Partial FCC Test Report

Report No.:	RF180921C06-2
FCC ID:	HFSQTA-9560NGW
Test Model:	D11
Received Date:	Sep. 21, 2018
Test Date:	Oct. 30, 2018 ~ Dec. 27, 2018
Issued Date:	Dec. 28, 2018
Applicant:	Quanta Computer Inc.
Address:	No.188, Wenhua 2nd Rd., Guishan Dist., Taoyuan City 33377, Taiwan (R.O.C.)
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C)
Test Location:	B2F., No.215, Sec. 3, Beixin Rd., Xindian Dist., New Taipei City, Taiwan
FCC Registration / Designation Number:	427177 / TW0011

Testing Laboratory
2021

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Release Control Record

Issue No.	Description	Date Issued
RF180921C06-2	Original Release	Dec. 28, 2018

1 Certificate of Conformity

Product:	Notebook Computer
Brand:	Quanta
Test Model:	D11
Sample Status:	ENGINEERING SAMPLE
Applicant:	Quanta Computer Inc.
Test Date:	Oct. 30, 2018 ~ Dec. 27, 2018
Standards:	47 CFR FCC Part 15, Subpart C (Section 15.247) 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:** Dec. 28, 2018

Gina Liu / Specialist

Approved by : , **Date:** Dec. 28, 2018

Dylan Chiou / Project Engineer

2 Summary of Test Results

47 CFR FCC Part 15, Subpart C (Section 15.247)			
FCC Clause	**Test Item**	**Result**	**Remarks**
15.207	AC Power Conducted Emission	Pass	Meet the requirement of limit. Minimum passing margin is -6.40 dB at 0.17734 MHz.
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -1.02 dB at 2484.52 MHz.
15.247(d)	Antenna Port Emission	N/A	Refer to Note
15.247(a)(2)	6 dB Bandwidth	N/A	Refer to Note
---	Occupied Bandwidth Measurement	N/A	Refer to Note
15.247(b)	Conducted power	Pass	Meet the requirement of limit.
15.247(e)	Power Spectral Density	N/A	Refer to Note
15.203	Antenna Requirement	N/A	Refer to Note

Note: This report is a partial report, only test item of Radiated Emissions, Conducted Emission tests and Conducted Power were performed for this report. Other testing data please refer to Intel report no.: 170524-02.TR04 for module (Brand: Intel, Model: 9560NGW).

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**	**Expended 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	2.0153 dB
	200 MHz ~ 1000 MHz	2.0224 dB
Radiated Emissions above 1 GHz	1 GHz ~ 18 GHz	1.0121 dB
	18 GHz ~ 40 GHz	1.1508 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Notebook Computer
Brand	Quanta
Test Model	D11
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	5 or 9 or 15 or 20 Vdc (adapter) 11.55 Vdc (battery)
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: 11.0 / 5.5 / 2.0 / 1.0 Mbps 802.11g: 54.0 / 48.0 / 36.0 / 24.0 / 18.0 / 12.0 / 9.0 / 6.0 Mbps 802.11n: up to 300.0 Mbps
Operating Frequency	2412 ~ 2472 MHz
Number of Channel	13 for 802.11b, 802.11g, 802.11n (HT20) 9 for 802.11n (HT40)
Output Power	214.783 mW
Antenna Type	Refer to Note as below
Antenna Connector	N/A
Accessory Device	Refer to Note as below
Data Cable Supplied	N/A

Note:

1. The WLAN/BT module (Brand: Intel, Model: 9560NGW) was installed in the EUT.
2. The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers.

Modulation Mode	Tx Function
802.11b	1TX
802.11g	1TX
802.11n (HT20)	2TX
802.11n (HT40)	2TX

3. The antenna information is listed as below.

Antenna Type	Manuf.	Mode	Parts Number	Antenna Gain (dBi)			
				BT/WLAN 2.4GHz	WLAN 5.15~5.35 GHz	WLAN 5.47~5.725 GHz	WLAN 5.725~5.85 GHz
PIFA	AWAN	Tablet	Main Antenna: DQ60ANF6Y18 (ANF6Y-100060) Aux. Antenna: DQ60ANF6Y19 (ANF6Y-100061)	Main: -1.68 Aux.: -0.73	Main: 1.58 Aux.: -0.78	Main: 0.93 Aux.: -0.15	Main: 0.67 Aux.: -0.17
		NB		Main: -2.63 Aux.: -2.28	Main: 1.93 Aux.: 1.95	Main: 0.18 Aux.: 0.44	Main: -0.02 Aux.: 0.74

4. The EUT contains following accessory devices.

Product	Brand	Model	Description
Adapter	Chicony	A16-045N1A	I/P: 100-240 Vac, 50-60 Hz, 1.2 A O/P: 5 Vdc, 3 A, 9 Vdc, 3 A, 15 Vdc, 3 A, 20 Vdc, 2.25 A, 45W Max. 1.45M/0 core
Battery	SIMPLOTECHNOLOGY COLTD	916QA112H	11.5 Vdc, 4940 mAh

5. 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

13 channels are provided for 802.11b, 802.11g and 802.11n (HT20):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	8	2447
2	2417	9	2452
3	2422	10	2457
4	2427	11	2462
5	2432	12	2467
6	2437	13	2472
7	2442		

9 channels are provided for 802.11n (HT40):

Channel	Frequency (MHz)	Channel	Frequency (MHz)
3	2422	8	2447
4	2427	9	2452
5	2432	10	2457
6	2437	11	2462
7	2442		

3.2.1 Test Mode Applicability and Tested Channel Detail

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

Where **RE≥1G:** Radiated Emission above 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 positioned of each 3 axis and NB mode. The worst case was found when positioned on **Z-plane**.

NOTE: The worst case was found when positioned on NB mode for Output Power test.

NOTE: "-"means no effect.

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	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11b	1 to 13	1, 6, 11, 12, 13	DSSS	DBPSK	1.0
-	802.11g	1 to 13	1, 6, 11, 12, 13	OFDM	BPSK	6.0
-	802.11n (HT20)	1 to 13	1, 6, 11, 12, 13	OFDM	BPSK	6.5
-	802.11n (HT40)	3 to 9	3, 6, 9, 10, 11	OFDM	BPSK	13.5

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	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11b	1 to 13	12	DSSS	DBPSK	1.0

Power Line Conducted Emission Test:

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

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

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11b	1 to 13	12	DSSS	DBPSK	1.0

Antenna Port Conducted Measurement:

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

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11b	1 to 13	1, 6, 11, 12, 13	DSSS	DBPSK	1.0
-	802.11g	1 to 13	1, 6, 11, 12, 13	OFDM	BPSK	6.0
-	802.11n (HT20)	1 to 13	1, 6, 11, 12, 13	OFDM	BPSK	6.5
-	802.11n (HT40)	3 to 9	3, 6, 9	OFDM	BPSK	13.5

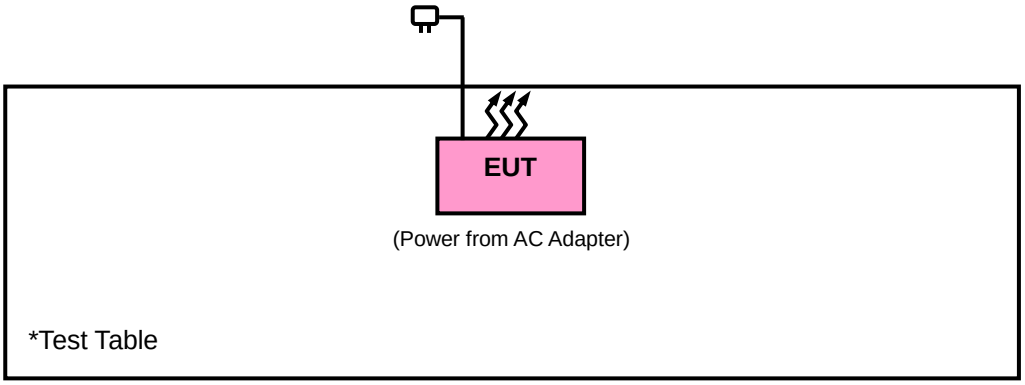
Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested by
RE≥1G	25 deg. C, 65 % RH	120 Vac, 60 Hz	Charles Hsiao
RE<1G	25 deg. C, 65 % RH	120 Vac, 60 Hz	Charles Hsiao
PLC	25 deg. C, 65 % RH	120 Vac, 60 Hz	Thomas Wei
APCM	25 deg. C, 65 % RH	120 Vac, 60 Hz	Frank Chiu

3.3 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units.

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 C (15.247)
KDB 558074 D01 15.247 Meas Guidance v05
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. Other emissions shall be at least 20 dB below the highest level of the desired power:

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 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver Agilent Technologies	N9038A	MY51210203	Mar. 16, 2018	Mar. 15, 2019
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Jan. 11, 2018	Jan. 10, 2019
BILOG Antenna SCHWARZBECK	VULB9168	9168-616	Dec. 14, 2017	Dec. 13, 2018
HORN Antenna ETS-Lindgren	3117	00143293	Dec. 13, 2017	Dec. 12, 2018
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Dec. 01, 2017	Nov. 30, 2018
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 16, 2018	Apr. 15, 2019
Loop Antenna	EM-6879	269	Sep. 07, 2018	Sep. 06, 2019
Preamplifier Agilent	310N	187226	Jun. 19, 2018	Jun. 18, 2019
Preamplifier Agilent	83017A	MY39501357	Jun. 19, 2018	Jun. 18, 2019
Power Meter Anritsu	ML2495A	1012010	Sep. 05, 2018	Sep. 04, 2019
Power Sensor Anritsu	MA2411B	1315050	Sep. 04, 2018	Sep. 03, 2019
RF signal cable ETS-LINDGREN	5D-FB	Cable-CH1-01(RFC-SMS-100-SMS-120+RFC-SMS-100-SMS-400)	Jun. 19, 2018	Jun. 18, 2019
RF signal cable ETS-LINDGREN	8D-FB	Cable-CH1-02(RFC-SMS-100-SMS-24)	Jun. 19, 2018	Jun. 18, 2019
Software	E3 8.130425b	NA	NA	NA
Antenna Tower MF	NA	NA	NA	NA
Turn Table MF	NA	NA	NA	NA
Antenna Tower &Turn Table Controller MF	MF-7802	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 HsinTien Chamber 1.

3. The horn antenna and preamplifier (model: 83017A) are used only for the measurement of emission frequency above 1 GHz if tested.

4. The IC Site Registration No. is IC7450I-1.

4.1.3 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. 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:

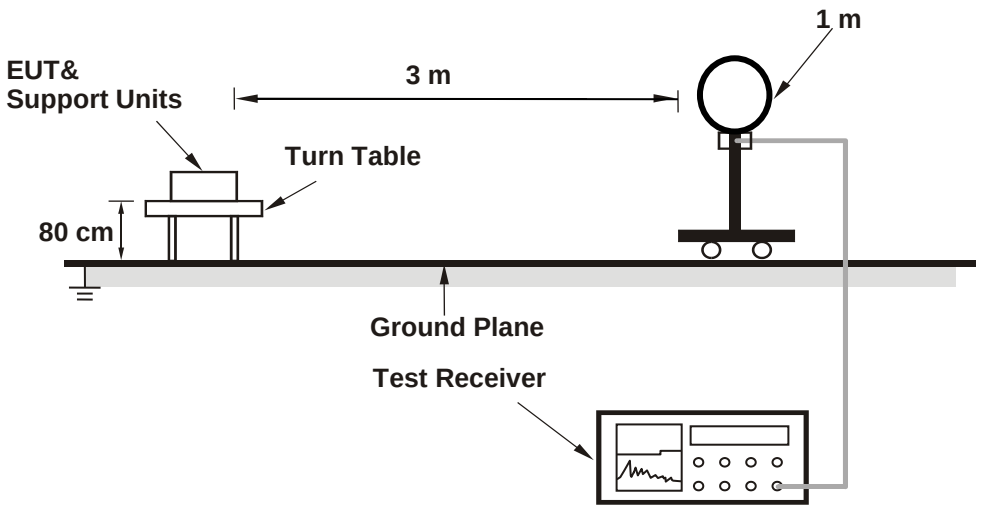
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) at frequency below 1 GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1 GHz.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

4.1.4 Deviation from Test Standard

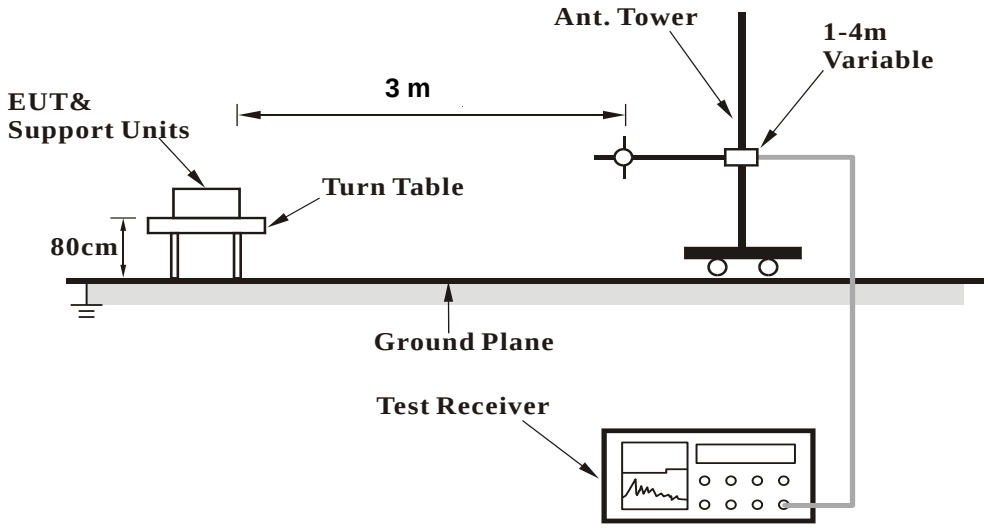
No deviation.

4.1.5 Test Set Up

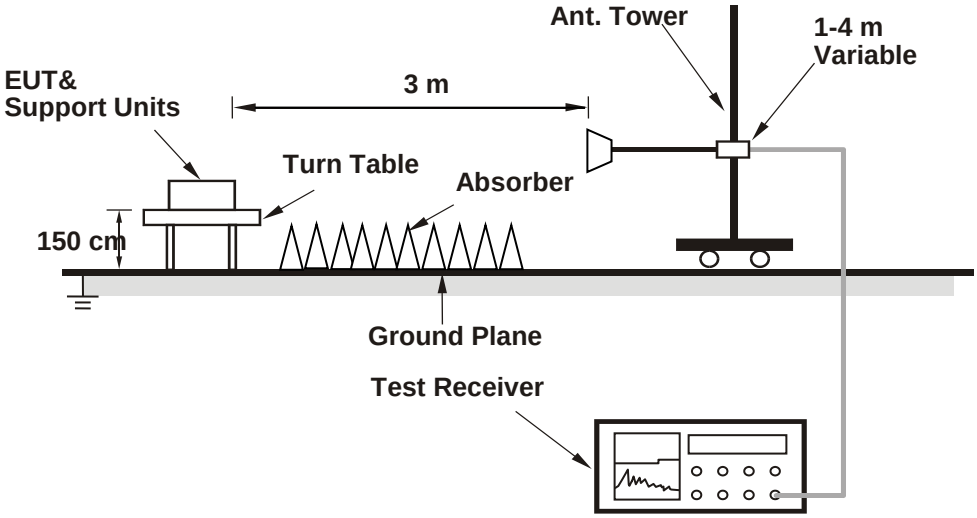
<Radiated Emission below 30 MHz>



<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).

4.1.6 EUT Operating Conditions

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

4.1.7 Test Results

Above 1 GHz Data：

802.11b

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

Antennal 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**
2389.56	52.96	51.25	54	-1.04	31.8	5.4	35.49	283	358	Average
2389.56	65.36	63.65	74	-8.64	31.8	5.4	35.49	283	358	Peak
2412	102.1	100.33			31.81	5.43	35.47	283	358	Average
2412	105.96	104.19			31.81	5.43	35.47	283	358	Peak
4824	39.26	31.13	54	-14.74	33.97	8.26	34.1	185	0	Average
4824	48.84	40.71	74	-25.16	33.97	8.26	34.1	185	0	Peak
Antennal 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**
2389.2	50.9	49.19	54	-3.1	31.8	5.4	35.49	217	105	Average
2389.2	62.69	60.98	74	-11.31	31.8	5.4	35.49	217	105	Peak
2412	101.64	99.87			31.81	5.43	35.47	217	105	Average
2412	104.44	102.67			31.81	5.43	35.47	217	105	Peak
4824	38.82	30.69	54	-15.18	33.97	8.26	34.1	133	326	Average
4824	48.29	40.16	74	-25.71	33.97	8.26	34.1	133	326	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 2412 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 6	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Antennal 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**
2386.68	50.75	49.04	54	-3.25	31.8	5.4	35.49	283	351	Average
2386.68	56.42	54.71	74	-17.58	31.8	5.4	35.49	283	351	Peak
2437	106.55	104.7			31.85	5.46	35.46	283	351	Average
2437	109.08	107.23			31.85	5.46	35.46	283	351	Peak
2487.4	47.34	45.35	54	-6.66	31.88	5.53	35.42	283	351	Average
2487.4	55.44	53.45	74	-18.56	31.88	5.53	35.42	283	351	Peak
4874	39.09	30.9	54	-14.91	33.98	8.27	34.06	124	44	Average
4874	48.8	40.61	74	-25.2	33.98	8.27	34.06	124	44	Peak
Antennal 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**
2386.77	49.04	47.33	54	-4.96	31.8	5.4	35.49	217	105	Average
2386.77	55.71	54	74	-18.29	31.8	5.4	35.49	217	105	Peak
2437	105.65	103.8			31.85	5.46	35.46	217	105	Average
2437	108.23	106.38			31.85	5.46	35.46	217	105	Peak
2487.36	46.59	44.6	54	-7.41	31.88	5.53	35.42	217	105	Average
2487.36	54.59	52.6	74	-19.41	31.88	5.53	35.42	217	105	Peak
4874	39.04	30.85	54	-14.96	33.98	8.27	34.06	124	216	Average
4874	48.56	40.37	74	-25.44	33.98	8.27	34.06	124	216	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 2437 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 11	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Antennal 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**
2462	102.22	100.29			31.87	5.5	35.44	262	5	Average
2462	105.75	103.82			31.87	5.5	35.44	262	5	Peak
2487.96	51.69	49.68	54	-2.31	31.9	5.53	35.42	262	5	Average
2487.96	65.69	63.68	74	-8.31	31.9	5.53	35.42	262	5	Peak
4924	39.26	31.01	54	-14.74	33.99	8.28	34.02	170	346	Average
4924	47.62	39.37	74	-26.38	33.99	8.28	34.02	170	346	Peak
Antennal 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**
2462	101.37	99.44			31.87	5.5	35.44	217	86	Average
2462	104.75	102.82			31.87	5.5	35.44	217	86	Peak
2488	49.43	47.42	54	-4.57	31.9	5.53	35.42	217	86	Average
2488	63.34	61.33	74	-10.66	31.9	5.53	35.42	217	86	Peak
4924	39.02	30.77	54	-14.98	33.99	8.28	34.02	114	111	Average
4924	49.23	40.98	74	-24.77	33.99	8.28	34.02	114	111	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 2462 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 12	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Antennal 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**
2467	100.25	98.3			31.87	5.5	35.42	262	4	Average
2467	103.37	101.42			31.87	5.5	35.42	262	4	Peak
2484.52	52.98	50.99	54	-1.02	31.88	5.53	35.42	262	4	Average
2484.52	68.34	66.35	74	-5.66	31.88	5.53	35.42	262	4	Peak
4834	39.12	30.99	54	-14.88	33.97	8.26	34.1	111	326	Average
4834	48.03	39.9	74	-25.97	33.97	8.26	34.1	111	326	Peak
Antennal 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**
2467	99.64	97.69			31.87	5.5	35.42	217	86	Average
2467	102.02	100.07			31.87	5.5	35.42	217	86	Peak
2484.32	50.91	48.92	54	-3.09	31.88	5.53	35.42	217	86	Average
2484.32	66.26	64.27	74	-7.74	31.88	5.53	35.42	217	86	Peak
4834	38.99	30.86	54	-15.01	33.97	8.26	34.1	145	155	Average
4834	48.55	40.42	74	-25.45	33.97	8.26	34.1	145	155	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 2467 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 13	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Antennal 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**
2472	98.88	96.92			31.88	5.5	35.42	233	4	Average
2472	101.93	99.97			31.88	5.5	35.42	233	4	Peak
2487.84	52.84	50.83	54	-1.16	31.9	5.53	35.42	233	4	Average
2487.84	71.53	69.52	74	-2.47	31.9	5.53	35.42	233	4	Peak
4944	39.4	31.13	54	-14.6	33.99	8.29	34.01	109	107	Average
4944	48.38	40.11	74	-25.62	33.99	8.29	34.01	109	107	Peak
Antennal 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**
2472	97.33	95.37			31.88	5.5	35.42	217	86	Average
2472	100.32	98.36			31.88	5.5	35.42	217	86	Peak
2487.76	50.53	48.52	54	-3.47	31.9	5.53	35.42	217	86	Average
2487.76	68.28	66.27	74	-5.72	31.9	5.53	35.42	217	86	Peak
4944	39.32	31.05	54	-14.68	33.99	8.29	34.01	111	316	Average
4944	48.59	40.32	74	-25.41	33.99	8.29	34.01	111	316	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 2472 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

802.11g

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

Antennal 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**
2389.92	49.17	47.44	54	-4.83	31.8	5.4	35.47	262	350	Average
2389.92	65.55	63.82	74	-8.45	31.8	5.4	35.47	262	350	Peak
2412	97.49	95.72			31.81	5.43	35.47	262	350	Average
2412	104.34	102.57			31.81	5.43	35.47	262	350	Peak
4824	39.45	31.32	54	-14.55	33.97	8.26	34.1	118	216	Average
4824	47.44	39.31	74	-26.56	33.97	8.26	34.1	118	216	Peak
Antennal 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**
2389.92	51.04	49.31	54	-2.96	31.8	5.4	35.47	217	90	Average
2389.92	67.07	65.34	74	-6.93	31.8	5.4	35.47	217	90	Peak
2412	96.57	94.8			31.81	5.43	35.47	217	90	Average
2412	103.44	101.67			31.81	5.43	35.47	217	90	Peak
4824	39.27	31.14	54	-14.73	33.97	8.26	34.1	155	189	Average
4824	47.42	39.29	74	-26.58	33.97	8.26	34.1	155	189	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 2412 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 6	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Antennal 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**
2389.56	52.78	51.07	54	-1.22	31.8	5.4	35.49	283	351	Average
2389.56	68.18	66.47	74	-5.82	31.8	5.4	35.49	283	351	Peak
2437	101.59	99.74			31.85	5.46	35.46	283	351	Average
2437	108.57	106.72			31.85	5.46	35.46	283	351	Peak
2483.72	52.67	50.71	54	-1.33	31.88	5.5	35.42	283	351	Average
2483.72	69.42	67.46	74	-4.58	31.88	5.5	35.42	283	351	Peak
4874	39.59	31.4	54	-14.41	33.98	8.27	34.06	175	105	Average
4874	47.64	39.45	74	-26.36	33.98	8.27	34.06	175	105	Peak
Antennal 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**
2389.29	52	50.29	54	-2	31.8	5.4	35.49	217	90	Average
2389.29	66.98	65.27	74	-7.02	31.8	5.4	35.49	217	90	Peak
2437	100.66	98.81			31.85	5.46	35.46	217	90	Average
2437	107.37	105.52			31.85	5.46	35.46	217	90	Peak
2483.64	51.06	49.1	54	-2.94	31.88	5.5	35.42	217	90	Average
2483.64	66.95	64.99	74	-7.05	31.88	5.5	35.42	217	90	Peak
4874	39.46	31.27	54	-14.54	33.98	8.27	34.06	112	285	Average
4874	47.59	39.4	74	-26.41	33.98	8.27	34.06	112	285	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 2437 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 11	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Antennal 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**
2462	99.74	97.81			31.87	5.5	35.44	262	5	Average
2462	106.6	104.67			31.87	5.5	35.44	262	5	Peak
2483.52	46.01	44.05	54	-7.99	31.88	5.5	35.42	262	5	Average
2483.52	61.27	59.31	74	-12.73	31.88	5.5	35.42	262	5	Peak
4924	39.54	31.29	54	-14.46	33.99	8.28	34.02	118	214	Average
4924	49.12	40.87	74	-24.88	33.99	8.28	34.02	118	214	Peak
Antennal 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**
2462	98.29	96.36			31.87	5.5	35.44	217	86	Average
2462	105.43	103.5			31.87	5.5	35.44	217	86	Peak
2483.52	44.03	42.07	54	-9.97	31.88	5.5	35.42	217	86	Average
2483.52	58.72	56.76	74	-15.28	31.88	5.5	35.42	217	86	Peak
4924	39.7	31.45	54	-14.3	33.99	8.28	34.02	134	159	Average
4924	48.11	39.86	74	-25.89	33.99	8.28	34.02	134	159	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 2462 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 12	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Antennal 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**
2467	96.64	94.69			31.87	5.5	35.42	262	4	Average
2467	103.41	101.46			31.87	5.5	35.42	262	4	Peak
2483.52	47.04	45.08	54	-6.96	31.88	5.5	35.42	262	4	Average
2483.52	59.72	57.76	74	-14.28	31.88	5.5	35.42	262	4	Peak
4934	39.79	31.53	54	-14.21	33.99	8.29	34.02	175	111	Average
4934	47.17	38.91	74	-26.83	33.99	8.29	34.02	175	111	Peak
Antennal 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**
2467	95.11	93.16			31.87	5.5	35.42	217	86	Average
2467	102.1	100.15			31.87	5.5	35.42	217	86	Peak
2483.6	45.12	43.16	54	-8.88	31.88	5.5	35.42	217	86	Average
2483.6	56.49	54.53	74	-17.51	31.88	5.5	35.42	217	86	Peak
4934	39.75	31.49	54	-14.25	33.99	8.29	34.02	194	314	Average
4934	48.44	40.18	74	-25.56	33.99	8.29	34.02	194	314	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 2467 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 13	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Antennal 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**
2472	77.55	75.59			31.88	5.5	35.42	233	4	Average
2472	84.79	82.83			31.88	5.5	35.42	233	4	Peak
2483.52	48.51	46.55	54	-5.49	31.88	5.5	35.42	233	4	Average
2483.52	60.3	58.34	74	-13.7	31.88	5.5	35.42	233	4	Peak
4944	39.81	31.54	54	-14.19	33.99	8.29	34.01	124	7	Average
4944	48.26	39.99	74	-25.74	33.99	8.29	34.01	124	7	Peak
Antennal 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**
2472	76.57	74.61			31.88	5.5	35.42	217	86	Average
2472	83.57	81.61			31.88	5.5	35.42	217	86	Peak
2483.52	45.84	43.88	54	-8.16	31.88	5.5	35.42	217	86	Average
2483.52	57.56	55.6	74	-16.44	31.88	5.5	35.42	217	86	Peak
4944	40.14	31.87	54	-13.86	33.99	8.29	34.01	134	300	Average
4944	47.98	39.71	74	-26.02	33.99	8.29	34.01	134	300	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 2472 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

802.11n (HT20)

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

Antennal 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**
2389.83	47.57	45.84	54	-6.43	31.8	5.4	35.47	300	0	Average
2389.83	60.82	59.09	74	-13.18	31.8	5.4	35.47	300	0	Peak
2412	102.48	100.71			31.81	5.43	35.47	292	0	Average
2412	109.76	107.99			31.81	5.43	35.47	292	0	Peak
4824	37.85	29.72	54	-16.15	33.97	8.26	34.1	156	211	Average
4824	47.71	39.58	74	-26.29	33.97	8.26	34.1	156	211	Peak
Antennal 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**
2389.83	44.81	43.08	54	-9.19	31.8	5.4	35.47	200	92	Average
2389.83	56.29	54.56	74	-17.71	31.8	5.4	35.47	200	92	Peak
2412	100.37	98.6			31.81	5.43	35.47	200	92	Average
2412	107.46	105.69			31.81	5.43	35.47	200	92	Peak
4824	38.13	30	54	-15.87	33.97	8.26	34.1	149	137	Average
4824	47.94	39.81	74	-26.06	33.97	8.26	34.1	149	137	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 2412 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 6	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Antennal 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**
2389.47	41.51	39.8	54	-12.49	31.8	5.4	35.49	292	0	Average
2389.47	52.08	50.37	74	-21.92	31.8	5.4	35.49	292	0	Peak
2437	103.37	101.52			31.85	5.46	35.46	292	0	Average
2437	110.31	108.46			31.85	5.46	35.46	292	0	Peak
2484.68	42.08	40.09	54	-11.92	31.88	5.53	35.42	292	0	Average
2484.68	52.98	50.99	74	-21.02	31.88	5.53	35.42	292	0	Peak
4874	37.91	29.72	54	-16.09	33.98	8.27	34.06	112	196	Average
4874	47.82	39.63	74	-26.18	33.98	8.27	34.06	112	196	Peak
Antennal 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**
2388.3	41.06	39.35	54	-12.94	31.8	5.4	35.49	200	92	Average
2388.3	52.37	50.66	74	-21.63	31.8	5.4	35.49	200	92	Peak
2437	101.47	99.62			31.85	5.46	35.46	200	92	Average
2437	108.29	106.44			31.85	5.46	35.46	200	92	Peak
2483.88	41.85	39.89	54	-12.15	31.88	5.5	35.42	200	92	Average
2483.88	54.01	52.05	74	-19.99	31.88	5.5	35.42	200	92	Peak
4874	37.54	29.35	54	-16.46	33.98	8.27	34.06	106	232	Average
4874	47.26	39.07	74	-26.74	33.98	8.27	34.06	106	232	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 2437 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 11	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Antennal 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**
2462	101.36	99.43			31.87	5.5	35.44	300	12	Average
2462	108.84	106.91			31.87	5.5	35.44	300	12	Peak
2483.52	45.78	43.82	54	-8.22	31.88	5.5	35.42	300	12	Average
2483.52	56.21	54.25	74	-17.79	31.88	5.5	35.42	300	12	Peak
4924	38.07	29.82	54	-15.93	33.99	8.28	34.02	129	47	Average
4924	47.98	39.73	74	-26.02	33.99	8.28	34.02	129	47	Peak
Antennal 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**
2462	99.44	97.51			31.87	5.5	35.44	200	92	Average
2462	106.17	104.24			31.87	5.5	35.44	200	92	Peak
2483.56	49.06	47.1	54	-4.94	31.88	5.5	35.42	222	110	Average
2483.56	60.96	59	74	-13.04	31.88	5.5	35.42	222	110	Peak
4924	37.45	29.2	54	-16.55	33.99	8.28	34.02	112	175	Average
4924	47.22	38.97	74	-26.78	33.99	8.28	34.02	112	175	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 2462 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 12	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Antennal 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**
2467	99.87	97.92			31.87	5.5	35.42	288	358	Average
2467	106.92	104.97			31.87	5.5	35.42	288	358	Peak
2483.56	49.38	47.42	54	-4.62	31.88	5.5	35.42	289	192	Average
2483.56	61.92	59.96	74	-12.08	31.88	5.5	35.42	289	192	Peak
4934	38.52	30.26	54	-15.48	33.99	8.29	34.02	176	39	Average
4934	48.1	39.84	74	-25.9	33.99	8.29	34.02	176	39	Peak
Antennal 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**
2467	97.58	95.63			31.87	5.5	35.42	200	92	Average
2467	104.13	102.18			31.87	5.5	35.42	200	92	Peak
2483.52	49.34	47.38	54	-4.66	31.88	5.5	35.42	222	110	Average
2483.52	61.99	60.03	74	-12.01	31.88	5.5	35.42	222	110	Peak
4934	38.06	29.8	54	-15.94	33.99	8.29	34.02	138	105	Average
4934	47.82	39.56	74	-26.18	33.99	8.29	34.02	138	105	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 2467 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 13	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Antennal 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**
2472	79.43	77.47			31.88	5.5	35.42	288	358	Average
2472	86.67	84.71			31.88	5.5	35.42	288	358	Peak
2483.56	52.4	50.44	54	-1.6	31.88	5.5	35.42	288	192	Average
2483.56	64.41	62.45	74	-9.59	31.88	5.5	35.42	288	192	Peak
4944	37.41	29.14	54	-16.59	33.99	8.29	34.01	158	206	Average
4944	47.34	39.07	74	-26.66	33.99	8.29	34.01	158	206	Peak
Antennal 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**
2472	77.27	75.31			31.88	5.5	35.42	200	92	Average
2472	84.93	82.97			31.88	5.5	35.42	200	92	Peak
2483.52	49.49	47.53	54	-4.51	31.88	5.5	35.42	200	92	Average
2483.52	62.79	60.83	74	-11.21	31.88	5.5	35.42	200	92	Peak
4944	37.34	29.07	54	-16.66	33.99	8.29	34.01	116	187	Average
4944	47.3	39.03	74	-26.7	33.99	8.29	34.01	116	187	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 2472 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

802.11n (HT40)

EUT Test Condition		Measurement Detail	
Channel	Channel 3	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Antennal 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**
2389.74	45.7	43.99	54	-8.3	31.8	5.4	35.49	292	0	Average
2389.74	56.7	54.99	74	-17.3	31.8	5.4	35.49	292	0	Peak
2422	98.49	96.69			31.83	5.43	35.46	292	0	Average
2422	105.57	103.77			31.83	5.43	35.46	292	0	Peak
2483.56	42.13	40.17	54	-11.87	31.88	5.5	35.42	292	0	Average
2483.56	52.99	51.03	74	-21.01	31.88	5.5	35.42	292	0	Peak
4844	37.43	29.28	54	-16.57	33.97	8.26	34.08	109	346	Average
4844	46.94	38.79	74	-27.06	33.97	8.26	34.08	109	346	Peak
Antennal 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**
2388.48	43.8	42.09	54	-10.2	31.8	5.4	35.49	200	92	Average
2388.48	54.42	52.71	74	-19.58	31.8	5.4	35.49	200	92	Peak
2422	96.64	94.84			31.83	5.43	35.46	200	92	Average
2422	103.26	101.46			31.83	5.43	35.46	200	92	Peak
2493.68	41.77	39.75	54	-12.23	31.9	5.53	35.41	200	92	Average
2493.68	52.43	50.41	74	-21.57	31.9	5.53	35.41	200	92	Peak
4844	38.57	30.42	54	-15.43	33.97	8.26	34.08	138	107	Average
4844	48.37	40.22	74	-25.63	33.97	8.26	34.08	138	107	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 2422 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 6	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Antennal 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**
2389.65	45.27	43.56	54	-8.73	31.8	5.4	35.49	292	0	Average
2389.65	56.46	54.75	74	-17.54	31.8	5.4	35.49	292	0	Peak
2437	99.61	97.76			31.85	5.46	35.46	292	0	Average
2437	106.18	104.33			31.85	5.46	35.46	292	0	Peak
2483.52	45.58	43.62	54	-8.42	31.88	5.5	35.42	292	0	Average
2483.52	57.12	55.16	74	-16.88	31.88	5.5	35.42	292	0	Peak
4874	38.15	29.96	54	-15.85	33.98	8.27	34.06	191	148	Average
4874	47.94	39.75	74	-26.06	33.98	8.27	34.06	191	148	Peak
Antennal 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**
2389.92	44.34	42.61	54	-9.66	31.8	5.4	35.47	200	92	Average
2389.92	56.47	54.74	74	-17.53	31.8	5.4	35.47	200	92	Peak
2437	97.65	95.8			31.85	5.46	35.46	200	92	Average
2437	104.28	102.43			31.85	5.46	35.46	200	92	Peak
2483.96	44.93	42.97	54	-9.07	31.88	5.5	35.42	200	92	Average
2483.96	55.39	53.43	74	-18.61	31.88	5.5	35.42	200	92	Peak
4874	37.29	29.1	54	-16.71	33.98	8.27	34.06	179	246	Average
4874	47.13	38.94	74	-26.87	33.98	8.27	34.06	179	246	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 2437 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 9	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Antennal 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**
2388.39	42.05	40.34	54	-11.95	31.8	5.4	35.49	300	12	Average
2388.39	53.42	51.71	74	-20.58	31.8	5.4	35.49	300	12	Peak
2452	98.44	96.57			31.85	5.46	35.44	300	12	Average
2452	105.06	103.19			31.85	5.46	35.44	300	12	Peak
2484.56	50.97	48.98	54	-3.03	31.88	5.53	35.42	300	28	Average
2484.56	65.24	63.25	74	-8.76	31.88	5.53	35.42	300	28	Peak
4904	37.61	29.39	54	-16.39	33.98	8.28	34.04	135	146	Average
4904	47.47	39.25	74	-26.53	33.98	8.28	34.04	135	146	Peak
Antennal 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**
2388.66	41.74	40.03	54	-12.26	31.8	5.4	35.49	200	92	Average
2388.66	52.2	50.49	74	-21.8	31.8	5.4	35.49	200	92	Peak
2452	96.19	94.32			31.85	5.46	35.44	200	92	Average
2452	103.05	101.18			31.85	5.46	35.44	200	92	Peak
2484.48	49.02	47.03	54	-4.98	31.88	5.53	35.42	200	92	Average
2484.48	63.44	61.45	74	-10.56	31.88	5.53	35.42	200	92	Peak
4904	37.11	28.89	54	-16.89	33.98	8.28	34.04	103	74	Average
4904	47.03	38.81	74	-26.97	33.98	8.28	34.04	103	74	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 2452 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 10	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Antennal 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**
2387.4	41.6	39.89	54	-12.4	31.8	5.4	35.49	300	12	Average
2387.4	51.86	50.15	74	-22.14	31.8	5.4	35.49	300	12	Peak
2457	93.6	91.71			31.87	5.46	35.44	300	12	Average
2457	100.19	98.3			31.87	5.46	35.44	300	12	Peak
2483.68	49.31	47.35	54	-4.69	31.88	5.5	35.42	300	12	Average
2483.68	65.48	63.52	74	-8.52	31.88	5.5	35.42	300	12	Peak
4914	37.63	29.41	54	-16.37	33.98	8.28	34.04	123	99	Average
4914	47.57	39.35	74	-26.43	33.98	8.28	34.04	123	99	Peak
Antennal 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**
2386.32	41.36	39.65	54	-12.64	31.8	5.4	35.49	200	92	Average
2386.32	52.04	50.33	74	-21.96	31.8	5.4	35.49	200	92	Peak
2457	92.29	90.4			31.87	5.46	35.44	200	92	Average
2457	99.37	97.48			31.87	5.46	35.44	200	92	Peak
2483.52	51.65	49.69	54	-2.35	31.88	5.5	35.42	220	100	Average
2483.52	62.92	60.96	74	-11.08	31.88	5.5	35.42	220	100	Peak
4914	38.57	30.35	54	-15.43	33.98	8.28	34.04	158	190	Average
4914	49.08	40.86	74	-24.92	33.98	8.28	34.04	158	190	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 2457 MHz: Fundamental frequency.
3. The emission levels of other frequencies were very low against the limit.

EUT Test Condition		Measurement Detail	
Channel	Channel 11	**Frequency Range**	1 GHz ~ 25 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Average (AV)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Charles Hsiao

Antennal 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**
2383.26	40.98	39.29	54	-13.02	31.78	5.4	35.49	268	344	Average
2383.26	51.78	50.09	74	-22.22	31.78	5.4	35.49	268	344	Peak
2462	85.51	83.58			31.87	5.5	35.44	268	344	Average
2462	93.54	91.61			31.87	5.5	35.44	268	344	Peak
2483.52	49.65	47.69	54	-4.35	31.88	5.5	35.42	268	344	Average
2483.52	66.12	64.16	74	-7.88	31.88	5.5	35.42	268	344	Peak
4924	37.26	29.01	54	-16.74	33.99	8.28	34.02	117	38	Average
4924	47.2	38.95	74	-26.8	33.99	8.28	34.02	117	38	Peak
Antennal 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**
2388.3	40.83	39.12	54	-13.17	31.8	5.4	35.49	200	92	Average
2388.3	52.13	50.42	74	-21.87	31.8	5.4	35.49	200	92	Peak
2462	84.83	82.9			31.87	5.5	35.44	200	92	Average
2462	93.66	91.73			31.87	5.5	35.44	200	92	Peak
2483.56	50.3	48.34	54	-3.7	31.88	5.5	35.42	190	81	Average
2483.56	64.73	62.77	74	-9.27	31.88	5.5	35.42	190	81	Peak
4924	37.71	29.46	54	-16.29	33.99	8.28	34.02	186	240	Average
4924	47.69	39.44	74	-26.31	33.99	8.28	34.02	186	240	Peak

Remarks:

1. Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor
   Margin value = Emission level – Limit value
2. 2462 MHz: Fundamental frequency.
3. 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:

802.11b

EUT Test Condition		Measurement Detail	
Channel	Channel 12	**Frequency Range**	30 MHz ~ 1 GHz
Input Power	120 Vac, 60 Hz	**Detector Function**	Peak (PK) Quasi-peak (QP)
Environmental Conditions	25 deg. C, 65 % RH	**Tested By**	Harry Hsueh

Antennal 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**
101.28	22.9	41.57	43.5	-20.6	12.31	1.28	32.26	124	308	Peak
203.34	14.53	34.05	43.5	-28.97	11.11	1.65	32.28	180	203	Peak
237.36	18.62	36.9	46	-27.38	12.02	1.85	32.15	124	133	Peak
407.8	20.81	35.53	46	-25.19	15.08	2.41	32.21	145	55	Peak
654.9	17.67	28.3	46	-28.33	18.52	2.99	32.14	190	198	Peak
801.2	20.02	28.4	46	-25.98	20.35	3.32	32.05	187	132	Peak
Antennal 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**
49.44	16.47	33.24	40	-23.53	14.55	0.9	32.22	165	190	Peak
97.23	16.34	35.28	43.5	-27.16	11.88	1.28	32.1	118	147	Peak
216.03	19	38.31	46	-27	11.27	1.65	32.23	189	310	Peak
333.6	23.03	39.04	46	-22.97	13.89	2.19	32.09	124	230	Peak
479.9	25.51	39	46	-20.49	16.07	2.56	32.12	160	33	Peak
821.5	22.6	30.56	46	-23.4	20.66	3.32	31.94	187	77	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	Dec. 10, 2018	Dec. 09, 2019
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond1-01	Sep. 05, 2018	Sep. 04, 2019
LISN/AMN ROHDE & SCHWARZ (EUT)	ESH3-Z5	835239/001	Mar. 06, 2018	Mar. 05, 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

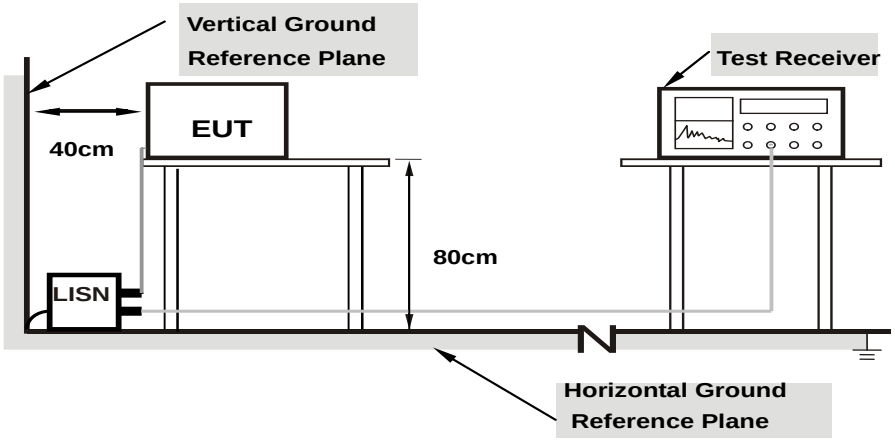
a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/50 uH of coupling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

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Conditions

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

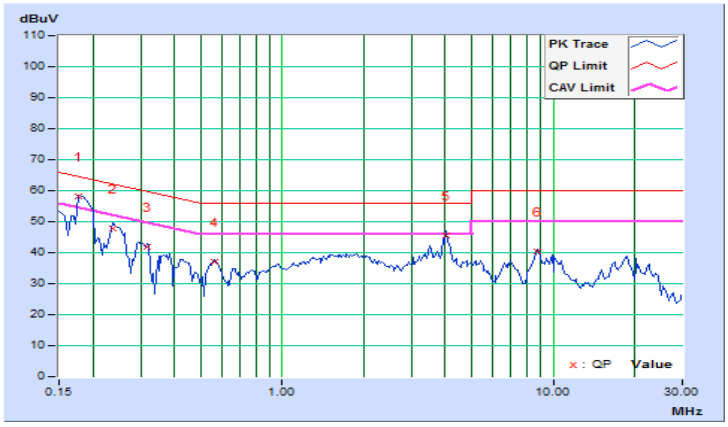
4.2.7 Test Results

Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25℃, 65%RH
Tested by	Thomas Wei	Test Date	2018/12/27

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	**0.17734**	**9.67**	**48.54**	**29.29**	**58.21**	**38.96**	**64.61**	**54.61**	**-6.40**	**-15.65**
2	0.23594	9.67	38.24	23.19	47.91	32.86	62.24	52.24	-14.33	-19.38
3	0.31797	9.66	32.08	14.73	41.74	24.39	59.76	49.76	-18.02	-25.37
4	0.56016	9.66	27.40	11.77	37.06	21.43	56.00	46.00	-18.94	-24.57
5	4.00781	9.73	35.77	20.51	45.50	30.24	56.00	46.00	-10.50	-15.76
6	8.75391	9.83	30.58	17.66	40.41	27.49	60.00	50.00	-19.59	-22.51

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

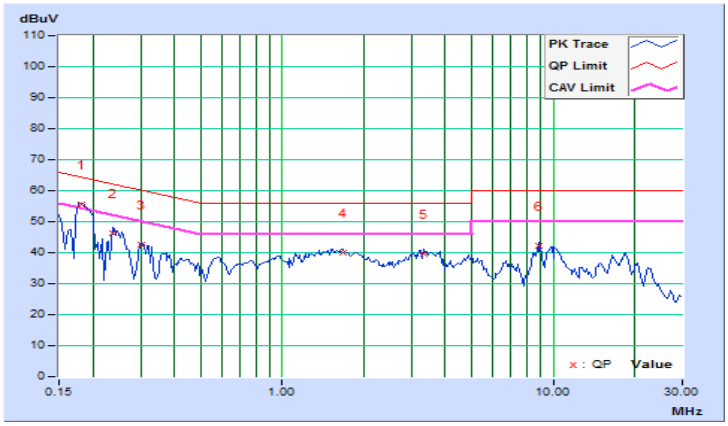


Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz
Input Power	120Vac, 60Hz	Environmental Conditions	25℃, 65%RH
Tested by	Thomas Wei	Test Date	2018/12/27

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	0.18125	9.67	45.84	29.54	55.51	39.21	64.43	54.43	-8.92	-15.22
2	0.23594	9.67	36.47	15.56	46.14	25.23	62.24	52.24	-16.10	-27.01
3	0.30234	9.67	32.75	17.22	42.42	26.89	60.18	50.18	-17.76	-23.29
4	1.66797	9.67	30.50	17.30	40.17	26.97	56.00	46.00	-15.83	-19.03
5	3.33594	9.71	29.90	16.61	39.61	26.32	56.00	46.00	-16.39	-19.68
6	8.87500	9.84	32.44	17.53	42.28	27.37	60.00	50.00	-17.72	-22.63

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 Conducted Output Power Measurement

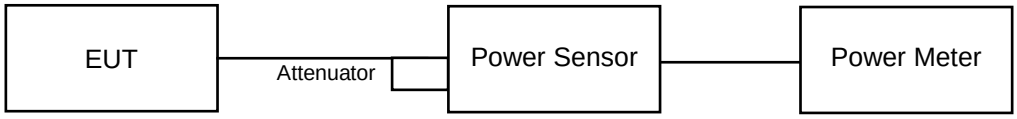
4.3.1 Limits of Conducted Output Power Measurement

For systems using digital modulation in the 2400–2483.5 MHz bands: 1 Watt (30 dBm)
Per KDB 662911 D01 Multiple Transmitter Output Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for NANT ≤ 4;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any NANT;
Array Gain = 5 log(NANT/NSS) dB or 3 dB, whichever is less for 20 MHz channel widths with NANT ≥ 5.

For power measurements on all other devices: Array Gain = 10 log(NANT/NSS) dB.

4.3.2 Test Setup



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedures

A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the power level.

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

802.11b

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	56.885	17.55	30	Pass
6	2437	124.451	20.95	30	Pass
11	2462	61.094	17.86	30	Pass
12	2467	34.995	15.44	30	Pass
13	2472	27.669	14.42	30	Pass

802.11g

Channel	Frequency (MHz)	Peak Power (mW)	Peak Power (dBm)	Limit (dBm)	Pass / Fail
1	2412	48.865	16.89	30	Pass
6	2437	110.917	20.45	30	Pass
11	2462	47.643	16.78	30	Pass
12	2467	23.605	13.73	30	Pass
13	2472	0.255	-5.93	30	Pass

802.11n (HT20)

Channel	Frequency (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
1	2412	16.34	16.28	69.343	18.41	30	Pass
6	2437	20.79	20.77	102.094	20.09	30	Pass
11	2462	16.47	16.39	71.121	18.52	30	Pass
12	2467	13.72	12.96	35.727	15.53	30	Pass
13	2472	-6.12	-6.38	0.265	-5.77	30	Pass

802.11n (HT40)

Channel	Frequency (MHz)	Peak Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
3	2422	15.10	14.80	188.365	22.75	30	Pass
6	2437	15.63	15.62	214.783	23.32	30	Pass
9	2452	14.24	14.24	191.426	22.82	30	Pass
10	2457	10.83	11.04	92.470	19.66	30	Pass
11	2462	3.71	3.55	23.067	13.63	30	Pass

5 Pictures of Test Arrangements

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

Appendix – Information on the Testing Laboratories

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

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

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

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