

FCC Test Report (5GHz WLAN)

Report No.: RF190618D07A-1

FCC ID: TK4WLE900VX

Test Model: WLE900VX

Received Date: Aug. 7, 2019

Test Date: Aug. 19 to Sep. 2, 2019

Issued Date: Oct. 2, 2019

Applicant: Compex Systems Pte Ltd

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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**FCC Registration /
Designation Number:** 198487 / TW2021



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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	8
3.2.1 Test Mode Applicability and Tested Channel Detail	9
3.3 Duty Cycle of Test Signal	11
3.4 Description of Support Units	12
3.4.1 Configuration of System under Test	12
3.5 General Description of Applied Standard	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 Procedure	16
4.1.4 Deviation from Test Standard	16
4.1.5 Test Setup	17
4.1.6 EUT Operating Condition	18
4.1.7 Test Results	19
4.2 Conducted Emission Measurement	39
4.2.1 Limits of Conducted Emission Measurement	39
4.2.2 Test Instruments	39
4.2.3 Test Procedure	40
4.2.4 Deviation from Test Standard	40
4.2.5 Test Setup	40
4.2.6 EUT Operating Condition	40
4.2.7 Test Results	41
4.3 Transmit Power Measurement	43
4.3.1 Limits of Transmit Power Measurement	43
4.3.2 Test Setup	43
4.3.3 Test Instruments	43
4.3.4 Test Procedure	44
4.3.5 Deviation from Test Standard	44
4.3.6 EUT Operating Condition	44
4.3.7 Test Result	45
5 Pictures of Test Arrangements	46
Annex A- Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band)	47
Appendix – Information of the Testing Laboratories	50

Release Control Record

Issue No.	Description	Date Issued
RF190618D07A-1	Original release.	Oct. 2, 2019

1 Certificate of Conformity

Product: 802.11ac Dual Band Module

Brand: COMPEX

Test Model: WLE900VX

Sample Status: Engineering sample

Applicant: Compex Systems Pte Ltd

Test Date: Aug. 19 to Sep. 2, 2019

Standard: 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: Oct. 2, 2019

Celia Chen / Supervisor

Approved by :



Date: Oct. 2, 2019

Rex Lai / Associate Technical Manager

2 Summary of Test Results

47 CFR FCC Part 15, Subpart E (Section 15.407)			
FCC Clause	Test Item	Result	Remarks
15.407(b)(6)	AC Power Conducted Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -13.21dB at 0.45859MHz.
15.407(b)(1/2/3/4(i/ii)/6)	Radiated Emissions & Band Edge Measurement*	Pass	Meet the requirement of limit. Minimum passing margin is -0.28dB at 5350.00MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	N/A	Refer to Note 2 below
15.407(a)(1/2/3)	Peak Power Spectral Density	N/A	Refer to Note 2 below
15.407(e)	6dB bandwidth	N/A	Refer to Note 2 below
15.407(g)	Frequency Stability	N/A	Refer to Note 2 below
15.203	Antenna Requirement	Pass	Antenna connector is Reverse SMA not a standard connector.

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

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. Test items: AC Power Conducted Emission, Radiated Emissions and Max Average Transmit Power were performed for this addendum. The others testing data refer to original test report.
3. N/A: Not Applicable

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	2.38 dB
	30MHz ~ 1GHz	5.43 dB
Radiated Emissions above 1 GHz	Above 1GHz	5.42 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	802.11ac Dual Band Module
Brand	COMPEX
Test Model	WLE900VX
Status of EUT	Engineering sample
Modulation Type	64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode only.
Modulation Technology	OFDM
Transfer Rate	802.11a: up to 54Mbps 802.11n: up to 450Mbps 802.11ac: up to 1299.9Mbps
Operating Frequency	5180 ~ 5240MHz, 5745 ~ 5825MHz
Number of Channel	5180 ~ 5240MHz 4 for 802.11a, 802.11n (20MHz), 802.11ac (20MHz) 2 for 802.11n (40MHz), 802.11ac (40MHz) 1 for 802.11ac (80MHz) 5745 ~ 5825MHz 5 for 802.11a, 802.11n (20MHz) 802.11ac (20MHz) 2 for 802.11n (40MHz) 802.11ac (40MHz) 1 for 802.11ac (80MHz)
Output Power	5180 ~ 5240MHz: 139.657mW 5745 ~ 5825MHz: 254.153mW
Antenna Type	Refer to note as below
Antenna Connector	Reverse SMA
Accessory Device	N/A
Data Cable Supplied	N/A

Note:

1. The difference compared with original test report is adding antenna source; therefore only AC Power Conducted Emission, Radiated Emissions and Max Average Transmit Power were performed for this addendum, and the others testing data refer to original test report.
2. This report is prepared for FCC class II permissive change.
3. The antenna information is listed as below:

Antenna Type	Dipole Antenna	Dipole Antenna
Maximum Gain (dBi)	2412-2462MHz: 2.0	2412-2462MHz: 2.22
	5180-5825MHz: 2.0	5180-5825MHz: 4.29
Remark	Original Approved	Additional

For new antenna source, the EUT is authorized for use frequency bands: 2412-2462MHz, 5180-5240MHz and 5745-5825MHz only.

4. The EUT provides 3 completed transmitters and 3 receivers.

Modulation Mode	TX FUNCTION
802.11a	1TX
802.11n (20MHz)	3TX
802.11n (40MHz)	3TX
802.11ac (20MHz)	3TX
802.11ac (40MHz)	3TX
802.11ac (80MHz)	3TX

* The modulation and bandwidth are similar for 802.11n mode for 20MHz / 40MHz and 802.11ac mode for 20MHz / 40MHz, therefore investigated worst case to representative mode in test report. (Final test mode refer section 3.2.1)

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

3.2 Description of Test Modes

FOR 5180 ~ 5240MHz

4 channels are provided for 802.11a, 802.11n (20MHz), 802.11ac (20MHz):

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

2 channels are provided for 802.11n (40MHz), 802.11ac (40MHz):

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (80MHz):

Channel	Frequency
42	5210MHz

FOR 5745 ~ 5825MHz:

5 channels are provided for 802.11a, 802.11n (20MHz), 802.11ac (20MHz):

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

2 channels are provided for 802.11n (40MHz), 802.11ac (40MHz):

Channel	Frequency	Channel	Frequency
151	5755MHz	159	5795MHz

1 channel is provided for 802.11ac (80MHz):

Channel	Frequency
155	5775MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

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

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

NOTE: The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when positioned on **X-plane**.

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. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11a	5180-5240	36 to 48	36, 44, 48	OFDM	BPSK	6
-	802.11ac (20MHz)		36 to 48	36, 44, 48	OFDM	BPSK	6.5
-	802.11ac (40MHz)		38 to 46	38, 46	OFDM	BPSK	13.5
-	802.11ac (80MHz)		42	42	OFDM	BPSK	29.3
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6
-	802.11ac (20MHz)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
-	802.11ac (40MHz)		151 to 159	151, 159	OFDM	BPSK	13.5
-	802.11ac (80MHz)		155	155	OFDM	BPSK	29.3

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. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11ac (20MHz)	5180-5240	36 to 48	48	OFDM	BPSK	6.5
-	802.11ac (20MHz)	5745-5825	149 to 165		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	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11ac (20MHz)	5180-5240	36 to 48	48	OFDM	BPSK	6.5
-	802.11ac (20MHz)	5745-5825	149 to 165		OFDM	BPSK	6.5

Antenna Port Conducted Measurement:

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

EUT Configure Mode	Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11a	5180-5240	36 to 48	36, 44, 48	OFDM	BPSK	6
-	802.11ac (20MHz)		36 to 48	36, 44, 48	OFDM	BPSK	6.5
-	802.11ac (40MHz)		38 to 46	38, 46	OFDM	BPSK	13.5
-	802.11ac (80MHz)		42	42	OFDM	BPSK	29.3
-	802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6
-	802.11ac (20MHz)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
-	802.11ac (40MHz)		151 to 159	151, 159	OFDM	BPSK	13.5
-	802.11ac (80MHz)		155	155	OFDM	BPSK	29.3

Test Condition:

Applicable To	Environmental Conditions	Input Power (System)	Tested By
RE $\geq$ 1G	23deg. C, 77%RH	120Vac, 60Hz	StarItaly Wu
RE<1G	23deg. C, 71%RH	120Vac, 60Hz	Dalen Dai
PLC	25deg. C, 75%RH	120Vac, 60Hz	StarItaly Wu
APCM	25deg. C, 76%RH	120Vac, 60Hz	Saxon Lee

3.3 Duty Cycle of Test Signal

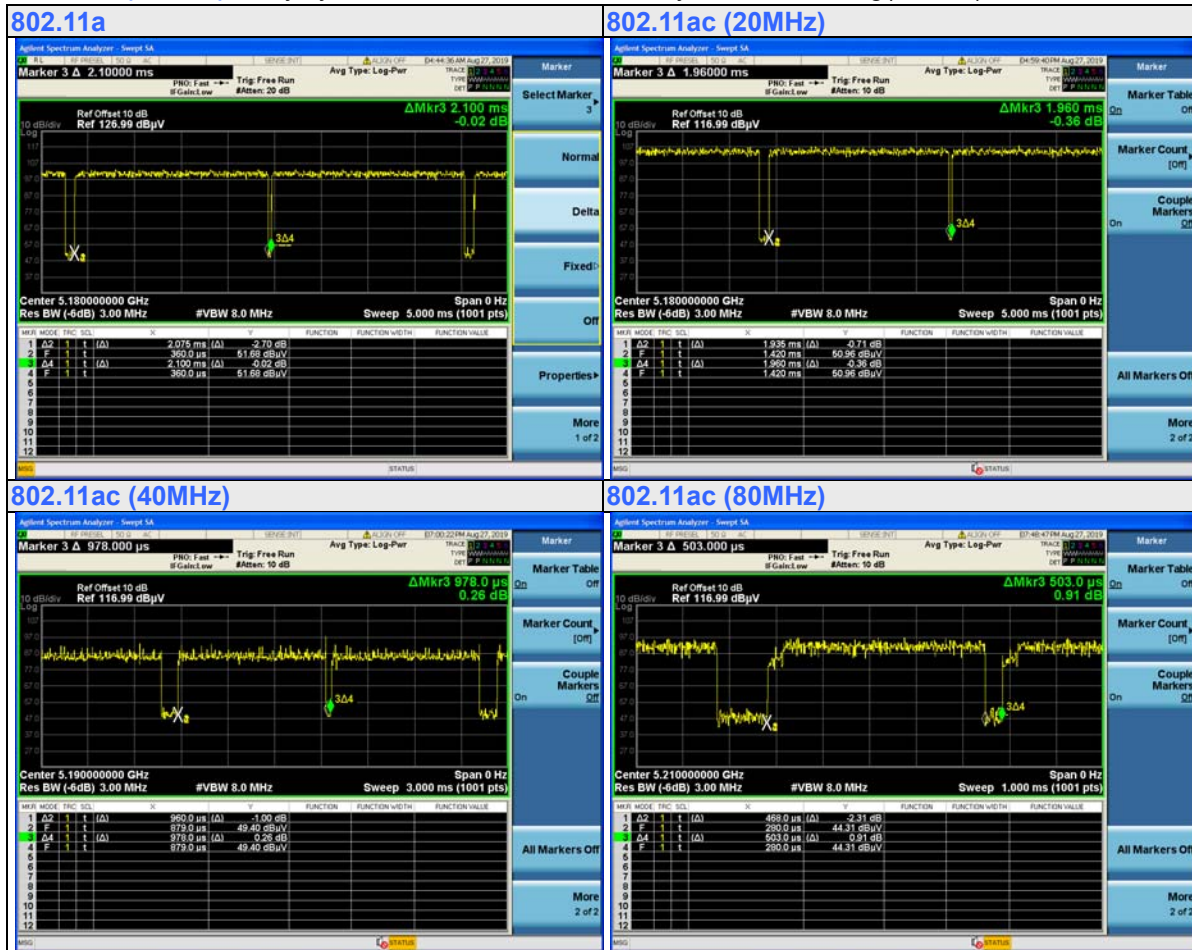
If duty cycle of test signal is $\geq 98\%$, duty factor is not required.
If duty cycle of test signal is $< 98\%$, duty factor shall be considered.

802.11a: Duty cycle = $2.075/2.1 = 0.988$

802.11ac (20MHz): Duty cycle = $1.935/1.96 = 0.987$

802.11ac (40MHz): Duty cycle = $0.96/0.978 = 0.982$

802.11ac (80MHz): Duty cycle = $0.468/0.503 = 0.93$, Duty factor = $10 * \log(1/0.93) = 0.32$



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.	Mechanical tool	N/A	N/A	N/A	N/A	Supplied by client
B.	Adapter	FSP	FSP040-DHAN3	N/A	N/A	Supplied by client
C.	Notebook PC	SONY	SVS151A12P	275548477000760	N/A	Provided by Lab

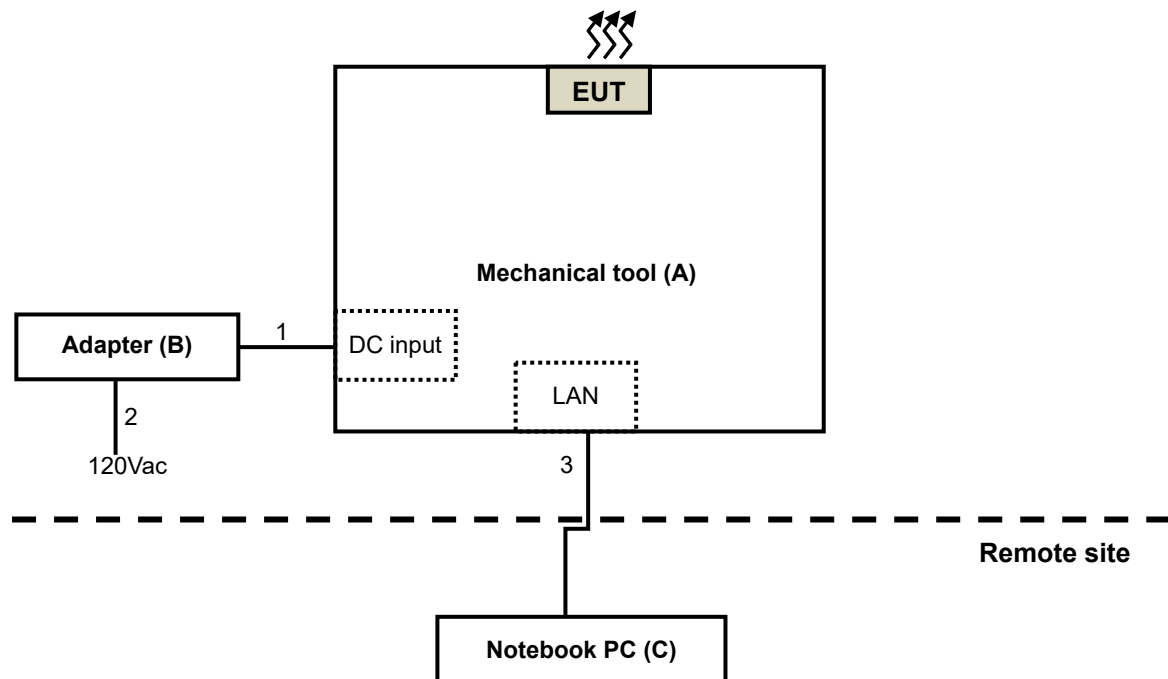
Note:

1. All power cords of the above support units are non-shielded (1.8 m).
2. Item C acted as communication partners to transfer data.
3. The rating of support unit B as follows.
AC I/P: 100-240V, 1.5A, 50-60Hz
DC O/P: 12.0V/ 3.33A (40W MAX)

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	DC cable	1	1.1	N	0	Supplied by client
2.	AC Power cord	1	1.2	N	0	Supplied by client
3.	LAN cable	1	10	N	0	Provided by Lab

Note: The core(s) is(are) originally attached to the cable(s).

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standard

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

FCC Part 15, Subpart E (15.407)

KDB 789033 D02 General UNII Test Procedure New Rules v02r01

KDB 662911 D01 Multiple Transmitter Output v02r01

ANSI C63.10-2013

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

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

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

NOTE:

- The lower limit shall apply at the transition frequencies.
- Emission level (dBuV/m) = 20 log Emission level (uV/m).
- 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 (dBµV/m)	AV:54 (dBµV/m)
Frequency Band	Applicable To		EIRP Limit	Equivalent Field Strength at 3m
5150~5250 MHz	15.407(b)(1)		PK:-27 (dBm/MHz)	PK:68.2(dBµV/m)
5250~5350 MHz	15.407(b)(2)			
5470~5725 MHz	15.407(b)(3)			
5725~5850 MHz	☒	15.407(b)(4)(i)	PK:-27 (dBm/MHz) ^{*1} PK:10 (dBm/MHz) ^{*2} PK:15.6 (dBm/MHz) ^{*3} PK:27 (dBm/MHz) ^{*4}	PK: 68.2(dBµV/m) ^{*1} PK:105.2 (dBµV/m) ^{*2} PK: 110.8(dBµV/m) ^{*3} PK:122.2 (dBµV/m) ^{*4}
	☐	15.407(b)(4)(ii)	Emission limits in section 15.247(d)	
			^{*2} below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.	
^{*1} beyond 75 MHz or more above of the band edge.				
^{*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.	CALIBRATED DATE	CALIBRATED UNTIL
HP Preamplifier	8447D	2432A03504	Feb. 20, 2019	Feb. 19, 2020
HP Preamplifier	8449B	3008A01201	Feb. 21, 2019	Feb. 20, 2020
MITEQ Preamplifier	AMF-6F-260400-33-8P	892164	Feb. 20, 2019	Feb. 19, 2020
Agilent TEST RECEIVER	N9038A	MY51210129	Mar. 05, 2019	Mar. 04, 2020
Schwarzbeck Antenna	VULB 9168	139	Nov. 26, 2018	Nov. 25, 2019
Schwarzbeck Antenna	VHBA 9123	480	Jun. 3, 2019	Jun. 2, 2021
Schwarzbeck Horn Antenna	BBHA-9170	212	Nov. 25, 2018	Nov. 24, 2019
Schwarzbeck Horn Antenna	BBHA 9120-D1	D130	Nov. 25, 2018	Nov. 24, 2019
ADT. Turn Table	TT100	0306	NA	NA
ADT. Tower	AT100	0306	NA	NA
Software	Radiated_V7.6.15.9.5	NA	NA	NA
SUHNER RF cable With 4dB PAD	SF102	Cable-CH6-01	Jul. 10, 2019	Jul. 9, 2020
SUHNER RF cable With 3/4dB PAD	SF102	Cable-CH8-3.6m	Jul. 10, 2019	Jul. 9, 2020
KEYSIGHT MIMO Powermeasurement Test set	U2021XA	U2021XA-001	Jun. 11, 2019	Jun. 10, 2020
KEYSIGHT Spectrum Analyzer	N9030A	MY54490260	Jul. 30, 2019	Jul. 29, 2020
Loop Antenna EMCI	LPA600	270	Aug. 23, 2017 Aug. 23, 2019	Aug. 22, 2019 Aug. 22, 2021
EMCO Horn Antenna	3115	00028257	Nov. 25, 2018	Nov. 24, 2019
Highpass filter Wainwright Instruments	WHK 3.1/18G-10SS	SN 8	NA	NA
ROHDE & SCHWARZ Spectrum Analyzer	FSV40	101042	Sep. 27, 2018	Sep. 26, 2019
Anritsu Power Sensor	MA2411B	0738404	Apr. 16, 2019	Apr. 15, 2020
Anritsu Power Meter	ML2495A	0842014	Apr. 16, 2019	Apr. 15, 2020

- NOTE:** 1. The calibration interval of the above test instruments is 12/24 months. And the calibrations are traceable to NML/ROC and NIST/USA.
2. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in Chamber No. 6.

4.1.3 Test Procedure

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 detects 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:

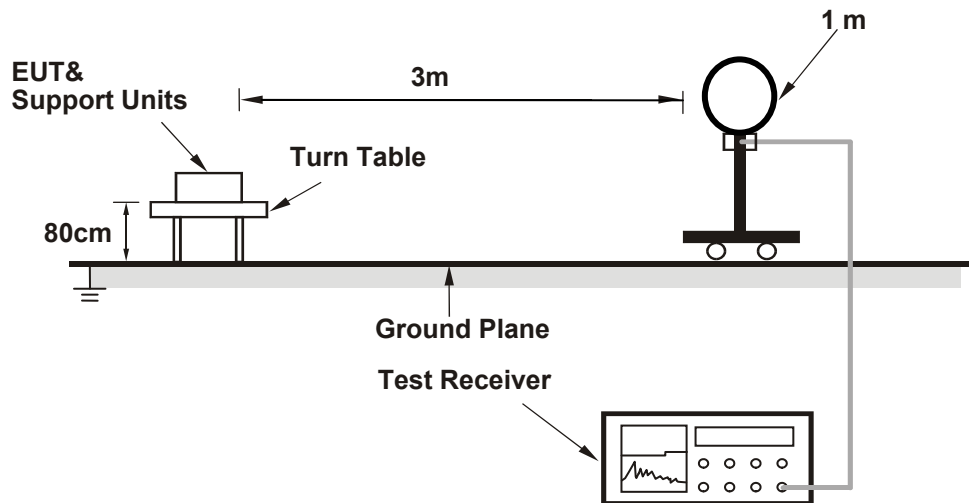
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

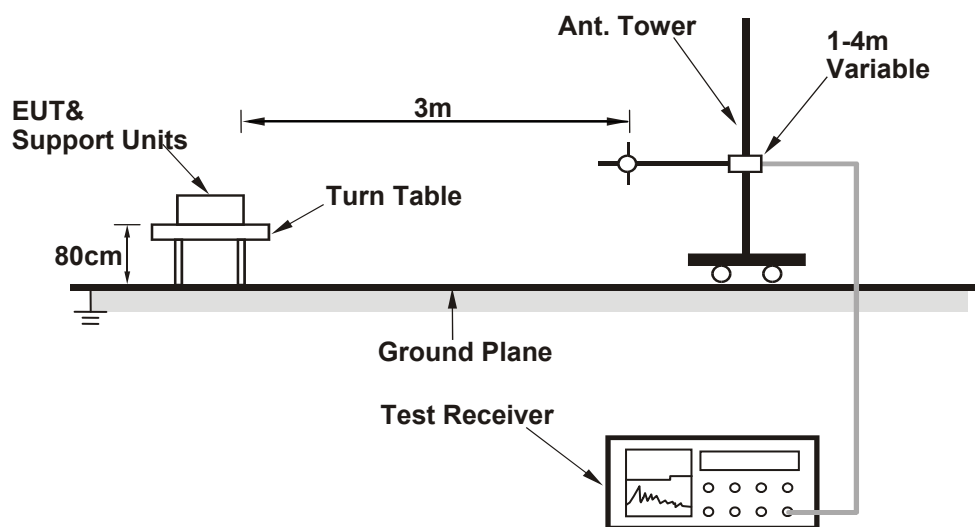
No deviation.

4.1.5 Test Setup

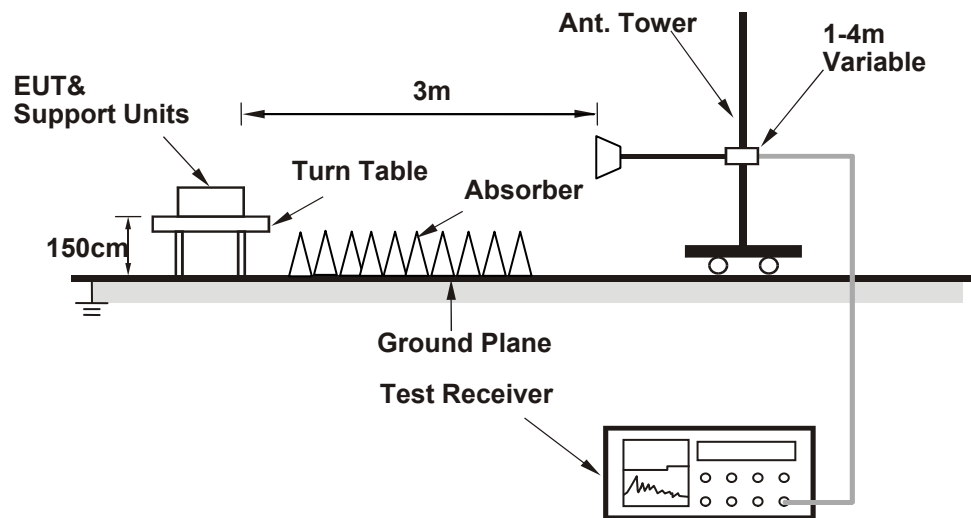
For Radiated emission below 30MHz



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 Condition

- Plugged the EUT into Mechanical tool and placed them on the testing table.
- The notebook connected with EUT via a LAN cable and ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results

ABOVE 1GHz DATA

802.11a

CHANNEL	TX Channel 36	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	67.01 PK	74.00	-6.99	3.29 H	280	59.66	7.35
2	5150.00	53.04 AV	54.00	-0.96	3.29 H	280	45.69	7.35
3	*5180.00	102.39 PK			3.29 H	280	95.07	7.32
4	*5180.00	92.55 AV			3.29 H	280	85.23	7.32
5	#10360.00	58.40 PK	68.20	-9.80	2.86 H	199	40.88	17.52
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	66.62 PK	74.00	-7.38	1.00 V	346	59.27	7.35
2	5150.00	53.66 AV	54.00	-0.34	1.00 V	346	46.31	7.35
3	*5180.00	112.21 PK			1.00 V	346	104.89	7.32
4	*5180.00	102.26 AV			1.00 V	346	94.94	7.32
5	#10360.00	59.52 PK	68.20	-8.68	3.42 V	28	42.00	17.52

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.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 44	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5220.00	106.42 PK			3.28 H	277	99.25	7.17
2	*5220.00	95.90 AV			3.28 H	277	88.73	7.17
3	#10440.00	64.18 PK	68.20	-4.02	3.08 H	185	46.28	17.90
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	*5220.00	115.45 PK			1.00 V	343	108.28	7.17
2	*5220.00	105.12 AV			1.00 V	343	97.95	7.17
3	#10440.00	66.45 PK	68.20	-1.75	3.65 V	16	48.55	17.90

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.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 48	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	106.92 PK			3.29 H	281	99.85	7.07
2	*5240.00	96.43 AV			3.29 H	281	89.36	7.07
3	5350.00	66.90 PK	74.00	-7.10	3.29 H	281	59.36	7.54
4	5350.00	53.72 AV	54.00	-0.28	3.29 H	281	46.18	7.54
5	#10480.00	64.38 PK	68.20	-3.82	3.02 H	182	46.29	18.09
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	115.78 PK			1.00 V	346	108.71	7.07
2	*5240.00	105.29 AV			1.00 V	346	98.22	7.07
3	5350.00	67.03 PK	74.00	-6.97	1.00 V	346	59.49	7.54
4	5350.00	53.68 AV	54.00	-0.32	1.00 V	346	46.14	7.54
5	#10480.00	67.07 PK	68.20	-1.13	3.72 V	16	48.98	18.09

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.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 149	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5580.87	61.36 PK	68.20	-6.84	3.27 H	291	53.26	8.10
2	*5745.00	105.50 PK			3.27 H	291	97.63	7.87
3	*5745.00	95.67 AV			3.27 H	291	87.80	7.87
4	#5959.45	60.95 PK	68.20	-7.25	3.27 H	291	52.51	8.44
5	11490.00	60.12 PK	74.00	-13.88	2.73 H	189	41.20	18.92
6	11490.00	47.77 AV	54.00	-6.23	2.73 H	189	28.85	18.92
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	#5618.40	62.16 PK	68.20	-6.04	3.87 V	172	54.25	7.91
2	*5745.00	112.21 PK			3.87 V	172	104.34	7.87
3	*5745.00	102.28 AV			3.87 V	172	94.41	7.87
4	#6015.98	62.49 PK	68.20	-5.71	3.87 V	172	54.00	8.49
5	11490.00	60.44 PK	74.00	-13.56	3.32 V	35	41.52	18.92
6	11490.00	48.29 AV	54.00	-5.71	3.32 V	35	29.37	18.92

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.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5591.80	61.29 PK	68.20	-6.91	3.30 H	293	53.24	8.05
2	*5785.00	106.16 PK			3.30 H	293	98.15	8.01
3	*5785.00	96.23 AV			3.30 H	293	88.22	8.01
4	#6022.62	61.11 PK	68.20	-7.09	3.30 H	293	52.61	8.50
5	11570.00	60.18 PK	74.00	-13.82	2.68 H	192	41.33	18.85
6	11570.00	47.79 AV	54.00	-6.21	2.68 H	192	28.94	18.85
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	#5628.37	62.69 PK	68.20	-5.51	3.84 V	175	54.83	7.86
2	*5785.00	112.81 PK			3.84 V	175	104.80	8.01
3	*5785.00	102.93 AV			3.84 V	175	94.92	8.01
4	#6016.93	62.08 PK	68.20	-6.12	3.84 V	175	53.59	8.49
5	11570.00	60.79 PK	74.00	-13.21	3.26 V	33	41.94	18.85
6	11570.00	48.85 AV	54.00	-5.15	3.26 V	33	30.00	18.85

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.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5567.10	61.45 PK	68.20	-6.75	3.34 H	290	53.30	8.15
2	*5825.00	105.63 PK			3.34 H	290	97.43	8.20
3	*5825.00	95.74 AV			3.34 H	290	87.54	8.20
4	#5958.50	60.63 PK	68.20	-7.57	3.34 H	290	52.19	8.44
5	11650.00	60.19 PK	74.00	-13.81	2.61 H	194	41.55	18.64
6	11650.00	47.65 AV	54.00	-6.35	2.61 H	194	29.01	18.64
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	#5637.87	61.55 PK	68.20	-6.65	3.89 V	171	53.74	7.81
2	*5825.00	112.04 PK			3.89 V	171	103.84	8.20
3	*5825.00	102.20 AV			3.89 V	171	94.00	8.20
4	#5941.40	61.39 PK	68.20	-6.81	3.89 V	171	52.94	8.45
5	11650.00	60.38 PK	74.00	-13.62	3.30 V	37	41.74	18.64
6	11650.00	48.23 AV	54.00	-5.77	3.30 V	37	29.59	18.64

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.
6. " # ": The radiated frequency is out of the restricted band.

802.11ac (20MHz)

CHANNEL	TX Channel 36	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	60.28 PK	74.00	-13.72	2.77 H	123	52.93	7.35
2	5150.00	46.67 AV	54.00	-7.33	2.77 H	123	39.32	7.35
3	*5180.00	104.23 PK			2.77 H	123	96.91	7.32
4	*5180.00	93.20 AV			2.77 H	123	85.88	7.32
5	#10360.00	58.43 PK	68.20	-9.77	2.65 H	198	40.91	17.52
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	62.54 PK	74.00	-11.46	1.00 V	352	55.19	7.35
2	5150.00	49.26 AV	54.00	-4.74	1.00 V	352	41.91	7.35
3	*5180.00	112.45 PK			1.00 V	352	105.13	7.32
4	*5180.00	101.59 AV			1.00 V	352	94.27	7.32
5	#10360.00	59.39 PK	68.20	-8.81	3.42 V	31	41.87	17.52

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.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 44	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5220.00	104.61 PK			2.79 H	131	97.44	7.17
2	*5220.00	94.38 AV			2.79 H	131	87.21	7.17
3	#10440.00	58.22 PK	68.20	-9.98	3.11 H	252	40.32	17.90
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	*5220.00	115.09 PK			1.00 V	351	107.92	7.17
2	*5220.00	104.83 AV			1.00 V	351	97.66	7.17
3	#10440.00	61.79 PK	68.20	-6.41	3.30 V	31	43.89	17.90

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.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 48	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	107.25 PK			2.75 H	118	100.18	7.07
2	*5240.00	97.10 AV			2.75 H	118	90.03	7.07
3	5350.00	60.18 PK	74.00	-13.82	2.75 H	118	52.64	7.54
4	5350.00	49.09 AV	54.00	-4.91	2.75 H	118	41.55	7.54
5	#10480.00	59.71 PK	68.20	-8.49	2.94 H	240	41.62	18.09
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5240.00	117.20 PK			1.02 V	354	110.13	7.07
2	*5240.00	107.16 AV			1.02 V	354	100.09	7.07
3	5350.00	63.01 PK	74.00	-10.99	1.02 V	354	55.47	7.54
4	5350.00	49.93 AV	54.00	-4.07	1.02 V	354	42.39	7.54
5	#10480.00	62.81 PK	68.20	-5.39	3.36 V	29	44.72	18.09

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.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 149	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5601.30	60.66 PK	68.20	-7.54	3.32 H	298	52.65	8.01
2	*5745.00	108.23 PK			3.32 H	298	100.36	7.87
3	*5745.00	98.40 AV			3.32 H	298	90.53	7.87
4	#6007.90	59.75 PK	68.20	-8.45	3.32 H	298	51.29	8.46
5	11490.00	60.95 PK	74.00	-13.05	2.88 H	163	42.03	18.92
6	11490.00	47.94 AV	54.00	-6.06	2.88 H	163	29.02	18.92
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	#5551.90	63.58 PK	68.20	-4.62	3.86 V	173	55.37	8.21
2	*5745.00	114.64 PK			3.86 V	173	106.77	7.87
3	*5745.00	104.22 AV			3.86 V	173	96.35	7.87
4	#6021.68	61.59 PK	68.20	-6.61	3.86 V	173	53.09	8.50
5	11490.00	61.35 PK	74.00	-12.65	3.27 V	31	42.43	18.92
6	11490.00	48.76 AV	54.00	-5.24	3.27 V	31	29.84	18.92

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.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 157	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5593.70	62.77 PK	68.20	-5.43	3.30 H	295	54.72	8.05
2	*5785.00	109.38 PK			3.30 H	295	101.37	8.01
3	*5785.00	99.49 AV			3.30 H	295	91.48	8.01
4	#5989.85	61.88 PK	68.20	-6.32	3.30 H	295	53.45	8.43
5	11570.00	61.20 PK	74.00	-12.80	2.74 H	162	42.35	18.85
6	11570.00	48.12 AV	54.00	-5.88	2.74 H	162	29.27	18.85
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	#5561.87	64.34 PK	68.20	-3.86	3.89 V	169	56.17	8.17
2	*5785.00	115.16 PK			3.89 V	169	107.15	8.01
3	*5785.00	105.22 AV			3.89 V	169	97.21	8.01
4	#6022.15	61.91 PK	68.20	-6.29	3.89 V	169	53.41	8.50
5	11570.00	62.03 PK	74.00	-11.97	3.18 V	27	43.18	18.85
6	11570.00	49.07 AV	54.00	-4.93	3.18 V	27	30.22	18.85

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.
6. " # ": The radiated frequency is out of the restricted band.

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

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5635.50	63.25 PK	68.20	-4.95	3.32 H	291	55.42	7.83
2	*5825.00	107.62 PK			3.32 H	291	99.42	8.20
3	*5825.00	94.80 AV			3.32 H	291	86.60	8.20
4	#5985.57	60.71 PK	68.20	-7.49	3.32 H	291	52.27	8.44
5	11650.00	61.31 PK	74.00	-12.69	2.76 H	158	42.67	18.64
6	11650.00	48.20 AV	54.00	-5.80	2.76 H	158	29.56	18.64
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	#5555.70	65.51 PK	68.20	-2.69	3.88 V	337	57.31	8.20
2	*5825.00	115.43 PK			3.88 V	337	107.23	8.20
3	*5825.00	105.58 AV			3.88 V	337	97.38	8.20
4	#6016.93	61.39 PK	68.20	-6.81	3.38 V	337	52.90	8.49
5	11650.00	62.21 PK	74.00	-11.79	3.13 V	29	43.57	18.64
6	11650.00	49.15 AV	54.00	-4.85	3.13 V	29	30.51	18.64

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.
6. " # ": The radiated frequency is out of the restricted band.

802.11ac (40MHz)

CHANNEL	TX Channel 38	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	60.79 PK	74.00	-13.21	2.84 H	108	53.44	7.35
2	5150.00	47.20 AV	54.00	-6.80	2.84 H	108	39.85	7.35
3	*5190.00	99.66 PK			2.84 H	108	92.37	7.29
4	*5190.00	91.25 AV			2.84 H	108	83.96	7.29
5	#10380.00	58.14 PK	68.20	-10.06	2.56 H	194	40.53	17.61

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	63.94 PK	74.00	-10.06	1.03 V	134	56.59	7.35
2	5150.00	49.14 AV	54.00	-4.86	1.03 V	134	41.79	7.35
3	*5190.00	107.77 PK			1.03 V	134	100.48	7.29
4	*5190.00	100.20 AV			1.03 V	134	92.91	7.29
5	#10380.00	59.21 PK	68.20	-8.99	3.52 V	29	41.60	17.61

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.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 46	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5230.00	101.80 PK			2.80 H	106	94.68	7.12
2	*5230.00	93.26 AV			2.80 H	106	86.14	7.12
3	5350.00	59.48 PK	74.00	-14.52	2.80 H	106	51.94	7.54
4	5350.00	46.81 AV	54.00	-7.19	2.80 H	106	39.27	7.54
5	#10460.00	58.66 PK	68.20	-9.54	2.49 H	197	40.67	17.99
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	*5230.00	109.25 PK			1.02 V	131	102.13	7.12
2	*5230.00	100.97 AV			1.02 V	131	93.85	7.12
3	5350.00	60.69 PK	74.00	-13.31	1.02 V	131	53.15	7.54
4	5350.00	47.48 AV	54.00	-6.52	1.02 V	131	39.94	7.54
5	#10460.00	59.93 PK	68.20	-8.27	3.48 V	27	41.94	17.99

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.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 151	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5560.45	61.61 PK	68.20	-6.59	3.27 H	295	53.44	8.17
2	*5755.00	105.64 PK			3.27 H	295	97.75	7.89
3	*5755.00	95.73 AV			3.27 H	295	87.84	7.89
4	#6015.50	60.81 PK	68.20	-7.39	3.27 H	295	52.32	8.49
5	11510.00	60.53 PK	74.00	-13.47	2.72 H	159	41.63	18.90
6	11510.00	47.41 AV	54.00	-6.59	2.72 H	159	28.51	18.90
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	#5560.93	64.31 PK	68.20	-3.89	3.89 V	338	56.14	8.17
2	*5755.00	110.51 PK			3.89 V	338	102.62	7.89
3	*5755.00	100.62 AV			3.89 V	338	92.73	7.89
4	#5925.25	61.19 PK	68.20	-7.01	3.89 V	338	52.69	8.50
5	11510.00	60.94 PK	74.00	-13.06	3.15 V	30	42.04	18.90
6	11510.00	48.07 AV	54.00	-5.93	3.15 V	30	29.17	18.90

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.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 159	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5567.57	58.39 PK	68.20	-9.81	3.31 H	296	50.24	8.15
2	*5795.00	109.41 PK			3.31 H	296	101.35	8.06
3	*5795.00	99.52 AV			3.31 H	296	91.46	8.06
4	#6017.87	57.42 PK	68.20	-10.78	3.31 H	296	48.93	8.49
5	11590.00	61.24 PK	74.00	-12.76	2.67 H	162	42.41	18.83
6	11590.00	48.30 AV	54.00	-5.70	2.67 H	162	29.47	18.83
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	#5559.98	64.45 PK	68.20	-3.75	3.87 V	335	56.28	8.17
2	*5795.00	115.27 PK			3.87 V	335	107.21	8.06
3	*5795.00	105.38 AV			3.87 V	335	97.32	8.06
4	#5938.07	60.77 PK	68.20	-7.43	3.87 V	335	52.31	8.46
5	11590.00	62.08 PK	74.00	-11.92	3.10 V	24	43.25	18.83
6	11590.00	49.11 AV	54.00	-4.89	3.10 V	24	30.28	18.83

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.
6. " # ": The radiated frequency is out of the restricted band.

802.11ac (80MHz)

CHANNEL	TX Channel 42	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	64.05 PK	74.00	-9.95	2.75 H	112	56.70	7.35
2	5150.00	50.87 AV	54.00	-3.13	2.75 H	112	43.52	7.35
3	*5210.00	94.03 PK			2.75 H	112	86.81	7.22
4	*5210.00	84.15 AV			2.75 H	112	76.93	7.22
5	#10420.00	58.02 PK	68.20	-10.18	2.46 H	192	40.22	17.80

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	66.52 PK	74.00	-7.48	1.03 V	133	59.17	7.35
2	5150.00	53.43 AV	54.00	-0.57	1.03 V	133	46.08	7.35
3	*5210.00	101.38 PK			1.03 V	133	94.16	7.22
4	*5210.00	91.51 AV			1.03 V	133	84.29	7.22
5	#10420.00	58.86 PK	68.20	-9.34	3.48 V	32	41.06	17.80

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.
6. " # ": The radiated frequency is out of the restricted band.

CHANNEL	TX Channel 155	DETECTOR FUNCTION	Peak (PK)
FREQUENCY RANGE	1GHz ~ 40GHz		Average (AV)

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	#5595.60	61.40 PK	68.20	-6.80	3.30 H	298	53.38	8.02
2	*5775.00	109.32 PK			3.30 H	298	101.34	7.98
3	*5775.00	99.40 AV			3.30 H	298	91.42	7.98
4	#5987.00	60.84 PK	68.20	-7.36	3.30 H	298	52.40	8.44
5	11550.00	60.75 PK	74.00	-13.25	2.73 H	154	41.88	18.87
6	11550.00	47.92 AV	54.00	-6.08	2.73 H	154	29.05	18.87
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	#5556.65	64.18 PK	68.20	-4.02	3.85 V	337	56.00	8.18
2	*5775.00	115.17 PK			3.85 V	337	107.19	7.98
3	*5775.00	105.22 AV			3.85 V	337	97.24	7.98
4	#6015.02	60.88 PK	68.20	-7.32	3.85 V	337	52.39	8.49
5	11550.00	61.24 PK	74.00	-12.76	3.11 V	28	42.37	18.87
6	11550.00	48.63 AV	54.00	-5.37	3.11 V	28	29.76	18.87

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.
6. " # ": The radiated frequency is out of the restricted band.

BELOW 1GHz WORST-CASE DATA

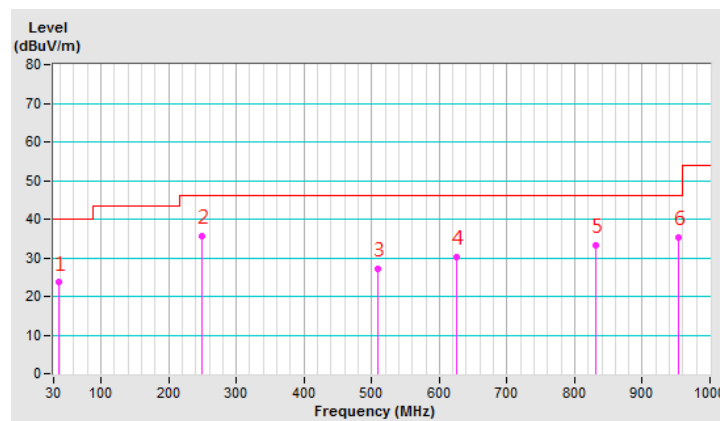
802.11ac (20MHz)

CHANNEL	TX Channel 48	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	37.76	23.63 QP	40.00	-16.37	2.54 H	360	31.72	-8.09
2	250.00	35.70 QP	46.00	-10.30	3.37 H	26	42.55	-6.85
3	509.62	27.21 QP	46.00	-18.79	2.12 H	316	27.70	-0.49
4	625.24	30.25 QP	46.00	-15.75	3.02 H	332	27.90	2.35
5	830.25	33.23 QP	46.00	-12.77	2.57 H	224	27.38	5.85
6	953.44	35.35 QP	46.00	-10.65	1.11 H	24	27.56	7.79

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 of frequency range 30MHz~1000MHz.
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.

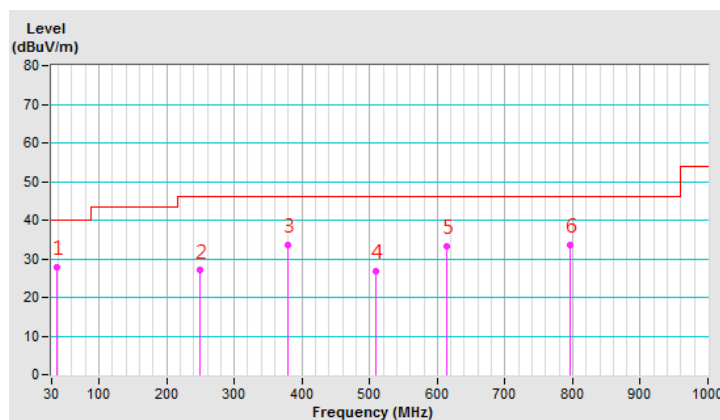


CHANNEL	TX Channel 48	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	38.00	27.80 QP	40.00	-12.20	2.85 V	215	35.87	-8.07
2	250.04	26.99 QP	46.00	-19.01	3.57 V	161	33.84	-6.85
3	378.52	33.58 QP	46.00	-12.42	2.05 V	360	37.02	-3.44
4	509.52	26.89 QP	46.00	-19.11	3.69 V	290	27.38	-0.49
5	614.86	33.18 QP	46.00	-12.82	3.24 V	147	31.06	2.12
6	795.62	33.54 QP	46.00	-12.46	2.22 V	234	28.53	5.01

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 of frequency range 30MHz~1000MHz.
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
ROHDE & SCHWARZ TEST RECEIVER	ESR3	102414	Jan. 17, 2019	Jan. 16, 2020
ROHDE & SCHWARZ Artificial Mains Network (for EUT)	ENV216	101196	Apr. 16, 2019	Apr. 15, 2020
LISN With Adapter (for EUT)	101196	NA	Apr. 16, 2019	Apr. 15, 2020
ROHDE & SCHWARZ Artificial Mains Network (for peripherals)	ESH3-Z5	100218	Nov. 30, 2018	Nov. 29, 2019
SCHWARZBECK Artificial Mains Network (For EUT)	NNLK8129	8129229	May 14, 2019	May 13, 2020
Software	Cond_V7.3.7.4	NA	NA	NA
RF cable (JYEBAO) With 10dB PAD	5D-FB	Cable-C10.01	Feb. 13, 2019	Feb. 12, 2020
LYNICS Terminator (For ROHDE & SCHWARZ LISN)	0900510	E1-011484	May 13, 2019	May 12, 2020
ROHDE & SCHWARZ Artificial Mains Network (For TV EUT)	ESH3-Z5	100220	Nov. 21, 2018	Nov. 20, 2019
LISN With Adapter (for TV EUT)	100220	NA	Nov. 21, 2018	Nov. 20, 2019

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 Shielded Room No. 10.

4.2.3 Test Procedure

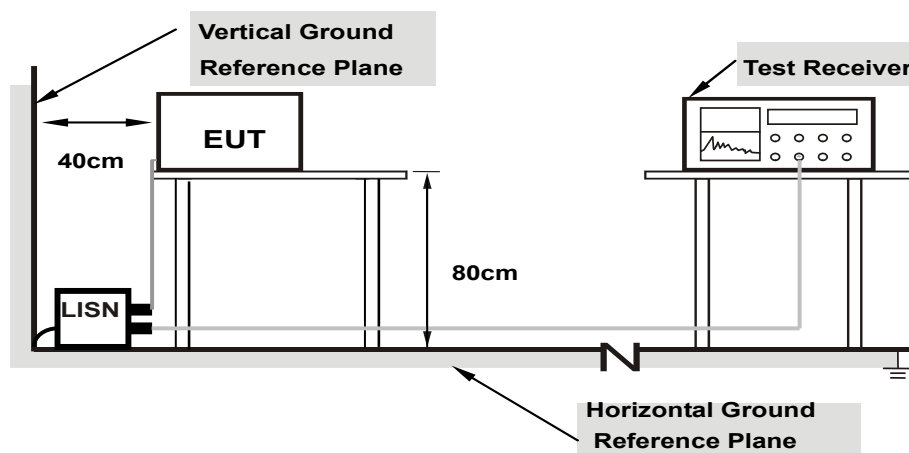
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Condition

Same as section 4.1.6.

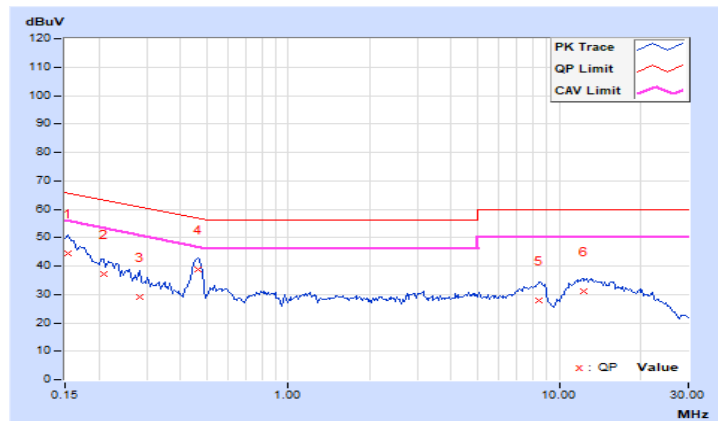
4.2.7 Test Results

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	9.64	34.73	24.37	44.37	34.01	65.79	55.79	-21.42	-21.78
2	0.20859	9.65	27.42	15.22	37.07	24.87	63.26	53.26	-26.19	-28.39
3	0.28281	9.66	19.54	12.15	29.20	21.81	60.73	50.73	-31.53	-28.92
4	0.46250	9.68	29.14	22.44	38.82	32.12	56.65	46.65	-17.83	-14.53
5	8.47266	9.90	17.97	11.26	27.87	21.16	60.00	50.00	-32.13	-28.84
6	12.26563	9.95	21.17	15.81	31.12	25.76	60.00	50.00	-28.88	-24.24

Remarks:

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

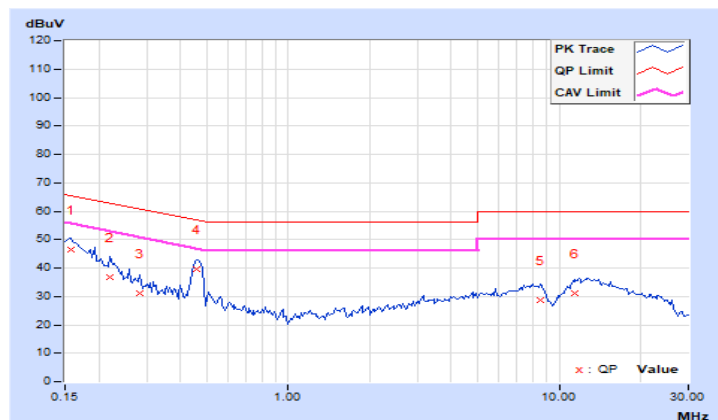


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
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No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15781	9.67	36.61	23.62	46.28	33.29	65.58	55.58	-19.30	-22.29
2	0.22031	9.67	27.21	11.90	36.88	21.57	62.81	52.81	-25.93	-31.24
3	0.28281	9.68	21.27	10.10	30.95	19.78	60.73	50.73	-29.78	-30.95
4	0.45859	9.71	29.75	23.80	39.46	33.51	56.72	46.72	-17.26	-13.21
5	8.48828	9.93	18.75	12.52	28.68	22.45	60.00	50.00	-31.32	-27.55
6	11.40234	9.99	20.98	16.55	30.97	26.54	60.00	50.00	-29.03	-23.46

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



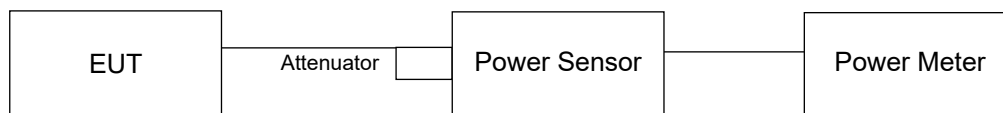
4.3 Transmit Power Measurement

4.3.1 Limits of Transmit Power Measurement

Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p $\leq$ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
		Fixed point-to-point Access Point	1 Watt (30 dBm)
	√	Indoor Access Point	1 Watt (30 dBm)
		Client device	250mW (24 dBm)
U-NII-2A	---		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-2C	---		250mW (24 dBm) or 11 dBm+10 log B*
U-NII-3	√		1 Watt (30 dBm)

*B is the 26 dB emission bandwidth in megahertz

4.3.2 Test Setup



4.3.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.3.4 Test Procedure

For Average Power Measurement

For 802.11a, 802.11ac (20MHz), 802.11ac (40MHz)

Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst and set the detector to AVERAGE. Duty factor is not added to measured value.

For 802.11ac (80MHz)

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

4.3.5 Deviation from Test Standard

No deviation.

4.3.6 EUT Operating Condition

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

4.3.7 Test Result

Power Output: 802.11a

CHAN.	FREQ. (MHz)	Maximum Conducted Power (mW)	Maximum Conducted Power (dBm)	Power Limit (dBm)	Pass/Fail
36	5180	116.95	20.68	30	Pass
44	5220	136.144	21.34	30	Pass
48	5240	136.773	21.36	30	Pass
149	5745	100.925	20.04	30	Pass
157	5785	104.232	20.18	30	Pass
165	5825	100	20.00	30	Pass

802.11ac (20MHz)

CHAN.	FREQ. (MHz)	Maximum Conducted Power (dBm)			Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass/Fail
		Chain 0	Chain 1	Chain 2				
36	5180	15.21	16.27	14.48	103.607	20.15	30	Pass
44	5220	16.02	17.26	16.67	139.657	21.45	30	Pass
48	5240	16.95	16.57	16.45	139.096	21.43	30	Pass
149	5745	18.54	17.43	17.96	189.302	22.77	30	Pass
157	5785	19.67	18.24	19.67	252.047	24.01	30	Pass
165	5825	19.80	18.32	19.08	244.329	23.88	30	Pass

802.11ac (40MHz)

CHAN.	FREQ. (MHz)	Maximum Conducted Power (dBm)			Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass/Fail
		Chain 0	Chain 1	Chain 2				
38	5190	13.33	12.34	12.26	55.495	17.44	30	Pass
46	5230	16.31	15.36	15.36	111.468	20.47	30	Pass
151	5755	15.67	15.07	15.49	104.435	20.19	30	Pass
159	5795	19.51	18.95	19.36	254.153	24.05	30	Pass

802.11ac (80MHz)

CHAN.	FREQ. (MHz)	Maximum Conducted Power (dBm)			Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass/Fail
		Chain 0	Chain 1	Chain 2				
42	5210	11.44	10.67	10.87	37.818	15.78	30	Pass
155	5775	12.09	10.93	11.97	44.309	16.46	30	Pass

5 Pictures of Test Arrangements

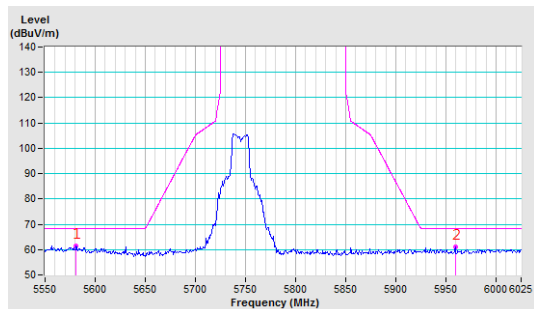
Please refer to the attached file (Test Setup Photo).

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

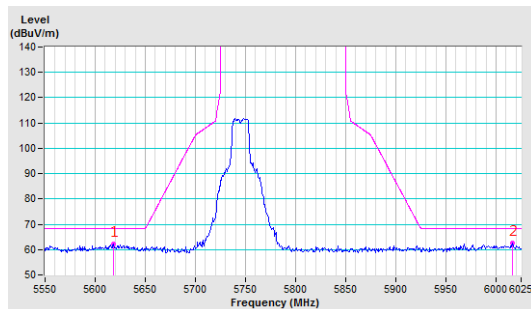
802.11a

CH 149 5745 MHz

Horizontal

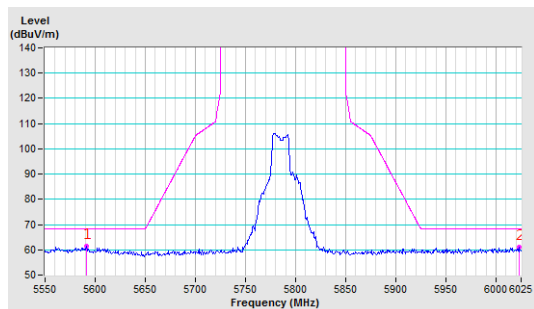


Vertical

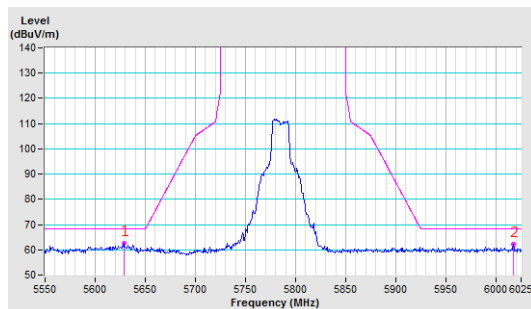


CH 157 5785 MHz

Horizontal

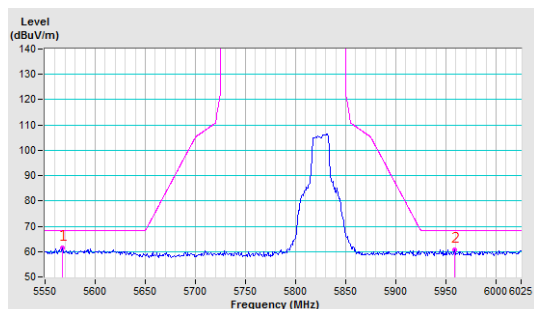


Vertical

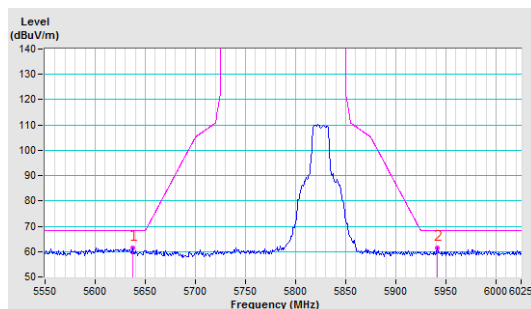


CH 165 5825 MHz

Horizontal



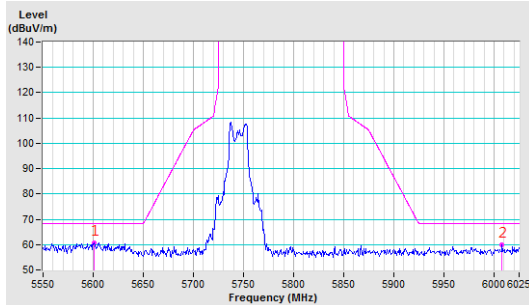
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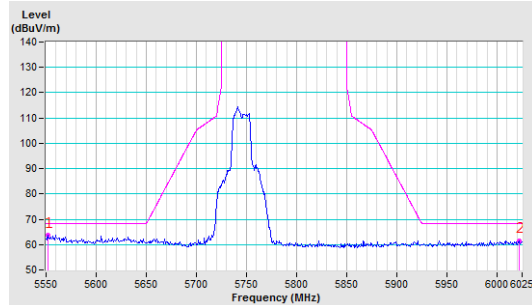
802.11ac (20MHz)

CH 149 5745 MHz

Horizontal

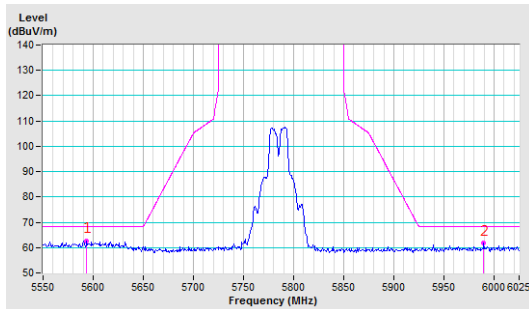


Vertical

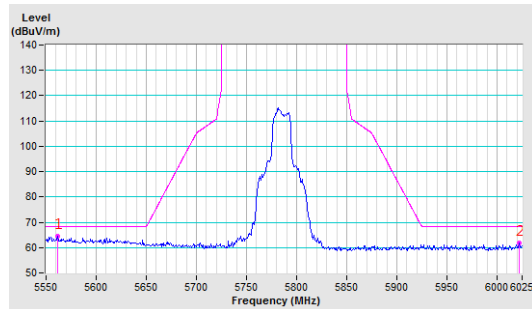


CH 157 5785 MHz

Horizontal

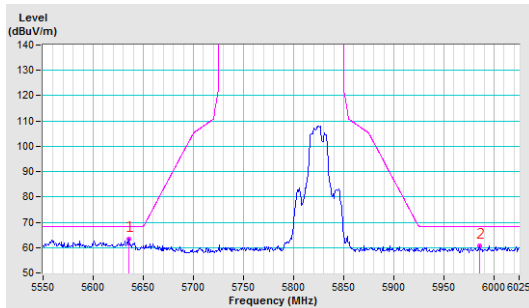


Vertical

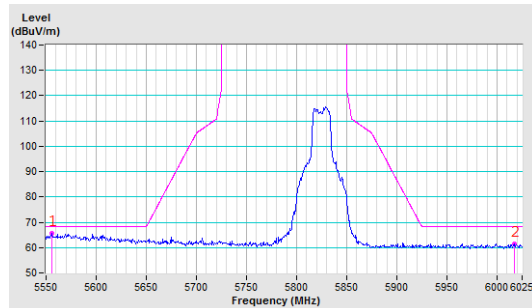


CH 165 5825 MHz

Horizontal



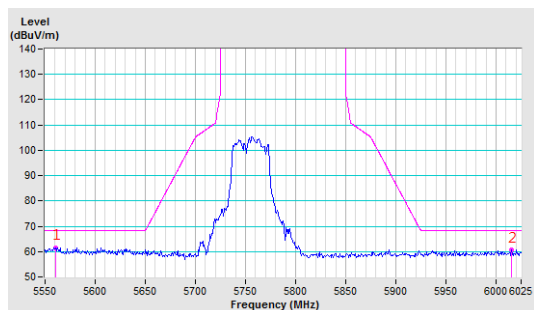
Vertical



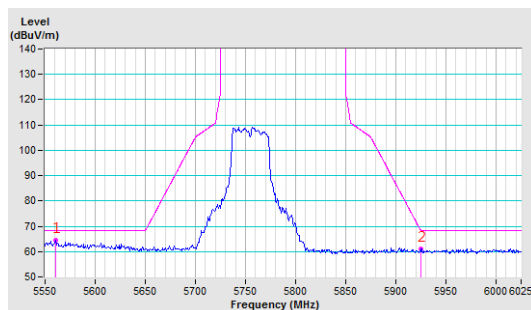
802.11ac (40MHz)

CH 151 5755 MHz

Horizontal

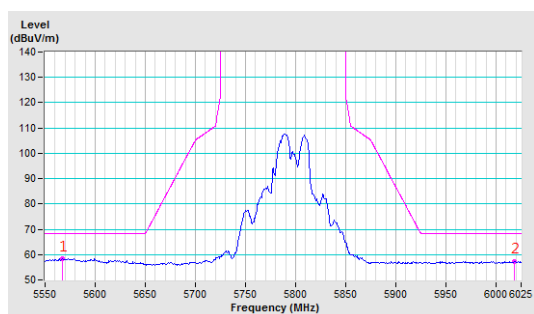


Vertical

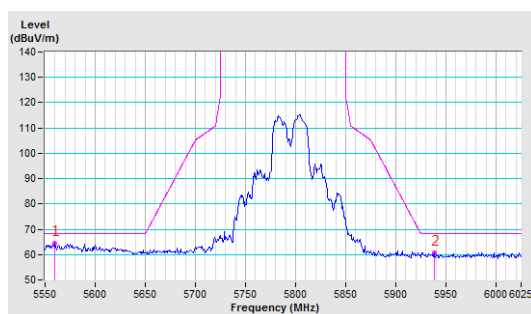


CH 159 5795 MHz

Horizontal



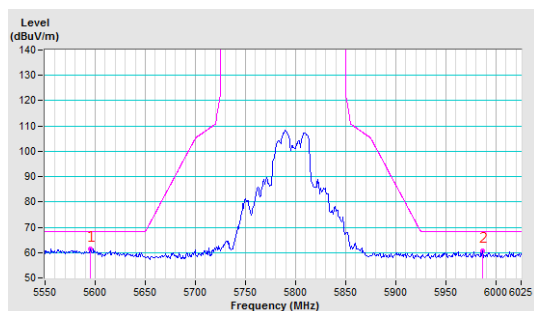
Vertical



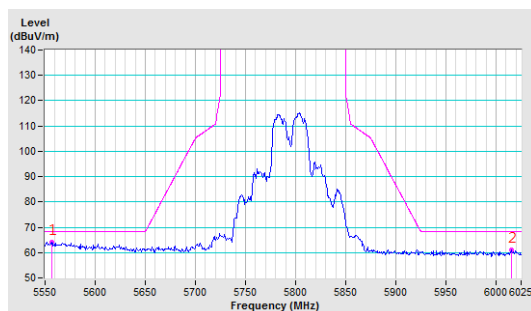
802.11ac (80MHz)

CH 155 5775 MHz

Horizontal



Vertical



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 according to ISO/IEC 17025.

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Web Site: www.bureauveritas-adt.com

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

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