Partial FCC Test Report

Report No.:	RFBDVW-WTW-P21100875
FCC ID:	PPQLILYW131
Test Model:	LILY-W131
Received Date:	Nov. 09, 2021
Test Date:	Mar. 16 ~ Mar. 17, 2022
Issued Date:	Jun. 08, 2022
Applicant:	LITE-ON Technology Corp.
Address:	Bldg. C, 90, Chien 1 Rd., Chung-Ho, New Taipei City, 23585, Taiwan, R.O.C.
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN
FCC Registration / Designation Number:	788550 / TW0003

Table of Contents

Release Control Record 3

1 Certificate of Conformity 4

2 Summary of Test Results 5

2.1 Measurement Uncertainty 5
2.2 Modification Record 5

3 General Information 6

3.1 General Description of EUT 6
3.2 Description of Test Modes 7
3.2.1 Test Mode Applicability and Tested Channel Detail 8
3.3 Duty Cycle of Test Signal 9
3.4 Description of Support Units 10
3.4.1 Configuration of System under Test 10
3.5 General Description of Applied Standards and References 10

4 Test Types and Results 11

4.1 Radiated Emission and Bandedge Measurement 11
4.1.1 Limits of Radiated Emission and Bandedge Measurement 11
4.1.2 Test Instruments 12
4.1.3 Test Procedures 13
4.1.4 Deviation from Test Standard 13
4.1.5 Test Setup 14
4.1.6 EUT Operating Conditions 15
4.1.7 Test Results 16
4.2 Conducted Emission Measurement 29
4.2.1 Limits of Conducted Emission Measurement 29
4.2.2 Test Instruments 29
4.2.3 Test Procedures 30
4.2.4 Deviation from Test Standard 30
4.2.5 Test Setup 30
4.2.6 EUT Operating Conditions 30
4.2.7 Test Results 31

Annex A - Band Edge Measurement 35

5 Pictures of Test Arrangements 38

Appendix – Information of the Testing Laboratories 39

Release Control Record

Issue No.	Description	Date Issued
RFBDVW-WTW-P21100875	Original release	Jun. 08, 2022

1 Certificate of Conformity

Product:	WLAN IEE 802.11 g/b/n transceiver module
Brand:	LITEON
Test Model:	LILY-W131
Sample Status:	DVT
Applicant:	LITE-ON Technology Corp.
Test Date:	Mar. 16 ~ Mar. 17, 2022
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 : Celine Chou , **Date:** Jun. 08, 2022

Celine Chou / Senior Specialist

Approved by : Jeremy Lin , **Date:** Jun. 08, 2022

Jeremy Lin / 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 -2.16dB at 0.59800MHz.
15.205 / 15.209 / 15.247(d)	Radiated Emissions and Band Edge Measurement	Pass	Meet the requirement of limit. Minimum passing margin is -4.6dB at 2390.00MHz.
15.247(d)	Antenna Port Emission	N/A	Refer to note 2
15.247(a)(2)	6dB bandwidth	N/A	Refer to note 2
15.247(b)	Conducted power	N/A	Refer to note 2
15.247(e)	Power Spectral Density	N/A	Refer to note 2
15.203	Antenna Requirement	Pass	Antenna connector is I-PEX not a standard connector.

Note:

1. For 2.4G band compliance with rule 15.247(d) of the band-edge items, the test plots were recorded in Annex A. Test Procedures refer to report 4.1.3.
2. Only conducted emission, radiated meissions and band edge tests were performed for this addendum. Refer to PHONENIX TESTTLAB GmbH report no.: F160785E3 for other test data.
3. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.79 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.04 dB
	30MHz ~ 200MHz	2.93 dB
	200MHz ~1000MHz	2.95 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	WLAN IEE 802.11 g/b/n transceiver module
Brand	LITEON
Test Model	LILY-W131
Sample Status	DVT
Power Supply Rating	3.3Vdc
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b:11/5.5/2/1Mbps 802.11g: 54/48/36/24/18/12/9/6Mbps 802.11n: up to 65Mbps
Operating Frequency	2412 ~ 2462MHz
Number of Channel	802.11b, 802.11g, 802.11n (HT20): 11
Antenna Type	Refer to note
Antenna Connector	Refer to note
Accessory Device	NA
Cable Supplied	NA

Note:

1. The difference compared with the original report is integrated in two new hosts. Only conducted emission, radiated meissions and band edge tests were performed for this addendum. Other testing data please refer to the original PHONENIX TESTTLAB GmbH report no.: F160785E3 for other test data.
2. The host devices are list as below table.

Brand	Model	Product Name	Difference
Lucid	LUCID CONNECTED HOME CHARGING STATION, LTE, NA	LUCID CONNECTED HOME CHARGING STATION, LTE, NA	With WLAN, WWAN and RFID function
	LUCID CONNECTED HOME CHARGING STATION, NA	LUCID CONNECTED HOME CHARGING STATION, NA	With WLAN function only

* 7.3m non-shielded power cord without core attached on host

3. The EUT provides 1 completed transmitter and 1 receiver.

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

4. The antenna information for host is listed as below.

Type	Connector	Gain (dBi)
Dipole	I-PEX	2.20

* The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

3.2 Description of Test Modes

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

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

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable to			Description
	RE≥1G	RE<1G	PLC	
A	√	√	√	EUT contain with LUCID CONNECTED HOME CHARGING STATION, LTE, NA
B	-	√	√	EUT contain with LUCID CONNECTED HOME CHARGING STATION, NA

Where RE≥1G: Radiated Emission above 1GHz & Bandedge Measurement RE<1G: Radiated Emission below 1GHz
PLC: Power Line Conducted Emission

Note:
1. The EUT was positioned on **Z-plane** only.
2. Radiated emission test (below 1GHz) and power line conducted emission test items chosen the worst maximum power from original test report.

Radiated Emission Test (Above 1GHz):

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

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
A	802.11b	1 to 11	1, 6, 11	DSSS	DBPSK	1.0
A	802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6.0
A	802.11n (HT20)	1 to 11	1, 6, 11	OFDM	BPSK	6.5

Radiated Emission Test (Below 1GHz):

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

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
A, B	802.11n (HT20)	1 to 11	6	OFDM	BPSK	6.5

Power Line Conducted Emission Test:

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

EUT Configure Mode	Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
A, B	802.11n (HT20)	1 to 11	6	OFDM	BPSK	6.5

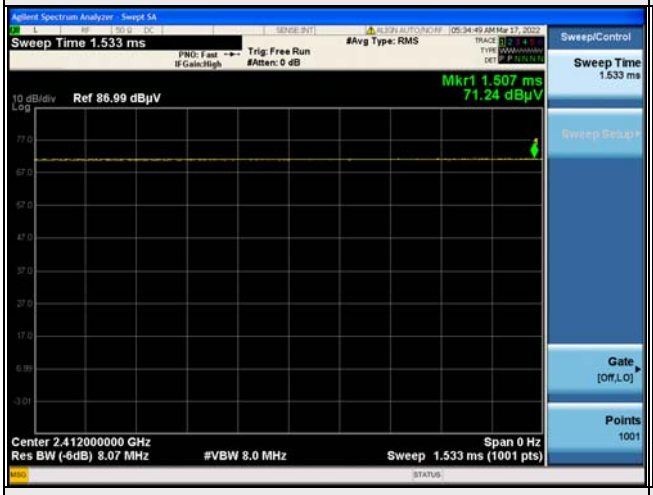
Test Condition:

Applicable to	Environmental Conditions	Input Power (System)	Tested by
RE≥1G	22 deg. C, 74% RH	220Vac, 60Hz	Thomas Cheng
RE<1G	22 deg. C, 74% RH	220Vac, 60Hz	Vincent Chen
PLC	21 deg. C, 64% RH	220Vac, 60Hz	Thomas Cheng

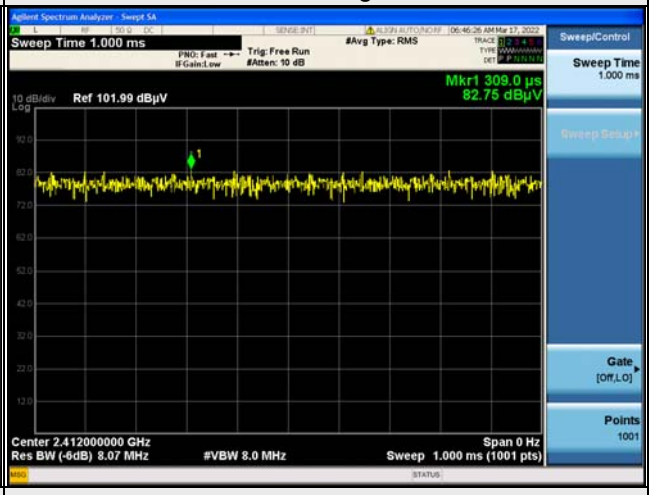
3.3 Duty Cycle of Test Signal

Duty cycle of test signal is 100%.

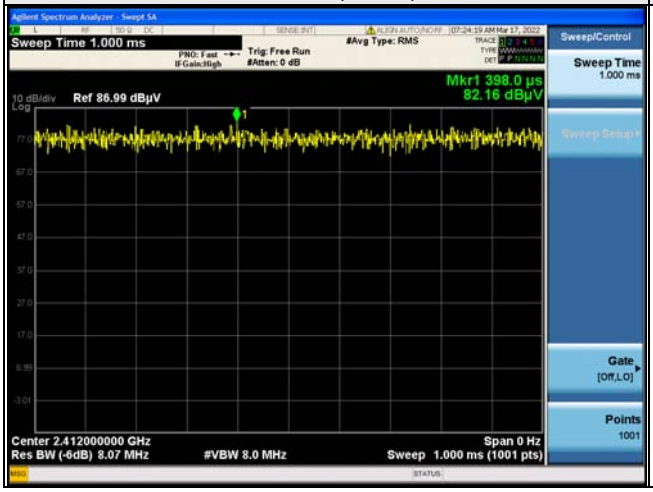
802.11b



802.11g



802.11n (HT20)



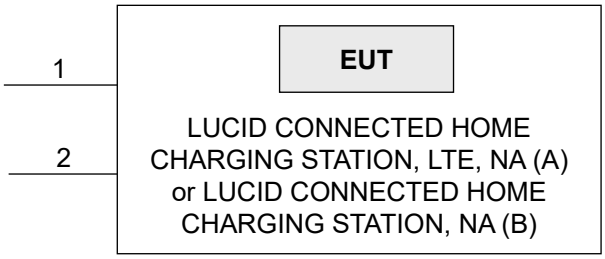
3.4 Description of Support Units

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

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	LUCID CONNECTED HOME CHARGING STATION, LTE, NA	Lucid	LUCID CONNECTED HOME CHARGING STATION, LTE, NA	NA	NA	Provided by manufacturer
B.	LUCID CONNECTED HOME CHARGING STATION, NA	Lucid	LUCID CONNECTED HOME CHARGING STATION, NA	NA	NA	Provided by manufacturer

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	Power cord	1	7.3	N	0	Attached on host
2.	AC power cable	1	2.4	N	0	-

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standards and References

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

Test standard:
FCC Part 15, Subpart C (15.247)
ANSI C63.10:2013

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

References Test Guidance:
KDB 558074 D01 15.247 Meas Guidance v05r02

All test items have been performed as a reference to the above KDB test guidance.

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 20dB 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 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer Agilent	N9010A	MY52220314	Dec. 03, 2021	Dec. 02, 2022
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Apr. 12, 2021	Apr. 11, 2022
Broadband Horn Antenna SCHWARZBECK	BBHA 9170	148	Nov. 14, 2021	Nov. 13, 2022
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-969	Nov. 14, 2021	Nov. 13, 2022
BILOG Antenna SCHWARZBECK	VULB 9168	9168-472	Oct. 28, 2021	Oct. 27, 2022
Fixed Attenuator WOKEN	MDCS18N-10	MDCS18N-10-01	Apr. 13, 2021	Apr. 12, 2022
Loop Antenna TESEQ	HLA 6121	45745	Jul. 21, 2021	Jul. 20, 2022
Preamplifier EMCI	EMC001340	980201	Sep. 15, 2021	Sep. 14, 2022
Preamplifier EMCI	EMC 012645	980115	Oct. 05, 2021	Oct. 04, 2022
Preamplifier EMCI	EMC 184045	980116	Oct. 05, 2021	Oct. 04, 2022
Preamplifier EMCI	EMC 330H	980112	Oct. 05, 2021	Oct. 04, 2022
RF Coaxial Cable EMCI	EMC104-SM-SM-8000	171005	Oct. 05, 2021	Oct. 04, 2022
RF Coaxial Cable HUBER+SUHNNER	SUCOFLEX 104	EMC104-SM-SM-1000 (140807)	Oct. 05, 2021	Oct. 04, 2022
RF Coaxial Cable WOKEN	8D-FB	Cable-Ch10-01	Oct. 05, 2021	Oct. 04, 2022
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

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 10.

4.1.3 Test Procedures

For Radiated emission below 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

Note:

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

For Radiated emission above 30MHz

a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

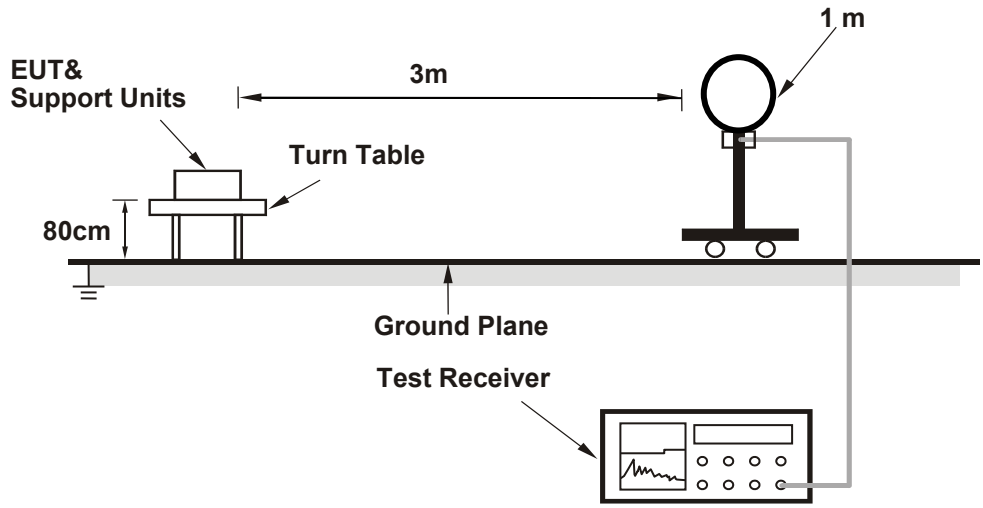
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98%) or 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz. (802.11b: RBW = 1MHz, VBW = 10Hz; 802.11g: RBW = 1MHz, VBW = 10Hz; 802.11n (HT20): RBW = 1MHz, VBW = 10Hz)
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

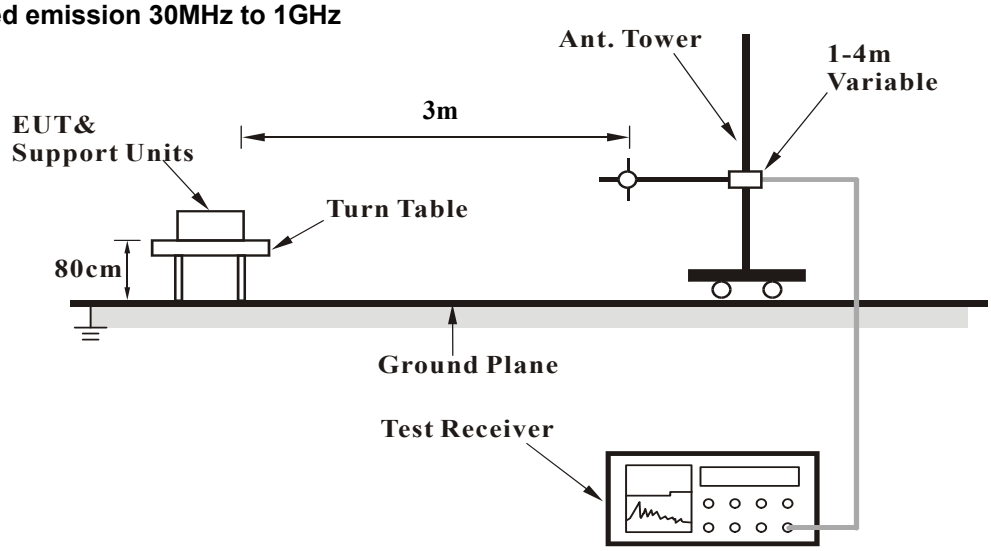
No deviation.

4.1.5 Test Setup

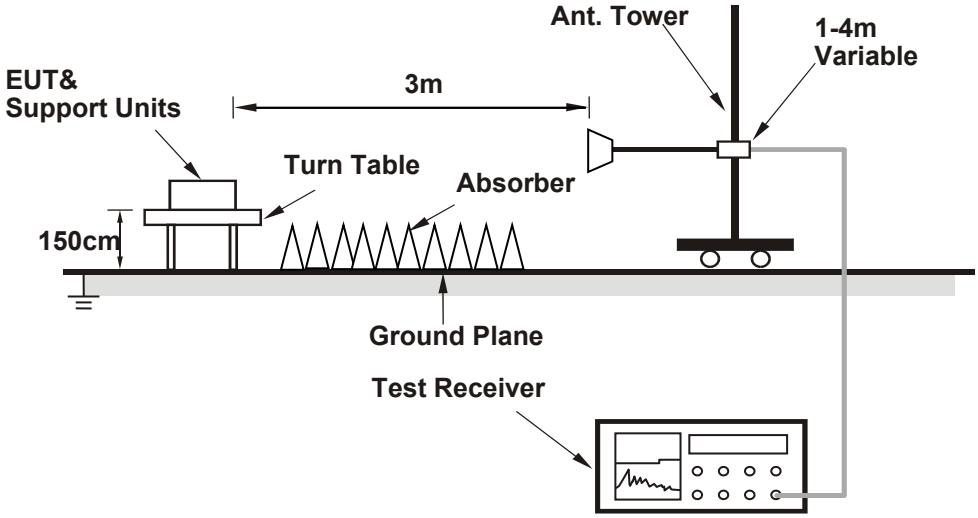
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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

4.1.6 EUT Operating Conditions

a. Set the EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results

Above 1GHz Data:

RF Mode	TX 802.11b	Channel	CH 1：2412 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	56.8 PK	74.0	-17.2	2.11 H	0	25.9	30.9
2	2390.00	46.1 AV	54.0	-7.9	2.11 H	0	15.2	30.9
3	*2412.00	104.7 PK			2.11 H	0	73.8	30.9
4	*2412.00	102.4 AV			2.11 H	0	71.5	30.9
5	4824.00	50.8 PK	74.0	-23.2	2.59 H	49	66.6	-15.8
6	4824.00	47.6 AV	54.0	-6.4	2.59 H	49	63.4	-15.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	56.7 PK	74.0	-17.3	3.84 V	350	25.8	30.9
2	2390.00	45.9 AV	54.0	-8.1	3.84 V	350	15.0	30.9
3	*2412.00	102.5 PK			3.84 V	350	71.6	30.9
4	*2412.00	100.6 AV			3.84 V	350	69.7	30.9
5	4824.00	48.9 PK	74.0	-25.1	3.27 V	287	64.7	-15.8
6	4824.00	45.1 AV	54.0	-8.9	3.91 V	322	60.9	-15.8

Remarks:

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

RF Mode	TX 802.11b	Channel	CH 6：2437 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	103.0 PK			2.51 H	2	72.1	30.9
2	*2437.00	100.7 AV			2.51 H	2	69.8	30.9
3	4874.00	51.5 PK	74.0	-22.5	2.49 H	43	67.4	-15.9
4	4874.00	48.9 AV	54.0	-5.1	2.49 H	43	64.8	-15.9
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	100.2 PK			3.79 V	346	69.3	30.9
2	*2437.00	97.8 AV			3.79 V	346	66.9	30.9
3	4874.00	49.5 PK	74.0	-24.5	3.21 V	211	65.4	-15.9
4	4874.00	45.6 AV	54.0	-8.4	3.21 V	211	61.5	-15.9

Remarks:

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

RF Mode	TX 802.11b	Channel	CH 11：2462 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	102.4 PK			2.68 H	0	71.5	30.9
2	*2462.00	99.2 AV			2.68 H	0	68.3	30.9
3	2483.50	57.0 PK	74.0	-17.0	2.68 H	0	26.2	30.8
4	2483.50	46.7 AV	54.0	-7.3	2.68 H	0	15.9	30.8
5	4924.00	47.8 PK	74.0	-26.2	2.75 H	21	63.8	-16.0
6	4924.00	43.0 AV	54.0	-11.0	2.75 H	21	59.0	-16.0
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	99.0 PK			3.65 V	347	68.1	30.9
2	*2462.00	95.2 AV			3.65 V	347	64.3	30.9
3	2483.50	56.6 PK	74.0	-17.4	3.65 V	347	25.8	30.8
4	2483.50	46.4 AV	54.0	-7.6	3.65 V	347	15.6	30.8
5	4924.00	45.6 PK	74.0	-28.4	2.80 V	170	61.6	-16.0
6	4924.00	40.4 AV	54.0	-13.6	2.80 V	170	56.4	-16.0

Remarks:

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

RF Mode	TX 802.11g	Channel	CH 1：2412 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	61.4 PK	74.0	-12.6	2.80 H	2	30.5	30.9
2	2390.00	48.7 AV	54.0	-5.3	2.80 H	2	17.8	30.9
3	*2412.00	103.3 PK			2.80 H	2	72.4	30.9
4	*2412.00	96.2 AV			2.80 H	2	65.3	30.9
5	4824.00	43.8 PK	74.0	-30.2	3.45 H	104	59.6	-15.8
6	4824.00	32.9 AV	54.0	-21.1	3.45 H	104	48.7	-15.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	59.1 PK	74.0	-14.9	3.91 V	349	28.2	30.9
2	2390.00	46.8 AV	54.0	-7.2	3.91 V	349	15.9	30.9
3	*2412.00	99.1 PK			3.91 V	349	68.2	30.9
4	*2412.00	92.0 AV			3.91 V	349	61.1	30.9
5	4824.00	43.3 PK	74.0	-30.7	1.16 V	82	59.1	-15.8
6	4824.00	32.5 AV	54.0	-21.5	1.16 V	82	48.3	-15.8

Remarks:

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

RF Mode	TX 802.11g	Channel	CH 6：2437 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	104.7 PK			2.75 H	2	73.8	30.9
2	*2437.00	97.7 AV			2.75 H	2	66.8	30.9
3	4874.00	44.3 PK	74.0	-29.7	2.43 H	294	60.2	-15.9
4	4874.00	33.1 AV	54.0	-20.9	2.43 H	294	49.0	-15.9
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	101.9 PK			3.83 V	348	71.0	30.9
2	*2437.00	94.8 AV			3.83 V	348	63.9	30.9
3	4874.00	43.7 PK	74.0	-30.3	2.94 V	242	59.6	-15.9
4	4874.00	32.9 AV	54.0	-21.1	2.94 V	242	48.8	-15.9

Remarks:

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

RF Mode	TX 802.11g	Channel	CH 11：2462 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	99.2 PK			2.72 H	2	68.3	30.9
2	*2462.00	92.3 AV			2.72 H	2	61.4	30.9
3	2483.50	61.8 PK	74.0	-12.2	2.72 H	2	31.0	30.8
4	2483.50	47.9 AV	54.0	-6.1	2.72 H	2	17.1	30.8
5	4924.00	43.1 PK	74.0	-30.9	3.36 H	3	59.1	-16.0
6	4924.00	33.0 AV	54.0	-21.0	3.36 H	3	49.0	-16.0
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	96.2 PK			3.70 V	346	65.3	30.9
2	*2462.00	89.3 AV			3.70 V	346	58.4	30.9
3	2483.50	59.1 PK	74.0	-14.9	3.70 V	346	28.3	30.8
4	2483.50	46.6 AV	54.0	-7.4	3.70 V	346	15.8	30.8
5	4924.00	42.9 PK	74.0	-31.1	3.04 V	119	58.9	-16.0
6	4924.00	32.8 AV	54.0	-21.2	3.04 V	119	48.8	-16.0

Remarks:

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

RF Mode	TX 802.11n (HT20)	Channel	CH 1：2412 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	62.9 PK	74.0	-11.1	2.81 H	2	32.0	30.9
2	**2390.00**	**49.4 AV**	**54.0**	**-4.6**	**2.81 H**	**2**	**18.5**	**30.9**
3	*2412.00	103.1 PK			2.81 H	2	72.2	30.9
4	*2412.00	95.4 AV			2.81 H	2	64.5	30.9
5	4824.00	44.6 PK	74.0	-29.4	3.37 H	75	60.4	-15.8
6	4824.00	33.4 AV	54.0	-20.6	3.37 H	75	49.2	-15.8
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	2390.00	60.7 PK	74.0	-13.3	3.85 V	349	29.8	30.9
2	2390.00	46.7 AV	54.0	-7.3	3.85 V	349	15.8	30.9
3	*2412.00	98.9 PK			3.85 V	349	68.0	30.9
4	*2412.00	91.1 AV			3.85 V	349	60.2	30.9
5	4824.00	44.1 PK	74.0	-29.9	3.84 V	125	59.9	-15.8
6	4824.00	33.2 AV	54.0	-20.8	3.84 V	125	49.0	-15.8

Remarks:

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

RF Mode	TX 802.11n (HT20)	Channel	CH 6：2437 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	105.7 PK			2.79 H	2	74.8	30.9
2	*2437.00	97.9 AV			2.79 H	2	67.0	30.9
3	4874.00	43.7 PK	74.0	-30.3	1.88 H	84	59.6	-15.9
4	4874.00	32.8 AV	54.0	-21.2	1.88 H	84	48.7	-15.9
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2437.00	102.7 PK			3.75 V	348	71.8	30.9
2	*2437.00	95.4 AV			3.75 V	348	64.5	30.9
3	4874.00	43.2 PK	74.0	-30.8	3.75 V	348	59.1	-15.9
4	4874.00	32.7 AV	54.0	-21.3	3.75 V	348	48.6	-15.9

Remarks:

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

RF Mode	TX 802.11n (HT20)	Channel	CH 11：2462 MHz
Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	99.7 PK			2.75 H	2	68.8	30.9
2	*2462.00	91.7 AV			2.75 H	2	60.8	30.9
3	2483.50	62.1 PK	74.0	-11.9	2.75 H	2	31.3	30.8
4	2483.50	48.6 AV	54.0	-5.4	2.75 H	2	17.8	30.8
5	4924.00	43.7 PK	74.0	-30.3	1.10 H	258	59.7	-16.0
6	4924.00	33.1 AV	54.0	-20.9	1.10 H	258	49.1	-16.0
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*2462.00	96.4 PK			3.70 V	347	65.5	30.9
2	*2462.00	88.5 AV			3.70 V	347	57.6	30.9
3	2483.50	58.9 PK	74.0	-15.1	3.70 V	347	28.1	30.8
4	2483.50	47.1 AV	54.0	-6.9	3.70 V	347	16.3	30.8
5	4924.00	43.3 PK	74.0	-30.7	3.14 V	208	59.3	-16.0
6	4924.00	32.8 AV	54.0	-21.2	3.14 V	208	48.8	-16.0

Remarks:

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

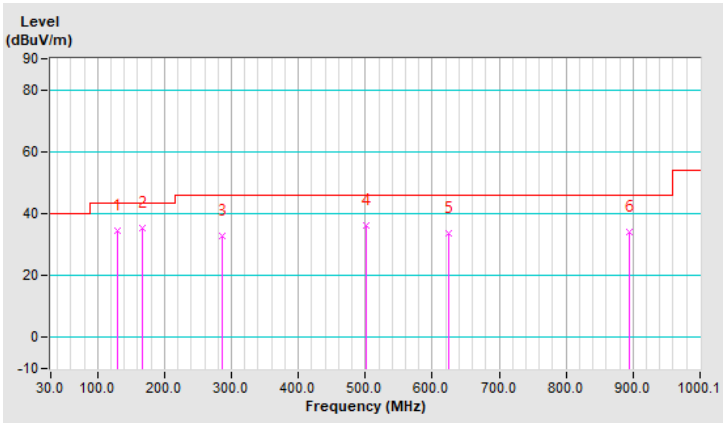
Below 1GHz worst-case data:

RF Mode	TX 802.11n (HT20)	Channel	CH 6：2437 MHz
Frequency Range	30MHz ~ 1GHz	Detector Function	Quasi-Peak (QP)
Test Mode	A		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	129.92	34.7 QP	43.5	-8.8	1.23 H	312	48.1	-13.4
2	166.78	35.2 QP	43.5	-8.3	2.46 H	183	48.1	-12.9
3	286.11	32.9 QP	46.0	-13.1	3.21 H	38	45.6	-12.7
4	501.47	36.3 QP	46.0	-9.7	1.87 H	18	42.3	-6.0
5	623.70	33.5 QP	46.0	-12.5	3.36 H	51	36.4	-2.9
6	894.36	34.0 QP	46.0	-12.0	1.45 H	18	32.5	1.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

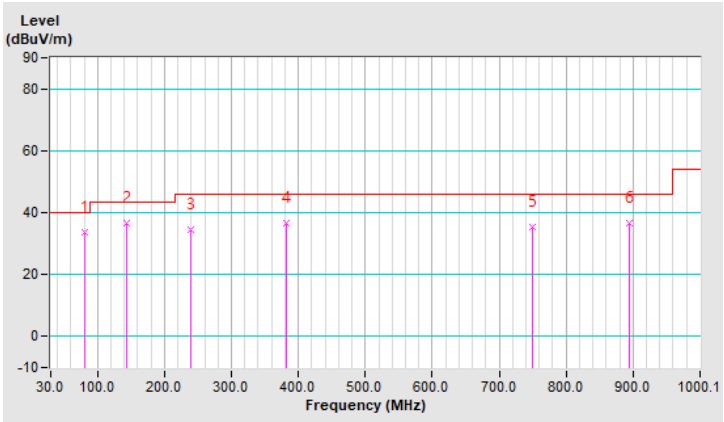


RF Mode	TX 802.11n (HT20)	Channel	CH 6：2437 MHz
Frequency Range	30MHz ~ 1GHz	Detector Function	Quasi-Peak (QP)
Test Mode	A		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	80.45	33.8 QP	40.0	-6.2	1.52 V	19	51.5	-17.7
2	143.50	36.7 QP	43.5	-6.8	2.26 V	2	49.0	-12.3
3	238.57	34.3 QP	46.0	-11.7	1.78 V	300	49.1	-14.8
4	382.15	36.7 QP	46.0	-9.3	2.35 V	18	46.2	-9.5
5	749.81	35.5 QP	46.0	-10.5	3.34 V	306	36.0	-0.5
6	894.36	36.5 QP	46.0	-9.5	1.04 V	2	35.0	1.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

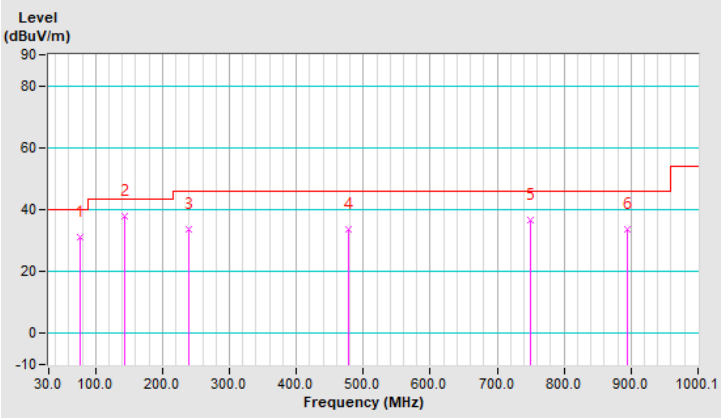


RF Mode	TX 802.11n (HT20)	Channel	CH 6：2437 MHz
Frequency Range	30MHz ~ 1GHz	Detector Function	Quasi-Peak (QP)
Test Mode	B		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	77.53	31.0 QP	40.0	-9.0	3.31 H	205	48.0	-17.0
2	143.50	37.8 QP	43.5	-5.7	2.04 H	233	50.1	-12.3
3	238.57	33.8 QP	46.0	-12.2	1.65 H	2	48.6	-14.8
4	477.22	33.8 QP	46.0	-12.2	2.29 H	18	40.7	-6.9
5	749.81	36.6 QP	46.0	-9.4	1.78 H	354	37.1	-0.5
6	894.36	33.8 QP	46.0	-12.2	1.03 H	161	32.3	1.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

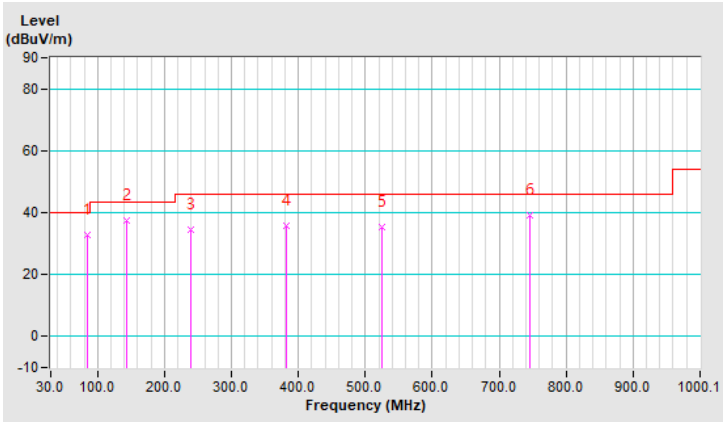


RF Mode	TX 802.11n (HT20)	Channel	CH 6：2437 MHz
Frequency Range	30MHz ~ 1GHz	Detector Function	Quasi-Peak (QP)
Test Mode	B		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	84.33	32.6 QP	40.0	-7.4	1.01 V	19	50.9	-18.3
2	143.50	37.3 QP	43.5	-6.2	1.01 V	2	49.6	-12.3
3	238.57	34.3 QP	46.0	-11.7	2.00 V	292	49.1	-14.8
4	382.15	35.8 QP	46.0	-10.2	1.01 V	18	45.3	-9.5
5	524.75	35.3 QP	46.0	-10.7	1.01 V	18	41.0	-5.7
6	745.93	39.0 QP	46.0	-7.0	2.00 V	41	39.6	-0.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB).
3. The other emission levels were very low against the limit of frequency range 30MHz ~ 1000MHz.
4. Margin value = Emission Level – Limit value.
5. The emission levels were very low against the limit of frequency range 9kHz ~ 30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

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

Note: 1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESR3	102783	Dec. 20, 2021	Dec. 19, 2022
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond2-01	Sep. 04, 2021	Sep. 03, 2022
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Feb. 17, 2022	Feb. 16, 2023
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100312	Sep. 17, 2021	Sep. 16, 2022
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 2.
3. The VCCI Site Registration No. is C-12047.

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/ 50uH of coupling impedance for the measuring instrument.

b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

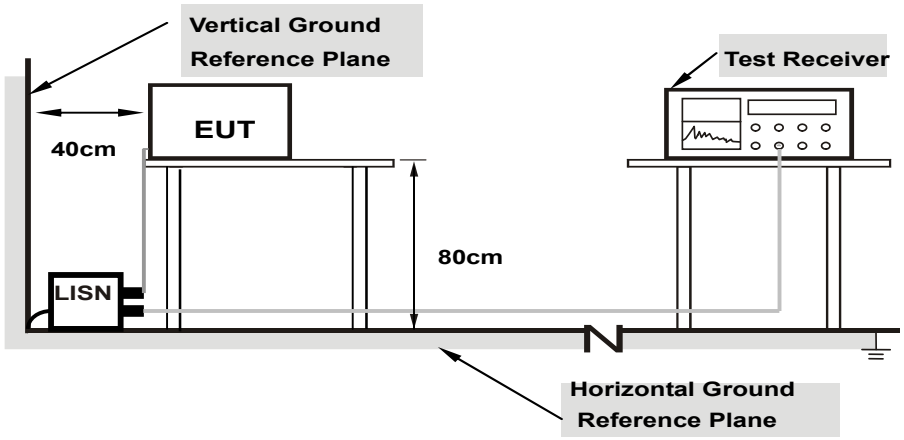
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Conditions

Same as 4.1.6.

4.2.7 Test Results

Worst-case data:

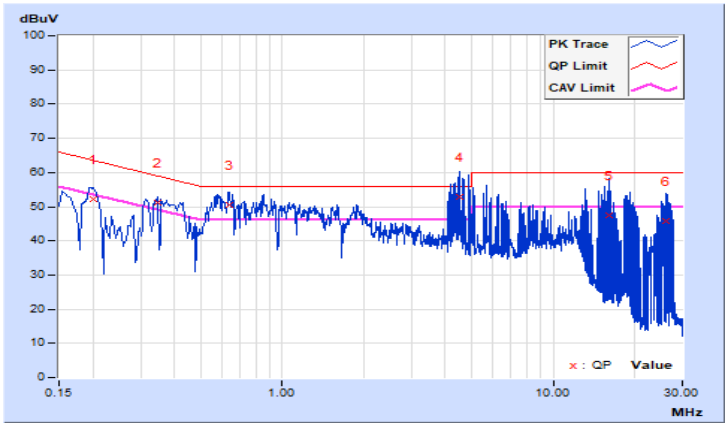
802.11n (HT20)

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

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.19989	10.14	41.99	29.74	52.13	39.88	63.62	53.62	-11.49	-13.74
2	0.34577	10.15	41.15	31.00	51.30	41.15	59.06	49.06	-7.76	-7.91
3	0.63800	10.17	40.28	29.97	50.45	40.14	56.00	46.00	-5.55	-5.86
4	4.51400	10.25	42.57	22.30	52.82	32.55	56.00	46.00	-3.18	-13.45
5	16.02600	10.34	37.24	8.31	47.58	18.65	60.00	50.00	-12.42	-31.35
6	25.97000	10.20	35.56	3.34	45.76	13.54	60.00	50.00	-14.24	-36.46

Remarks:

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

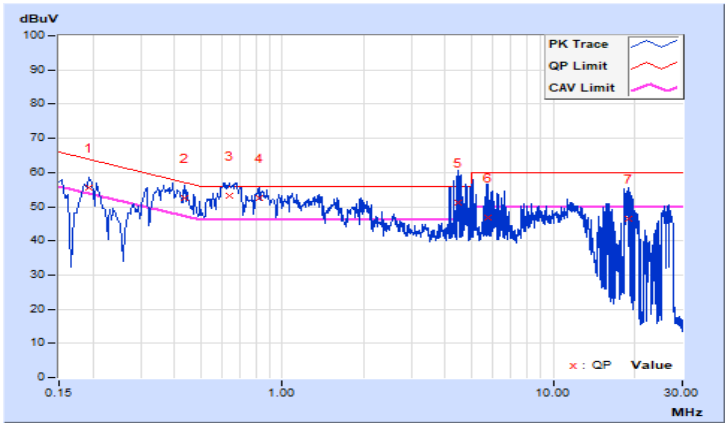


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	A		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.19400	10.15	45.47	32.58	55.62	42.73	63.86	53.86	-8.24	-11.13
2	0.43400	10.17	42.50	33.48	52.67	43.65	57.18	47.18	-4.51	-3.53
3	0.63800	10.18	42.97	32.86	53.15	43.04	56.00	46.00	-2.85	-2.96
4	0.81800	10.19	42.17	30.08	52.36	40.27	56.00	46.00	-3.64	-5.73
5	4.47800	10.28	40.83	23.60	51.11	33.88	56.00	46.00	-4.89	-12.12
6	5.78200	10.29	36.37	24.43	46.66	34.72	60.00	50.00	-13.34	-15.28
7	18.99800	10.53	36.08	8.48	46.61	19.01	60.00	50.00	-13.39	-30.99

Remarks:

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

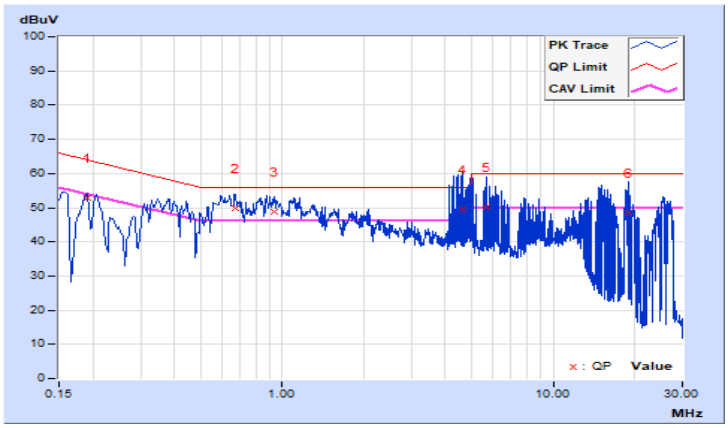


Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.19000	10.14	42.80	34.12	52.94	44.26	64.04	54.04	-11.10	-9.78
2	0.66809	10.17	39.59	28.39	49.76	38.56	56.00	46.00	-6.24	-7.44
3	0.93400	10.19	38.75	28.05	48.94	38.24	56.00	46.00	-7.06	-7.76
4	4.61400	10.25	39.21	21.02	49.46	31.27	56.00	46.00	-6.54	-14.73
5	5.69000	10.26	39.81	21.11	50.07	31.37	60.00	50.00	-9.93	-18.63
6	18.93800	10.39	38.08	8.22	48.47	18.61	60.00	50.00	-11.53	-31.39

Remarks:

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

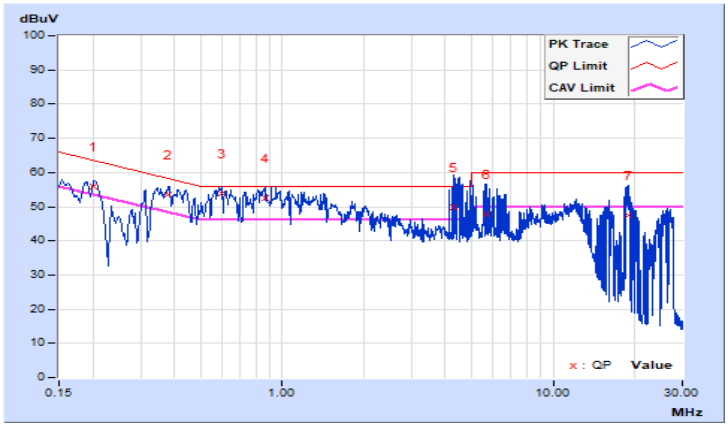


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Test Mode	B		

No	Freq.	Corr. Factor	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.20200	10.15	45.78	34.06	55.93	44.21	63.53	53.53	-7.60	-9.32
2	0.38117	10.17	43.27	33.61	53.44	43.78	58.25	48.25	-4.81	-4.47
3	**0.59800**	**10.18**	**43.66**	**33.30**	**53.84**	**43.48**	**56.00**	**46.00**	**-2.16**	**-2.52**
4	0.86200	10.19	42.38	33.64	52.57	43.83	56.00	46.00	-3.43	-2.17
5	4.30600	10.27	39.51	23.44	49.78	33.71	56.00	46.00	-6.22	-12.29
6	5.68600	10.29	37.46	24.10	47.75	34.39	60.00	50.00	-12.25	-15.61
7	18.92200	10.53	37.07	9.92	47.60	20.45	60.00	50.00	-12.40	-29.55

Remarks:

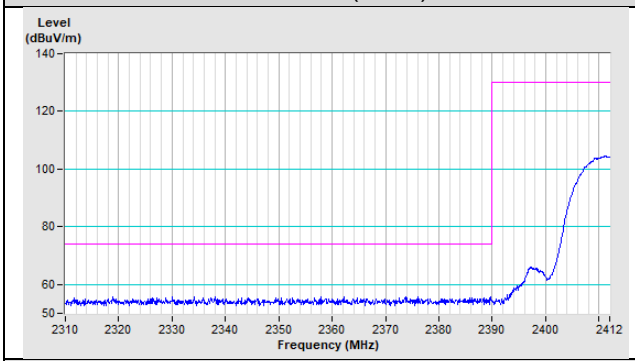
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. The emission levels of other frequencies were very low against the limit.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.



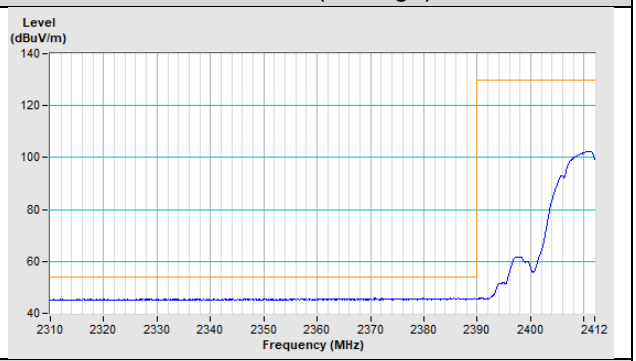
Annex A - Band Edge Measurement

802.11b Channel 1

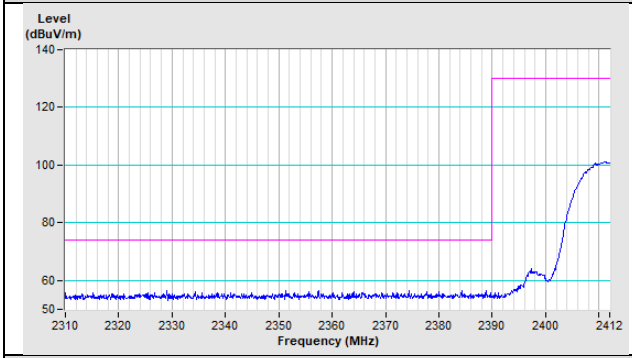
Horizontal (Peak)



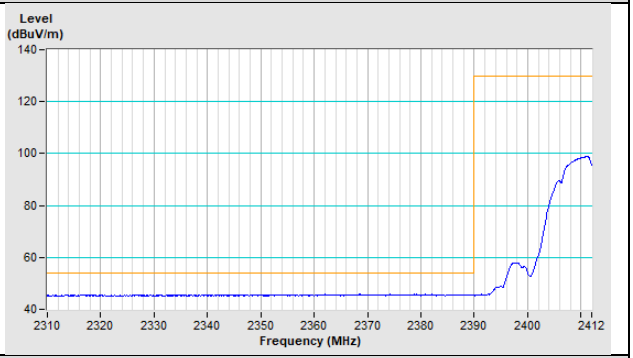
Horizontal (Average)



Vertical (Peak)

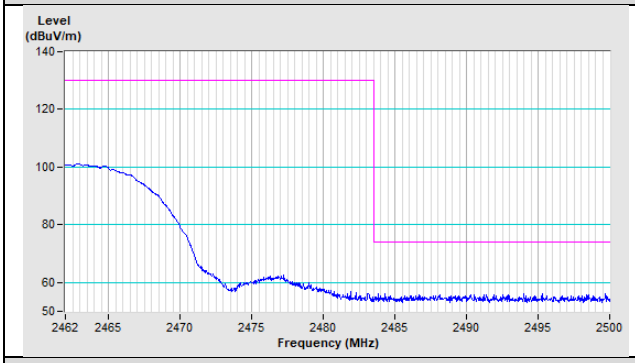


Vertical (Average)

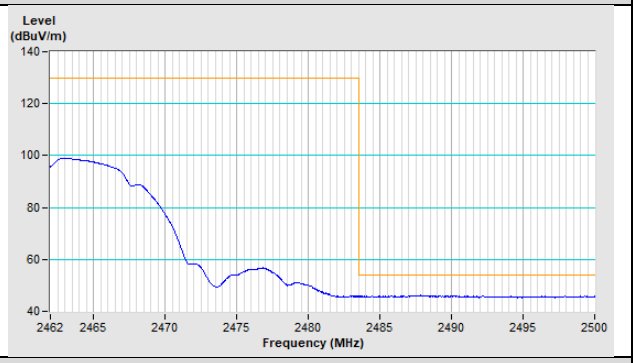


802.11b Channel 11

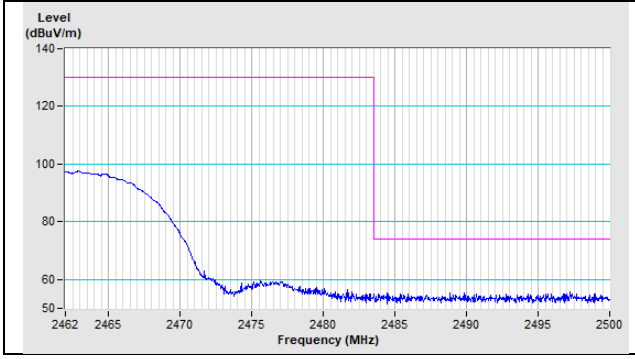
Horizontal (Peak)



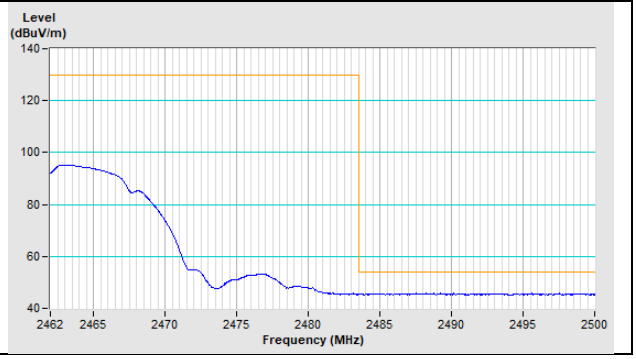
Horizontal (Average)

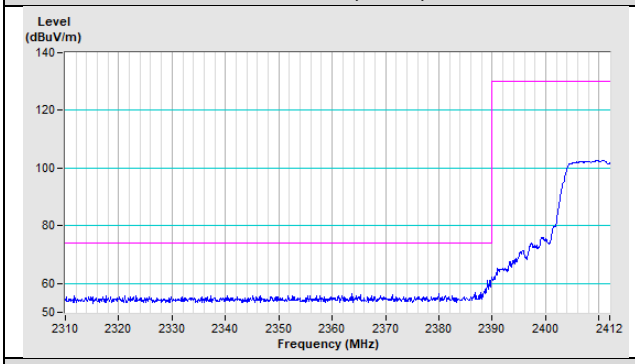
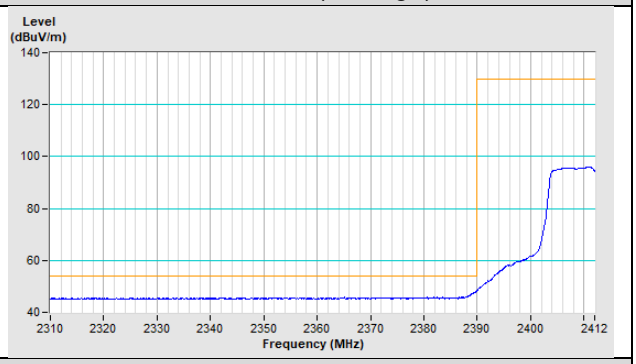
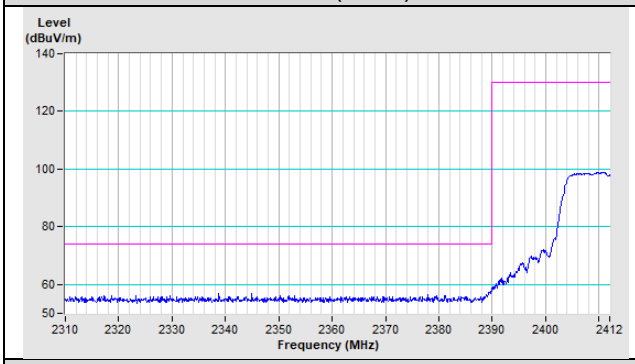
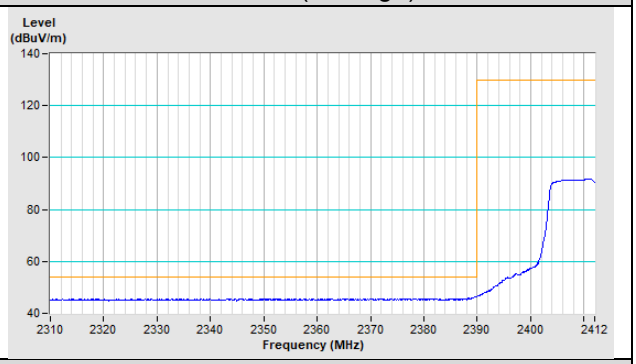
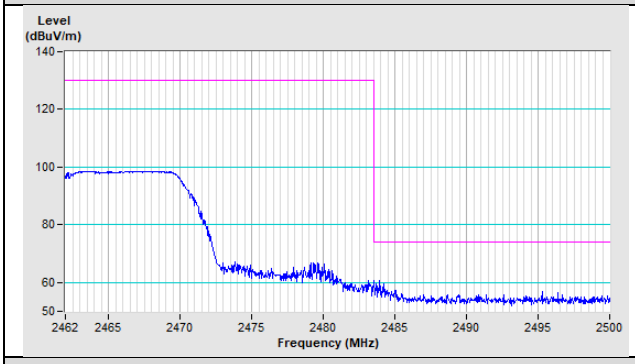
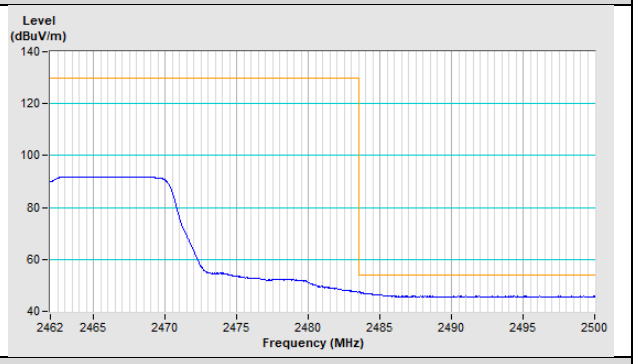
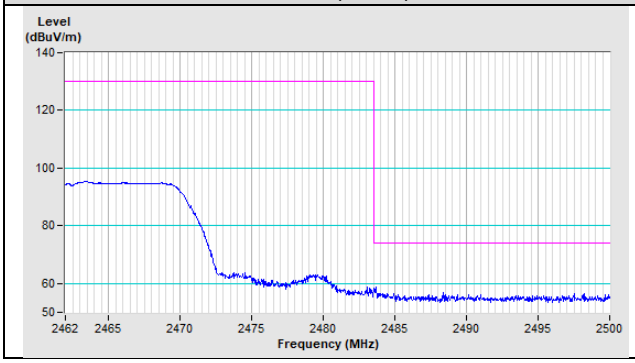
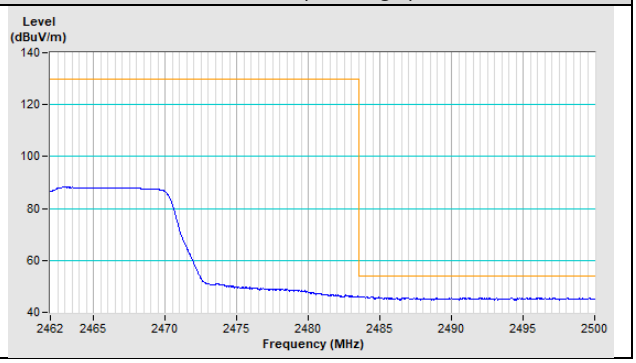


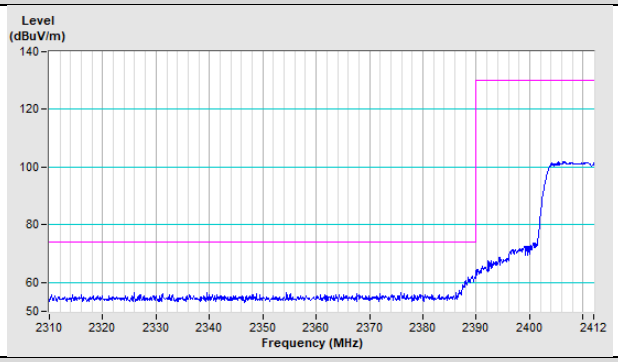
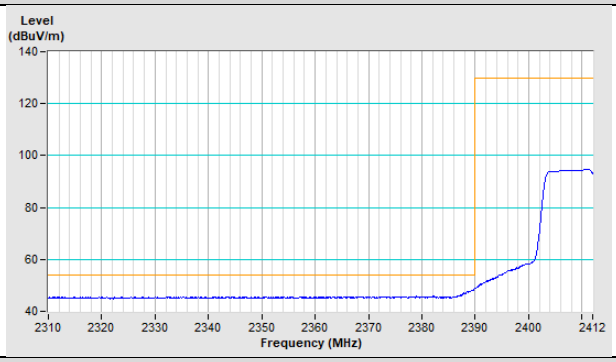
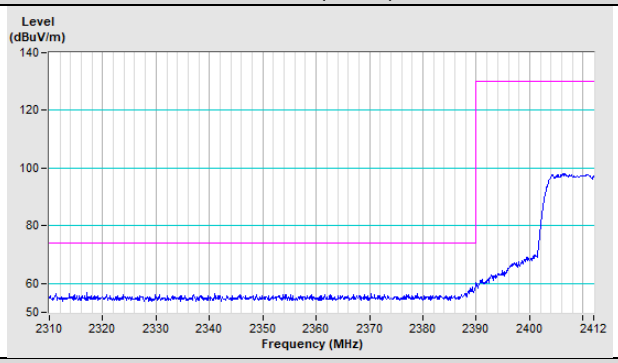
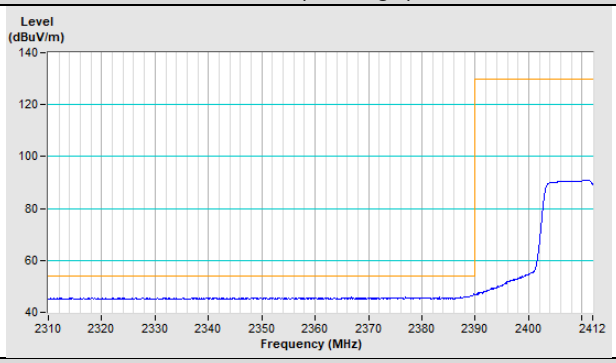
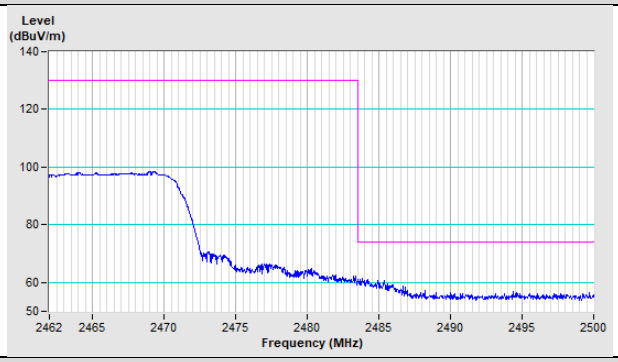
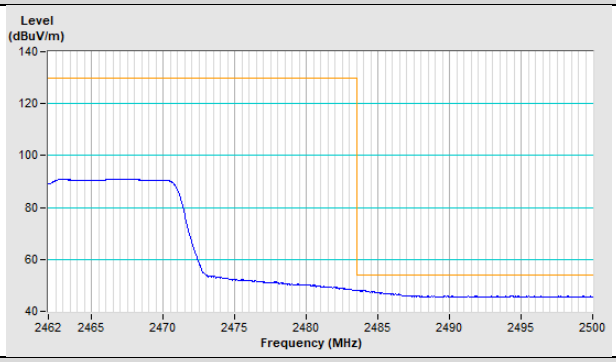
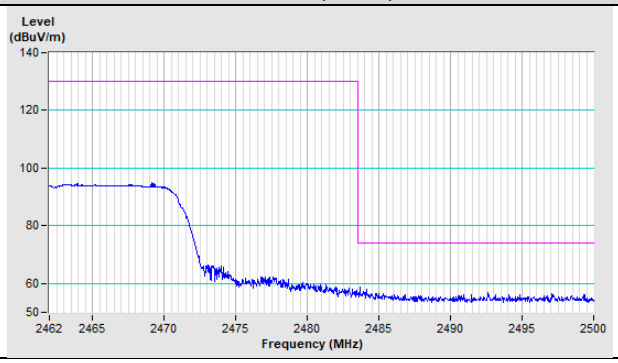
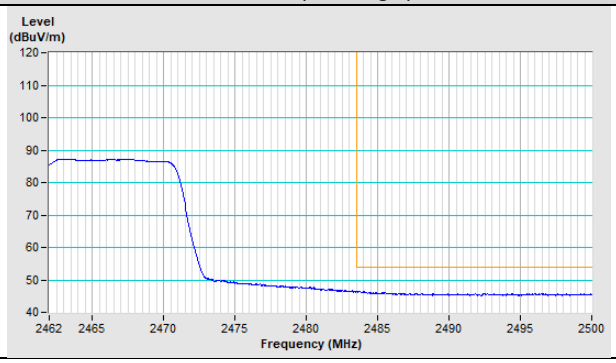
Vertical (Peak)



Vertical (Average)



802.11g Channel 1	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	
802.11g Channel 11	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

802.11n (HT20) Channel 1	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	
802.11n (HT20) Channel 11	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	

5 Pictures of Test Arrangements

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

Appendix – Information of the Testing Laboratories

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

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

Lin Kou EMC/RF Lab
Tel: 886-2-26052180
Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab
Tel: 886-3-6668565
Fax: 886-3-6668323

Hwa Ya EMC/RF/Safety Lab
Tel: 886-3-3183232
Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com
Web Site: www.bureauveritas-adt.com

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

--- END ---