FCC Test Report (WLAN)

Report No.:	RF180323C16F
FCC ID:	2APRXH2C
Test Model:	H2C
Series Model:	H3C
Received Date:	Mar. 11, 2020
Test Date:	Mar. 23 to 30, 2020
Issued Date:	Apr. 6, 2020
Applicant:	Western Digital Technologies, Inc
Address:	3355 Michelson Dr #100, Irvine, CA 92612
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
FCC Registration / Designation Number:	198487 / TW2021

Testing Laboratory
2021

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Release Control Record

Issue No.	Description	Date Issued
RF180323C16F	Original release.	Apr. 6, 2020

1 Certificate of Conformity

Product:	ibi Wireless
Brand:	SanDisk
Test Model:	H2C
Series Model:	H3C
Sample Status:	Engineering sample
Applicant:	Western Digital Technologies, Inc
Test Date:	Mar. 23 to 30, 2020
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 : Celia Chen , **Date:** Apr. 6, 2020

Celia Chen / Supervisor

Approved by : Rex Lai , **Date:** Apr. 6, 2020

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 -8.86dB at 0.15781MHz.
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 -3.08dB at 5470.00MHz.
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	N/A	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	No antenna connector is used.

Note:
1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. For U-NII-2A, U-NII-2C bands compliance with rule 15.407(b) of band-edge items, the test plots were recorded in Annex A. Test Procedures refer to report 4.1.3.
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	3.00 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	2.61 dB
	30MHz ~ 1GHz	5.43 dB
Radiated Emissions above 1 GHz	Above 1GHz	5.14 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	ibi Wireless
Brand	SanDisk
Test Model	H2C
Series Model	H3C
Model Difference	Refer to Note as below
Status of EUT	Engineering sample
Power Supply Rating	12Vdc (Adapter)
Modulation Type	256QAM, 64QAM, 16QAM, QPSK, BPSK
Modulation Technology	OFDM
Transfer Rate	802.11a: 54/48/36/24/18/12/9/6Mbps 802.11n: up to 300Mbps 802.11ac: up to 867Mbps
Operating Frequency	5260~5320MHz, 5500~5700MHz
Number of Channel	5260~5320MHz: 802.11a, 802.11n (20MHz), 802.11ac (20MHz): 4 802.11n (40MHz), 802.11ac (40MHz): 2 802.11ac (80MHz): 1 5500~5700MHz: 802.11a, 802.11n (20MHz), 802.11ac (20MHz): 11 802.11n (40MHz), 802.11ac (40MHz): 5 802.11ac (80MHz): 2
Output Power	5260~5320MHz: 81.383mW 5500~5700MHz: 82.139mW
Antenna Type	Refer to Note as below
Antenna Connector	Refer to Note as below
Accessory Device	Adapter
Data Cable Supplied	N/A

Note:

1. This report is prepared for FCC class II permissive change.
2. This report is issued as a supplementary report of original BV CPS report no. RF180323C16A-1. The difference compared with original report is adding U-NII-2A and U-NII-2C bands by software; therefore the EUT is re-tested in this report.
3. All models are listed as below. Model: H2C is the representative for final test.

Model	HDD Capacity	AC adapter	Interface	Remark
H2C	1TB	12V / 1.5A	USB & DC in	H3C & H2C share identical PCB, with H3C being the de-populated version without USB port. H2C/ H3C are available with 1GB/ 512MB RAM, respectively.
	2TB			
	4TB			
H3C	500GB	12V / 1.0A	DC in	

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

Modulation Mode	TX Function
802.11a	2TX
802.11n (HT20)	2TX
802.11n (HT40)	2TX
802.11ac (VHT20)	2TX
802.11ac (VHT40)	2TX
802.11ac (VHT80)	2TX

*The modulation and bandwidth are similar for 802.11n mode for HT20/HT40 and 802.11ac mode for VHT20/VHT40, therefore investigated worst case to representative mode in test report. (Final test mode refer section 3.2.1)

5. The following antennas were provided to the EUT.

Ant. Type	PCB				
Connecter Type	NA				
Antenna Gain (dBi)					
Item	2.4G	5G Band 1	5G Band 2	5G Band 3	5G Band 4
Ant. 1	2.14	0.97	**2.14***	1.36	1.36
Ant. 2	0.78	3.19	**3.19***	2.32	2.32

* The maximum antenna gain is chosen for final test.

6. The EUT consumes power from the following Adapters.

For Model: H3C

Adapter 1	
Brand	Ktec
Model	KSAS0181200100HU
Input Power	100-240Vac, 50/60Hz, 0.5A
Output Power	12Vdc, 1.0A
Power Line	1.5m cable without core attached on adapter

Adapter 2	
Brand	Ktec
Model	KSAS0181200100D5
Input Power	100-240Vac, 50/60Hz, 0.5A
Output Power	12Vdc, 1.0A
Power Line	1.5m cable without core attached on adapter

For Model: H2C

Adapter 3	
Brand	Ktec
Model	KSA-24W-120150D5
Input Power	120-240Vac, 50/60Hz, 0.6A
Output Power	12Vdc, 1.5A
Power Line	1.8m cable with 1 core attached on adapter

Adapter 4	
Brand	Asian Power Devices Inc.
Model	WB-18R12R
Input Power	120-240Vac, 50/60Hz, 0.6A Max.
Output Power	12Vdc, 1.5A
Power Line	1.75m cable without core attached on adapter

Adapter 5	
Brand	Asian Power Devices Inc.
Model	WB-18R12FU
Input Power	120-240Vac, 50/60Hz, 0.6A Max.
Output Power	12Vdc, 1.5A
Power Line	1.75m cable without core attached on adapter

Adapter 6	
Brand	Ktec
Model	KSA-24W-120150HU
Input Power	120-240Vac 50/60Hz 0.6A
Output Power	12Vdc 1.5A
Power Line	1.8m cable without core attached on adapter

Adapter 7	
Brand	Ktec
Model	KSA-18F-120150HU
Input Power	100-240Vac, 50/60Hz, 0.5A
Output Power	12Vdc, 1.5A
Power Line	1.75m cable without core attached on adapter

* Adapter 1 & 2, 3 & 6, 4 & 5 are identical with each other except for their Plug Type difference. After pre-tested above adapter, the adapter 4 was the worst case, therefore chosen for final test and presented in the test report.

7. WLAN 2.4GHz, 5GHz and BT LE technology cannot transmit at same time.

8. 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

5260~5320MHz:

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

Channel	Frequency	Channel	Frequency
52	5260 MHz	60	5300 MHz
56	5280 MHz	64	5320 MHz

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

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz

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

Channel	Frequency
58	5290MHz

5500~5700MHz:

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

Channel	Frequency	Channel	Frequency
100	5500 MHz	124	5620 MHz
104	5520 MHz	128	5640 MHz
108	5540 MHz	132	5660 MHz
112	5560 MHz	136	5680 MHz
116	5580 MHz	140	5700 MHz
120	5600 MHz		

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

Channel	Frequency	Channel	Frequency
102	5510 MHz	126	5630 MHz
110	5550 MHz	134	5670 MHz
118	5590 MHz		

2 channels are provided for 802.11ac (80MHz):

Channel	Frequency	Channel	Frequency
106	5530 MHz	122	5610MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

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

Where **RE≥1G:** Radiated Emission above 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	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	6.0
	802.11ac (20MHz)		52 to 64	52, 60, 64	OFDM	6.5
	802.11ac (40MHz)		54 to 62	54, 62	OFDM	13.5
	802.11ac (80MHz)		58	58	OFDM	29.3
-	802.11a	5500-5700	100 to 140	100, 116, 132, 140	OFDM	6.0
	802.11ac (20MHz)		100 to 140	100, 116, 132, 140	OFDM	6.5
	802.11ac (40MHz)		102 to 134	102, 110, 134	OFDM	13.5
	802.11ac (80MHz)		106 to 122	106, 122	OFDM	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	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
-	802.11a	5260-5320	52 to 64	64	OFDM	6.0
-	802.11a	5500-5700	100 to 140		OFDM	6.0

Power Line Conducted Emission Test:

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

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
-	802.11a	5260-5320	52 to 64	64	OFDM	6.0
-	802.11a	5500-5700	100 to 140		OFDM	6.0

Antenna Port Conducted Measurement:

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

EUT Configure Mode	Mode	Frequency Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Data Rate (Mbps)
-	802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	6.0
	802.11ac (20MHz)		52 to 64	52, 60, 64	OFDM	6.5
	802.11ac (40MHz)		54 to 62	54, 62	OFDM	13.5
	802.11ac (80MHz)		58	58	OFDM	29.3
-	802.11a	5500-5700	100 to 140	100, 116, 132, 140	OFDM	6.0
	802.11ac (20MHz)		100 to 140	100, 116, 132, 140	OFDM	6.5
	802.11ac (40MHz)		102 to 134	102, 110, 134	OFDM	13.5
	802.11ac (80MHz)		106 to 122	106, 122	OFDM	29.3

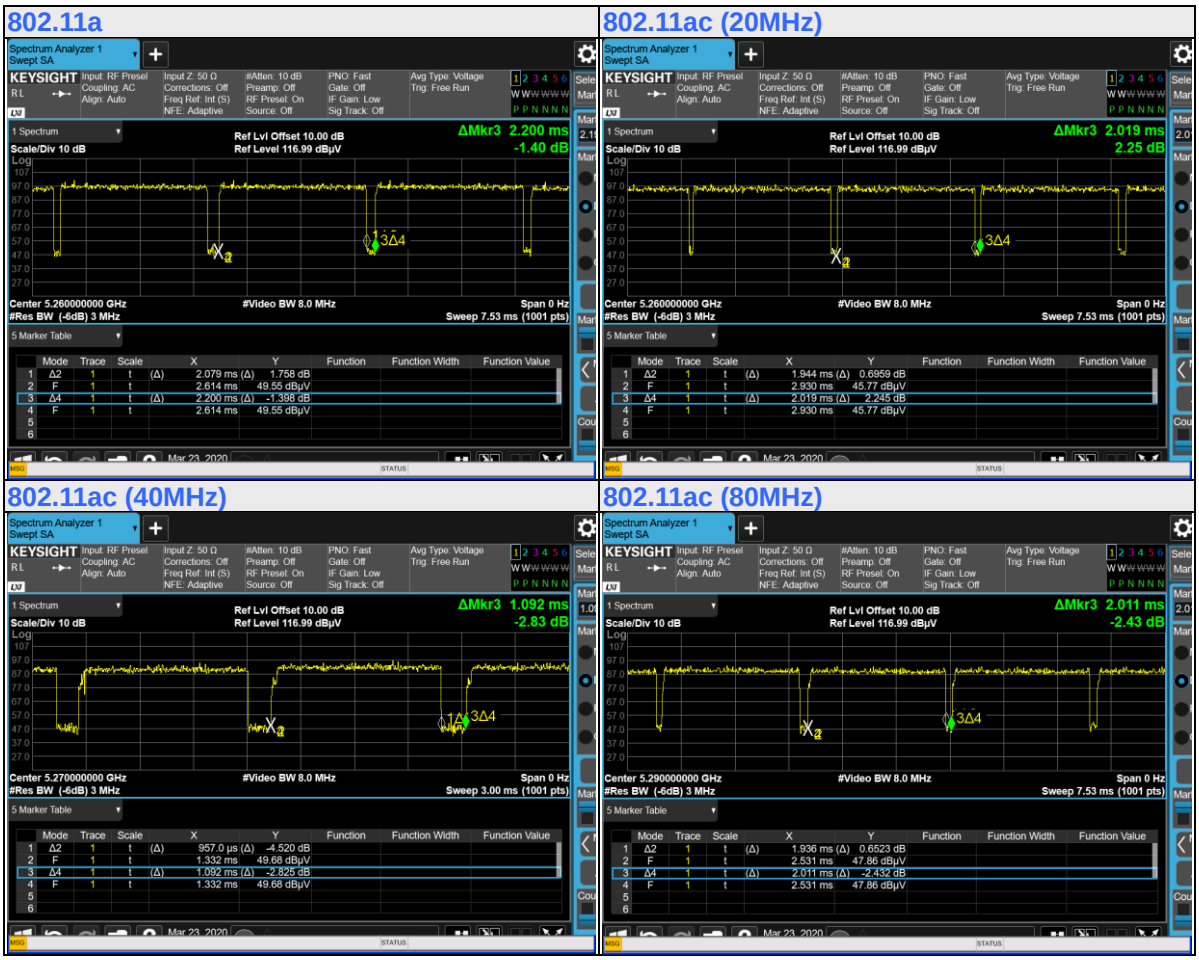
Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested By
RE≥1G	24deg. C, 73%RH	120Vac, 60Hz	Ian Chang
RE<1G	22deg. C, 75%RH	120Vac, 60Hz	Ian Chang
PLC	25deg. C, 75%RH	120Vac, 60Hz	Starltaly Wu
APCM	25deg. C, 76%RH	120Vac, 60Hz	Dalen Dai

3.3 Duty Cycle of Test Signal

Duty cycle of test signal is < 98 %, duty factor is required.

802.11a: Duty cycle = 2.079/2.2 =0.945, Duty factor = 10 * log(1/0.945) = 0.25
802.11ac (20MHz): Duty cycle = 1.944/2.019 =0.963, Duty factor = 10 * log(1/0.963) = 0.16
802.11ac (40MHz): Duty cycle = 0.957/1.092 =0.876, Duty factor = 10 * log(1/0.876) = 0.57
802.11ac (80MHz): Duty cycle = 1.936/2.011 =0.963, Duty factor = 10 * log(1/0.963) = 0.17



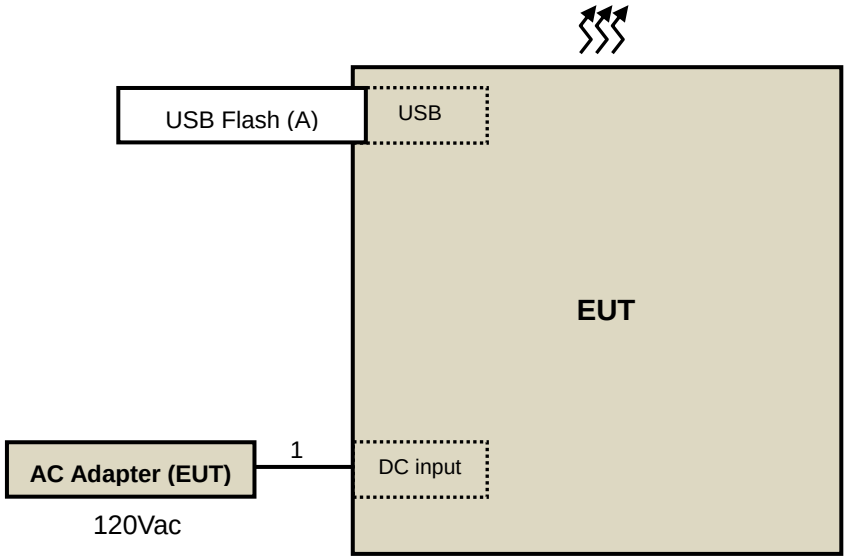
3.4 Description of Support Units

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.

No.	Product	Brand	Model No.	Serial No.	FCC ID	Remark
A.	USB 3.0 Flash Drive	HP	v250w	N/A	N/A	Provided by Lab

ID	Cable Descriptions	Qty.	Length (m)	Shielding (Yes/ No)	Cores (Qty.)	Remarks
1.	DC cable	1	1.75	N	0	Supplied by client

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standard and References

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

Test standard:

FCC Part 15, Subpart E (15.407)
ANSI C63.10-2013

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

References Test Guidance :

KDB 789033 D02 General UNII Test Procedure New Rules v02r01
KDB 662911 D01 Multiple Transmitter Output v02r01

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

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

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

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	☒	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)	

*1 beyond 75 MHz or more above of the band edge.

*2 below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.

*3 below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.

*4 from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Note:

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

$$E = \frac{1000000\sqrt{30P}}{3}$$ µV/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. 19, 2020	Feb. 18, 2021
HP Preamplifier	8449B	3008A01201	Feb. 20, 2020	Feb. 19, 2021
MITEQ Preamplifier	AMF-6F-260400-33-8P	892164	Feb. 19, 2020	Feb. 18, 2021
Agilent TEST RECEIVER	N9038A	MY51210137	Jun. 6, 2019	Jun. 5, 2020
Schwarzbeck Antenna	VULB 9168	139	Nov. 7, 2019	Nov. 6, 2020
Schwarzbeck Antenna	VHBA 9123	480	Jun. 3, 2019	Jun. 2, 2021
Schwarzbeck Horn Antenna	BBHA-9170	212	Nov. 24, 2019	Nov. 23, 2020
Schwarzbeck Horn Antenna	BBHA 9120-D1	D130	Nov. 24, 2019	Nov. 23, 2020
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, 2019	Aug. 22, 2021
EMCO Horn Antenna	3115	00028257	Nov. 24, 2019	Nov. 23, 2020
Highpass filter Wainwright Instruments	WHK 3.1/18G-10SS	SN 8	NA	NA
ROHDE & SCHWARZ Spectrum Analyzer	FSV40	101042	Sep. 23, 2019	Sep. 22, 2020
Anritsu Power Sensor	MA2411B	0738404	Apr. 16, 2019	Apr. 15, 2020
Anritsu Power Meter	ML2495A	0842014	Apr. 16, 2019	Apr. 15, 2020
Temperature & Humidity Chamber	MHU-225AU	920409	May 24, 2019	May 23, 2020
DIGITAL POWER METER IDRC	CP-240	240515	Sep. 11, 2019	Sep. 10, 2020
AC Power Source ExTech	CFW-105	E000603	NA	NA

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 ≥ 1/T (Duty cycle < 98%) or 10Hz (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz. (802.11a: RBW = 1MHz, VBW = 510Hz; 802.11ac (20MHz): RBW = 1MHz, VBW = 560Hz; 802.11ac (40MHz): RBW = 1MHz, VBW = 1.1kHz; 802.11ac (80MHz): RBW = 1MHz, VBW = 560Hz)

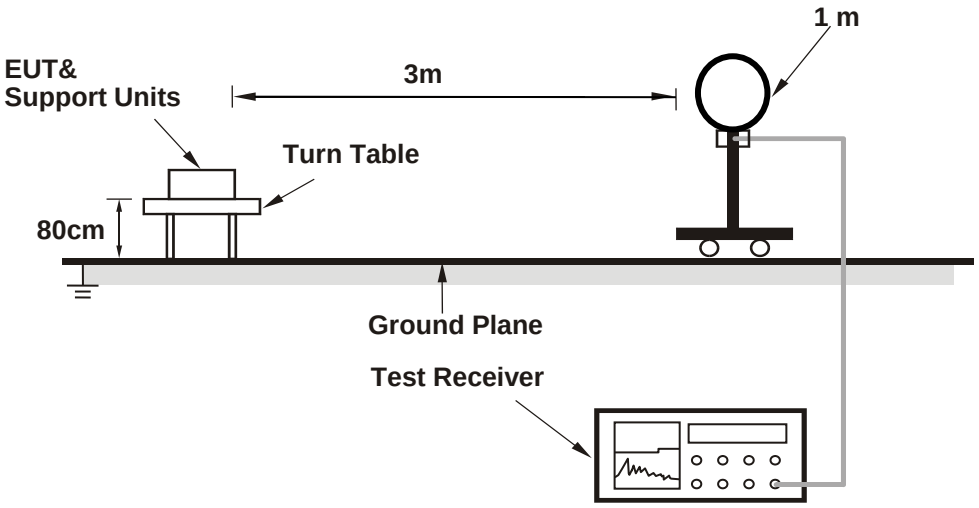
4. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

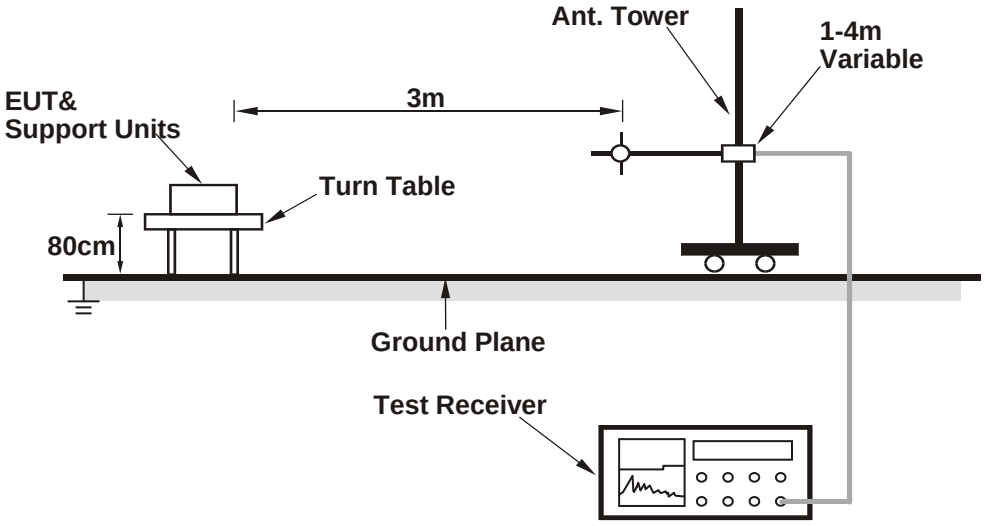
No deviation.

4.1.5 Test Setup

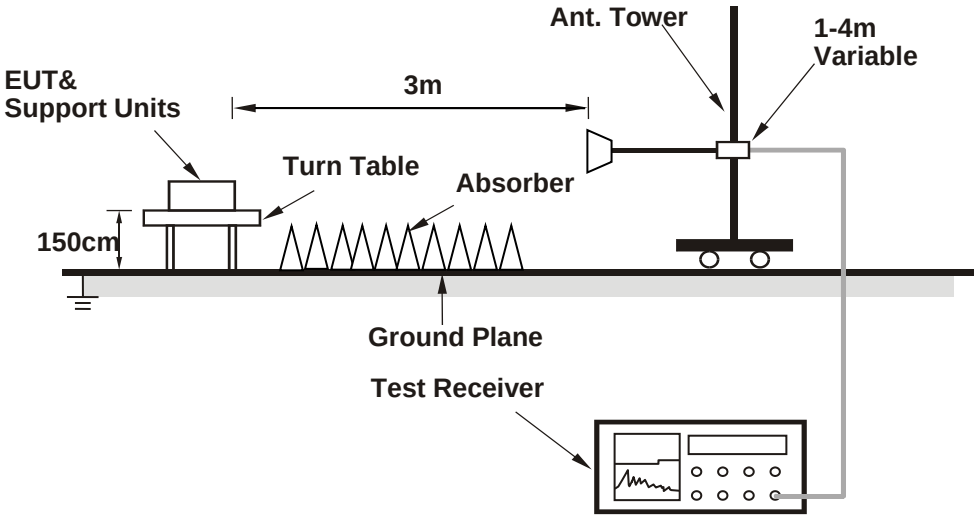
For Radiated emission below 30MHz



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 52	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	61.53 PK	74.00	-12.47	1.37 H	337	51.99	9.54
2	5150.00	49.19 AV	54.00	-4.81	1.37 H	337	39.65	9.54
3	*5260.00	110.61 PK			1.37 H	337	100.68	9.93
4	*5260.00	101.45 AV			1.37 H	337	91.52	9.93
5	#10520.00	58.31 PK	68.20	-9.89	1.82 H	124	42.03	16.28
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	61.06 PK	74.00	-12.94	2.25 V	294	51.52	9.54
2	5150.00	49.13 AV	54.00	-4.87	2.25 V	294	39.59	9.54
3	*5260.00	108.76 PK			2.25 V	294	98.83	9.93
4	*5260.00	99.38 AV			2.25 V	294	89.45	9.93
5	#10520.00	57.70 PK	68.20	-10.50	1.64 V	232	41.42	16.28

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 60	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	110.86 PK			1.45 H	325	100.69	10.17
2	*5300.00	101.78 AV			1.45 H	325	91.61	10.17
3	10600.00	58.50 PK	74.00	-15.50	1.58 H	269	42.13	16.37
4	10600.00	46.48 AV	54.00	-7.52	1.58 H	269	30.11	16.37
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	*5300.00	108.61 PK			2.26 V	302	98.44	10.17
2	*5300.00	99.43 AV			2.26 V	302	89.26	10.17
3	10600.00	57.53 PK	74.00	-16.47	1.74 V	154	41.16	16.37
4	10600.00	46.01 AV	54.00	-7.99	1.74 V	154	29.64	16.37

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 64	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	110.91 PK			1.44 H	328	100.71	10.20
2	*5320.00	102.09 AV			1.44 H	328	91.89	10.20
3	5350.00	62.37 PK	74.00	-11.63	1.44 H	328	52.12	10.25
4	5350.00	50.11 AV	54.00	-3.89	1.44 H	328	39.86	10.25
5	10640.00	58.82 PK	74.00	-15.18	1.63 H	269	42.23	16.59
6	10640.00	46.74 AV	54.00	-7.26	1.63 H	269	30.15	16.59
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	*5320.00	108.94 PK			2.30 V	291	98.74	10.20
2	*5320.00	99.89 AV			2.30 V	291	89.69	10.20
3	5350.00	61.48 PK	74.00	-12.52	2.30 V	291	51.23	10.25
4	5350.00	49.28 AV	54.00	-4.72	2.30 V	291	39.03	10.25
5	10640.00	57.71 PK	74.00	-16.29	1.88 V	201	41.12	16.59
6	10640.00	46.25 AV	54.00	-7.75	1.88 V	201	29.66	16.59

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.

CHANNEL	TX Channel 100	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	61.97 PK	74.00	-12.03	2.67 H	239	51.17	10.80
2	5460.00	49.98 AV	54.00	-4.02	2.67 H	239	39.18	10.80
3	#5470.00	64.76 PK	68.20	-3.44	2.67 H	239	53.87	10.89
4	*5500.00	109.04 PK			2.67 H	239	97.89	11.15
5	*5500.00	100.80 AV			2.67 H	239	89.65	11.15
6	11000.00	58.70 PK	74.00	-15.30	1.57 H	241	41.16	17.54
7	11000.00	47.17 AV	54.00	-6.83	1.57 H	241	29.63	17.54
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	5460.00	61.64 PK	74.00	-12.36	2.31 V	299	50.84	10.80
2	5460.00	49.64 AV	54.00	-4.36	2.31 V	299	38.84	10.80
3	#5470.00	63.36 PK	68.20	-4.84	2.31 V	299	52.47	10.89
4	*5500.00	106.79 PK			2.31 V	299	95.64	11.15
5	*5500.00	98.11 AV			2.31 V	299	86.96	11.15
6	11000.00	58.38 PK	74.00	-15.62	1.00 V	274	40.84	17.54
7	11000.00	46.43 AV	54.00	-7.57	1.00 V	274	28.89	17.54

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 116	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	108.67 PK			2.76 H	291	97.88	10.79
2	*5580.00	100.62 AV			2.76 H	291	89.83	10.79
3	11160.00	58.52 PK	74.00	-15.48	2.03 H	358	41.16	17.36
4	11160.00	46.70 AV	54.00	-7.30	2.03 H	358	29.34	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	*5580.00	106.46 PK			2.36 V	303	95.67	10.79
2	*5580.00	97.79 AV			2.36 V	303	87.00	10.79
3	11160.00	57.91 PK	74.00	-16.09	1.84 V	205	40.55	17.36
4	11160.00	46.03 AV	54.00	-7.97	1.84 V	205	28.67	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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 132	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5660.00	107.81 PK			2.60 H	311	97.32	10.49
2	*5660.00	99.02 AV			2.60 H	311	88.53	10.49
3	11320.00	58.89 PK	74.00	-15.11	1.54 H	241	41.51	17.38
4	11320.00	46.75 AV	54.00	-7.25	1.54 H	241	29.37	17.38
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	*5660.00	105.91 PK			2.28 V	291	95.42	10.49
2	*5660.00	97.12 AV			2.28 V	291	86.63	10.49
3	11320.00	57.54 PK	74.00	-16.46	1.69 V	352	40.16	17.38
4	11320.00	45.75 AV	54.00	-8.25	1.69 V	352	28.37	17.38

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.

CHANNEL	TX Channel 140	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	108.61 PK			2.51 H	258	98.30	10.31
2	*5700.00	99.80 AV			2.51 H	258	89.49	10.31
3	#5725.00	63.61 PK	68.20	-4.59	2.51 H	258	53.41	10.20
4	11400.00	59.46 PK	74.00	-14.54	1.85 H	205	41.16	18.30
5	11400.00	47.67 AV	54.00	-6.33	1.85 H	205	29.37	18.30
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	*5700.00	106.76 PK			2.29 V	293	96.45	10.31
2	*5700.00	98.00 AV			2.29 V	293	87.69	10.31
3	#5725.00	63.28 PK	68.20	-4.92	2.29 V	293	53.08	10.20
4	11400.00	58.58 PK	74.00	-15.42	1.22 V	218	40.28	18.30
5	11400.00	46.73 AV	54.00	-7.27	1.22 V	218	28.43	18.30

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. 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 52	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	61.41 PK	74.00	-12.59	1.75 H	325	51.87	9.54
2	5150.00	49.09 AV	54.00	-4.91	1.75 H	325	39.55	9.54
3	*5260.00	108.81 PK			1.75 H	325	98.88	9.93
4	*5260.00	99.48 AV			1.75 H	325	89.55	9.93
5	#10520.00	57.56 PK	68.20	-10.64	1.62 H	220	41.28	16.28
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	60.56 PK	74.00	-13.44	2.18 V	306	51.02	9.54
2	5150.00	48.57 AV	54.00	-5.43	2.18 V	306	39.03	9.54
3	*5260.00	106.77 PK			2.18 V	306	96.84	9.93
4	*5260.00	97.42 AV			2.18 V	306	87.49	9.93
5	#10520.00	56.90 PK	68.20	-11.30	1.89 V	45	40.62	16.28

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 60	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5300.00	108.65 PK			1.77 H	329	98.48	10.17
2	*5300.00	99.84 AV			1.77 H	329	89.67	10.17
3	10600.00	57.92 PK	74.00	-16.08	1.74 H	134	41.55	16.37
4	10600.00	45.98 AV	54.00	-8.02	1.74 H	134	29.61	16.37
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	*5300.00	107.06 PK			2.20 V	310	96.89	10.17
2	*5300.00	97.59 AV			2.20 V	310	87.42	10.17
3	10600.00	56.71 PK	74.00	-17.29	1.39 V	264	40.34	16.37
4	10600.00	44.98 AV	54.00	-9.02	1.39 V	264	28.61	16.37

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 64	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5320.00	107.42 PK			1.45 H	335	97.22	10.20
2	*5320.00	98.33 AV			1.45 H	335	88.13	10.20
3	5350.00	61.54 PK	74.00	-12.46	1.45 H	335	51.29	10.25
4	5350.00	49.79 AV	54.00	-4.21	1.45 H	335	39.54	10.25
5	10640.00	57.72 PK	74.00	-16.28	1.67 H	210	41.13	16.59
6	10640.00	45.93 AV	54.00	-8.07	1.67 H	210	29.34	16.59
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	*5320.00	105.84 PK			2.20 V	302	95.64	10.20
2	*5320.00	96.73 AV			2.20 V	302	86.53	10.20
3	5350.00	61.27 PK	74.00	-12.73	2.20 V	302	51.02	10.25
4	5350.00	49.38 AV	54.00	-4.62	2.20 V	302	39.13	10.25
5	10640.00	56.84 PK	74.00	-17.16	1.87 V	145	40.25	16.59
6	10640.00	45.02 AV	54.00	-8.98	1.87 V	145	28.43	16.59

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.

CHANNEL	TX Channel 100	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	62.38 PK	74.00	-11.62	1.13 H	261	51.58	10.80
2	5460.00	50.27 AV	54.00	-3.73	1.13 H	261	39.47	10.80
3	#5470.00	64.75 PK	68.20	-3.45	1.13 H	261	53.86	10.89
4	*5500.00	108.92 PK			1.13 H	261	97.77	11.15
5	*5500.00	100.40 AV			1.13 H	261	89.25	11.15
6	11000.00	58.70 PK	74.00	-15.30	1.52 H	147	41.16	17.54
7	11000.00	46.88 AV	54.00	-7.12	1.52 H	147	29.34	17.54
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	5460.00	61.83 PK	74.00	-12.17	2.20 V	306	51.03	10.80
2	5460.00	49.91 AV	54.00	-4.09	2.20 V	306	39.11	10.80
3	#5470.00	64.05 PK	68.20	-4.15	2.20 V	306	53.16	10.89
4	*5500.00	106.62 PK			2.20 V	306	95.47	11.15
5	*5500.00	98.11 AV			2.20 V	306	86.96	11.15
6	11000.00	57.68 PK	74.00	-16.32	1.96 V	326	40.14	17.54
7	11000.00	45.98 AV	54.00	-8.02	1.96 V	326	28.44	17.54

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 116	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	108.25 PK			1.15 H	258	97.46	10.79
2	*5580.00	99.75 AV			1.15 H	258	88.96	10.79
3	11160.00	58.51 PK	74.00	-15.49	2.31 H	205	41.15	17.36
4	11160.00	46.70 AV	54.00	-7.30	2.31 H	205	29.34	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	*5580.00	106.57 PK			2.21 V	297	95.78	10.79
2	*5580.00	97.65 AV			2.21 V	297	86.86	10.79
3	11160.00	57.81 PK	74.00	-16.19	1.84 V	127	40.45	17.36
4	11160.00	46.07 AV	54.00	-7.93	1.84 V	127	28.71	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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 132	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5660.00	107.95 PK			1.15 H	263	97.46	10.49
2	*5660.00	99.36 AV			1.15 H	263	88.87	10.49
3	11320.00	58.64 PK	74.00	-15.36	1.78 H	154	41.26	17.38
4	11320.00	46.75 AV	54.00	-7.25	1.78 H	154	29.37	17.38
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	*5660.00	105.91 PK			2.23 V	299	95.42	10.49
2	*5660.00	96.88 AV			2.23 V	299	86.39	10.49
3	11320.00	57.99 PK	74.00	-16.01	1.88 V	192	40.61	17.38
4	11320.00	45.64 AV	54.00	-8.36	1.88 V	192	28.26	17.38

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.

CHANNEL	TX Channel 140	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5700.00	108.24 PK			1.17 H	262	97.93	10.31
2	*5700.00	98.98 AV			1.17 H	262	88.67	10.31
3	#5725.00	62.93 PK	68.20	-5.27	1.17 H	262	52.73	10.20
4	11400.00	59.45 PK	74.00	-14.55	1.62 H	139	41.15	18.30
5	11400.00	47.33 AV	54.00	-6.67	1.62 H	139	29.03	18.30
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	*5700.00	106.16 PK			2.28 V	298	95.85	10.31
2	*5700.00	96.97 AV			2.28 V	298	86.66	10.31
3	#5725.00	62.23 PK	68.20	-5.97	2.28 V	298	52.03	10.20
4	11400.00	58.42 PK	74.00	-15.58	1.88 V	120	40.12	18.30
5	11400.00	46.56 AV	54.00	-7.44	1.88 V	120	28.26	18.30

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. 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 54	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	61.12 PK	74.00	-12.88	1.45 H	342	51.58	9.54
2	5150.00	49.33 AV	54.00	-4.67	1.45 H	342	39.79	9.54
3	*5270.00	103.77 PK			1.45 H	342	93.78	9.99
4	*5270.00	95.92 AV			1.45 H	342	85.93	9.99
5	#10540.00	57.45 PK	68.20	-10.75	1.62 H	238	41.15	16.30
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	60.67 PK	74.00	-13.33	2.18 V	292	51.13	9.54
2	5150.00	48.78 AV	54.00	-5.22	2.18 V	292	39.24	9.54
3	*5270.00	101.22 PK			2.18 V	292	91.23	9.99
4	*5270.00	92.96 AV			2.18 V	292	82.97	9.99
5	#10540.00	56.86 PK	68.20	-11.34	1.99 V	284	40.56	16.30

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. 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 62	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5310.00	104.20 PK			1.36 H	338	94.01	10.19
2	*5310.00	95.50 AV			1.36 H	338	85.31	10.19
3	5350.00	61.92 PK	74.00	-12.08	1.36 H	338	51.67	10.25
4	5350.00	50.44 AV	54.00	-3.56	1.36 H	338	40.19	10.25
5	10620.00	57.71 PK	74.00	-16.29	1.61 H	208	41.23	16.48
6	10620.00	45.79 AV	54.00	-8.21	1.61 H	208	29.31	16.48
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	*5310.00	102.34 PK			2.10 V	299	92.15	10.19
2	*5310.00	93.65 AV			2.10 V	299	83.46	10.19
3	5350.00	60.89 PK	74.00	-13.11	2.10 V	299	50.64	10.25
4	5350.00	49.87 AV	54.00	-4.13	2.10 V	299	39.62	10.25
5	10620.00	57.00 PK	74.00	-17.00	2.10 V	231	40.52	16.48
6	10620.00	44.64 AV	54.00	-9.36	2.10 V	231	28.16	16.48

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.

CHANNEL	TX Channel 102	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	61.69 PK	74.00	-12.31	1.49 H	263	50.89	10.80
2	5460.00	50.43 AV	54.00	-3.57	1.49 H	263	39.63	10.80
3	#5470.00	64.25 PK	68.20	-3.95	1.49 H	263	53.36	10.89
4	*5510.00	102.92 PK			1.49 H	263	91.82	11.10
5	*5510.00	94.38 AV			1.49 H	263	83.28	11.10
6	11020.00	59.11 PK	74.00	-14.89	1.82 H	254	41.62	17.49
7	11020.00	46.80 AV	54.00	-7.20	1.82 H	254	29.31	17.49
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	5460.00	60.93 PK	74.00	-13.07	2.26 V	293	50.13	10.80
2	5460.00	49.98 AV	54.00	-4.02	2.26 V	293	39.18	10.80
3	#5470.00	63.63 PK	68.20	-4.57	2.26 V	293	52.74	10.89
4	*5510.00	101.13 PK			2.26 V	293	90.03	11.10
5	*5510.00	90.36 AV			2.26 V	293	79.26	11.10
6	11020.00	57.67 PK	74.00	-16.33	1.39 V	210	40.18	17.49
7	11020.00	45.92 AV	54.00	-8.08	1.39 V	210	28.43	17.49

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 110	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5550.00	103.76 PK			1.51 H	261	92.85	10.91
2	*5550.00	94.17 AV			1.51 H	261	83.26	10.91
3	11100.00	58.57 PK	74.00	-15.43	1.94 H	281	41.27	17.30
4	11100.00	46.73 AV	54.00	-7.27	1.94 H	281	29.43	17.30
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	*5550.00	101.68 PK			2.24 V	294	90.77	10.91
2	*5550.00	91.94 AV			2.24 V	294	81.03	10.91
3	11100.00	58.01 PK	74.00	-15.99	1.15 V	220	40.71	17.30
4	11100.00	45.91 AV	54.00	-8.09	1.15 V	220	28.61	17.30

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. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit.
5. " * ": Fundamental frequency.

CHANNEL	TX Channel 134	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5670.00	102.72 PK			1.30 H	268	92.28	10.44
2	*5670.00	94.00 AV			1.30 H	268	83.56	10.44
3	#5725.00	61.67 PK	68.20	-6.53	1.30 H	268	51.47	10.20
4	11340.00	58.88 PK	74.00	-15.12	1.57 H	142	41.26	17.62
5	11340.00	46.93 AV	54.00	-7.07	1.57 H	142	29.31	17.62
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	*5670.00	101.22 PK			2.30 V	298	90.78	10.44
2	*5670.00	91.57 AV			2.30 V	298	81.13	10.44
3	#5725.00	62.04 PK	68.20	-6.16	2.30 V	298	51.84	10.20
4	11340.00	58.29 PK	74.00	-15.71	1.92 V	268	40.67	17.62
5	11340.00	45.96 AV	54.00	-8.04	1.92 V	268	28.34	17.62

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 58	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5150.00	60.83 PK	74.00	-13.17	1.37 H	326	51.29	9.54
2	5150.00	49.02 AV	54.00	-4.98	1.37 H	326	39.48	9.54
3	*5290.00	102.97 PK			1.37 H	326	92.85	10.12
4	*5290.00	93.72 AV			1.37 H	326	83.60	10.12
5	5350.00	66.03 PK	74.00	-7.97	1.37 H	326	55.78	10.25
6	5350.00	50.43 AV	54.00	-3.57	1.37 H	326	40.18	10.25
7	#10580.00	57.57 PK	68.20	-10.63	1.69 H	36	41.23	16.34
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	5150.00	60.40 PK	74.00	-13.60	2.18 V	291	50.86	9.54
2	5150.00	48.57 AV	54.00	-5.43	2.18 V	291	39.03	9.54
3	*5290.00	100.58 PK			2.18 V	291	90.46	10.12
4	*5290.00	91.48 AV			2.18 V	291	81.36	10.12
5	5350.00	65.66 PK	74.00	-8.34	2.18 V	291	55.41	10.25
6	5350.00	50.12 AV	54.00	-3.88	2.18 V	291	39.87	10.25
7	#10580.00	57.21 PK	68.20	-10.99	1.42 V	55	40.87	16.34

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. 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 106	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	5460.00	66.35 PK	74.00	-7.65	1.46 H	267	55.55	10.80
2	5460.00	50.83 AV	54.00	-3.17	1.46 H	267	40.03	10.80
3	**#5470.00**	**65.12 PK**	**68.20**	**-3.08**	**1.46 H**	**267**	**54.23**	**10.89**
4	*5530.00	101.35 PK			1.46 H	267	90.34	11.01
5	*5530.00	92.28 AV			1.46 H	267	81.27	11.01
6	11060.00	57.92 PK	74.00	-16.08	1.92 H	134	40.52	17.40
7	11060.00	46.04 AV	54.00	-7.96	1.92 H	134	28.64	17.40
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	5460.00	65.53 PK	74.00	-8.47	2.28 V	298	54.73	10.80
2	5460.00	50.06 AV	54.00	-3.94	2.28 V	298	39.26	10.80
3	#5470.00	64.78 PK	68.20	-3.42	2.28 V	298	53.89	10.89
4	*5530.00	99.80 PK			2.28 V	298	88.79	11.01
5	*5530.00	90.64 AV			2.28 V	298	79.63	11.01
6	11060.00	57.08 PK	74.00	-16.92	1.82 V	29	39.68	17.40
7	11060.00	44.83 AV	54.00	-9.17	1.82 V	29	27.43	17.40

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 122	DETECTOR FUNCTION	Peak (PK) Average (AV)
FREQUENCY RANGE	1GHz ~ 40GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5610.00	101.81 PK			1.55 H	267	91.14	10.67
2	*5610.00	92.87 AV			1.55 H	267	82.20	10.67
3	#5725.00	61.78 PK	68.20	-6.42	1.55 H	267	51.58	10.20
4	11220.00	57.54 PK	74.00	-16.46	1.52 H	25	40.18	17.36
5	11220.00	45.72 AV	54.00	-8.28	1.52 H	25	28.36	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	*5610.00	100.46 PK			2.23 V	293	89.79	10.67
2	*5610.00	91.30 AV			2.23 V	293	80.63	10.67
3	#5725.00	61.16 PK	68.20	-7.04	2.23 V	293	50.96	10.20
4	11220.00	56.68 PK	74.00	-17.32	1.74 V	154	39.32	17.36
5	11220.00	44.82 AV	54.00	-9.18	1.74 V	154	27.46	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. 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 Data:

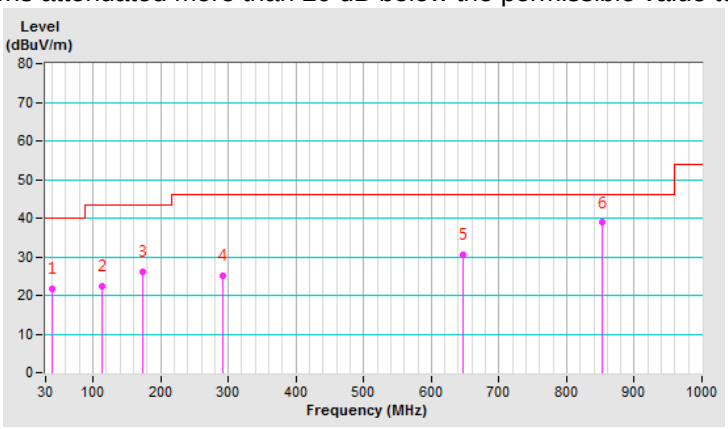
802.11a

CHANNEL	TX Channel 64	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	38.88	21.86 QP	40.00	-18.14	1.14 H	338	29.86	-8.00
2	112.89	22.51 QP	43.50	-20.99	1.34 H	252	32.21	-9.70
3	172.69	26.26 QP	43.50	-17.24	1.95 H	238	33.37	-7.11
4	291.80	25.25 QP	46.00	-20.75	2.34 H	127	30.25	-5.00
5	646.39	30.61 QP	46.00	-15.39	1.45 H	236	27.75	2.86
6	852.51	38.89 QP	46.00	-7.11	1.62 H	203	32.36	6.53

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.

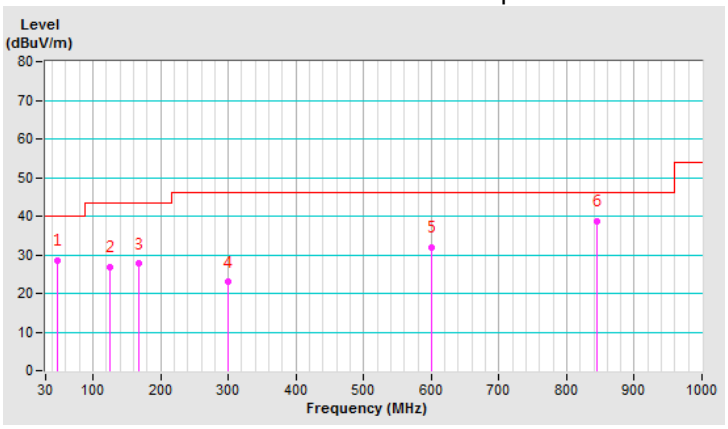


CHANNEL	TX Channel 64	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9kHz ~ 1GHz		

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	47.95	28.64 QP	40.00	-11.36	1.54 V	84	35.67	-7.03
2	124.14	26.81 QP	43.50	-16.69	1.23 V	140	35.53	-8.72
3	168.32	27.63 QP	43.50	-15.87	1.18 V	179	34.37	-6.74
4	300.00	22.89 QP	46.00	-23.11	1.38 V	152	27.66	-4.77
5	600.02	31.86 QP	46.00	-14.14	1.82 V	116	29.76	2.10
6	844.90	38.70 QP	46.00	-7.30	1.42 V	165	32.24	6.46

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. 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	ESCS30	100276	Apr. 8, 2019	Apr. 7, 2020
SCHWARZBECK Artificial Mains Network (for EUT)	NSLK 8128	8128-244	Nov. 11, 2019	Nov. 10, 2020
LISN With Adapter (for EUT)	AD10	C05Ada-001	Nov. 11, 2019	Nov. 10, 2020
ROHDE & SCHWARZ Artificial Mains Network (for peripheral)	ESH3-Z5	100220	Nov. 18, 2019	Nov. 17, 2020
Software	Cond_V7.3.7.4	NA	NA	NA
RF cable (JYEBAO) With 10dB PAD	5D-FB	Cable-C05.01	Jan. 30, 2020	Jan. 29, 2021
LYNICS Terminator (For R&S LISN)	0900510	E1-01-305	Feb. 17, 2020	Feb. 16, 2021

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. 5.

4.2.3 Test Procedure

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

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

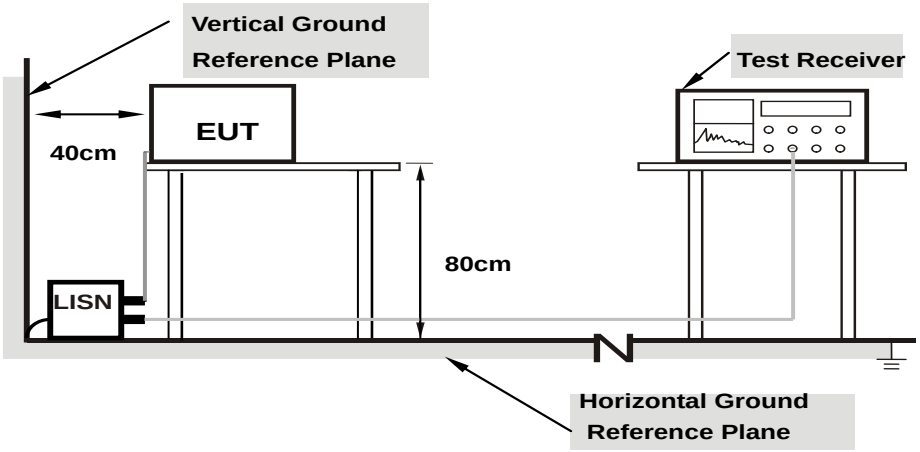
c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

NOTE: 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.

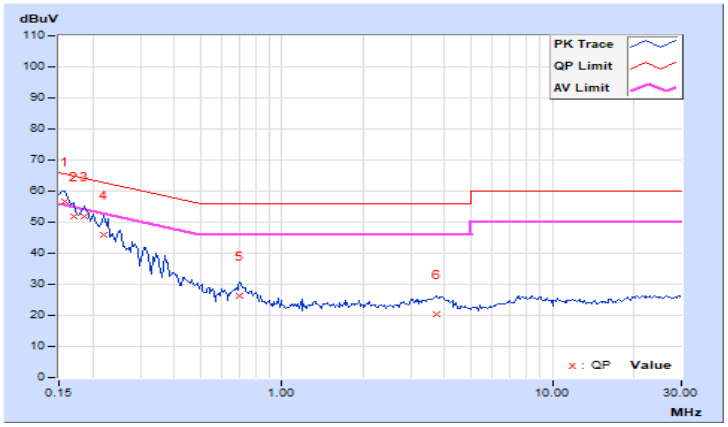
4.2.7 Test Results

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

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	**0.15781**	**9.90**	**46.82**	**31.31**	**56.72**	**41.21**	**65.58**	**55.58**	**-8.86**	**-14.37**
2	0.16953	9.90	41.83	21.59	51.73	31.49	64.98	54.98	-13.25	-23.49
3	0.18516	9.90	41.79	26.54	51.69	36.44	64.25	54.25	-12.56	-17.81
4	0.22031	9.90	35.97	22.56	45.87	32.46	62.81	52.81	-16.94	-20.35
5	0.70078	9.94	16.45	9.93	26.39	19.87	56.00	46.00	-29.61	-26.13
6	3.74609	10.14	10.05	1.90	20.19	12.04	56.00	46.00	-35.81	-33.96

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.

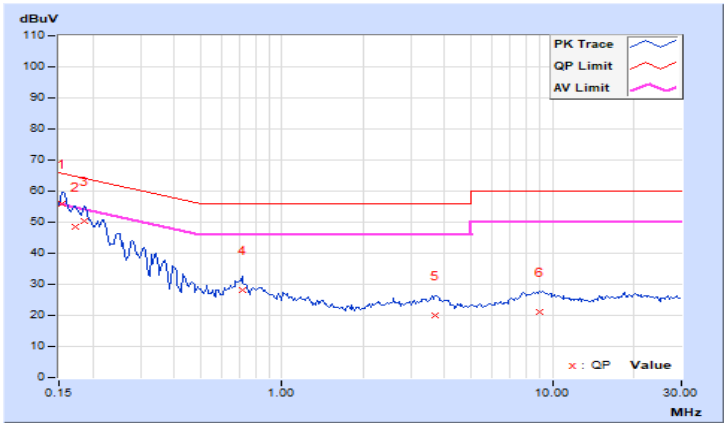


Phase	Neutral (N)	Detector Function	Quasi-Peak (QP) / Average (AV)

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15391	9.92	46.10	29.11	56.02	39.03	65.79	55.79	-9.77	-16.76
2	0.17344	9.92	38.59	20.17	48.51	30.09	64.79	54.79	-16.28	-24.70
3	0.18516	9.92	40.43	23.22	50.35	33.14	64.25	54.25	-13.90	-21.11
4	0.71250	9.97	18.36	12.68	28.33	22.65	56.00	46.00	-27.67	-23.35
5	3.70703	10.15	9.75	1.68	19.90	11.83	56.00	46.00	-36.10	-34.17
6	9.01172	10.46	10.65	3.21	21.11	13.67	60.00	50.00	-38.89	-36.33

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 ≦ 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,

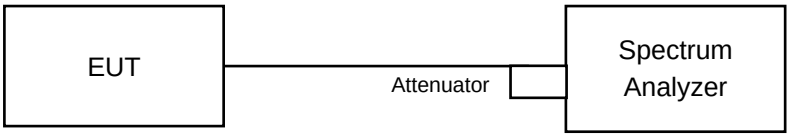
Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \leq 4$;
Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};
Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

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

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 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				
52	5260	16.02	16.05	80.266	19.05	24	Pass
60	5300	16.08	16.11	**81.383**	19.11	24	Pass
64	5320	16.04	16.14	81.294	19.10	24	Pass
100	5500	16.03	16.11	80.919	19.08	24	Pass
116	5580	16.07	16.10	81.196	19.10	24	Pass
132	5660	16.05	16.14	81.387	19.11	24	Pass
140	5700	16.09	16.18	**82.139**	19.15	24	Pass

NOTE:

For U-NII-2A, U-NII-2C Band:

Chain 0

1. 11dBm + 10log(21.05) = 24.23 dBm > 24dBm.
2. 11dBm + 10log(21.61) = 24.35 dBm > 24dBm.
3. 11dBm + 10log(21.25) = 24.27 dBm > 24dBm.
4. 11dBm + 10log(21.29) = 24.28 dBm > 24dBm.
5. 11dBm + 10log(20.77) = 24.17 dBm > 24dBm.
6. 11dBm + 10log(21.39) = 24.30 dBm > 24dBm.
7. 11dBm + 10log(21.66) = 24.36 dBm > 24dBm.

Chain 1

1. 11dBm + 10log(20.98) = 24.22 dBm > 24dBm.
2. 11dBm + 10log(21.44) = 24.31 dBm > 24dBm.
3. 11dBm + 10log(21.23) = 24.27 dBm > 24dBm.
4. 11dBm + 10log(21.14) = 24.25 dBm > 24dBm.
5. 11dBm + 10log(20.78) = 24.18 dBm > 24dBm.
6. 11dBm + 10log(21.26) = 24.28 dBm > 24dBm.
7. 11dBm + 10log(21.77) = 24.38 dBm > 24dBm.

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				
52	5260	15.11	15.20	65.547	18.17	24	Pass
60	5300	15.08	15.19	65.248	18.15	24	Pass
64	5320	15.05	15.22	65.255	18.15	24	Pass
100	5500	15.16	15.18	65.771	18.18	24	Pass
116	5580	15.09	15.02	64.054	18.07	24	Pass
132	5660	15.05	15.07	64.126	18.07	24	Pass
140	5700	15.06	15.02	63.832	18.05	24	Pass

NOTE:

For U-NII-2A, U-NII-2C Band:

Chain 0

1. 11dBm + 10log(21.74) = 24.37 dBm > 24dBm.
2. 11dBm + 10log(22.02) = 24.43 dBm > 24dBm.
3. 11dBm + 10log(21.61) = 24.35 dBm > 24dBm.
4. 11dBm + 10log(21.53) = 24.33 dBm > 24dBm.
5. 11dBm + 10log(22.45) = 24.51 dBm > 24dBm.
6. 11dBm + 10log(21.88) = 24.40 dBm > 24dBm.
7. 11dBm + 10log(21.65) = 24.35 dBm > 24dBm.

Chain 1

1. 11dBm + 10log(21.58) = 24.34 dBm > 24dBm.
2. 11dBm + 10log(22.08) = 24.44 dBm > 24dBm.
3. 11dBm + 10log(21.48) = 24.32 dBm > 24dBm.
4. 11dBm + 10log(21.58) = 24.34 dBm > 24dBm.
5. 11dBm + 10log(22.39) = 24.50 dBm > 24dBm.
6. 11dBm + 10log(21.84) = 24.39 dBm > 24dBm.
7. 11dBm + 10log(21.70) = 24.36 dBm > 24dBm.

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				
54	5270	14.06	14.06	50.936	17.07	24	Pass
62	5310	14.09	14.10	51.349	17.11	24	Pass
102	5510	14.04	14.06	50.819	17.06	24	Pass
110	5550	14.02	14.09	50.88	17.07	24	Pass
134	5670	14.08	14.10	51.29	17.10	24	Pass

NOTE:

For U-NII-2A, U-NII-2C Band:

Chain 0

1. 11dBm + 10log(43.53) = 27.39 dBm > 24dBm.
2. 11dBm + 10log(43.13) = 27.35 dBm > 24dBm.
3. 11dBm + 10log(43.99) = 27.43 dBm > 24dBm.
4. 11dBm + 10log(43.99) = 27.43 dBm > 24dBm.
5. 11dBm + 10log(43.40) = 27.37 dBm > 24dBm.

Chain 1

1. 11dBm + 10log(43.42) = 27.38 dBm > 24dBm.
2. 11dBm + 10log(43.16) = 27.35 dBm > 24dBm.
3. 11dBm + 10log(44.08) = 27.44 dBm > 24dBm.
4. 11dBm + 10log(43.83) = 27.42 dBm > 24dBm.
5. 11dBm + 10log(43.38) = 27.37 dBm > 24dBm.

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				
58	5290	14.05	14.14	51.352	17.11	24	Pass
106	5530	14.10	14.04	51.055	17.08	24	Pass
122	5610	14.07	14.03	50.82	17.06	24	Pass

NOTE:

For U-NII-2A, U-NII-2C Band:

Chain 0

1. 11dBm + 10log(83.13) = 30.20 dBm > 24dBm.
2. 11dBm + 10log(92.25) = 30.65 dBm > 24dBm.
3. 11dBm + 10log(82.81) = 30.18 dBm > 24dBm.

Chain 1

1. 11dBm + 10log(83.20) = 30.20 dBm > 24dBm.
2. 11dBm + 10log(92.86) = 30.68 dBm > 24dBm.
3. 11dBm + 10log(82.61) = 30.17 dBm > 24dBm.

26dB Bandwidth:

802.11a

Channel	Channel Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	21.05	20.98
60	5300	21.61	21.44
64	5320	21.25	21.23
100	5500	21.29	21.14
116	5580	20.77	20.78
132	5660	21.39	21.26
140	5700	21.66	21.77

802.11ac (20MHz)

Channel	Channel Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	21.74	21.58
60	5300	22.02	22.08
64	5320	21.61	21.48
100	5500	21.53	21.58
116	5580	22.45	22.39
132	5660	21.88	21.84
140	5700	21.65	21.70

802.11ac (40MHz)

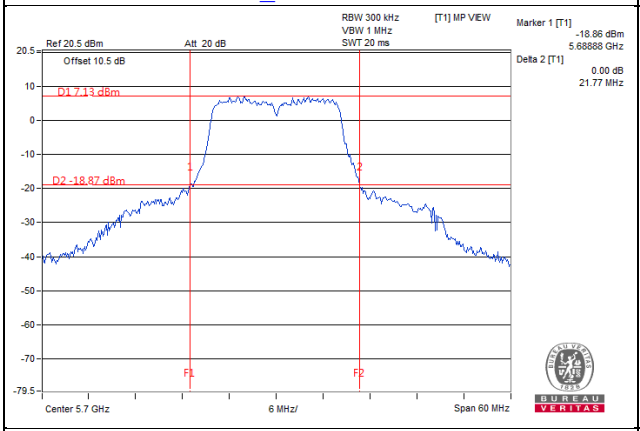
Channel	Channel Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
54	5270	43.53	43.42
62	5310	43.13	43.16
102	5510	43.99	44.08
110	5550	43.99	43.83
134	5670	43.40	43.38

802.11ac (80MHz)

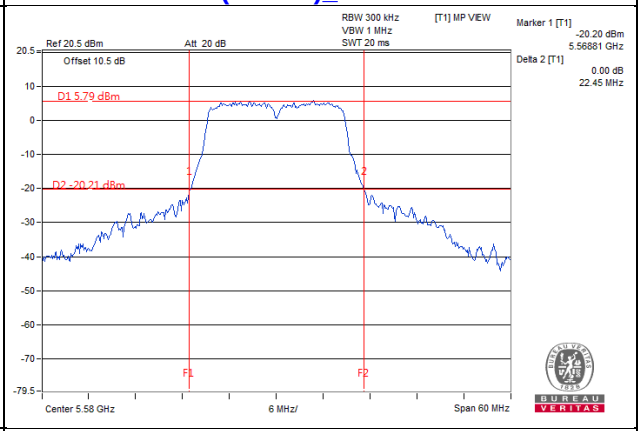
Channel	Channel Frequency (MHz)	26dBc Bandwidth (MHz)	
		Chain 0	Chain 1
58	5290	83.13	83.20
106	5530	92.25	92.86
122	5610	82.81	82.61

Spectrum Plot of Worst Value

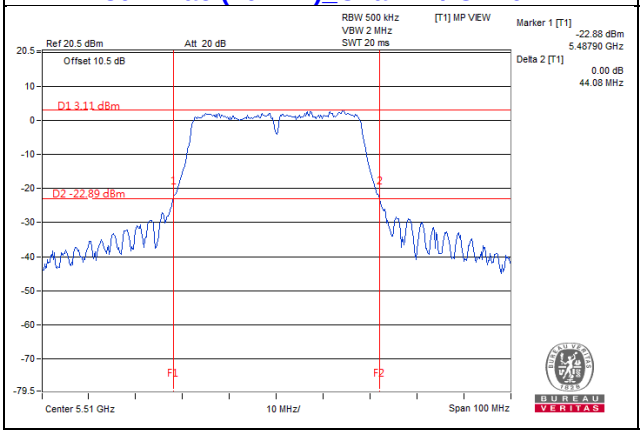
802.11a_Chain 1 / CH140



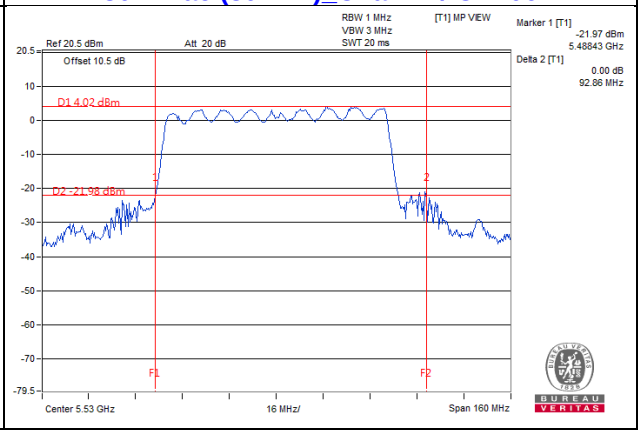
802.11ac (20MHz)_Chain 0 / CH116



802.11ac (40MHz)_Chain 1 / CH102

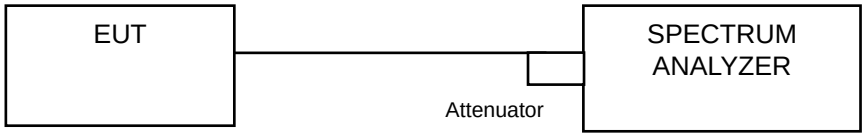


802.11ac (80MHz)_Chain 1 / CH106



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
52	5260	16.68	16.68
60	5300	17.04	16.92
64	5320	16.80	16.80
100	5500	16.68	16.68
116	5580	16.68	16.68
132	5660	16.80	16.80
140	5700	16.92	16.92

802.11ac (20MHz)

Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		CHAIN 0	CHAIN 1
52	5260	17.76	17.88
60	5300	17.88	17.88
64	5320	17.76	17.88
100	5500	17.76	17.88
116	5580	17.88	17.88
132	5660	17.88	17.76
140	5700	17.76	17.76

802.11ac (40MHz)

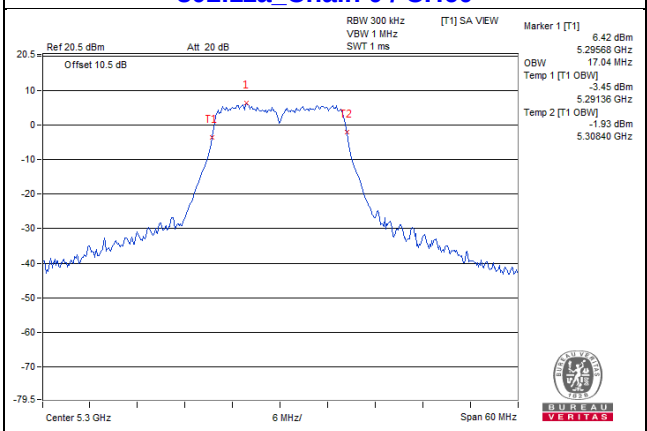
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		CHAIN 0	CHAIN 1
54	5270	36.60	36.60
62	5310	36.60	36.60
102	5510	36.80	36.80
110	5550	36.80	36.80
134	5670	36.80	36.60

802.11ac (80MHz)

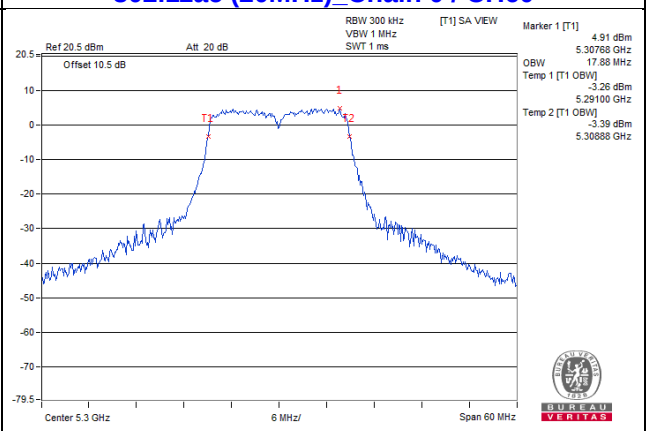
Channel	Channel Frequency (MHz)	Occupied Bandwidth (MHz)	
		CHAIN 0	CHAIN 1
58	5290	75.84	75.84
106	5530	75.84	75.84
122	5610	75.84	75.84

Spectrum Plot of Worst Value

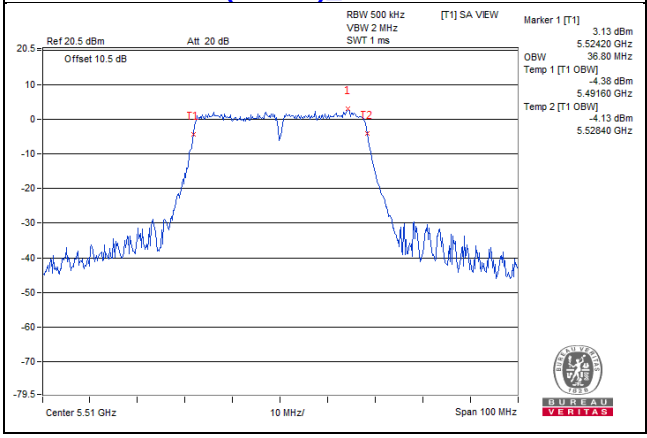
802.11a_Chain 0 / CH60



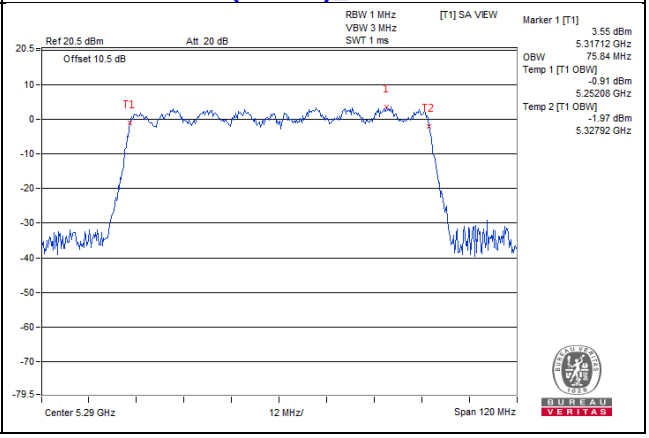
802.11ac (20MHz)_Chain 0 / CH60



802.11ac (40MHz)_Chain 0 / CH102



802.11ac (80MHz)_Chain 0 / CH58

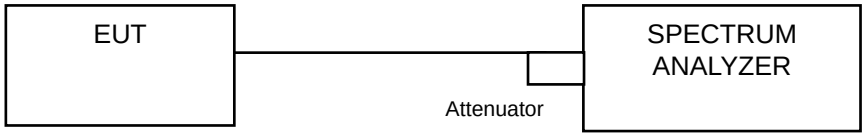


4.5 Peak Power Spectral Density Measurement

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

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)

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

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				
52	5260	1.68	1.52	0.25	4.86	11.00	Pass
60	5300	1.72	1.59	0.25	4.92	11.00	Pass
64	5320	2.79	1.98	0.25	5.66	11.00	Pass
100	5500	1.92	1.82	0.25	5.13	11.00	Pass
116	5580	2.32	2.28	0.25	5.56	11.00	Pass
132	5660	2.13	2.02	0.25	5.34	11.00	Pass
140	5700	2.51	2.38	0.25	5.71	11.00	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. **<For U-NII-2A Band>**
   Directional gain = 10 log[(10$^{Chain0/20}$ + 10$^{Chain1/20}$)^2 / 2] = 5.69dBi < 6dBi, so the power spectral density limit doesn't reduce.
   <For U-NII-2C Band>
   Directional gain = 10 log[(10$^{Chain0/20}$ + 10$^{Chain1/20}$)^2 / 2] = 4.86dBi < 6dBi, so the power spectral density limit doesn't reduce.

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

802.11ac (20MHz)

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				
52	5260	0.97	0.73	0.16	4.02	11.00	Pass
60	5300	0.81	1.01	0.16	4.08	11.00	Pass
64	5320	0.55	0.61	0.16	3.75	11.00	Pass
100	5500	0.47	0.25	0.16	3.53	11.00	Pass
116	5580	1.52	1.38	0.16	4.62	11.00	Pass
132	5660	1.43	1.35	0.16	4.56	11.00	Pass
140	5700	0.76	0.68	0.16	3.89	11.00	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. **<For U-NII-2A Band>**
   Directional gain = 10 log[(10$^{Chain0/20}$ + 10$^{Chain1/20}$)^2 / 2] = 5.69dBi < 6dBi, so the power spectral density limit doesn't reduce.
   <For U-NII-2C Band>
   Directional gain = 10 log[(10$^{Chain0/20}$ + 10$^{Chain1/20}$)^2 / 2] = 4.86dBi < 6dBi, so the power spectral density limit doesn't reduce.

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

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				
54	5270	-3.81	-3.87	0.57	-0.26	11.00	Pass
62	5310	-3.46	-3.52	0.57	0.09	11.00	Pass
102	5510	-3.85	-3.86	0.57	-0.27	11.00	Pass
118	5590	-4.19	-4.26	0.57	-0.64	11.00	Pass
134	5670	-3.19	-3.46	0.57	0.26	11.00	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. **<For U-NII-2A Band>**
   Directional gain = 10 log[(10$^{Chain0/20}$ + 10$^{Chain1/20}$)^2 / 2] = 5.69dBi < 6dBi, so the power spectral density limit doesn't reduce.
   <For U-NII-2C Band>
   Directional gain = 10 log[(10$^{Chain0/20}$ + 10$^{Chain1/20}$)^2 / 2] = 4.86dBi < 6dBi, so the power spectral density limit doesn't reduce.

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

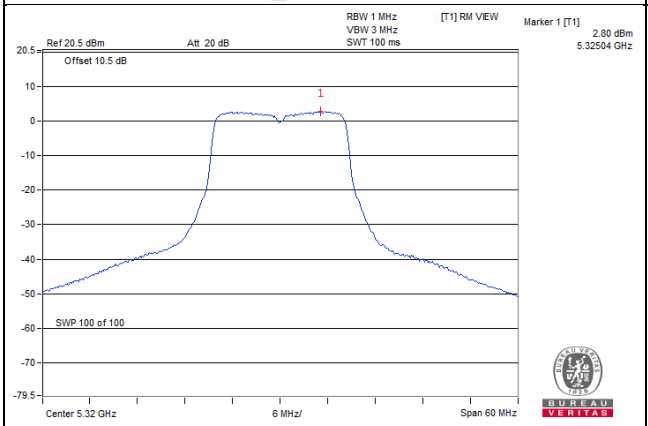
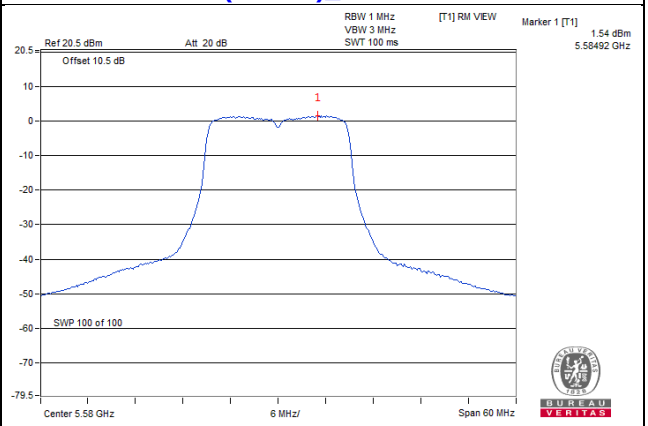
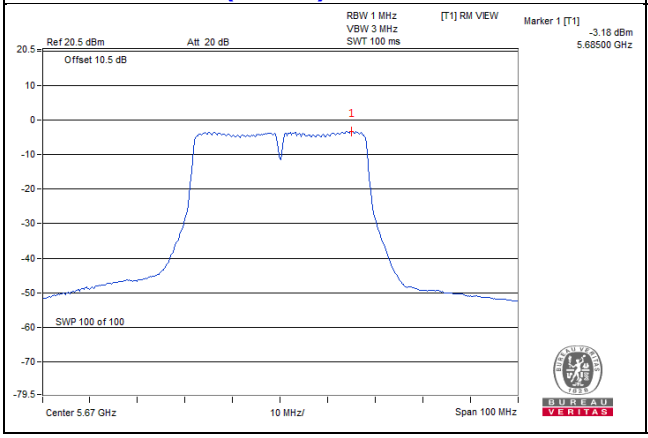
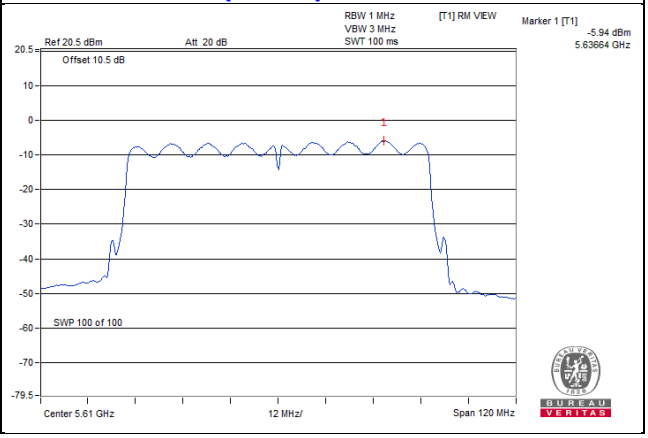
802.11ac (80MHz)

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				
58	5290	-6.43	-6.27	0.17	-3.17	11.00	Pass
106	5530	-6.11	-6.04	0.17	-2.89	11.00	Pass
122	5610	-6.06	-5.96	0.17	-2.83	11.00	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. **<For U-NII-2A Band>**
   Directional gain = 10 log[(10$^{Chain0/20}$ + 10$^{Chain1/20}$)^2 / 2] = 5.69dBi < 6dBi, so the power spectral density limit doesn't reduce.
   <For U-NII-2C Band>
   Directional gain = 10 log[(10$^{Chain0/20}$ + 10$^{Chain1/20}$)^2 / 2] = 4.86dBi < 6dBi, so the power spectral density limit doesn't reduce.

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

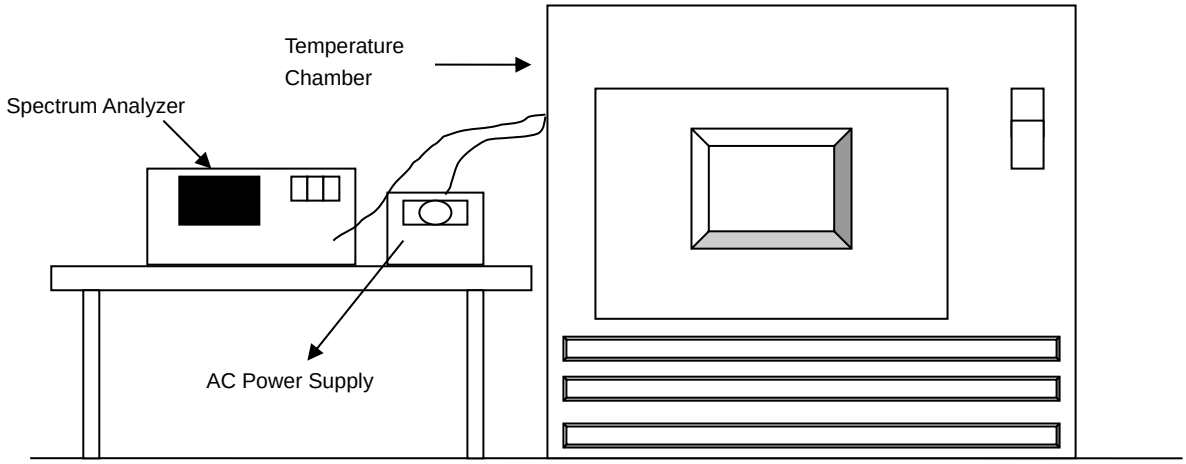
Spectrum Plot of Worst Value	
802.11a_Chain 0 / CH64	**802.11ac (20MHz)_Chain 0 / CH116**
	
802.11ac (40MHz)_Chain 0 / CH134	**802.11ac (80MHz)_Chain 1 / CH122**
	

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

a. The EUT was placed inside the environmental test chamber and powered by nominal AC voltage.
b. Turn the EUT on and couple its output to a spectrum analyzer.
c. Turn the EUT off and set the chamber to the highest temperature specified.
d. 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.
e. Repeat step (d) with the temperature chamber set to the next desired temperature until measurements down to the lowest specified temperature have been completed.
f. 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: 5260 MHz									
TEMP. (℃)	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	5259.989	Pass	5259.9884	Pass	5259.9901	Pass	5259.9914	Pass
40	120	5260.0105	Pass	5260.0085	Pass	5260.0087	Pass	5260.0119	Pass
30	120	5259.9871	Pass	5259.9885	Pass	5259.9906	Pass	5259.9904	Pass
20	120	5259.9979	Pass	5260.0001	Pass	5259.9985	Pass	5259.9986	Pass
10	120	5260.0228	Pass	5260.0224	Pass	5260.0239	Pass	5260.025	Pass
0	120	5259.9848	Pass	5259.9841	Pass	5259.9844	Pass	5259.9857	Pass
-10	120	5259.9885	Pass	5259.9908	Pass	5259.9933	Pass	5259.9929	Pass
-20	120	5259.9787	Pass	5259.9784	Pass	5259.9792	Pass	5259.9772	Pass
-30	120	5260.0087	Pass	5260.0056	Pass	5260.0065	Pass	5260.0092	Pass

Frequency Stability Versus Voltage									
Operating Frequency: 5260 MHz									
TEMP. (℃)	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	5259.9984	Pass	5259.9999	Pass	5259.9981	Pass	5259.9991	Pass
	120	5259.9979	Pass	5260.0001	Pass	5259.9985	Pass	5259.9986	Pass
	102	5259.9973	Pass	5259.9994	Pass	5259.9982	Pass	5259.998	Pass

5 Pictures of Test Arrangements

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

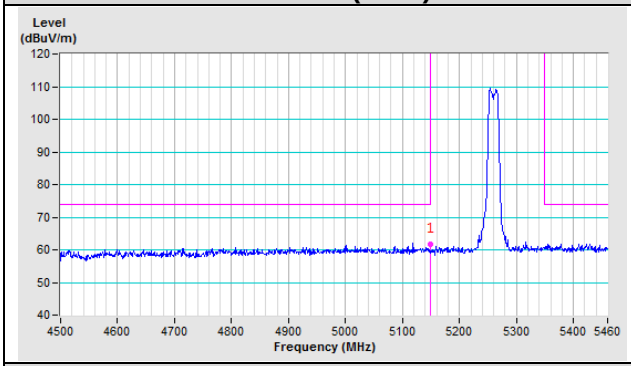
Annex A- Bandedge Measurement

The test plots shall address as below for reference.

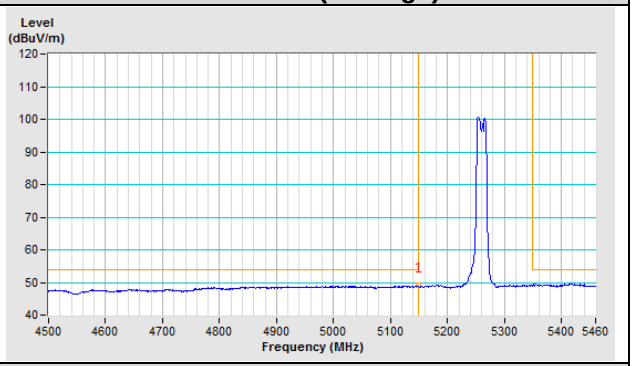
802.11a

Channel 52

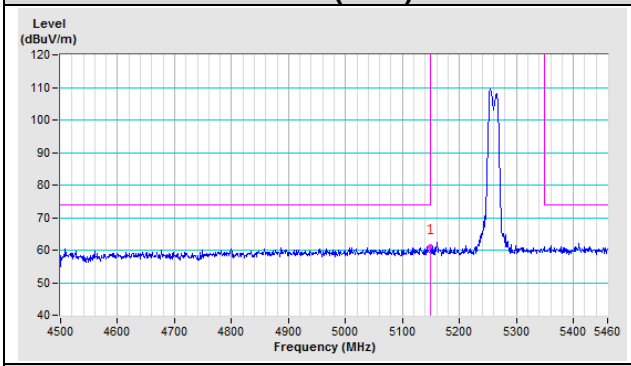
Horizontal (Peak)



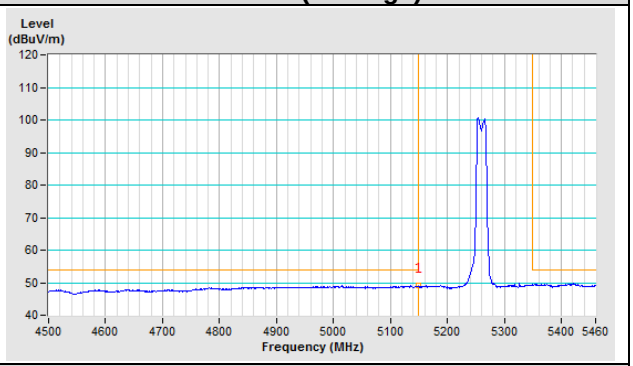
Horizontal (Average)



Vertical (Peak)

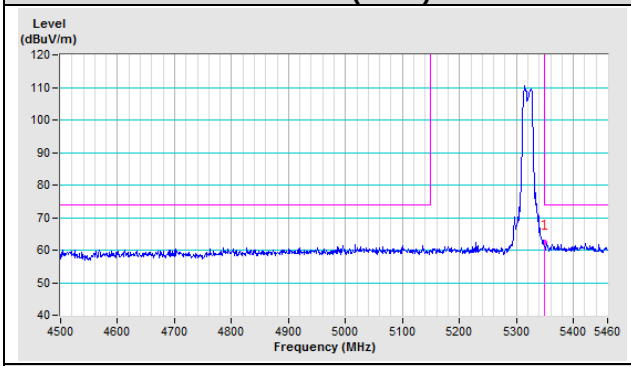


Vertical (Average)

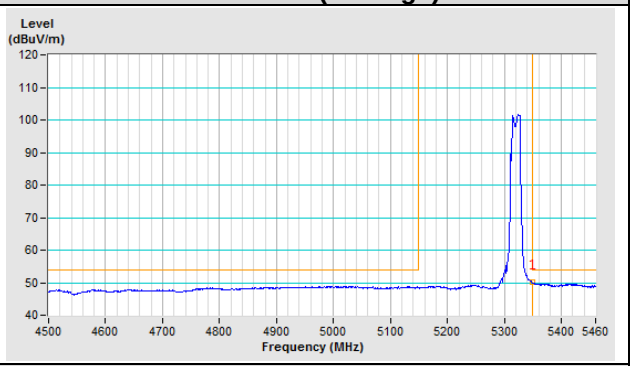


Channel 64

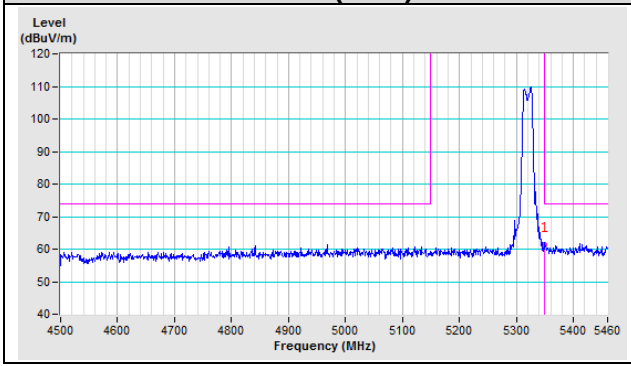
Horizontal (Peak)



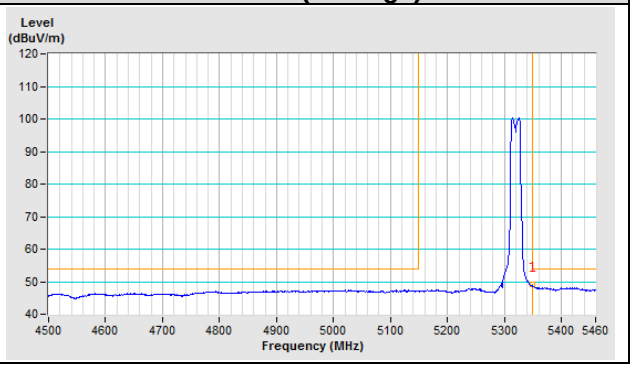
Horizontal (Average)

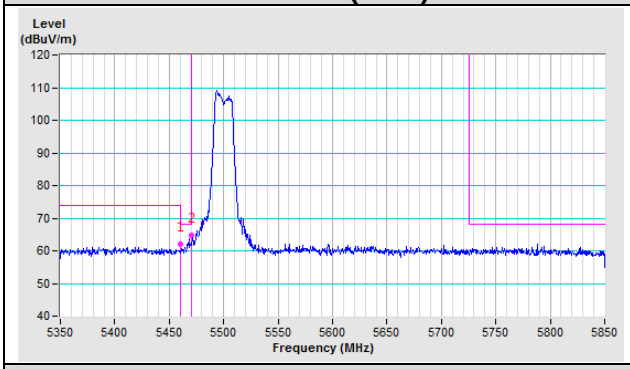
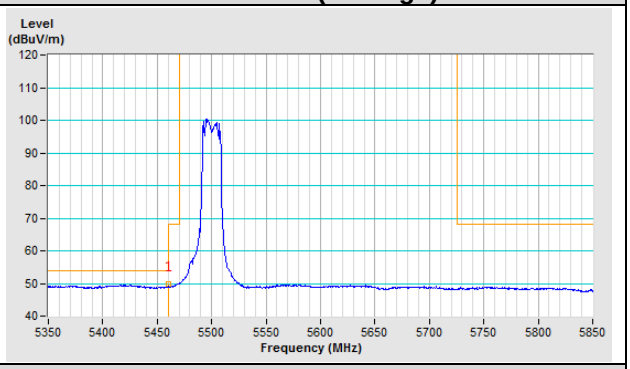
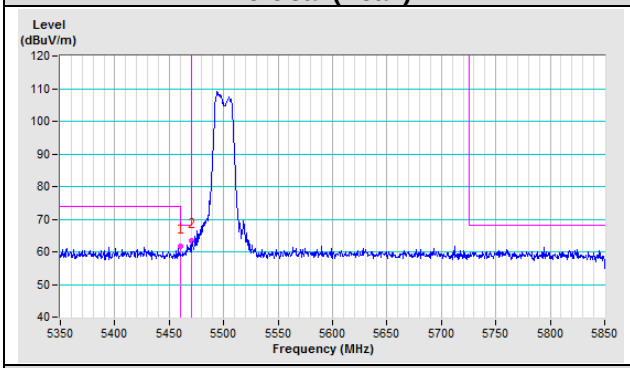
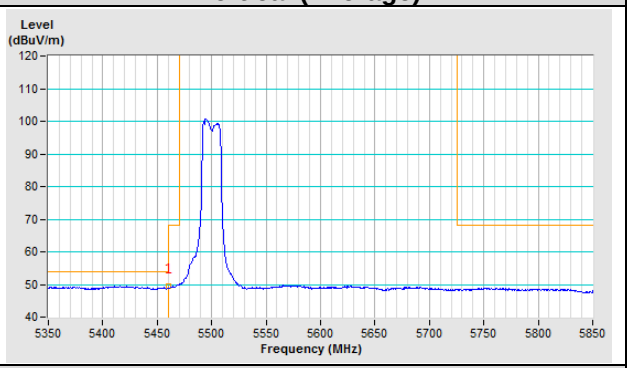
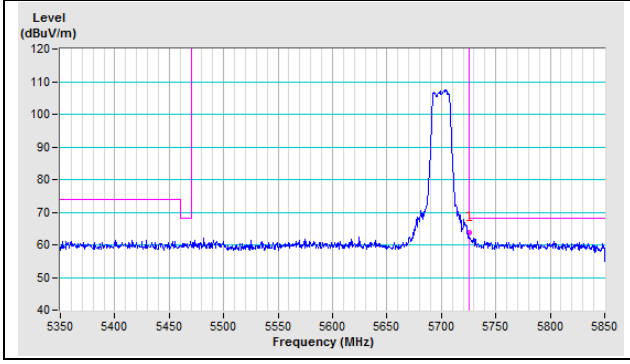
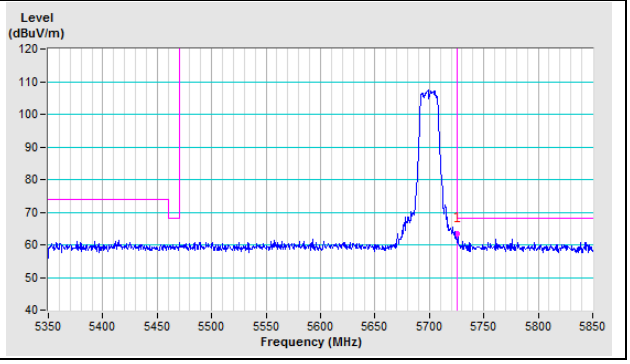


Vertical (Peak)



Vertical (Average)

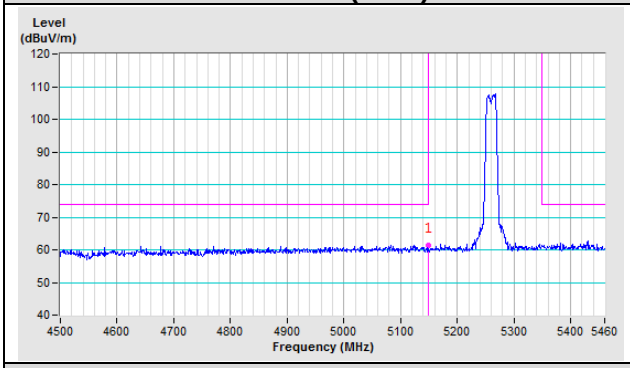


Channel 100	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	
Channel 140	
Horizontal	Vertical
	

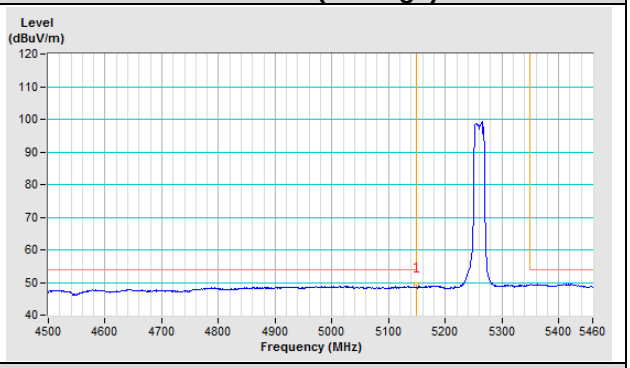
802.11ac (20MHz)

Channel 52

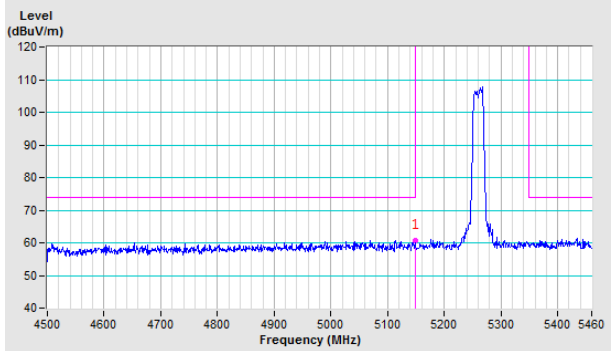
Horizontal (Peak)



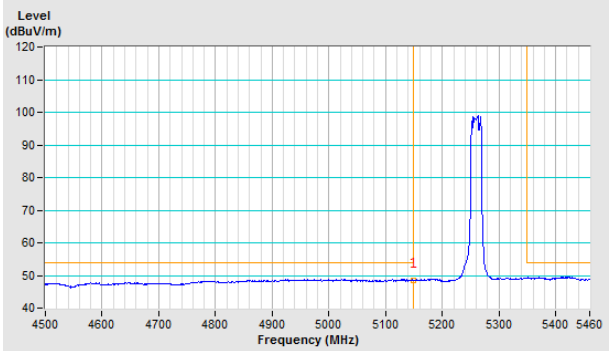
Horizontal (Average)



Vertical (Peak)

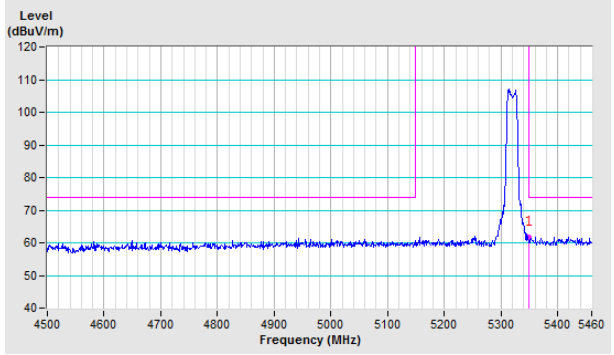


Vertical (Average)

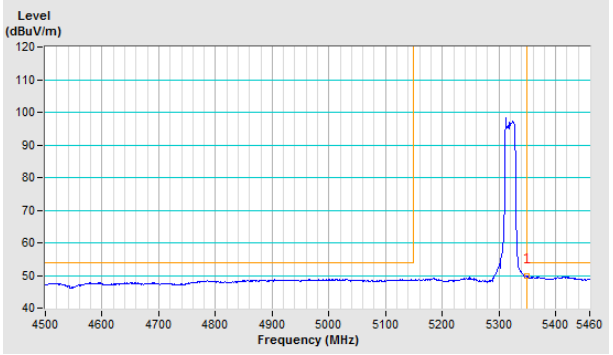


Channel 64

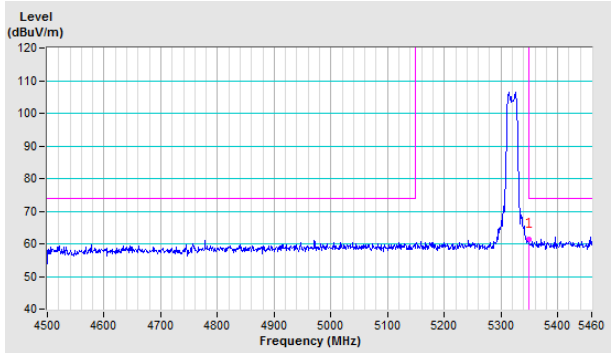
Horizontal (Peak)



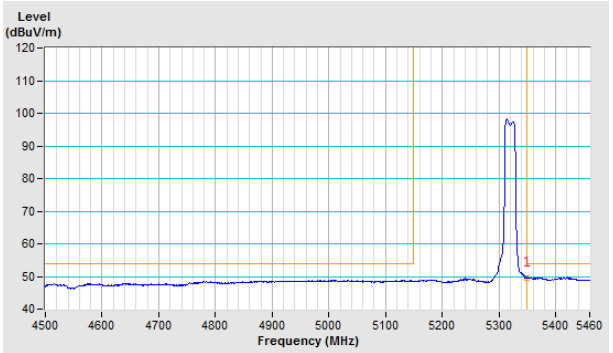
Horizontal (Average)

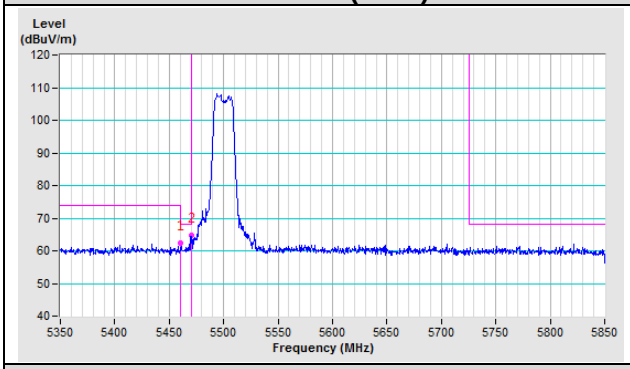
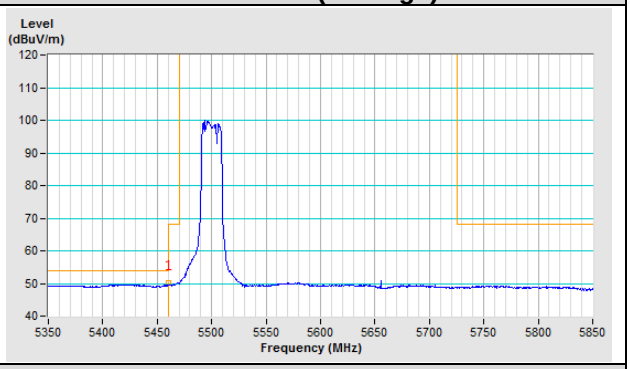
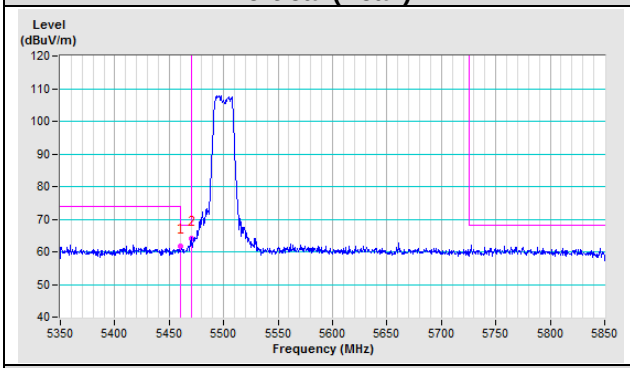
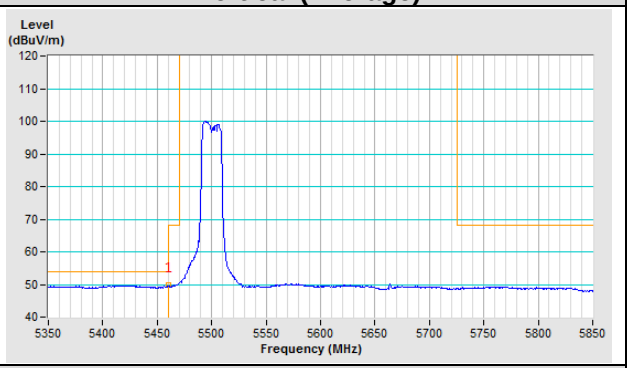
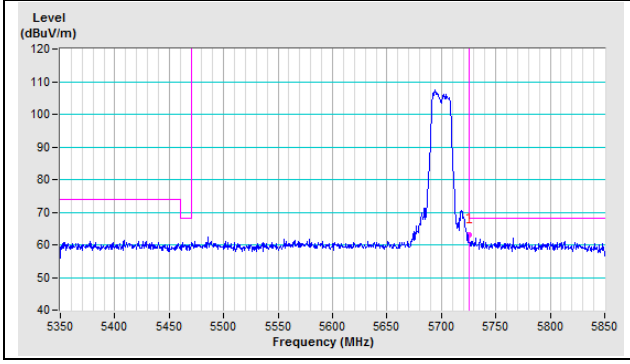
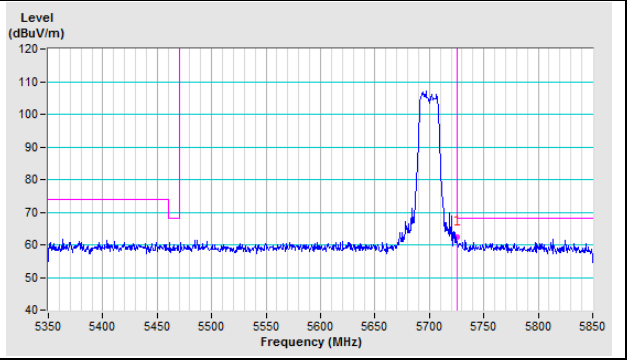


Vertical (Peak)



Vertical (Average)

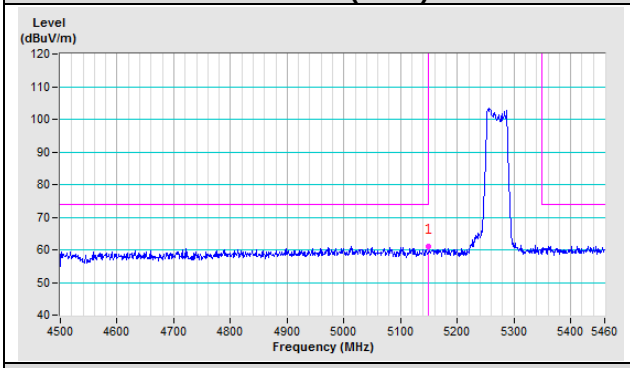


Channel 100	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	
Channel 140	
Horizontal	Vertical
	

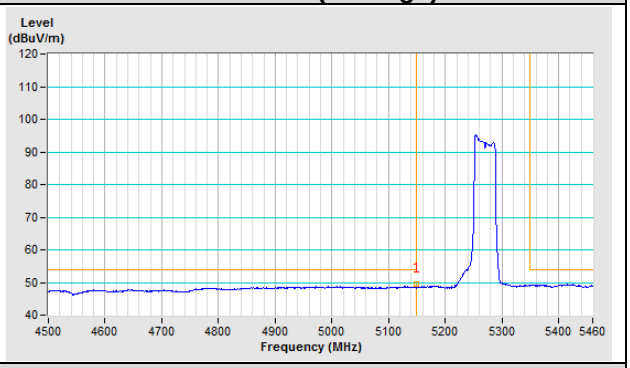
802.11ac (40MHz)

Channel 54

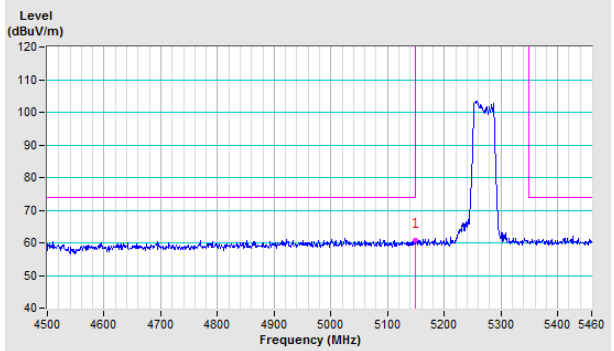
Horizontal (Peak)



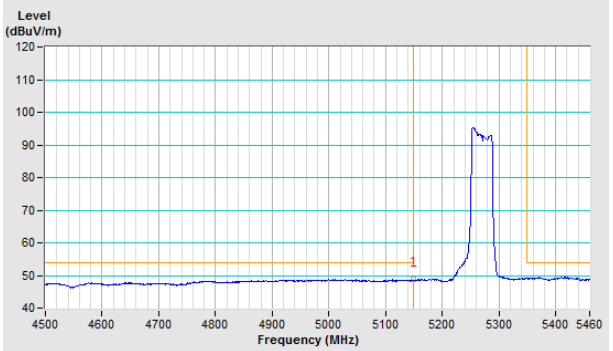
Horizontal (Average)



Vertical (Peak)

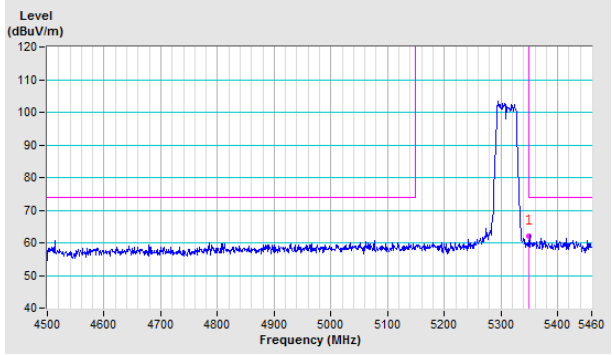


Vertical (Average)

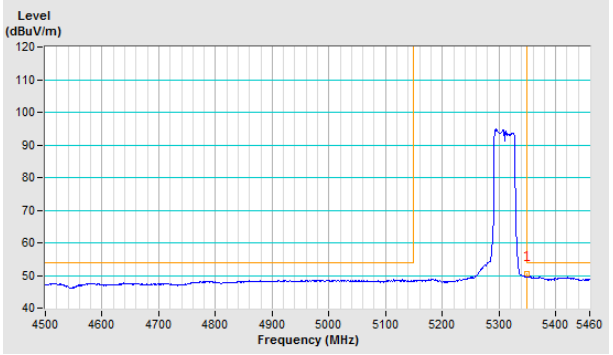


Channel 62

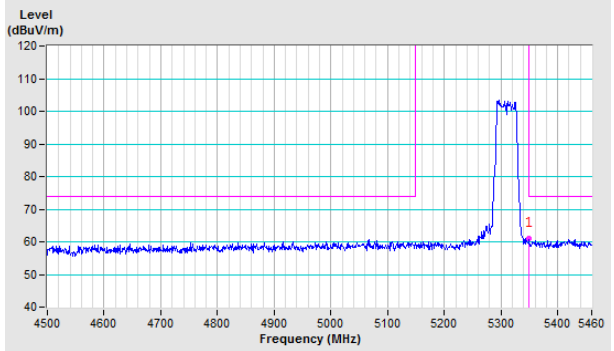
Horizontal (Peak)



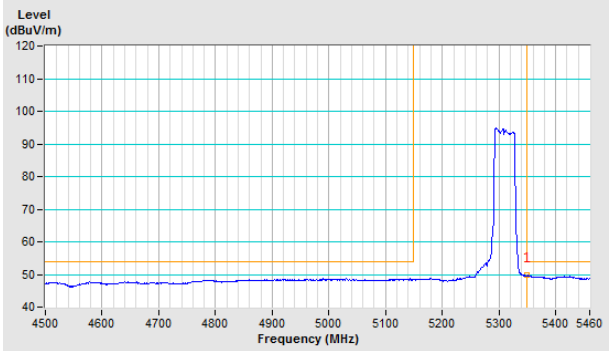
Horizontal (Average)

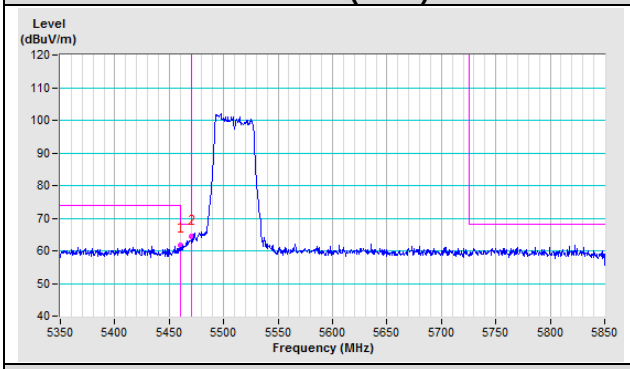
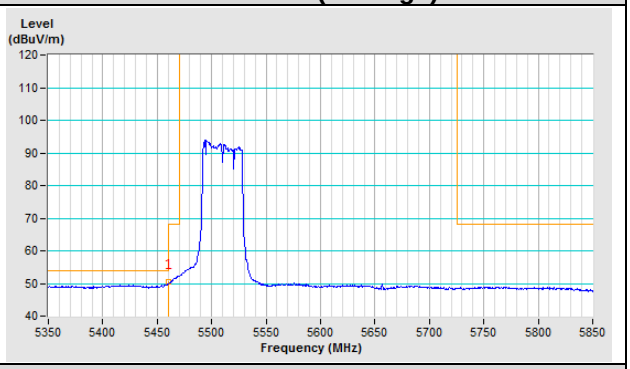
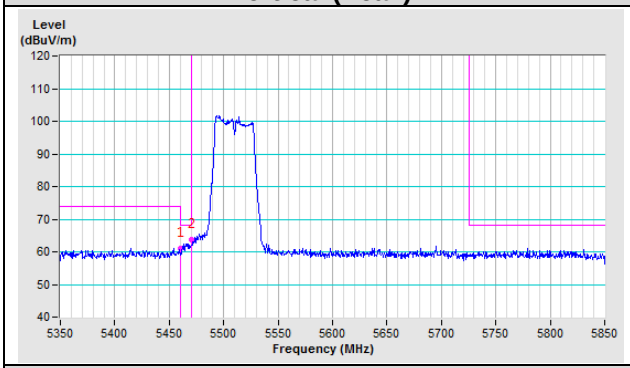
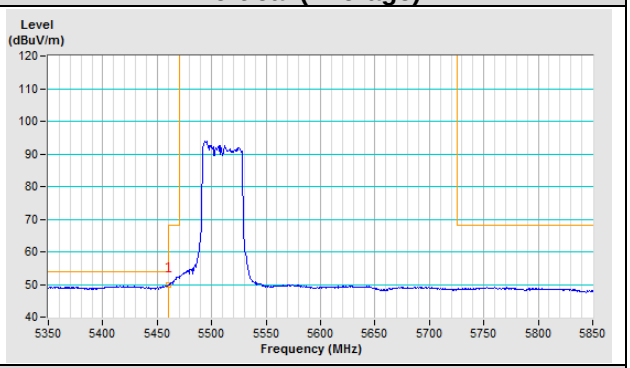
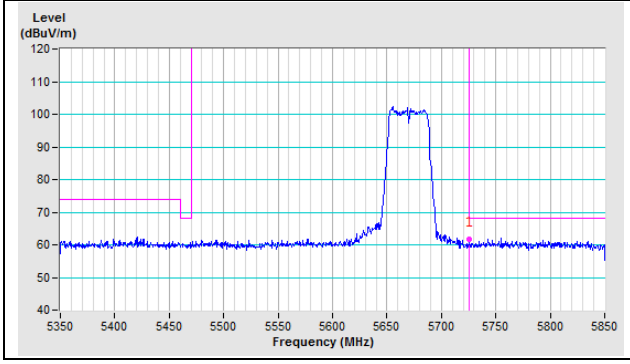
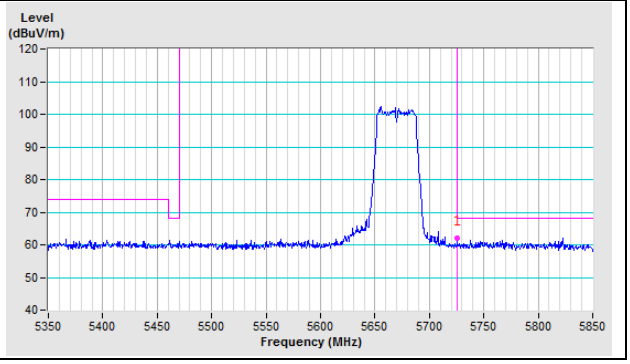


Vertical (Peak)



Vertical (Average)

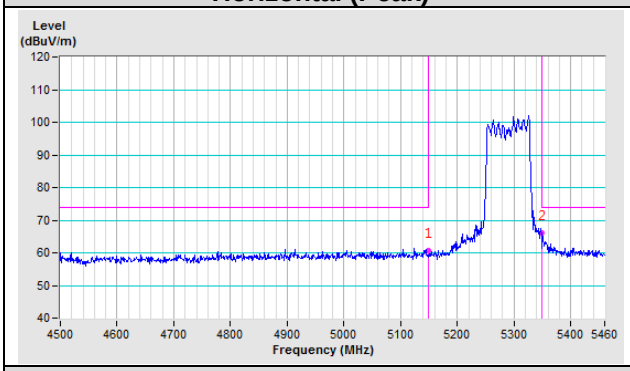


Channel 102	
Horizontal (Peak)	Horizontal (Average)
	
Vertical (Peak)	Vertical (Average)
	
Channel 134	
Horizontal	Vertical
	

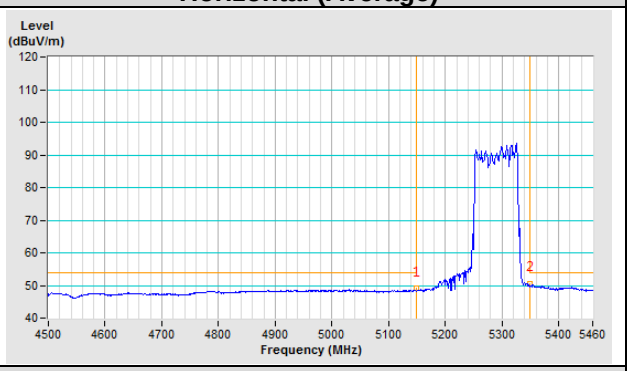
802.11ac (80MHz)

Channel 58

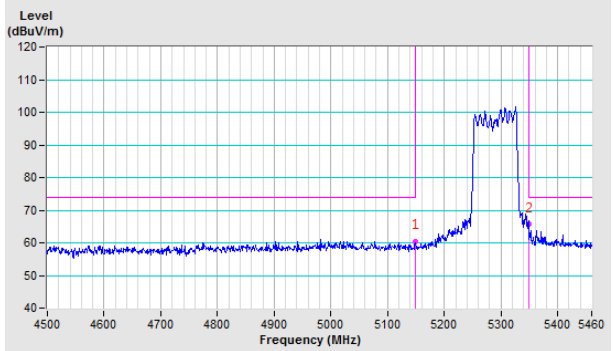
Horizontal (Peak)



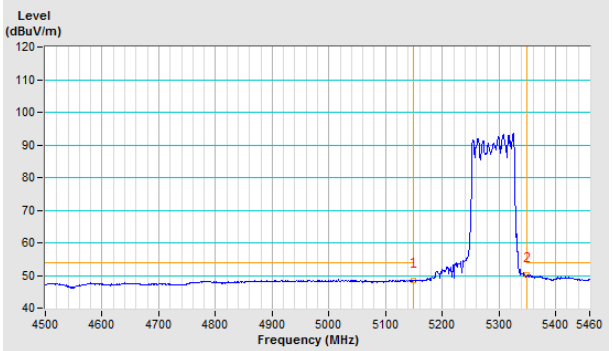
Horizontal (Average)



Vertical (Peak)

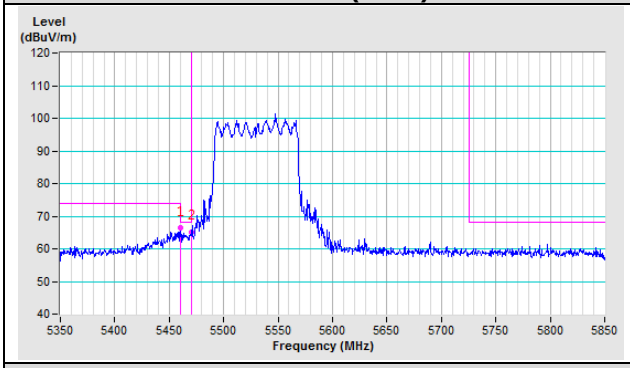


Vertical (Average)

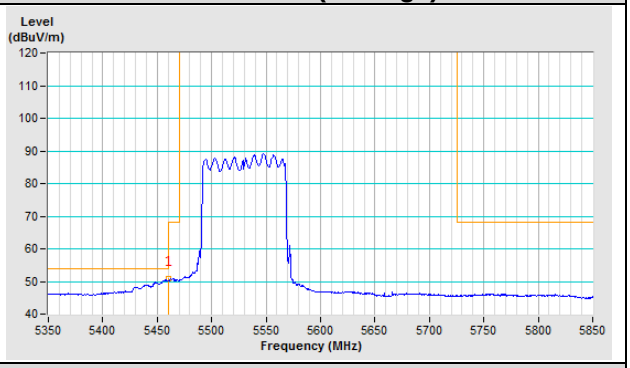


Channel 106

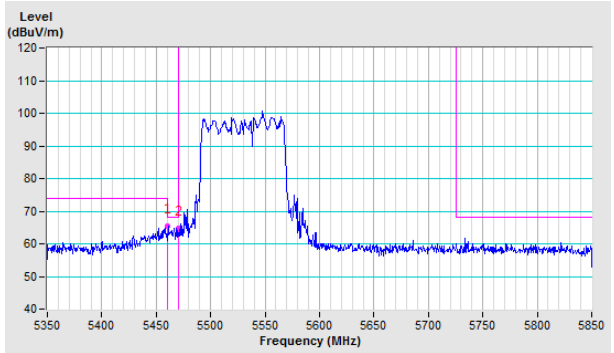
Horizontal (Peak)



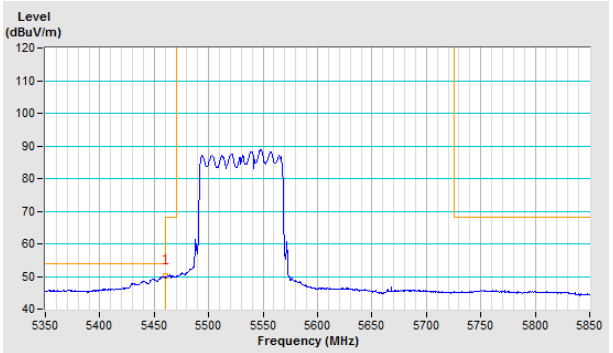
Horizontal (Average)

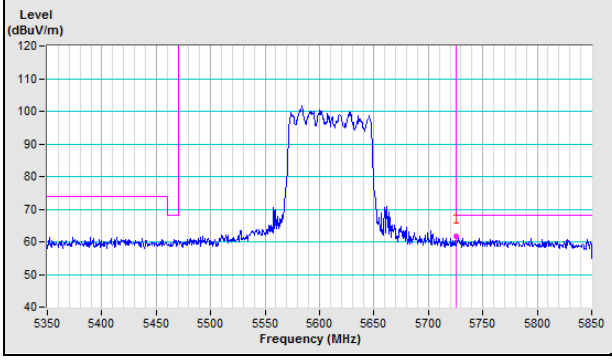
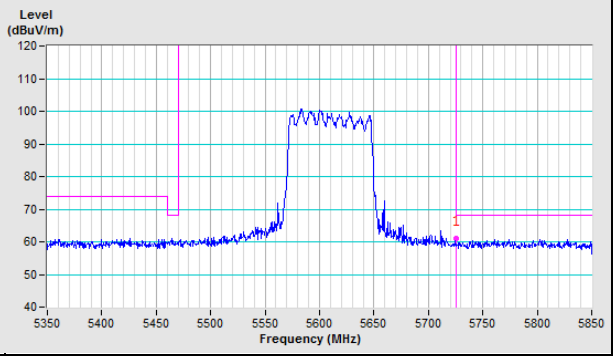


Vertical (Peak)



Vertical (Average)



Channel 122	
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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