

FCC Test Report

Report No.: RF170307C24-1

FCC ID: A8J-EAP1300

Test Model: EAP1300, EAP1300EXT (refer to item 3.1 for more details)

Received Date: Feb. 17, 2017

Test Date: Feb. 17 ~ Apr. 18, 2017

Issued Date: Apr. 20, 2017

Applicant: EnGenius Technologies

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Release Control Record

Issue No.	Description	Date Issued
RF170307C24-1	Original release	Apr. 20, 2017

1 Certificate of Conformity

Product: Dual Band Indoor Access Point

Brand: EnGenius

Test Model: EAP1300, EAP1300EXT (refer to item 3.1 for more details)

Sample Status: Engineering sample

Applicant: EnGenius Technologies

Test Date: Feb. 17 ~ Apr. 18, 2017

Standards: 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 : Suntee Liu, **Date:** Apr. 20, 2017
Suntee Liu / Specialist

Approved by : Ken Liu, **Date:** Apr. 20, 2017
Ken Liu / Senior 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 -8.88dB at 0.48203MHz.
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 -1.0dB at 5150.00MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	-	Reference only.
15.407(a)(1/2/3)	Peak Power Spectral Density	Pass	Meet the requirement of limit.
15.407(e)	6dB bandwidth	Pass	Meet the requirement of limit. (U-NII-3 Band only)
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	Internal antenna: Antenna connector is IPEX for PIFA antenna not a standard connector. External antenna: Antenna connector is RSMA for dipole antenna not a standard connector.

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

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.94 dB
Radiated Emissions up to 1 GHz	30MHz ~ 200MHz	3.86 dB
	200MHz ~ 1000MHz	3.87 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Dual Band Indoor Access Point
Brand	EnGenius
Test Model	EAP1300, EAP1300EXT
Model Difference	Refer to Note
Sample Status	Engineering sample
Power Supply Rating	12Vdc (adapter) 54Vdc (POE)
Modulation Type	256QAM, 64QAM, 16QAM, QPSK, BPSK
Modulation Technology	OFDM
Transfer Rate	802.11a: 54/48/36/24/18/12/9/6Mbps 802.11n: up to 300Mbps 802.11ac: up to 867Mbps
Operating Frequency	5180~5240MHz, 5745~5825MHz
Number of Channel	5180~5240MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 4 802.11n (HT40), 802.11ac (VHT40): 2 802.11ac (VHT80): 1 5745~5825MHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 5 802.11n (HT40), 802.11ac (VHT40): 2 802.11ac (VHT80): 1
Output Power	CDD Mode: 5180~5240MHz: 272.937mW 5745~5825MHz: 319.544mW Beamforming Mode: 5180~5240MHz: 118.277mW 5745~5825MHz: 159.783mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter
Cable Supplied	0.5m non-shielded RJ45 cable without core

Note:

1. The EUT incorporates a MIMO function. Physically, the EUT provides 2 completed transmitters and 2 receivers.

Modulation Mode	TX Function	Beamforming
802.11b	2TX	Not Support
802.11g	2TX	Not Support
802.11a	2TX	Not Support
802.11n (HT20)	2TX	Support
802.11n (HT40)	2TX	Support
802.11ac (VHT20)	2TX	Support
802.11ac (VHT40)	2TX	Support
802.11ac (VHT80)	2TX	Support

* The modulation and bandwidth are similar for 802.11n mode for HT20/HT40 and 802.11ac mode for VHT20/VHT40, therefore investigated worst case to representative mode in test report. (Final test mode refer section 3.2.1)

* For 802.11n and 802.11ac, CDD mode and Beamforming mode are presented in power output test item. For other test items, CDD mode is the worst case for final tests after pretesting.

2. The EUT uses following antennas.

Internal antenna		
Type	PIFA	
Connector	IPEX	
Gain (dBi)		
Frequency	2.4GHz	5GHz
	4	5

External antenna						
Type	Dipole					
Connector	RSMA					
Gain (dBi)						
Frequency (MHz)	2400	2410	2420	2430	2440	2450
	4.50	4.67	4.89	4.63	4.94	4.98
	2460	2470	2480	2490	2500	
	5.67	4.78	4.78	4.84	4.81	
	5000	5100	5150	5250	5350	5450
	3.55	3.70	3.01	3.32	3.76	4.31
	5550	5650	5725	5750	5800	5825
	4.85	4.99	4.86	4.48	4.46	4.71
	5850	5900	5950	6000		
	4.50	4.33	4.44	4.56		

* The 2.4GHz max. gain (External antenna) is chosen for final tests since it has the maximum gain among all antennas.

* The 5GHz max. gain (Internal antenna) is chosen for final tests since it has the maximum gain among all antennas.

3. All models are listed as below.

Brand	Model	Difference
EnGenius	EAP1300	Internal antenna
	EAP1300EXT	External antenna

4. The EUT uses following adapter.

Brand	DVE
Model	DSA-12PFT-12 FUS 120100
Input Power	100-240Vac, 50/60Hz, 0.5A
Output Power	+12Vdc, 1A
Power Line	1.45m DC cable without core attached on adapter

5. The EUT uses following POE (support unit).

Brand	SENAO
Model	EAP5006GP
Input Power	100-240Vac, 0.8A, 50-60Hz
Output Power	54Vdc, 0.6A
Power Line	0.5m non-shielded power cable without core

6. 2.4GHz and 5GHz technologies can transmit at same time.

7. Spurious emission of the simultaneous operation (2.4GHz and 5GHz) has been evaluated and no non-compliance was found.

3.2 Description of Test Modes

For 5180 ~ 5240MHz

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

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

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

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
42	5210MHz

For 5745 ~ 5825MHz

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

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

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

Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
155	5775MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable to				Description
	RE $\geq$ 1G	RE<1G	PLC	APCM	
A1	√	√	√	√	Internal antenna, Adapter
A2	-	√	√	-	Internal antenna, POE
B1	√	√	√	-	External antenna, Adapter
B2	-	√	√	-	External antenna, POE

Where RE $\geq$ 1G: Radiated Emission above 1GHz & Bandedge Measurement
 RE<1G: Radiated Emission below 1GHz
 PLC: Power Line Conducted Emission
 APCM: Antenna Port Conducted Measurement

Note:

1. The antenna had been pre-tested on the positioned of each 3 axis. The worst cases were found when positioned on Z-plane for internal antenna and X-plane for external antenna.
2. "-" means no effect.

Radiated Emission Test (Above 1GHz):

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

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
A1, B1	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0
A1, B1	802.11n (HT20)		36 to 48	36, 40, 48	OFDM	7.2
A1, B1	802.11n (HT40)		38 to 46	38, 46	OFDM	15.0
A1, B1	802.11ac (VHT80)		42	42	OFDM	65.0
A1, B1	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	6.0
A1, B1	802.11n (HT20)		149 to 165	149, 157, 165	OFDM	7.2
A1, B1	802.11n (HT40)		151 to 159	151, 159	OFDM	15.0
A1, B1	802.11ac (VHT80)		155	155	OFDM	65.0

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.

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
A1, A2, B1, B2	802.11a	5745-5825	149 to 165	157	OFDM	6.0

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.

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
A1, A2, B1, B2	802.11a	5745-5825	149 to 165	157	OFDM	6.0

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.

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
A1	802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	6.0
A1	802.11n (HT20)		36 to 48	36, 40, 48	OFDM	7.2
A1	802.11n (HT40)		38 to 46	38, 46	OFDM	15.0
A1	802.11ac (VHT80)		42	42	OFDM	65.0
A1	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	6.0
A1	802.11n (HT20)		149 to 165	149, 157, 165	OFDM	7.2
A1	802.11n (HT40)		151 to 159	151, 159	OFDM	15.0
A1	802.11ac (VHT80)		155	155	OFDM	65.0

Test Condition:

Applicable to	Environmental Conditions	Input Power	Tested by
RE $\geq$ 1G	20deg. C, 66%RH	120Vac, 60Hz	James Yang Jones Chang
RE<1G	20deg. C, 66%RH	120Vac, 60Hz	James Yang
PLC	25deg. C, 75%RH	120Vac, 60Hz	Chris Lin
APCM	25deg. C, 60%RH	120Vac, 60Hz	Antony Lee

3.3 Duty Cycle of Test Signal

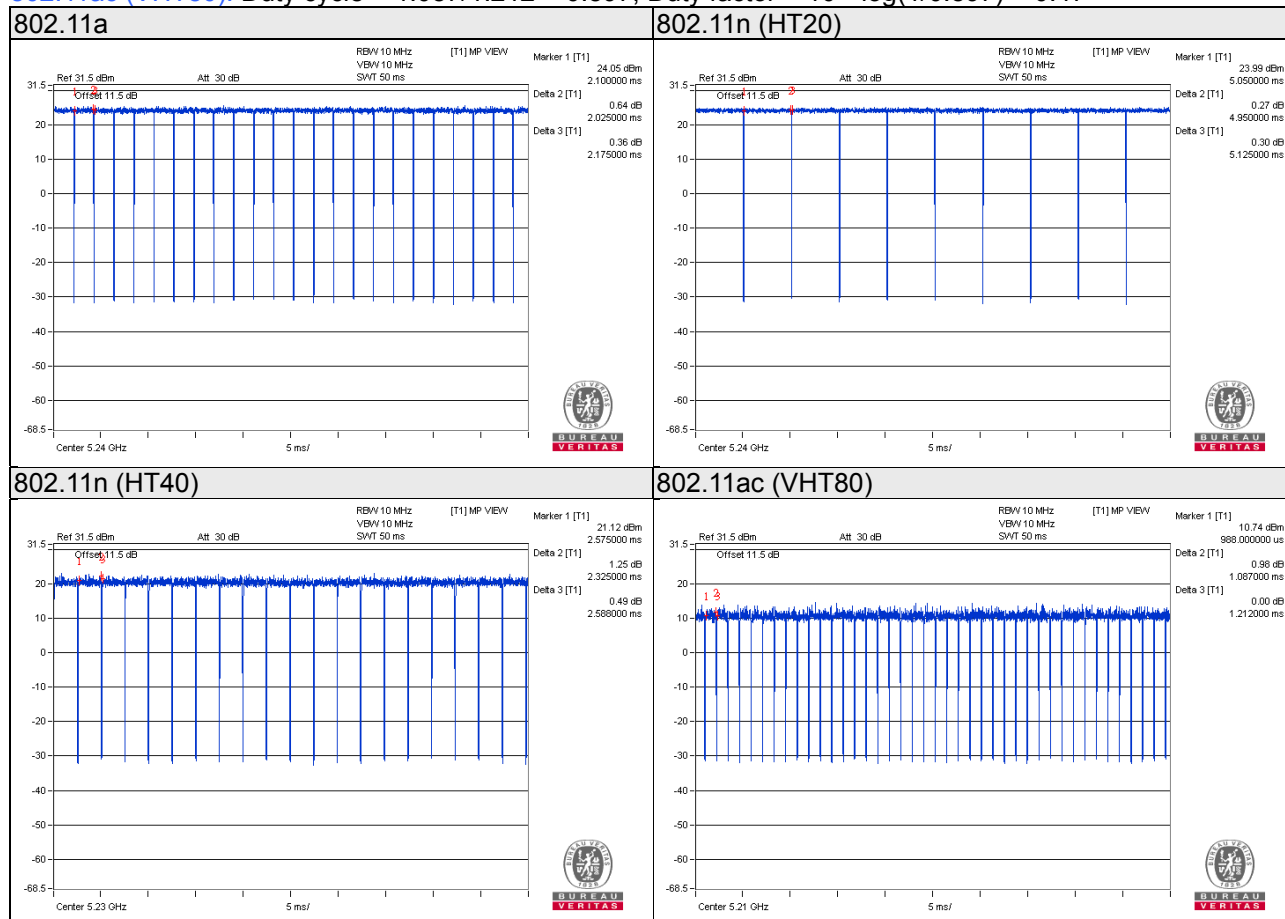
Duty cycle of test signal is < 98%, duty factor shall be considered.

802.11a: Duty cycle = $2.025/2.175 = 0.931$, Duty factor = $10 * \log(1/0.931) = 0.31$

802.11n (HT20): Duty cycle = $4.950/5.125 = 0.966$, Duty factor = $10 * \log(1/0.966) = 0.15$

802.11n (HT40): Duty cycle = $2.325/2.588 = 0.898$, Duty factor = $10 * \log(1/0.898) = 0.47$

802.11ac (VHT80): Duty cycle = $1.087/1.212 = 0.897$, Duty factor = $10 * \log(1/0.897) = 0.47$



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.	PC	DELL	OptiPlex 9010 DT	HR465W1	FCC DoC Approved	-
B.	POE	SENAO	EAP5006GP	NA	NA	Provided by manufacturer

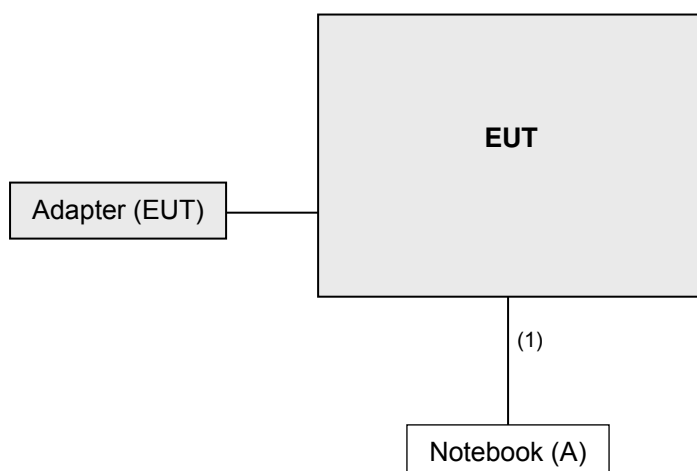
Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Item A acted as a communication partner to transfer data.

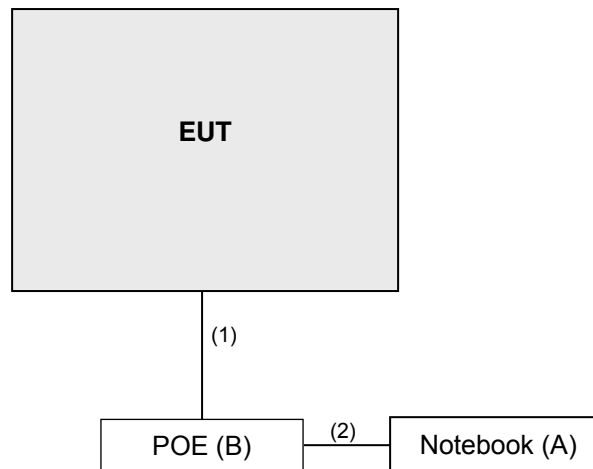
ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	RJ45, Cat5e	1	0.5	N	0	Accessory of EUT
2.	RJ45, Cat5e	1	3	N	0	-

3.4.1 Configuration of System under Test

Mode A1, B1



Mode A2, B2



3.5 General Description of Applied Standards

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

FCC Part 15, Subpart E (15.407)

KDB 789033 D02 General UNII Test Procedure New Rules v01r04

KDB 662911 D01 Multiple Transmitter Output v02r01

ANSI C63.10-2013

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

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

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

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

NOTE:

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

Limits of unwanted emission out of the restricted bands

Applicable To			Limit	
789033 D02 General UNII Test Procedure New Rules v01r03			Field Strength at 3m	
			PK:74 (dBµV/m)	AV:54 (dBµV/m)
Frequency Band	Applicable To		EIRP Limit	Equivalent Field Strength at 3m
5150~5250 MHz	15.407(b)(1)		PK: -27 (dBm/MHz)	PK: 68.2(dBµV/m)
5250~5350 MHz	15.407(b)(2)			
5470~5725 MHz	15.407(b)(3)			
5725~5850 MHz	☒	15.407(b)(4)(i)	PK: -27 (dBm/MHz) ^{*1} PK: 10 (dBm/MHz) ^{*2} PK: 15.6 (dBm/MHz) ^{*3} PK: 27 (dBm/MHz) ^{*4}	PK: 68.2(dBµV/m) ^{*1} PK: 105.2 (dBµV/m) ^{*2} PK: 110.8(dBµV/m) ^{*3} PK: 122.2 (dBµV/m) ^{*4}
	☐	15.407(b)(4)(ii)	Emission limits in section 15.247(d)	
^{*1} beyond 75 MHz or more above of the band edge.			^{*2} below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.	
^{*3} below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.			^{*4} from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.	

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

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

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESIB7	100187	Apr. 18, 2016	Apr. 17, 2017
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Aug. 16, 2016	Aug. 15, 2017
BILOG Antenna SCHWARZBECK	VULB9168	9168-171	Dec. 28, 2016	Dec. 27, 2017
HORN Antenna SCHWARZBECK	9120D	209	Dec. 27, 2016	Dec. 26, 2017
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Dec. 14, 2016	Dec. 13, 2017
Loop Antenna	EM-6879	269	Aug. 11, 2016	Aug. 10, 2017
Preamplifier Agilent	8447D	2944A10738	Aug. 22, 2016	Aug. 21, 2017
Preamplifier Agilent	8449B	3008A01964	Aug. 22, 2016	Aug. 21, 2017
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH3-03 (214378)	Aug. 22, 2016	Aug. 21, 2017
RF signal cable HUBER+SUHNER	SUCOFLEX 106	Cable-CH3-03 (309224+12738)	Aug. 22, 2016	Aug. 21, 2017
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021702	NA	NA
Turn Table BV ADT	TT100	TT93021702	NA	NA
Turn Table Controller BV ADT	SC100	SC93021702	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	815221	Oct. 17, 2016	Oct. 16, 2017
High Speed Peak Power Meter	ML2495A	0824011	Jul. 09, 2016	Jul. 08, 2017
Power Sensor	MA2411B	0738171	Aug. 11, 2016	Aug. 10, 2017

- Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 3.
3. The horn antenna and preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Site Registration No. is 988962.
5. The IC Site Registration No. is IC 7450F-3.

4.1.3 Test Procedures

For Radiated emission below 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. Both X and Y axes of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

Note:

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

For Radiated emission above 30MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

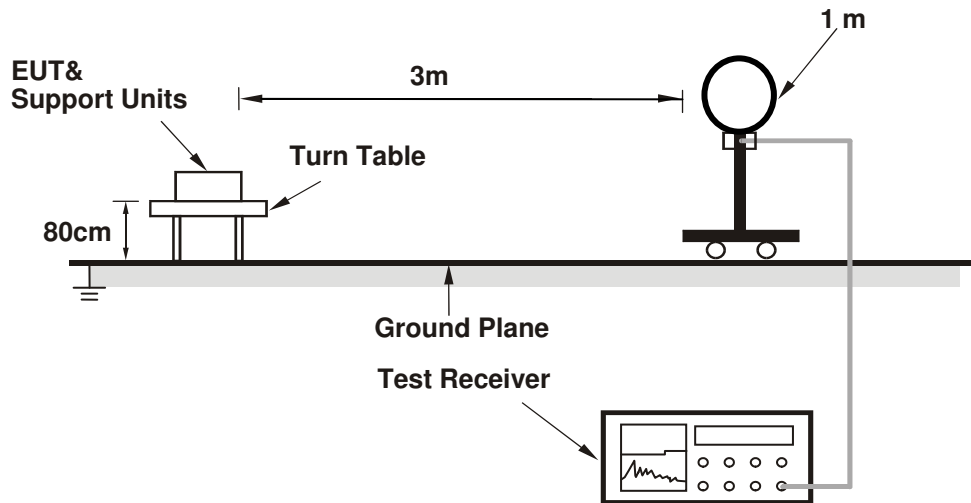
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

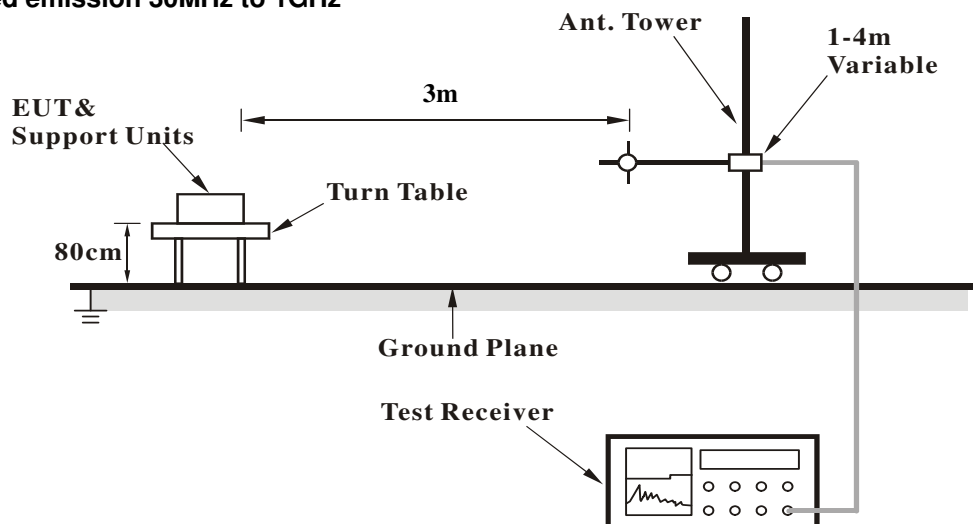
No deviation.

4.1.5 Test Setup

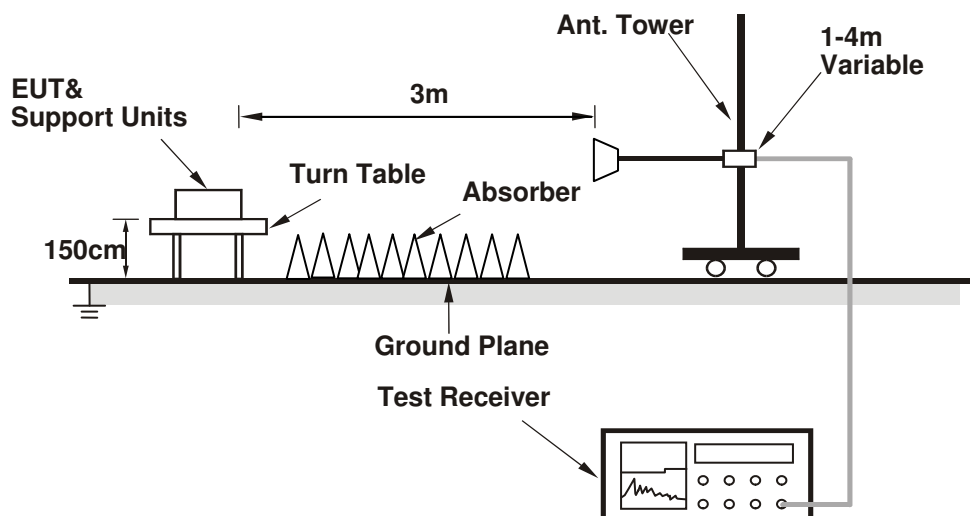
For Radiated emission below 30MHz



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 Conditions

- Placed the EUT on the testing table.
- Prepared a PC to act as a communication partner and placed it outside of testing area.
- The communication partner connected with EUT via a RJ45 cable and ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.
- The communication partner sent data to EUT by command "PING".

4.1.7 Test Results

Above 1GHz worst-Case Data:

Test Mode A1

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	73.0 PK	74.0	-1.0	2.43 H	297	72.2	0.8
2	5150.00	52.3 AV	54.0	-1.7	2.43 H	297	51.5	0.8
3	*5180.00	116.1 PK			2.71 H	300	77.4	38.7
4	*5180.00	105.9 AV			2.71 H	300	67.2	38.7
5	#6906.00	63.7 PK	68.2	-4.5	1.56 H	288	56.7	7.0
6	#10360.00	59.7 PK	74.0	-14.3	1.62 H	28	47.0	12.7
7	#10360.00	46.3 AV	54.0	-7.7	1.62 H	28	33.6	12.7
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	59.2 PK	74.0	-14.8	1.76 V	298	58.4	0.8
2	5150.00	43.7 AV	54.0	-10.3	1.76 V	298	42.9	0.8
3	*5180.00	111.7 PK			3.09 V	321	73.0	38.7
4	*5180.00	101.5 AV			3.09 V	321	62.8	38.7
5	#6906.00	60.3 PK	68.2	-7.9	1.99 V	353	53.3	7.0
6	#10360.00	58.6 PK	74.0	-15.4	1.89 V	254	45.9	12.7
7	#10360.00	44.7 AV	54.0	-9.3	1.89 V	254	32.0	12.7

Remarks:

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

CHANNEL	TX Channel 40	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	70.7 PK	74.0	-3.3	2.83 H	41	69.9	0.8
2	5150.00	52.6 AV	54.0	-1.4	2.83 H	41	51.8	0.8
3	*5200.00	120.0 PK			1.01 H	46	81.3	38.7
4	*5200.00	109.0 AV			1.01 H	46	70.3	38.7
5	#6933.20	62.9 PK	68.2	-5.3	1.62 H	294	55.7	7.2
6	#10400.00	58.6 PK	74.0	-15.4	1.86 H	324	45.9	12.7
7	#10400.00	45.1 AV	54.0	-8.9	1.86 H	324	32.4	12.7
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	64.2 PK	74.0	-9.8	1.51 V	40	63.4	0.8
2	5150.00	47.8 AV	54.0	-6.2	1.51 V	40	47.0	0.8
3	*5200.00	114.2 PK			1.49 V	42	75.5	38.7
4	*5200.00	103.2 AV			1.49 V	42	64.5	38.7
5	#6933.20	59.3 PK	68.2	-8.9	1.98 V	7	52.1	7.2
6	#10400.00	57.7 PK	74.0	-16.3	1.69 V	192	45.0	12.7
7	#10400.00	44.9 AV	54.0	-9.1	1.69 V	192	32.2	12.7

Remarks:

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

CHANNEL	TX Channel 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	118.0 PK			2.84 H	288	79.2	38.8
2	*5240.00	108.3 AV			2.84 H	288	69.5	38.8
3	5350.00	56.9 PK	74.0	-17.1	2.61 H	322	55.8	1.1
4	5350.00	44.1 AV	54.0	-9.9	2.61 H	322	43.0	1.1
5	#6986.50	60.9 PK	68.2	-7.3	1.62 H	296	53.3	7.6
6	#10480.00	58.8 PK	74.0	-15.2	2.38 H	185	45.3	13.5
7	#10480.00	45.5 AV	54.0	-8.5	2.38 H	185	32.0	13.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	113.6 PK			1.56 V	46	74.8	38.8
2	*5240.00	103.0 AV			1.56 V	46	64.2	38.8
3	5350.00	56.7 PK	74.0	-17.3	1.87 V	332	55.6	1.1
4	5350.00	43.2 AV	54.0	-10.8	1.87 V	332	42.1	1.1
5	#6986.50	58.1 PK	68.2	-10.1	2.20 V	6	50.5	7.6
6	#10480.00	59.1 PK	74.0	-14.9	2.57 V	69	45.6	13.5
7	#10480.00	45.4 AV	54.0	-8.6	2.57 V	69	31.9	13.5

Remarks:

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

CHANNEL	TX Channel 149	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	#5645.60	55.8 PK	68.2	-12.4	1.50 H	34	54.1	1.7
2	*5745.00	114.8 PK			1.50 H	34	74.9	39.9
3	*5745.00	104.7 AV			1.50 H	34	64.8	39.9
4	#5976.00	56.8 PK	68.2	-11.4	1.50 H	34	54.0	2.8
5	7660.00	54.2 PK	74.0	-19.8	1.72 H	19	45.8	8.4
6	7660.00	43.7 AV	54.0	-10.3	1.72 H	19	35.3	8.4
7	11490.00	61.8 PK	74.0	-12.2	1.72 H	94	47.3	14.5
8	11490.00	50.2 AV	54.0	-3.8	1.72 H	94	35.7	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	#5630.40	55.1 PK	68.2	-13.1	2.28 V	30	53.4	1.7
2	*5745.00	113.0 PK			2.28 V	30	73.1	39.9
3	*5745.00	102.4 AV			2.28 V	30	62.5	39.9
4	#5964.80	56.1 PK	68.2	-12.1	2.28 V	30	53.4	2.7
5	11490.00	60.0 PK	74.0	-14.0	1.91 V	346	45.5	14.5
6	11490.00	47.0 AV	54.0	-7.0	1.91 V	346	32.5	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. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 157	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	#5634.40	59.8 PK	68.2	-8.4	2.73 H	359	58.1	1.7
2	*5785.00	115.5 PK			2.73 H	359	75.4	40.1
3	*5785.00	105.8 AV			2.73 H	359	65.7	40.1
4	#5982.40	58.1 PK	68.2	-10.1	2.73 H	359	55.3	2.8
5	11570.00	62.4 PK	74.0	-11.6	1.75 H	94	48.1	14.3
6	11570.00	49.3 AV	54.0	-4.7	1.75 H	94	35.0	14.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5640.00	56.2 PK	68.2	-12.0	1.85 V	0	54.5	1.7
2	*5785.00	112.8 PK			1.85 V	0	72.7	40.1
3	*5785.00	102.7 AV			1.85 V	0	62.6	40.1
4	#5979.20	57.6 PK	68.2	-10.6	1.85 V	0	54.8	2.8
5	11570.00	60.5 PK	74.0	-13.5	1.96 V	290	46.2	14.3
6	11570.00	47.3 AV	54.0	-6.7	1.96 V	290	33.0	14.3

Remarks:

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

CHANNEL	TX Channel 165	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	#5615.20	55.8 PK	68.2	-12.4	2.70 H	359	54.1	1.7
2	*5825.00	115.9 PK			2.70 H	359	75.7	40.2
3	*5825.00	105.4 AV			2.70 H	359	65.2	40.2
4	#5991.20	57.9 PK	68.2	-10.3	2.70 H	359	55.1	2.8
5	11650.00	61.5 PK	74.0	-12.5	1.78 H	93	47.1	14.4
6	11650.00	48.9 AV	54.0	-5.1	1.78 H	93	34.5	14.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5613.60	55.6 PK	68.2	-12.6	1.73 V	4	53.9	1.7
2	*5825.00	114.7 PK			1.73 V	4	74.5	40.2
3	*5825.00	104.7 AV			1.73 V	4	64.5	40.2
4	#5976.80	58.2 PK	68.2	-10.0	1.73 V	4	55.4	2.8
5	11650.00	59.7 PK	74.0	-14.3	2.75 V	212	45.3	14.4
6	11650.00	47.0 AV	54.0	-7.0	2.75 V	212	32.6	14.4

Remarks:

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

802.11n (HT20)

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	69.5 PK	74.0	-4.5	3.55 H	304	68.7	0.8
2	5150.00	52.2 AV	54.0	-1.8	3.55 H	304	51.4	0.8
3	*5180.00	111.4 PK			2.70 H	284	72.7	38.7
4	*5180.00	100.7 AV			2.70 H	284	62.0	38.7
5	#6906.00	60.5 PK	68.2	-7.7	1.74 H	312	53.5	7.0
6	#10360.00	59.5 PK	74.0	-14.5	1.77 H	30	46.8	12.7
7	#10360.00	46.7 AV	54.0	-7.3	1.77 H	30	34.0	12.7
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	69.6 PK	74.0	-4.4	3.26 V	9	68.8	0.8
2	5150.00	51.7 AV	54.0	-2.3	3.26 V	9	50.9	0.8
3	*5180.00	110.6 PK			2.92 V	1	71.9	38.7
4	*5180.00	100.3 AV			2.92 V	1	61.6	38.7
5	#6906.00	61.2 PK	68.2	-7.0	2.51 V	306	54.2	7.0
6	#10360.00	59.5 PK	74.0	-14.5	2.60 V	50	46.8	12.7
7	#10360.00	45.0 AV	54.0	-9.0	2.60 V	50	32.3	12.7

Remarks:

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

CHANNEL	TX Channel 40	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	69.6 PK	74.0	-4.4	3.80 H	14	68.8	0.8
2	5150.00	52.2 AV	54.0	-1.8	3.80 H	14	51.4	0.8
3	*5200.00	116.9 PK			3.40 H	300	78.2	38.7
4	*5200.00	106.0 AV			3.40 H	300	67.3	38.7
5	#6933.00	59.1 PK	68.2	-9.1	1.22 H	18	51.9	7.2
6	#10400.00	58.1 PK	74.0	-15.9	2.03 H	331	45.4	12.7
7	#10400.00	44.8 AV	54.0	-9.2	2.03 H	331	32.1	12.7
8	15600.00	63.5 PK	74.0	-10.5	3.50 H	302	49.0	14.5
9	15600.00	50.5 AV	54.0	-3.5	3.50 H	302	36.0	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	5150.00	70.0 PK	74.0	-4.0	3.24 V	9	69.2	0.8
2	5150.00	51.4 AV	54.0	-2.6	3.24 V	9	50.6	0.8
3	*5200.00	116.0 PK			3.05 V	1	77.3	38.7
4	*5200.00	105.9 AV			3.05 V	1	67.2	38.7
5	#6933.00	56.1 PK	68.2	-12.1	2.50 V	330	48.9	7.2
6	#10400.00	57.0 PK	74.0	-17.0	2.50 V	40	44.3	12.7
7	#10400.00	44.0 AV	54.0	-10.0	2.50 V	40	31.3	12.7
8	15600.00	64.9 PK	74.0	-9.1	2.40 V	144	50.4	14.5
9	15600.00	52.2 AV	54.0	-1.8	2.40 V	144	37.7	14.5

Remarks:

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

CHANNEL	TX Channel 48	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	117.9 PK			3.90 H	296	79.1	38.8
2	*5240.00	106.6 AV			3.90 H	296	67.8	38.8
3	5350.00	56.3 PK	74.0	-17.7	2.58 H	292	55.2	1.1
4	5350.00	44.5 AV	54.0	-9.5	2.58 H	292	43.4	1.1
5	#6986.50	57.2 PK	68.2	-11.0	1.24 H	15	49.6	7.6
6	#10480.00	57.3 PK	74.0	-16.7	1.77 H	277	43.8	13.5
7	#10480.00	45.1 AV	54.0	-8.9	1.77 H	277	31.6	13.5
8	15720.00	63.4 PK	74.0	-10.6	3.56 H	343	49.5	13.9
9	15720.00	50.4 AV	54.0	-3.6	3.56 H	343	36.5	13.9
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	*5240.00	117.1 PK			3.03 V	356	78.3	38.8
2	*5240.00	106.2 AV			3.03 V	356	67.4	38.8
3	5350.00	55.6 PK	74.0	-18.4	3.04 V	273	54.5	1.1
4	5350.00	33.6 AV	54.0	-20.4	3.04 V	273	32.5	1.1
5	#6986.50	57.0 PK	68.2	-11.2	2.52 V	326	49.4	7.6
6	#10480.00	58.3 PK	74.0	-15.7	2.57 V	38	44.8	13.5
7	#10480.00	45.1 AV	54.0	-8.9	2.57 V	38	31.6	13.5
8	15720.00	65.2 PK	74.0	-8.8	2.37 V	135	51.3	13.9
9	15720.00	52.1 AV	54.0	-1.9	2.37 V	135	38.2	13.9

Remarks:

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

CHANNEL	TX Channel 149	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	#5617.60	56.5 PK	68.2	-11.7	2.11 H	285	54.8	1.7
2	*5745.00	119.0 PK			2.11 H	285	79.1	39.9
3	*5745.00	108.5 AV			2.11 H	285	68.6	39.9
4	#5992.80	57.6 PK	68.2	-10.6	2.11 H	285	54.8	2.8
5	7660.00	56.7 PK	74.0	-17.3	1.62 H	13	48.3	8.4
6	7660.00	45.2 AV	54.0	-8.8	1.62 H	13	36.8	8.4
7	11490.00	58.8 PK	74.0	-15.2	2.03 H	324	44.3	14.5
8	11490.00	46.1 AV	54.0	-7.9	2.03 H	324	31.6	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	#5636.00	57.0 PK	68.2	-11.2	1.90 V	7	55.3	1.7
2	*5745.00	114.1 PK			1.90 V	7	74.2	39.9
3	*5745.00	103.5 AV			1.90 V	7	63.6	39.9
4	#5960.00	57.2 PK	68.2	-11.0	1.90 V	7	54.6	2.6
5	11490.00	59.9 PK	74.0	-14.1	2.23 V	55	45.4	14.5
6	11490.00	47.6 AV	54.0	-6.4	2.23 V	55	33.1	14.5

Remarks:

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

CHANNEL	TX Channel 157	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	#5644.80	57.0 PK	68.2	-11.2	2.10 H	285	55.3	1.7
2	*5785.00	120.2 PK			2.10 H	285	80.1	40.1
3	*5785.00	110.3 AV			2.10 H	285	70.2	40.1
4	#5954.40	58.4 PK	68.2	-9.8	2.10 H	285	55.8	2.6
5	11570.00	60.7 PK	74.0	-13.3	1.66 H	182	46.4	14.3
6	11570.00	47.1 AV	54.0	-6.9	1.66 H	182	32.8	14.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5636.80	56.9 PK	68.2	-11.3	1.91 V	9	55.2	1.7
2	*5785.00	114.6 PK			1.91 V	9	74.5	40.1
3	*5785.00	103.9 AV			1.91 V	9	63.8	40.1
4	#5983.20	58.5 PK	68.2	-9.7	1.91 V	9	55.7	2.8
5	11570.00	60.1 PK	74.0	-13.9	2.20 V	50	45.8	14.3
6	11570.00	47.8 AV	54.0	-6.2	2.20 V	50	33.5	14.3

Remarks:

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

CHANNEL	TX Channel 165	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	#5614.40	57.0 PK	68.2	-11.2	2.14 H	285	55.3	1.7
2	*5825.00	119.8 PK			2.14 H	285	79.6	40.2
3	*5825.00	110.5 AV			2.14 H	285	70.3	40.2
4	#5977.60	58.7 PK	68.2	-9.5	2.14 H	285	55.9	2.8
5	11650.00	62.7 PK	74.0	-11.3	2.35 H	348	48.3	14.4
6	11650.00	48.9 AV	54.0	-5.1	2.35 H	348	34.5	14.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5609.60	57.4 PK	68.2	-10.8	1.21 V	12	55.7	1.7
2	*5825.00	113.8 PK			1.21 V	12	73.6	40.2
3	*5825.00	103.3 AV			1.21 V	12	63.1	40.2
4	#5953.60	58.3 PK	68.2	-9.9	1.21 V	12	55.7	2.6
5	11650.00	59.9 PK	74.0	-14.1	2.16 V	45	45.5	14.4
6	11650.00	47.7 AV	54.0	-6.3	2.16 V	45	33.3	14.4

Remarks:

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

802.11n (HT40)

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	69.9 PK	74.0	-4.1	1.46 H	304	69.1	0.8
2	5150.00	52.6 AV	54.0	-1.4	1.46 H	304	51.8	0.8
3	*5190.00	110.9 PK			2.78 H	290	72.2	38.7
4	*5190.00	101.1 AV			2.78 H	290	62.4	38.7
5	#10380.00	58.1 PK	74.0	-15.9	1.58 H	153	45.3	12.8
6	#10380.00	45.0 AV	54.0	-9.0	1.58 H	153	32.2	12.8
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	68.0 PK	74.0	-6.0	3.26 V	5	67.2	0.8
2	5150.00	51.3 AV	54.0	-2.7	3.26 V	5	50.5	0.8
3	*5190.00	109.5 PK			3.55 V	359	70.8	38.7
4	*5190.00	100.3 AV			3.55 V	359	61.6	38.7
5	#10380.00	57.5 PK	74.0	-16.5	2.04 V	213	44.7	12.8
6	#10380.00	45.0 AV	54.0	-9.0	2.04 V	213	32.2	12.8

Remarks:

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

CHANNEL	TX Channel 46	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	66.7 PK	74.0	-7.3	3.56 H	294	65.9	0.8
2	5150.00	52.3 AV	54.0	-1.7	3.56 H	294	51.5	0.8
3	*5230.00	113.4 PK			3.90 H	291	74.6	38.8
4	*5230.00	103.4 AV			3.90 H	291	64.6	38.8
5	5350.00	57.2 PK	74.0	-16.8	3.57 H	276	56.1	1.1
6	5350.00	46.1 AV	54.0	-7.9	3.57 H	276	45.0	1.1
7	#10460.00	57.9 PK	74.0	-16.1	1.74 H	89	44.6	13.3
8	#10460.00	45.0 AV	54.0	-9.0	1.74 H	89	31.7	13.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	64.1 PK	74.0	-9.9	3.87 V	0	63.3	0.8
2	5150.00	49.5 AV	54.0	-4.5	3.87 V	0	48.7	0.8
3	*5230.00	113.5 PK			3.51 V	359	74.7	38.8
4	*5230.00	103.8 AV			3.51 V	359	65.0	38.8
5	5350.00	55.7 PK	74.0	-18.3	2.90 V	322	54.6	1.1
6	5350.00	44.7 AV	54.0	-9.3	2.90 V	322	43.6	1.1
7	#10460.00	58.8 PK	74.0	-15.2	2.69 V	354	45.5	13.3
8	#10460.00	46.8 AV	54.0	-7.2	2.69 V	354	33.5	13.3

Remarks:

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

CHANNEL	TX Channel 151	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	#5644.80	62.9 PK	68.2	-5.3	1.68 H	40	61.2	1.7
2	#5650.00	66.4 PK	68.2	-1.8	1.68 H	40	64.7	1.7
3	*5755.00	116.7 PK			1.98 H	289	76.8	39.9
4	*5755.00	107.0 AV			1.98 H	289	67.1	39.9
5	#5935.20	58.3 PK	68.2	-9.9	1.68 H	40	55.7	2.6
6	11510.00	59.3 PK	74.0	-14.7	1.98 H	332	44.8	14.5
7	11510.00	47.3 AV	54.0	-6.7	1.98 H	332	32.8	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	#5641.60	60.2 PK	68.2	-8.0	1.83 V	0	58.5	1.7
2	#5650.00	60.0 PK	68.2	-8.2	1.89 V	19	58.3	1.7
3	*5755.00	111.4 PK			1.83 V	0	71.5	39.9
4	*5755.00	102.0 AV			1.83 V	0	62.1	39.9
5	#5952.80	57.7 PK	68.2	-10.5	1.83 V	0	55.1	2.6
6	11510.00	59.7 PK	74.0	-14.3	1.61 V	188	45.2	14.5
7	11510.00	46.8 AV	54.0	-7.2	1.61 V	188	32.3	14.5

Remarks:

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

CHANNEL	TX Channel 159	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	#5636.00	56.6 PK	68.2	-11.6	2.03 H	286	54.9	1.7
2	*5795.00	117.1 PK			2.03 H	286	77.0	40.1
3	*5795.00	107.4 AV			2.03 H	286	67.3	40.1
4	#5925.00	66.9 PK	68.2	-1.3	2.42 H	291	64.3	2.6
5	#5928.00	63.2 PK	68.2	-5.0	2.03 H	286	60.6	2.6
6	11590.00	59.3 PK	74.0	-14.7	1.77 H	313	45.0	14.3
7	11590.00	47.2 AV	54.0	-6.8	1.77 H	313	32.9	14.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5639.20	56.4 PK	68.2	-11.8	1.80 V	3	54.7	1.7
2	*5795.00	111.6 PK			1.80 V	3	71.5	40.1
3	*5795.00	101.8 AV			1.80 V	3	61.7	40.1
4	#5925.00	62.5 PK	68.2	-5.7	2.03 V	12	59.9	2.6
5	#5936.00	57.9 PK	68.2	-10.3	1.80 V	3	55.3	2.6
6	11590.00	59.5 PK	74.0	-14.5	1.58 V	270	45.2	14.3
7	11590.00	46.8 AV	54.0	-7.2	1.58 V	270	32.5	14.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": 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	68.0 PK	74.0	-6.0	2.70 H	295	67.2	0.8
2	5150.00	52.7 AV	54.0	-1.3	2.70 H	295	51.9	0.8
3	*5210.00	105.2 PK			2.62 H	292	66.5	38.7
4	*5210.00	95.9 AV			2.62 H	292	57.2	38.7
5	5350.00	56.7 PK	74.0	-17.3	2.66 H	301	55.6	1.1
6	5350.00	44.2 AV	54.0	-9.8	2.66 H	301	43.1	1.1
7	#10420.00	59.5 PK	74.0	-14.5	2.79 H	127	46.6	12.9
8	#10420.00	44.9 AV	54.0	-9.1	2.79 H	127	32.0	12.9
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	5150.00	62.5 PK	74.0	-11.5	3.25 V	3	61.7	0.8
2	5150.00	49.6 AV	54.0	-4.4	3.25 V	3	48.8	0.8
3	*5210.00	104.7 PK			3.56 V	0	66.0	38.7
4	*5210.00	94.5 AV			3.56 V	0	55.8	38.7
5	5350.00	56.3 PK	74.0	-17.7	3.00 V	0	55.2	1.1
6	5350.00	43.8 AV	54.0	-10.2	3.00 V	0	42.7	1.1
7	#10420.00	57.5 PK	74.0	-16.5	2.49 V	33	44.6	12.9
8	#10420.00	45.4 AV	54.0	-8.6	2.49 V	33	32.5	12.9

Remarks:

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

CHANNEL	TX Channel 155	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	#5648.80	62.5 PK	68.2	-5.7	2.08 H	283	60.8	1.7
2	#5650.00	66.3 PK	68.2	-1.9	2.83 H	284	64.6	1.7
3	*5775.00	110.1 PK			2.08 H	283	70.1	40.0
4	*5775.00	100.2 AV			2.08 H	283	60.2	40.0
5	#5925.00	66.6 PK	68.2	-1.6	2.03 H	286	64.0	2.6
6	#5928.00	64.9 PK	68.2	-3.3	2.08 H	283	62.3	2.6
7	11550.00	59.1 PK	74.0	-14.9	2.50 H	354	44.6	14.5
8	11550.00	46.9 AV	54.0	-7.1	2.50 H	354	32.4	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	#5646.40	60.1 PK	68.2	-8.1	1.81 V	0	58.4	1.7
2	#5650.00	61.8 PK	68.2	-6.4	1.65 V	355	60.1	1.7
3	*5775.00	104.9 PK			1.81 V	0	64.9	40.0
4	*5775.00	95.0 AV			1.81 V	0	55.0	40.0
5	#5925.00	61.2 PK	68.2	-7.0	2.00 V	0	58.6	2.6
6	#5980.80	57.8 PK	68.2	-10.4	1.81 V	0	55.0	2.8
7	11550.00	59.6 PK	74.0	-14.4	1.49 V	321	45.1	14.5
8	11550.00	46.9 AV	54.0	-7.1	1.49 V	321	32.4	14.5

Remarks:

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

Test Mode B1

802.11a

CHANNEL	TX Channel 36	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	63.1 PK	74.0	-10.9	1.55 H	75	62.3	0.8
2	5150.00	46.3 AV	54.0	-7.7	1.55 H	75	45.5	0.8
3	*5180.00	108.2 PK			1.94 H	317	69.5	38.7
4	*5180.00	97.7 AV			1.94 H	317	59.0	38.7
5	#6906.00	56.9 PK	68.2	-11.3	2.27 H	257	49.9	7.0
6	#10360.00	56.1 PK	74.0	-17.9	2.46 H	253	43.4	12.7
7	#10360.00	43.9 AV	54.0	-10.1	2.46 H	253	31.2	12.7
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	69.5 PK	74.0	-4.5	1.52 V	141	68.7	0.8
2	5150.00	52.8 AV	54.0	-1.2	1.52 V	141	52.0	0.8
3	*5180.00	115.8 PK			1.49 V	139	77.1	38.7
4	*5180.00	105.5 AV			1.49 V	139	66.8	38.7
5	#6906.00	58.9 PK	68.2	-9.3	1.75 V	109	51.9	7.0
6	#10360.00	57.8 PK	74.0	-16.2	2.30 V	317	45.1	12.7
7	#10360.00	44.0 AV	54.0	-10.0	2.30 V	317	31.3	12.7

Remarks:

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

CHANNEL	TX Channel 40	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	63.0 PK	74.0	-11.0	1.05 H	14	62.2	0.8
2	5150.00	46.5 AV	54.0	-7.5	1.05 H	14	45.7	0.8
3	*5200.00	111.9 PK			1.23 H	12	73.2	38.7
4	*5200.00	101.0 AV			1.23 H	12	62.3	38.7
5	#10400.00	58.3 PK	74.0	-15.7	1.68 H	300	45.6	12.7
6	#10400.00	45.2 AV	54.0	-8.8	1.68 H	300	32.5	12.7
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	70.0 PK	74.0	-4.0	1.37 V	37	69.2	0.8
2	5150.00	52.8 AV	54.0	-1.2	1.37 V	37	52.0	0.8
3	*5200.00	119.3 PK			1.33 V	257	80.6	38.7
4	*5200.00	108.6 AV			1.33 V	257	69.9	38.7
5	#10400.00	57.3 PK	74.0	-16.7	1.52 V	338	44.6	12.7
6	#10400.00	44.7 AV	54.0	-9.3	1.52 V	338	32.0	12.7

Remarks:

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

CHANNEL	TX Channel 48	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	112.3 PK			1.40 H	12	73.5	38.8
2	*5240.00	101.5 AV			1.40 H	12	62.7	38.8
3	5350.00	57.0 PK	74.0	-17.0	1.45 H	22	55.9	1.1
4	5350.00	43.4 AV	54.0	-10.6	1.45 H	22	42.3	1.1
5	#10480.00	59.7 PK	74.0	-14.3	1.72 H	221	46.2	13.5
6	#10480.00	45.7 AV	54.0	-8.3	1.72 H	221	32.2	13.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	118.6 PK			1.36 V	193	79.8	38.8
2	*5240.00	108.3 AV			1.36 V	193	69.5	38.8
3	5350.00	57.6 PK	74.0	-16.4	1.46 V	58	56.5	1.1
4	5350.00	44.2 AV	54.0	-9.8	1.46 V	58	43.1	1.1
5	#10480.00	59.1 PK	74.0	-14.9	1.87 V	296	45.6	13.5
6	#10480.00	45.3 AV	54.0	-8.7	1.87 V	296	31.8	13.5

Remarks:

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

CHANNEL	TX Channel 149	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	#5644.00	57.2 PK	68.2	-11.0	2.28 H	319	55.5	1.7
2	*5745.00	110.5 PK			2.28 H	319	70.6	39.9
3	*5745.00	100.2 AV			2.28 H	319	60.3	39.9
4	#5970.40	58.8 PK	68.2	-9.4	2.28 H	319	56.1	2.7
5	11490.00	60.7 PK	74.0	-13.3	2.09 H	98	46.2	14.5
6	11490.00	46.9 AV	54.0	-7.1	2.09 H	98	32.4	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	#5640.00	58.4 PK	68.2	-9.8	1.28 V	153	56.7	1.7
2	*5745.00	119.8 PK			1.28 V	153	79.9	39.9
3	*5745.00	109.1 AV			1.28 V	153	69.2	39.9
4	#5971.20	59.3 PK	68.2	-8.9	1.28 V	153	56.6	2.7
5	11490.00	59.8 PK	74.0	-14.2	1.52 V	325	45.3	14.5
6	11490.00	47.1 AV	54.0	-6.9	1.52 V	325	32.6	14.5

Remarks:

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

CHANNEL	TX Channel 157	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	#5611.20	57.0 PK	68.2	-11.2	2.56 H	327	55.3	1.7
2	*5785.00	110.3 PK			2.56 H	327	70.2	40.1
3	*5785.00	100.0 AV			2.56 H	327	59.9	40.1
4	#5972.80	59.2 PK	68.2	-9.0	2.56 H	327	56.5	2.7
5	11570.00	59.2 PK	74.0	-14.8	2.41 H	75	44.9	14.3
6	11570.00	46.6 AV	54.0	-7.4	2.41 H	75	32.3	14.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5611.20	58.2 PK	68.2	-10.0	1.00 V	279	56.5	1.7
2	*5785.00	117.6 PK			1.00 V	279	77.5	40.1
3	*5785.00	107.2 AV			1.00 V	279	67.1	40.1
4	#5984.00	58.8 PK	68.2	-9.4	1.00 V	279	56.0	2.8
5	11570.00	62.2 PK	74.0	-11.8	2.79 V	35	47.9	14.3
6	11570.00	49.7 AV	54.0	-4.3	2.79 V	35	35.4	14.3

Remarks:

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

CHANNEL	TX Channel 165	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	#5621.60	57.5 PK	68.2	-10.7	2.58 H	323	55.8	1.7
2	*5825.00	111.8 PK			2.58 H	323	71.6	40.2
3	*5825.00	101.5 AV			2.58 H	323	61.3	40.2
4	#5934.40	59.2 PK	68.2	-9.0	2.58 H	323	56.6	2.6
5	11650.00	60.3 PK	74.0	-13.7	2.04 H	73	45.9	14.4
6	11650.00	47.2 AV	54.0	-6.8	2.04 H	73	32.8	14.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5603.20	57.9 PK	68.2	-10.3	1.00 V	276	56.2	1.7
2	*5825.00	119.1 PK			1.00 V	276	78.9	40.2
3	*5825.00	107.7 AV			1.00 V	276	67.5	40.2
4	#5929.60	64.1 PK	68.2	-4.1	1.00 V	276	61.5	2.6
5	11650.00	63.3 PK	74.0	-10.7	2.64 V	32	48.9	14.4
6	11650.00	51.0 AV	54.0	-3.0	2.64 V	32	36.6	14.4

Remarks:

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

802.11n (HT20)

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	64.1 PK	74.0	-9.9	1.09 H	13	63.3	0.8
2	5150.00	47.4 AV	54.0	-6.6	1.09 H	13	46.6	0.8
3	*5180.00	106.8 PK			1.02 H	13	68.1	38.7
4	*5180.00	96.2 AV			1.02 H	13	57.5	38.7
5	#10360.00	58.8 PK	74.0	-15.2	2.52 H	177	46.1	12.7
6	#10360.00	45.0 AV	54.0	-9.0	2.52 H	177	32.3	12.7
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	70.5 PK	74.0	-3.5	1.30 V	22	69.7	0.8
2	5150.00	52.9 AV	54.0	-1.1	1.30 V	22	52.1	0.8
3	*5180.00	113.6 PK			1.29 V	321	74.9	38.7
4	*5180.00	102.9 AV			1.29 V	321	64.2	38.7
5	#10360.00	58.3 PK	74.0	-15.7	2.77 V	46	45.6	12.7
6	#10360.00	44.6 AV	54.0	-9.4	2.77 V	46	31.9	12.7

Remarks:

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

CHANNEL	TX Channel 40	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	1.02 H	79	63.8	0.8
2	5150.00	45.6 AV	54.0	-8.4	1.02 H	79	44.8	0.8
3	*5200.00	110.3 PK			1.00 H	76	71.6	38.7
4	*5200.00	100.1 AV			1.00 H	76	61.4	38.7
5	#10400.00	58.5 PK	74.0	-15.5	1.92 H	178	45.8	12.7
6	#10400.00	44.9 AV	54.0	-9.1	1.92 H	178	32.2	12.7
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	72.3 PK	74.0	-1.7	1.31 V	22	71.5	0.8
2	5150.00	52.7 AV	54.0	-1.3	1.31 V	22	51.9	0.8
3	*5200.00	117.3 PK			1.22 V	262	78.6	38.7
4	*5200.00	106.6 AV			1.22 V	262	67.9	38.7
5	#10400.00	58.2 PK	74.0	-15.8	1.82 V	271	45.5	12.7
6	#10400.00	44.8 AV	54.0	-9.2	1.82 V	271	32.1	12.7

Remarks:

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

CHANNEL	TX Channel 48	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	112.0 PK			1.00 H	77	73.2	38.8
2	*5240.00	101.0 AV			1.00 H	77	62.2	38.8
3	5350.00	56.7 PK	74.0	-17.3	1.21 H	8	55.6	1.1
4	5350.00	43.6 AV	54.0	-10.4	1.21 H	8	42.5	1.1
5	#10480.00	58.6 PK	74.0	-15.4	1.99 H	57	45.1	13.5
6	#10480.00	45.3 AV	54.0	-8.7	1.99 H	57	31.8	13.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	118.2 PK			1.27 V	269	79.4	38.8
2	*5240.00	107.6 AV			1.27 V	269	68.8	38.8
3	5350.00	57.4 PK	74.0	-16.6	1.38 V	298	56.3	1.1
4	5350.00	44.0 AV	54.0	-10.0	1.38 V	298	42.9	1.1
5	#10480.00	58.3 PK	74.0	-15.7	1.73 V	98	44.8	13.5
6	#10480.00	45.4 AV	54.0	-8.6	1.73 V	98	31.9	13.5

Remarks:

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

CHANNEL	TX Channel 149	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	#5601.60	58.0 PK	68.2	-10.2	2.61 H	315	56.4	1.6
2	*5745.00	110.8 PK			2.61 H	315	70.9	39.9
3	*5745.00	100.1 AV			2.61 H	315	60.2	39.9
4	#5999.20	59.3 PK	68.2	-8.9	2.61 H	315	56.5	2.8
5	11490.00	59.3 PK	74.0	-14.7	1.75 H	168	44.8	14.5
6	11490.00	46.6 AV	54.0	-7.4	1.75 H	168	32.1	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	#5616.00	57.9 PK	68.2	-10.3	1.00 V	277	56.2	1.7
2	*5745.00	117.6 PK			1.00 V	277	77.7	39.9
3	*5745.00	106.8 AV			1.00 V	277	66.9	39.9
4	#5947.20	59.0 PK	68.2	-9.2	1.00 V	277	56.4	2.6
5	11490.00	62.3 PK	74.0	-11.7	2.92 V	34	47.8	14.5
6	11490.00	48.4 AV	54.0	-5.6	2.92 V	34	33.9	14.5

Remarks:

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

CHANNEL	TX Channel 157	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	#5604.80	58.6 PK	68.2	-9.6	2.48 H	326	56.9	1.7
2	*5785.00	110.5 PK			2.48 H	326	70.4	40.1
3	*5785.00	99.9 AV			2.48 H	326	59.8	40.1
4	#5985.60	59.0 PK	68.2	-9.2	2.48 H	326	56.2	2.8
5	11570.00	59.8 PK	74.0	-14.2	1.82 H	147	45.5	14.3
6	11570.00	47.1 AV	54.0	-6.9	1.82 H	147	32.8	14.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5624.80	58.1 PK	68.2	-10.1	1.00 V	275	56.4	1.7
2	*5785.00	117.7 PK			1.00 V	275	77.6	40.1
3	*5785.00	107.3 AV			1.00 V	275	67.2	40.1
4	#5945.60	59.0 PK	68.2	-9.2	1.00 V	275	56.4	2.6
5	11570.00	62.8 PK	74.0	-11.2	2.24 V	88	48.5	14.3
6	11570.00	48.5 AV	54.0	-5.5	2.24 V	88	34.2	14.3

Remarks:

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

CHANNEL	TX Channel 165	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	#5606.40	57.4 PK	68.2	-10.8	2.50 H	323	55.7	1.7
2	*5825.00	112.7 PK			2.50 H	323	72.5	40.2
3	*5825.00	101.1 AV			2.50 H	323	60.9	40.2
4	#5936.80	59.6 PK	68.2	-8.6	2.50 H	323	57.0	2.6
5	11650.00	60.6 PK	74.0	-13.4	2.74 H	230	46.2	14.4
6	11650.00	46.8 AV	54.0	-7.2	2.74 H	230	32.4	14.4
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5632.80	58.7 PK	68.2	-9.5	1.00 V	276	57.0	1.7
2	*5825.00	118.9 PK			1.00 V	276	78.7	40.2
3	*5825.00	108.0 AV			1.00 V	276	67.8	40.2
4	#5933.60	64.7 PK	68.2	-3.5	1.00 V	275	62.1	2.6
5	11650.00	64.6 PK	74.0	-9.4	2.52 V	33	50.2	14.4
6	11650.00	50.6 AV	54.0	-3.4	2.52 V	33	36.2	14.4

Remarks:

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

802.11n (HT40)

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	65.1 PK	74.0	-8.9	1.10 H	14	64.3	0.8
2	5150.00	48.6 AV	54.0	-5.4	1.10 H	14	47.8	0.8
3	*5190.00	102.8 PK			1.34 H	14	64.1	38.7
4	*5190.00	93.2 AV			1.34 H	14	54.5	38.7
5	#10380.00	58.4 PK	74.0	-15.6	1.83 H	323	45.6	12.8
6	#10380.00	45.0 AV	54.0	-9.0	1.83 H	323	32.2	12.8
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	69.9 PK	74.0	-4.1	1.58 V	142	69.1	0.8
2	5150.00	52.2 AV	54.0	-1.8	1.58 V	142	51.4	0.8
3	*5190.00	110.3 PK			1.51 V	140	71.6	38.7
4	*5190.00	100.6 AV			1.51 V	140	61.9	38.7
5	#10380.00	57.4 PK	74.0	-16.6	1.42 V	198	44.6	12.8
6	#10380.00	44.0 AV	54.0	-10.0	1.42 V	198	31.2	12.8

Remarks:

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

CHANNEL	TX Channel 46	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	60.7 PK	74.0	-13.3	1.10 H	77	59.9	0.8
2	5150.00	46.6 AV	54.0	-7.4	1.10 H	77	45.8	0.8
3	*5230.00	106.3 PK			1.30 H	15	67.5	38.8
4	*5230.00	96.8 AV			1.30 H	15	58.0	38.8
5	#10460.00	59.3 PK	74.0	-14.7	1.92 H	217	46.0	13.3
6	#10460.00	45.8 AV	54.0	-8.2	1.92 H	217	32.5	13.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	67.2 PK	74.0	-6.8	1.30 V	25	66.4	0.8
2	5150.00	52.6 AV	54.0	-1.4	1.30 V	25	51.8	0.8
3	*5230.00	113.9 PK			1.26 V	30	75.1	38.8
4	*5230.00	103.4 AV			1.26 V	30	64.6	38.8
5	#10460.00	58.3 PK	74.0	-15.7	1.74 V	142	45.0	13.3
6	#10460.00	44.6 AV	54.0	-9.4	1.74 V	142	31.3	13.3

Remarks:

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

CHANNEL	TX Channel 151	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	#5648.00	61.2 PK	68.2	-7.0	2.43 H	314	59.5	1.7
2	#5650.00	59.1 PK	68.2	-9.1	2.45 H	308	57.4	1.7
3	*5755.00	108.2 PK			2.43 H	314	68.3	39.9
4	*5755.00	98.4 AV			2.43 H	314	58.5	39.9
5	#5948.00	58.3 PK	68.2	-9.9	2.43 H	314	55.7	2.6
6	11510.00	59.7 PK	74.0	-14.3	1.82 H	243	45.2	14.5
7	11510.00	46.6 AV	54.0	-7.4	1.82 H	243	32.1	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	#5641.60	65.2 PK	68.2	-3.0	1.00 V	279	63.5	1.7
2	#5650.00	66.8 PK	68.2	-1.4	1.00 V	270	65.1	1.7
3	*5755.00	114.1 PK			1.00 V	279	74.2	39.9
4	*5755.00	104.2 AV			1.00 V	279	64.3	39.9
5	#5931.20	59.2 PK	68.2	-9.0	1.00 V	279	56.6	2.6
6	11510.00	59.2 PK	74.0	-14.8	2.25 V	84	44.7	14.5
7	11510.00	46.4 AV	54.0	-7.6	2.25 V	84	31.9	14.5

Remarks:

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

CHANNEL	TX Channel 159	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	#5647.20	58.8 PK	68.2	-9.4	2.49 H	326	57.1	1.7
2	*5795.00	108.8 PK			2.49 H	326	68.7	40.1
3	*5795.00	98.3 AV			2.49 H	326	58.2	40.1
4	#5926.00	61.7 PK	68.2	-6.5	2.37 H	308	59.1	2.6
5	#5936.80	61.0 PK	68.2	-7.2	2.49 H	326	58.4	2.6
6	11590.00	59.4 PK	74.0	-14.6	1.74 H	109	45.1	14.3
7	11590.00	46.3 AV	54.0	-7.7	1.74 H	109	32.0	14.3
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5643.20	61.4 PK	68.2	-6.8	1.00 V	276	59.7	1.7
2	*5795.00	115.3 PK			1.00 V	276	75.2	40.1
3	*5795.00	105.1 AV			1.00 V	276	65.0	40.1
4	#5926.00	66.7 PK	68.2	-1.5	1.02 V	303	64.1	2.6
5	#5931.20	64.8 PK	68.2	-3.4	1.00 V	276	62.2	2.6
6	11590.00	59.5 PK	74.0	-14.5	2.41 V	87	45.2	14.3
7	11590.00	46.5 AV	54.0	-7.5	2.41 V	87	32.2	14.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": 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	62.2 PK	74.0	-11.8	1.11 H	78	61.4	0.8
2	5150.00	49.5 AV	54.0	-4.5	1.11 H	78	48.7	0.8
3	*5210.00	100.4 PK			1.21 H	12	61.7	38.7
4	*5210.00	90.5 AV			1.21 H	12	51.8	38.7
5	5350.00	56.9 PK	74.0	-17.1	1.23 H	77	55.8	1.1
6	5350.00	44.0 AV	54.0	-10.0	1.23 H	77	42.9	1.1
7	#10420.00	58.6 PK	74.0	-15.4	1.88 H	277	45.7	12.9
8	#10420.00	45.8 AV	54.0	-8.2	1.88 H	277	32.9	12.9
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	5150.00	66.6 PK	74.0	-7.4	1.25 V	160	65.8	0.8
2	5150.00	52.9 AV	54.0	-1.1	1.25 V	160	52.1	0.8
3	*5210.00	106.1 PK			1.49 V	138	67.4	38.7
4	*5210.00	96.5 AV			1.49 V	138	57.8	38.7
5	5350.00	56.6 PK	74.0	-17.4	1.33 V	142	55.5	1.1
6	5350.00	43.7 AV	54.0	-10.3	1.33 V	142	42.6	1.1
7	#10420.00	56.5 PK	74.0	-17.5	1.57 V	241	43.6	12.9
8	#10420.00	43.6 AV	54.0	-10.4	1.57 V	241	30.7	12.9

Remarks:

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

CHANNEL	TX Channel 155	DETECTOR	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz	FUNCTION	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	#5623.20	60.1 PK	68.2	-8.1	2.26 H	321	58.4	1.7
2	#5645.00	58.6 PK	68.2	-9.6	2.28 H	324	56.9	1.7
3	*5775.00	102.0 PK			2.26 H	321	62.0	40.0
4	*5775.00	91.5 AV			2.26 H	321	51.5	40.0
5	#5956.00	59.4 PK	68.2	-8.8	2.26 H	321	56.8	2.6
6	11550.00	59.9 PK	74.0	-14.1	1.82 H	143	45.4	14.5
7	11550.00	46.8 AV	54.0	-7.2	1.82 H	143	32.3	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	#5622.40	65.3 PK	68.2	-2.9	1.00 V	273	63.6	1.7
2	#5645.00	67.0 PK	68.2	-1.2	1.00 V	269	65.3	1.7
3	*5775.00	107.1 PK			1.00 V	273	67.1	40.0
4	*5775.00	97.5 AV			1.00 V	273	57.5	40.0
5	#5929.60	61.3 PK	68.2	-6.9	1.00 V	273	58.7	2.6
6	11550.00	59.3 PK	74.0	-14.7	2.73 V	93	44.8	14.5
7	11550.00	45.9 AV	54.0	-8.1	2.73 V	93	31.4	14.5

Remarks:

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

Below 1GHz Worst-Case Data:

Test Mode A1

802.11a

CHANNEL	TX Channel 157	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	55.18	26.2 QP	40.0	-13.8	2.00 H	72	40.7	-14.5
2	107.67	28.9 QP	43.5	-14.6	1.50 H	119	46.4	-17.5
3	146.56	26.8 QP	43.5	-16.7	1.00 H	119	40.8	-14.0
4	267.10	30.6 QP	46.0	-15.4	1.00 H	108	43.8	-13.2
5	547.08	22.7 QP	46.0	-23.3	2.00 H	38	29.8	-7.1
6	842.61	29.5 QP	46.0	-16.5	2.00 H	87	30.4	-0.9
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	35.73	37.2 QP	40.0	-2.8	1.00 V	38	53.1	-15.9
2	55.18	38.2 QP	40.0	-1.8	1.00 V	5	52.7	-14.5
3	138.78	27.3 QP	43.5	-16.2	1.00 V	357	41.6	-14.3
4	267.10	30.3 QP	46.0	-15.7	1.99 V	170	43.5	-13.2
5	722.07	33.7 QP	46.0	-12.3	1.49 V	310	36.9	-3.2
6	937.88	31.8 QP	46.0	-14.2	1.00 V	14	30.7	1.1

Remarks:

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

Test Mode A2

802.11a

CHANNEL	TX Channel 157	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	57.12	27.1 QP	40.0	-12.9	1.99 H	231	41.7	-14.6
2	105.73	29.9 QP	43.5	-13.6	1.99 H	120	47.6	-17.7
3	142.67	29.7 QP	43.5	-13.8	1.99 H	281	43.8	-14.1
4	263.21	29.3 QP	46.0	-16.7	1.50 H	231	42.7	-13.4
5	718.18	27.0 QP	46.0	-19.0	1.50 H	355	30.3	-3.3
6	928.16	30.8 QP	46.0	-15.2	1.50 H	223	29.8	1.0
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	35.73	32.9 QP	40.0	-7.1	1.00 V	323	48.8	-15.9
2	142.67	22.6 QP	43.5	-20.9	1.00 V	192	36.7	-14.1
3	263.21	30.3 QP	46.0	-15.7	1.51 V	179	43.7	-13.4
4	467.36	22.2 QP	46.0	-23.8	1.00 V	314	30.6	-8.4
5	729.84	27.7 QP	46.0	-18.3	2.00 V	217	30.5	-2.8
6	887.33	34.8 QP	46.0	-11.2	1.00 V	81	34.9	-0.1

Remarks:

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

Test Mode B1

802.11a

CHANNEL	TX Channel 157	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	57.12	26.3 QP	40.0	-13.7	1.99 H	220	40.9	-14.6
2	101.84	31.2 QP	43.5	-12.3	1.99 H	130	49.4	-18.2
3	185.44	32.5 QP	43.5	-11.0	1.50 H	226	48.1	-15.6
4	220.44	30.2 QP	46.0	-15.8	1.50 H	353	45.9	-15.7
5	302.10	26.2 QP	46.0	-19.8	1.00 H	123	38.2	-12.0
6	747.34	31.7 QP	46.0	-14.3	1.00 H	351	34.0	-2.3
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	55.18	36.6 QP	40.0	-3.4	1.00 V	8	51.1	-14.5
2	101.84	32.3 QP	43.5	-11.2	1.51 V	64	50.5	-18.2
3	142.67	26.7 QP	43.5	-16.8	1.00 V	262	40.8	-14.1
4	187.39	26.8 QP	43.5	-16.7	2.00 V	258	42.5	-15.7
5	305.99	24.0 QP	46.0	-22.0	1.00 V	101	35.9	-11.9
6	747.34	31.9 QP	46.0	-14.1	1.51 V	110	34.2	-2.3

Remarks:

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

Test Mode B2

802.11a

CHANNEL	TX Channel 157	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	105.73	29.0 QP	43.5	-14.5	2.00 H	93	46.7	-17.7
2	142.67	32.7 QP	43.5	-10.8	2.00 H	93	46.8	-14.1
3	187.39	35.1 QP	43.5	-8.4	1.51 H	162	50.8	-15.7
4	224.33	30.0 QP	46.0	-16.0	1.51 H	32	45.8	-15.8
5	315.71	29.0 QP	46.0	-17.0	1.01 H	126	40.5	-11.5
6	815.39	29.3 QP	46.0	-16.7	1.51 H	261	30.5	-1.2
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	37.68	36.2 QP	40.0	-3.8	1.99 V	7	51.6	-15.4
2	142.67	28.4 QP	43.5	-15.1	1.00 V	149	42.5	-14.1
3	185.44	29.0 QP	43.5	-14.5	1.49 V	265	44.6	-15.6
4	333.21	25.4 QP	46.0	-20.6	1.49 V	71	36.5	-11.1
5	729.84	30.9 QP	46.0	-15.1	1.49 V	67	33.7	-2.8
6	928.16	30.8 QP	46.0	-15.2	1.99 V	172	29.8	1.0

Remarks:

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

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.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCS 30	100288	Aug. 18, 2016	Aug. 17, 2017
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond2-01	Dec. 22, 2016	Dec. 21, 2017
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Jan. 17, 2017	Jan. 16, 2018
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Jul. 26, 2016	Jul. 25, 2017
Software ADT	BV ADT_Conc_ V7.3.7.3	NA	NA	NA

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 HwaYa Shielded Room 2.

3. The VCCI Site Registration No. is C-2047.

4.2.3 Test Procedures

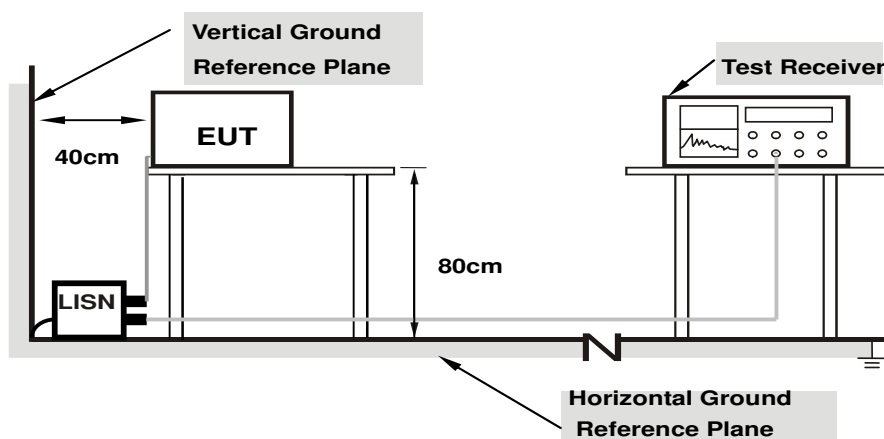
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance 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: The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Conditions

Same as 4.1.6.

4.2.7 Test Results

Worst-case data: 802.11a

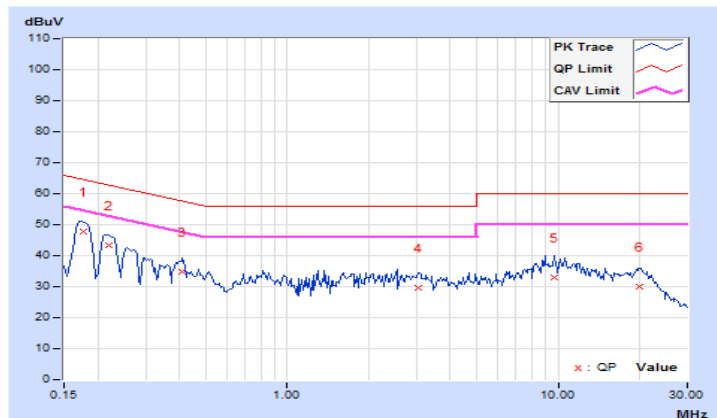
Test Mode A1

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17734	10.00	37.65	23.85	47.65	33.85	64.61	54.61	-16.96	-20.76
2	0.22031	10.02	33.38	19.71	43.40	29.73	62.81	52.81	-19.41	-23.08
3	0.41172	10.03	24.79	12.66	34.82	22.69	57.61	47.61	-22.79	-24.92
4	3.03906	10.15	19.37	9.03	29.52	19.18	56.00	46.00	-26.48	-26.82
5	9.64453	10.26	22.70	13.95	32.96	24.21	60.00	50.00	-27.04	-25.79
6	19.94141	10.46	19.65	12.41	30.11	22.87	60.00	50.00	-29.89	-27.13

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.

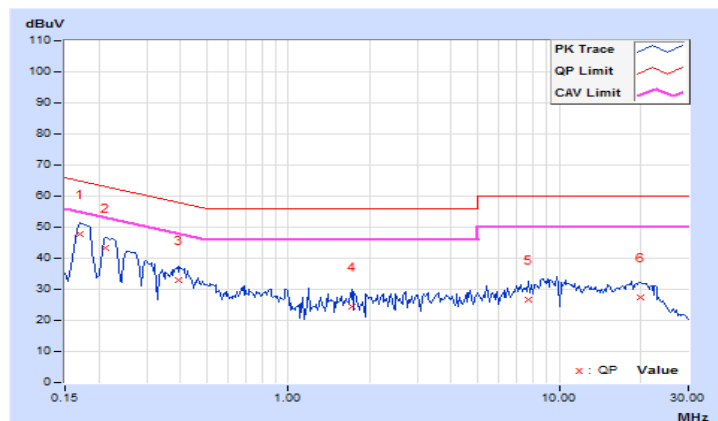


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16953	10.00	37.75	20.89	47.75	30.89	64.98	54.98	-17.23	-24.09
2	0.21250	9.95	33.52	16.27	43.47	26.22	63.11	53.11	-19.64	-26.89
3	0.39219	9.99	23.03	11.56	33.02	21.55	58.02	48.02	-25.00	-26.47
4	1.71094	10.06	14.32	6.00	24.38	16.06	56.00	46.00	-31.62	-29.94
5	7.66797	10.20	16.37	8.39	26.57	18.59	60.00	50.00	-33.43	-31.41
6	19.96875	10.56	16.73	8.56	27.29	19.12	60.00	50.00	-32.71	-30.88

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.



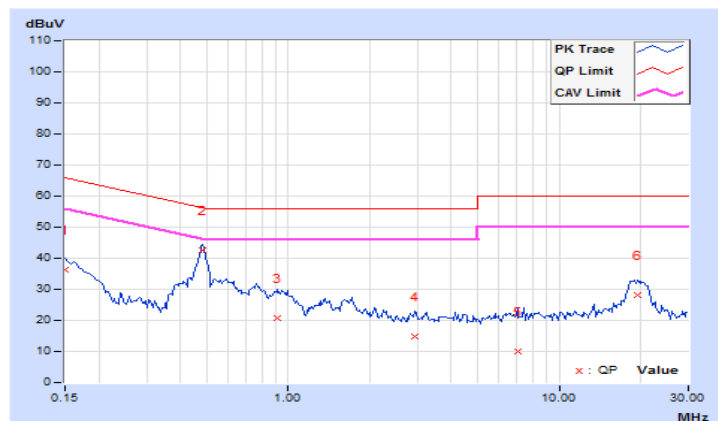
Test Mode A2

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.99	26.47	17.24	36.46	27.23	66.00	56.00	-29.54	-28.77
2	0.48203	10.04	32.43	27.10	42.47	37.14	56.30	46.30	-13.83	-9.16
3	0.91563	10.07	10.56	4.92	20.63	14.99	56.00	46.00	-35.37	-31.01
4	2.94531	10.14	4.50	-1.72	14.64	8.42	56.00	46.00	-41.36	-37.58
5	7.01563	10.22	-0.33	-5.75	9.89	4.47	60.00	50.00	-50.11	-45.53
6	19.48438	10.45	17.55	11.42	28.00	21.87	60.00	50.00	-32.00	-28.13

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.

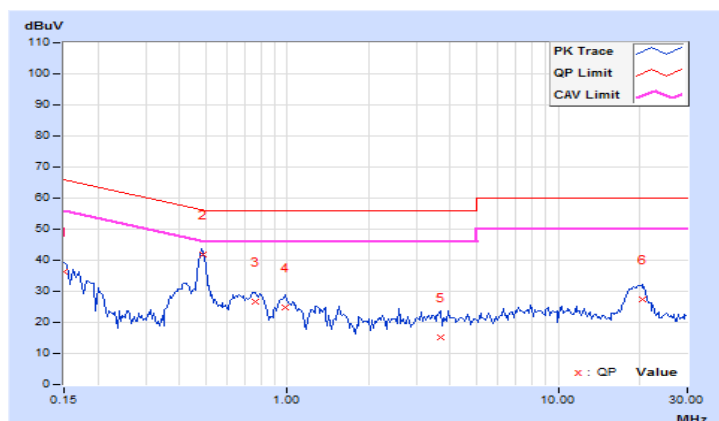


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	10.03	26.37	16.82	36.40	26.85	66.00	56.00	-29.60	-29.15
2	0.48984	10.01	31.75	26.03	41.76	36.04	56.17	46.17	-14.41	-10.13
3	0.75938	10.06	16.53	11.27	26.59	21.33	56.00	46.00	-29.41	-24.67
4	0.97813	10.10	14.59	9.51	24.69	19.61	56.00	46.00	-31.31	-26.39
5	3.66797	10.16	4.94	-1.21	15.10	8.95	56.00	46.00	-40.90	-37.05
6	20.40625	10.55	17.04	10.87	27.59	21.42	60.00	50.00	-32.41	-28.58

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.



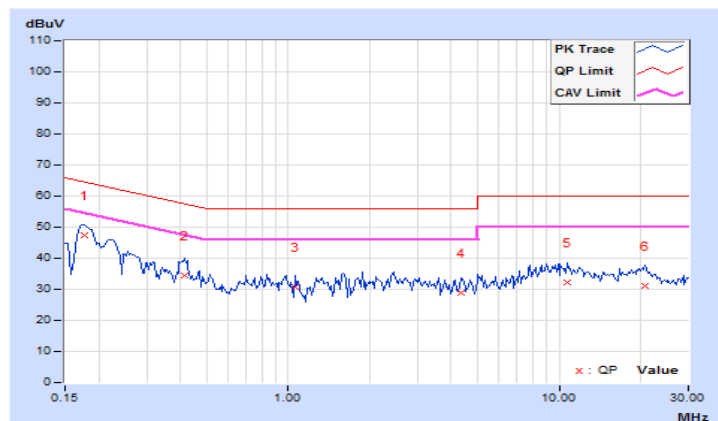
Test Mode B1

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17734	10.00	37.53	23.28	47.53	33.28	64.61	54.61	-17.08	-21.33
2	0.41563	10.03	24.42	14.54	34.45	24.57	57.54	47.54	-23.09	-22.97
3	1.05859	10.08	20.62	9.29	30.70	19.37	56.00	46.00	-25.30	-26.63
4	4.33984	10.18	18.67	8.44	28.85	18.62	56.00	46.00	-27.15	-27.38
5	10.70313	10.27	21.86	13.88	32.13	24.15	60.00	50.00	-27.87	-25.85
6	20.79688	10.43	20.57	12.81	31.00	23.24	60.00	50.00	-29.00	-26.76

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.

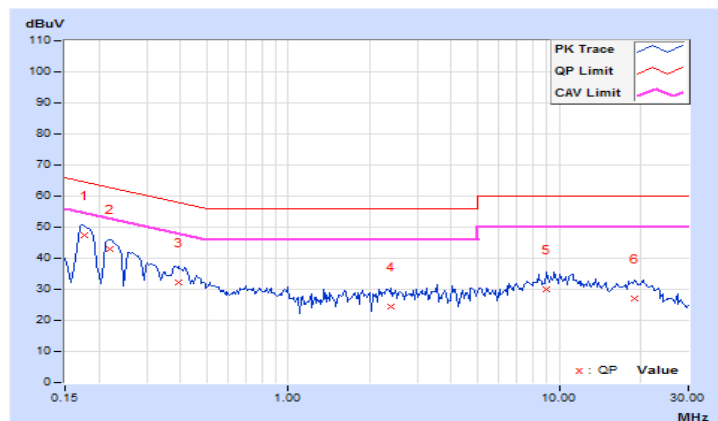


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17734	9.98	37.39	23.24	47.37	33.22	64.61	54.61	-17.24	-21.39
2	0.22031	9.95	33.06	17.85	43.01	27.80	62.81	52.81	-19.80	-25.01
3	0.39219	9.99	22.16	7.67	32.15	17.66	58.02	48.02	-25.87	-30.36
4	2.39063	10.08	14.44	5.98	24.52	16.06	56.00	46.00	-31.48	-29.94
5	9.01563	10.21	19.76	10.95	29.97	21.16	60.00	50.00	-30.03	-28.84
6	18.97266	10.52	16.41	8.34	26.93	18.86	60.00	50.00	-33.07	-31.14

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.



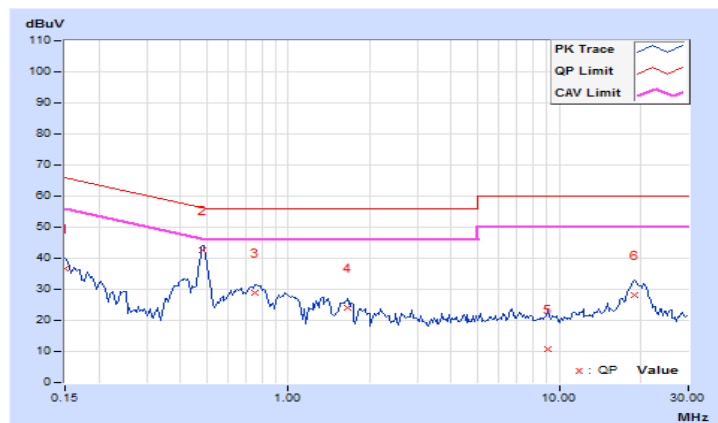
Test Mode B2

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.99	26.53	17.18	36.52	27.17	66.00	56.00	-29.48	-28.83
2	0.48203	10.04	32.46	27.38	42.50	37.42	56.30	46.30	-13.80	-8.88
3	0.75156	10.06	18.66	15.63	28.72	25.69	56.00	46.00	-27.28	-20.31
4	1.65625	10.10	13.83	9.17	23.93	19.27	56.00	46.00	-32.07	-26.73
5	9.06250	10.25	0.49	-4.89	10.74	5.36	60.00	50.00	-49.26	-44.64
6	18.89063	10.43	17.90	11.72	28.33	22.15	60.00	50.00	-31.67	-27.85

Remarks:

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

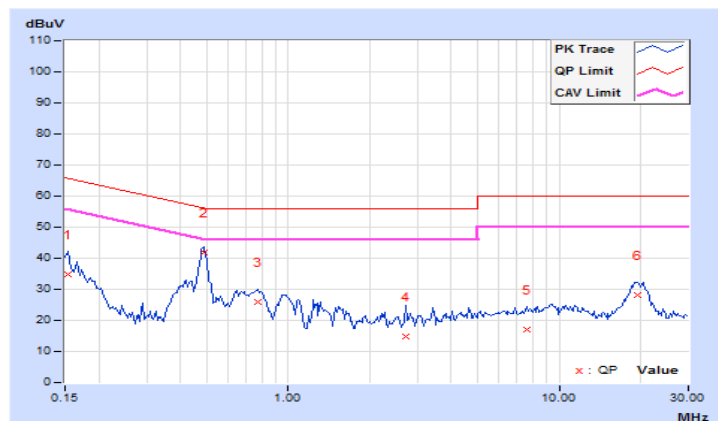


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
-------	-------------	-------------------	--------------------------------

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	10.02	24.90	15.39	34.92	25.41	65.79	55.79	-30.87	-30.38
2	0.48594	10.01	31.78	26.69	41.79	36.70	56.24	46.24	-14.45	-9.54
3	0.77500	10.06	15.94	11.20	26.00	21.26	56.00	46.00	-30.00	-24.74
4	2.71094	10.10	4.60	-1.40	14.70	8.70	56.00	46.00	-41.30	-37.30
5	7.64453	10.20	6.67	0.60	16.87	10.80	60.00	50.00	-43.13	-39.20
6	19.37891	10.54	17.69	11.25	28.23	21.79	60.00	50.00	-31.77	-28.21

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)
		Mobile and Portable client device	250mW (24 dBm)
U-NII-2A	-		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-2C	-		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-3	√		1 Watt (30 dBm)

*B is the 26 dB emission bandwidth in megahertz

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

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

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

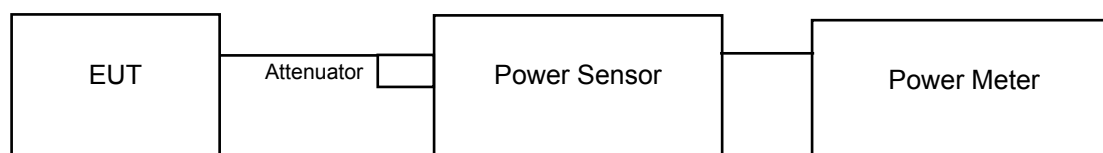
Array Gain = $5 \log(N_{ANT}/N_{SS})$ dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

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

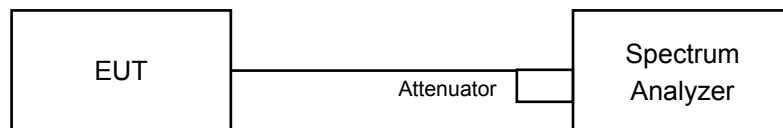
4.3.2 Test Setup

For Power Output Measurement

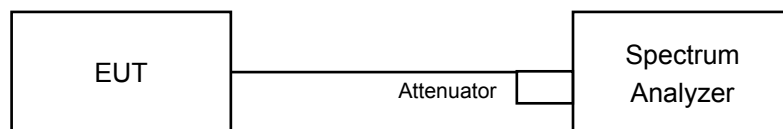
802.11a, 802.11n (HT20), 802.11n (HT40)



802.11ac (VHT80)



For 26dB Bandwidth



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

For Average Power Measurement

For 802.11a, 802.11n (HT20), 802.11n (HT40)

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 802.11ac (VHT80)

- 1) Set span to encompass the entire 26 dB EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal.
- 2) Set sweep trigger to "free run".
- 3) Set RBW = 1 MHz.
- 4) Set VBW $\geq$ 3 MHz.
- 5) Number of points in sweep $\geq$ 2 Span / RBW.
- 6) Sweep time $\leq$ (number of points in sweep) * T
- 7) Using emission bandwidth to determine the frequency span for integration the channel bandwidth.
- 8) Detector = RMS.
- 9) Trace mode = max hold.
- 10) Allow max hold to run for at least 60 seconds, or longer as needed to allow the trace to stabilize.

For 26dB 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 Conditions

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

4.3.7 Test Result

Power Output:

CDD Mode

802.11a

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	17.62	16.92	107.014	20.29	30	Pass
40	5200	21.56	21.13	272.937	24.36	30	Pass
48	5240	19.87	20.03	197.744	22.96	30	Pass
149	5745	21.48	21.55	283.494	24.53	30	Pass
157	5785	21.75	21.83	302.029	24.80	30	Pass
165	5825	21.57	21.44	282.865	24.52	30	Pass

802.11n (HT20)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	17.41	15.99	94.800	19.77	30	Pass
40	5200	21.06	20.37	236.537	23.74	30	Pass
48	5240	19.88	20.14	200.551	23.02	30	Pass
149	5745	21.52	21.25	275.258	24.40	30	Pass
157	5785	21.78	21.64	296.542	24.72	30	Pass
165	5825	21.54	21.48	283.166	24.52	30	Pass

802.11n (HT40)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	16.60	15.64	82.353	19.16	30	Pass
46	5230	19.73	19.35	180.071	22.55	30	Pass
151	5755	21.84	21.79	303.765	24.83	30	Pass
159	5795	22.04	22.03	319.544	25.05	30	Pass

802.11ac (VHT80)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	15.23	14.54	61.788	17.91	30	Pass
155	5775	17.71	17.35	113.345	20.54	30	Pass

Beamforming Mode

802.11n (HT20)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	14.400	12.98	47.403	16.76	27.99	Pass
40	5200	18.050	17.36	118.277	20.73	27.99	Pass
48	5240	16.870	17.13	100.282	20.01	27.99	Pass
149	5745	18.510	18.24	137.638	21.39	27.99	Pass
157	5785	18.770	18.63	148.281	21.71	27.99	Pass
165	5825	18.530	18.47	141.593	21.51	27.99	Pass

Note: Max. directional gain = $5\text{dBi} + 10\log(2) = 8.01\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $30 - (8.01 - 6) = 27.99\text{dBm}$.

802.11n (HT40)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	13.590	12.63	41.179	16.15	27.99	Pass
46	5230	16.720	16.34	90.042	19.54	27.99	Pass
151	5755	18.830	18.78	151.893	21.82	27.99	Pass
159	5795	19.030	19.02	159.783	22.04	27.99	Pass

Note: Max. directional gain = $5\text{dBi} + 10\log(2) = 8.01\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $30 - (8.01 - 6) = 27.99\text{dBm}$.

802.11ac (VHT80)

Chan.	Freq. (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	12.220	11.53	30.896	14.90	27.99	Pass
155	5775	14.700	14.34	56.676	17.53	27.99	Pass

Note: Max. directional gain = $5\text{dBi} + 10\log(2) = 8.01\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $30 - (8.01 - 6) = 27.99\text{dBm}$.

26dB Bandwidth

802.11a

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	19.48	19.85
40	5200	41.08	42.31
48	5240	29.59	31.30

802.11n (HT20)

Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	20.57	20.54
40	5200	38.99	44.01
48	5240	32.10	22.84

802.11n (HT40)

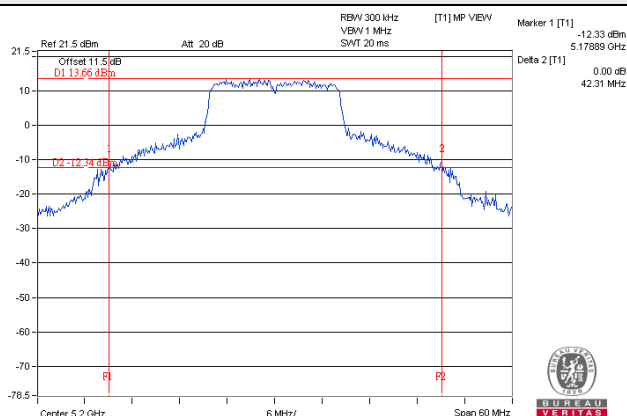
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	39.97	40.87
46	5230	60.83	81.41

802.11ac (VHT80)

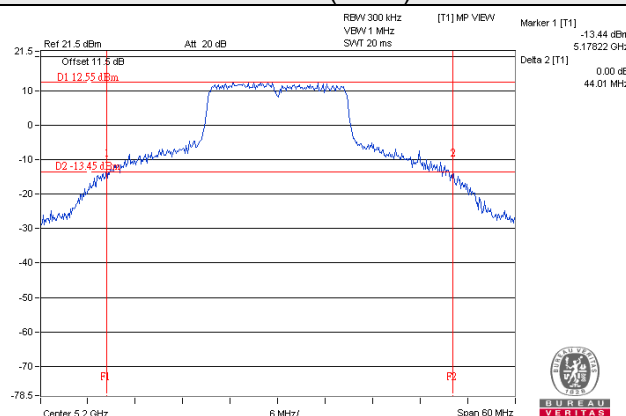
Channel	Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	81.55	83.93

Spectrum Plot of Worst Value

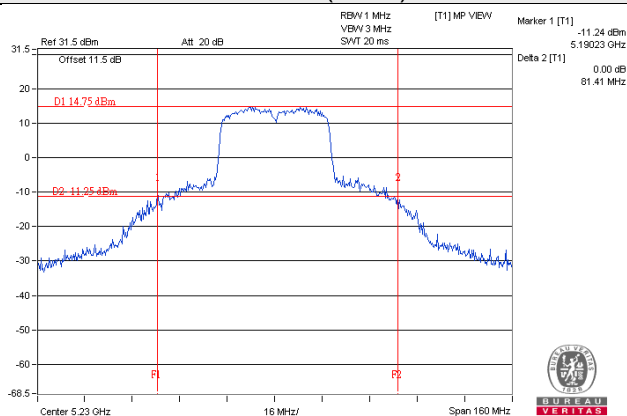
802.11a



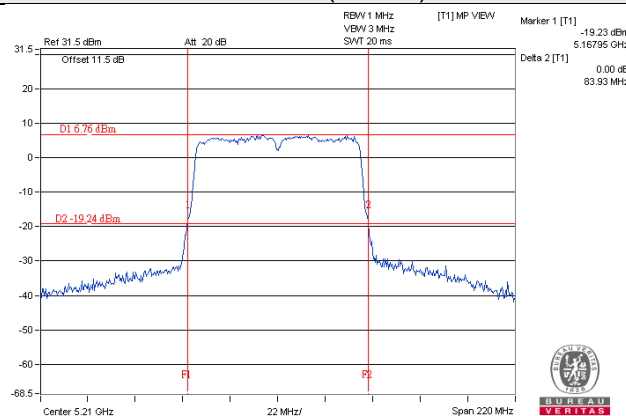
802.11n (HT20)



802.11n (HT40)

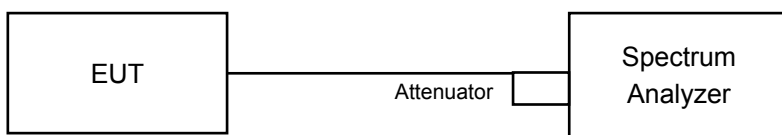


802.11ac (VHT80)



4.4 Occupied Bandwidth Measurement

4.4.1 Test Setup



4.4.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.3 Test Procedure

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

4.4.4 Test Result

802.11a

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	16.68	16.68
40	5200	21.84	24.72
48	5240	16.68	16.80
149	5745	17.04	21.12
157	5785	22.44	25.80
165	5825	28.08	30.48

802.11n (HT20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	17.88	17.76
40	5200	18.72	22.20
48	5240	18.00	17.76
149	5745	18.36	21.84
157	5785	23.16	26.64
165	5825	28.68	32.52

802.11n (HT40)

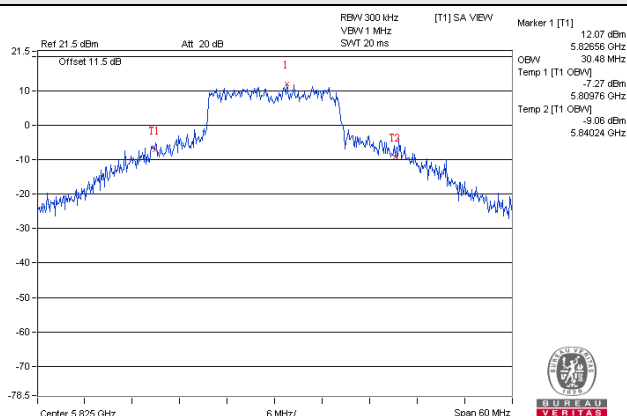
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	35.64	36.24
46	5230	36.72	36.72
151	5755	36.48	38.52
159	5795	39.48	44.28

802.11ac (VHT80)

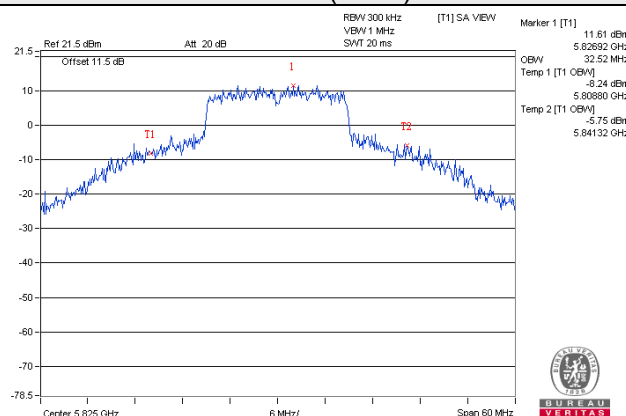
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	75.36	75.60
155	5775	75.60	76.08

Spectrum Plot of Worst Value

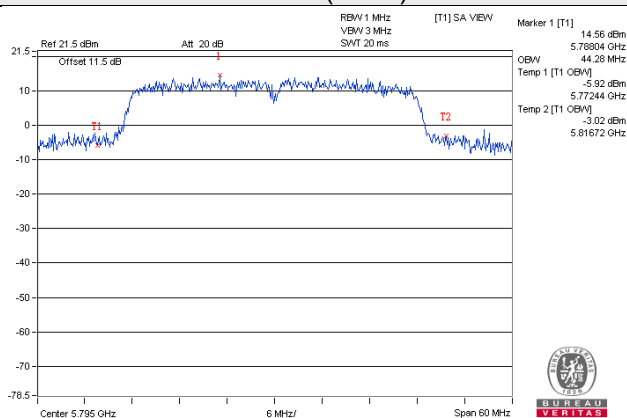
802.11a



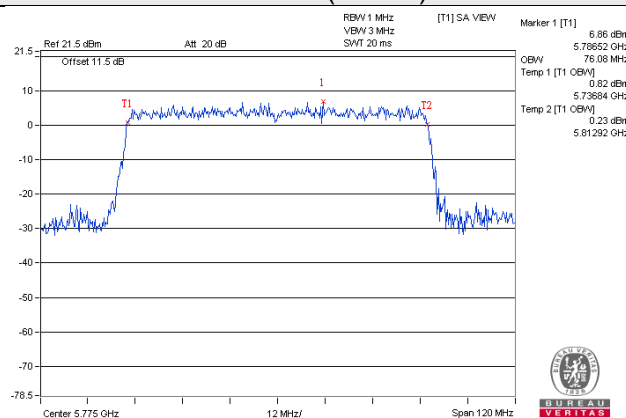
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)

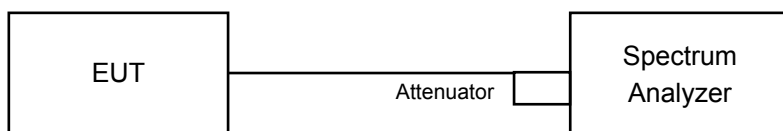


4.5 Peak Power Spectral Density Measurement

4.5.1 Limits of Peak Power Spectral Density Measurement

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

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedures

For U-NII-1 band:

Duty cycle of test signal is $\geq 98\%$

Using method SA-1

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

Duty cycle of test signal is $< 98\%$

Using method SA-2

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

For U-NII-3 band:

Duty cycle of test signal is $\geq 98\%$

Using method SA-1

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

Duty cycle of test signal is $< 98\%$

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

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Conditions

Same as item 4.3.6.

4.5.7 Test Results

For U-NII-1 Band

802.11a

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
36	5180	4.11	3.37	0.31	7.08	14.99	Pass
40	5200	9.08	7.54	0.31	11.70	14.99	Pass
48	5240	7.32	5.43	0.31	9.80	14.99	Pass

Note:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Max. directional gain = $5\text{dBi} + 10\log(2) = 8.01\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $17-(8.01-6) = 14.99\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT20)

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
36	5180	3.82	2.52	0.15	6.38	14.99	Pass
40	5200	8.20	6.26	0.15	10.50	14.99	Pass
48	5240	4.90	7.16	0.15	9.34	14.99	Pass

Note:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Max. directional gain = $5\text{dBi} + 10\log(2) = 8.01\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $17-(8.01-6) = 14.99\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT40)

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
38	5190	0.90	-0.52	0.47	3.73	14.99	Pass
46	5230	5.01	2.77	0.47	7.51	14.99	Pass

Note:

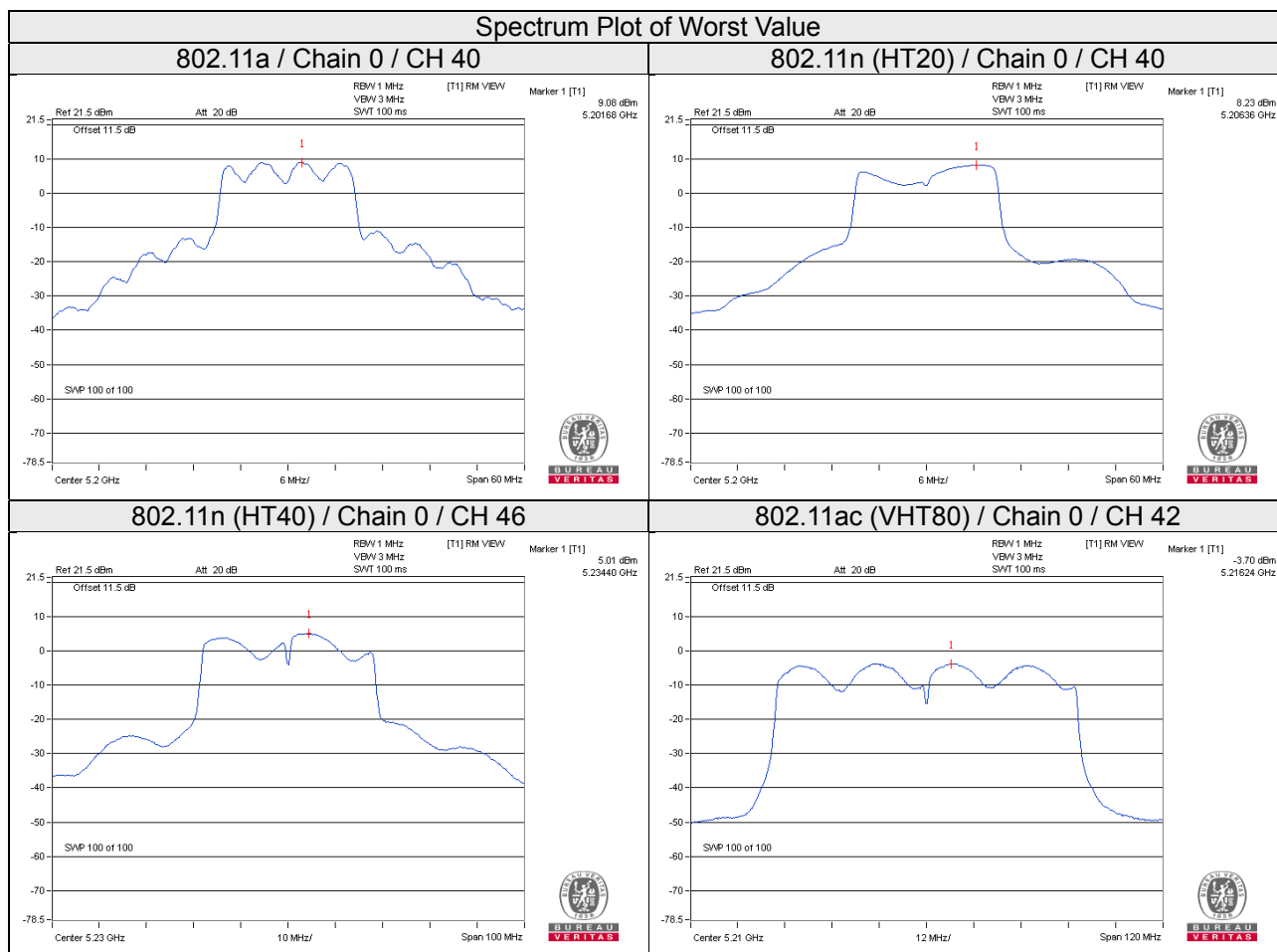
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Max. directional gain = $5\text{dBi} + 10\log(2) = 8.01\text{dBi} > 6\text{dBi}$, so the limit shall be reduced to $17-(8.01-6) = 14.99\text{dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT80)

Chan.	Freq. (MHz)	PSD W/O Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD With Duty Factor (dBm/MHz)	Max. Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
42	5210	-3.74	-4.84	0.47	-0.77	14.99	Pass

Note:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Max. directional gain = 5dBi + 10log(2) = 8.01dBi > 6dBi, so the limit shall be reduced to 17-(8.01-6) = 14.99dBm.
3. Refer to section 3.3 for duty cycle spectrum plot.



For U-NII-3 Band

802.11a

TX chain	Chan.	Freq. (MHz)	PSD W/O Duty Factor		10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	149	5745	-0.64	1.58	3.01	0.31	4.90	27.99	Pass
	157	5785	-0.74	1.48	3.01	0.31	4.80	27.99	Pass
	165	5825	-0.59	1.63	3.01	0.31	4.95	27.99	Pass
1	149	5745	-1.12	1.10	3.01	0.31	4.42	27.99	Pass
	157	5785	-1.07	1.15	3.01	0.31	4.47	27.99	Pass
	165	5825	-0.82	1.40	3.01	0.31	4.72	27.99	Pass

Note:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Max. directional gain = 5dBi + 10log(2) = 8.01dBi > 6dBi, so the limit shall be reduced to 30-(8.01-6) = 27.99.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT20)

TX chain	Chan.	Freq. (MHz)	PSD W/O Duty Factor		10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	149	5745	-1.41	0.81	3.01	0.15	3.97	27.99	Pass
	157	5785	-1.82	0.40	3.01	0.15	3.56	27.99	Pass
	165	5825	-1.56	0.66	3.01	0.15	3.82	27.99	Pass
1	149	5745	-1.60	0.62	3.01	0.15	3.78	27.99	Pass
	157	5785	-1.22	1.00	3.01	0.15	4.16	27.99	Pass
	165	5825	-1.07	1.15	3.01	0.15	4.31	27.99	Pass

Note:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Max. directional gain = 5dBi + 10log(2) = 8.01dBi > 6dBi, so the limit shall be reduced to 30-(8.01-6) = 27.99.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11n (HT40)

TX chain	Chan.	Freq. (MHz)	PSD W/O Duty Factor		10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	151	5755	-3.99	-1.77	3.01	0.47	1.71	27.99	Pass
	159	5795	-3.96	-1.74	3.01	0.47	1.74	27.99	Pass
1	151	5755	-4.35	-2.13	3.01	0.47	1.35	27.99	Pass
	159	5795	-3.92	-1.70	3.01	0.47	1.78	27.99	Pass

Note:

1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Max. directional gain = 5dBi + 10log(2) = 8.01dBi > 6dBi, so the limit shall be reduced to 30-(8.01-6) = 27.99.
3. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (VHT80)

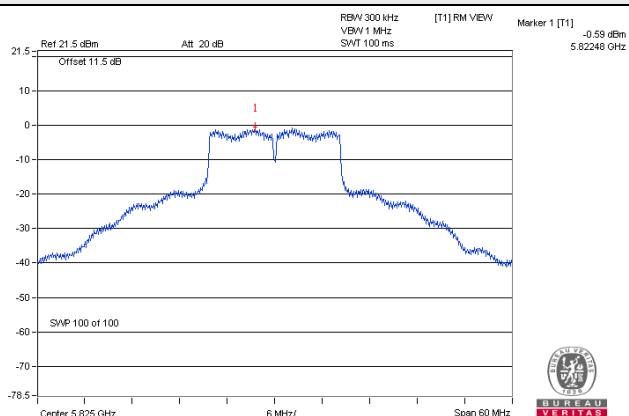
TX chain	Chan.	Freq. (MHz)	PSD W/O Duty Factor		10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass / Fail
			(dBm/300kHz)	(dBm/500kHz)					
0	155	5775	-11.89	-9.67	3.01	0.47	-6.19	27.99	Pass
1	155	5775	-12.10	-9.88	3.01	0.47	-6.40	27.99	Pass

Note:

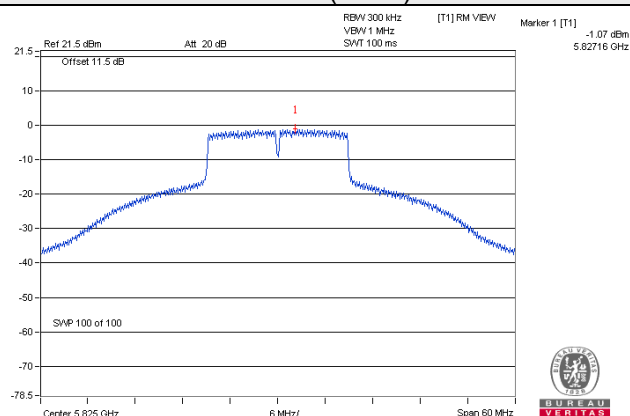
1. Method 1 of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. Max. directional gain = 5dBi + 10log(2) = 8.01dBi > 6dBi, so the limit shall be reduced to 30-(8.01-6) = 27.99.
3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

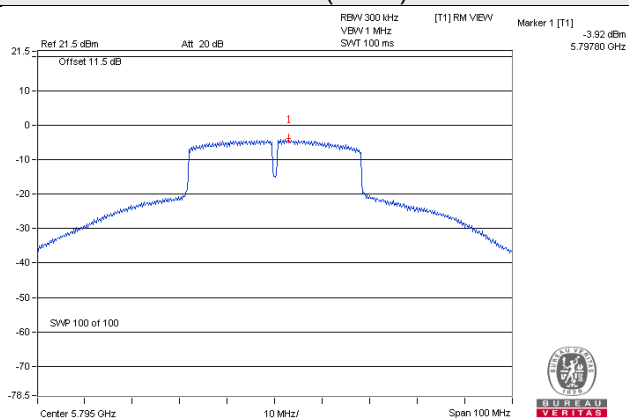
802.11a



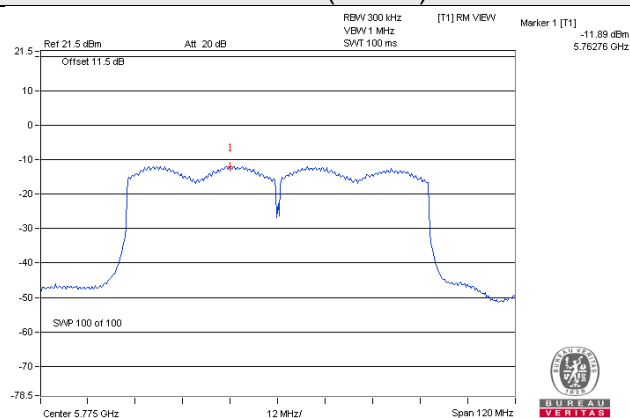
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)

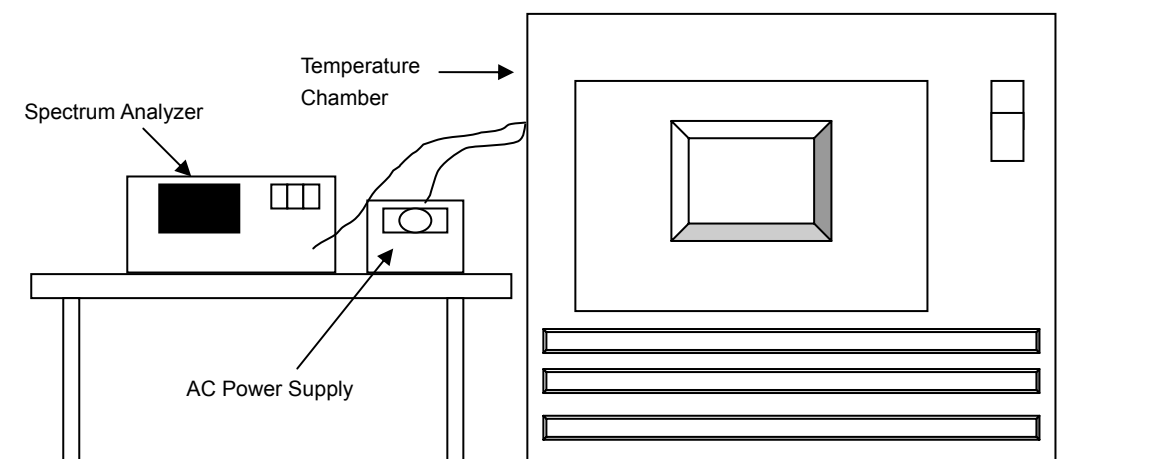


4.6 Frequency Stability

4.6.1 Limits of Frequency Stability Measurement

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

4.6.2 Test Setup



4.6.3 Test Procedure

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

4.6.4 Deviation from Test Standard

No deviation.

4.6.5 EUT Operating Condition

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

4.6.6 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 5180MHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
50	120	5179.9939	-0.00012	5179.9949	-0.00010	5179.9972	-0.00005	5179.9934	-0.00013
40	120	5179.9996	-0.00001	5179.9952	-0.00009	5179.9967	-0.00006	5179.996	-0.00008
30	120	5180.0044	0.00008	5180.0081	0.00016	5180.0072	0.00014	5180.0063	0.00012
20	120	5179.9978	-0.00004	5179.9958	-0.00008	5179.9985	-0.00003	5179.9971	-0.00006
10	120	5180.0231	0.00045	5180.0242	0.00047	5180.0241	0.00047	5180.024	0.00046
0	120	5180.0175	0.00034	5180.0204	0.00039	5180.0175	0.00034	5180.0187	0.00036
-10	120	5179.9818	-0.00035	5179.9822	-0.00034	5179.9828	-0.00033	5179.9815	-0.00036
-20	120	5179.9971	-0.00006	5179.9962	-0.00007	5179.9992	-0.00002	5179.9968	-0.00006
-30	120	5180.0048	0.00009	5180.0004	0.00001	5180.001	0.00002	5180.0046	0.00009

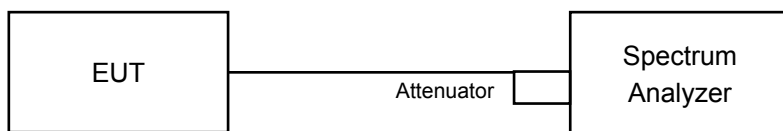
Frequency Stability Versus Voltage									
Operating Frequency: 5180MHz									
Temp. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)	Measured Frequency (MHz)	Frequency Drift (%)
20	138	5179.9982	-0.00003	5179.9958	-0.00008	5179.9991	-0.00002	5179.9975	-0.00005
	120	5179.9978	-0.00004	5179.9958	-0.00008	5179.9985	-0.00003	5179.9971	-0.00006
	102	5179.9983	-0.00003	5179.9954	-0.00009	5179.9992	-0.00002	5179.9975	-0.00005

4.7 6dB Bandwidth Measurement

4.7.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

4.7.2 Test Setup



4.7.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.7.4 Test Procedure

MEASUREMENT PROCEDURE REF

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

4.7.5 Deviation from Test Standard

No deviation.

4.7.6 EUT Operating Condition

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

4.7.7 Test Results

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
149	5745	16.42	16.38	0.5	Pass
157	5785	16.41	16.39	0.5	Pass
165	5825	16.45	16.34	0.5	Pass

802.11n (HT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
149	5745	17.64	17.64	0.5	Pass
157	5785	17.65	17.61	0.5	Pass
165	5825	17.66	17.65	0.5	Pass

802.11n (HT40)

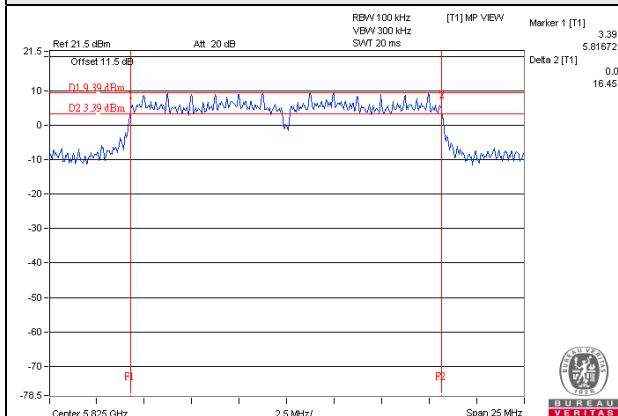
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
151	5755	35.20	35.17	0.5	Pass
159	5795	35.18	36.34	0.5	Pass

802.11ac (VHT80)

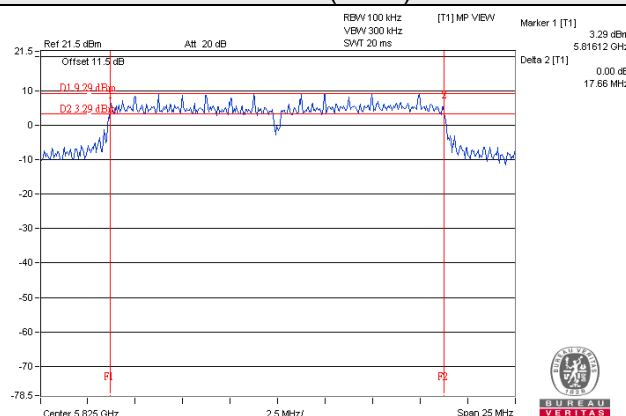
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
155	5775	74.39	76.01	0.5	Pass

Spectrum Plot of Worst Value

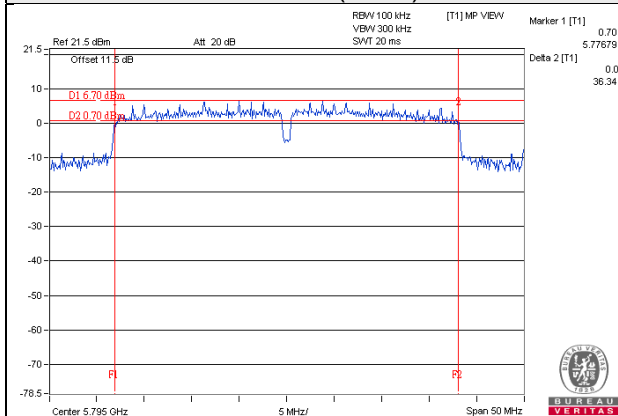
802.11a



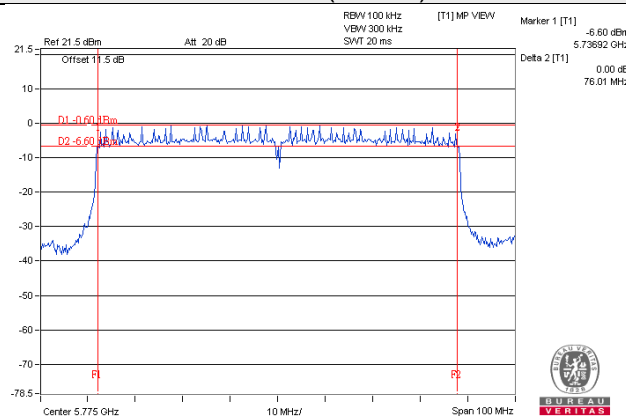
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)



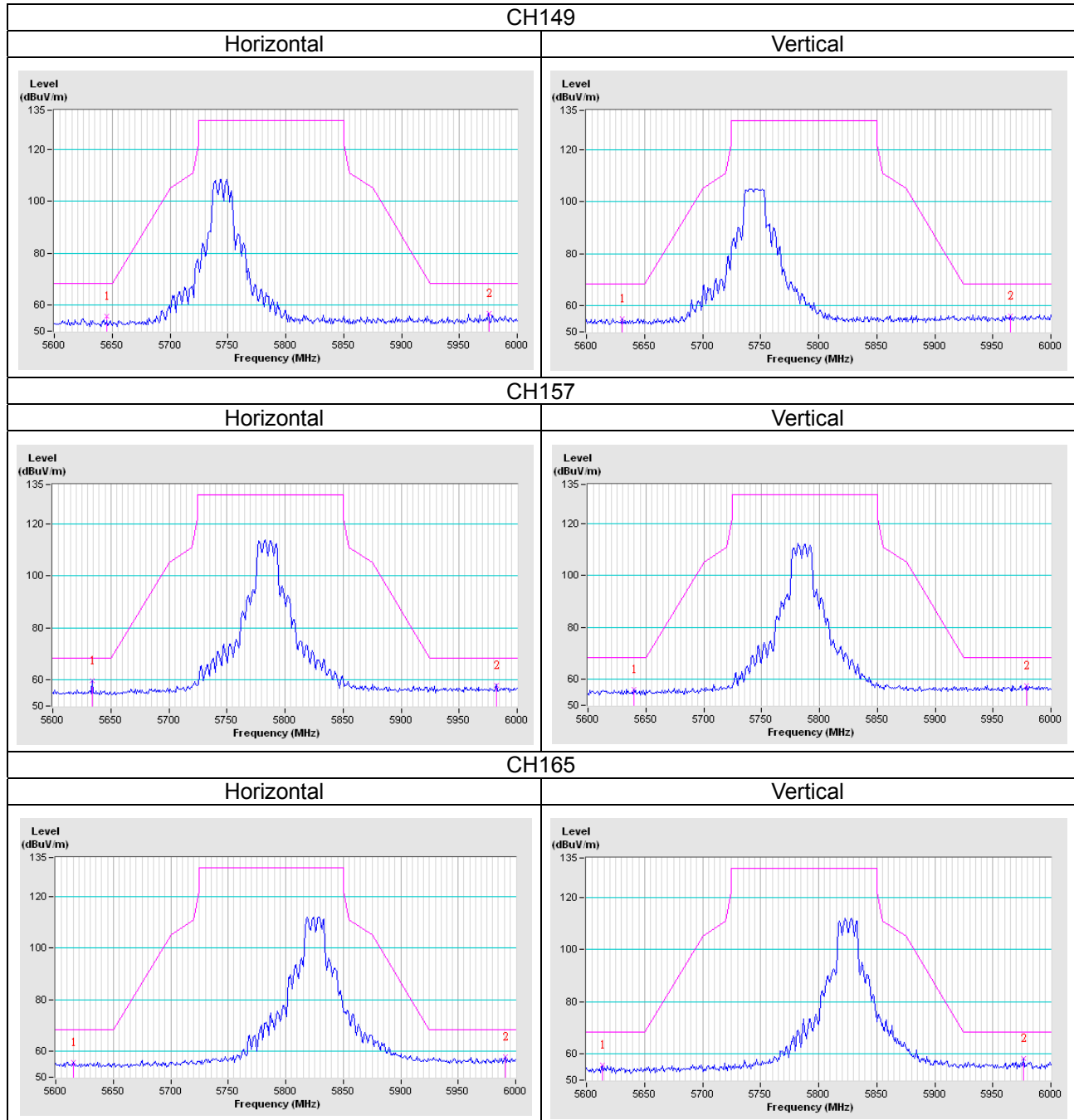
5 Pictures of Test Arrangements

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

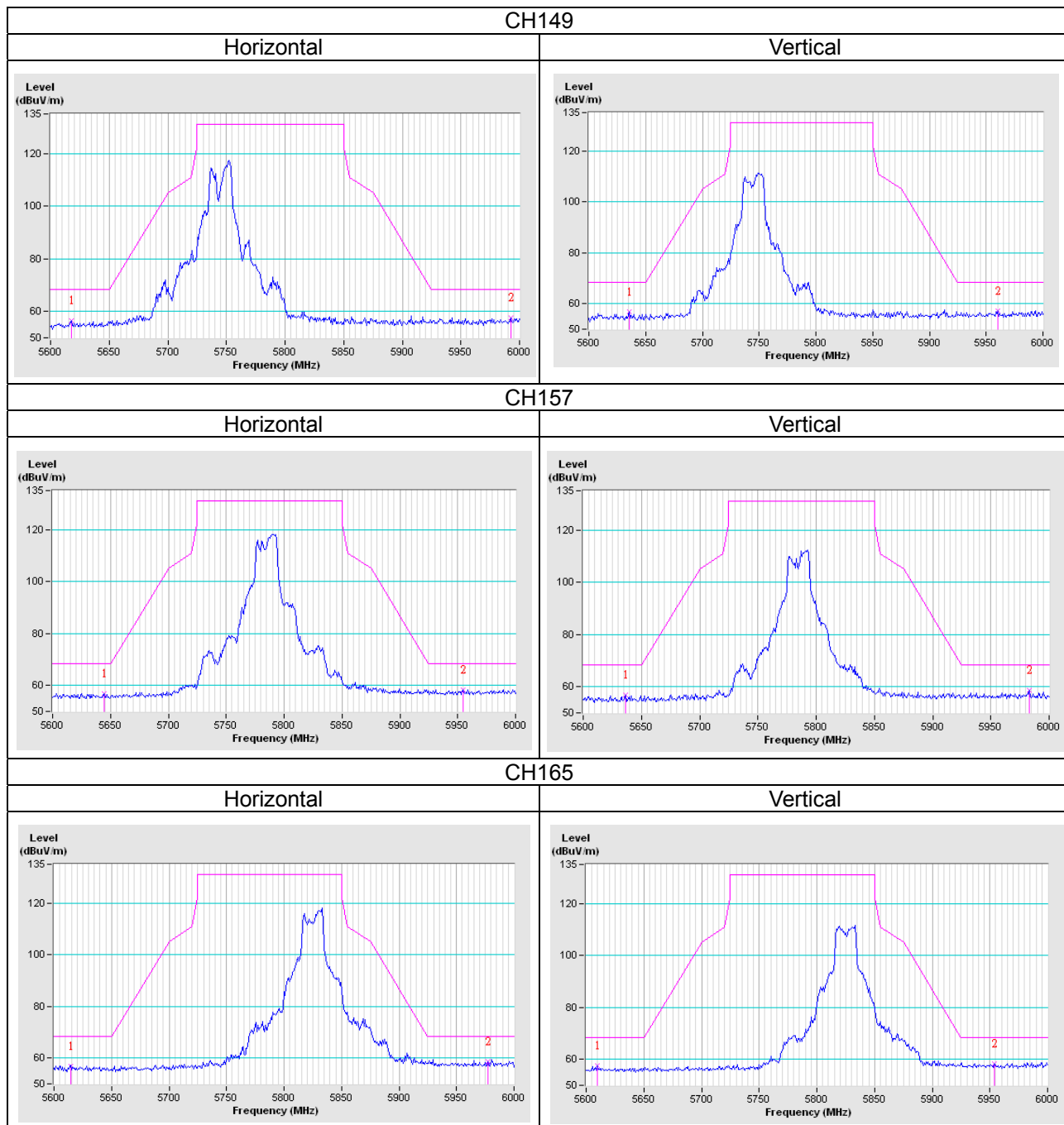
Annex A- Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band)

Test Mode A1

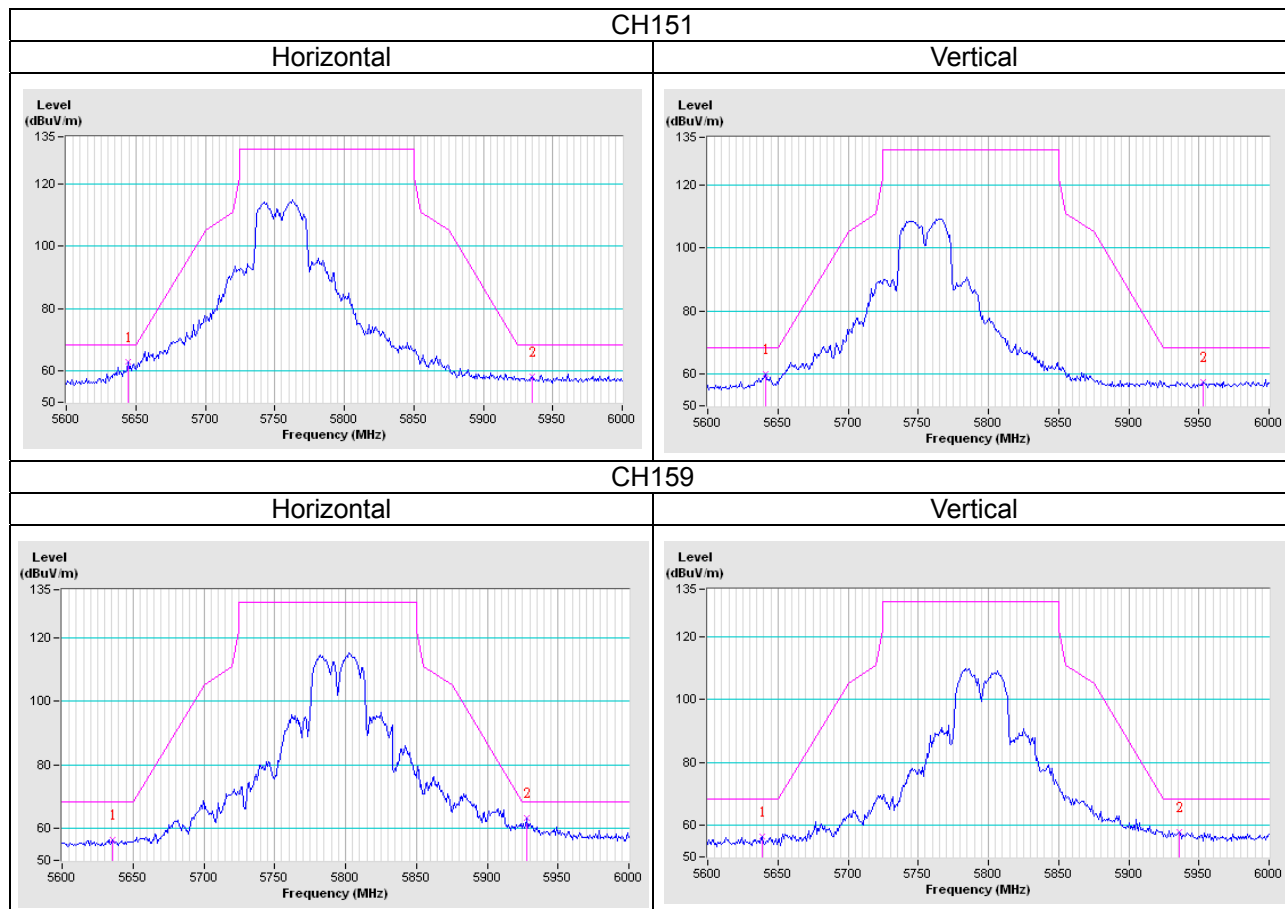
802.11a



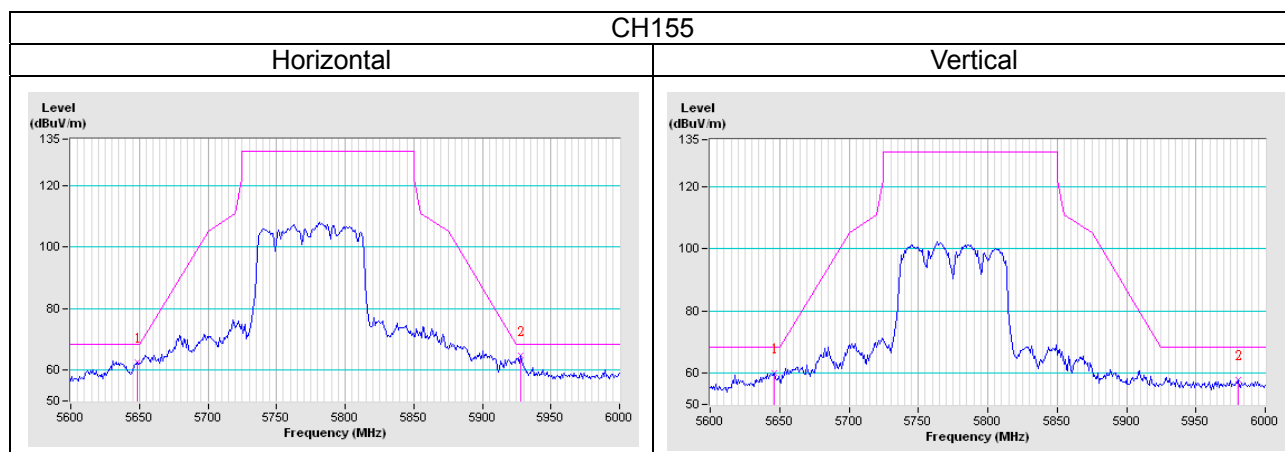
802.11n (HT20)



802.11n (HT40)

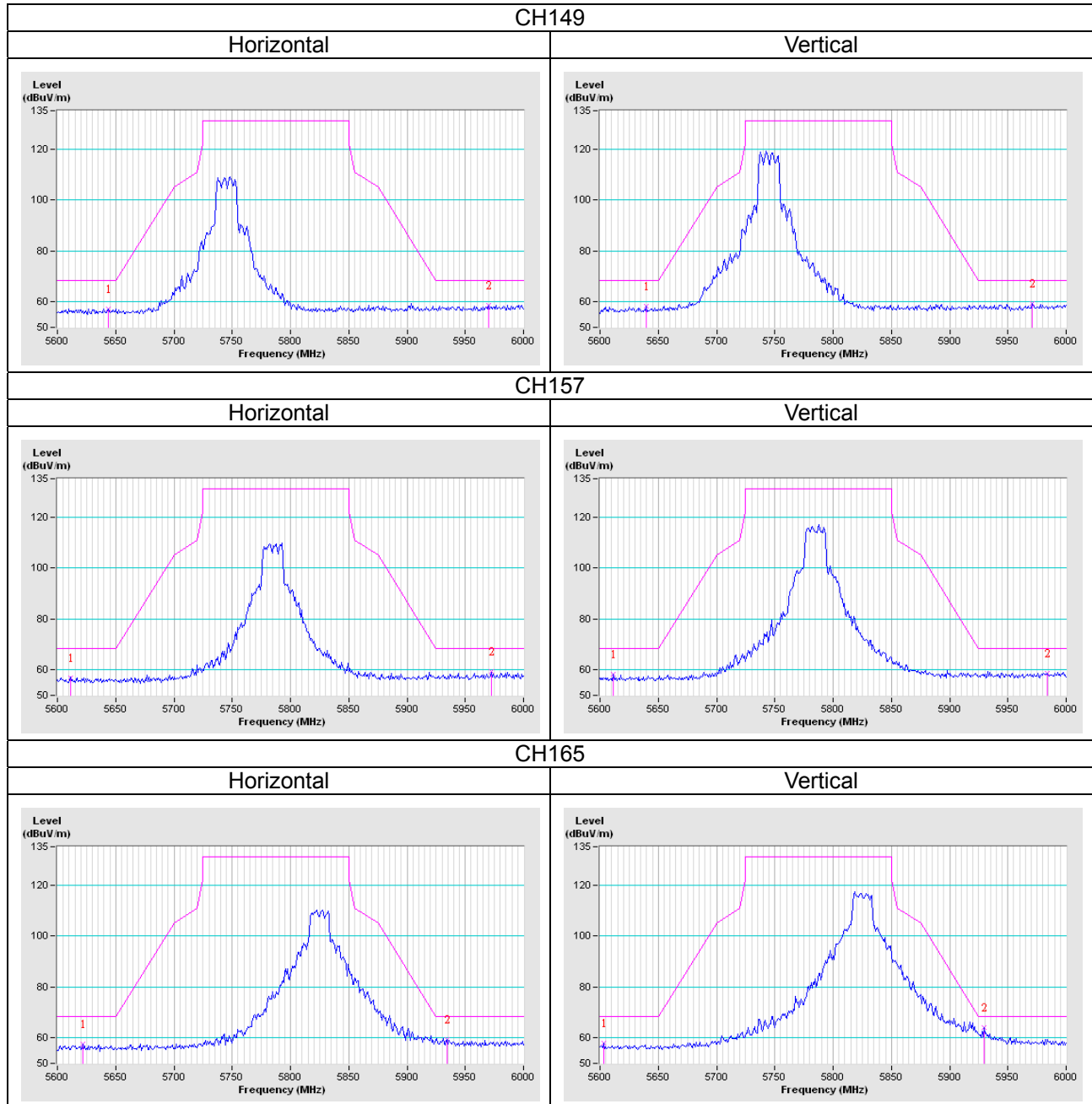


802.11ac (VHT80)

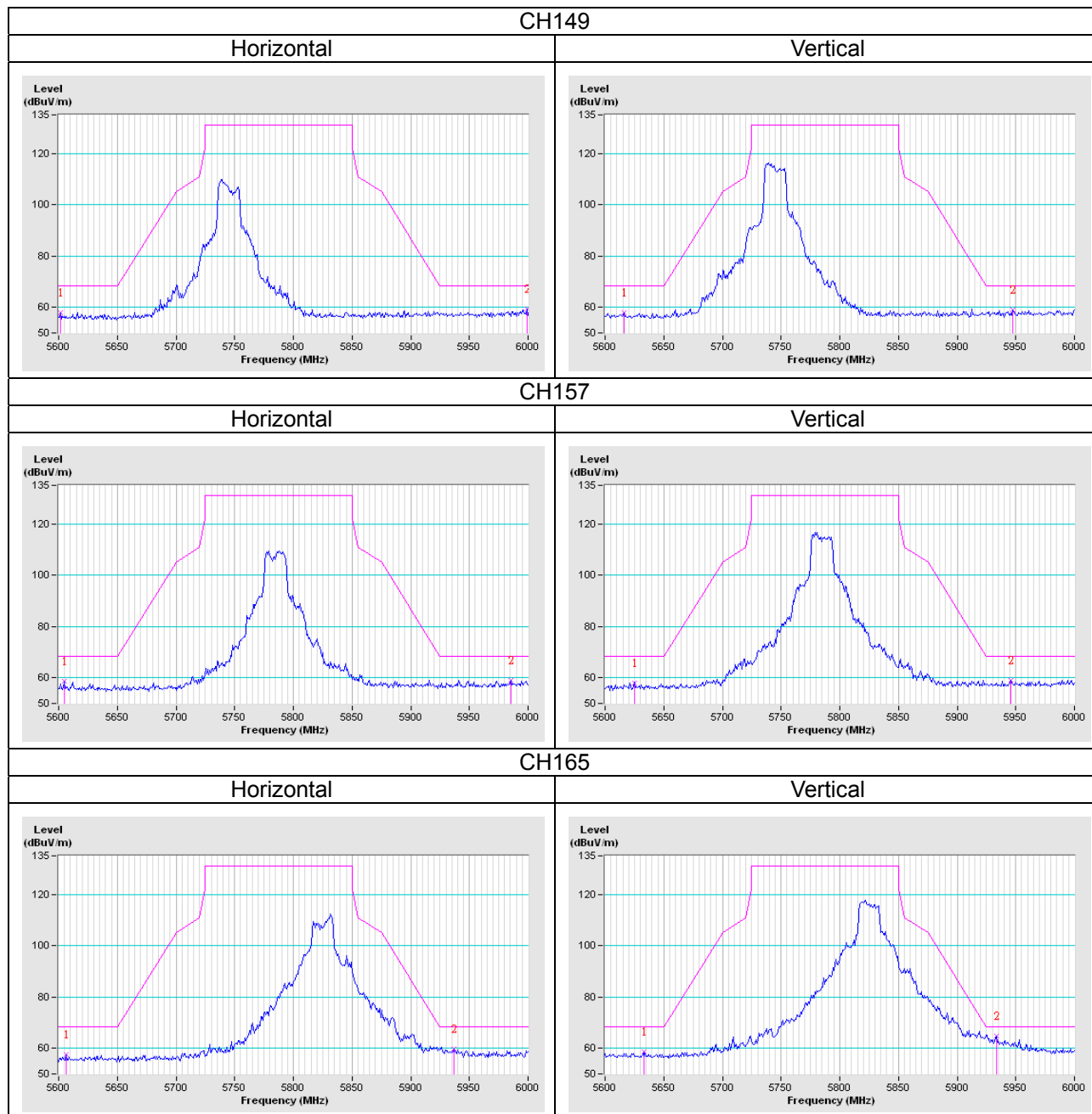


Test Mode B1

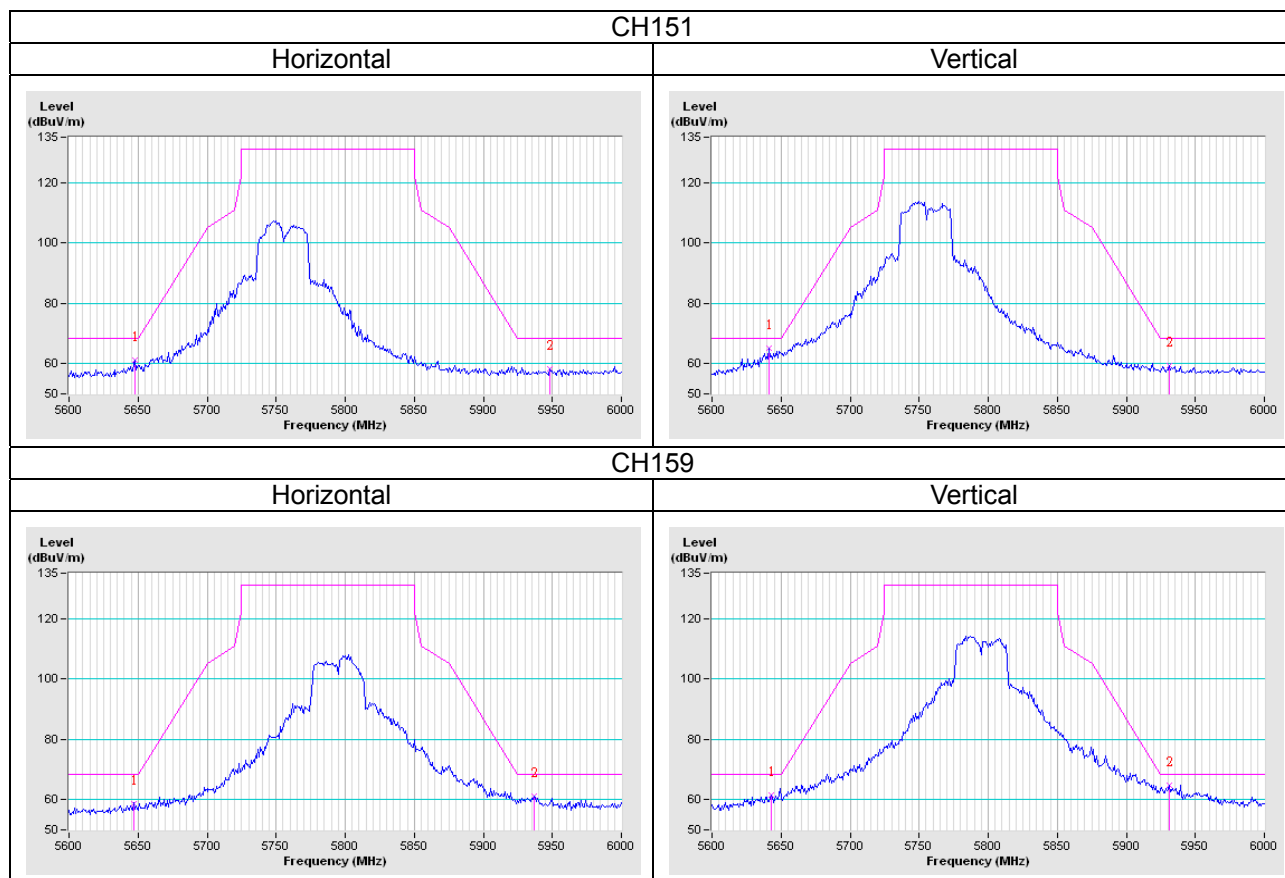
802.11a



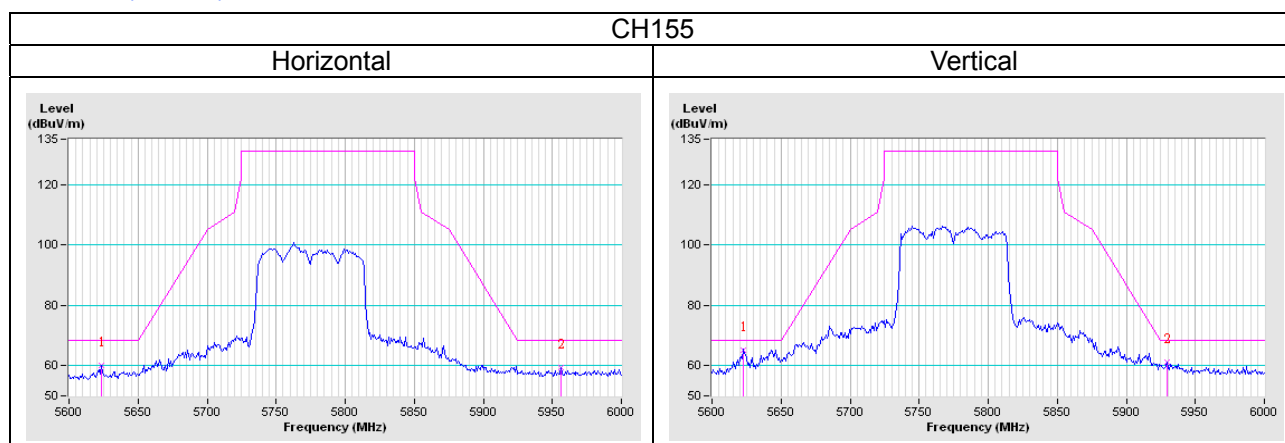
802.11n (HT20)



802.11n (HT40)



802.11ac (VHT80)



Appendix – Information on the Testing Laboratories

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

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

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Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

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

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