

FCC Test Report (WLAN)

Report No.: RF171031D16C-1

FCC ID: 2AN9V-DVTRF001

Test Model: DVTRF001

Received Date: June 21, 2019

Test Date: July 09 to 29, 2019

Issued Date: Aug. 13, 2019

Applicant: Devialet

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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**FCC Registration /
Designation Number:** 723255 / TW2022



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Release Control Record

Issue No.	Description	Date Issued
RF171031D16C-1	Original release.	Aug. 13, 2019

1 Certificate of Conformity

Product: WCBN3507A-D6
Brand: Devialet
Test Model: DVTRF001
Sample Status: R&D SAMPLE
Applicant: Devialet
Test Date: July 09 to 29, 2019
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 : Phoenix Huang , **Date:** Aug. 13, 2019
Phoenix Huang / Specialist

Approved by : May Chen , **Date:** Aug. 13, 2019
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 -20.42dB at 0.15000MHz.
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 -0.3dB at 5725.00MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.

Note:

Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

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) (\pm)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.8 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	4.8 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	5.0 dB
	6GHz ~ 18GHz	5.0 dB
	18GHz ~ 40GHz	5.3 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT (WLAN)

Product	WCBN3507A-D6
Brand	Devialet
Test Model	DVTRF001
Status of EUT	R&D SAMPLE
Power Supply Rating	3.3Vdc from host equipment
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode and VHT (20/40) mode in 2.4GHz
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: up to 11Mbps 802.11a/g: up to 54Mbps 802.11n : up to 300Mbps 802.11ac: up to 866.7Mbps
Operating Frequency	2.4GHz: 2.412 ~ 2.462 GHz 5GHz: 5.18 ~ 5.24 GHz, 5.26 ~ 5.32 GHz, 5.5 ~ 5.72 GHz, 5.745 ~ 5.825 GHz
Number of Channel	2.4GHz: 802.11b, 802.11g, 802.11n (HT20), VHT20: 11 802.11n (HT40), VHT40: 7 5GHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 25 802.11n (HT40), 802.11ac (VHT40): 12 802.11ac (VHT80): 6
Output Power	2.412 ~ 2.462 GHz: 457.696 mW 5.18 ~ 5.24 GHz: 75.441 mW 5.26 ~ 5.32 GHz: 69.782 mW 5.5 ~ 5.72 GHz: 70.99 mW 5.745 ~ 5.825 GHz: 60.97 mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	NA
Data Cable Supplied	NA

Note:

1. This report is prepared for FCC class II change. The difference compared with the Report No.: RF140808E04X-1 as the following:

- ◆ Add one antenna set.

Original									
Antenna set 1									
Transmitter Circuit	Brand	Model	Antenna Type	2.4GHz Gain <with cable loss> (dBi)	5GHz Gain <with cable loss> (dBi)	2.4GHz Cable Loss (dB)	5G Cable Loss (dB)	Connector Type	Cable Length (mm)
Chain (0)	WNC	81-EBJ15.005	PIFA	3.62	Band 1&2: 3.08 Band 3: 4.76 Band 4: 4.76	1.15	Band 1&2:1.70 Band 3: 1.74 Band 4: 1.79	IPEX	300
Chain (1)	WNC	81-EBJ15.005	PIFA	3.62	Band 1&2: 3.08 Band 3: 4.76 Band 4: 4.76	1.15	Band 1&2:1.70 Band 3: 1.74 Band 4: 1.79	IPEX	300
Antenna set 2									
Transmitter Circuit	Brand	Model	Antenna Type	2.4GHz Gain <with cable loss> (dBi)	5GHz Gain <with cable loss> (dBi)	Cable Loss (dB)	Connector Type	Cable Length (mm)	
Chain (0)	Tongda	T-543-8201044-A (Ant 1)	PIFA	3.572	Band 1&2: 3.002 Band 3: 4.546 Band 4: 4.416	NA	IPEX	77	
Chain (1)	Tongda	T-543-8201044-A (Ant 2)	PIFA	3.325	Band 1&2: 2.942 Band 3: 4.622 Band 4: 4.586	NA	IPEX	61	
Antenna set 3									
Transmitter Circuit	Brand	Model	Antenna Type	2.4GHz Gain <with cable loss> (dBi)	5GHz Gain <with cable loss> (dBi)	Cable Loss (dB)		Connector Type	
Chain (0)	ethertronics	M830520	chip	1.1	3.2	NA		IPEX	
Chain (1)	ethertronics	M830520	chip	1.1	3.2	NA		IPEX	
Antenna set 4									
Transmitter Circuit	Brand	Model	Antenna Type	2.4GHz Gain <with cable loss> (dBi)	5GHz Gain <with cable loss> (dBi)	Cable Loss (dB)		Connector Type	
Chain (0)	ethertronics	1002298	PIFA	3.6	5.1	NA		IPEX	
Chain (1)	ethertronics	1002298	PIFA	3.6	5.1	NA		IPEX	
Newly									
Antenna set 5									
Transmitter Circuit	Brand	Model	Antenna Type	2.4GHz Gain <with cable loss> (dBi)	5GHz Gain <with cable loss> (dBi)	2.4GHz Cable Loss (dB)	5G Cable Loss (dB)	Connector Type	Cable Length (mm)
Chain (0)	Devialet	DVT-BA-M-1311-P	Monopole G	3.4	5.8	0.8	1.5	IPEX	150
Chain (1)	Devialet	DVT-BA-PF-1408-P	IFA	5.2	3.3	0.8	1.5	IPEX	150
<p>Note:</p> <ol style="list-style-type: none"> 1. All of antenna can be application for WLAN and Bluetooth. 2. The Bluetooth technology will fix transmission on Chain (0) 									

2. According to above condition, only AC Power Conducted Emission, Radiated Emissions and Conducted power test items of newly antenna set 5 need to be performed. And all data were verified to meet the requirements.

3. There are Bluetooth technology and WLAN technology used for the EUT.

4. WLAN <5GHz> and Bluetooth technology can transmit at same time.

5. The EUT incorporates a 2T2R function with beamforming.

For 2.4G Band		
MODULATION MODE	TX & RX CONFIGURATION	
802.11b	2TX	2RX
802.11g	2TX	2RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX
VHT20	2TX	2RX
VHT40	2TX	2RX
For 5G Band		
MODULATION MODE	TX & RX CONFIGURATION	
802.11a	2TX	2RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX
802.11ac (VHT20)	2TX	2RX
802.11ac (VHT40)	2TX	2RX
802.11ac (VHT80)	2TX	2RX

6. The EUT was pre-tested under the following modes:

Test Mode	Data rate
Mode A	400ns GI
Mode B	800ns GI

From the above modes, the worst case was found in **Mode B**. Therefore only the test data of the mode was recorded in this report.

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

3.2 Description of Test Modes

FOR 5180 ~ 5240MHz

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

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

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

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
42	5210 MHz

FOR 5260 ~ 5320MHz

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

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

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

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
58	5290 MHz

FOR 5500 ~ 5720MHz

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

Channel	Frequency	Channel	Frequency
100	5500 MHz	124	5620 MHz
104	5520 MHz	128	5640 MHz
108	5540 MHz	132	5660 MHz
112	5560 MHz	136	5680 MHz
116	5580 MHz	140	5700 MHz
120	5600 MHz	144	5720 MHz

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

Channel	Frequency	Channel	Frequency
102	5510 MHz	126	5630 MHz
110	5550 MHz	134	5670 MHz
118	5590 MHz	142	5710 MHz

3 channels are provided for 802.11ac (VHT80):

Channel	Frequency	Channel	Frequency
106	5530 MHz	138	5690 MHz
122	5610 MHz		

FOR 5745 ~ 5825MHz:

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

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

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

Channel	Frequency	Channel	Frequency
151	5755 MHz	159	5795 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
155	5775 MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

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

Where **RE \geq 1G**: Radiated Emission above 1GHz

RE<1G: Radiated Emission below 1GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

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

Radiated Emission Test (Above 1GHz):

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

Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6
802.11ac (VHT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
802.11ac (VHT40)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11ac (VHT80)		42	42	OFDM	BPSK	29.3
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6
802.11ac (VHT20)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
802.11ac (VHT40)		54 to 62	54, 62	OFDM	BPSK	13.5
802.11ac (VHT80)		58	58	OFDM	BPSK	29.3
802.11a	5500-5720	100 to 144	100, 116, 140, 144	OFDM	BPSK	6
802.11ac (VHT20)		100 to 144	100, 116, 140, 144	OFDM	BPSK	6.5
802.11ac (VHT40)		102 to 142	102, 110, 134, 142	OFDM	BPSK	13.5
802.11ac (VHT80)		106 to 138	106, 122, 138	OFDM	BPSK	29.3
802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6
802.11ac (VHT20)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
802.11ac (VHT40)		151 to 159	151, 159	OFDM	BPSK	13.5
802.11ac (VHT80)		155	155	OFDM	BPSK	29.3

Radiated Emission Test (Below 1GHz):

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

Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5180-5320, 5500-5720, 5745-5825	36 to 64, 100 to 144, 149 to 165	48	OFDM	BPSK	6

Power Line Conducted Emission Test:

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

Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5180-5320, 5500-5720, 5745-5825	36 to 64, 100 to 144, 149 to 165	48	OFDM	BPSK	6

Antenna Port Conducted Measurement:

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

Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6
802.11ac (VHT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
802.11ac (VHT40)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11ac (VHT80)		42	42	OFDM	BPSK	29.3
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6
802.11ac (VHT20)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
802.11ac (VHT40)		54 to 62	54, 62	OFDM	BPSK	13.5
802.11ac (VHT80)		58	58	OFDM	BPSK	29.3
802.11a	5500-5720	100 to 144	100, 116, 140, 144	OFDM	BPSK	6
802.11ac (VHT20)		100 to 144	100, 116, 140, 144	OFDM	BPSK	6.5
802.11ac (VHT40)		102 to 142	102, 110, 134, 142	OFDM	BPSK	13.5
802.11ac (VHT80)		106 to 138	106, 122, 138	OFDM	BPSK	29.3
802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6
802.11ac (VHT20)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
802.11ac (VHT40)		151 to 159	151, 159	OFDM	BPSK	13.5
802.11ac (VHT80)		155	155	OFDM	BPSK	29.3

Test Condition:

Applicable To	Environmental Conditions	Input Power (System)	Tested By
RE \geq 1G	21deg. C, 62%RH, 25deg. C, 65%RH	120Vac, 60Hz	Tank Wu, Nelson Teng
RE $<$ 1G	25deg. C, 65%RH	120Vac, 60Hz	Nelson Teng
PLC	23deg. C, 76%RH	120Vac, 60Hz	Andy Ho
APCM	25deg. C, 60%RH	120Vac, 60Hz	Jyunchun Lin

3.3 Duty Cycle of Test Signal

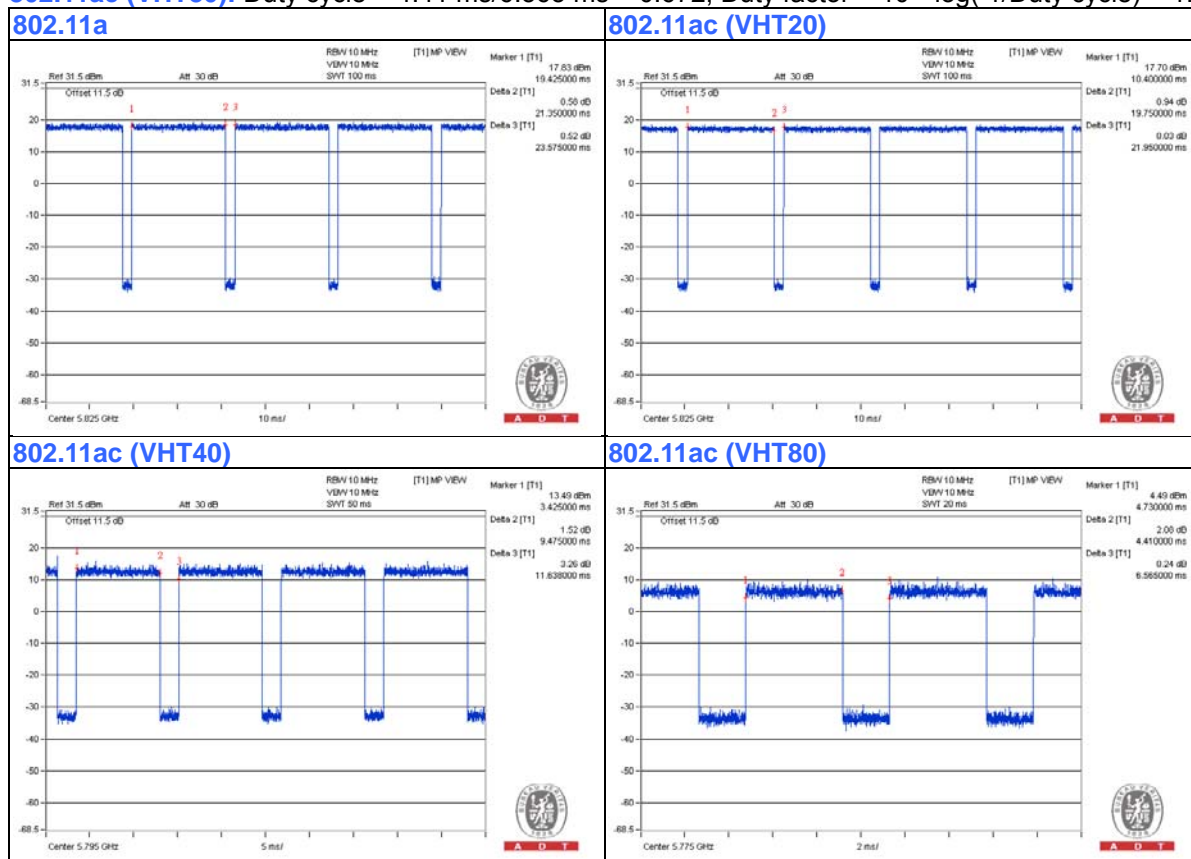
Duty cycle of test signal is < 98%, duty factor shall be considered.

802.11a: Duty cycle = 21.35 ms/23.575 ms = 0.906, Duty factor = $10 * \log(1/\text{Duty cycle}) = 0.43$

802.11ac (VHT20): Duty cycle = 19.75 ms/21.95 ms = 0.9, Duty factor = $10 * \log(1/\text{Duty cycle}) = 0.46$

802.11ac (VHT40): Duty cycle = 9.475 ms/11.638 ms = 0.814, Duty factor = $10 * \log(1/\text{Duty cycle}) = 0.89$

802.11ac (VHT80): Duty cycle = 4.41 ms/6.565 ms = 0.672, Duty factor = $10 * \log(1/\text{Duty cycle}) = 1.73$



3.4 Description of Support Units

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

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Laptop	lenovo	3000 N200	NA	NA	Provided by Lab (for other test)
B.	Test Tool	Lite-ON	NA	NA	NA	Supplied by client
C.	Adapter	lenovo	P2P1160	NA	NA	Provided by Lab
D.	Laptop	DELL	E5430	DM1SKV1	FCC DoC	Provided by Lab (for conduction emission test)
E.	Adapter	DELL	LA65NS2-01	NA	NA	Provided by Lab

Note:

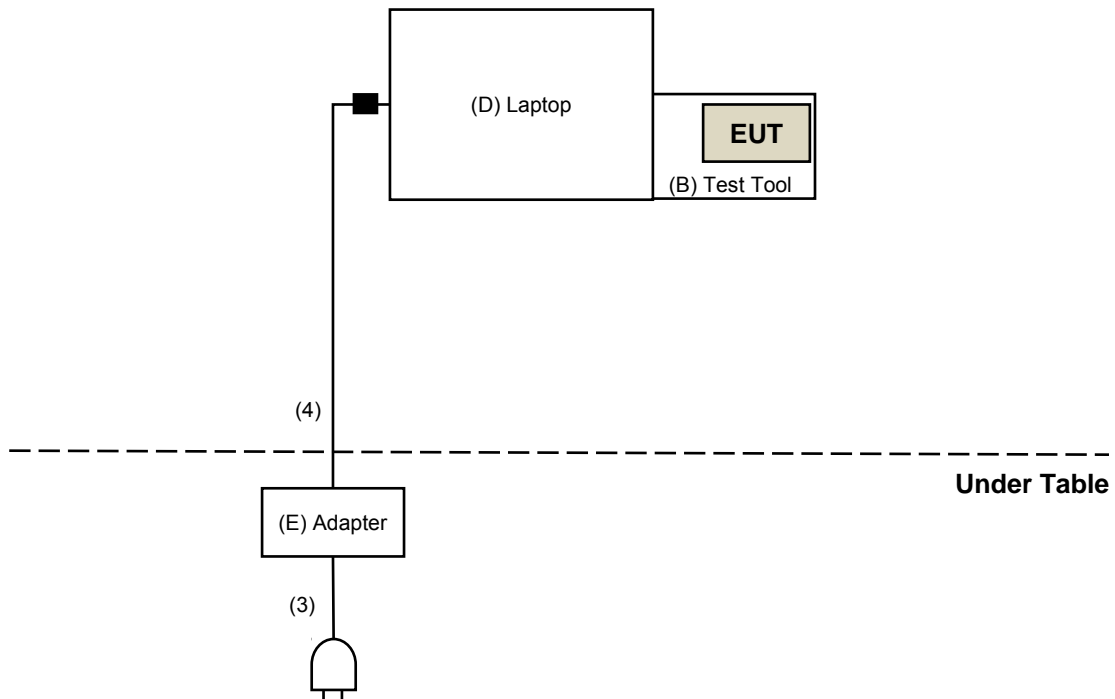
1. All power cords of the above support units are non-shielded (1.8m).

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	DC Cable	1	1.9	No	1	Provided by Lab
2.	AC Cable	1	1.9	No	0	Provided by Lab
3.	AC Cable	1	0.8	No	0	Provided by Lab
4.	DC Cable	1	1.6	No	1	Provided by Lab

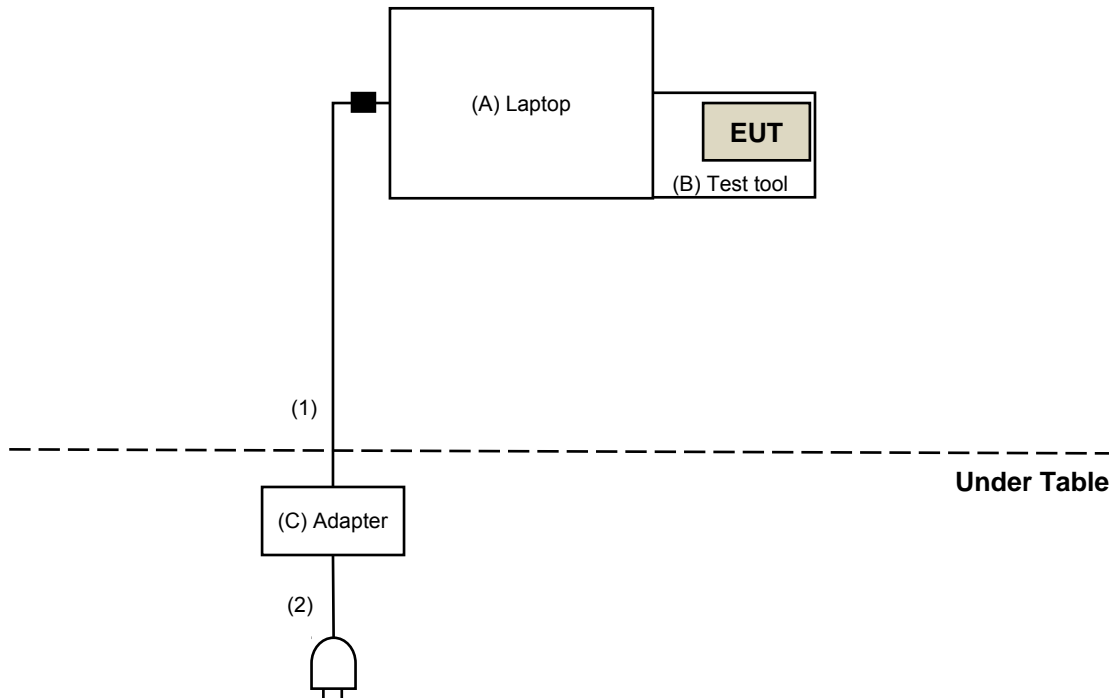
Note: The core(s) is(are) originally attached to the cable(s).

3.4.1 Configuration of System under Test

Power Line Conducted Emission test:



Other test items:



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 v02r01

KDB 662911 D01 Multiple Transmitter Output v02r01

ANSI C63.10-2013

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

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

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

NOTE:

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

Limits of unwanted emission out of the restricted bands

Applicable To		Limit	
789033 D02 General UNII Test Procedure New Rules v02r01		Field Strength at 3m	
		PK:74 (dBuV/m)	AV:54 (dBuV/m)
Frequency Band	Applicable To	EIRP Limit	Equivalent Field Strength at 3m
5150~5250 MHz	15.407(b)(1)	PK:-27 (dBm/MHz)	PK:68.2(dBuV/m)
5250~5350 MHz	15.407(b)(2)		
5470~5725 MHz	15.407(b)(3)		
5725~5850 MHz	<input checked="" type="checkbox"/> 15.407(b)(4)(i)	PK:-27 (dBm/MHz) ^{*1} PK:10 (dBm/MHz) ^{*2} PK:15.6 (dBm/MHz) ^{*3} PK:27 (dBm/MHz) ^{*4}	PK: 68.2(dBuV/m) ^{*1} PK:105.2 (dBuV/m) ^{*2} PK: 110.8(dBuV/m) ^{*3} PK:122.2 (dBuV/m) ^{*4}
	<input type="checkbox"/> 15.407(b)(4)(ii)	Emission limits in section 15.247(d)	
*1 beyond 75 MHz or more above of the band edge.		*2 below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.	
*3 below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.		*4 from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.	

Note:

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

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

4.1.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver ESR7 R&S	ESR7	102026	Apr. 24, 2019	Apr. 23, 2020
Spectrum Analyzer Keysight	N9030B	MY57141948	May 25, 2019	May 24, 2020
Pre-Amplifier EMCI	EMC001340	980142	Jan. 25, 2019	Jan. 24, 2020
Loop Antenna Electro-Metrics	EM-6879	269	Sep. 07, 2018	Sep. 06, 2019
RF Cable	NA	LOOPCAB-001	Jan. 14, 2019	Jan. 13, 2020
RF Cable	NA	LOOPCAB-002	Jan. 14, 2019	Jan. 13, 2020
Pre-Amplifier EMCI	EMC330N	980538	Apr. 30, 2019	Apr. 29, 2020
Trilog Broadband Antenna SCHWARZBECK	VULB9168	9168-0842	Nov. 21, 2018	Nov. 20, 2019
RF Cable	8D	966-5-1	May 03, 2019	May 02, 2020
RF Cable	8D	966-5-2	May 03, 2019	May 02, 2020
RF Cable	8D	966-5-3	May 03, 2019	May 02, 2020
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-ATT5-02	Jan. 28, 2019	Jan. 27, 2020
Horn_Antenna SCHWARZBECK	BBHA 9120D	9120D-1819	Nov. 25, 2018	Nov. 24, 2019
Pre-Amplifier EMCI	EMC12630SE	980509	May 03, 2019	May 02, 2020
RF Cable EMCI	EMC104-SM-SM-1500	180503	May 03, 2019	May 02, 2020
RF Cable EMCI	EMC104-SM-SM-2000	180501	May 03, 2019	May 02, 2020
RF Cable EMCI	EMC104-SM-SM-6000	180505	May 03, 2019	May 02, 2020
Pre-Amplifier EMCI	EMC184045SE	980387	Jan. 28, 2019	Jan. 27, 2020
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170519	Nov. 25, 2018	Nov. 24, 2019
RF Cable	EMC102-KM-KM-1200	160924	Jan. 28, 2019	Jan. 27, 2020
RF Cable	EMC102-KM-KM-1200	160925	Jan. 28, 2019	Jan. 27, 2020
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Boresight Antenna Tower & Turn Table Max-Full	MF-7802BS	MF780208530	NA	NA
Spectrum Analyzer R&S	FSV40	100964	June 04, 2019	June 03, 2020
Power meter Anritsu	ML2495A	1014008	May 13, 2019	May 12, 2020
Power sensor Anritsu	MA2411B	0917122	May 13, 2019	May 12, 2020
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 15, 2019	Apr. 14, 2020

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in 966 Chamber No. 5.
3. Loop antenna was used for all emissions below 30 MHz.
4. Tested Date: July 09 to 21, 2019

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. Parallel, perpendicular, and ground-parallel orientations 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 detects 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:

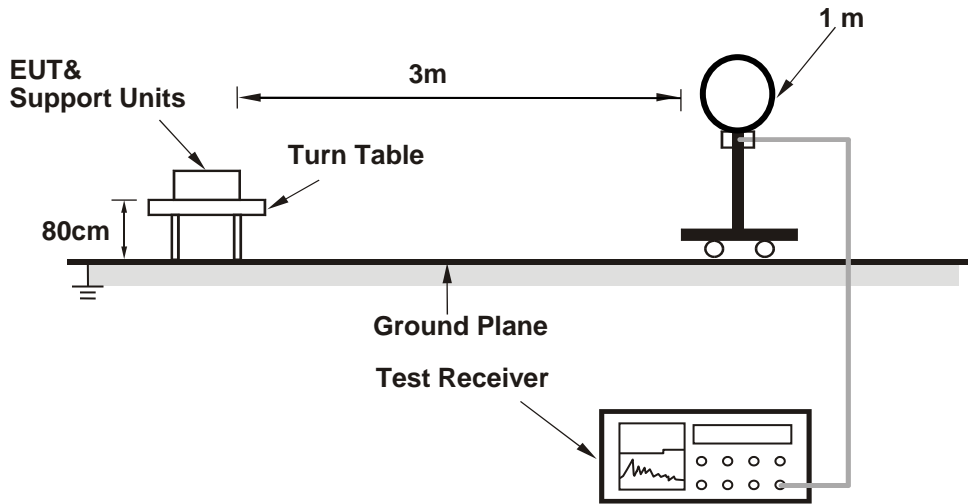
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle < 98%) or 10Hz (Duty cycle $\geq 98\%$) 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

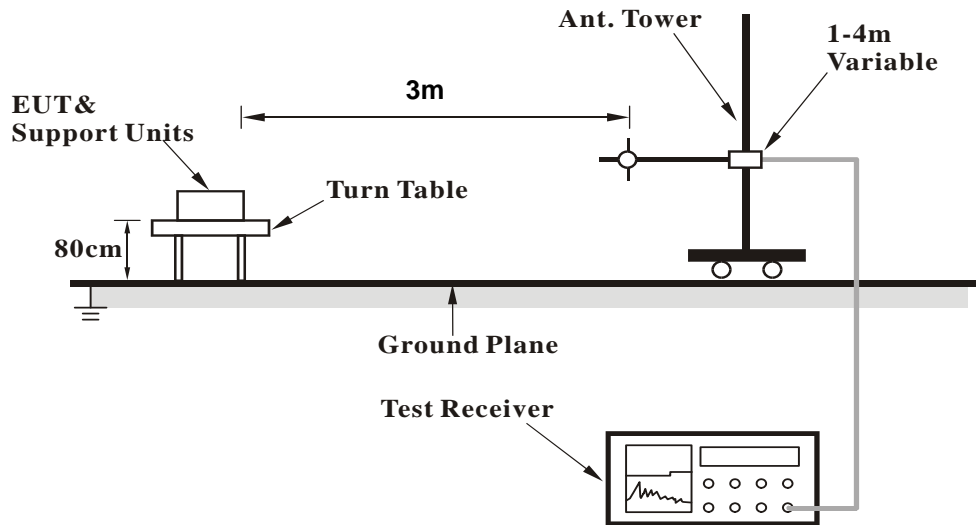
No deviation.

4.1.5 Test Setup

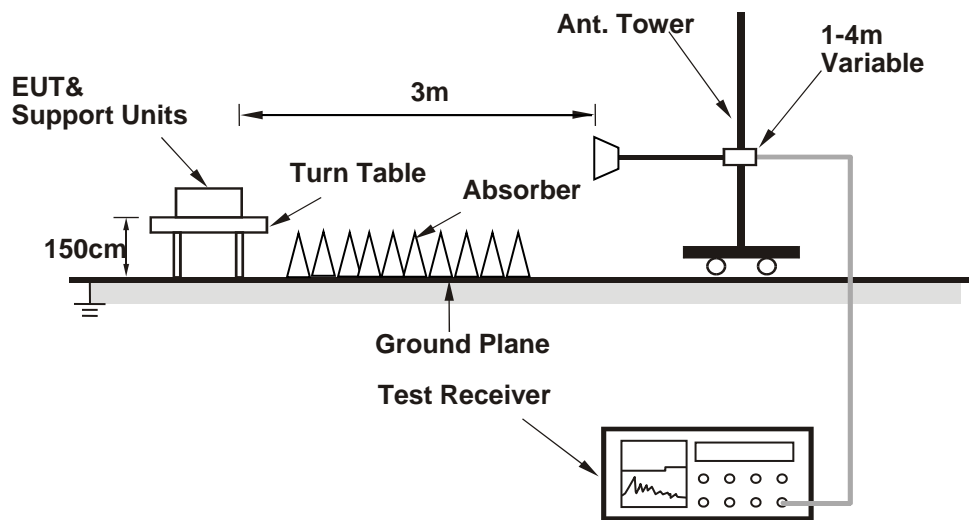
For Radiated emission below 30MHz



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

- Connected the EUT with the Laptop which is placed on the testing table.
- Controlling software (QRCT_CONNECTIVITY 3.0.33) has been activated to set the EUT under transmission condition continuously.

4.1.7 Test Results

Above 1GHz Data:

802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	64.6 PK	74.0	-9.4	1.63 H	345	62.5	2.1
2	5150.00	53.5 AV	54.0	-0.5	1.63 H	345	51.4	2.1
3	*5180.00	106.8 PK			1.63 H	345	105.0	1.8
4	*5180.00	97.5 AV			1.63 H	345	95.7	1.8
5	#10360.00	47.7 PK	68.2	-20.5	1.59 H	26	35.6	12.1
6	15540.00	48.6 PK	74.0	-25.4	1.00 H	117	36.4	12.2
7	15540.00	37.1 AV	54.0	-16.9	1.00 H	117	24.9	12.2
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	60.7 PK	74.0	-13.3	2.67 V	175	58.6	2.1
2	5150.00	50.2 AV	54.0	-3.8	2.67 V	175	48.1	2.1
3	*5180.00	106.8 PK			2.67 V	175	105.0	1.8
4	*5180.00	96.4 AV			2.67 V	175	94.6	1.8
5	#10360.00	48.0 PK	68.2	-20.2	1.20 V	18	35.9	12.1
6	15540.00	47.4 PK	74.0	-26.6	1.14 V	89	35.2	12.2
7	15540.00	35.7 AV	54.0	-18.3	1.14 V	89	23.5	12.2

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

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

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	106.8 PK			1.76 H	344	105.1	1.7
2	*5200.00	97.1 AV			1.76 H	344	95.4	1.7
3	#10400.00	47.8 PK	68.2	-20.4	1.56 H	40	35.4	12.4
4	15600.00	48.7 PK	74.0	-25.3	1.00 H	119	36.7	12.0
5	15600.00	37.3 AV	54.0	-16.7	1.00 H	119	25.3	12.0

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	*5200.00	106.3 PK			2.72 V	168	104.6	1.7
2	*5200.00	95.9 AV			2.72 V	168	94.2	1.7
3	#10400.00	48.4 PK	68.2	-19.8	1.26 V	13	36.0	12.4
4	15600.00	47.5 PK	74.0	-26.5	1.17 V	75	35.5	12.0
5	15600.00	35.9 AV	54.0	-18.1	1.17 V	75	23.9	12.0

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

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

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	107.8 PK			2.20 H	342	106.4	1.4
2	*5240.00	97.9 AV			2.20 H	342	96.5	1.4
3	5350.00	49.0 PK	74.0	-25.0	2.20 H	342	47.5	1.5
4	5350.00	36.9 AV	54.0	-17.1	2.20 H	342	35.4	1.5
5	#10480.00	47.9 PK	68.2	-20.3	1.54 H	46	35.1	12.8
6	15720.00	49.0 PK	74.0	-25.0	1.00 H	121	37.4	11.6
7	15720.00	37.4 AV	54.0	-16.6	1.00 H	121	25.8	11.6

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	*5240.00	106.8 PK			2.72 V	182	105.4	1.4
2	*5240.00	96.6 AV			2.72 V	182	95.2	1.4
3	5350.00	48.8 PK	74.0	-25.2	2.72 V	182	47.3	1.5
4	5350.00	36.6 AV	54.0	-17.4	2.72 V	182	35.1	1.5
5	#10480.00	48.8 PK	68.2	-19.4	1.24 V	10	36.0	12.8
6	15720.00	47.2 PK	74.0	-26.8	1.15 V	66	35.6	11.6
7	15720.00	35.7 AV	54.0	-18.3	1.15 V	66	24.1	11.6

REMARKS:

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

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

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	50.6 PK	74.0	-23.4	1.84 H	344	48.5	2.1
2	5150.00	37.7 AV	54.0	-16.3	1.84 H	344	35.6	2.1
3	*5260.00	106.9 PK			1.84 H	344	105.6	1.3
4	*5260.00	97.4 AV			1.84 H	344	96.1	1.3
5	#10520.00	47.6 PK	68.2	-20.6	1.58 H	51	34.8	12.8
6	15780.00	48.5 PK	74.0	-25.5	1.00 H	133	36.8	11.7
7	15780.00	36.8 AV	54.0	-17.2	1.00 H	133	25.1	11.7

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	48.5 PK	74.0	-25.5	2.76 V	175	46.4	2.1
2	5150.00	36.7 AV	54.0	-17.3	2.76 V	175	34.6	2.1
3	*5260.00	106.7 PK			2.76 V	175	105.4	1.3
4	*5260.00	96.6 AV			2.76 V	175	95.3	1.3
5	#10520.00	49.1 PK	68.2	-19.1	1.32 V	19	36.3	12.8
6	15780.00	47.4 PK	74.0	-26.6	1.19 V	82	35.7	11.7
7	15780.00	36.1 AV	54.0	-17.9	1.19 V	82	24.4	11.7

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	107.7 PK			1.79 H	353	106.3	1.4
2	*5300.00	97.2 AV			1.79 H	353	95.8	1.4
3	10600.00	47.7 PK	74.0	-26.3	1.59 H	29	34.6	13.1
4	10600.00	36.5 AV	54.0	-17.5	1.59 H	29	23.4	13.1
5	15900.00	49.2 PK	74.0	-24.8	1.06 H	126	37.7	11.5
6	15900.00	37.8 AV	54.0	-16.2	1.06 H	126	26.3	11.5

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	*5300.00	106.0 PK			2.70 V	173	104.6	1.4
2	*5300.00	96.1 AV			2.70 V	173	94.7	1.4
3	10600.00	48.2 PK	74.0	-25.8	1.26 V	13	35.1	13.1
4	10600.00	37.0 AV	54.0	-17.0	1.26 V	13	23.9	13.1
5	15900.00	46.9 PK	74.0	-27.1	1.23 V	67	35.4	11.5
6	15900.00	35.5 AV	54.0	-18.5	1.23 V	67	24.0	11.5

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	106.1 PK			1.84 H	344	104.6	1.5
2	*5320.00	96.3 AV			1.84 H	344	94.8	1.5
3	5350.00	67.6 PK	74.0	-6.4	1.84 H	344	66.1	1.5
4	5350.00	53.6 AV	54.0	-0.4	1.84 H	344	52.1	1.5
5	10640.00	47.2 PK	74.0	-26.8	1.62 H	25	34.0	13.2
6	10640.00	36.1 AV	54.0	-17.9	1.62 H	25	22.9	13.2
7	15960.00	49.3 PK	74.0	-24.7	1.00 H	126	37.8	11.5
8	15960.00	37.9 AV	54.0	-16.1	1.00 H	126	26.4	11.5

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	105.2 PK			2.67 V	175	103.7	1.5
2	*5320.00	95.5 AV			2.67 V	175	94.0	1.5
3	5350.00	60.4 PK	74.0	-13.6	2.67 V	175	58.9	1.5
4	5350.00	49.7 AV	54.0	-4.3	2.67 V	175	48.2	1.5
5	10640.00	47.1 PK	74.0	-26.9	1.23 V	5	33.9	13.2
6	10640.00	36.0 AV	54.0	-18.0	1.23 V	5	22.8	13.2
7	15960.00	49.3 PK	74.0	-24.7	1.15 V	88	37.8	11.5
8	15960.00	37.6 AV	54.0	-16.4	1.15 V	88	26.1	11.5

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

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

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	5460.00	57.5 PK	74.0	-16.5	1.78 H	340	55.6	1.9
2	5460.00	45.9 AV	54.0	-8.1	1.78 H	340	44.0	1.9
3	#5470.00	66.3 PK	68.2	-1.9	1.78 H	340	64.4	1.9
4	*5500.00	101.4 PK			1.78 H	340	99.5	1.9
5	*5500.00	91.6 AV			1.78 H	340	89.7	1.9
6	11000.00	47.0 PK	74.0	-27.0	1.63 H	31	33.4	13.6
7	11000.00	36.1 AV	54.0	-17.9	1.63 H	31	22.5	13.6
8	#16500.00	48.6 PK	68.2	-19.6	1.11 H	142	34.4	14.2

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	5460.00	57.1 PK	74.0	-16.9	2.76 V	162	55.2	1.9
2	5460.00	45.4 AV	54.0	-8.6	2.76 V	162	43.5	1.9
3	#5470.00	66.5 PK	68.2	-1.7	2.76 V	162	64.6	1.9
4	*5500.00	101.6 PK			2.76 V	162	99.7	1.9
5	*5500.00	91.6 AV			2.76 V	162	89.7	1.9
6	11000.00	46.6 PK	74.0	-27.4	1.28 V	28	33.0	13.6
7	11000.00	35.8 AV	54.0	-18.2	1.28 V	28	22.2	13.6
8	#16500.00	49.1 PK	68.2	-19.1	1.22 V	77	34.9	14.2

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	106.2 PK			1.84 H	331	104.1	2.1
2	*5580.00	96.4 AV			1.84 H	331	94.3	2.1
3	11160.00	47.7 PK	74.0	-26.3	1.66 H	22	35.0	12.7
4	11160.00	36.6 AV	54.0	-17.4	1.66 H	22	23.9	12.7
5	#16740.00	49.0 PK	68.2	-19.2	1.14 H	110	33.1	15.9

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	*5580.00	106.4 PK			2.74 V	159	104.3	2.1
2	*5580.00	96.2 AV			2.74 V	159	94.1	2.1
3	11160.00	47.8 PK	74.0	-26.2	1.30 V	14	35.1	12.7
4	11160.00	36.8 AV	54.0	-17.2	1.30 V	14	24.1	12.7
5	#16740.00	48.5 PK	68.2	-19.7	1.24 V	84	32.6	15.9

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	101.1 PK			2.02 H	352	98.9	2.2
2	*5700.00	91.5 AV			2.02 H	352	89.3	2.2
3	#5725.00	67.4 PK	68.2	-0.8	2.02 H	352	65.2	2.2
4	11400.00	46.2 PK	74.0	-27.8	1.67 H	37	32.7	13.5
5	11400.00	33.8 AV	54.0	-20.2	1.67 H	37	20.3	13.5
6	#17100.00	49.4 PK	68.2	-18.8	1.15 H	113	32.6	16.8

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	101.7 PK			2.77 V	174	99.5	2.2
2	*5700.00	91.9 AV			2.77 V	174	89.7	2.2
3	#5725.00	67.5 PK	68.2	-0.7	2.77 V	174	65.3	2.2
4	11400.00	45.9 PK	74.0	-28.1	1.24 V	34	32.4	13.5
5	11400.00	33.5 AV	54.0	-20.5	1.24 V	34	20.0	13.5
6	#17100.00	48.8 PK	68.2	-19.4	1.22 V	81	32.0	16.8

REMARKS:

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

CHANNEL	TX Channel 144	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	51.6 PK	68.2	-16.6	3.51 H	355	49.7	1.9
2	*5720.00	103.6 PK			3.51 H	355	101.4	2.2
3	*5720.00	93.9 AV			3.51 H	355	91.7	2.2
4	#5850.00	56.8 PK	68.2	-11.4	3.51 H	355	54.2	2.6
5	11440.00	45.9 PK	74.0	-28.1	1.70 H	47	32.2	13.7
6	11440.00	33.4 AV	54.0	-20.6	1.70 H	47	19.7	13.7
7	#17160.00	49.0 PK	68.2	-19.2	1.17 H	110	31.7	17.3

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	#5470.00	51.5 PK	68.2	-16.7	2.65 V	183	49.6	1.9
2	*5720.00	105.3 PK			2.65 V	183	103.1	2.2
3	*5720.00	95.3 AV			2.65 V	183	93.1	2.2
4	#5850.00	56.4 PK	68.2	-11.8	2.65 V	183	53.8	2.6
5	11440.00	45.9 PK	74.0	-28.1	1.22 V	43	32.2	13.7
6	11440.00	33.5 AV	54.0	-20.5	1.22 V	43	19.8	13.7
7	#17160.00	48.3 PK	68.2	-19.9	1.25 V	68	31.0	17.3

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5574.50	59.9 PK	68.2	-8.3	3.48 H	346	57.8	2.1
2	*5745.00	104.2 PK			3.48 H	346	101.9	2.3
3	*5745.00	94.4 AV			3.48 H	346	92.1	2.3
4	#5994.18	60.2 PK	68.2	-8.0	3.48 H	346	57.3	2.9
5	11490.00	47.3 PK	74.0	-26.7	1.60 H	29	33.2	14.1
6	11490.00	36.3 AV	54.0	-17.7	1.60 H	29	22.2	14.1
7	#17235.00	49.1 PK	68.2	-19.1	1.19 H	120	31.4	17.7

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5641.70	58.0 PK	68.2	-10.2	2.67 V	177	56.0	2.0
2	*5745.00	105.4 PK			2.67 V	177	103.1	2.3
3	*5745.00	95.4 AV			2.67 V	177	93.1	2.3
4	#5979.29	60.2 PK	68.2	-8.0	2.67 V	177	57.3	2.9
5	11490.00	46.0 PK	74.0	-28.0	1.24 V	45	31.9	14.1
6	11490.00	33.8 AV	54.0	-20.2	1.24 V	45	19.7	14.1
7	#17235.00	49.0 PK	68.2	-19.2	1.26 V	81	31.3	17.7

REMARKS:

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

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

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	#5639.93	58.7 PK	68.2	-9.5	3.52 H	347	56.7	2.0
2	*5785.00	104.1 PK			3.52 H	347	101.7	2.4
3	*5785.00	94.1 AV			3.52 H	347	91.7	2.4
4	#5934.59	59.3 PK	68.2	-8.9	3.52 H	347	56.5	2.8
5	11570.00	47.5 PK	74.0	-26.5	1.71 H	14	33.4	14.1
6	11570.00	36.1 AV	54.0	-17.9	1.71 H	14	22.0	14.1
7	#17355.00	48.5 PK	68.2	-19.7	1.10 H	118	30.2	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	#5591.27	58.8 PK	68.2	-9.4	2.72 V	178	56.7	2.1
2	*5785.00	104.9 PK			2.72 V	178	102.5	2.4
3	*5785.00	95.4 AV			2.72 V	178	93.0	2.4
4	#5995.39	60.4 PK	68.2	-7.8	2.72 V	178	57.5	2.9
5	11570.00	45.7 PK	74.0	-28.3	1.25 V	42	31.6	14.1
6	11570.00	33.4 AV	54.0	-20.6	1.25 V	42	19.3	14.1
7	#17355.00	48.8 PK	68.2	-19.4	1.24 V	73	30.5	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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

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	#5601.97	58.9 PK	68.2	-9.3	3.47 H	336	56.8	2.1
2	*5825.00	104.2 PK			3.47 H	336	101.7	2.5
3	*5825.00	94.6 AV			3.47 H	336	92.1	2.5
4	#5946.69	60.2 PK	68.2	-8.0	3.47 H	336	57.3	2.9
5	11650.00	47.4 PK	74.0	-26.6	1.69 H	21	33.5	13.9
6	11650.00	36.5 AV	54.0	-17.5	1.69 H	21	22.6	13.9
7	#17475.00	48.9 PK	68.2	-19.3	1.14 H	119	29.4	19.5

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	#5611.61	59.3 PK	68.2	-8.9	2.72 V	174	57.2	2.1
2	*5825.00	105.3 PK			2.72 V	174	102.8	2.5
3	*5825.00	95.5 AV			2.72 V	174	93.0	2.5
4	#6003.80	60.8 PK	68.2	-7.4	2.72 V	174	57.9	2.9
5	11650.00	45.7 PK	74.0	-28.3	1.25 V	34	31.8	13.9
6	11650.00	33.4 AV	54.0	-20.6	1.25 V	34	19.5	13.9
7	#17475.00	48.4 PK	68.2	-19.8	1.27 V	70	28.9	19.5

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

802.11ac (VHT20)

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

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	65.7 PK	74.0	-8.3	1.99 H	344	63.6	2.1
2	5150.00	53.3 AV	54.0	-0.7	1.99 H	344	51.2	2.1
3	*5180.00	107.3 PK			1.99 H	344	105.5	1.8
4	*5180.00	97.5 AV			1.99 H	344	95.7	1.8
5	#10360.00	47.7 PK	68.2	-20.5	1.54 H	14	35.6	12.1
6	15540.00	48.2 PK	74.0	-25.8	1.05 H	114	36.0	12.2
7	15540.00	36.9 AV	54.0	-17.1	1.05 H	114	24.7	12.2

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	61.2 PK	74.0	-12.8	2.61 V	164	59.1	2.1
2	5150.00	50.4 AV	54.0	-3.6	2.61 V	164	48.3	2.1
3	*5180.00	106.6 PK			2.72 V	174	104.8	1.8
4	*5180.00	96.4 AV			2.72 V	174	94.6	1.8
5	#10360.00	48.2 PK	68.2	-20.0	1.24 V	10	36.1	12.1
6	15540.00	47.5 PK	74.0	-26.5	1.15 V	84	35.3	12.2
7	15540.00	35.6 AV	54.0	-18.4	1.15 V	84	23.4	12.2

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

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

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	106.7 PK			1.99 H	329	105.0	1.7
2	*5200.00	97.1 AV			1.99 H	329	95.4	1.7
3	#10400.00	48.4 PK	68.2	-19.8	1.49 H	0	36.0	12.4
4	15600.00	48.4 PK	74.0	-25.6	1.01 H	124	36.4	12.0
5	15600.00	36.8 AV	54.0	-17.2	1.01 H	124	24.8	12.0

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	*5200.00	106.0 PK			2.67 V	159	104.3	1.7
2	*5200.00	96.1 AV			2.67 V	159	94.4	1.7
3	#10400.00	48.4 PK	68.2	-19.8	1.19 V	0	36.0	12.4
4	15600.00	47.2 PK	74.0	-26.8	1.20 V	75	35.2	12.0
5	15600.00	35.6 AV	54.0	-18.4	1.20 V	75	23.6	12.0

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

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

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	107.0 PK			1.67 H	341	105.6	1.4
2	*5240.00	97.5 AV			1.67 H	341	96.1	1.4
3	5350.00	49.7 PK	74.0	-24.3	1.67 H	341	48.2	1.5
4	5350.00	37.3 AV	54.0	-16.7	1.67 H	341	35.8	1.5
5	#10480.00	47.2 PK	68.2	-21.0	1.51 H	61	34.4	12.8
6	15720.00	49.2 PK	74.0	-24.8	1.00 H	118	37.6	11.6
7	15720.00	37.7 AV	54.0	-16.3	1.00 H	118	26.1	11.6

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	*5240.00	106.8 PK			2.77 V	170	105.4	1.4
2	*5240.00	96.7 AV			2.77 V	170	95.3	1.4
3	5350.00	48.2 PK	74.0	-25.8	2.77 V	170	46.7	1.5
4	5350.00	36.2 AV	54.0	-17.8	2.77 V	170	34.7	1.5
5	#10480.00	48.0 PK	68.2	-20.2	1.30 V	23	35.2	12.8
6	15720.00	47.2 PK	74.0	-26.8	1.18 V	55	35.6	11.6
7	15720.00	35.6 AV	54.0	-18.4	1.18 V	55	24.0	11.6

REMARKS:

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

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

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	50.8 PK	74.0	-23.2	1.99 H	358	48.7	2.1
2	5150.00	37.8 AV	54.0	-16.2	1.99 H	358	35.7	2.1
3	*5260.00	107.3 PK			1.99 H	358	106.0	1.3
4	*5260.00	97.5 AV			1.99 H	358	96.2	1.3
5	#10520.00	47.6 PK	68.2	-20.6	1.57 H	9	34.8	12.8
6	15780.00	48.7 PK	74.0	-25.3	1.02 H	106	37.0	11.7
7	15780.00	37.3 AV	54.0	-16.7	1.02 H	106	25.6	11.7

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	48.6 PK	74.0	-25.4	2.79 V	180	46.5	2.1
2	5150.00	36.3 AV	54.0	-17.7	2.79 V	180	34.2	2.1
3	*5260.00	106.6 PK			2.79 V	180	105.3	1.3
4	*5260.00	96.7 AV			2.79 V	180	95.4	1.3
5	#10520.00	48.4 PK	68.2	-19.8	1.27 V	30	35.6	12.8
6	15780.00	47.0 PK	74.0	-27.0	1.14 V	45	35.3	11.7
7	15780.00	35.6 AV	54.0	-18.4	1.14 V	45	23.9	11.7

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	107.9 PK			1.81 H	347	106.5	1.4
2	*5300.00	97.5 AV			1.81 H	347	96.1	1.4
3	10600.00	47.7 PK	74.0	-26.3	1.65 H	28	34.6	13.1
4	10600.00	36.3 AV	54.0	-17.7	1.65 H	28	23.2	13.1
5	15900.00	48.8 PK	74.0	-25.2	1.06 H	135	37.3	11.5
6	15900.00	37.5 AV	54.0	-16.5	1.06 H	135	26.0	11.5

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	*5300.00	106.7 PK			2.66 V	170	105.3	1.4
2	*5300.00	96.9 AV			2.66 V	170	95.5	1.4
3	10600.00	47.8 PK	74.0	-26.2	1.31 V	27	34.7	13.1
4	10600.00	36.8 AV	54.0	-17.2	1.31 V	27	23.7	13.1
5	15900.00	47.0 PK	74.0	-27.0	1.21 V	73	35.5	11.5
6	15900.00	35.8 AV	54.0	-18.2	1.21 V	73	24.3	11.5

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	106.0 PK			1.93 H	344	104.5	1.5
2	*5320.00	96.2 AV			1.93 H	344	94.7	1.5
3	5350.00	66.8 PK	74.0	-7.2	1.93 H	344	65.3	1.5
4	5350.00	53.5 AV	54.0	-0.5	1.93 H	344	52.0	1.5
5	10640.00	47.6 PK	74.0	-26.4	1.66 H	30	34.4	13.2
6	10640.00	36.2 AV	54.0	-17.8	1.66 H	30	23.0	13.2
7	15960.00	49.0 PK	74.0	-25.0	1.08 H	132	37.5	11.5
8	15960.00	37.8 AV	54.0	-16.2	1.08 H	132	26.3	11.5

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	105.0 PK			2.69 V	188	103.5	1.5
2	*5320.00	95.4 AV			2.69 V	188	93.9	1.5
3	5350.00	60.3 PK	74.0	-13.7	2.69 V	188	58.8	1.5
4	5350.00	49.8 AV	54.0	-4.2	2.69 V	188	48.3	1.5
5	10640.00	46.4 PK	74.0	-27.6	1.27 V	0	33.2	13.2
6	10640.00	35.6 AV	54.0	-18.4	1.27 V	0	22.4	13.2
7	15960.00	49.5 PK	74.0	-24.5	1.19 V	74	38.0	11.5
8	15960.00	37.7 AV	54.0	-16.3	1.19 V	74	26.2	11.5

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

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

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	5460.00	56.8 PK	74.0	-17.2	1.89 H	339	54.9	1.9
2	5460.00	45.4 AV	54.0	-8.6	1.89 H	339	43.5	1.9
3	#5470.00	66.7 PK	68.2	-1.5	1.89 H	339	64.8	1.9
4	*5500.00	101.3 PK			1.89 H	339	99.4	1.9
5	*5500.00	91.4 AV			1.89 H	339	89.5	1.9
6	11000.00	47.5 PK	74.0	-26.5	1.70 H	22	33.9	13.6
7	11000.00	36.1 AV	54.0	-17.9	1.70 H	22	22.5	13.6
8	#16500.00	48.7 PK	68.2	-19.5	1.10 H	144	34.5	14.2

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	5460.00	57.1 PK	74.0	-16.9	2.80 V	172	55.2	1.9
2	5460.00	45.5 AV	54.0	-8.5	2.80 V	172	43.6	1.9
3	#5470.00	66.7 PK	68.2	-1.5	2.80 V	172	64.8	1.9
4	*5500.00	100.7 PK			2.80 V	172	98.8	1.9
5	*5500.00	90.4 AV			2.80 V	172	88.5	1.9
6	11000.00	46.5 PK	74.0	-27.5	1.31 V	37	32.9	13.6
7	11000.00	35.9 AV	54.0	-18.1	1.31 V	37	22.3	13.6
8	#16500.00	49.0 PK	68.2	-19.2	1.28 V	63	34.8	14.2

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	106.2 PK			1.98 H	357	104.1	2.1
2	*5580.00	96.5 AV			1.98 H	357	94.4	2.1
3	11160.00	47.0 PK	74.0	-27.0	1.61 H	37	34.3	12.7
4	11160.00	35.9 AV	54.0	-18.1	1.61 H	37	23.2	12.7
5	#16740.00	49.3 PK	68.2	-18.9	1.05 H	122	33.4	15.9

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	*5580.00	106.1 PK			2.69 V	162	104.0	2.1
2	*5580.00	96.2 AV			2.69 V	162	94.1	2.1
3	11160.00	47.5 PK	74.0	-26.5	1.32 V	7	34.8	12.7
4	11160.00	36.3 AV	54.0	-17.7	1.32 V	7	23.6	12.7
5	#16740.00	48.7 PK	68.2	-19.5	1.22 V	93	32.8	15.9

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	102.3 PK			3.62 H	351	100.1	2.2
2	*5700.00	92.4 AV			3.62 H	351	90.2	2.2
3	#5725.00	67.9 PK	68.2	-0.3	3.62 H	351	65.7	2.2
4	11400.00	47.3 PK	74.0	-26.7	1.56 H	35	33.8	13.5
5	11400.00	36.3 AV	54.0	-17.7	1.56 H	35	22.8	13.5
6	#17100.00	49.0 PK	68.2	-19.2	1.02 H	135	32.2	16.8

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	101.9 PK			2.72 V	187	99.7	2.2
2	*5700.00	91.4 AV			2.72 V	187	89.2	2.2
3	#5725.00	67.4 PK	68.2	-0.8	2.72 V	187	65.2	2.2
4	11400.00	45.3 PK	74.0	-28.7	1.23 V	43	31.8	13.5
5	11400.00	33.1 AV	54.0	-20.9	1.23 V	43	19.6	13.5
6	#17100.00	48.4 PK	68.2	-19.8	1.26 V	82	31.6	16.8

REMARKS:

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

CHANNEL	TX Channel 144	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	51.5 PK	68.2	-16.7	3.48 H	342	49.6	1.9
2	*5720.00	103.9 PK			3.48 H	346	101.7	2.2
3	*5720.00	94.3 AV			3.48 H	346	92.1	2.2
4	#5850.00	57.0 PK	68.2	-11.2	3.54 H	342	54.4	2.6
5	11440.00	46.0 PK	74.0	-28.0	1.66 H	51	32.3	13.7
6	11440.00	33.5 AV	54.0	-20.5	1.66 H	51	19.8	13.7
7	#17160.00	48.7 PK	68.2	-19.5	1.17 H	122	31.4	17.3

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	#5470.00	51.3 PK	68.2	-16.9	2.65 V	183	49.4	1.9
2	*5720.00	104.6 PK			2.61 V	174	102.4	2.2
3	*5720.00	94.8 AV			2.61 V	174	92.6	2.2
4	#5850.00	57.0 PK	68.2	-11.2	2.69 V	179	54.4	2.6
5	11440.00	45.7 PK	74.0	-28.3	1.25 V	34	32.0	13.7
6	11440.00	33.1 AV	54.0	-20.9	1.25 V	34	19.4	13.7
7	#17160.00	48.6 PK	68.2	-19.6	1.30 V	76	31.3	17.3

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5569.77	59.9 PK	68.2	-8.3	3.40 H	352	57.8	2.1
2	*5745.00	103.7 PK			3.40 H	352	101.4	2.3
3	*5745.00	94.0 AV			3.40 H	352	91.7	2.3
4	#5965.09	61.1 PK	68.2	-7.1	3.40 H	352	58.2	2.9
5	11490.00	46.7 PK	74.0	-27.3	1.59 H	46	32.6	14.1
6	11490.00	35.7 AV	54.0	-18.3	1.59 H	46	21.6	14.1
7	#17235.00	49.6 PK	68.2	-18.6	1.00 H	108	31.9	17.7

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5591.72	58.4 PK	68.2	-9.8	2.70 V	175	56.3	2.1
2	*5745.00	105.2 PK			2.70 V	175	102.9	2.3
3	*5745.00	94.9 AV			2.70 V	175	92.6	2.3
4	#6012.17	59.5 PK	68.2	-8.7	2.70 V	175	56.6	2.9
5	11490.00	48.2 PK	74.0	-25.8	1.28 V	45	34.1	14.1
6	11490.00	36.7 AV	54.0	-17.3	1.28 V	45	22.6	14.1
7	#17235.00	46.3 PK	68.2	-21.9	1.26 V	75	28.6	17.7

REMARKS:

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

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

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	#5555.04	59.2 PK	68.2	-9.0	3.37 H	343	57.2	2.0
2	*5785.00	102.6 PK			3.37 H	343	100.2	2.4
3	*5785.00	93.9 AV			3.37 H	343	91.5	2.4
4	#5945.80	60.0 PK	68.2	-8.2	3.37 H	343	57.2	2.8
5	11570.00	46.7 PK	74.0	-27.3	1.66 H	43	32.6	14.1
6	11570.00	35.6 AV	54.0	-18.4	1.66 H	43	21.5	14.1
7	#17355.00	48.8 PK	68.2	-19.4	1.07 H	106	30.5	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	#5595.42	59.2 PK	68.2	-9.0	2.76 V	173	57.1	2.1
2	*5785.00	105.3 PK			2.76 V	173	102.9	2.4
3	*5785.00	95.3 AV			2.76 V	173	92.9	2.4
4	#5999.38	59.4 PK	68.2	-8.8	2.76 V	173	56.5	2.9
5	11570.00	48.5 PK	74.0	-25.5	1.23 V	30	34.4	14.1
6	11570.00	36.7 AV	54.0	-17.3	1.23 V	30	22.6	14.1
7	#17355.00	46.4 PK	68.2	-21.8	1.23 V	94	28.1	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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

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

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	#5572.62	58.3 PK	68.2	-9.9	3.38 H	349	56.2	2.1
2	*5825.00	104.5 PK			3.38 H	349	102.0	2.5
3	*5825.00	94.0 AV			3.38 H	349	91.5	2.5
4	#5961.66	60.2 PK	68.2	-8.0	3.38 H	349	57.3	2.9
5	11650.00	47.3 PK	74.0	-26.7	1.60 H	50	33.4	13.9
6	11650.00	36.1 AV	54.0	-17.9	1.60 H	50	22.2	13.9
7	#17475.00	49.4 PK	68.2	-18.8	1.08 H	108	29.9	19.5

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	#5566.08	59.1 PK	68.2	-9.1	2.76 V	173	57.0	2.1
2	*5825.00	105.5 PK			2.75 V	165	103.0	2.5
3	*5825.00	95.4 AV			2.75 V	165	92.9	2.5
4	#5959.37	60.0 PK	68.2	-8.2	2.76 V	173	57.1	2.9
5	11650.00	48.4 PK	74.0	-25.6	1.27 V	21	34.5	13.9
6	11650.00	36.9 AV	54.0	-17.1	1.27 V	21	23.0	13.9
7	#17475.00	46.5 PK	68.2	-21.7	1.23 V	80	27.0	19.5

REMARKS:

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

802.11ac (VHT40)

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

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	65.9 PK	74.0	-8.1	2.19 H	343	63.8	2.1
2	5150.00	52.5 AV	54.0	-1.5	2.19 H	343	50.4	2.1
3	*5190.00	102.4 PK			2.19 H	343	100.6	1.8
4	*5190.00	92.5 AV			2.19 H	343	90.7	1.8
5	5350.00	49.4 PK	74.0	-24.6	2.19 H	343	47.9	1.5
6	5350.00	36.9 AV	54.0	-17.1	2.19 H	343	35.4	1.5
7	#10380.00	47.6 PK	68.2	-20.6	1.69 H	54	35.3	12.3
8	15570.00	49.1 PK	74.0	-24.9	1.13 H	136	36.9	12.2
9	15570.00	37.8 AV	54.0	-16.2	1.13 H	136	25.6	12.2

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	61.4 PK	74.0	-12.6	2.69 V	183	59.3	2.1
2	5150.00	50.7 AV	54.0	-3.3	2.69 V	183	48.6	2.1
3	*5190.00	101.8 PK			2.69 V	183	100.0	1.8
4	*5190.00	91.8 AV			2.69 V	183	90.0	1.8
5	5350.00	49.1 PK	74.0	-24.9	2.69 V	183	47.6	1.5
6	5350.00	36.6 AV	54.0	-17.4	2.69 V	183	35.1	1.5
7	#10380.00	47.7 PK	68.2	-20.5	1.30 V	24	35.4	12.3
8	15570.00	47.0 PK	74.0	-27.0	1.09 V	70	34.8	12.2
9	15570.00	35.2 AV	54.0	-18.8	1.09 V	70	23.0	12.2

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	102.8 PK			2.13 H	342	101.3	1.5
2	*5230.00	93.0 AV			2.13 H	342	91.5	1.5
3	5350.00	49.6 PK	74.0	-24.4	2.13 H	342	48.1	1.5
4	5350.00	36.9 AV	54.0	-17.1	2.13 H	342	35.4	1.5
5	#10460.00	47.6 PK	68.2	-20.6	1.64 H	58	34.9	12.7
6	15690.00	49.4 PK	74.0	-24.6	1.16 H	134	37.8	11.6
7	15690.00	38.0 AV	54.0	-16.0	1.16 H	134	26.4	11.6

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	*5230.00	102.9 PK			2.70 V	161	101.4	1.5
2	*5230.00	92.4 AV			2.70 V	161	90.9	1.5
3	5350.00	49.3 PK	74.0	-24.7	2.70 V	161	47.8	1.5
4	5350.00	36.8 AV	54.0	-17.2	2.70 V	161	35.3	1.5
5	#10460.00	48.3 PK	68.2	-19.9	1.24 V	0	35.6	12.7
6	15690.00	47.0 PK	74.0	-27.0	1.21 V	87	35.4	11.6
7	15690.00	35.3 AV	54.0	-18.7	1.21 V	87	23.7	11.6

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

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

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	50.3 PK	74.0	-23.7	2.12 H	343	48.2	2.1
2	5150.00	38.5 AV	54.0	-15.5	2.12 H	343	36.4	2.1
3	*5270.00	101.7 PK			3.21 H	352	100.4	1.3
4	*5270.00	91.4 AV			3.21 H	352	90.1	1.3
5	5350.00	63.1 PK	74.0	-10.9	2.12 H	343	61.6	1.5
6	5350.00	51.0 AV	54.0	-3.0	2.12 H	343	49.5	1.5
7	#10540.00	47.8 PK	68.2	-20.4	1.66 H	36	34.9	12.9
8	15810.00	49.4 PK	74.0	-24.6	1.15 H	122	37.7	11.7
9	15810.00	38.3 AV	54.0	-15.7	1.15 H	122	26.6	11.7

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	49.8 PK	74.0	-24.2	2.70 V	174	47.7	2.1
2	5150.00	37.3 AV	54.0	-16.7	2.70 V	174	35.2	2.1
3	*5270.00	101.4 PK			2.70 V	174	100.1	1.3
4	*5270.00	90.8 AV			2.70 V	174	89.5	1.3
5	5350.00	63.0 PK	74.0	-11.0	2.70 V	174	61.5	1.5
6	5350.00	50.0 AV	54.0	-4.0	2.70 V	174	48.5	1.5
7	#10540.00	48.8 PK	68.2	-19.4	1.19 V	0	35.9	12.9
8	15810.00	47.1 PK	74.0	-26.9	1.22 V	73	35.4	11.7
9	15810.00	35.4 AV	54.0	-18.6	1.22 V	73	23.7	11.7

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	100.8 PK			1.79 H	338	99.4	1.4
2	*5310.00	90.1 AV			1.79 H	338	88.7	1.4
3	5350.00	63.6 PK	74.0	-10.4	1.79 H	338	62.1	1.5
4	5350.00	52.1 AV	54.0	-1.9	1.79 H	338	50.6	1.5
5	10620.00	47.3 PK	74.0	-26.7	1.69 H	46	34.2	13.1
6	10620.00	35.8 AV	54.0	-18.2	1.69 H	46	22.7	13.1
7	15930.00	49.2 PK	74.0	-24.8	1.18 H	125	37.7	11.5
8	15930.00	38.1 AV	54.0	-15.9	1.18 H	125	26.6	11.5

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	*5310.00	100.4 PK			2.68 V	166	99.0	1.4
2	*5310.00	89.6 AV			2.68 V	166	88.2	1.4
3	5350.00	60.9 PK	74.0	-13.1	2.68 V	166	59.4	1.5
4	5350.00	50.2 AV	54.0	-3.8	2.68 V	166	48.7	1.5
5	10620.00	46.5 PK	74.0	-27.5	1.27 V	45	33.4	13.1
6	10620.00	35.5 AV	54.0	-18.5	1.27 V	45	22.4	13.1
7	15930.00	49.9 PK	74.0	-24.1	1.16 V	54	38.4	11.5
8	15930.00	38.1 AV	54.0	-15.9	1.16 V	54	26.6	11.5

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

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

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	5460.00	56.2 PK	74.0	-17.8	2.15 H	357	54.3	1.9
2	5460.00	43.8 AV	54.0	-10.2	2.15 H	357	41.9	1.9
3	#5470.00	67.2 PK	68.2	-1.0	2.15 H	357	65.3	1.9
4	*5510.00	96.6 PK			2.15 H	357	94.7	1.9
5	*5510.00	87.0 AV			2.15 H	357	85.1	1.9
6	11020.00	47.3 PK	74.0	-26.7	1.71 H	44	33.9	13.4
7	11020.00	35.9 AV	54.0	-18.1	1.71 H	44	22.5	13.4
8	#16530.00	49.4 PK	68.2	-18.8	1.10 H	129	34.9	14.5

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	56.2 PK	74.0	-17.8	2.73 V	175	54.3	1.9
2	5460.00	42.3 AV	54.0	-11.7	2.73 V	175	40.4	1.9
3	#5470.00	64.1 PK	68.2	-4.1	2.73 V	175	62.2	1.9
4	*5510.00	100.5 PK			2.73 V	175	98.6	1.9
5	*5510.00	89.5 AV			2.73 V	175	87.6	1.9
6	11020.00	47.2 PK	74.0	-26.8	1.28 V	49	33.8	13.4
7	11020.00	36.0 AV	54.0	-18.0	1.28 V	49	22.6	13.4
8	#16530.00	50.0 PK	68.2	-18.2	1.11 V	67	35.5	14.5

REMARKS:

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

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

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	101.1 PK			3.28 H	343	99.1	2.0
2	*5550.00	91.4 AV			3.28 H	343	89.4	2.0
3	11100.00	48.1 PK	74.0	-25.9	1.60 H	44	35.2	12.9
4	11100.00	36.4 AV	54.0	-17.6	1.60 H	44	23.5	12.9
5	#16650.00	49.2 PK	68.2	-19.0	1.19 H	120	34.0	15.2

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	*5550.00	100.2 PK			3.25 V	334	98.2	2.0
2	*5550.00	90.7 AV			3.25 V	334	88.7	2.0
3	11100.00	48.6 PK	74.0	-25.4	1.57 V	44	35.7	12.9
4	11100.00	36.7 AV	54.0	-17.3	1.57 V	44	23.8	12.9
5	#16650.00	48.8 PK	68.2	-19.4	1.24 V	119	33.6	15.2

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	97.5 PK			3.62 H	351	95.4	2.1
2	*5670.00	87.6 AV			3.62 H	351	85.5	2.1
3	#5725.00	64.0 PK	68.2	-4.2	3.62 H	351	61.8	2.2
4	11340.00	46.9 PK	74.0	-27.1	1.72 H	45	33.9	13.0
5	11340.00	35.7 AV	54.0	-18.3	1.72 H	45	22.7	13.0
6	#17010.00	49.7 PK	68.2	-18.5	1.09 H	137	32.8	16.9

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	100.2 PK			3.19 V	322	98.1	2.1
2	*5670.00	90.7 AV			3.19 V	322	88.6	2.1
3	#5725.00	61.8 PK	68.2	-6.4	3.19 V	322	59.6	2.2
4	11340.00	48.7 PK	74.0	-25.3	1.59 V	56	35.7	13.0
5	11340.00	36.7 AV	54.0	-17.3	1.59 V	56	23.7	13.0
6	#17010.00	48.7 PK	68.2	-19.5	1.24 V	117	31.8	16.9

REMARKS:

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

CHANNEL	TX Channel 142	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	51.1 PK	68.2	-17.1	3.21 H	342	49.2	1.9
2	*5710.00	101.5 PK			3.21 H	342	99.3	2.2
3	*5710.00	91.3 AV			3.21 H	342	89.1	2.2
4	#5850.00	63.0 PK	68.2	-5.2	3.21 H	342	60.4	2.6
5	11420.00	47.9 PK	74.0	-26.1	1.61 H	28	34.3	13.6
6	11420.00	36.1 AV	54.0	-17.9	1.61 H	28	22.5	13.6
7	#17130.00	49.3 PK	68.2	-18.9	1.17 H	108	32.2	17.1

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	#5470.00	50.7 PK	68.2	-17.5	3.22 V	328	48.8	1.9
2	*5710.00	101.3 PK			3.22 V	328	99.1	2.2
3	*5710.00	90.8 AV			3.22 V	328	88.6	2.2
4	#5850.00	63.0 PK	68.2	-5.2	3.22 V	328	60.4	2.6
5	11420.00	48.6 PK	74.0	-25.4	1.61 V	42	35.0	13.6
6	11420.00	36.6 AV	54.0	-17.4	1.61 V	42	23.0	13.6
7	#17130.00	48.9 PK	68.2	-19.3	1.20 V	110	31.8	17.1

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5647.80	59.1 PK	68.2	-9.1	3.22 H	347	57.1	2.0
2	*5755.00	101.8 PK			3.22 H	347	99.5	2.3
3	*5755.00	91.8 AV			3.22 H	347	89.5	2.3
4	#5944.09	60.9 PK	68.2	-7.3	3.22 H	347	58.1	2.8
5	11510.00	47.7 PK	74.0	-26.3	1.65 H	40	33.6	14.1
6	11510.00	36.1 AV	54.0	-17.9	1.65 H	40	22.0	14.1
7	#17265.00	49.2 PK	68.2	-19.0	1.15 H	116	31.4	17.8

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5633.82	59.1 PK	68.2	-9.1	2.67 V	178	57.1	2.0
2	*5755.00	102.1 PK			2.67 V	178	99.8	2.3
3	*5755.00	92.3 AV			2.67 V	178	90.0	2.3
4	#5936.98	59.8 PK	68.2	-8.4	2.67 V	178	57.0	2.8
5	11510.00	48.9 PK	74.0	-25.1	1.56 V	43	34.8	14.1
6	11510.00	37.0 AV	54.0	-17.0	1.56 V	43	22.9	14.1
7	#17265.00	48.2 PK	68.2	-20.0	1.18 V	117	30.4	17.8

REMARKS:

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

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

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	#5550.12	58.8 PK	68.2	-9.4	3.40 H	344	56.8	2.0
2	*5795.00	101.3 PK			3.40 H	344	98.8	2.5
3	*5795.00	91.4 AV			3.40 H	344	88.9	2.5
4	#6004.40	60.9 PK	68.2	-7.3	3.40 H	344	58.0	2.9
5	11590.00	47.6 PK	74.0	-26.4	1.65 H	54	33.5	14.1
6	11590.00	36.3 AV	54.0	-17.7	1.65 H	54	22.2	14.1
7	#17385.00	49.9 PK	68.2	-18.3	1.07 H	122	31.4	18.5

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5623.16	59.3 PK	68.2	-8.9	2.71 V	173	57.2	2.1
2	*5795.00	101.8 PK			2.71 V	173	99.3	2.5
3	*5795.00	92.2 AV			2.71 V	173	89.7	2.5
4	#5938.08	59.5 PK	68.2	-8.7	2.71 V	173	56.7	2.8
5	11590.00	49.1 PK	74.0	-24.9	1.60 V	70	35.0	14.1
6	11590.00	37.1 AV	54.0	-16.9	1.60 V	70	23.0	14.1
7	#17385.00	49.1 PK	68.2	-19.1	1.19 V	127	30.6	18.5

REMARKS:

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

802.11ac (VHT80)

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	64.4 PK	74.0	-9.6	2.26 H	344	62.3	2.1
2	5150.00	53.6 AV	54.0	-0.4	2.26 H	344	51.5	2.1
3	*5210.00	99.2 PK			2.26 H	344	97.6	1.6
4	*5210.00	89.7 AV			2.26 H	344	88.1	1.6
5	5350.00	50.3 PK	74.0	-23.7	2.26 H	344	48.8	1.5
6	5350.00	38.8 AV	54.0	-15.2	2.26 H	344	37.3	1.5
7	#10420.00	47.2 PK	68.2	-21.0	1.71 H	31	34.8	12.4
8	15630.00	49.3 PK	74.0	-24.7	1.23 H	120	37.5	11.8
9	15630.00	38.1 AV	54.0	-15.9	1.23 H	120	26.3	11.8

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	64.2 PK	74.0	-9.8	2.91 V	88	62.1	2.1
2	5150.00	51.0 AV	54.0	-3.0	2.91 V	88	48.9	2.1
3	*5210.00	96.4 PK			2.91 V	88	94.8	1.6
4	*5210.00	87.4 AV			2.91 V	88	85.8	1.6
5	5350.00	49.5 PK	74.0	-24.5	2.91 V	88	48.0	1.5
6	5350.00	37.5 AV	54.0	-16.5	2.91 V	88	36.0	1.5
7	#10420.00	45.9 PK	68.2	-22.3	1.24 V	40	33.5	12.4
8	15630.00	49.4 PK	74.0	-24.6	1.13 V	52	37.6	11.8
9	15630.00	37.8 AV	54.0	-16.2	1.13 V	52	26.0	11.8

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	54.9 PK	74.0	-19.1	2.03 H	342	52.8	2.1
2	5150.00	42.0 AV	54.0	-12.0	2.03 H	342	39.9	2.1
3	*5290.00	98.3 PK			2.03 H	342	96.9	1.4
4	*5290.00	89.3 AV			2.03 H	342	87.9	1.4
5	5350.00	64.3 PK	74.0	-9.7	2.03 H	342	62.8	1.5
6	5350.00	52.2 AV	54.0	-1.8	2.03 H	342	50.7	1.5
7	#10580.00	47.5 PK	68.2	-20.7	1.71 H	61	34.6	12.9
8	15870.00	49.0 PK	74.0	-25.0	1.19 H	130	37.4	11.6
9	15870.00	38.0 AV	54.0	-16.0	1.19 H	130	26.4	11.6

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	54.7 PK	74.0	-19.3	2.92 V	97	52.6	2.1
2	5150.00	41.9 AV	54.0	-12.1	2.92 V	97	39.8	2.1
3	*5290.00	97.7 PK			2.92 V	97	96.3	1.4
4	*5290.00	88.0 AV			2.92 V	97	86.6	1.4
5	5350.00	62.8 PK	74.0	-11.2	2.92 V	97	61.3	1.5
6	5350.00	50.7 AV	54.0	-3.3	2.92 V	97	49.2	1.5
7	#10580.00	46.2 PK	68.2	-22.0	1.30 V	46	33.3	12.9
8	15870.00	50.4 PK	74.0	-23.6	1.13 V	59	38.8	11.6
9	15870.00	38.5 AV	54.0	-15.5	1.13 V	59	26.9	11.6

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

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

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	5460.00	60.6 PK	74.0	-13.4	2.03 H	339	58.7	1.9
2	5460.00	48.9 AV	54.0	-5.1	2.03 H	339	47.0	1.9
3	#5470.00	65.6 PK	68.2	-2.6	2.03 H	339	63.7	1.9
4	*5530.00	92.8 PK			2.03 H	339	90.8	2.0
5	*5530.00	82.8 AV			2.03 H	339	80.8	2.0
6	#5725.00	51.1 PK	68.2	-17.1	2.03 H	339	48.9	2.2
7	11060.00	47.4 PK	74.0	-26.6	1.70 H	37	34.2	13.2
8	11060.00	35.7 AV	54.0	-18.3	1.70 H	37	22.5	13.2
9	#16590.00	49.0 PK	68.2	-19.2	1.17 H	140	34.2	14.8

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	58.1 PK	74.0	-15.9	2.91 V	106	56.2	1.9
2	5460.00	46.6 AV	54.0	-7.4	2.91 V	106	44.7	1.9
3	#5470.00	62.6 PK	68.2	-5.6	2.91 V	106	60.7	1.9
4	*5530.00	92.1 PK			2.91 V	106	90.1	2.0
5	*5530.00	82.0 AV			2.91 V	106	80.0	2.0
6	#5725.00	51.4 PK	68.2	-16.8	2.91 V	106	49.2	2.2
7	11060.00	46.1 PK	74.0	-27.9	1.27 V	49	32.9	13.2
8	11060.00	35.2 AV	54.0	-18.8	1.27 V	49	22.0	13.2
9	#16590.00	49.8 PK	68.2	-18.4	1.19 V	55	35.0	14.8

REMARKS:

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

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5610.00	97.0 PK			2.38 H	191	94.9	2.1
2	*5610.00	86.1 AV			2.38 H	191	84.0	2.1
3	#5725.00	67.5 PK	68.2	-0.7	2.38 H	191	65.3	2.2
4	11220.00	47.6 PK	74.0	-26.4	1.64 H	32	35.0	12.6
5	11220.00	36.1 AV	54.0	-17.9	1.64 H	32	23.5	12.6
6	#16830.00	49.1 PK	68.2	-19.1	1.20 H	115	32.8	16.3

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	*5610.00	96.8 PK			2.64 V	172	94.7	2.1
2	*5610.00	86.1 AV			2.64 V	172	84.0	2.1
3	#5725.00	67.4 PK	68.2	-0.8	2.64 V	172	65.2	2.2
4	11220.00	46.3 PK	74.0	-27.7	1.23 V	36	33.7	12.6
5	11220.00	35.3 AV	54.0	-18.7	1.23 V	36	22.7	12.6
6	#16830.00	49.8 PK	68.2	-18.4	1.16 V	57	33.5	16.3

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

CHANNEL	TX Channel 138	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	53.1 PK	68.2	-15.1	3.25 H	359	51.2	1.9
2	*5690.00	99.6 PK			3.25 H	359	97.5	2.1
3	*5690.00	89.2 AV			3.25 H	359	87.1	2.1
4	#5850.00	64.5 PK	68.2	-3.7	3.25 H	359	61.9	2.6
5	11380.00	47.5 PK	74.0	-26.5	1.70 H	39	34.2	13.3
6	11380.00	35.8 AV	54.0	-18.2	1.70 H	39	22.5	13.3
7	#17070.00	48.9 PK	68.2	-19.3	1.16 H	152	32.0	16.9

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5470.00	52.9 PK	68.2	-15.3	2.66 V	171	51.0	1.9
2	*5690.00	99.8 PK			2.66 V	171	97.7	2.1
3	*5690.00	89.4 AV			2.66 V	171	87.3	2.1
4	#5850.00	64.7 PK	68.2	-3.5	2.66 V	171	62.1	2.6
5	11380.00	47.7 PK	74.0	-26.3	1.22 V	44	34.4	13.3
6	11380.00	35.8 AV	54.0	-18.2	1.22 V	44	22.5	13.3
7	#17070.00	49.2 PK	68.2	-19.0	1.22 V	71	32.3	16.9

REMARKS:

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

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

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	#5649.00	67.5 PK	68.2	-0.7	3.22 H	346	65.5	2.0
2	*5775.00	99.1 PK			3.22 H	346	96.7	2.4
3	*5775.00	88.9 AV			3.22 H	346	86.5	2.4
4	#5925.88	63.2 PK	68.2	-5.0	3.22 H	346	60.5	2.7
5	11550.00	47.7 PK	74.0	-26.3	1.71 H	53	33.5	14.2
6	11550.00	36.1 AV	54.0	-17.9	1.71 H	53	21.9	14.2
7	#17325.00	49.1 PK	68.2	-19.1	1.12 H	139	31.0	18.1

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	#5649.63	66.0 PK	68.2	-2.2	2.68 V	175	64.0	2.0
2	*5775.00	99.0 PK			2.68 V	175	96.6	2.4
3	*5775.00	89.5 AV			2.68 V	175	87.1	2.4
4	#5927.08	63.3 PK	68.2	-4.9	2.68 V	175	60.6	2.7
5	11550.00	46.9 PK	74.0	-27.1	1.26 V	54	32.7	14.2
6	11550.00	35.7 AV	54.0	-18.3	1.26 V	54	21.5	14.2
7	#17325.00	49.9 PK	68.2	-18.3	1.21 V	42	31.8	18.1

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

Below 1GHz Data:

802.11a

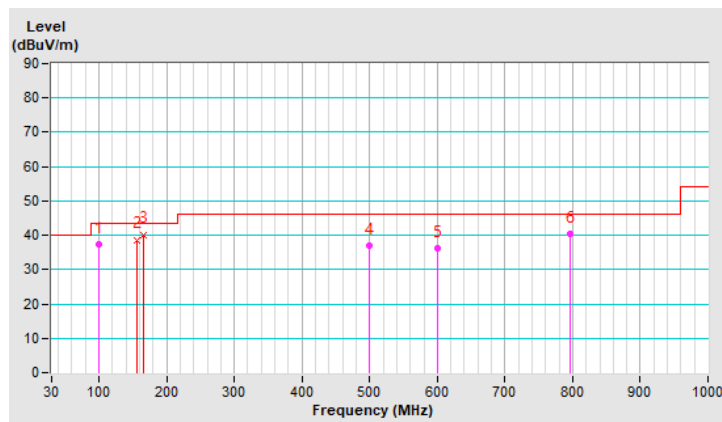
CHANNEL	TX Channel 48	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	99.91	37.4 QP	43.5	-6.1	3.00 H	11	54.7	-17.3
2	156.52	38.7 QP	43.5	-4.8	2.25 H	271	51.5	-12.8
3	164.95	40.2 QP	43.5	-3.3	1.50 H	55	53.4	-13.2
4	499.60	37.0 QP	46.0	-9.0	1.75 H	110	44.7	-7.7
5	599.51	36.3 QP	46.0	-9.7	1.75 H	207	41.7	-5.4
6	796.74	40.5 QP	46.0	-5.5	1.25 H	235	43.1	-2.6

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



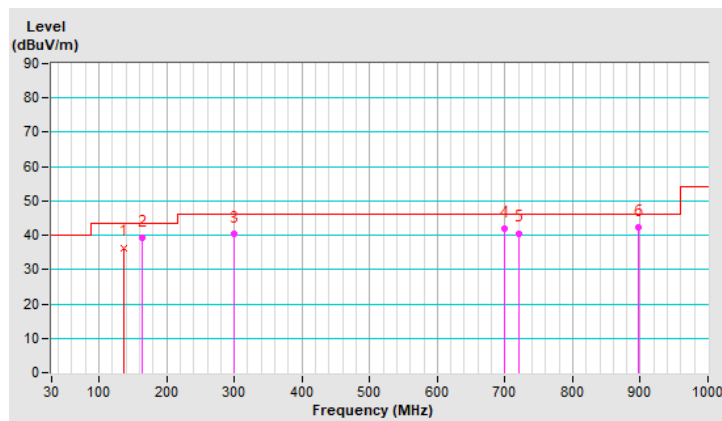
CHANNEL	TX Channel 48	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	137.50	36.4 QP	43.5	-7.1	1.25 V	302	49.8	-13.4
2	164.47	39.2 QP	43.5	-4.3	1.25 V	55	52.3	-13.1
3	299.78	40.4 QP	46.0	-5.6	1.50 V	342	52.7	-12.3
4	699.35	42.0 QP	46.0	-4.0	1.50 V	320	46.0	-4.0
5	721.46	40.6 QP	46.0	-5.4	1.50 V	275	44.2	-3.6
6	896.26	42.4 QP	46.0	-3.6	2.50 V	290	43.9	-1.5

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

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

Note: 1. The lower limit shall apply at the transition frequencies.

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.2.2 Test Instruments

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver R&S	ESCS 30	847124/029	Oct. 24, 2018	Oct. 23, 2019
Line-Impedance Stabilization Network (for EUT) R&S	ESH3-Z5	848773/004	Oct. 22, 2018	Oct. 21, 2019
Line-Impedance Stabilization Network (for Peripheral) R&S	ESH3-Z5	835239/001	Mar. 17, 2019	Mar. 16, 2020
50 ohms Terminator	N/A	3	Oct. 22, 2018	Oct. 21, 2019
RF Cable	5D-FB	COCCAB-001	Sep. 28, 2018	Sep. 27, 2019
Fixed attenuator EMCI	STI02-2200-10	003	Mar. 14, 2019	Mar. 13, 2020
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 Conduction 1.
3. Tested Date: July 22, 2019

4.2.3 Test Procedure

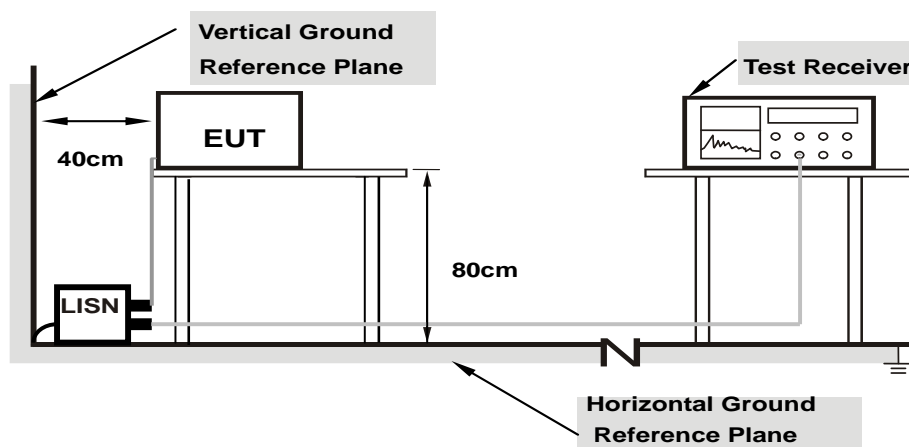
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

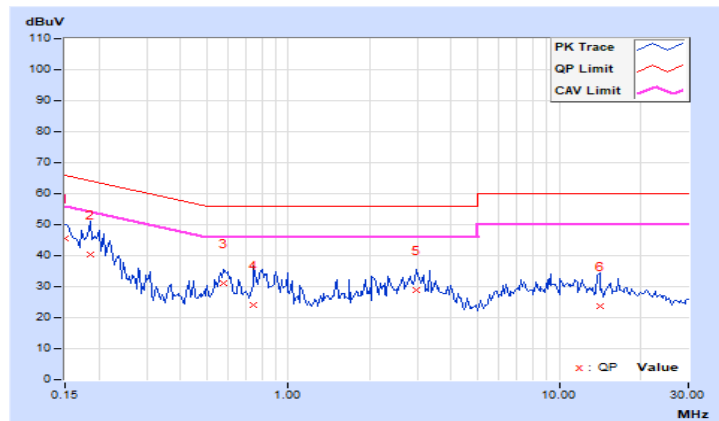
4.2.7 Test Results

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.94	35.64	24.36	45.58	34.30	66.00	56.00	-20.42	-21.70
2	0.18516	9.95	30.45	16.85	40.40	26.80	64.25	54.25	-23.85	-27.45
3	0.57969	9.97	21.08	12.62	31.05	22.59	56.00	46.00	-24.95	-23.41
4	0.74766	9.98	14.03	5.41	24.01	15.39	56.00	46.00	-31.99	-30.61
5	2.97656	10.11	18.63	12.08	28.74	22.19	56.00	46.00	-27.26	-23.81
6	14.08984	10.70	13.17	6.33	23.87	17.03	60.00	50.00	-36.13	-32.97

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

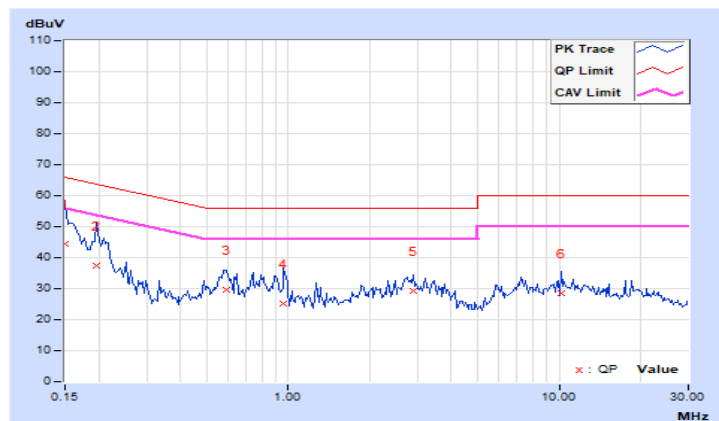


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.92	34.67	22.98	44.59	32.90	66.00	56.00	-21.41	-23.10
2	0.19687	9.93	27.60	15.95	37.53	25.88	63.74	53.74	-26.21	-27.86
3	0.59141	9.95	19.78	11.18	29.73	21.13	56.00	46.00	-26.27	-24.87
4	0.95859	9.98	15.04	7.32	25.02	17.30	56.00	46.00	-30.98	-28.70
5	2.89453	10.07	19.17	13.02	29.24	23.09	56.00	46.00	-26.76	-22.91
6	10.12891	10.37	18.09	12.62	28.46	22.99	60.00	50.00	-31.54	-27.01

Remarks:

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



4.3 Transmit Power Measurement

4.3.1 Limits of Transmit Power Measurement

Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p \leq 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)
	√	Client device	250mW (24 dBm)
U-NII-2A		√	250mW (24 dBm) or 11 dBm+10 log B*
U-NII-2C		√	250mW (24 dBm) or 11 dBm+10 log B*
U-NII-3		√	1 Watt (30 dBm)

*B is the 26 dB emission bandwidth in megahertz

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

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;

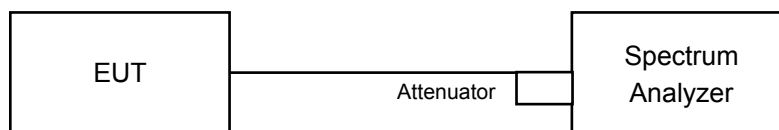
Array Gain = $5 \log(N_{ANT}/N_{SS})$ dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

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

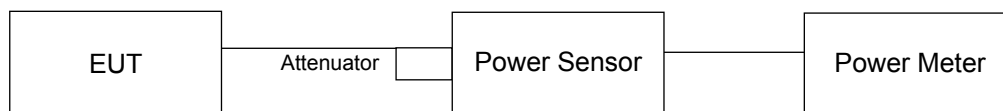
4.3.2 Test Setup

FOR POWER OUTPUT MEASUREMENT

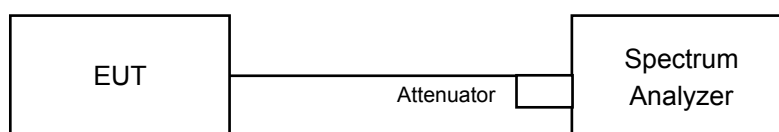
For channel straddling 5725MHz:



For other channels:



FOR 26dB OCCUPIED BANDWIDTH



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

FOR POWER OUTPUT MEASUREMENT

For channel straddling 5725MHz:

Follow FCC KDB 789033 UNII test procedure:

Method SA-2

1. Set span to encompass the emission bandwidth (EBW) of the signal.
2. Set RBW =1MHz.
3. Set the VBW $\geq 3 \times$ RBW.
4. Number of points in sweep ≥ 2 Span / RBW.
5. Sweep time = auto.
6. Detector = RMS.
7. Trace average at least 100 traces in power averaging mode
8. Compute power by integrating the spectrum across the 26 dB EBW of the signal.
9. Duty factor need added to measured value (duty cycle < 98 percent).

For other channels:

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

FOR 26dB OCCUPIED BANDWIDTH

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

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Condition

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

4.3.7 Test Results

802.11a

POWER OUTPUT

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	13.62	14.27	49.744	16.97	22.35	Pass
40	5200	15.00	15.76	69.293	18.41	22.35	Pass
48	5240	15.32	16.17	75.441	18.78	22.35	Pass
52	5260	14.73	15.63	66.276	18.21	22.35	Pass
60	5300	15.09	15.74	69.782	18.44	22.35	Pass
64	5320	13.19	13.47	43.078	16.34	22.35	Pass
100	5500	13.86	13.19	45.167	16.55	22.35	Pass
116	5580	14.90	16.03	70.99	18.51	22.35	Pass
140	5700	10.85	11.25	25.497	14.06	22.29	Pass
*144 (U-NII-2C Band)	5720	12.60	13.36	44.029	16.44	21.31	Pass
*144 (U-NII-3 Band)	5720	5.20	5.79	7.844	8.95	28.35	Pass
149	5745	13.54	13.37	44.321	16.47	28.35	Pass
157	5785	14.61	15.06	60.97	17.85	28.35	Pass
165	5825	14.64	14.72	58.755	17.69	28.35	Pass

* Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test.

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
144	5720	51.873	17.15

Note: The total power was calculated through formula and record the value for reference only.

Note:

For U-NII-1: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2]$ = 7.65 dBi > 6 dBi, so the power limit shall be reduced to $24 - (7.36 - 6) = 22.35$ dBm.

For U-NII-2A, U-NII-2C: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2]$ = 7.65 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(7.65-6)".

For U-NII-3: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2]$ = 7.65 dBi > 6 dBi, so the power limit shall be reduced to $30 - (7.36 - 6) = 28.35$ dBm.

For CH144: Total power (dBm) = Average power <Chain 0 +1> (dBm) + Duty Factor (0.43dB)

26dB OCCUPIED BANDWIDTH

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	21.71	21.15
40	5200	22.45	22.99
48	5240	20.39	21.37
52	5260	20.08	20.22
60	5300	20.02	21.84
64	5320	19.96	20.55
100	5500	20.08	20.69
116	5580	21.59	21.68
140	5700	19.82	19.71
144 (U-NII-2C Band)	5720	15.71	18.63

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

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	20.08	24.02 > 24
60	5300	20.02	24.01 > 24
64	5320	19.96	24 = 24
100	5500	20.08	24.02 > 24
116	5580	21.59	24.34 > 24
140	5700	19.71	23.94 < 24
144 (U-NII-2C Band)	5720	15.71	22.96 < 24

802.11ac (VHT20)
POWER OUTPUT

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	13.74	14.16	49.721	16.97	22.35	Pass
40	5200	14.10	14.57	54.346	17.35	22.35	Pass
48	5240	13.74	15.57	59.717	17.76	22.35	Pass
52	5260	14.01	15.37	59.612	17.75	22.35	Pass
60	5300	13.85	14.15	50.268	17.01	22.35	Pass
64	5320	13.39	13.43	43.856	16.42	22.35	Pass
100	5500	13.37	12.71	40.391	16.06	22.35	Pass
116	5580	13.97	14.50	53.13	17.25	22.35	Pass
140	5700	10.63	10.75	23.446	13.70	22.35	Pass
*144 (U-NII-2C Band)	5720	12.53	12.95	41.822	16.21	21.25	Pass
*144 (U-NII-3 Band)	5720	5.53	6.02	8.415	9.25	28.35	Pass
149	5745	13.18	12.47	38.457	15.85	28.35	Pass
157	5785	13.43	13.45	44.16	16.45	28.35	Pass
165	5825	13.47	14.20	48.536	16.86	28.35	Pass

* Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test.

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
144	5720	50.237	17.01

Note: The total power was calculated through formula and record the value for reference only.

Note:

For U-NII-1: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2]$ = 7.65 dBi > 6 dBi, so the power limit shall be reduced to $24 - (7.36 - 6) = 22.35$ dBm.

For U-NII-2A, U-NII-2C: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2]$ = 7.65 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(7.65-6)".

For U-NII-3: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2]$ = 7.65 dBi > 6 dBi, so the power limit shall be reduced to $30 - (7.36 - 6) = 28.35$ dBm.

For CH144: Total power (dBm) = Average power <Chain 0 +1> (dBm) + Duty Factor (0.46dB)

26dB OCCUPIED BANDWIDTH

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	23.02	24.92
40	5200	21.21	21.85
48	5240	20.88	21.35
52	5260	20.87	21.23
60	5300	21.54	21.62
64	5320	20.73	20.88
100	5500	20.72	20.82
116	5580	22.99	22.07
140	5700	20.71	21.89
144 (U-NII-2C Band)	5720	17.32	15.51

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

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
52	5260	20.87	24.19 > 24
60	5300	21.54	24.33 > 24
64	5320	20.73	24.16 > 24
100	5500	20.72	24.16 > 24
116	5580	22.07	24.43 > 24
140	5700	20.71	24.16 > 24
144 (U-NII-2C Band)	5720	15.51	22.9 < 24

802.11ac (VHT40)
POWER OUTPUT

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	9.95	9.71	19.24	12.84	22.35	Pass
46	5230	13.36	13.97	46.623	16.69	22.35	Pass
54	5270	13.11	13.10	40.881	16.12	22.35	Pass
62	5310	10.64	9.92	21.405	13.31	22.35	Pass
102	5510	10.04	9.54	19.088	12.81	22.35	Pass
110	5550	13.01	13.30	41.379	16.17	22.35	Pass
134	5670	11.00	11.34	26.203	14.18	22.35	Pass
*142 (U-NII-2C Band)	5710	12.97	13.40	51.211	17.09	22.35	Pass
*142 (U-NII-3 Band)	5710	0.78	1.09	3.049	4.84	28.35	Pass
151	5755	11.55	11.10	27.171	14.34	28.35	Pass
159	5795	12.62	12.56	36.311	15.60	28.35	Pass

* Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test.

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
142	5710	54.26	17.34

Note: The total power was calculated through formula and record the value for reference only.

Note:

For U-NII-1: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 7.65 \text{ dBi} > 6 \text{ dBi}$, so the power limit shall be reduced to $24 - (7.36 - 6) = 22.35 \text{ dBm}$.

For U-NII-2A, U-NII-2C: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 7.65 \text{ dBi} > 6 \text{ dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(7.65-6)".

For U-NII-3: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 7.65 \text{ dBi} > 6 \text{ dBi}$, so the power limit shall be reduced to $30 - (7.36 - 6) = 28.35 \text{ dBm}$.

For CH142: Total power (dBm)= Average power <Chain 0 +1> (dBm) + Duty Factor (0.89dB)

26dB OCCUPIED BANDWIDTH

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	44.18	42.32
46	5230	42.44	42.56
54	5270	45.71	43.67
62	5310	42.97	42.99
102	5510	42.17	45.25
110	5550	42.95	43.40
134	5670	48.31	52.56
142 (U-NII-2C Band)	5710	55.15	48.29

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

Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
54	5270	43.67	27.4 > 24
62	5310	42.97	27.33 > 24
102	5510	42.17	27.25 > 24
110	5550	42.95	27.32 > 24
134	5670	48.31	27.84 > 24
142 (U-NII-2C Band)	5710	48.29	27.83 > 24

802.11ac (VHT80)
POWER OUTPUT

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	9.18	9.69	17.59	12.45	22.35	Pass
58	5290	9.00	8.66	15.288	11.84	22.35	Pass
106	5530	8.36	8.13	13.356	11.26	22.35	Pass
122	5610	13.12	13.50	42.899	16.32	22.35	Pass
*138 (U-NII-2C Band)	5690	12.50	13.11	56.937	17.55	22.35	Pass
*138 (U-NII-3 Band)	5690	-4.28	-4.08	1.1375	0.56	28.35	Pass
155	5775	10.00	9.88	19.727	12.95	28.35	Pass

* Test was performed in accordance with Measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test.

The Total Power for the straddle channel:

Chan.	Chan. Freq. (MHz)	Average Power (mW)	Average Power (dBm)
138	5690	58.0745	17.64

Note: The total power was calculated through formula and record the value for reference only.

Note:

For U-NII-1: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 7.65 \text{ dBi} > 6 \text{ dBi}$, so the power limit shall be reduced to $24 - (7.36 - 6) = 22.35 \text{ dBm}$.

For U-NII-2A, U-NII-2C: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 7.65 \text{ dBi} > 6 \text{ dBi}$, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(7.65-6)".

For U-NII-3: The directional gain = $10 \log[(10^{G0/20} + 10^{G1/20})^2 / 2] = 7.65 \text{ dBi} > 6 \text{ dBi}$, so the power limit shall be reduced to $30 - (7.36 - 6) = 28.35 \text{ dBm}$.

For CH138: Total power (dBm) = Average power <Chain 0 +1>(dBm) + Duty Factor (1.73dB)

26dB OCCUPIED BANDWIDTH

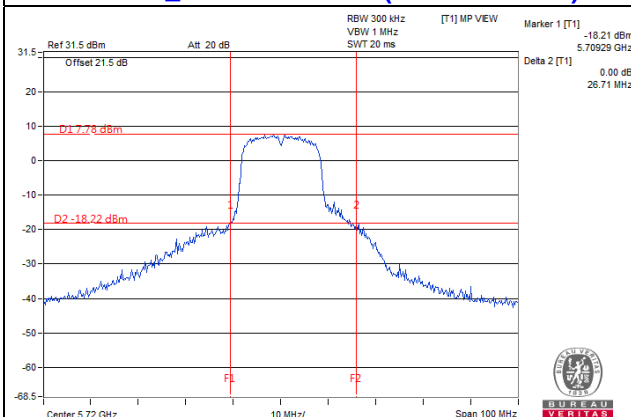
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	83.38	83.08
58	5290	85.77	82.76
106	5530	83.82	92.11
122	5610	98.52	87.52
138 (U-NII-2C Band)	5690	97.00	95.48

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

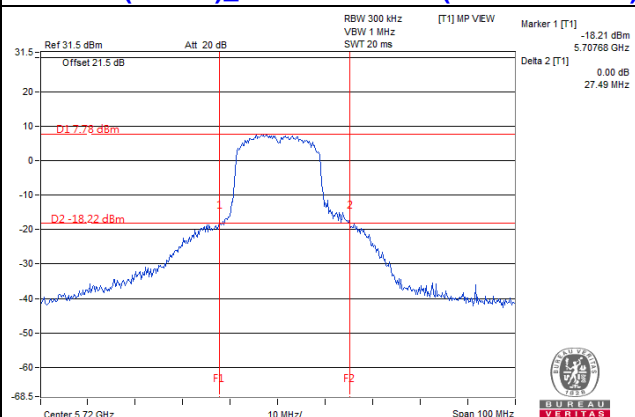
Power Limit = 11dBm + 10logB < U-NII-2A, U-NII-2C >			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Limit (dBm)
58	5290	82.76	30.17 > 24
106	5530	83.82	30.23 > 24
122	5610	87.52	30.42 > 24
138 (U-NII-2C Band)	5690	95.48	30.79 > 24

Spectrum Plot of Worst Value

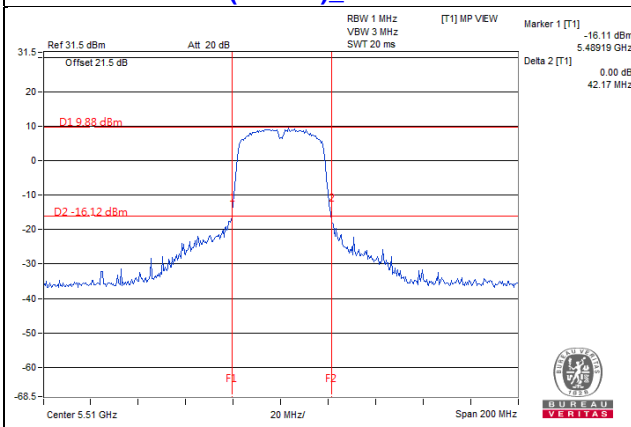
802.11a_Chain 0: CH144 (U-NII-2C Band)



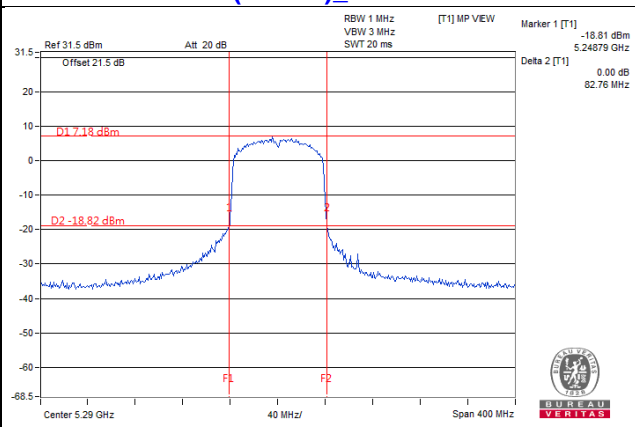
802.11ac (VHT20)_Chain 1: CH144 (U-NII-2C Band)



802.11ac (VHT40)_Chain 0: CH102



802.11ac (VHT80)_Chain 1: CH58



NOTE:

For CH144 (U-NII-2C Band) = 5725MHz - Marker 1

5 Pictures of Test Arrangements

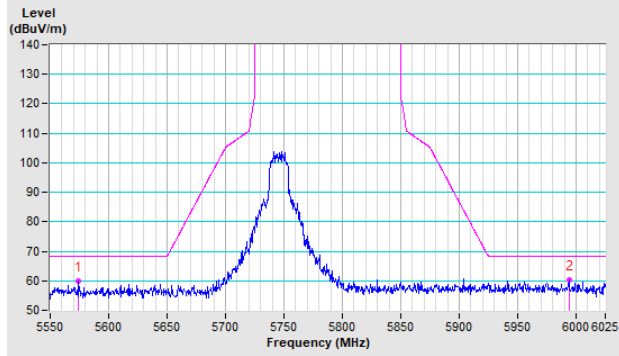
Please refer to the attached file (Test Setup Photo).

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

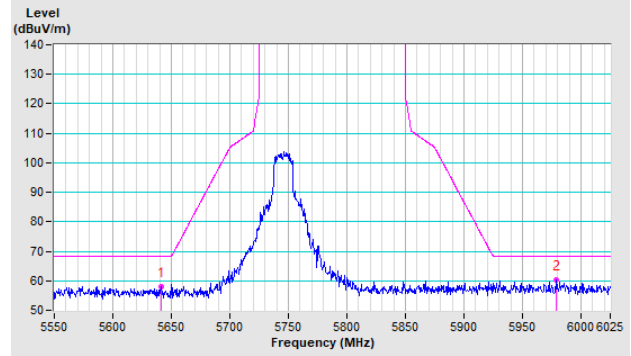
802.11a

CH 149 5745 MHz

Horizontal

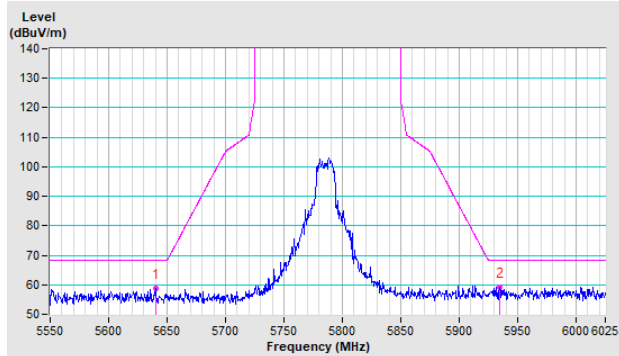


Vertical

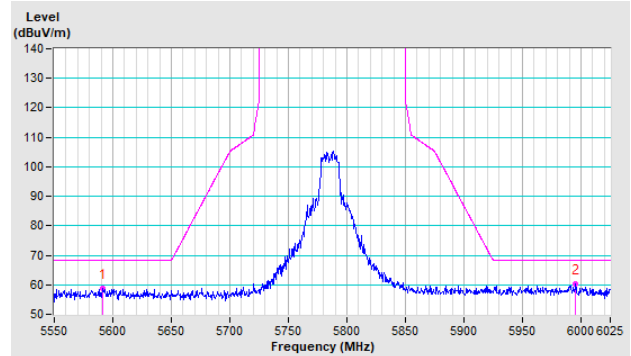


CH 157 5785 MHz

Horizontal

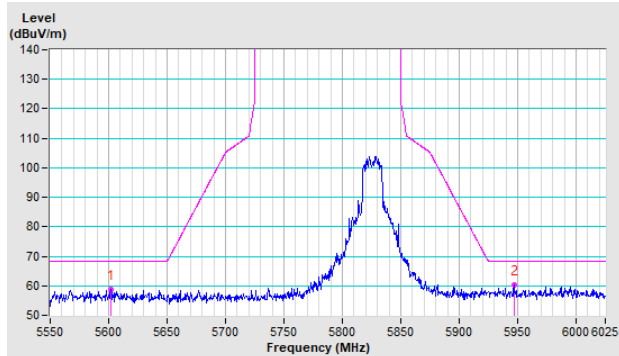


Vertical

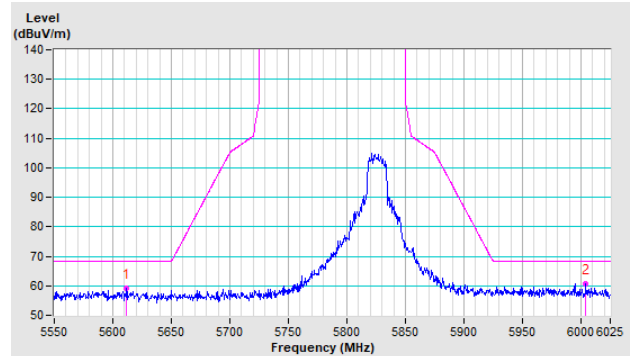


CH 165 5825 MHz

Horizontal



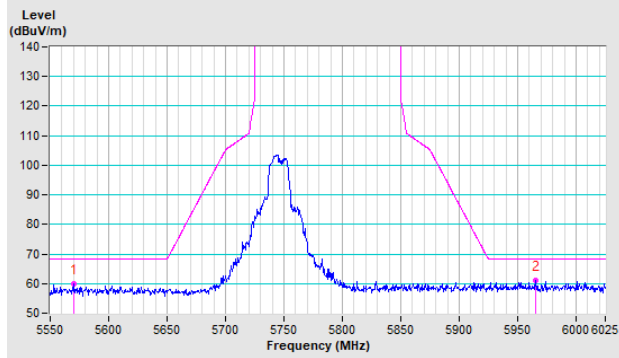
Vertical



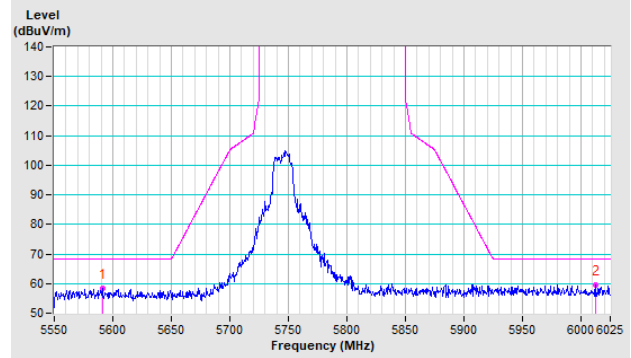
802.11ac (VHT20)

CH 149 5745 MHz

Horizontal

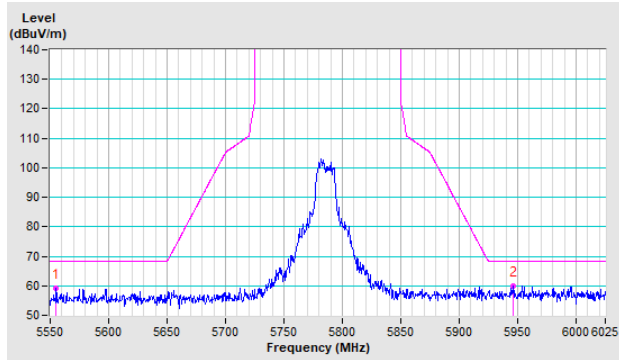


Vertical

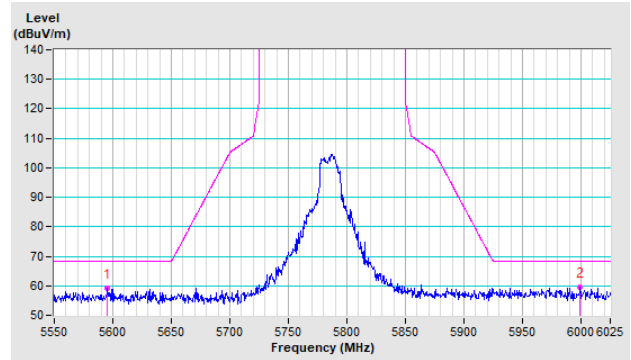


CH 157 5785 MHz

Horizontal

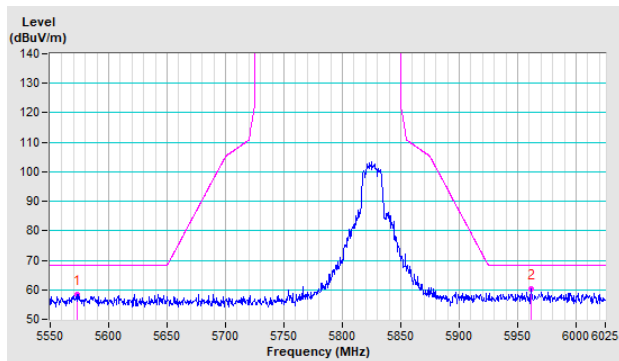


Vertical

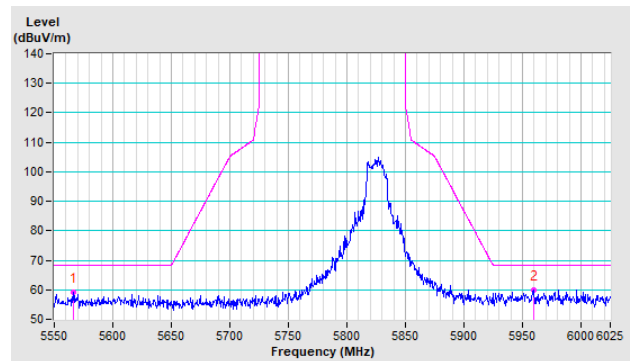


CH 165 5825 MHz

Horizontal



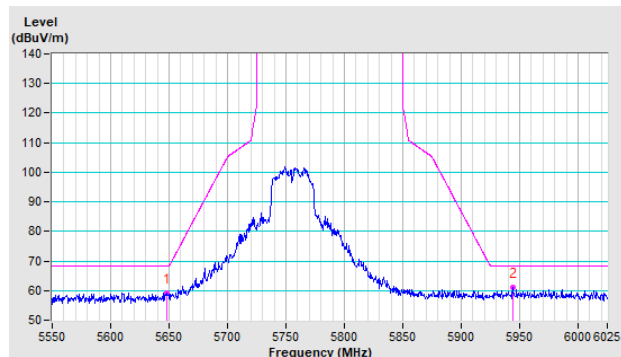
Vertical



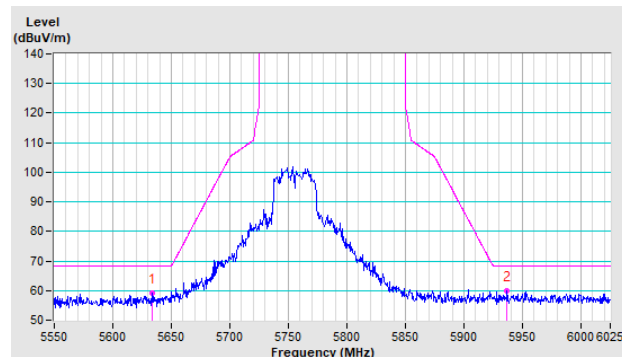
802.11ac (VHT40)

CH 151 5755 MHz

Horizontal

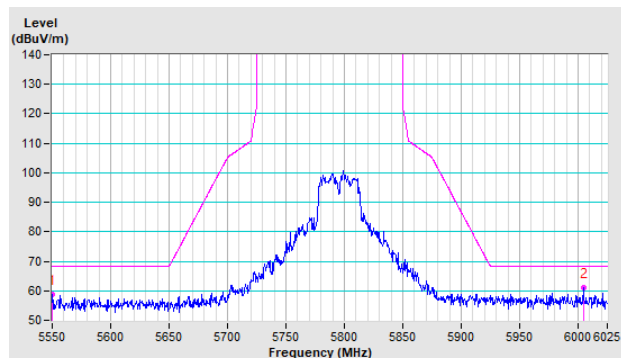


Vertical

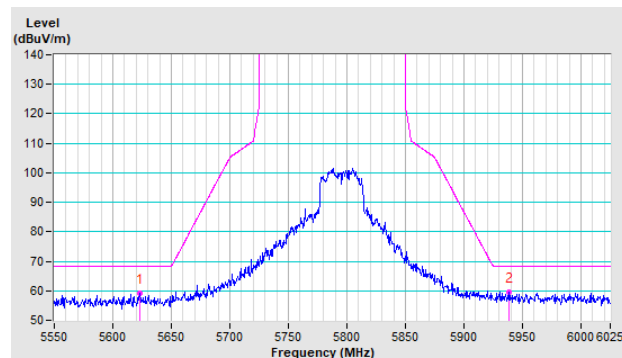


CH 159 5795 MHz

Horizontal



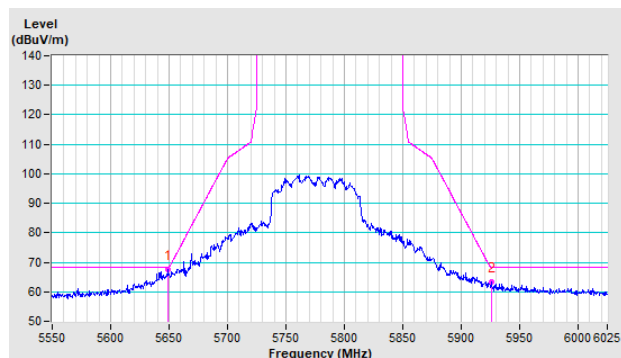
Vertical



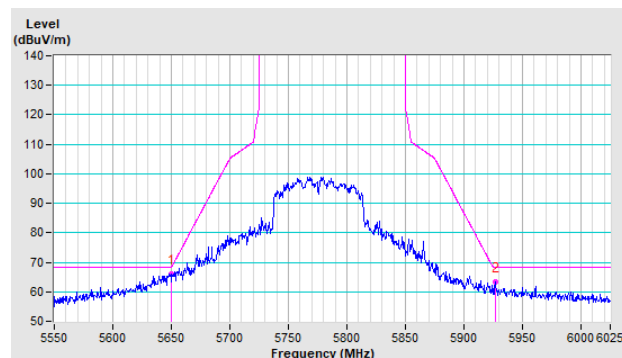
802.11ac (VHT80)

CH 155 5775 MHz

Horizontal



Vertical



Appendix – Information of 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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Web Site: www.bureauveritas-adt.com

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

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