

Variant FCC Test Report

Report No.: RF151207C04A-3

FCC ID: QYL8260NG

Test Model: 8260NGW

Received Date: Sep. 07, 2018

Test Date: Oct. 01, 2018 ~ Oct. 04, 2018

Issued Date: Oct. 30, 2018

Applicant: Getac Technology Corporation.

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**FCC Registration /
Designation Number:** 788550 / TW0003



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Release Control Record

Issue No.	Description	Date Issued
RF151207C04A-3	Original Release	Oct. 30, 2018

1 Certificate of Conformity

Product: Wireless module

Brand: Intel

Test Model: 8260NGW

Sample Status: Engineering Sample

Applicant: Getac Technology Corporation.

Test Date: Oct. 01, 2018 ~ Oct. 04, 2018

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 RF characteristics under the conditions specified in this report.

Prepared by : Gina Liu, **Date:** Oct. 30, 2018
Gina Liu / Specialist

Approved by : Dylan Chiou, **Date:** Oct. 30, 2018
Dylan Chiou / Project Engineer

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -20.42 dB at 1.22096 MHz.
15.407(b) (1/2/3/4(i/ii)/6)	Radiated Emissions & Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -0.1 dB at 5470 MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	N/A	Refer to Note
15.407(a)(1/2/3)	Peak Power Spectral Density	N/A	Refer to Note
15.407(e)	6 dB Bandwidth	N/A	Refer to Note
15.407(g)	Frequency Stability	N/A	Refer to Note
15.203	Antenna Requirement	N/A	Refer to Note

Note: Only Conducted Emission, Max Average Transmit Power and Radiated Emissions tests were performed for the addendum. Refer to original report for other test data.

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	150 kHz ~ 30 MHz	2.44 dB
Radiated Emissions up to 1 GHz	30 MHz ~ 200 MHz	2.93 dB
	200 MHz ~ 1000 MHz	2.95 dB
Radiated Emissions above 1 GHz	1 GHz ~ 18 GHz	2.26 dB
	18 GHz ~ 40 GHz	1.94 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Wireless module
Brand	Intel
Test Model	8260NGW
Status of EUT	Engineering Sample
Power Supply Rating	5.0 Vdc (host equipment)
Modulation Type	256QAM, 64QAM, 16QAM, QPSK, BPSK
Modulation Technology	OFDM
Transfer Rate	802.11a: 54.0/ 48.0/ 36.0/ 24.0/ 18.0/ 12.0/ 9.0/ 6.0 Mbps 802.11n: up to 400.0 Mbps 802.11ac: up to 866.7 Mbps
Operating Frequency	5180 ~ 5240 MHz, 5260 ~ 5320 MHz, 5500 ~ 5700 MHz, 5745 ~ 5825 MHz
Number of Channel	5180 ~ 5240 MHz: 4 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40) 1 for 802.11ac (VHT80) 5260 ~ 5320 MHz: 4 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40) 1 for 802.11ac (VHT80) 5500 ~ 5700 MHz: 11 for 802.11a, 802.11n (HT20) 5 for 802.11n (HT40) 2 for 802.11ac (VHT80) 5745 ~ 5825 MHz: 5 for 802.11a, 802.11n (HT20) 2 for 802.11n (HT40) 1 for 802.11ac (VHT80)
Output Power	52.845 mW for 5180 ~ 5240 MHz 53.456 mW for 5260 ~ 5320 MHz 66.988 mW for 5500 ~ 5700 MHz 57.016 mW for 5745 ~ 5825 MHz
Antenna Type	Refer to Note as below
Antenna Connector	I-pex
Accessory Device	Refer to Note as below
Data Cable Supplied	Refer to Note as below

Note:

1. This report is issued as a supplementary report to BV CPS report no. RF151207C04-4. The difference compared with original report is adding new WLAN antenna, PCMCIA card slot, new SSD and new adapter. Therefore, only Conducted Emission, Conducted Power and Radiated Emissions tests were verified and recorded in this report.
2. The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers.

Modulation Mode	Tx Function
802.11a	1TX
802.11n (HT20)	2TX
802.11n (HT40)	2TX
802.11ac (VHT20)	2TX
802.11ac (VHT40)	2TX
802.11ac (VHT80)	2TX

* 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)

3. The antenna information is listed as below.

Antenna Type	Antenna Gain (dBi)			
	5180 ~ 5240 MHz	5260 ~ 5320 MHz	5500 ~ 5700 MHz	5745 ~ 5825 MHz
PIFA	Main: 2.4 Aux.: 0.9	Main: 3.51 Aux.: 1.67	Main: 3.19 Aux.: 1.62	Main: 2.26 Aux.: 1.35

Note: The UNII-2A & UNII-2C Gain values are larger than the original report and have been evaluated for radiation emission.

4. The EUT is authorized for use in specific End-product.

Product	Brand	Model	Description
NB & Tablet	Getac	V110	N/A

5. The End-product contains following accessory devices. (New brand is marked in gray.)

Product	Brand	Model	Description
Adapter 1	Chicony	A12-065N2A	I/P: 100-240Vac, 50/60Hz, 1.7A O/P: 19Vdc, 3.42A 1.7 m shielded with 1 core
Adapter 2	N/A	ADM-9019M	I/P: 100-240Vac, 50/60Hz, 1.5A O/P: 19Vdc, 4.74A 1.75 m shielded without core
Battery	Getac Technology Corp.	BP3S1P2100-S	11.1Vdc, 2100mAh
WLAN/BT Module	Intel	8260NGW	--
Digitizer	KYE	T116 EMR Digitizer	--
LTE Module	Sierra	EM7355	Function: WWAN SW: SWI9X15C_01.05.11.08 HW: 1.1
OS	N/A	N/A	Win10 64bit

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

3.2 Description of Test Modes

For 5180 ~ 5240 MHz

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

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

2 channels are provided for 802.11n (HT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	46	5230

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency (MHz)
42	5210

For 5260 ~ 5320 MHz

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

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

2 channels are provided for 802.11n (HT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
54	5270	62	5310

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency (MHz)
58	5290

For 5500 ~ 5700 MHz

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

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

5 channels are provided for 802.11n (HT40):

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

2 channels are provided for 802.11ac (VHT80):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
106	5530	122	5610

For 5745 ~ 5825 MHz:

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

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

2 channels are provided for 802.11n (HT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
151	5755	159	5795

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency (MHz)
155	5775

3.2.1 Test Mode Applicability and Tested Channel Detail

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

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

RE $<$ 1G: Radiated Emission below 1 GHz

PLC: Power Line Conducted Emission

APCM: Antenna Port Conducted Measurement

Note:

- The EUT had been pre-tested on the Notebook, Tablet mode. The worst case was found when positioned as the table below.
- "-" means no effect.

Following mode (axis) was selected for the final test as listed below:

Frequency (MHz)	Antenna Mode	5180~5240	5260~5320	5500~5700	5745~5825
Axis	SISO	Z	Z	NB	NB
	MIMO	Z	Y	NB	NB

Radiated Emission Test (Above 1 GHz):

- ☒ 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	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5180-5240	802.11a	36 to 48	36, 40, 48	OFDM	BPSK	6.0
-		802.11n (HT20)	36 to 48	36, 40, 48	OFDM	BPSK	6.5
-		802.11n (HT40)	38 to 46	38, 46	OFDM	BPSK	13.5
-		802.11ac (VHT80)	42	42	OFDM	BPSK	29.3
-	5260-5320	802.11a	52 to 64	52, 60, 64	OFDM	BPSK	6.0
-		802.11n (HT20)	52 to 64	52, 60, 64	OFDM	BPSK	6.5
-		802.11n (HT40)	54 to 62	54, 62	OFDM	BPSK	13.5
-		802.11ac (VHT80)	58	58	OFDM	BPSK	29.3
-	5500-5700	802.11a	100 to 140	100, 116, 140	OFDM	BPSK	6.0
-		802.11n (HT20)	100 to 140	100, 116, 140	OFDM	BPSK	6.5
-		802.11n (HT40)	102 to 134	102, 110, 134	OFDM	BPSK	13.5
-		802.11ac (VHT80)	106 to 138	106, 122, 138	OFDM	BPSK	29.3
-	5745-5825	802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6.0
-		802.11n (HT20)	149 to 165	149, 157, 165	OFDM	BPSK	6.5
-		802.11n (HT40)	151 to 159	151, 159	OFDM	BPSK	13.5
-		802.11ac (VHT80)	155	155	OFDM	BPSK	29.3

Radiated Emission Test (Below 1 GHz):

- ☒ 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	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5180-5240	802.11a	100 to 140	100	OFDM	BPSK	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	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5180-5240	802.11a	100 to 140	100	OFDM	BPSK	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	Frequency Band (MHz)	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5180-5240	802.11a	36 to 48	36, 40, 48	OFDM	BPSK	6.0
-		802.11n (HT20)	36 to 48	36, 40, 48	OFDM	BPSK	6.5
-		802.11n (HT40)	38 to 46	38, 46	OFDM	BPSK	13.5
-		802.11ac (VHT80)	42	42	OFDM	BPSK	29.3
-	5260-5320	802.11a	52 to 64	52, 60, 64	OFDM	BPSK	6.0
-		802.11n (HT20)	52 to 64	52, 60, 64	OFDM	BPSK	6.5
-		802.11n (HT40)	54 to 62	54, 62	OFDM	BPSK	13.5
-		802.11ac (VHT80)	58	58	OFDM	BPSK	29.3
-	5500-5700	802.11a	100 to 140	100, 116, 140	OFDM	BPSK	6.0
-		802.11n (HT20)	100 to 140	100, 116, 140	OFDM	BPSK	6.5
-		802.11n (HT40)	102 to 134	102, 110, 134	OFDM	BPSK	13.5
-		802.11ac (VHT80)	106 to 138	106, 122, 138	OFDM	BPSK	29.3
-	5745-5825	802.11a	149 to 165	149, 157, 165	OFDM	BPSK	6.0
-		802.11n (HT20)	149 to 165	149, 157, 165	OFDM	BPSK	6.5
-		802.11n (HT40)	151 to 159	151, 159	OFDM	BPSK	13.5
-		802.11ac (VHT80)	155	155	OFDM	BPSK	29.3

Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested by
RE≥1G	25 deg. C, 65 % RH	120 Vac, 60 Hz	Thomas Wei, Jisyong Wang
RE<1G	25 deg. C, 65 % RH	120 Vac, 60 Hz	Thomas Wei
PLC	25 deg. C, 65 % RH	120 Vac, 60 Hz	Jisyong Wang
APCM	25 deg. C, 65 % RH	5 Vdc	Gavin Wu

3.3 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.

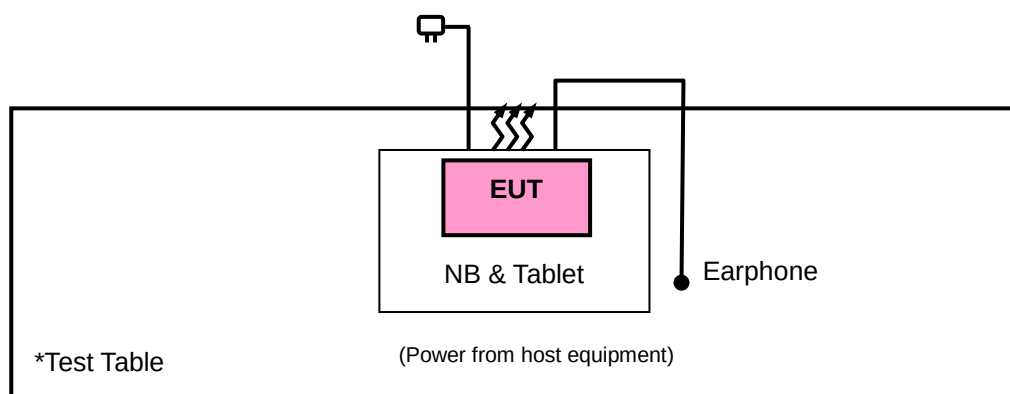
No.	Product	Brand	Model No.	Serial No.	FCC ID
1.	NB & Tablet	Getac	V110	N/A	N/A
2.	Earphone	N/A	N/A	N/A	N/A

No.	Signal Cable Description Of The Above Support Units
1.	N/A
2.	N/A

Note:

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

3.3.1 Configuration of System under Test



3.4 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 Procedures New Rules v02r01

KDB 662911 D01 Multiple Transmitter Output v02r01

ANSI C63.10-2013

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

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

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

Note:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000 MHz, 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 20 dB under any condition of modulation.

4.1.2 Limits of Unwanted Emission Out of the Restricted Bands

Applicable To		Limit	
789033 D02 General UNII Test Procedures New Rules v02r01		Field Strength at 3 m	
		PK: 74 (dBμV/m)	AV: 54 (dBμV/m)
Frequency Band	Applicable To	EIRP Limit	Equivalent Field Strength at 3 m
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:

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

4.1.3 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver Agilent	N9038A	MY51210203	Mar. 16, 2018	Mar. 15, 2019
Spectrum Analyzer Agilent	N9010A	MY52220314	Nov. 24, 2017	Nov. 23, 2018
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Jan. 11, 2018	Jan. 10, 2019
Broadband Horn Antenna SCHWARZBECK	BBHA 9170	148	Nov. 13, 2017	Nov. 12, 2018
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-969	Nov. 12, 2017	Nov. 11, 2018
BILOG Antenna SCHWARZBECK	VULB 9168	9168-472	Dec. 06, 2017	Dec. 05, 2018
Loop Antenna	EM-6879	269	Sep. 07, 2018	Sep. 06, 2019
Preamplifier EMCI	EMC001340	980201	Nov. 01, 2017	Oct. 30, 2018
Preamplifier EMCI	EMC 012645	980115	Oct. 20, 2017	Oct. 19, 2018
Preamplifier EMCI	EMC 184045	980116	Oct. 20, 2017	Oct. 19, 2018
Preamplifier EMCI	EMC 330H	980112	Oct. 13, 2017	Oct. 12, 2018
Power Meter Anritsu	ML2495A	1012010	Sep. 05, 2018	Sep. 04, 2019
Power Sensor Anritsu	MA2411B	1315050	Sep. 04, 2018	Sep. 03, 2019
RF Coaxial Cable HUBER+SUHNNER	EMC104-SM-SM-800 0&3000	140811+170717	Oct. 20, 2017	Oct. 19, 2018
RF Coaxial Cable HUBER+SUHNNER	SUCOFLEX 104	EMC104-SM-SM- 1000(140807)	Oct. 20, 2017	Oct. 19, 2018
RF Coaxial Cable Worken	8D-FB	Cable-Ch10-01	Oct. 20, 2017	Oct. 19, 2018
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Software BV ADT	E3 6.120103	NA	NA	NA
Antenna Tower MF	MFA-440H	NA	NA	NA
Turn Table MF	MFT-201SS	NA	NA	NA
Antenna Tower & Turn Table Controller MF	MF-7802	NA	NA	NA
Temperature & Humidity Chamber	GTH-120-40-CP-AR	MAA1306-019	Sep. 05, 2018	Sep. 04, 2019
DC Power Supply Topward	33010D	807748	Oct. 25, 2016	Oct. 24, 2018
Digital Multimeter Fluke	87-III	70360742	Jun. 29, 2018	Jun. 28, 2019

- Note: 1. The calibration interval of the above test instruments is 12 / 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 10.
3. The horn antenna and preamplifier (model: EMC 184045) are used only for the measurement of emission frequency above 1 GHz if tested.
4. The IC Site Registration No. is IC7450F-10.

4.1.4 Test Procedures

For Radiated Emission below 30 MHz

- 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 Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

Note:

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

For Radiated Emission above 30 MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters (for 30 MHz ~ 1 GHz) / 1.5 meters (for above 1 GHz) 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 detected 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:

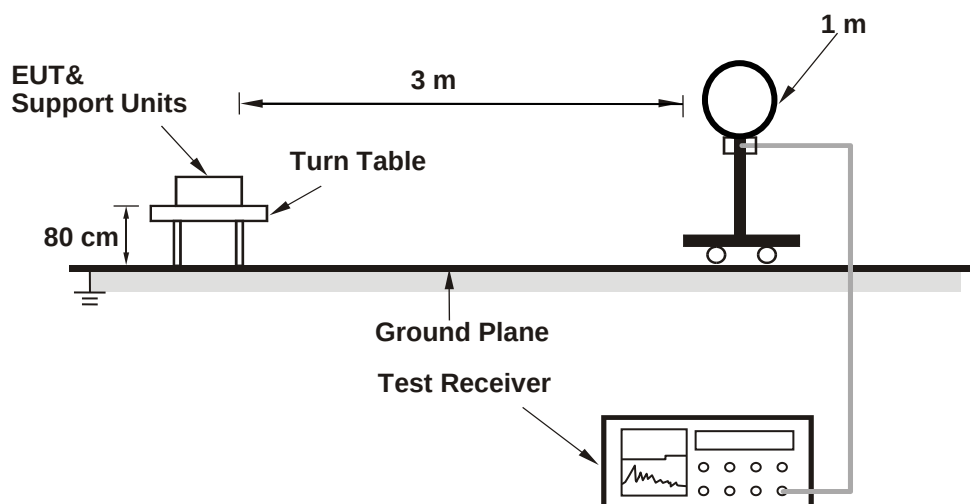
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) at frequency below 1 GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1 GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is $\geq 1/T$ (Duty cycle $< 98\%$) or 10 Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1 GHz.
(11a: RBW = 1 MHz, VBW = 1 kHz ; 11n (HT20): RBW = 1 MHz, VBW = 1 kHz ;
11n (HT40): RBW = 1 MHz, VBW = 1 kHz ; 11ac (VHT80): RBW = 1 MHz, VBW = 3 kHz)
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.5 Deviation from Test Standard

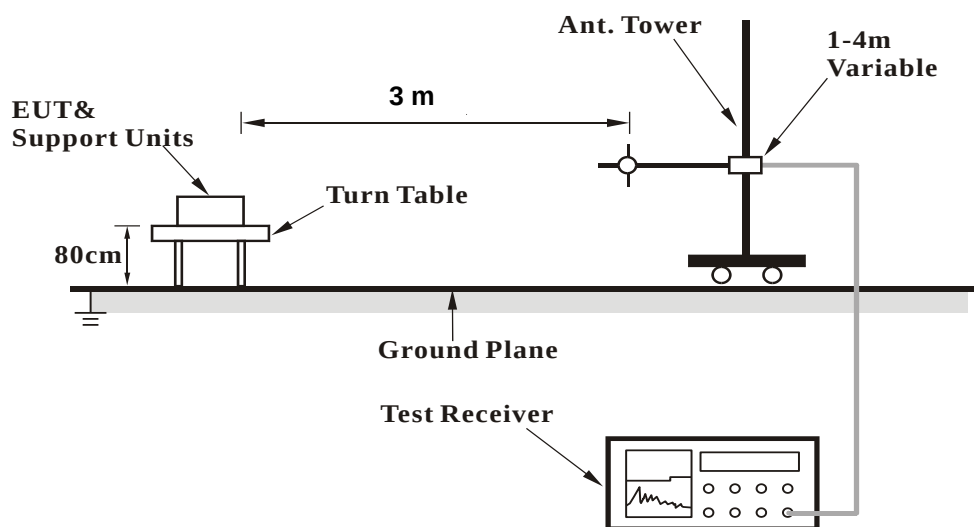
No deviation.

4.1.6 Test Setup

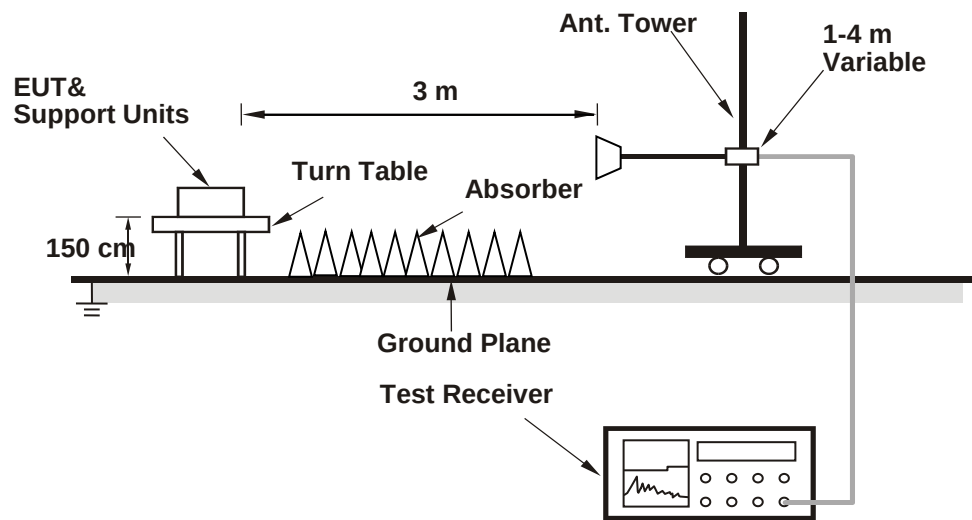
<Radiated Emission below 30 MHz>



<Radiated Emission 30 MHz to 1 GHz>



<Radiated Emission above 1 GHz>



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

4.1.7 EUT Operating Conditions

- Placed the EUT on a testing table.
- Use the software to control the EUT under transmission condition continuously at specific channel frequency.

4.1.8 Test Results

Above 1 GHz Data :

<SISO>

802.11a

EUT Test Condition		Measurement Detail	
Channel	Channel 36	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Thomas Wei

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5149.94	45.53	44.95	54	-8.47	31.56	6.34	37.32	100	92	Average
5149.94	58.39	57.81	74	-15.61	31.56	6.34	37.32	100	92	Peak
5180	94.16	93.54			31.59	6.37	37.34	100	92	Average
5180	102.89	102.27			31.59	6.37	37.34	100	92	Peak
*10360	55.96	58.72	68.2	-12.24	39.48	10.21	52.45	147	221	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5149.94	51.11	50.52	54	-2.89	31.57	6.34	37.32	107	272	Average
5149.94	63.9	63.32	74	-10.1	31.56	6.34	37.32	107	272	Peak
5180	98.83	98.21			31.59	6.37	37.34	107	272	Average
5180	107.73	107.11			31.59	6.37	37.34	107	272	Peak
*10360	55.55	58.31	68.2	-12.65	39.48	10.21	52.45	151	103	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5180 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 40	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Thomas Wei

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5149.58	41.07	40.49	54	-12.93	31.56	6.34	37.32	100	100	Average
5149.58	52.93	52.35	74	-21.07	31.56	6.34	37.32	100	100	Peak
5200	94.08	93.45			31.6	6.39	37.36	100	100	Average
5200	103.92	103.29			31.6	6.39	37.36	100	100	Peak
5427	41.39	40.28	54	-12.61	31.75	6.49	37.13	100	100	Average
5427	53.18	52.07	74	-20.82	31.75	6.49	37.13	100	100	Peak
*10400	56.49	59.23	68.2	-11.71	39.51	10.2	52.45	164	155	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5149.94	43.71	43.13	54	-10.29	31.56	6.34	37.32	177	262	Average
5149.94	56.76	56.18	74	-17.24	31.56	6.34	37.32	177	262	Peak
5200	99.03	98.4	54		31.6	6.39	37.36	177	262	Average
5200	108.13	107.5	74		31.6	6.39	37.36	177	262	Peak
5428.21	45.93	44.82	54	-8.07	31.75	6.49	37.13	177	262	Average
5428.21	56.06	54.95	74	-17.94	31.75	6.49	37.13	177	262	Peak
*10400	57.39	60.13	68.2	-10.81	39.51	10.2	52.45	141	206	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5200 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 48	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Thomas Wei

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5088.74	39.06	38.52	54	-14.94	31.53	6.28	37.27	100	94	Average
5088.74	50.15	49.61	74	-23.85	31.53	6.28	37.27	100	94	Peak
5240	95.54	94.82			31.62	6.42	37.32	100	94	Average
5240	103.46	102.74			31.62	6.42	37.32	100	94	Peak
5389.71	39.6	38.58	54	-14.4	31.73	6.47	37.18	100	94	Average
5389.71	50.48	49.46	74	-23.52	31.73	6.47	37.18	100	94	Peak
*10480	55.6	58.44	68.2	-12.6	39.6	10.22	52.66	138	200	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5007.02	41.65	41.19	54	-12.35	31.47	6.22	37.23	178	248	Average
5007.02	52.22	51.76	74	-21.78	31.47	6.22	37.23	178	248	Peak
5240	99.51	98.79			31.62	6.42	37.32	178	248	Average
5240	108.38	107.66			31.62	6.42	37.32	178	248	Peak
5392.13	44.38	43.36	54	-9.62	31.73	6.47	37.18	178	248	Average
5392.13	55.31	54.29	74	-18.69	31.73	6.47	37.18	178	248	Peak
*10480	55.92	58.76	68.2	-12.28	39.6	10.22	52.66	175	146	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5240 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 52	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Thomas Wei

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5102.06	41.14	40.6	54	-12.86	31.53	6.29	37.28	100	94	Average
5102.06	53.39	52.85	74	-20.61	31.53	6.29	37.28	100	94	Peak
5260	96.98	96.17			31.65	6.43	37.27	100	94	Average
5260	106.04	105.23			31.65	6.43	37.27	100	94	Peak
5417.32	42.22	41.17	54	-11.78	31.75	6.48	37.18	100	94	Average
5417.32	53.8	52.75	74	-20.2	31.75	6.48	37.18	100	94	Peak
*10520	55.73	58.53	68.2	-12.47	39.66	10.27	52.73	144	289	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5108.54	44.42	43.86	54	-9.58	31.54	6.3	37.28	177	262	Average
5108.54	54.84	54.28	74	-19.16	31.54	6.3	37.28	177	262	Peak
5260	102.88	102.07			31.65	6.43	37.27	177	262	Average
5260	112.5	111.69			31.65	6.43	37.27	177	262	Peak
5416.66	48.34	47.29	54	-5.66	31.75	6.48	37.18	177	262	Average
5416.66	58.98	57.93	74	-15.02	31.75	6.48	37.18	177	262	Peak
*10520	55.34	58.14	68.2	-12.86	39.66	10.27	52.73	164	225	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
2. 5260 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 60	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Thomas Wei

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5147.6	40.71	40.13	54	-13.29	31.56	6.34	37.32	100	93	Average
5147.6	53.24	52.66	74	-20.76	31.56	6.34	37.32	100	93	Peak
5300	95.83	94.89			31.67	6.46	37.19	100	93	Average
5300	104.81	103.87			31.67	6.46	37.19	100	93	Peak
5350.22	43.9	42.91	54	-10.1	31.7	6.47	37.18	100	93	Average
5350.22	59.81	58.82	74	-14.19	31.7	6.47	37.18	100	93	Peak
10600	46.2	49.03	54	-7.8	39.85	10.43	53.11	158	67	Average
10600	55.24	58.07	74	-18.76	39.85	10.43	53.11	158	67	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5149.58	44.2	43.62	54	-9.8	31.56	6.34	37.32	183	260	Average
5149.58	54.29	53.71	74	-19.71	31.56	6.34	37.32	183	260	Peak
5300	102.83	101.89			31.67	6.46	37.19	183	260	Average
5300	111.6	110.66			31.67	6.46	37.19	183	260	Peak
5350.33	51.78	50.79	54	-2.22	31.7	6.47	37.18	183	260	Average
5350.33	68.19	67.2	74	-5.81	31.7	6.47	37.18	183	260	Peak
10600	46.58	49.41	54	-7.42	39.85	10.43	53.11	203	115	Average
10600	56.68	59.51	74	-17.32	39.85	10.43	53.11	203	115	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
2. 5300 MHz: Fundamental Frequency
3. The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 64	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Thomas Wei

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5320	91.45	90.5			31.68	6.46	37.19	100	95	Average
5320	99.75	98.8			31.68	6.46	37.19	100	95	Peak
5350.22	42.95	41.96	54	-11.05	31.7	6.47	37.18	100	95	Average
5350.22	55.52	54.53	74	-18.48	31.7	6.47	37.18	100	95	Peak
10640	46.63	49.41	54	-7.37	39.93	10.36	53.07	166	167	Average
10640	55.63	58.41	74	-18.37	39.93	10.36	53.07	166	167	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5320	99.36	98.41			31.68	6.46	37.19	184	272	Average
5320	108.55	107.6			31.68	6.46	37.19	184	272	Peak
5350.33	49.59	48.6	54	-4.41	31.7	6.47	37.18	184	272	Average
5350.33	63.97	62.98	74	-10.03	31.7	6.47	37.18	184	272	Peak
10640	46.17	48.95	54	-7.83	39.93	10.36	53.07	221	304	Average
10640	56.31	59.09	74	-17.69	39.93	10.36	53.07	221	304	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5320 MHz: Fundamental Frequency
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 100	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Thomas Wei

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5458.96	47.11	45.91	54	-6.89	31.77	6.51	37.08	240	111	Average
5458.96	62.01	60.81	74	-11.99	31.77	6.51	37.08	240	111	Peak
*5470	65.82	64.59	68.2	-2.38	31.79	6.52	37.08	240	111	Peak
5500	98.58	97.26			31.81	6.54	37.03	240	111	Average
5500	108.05	106.73			31.81	6.54	37.03	240	111	Peak
*5725	58.03	56.52	68.2	-10.17	32.18	6.76	37.43	240	111	Peak
11000	47.04	48.94	54	-6.96	40.73	10.4	53.03	178	162	Average
11000	55.75	57.65	74	-18.25	40.73	10.4	53.03	178	162	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5459.95	49.44	48.24	54	-4.56	31.77	6.51	37.08	180	255	Average
5459.95	62.94	61.74	74	-11.06	31.77	6.51	37.08	180	255	Peak
*5470	68.1	66.87	68.2	-0.1	31.79	6.52	37.08	180	255	Peak
5500	100.4	99.08			31.81	6.54	37.03	180	255	Average
5500	109.72	108.4			31.81	6.54	37.03	180	255	Peak
*5725	56.95	55.44	68.2	-11.25	32.18	6.76	37.43	180	255	Peak
11000	47.27	49.17	54	-6.73	40.73	10.4	53.03	214	119	Average
11000	56.15	58.05	74	-17.85	40.73	10.4	53.03	214	119	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
2. 5500 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 116	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Thomas Wei

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5353.68	49.01	48.02	54	-4.99	31.7	6.47	37.18	237	112	Average
5353.68	59.01	58.02	74	-14.99	31.7	6.47	37.18	237	112	Peak
*5470	54.57	53.34	68.2	-13.63	31.79	6.52	37.08	237	112	Peak
5580	100.18	98.77			31.92	6.65	37.16	237	112	Average
5580	109.08	107.67			31.92	6.65	37.16	237	112	Peak
*5725	57.47	55.96	68.2	-10.73	32.18	6.76	37.43	237	112	Peak
11160	47.17	48.87	54	-6.83	40.56	10.52	52.78	127	239	Average
11160	57.59	59.29	74	-16.41	40.56	10.52	52.78	127	239	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5352.72	51.32	50.33	54	-2.68	31.7	6.47	37.18	166	242	Average
5352.72	62.16	61.17	74	-11.84	31.7	6.47	37.18	166	242	Peak
*5470	57.65	56.42	68.2	-10.55	31.79	6.52	37.08	166	242	Peak
5580	100.42	99.01			31.92	6.65	37.16	166	242	Average
5580	109.52	108.11			31.92	6.65	37.16	166	242	Peak
*5725	56.19	54.68	68.2	-12.01	32.18	6.76	37.43	166	242	Peak
11160	47.44	49.14	54	-6.56	40.56	10.52	52.78	159	279	Average
11160	57.79	59.49	74	-16.21	40.56	10.52	52.78	159	279	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
2. 5580 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 140	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Thomas Wei

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5396.88	46.25	45.22	54	-7.75	31.74	6.47	37.18	234	111	Average
5396.88	56.22	55.19	74	-17.78	31.74	6.47	37.18	234	111	Peak
*5470	56.12	54.89	68.2	-12.08	31.79	6.52	37.08	234	111	Peak
5700	100.3	98.85			32.12	6.73	37.4	234	111	Average
5700	109.6	108.15			32.12	6.73	37.4	234	111	Peak
*5725	65.48	63.97	68.2	-2.72	32.18	6.76	37.43	234	111	Peak
11400	46.76	48.66	54	-7.24	40.33	10.47	52.7	225	241	Average
11400	56.81	58.71	74	-17.19	40.33	10.47	52.7	225	241	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5390.8	47.62	46.6	54	-6.38	31.73	6.47	37.18	179	254	Average
5390.8	57.9	56.88	74	-16.1	31.73	6.47	37.18	179	254	Peak
*5470	57.02	55.79	68.2	-11.18	31.79	6.52	37.08	179	254	Peak
5700	99.35	97.9			32.12	6.73	37.4	179	254	Average
5700	108.42	106.97			32.12	6.73	37.4	179	254	Peak
*5725	66.03	64.52	68.2	-2.17	32.18	6.76	37.43	179	254	Peak
11400	47.13	49.03	54	-6.87	40.33	10.47	52.7	183	164	Average
11400	57.58	59.48	74	-16.42	40.33	10.47	52.7	183	164	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
2. 5700 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 149	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Thomas Wei

<Spurious Emission>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5745	99.04	97.52			32.21	6.78	37.47	235	112	Average
5745	108.47	106.95			32.21	6.78	37.47	235	112	Peak
11490	47.15	49.02	54	-6.85	40.25	10.66	52.78	152	242	Average
11490	56.9	58.77	74	-17.1	40.25	10.66	52.78	152	242	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5745	97.74	96.22			32.21	6.78	37.47	184	237	Average
5745	106.51	104.99			32.21	6.78	37.47	184	237	Peak
11490	47.06	48.93	54	-6.94	40.25	10.66	52.78	196	183	Average
11490	55.68	57.55	74	-18.32	40.25	10.66	52.78	196	183	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5594.175	55.31	53.85	68.2	-12.89	31.95	6.67	37.16	235	112	Peak
5656.875	54.56	53.13	73.31	-18.75	32.06	6.71	37.34	235	112	Peak
5921.45	52.24	50.39	70.82	-18.58	32.49	6.86	37.5	235	112	Peak
5972.275	54.34	52.4	68.2	-13.86	32.57	6.88	37.51	235	112	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5586.1	54.38	52.93	68.2	-13.82	31.95	6.66	37.16	184	237	Peak
5659.725	54.12	52.69	75.42	-21.3	32.06	6.71	37.34	184	237	Peak
5917.65	52.2	50.35	73.62	-21.42	32.49	6.86	37.5	184	237	Peak
5976.55	53.59	51.62	68.2	-14.61	32.6	6.88	37.51	184	237	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5745 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 157	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Thomas Wei

<Spurious Emission>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5785	98.59	97.05			32.26	6.82	37.54	235	111	Average
5785	107.85	106.31			32.26	6.82	37.54	235	111	Peak
11570	46.65	48.77	54	-7.35	40.13	10.76	53.01	168	150	Average
11570	56.46	58.58	74	-17.54	40.13	10.76	53.01	168	150	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5785	97.12	95.58			32.26	6.82	37.54	185	258	Average
5785	105.74	104.2			32.26	6.82	37.54	185	258	Peak
11570	46.87	48.99	54	-7.13	40.13	10.76	53.01	172	306	Average
11570	55.77	57.89	74	-18.23	40.13	10.76	53.01	172	306	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5634.075	56.73	55.27	68.2	-11.47	32.04	6.7	37.28	235	111	Peak
5656.875	55.47	54.04	73.31	-17.84	32.06	6.71	37.34	235	111	Peak
5917.175	51.79	49.94	73.97	-22.18	32.49	6.86	37.5	235	111	Peak
5935.225	55.08	53.2	68.2	-13.12	32.52	6.86	37.5	235	111	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5627.425	55.69	54.21	68.2	-12.51	32.01	6.69	37.22	185	258	Peak
5660.2	54.79	53.36	75.77	-20.98	32.06	6.71	37.34	185	258	Peak
5923.35	51.86	49.98	69.42	-17.56	32.52	6.86	37.5	185	258	Peak
5943.775	53.27	51.35	68.2	-14.93	32.55	6.87	37.5	185	258	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5785 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 165	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Thomas Wei

<Spurious Emission>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5825	98.13	96.47			32.35	6.84	37.53	231	111	Average
5825	107.04	105.38			32.35	6.84	37.53	231	111	Peak
11650	46.28	48.59	54	-7.72	40.03	10.8	53.14	225	108	Average
11650	55.96	58.27	74	-18.04	40.03	10.8	53.14	225	108	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5825	95.7	94.04			32.35	6.84	37.53	173	267	Average
5825	103.97	102.31			32.35	6.84	37.53	173	267	Peak
11650	46.57	48.88	54	-7.43	40.03	10.8	53.14	156	189	Average
11650	56.38	58.69	74	-17.62	40.03	10.8	53.14	156	189	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5592.75	55.86	54.4	68.2	-12.34	31.95	6.67	37.16	231	111	Peak
5650.7	52.61	51.12	68.72	-16.11	32.06	6.71	37.28	231	111	Peak
5921.925	54.04	52.16	70.47	-16.43	32.52	6.86	37.5	231	111	Peak
5977.025	54.02	52.05	68.2	-14.18	32.6	6.88	37.51	231	111	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5597.5	56.33	54.86	68.2	-11.87	31.95	6.68	37.16	173	267	Peak
5654.025	50.93	49.5	71.19	-20.26	32.06	6.71	37.34	173	267	Peak
5921.45	51.82	49.97	70.82	-19	32.49	6.86	37.5	173	267	Peak
6006	52.73	50.72	68.2	-15.47	32.63	6.89	37.51	173	267	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5825 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

<MIMO>

802.11n (HT20)

EUT Test Condition		Measurement Detail	
Channel	Channel 36	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Thomas Wei

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5149.7	43.02	42.44	54	-10.98	31.56	6.34	37.32	103	58	Average
5149.7	55.25	54.67	74	-18.75	31.56	6.34	37.32	103	58	Peak
5180	94.12	93.5			31.59	6.37	37.34	103	58	Average
5180	103.44	102.82			31.59	6.37	37.34	103	58	Peak
*10360	54.91	57.67	68.2	-13.29	39.48	10.21	52.45	159	87	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5149.85	45.78	45.2	54	-8.22	31.56	6.34	37.32	170	93	Average
5149.85	56.82	56.24	74	-17.18	31.56	6.34	37.32	170	93	Peak
5180	95.66	95.04			31.59	6.37	37.34	170	93	Average
5180	104.82	104.2			31.59	6.37	37.34	170	93	Peak
*10360	55.76	58.52	68.2	-12.44	39.48	10.21	52.45	194	228	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5180 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 40	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Thomas Wei

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5141.75	41.28	40.69	54	-12.72	31.56	6.33	37.3	114	56	Average
5141.75	52.96	52.37	74	-21.04	31.56	6.33	37.3	114	56	Peak
5200	94.78	94.15			31.6	6.39	37.36	114	56	Average
5200	104.34	103.71			31.6	6.39	37.36	114	56	Peak
5427.99	41.63	40.52	54	-12.37	31.75	6.49	37.13	114	56	Average
5427.99	52.02	50.91	74	-21.98	31.75	6.49	37.13	114	56	Peak
*10400	55.84	58.58	68.2	-12.36	39.51	10.2	52.45	158	113	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5150	41.75	41.17	54	-12.25	31.56	6.34	37.32	115	270	Average
5150	52.55	51.97	74	-21.45	31.56	6.34	37.32	115	270	Peak
5200	97.52	96.89			31.6	6.39	37.36	115	270	Average
5200	106.48	105.85			31.6	6.39	37.36	115	270	Peak
5427	42.69	41.58	54	-11.31	31.75	6.49	37.13	115	270	Average
5427	52.39	51.28	74	-21.61	31.75	6.49	37.13	115	270	Peak
*10400	54.29	57.03	68.2	-13.91	39.51	10.2	52.45	165	201	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
2. 5200 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 48	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Thomas Wei

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5090.9	39.34	38.8	54	-14.66	31.53	6.28	37.27	232	56	Average
5090.9	51	50.46	74	-23	31.53	6.28	37.27	232	56	Peak
5240	94.55	93.83			31.62	6.42	37.32	232	56	Average
5240	103.73	103.01			31.62	6.42	37.32	232	56	Peak
5396.86	42.39	41.36	54	-11.61	31.74	6.47	37.18	232	56	Average
5396.86	52.84	51.81	74	-21.16	31.74	6.47	37.18	232	56	Peak
*10480	55.22	58.06	68.2	-12.98	39.6	10.22	52.66	192	136	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5007.05	42.25	41.79	54	-11.75	31.47	6.22	37.23	176	245	Average
5007.05	53.08	52.62	74	-20.92	31.47	6.22	37.23	176	245	Peak
5240	97.16	96.44			31.62	6.42	37.32	176	245	Average
5240	105.67	104.95			31.62	6.42	37.32	176	245	Peak
5391.03	42.67	41.65	54	-11.33	31.73	6.47	37.18	176	245	Average
5391.03	53.11	52.09	74	-20.89	31.73	6.47	37.18	176	245	Peak
*10480	55.34	58.18	68.2	-12.86	39.6	10.22	52.66	212	174	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5240 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 52	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Jisyoung Wang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5110.88	42.79	42.23	54	-11.21	31.54	6.3	37.28	156	20	Average
5110.88	54.66	54.1	74	-19.34	31.54	6.3	37.28	156	20	Peak
5260	97.7	96.89			31.65	6.43	37.27	156	20	Average
5260	107.71	106.9			31.65	6.43	37.27	156	20	Peak
5409.18	42.15	41.11	54	-11.85	31.74	6.48	37.18	156	20	Average
5409.18	53.78	52.74	74	-20.22	31.74	6.48	37.18	156	20	Peak
*10520	52.97	55.77	68.2	-15.23	39.66	10.27	52.73	194	235	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5101.16	41.42	40.88	54	-12.58	31.53	6.29	37.28	150	73	Average
5101.16	52.96	52.42	74	-21.04	31.53	6.29	37.28	150	73	Peak
5260	99.6	98.79			31.65	6.43	37.27	150	73	Average
5260	109.45	108.64			31.65	6.43	37.27	150	73	Peak
5417.43	45.92	44.87	54	-8.08	31.75	6.48	37.18	150	73	Average
5417.43	57.77	56.72	74	-16.23	31.75	6.48	37.18	150	73	Peak
*10520	54.55	57.35	68.2	-13.65	39.66	10.27	52.73	172	48	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5260 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 60	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Jisyoung Wang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5142.92	41.52	40.93	54	-12.48	31.56	6.33	37.3	147	18	Average
5142.92	52.73	52.14	74	-21.27	31.56	6.33	37.3	147	18	Peak
5300	94.48	93.54			31.67	6.46	37.19	147	18	Average
5300	104.48	103.54			31.67	6.46	37.19	147	18	Peak
5405.66	41.48	40.45	54	-12.52	31.74	6.47	37.18	147	18	Average
5405.66	52.51	51.48	74	-21.49	31.74	6.47	37.18	147	18	Peak
10600	45.66	48.49	54	-8.34	39.85	10.43	53.11	224	159	Average
10600	53.7	56.53	74	-20.3	39.85	10.43	53.11	224	159	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5148.86	40.77	40.19	54	-13.23	31.56	6.34	37.32	142	76	Average
5148.86	52.63	52.05	74	-21.37	31.56	6.34	37.32	142	76	Peak
5300	96.98	96.04			31.67	6.46	37.19	142	76	Average
5300	106.99	106.05			31.67	6.46	37.19	142	76	Peak
5448.78	44.26	43.12	54	-9.74	31.77	6.5	37.13	142	76	Average
5448.78	55.7	54.56	74	-18.3	31.77	6.5	37.13	142	76	Peak
10600	45.98	48.81	54	-8.02	39.85	10.43	53.11	170	164	Average
10600	53.48	56.31	74	-20.52	39.85	10.43	53.11	170	164	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
2. 5300 MHz: Fundamental Frequency
3. The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 64	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Jisyoung Wang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5320	91.93	90.98			31.68	6.46	37.19	126	17	Average
5320	101.93	100.98			31.68	6.46	37.19	126	17	Peak
5351.98	41.77	40.78	54	-12.23	31.7	6.47	37.18	126	17	Average
5351.98	53.76	52.77	74	-20.24	31.7	6.47	37.18	126	17	Peak
10640	45.89	48.67	54	-8.11	39.93	10.36	53.07	118	235	Average
10640	53.88	56.66	74	-20.12	39.93	10.36	53.07	118	235	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5320	95.92	94.97			31.68	6.46	37.19	132	73	Average
5320	105.93	104.98			31.68	6.46	37.19	132	73	Peak
5350.11	43.67	42.68	54	-10.33	31.7	6.47	37.18	132	73	Average
5350.11	55.64	54.65	74	-18.36	31.7	6.47	37.18	132	73	Peak
10640	45.51	48.29	54	-8.49	39.93	10.36	53.07	186	254	Average
10640	53.53	56.31	74	-20.47	39.93	10.36	53.07	186	254	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5320 MHz: Fundamental Frequency
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 100	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Jisyoung Wang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5457.36	44.05	42.85	54	-9.95	31.77	6.51	37.08	210	245	Average
5457.36	56.86	55.66	74	-17.14	31.77	6.51	37.08	210	245	Peak
*5470	59.11	57.88	68.2	-9.09	31.79	6.52	37.08	210	245	Peak
5500	97.46	96.14			31.81	6.54	37.03	210	245	Average
5500	107.28	105.96			31.81	6.54	37.03	210	245	Peak
*5725	54.76	53.25	68.2	-13.44	32.18	6.76	37.43	210	245	Peak
11000	46.5	48.4	54	-7.5	40.73	10.4	53.03	235	166	Average
11000	55.11	57.01	74	-18.89	40.73	10.4	53.03	235	166	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5459.95	45.03	43.83	54	-8.97	31.77	6.51	37.08	175	241	Average
5459.95	55.82	54.62	74	-18.18	31.77	6.51	37.08	175	241	Peak
*5470	58.9	57.67	68.2	-9.3	31.79	6.52	37.08	175	241	Peak
5500	95.11	93.79			31.81	6.54	37.03	175	241	Average
5500	104.83	103.51			31.81	6.54	37.03	175	241	Peak
*5725	54.75	53.24	68.2	-13.45	32.18	6.76	37.43	175	241	Peak
11000	46.16	48.06	54	-7.84	40.73	10.4	53.03	171	208	Average
11000	54.73	56.63	74	-19.27	40.73	10.4	53.03	171	208	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
2. 5500 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 116	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Jisyoung Wang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5429.04	45.33	44.21	54	-8.67	31.76	6.49	37.13	220	211	Average
5429.04	56.84	55.72	74	-17.16	31.76	6.49	37.13	220	211	Peak
*5470	54.52	53.29	68.2	-13.68	31.79	6.52	37.08	220	211	Peak
5580	97.01	95.6			31.92	6.65	37.16	220	211	Average
5580	107.2	105.79			31.92	6.65	37.16	220	211	Peak
*5725	55.64	54.13	68.2	-12.56	32.18	6.76	37.43	220	211	Peak
11160	46.98	48.68	54	-7.02	40.56	10.52	52.78	152	183	Average
11160	55.47	57.17	74	-18.53	40.56	10.52	52.78	152	183	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5354.16	47.3	46.31	54	-6.7	31.7	6.47	37.18	180	208	Average
5354.16	58.12	57.13	74	-15.88	31.7	6.47	37.18	180	208	Peak
*5470	53.71	52.48	68.2	-14.49	31.79	6.52	37.08	180	208	Peak
5580	96.45	95.04			31.92	6.65	37.16	180	208	Average
5580	106.33	104.92			31.92	6.65	37.16	180	208	Peak
*5725	54.9	53.39	68.2	-13.3	32.18	6.76	37.43	180	208	Peak
11160	46.31	48.01	54	-7.69	40.56	10.52	52.78	179	134	Average
11160	54.86	56.56	74	-19.14	40.56	10.52	52.78	179	134	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
2. 5580 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 140	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Jisyoung Wang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5396.24	44.52	43.49	54	-9.48	31.74	6.47	37.18	195	214	Average
5396.24	55.45	54.42	74	-18.55	31.74	6.47	37.18	195	214	Peak
*5470	56.01	54.78	68.2	-12.19	31.79	6.52	37.08	195	214	Peak
5700	97.26	95.81			32.12	6.73	37.4	195	214	Average
5700	107.67	106.22			32.12	6.73	37.4	195	214	Peak
*5725	62.96	61.45	68.2	-5.24	32.18	6.76	37.43	195	214	Peak
11400	46.46	48.36	54	-7.54	40.33	10.47	52.7	160	277	Average
11400	55.94	57.84	74	-18.06	40.33	10.47	52.7	160	277	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5397.36	44.02	42.99	54	-9.98	31.74	6.47	37.18	157	228	Average
5397.36	55.23	54.2	74	-18.77	31.74	6.47	37.18	157	228	Peak
*5470	54.37	53.14	68.2	-13.83	31.79	6.52	37.08	157	228	Peak
5700	97.55	96.1			32.12	6.73	37.4	157	228	Average
5700	107.28	105.83			32.12	6.73	37.4	157	228	Peak
*5725	62.15	60.64	68.2	-6.05	32.18	6.76	37.43	157	228	Peak
11400	46.27	48.17	54	-7.73	40.33	10.47	52.7	220	155	Average
11400	55.35	57.25	74	-18.65	40.33	10.47	52.7	220	155	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5700 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 149	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Thomas Wei

<Spurious Emission>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5745	97.51	95.99			32.21	6.78	37.47	206	17	Average
5745	107.81	106.29			32.21	6.78	37.47	206	17	Peak
11490	46.63	48.5	54	-7.37	40.25	10.66	52.78	186	117	Average
11490	55.37	57.24	74	-18.63	40.25	10.66	52.78	186	117	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5745	96.53	95.01			32.21	6.78	37.47	216	246	Average
5745	107.15	105.63			32.21	6.78	37.47	216	246	Peak
11490	46.08	47.95	54	-7.92	40.25	10.66	52.78	108	235	Average
11490	55.05	56.92	74	-18.95	40.25	10.66	52.78	108	235	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5588	56.58	55.13	68.2	-11.62	31.95	6.66	37.16	206	17	Peak
5652.6	52.49	51	70.13	-17.64	32.06	6.71	37.28	206	17	Peak
5915.75	51.81	49.96	75.02	-23.21	32.49	6.86	37.5	206	17	Peak
5977.975	56.46	54.49	68.2	-11.74	32.6	6.88	37.51	206	17	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5588.95	55.89	54.44	68.2	-12.31	31.95	6.66	37.16	216	246	Peak
5655.925	52.08	50.65	72.6	-20.52	32.06	6.71	37.34	216	246	Peak
5920.5	51.54	49.69	71.52	-19.98	32.49	6.86	37.5	216	246	Peak
5972.75	54.1	52.13	68.2	-14.1	32.6	6.88	37.51	216	246	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5745 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 157	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Thomas Wei

<Spurious Emission>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5785	100.65	99.11			32.26	6.82	37.54	203	26	Average
5785	110.75	109.21			32.26	6.82	37.54	203	26	Peak
11570	46.27	48.39	54	-7.73	40.13	10.76	53.01	163	255	Average
11570	55.36	57.48	74	-18.64	40.13	10.76	53.01	163	255	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5785	95.49	93.95			32.26	6.82	37.54	190	236	Average
5785	105.49	103.95			32.26	6.82	37.54	190	236	Peak
11570	45.99	48.11	54	-8.01	40.13	10.76	53.01	179	343	Average
11570	54.75	56.87	74	-19.25	40.13	10.76	53.01	179	343	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5553.8	55.58	54.19	68.2	-12.62	31.89	6.62	37.12	203	26	Peak
5654.025	52.35	50.92	71.19	-18.84	32.06	6.71	37.34	203	26	Peak
5918.125	51.46	49.61	73.27	-21.81	32.49	6.86	37.5	203	26	Peak
6014.55	54.72	52.65	68.2	-13.48	32.67	6.9	37.5	203	26	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5633.6	54.1	52.64	68.2	-14.1	32.04	6.7	37.28	190	236	Peak
5654.975	50.95	49.52	71.9	-20.95	32.06	6.71	37.34	190	236	Peak
5920.5	51.87	50.02	71.52	-19.65	32.49	6.86	37.5	190	236	Peak
5929.525	52.77	50.89	68.2	-15.43	32.52	6.86	37.5	190	236	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5785 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 165	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Thomas Wei

<Spurious Emission>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5825	98.03	96.37			32.35	6.84	37.53	217	29	Average
5825	108.04	106.38			32.35	6.84	37.53	217	29	Peak
11650	45.95	48.26	54	-8.05	40.03	10.8	53.14	187	237	Average
11650	55.01	57.32	74	-18.99	40.03	10.8	53.14	187	237	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5825	95.79	94.13			32.35	6.84	37.53	180	254	Average
5825	105.86	104.2			32.35	6.84	37.53	180	254	Peak
11650	45.46	47.77	54	-8.54	40.03	10.8	53.14	193	100	Average
11650	54.64	56.95	74	-19.36	40.03	10.8	53.14	193	100	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5597.5	54.15	52.68	68.2	-14.05	31.95	6.68	37.16	217	29	Peak
5651.175	52.48	50.99	69.07	-16.59	32.06	6.71	37.28	217	29	Peak
5920.5	52.98	51.13	71.52	-18.54	32.49	6.86	37.5	217	29	Peak
5972.75	54.81	52.84	68.2	-13.39	32.6	6.88	37.51	217	29	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5599.4	54.44	52.94	68.2	-13.76	31.98	6.68	37.16	180	254	Peak
5656.4	51.53	50.1	72.95	-21.42	32.06	6.71	37.34	180	254	Peak
5922.4	52.54	50.66	70.12	-17.58	32.52	6.86	37.5	180	254	Peak
5980.825	52.92	50.95	68.2	-15.28	32.6	6.88	37.51	180	254	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5825 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

802.11n (HT40)

EUT Test Condition		Measurement Detail	
Channel	Channel 38	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Thomas Wei

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5149.85	45.81	45.23	54	-8.19	31.56	6.34	37.32	123	42	Average
5149.85	57.19	56.61	74	-16.81	31.56	6.34	37.32	123	42	Peak
5190	91.03	90.4			31.59	6.38	37.34	123	42	Average
5190	100.13	99.5			31.59	6.38	37.34	123	42	Peak
5414.68	41.27	40.22	54	-12.73	31.75	6.48	37.18	123	42	Average
5414.68	52.33	51.28	74	-21.67	31.75	6.48	37.18	123	42	Peak
*10380	54.99	57.73	68.2	-13.21	39.5	10.21	52.45	128	214	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5149.55	49.04	48.46	54	-4.96	31.56	6.34	37.32	125	272	Average
5149.55	59.53	58.95	74	-14.47	31.56	6.34	37.32	125	272	Peak
5190	93.48	92.85			31.59	6.38	37.34	125	272	Average
5190	102.55	101.92			31.59	6.38	37.34	125	272	Peak
5412.48	41.63	40.58	54	-12.37	31.75	6.48	37.18	125	272	Average
5412.48	51.75	50.7	74	-22.25	31.75	6.48	37.18	125	272	Peak
*10380	54.88	57.62	68.2	-13.32	39.5	10.21	52.45	167	110	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5190 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 46	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Thomas Wei

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5139.8	40.48	39.89	54	-13.52	31.56	6.33	37.3	242	56	Average
5139.8	51.43	50.84	74	-22.57	31.56	6.33	37.3	242	56	Peak
5230	92.34	91.63			31.62	6.41	37.32	242	56	Average
5230	101.69	100.98			31.62	6.41	37.32	242	56	Peak
5377.94	42.1	41.08	54	-11.9	31.73	6.47	37.18	242	56	Average
5377.94	53.32	52.3	74	-20.68	31.73	6.47	37.18	242	56	Peak
*10460	54.49	57.29	68.2	-13.71	39.57	10.22	52.59	173	194	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5082.95	41.28	40.75	54	-12.72	31.52	6.28	37.27	228	101	Average
5082.95	52.11	51.58	74	-21.89	31.52	6.28	37.27	228	101	Peak
5230	94.67	93.96			31.62	6.41	37.32	228	101	Average
5230	102.72	102.01			31.62	6.41	37.32	228	101	Peak
5387.4	41.19	40.17	54	-12.81	31.73	6.47	37.18	228	101	Average
5387.4	52.76	51.74	74	-21.24	31.73	6.47	37.18	228	101	Peak
*10460	54.5	57.3	68.2	-13.7	39.57	10.22	52.59	214	115	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5230 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 54	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Jisyoung Wang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5120.78	40.35	39.8	54	-13.65	31.54	6.31	37.3	172	16	Average
5120.78	53.62	53.07	74	-20.38	31.54	6.31	37.3	172	16	Peak
5270	91.57	90.75			31.65	6.44	37.27	172	16	Average
5270	101.55	100.73			31.65	6.44	37.27	172	16	Peak
5350.66	41.63	40.64	54	-12.37	31.7	6.47	37.18	172	16	Average
5350.66	58.19	57.2	74	-15.81	31.7	6.47	37.18	172	16	Peak
*10540	53.05	55.9	68.2	-15.15	39.7	10.31	52.86	233	108	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5126.9	39.98	39.41	54	-14.02	31.55	6.32	37.3	125	74	Average
5126.9	52.63	52.06	74	-21.37	31.55	6.32	37.3	125	74	Peak
5270	93.76	92.94			31.65	6.44	37.27	125	74	Average
5270	103.66	102.84			31.65	6.44	37.27	125	74	Peak
5350.33	42.57	41.58	54	-11.43	31.7	6.47	37.18	125	74	Average
5350.33	59.08	58.09	74	-14.92	31.7	6.47	37.18	125	74	Peak
*10540	53.26	56.11	68.2	-14.94	39.7	10.31	52.86	129	146	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
2. 5270 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 62	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Jisyoung Wang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5140.76	39.7	39.11	54	-14.3	31.56	6.33	37.3	195	12	Average
5140.76	52.24	51.65	74	-21.76	31.56	6.33	37.3	195	12	Peak
5310	91.59	90.64			31.68	6.46	37.19	195	12	Average
5310	101.57	100.62			31.68	6.46	37.19	195	12	Peak
5351.87	46.04	45.05	54	-7.96	31.7	6.47	37.18	195	12	Average
5351.87	64.59	63.6	74	-9.41	31.7	6.47	37.18	195	12	Peak
10620	45.32	48.13	54	-8.68	39.89	10.39	53.09	194	238	Average
10620	53.76	56.57	74	-20.24	39.89	10.39	53.09	194	238	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5145.26	39.26	38.68	54	-14.74	31.56	6.34	37.32	133	74	Average
5145.26	51.31	50.73	74	-22.69	31.56	6.34	37.32	133	74	Peak
5310	91.38	90.43			31.68	6.46	37.19	133	74	Average
5310	101.39	100.44			31.68	6.46	37.19	133	74	Peak
5350	45.35	44.36	54	-8.65	31.7	6.47	37.18	133	74	Average
5350	63.26	62.27	74	-10.74	31.7	6.47	37.18	133	74	Peak
10620	45.16	47.97	54	-8.84	39.89	10.39	53.09	241	155	Average
10620	53.27	56.08	74	-20.73	39.89	10.39	53.09	241	155	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
2. 5310 MHz: Fundamental Frequency
3. The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 102	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Jisyoung Wang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5459.92	46.54	45.34	54	-7.46	31.77	6.51	37.08	168	242	Average
5459.92	58.5	57.3	74	-15.5	31.77	6.51	37.08	168	242	Peak
*5470	62.12	60.89	68.2	-6.08	31.79	6.52	37.08	168	242	Peak
5510	95.16	93.86			31.81	6.55	37.06	168	242	Average
5510	105.18	103.88			31.81	6.55	37.06	168	242	Peak
*5725	53.92	52.41	68.2	-14.28	32.18	6.76	37.43	168	242	Peak
11020	46.19	48.02	54	-7.81	40.71	10.41	52.95	156	238	Average
11020	54.87	56.7	74	-19.13	40.71	10.41	52.95	156	238	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5455.6	45.3	44.1	54	-8.7	31.77	6.51	37.08	154	234	Average
5455.6	57.7	56.5	74	-16.3	31.77	6.51	37.08	154	234	Peak
*5470	63.02	61.79	68.2	-5.18	31.79	6.52	37.08	154	234	Peak
5510	94.43	93.13			31.81	6.55	37.06	154	234	Average
5510	104.44	103.14			31.81	6.55	37.06	154	234	Peak
*5725	53.46	51.95	68.2	-14.74	32.18	6.76	37.43	154	234	Peak
11020	46.43	48.26	54	-7.57	40.71	10.41	52.95	190	178	Average
11020	55.16	56.99	74	-18.84	40.71	10.41	52.95	190	178	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5510 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 110	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Jisyoung Wang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5459.94	45.39	44.19	54	-8.61	31.77	6.51	37.08	175	240	Average
5459.94	57.52	56.32	74	-16.48	31.77	6.51	37.08	175	240	Peak
*5470	58.11	56.88	68.2	-10.09	31.79	6.52	37.08	175	240	Peak
5550	96.1	94.69			31.89	6.61	37.09	175	240	Average
5550	106.24	104.83			31.89	6.61	37.09	175	240	Peak
*5725	52.07	50.56	68.2	-16.13	32.18	6.76	37.43	175	240	Peak
11100	46.59	48.2	54	-7.41	40.63	10.47	52.71	158	341	Average
11100	55.4	57.01	74	-18.6	40.63	10.47	52.71	158	341	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5458.64	46.13	44.93	54	-7.87	31.77	6.51	37.08	172	215	Average
5458.64	57.77	56.57	74	-16.23	31.77	6.51	37.08	172	215	Peak
*5470	60.33	59.1	68.2	-7.87	31.79	6.52	37.08	172	215	Peak
5550	94.16	92.75			31.89	6.61	37.09	172	215	Average
5550	104.31	102.9			31.89	6.61	37.09	172	215	Peak
*5725	52.87	51.36	68.2	-15.33	32.18	6.76	37.43	172	215	Peak
11100	46.25	47.86	54	-7.75	40.63	10.47	52.71	124	200	Average
11100	54.26	55.87	74	-19.74	40.63	10.47	52.71	124	200	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
2. 5550 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 134	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Jisyoung Wang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5446.8	44.68	43.54	54	-9.32	31.77	6.5	37.13	169	243	Average
5446.8	56.47	55.33	74	-17.53	31.77	6.5	37.13	169	243	Peak
*5470	52.37	51.14	68.2	-15.83	31.79	6.52	37.08	169	243	Peak
5670	95.48	94.01			32.09	6.72	37.34	169	243	Average
5670	105.44	103.97			32.09	6.72	37.34	169	243	Peak
*5725	61.18	59.67	68.2	-7.02	32.18	6.76	37.43	169	243	Peak
11340	46.64	48.44	54	-7.36	40.4	10.52	52.72	161	94	Average
11340	55.72	57.52	74	-18.28	40.4	10.52	52.72	161	94	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5431.44	42.43	41.31	54	-11.57	31.76	6.49	37.13	153	204	Average
5431.44	54.61	53.49	74	-19.39	31.76	6.49	37.13	153	204	Peak
*5470	54.16	52.93	68.2	-14.04	31.79	6.52	37.08	153	204	Peak
5670	95.52	94.05			32.09	6.72	37.34	153	204	Average
5670	105.4	103.93			32.09	6.72	37.34	153	204	Peak
*5725	56.78	55.27	68.2	-11.42	32.18	6.76	37.43	153	204	Peak
11340	46.27	48.07	54	-7.73	40.4	10.52	52.72	206	179	Average
11340	56.13	57.93	74	-17.87	40.4	10.52	52.72	206	179	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
2. 5670 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 151	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Thomas Wei

<Spurious Emission>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5755	91.37	89.82			32.23	6.79	37.47	215	40	Average
5755	101.38	99.83			32.23	6.79	37.47	215	40	Peak
11510	46.2	48.09	54	-7.8	40.23	10.69	52.81	123	301	Average
11510	55.34	57.23	74	-18.66	40.23	10.69	52.81	123	301	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5755	89.3	87.75			32.23	6.79	37.47	202	254	Average
5755	99.31	97.76			32.23	6.79	37.47	202	254	Peak
11510	46.66	48.55	54	-7.34	40.23	10.69	52.81	168	174	Average
11510	55.99	57.88	74	-18.01	40.23	10.69	52.81	168	174	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5609.85	54.05	52.61	68.2	-14.15	31.98	6.68	37.22	215	40	Peak
5659.25	52.91	51.48	75.07	-22.16	32.06	6.71	37.34	215	40	Peak
5920.5	52.33	50.48	71.52	-19.19	32.49	6.86	37.5	215	40	Peak
5926.2	53.6	51.72	68.2	-14.6	32.52	6.86	37.5	215	40	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5607	52.14	50.7	68.2	-16.06	31.98	6.68	37.22	202	254	Peak
5654.975	52.18	50.75	71.9	-19.72	32.06	6.71	37.34	202	254	Peak
5917.65	51.84	49.99	73.62	-21.78	32.49	6.86	37.5	202	254	Peak
6024.05	52.44	50.32	68.2	-15.76	32.72	6.9	37.5	202	254	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5755 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 159	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Thomas Wei

<Spurious Emission>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5795	92.43	90.85			32.29	6.83	37.54	203	18	Average
5795	102.53	100.95			32.29	6.83	37.54	203	18	Peak
11590	45.71	47.83	54	-8.29	40.11	10.78	53.01	148	251	Average
11590	54.05	56.17	74	-19.95	40.11	10.78	53.01	148	251	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5795	90.72	89.14			32.29	6.83	37.54	213	263	Average
5795	100.72	99.14			32.29	6.83	37.54	213	263	Peak
11590	45.97	48.09	54	-8.03	40.11	10.78	53.01	197	41	Average
11590	54.5	56.62	74	-19.5	40.11	10.78	53.01	197	41	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5628.85	53.38	51.96	68.2	-14.82	32.01	6.69	37.28	203	18	Peak
5657.825	53.04	51.61	74.01	-20.97	32.06	6.71	37.34	203	18	Peak
5918.125	51.95	50.1	73.27	-21.32	32.49	6.86	37.5	203	18	Peak
5935.7	53.03	51.15	68.2	-15.17	32.52	6.86	37.5	203	18	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5632.175	52.65	51.22	68.2	-15.55	32.01	6.7	37.28	213	263	Peak
5651.175	52.38	50.89	69.07	-16.69	32.06	6.71	37.28	213	263	Peak
5916.225	52.82	50.97	74.67	-21.85	32.49	6.86	37.5	213	263	Peak
5929.525	52.45	50.57	68.2	-15.75	32.52	6.86	37.5	213	263	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5795 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

802.11ac (VHT80)

EUT Test Condition		Measurement Detail	
Channel	Channel 42	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Jisyoung Wang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5149.4	44.43	43.85	54	-9.57	31.56	6.34	37.32	243	40	Average
5149.4	54.64	54.06	74	-19.36	31.56	6.34	37.32	243	40	Peak
5210	85.51	84.86			31.61	6.4	37.36	243	40	Average
5210	93.67	93.02			31.61	6.4	37.36	243	40	Peak
5354.84	41.15	40.16	54	-12.85	31.7	6.47	37.18	243	40	Average
5354.84	52.36	51.37	74	-21.64	31.7	6.47	37.18	243	40	Peak
*10420	54.05	56.76	68.2	-14.15	39.53	10.21	52.45	156	174	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5148.95	48.44	47.86	54	-5.56	31.56	6.34	37.32	173	303	Average
5148.95	58.44	57.86	74	-15.56	31.56	6.34	37.32	173	303	Peak
5210	90.21	89.56			31.61	6.4	37.36	173	303	Average
5210	98.7	98.05			31.61	6.4	37.36	173	303	Peak
5354.51	43.22	42.23	54	-10.78	31.7	6.47	37.18	173	303	Average
5354.51	53.66	52.67	74	-20.34	31.7	6.47	37.18	173	303	Peak
*10420	54.94	57.65	68.2	-13.26	39.53	10.21	52.45	184	109	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5210 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 58	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Jisyoung Wang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5135.36	39.82	39.24	54	-14.18	31.55	6.33	37.3	148	19	Average
5135.36	51.76	51.18	74	-22.24	31.55	6.33	37.3	148	19	Peak
5290	87.29	86.41			31.66	6.45	37.23	148	19	Average
5290	97.3	96.42			31.66	6.45	37.23	148	19	Peak
5353.41	47.28	46.29	54	-6.72	31.7	6.47	37.18	148	19	Average
5353.41	60.52	59.53	74	-13.48	31.7	6.47	37.18	148	19	Peak
*10580	53.61	56.52	68.2	-14.59	39.81	10.39	53.11	164	179	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5146.34	39.75	39.17	54	-14.25	31.56	6.34	37.32	137	64	Average
5146.34	52.13	51.55	74	-21.87	31.56	6.34	37.32	137	64	Peak
5290	88.85	87.97			31.66	6.45	37.23	137	64	Average
5290	98.85	97.97			31.66	6.45	37.23	137	64	Peak
5356.38	49.74	48.75	54	-4.26	31.7	6.47	37.18	137	64	Average
5356.38	62.56	61.57	74	-11.44	31.7	6.47	37.18	137	64	Peak
*10580	54.1	57.01	68.2	-14.1	39.81	10.39	53.11	194	206	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5290 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 106	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Jisyoung Wang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5456.08	51.72	50.52	54	-2.28	31.77	6.51	37.08	174	244	Average
5456.08	64.93	63.73	74	-9.07	31.77	6.51	37.08	174	244	Peak
*5470	66.58	65.35	68.2	-1.62	31.79	6.52	37.08	174	244	Peak
5530	91.22	89.89			31.84	6.58	37.09	174	244	Average
5530	101.26	99.93			31.84	6.58	37.09	174	244	Peak
*5725	51.96	50.45	68.2	-16.24	32.18	6.76	37.43	174	244	Peak
11060	46.54	48.23	54	-7.46	40.66	10.44	52.79	139	310	Average
11060	55.8	57.49	74	-18.2	40.66	10.44	52.79	139	310	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5457.52	49.08	47.88	54	-4.92	31.77	6.51	37.08	168	257	Average
5457.52	61.95	60.75	74	-12.05	31.77	6.51	37.08	168	257	Peak
*5470	62.85	61.62	68.2	-5.35	31.79	6.52	37.08	168	257	Peak
5530	89.52	88.19			31.84	6.58	37.09	168	257	Average
5530	99.53	98.2			31.84	6.58	37.09	168	257	Peak
*5725	51.55	50.04	68.2	-16.65	32.18	6.76	37.43	168	257	Peak
11060	46.82	48.51	54	-7.18	40.66	10.44	52.79	176	101	Average
11060	55.48	57.17	74	-18.52	40.66	10.44	52.79	176	101	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
2. 5530 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 122	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Jisyoung Wang

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5450.48	44.34	43.14	54	-9.66	31.77	6.51	37.08	156	170	Average
5450.48	57.13	55.93	74	-16.87	31.77	6.51	37.08	156	170	Peak
*5470	58.34	57.11	68.2	-9.86	31.79	6.52	37.08	156	170	Peak
5610	94.12	92.68			31.98	6.68	37.22	156	170	Average
5610	104.03	102.59			31.98	6.68	37.22	156	170	Peak
*5725	57.27	55.76	68.2	-10.93	32.18	6.76	37.43	156	170	Peak
11220	46.31	48.06	54	-7.69	40.51	10.55	52.81	148	195	Average
11220	55.57	57.32	74	-18.43	40.51	10.55	52.81	148	195	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5459.76	45.28	44.08	54	-8.72	31.77	6.51	37.08	163	226	Average
5459.76	58.01	56.81	74	-15.99	31.77	6.51	37.08	163	226	Peak
*5470	57.89	56.66	68.2	-10.31	31.79	6.52	37.08	163	226	Peak
5610	92.37	90.93			31.98	6.68	37.22	163	226	Average
5610	102.14	100.7			31.98	6.68	37.22	163	226	Peak
*5725	58.02	56.51	68.2	-10.18	32.18	6.76	37.43	163	226	Peak
11220	46.61	48.36	54	-7.39	40.51	10.55	52.81	201	118	Average
11220	54.97	56.72	74	-19.03	40.51	10.55	52.81	201	118	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
2. 5610 MHz: Fundamental Frequency
3. *: Out of Restricted Band
4. The emission levels of other frequencies were very low against the limit

EUT Test Condition		Measurement Detail	
Channel	Channel 155	Frequency Range	1 GHz ~ 40 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Thomas Wei

<Spurious Emission>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5775	86.25	84.68			32.26	6.81	37.5	196	11	Average
5775	96.26	94.69			32.26	6.81	37.5	196	11	Peak
11550	46.67	48.71	54	-7.33	40.16	10.74	52.94	183	239	Average
11550	56.63	58.67	74	-17.37	40.16	10.74	52.94	183	239	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5775	86.29	84.72			32.26	6.81	37.5	215	248	Average
5775	96.3	94.73			32.26	6.81	37.5	215	248	Peak
11550	46.28	48.32	54	-7.72	40.16	10.74	52.94	165	138	Average
11550	55.62	57.66	74	-18.38	40.16	10.74	52.94	165	138	Peak

<Out of Band Emission (OOBE)>

Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5618.875	53.12	51.64	68.2	-15.08	32.01	6.69	37.22	196	11	Peak
5657.35	52.87	51.44	73.66	-20.79	32.06	6.71	37.34	196	11	Peak
5915.75	53.3	51.45	75.02	-21.72	32.49	6.86	37.5	196	11	Peak
5963.25	53.85	51.91	68.2	-14.35	32.57	6.88	37.51	196	11	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
5639.3	52.84	51.38	68.2	-15.36	32.04	6.7	37.28	215	248	Peak
5656.875	51.65	50.22	73.31	-21.66	32.06	6.71	37.34	215	248	Peak
5923.825	51.61	49.73	69.07	-17.46	32.52	6.86	37.5	215	248	Peak
5992.7	52.56	50.55	68.2	-15.64	32.63	6.89	37.51	215	248	Peak

Remarks:

- Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
- 5775 MHz: Fundamental Frequency
- *: Out of Restricted Band
- The emission levels of other frequencies were very low against the limit

9 kHz ~ 30 MHz Data:

The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

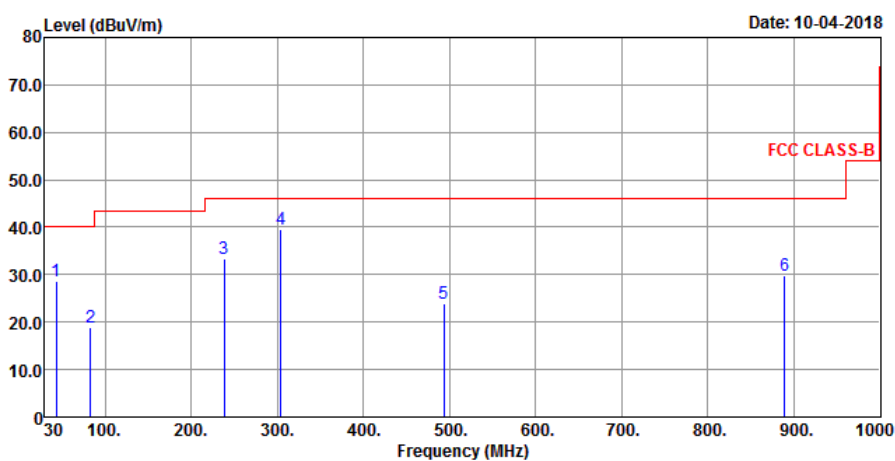
30 MHz ~ 1 GHz Worst-Case Data:

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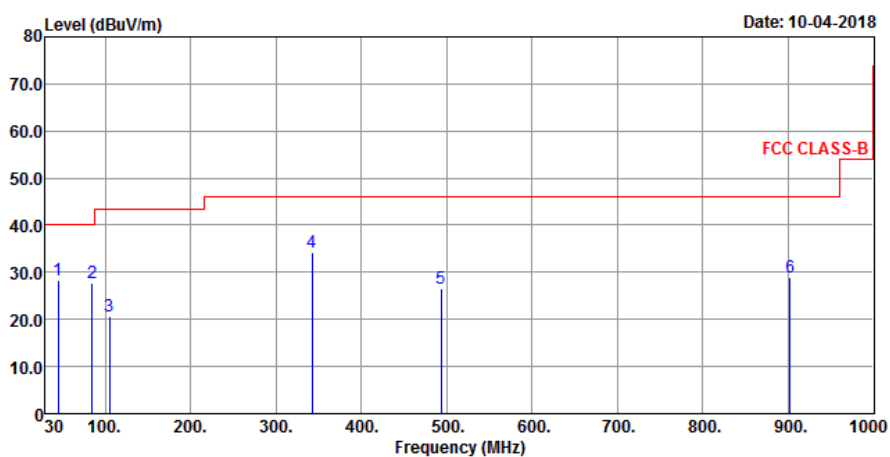
802.11a

EUT Test Condition		Measurement Detail	
Channel	Channel 100	Frequency Range	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	Detector Function	Peak (PK) QP (Quasi-Peak)
Environmental Conditions	25 deg. C, 65 % RH	Tested By	Thomas Wei

Horizontal



Vertical



Antenna Polarity & Test Distance: Horizontal at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
43.58	28.6	45.62	40	-11.4	13.59	0.5	31.11	137	321	Peak
83.35	18.96	41.75	40	-21.04	8.18	0.68	31.65	168	255	Peak
238.55	33.36	52.73	46	-12.64	10.99	1.43	31.79	200	238	Peak
304.51	39.7	56.86	46	-6.3	13.06	1.67	31.89	161	142	Peak
493.66	24.01	36.06	46	-21.99	17.2	2.47	31.72	141	105	Peak
889.42	29.81	34.44	46	-16.19	23.37	3.99	31.99	113	72	Peak
Antenna Polarity & Test Distance: Vertical at 3 m										
Frequency (MHz)	Emission Level (dBuV/m)	Read Level (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Antenna Height (cm)	Table Angle (Degree)	Remark
44.55	28.22	45.25	40	-11.78	13.6	0.51	31.14	124	88	Peak
84.32	27.86	50.66	40	-12.14	8.2	0.69	31.69	172	166	Peak
104.69	20.73	42.33	43.5	-22.77	9.53	0.77	31.9	208	190	Peak
342.34	34.28	50.3	46	-11.72	13.96	1.84	31.82	256	241	Peak
493.66	26.48	38.53	46	-19.52	17.2	2.47	31.72	283	304	Peak
902.03	28.93	33.38	46	-17.07	23.52	4.05	32.02	325	349	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
Margin value = Emission level – Limit value
2. The emission levels of other frequencies were very low against the limit

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 0.50 MHz.

4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver ROHDE & SCHWARZ	ESCI	100613	Nov. 23, 2017	Nov. 22, 2018
RF signal cable Woken	5D-FB	Cable-cond1-01	Sep. 05, 2018	Sep. 04, 2019
LISN/AMN ROHDE & SCHWARZ (EUT)	ENV216	101826	Feb. 26, 2018	Feb. 25, 2019
LISN/AMN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Aug. 19, 2018	Aug. 18, 2019
Software ADT	BV ADT_Cond_ V7.3.7.4	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 1.
 3. The VCCI Site Registration No. is C-2040.

4.2.3 Test Procedures

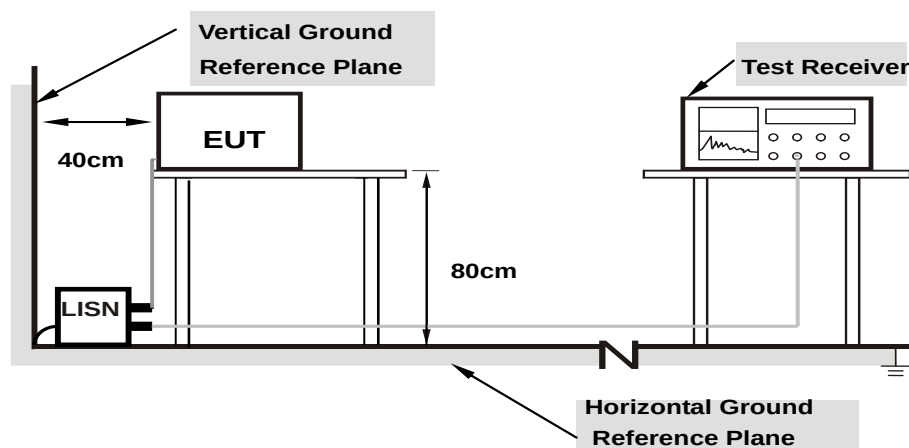
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit -20 dB) was not recorded.

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



- Note:** 1.Support units were connected to second LISN.
 2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

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

4.2.6 EUT Operating Conditions

- Placed the EUT on a testing table.
- Use the software to control the EUT under transmission condition continuously at specific channel frequency.

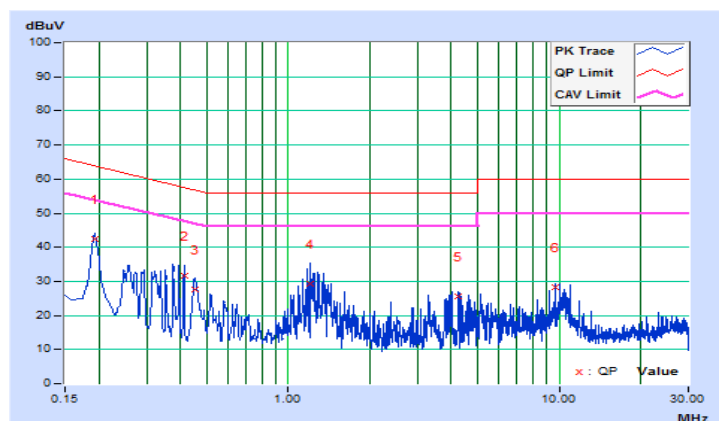
4.2.7 Test Results

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 65%RH
Tested by	Jisyong Wang	Test Date	2018/10/1

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.19305	9.67	32.73	15.76	42.40	25.43	63.90	53.90	-21.50	-28.47
2	0.41197	9.66	22.02	0.39	31.68	10.05	57.61	47.61	-25.93	-37.56
3	0.45097	9.66	17.89	2.94	27.55	12.60	56.86	46.86	-29.31	-34.26
4	1.20961	9.66	19.50	1.26	29.16	10.92	56.00	46.00	-26.84	-35.08
5	4.25159	9.74	15.87	1.74	25.61	11.48	56.00	46.00	-30.39	-34.52
6	9.63175	9.84	18.40	1.84	28.24	11.68	60.00	50.00	-31.76	-38.32

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

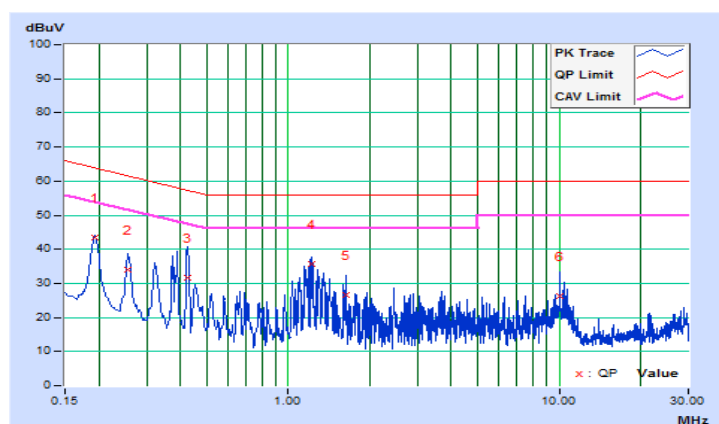


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25°C, 65%RH
Tested by	Jisyong Wang	Test Date	2018/10/1

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.19305	9.67	33.78	15.70	43.45	25.37	63.90	53.90	-20.45	-28.53
2	0.25593	9.67	24.20	10.79	33.87	20.46	61.56	51.56	-27.69	-31.10
3	0.42370	9.67	22.06	2.18	31.73	11.85	57.38	47.38	-25.65	-35.53
4	1.22096	9.66	25.92	8.38	35.58	18.04	56.00	46.00	-20.42	-27.96
5	1.62798	9.67	16.89	2.28	26.56	11.95	56.00	46.00	-29.44	-34.05
6	10.04621	9.86	16.40	3.79	26.26	13.65	60.00	50.00	-33.74	-36.35

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 $\leq$ 125 mW (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	250 mW (24 dBm)
U-NII-2A		√	250 mW (24 dBm) or 11 dBm + 10 log B*
U-NII-2C		√	250 mW (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 $N_{ANT} \leq 4$;

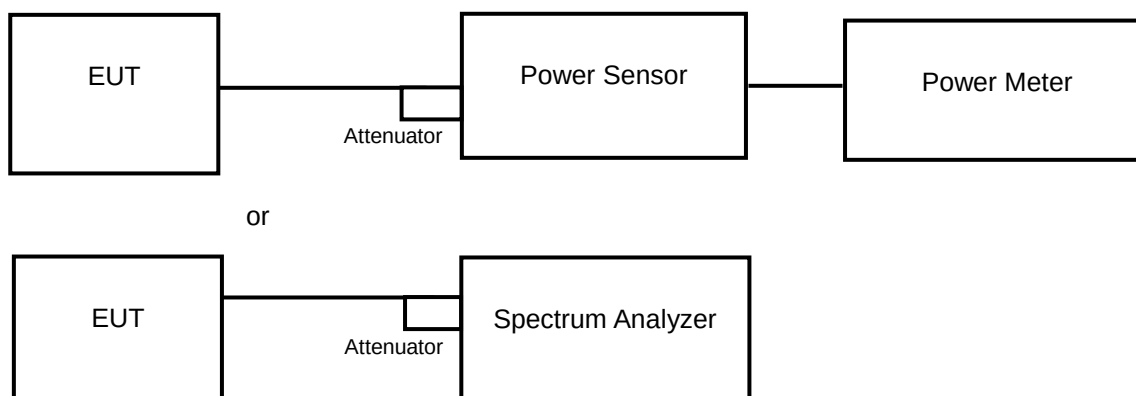
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;

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

<Power Output Measurement>



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

Average Power Measurement

<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.

<802.11ac (VHT80)>

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

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 Results

Power Output:

<SISO>

802.11a

Channel	Frequency (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass / Fail
36	5180	46.559	16.68	24	Pass
40	5200	47.206	16.74	24	Pass
48	5240	46.452	16.67	24	Pass
52	5260	46.345	16.66	24	Pass
60	5300	48.195	16.83	24	Pass
64	5320	47.098	16.73	24	Pass
100	5500	51.761	17.14	24	Pass
116	5580	54.702	17.38	24	Pass
140	5700	55.335	17.43	24	Pass
149	5745	41.115	16.14	30	Pass
157	5785	41.976	16.23	30	Pass
165	5825	40.087	16.03	30	Pass

<MIMO>

802.11n (HT20)

Channel	Frequency (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	14.34	13.67	50.466	17.03	24	Pass
40	5200	14.13	13.78	49.774	16.97	24	Pass
48	5240	14.21	14.13	52.240	17.18	24	Pass
52	5260	14.23	14.13	52.360	17.19	24	Pass
60	5300	14.32	14.19	53.333	17.27	24	Pass
64	5320	14.13	14.04	51.286	17.10	24	Pass
100	5500	15.33	14.66	63.387	18.02	24	Pass
116	5580	15.23	14.91	64.269	18.08	24	Pass
140	5700	15.00	14.86	62.230	17.94	24	Pass
149	5745	14.51	14.12	54.075	17.33	30	Pass
157	5785	14.83	14.24	57.016	17.56	30	Pass
165	5825	14.49	13.74	51.761	17.14	30	Pass

802.11n (HT40)

Channel	Frequency (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	14.27	14.16	52.845	17.23	24	Pass
46	5230	14.23	14.12	52.360	17.19	24	Pass
54	5270	14.32	14.21	53.456	17.28	24	Pass
62	5310	12.96	12.74	38.548	15.86	24	Pass
102	5510	15.23	15.11	65.766	18.18	24	Pass
110	5550	15.16	15.12	65.313	18.15	24	Pass
134	5670	15.12	15.10	64.863	18.12	24	Pass
151	5755	14.15	14.26	52.723	17.22	30	Pass
159	5795	14.03	14.17	51.404	17.11	30	Pass

802.11ac (VHT80)

Channel	Frequency (MHz)	Maximum Conducted Power (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	13.85	13.89	48.753	16.88	24	Pass
58	5290	13.77	13.65	46.989	16.72	24	Pass
106	5530	15.25	15.22	66.834	18.25	24	Pass
122	5610	15.28	15.21	66.988	18.26	24	Pass
155	5775	13.67	13.72	46.881	16.71	30	Pass

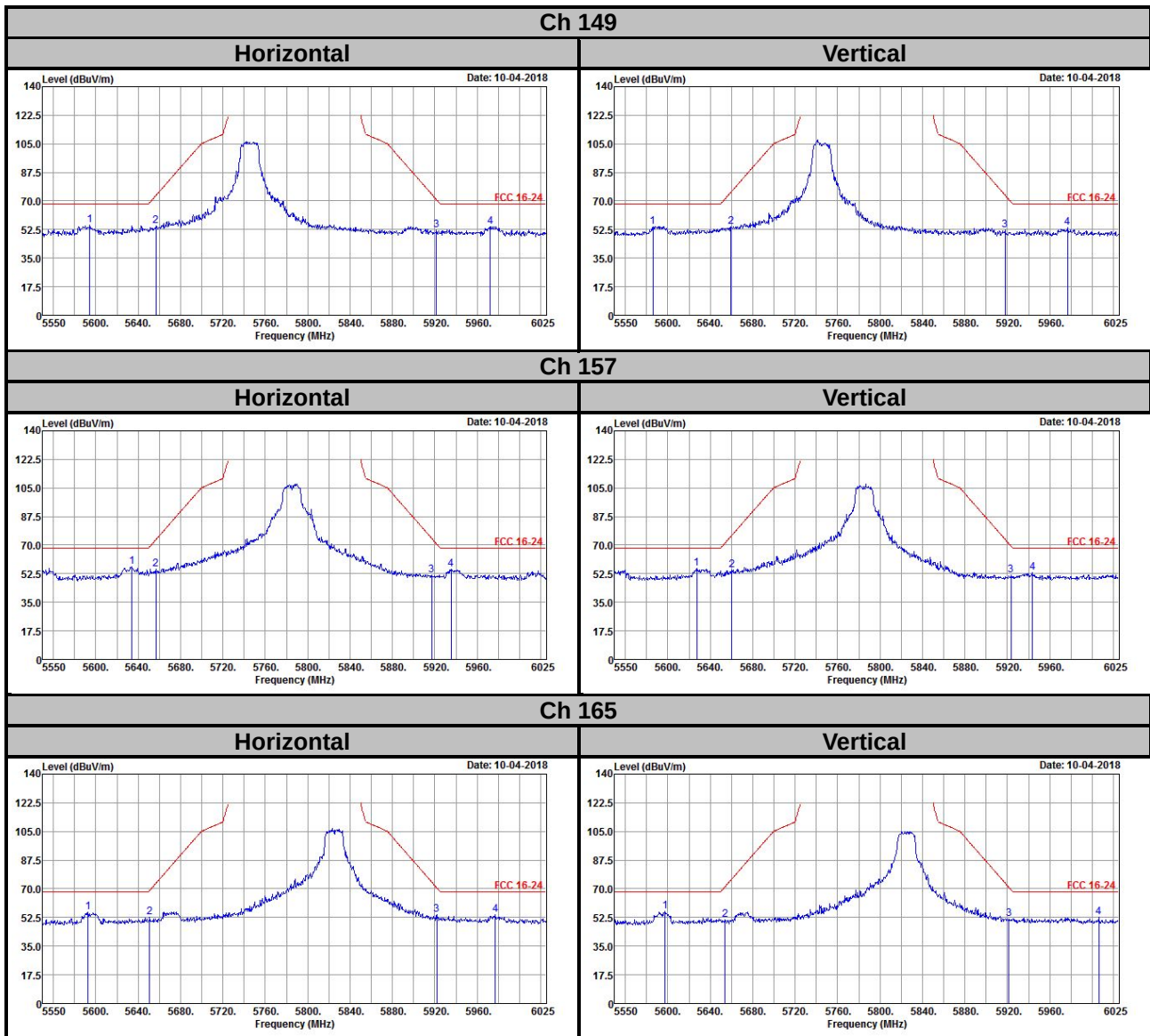
5 Pictures of Test Arrangements

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

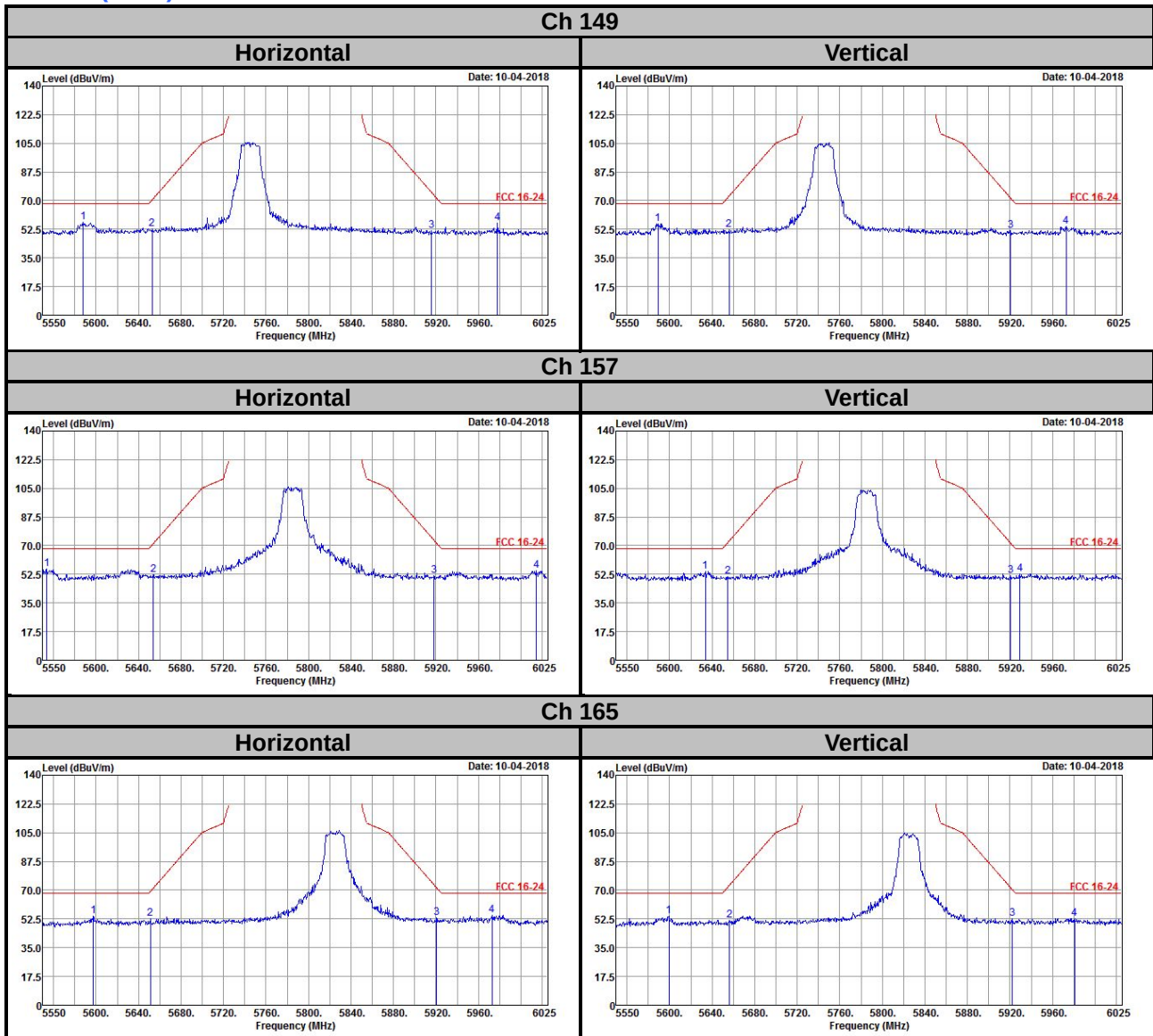
Annex A- Radiated Out of Band Emisison (OOBE) Measurement (For U-NII-3 band)

<SISO>

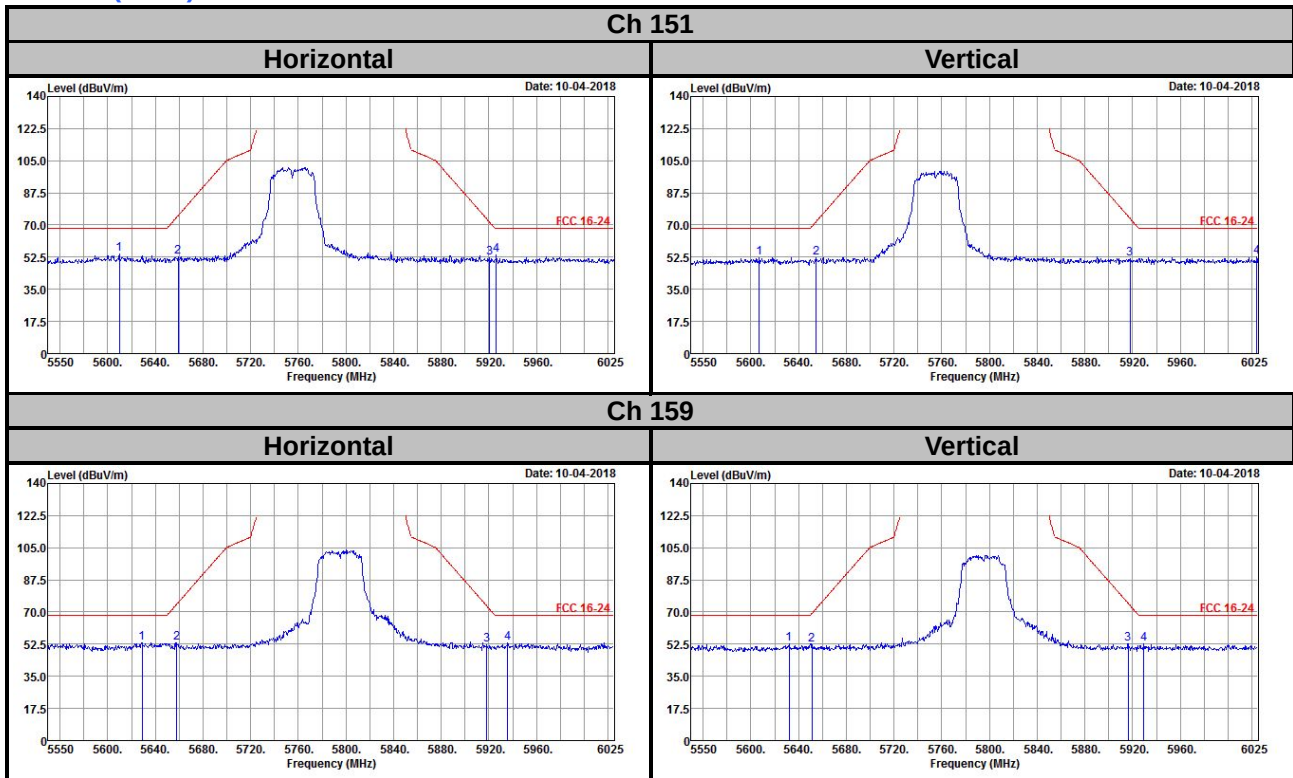
802.11a



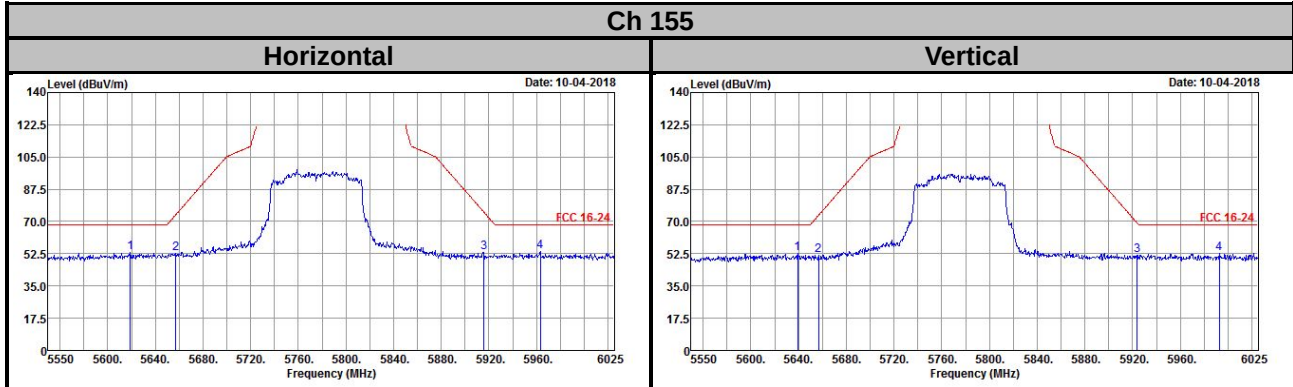
<MIMO>
802.11n (HT20)



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

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

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