

FCC Test Report (Co-Located)

Report No.: RF161229C25F-2

FCC ID: PY317400404

Test Model: RBR40

Series Model: RBS40

Received Date: Dec. 22, 2016

Test Date: Mar. 01, 2017

Issued Date: Feb. 02, 2018

Applicant: NETGEAR, INC.

Address: 350 East Plumeria Drive San Jose, CA 95134

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: No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)

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



This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification. The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.

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	9
3.2.1 Test Mode Applicability and Tested Channel Detail	11
3.3 Description of Support Units	13
3.3.1 Configuration of System under Test	13
3.4 General Description of Applied Standards	13
4 Test Types and Results	14
4.1 Radiated Emission and Bandedge Measurement.....	14
4.1.1 Limits of Radiated Emission and Bandedge Measurement	14
4.1.2 Test Instruments	15
4.1.3 Test Procedures.....	16
4.1.4 Deviation from Test Standard	16
4.1.5 Test Setup.....	17
4.1.6 EUT Operating Conditions.....	18
4.1.7 Test Results	19
4.2 Conducted Emission Measurement	35
4.2.1 Limits of Conducted Emission Measurement	35
4.2.2 Test Instruments	35
4.2.3 Test Procedures.....	36
4.2.4 Deviation from Test Standard	36
4.2.5 Test Setup.....	36
4.2.6 EUT Operating Conditions.....	36
4.2.7 Test Results	37
5 Pictures of Test Arrangements	53
Appendix – Information on the Testing Laboratories	54

Release Control Record

Issue No.	Description	Date Issued
RF161229C25F-2	Original release.	Feb. 02, 2018

1 Certificate of Conformity

Product: Orbi Router, Orbi Satellite

Brand: NETGEAR

Test Model: RBR40

Series Model: RBS40

Sample Status: Engineering sample

Applicant: NETGEAR, INC.

Test Date: Mar. 01, 2017

Standards: 47 CFR FCC Part 15, Subpart C (Section 15.247)
47 CFR FCC Part 15, Subpart E (Section 15.407)
ANSI C63.10-2013

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

Prepared by :  , **Date:** Feb. 02, 2018
Pettie Chen / Senior Specialist

Approved by :  , **Date:** Feb. 02, 2018
Bruce Chen / Project Engineer

2 Summary of Test Results

Applied Standard:	47 CFR FCC Part 15, Subpart C (Section 15.247) 47 CFR FCC Part 15, Subpart E (Section 15.407)		
FCC Clause	Test Item	Result	Remarks
15.207 15.407(b)(6)	AC Power Conducted Emission	Pass	Meet the requirement of limit. Minimum passing margin is -11.20dB at 0.31350MHz.
15.205 / 15.209 / 15.247(d) 15.407(b) (1/2/3/4(i/ii)/6)	Radiated Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -0.1dB at 5150.00MHz.

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	2.44 dB
Radiated Emissions up to 1 GHz	30MHz ~ 200MHz	3.59 dB
	200MHz ~ 1000MHz	3.60 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Orbi Router, Orbi Satellite
Brand	NETGEAR
Test Model	RBR40
Series Model	RBS40
Model Difference	Refer to Note for more details
Status of EUT	Engineering sample
Power Supply Rating	12Vdc from adapter
Modulation Type	CCK, DQPSK, DBPSK for DSSS 256QAM, 64QAM, 16QAM, QPSK, BPSK for OFDM
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: 11/5.5/2/1Mbps 802.11a/g: 54/48/36/24/18/12/9/6Mbps 802.11n: up to 300Mbps 802.11ac: up to 866.7Mbps
Operating Frequency	2.4GHz: 2412 ~ 2462MHz 5.0GHz: 5180 ~ 5240MHz, 5745 ~ 5825MHz
Number of Channel	2412 ~ 2462MHz: 11 for 802.11b, 802.11g, 802.11n (HT20) 7 for 802.11n (HT40) 5180 ~ 5240MHz: 4 for 802.11a, 802.11n (HT20), 802.11ac (VHT20) 2 for 802.11n (HT40), 802.11ac (VHT40) 1 for 802.11ac (VHT80) 5745 ~ 5825MHz: 5 for 802.11a, 802.11n (HT20), 802.11ac (VHT20) 2 for 802.11n (HT40), 802.11ac (VHT40) 1 for 802.11ac (VHT80)
Output Power	WLAN CDD Mode: 2412 ~ 2462MHz: 967.282mW 5180 ~ 5240MHz: 873.145mW 5745 ~ 5825MHz: 881.224mW Beamforming Mode: 2412 ~ 2462MHz: 920.601mW 5180 ~ 5240MHz: 855.208mW 5745 ~ 5825MHz: 841.395mW
Antenna Type	Refer to note
Antenna Connector	Refer to note
Accessory Device	Adapter
Data Cable Supplied	1.95m non-shielded RJ45 cable

Note:

1. All models are electrically identical except software firmware. Model: RBR40 is the representative for final test.

Brand	Product Name	Model	Function	Band	RF Module	Difference
NETGEAR	Orbi Router	RBR40	Router	2.4G/ UNII-3	Module 1	1. Master mode only
				UNII-1	Module 2	2. With internet function
	Orbi Satellite	RBS40	Satellite	2.4G/ UNII-3	Module 1	Master mode and Client mode for 2.4GHz Client mode for UNII-3
				UNII-1	Module 2	Master mode only for UNII-1

*The following RF Modules are for the EUT.

RF Module	Band	Antenna No.
Module 1	2.4G	3/4
	UNII-3	1/2
Module 2	UNII-1	3/4

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

Band	Modulation Mode	Beamforming Mode	TX Function
2.4GHz	802.11b	Not Support	2TX
	802.11g	Not Support	2TX
	802.11n (HT20)	Support	2TX
	802.11n (HT40)	Support	2TX
5GHz	802.11a	Not Support	2TX
	802.11n (HT20)	Support	2TX
	802.11n (HT40)	Support	2TX
	802.11ac (VHT20)	Support	2TX
	802.11ac (VHT40)	Support	2TX
	802.11ac (VHT80)	Support	2TX

* For 802.11n, CDD mode is the worst case for final radiated emission and power line conducted emission tests after pretesting CDD mode and beamforming mode.

*The EUT was pretesting following mode and Mode A was the worst for the final tests.

Mode	Description
A	Absorber position 1
B	Absorber position 2

3. The EUT uses following antennas.

Antenna Type	Dipole				
Antenna Connector	I-PEX				
Antenna Gain (dBi)					
	2.4GHz Band	5GHz U-NII-1	5GHz U-NII-2A	5GHz U-NII-2C	5GHz U-NII-3
Ant. 1	-	-	-	3.49	3.80
Ant. 2	-	-	-	3.51	3.57
Ant. 3	2.58	3.72	3.56	-	-
Ant. 4	2.89	3.49	3.53	-	-

4. The EUT uses following adapters.

Adapter 1	
Brand	NETGEAR
Model	AD2067F10
P/N	332-10797-01
Input Power	100-120Vac~50/60Hz 1.0A
Output Power	12.0Vdc / 2.5A
Power Line	1.85m DC cable without core attached on adapter

Adapter 2	
Brand	NETGEAR
Model	2ABL030P1 NJ
P/N	332-10948-01
Input Power	100-120Vac~50/60Hz 1.0A
Output Power	12.0Vdc / 2.5A
Power Line	1.8m DC cable without core attached on adapter

* After pre-testing, adapter 1 was the worst case for final test.

3.2 Description of Test Modes

For 2.4GHz

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		

7 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
3	2422MHz	7	2442MHz
4	2427MHz	8	2447MHz
5	2432MHz	9	2452MHz
6	2437MHz		

For 5180 ~ 5240MHz

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

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

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

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
42	5210MHz

For 5745 ~ 5825MHz:

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

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

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

Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
155	5775MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT CONFIGURE MODE	APPLICABLE TO			DESCRIPTION
	RE \geq 1G	RE<1G	PLC	
A	√	√	√	Power from adapter 1
B	-	√	√	Power from adapter 2

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

Note:

1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **Z-plane**.
2. "-": Means no effect.

Radiated Emission Test (Above 1GHz):

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

EUT CONFIGURE MODE	MODE	FREQ. RANGE (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY
A	802.11b + 802.11ac (VHT20)	2412 ~ 2462	1 to 11	1 + 40	DBPSK
		5180 ~ 5240	36 to 48		BPSK
A	802.11b + 802.11a	2412 ~ 2462	1 to 11	1 + 165	DBPSK
		5745 ~ 5825	149 to 165		BPSK
A	802.11ac (VHT20) + 802.11a	5180 ~ 5240	36 to 48	40 + 165	BPSK
		5745 ~ 5825	149 to 165		BPSK
A	802.11b + 802.11ac (VHT20) + 802.11a	2412 ~ 2462	1 to 11	1 + 40 + 165	DBPSK
		5180 ~ 5240	36 to 48		BPSK
		5745 ~ 5825	149 to 165		BPSK

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	FREQ. RANGE (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY
A, B	802.11b + 802.11ac (VHT20)	2412 ~ 2462	1 to 11	1 + 40	DBPSK
		5180 ~ 5240	36 to 48		BPSK
A, B	802.11b + 802.11a	2412 ~ 2462	1 to 11	1 + 165	DBPSK
		5745 ~ 5825	149 to 165		BPSK
A, B	802.11ac (VHT20) + 802.11a	5180 ~ 5240	36 to 48	40 + 165	BPSK
		5745 ~ 5825	149 to 165		BPSK
A, B	802.11b + 802.11ac (VHT20) + 802.11a	2412 ~ 2462	1 to 11	1 + 40 + 165	DBPSK
		5180 ~ 5240	36 to 48		BPSK
		5745 ~ 5825	149 to 165		BPSK

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	FREQ. RANGE (MHz)	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY
A, B	802.11b + 802.11ac (VHT20)	2412 ~ 2462	1 to 11	1 + 40	DBPSK
		5180 ~ 5240	36 to 48		BPSK
A, B	802.11b + 802.11a	2412 ~ 2462	1 to 11	1 + 165	DBPSK
		5745 ~ 5825	149 to 165		BPSK
A, B	802.11ac (VHT20) + 802.11a	5180 ~ 5240	36 to 48	40 + 165	BPSK
		5745 ~ 5825	149 to 165		BPSK
A, B	802.11b + 802.11ac (VHT20) + 802.11a	2412 ~ 2462	1 to 11	1 + 40 + 165	DBPSK
		5180 ~ 5240	36 to 48		BPSK
		5745 ~ 5825	149 to 165		BPSK

Test Condition:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE \geq 1G	22deg. C, 65%RH	120Vac, 60Hz	Matthew Yang
RE<1G	22deg. C, 65%RH	120Vac, 60Hz	Matthew Yang
PLC	25deg. C, 75%RH	120Vac, 60Hz	Matthew Yang

3.3 Description of Support Units

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

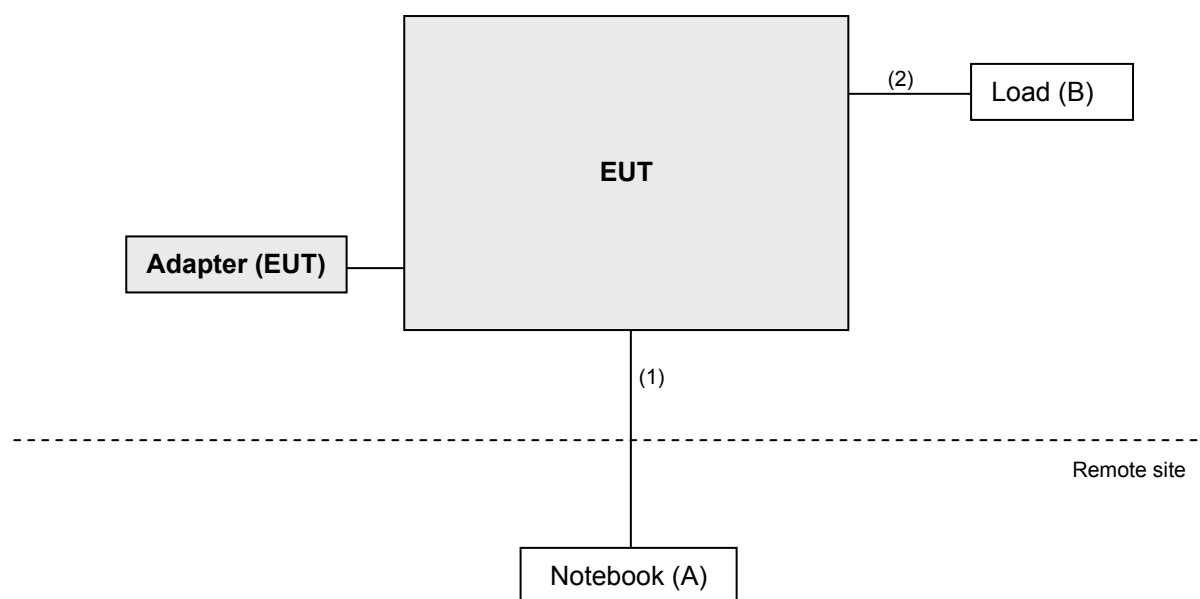
ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Notebook	DELL	E5410	6RP2YM1	FCC DoC Approved	-
B.	Load	N/A	N/A	N/A	N/A	-

Note:

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

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	RJ45 cable	1	10	N	0	-
2.	RJ45 cable	3	1.8	N	0	-

3.3.1 Configuration of System under Test



3.4 General Description of Applied Standards

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

FCC Part 15, Subpart C (15.247)

FCC Part 15, Subpart E (15.407)

ANSI C63.10-2013

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

Note: The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

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

Limits of unwanted emission out of the restricted bands

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

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

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

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESIB7	100187	Apr. 18, 2016	Apr. 17, 2017
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Aug. 16, 2016	Aug. 15, 2017
BILOG Antenna SCHWARZBECK	VULB9168	9168-151	Dec. 16, 2016	Dec. 15, 2017
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-1170	Dec. 15, 2016	Dec. 14, 2017
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Dec. 14, 2016	Dec. 13, 2017
Preamplifier Agilent	8447D	2944A10738	Aug. 22, 2016	Aug. 21, 2017
Preamplifier Agilent	8449B	3008A01964	Aug. 22, 2016	Aug. 21, 2017
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH3-03 (214378)	Aug. 22, 2016	Aug. 21, 2017
RF signal cable HUBER+SUHNER	SUCOFLEX 106	Cable-CH3-03 (309224+12738)	Aug. 22, 2016	Aug. 21, 2017
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021702	NA	NA
Turn Table BV ADT	TT100	TT93021702	NA	NA
Turn Table Controller BV ADT	SC100	SC93021702	NA	NA
26GHz ~ 40GHz Amplifier	EM26400	815221	Oct. 17, 2016	Oct. 16, 2017

- 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 4.
 3. The FCC Designation Number is TW0003. The number will be varied with the Lab location and scope as attached.
 4. The IC Site Registration No. is IC 7450F-4.

4.1.3 Test Procedures

For Radiated emission below 30MHz

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

NOTE:

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

For Radiated emission above 30MHz

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

Note:

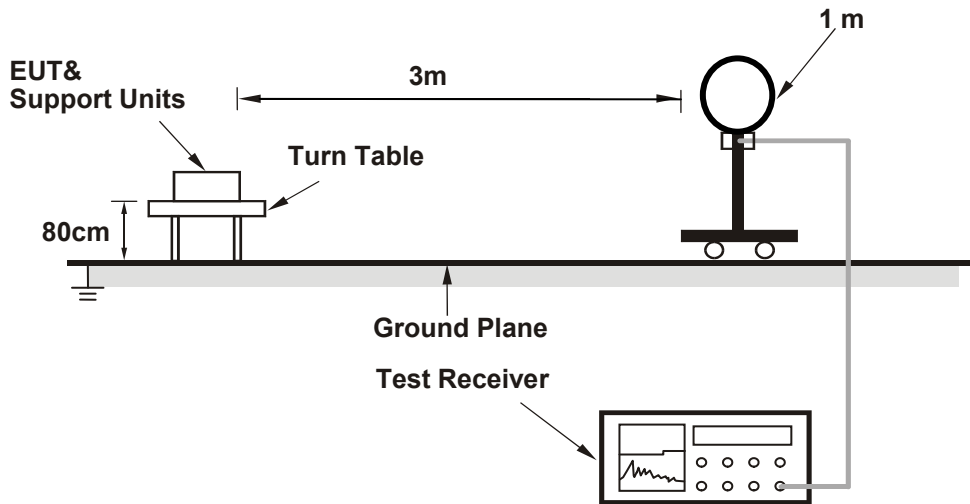
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

4.1.4 Deviation from Test Standard

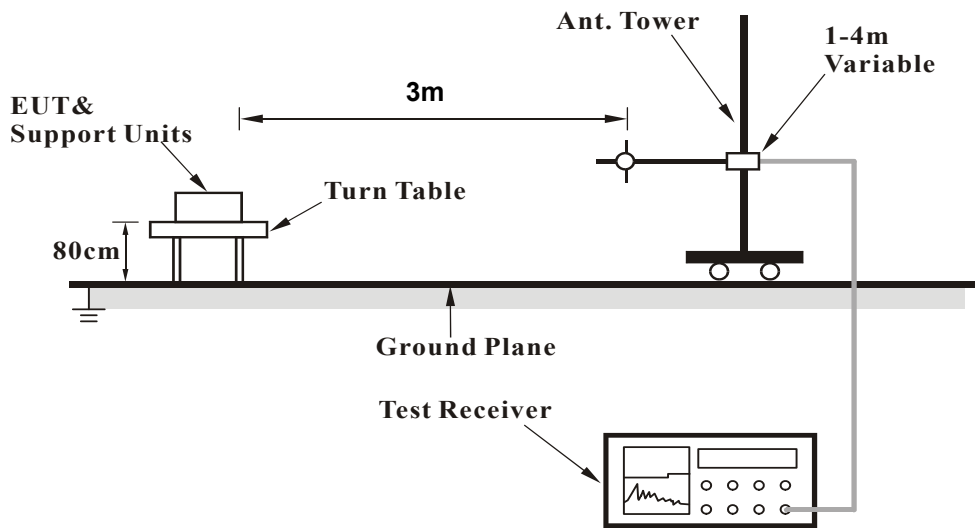
No deviation.

4.1.5 Test Setup

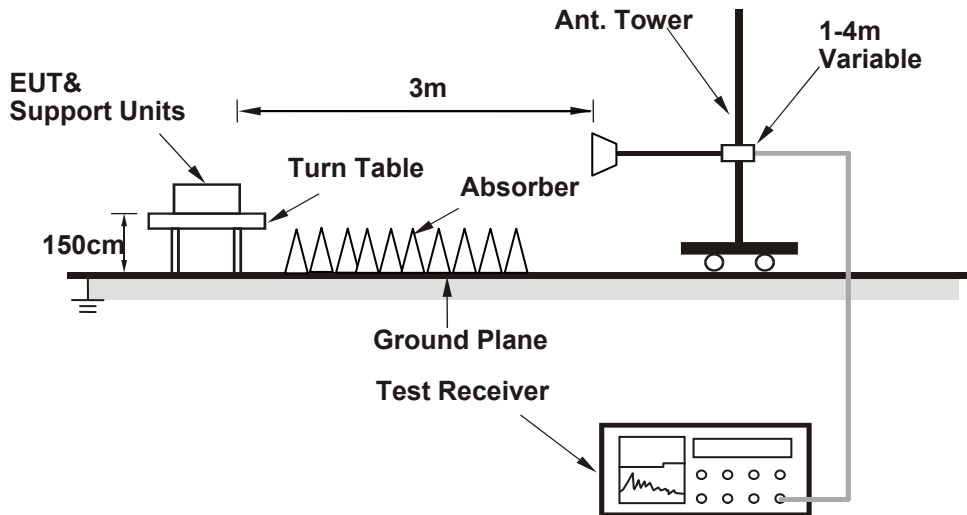
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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

4.1.6 EUT Operating Conditions

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

4.1.7 Test Results

Above 1GHz Data:

802.11b + 802.11ac (VHT20)

CHANNEL	CH 1 + CH 40	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2388.00	56.6 PK	74.0	-17.4	3.17 H	50	23.7	32.9
2	2388.00	47.5 AV	54.0	-6.5	3.17 H	50	14.6	32.9
3	*2412.00	112.8 PK			3.17 H	50	79.9	32.9
4	*2412.00	108.9 AV			3.17 H	50	76.0	32.9
5	4824.00	50.7 PK	74.0	-23.3	3.49 H	18	44.0	6.7
6	4824.00	43.1 AV	54.0	-10.9	3.49 H	18	36.4	6.7
7	5150.00	59.1 PK	74.0	-14.9	2.18 H	325	53.0	6.1
8	5150.00	46.4 AV	54.0	-7.6	2.18 H	325	40.3	6.1
9	*5200.00	112.9 PK			2.18 H	325	72.7	40.2
10	*5200.00	102.5 AV			2.18 H	325	62.3	40.2
11	#10400.00	59.6 PK	74.0	-14.4	1.34 H	110	41.4	18.2
12	#10400.00	46.8 AV	54.0	-7.2	1.34 H	110	28.6	18.2

Remarks:

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

CHANNEL	CH 1 + CH 40	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2388.00	62.6 PK	74.0	-11.4	1.55 V	211	29.7	32.9
2	2388.00	53.7 AV	54.0	-0.3	1.55 V	211	20.8	32.9
3	*2412.00	122.5 PK			1.55 V	211	89.6	32.9
4	*2412.00	118.4 AV			1.55 V	211	85.5	32.9
5	4824.00	53.9 PK	74.0	-20.1	1.32 V	38	47.2	6.7
6	4824.00	48.7 AV	54.0	-5.3	1.32 V	38	42.0	6.7
7	5150.00	68.8 PK	74.0	-5.2	1.15 V	208	62.7	6.1
8	5150.00	53.9 AV	54.0	-0.1	1.15 V	208	47.8	6.1
9	*5200.00	122.8 PK			1.15 V	208	82.6	40.2
10	*5200.00	112.3 AV			1.15 V	208	72.1	40.2
11	#10400.00	59.8 PK	74.0	-14.2	1.20 V	69	41.6	18.2
12	#10400.00	48.0 AV	54.0	-6.0	1.20 V	69	29.8	18.2

Remarks:

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

802.11b + 802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2388.00	56.5 PK	74.0	-17.5	3.04 H	67	23.6	32.9
2	2388.00	47.5 AV	54.0	-6.5	3.04 H	67	14.6	32.9
3	*2412.00	112.5 PK			3.04 H	67	79.6	32.9
4	*2412.00	108.7 AV			3.04 H	67	75.8	32.9
5	4824.00	50.5 PK	74.0	-23.5	3.52 H	7	43.8	6.7
6	4824.00	43.1 AV	54.0	-10.9	3.52 H	7	36.4	6.7
7	#5618.40	57.5 PK	68.2	-10.7	1.20 H	142	51.1	6.4
8	*5825.00	116.5 PK			1.20 H	142	75.3	41.2
9	*5825.00	106.2 AV			1.20 H	142	65.0	41.2
10	#5969.60	58.1 PK	68.2	-10.1	1.20 H	142	50.9	7.2
11	11650.00	61.1 PK	74.0	-12.9	1.00 H	3	41.2	19.9
12	11650.00	47.8 AV	54.0	-6.2	1.00 H	3	27.9	19.9

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

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

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2388.00	62.5 PK	74.0	-11.5	1.51 V	217	29.6	32.9
2	2388.00	53.6 AV	54.0	-0.4	1.51 V	217	20.7	32.9
3	*2412.00	122.1 PK			1.51 V	217	89.2	32.9
4	*2412.00	118.3 AV			1.51 V	217	85.4	32.9
5	4824.00	53.0 PK	74.0	-21.0	1.40 V	39	46.3	6.7
6	4824.00	48.4 AV	54.0	-5.6	1.40 V	39	41.7	6.7
7	#5615.20	59.5 PK	68.2	-8.7	1.54 V	155	52.6	6.9
8	*5825.00	123.1 PK			1.54 V	155	81.9	41.2
9	*5825.00	112.7 AV			1.54 V	155	71.5	41.2
10	#5943.20	60.2 PK	68.2	-8.0	1.54 V	155	52.4	7.8
11	11650.00	60.6 PK	74.0	-13.4	1.21 V	111	40.7	19.9
12	11650.00	47.6 AV	54.0	-6.4	1.21 V	111	27.7	19.9

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

802.11ac (VHT20) + 802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	58.8 PK	74.0	-15.2	2.15 H	340	52.7	6.1
2	5150.00	46.5 AV	54.0	-7.5	2.15 H	340	40.4	6.1
3	*5200.00	113.0 PK			2.15 H	340	72.8	40.2
4	*5200.00	102.5 AV			2.15 H	340	62.3	40.2
5	#10400.00	59.6 PK	74.0	-14.4	1.32 H	114	41.4	18.2
6	#10400.00	46.2 AV	54.0	-7.8	1.32 H	114	28.0	18.2
7	#5618.40	58.2 PK	68.2	-10.0	1.19 H	139	51.8	6.4
8	*5825.00	116.6 PK			1.19 H	139	75.4	41.2
9	*5825.00	106.1 AV			1.19 H	139	64.9	41.2
10	#5969.60	58.2 PK	68.2	-10.0	1.19 H	139	51.0	7.2
11	11650.00	61.0 PK	74.0	-13.0	1.00 H	3	41.1	19.9
12	11650.00	48.1 AV	54.0	-5.9	1.00 H	3	28.2	19.9

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

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

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	68.7 PK	74.0	-5.3	1.21 V	211	62.6	6.1
2	5150.00	53.9 AV	54.0	-0.1	1.21 V	211	47.8	6.1
3	*5200.00	122.8 PK			1.21 V	211	82.6	40.2
4	*5200.00	112.3 AV			1.21 V	211	72.1	40.2
5	#10400.00	59.8 PK	74.0	-14.2	1.20 V	74	41.6	18.2
6	#10400.00	48.2 AV	54.0	-5.8	1.20 V	74	30.0	18.2
7	#5615.20	59.6 PK	68.2	-8.6	1.50 V	160	53.2	6.4
8	*5825.00	123.3 PK			1.50 V	160	82.1	41.2
9	*5825.00	112.8 AV			1.50 V	160	71.6	41.2
10	#5943.20	60.5 PK	68.2	-7.7	1.50 V	160	53.4	7.1
11	11650.00	61.4 PK	74.0	-12.6	1.21 V	111	41.5	19.9
12	11650.00	48.2 AV	54.0	-5.8	1.21 V	111	28.3	19.9

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

802.11b + 802.11ac (VHT20) + 802.11a

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2388.00	56.5 PK	74.0	-17.5	3.20 H	49	23.6	32.9
2	2388.00	47.5 AV	54.0	-6.5	3.20 H	49	14.6	32.9
3	*2412.00	112.5 PK			3.20 H	49	79.6	32.9
4	*2412.00	108.7 AV			3.20 H	49	75.8	32.9
5	4824.00	50.5 PK	74.0	-23.5	3.58 H	19	43.8	6.7
6	4824.00	43.0 AV	54.0	-11.0	3.58 H	19	36.3	6.7
7	5150.00	59.0 PK	74.0	-15.0	2.04 H	339	52.9	6.1
8	5150.00	46.4 AV	54.0	-7.6	2.04 H	339	40.3	6.1
9	*5200.00	112.8 PK			2.04 H	339	72.6	40.2
10	*5200.00	102.5 AV			2.04 H	339	62.3	40.2
11	#5618.40	57.7 PK	68.2	-10.5	1.18 H	142	51.3	6.4
12	*5825.00	116.6 PK			1.18 H	142	74.8	41.8
13	*5825.00	106.1 AV			1.18 H	142	64.3	41.8
14	#5969.60	58.0 PK	68.2	-10.2	1.18 H	142	50.8	7.2
15	#10400.00	59.6 PK	74.0	-14.4	1.41 H	125	41.4	18.2
16	#10400.00	46.6 AV	54.0	-7.4	1.41 H	125	28.4	18.2
17	11650.00	61.2 PK	74.0	-12.8	1.07 H	3	41.4	19.8
18	11650.00	47.8 AV	54.0	-6.2	1.07 H	3	28.0	19.8

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

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

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	2388.00	62.4 PK	74.0	-11.6	1.40 V	189	29.5	32.9
2	2388.00	53.6 AV	54.0	-0.4	1.40 V	189	20.7	32.9
3	*2412.00	121.9 PK			1.40 V	189	89.0	32.9
4	*2412.00	118.2 AV			1.40 V	189	85.3	32.9
5	4824.00	53.3 PK	74.0	-20.7	1.36 V	29	46.6	6.7
6	4824.00	48.4 AV	54.0	-5.6	1.36 V	29	41.7	6.7
7	5150.00	68.6 PK	74.0	-5.4	1.13 V	199	62.5	6.1
8	5150.00	53.8 AV	54.0	-0.2	1.13 V	199	47.7	6.1
9	*5200.00	122.6 PK			1.13 V	199	82.4	40.2
10	*5200.00	112.2 AV			1.13 V	199	72.0	40.2
11	#5615.20	59.6 PK	68.2	-8.6	1.45 V	162	53.2	6.4
12	*5825.00	123.3 PK			1.45 V	162	81.5	41.8
13	*5825.00	112.8 AV			1.45 V	162	71.0	41.8
14	#5943.20	60.0 PK	68.2	-8.2	1.45 V	162	52.9	7.1
15	#10400.00	59.6 PK	74.0	-14.4	1.22 V	67	41.4	18.2
16	#10400.00	48.4 AV	54.0	-5.6	1.22 V	67	30.2	18.2
17	11650.00	60.9 PK	74.0	-13.1	1.24 V	110	41.1	19.8
18	11650.00	48.2 AV	54.0	-5.8	1.24 V	110	28.4	19.8

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

Below 1GHz data

802.11b + 802.11ac (VHT20)

CHANNEL	CH 1 + CH 40	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz	TEST MODE	A

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	33.78	22.9 QP	40.0	-17.1	1.00 H	108	38.4	-15.5
2	113.34	23.5 QP	43.5	-20.0	2.00 H	118	40.2	-16.7
3	369.47	33.4 QP	46.0	-12.6	1.00 H	143	44.3	-10.9
4	596.50	30.8 QP	46.0	-15.2	1.24 H	169	37.1	-6.3
5	699.34	34.3 QP	46.0	-11.7	1.24 H	169	38.7	-4.4
6	938.01	31.2 QP	46.0	-14.8	1.00 H	22	31.4	-0.2

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	37.66	32.7 QP	40.0	-7.3	1.50 V	21	47.8	-15.1
2	161.85	21.4 QP	43.5	-22.1	1.00 V	76	35.0	-13.6
3	371.41	30.4 QP	46.0	-15.6	1.50 V	198	41.2	-10.8
4	584.85	32.1 QP	46.0	-13.9	1.00 V	75	38.7	-6.6
5	730.38	31.9 QP	46.0	-14.1	1.00 V	104	35.5	-3.6
6	949.65	29.5 QP	46.0	-16.5	2.00 V	11	29.4	0.1

Remarks:

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

802.11b + 802.11a

CHANNEL	CH 1 + CH 165	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz	TEST MODE	A

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	115.28	23.7 QP	43.5	-19.8	1.00 H	293	40.2	-16.5
2	369.47	32.6 QP	46.0	-13.4	1.00 H	130	43.5	-10.9
3	596.50	32.1 QP	46.0	-13.9	1.50 H	166	38.4	-6.3
4	705.16	34.3 QP	46.0	-11.7	1.00 H	166	38.6	-4.3
5	808.00	34.6 QP	46.0	-11.4	1.50 H	178	36.7	-2.1
6	939.95	29.9 QP	46.0	-16.1	1.24 H	8	30.0	-0.1

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	37.66	32.7 QP	40.0	-7.3	2.00 V	69	47.8	-15.1
2	371.41	30.6 QP	46.0	-15.4	1.00 V	175	41.4	-10.8
3	528.58	27.8 QP	46.0	-18.2	2.00 V	24	35.8	-8.0
4	580.97	32.1 QP	46.0	-13.9	1.00 V	94	38.9	-6.8
5	837.11	35.4 QP	46.0	-10.6	1.24 V	37	37.2	-1.8
6	936.07	28.5 QP	46.0	-17.5	1.50 V	358	28.8	-0.3

Remarks:

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

802.11ac (VHT20) + 802.11a

CHANNEL	CH 40 + CH 165	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz	TEST MODE	A

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	115.28	24.6 QP	43.5	-18.9	1.00 H	313	41.1	-16.5
2	270.51	27.0 QP	46.0	-19.0	1.24 H	264	40.0	-13.0
3	367.53	33.6 QP	46.0	-12.4	1.50 H	138	44.5	-10.9
4	594.56	31.5 QP	46.0	-14.5	1.00 H	163	37.9	-6.4
5	705.16	33.9 QP	46.0	-12.1	2.00 H	168	38.2	-4.3
6	809.94	36.1 QP	46.0	-9.9	1.50 H	158	38.2	-2.1

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	37.66	31.1 QP	40.0	-8.9	1.00 V	126	46.2	-15.1
2	369.47	31.7 QP	46.0	-14.3	1.50 V	188	42.6	-10.9
3	528.58	27.4 QP	46.0	-18.6	1.00 V	63	35.4	-8.0
4	584.85	32.6 QP	46.0	-13.4	1.50 V	112	39.2	-6.6
5	808.00	30.6 QP	46.0	-15.4	1.00 V	285	32.7	-2.1
6	936.07	29.3 QP	46.0	-16.7	1.24 V	291	29.6	-0.3

Remarks:

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

802.11b + 802.11ac (VHT20) + 802.11a

CHANNEL	CH 1 + CH 40 + CH 165	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz	TEST MODE	A

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	115.28	23.4 QP	43.5	-20.1	1.50 H	319	39.9	-16.5
2	369.47	33.7 QP	46.0	-12.3	1.00 H	153	44.6	-10.9
3	602.32	29.9 QP	46.0	-16.1	1.24 H	166	36.0	-6.1
4	705.16	35.3 QP	46.0	-10.7	1.00 H	167	39.6	-4.3
5	817.70	36.2 QP	46.0	-9.8	1.50 H	156	38.2	-2.0
6	939.95	31.5 QP	46.0	-14.5	1.24 H	297	31.6	-0.1

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	37.66	32.4 QP	40.0	-7.6	1.24 V	145	47.5	-15.1
2	367.53	30.9 QP	46.0	-15.1	1.00 V	197	41.8	-10.9
3	580.97	32.4 QP	46.0	-13.6	2.00 V	76	39.2	-6.8
4	693.52	30.8 QP	46.0	-15.2	1.00 V	298	35.3	-4.5
5	815.76	30.8 QP	46.0	-15.2	1.50 V	157	32.8	-2.0
6	936.07	30.3 QP	46.0	-15.7	1.50 V	9	30.6	-0.3

Remarks:

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

802.11b + 802.11ac (VHT20)

CHANNEL	CH 1 + CH 40	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz	TEST MODE	B

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	33.78	29.2 QP	40.0	-10.8	1.00 H	126	44.7	-15.5
2	115.28	26.7 QP	43.5	-16.8	1.49 H	135	43.2	-16.5
3	258.87	32.6 QP	46.0	-13.4	1.24 H	253	46.4	-13.8
4	357.83	31.6 QP	46.0	-14.4	1.00 H	152	42.7	-11.1
5	557.69	31.4 QP	46.0	-14.6	1.49 H	174	39.0	-7.6
6	798.30	36.9 QP	46.0	-9.1	1.00 H	175	39.2	-2.3

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	41.54	36.7 QP	40.0	-3.3	2.00 V	90	51.5	-14.8
2	105.58	38.6 QP	43.5	-4.9	1.24 V	130	56.3	-17.7
3	258.87	29.2 QP	46.0	-16.8	1.49 V	185	43.0	-13.8
4	423.80	28.9 QP	46.0	-17.1	1.24 V	314	38.7	-9.8
5	637.25	32.7 QP	46.0	-13.3	1.00 V	83	38.1	-5.4
6	939.95	30.5 QP	46.0	-15.5	1.24 V	134	30.6	-0.1

Remarks:

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

802.11b + 802.11a

CHANNEL	CH 1 + CH 165	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz	TEST MODE	B

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	33.78	31.6 QP	40.0	-8.4	1.00 H	164	47.1	-15.5
2	253.05	31.7 QP	46.0	-14.3	1.49 H	254	45.8	-14.1
3	355.89	34.9 QP	46.0	-11.1	1.49 H	136	46.1	-11.2
4	567.39	25.7 QP	46.0	-20.3	1.00 H	172	33.0	-7.3
5	730.38	36.7 QP	46.0	-9.3	2.00 H	199	40.3	-3.6
6	806.06	34.7 QP	46.0	-11.3	1.00 H	172	36.8	-2.1

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	33.78	25.5 QP	40.0	-14.5	1.49 V	134	41.0	-15.5
2	253.05	28.8 QP	46.0	-17.2	1.24 V	191	42.9	-14.1
3	355.89	29.3 QP	46.0	-16.7	1.00 V	216	40.5	-11.2
4	588.74	32.2 QP	46.0	-13.8	1.49 V	126	38.7	-6.5
5	730.38	33.0 QP	46.0	-13.0	1.00 V	10	36.6	-3.6
6	808.00	34.0 QP	46.0	-12.0	2.00 V	171	36.1	-2.1

Remarks:

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

802.11ac (VHT20) + 802.11a

CHANNEL	CH 40 + CH 165	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz	TEST MODE	B

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	115.28	22.7 QP	43.5	-20.8	1.49 H	130	39.2	-16.5
2	253.05	31.5 QP	46.0	-14.5	1.00 H	263	45.6	-14.1
3	355.89	36.1 QP	46.0	-9.9	1.49 H	150	47.3	-11.2
4	639.19	26.5 QP	46.0	-19.5	1.24 H	173	31.9	-5.4
5	767.25	33.7 QP	46.0	-12.3	1.00 H	175	36.5	-2.8
6	936.07	31.8 QP	46.0	-14.2	1.24 H	104	32.1	-0.3

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	45.42	20.4 QP	40.0	-19.6	1.49 V	13	35.0	-14.6
2	253.05	27.4 QP	46.0	-18.6	1.00 V	189	41.5	-14.1
3	357.83	29.4 QP	46.0	-16.6	2.00 V	216	40.5	-11.1
4	586.79	30.7 QP	46.0	-15.3	1.00 V	187	37.2	-6.5
5	730.38	35.8 QP	46.0	-10.2	1.24 V	96	39.4	-3.6
6	936.07	30.4 QP	46.0	-15.6	1.49 V	67	30.7	-0.3

Remarks:

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

802.11b + 802.11ac (VHT20) + 802.11a

CHANNEL	CH 1 + CH 40 + CH 165	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	30MHz ~ 1GHz	TEST MODE	B

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	33.78	24.9 QP	40.0	-15.1	1.00 H	126	40.4	-15.5
2	115.28	22.9 QP	43.5	-20.6	1.49 H	267	39.4	-16.5
3	253.05	31.9 QP	46.0	-14.1	1.00 H	261	46.0	-14.1
4	369.47	35.1 QP	46.0	-10.9	1.49 H	226	46.0	-10.9
5	808.00	34.5 QP	46.0	-11.5	1.00 H	145	36.6	-2.1
6	934.13	30.3 QP	46.0	-15.7	1.24 H	290	30.6	-0.3

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	43.48	23.9 QP	40.0	-16.1	1.00 V	10	38.5	-14.6
2	258.87	27.7 QP	46.0	-18.3	1.49 V	203	41.5	-13.8
3	371.41	29.0 QP	46.0	-17.0	1.00 V	195	39.8	-10.8
4	493.66	27.4 QP	46.0	-18.6	1.49 V	173	36.1	-8.7
5	596.50	32.1 QP	46.0	-13.9	2.00 V	204	38.4	-6.3
6	932.19	30.9 QP	46.0	-15.1	1.24 V	8	31.2	-0.3

Remarks:

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

4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

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

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

4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESCS 30	100424	Oct. 24, 2016	Oct. 23, 2017
RF signal cable (with 10dB PAD) Woken	5D-FB	Cable-cond1-01	Dec. 22, 2016	Dec. 21, 2017
LISN ROHDE & SCHWARZ (EUT)	ESH2-Z5	100100	Jan. 17, 2017	Jan. 16, 2018
LISN ROHDE & SCHWARZ (Peripheral)	ESH3-Z5	100311	Jul. 28, 2016	Jul. 27, 2017
Software ADT	BV ADT_Cond_ V7.3.7.3	NA	NA	NA

- Note:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in HwaYa Shielded Room 1.
 3. The VCCI Site Registration No. is C-2040.

4.2.3 Test Procedures

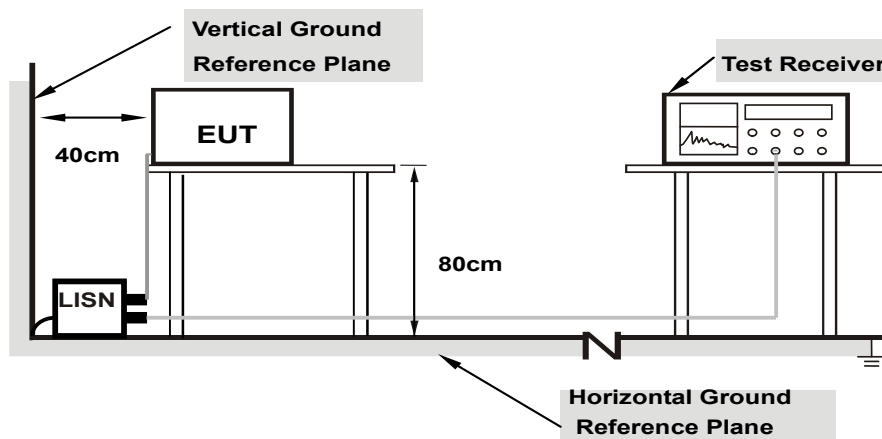
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) were 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

Test Mode A

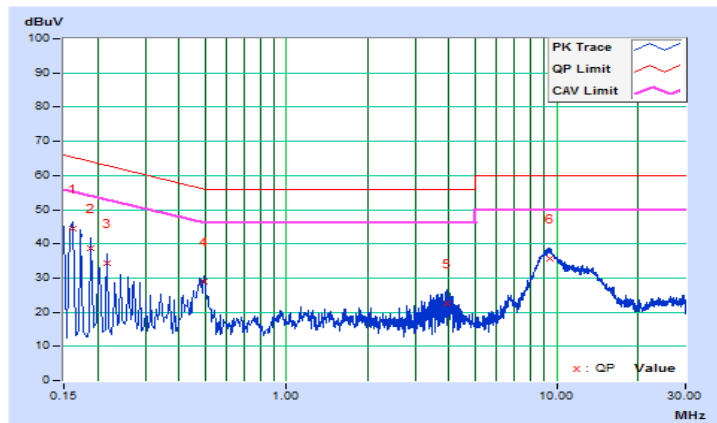
802.11b + 802.11ac (VHT20)

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Channel	CH 1 + CH 40		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16173	10.18	34.38	17.02	44.56	27.20	65.37	55.37	-20.81	-28.17
2	0.18910	10.19	28.58	8.85	38.77	19.04	64.08	54.08	-25.31	-35.04
3	0.21647	10.19	24.29	6.25	34.48	16.44	62.95	52.95	-28.47	-36.51
4	0.49799	10.23	18.57	13.97	28.80	24.20	56.03	46.03	-27.23	-21.83
5	3.94270	10.43	12.22	3.07	22.65	13.50	56.00	46.00	-33.35	-32.50
6	9.44798	10.71	24.90	17.76	35.61	28.47	60.00	50.00	-24.39	-21.53

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

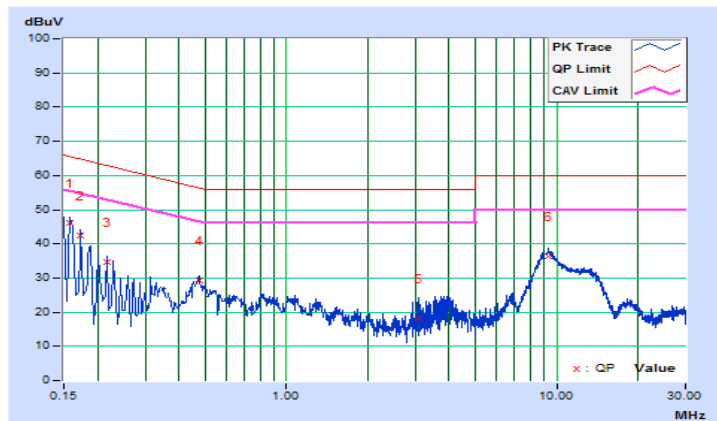


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Channel	CH 1 + CH 40		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.15802	10.19	35.88	20.22	46.07	30.41	65.57
2	0.17346	10.19	32.35	13.95	42.54	24.14	64.79	54.79	-22.25	-30.65
3	0.21647	10.20	24.44	8.33	34.64	18.53	62.95	52.95	-28.31	-34.42
4	0.47412	10.29	18.99	14.44	29.28	24.73	56.44	46.44	-27.16	-21.71
5	3.10205	10.47	7.57	-0.48	18.04	9.99	56.00	46.00	-37.96	-36.01
6	9.29940	10.79	25.41	19.27	36.20	30.06	60.00	50.00	-23.80	-19.94

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



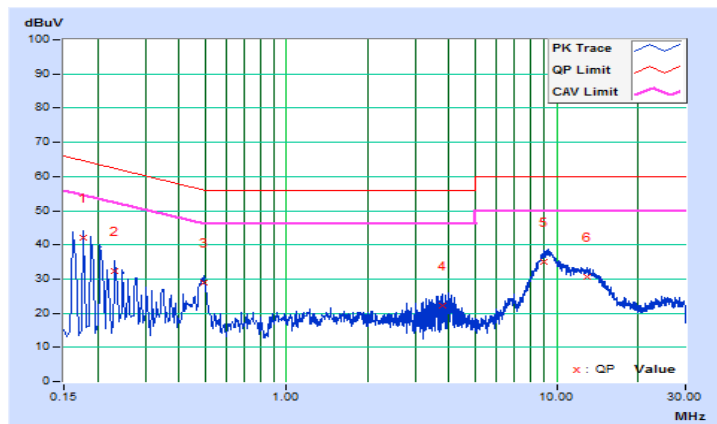
802.11b + 802.11a

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Channel	CH 1 + CH 165		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.17737	10.18	31.80	15.25	41.98	25.43	64.61
2	0.23216	10.19	22.05	6.06	32.24	16.25	62.37	52.37	-30.13	-36.12
3	0.49799	10.23	18.80	14.20	29.03	24.43	56.03	46.03	-27.00	-21.60
4	3.80194	10.42	11.92	3.03	22.34	13.45	56.00	46.00	-33.66	-32.55
5	8.96705	10.69	24.20	18.03	34.89	28.72	60.00	50.00	-25.11	-21.28
6	12.89660	10.96	19.66	13.43	30.62	24.39	60.00	50.00	-29.38	-25.61

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

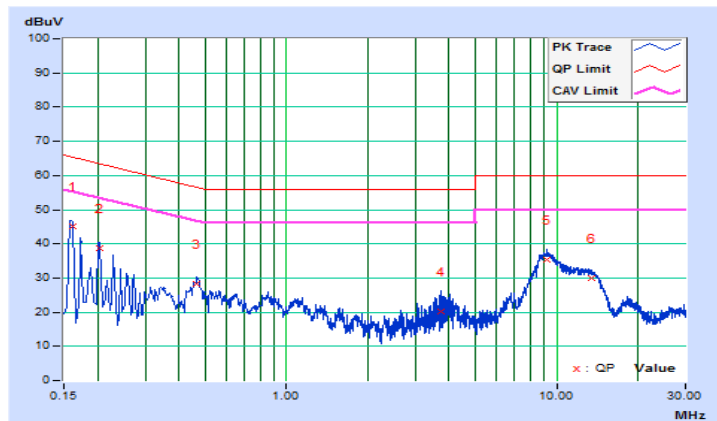


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Channel	CH 1 + CH 165		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.16173	10.19	34.90	18.59	45.09	28.78	65.37
2	0.20243	10.19	28.41	13.94	38.60	24.13	63.51	53.51	-24.91	-29.38
3	0.46669	10.29	17.84	9.81	28.13	20.10	56.57	46.57	-28.44	-26.47
4	3.75111	10.53	9.62	1.70	20.15	12.23	56.00	46.00	-35.85	-33.77
5	9.24466	10.79	24.42	17.80	35.21	28.59	60.00	50.00	-24.79	-21.41
6	13.45964	11.11	18.86	12.95	29.97	24.06	60.00	50.00	-30.03	-25.94

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



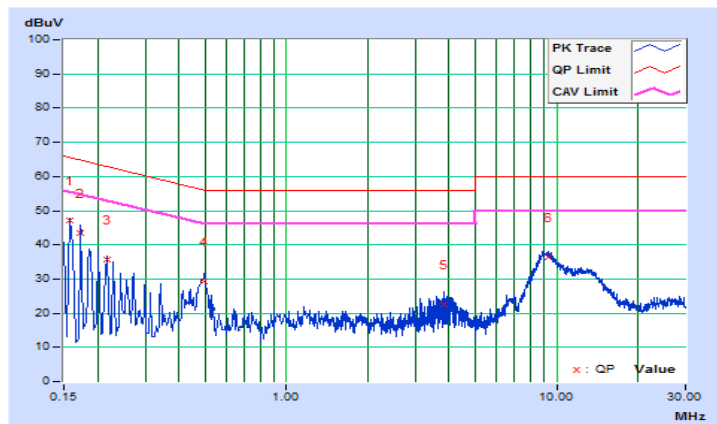
802.11ac (VHT20) + 802.11a

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Channel	CH 40 + CH 165		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.15782	10.18	37.07	20.37	47.25	30.55	65.58
2	0.17346	10.18	33.34	13.79	43.52	23.97	64.79	54.79	-21.27	-30.82
3	0.21647	10.19	25.52	7.58	35.71	17.77	62.95	52.95	-27.24	-35.18
4	0.49799	10.23	18.90	14.12	29.13	24.35	56.03	46.03	-26.90	-21.68
5	3.83713	10.42	12.06	3.21	22.48	13.63	56.00	46.00	-33.52	-32.37
6	9.32677	10.71	25.53	19.36	36.24	30.07	60.00	50.00	-23.76	-19.93

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

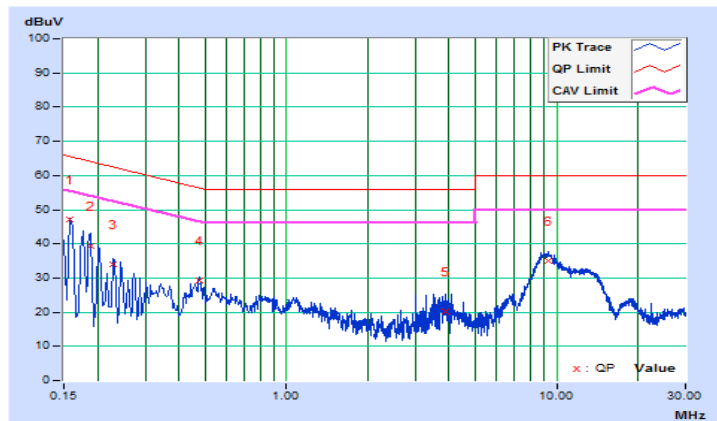


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Channel	CH 40 + CH 165		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.15802	10.19	36.81	21.10	47.00	31.29	65.57
2	0.18903	10.19	29.25	10.99	39.44	21.18	64.08	54.08	-24.64	-32.90
3	0.22851	10.20	23.80	9.99	34.00	20.19	62.50	52.50	-28.50	-32.31
4	0.47453	10.29	19.12	14.65	29.41	24.94	56.43	46.43	-27.02	-21.49
5	3.85668	10.54	9.72	0.99	20.26	11.53	56.00	46.00	-35.74	-34.47
6	9.27985	10.79	24.32	17.76	35.11	28.55	60.00	50.00	-24.89	-21.45

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



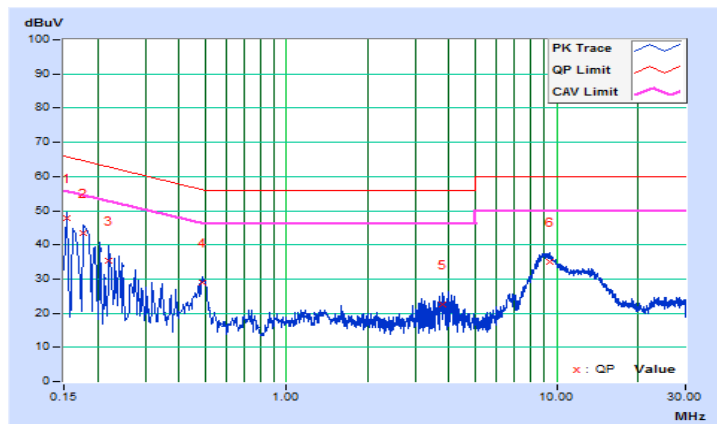
802.11b + 802.11ac (VHT20) + 802.11a

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Channel	CH 1 + CH 40 + CH 165		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.15391	10.18	37.79	20.75	47.97	30.93	65.79
2	0.17744	10.18	33.23	16.83	43.41	27.01	64.60	54.60	-21.19	-27.59
3	0.22038	10.19	25.25	9.01	35.44	19.20	62.80	52.80	-27.36	-33.60
4	0.48626	10.23	18.87	10.31	29.10	20.54	56.23	46.23	-27.13	-25.69
5	3.76675	10.42	12.27	3.46	22.69	13.88	56.00	46.00	-33.31	-32.12
6	9.49099	10.71	24.35	18.17	35.06	28.88	60.00	50.00	-24.94	-21.12

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

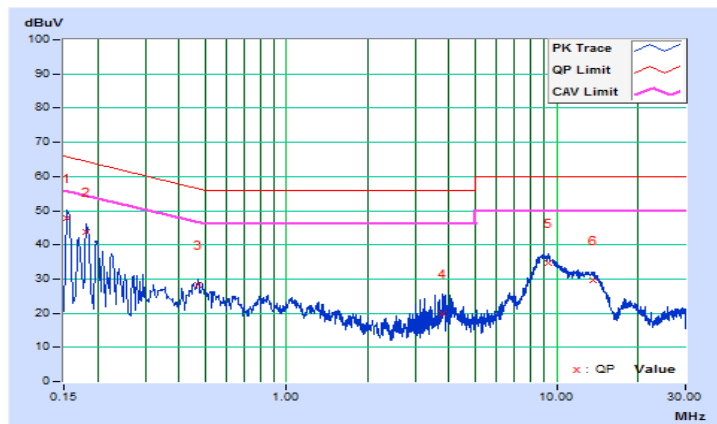


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Channel	CH 1 + CH 40 + CH 165		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.15391	10.19	37.76	21.62	47.95	31.81	65.79
2	0.18128	10.19	33.66	17.99	43.85	28.18	64.43	54.43	-20.58	-26.25
3	0.47039	10.29	17.90	13.34	28.19	23.63	56.51	46.51	-28.32	-22.88
4	3.77066	10.53	9.43	0.98	19.96	11.51	56.00	46.00	-36.04	-34.49
5	9.31895	10.79	23.73	16.66	34.52	27.45	60.00	50.00	-25.48	-22.55
6	13.57092	11.12	18.56	12.70	29.68	23.82	60.00	50.00	-30.32	-26.18

Remarks:

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



Test Mode B

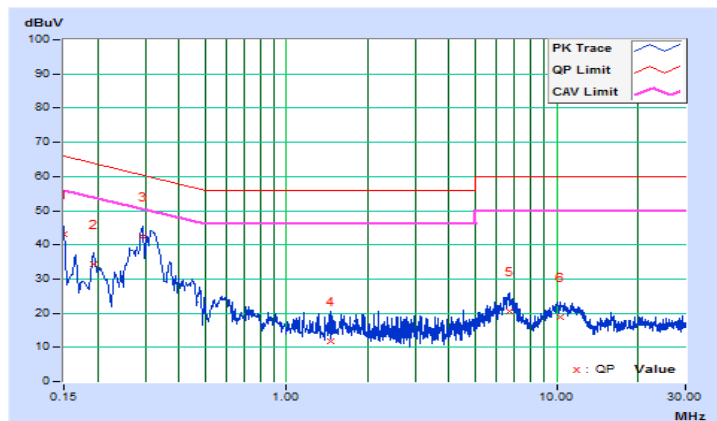
802.11b + 802.11ac (VHT20)

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Channel	CH 1 + CH 40		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.15000	10.17	32.96	17.61	43.13	27.78	66.00
2	0.19305	10.19	24.22	13.25	34.41	23.44	63.90	53.90	-29.49	-30.46
3	0.29467	10.20	32.33	24.18	42.53	34.38	60.39	50.39	-17.86	-16.01
4	1.45203	10.31	1.48	-3.07	11.79	7.24	56.00	46.00	-44.21	-38.76
5	6.69925	10.57	10.11	2.17	20.68	12.74	60.00	50.00	-39.32	-37.26
6	10.37074	10.77	8.02	3.26	18.79	14.03	60.00	50.00	-41.21	-35.97

Remarks:

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

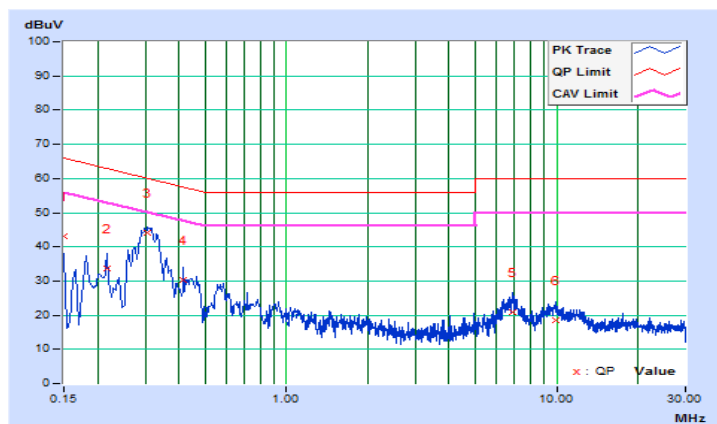


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Channel	CH 1 + CH 40		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.15000	10.18	32.84	17.25	43.02	27.43	66.00
2	0.21647	10.20	23.53	13.54	33.73	23.74	62.95	52.95	-29.22	-29.21
3	0.30640	10.24	33.90	26.40	44.14	36.64	60.07	50.07	-15.93	-13.43
4	0.41588	10.29	20.17	11.96	30.46	22.25	57.53	47.53	-27.07	-25.28
5	6.84001	10.68	10.04	2.35	20.72	13.03	60.00	50.00	-39.28	-36.97
6	9.88590	10.81	7.80	2.83	18.61	13.64	60.00	50.00	-41.39	-36.36

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



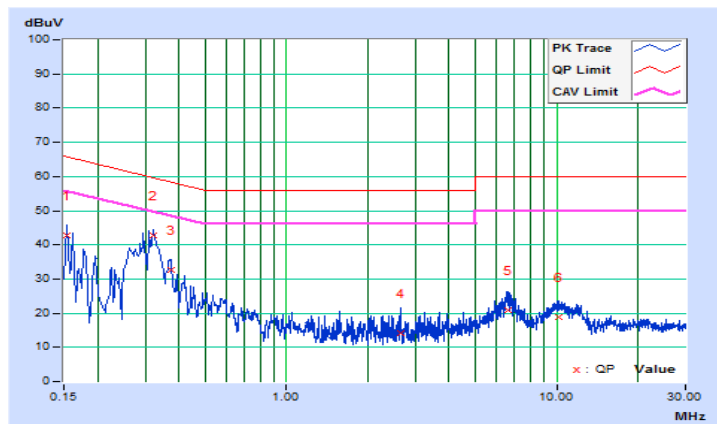
802.11b + 802.11a

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Channel	CH 1 + CH 165		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.15391	10.18	32.59	17.52	42.77	27.70	65.79
2	0.32187	10.21	32.47	24.33	42.68	34.54	59.66	49.66	-16.98	-15.12
3	0.37304	10.22	22.30	14.45	32.52	24.67	58.43	48.43	-25.91	-23.76
4	2.64458	10.38	3.71	-1.97	14.09	8.41	56.00	46.00	-41.91	-37.59
5	6.64060	10.57	10.19	2.08	20.76	12.65	60.00	50.00	-39.24	-37.35
6	10.15960	10.75	8.10	3.26	18.85	14.01	60.00	50.00	-41.15	-35.99

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

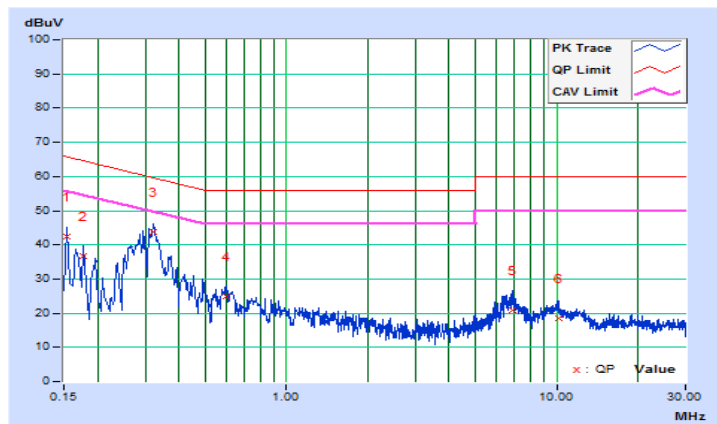


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Channel	CH 1 + CH 165		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.15391	10.19	32.35	16.89	42.54	27.08	65.79
2	0.17737	10.19	26.59	14.02	36.78	24.21	64.61	54.61	-27.83	-30.40
3	0.32204	10.25	33.66	25.37	43.91	35.62	59.65	49.65	-15.74	-14.03
4	0.59574	10.28	14.56	9.32	24.84	19.60	56.00	46.00	-31.16	-26.40
5	6.84392	10.68	10.18	2.43	20.86	13.11	60.00	50.00	-39.14	-36.89
6	10.20652	10.84	7.55	2.54	18.39	13.38	60.00	50.00	-41.61	-36.62

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



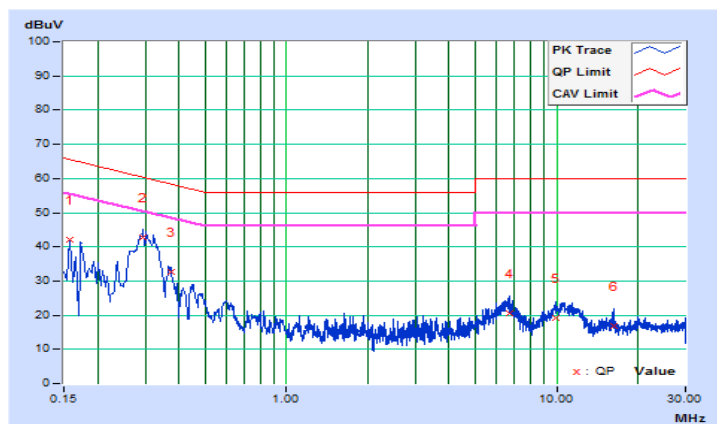
802.11ac (VHT20) + 802.11a

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Channel	CH 40 + CH 165		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.15782	10.18	31.93	15.65	42.11	25.83	65.58
2	0.29467	10.20	32.62	24.37	42.82	34.57	60.39	50.39	-17.57	-15.82
3	0.37304	10.22	22.53	14.58	32.75	24.80	58.43	48.43	-25.68	-23.63
4	6.67579	10.57	9.97	1.98	20.54	12.55	60.00	50.00	-39.46	-37.45
5	9.90545	10.74	8.44	3.65	19.18	14.39	60.00	50.00	-40.82	-35.61
6	16.22792	11.21	5.51	0.85	16.72	12.06	60.00	50.00	-43.28	-37.94

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

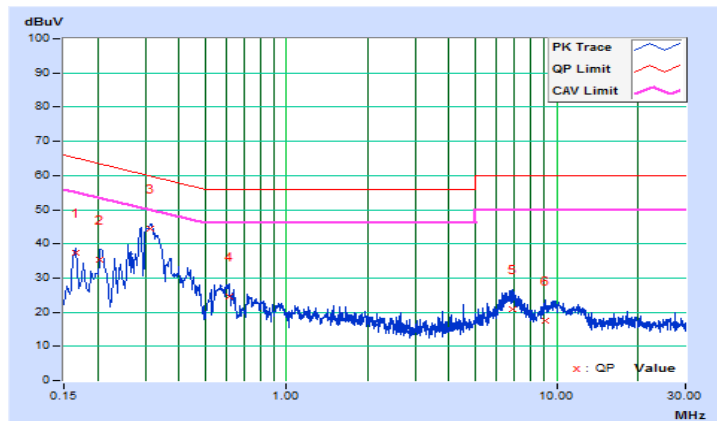


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Channel	CH 40 + CH 165		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.16564	10.19	27.25	10.77	37.44	20.96	65.18
2	0.20474	10.19	25.14	14.94	35.33	25.13	63.42	53.42	-28.09	-28.29
3	0.31350	10.25	34.04	28.43	44.29	38.68	59.88	49.88	-15.59	-11.20
4	0.61138	10.28	14.42	8.95	24.70	19.23	56.00	46.00	-31.30	-26.77
5	6.84001	10.68	10.05	2.43	20.73	13.11	60.00	50.00	-39.27	-36.89
6	9.04916	10.78	6.76	1.78	17.54	12.56	60.00	50.00	-42.46	-37.44

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



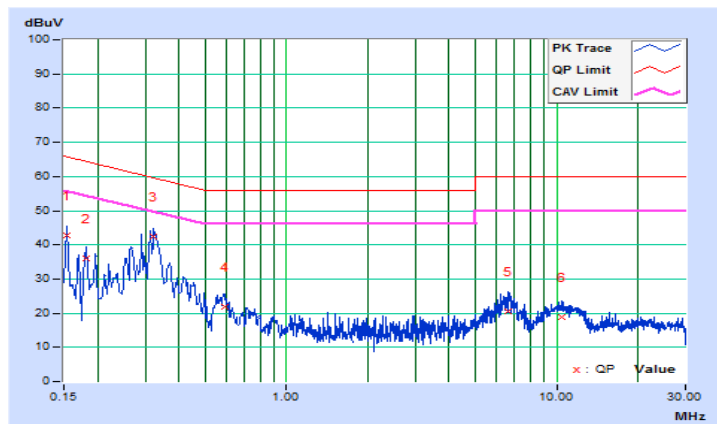
802.11b + 802.11ac (VHT20) + 802.11a

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
Channel	CH 1 + CH 40 + CH 165		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.15391	10.18	32.47	17.48	42.65	27.66	65.79
2	0.18122	10.18	25.99	14.08	36.17	24.26	64.43	54.43	-28.26	-30.17
3	0.32204	10.21	32.34	23.97	42.55	34.18	59.65	49.65	-17.10	-15.47
4	0.58792	10.24	11.72	6.52	21.96	16.76	56.00	46.00	-34.04	-29.24
5	6.60150	10.56	10.07	2.15	20.63	12.71	60.00	50.00	-39.37	-37.29
6	10.42939	10.77	8.06	3.20	18.83	13.97	60.00	50.00	-41.17	-36.03

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

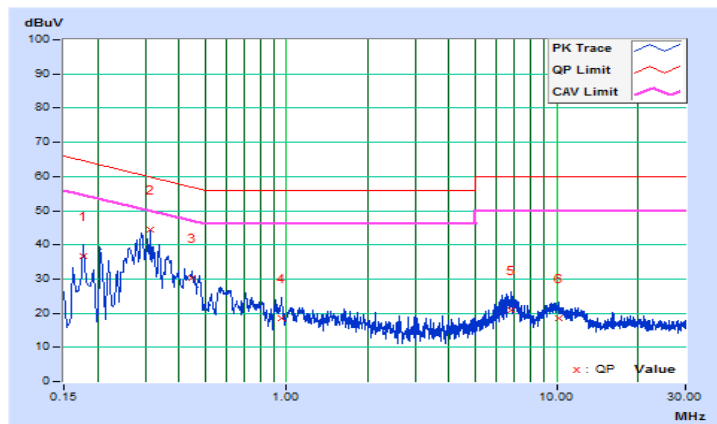


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
Channel	CH 1 + CH 40 + CH 165		

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.17744	10.19	26.43	13.77	36.62	23.96	64.60
2	0.31422	10.25	34.23	28.38	44.48	38.63	59.86	49.86	-15.38	-11.23
3	0.44716	10.29	20.11	14.02	30.40	24.31	56.93	46.93	-26.53	-22.62
4	0.95937	10.27	8.30	4.14	18.57	14.41	56.00	46.00	-37.43	-31.59
5	6.76181	10.67	10.09	2.33	20.76	13.00	60.00	50.00	-39.24	-37.00
6	10.21825	10.84	7.58	2.72	18.42	13.56	60.00	50.00	-41.58	-36.44

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



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 accredited and approved according to ISO/IEC 17025.

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

Linko 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 ---