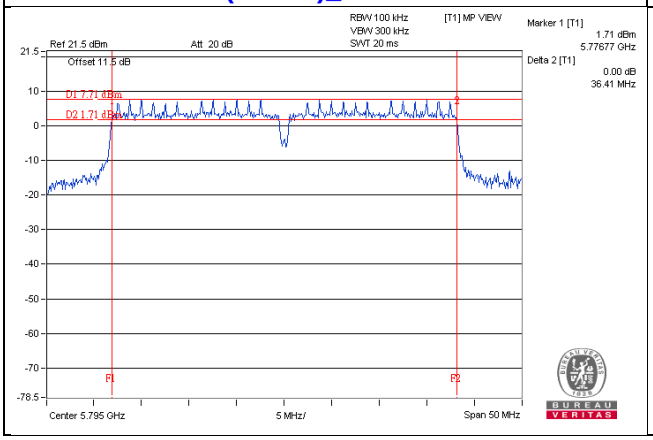
802.11a_Chain 3 / CH165



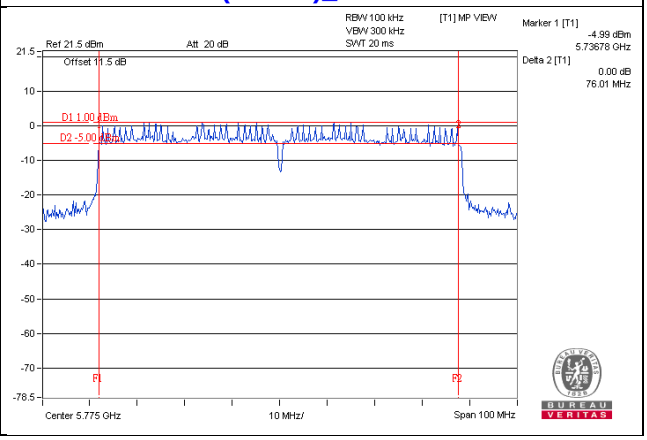
802.11ac (VHT20)_Chain 0 / CH149



802.11ac (VHT40)_Chain 1 / CH159



802.11ac (VHT80)_Chain 0 / CH155

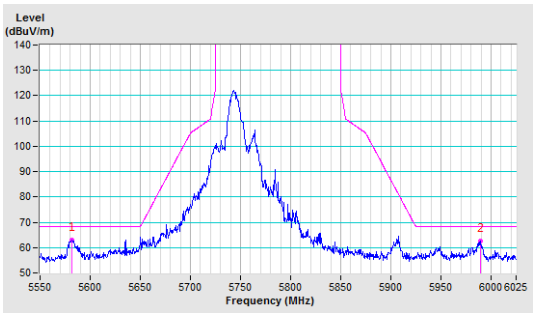
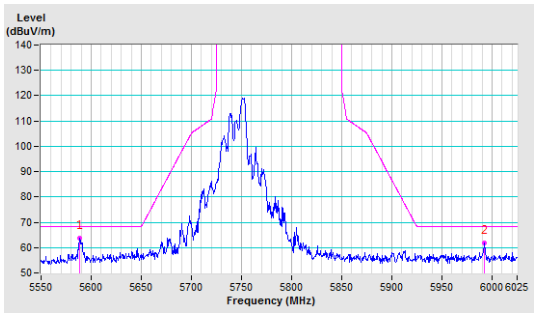
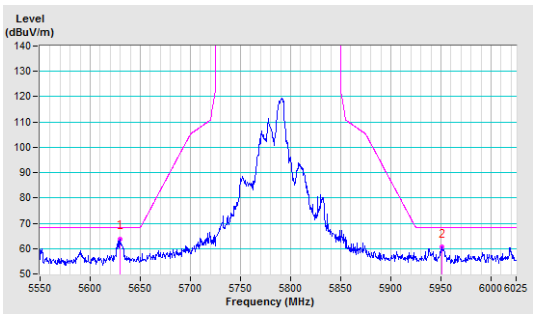
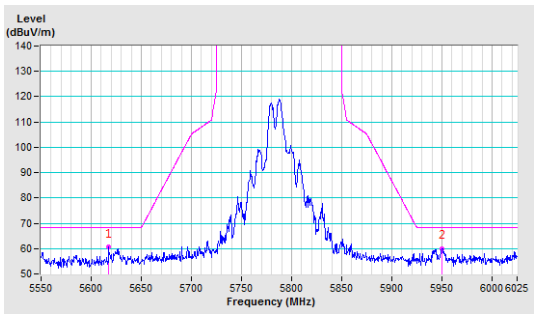
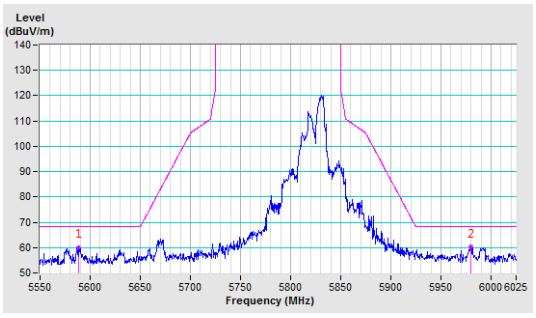
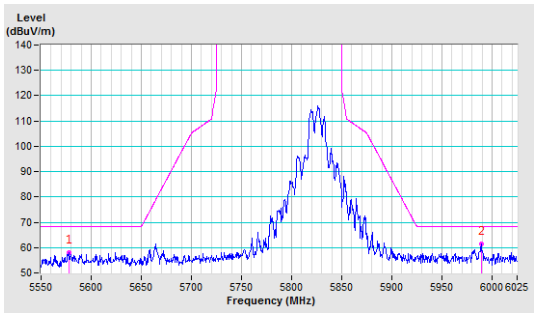


5 Pictures of Test Arrangements

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

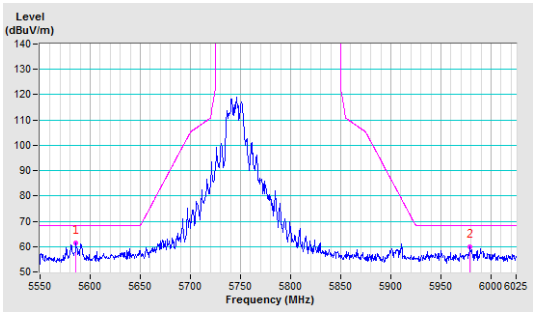
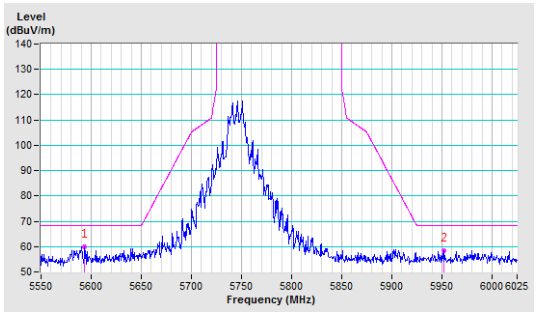
Annex A- Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band) (Mode 1)

802.11a

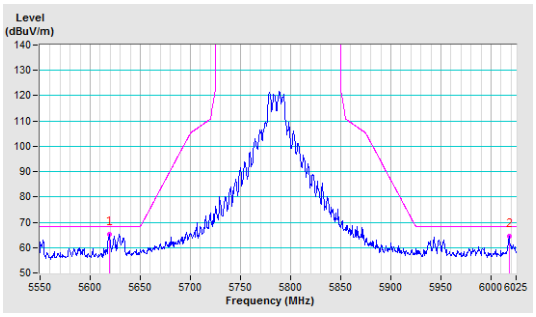
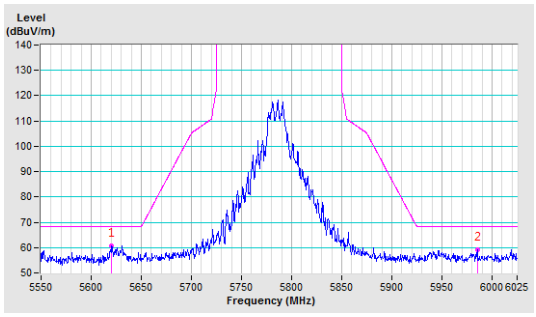
CH 149 5745 MHz	
Horizontal	**Vertical**
	
CH 157 5785 MHz	
Horizontal	**Vertical**
	
CH 165 5825 MHz	
Horizontal	**Vertical**
	

802.11ac (VHT20)

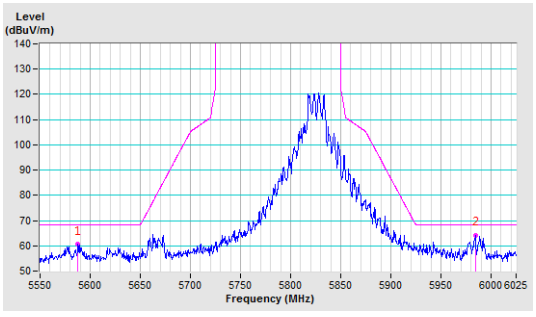
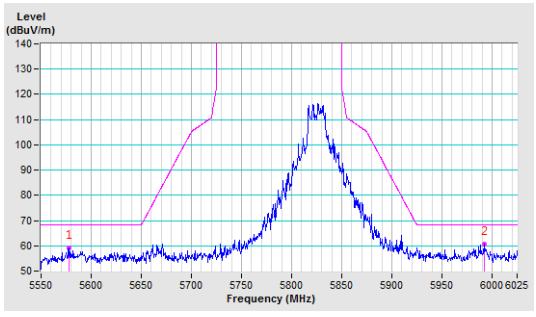
CH 149 5745 MHz

Horizontal	Vertical
	

CH 157 5785 MHz

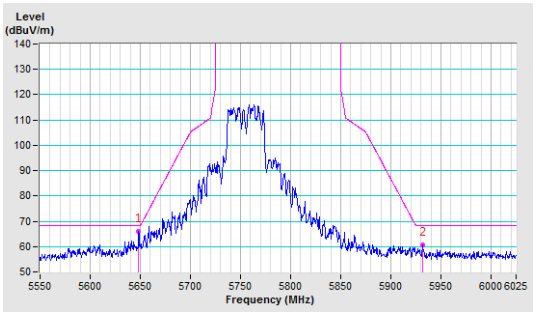
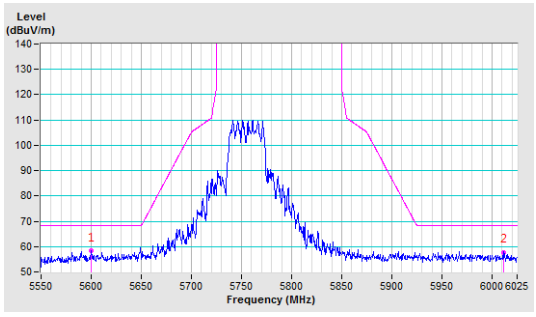
Horizontal	Vertical
	

CH 165 5825 MHz

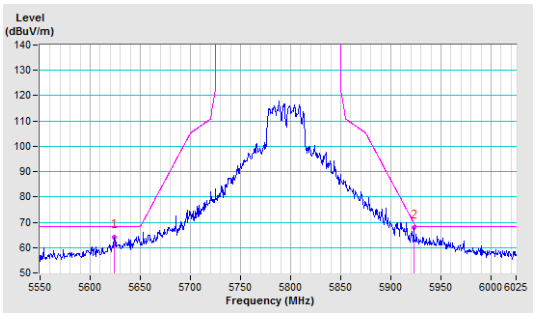
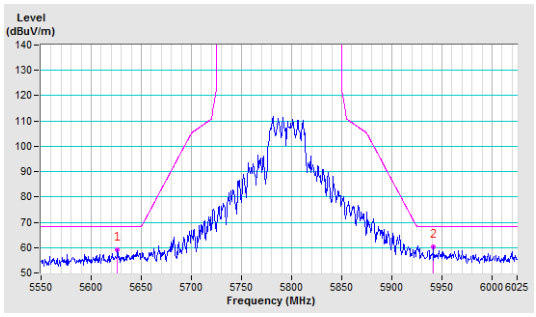
Horizontal	Vertical
	

802.11ac (VHT40)

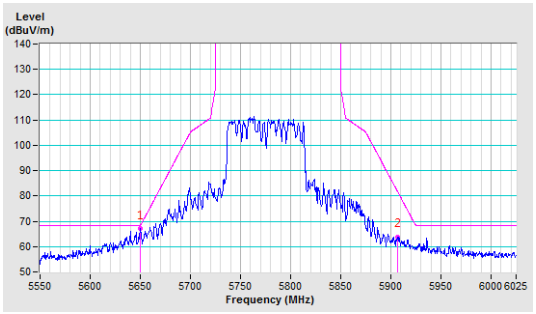
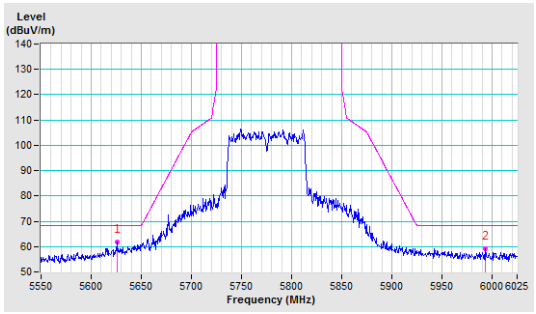
CH 151 5755 MHz

Horizontal	Vertical
	

CH 159 5795 MHz

Horizontal	Vertical
	

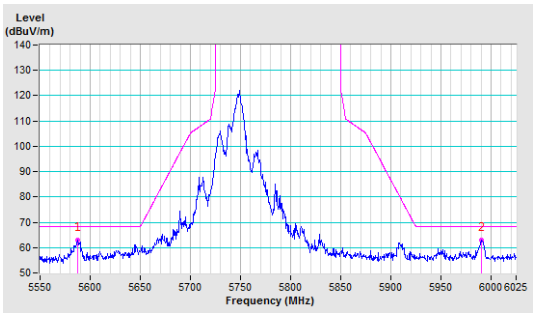
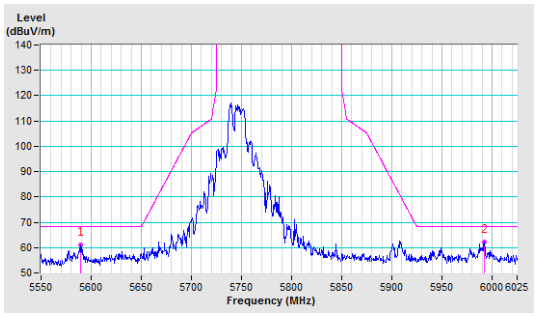
802.11ac (VHT80)

CH 155 5775 MHz	
Horizontal	**Vertical**
	

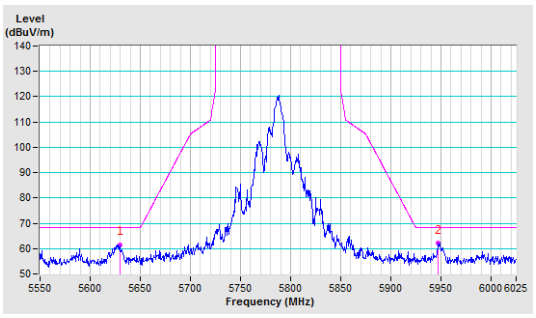
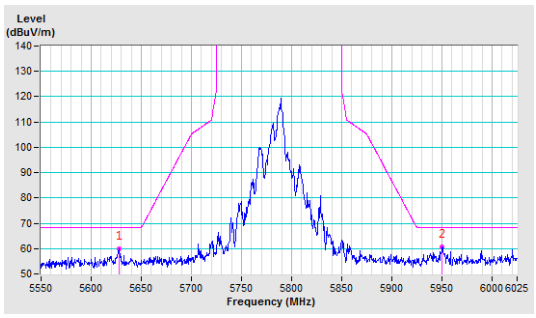
Annex B- Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band) (Mode 2)

802.11a

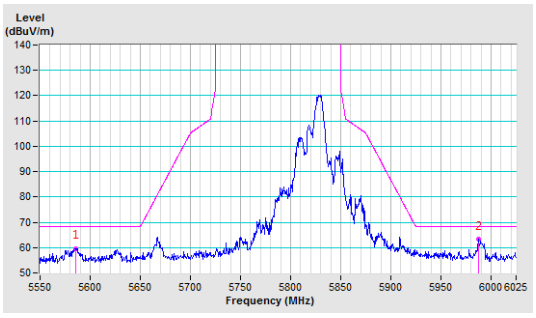
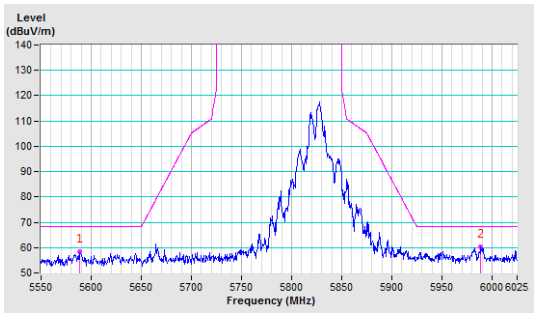
CH 149 5745 MHz

Horizontal	Vertical
	

CH 157 5785 MHz

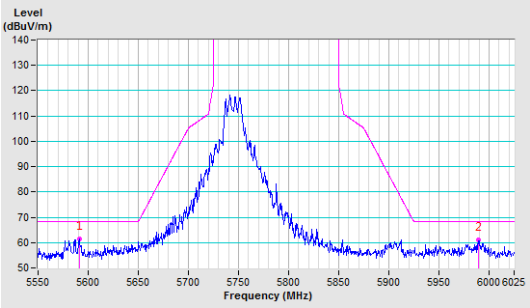
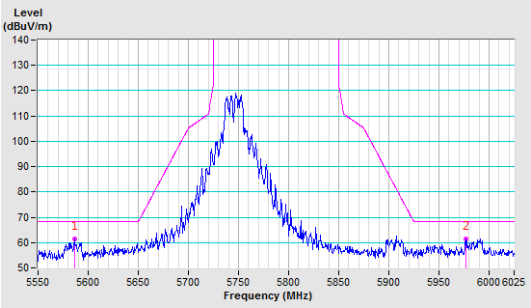
Horizontal	Vertical
	

CH 165 5825 MHz

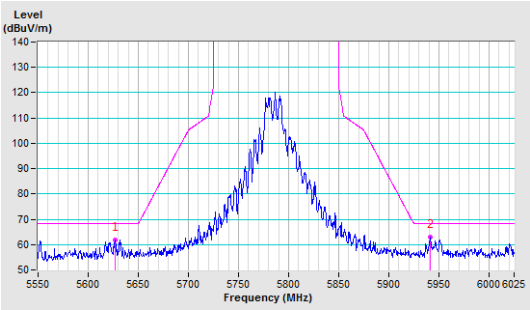
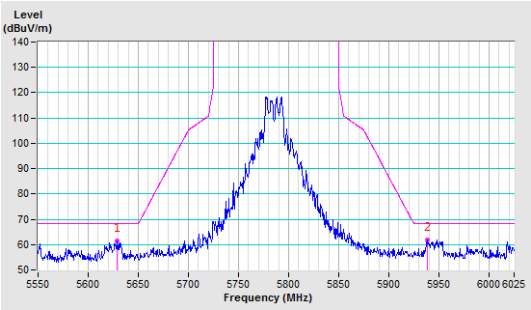
Horizontal	Vertical
	

802.11ac (VHT20)

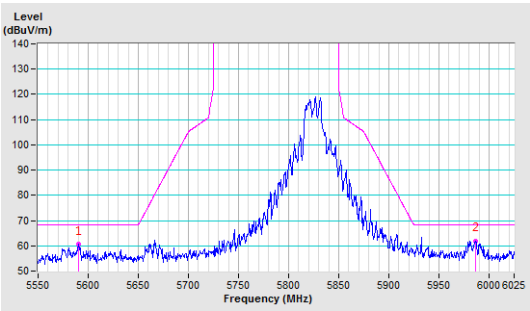
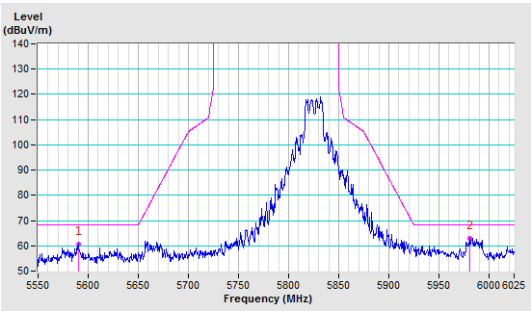
CH 149 5745 MHz

Horizontal	Vertical
	

CH 157 5785 MHz

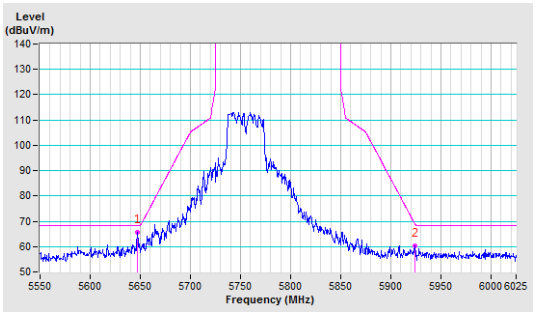
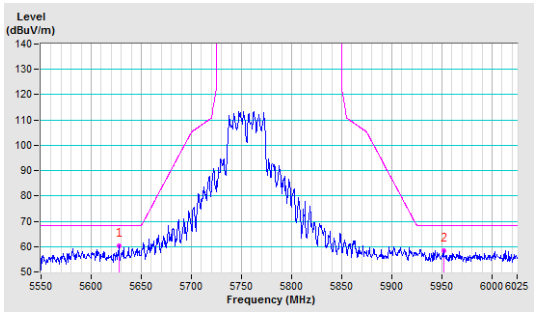
Horizontal	Vertical
	

CH 165 5825 MHz

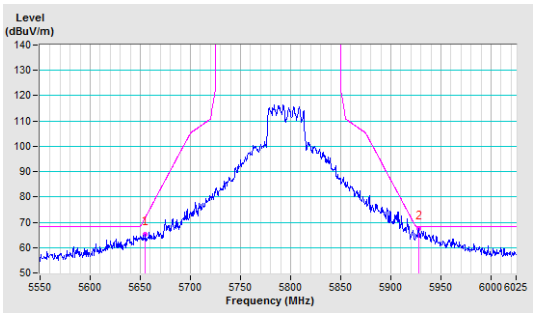
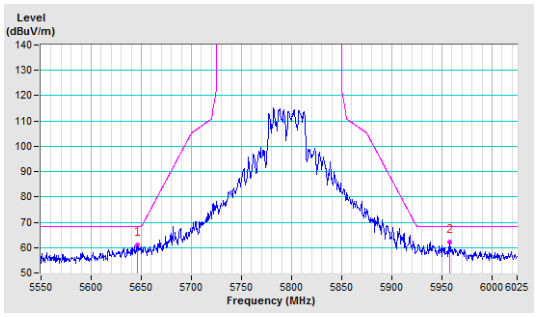
Horizontal	Vertical
	

802.11ac (VHT40)

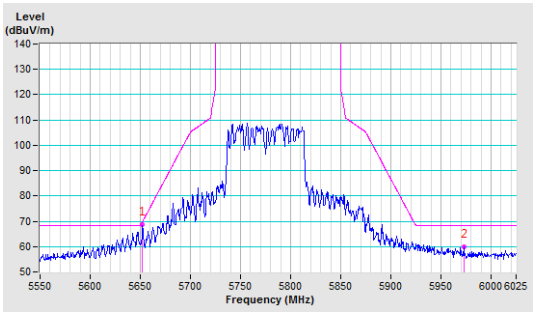
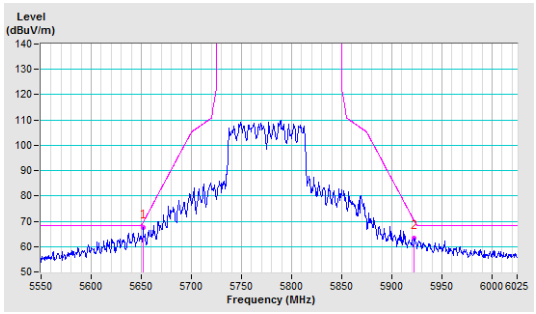
CH 151 5755 MHz

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 FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

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

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

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