

FCC Test Report

Report No.: RF180919D02-1

FCC ID: P27-SOR4105T

Test Model: SOR4105T

Received Date: Sep. 19, 2018

Test Date: Oct. 5 ~ 23, 2018

Issued Date: Dec. 12, 2018

Applicant: Sercomm Corp.

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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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Release Control Record

Issue No.	Description	Date Issued
RF180919D02-1	Original release.	Dec. 12, 2018

1 Certificate of Conformity

Product: Harman Magic Box

Brand: Sprint & Harman Kardon

Test Model: SOR4105T

Sample Status: Engineering sample

Applicant: Sercomm Corp.

Test Date: Oct. 5 ~ 23, 2018

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 :

Annie Chang

Date: Dec. 12, 2018

Annie Chang / Senior Specialist

Approved by :

Rex Lai

Date: Dec. 12, 2018

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 -14.94 dB at 3.04150 MHz
15.407(b)(1/2/3/4(i/ii)/6)	Radiated Emissions & Band Edge Measurement*	Pass	Meet the requirement of limit. Minimum passing margin is -1.11dB at 5150.00MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	Pass	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	-	Reference only.
15.407(a)(1/2/3)	Peak Power Spectral Density	Pass	Meet the requirement of limit.
15.407(e)	6dB bandwidth	Pass	Meet the requirement of limit. (U-NII-3 Band only)
15.407(g)	Frequency Stability	Pass	Meet the requirement of limit.
15.203	Antenna Requirement	Pass	Antenna connector is I-PEX 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.

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) (\pm)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.79 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	2.38 dB
	30MHz ~ 1000MHz	5.54 dB
Radiated Emissions above 1 GHz	Above 1GHz	5.48 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	Harman Magic Box
Brand	Sprint & Harman Kardon
Test Model	SOR4105T
Status of EUT	Engineering sample
Power Supply Rating	12Vdc
Modulation Type	64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode only.
Modulation Technology	OFDM
Transfer Rate	802.11a: 54/48/36/24/18/12/9/6Mbps 802.11n: up to 300Mbps 802.11ac: up to 866.6Mbps
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: 337.311mW 5745 ~ 5825MHz: 368.686mW
Antenna Type	5180 ~ 5240MHz: Ant.1: Dipole antenna with 3.10dBi gain Ant.2: Dipole antenna with 3.61dBi gain 5745 ~ 5825MHz: Ant.1: Dipole antenna with 3.60dBi gain Ant.2: Dipole antenna with 3.07dBi gain
Antenna Connector	I-PEX
Accessory Device	Refer to user's manual
Data Cable Supplied	N/A

Note:

1. The EUT is a Harman Magic Box.
2. The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and two receivers.

Modulation Mode	TX FUNCTION
802.11a	2TX
802.11n (20MHz)	2TX
802.11n (40MHz)	2TX
802.11ac (20MHz)	2TX
802.11ac (40MHz)	2TX
802.11ac (80MHz)	2TX

* 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)

3. The EUT uses following adapter.

Brand	CWT
Model	2ABF060F
AC Input Power	100-240V, 50/60H, 1.7A
DC Output Power	12V, 5A
Power Line	Non-shielded AC 3-Pin cable (3.5m) Non-shielded DC cable (1.5m)

4. The directional gain table:

Frequency Band (MHz)	Max. Gain (dBi)
5180-5240	6.37
5745-5825	6.35

Note:

- (i) If transmit signals are *correlated*, then

Directional gain = $10 \log[(10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20})^2 / N_{ANT}]$ dBi [Note the "20"s in the denominator of each exponent and the square of the sum of terms; the object is to combine the signal levels coherently.]

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

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, 40, 48	OFDM	BPSK	6
-	802.11ac (20MHz)		36 to 48	36, 40, 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	40	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	40	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, 40, 48	OFDM	BPSK	6
-	802.11ac (20MHz)		36 to 48	36, 40, 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	Tested By
RE \geq 1G	26deg. C, 76%RH	120Vac, 60Hz	Dalen Dai
RE<1G	26deg. C, 76%RH	120Vac, 60Hz	Dalen Dai
PLC	23deg. C, 77%RH	120Vac, 60Hz	Justin Liu 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.

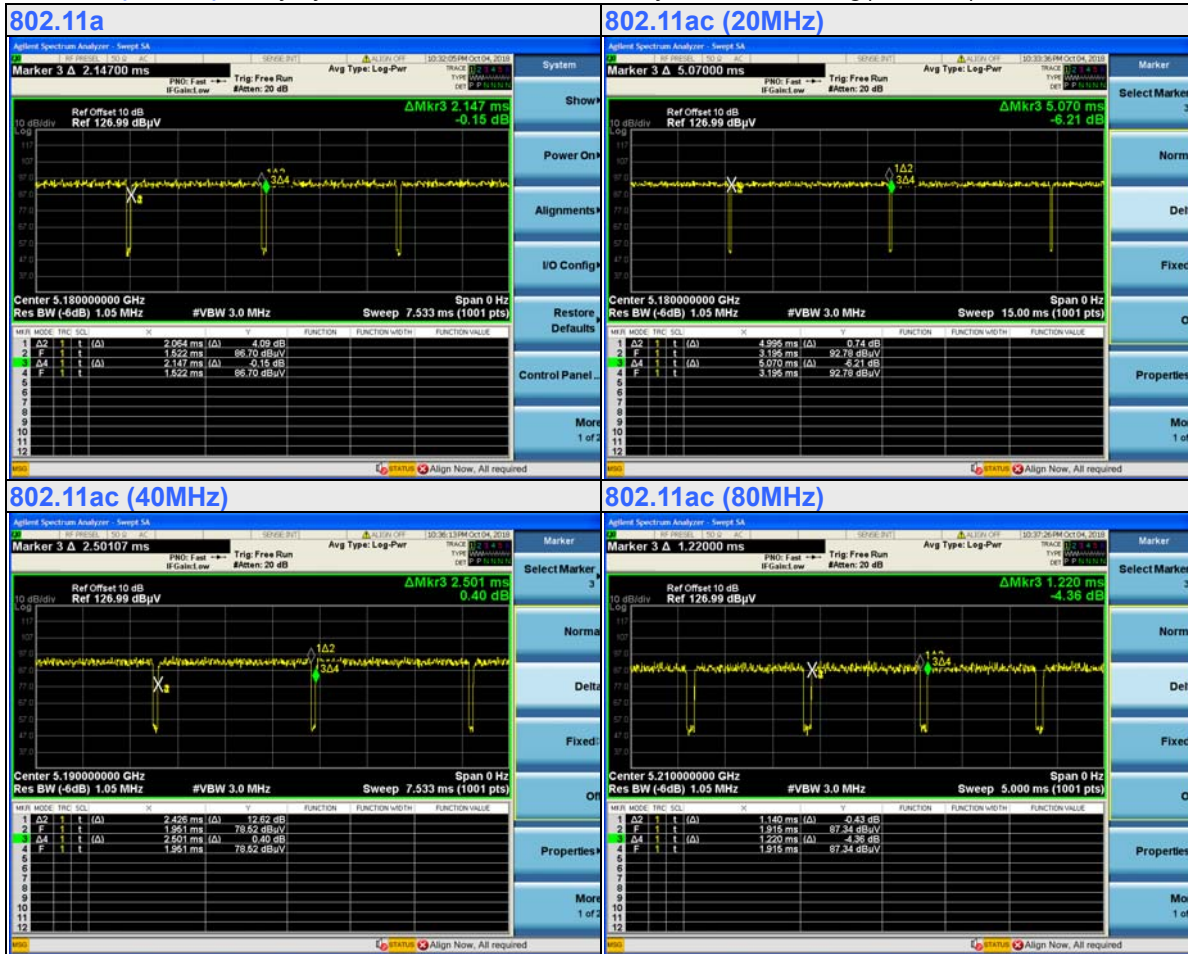
If duty cycle of test signal is $< 98\%$, duty factor shall be considered.

802.11a: Duty cycle = $2.064/2.147 = 0.961$, Duty factor = $10 * \log(1/0.961) = 0.17$

802.11ac (20MHz): Duty cycle = $4.995/5.070 = 0.985$

802.11ac (40MHz): Duty cycle = $2.426/2.501 = 0.970$, Duty factor = $10 * \log(1/0.970) = 0.13$

802.11ac (80MHz): Duty cycle = $1.14/1.22 = 0.934$, Duty factor = $10 * \log(1/0.934) = 0.29$



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.	Notebook PC	SONY	SVS151A12P	275548477001024	FCC DoC Approved	Provided by Lab
B.	Notebook PC	DELL	PP27L	8SNZ12S	FCC DoC Approved	Provided by Lab
C.	Notebook PC	ASUS	PU401L	ECNXBC012528528	FCC DoC Approved	Provided by Lab

Note:

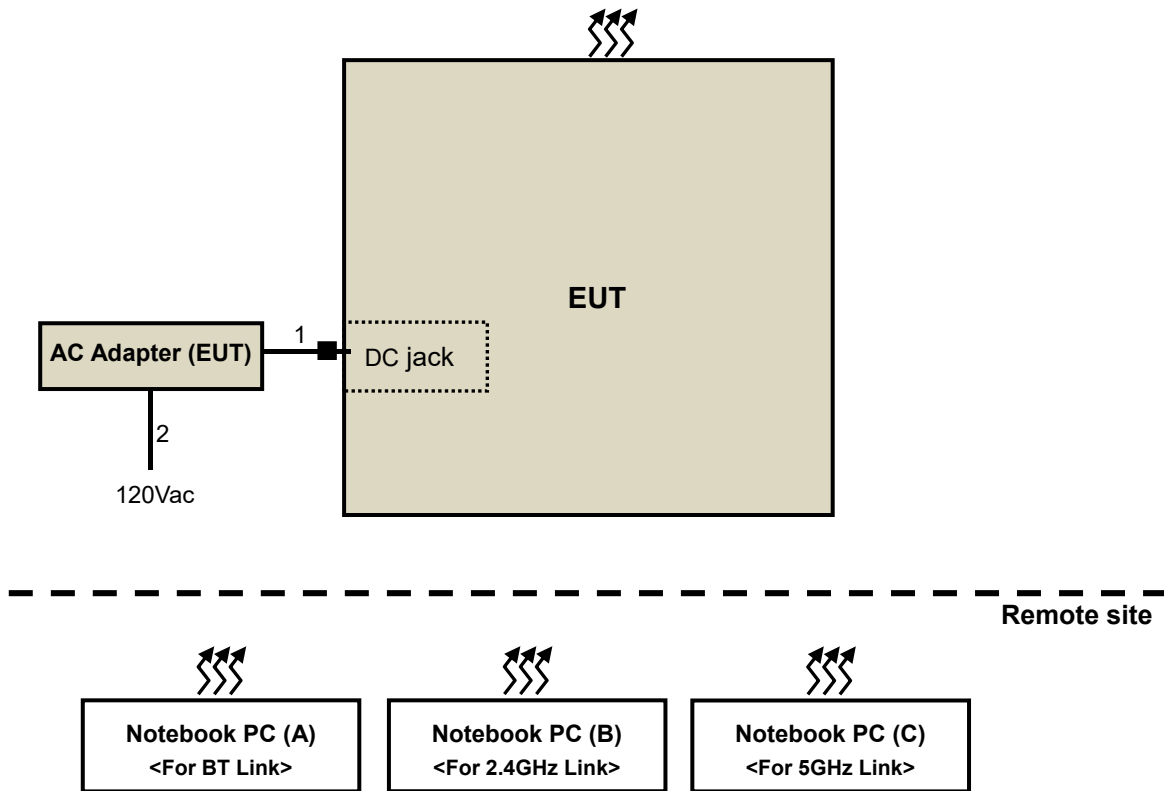
1. All power cords of the above support units are non-shielded (1.8m).
2. Items A-C acted as communication partners to transfer data.

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	DC cable	1	1.5	N	1	Supplied by client
2.	AC cable	1	3.5	N	0	Supplied by client

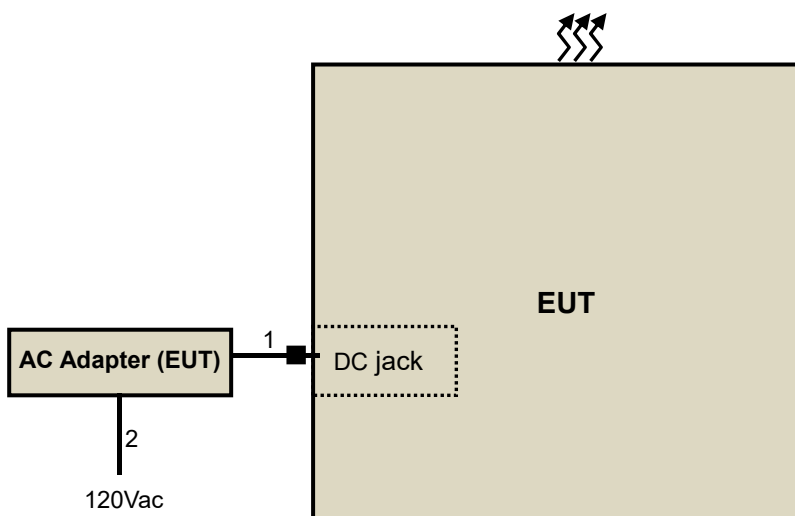
Note: The core(s) is(are) originally attached to the cable(s).

3.4.1 Configuration of System under Test

For Conducted Emission test:



For Radiated Emission 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:

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 (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	<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(dBµV/m) ^{*1} PK:105.2 (dBµV/m) ^{*2} PK: 110.8(dBµV/m) ^{*3} PK:122.2 (dBµV/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. ^{*3} below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.		^{*2} below the band edge increasing linearly to 10 dBm/MHz at 25 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. 21, 2018	Feb. 20, 2019
HP Preamplifier	8449B	3008A01201	Feb. 22, 2018	Feb. 21, 2019
MITEQ Preamplifier	AMF-6F-260400-33-8P	892164	Feb. 21, 2018	Feb. 20, 2019
Agilent TEST RECEIVER	N9038A	MY51210129	Feb. 6, 2018	Feb. 5, 2019
Schwarzbeck Antenna	VULB 9168	139	Nov. 29, 2017	Nov. 28, 2018
Schwarzbeck Antenna	VHBA 9123	480	May 19, 2017	May 18, 2019
Schwarzbeck Horn Antenna	BBHA-9170	212	Dec. 1, 2017	Nov. 30, 2018
Schwarzbeck Horn Antenna	BBHA 9120-D1	D130	Dec. 1, 2017	Nov. 30, 2018
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	Aug. 13, 2018	Aug. 12, 2019
SUHNER RF cable With 3/4dB PAD	SF102	Cable-CH8-3.6m	Aug. 13, 2018	Aug. 12, 2019
KEYSIGHT MIMO Powermeasurement Test set	U2021XA	U2021XA-001	Jun. 4, 2018	Jun. 3, 2019
KEYSIGHT Spectrum Analyzer	N9030A	MY54490260	Aug. 3, 2018	Aug. 2, 2019
Loop Antenna EMCI	LPA600	270	Aug. 11, 2017	Aug. 10, 2019
EMCO Horn Antenna	3115	00028257	Nov. 30, 2017	Nov. 29, 2018
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. 26, 2018	Apr. 25, 2019
Anritsu Power Meter	ML2495A	0842014	Apr. 26, 2018	Apr. 25, 2019

- NOTE:** 1. The calibration interval of the above test instruments is 12/24 months. And the calibrations are traceable to NML/ROC and NIST/USA.
2. The 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. The Industry Canada Reference No. IC 7450E-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:

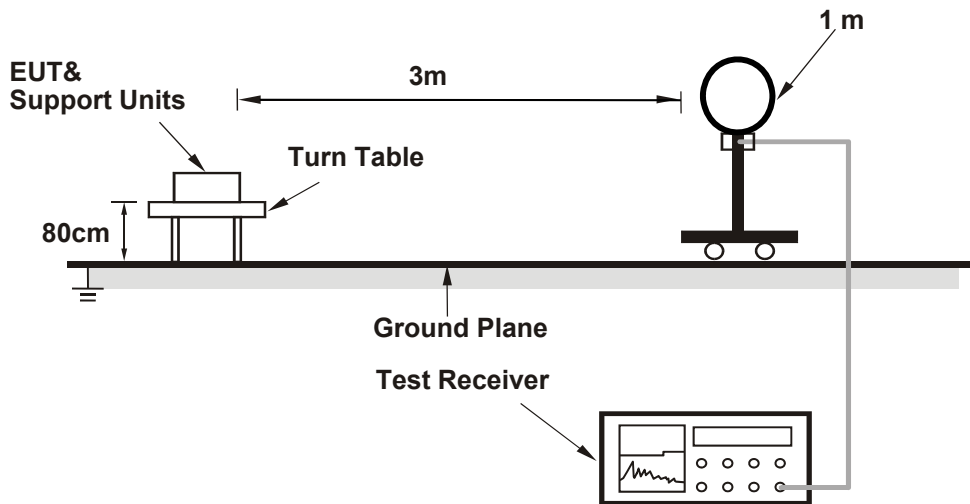
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

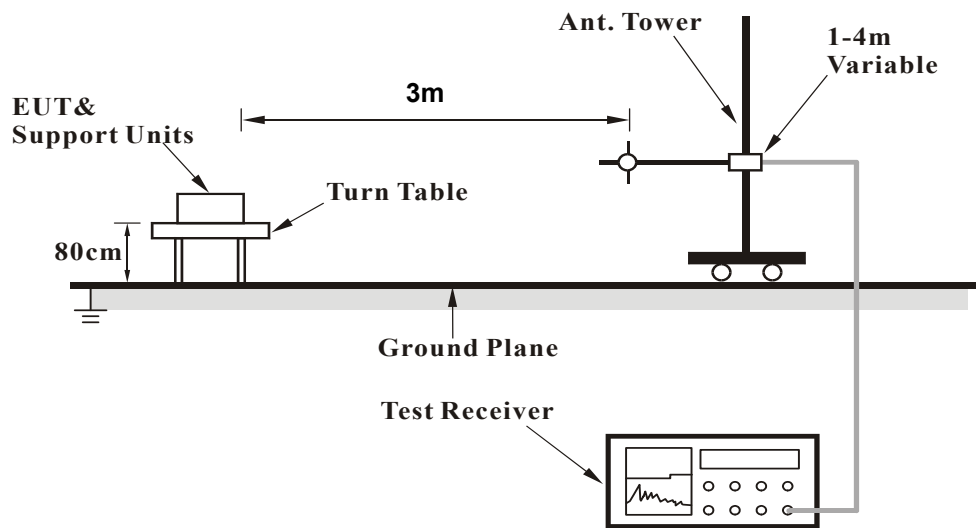
No deviation.

4.1.5 Test Setup

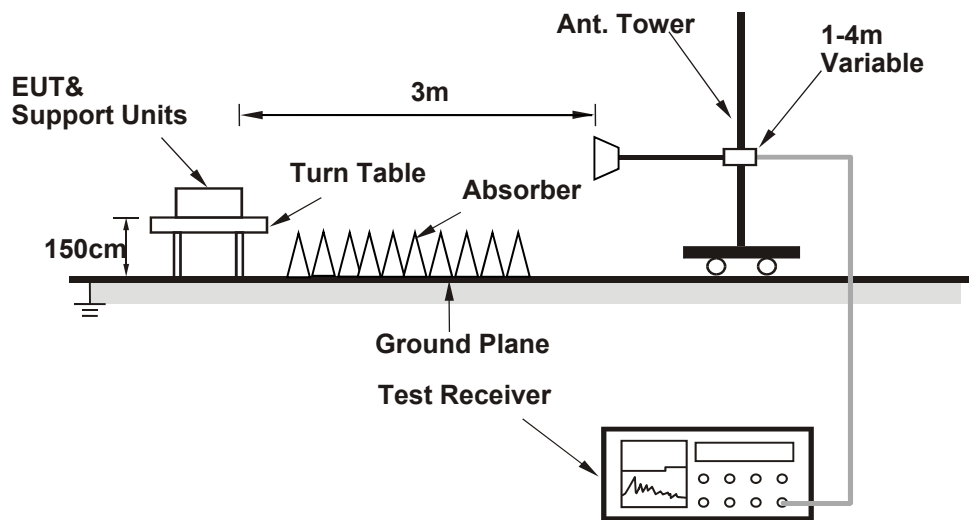
For Radiated emission below 30MHz



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

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

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	67.28 PK	74.00	-6.72	1.00 H	266	62.01	5.27
2	5150.00	50.85 AV	54.00	-3.15	1.00 H	266	45.58	5.27
3	*5180.00	112.57 PK			1.00 H	266	107.52	5.05
4	*5180.00	102.63 AV			1.00 H	266	97.58	5.05
5	#10360.00	53.53 PK	68.20	-14.67	2.56 H	104	37.79	15.74

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	70.54 PK	74.00	-3.46	1.18 V	37	65.27	5.27
2	5150.00	52.89 AV	54.00	-1.11	1.18 V	37	47.62	5.27
3	*5180.00	109.26 PK			1.18 V	37	104.21	5.05
4	*5180.00	98.18 AV			1.18 V	37	93.13	5.05
5	#10360.00	54.00 PK	68.20	-14.20	1.72 V	217	38.26	15.74

REMARKS:

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

CHANNEL	TX Channel 40	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	*5200.00	113.28 PK			1.03 H	271	108.38	4.90
2	*5200.00	103.56 AV			1.03 H	271	98.66	4.90
3	#10400.00	54.30 PK	68.20	-13.90	2.61 H	98	38.25	16.05

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	*5200.00	109.31 PK			1.06 V	42	104.41	4.90
2	*5200.00	100.11 AV			1.06 V	42	95.21	4.90
3	#10400.00	54.76 PK	68.20	-13.44	1.66 V	223	38.71	16.05

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
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	112.76 PK			1.08 H	263	108.11	4.65
2	*5240.00	103.10 AV			1.08 H	263	98.45	4.65
3	5350.00	54.27 PK	74.00	-19.73	1.08 H	263	49.77	4.50
4	5350.00	41.34 AV	54.00	-12.66	1.08 H	263	36.84	4.50
5	#10480.00	54.84 PK	68.20	-13.36	2.57 H	109	38.18	16.66

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	109.81 PK			1.09 V	40	105.16	4.65
2	*5240.00	100.69 AV			1.09 V	40	96.04	4.65
3	5350.00	54.69 PK	74.00	-19.31	1.09 V	40	50.19	4.50
4	5350.00	41.72 AV	54.00	-12.28	1.09 V	40	37.22	4.50
5	#10480.00	55.31 PK	68.20	-12.89	1.68 V	204	38.65	16.66

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
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	#5634.55	64.34 PK	68.20	-3.86	1.60 H	284	59.35	4.99
2	*5745.00	112.78 PK			1.60 H	284	107.17	5.61
3	*5745.00	102.72 AV			1.60 H	284	97.11	5.61
4	#5925.73	65.20 PK	68.20	-3.00	1.60 H	284	58.93	6.27
5	11490.00	54.92 PK	74.00	-19.08	1.93 H	220	37.66	17.26
6	11490.00	44.71 AV	54.00	-9.29	1.93 H	220	27.45	17.26

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	#5639.77	63.48 PK	68.20	-4.72	1.59 V	23	58.46	5.02
2	*5745.00	109.64 PK			1.59 V	23	104.03	5.61
3	*5745.00	100.03 AV			1.59 V	23	94.42	5.61
4	#5954.70	64.52 PK	68.20	-3.68	1.59 V	23	58.25	6.27
5	11490.00	55.30 PK	74.00	-18.70	1.55 V	334	38.04	17.26
6	11490.00	45.55 AV	54.00	-8.45	1.55 V	334	28.29	17.26

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
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	#5642.62	63.91 PK	68.20	-4.29	1.63 H	281	58.89	5.02
2	*5785.00	113.16 PK			1.63 H	281	107.26	5.90
3	*5785.00	103.09 AV			1.63 H	281	97.19	5.90
4	#5988.43	65.54 PK	68.20	-2.66	1.63 H	281	59.18	6.36
5	11570.00	55.25 PK	74.00	-18.75	1.90 H	227	37.89	17.36
6	11570.00	45.00 AV	54.00	-9.00	1.90 H	227	27.64	17.36

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	#5630.75	64.66 PK	68.20	-3.54	1.56 V	27	59.67	4.99
2	*5785.00	110.02 PK			1.56 V	27	104.12	5.90
3	*5785.00	100.17 AV			1.56 V	27	94.27	5.90
4	#6008.85	65.39 PK	68.20	-2.81	1.56 V	27	59.00	6.39
5	11570.00	55.52 PK	74.00	-18.48	1.52 V	346	38.16	17.36
6	11570.00	45.69 AV	54.00	-8.31	1.52 V	346	28.33	17.36

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
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	#5594.18	65.20 PK	68.20	-3.00	1.61 H	285	60.31	4.89
2	*5825.00	112.88 PK			1.61 H	285	106.77	6.11
3	*5825.00	102.65 AV			1.61 H	285	96.54	6.11
4	#6011.70	66.05 PK	68.20	-2.15	1.61 H	285	59.65	6.40
5	11650.00	55.07 PK	74.00	-18.93	1.97 H	225	37.92	17.15
6	11650.00	44.73 AV	54.00	-9.27	1.97 H	225	27.58	17.15

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	#5646.90	63.93 PK	68.20	-4.27	1.58 V	21	58.90	5.03
2	*5825.00	109.87 PK			1.58 V	21	103.76	6.11
3	*5825.00	99.92 AV			1.58 V	21	93.81	6.11
4	#5977.02	64.87 PK	68.20	-3.33	1.58 V	21	58.54	6.33
5	11650.00	55.23 PK	74.00	-18.77	1.47 V	327	38.08	17.15
6	11650.00	45.42 AV	54.00	-8.58	1.47 V	327	28.27	17.15

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
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	68.85 PK	74.00	-5.15	1.00 H	266	63.58	5.27
2	5150.00	52.20 AV	54.00	-1.80	1.00 H	266	46.93	5.27
3	*5180.00	112.81 PK			1.00 H	266	107.76	5.05
4	*5180.00	102.30 AV			1.00 H	266	97.25	5.05
5	#10360.00	53.58 PK	68.20	-14.62	2.78 H	111	37.84	15.74

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	68.11 PK	74.00	-5.89	1.08 V	39	62.84	5.27
2	5150.00	49.92 AV	54.00	-4.08	1.08 V	39	44.65	5.27
3	*5180.00	109.91 PK			1.08 V	39	104.86	5.05
4	*5180.00	99.20 AV			1.08 V	39	94.15	5.05
5	#10360.00	53.88 PK	68.20	-14.32	1.65 V	204	38.14	15.74

REMARKS:

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

CHANNEL	TX Channel 40	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	*5200.00	113.29 PK			1.02 H	269	108.39	4.90
2	*5200.00	103.61 AV			1.02 H	269	98.71	4.90
3	#10400.00	53.97 PK	68.20	-14.23	2.72 H	105	37.92	16.05

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	*5200.00	110.06 PK			1.11 V	42	105.16	4.90
2	*5200.00	99.98 AV			1.11 V	42	95.08	4.90
3	#10400.00	54.27 PK	68.20	-13.93	1.70 V	212	38.22	16.05

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
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	112.79 PK			1.02 H	267	108.14	4.65
2	*5240.00	102.56 AV			1.02 H	267	97.91	4.65
3	5350.00	55.36 PK	74.00	-18.64	1.02 H	267	50.86	4.50
4	5350.00	43.02 AV	54.00	-10.98	1.02 H	267	38.52	4.50
5	#10480.00	54.71 PK	68.20	-13.49	2.49 H	120	38.05	16.66

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	109.53 PK			1.19 V	46	104.88	4.65
2	*5240.00	99.26 AV			1.19 V	46	94.61	4.65
3	5350.00	54.91 PK	74.00	-19.09	1.19 V	46	50.41	4.50
4	5350.00	42.86 AV	54.00	-11.14	1.19 V	46	38.36	4.50
5	#10480.00	55.01 PK	68.20	-13.19	1.63 V	217	38.35	16.66

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
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	#5645.95	65.10 PK	68.20	-3.10	1.63 H	283	60.08	5.02
2	*5745.00	112.31 PK			1.63 H	283	106.70	5.61
3	*5745.00	102.65 AV			1.63 H	283	97.04	5.61
4	#5998.87	66.22 PK	68.20	-1.98	1.63 H	283	59.82	6.40
5	11490.00	55.14 PK	74.00	-18.86	1.99 H	227	37.88	17.26
6	11490.00	44.87 AV	54.00	-9.13	1.99 H	227	27.61	17.26

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	#5622.68	64.09 PK	68.20	-4.11	1.54 V	22	59.12	4.97
2	*5745.00	109.21 PK			1.54 V	22	103.60	5.61
3	*5745.00	99.76 AV			1.54 V	22	94.15	5.61
4	#6019.30	65.29 PK	68.20	-2.91	1.54 V	22	58.89	6.40
5	11490.00	55.41 PK	74.00	-18.59	1.39 V	344	38.15	17.26
6	11490.00	45.57 AV	54.00	-8.43	1.39 V	344	28.31	17.26

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
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	#5616.98	63.95 PK	68.20	-4.25	1.60 H	288	58.99	4.96
2	*5785.00	111.98 PK			1.60 H	288	106.08	5.90
3	*5785.00	102.65 AV			1.60 H	288	96.75	5.90
4	#6003.15	66.10 PK	68.20	-2.10	1.60 H	288	59.71	6.39
5	11570.00	55.15 PK	74.00	-18.85	1.96 H	221	37.79	17.36
6	11570.00	44.91 AV	54.00	-9.09	1.96 H	221	27.55	17.36

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	#5641.20	64.81 PK	68.20	-3.39	1.52 V	24	59.79	5.02
2	*5785.00	108.49 PK			1.52 V	24	102.59	5.90
3	*5785.00	98.85 AV			1.52 V	24	92.95	5.90
4	#5986.05	65.46 PK	68.20	-2.74	1.52 V	24	59.10	6.36
5	11570.00	55.47 PK	74.00	-18.53	1.41 V	331	38.11	17.36
6	11570.00	45.42 AV	54.00	-8.58	1.41 V	331	28.06	17.36

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
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	#5619.35	64.59 PK	68.20	-3.61	1.67 H	285	59.63	4.96
2	*5825.00	112.13 PK			1.67 H	285	106.02	6.11
3	*5825.00	102.34 AV			1.67 H	285	96.23	6.11
4	#6000.77	65.80 PK	68.20	-2.40	1.67 H	285	59.40	6.40
5	11650.00	54.81 PK	74.00	-19.19	1.92 H	228	37.66	17.15
6	11650.00	44.47 AV	54.00	-9.53	1.92 H	228	27.32	17.15

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	#5645.48	63.99 PK	68.20	-4.21	1.55 V	20	58.97	5.02
2	*5825.00	108.89 PK			1.55 V	20	102.78	6.11
3	*5825.00	98.64 AV			1.55 V	20	92.53	6.11
4	#5988.43	65.65 PK	68.20	-2.55	1.55 V	20	59.29	6.36
5	11650.00	55.02 PK	74.00	-18.98	1.93 V	234	37.87	17.15
6	11650.00	44.77 AV	54.00	-9.23	1.93 V	234	27.62	17.15

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
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	69.08 PK	74.00	-4.92	1.03 H	261	63.81	5.27
2	5150.00	52.33 AV	54.00	-1.67	1.03 H	261	47.06	5.27
3	*5190.00	104.49 PK			1.03 H	261	99.51	4.98
4	*5190.00	97.60 AV			1.03 H	261	92.62	4.98
5	#10380.00	53.50 PK	68.20	-14.70	2.77 H	106	37.61	15.89

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	66.41 PK	74.00	-7.59	1.13 V	35	61.14	5.27
2	5150.00	50.60 AV	54.00	-3.40	1.13 V	35	45.33	5.27
3	*5190.00	101.86 PK			1.13 V	35	96.88	4.98
4	*5190.00	95.08 AV			1.13 V	35	90.10	4.98
5	#10380.00	53.98 PK	68.20	-14.22	1.53 V	217	38.09	15.89

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
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	109.83 PK			1.02 H	264	105.12	4.71
2	*5230.00	102.22 AV			1.02 H	264	97.51	4.71
3	5350.00	56.88 PK	74.00	-17.12	1.02 H	264	52.38	4.50
4	5350.00	43.57 AV	54.00	-10.43	1.02 H	264	39.07	4.50
5	#10460.00	54.43 PK	68.20	-13.77	2.89 H	114	37.91	16.52

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	*5230.00	106.30 PK			1.10 V	42	101.59	4.71
2	*5230.00	98.53 AV			1.10 V	42	93.82	4.71
3	5350.00	56.14 PK	74.00	-17.86	1.10 V	42	51.64	4.50
4	5350.00	42.92 AV	54.00	-11.08	1.10 V	42	38.42	4.50
5	#10460.00	54.79 PK	68.20	-13.41	1.60 V	222	38.27	16.52

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. 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	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	#5609.37	64.05 PK	68.20	-4.15	1.61 H	281	59.12	4.93
2	*5755.00	109.93 PK			1.61 H	281	104.26	5.67
3	*5755.00	99.72 AV			1.61 H	281	94.05	5.67
4	#5927.62	64.87 PK	68.20	-3.33	1.61 H	281	58.60	6.27
5	11510.00	54.82 PK	74.00	-19.18	2.06 H	217	37.51	17.31
6	11510.00	44.73 AV	54.00	-9.27	2.06 H	217	27.42	17.31

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	#5640.25	64.38 PK	68.20	-3.82	1.57 V	21	59.36	5.02
2	*5755.00	106.81 PK			1.57 V	21	101.14	5.67
3	*5755.00	96.92 AV			1.57 V	21	91.25	5.67
4	#5991.75	64.58 PK	68.20	-3.62	1.57 V	21	58.20	6.38
5	11510.00	55.54 PK	74.00	-18.46	1.41 V	347	38.23	17.31
6	11510.00	45.71 AV	54.00	-8.29	1.41 V	347	28.40	17.31

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
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	#5632.65	64.60 PK	68.20	-3.60	1.63 H	288	59.62	4.98
2	*5795.00	110.18 PK			1.63 H	288	104.21	5.97
3	*5795.00	100.26 AV			1.63 H	288	94.29	5.97
4	#5975.60	66.23 PK	68.20	-1.97	1.63 H	288	59.90	6.33
5	11590.00	55.19 PK	74.00	-18.81	2.02 H	209	37.82	17.37
6	11590.00	45.02 AV	54.00	-8.98	2.02 H	209	27.65	17.37

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	#5644.05	64.75 PK	68.20	-3.45	1.58 V	25	59.73	5.02
2	*5795.00	106.53 PK			1.58 V	25	100.56	5.97
3	*5795.00	96.44 AV			1.58 V	25	90.47	5.97
4	#6015.02	65.12 PK	68.20	-3.08	1.58 V	25	58.73	6.39
5	11590.00	55.73 PK	74.00	-18.27	1.40 V	339	38.36	17.37
6	11590.00	45.66 AV	54.00	-8.34	1.40 V	339	28.29	17.37

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
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	67.86 PK	74.00	-6.14	1.00 H	266	62.59	5.27
2	5150.00	52.89 AV	54.00	-1.11	1.00 H	266	47.62	5.27
3	*5210.00	101.25 PK			1.00 H	266	96.42	4.83
4	*5210.00	92.66 AV			1.00 H	266	87.83	4.83
5	5350.00	54.87 PK	74.00	-19.13	1.00 H	266	50.37	4.50
6	5350.00	42.62 AV	54.00	-11.38	1.00 H	266	38.12	4.50
7	#10420.00	53.76 PK	68.20	-14.44	2.65 H	101	37.55	16.21

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	65.53 PK	74.00	-8.47	1.10 V	38	60.26	5.27
2	5150.00	49.46 AV	54.00	-4.54	1.10 V	38	44.19	5.27
3	*5210.00	97.68 PK			1.10 V	38	92.85	4.83
4	*5210.00	89.40 AV			1.10 V	38	84.57	4.83
5	5350.00	54.54 PK	74.00	-19.46	1.10 V	38	50.04	4.50
6	5350.00	42.39 AV	54.00	-11.61	1.10 V	38	37.89	4.50
7	#10420.00	54.17 PK	68.20	-14.03	1.60 V	211	37.96	16.21

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
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	#5645.00	66.58 PK	68.20	-1.62	1.60 H	282	61.56	5.02
2	*5775.00	111.79 PK			1.60 H	282	105.96	5.83
3	*5775.00	101.75 AV			1.60 H	282	95.92	5.83
4	#5928.10	66.82 PK	68.20	-1.38	1.60 H	282	60.56	6.26
5	11550.00	55.30 PK	74.00	-18.70	2.07 H	211	37.96	17.34
6	11550.00	45.05 AV	54.00	-8.95	2.07 H	211	27.71	17.34

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	#5646.90	64.69 PK	68.20	-3.51	1.54 V	23	59.66	5.03
2	*5775.00	107.12 PK			1.54 V	23	101.29	5.83
3	*5775.00	97.06 AV			1.54 V	23	91.23	5.83
4	#5933.80	64.88 PK	68.20	-3.32	1.54 V	23	58.62	6.26
5	11550.00	55.41 PK	74.00	-18.59	1.43 V	331	38.07	17.34
6	11550.00	45.46 AV	54.00	-8.54	1.43 V	331	28.12	17.34

REMARKS:

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

Below 1GHz Data:

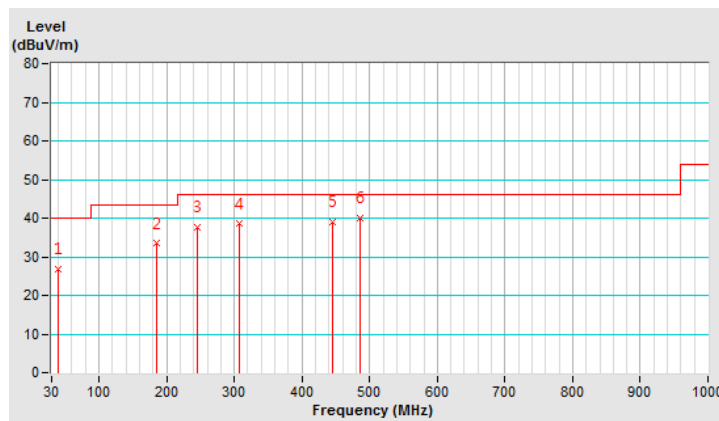
802.11ac (20MHz)

CHANNEL	TX Channel 40	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	38.78	26.81 QP	40.00	-13.19	1.44 H	150	34.77	-7.96
2	184.86	33.39 QP	43.50	-10.11	1.62 H	63	42.30	-8.91
3	246.26	37.55 QP	46.00	-8.45	1.77 H	297	45.06	-7.51
4	306.84	38.52 QP	46.00	-7.48	1.91 H	135	43.55	-5.03
5	444.29	39.08 QP	46.00	-6.92	1.52 H	250	41.15	-2.07
6	485.56	39.96 QP	46.00	-6.04	2.17 H	211	41.42	-1.46

REMARKS:

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



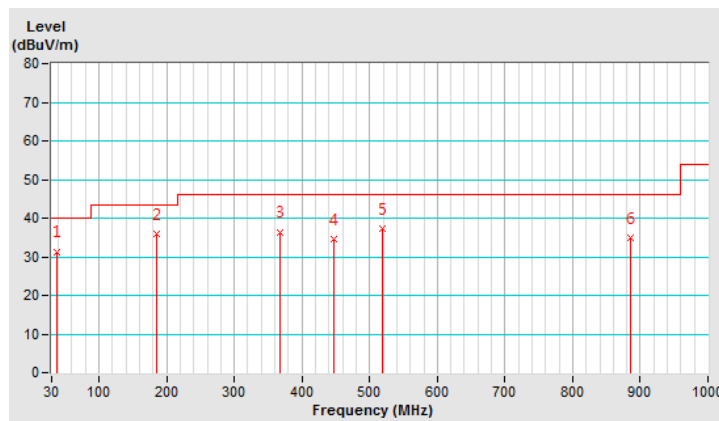
CHANNEL	TX Channel 40	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	38.54	31.11 QP	40.00	-8.89	2.11 V	323	39.11	-8.00
2	184.67	35.82 QP	43.50	-7.68	1.52 V	313	44.71	-8.89
3	366.88	36.28 QP	46.00	-9.72	1.66 V	191	40.22	-3.94
4	447.83	34.48 QP	46.00	-11.52	1.37 V	350	36.51	-2.03
5	518.78	37.19 QP	46.00	-8.81	1.79 V	107	38.11	-0.92
6	886.27	34.75 QP	46.00	-11.25	1.51 V	360	29.45	5.30

REMARKS:

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



4.2 Conducted Emission Measurement

4.2.1 Limits of Conducted Emission Measurement

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

Note: 1. The lower limit shall apply at the transition frequencies.

2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.2.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
ROHDE & SCHWARZ TEST RECEIVER	ESR3	102413	Feb. 8, 2018	Feb. 7, 2019
ROHDE & SCHWARZ Artificial Mains Network (for EUT)	ESH2-Z5	100104	Dec. 6, 2017	Dec. 5, 2018
LISN With Adapter (for EUT)	AD10	C09Ada-001	Dec. 6, 2017	Dec. 5, 2018
ROHDE & SCHWARZ Artificial Mains Network (for peripherals)	ESH3-Z5	847265/023	Nov. 3, 2017	Nov. 2, 2018
SCHWARZBECK Artificial Mains Network (For EUT)	NNLK8129	8129229	May 3, 2018	May 2, 2019
SCHWARZBECK Artificial Mains Network (For EUT)	NNLK 8121	8121-808	Mar. 5, 2018	Mar. 4, 2019
Software	Cond_V7.3.7.4	NA	NA	NA
RF cable (JYEBAO) With 10dB PAD	5D-FB	Cable-C09.01	Feb. 21, 2018	Feb. 20, 2019
SUHNER Terminator (For ROHDE & SCHWARZ LISN)	65BNC-5001	E1-010789	May 8, 2018	May 7, 2019

Notes: 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. 9.

3. The VCCI Site Registration No. C-1312.

4.2.3 Test Procedure

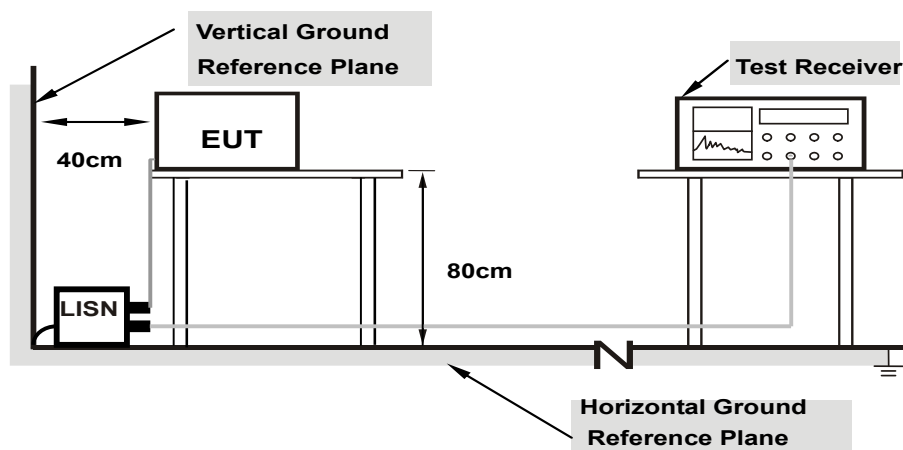
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance 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 4.1.6.

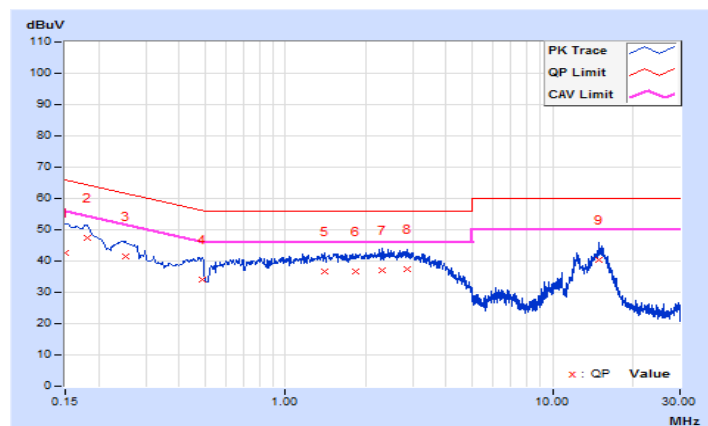
4.2.7 Test Results

Phase	Line (L)	Detector Function	Quasi-Peak (QP) / Average (AV)
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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	0.15000	10.11	32.44	17.51	42.55	27.62	66.00	56.00	-23.45	-28.38
2	0.18128	10.12	37.15	23.11	47.27	33.23	64.43	54.43	-17.16	-21.20
3	0.25125	10.13	31.25	18.03	41.38	28.16	61.72	51.72	-20.34	-23.56
4	0.48806	10.16	23.99	12.49	34.15	22.65	56.20	46.20	-22.05	-23.55
5	1.40321	10.28	26.40	16.34	36.68	26.62	56.00	46.00	-19.32	-19.38
6	1.82549	10.31	26.28	17.03	36.59	27.34	56.00	46.00	-19.41	-18.66
7	2.31815	10.34	26.77	18.79	37.11	29.13	56.00	46.00	-18.89	-16.87
8	2.84209	10.38	26.97	19.84	37.35	30.22	56.00	46.00	-18.65	-15.78
9	14.92358	10.88	29.37	23.06	40.25	33.94	60.00	50.00	-19.75	-16.06

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.

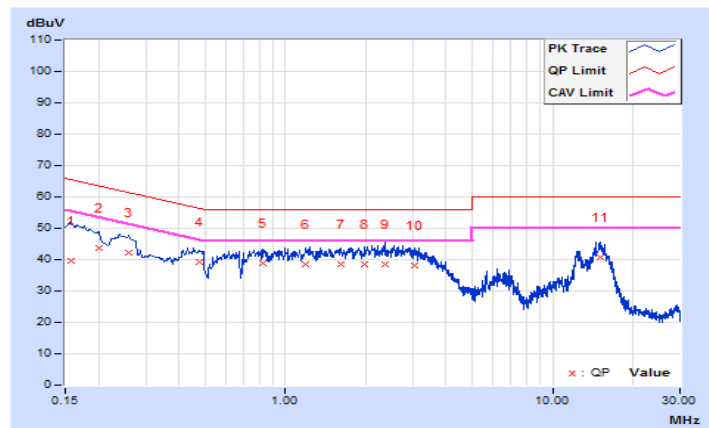


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)
-------	-------------	-------------------	--------------------------------

No	Freq. [MHz]	Corr.	Reading Value		Emission Level		Limit		Margin	
		Factor (dB)	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15760	10.12	29.43	7.40	39.55	17.52	65.59	55.59	-26.04	-38.07
2	0.19978	10.14	33.51	14.69	43.65	24.83	63.62	53.62	-19.97	-28.79
3	0.25932	10.15	32.06	17.74	42.21	27.89	61.45	51.45	-19.24	-23.56
4	0.47453	10.17	28.93	15.33	39.10	25.50	56.43	46.43	-17.33	-20.93
5	0.82449	10.24	28.54	15.61	38.78	25.85	56.00	46.00	-17.22	-20.15
6	1.19546	10.28	28.31	17.25	38.59	27.53	56.00	46.00	-17.41	-18.47
7	1.60653	10.31	28.24	18.52	38.55	28.83	56.00	46.00	-17.45	-17.17
8	1.98971	10.33	28.09	19.49	38.42	29.82	56.00	46.00	-17.58	-16.18
9	2.34943	10.36	27.99	20.27	38.35	30.63	56.00	46.00	-17.65	-15.37
10	3.04150	10.41	27.69	20.65	38.10	31.06	56.00	46.00	-17.90	-14.94
11	15.02133	10.77	29.93	23.62	40.70	34.39	60.00	50.00	-19.30	-15.61

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.



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

Per KDB 662911 Method of conducted output power measurement on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;

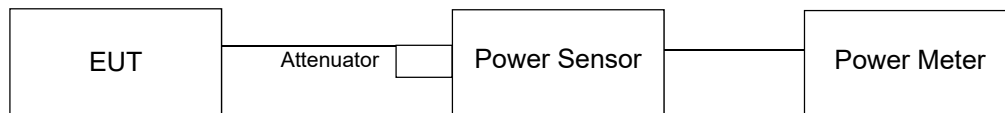
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT} ;

Array Gain = $5 \log(N_{ANT}/N_{SS})$ dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

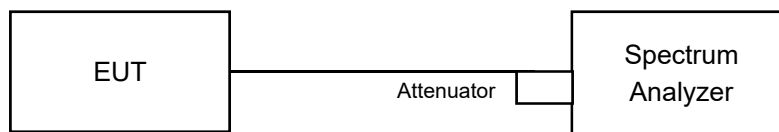
For power measurements on all other devices: Array Gain = $10 \log(N_{ANT}/N_{SS})$ dB.

4.3.2 Test Setup

For Power Output Measurement



For 26dB Occupied Bandwidth



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.

For 26dB Occupied Bandwidth

- 1) Set RBW = approximately 1% of the emission bandwidth.
- 2) Set the VBW > RBW.
- 3) Detector = Peak.
- 4) Trace mode = max hold.
- 5) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

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 (dBm)		Total Power (mW)	Total Power (dBm)	Power Limit (dBm)	Pass/Fail
		CHAIN 0	CHAIN 1				
36	5180	21.68	21.66	293.786	24.68	30	Pass
40	5200	22.28	22.26	337.311	25.28	30	Pass
48	5240	22.17	22.14	328.498	25.17	30	Pass
149	5745	22.29	22.08	330.87	25.20	30	Pass
157	5785	22.33	22.17	335.818	25.26	30	Pass
165	5825	22.67	22.45	360.719	25.57	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				
36	5180	22.59	21.57	325.101	25.12	30	Pass
40	5200	22.27	22.25	336.535	25.27	30	Pass
48	5240	22.19	22.12	328.507	25.17	30	Pass
149	5745	22.39	22.14	337.062	25.28	30	Pass
157	5785	22.44	22.31	345.604	25.39	30	Pass
165	5825	22.76	22.55	368.686	25.67	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				
38	5190	18.14	18.09	129.580	21.13	30	Pass
46	5230	22.21	22.16	330.778	25.20	30	Pass
151	5755	22.51	22.22	344.963	25.38	30	Pass
159	5795	22.66	22.40	358.282	25.54	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				
42	5210	17.29	17.23	106.425	20.27	30	Pass
155	5775	21.92	21.71	303.849	24.83	30	Pass

26dB Bandwidth:

802.11a

Channel	Channel Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	33.60	33.30
40	5200	36.60	36.32
48	5240	36.72	36.59

802.11ac (20MHz)

Channel	Channel Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	35.02	35.09
40	5200	40.63	38.33
48	5240	40.78	40.67

802.11ac (40MHz)

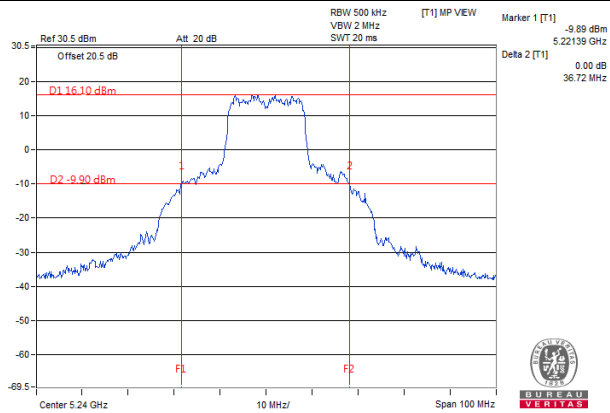
Channel	Channel Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	40.04	40.33
46	5230	76.24	79.48

802.11ac (80MHz)

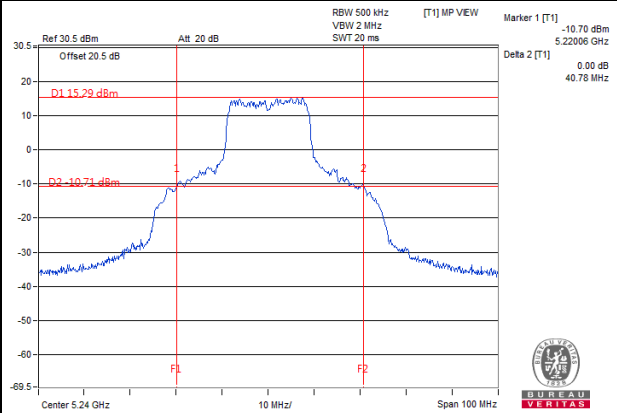
Channel	Channel Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	83.23	83.55

Spectrum Plot of Worst Value

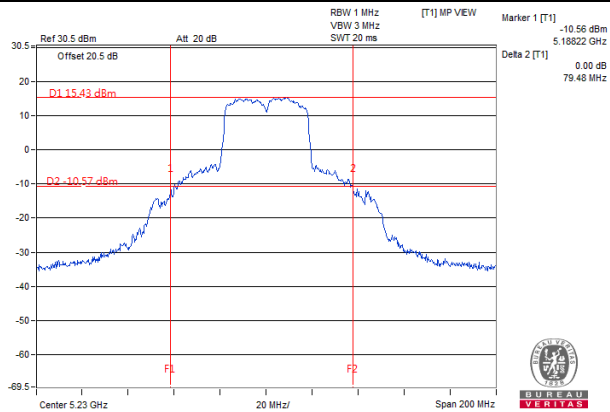
802.11a_Chain0 / CH48



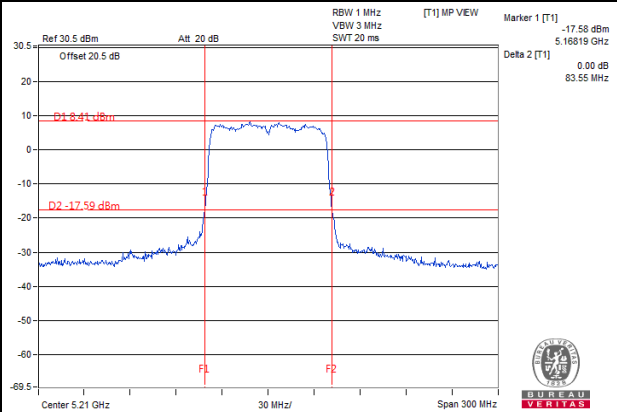
802.11ac (20MHz)_Chain0 / CH48



802.11ac (40MHz)_Chain1 / CH46



802.11ac (80MHz)_Chain1 / CH42



4.4 Occupied Bandwidth Measurement

4.4.1 Test Setup



4.4.2 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.4.3 Test Procedure

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth and set the detector to SAMPLE. The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 %of the total mean power of a given emission.

4.4.4 Test Results

802.11a

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	16.95	16.92
40	5200	17.64	17.88
48	5240	17.88	18.12
149	5745	31.04	31.20
157	5785	32.50	32.70
165	5825	32.70	32.20

802.11ac (20MHz)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	18.26	18.24
40	5200	19.32	19.08
48	5240	18.24	18.36
149	5745	34.70	34.50
157	5785	36.40	36.40
165	5825	36.30	35.90

802.11ac (40MHz)

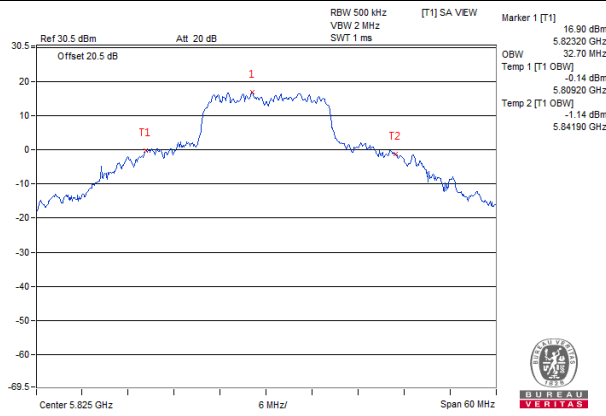
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	35.94	36.00
46	5230	38.80	39.40
151	5755	62.46	62.33
159	5795	61.83	61.66

802.11ac (80MHz)

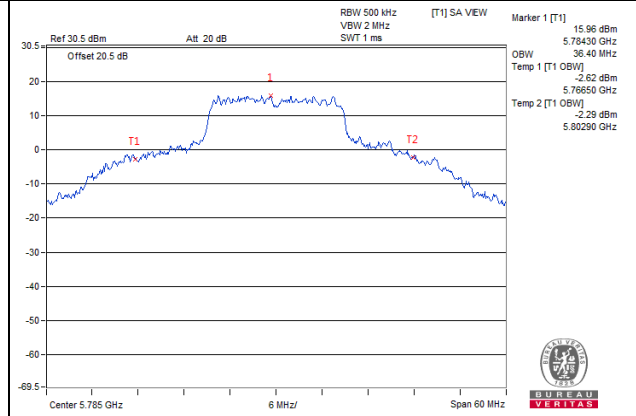
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	75.65	75.60
155	5775	89.48	89.32

Spectrum Plot of Worst Value

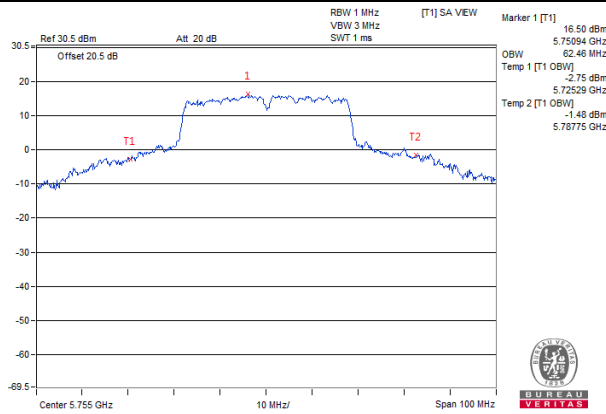
802.11a_Chain0 / CH165



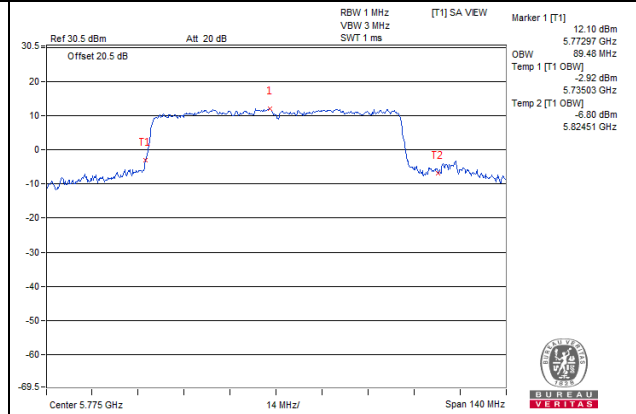
802.11ac (20MHz)_Chain0 / CH157



802.11ac (40MHz)_Chain0 / CH151



802.11ac (80MHz)_Chain0 / CH155



4.5 Peak Power Spectral Density Measurement

4.5.1 Limits of Peak Power Spectral Density Measurement

Operation Band	EUT Category		Limit
U-NII-1		Outdoor Access Point	17dBm/ MHz
		Fixed point-to-point Access Point	
	√	Indoor Access Point	
		Client device	11dBm/ MHz
U-NII-2A	-		11dBm/ MHz
U-NII-2C	-		11dBm/ MHz
U-NII-3	√		30dBm/ 500kHz

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

For U-NII-1, U-NII-2A, U-NII-2C band:

Using method SA-2

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 30 kHz, Set VBW ≥ 1 MHz, Detector = RMS
- 3) Set Channel power measure = 1MHz
- 4) Sweep time = auto, trigger set to “free run”.
- 5) Trace average at least 100 traces in power averaging mode.
- 6) Record the max value and add 10 log (1/duty cycle)

For U-NII-3 band:

Using method SA-2

- 1) Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2) Set RBW = 1 MHz, Set VBW ≥ 3 MHz, Detector = RMS
- 3) Sweep time = auto, trigger set to “free run”.
- 4) Trace average at least 100 traces in power averaging mode.
- 5) Record the max value and add 10 log (1/duty cycle)

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Same as Item 4.3.6.

4.5.7 Test Results

For U-NII-1 Band:

802.11a

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm)		Duty Factor (dB)	Total PSD With Duty Factor (dBm)	MAX. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	7.89	7.91	0.17	11.08	16.63	Pass
40	5200	8.40	8.43	0.17	11.60	16.63	Pass
48	5240	8.45	8.43	0.17	11.62	16.63	Pass

- Note:**
- Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
 - Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / 2] = 6.37\text{dBi} > 6\text{dBi}$, so the Power Spectral Density limit shall be reduced to $17 - (6.37 - 6) = 16.63\text{dBm}$.
 - Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (20MHz)

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm)		Total PSD (dBm)	MAX. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1			
36	5180	7.42	7.45	10.45	16.63	Pass
40	5200	7.93	7.93	10.94	16.63	Pass
48	5240	7.49	7.52	10.52	16.63	Pass

- Note:**
- Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
 - Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / 2] = 6.37\text{dBi} > 6\text{dBi}$, so the Power Spectral Density limit shall be reduced to $17 - (6.37 - 6) = 16.63\text{dBm}$.

802.11ac (40MHz)

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm)		Duty Factor (dB)	Total PSD With Duty Factor (dBm)	MAX. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	1.36	1.33	0.13	4.49	16.63	Pass
46	5230	5.54	5.48	0.13	8.65	16.63	Pass

- Note:**
1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
 2. Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / 2] = 6.37\text{dBi} > 6\text{dBi}$, so the Power Spectral Density limit shall be reduced to $17 - (6.37 - 6) = 16.63\text{dBm}$.
 3. Refer to section 3.3 for duty cycle spectrum plot.

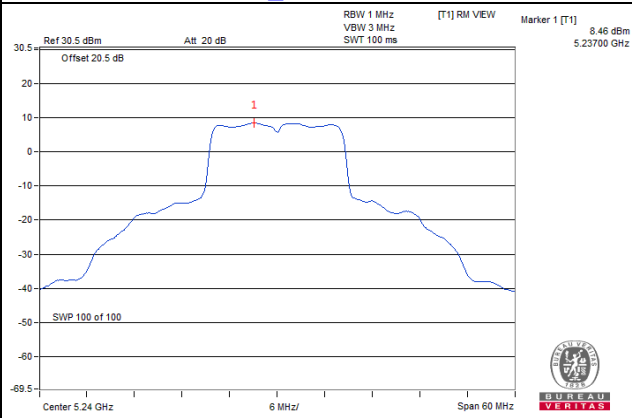
802.11ac (80MHz)

Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm)		Duty Factor (dB)	Total PSD With Duty Factor (dBm)	MAX. Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	-2.83	-2.79	0.29	0.49	16.63	Pass

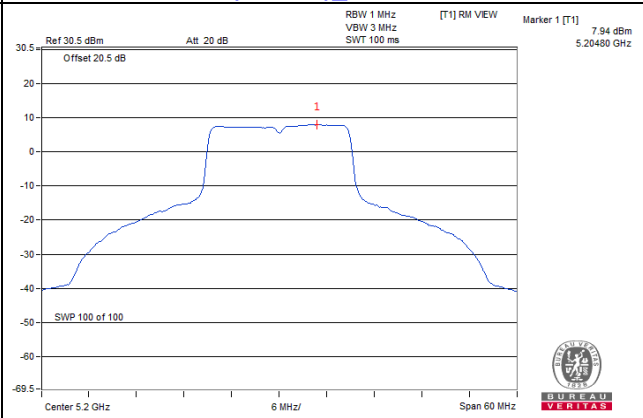
- Note:**
1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
 2. Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / 2] = 6.37\text{dBi} > 6\text{dBi}$, so the Power Spectral Density limit shall be reduced to $17 - (6.37 - 6) = 16.63\text{dBm}$.
 3. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

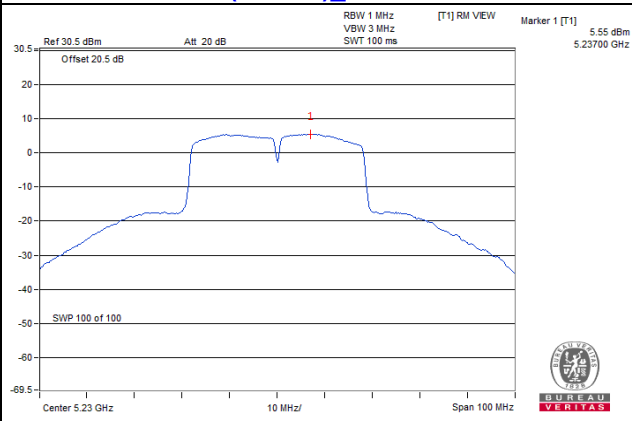
802.11a_Chain 0 / CH48



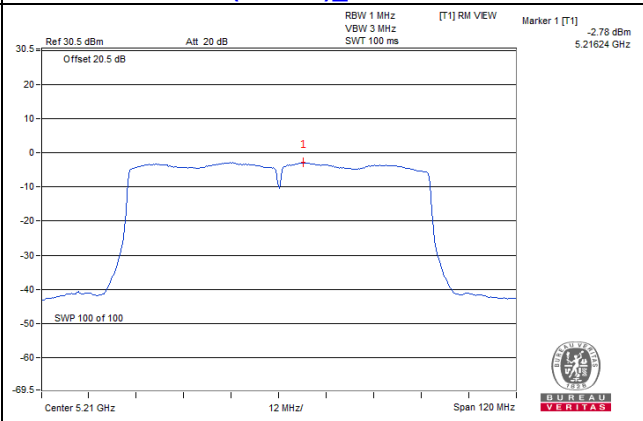
802.11ac (20MHz)_Chain 0 / CH40



802.11ac (40MHz)_Chain 0 / CH46



802.11ac (80MHz)_Chain 1 / CH42



For U-NII-3 Band:

802.11a

TX chain	Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/500kHz)	10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
0	149	5745	0.94	3.01	0.17	4.12	29.65	Pass
	157	5785	0.86	3.01	0.17	4.04	29.65	Pass
	165	5825	0.95	3.01	0.17	4.13	29.65	Pass
1	149	5745	0.92	3.01	0.17	4.10	29.65	Pass
	157	5785	0.81	3.01	0.17	3.99	29.65	Pass
	165	5825	0.84	3.01	0.17	4.02	29.65	Pass

Note: 1. Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / 2] = 6.35\text{dBi} > 6\text{dBi}$, so the Power Spectral Density limit shall be reduced to $30 - (6.35 - 6) = 29.65\text{dBm}$.

2. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (20MHz)

TX chain	Chan.	Chan. Freq. (MHz)	PSD (dBm/500kHz)	10 log (N=2) dB	Total PSD (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
0	149	5745	0.61	3.01	3.62	29.65	Pass
	157	5785	0.59	3.01	3.60	29.65	Pass
	165	5825	0.56	3.01	3.57	29.65	Pass
1	149	5745	0.52	3.01	3.53	29.65	Pass
	157	5785	0.63	3.01	3.64	29.65	Pass
	165	5825	0.55	3.01	3.56	29.65	Pass

Note: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / 2] = 6.35\text{dBi} > 6\text{dBi}$, so the Power Spectral Density limit shall be reduced to $30 - (6.35 - 6) = 29.65\text{dBm}$.

802.11ac (40MHz)

TX chain	Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/500kHz)	10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
0	151	5755	-2.73	3.01	0.13	0.41	29.65	Pass
	159	5795	-2.97	3.01	0.13	0.17	29.65	Pass
1	151	5755	-2.84	3.01	0.13	0.30	29.65	Pass
	159	5795	-3.03	3.01	0.13	0.11	29.65	Pass

Note: 1. Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / 2] = 6.35\text{dBi} > 6\text{dBi}$, so the Power Spectral Density limit shall be reduced to $30 - (6.35 - 6) = 29.65\text{dBm}$.

2. Refer to section 3.3 for duty cycle spectrum plot.

802.11ac (80MHz)

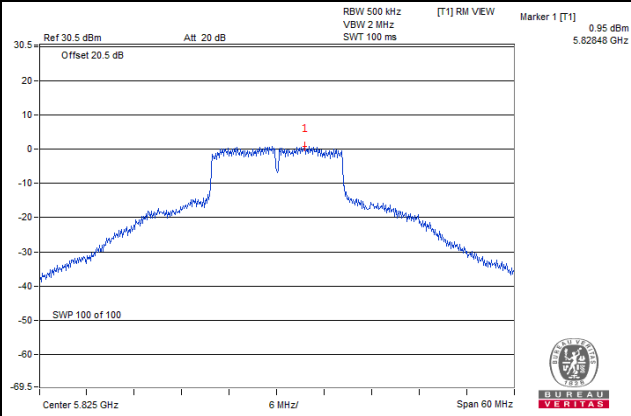
TX chain	Chan.	Chan. Freq. (MHz)	PSD W/O Duty Factor (dBm/500kHz)	10 log (N=2) dB	Duty Factor (dB)	Total PSD With Duty Factor (dBm/500kHz)	Limit (dBm/500kHz)	Pass /Fail
0	155	5775	-7.33	3.01	0.29	-4.03	29.65	Pass
1	155	5775	-7.36	3.01	0.29	-4.06	29.65	Pass

Note: 1. Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / 2] = 6.35\text{dBi} > 6\text{dBi}$, so the Power Spectral Density limit shall be reduced to $30 - (6.35 - 6) = 29.65\text{dBm}$.

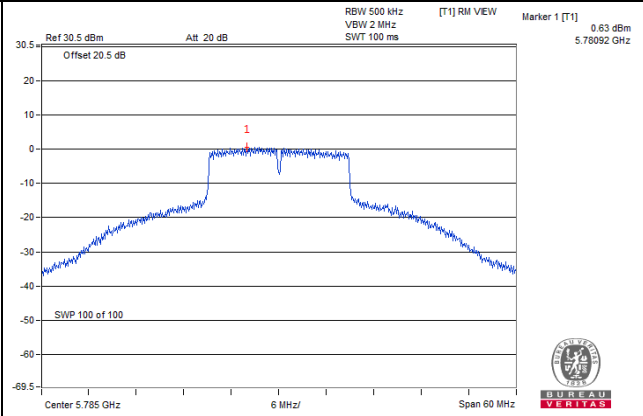
2. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

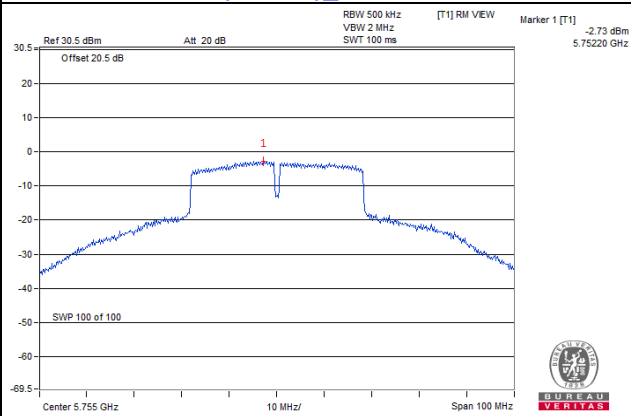
802.11a_Chain 0 / CH165



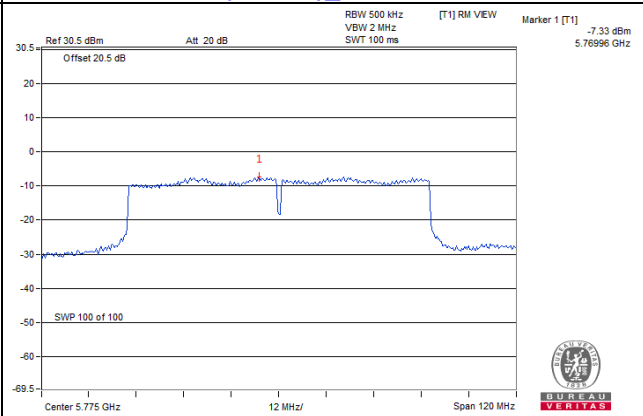
802.11ac (20MHz)_Chain 1 / CH157



802.11ac (40MHz)_Chain 0 / CH151



802.11ac (80MHz)_Chain 0 / CH155

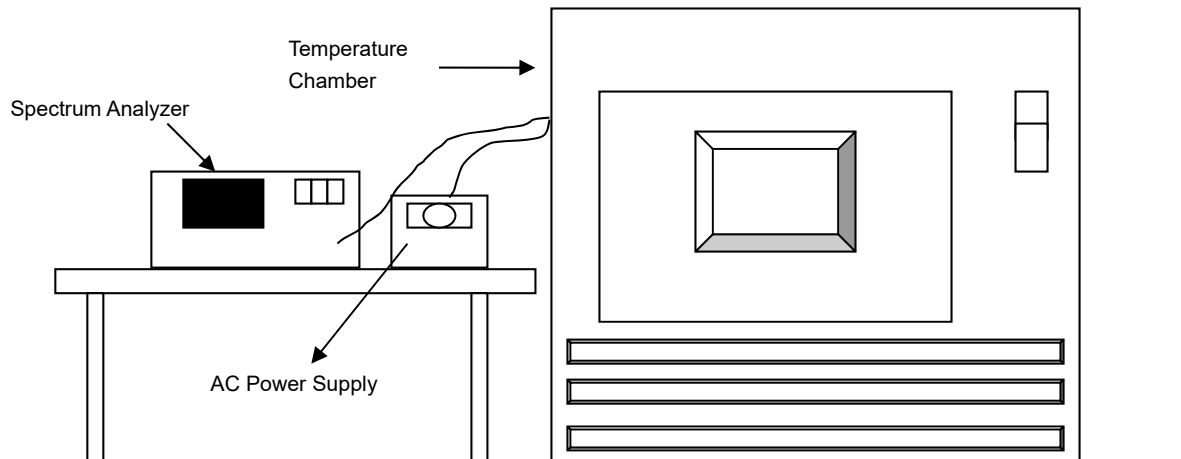


4.6 Frequency Stability Measurement

4.6.1 Limits of Frequency Stability Measurement

The frequency of the carrier signal shall be maintained within band of operation

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

- The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
- Turn the EUT on and couple its output to a spectrum analyzer.
- Turn the EUT off and set the chamber to the highest temperature specified.
- Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 Minutes.
- Repeat step d with the temperature chamber set to the next required temperature.
- The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 Minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

Set the EUT transmit at un-modulation mode to test frequency stability.

4.6.7 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 5180 MHz									
TEMP. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
50	120	5180.0166	Pass	5180.0157	Pass	5180.0163	Pass	5180.0163	Pass
40	120	5179.9823	Pass	5179.9802	Pass	5179.9815	Pass	5179.9797	Pass
30	120	5180.0147	Pass	5180.0163	Pass	5180.0156	Pass	5180.014	Pass
20	120	5179.9955	Pass	5179.9933	Pass	5179.995	Pass	5179.9937	Pass
10	120	5179.9807	Pass	5179.9813	Pass	5179.9828	Pass	5179.9843	Pass
0	120	5180.0155	Pass	5180.0141	Pass	5180.0121	Pass	5180.013	Pass
-10	120	5179.9995	Pass	5179.9963	Pass	5179.9976	Pass	5179.9962	Pass
-20	120	5180.0024	Pass	5180.0039	Pass	5180.0048	Pass	5180.0058	Pass
-30	120	5179.9916	Pass	5179.9904	Pass	5179.9888	Pass	5179.9892	Pass

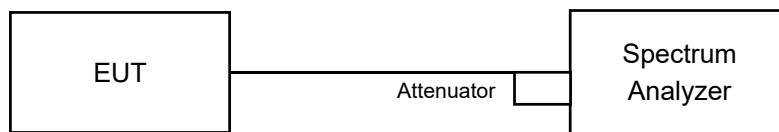
Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
TEMP. (°C)	Power Supply (Vac)	0 Minute		2 Minute		5 Minute		10 Minute	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	138	5179.9946	Pass	5179.9935	Pass	5179.9959	Pass	5179.9946	Pass
	120	5179.9955	Pass	5179.9933	Pass	5179.9950	Pass	5179.9937	Pass
	102	5179.9963	Pass	5179.9942	Pass	5179.9951	Pass	5179.9936	Pass

4.7 6dB Bandwidth Measurement

4.7.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

4.7.2 Test Setup



4.7.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.7.4 Test Procedure

MEASUREMENT PROCEDURE REF

- a. Set resolution bandwidth (RBW) = 100kHz
- b. Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
- c. Trace mode = max hold.
- d. Sweep = auto couple.
- e. Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission

4.7.5 Deviation from Test Standard

No deviation.

4.7.6 EUT Operating Condition

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

4.7.7 Test Results

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
149	5745	15.76	15.76	0.5	PASS
157	5785	15.79	15.78	0.5	PASS
165	5825	15.95	16.34	0.5	PASS

802.11ac (20MHz)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
149	5745	16.58	16.58	0.5	PASS
157	5785	17.59	16.97	0.5	PASS
165	5825	17.58	17.59	0.5	PASS

802.11ac (40MHz)

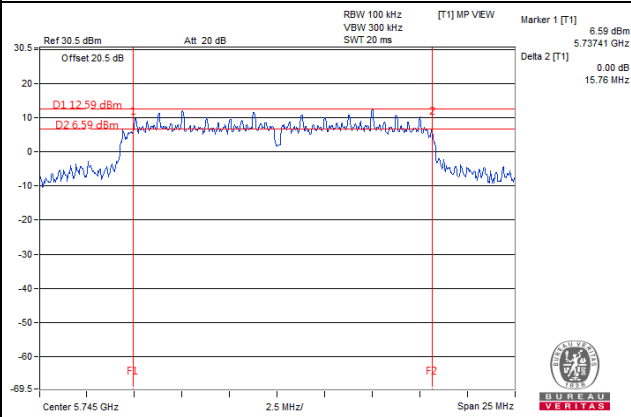
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
151	5755	35.17	35.22	0.5	PASS
159	5795	35.22	35.21	0.5	PASS

802.11ac (80MHz)

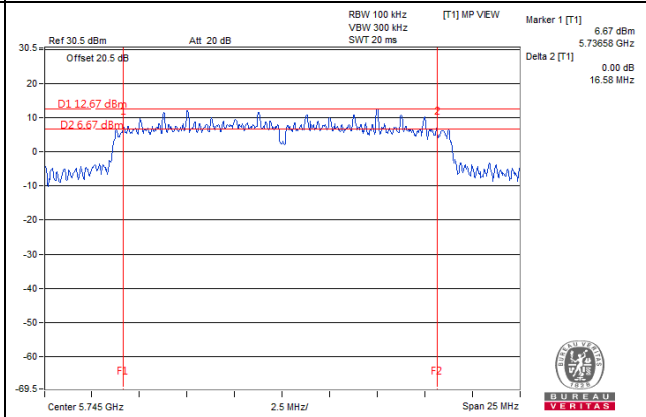
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
155	5775	75.41	75.47	0.5	PASS

Spectrum Plot of Worst Value

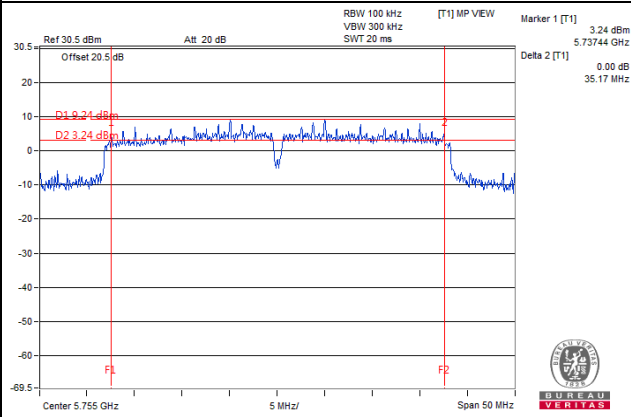
802.11a_Chain 0 / CH149



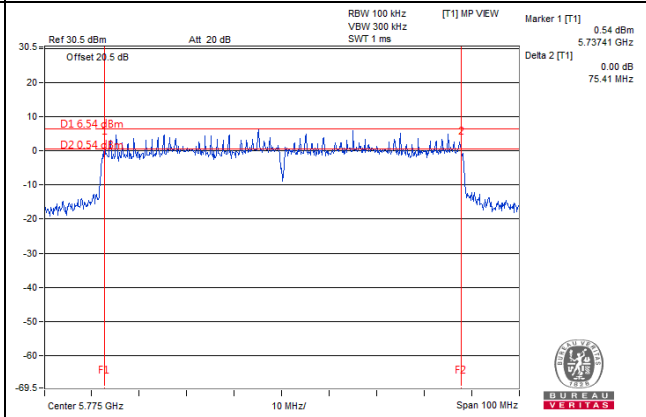
802.11ac (20MHz)_Chain 0 / CH149



802.11ac (40MHz)_Chain 0 / CH151



802.11ac (80MHz)_Chain 0 / CH155



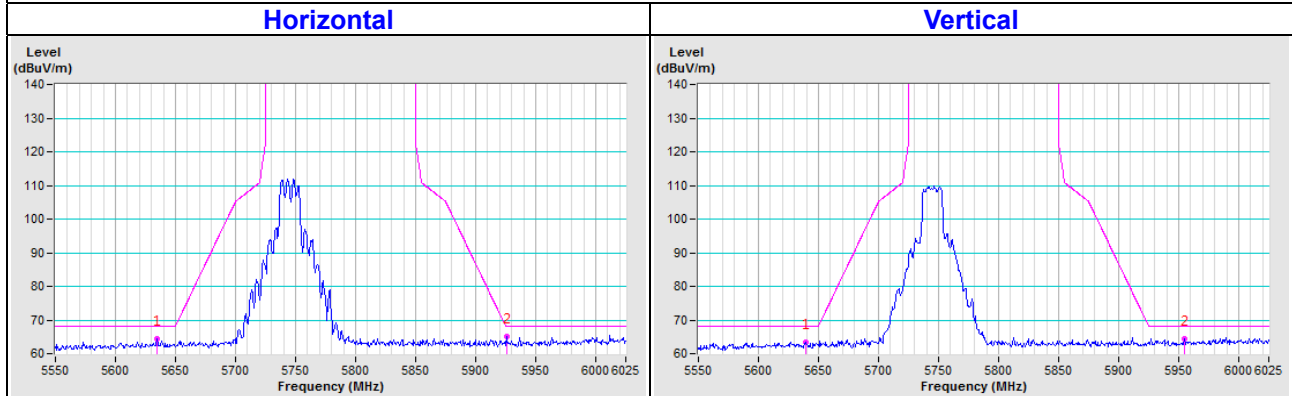
5 Pictures of Test Arrangements

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

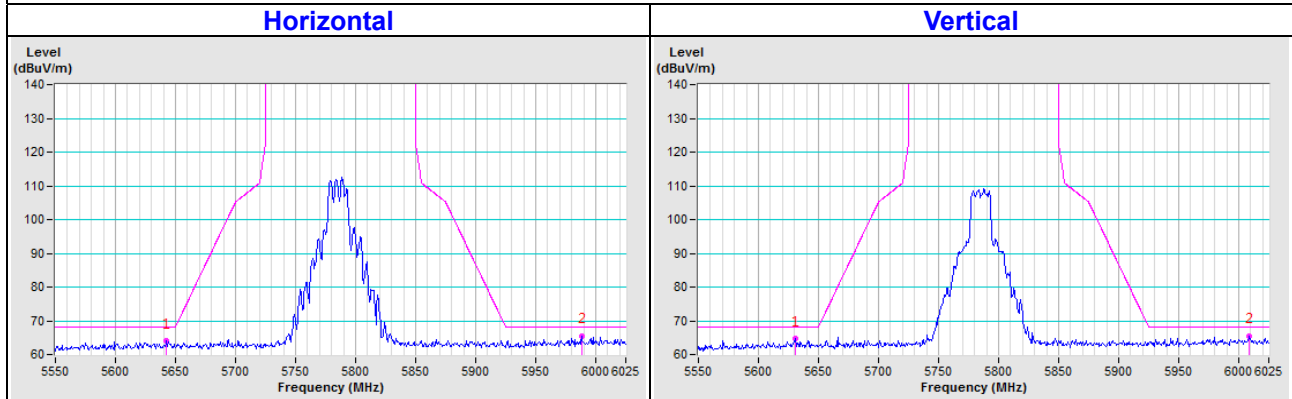
Annex A- Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band)

802.11a

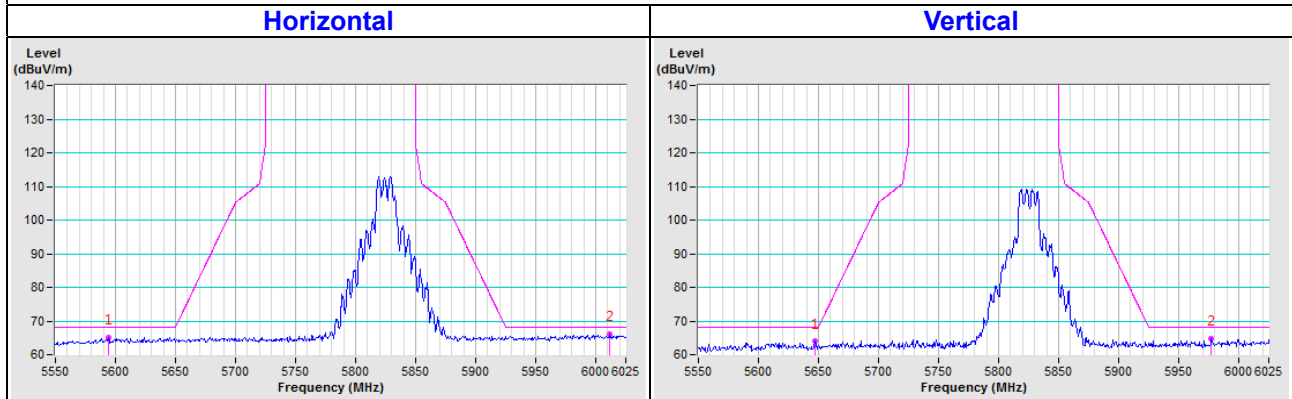
CH149



CH157



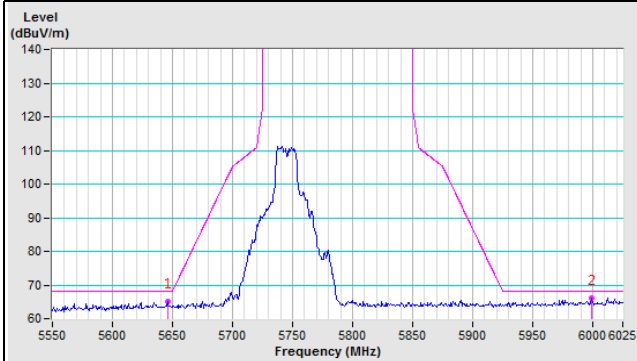
CH165



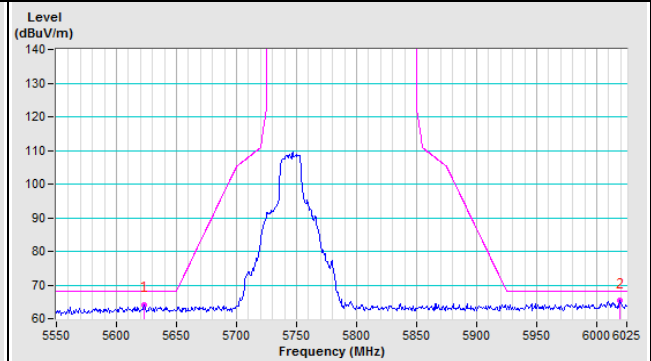
802.11ac (20MHz)

CH149

Horizontal

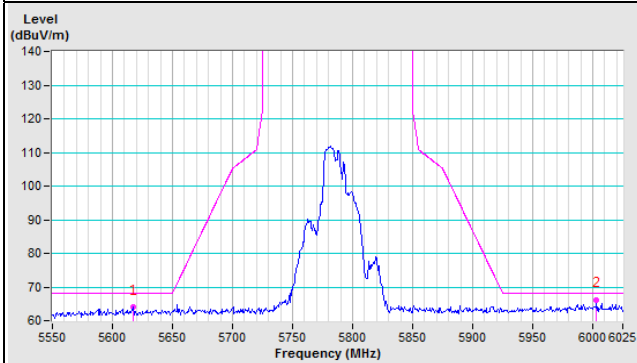


Vertical

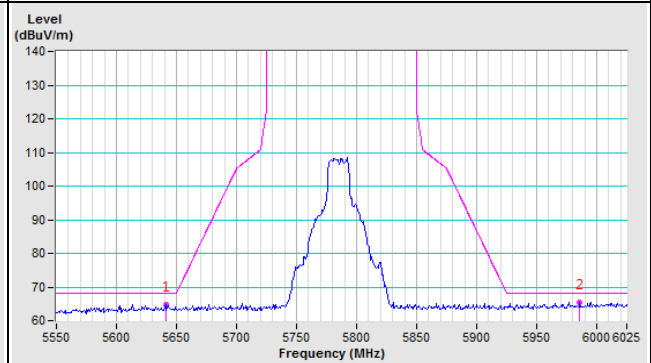


CH157

Horizontal

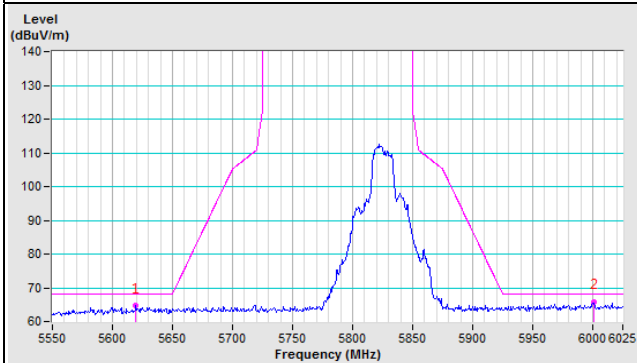


Vertical

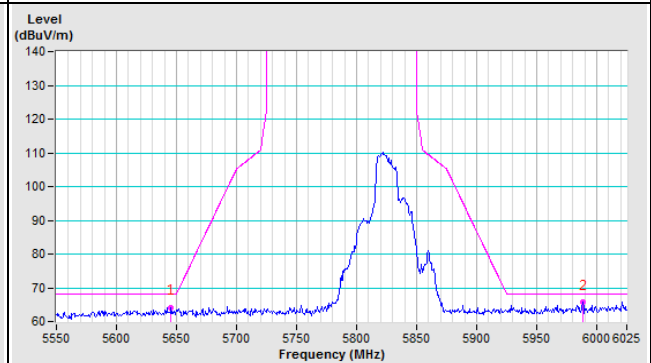


CH165

Horizontal

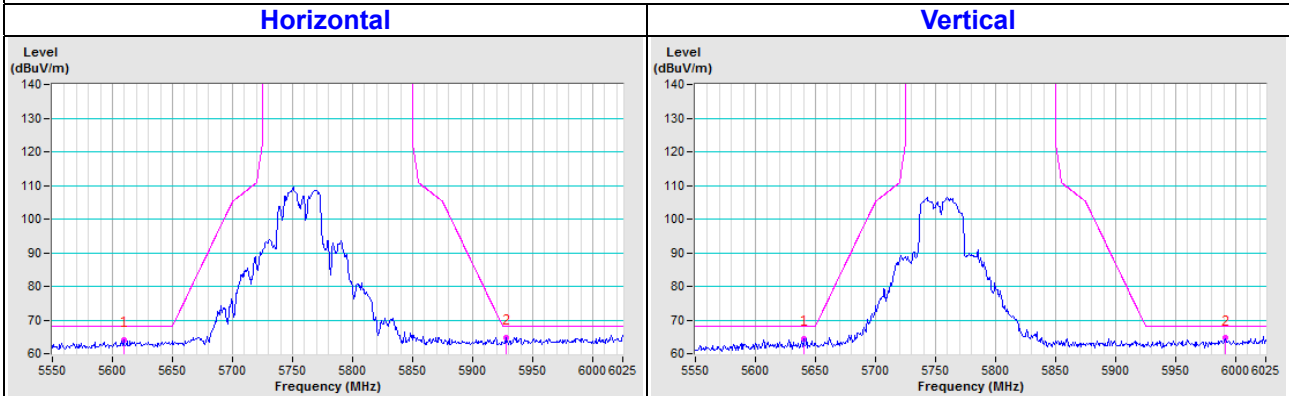


Vertical

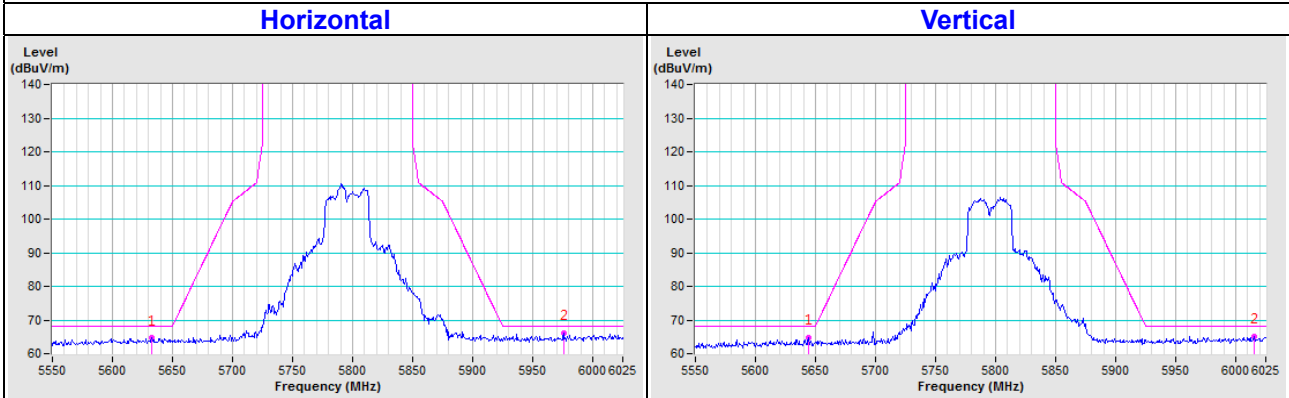


802.11ac (40MHz)

CH151

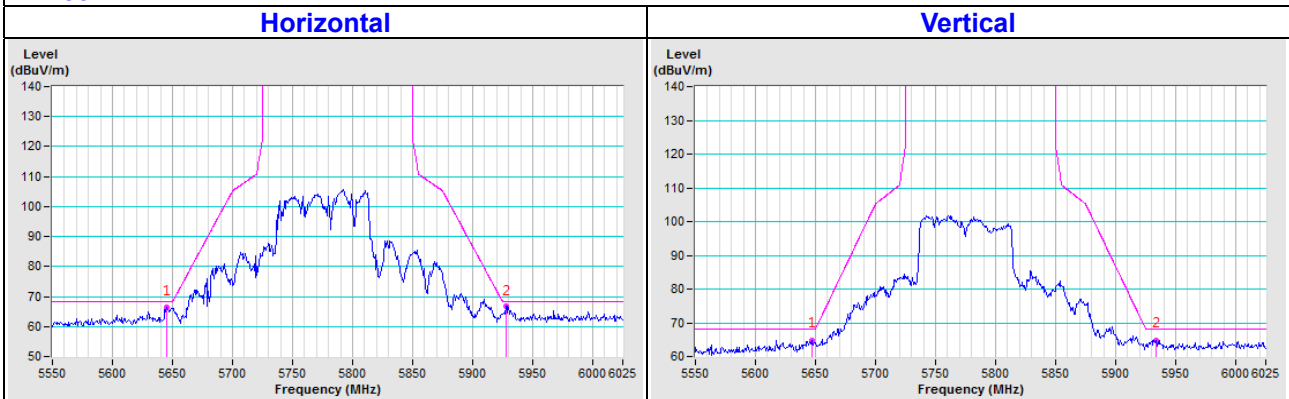


CH159



802.11ac (80MHz)

CH155



Appendix – Information on the Testing Laboratories

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

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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.

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