

FCC Test Report (WLAN)

Report No.: RFBDKG-WTW-P20110147-1

FCC ID: JNZVR0020

Test Model: VR0020

Received Date: Nov. 10, 2020

Test Date: Mar. 09 to Apr. 19, 2021

Issued Date: May 07, 2021

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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**FCC Registration /
Designation Number:** 723255 / TW2022



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Release Control Record

Issue No.	Description	Date Issued
RFBDKG-WTW-P20110147-1	Original release.	May 07, 2021

1 Certificate of Conformity

Product: Camera and Speakerphone
Brand: Logitech
Test Model: VR0020
Sample Status: Engineering sample
Applicant: Logitech Far East Ltd
Test Date: Mar. 09 to Apr. 19, 2021
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 EMC characteristics under the conditions specified in this report.

Prepared by : Phoenix Huang , **Date:** May 07, 2021
Phoenix Huang / Specialist

Approved by : Clark Lin , **Date:** May 07, 2021
Clark Lin / 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)(8)	AC Power Conducted Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -5.15 dB at 27.64844 MHz.
15.407(b) (1/2/3/4(i/ii)/8)	Radiated Emissions & Band Edge Measurement*	PASS	Meet the requirement of limit. Minimum passing margin is -4.0 dB at 5150.00 MHz.
15.407(a)(1/2/3)	Max Average Transmit Power	PASS	Meet the requirement of limit.
---	Occupied Bandwidth Measurement	-	Reference only.
15.407(a)(1/2/3)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(e)	6dB bandwidth	PASS	Meet the requirement of limit. (U-NII-3 Band only)
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	Antenna connector is i-pex(MHF) not a standard connector.

Note:

1. For U-NII-3 band compliance with rule part 15.407(b)(4)(i), the OOB test plots were recorded in Annex A.
2. For U-NII-1, U-NII-2A, U-NII-2C band compliance with rule 15.407(b) of the band-edge items, the test plots were recorded in Annex B. Test Procedures refer to report 4.1.3.
3. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) (\pm)
Conducted Emissions at mains ports	150kHz ~ 30MHz	1.9 dB
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.1 dB
	30MHz ~ 1GHz	5.4 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	5.0 dB
	18GHz ~ 40GHz	5.3 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT (WLAN)

Product	Camera and Speakerphone
Brand	Logitech
Test Model	VR0020
Status of EUT	Engineering sample
Power Supply Rating	19 Vdc from power adapter
Modulation Type	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM 256QAM for OFDM in 11ac mode only
Modulation Technology	DSSS, OFDM
Transfer Rate	802.11b: up to 11 Mbps 802.11a/g: up to 54 Mbps 802.11n: up to 300 Mbps 802.11ac: up to 866.7Mbps
Operating Frequency	2.4GHz: 2.412 ~ 2.462 GHz 5GHz: 5.18 ~ 5.24 GHz, 5.26 ~ 5.32 GHz, 5.50 ~ 5.72 GHz, 5.745 ~ 5.825 GHz
Number of Channel	2.4GHz: 802.11b, 802.11g, 802.11n (HT20): 11 802.11n (HT40): 7 5GHz: 802.11a, 802.11n (HT20), 802.11ac (VHT20): 25 802.11n (HT40), 802.11ac (VHT40): 12 802.11ac (VHT80): 6
Output Power	2.4GHz: 383.963 mW 5.18 ~ 5.24 GHz: 69.047 mW 5.26 ~ 5.32 GHz: 73.738 mW 5.50 ~ 5.72 GHz: 82.227 mW 5.745 ~ 5.825 GHz: 214.244 mW
Antenna Type	Refer to Note
Antenna Connector	Refer to Note
Accessory Device	Adapter x 1, Remote controller x 1 (Brand: Logitech / Model: RR0016)
Data Cable Supplied	USB Cable x 1 (2.2 m, Unshielded), HDMI Cable x 1 (2 m, Unshielded)

Note:

1. Simultaneously transmission condition.

Condition	Technology	
1	WLAN (2.4GHz)	WLAN (5GHz)
2	WLAN (2.4GHz)	Bluetooth
3	WLAN (5GHz)	Bluetooth

Note: The emission of the simultaneous operation has been evaluated and no non-compliance was found.

2. The EUT could be supplied with a power adapter as the following table:

Brand	Model No.	Spec.
Logi	DSA-90PFE-19 3 190474	Input: 100-240 Vac, 500 mA, 50-60 Hz, 1.5 A AC input cable: Unshielded, 1 m Output: 19 Vdc, 4.74 A DC output cable: Unshielded, 1.5 m, with one core

3. The antennas provided to the EUT, please refer to the following table:

Antenna No.	RF Chain No.	Brand	Model	Antenna Net Gain (dBi)	Frequency Range (GHz)	Antenna Type	Connector Type	Cable Length (mm)
ANT 0	Chain 0	FIH	PCB	7.35	2.4~2.4835	Monopole	i-pex(MHF)	85
				7.92	5.15~5.25			
				8.71	5.25~5.35			
				8.7	5.47~5.725			
				7.7	5.725~5.85			
ANT 1	Chain 1	FIH	PCB	5.06	2.4~2.4835	Monopole	i-pex(MHF)	100
				7.12	5.15~5.25			
				7.5	5.25~5.35			
				7.02	5.47~5.725			
				6.17	5.725~5.85			

Note: The Bluetooth technology will fix transmission on Chain (0).

4. The EUT incorporates a MIMO function:

2.4GHz Band		
MODULATION MODE	TX & RX CONFIGURATION	
802.11b	2TX	2RX
802.11g	2TX	2RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX
5GHz Band		
MODULATION MODE	TX & RX CONFIGURATION	
802.11a	2TX	2RX
802.11n (HT20)	2TX	2RX
802.11n (HT40)	2TX	2RX
802.11ac (VHT20)	2TX	2RX
802.11ac (VHT40)	2TX	2RX
802.11ac (VHT80)	2TX	2RX

Note: The modulation and bandwidth are similar for 802.11n mode for 20MHz (40MHz) and 802.11ac mode for 20MHz (40MHz), therefore the manufacturer will control the power for 802.11n mode is the same as the 802.11ac or more lower than it and investigated worst case to representative mode in test report. (Final test mode refer to section 3.2.1)

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

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

3.2 Description of Test Modes

FOR 5180 ~ 5240MHz

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

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

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

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
42	5210 MHz

FOR 5260 ~ 5320MHz

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

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

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

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
58	5290 MHz

FOR 5500 ~ 5720MHz

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

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	144	5720 MHz

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

Channel	Frequency	Channel	Frequency
102	5510 MHz	126	5630 MHz
110	5550 MHz	134	5670 MHz
118	5590 MHz	142	5710 MHz

3 channels are provided for 802.11ac (VHT80):

Channel	Frequency	Channel	Frequency
106	5530 MHz	138	5690 MHz
122	5610 MHz		

FOR 5745 ~ 5825MHz:

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

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

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

Channel	Frequency	Channel	Frequency
151	5755 MHz	159	5795 MHz

1 channel is provided for 802.11ac (VHT80):

Channel	Frequency
155	5775 MHz

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.

Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6
802.11ac (VHT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
802.11ac (VHT40)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11ac (VHT80)		42	42	OFDM	BPSK	29.3
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6
802.11ac (VHT20)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
802.11ac (VHT40)		54 to 62	54, 62	OFDM	BPSK	13.5
802.11ac (VHT80)		58	58	OFDM	BPSK	29.3
802.11a	5500-5720	100 to 144	100, 116, 140, 144	OFDM	BPSK	6
802.11ac (VHT20)		100 to 144	100, 116, 140, 144	OFDM	BPSK	6.5
802.11ac (VHT40)		102 to 142	102, 110, 134, 142	OFDM	BPSK	13.5
802.11ac (VHT80)		106 to 138	106, 122, 138	OFDM	BPSK	29.3
802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6
802.11ac (VHT20)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
802.11ac (VHT40)		151 to 159	151, 159	OFDM	BPSK	13.5
802.11ac (VHT80)		155	155	OFDM	BPSK	29.3

Radiated Emission Test (Below 1GHz):

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

Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5180-5320, 5500-5720, 5745-5825	36 to 64, 100 to 140, 149 to 165	149	OFDM	BPSK	6

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.

Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5180-5320, 5500-5720, 5745-5825	36 to 64, 100 to 140, 149 to 165	149	OFDM	BPSK	6

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.

Mode	FREQ. Band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	5180-5240	36 to 48	36, 40, 48	OFDM	BPSK	6
802.11ac (VHT20)		36 to 48	36, 40, 48	OFDM	BPSK	6.5
802.11ac (VHT40)		38 to 46	38, 46	OFDM	BPSK	13.5
802.11ac (VHT80)		42	42	OFDM	BPSK	29.3
802.11a	5260-5320	52 to 64	52, 60, 64	OFDM	BPSK	6
802.11ac (VHT20)		52 to 64	52, 60, 64	OFDM	BPSK	6.5
802.11ac (VHT40)		54 to 62	54, 62	OFDM	BPSK	13.5
802.11ac (VHT80)		58	58	OFDM	BPSK	29.3
802.11a	5500-5720	100 to 144	100, 116, 140, 144	OFDM	BPSK	6
802.11ac (VHT20)		100 to 144	100, 116, 140, 144	OFDM	BPSK	6.5
802.11ac (VHT40)		102 to 142	102, 110, 134, 142	OFDM	BPSK	13.5
802.11ac (VHT80)		106 to 138	106, 122, 138	OFDM	BPSK	29.3
802.11a	5745-5825	149 to 165	149, 157, 165	OFDM	BPSK	6
802.11ac (VHT20)		149 to 165	149, 157, 165	OFDM	BPSK	6.5
802.11ac (VHT40)		151 to 159	151, 159	OFDM	BPSK	13.5
802.11ac (VHT80)		155	155	OFDM	BPSK	29.3

Test Condition:

Applicable To	Environmental Conditions	Input Power	Tested By
RE \geq 1G	25deg. C, 75%RH	120Vac, 60Hz	Gary Cheng
RE $<$ 1G	22deg. C, 66%RH	120Vac, 60Hz	Sampson Chen
PLC	25deg. C, 75%RH	120Vac, 60Hz	Sampson Chen
APCM	25deg. C, 60%RH	120Vac, 60Hz	Eric Peng

3.3 Duty Cycle of Test Signal

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

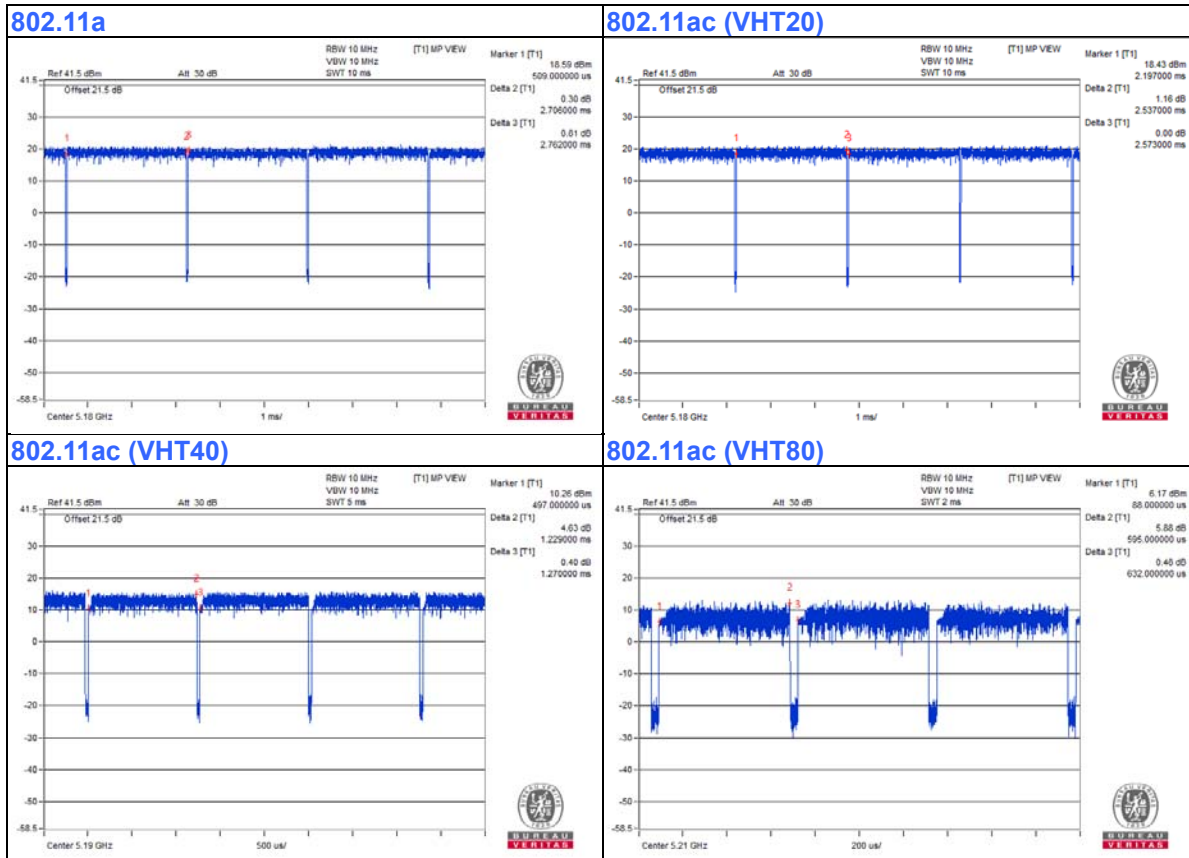
If duty cycle of test signal is $< 98\%$, duty factor shall be considered.

802.11a: Duty cycle = $2.706 \text{ ms} / 2.762 \text{ ms} = 0.98$

802.11ac (VHT20): Duty cycle = $2.537 \text{ ms} / 2.573 \text{ ms} = 0.986$

802.11ac (VHT40): Duty cycle = $1.229 \text{ ms} / 1.27 \text{ ms} = 0.968$, Duty factor = $10 * \log (1/\text{Duty cycle}) = 0.14 \text{ dB}$

802.11ac (VHT80): Duty cycle = $0.595 \text{ ms} / 0.632 \text{ ms} = 0.941$, Duty factor = $10 * \log (1/\text{Duty cycle}) = 0.26 \text{ dB}$



3.4 Description of Support Units

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

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	MIC POD	Logitech	V-U0049	NA	NA	Supplied by client
B.	TAP Touch Controller	Logitech	V-U0053	NA	NA	Supplied by client
C.	Dongle	SanDisk	Ultra Flair USB 3.0	NA	NA	Provided by Lab
D.	Dongle	SanDisk	Ultra Flair USB 3.0	NA	NA	Provided by Lab
E.	Laptop	Lenovo	20U5S01X00 L14	PF-28LKK7	NA	Provided by Lab
F.	Monitor	DELL	P2415Q	CN-0J1P7F-QDC00-8 5L-13GB-A09	FCC DoC	Provided by Lab
G.	Monitor	NEOKA	NA	NA	NA	Provided by Lab
H.	Laptop	Lenovo	20U5S01X00 L14	PF-1ANPYA	NA	Provided by Lab

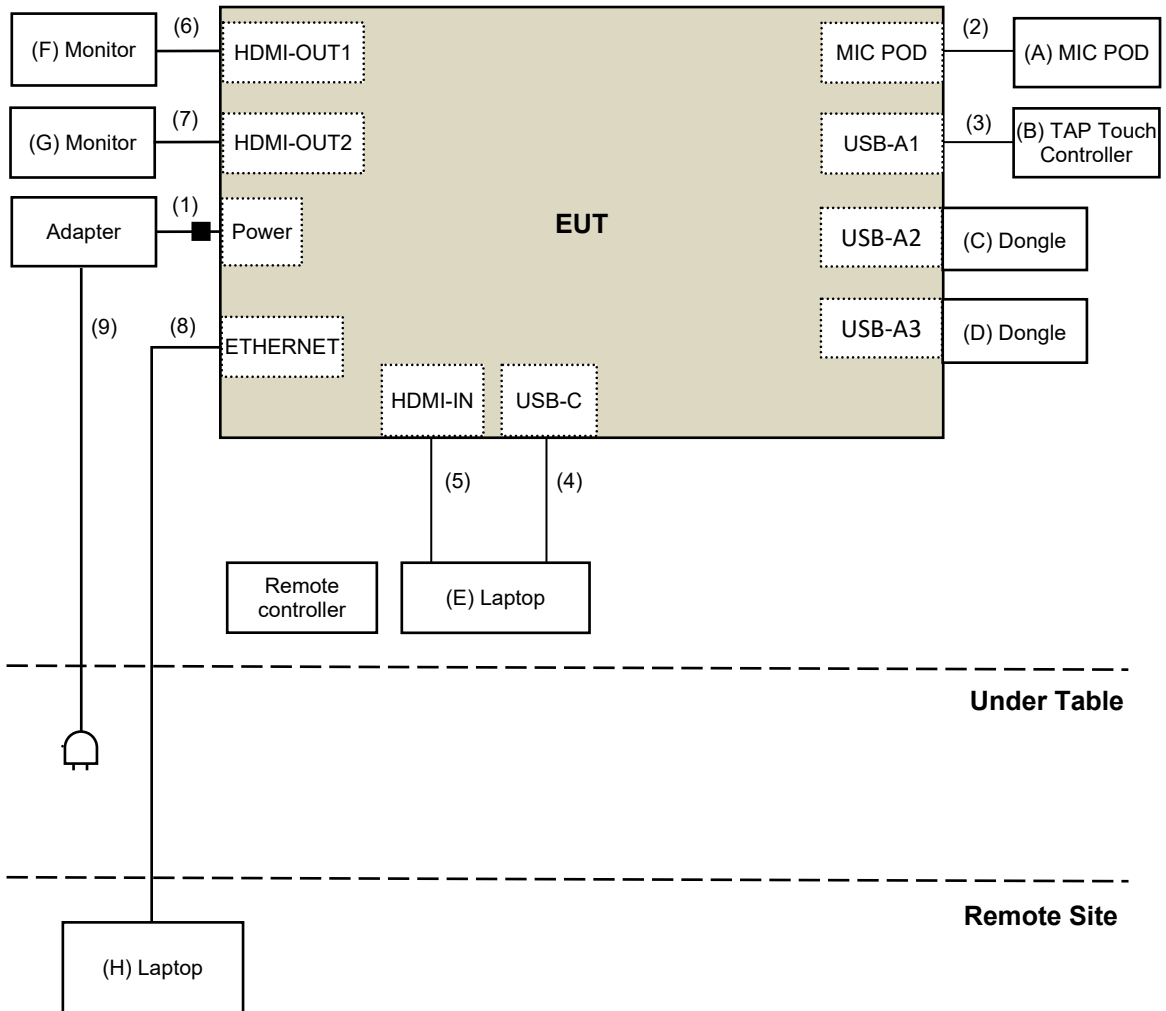
Note:

1. All power cords of the above support units are non-shielded (1.8m).

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	DC Cable	1	1.5	No	1	Supplied by client
2.	Micro USB Cable	1	3	No	0	Supplied by client
3.	USB A to Type C Cable	1	2.2	No	0	Supplied by client
4.	USB A to Type C Cable	1	2.2	No	0	Supplied by client
5.	HDMI Cable	1	1.8	No	0	Supplied by client
6.	HDMI Cable	1	1.8	No	0	Supplied by client
7.	HDMI Cable	1	1.8	No	0	Supplied by client
8.	RJ-45 Cable	1	10	No	0	Provided by Lab
9.	AC Cable	1	1	No	0	Supplied by client

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

3.4.1 Configuration of System under Test



3.5 General Description of Applied Standard 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 (dBuV/m)	AV:54 (dBuV/m)
Frequency Band	Applicable To	EIRP Limit	Equivalent Field Strength at 3m
5150~5250 MHz	15.407(b)(1)	PK:-27 (dBm/MHz)	PK:68.2(dBuV/m)
5250~5350 MHz	15.407(b)(2)		
5470~5725 MHz	15.407(b)(3)		
5725~5850 MHz	15.407(b)(4)(i)	PK: -27 (dBm/MHz) ^{*1} PK: 10 (dBm/MHz) ^{*2} PK: 15.6 (dBm/MHz) ^{*3} PK: 27 (dBm/MHz) ^{*4}	PK: 68.2(dBuV/m) ^{*1} PK: 105.2 (dBuV/m) ^{*2} PK: 110.8(dBuV/m) ^{*3} PK: 122.2 (dBuV/m) ^{*4}
*1 beyond 75 MHz or more above of the band edge.		*2 below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.	
*3 below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.		*4 from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.	

Note:

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

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

4.1.2 Test Instruments

For Radiated Emission test:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver Keysight	N9038A	MY54450088	July 06, 2020	July 05, 2021
Pre-Amplifier EMCI	EMC001340	980142	May 25, 2020	May 24, 2021
Loop Antenna Electro-Metrics	EM-6879	264	Mar. 05, 2021	Mar. 04, 2022
RF Cable	5D-FB	LOOPCAB-001	Jan. 07, 2021	Jan. 06, 2022
RF Cable	5D-FB	LOOPCAB-002	Jan. 07, 2021	Jan. 06, 2022
Pre-Amplifier Mini-Circuits	ZFL-1000VH2	QA0838008	Oct. 20, 2020	Oct. 19, 2021
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-361	Nov. 05, 2020	Nov. 04, 2021
RF Cable	8D	966-3-1	Mar. 16, 2021	Mar. 15, 2022
RF Cable	8D	966-3-2	Mar. 16, 2021	Mar. 15, 2022
RF Cable	8D	966-3-3	Mar. 16, 2021	Mar. 15, 2022
Fixed attenuator Mini-Circuits	UNAT-5+	PAD-3m-3-01	Sep. 24, 2020	Sep. 23, 2021
Horn_Antenna SCHWARZBECK	BBHA9120-D	9120D-406	Nov. 22, 2020	Nov. 21, 2021
Pre-Amplifier EMCI	EMC12630SE	980384	Jan. 11, 2021	Jan. 10, 2022
RF Cable	EMC104-SM-SM-1500	180504	Apr. 29, 2020	Apr. 28, 2021
RF Cable	EMC104-SM-SM-2000	180601	June 09, 2020	June 08, 2021
RF Cable	EMC104-SM-SM-6000	180602	June 09, 2020	June 08, 2021
Spectrum Analyzer Keysight	N9030A	MY54490679	July 13, 2020	July 12, 2021
Pre-Amplifier EMCI	EMC184045SE	980387	Jan. 11, 2021	Jan. 10, 2022
Horn_Antenna SCHWARZBECK	BBHA 9170	BBHA9170519	Nov. 22, 2020	Nov. 21, 2021
RF Cable	EMC102-KM-KM-1200	160924	Jan. 11, 2021	Jan. 10, 2022
RF Cable	EMC-KM-KM-4000	200214	Mar. 10, 2021	Mar. 09, 2022
Software	ADT_Radiated_V8.7.08	NA	NA	NA
Antenna Tower & Turn Table Max-Full	MF-7802	MF780208406	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA

Note:

1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in 966 Chamber No. 3.
3. Tested Date: Apr. 09 to 19, 2021

For other test items

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSV40	100964	May 29, 2020	May 28, 2021
Power meter Anritsu	ML2495A	1529002	July 22, 2020	July 21, 2021
Power sensor Anritsu	MA2411B	1339443	July 22, 2020	July 21, 2021
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 14, 2020	Apr. 13, 2021
AC Power Source Extech Electronics	6905S	1991551	NA	NA
Temperature & Humidity Chamber Giant Force	GTH-150-40-SP-AR	MAA0812-008	Jan. 14, 2021	Jan. 13, 2022
True RMS Clamp Meter FLUKE	325	31130711WS	June 06, 2020	June 05, 2021
Software	ADT_RF Test Software V6.6.5.4	NA	NA	NA

- NOTE:**
1. The test was performed in Oven room 2.
 2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 3. Tested Date: Mar. 09, 2021

4.1.3 Test Procedure

For Radiated emission below 30MHz

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

Note:

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

For Radiated emission above 30MHz

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

Note:

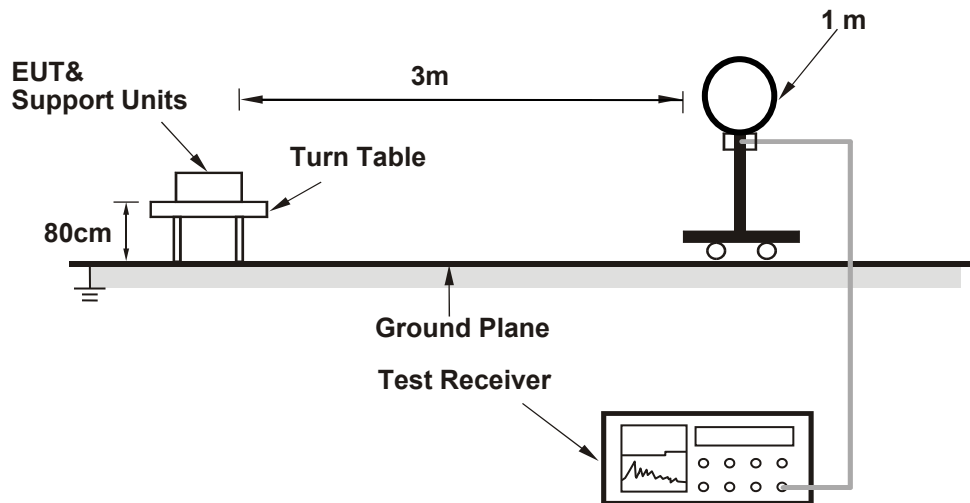
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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

4.1.4 Deviation from Test Standard

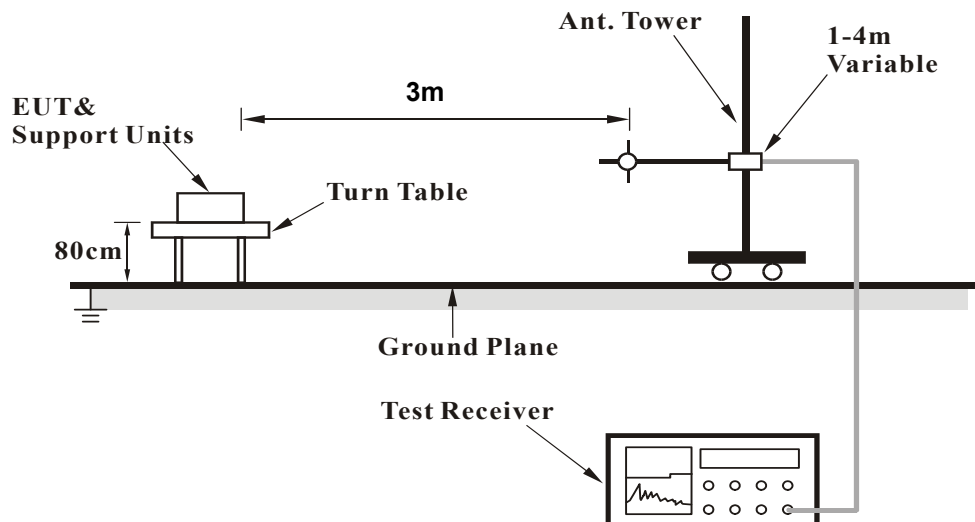
No deviation.

4.1.5 Test Setup

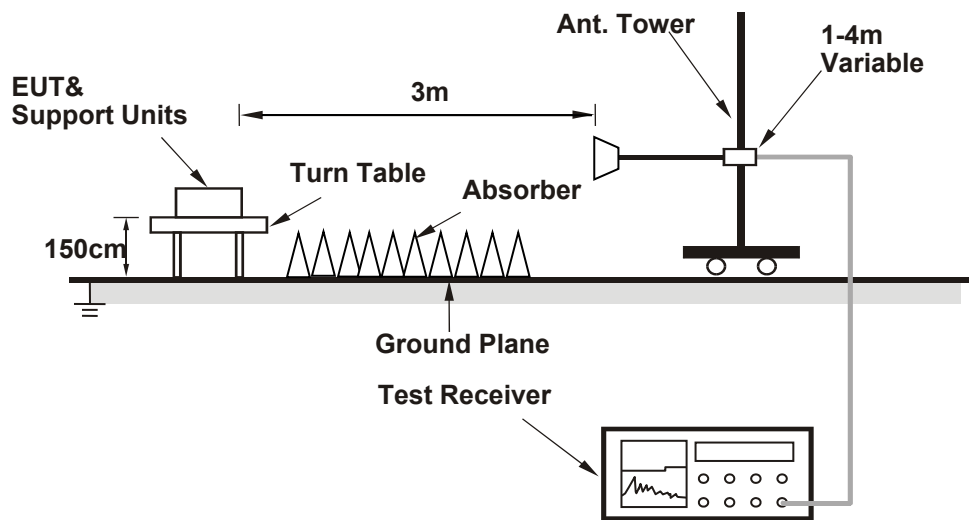
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



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

4.1.6 EUT Operating Condition

- a. Placed the EUT on the testing table.
- b. Controlling software (QDART_Version 4.0.00156.0) has been activated to set the EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results

Above 1GHz Data:

RF Mode	TX 802.11a	Channel	CH 36 : 5180 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	61.4 PK	74.0	-12.6	3.00 H	360	56.2	5.2
2	5150.00	49.4 AV	54.0	-4.6	3.00 H	360	44.2	5.2
3	*5180.00	115.7 PK			3.00 H	360	110.7	5.0
4	*5180.00	105.5 AV			3.00 H	360	100.5	5.0
5	#10360.00	58.3 PK	68.2	-9.9	1.72 H	184	44.1	14.2
6	15540.00	52.9 PK	74.0	-21.1	1.72 H	205	38.0	14.9
7	15540.00	40.8 AV	54.0	-13.2	1.72 H	205	25.9	14.9

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	60.8 PK	74.0	-13.2	2.54 V	354	55.6	5.2
2	5150.00	48.2 AV	54.0	-5.8	2.54 V	354	43.0	5.2
3	*5180.00	114.8 PK			2.54 V	354	109.8	5.0
4	*5180.00	104.9 AV			2.54 V	354	99.9	5.0
5	#10360.00	60.8 PK	68.2	-7.4	1.78 V	203	46.6	14.2
6	15540.00	54.5 PK	74.0	-19.5	2.15 V	193	39.6	14.9
7	15540.00	41.9 AV	54.0	-12.1	2.15 V	193	27.0	14.9

Remarks:

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

RF Mode	TX 802.11a	Channel	CH 40 : 5200 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	65.6 PK	74.0	-8.4	2.92 H	348	60.4	5.2
2	5150.00	50.0 AV	54.0	-4.0	2.92 H	348	44.8	5.2
3	*5200.00	118.8 PK			2.92 H	348	114.0	4.8
4	*5200.00	108.1 AV			2.92 H	348	103.3	4.8
5	5350.00	45.1 PK	74.0	-28.9	2.92 H	348	40.3	4.8
6	5350.00	37.6 AV	54.0	-16.4	2.92 H	348	32.8	4.8
7	#10400.00	58.0 PK	68.2	-10.2	1.68 H	179	43.8	14.2
8	15600.00	52.9 PK	74.0	-21.1	1.67 H	190	37.9	15.0
9	15600.00	40.8 AV	54.0	-13.2	1.67 H	190	25.8	15.0

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	64.2 PK	74.0	-9.8	2.56 V	360	59.0	5.2
2	5150.00	48.3 AV	54.0	-5.7	2.56 V	360	43.1	5.2
3	*5200.00	117.3 PK			2.56 V	360	112.5	4.8
4	*5200.00	106.8 AV			2.56 V	360	102.0	4.8
5	5350.00	44.4 PK	74.0	-29.6	2.56 V	360	39.6	4.8
6	5350.00	36.4 AV	54.0	-17.6	2.56 V	360	31.6	4.8
7	#10400.00	61.6 PK	68.2	-6.6	1.79 V	205	47.4	14.2
8	15600.00	54.6 PK	74.0	-19.4	2.16 V	201	39.6	15.0
9	15600.00	42.4 AV	54.0	-11.6	2.16 V	201	27.4	15.0

Remarks:

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

RF Mode	TX 802.11a	Channel	CH 48 : 5240 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	61.3 PK	74.0	-12.7	2.68 H	346	56.1	5.2
2	5150.00	45.6 AV	54.0	-8.4	2.68 H	346	40.4	5.2
3	*5240.00	116.8 PK			2.68 H	346	112.0	4.8
4	*5240.00	107.6 AV			2.68 H	346	102.8	4.8
5	5350.00	50.7 PK	74.0	-23.3	2.68 H	346	45.9	4.8
6	5350.00	37.9 AV	54.0	-16.1	2.68 H	346	33.1	4.8
7	#10480.00	58.4 PK	68.2	-9.8	1.62 H	186	44.3	14.1
8	15720.00	53.4 PK	74.0	-20.6	1.70 H	184	38.6	14.8
9	15720.00	41.1 AV	54.0	-12.9	1.70 H	184	26.3	14.8

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	60.1 PK	74.0	-13.9	2.60 V	360	54.9	5.2
2	5150.00	44.3 AV	54.0	-9.7	2.60 V	360	39.1	5.2
3	*5240.00	115.4 PK			2.60 V	360	110.6	4.8
4	*5240.00	106.3 AV			2.60 V	360	101.5	4.8
5	5350.00	50.1 PK	74.0	-23.9	2.60 V	360	45.3	4.8
6	5350.00	36.8 AV	54.0	-17.2	2.60 V	360	32.0	4.8
7	#10480.00	62.2 PK	68.2	-6.0	1.83 V	196	48.1	14.1
8	15720.00	54.9 PK	74.0	-19.1	2.11 V	215	40.1	14.8
9	15720.00	42.7 AV	54.0	-11.3	2.11 V	215	27.9	14.8

Remarks:

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

RF Mode	TX 802.11a	Channel	CH 52 : 5260 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	51.8 PK	74.0	-22.2	2.70 H	350	46.6	5.2
2	5150.00	38.9 AV	54.0	-15.1	2.70 H	350	33.7	5.2
3	*5260.00	116.8 PK			2.70 H	350	112.0	4.8
4	*5260.00	106.3 AV			2.70 H	350	101.5	4.8
5	5350.00	51.6 PK	74.0	-22.4	2.70 H	350	46.8	4.8
6	5350.00	40.8 AV	54.0	-13.2	2.70 H	350	36.0	4.8
7	#10520.00	58.9 PK	68.2	-9.3	1.67 H	164	44.8	14.1
8	15780.00	52.9 PK	74.0	-21.1	1.61 H	185	38.4	14.5
9	15780.00	40.6 AV	54.0	-13.4	1.61 H	185	26.1	14.5

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	50.4 PK	74.0	-23.6	2.61 V	360	45.2	5.2
2	5150.00	37.5 AV	54.0	-16.5	2.61 V	360	32.3	5.2
3	*5260.00	115.1 PK			2.61 V	360	110.3	4.8
4	*5260.00	104.7 AV			2.61 V	360	99.9	4.8
5	5350.00	49.8 PK	74.0	-24.2	2.61 V	360	45.0	4.8
6	5350.00	39.4 AV	54.0	-14.6	2.61 V	360	34.6	4.8
7	#10520.00	61.5 PK	68.2	-6.7	1.85 V	217	47.4	14.1
8	15780.00	54.4 PK	74.0	-19.6	2.11 V	201	39.9	14.5
9	15780.00	42.1 AV	54.0	-11.9	2.11 V	201	27.6	14.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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.

RF Mode	TX 802.11a	Channel	CH 60 : 5300 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	116.4 PK			2.66 H	341	111.6	4.8
2	*5300.00	106.4 AV			2.66 H	341	101.6	4.8
3	10600.00	59.0 PK	74.0	-15.0	1.64 H	182	44.8	14.2
4	10600.00	45.1 AV	54.0	-8.9	1.64 H	182	30.9	14.2
5	15900.00	52.6 PK	74.0	-21.4	1.64 H	195	38.1	14.5
6	15900.00	40.1 AV	54.0	-13.9	1.64 H	195	25.6	14.5

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	114.7 PK			2.66 V	360	109.9	4.8
2	*5300.00	104.1 AV			2.66 V	360	99.3	4.8
3	10600.00	60.9 PK	74.0	-13.1	1.71 V	203	46.7	14.2
4	10600.00	47.4 AV	54.0	-6.6	1.71 V	203	33.2	14.2
5	15900.00	52.1 PK	74.0	-21.9	2.09 V	211	37.6	14.5
6	15900.00	42.6 AV	54.0	-11.4	2.09 V	211	28.1	14.5

Remarks:

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

RF Mode	TX 802.11a	Channel	CH 64 : 5320 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	116.8 PK			2.70 H	282	112.0	4.8
2	*5320.00	106.9 AV			2.70 H	282	102.1	4.8
3	5350.00	60.0 PK	74.0	-14.0	2.70 H	282	55.2	4.8
4	5350.00	49.0 AV	54.0	-5.0	2.70 H	282	44.2	4.8
5	10640.00	59.5 PK	74.0	-14.5	1.64 H	211	45.2	14.3
6	10640.00	46.0 AV	54.0	-8.0	1.64 H	211	31.7	14.3
7	15960.00	52.5 PK	74.0	-21.5	1.67 H	200	37.8	14.7
8	15960.00	40.1 AV	54.0	-13.9	1.67 H	200	25.4	14.7

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	113.9 PK			1.60 V	306	109.1	4.8
2	*5320.00	103.6 AV			1.60 V	306	98.8	4.8
3	5350.00	52.9 PK	74.0	-21.1	1.60 V	306	48.1	4.8
4	5350.00	42.3 AV	54.0	-11.7	1.60 V	306	37.5	4.8
5	10640.00	60.8 PK	74.0	-13.2	1.54 V	182	46.5	14.3
6	10640.00	47.1 AV	54.0	-6.9	1.54 V	182	32.8	14.3
7	15960.00	48.0 PK	74.0	-26.0	1.61 V	206	33.3	14.7
8	15960.00	42.3 AV	54.0	-11.7	1.61 V	206	27.6	14.7

Remarks:

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

RF Mode	TX 802.11a	Channel	CH 100 : 5500 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	57.0 PK	74.0	-17.0	2.66 H	280	52.1	4.9
2	5460.00	46.1 AV	54.0	-7.9	2.66 H	280	41.2	4.9
3	#5470.00	63.5 PK	68.2	-4.7	2.66 H	280	58.5	5.0
4	*5500.00	116.0 PK			2.66 H	280	110.9	5.1
5	*5500.00	105.9 AV			2.66 H	280	100.8	5.1
6	11000.00	59.3 PK	74.0	-14.7	1.68 H	215	44.6	14.7
7	11000.00	45.5 AV	54.0	-8.5	1.68 H	215	30.8	14.7
8	#16500.00	48.3 PK	68.2	-19.9	1.71 H	205	31.8	16.5

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	55.5 PK	74.0	-18.5	1.61 V	295	50.6	4.9
2	5460.00	45.8 AV	54.0	-8.2	1.61 V	295	40.9	4.9
3	#5470.00	53.0 PK	68.2	-15.2	1.61 V	295	48.0	5.0
4	*5500.00	113.9 PK			1.61 V	295	108.8	5.1
5	*5500.00	103.7 AV			1.61 V	295	98.6	5.1
6	11000.00	60.5 PK	74.0	-13.5	1.59 V	190	45.8	14.7
7	11000.00	47.1 AV	54.0	-6.9	1.59 V	190	32.4	14.7
8	#16500.00	47.7 PK	68.2	-20.5	1.58 V	207	31.2	16.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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.

RF Mode	TX 802.11a	Channel	CH 116 : 5580 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5580.00	118.0 PK			2.55 H	286	113.0	5.0
2	*5580.00	107.6 AV			2.55 H	286	102.6	5.0
3	11160.00	59.4 PK	74.0	-14.6	1.57 H	188	44.8	14.6
4	11160.00	45.8 AV	54.0	-8.2	1.57 H	188	31.2	14.6
5	#16740.00	53.2 PK	68.2	-15.0	1.68 H	221	35.9	17.3

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5580.00	116.4 PK			1.55 V	309	111.4	5.0
2	*5580.00	105.8 AV			1.55 V	309	100.8	5.0
3	11160.00	61.3 PK	74.0	-12.7	1.68 V	217	46.7	14.6
4	11160.00	47.6 AV	54.0	-6.4	1.68 V	217	33.0	14.6
5	#16740.00	52.5 PK	68.2	-15.7	2.15 V	220	35.2	17.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – 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.

RF Mode	TX 802.11a	Channel	CH 140 : 5700 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	118.2 PK			2.56 H	284	113.1	5.1
2	*5700.00	107.0 AV			2.56 H	284	101.9	5.1
3	#5725.00	64.1 PK	68.2	-4.1	2.56 H	284	58.9	5.2
4	11400.00	59.5 PK	74.0	-14.5	1.57 H	203	44.5	15.0
5	11400.00	46.0 AV	54.0	-8.0	1.57 H	203	31.0	15.0
6	#17100.00	47.8 PK	68.2	-20.4	1.74 H	190	29.3	18.5

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	116.2 PK			1.55 V	314	111.1	5.1
2	*5700.00	105.6 AV			1.55 V	314	100.5	5.1
3	#5725.00	62.8 PK	68.2	-5.4	1.55 V	314	57.6	5.2
4	11400.00	60.8 PK	74.0	-13.2	1.67 V	233	45.8	15.0
5	11400.00	47.2 AV	54.0	-6.8	1.67 V	233	32.2	15.0
6	#17100.00	47.9 PK	68.2	-20.3	2.17 V	216	29.4	18.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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.

RF Mode	TX 802.11a	Channel	CH 144 : 5720 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	50.3 PK	74.0	-23.7	2.58 H	280	45.4	4.9
2	5460.00	38.0 AV	54.0	-16.0	2.58 H	280	33.1	4.9
3	#5470.00	50.9 PK	68.2	-17.3	2.58 H	280	45.9	5.0
4	*5720.00	118.7 PK			2.58 H	280	113.5	5.2
5	*5720.00	107.8 AV			2.58 H	280	102.6	5.2
6	#5850.00	53.7 PK	68.2	-14.5	2.58 H	280	48.2	5.5
7	11440.00	59.0 PK	74.0	-15.0	1.51 H	172	43.9	15.1
8	11440.00	48.2 AV	54.0	-5.8	1.51 H	172	33.1	15.1
9	#17160.00	52.9 PK	68.2	-15.3	1.69 H	218	34.4	18.5

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	48.3 PK	74.0	-25.7	3.16 V	333	43.4	4.9
2	5460.00	37.0 AV	54.0	-17.0	3.16 V	333	32.1	4.9
3	#5470.00	49.0 PK	68.2	-19.2	3.16 V	333	44.0	5.0
4	*5720.00	115.2 PK			3.16 V	333	110.0	5.2
5	*5720.00	105.4 AV			3.16 V	333	100.2	5.2
6	#5850.00	51.9 PK	68.2	-16.3	3.16 V	333	46.4	5.5
7	11440.00	60.3 PK	74.0	-13.7	1.75 V	218	45.2	15.1
8	11440.00	49.5 AV	54.0	-4.5	1.75 V	218	34.4	15.1
9	#17160.00	47.0 PK	68.2	-21.2	2.15 V	223	28.5	18.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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.

RF Mode	TX 802.11a	Channel	CH 149 : 5745 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5648.17	52.9 PK	68.2	-15.3	2.63 H	360	47.9	5.0
2	*5745.00	116.9 PK			2.63 H	360	111.5	5.4
3	*5745.00	107.3 AV			2.63 H	360	101.9	5.4
4	#5977.84	52.9 PK	68.2	-15.3	2.63 H	360	47.1	5.8
5	11490.00	59.3 PK	74.0	-14.7	1.53 H	186	44.2	15.1
6	11490.00	48.4 AV	54.0	-5.6	1.53 H	186	33.3	15.1
7	#17235.00	53.2 PK	68.2	-15.0	1.70 H	213	34.6	18.6

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5561.15	51.8 PK	68.2	-16.4	3.16 V	325	46.8	5.0
2	*5745.00	115.4 PK			3.16 V	325	110.0	5.4
3	*5745.00	105.5 AV			3.16 V	325	100.1	5.4
4	#5928.67	51.4 PK	68.2	-16.8	3.16 V	325	45.8	5.6
5	11490.00	61.3 PK	74.0	-12.7	2.04 V	207	46.2	15.1
6	11490.00	49.4 AV	54.0	-4.6	2.04 V	207	34.3	15.1
7	#17235.00	54.6 PK	68.2	-13.6	2.15 V	223	36.0	18.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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.

RF Mode	TX 802.11a	Channel	CH 157 : 5785 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5552.89	51.7 PK	68.2	-16.5	2.52 H	346	46.7	5.0
2	*5785.00	117.4 PK			2.52 H	346	111.9	5.5
3	*5785.00	107.4 AV			2.52 H	346	101.9	5.5
4	#5934.42	52.2 PK	68.2	-16.0	2.52 H	346	46.6	5.6
5	11570.00	58.4 PK	74.0	-15.6	1.66 H	177	43.5	14.9
6	11570.00	48.3 AV	54.0	-5.7	1.66 H	177	33.4	14.9
7	#17355.00	52.7 PK	68.2	-15.5	1.76 H	227	33.8	18.9

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5639.67	51.7 PK	68.2	-16.5	3.20 V	328	46.7	5.0
2	*5785.00	115.1 PK			3.20 V	328	109.6	5.5
3	*5785.00	105.2 AV			3.20 V	328	99.7	5.5
4	#5960.57	52.3 PK	68.2	-15.9	3.20 V	328	46.5	5.8
5	11570.00	61.4 PK	74.0	-12.6	2.10 V	206	46.5	14.9
6	11570.00	49.5 AV	54.0	-4.5	2.10 V	206	34.6	14.9
7	#17355.00	54.6 PK	68.2	-13.6	2.12 V	239	35.7	18.9

Remarks:

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

RF Mode	TX 802.11a	Channel	CH 165 : 5825 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5578.82	51.8 PK	68.2	-16.4	2.57 H	354	46.8	5.0
2	*5825.00	116.8 PK			2.57 H	354	111.4	5.4
3	*5825.00	106.9 AV			2.57 H	354	101.5	5.4
4	#5952.15	52.4 PK	68.2	-15.8	2.57 H	354	46.7	5.7
5	11650.00	61.0 PK	74.0	-13.0	1.65 H	162	46.2	14.8
6	11650.00	48.8 AV	54.0	-5.2	1.65 H	162	34.0	14.8
7	#17475.00	52.2 PK	68.2	-16.0	1.75 H	217	32.5	19.7

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5578.16	51.4 PK	68.2	-16.8	3.22 V	335	46.4	5.0
2	*5825.00	115.1 PK			3.22 V	335	109.7	5.4
3	*5825.00	105.5 AV			3.22 V	335	100.1	5.4
4	#5989.39	51.6 PK	68.2	-16.6	3.22 V	335	45.8	5.8
5	11650.00	61.0 PK	74.0	-13.0	2.14 V	215	46.2	14.8
6	11650.00	49.2 AV	54.0	-4.8	2.14 V	215	34.4	14.8
7	#17475.00	54.3 PK	68.2	-13.9	2.12 V	231	34.6	19.7

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.

RF Mode	TX 802.11ac (VHT20)	Channel	CH 36 : 5180 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	62.5 PK	74.0	-11.5	2.62 H	277	57.3	5.2
2	5150.00	49.2 AV	54.0	-4.8	2.62 H	277	44.0	5.2
3	*5180.00	117.7 PK			2.62 H	277	112.7	5.0
4	*5180.00	107.0 AV			2.62 H	277	102.0	5.0
5	#10360.00	58.4 PK	68.2	-9.8	1.67 H	188	44.2	14.2
6	15540.00	52.7 PK	74.0	-21.3	1.72 H	193	37.8	14.9
7	15540.00	40.6 AV	54.0	-13.4	1.72 H	193	25.7	14.9

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	61.5 PK	74.0	-12.5	3.30 V	355	56.3	5.2
2	5150.00	48.9 AV	54.0	-5.1	3.30 V	355	43.7	5.2
3	*5180.00	114.8 PK			3.30 V	355	109.8	5.0
4	*5180.00	103.9 AV			3.30 V	355	98.9	5.0
5	#10360.00	61.2 PK	68.2	-7.0	1.82 V	210	47.0	14.2
6	15540.00	54.7 PK	74.0	-19.3	2.20 V	184	39.8	14.9
7	15540.00	41.8 AV	54.0	-12.2	2.20 V	184	26.9	14.9

Remarks:

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

RF Mode	TX 802.11ac (VHT20)	Channel	CH 40 : 5200 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5200.00	118.7 PK			2.62 H	288	113.9	4.8
2	*5200.00	108.2 AV			2.62 H	288	103.4	4.8
3	#10400.00	58.0 PK	68.2	-10.2	1.71 H	177	43.8	14.2
4	15600.00	53.6 PK	74.0	-20.4	1.72 H	178	38.6	15.0
5	15600.00	40.7 AV	54.0	-13.3	1.72 H	178	25.7	15.0

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5200.00	117.0 PK			3.29 V	346	112.2	4.8
2	*5200.00	106.4 AV			3.29 V	346	101.6	4.8
3	#10400.00	61.5 PK	68.2	-6.7	1.85 V	210	47.3	14.2
4	15600.00	55.0 PK	74.0	-19.0	2.23 V	189	40.0	15.0
5	15600.00	42.2 AV	54.0	-11.8	2.23 V	189	27.2	15.0

Remarks:

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

RF Mode	TX 802.11ac (VHT20)	Channel	CH 48 : 5240 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	51.3 PK	74.0	-22.7	2.64 H	277	46.1	5.2
2	5150.00	40.6 AV	54.0	-13.4	2.64 H	277	35.4	5.2
3	*5240.00	118.2 PK			2.64 H	277	113.4	4.8
4	*5240.00	107.6 AV			2.64 H	277	102.8	4.8
5	5350.00	54.0 PK	74.0	-20.0	2.64 H	277	49.2	4.8
6	5350.00	42.0 AV	54.0	-12.0	2.64 H	277	37.2	4.8
7	#10480.00	58.0 PK	68.2	-10.2	1.70 H	175	43.9	14.1
8	15720.00	52.4 PK	74.0	-21.6	1.73 H	204	37.6	14.8
9	15720.00	40.7 AV	54.0	-13.3	1.73 H	204	25.9	14.8

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	59.6 PK	74.0	-14.4	3.26 V	360	54.4	5.2
2	5150.00	43.8 AV	54.0	-10.2	3.26 V	360	38.6	5.2
3	*5240.00	115.1 PK			3.26 V	360	110.3	4.8
4	*5240.00	106.2 AV			3.26 V	360	101.4	4.8
5	5350.00	50.0 PK	74.0	-24.0	3.26 V	360	45.2	4.8
6	5350.00	36.8 AV	54.0	-17.2	3.26 V	360	32.0	4.8
7	#10480.00	61.2 PK	68.2	-7.0	1.83 V	197	47.1	14.1
8	15720.00	54.8 PK	74.0	-19.2	2.24 V	198	40.0	14.8
9	15720.00	42.0 AV	54.0	-12.0	2.24 V	198	27.2	14.8

Remarks:

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

RF Mode	TX 802.11ac (VHT20)	Channel	CH 52 : 5260 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	53.1 PK	74.0	-20.9	2.66 H	276	47.9	5.2
2	5150.00	41.4 AV	54.0	-12.6	2.66 H	276	36.2	5.2
3	*5260.00	118.7 PK			2.66 H	276	113.9	4.8
4	*5260.00	109.4 AV			2.66 H	276	104.6	4.8
5	#10520.00	58.0 PK	68.2	-10.2	1.67 H	202	43.9	14.1
6	15780.00	52.7 PK	74.0	-21.3	1.72 H	183	38.2	14.5
7	15780.00	40.3 AV	54.0	-13.7	1.72 H	183	25.8	14.5

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	49.9 PK	74.0	-24.1	3.24 V	346	44.7	5.2
2	5150.00	37.2 AV	54.0	-16.8	3.24 V	346	32.0	5.2
3	*5260.00	115.3 PK			3.24 V	346	110.5	4.8
4	*5260.00	106.5 AV			3.24 V	346	101.7	4.8
5	#10520.00	61.4 PK	68.2	-6.8	1.84 V	219	47.3	14.1
6	15780.00	54.7 PK	74.0	-19.3	2.18 V	193	40.2	14.5
7	15780.00	41.8 AV	54.0	-12.2	2.18 V	193	27.3	14.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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.

RF Mode	TX 802.11ac (VHT20)	Channel	CH 60 : 5300 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	118.2 PK			2.58 H	268	113.4	4.8
2	*5300.00	107.6 AV			2.58 H	268	102.8	4.8
3	10600.00	61.5 PK	74.0	-12.5	1.61 H	194	47.3	14.2
4	10600.00	49.3 AV	54.0	-4.7	1.61 H	194	35.1	14.2
5	15900.00	52.6 PK	74.0	-21.4	1.71 H	176	38.1	14.5
6	15900.00	40.4 AV	54.0	-13.6	1.71 H	176	25.9	14.5

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5300.00	116.5 PK			3.28 V	340	111.7	4.8
2	*5300.00	105.4 AV			3.28 V	340	100.6	4.8
3	10600.00	61.6 PK	74.0	-12.4	1.88 V	216	47.4	14.2
4	10600.00	47.4 AV	54.0	-6.6	1.88 V	216	33.2	14.2
5	15900.00	54.9 PK	74.0	-19.1	2.21 V	188	40.4	14.5
6	15900.00	43.0 AV	54.0	-11.0	2.21 V	188	28.5	14.5

Remarks:

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

RF Mode	TX 802.11ac (VHT20)	Channel	CH 64 : 5320 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	116.9 PK			2.63 H	276	112.1	4.8
2	*5320.00	106.0 AV			2.63 H	276	101.2	4.8
3	5350.00	61.3 PK	74.0	-12.7	2.63 H	276	56.5	4.8
4	5350.00	49.1 AV	54.0	-4.9	2.63 H	276	44.3	4.8
5	10640.00	60.8 PK	74.0	-13.2	1.57 H	207	46.5	14.3
6	10640.00	48.9 AV	54.0	-5.1	1.57 H	207	34.6	14.3
7	15960.00	52.9 PK	74.0	-21.1	1.68 H	186	38.2	14.7
8	15960.00	40.6 AV	54.0	-13.4	1.68 H	186	25.9	14.7

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5320.00	114.3 PK			3.26 V	342	109.5	4.8
2	*5320.00	104.3 AV			3.26 V	342	99.5	4.8
3	5350.00	54.8 PK	74.0	-19.2	3.26 V	342	50.0	4.8
4	5350.00	44.2 AV	54.0	-9.8	3.26 V	342	39.4	4.8
5	10640.00	61.3 PK	74.0	-12.7	1.88 V	210	47.0	14.3
6	10640.00	47.4 AV	54.0	-6.6	1.88 V	210	33.1	14.3
7	15960.00	54.9 PK	74.0	-19.1	2.26 V	186	40.2	14.7
8	15960.00	43.2 AV	54.0	-10.8	2.26 V	186	28.5	14.7

Remarks:

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

RF Mode	TX 802.11ac (VHT20)	Channel	CH 100 : 5500 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	58.5 PK	74.0	-15.5	2.69 H	278	53.6	4.9
2	5460.00	48.1 AV	54.0	-5.9	2.69 H	278	43.2	4.9
3	#5470.00	63.5 PK	68.2	-4.7	2.69 H	278	58.5	5.0
4	*5500.00	115.6 PK			2.69 H	278	110.5	5.1
5	*5500.00	105.3 AV			2.69 H	278	100.2	5.1
6	11000.00	60.5 PK	74.0	-13.5	1.52 H	195	45.8	14.7
7	11000.00	48.6 AV	54.0	-5.4	1.52 H	195	33.9	14.7
8	#16500.00	52.5 PK	68.2	-15.7	1.71 H	200	36.0	16.5

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	56.5 PK	74.0	-17.5	3.24 V	348	51.6	4.9
2	5460.00	46.3 AV	54.0	-7.7	3.24 V	348	41.4	4.9
3	#5470.00	54.7 PK	68.2	-13.5	3.24 V	348	49.7	5.0
4	*5500.00	113.4 PK			3.24 V	348	108.3	5.1
5	*5500.00	102.2 AV			3.24 V	348	97.1	5.1
6	11000.00	61.2 PK	74.0	-12.8	1.88 V	225	46.5	14.7
7	11000.00	47.6 AV	54.0	-6.4	1.88 V	225	32.9	14.7
8	#16500.00	54.7 PK	68.2	-13.5	2.32 V	191	38.2	16.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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.

RF Mode	TX 802.11ac (VHT20)	Channel	CH 116 : 5580 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5580.00	118.2 PK			2.70 H	284	113.2	5.0
2	*5580.00	107.5 AV			2.70 H	284	102.5	5.0
3	11160.00	61.9 PK	74.0	-12.1	1.57 H	202	47.3	14.6
4	11160.00	49.5 AV	54.0	-4.5	1.57 H	202	34.9	14.6
5	#16740.00	53.0 PK	68.2	-15.2	1.66 H	180	35.7	17.3

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5580.00	115.8 PK			3.27 V	350	110.8	5.0
2	*5580.00	105.0 AV			3.27 V	350	100.0	5.0
3	11160.00	62.3 PK	74.0	-11.7	1.71 V	204	47.7	14.6
4	11160.00	49.5 AV	54.0	-4.5	1.71 V	204	34.9	14.6
5	#16740.00	55.2 PK	68.2	-13.0	2.22 V	197	37.9	17.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – 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.

RF Mode	TX 802.11ac (VHT20)	Channel	CH 140 : 5700 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	117.1 PK			2.47 H	358	112.0	5.1
2	*5700.00	106.0 AV			2.47 H	358	100.9	5.1
3	#5725.00	63.3 PK	68.2	-4.9	2.47 H	358	58.1	5.2
4	11400.00	62.2 PK	74.0	-11.8	1.60 H	188	47.2	15.0
5	11400.00	49.7 AV	54.0	-4.3	1.60 H	188	34.7	15.0
6	#17100.00	53.1 PK	68.2	-15.1	1.70 H	195	34.6	18.5

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5700.00	114.3 PK			3.21 V	342	109.2	5.1
2	*5700.00	104.5 AV			3.21 V	342	99.4	5.1
3	#5725.00	61.9 PK	68.2	-6.3	3.21 V	342	56.7	5.2
4	11400.00	62.5 PK	74.0	-11.5	1.71 V	193	47.5	15.0
5	11400.00	49.7 AV	54.0	-4.3	1.71 V	193	34.7	15.0
6	#17100.00	55.7 PK	68.2	-12.5	2.25 V	189	37.2	18.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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.

RF Mode	TX 802.11ac (VHT20)	Channel	CH 144 : 5720 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	50.9 PK	74.0	-23.1	2.55 H	291	46.0	4.9
2	5460.00	38.4 AV	54.0	-15.6	2.55 H	291	33.5	4.9
3	#5470.00	50.6 PK	68.2	-17.6	2.55 H	291	45.6	5.0
4	*5720.00	118.6 PK			2.55 H	291	113.4	5.2
5	*5720.00	107.9 AV			2.55 H	291	102.7	5.2
6	#5850.00	54.2 PK	68.2	-14.0	2.55 H	291	48.7	5.5
7	11440.00	58.9 PK	74.0	-15.1	1.48 H	164	43.8	15.1
8	11440.00	47.9 AV	54.0	-6.1	1.48 H	164	32.8	15.1
9	#17160.00	53.1 PK	68.2	-15.1	1.70 H	210	34.6	18.5

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	48.3 PK	74.0	-25.7	3.17 V	342	43.4	4.9
2	5460.00	37.1 AV	54.0	-16.9	3.17 V	342	32.2	4.9
3	#5470.00	48.8 PK	68.2	-19.4	3.17 V	342	43.8	5.0
4	*5720.00	115.1 PK			3.17 V	342	109.9	5.2
5	*5720.00	105.5 AV			3.17 V	342	100.3	5.2
6	#5850.00	52.0 PK	68.2	-16.2	3.17 V	342	46.5	5.5
7	11440.00	60.8 PK	74.0	-13.2	1.81 V	219	45.7	15.1
8	11440.00	49.7 AV	54.0	-4.3	1.81 V	219	34.6	15.1
9	#17160.00	46.6 PK	68.2	-21.6	2.17 V	223	28.1	18.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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.

RF Mode	TX 802.11ac (VHT20)	Channel	CH 149 : 5745 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5596.07	53.3 PK	68.2	-14.9	2.64 H	281	48.3	5.0
2	*5745.00	119.2 PK			2.64 H	281	113.8	5.4
3	*5745.00	108.5 AV			2.64 H	281	103.1	5.4
4	#5977.60	53.0 PK	68.2	-15.2	2.64 H	281	47.2	5.8
5	11490.00	60.7 PK	74.0	-13.3	1.70 H	164	45.6	15.1
6	11490.00	48.5 AV	54.0	-5.5	1.70 H	164	33.4	15.1
7	#17235.00	52.0 PK	68.2	-16.2	1.75 H	215	33.4	18.6

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5616.48	51.8 PK	68.2	-16.4	3.14 V	313	46.8	5.0
2	*5745.00	115.9 PK			3.14 V	313	110.5	5.4
3	*5745.00	104.7 AV			3.14 V	313	99.3	5.4
4	#5973.53	52.2 PK	68.2	-16.0	3.14 V	313	46.4	5.8
5	11490.00	61.0 PK	74.0	-13.0	2.15 V	207	45.9	15.1
6	11490.00	49.0 AV	54.0	-5.0	2.15 V	207	33.9	15.1
7	#17235.00	54.9 PK	68.2	-13.3	2.12 V	235	36.3	18.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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.

RF Mode	TX 802.11ac (VHT20)	Channel	CH 157 : 5785 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5573.05	53.1 PK	68.2	-15.1	2.61 H	279	48.0	5.1
2	*5785.00	119.1 PK			2.61 H	279	113.6	5.5
3	*5785.00	108.5 AV			2.61 H	279	103.0	5.5
4	#6009.82	53.2 PK	68.2	-15.0	2.61 H	279	47.4	5.8
5	11570.00	60.7 PK	74.0	-13.3	1.61 H	161	45.8	14.9
6	11570.00	48.5 AV	54.0	-5.5	1.61 H	161	33.6	14.9
7	#17355.00	51.6 PK	68.2	-16.6	1.68 H	223	32.7	18.9

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5615.76	51.3 PK	68.2	-16.9	3.20 V	302	46.3	5.0
2	*5785.00	115.6 PK			3.20 V	302	110.1	5.5
3	*5785.00	104.6 AV			3.20 V	302	99.1	5.5
4	#5996.84	51.8 PK	68.2	-16.4	3.20 V	302	46.0	5.8
5	11570.00	61.4 PK	74.0	-12.6	2.07 V	200	46.5	14.9
6	11570.00	49.7 AV	54.0	-4.3	2.07 V	200	34.8	14.9
7	#17355.00	54.5 PK	68.2	-13.7	2.12 V	252	35.6	18.9

Remarks:

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

RF Mode	TX 802.11ac (VHT20)	Channel	CH 165 : 5825 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5617.63	51.6 PK	68.2	-16.6	2.64 H	280	46.6	5.0
2	*5825.00	118.7 PK			2.64 H	280	113.3	5.4
3	*5825.00	107.9 AV			2.64 H	280	102.5	5.4
4	#5941.28	53.4 PK	68.2	-14.8	2.64 H	280	47.8	5.6
5	11650.00	60.8 PK	74.0	-13.2	1.70 H	177	46.0	14.8
6	11650.00	48.8 AV	54.0	-5.2	1.70 H	177	34.0	14.8
7	#17475.00	52.2 PK	68.2	-16.0	1.71 H	209	32.5	19.7

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5561.77	50.6 PK	68.2	-17.6	3.15 V	318	45.6	5.0
2	*5825.00	115.7 PK			3.15 V	318	110.3	5.4
3	*5825.00	104.6 AV			3.15 V	318	99.2	5.4
4	#5928.02	53.2 PK	68.2	-15.0	3.15 V	318	47.6	5.6
5	11650.00	60.7 PK	74.0	-13.3	2.14 V	217	45.9	14.8
6	11650.00	49.1 AV	54.0	-4.9	2.14 V	217	34.3	14.8
7	#17475.00	54.2 PK	68.2	-14.0	2.07 V	246	34.5	19.7

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.

RF Mode	TX 802.11ac (VHT40)	Channel	CH 38 : 5190 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	55.2 PK	74.0	-18.8	1.84 H	278	50.0	5.2
2	5150.00	48.5 AV	54.0	-5.5	1.84 H	278	43.3	5.2
3	*5190.00	107.4 PK			1.84 H	278	102.5	4.9
4	*5190.00	98.5 AV			1.84 H	278	93.6	4.9
5	5412.88	58.4 PK	74.0	-15.6	2.62 H	282	53.6	4.8
6	5412.88	49.5 AV	54.0	-4.5	2.62 H	282	44.7	4.8
7	#10380.00	59.6 PK	68.2	-8.6	1.58 H	197	45.5	14.1
8	15570.00	51.6 PK	74.0	-22.4	1.66 H	202	36.6	15.0
9	15570.00	40.2 AV	54.0	-13.8	1.66 H	202	25.2	15.0

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	57.8 PK	74.0	-16.2	3.16 V	298	52.6	5.2
2	5150.00	48.0 AV	54.0	-6.0	3.16 V	298	42.8	5.2
3	*5190.00	106.1 PK			3.16 V	298	101.2	4.9
4	*5190.00	97.5 AV			3.16 V	298	92.6	4.9
5	5412.88	50.7 PK	74.0	-23.3	2.70 V	274	45.9	4.8
6	5412.88	40.0 AV	54.0	-14.0	2.70 V	274	35.2	4.8
7	#10380.00	59.1 PK	68.2	-9.1	2.19 V	202	45.0	14.1
8	15570.00	49.6 PK	74.0	-24.4	2.82 V	205	34.6	15.0
9	15570.00	38.6 AV	54.0	-15.4	2.82 V	205	23.6	15.0

Remarks:

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

RF Mode	TX 802.11ac (VHT40)	Channel	CH 46 : 5230 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	52.9 PK	74.0	-21.1	2.62 H	275	47.7	5.2
2	5150.00	43.5 AV	54.0	-10.5	2.62 H	275	38.3	5.2
3	*5230.00	112.0 PK			2.62 H	275	107.2	4.8
4	*5230.00	103.1 AV			2.62 H	275	98.3	4.8
5	5350.00	53.3 PK	74.0	-20.7	2.62 H	275	48.5	4.8
6	5350.00	43.8 AV	54.0	-10.2	2.62 H	275	39.0	4.8
7	5452.34	59.5 PK	74.0	-14.5	2.56 H	261	54.6	4.9
8	5452.34	49.9 AV	54.0	-4.1	2.56 H	261	45.0	4.9
9	#10460.00	60.0 PK	68.2	-8.2	1.59 H	198	45.9	14.1
10	15690.00	51.2 PK	74.0	-22.8	1.68 H	198	36.2	15.0
11	15690.00	40.6 AV	54.0	-13.4	1.68 H	198	25.6	15.0

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	52.6 PK	74.0	-21.4	3.20 V	292	47.4	5.2
2	5150.00	43.0 AV	54.0	-11.0	3.20 V	292	37.8	5.2
3	*5230.00	109.5 PK			3.20 V	292	104.7	4.8
4	*5230.00	101.1 AV			3.20 V	292	96.3	4.8
5	5350.00	52.6 PK	74.0	-21.4	3.20 V	292	47.8	4.8
6	5350.00	43.0 AV	54.0	-11.0	3.20 V	292	38.2	4.8
7	5452.34	58.6 PK	74.0	-15.4	3.00 V	277	53.7	4.9
8	5452.34	49.0 AV	54.0	-5.0	3.00 V	277	44.1	4.9
9	#10460.00	59.4 PK	68.2	-8.8	2.17 V	215	45.3	14.1
10	15690.00	49.4 PK	74.0	-24.6	2.86 V	199	34.4	15.0
11	15690.00	38.3 AV	54.0	-15.7	2.86 V	199	23.3	15.0

Remarks:

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

RF Mode	TX 802.11ac (VHT40)	Channel	CH 54 : 5270 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5047.50	55.8 PK	74.0	-18.2	2.71 H	282	50.9	4.9
2	5047.50	47.2 AV	54.0	-6.8	2.71 H	282	42.3	4.9
3	5150.00	50.1 PK	74.0	-23.9	2.71 H	277	44.9	5.2
4	5150.00	40.7 AV	54.0	-13.3	2.71 H	277	35.5	5.2
5	*5270.00	116.3 PK			2.71 H	277	111.5	4.8
6	*5270.00	106.4 AV			2.71 H	277	101.6	4.8
7	5350.00	60.1 PK	74.0	-13.9	2.71 H	277	55.3	4.8
8	5350.00	49.4 AV	54.0	-4.6	2.71 H	277	44.6	4.8
9	#10540.00	59.4 PK	68.2	-8.8	1.63 H	203	45.2	14.2
10	15810.00	52.8 PK	74.0	-21.2	1.74 H	198	38.3	14.5
11	15810.00	42.0 AV	54.0	-12.0	1.74 H	198	27.5	14.5

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5047.50	55.1 PK	74.0	-18.9	3.00 V	300	50.2	4.9
2	5047.50	47.0 AV	54.0	-7.0	3.00 V	300	42.1	4.9
3	5150.00	49.9 PK	74.0	-24.1	3.21 V	323	44.7	5.2
4	5150.00	39.4 AV	54.0	-14.6	3.21 V	323	34.2	5.2
5	*5270.00	112.9 PK			3.21 V	323	108.1	4.8
6	*5270.00	102.9 AV			3.21 V	323	98.1	4.8
7	5350.00	59.6 PK	74.0	-14.4	3.21 V	323	54.8	4.8
8	5350.00	48.4 AV	54.0	-5.6	3.21 V	323	43.6	4.8
9	#10540.00	52.4 PK	68.2	-15.8	2.05 V	206	38.2	14.2
10	15810.00	52.3 PK	74.0	-21.7	2.70 V	211	37.8	14.5
11	15810.00	41.3 AV	54.0	-12.7	2.70 V	211	26.8	14.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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.

RF Mode	TX 802.11ac (VHT40)	Channel	CH 62 : 5310 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5310.00	111.8 PK			2.66 H	280	107.0	4.8
2	*5310.00	102.5 AV			2.66 H	280	97.7	4.8
3	5350.00	59.9 PK	74.0	-14.1	2.66 H	280	55.1	4.8
4	5350.00	49.5 AV	54.0	-4.5	2.66 H	280	44.7	4.8
5	10620.00	60.1 PK	74.0	-13.9	1.53 H	207	45.8	14.3
6	10620.00	48.6 AV	54.0	-5.4	1.53 H	207	34.3	14.3
7	15930.00	50.5 PK	74.0	-23.5	1.65 H	192	35.9	14.6
8	15930.00	39.9 AV	54.0	-14.1	1.65 H	192	25.3	14.6

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5310.00	109.3 PK			3.21 V	298	104.5	4.8
2	*5310.00	101.1 AV			3.21 V	298	96.3	4.8
3	5350.00	53.7 PK	74.0	-20.3	3.21 V	298	48.9	4.8
4	5350.00	43.3 AV	54.0	-10.7	3.21 V	298	38.5	4.8
5	10620.00	59.8 PK	74.0	-14.2	2.13 V	203	45.5	14.3
6	10620.00	43.9 AV	54.0	-10.1	2.13 V	203	29.6	14.3
7	15930.00	49.5 PK	74.0	-24.5	2.82 V	190	34.9	14.6
8	15930.00	38.4 AV	54.0	-15.6	2.82 V	190	23.8	14.6

Remarks:

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

RF Mode	TX 802.11ac (VHT40)	Channel	CH 102 : 5510 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	59.1 PK	74.0	-14.9	2.66 H	280	54.2	4.9
2	5460.00	47.8 AV	54.0	-6.2	2.66 H	280	42.9	4.9
3	#5470.00	64.0 PK	68.2	-4.2	2.66 H	280	59.0	5.0
4	*5510.00	110.9 PK			2.66 H	280	105.8	5.1
5	*5510.00	102.1 AV			2.66 H	280	97.0	5.1
6	#5733.50	60.2 PK	68.2	-8.0	2.66 H	283	54.9	5.3
7	11020.00	60.2 PK	74.0	-13.8	1.55 H	195	45.6	14.6
8	11020.00	48.4 AV	54.0	-5.6	1.55 H	195	33.8	14.6
9	#16530.00	50.6 PK	68.2	-17.6	1.62 H	196	34.0	16.6

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	58.4 PK	74.0	-15.6	3.26 V	310	53.5	4.9
2	5460.00	42.9 AV	54.0	-11.1	3.26 V	310	38.0	4.9
3	#5470.00	53.8 PK	68.2	-14.4	3.26 V	310	48.8	5.0
4	*5510.00	109.3 PK			3.26 V	310	104.2	5.1
5	*5510.00	100.8 AV			3.26 V	310	95.7	5.1
6	#5733.50	52.2 PK	68.2	-16.0	3.26 V	310	46.9	5.3
7	11020.00	59.4 PK	74.0	-14.6	2.11 V	207	44.8	14.6
8	11020.00	43.6 AV	54.0	-10.4	2.11 V	207	29.0	14.6
9	#16530.00	49.6 PK	68.2	-18.6	2.78 V	202	33.0	16.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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.

RF Mode	TX 802.11ac (VHT40)	Channel	CH 110 : 5550 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5470.00	59.7 PK	68.2	-8.5	2.59 H	278	54.7	5.0
2	*5550.00	113.8 PK			2.59 H	278	108.8	5.0
3	*5550.00	105.1 AV			2.59 H	278	100.1	5.0
4	#5725.00	49.8 PK	68.2	-18.4	2.59 H	278	44.6	5.2
5	#5773.23	62.4 PK	68.2	-5.8	2.75 H	282	57.0	5.4
6	11100.00	61.6 PK	74.0	-12.4	1.68 H	201	47.3	14.3
7	11100.00	49.7 AV	54.0	-4.3	1.68 H	201	35.4	14.3
8	#16650.00	51.4 PK	68.2	-16.8	1.70 H	189	34.4	17.0

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5470.00	58.4 PK	68.2	-9.8	3.20 V	320	53.4	5.0
2	*5550.00	112.6 PK			3.20 V	320	107.6	5.0
3	*5550.00	103.3 AV			3.20 V	320	98.3	5.0
4	#5725.00	47.6 PK	68.2	-20.6	3.20 V	320	42.4	5.2
5	#5773.23	60.6 PK	68.2	-7.6	3.20 V	320	55.2	5.4
6	11100.00	52.8 PK	74.0	-21.2	2.09 V	202	38.5	14.3
7	11100.00	44.4 AV	54.0	-9.6	2.09 V	202	30.1	14.3
8	#16650.00	52.2 PK	68.2	-16.0	2.76 V	198	35.2	17.0

Remarks:

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

RF Mode	TX 802.11ac (VHT40)	Channel	CH 134 : 5670 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5670.00	113.4 PK			2.63 H	282	108.3	5.1
2	*5670.00	104.3 AV			2.63 H	282	99.2	5.1
3	#5725.00	63.6 PK	68.2	-4.6	2.63 H	282	58.4	5.2
4	11340.00	61.4 PK	74.0	-12.6	1.59 H	192	46.3	15.1
5	11340.00	49.6 AV	54.0	-4.4	1.59 H	192	34.5	15.1
6	#17010.00	50.8 PK	68.2	-17.4	1.80 H	202	32.2	18.6

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5670.00	112.7 PK			3.17 V	323	107.6	5.1
2	*5670.00	102.4 AV			3.17 V	323	97.3	5.1
3	#5725.00	61.6 PK	68.2	-6.6	3.17 V	323	56.4	5.2
4	11340.00	53.1 PK	74.0	-20.9	2.14 V	193	38.0	15.1
5	11340.00	44.8 AV	54.0	-9.2	2.14 V	193	29.7	15.1
6	#17010.00	49.6 PK	68.2	-18.6	2.68 V	190	31.0	18.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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.

RF Mode	TX 802.11ac (VHT40)	Channel	CH 142 : 5710 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	51.7 PK	74.0	-22.3	2.63 H	282	46.8	4.9
2	5460.00	42.6 AV	54.0	-11.4	2.63 H	282	37.7	4.9
3	#5470.00	54.6 PK	68.2	-13.6	2.63 H	282	49.6	5.0
4	*5710.00	114.0 PK			2.63 H	282	108.8	5.2
5	*5710.00	104.7 AV			2.63 H	282	99.5	5.2
6	#5850.00	55.4 PK	68.2	-12.8	2.63 H	282	49.9	5.5
7	11420.00	61.9 PK	74.0	-12.1	1.65 H	215	46.9	15.0
8	11420.00	49.8 AV	54.0	-4.2	1.65 H	215	34.8	15.0
9	#17130.00	50.9 PK	68.2	-17.3	1.78 H	200	32.4	18.5

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	50.4 PK	74.0	-23.6	3.22 V	319	45.5	4.9
2	5460.00	41.3 AV	54.0	-12.7	3.22 V	319	36.4	4.9
3	#5470.00	53.2 PK	68.2	-15.0	3.22 V	319	48.2	5.0
4	*5710.00	112.4 PK			3.22 V	319	107.2	5.2
5	*5710.00	102.6 AV			3.22 V	319	97.4	5.2
6	#5850.00	54.0 PK	68.2	-14.2	3.22 V	319	48.5	5.5
7	11420.00	52.9 PK	74.0	-21.1	2.15 V	200	37.9	15.0
8	11420.00	44.6 AV	54.0	-9.4	2.15 V	200	29.6	15.0
9	#17130.00	52.4 PK	68.2	-15.8	2.73 V	190	33.9	18.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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.

RF Mode	TX 802.11ac (VHT40)	Channel	CH 151 : 5755 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5585.67	52.8 PK	68.2	-15.4	2.63 H	282	47.8	5.0
2	*5755.00	113.9 PK			2.63 H	282	108.5	5.4
3	*5755.00	105.2 AV			2.63 H	282	99.8	5.4
4	#5977.70	57.5 PK	68.2	-10.7	2.63 H	282	51.7	5.8
5	11510.00	61.1 PK	74.0	-12.9	1.57 H	189	46.0	15.1
6	11510.00	49.0 AV	54.0	-5.0	1.57 H	189	33.9	15.1
7	#17265.00	50.7 PK	68.2	-17.5	1.74 H	201	32.1	18.6

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5632.09	51.1 PK	68.2	-17.1	3.27 V	323	46.1	5.0
2	*5755.00	110.2 PK			3.27 V	323	104.8	5.4
3	*5755.00	101.0 AV			3.27 V	323	95.6	5.4
4	#5978.58	57.6 PK	68.2	-10.6	3.27 V	323	51.8	5.8
5	11510.00	53.5 PK	74.0	-20.5	2.12 V	204	38.4	15.1
6	11510.00	44.8 AV	54.0	-9.2	2.12 V	204	29.7	15.1
7	#17265.00	52.8 PK	68.2	-15.4	2.77 V	193	34.2	18.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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.

RF Mode	TX 802.11ac (VHT40)	Channel	CH 159 : 5795 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5572.84	56.3 PK	68.2	-11.9	2.61 H	274	51.2	5.1
2	*5795.00	113.9 PK			2.61 H	274	108.4	5.5
3	*5795.00	105.1 AV			2.61 H	274	99.6	5.5
4	#6018.18	56.8 PK	68.2	-11.4	2.61 H	274	51.0	5.8
5	11590.00	60.7 PK	74.0	-13.3	1.68 H	194	45.9	14.8
6	11590.00	49.0 AV	54.0	-5.0	1.68 H	194	34.2	14.8
7	#17385.00	50.3 PK	68.2	-17.9	1.70 H	209	31.3	19.0

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5553.79	50.8 PK	68.2	-17.4	3.27 V	319	45.8	5.0
2	*5795.00	110.7 PK			3.27 V	319	105.2	5.5
3	*5795.00	101.3 AV			3.27 V	319	95.8	5.5
4	#6018.30	55.3 PK	68.2	-12.9	3.27 V	319	49.5	5.8
5	11590.00	53.6 PK	74.0	-20.4	2.16 V	202	38.8	14.8
6	11590.00	45.1 AV	54.0	-8.9	2.16 V	202	30.3	14.8
7	#17385.00	52.5 PK	68.2	-15.7	2.79 V	180	33.5	19.0

Remarks:

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

RF Mode	TX 802.11ac (VHT80)	Channel	CH 42 : 5210 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	61.0 PK	74.0	-13.0	2.64 H	279	55.8	5.2
2	5150.00	49.9 AV	54.0	-4.1	2.64 H	279	44.7	5.2
3	*5210.00	106.0 PK			2.64 H	279	101.2	4.8
4	*5210.00	98.2 AV			2.64 H	279	93.4	4.8
5	5350.00	52.6 PK	74.0	-21.4	2.64 H	279	47.8	4.8
6	5350.00	42.2 AV	54.0	-11.8	2.64 H	279	37.4	4.8
7	#10420.00	57.5 PK	68.2	-10.7	1.49 H	219	43.4	14.1
8	15630.00	50.4 PK	74.0	-23.6	1.60 H	208	35.4	15.0
9	15630.00	38.1 AV	54.0	-15.9	1.60 H	208	23.1	15.0

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	59.1 PK	74.0	-14.9	3.26 V	307	53.9	5.2
2	5150.00	47.6 AV	54.0	-6.4	3.26 V	307	42.4	5.2
3	*5210.00	104.8 PK			3.26 V	307	100.0	4.8
4	*5210.00	96.6 AV			3.26 V	307	91.8	4.8
5	5350.00	51.0 PK	74.0	-23.0	3.26 V	307	46.2	4.8
6	5350.00	40.3 AV	54.0	-13.7	3.26 V	307	35.5	4.8
7	#10420.00	58.6 PK	68.2	-9.6	2.14 V	209	44.5	14.1
8	15630.00	48.3 PK	74.0	-25.7	2.81 V	183	33.3	15.0
9	15630.00	37.2 AV	54.0	-16.8	2.81 V	183	22.2	15.0

Remarks:

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

RF Mode	TX 802.11ac (VHT80)	Channel	CH 58 : 5290 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	51.0 PK	74.0	-23.0	2.63 H	279	45.8	5.2
2	5150.00	41.3 AV	54.0	-12.7	2.63 H	279	36.1	5.2
3	*5290.00	106.3 PK			2.63 H	279	101.5	4.8
4	*5290.00	97.2 AV			2.63 H	279	92.4	4.8
5	5350.00	59.3 PK	74.0	-14.7	2.63 H	279	54.5	4.8
6	5350.00	49.6 AV	54.0	-4.4	2.63 H	279	44.8	4.8
7	#10580.00	57.9 PK	68.2	-10.3	1.44 H	215	43.7	14.2
8	15870.00	50.9 PK	74.0	-23.1	1.63 H	205	36.4	14.5
9	15870.00	38.4 AV	54.0	-15.6	1.63 H	205	23.9	14.5

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5150.00	51.2 PK	74.0	-22.8	3.24 V	293	46.0	5.2
2	5150.00	41.3 AV	54.0	-12.7	3.24 V	293	36.1	5.2
3	*5290.00	104.9 PK			3.24 V	293	100.1	4.8
4	*5290.00	95.7 AV			3.24 V	293	90.9	4.8
5	5350.00	53.7 PK	74.0	-20.3	3.24 V	293	48.9	4.8
6	5350.00	44.0 AV	54.0	-10.0	3.24 V	293	39.2	4.8
7	#10580.00	58.9 PK	68.2	-9.3	2.17 V	200	44.7	14.2
8	15870.00	48.0 PK	74.0	-26.0	2.76 V	181	33.5	14.5
9	15870.00	37.5 AV	54.0	-16.5	2.76 V	181	23.0	14.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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.

RF Mode	TX 802.11ac (VHT80)	Channel	CH 106 : 5530 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5454.64	60.8 PK	74.0	-13.2	2.64 H	281	55.9	4.9
2	5454.64	49.3 AV	54.0	-4.7	2.64 H	281	44.4	4.9
3	5460.00	59.4 PK	74.0	-14.6	2.64 H	281	54.5	4.9
4	5460.00	48.0 AV	54.0	-6.0	2.64 H	281	43.1	4.9
5	#5470.00	59.1 PK	68.2	-9.1	2.64 H	281	54.1	5.0
6	*5530.00	106.3 PK			2.64 H	281	101.2	5.1
7	*5530.00	96.7 AV			2.64 H	281	91.6	5.1
8	#5725.00	50.4 PK	68.2	-17.8	2.64 H	281	45.2	5.2
9	11060.00	57.5 PK	74.0	-16.5	1.42 H	229	43.0	14.5
10	11060.00	47.3 AV	54.0	-6.7	1.42 H	229	32.8	14.5
11	#16590.00	50.8 PK	68.2	-17.4	1.61 H	205	34.0	16.8

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5454.64	60.7 PK	74.0	-13.3	3.28 V	292	55.8	4.9
2	5454.64	43.2 AV	54.0	-10.8	3.28 V	292	38.3	4.9
3	5460.00	59.0 PK	74.0	-15.0	3.28 V	292	54.1	4.9
4	5460.00	42.1 AV	54.0	-11.9	3.28 V	292	37.2	4.9
5	#5470.00	60.5 PK	68.2	-7.7	3.28 V	292	55.5	5.0
6	*5530.00	104.4 PK			3.28 V	292	99.3	5.1
7	*5530.00	96.3 AV			3.28 V	292	91.2	5.1
8	#5725.00	51.8 PK	68.2	-16.4	3.28 V	292	46.6	5.2
9	11060.00	55.9 PK	74.0	-18.1	2.19 V	205	41.4	14.5
10	11060.00	45.3 AV	54.0	-8.7	2.19 V	205	30.8	14.5
11	#16590.00	49.6 PK	68.2	-18.6	2.73 V	194	32.8	16.8

Remarks:

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

RF Mode	TX 802.11ac (VHT80)	Channel	CH 122 : 5610 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5610.00	111.1 PK			2.70 H	284	106.1	5.0
2	*5610.00	102.2 AV			2.70 H	284	97.2	5.0
3	#5725.00	64.0 PK	68.2	-4.2	2.70 H	284	58.8	5.2
4	11220.00	57.1 PK	74.0	-16.9	1.38 H	213	42.1	15.0
5	11220.00	47.7 AV	54.0	-6.3	1.38 H	213	32.7	15.0
6	#16830.00	50.4 PK	68.2	-17.8	1.61 H	200	32.6	17.8

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	*5610.00	104.9 PK			3.25 V	298	99.9	5.0
2	*5610.00	96.9 AV			3.25 V	298	91.9	5.0
3	#5725.00	62.4 PK	68.2	-5.8	3.25 V	298	57.2	5.2
4	11220.00	56.0 PK	74.0	-18.0	2.22 V	194	41.0	15.0
5	11220.00	45.8 AV	54.0	-8.2	2.22 V	194	30.8	15.0
6	#16830.00	49.8 PK	68.2	-18.4	2.79 V	204	32.0	17.8

Remarks:

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

RF Mode	TX 802.11ac (VHT80)	Channel	CH 138 : 5690 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	51.0 PK	74.0	-23.0	2.61 H	284	46.1	4.9
2	5460.00	40.1 AV	54.0	-13.9	2.61 H	284	35.2	4.9
3	#5470.00	52.4 PK	68.2	-15.8	2.61 H	284	47.4	5.0
4	*5690.00	111.0 PK			2.61 H	284	105.9	5.1
5	*5690.00	101.8 AV			2.61 H	284	96.7	5.1
6	#5850.00	56.1 PK	68.2	-12.1	2.61 H	284	50.6	5.5
7	11380.00	57.9 PK	74.0	-16.1	1.49 H	214	42.8	15.1
8	11380.00	47.0 AV	54.0	-7.0	1.49 H	214	31.9	15.1
9	#17070.00	50.8 PK	68.2	-17.4	1.59 H	201	32.2	18.6

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5460.00	50.6 PK	74.0	-23.4	3.25 V	320	45.7	4.9
2	5460.00	40.0 AV	54.0	-14.0	3.25 V	320	35.1	4.9
3	#5470.00	51.3 PK	68.2	-16.9	3.25 V	320	46.3	5.0
4	*5690.00	105.1 PK			3.25 V	320	100.0	5.1
5	*5690.00	96.8 AV			3.25 V	320	91.7	5.1
6	#5850.00	54.2 PK	68.2	-14.0	3.25 V	320	48.7	5.5
7	11380.00	56.0 PK	74.0	-18.0	2.26 V	188	40.9	15.1
8	11380.00	46.1 AV	54.0	-7.9	2.26 V	188	31.0	15.1
9	#17070.00	49.5 PK	68.2	-18.7	2.77 V	200	30.9	18.6

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. 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.

RF Mode	TX 802.11ac (VHT80)	Channel	CH 155 : 5775 MHz
Frequency Range	1GHz ~ 40GHz	Detector Function	Peak (PK) Average (AV)

Antenna Polarity & Test Distance : Horizontal at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5638.91	55.7 PK	68.2	-12.5	2.57 H	283	50.7	5.0
2	*5775.00	110.7 PK			2.57 H	283	105.2	5.5
3	*5775.00	101.5 AV			2.57 H	283	96.0	5.5
4	#5930.13	51.7 PK	68.2	-16.5	2.57 H	283	46.1	5.6
5	11550.00	57.7 PK	74.0	-16.3	1.49 H	212	42.7	15.0
6	11550.00	47.3 AV	54.0	-6.7	1.49 H	212	32.3	15.0
7	#17325.00	50.4 PK	68.2	-17.8	1.65 H	220	31.7	18.7

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	#5638.39	51.4 PK	68.2	-16.8	3.23 V	320	46.4	5.0
2	*5775.00	106.9 PK			3.23 V	320	101.4	5.5
3	*5775.00	97.6 AV			3.23 V	320	92.1	5.5
4	#5934.94	52.6 PK	68.2	-15.6	3.23 V	320	47.0	5.6
5	11550.00	55.8 PK	74.0	-18.2	2.21 V	192	40.8	15.0
6	11550.00	46.0 AV	54.0	-8.0	2.21 V	192	31.0	15.0
7	#17325.00	49.6 PK	68.2	-18.6	2.73 V	213	30.9	18.7

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.

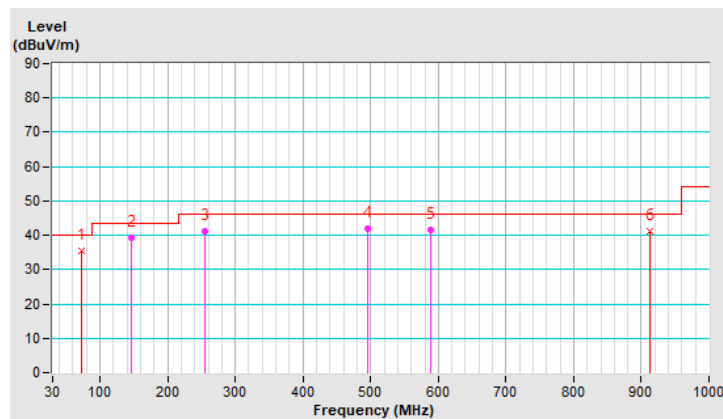
Below 1GHz Data:

RF Mode	TX 802.11a	Channel	CH 149 : 5745 MHz
Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	73.31	35.3 QP	40.0	-4.7	3.00 H	121	46.6	-11.3
2	146.05	39.4 QP	43.5	-4.1	2.00 H	157	47.0	-7.6
3	254.38	41.2 QP	46.0	-4.8	1.00 H	240	49.7	-8.5
4	496.12	41.8 QP	46.0	-4.2	2.00 H	329	43.0	-1.2
5	587.98	41.6 QP	46.0	-4.4	1.50 H	71	40.7	0.9
6	911.89	41.1 QP	46.0	-4.9	1.50 H	208	34.0	7.1

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – 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.



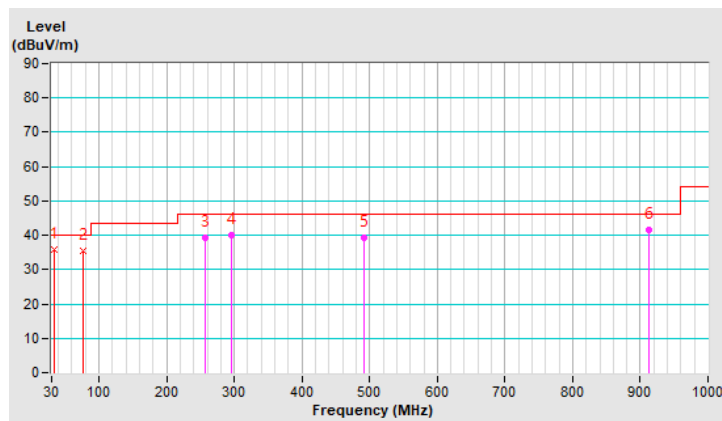
RF Mode	TX 802.11a	Channel	CH 149 : 5745 MHz
Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)

Antenna Polarity & Test Distance : Vertical at 3 m

No	Frequency (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	34.38	35.7 QP	40.0	-4.3	1.00 V	314	44.8	-9.1
2	76.23	35.5 QP	40.0	-4.5	3.00 V	151	47.6	-12.1
3	257.37	39.4 QP	46.0	-6.6	2.00 V	5	47.8	-8.4
4	295.16	40.0 QP	46.0	-6.0	1.50 V	358	46.8	-6.8
5	492.22	39.4 QP	46.0	-6.6	1.00 V	150	40.6	-1.2
6	912.05	41.5 QP	46.0	-4.5	1.00 V	201	34.3	7.2

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – 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.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver R&S	ESCS 30	847124/029	Oct. 20, 2020	Oct. 19, 2021
Line-Impedance Stabilization Network (for EUT) R&S	ESH3-Z5	848773/004	Oct. 27, 2020	Oct. 26, 2021
Line-Impedance Stabilization Network (for Peripheral) R&S	ESH3-Z5	835239/001	Mar. 26, 2021	Mar. 25, 2022
50 ohms Terminator	50	3	Oct. 26, 2020	Oct. 25, 2021
RF Cable	5D-FB	COCCAB-001	Sep. 26, 2020	Sep. 25, 2021
Fixed attenuator EMCI	STI02-2200-10	005	Aug. 29, 2020	Aug. 28, 2021
Software BVADT	BVADT_Cond_ V7.3.7.4	NA	NA	NA

Note:

1. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in Conduction 1.
- 3 Tested Date: Apr. 09, 2021

4.2.3 Test Procedure

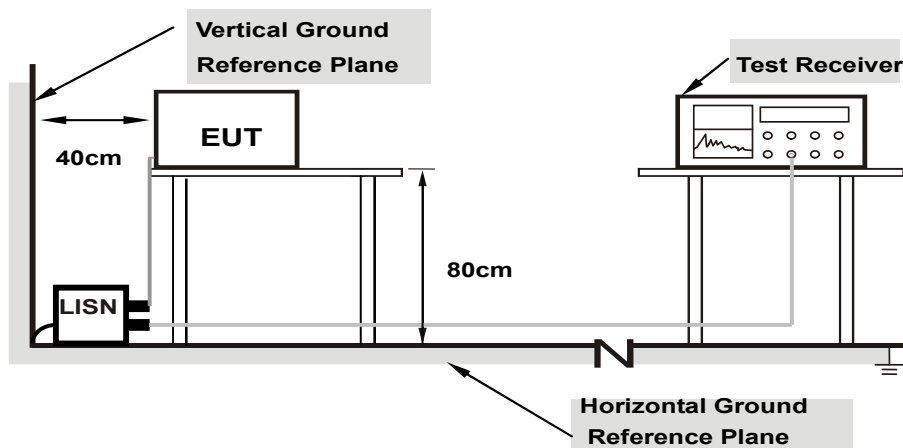
- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance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

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

4.2.4 Deviation from Test Standard

No deviation.

4.2.5 Test Setup



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

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

4.2.6 EUT Operating Condition

Same as 4.1.6.

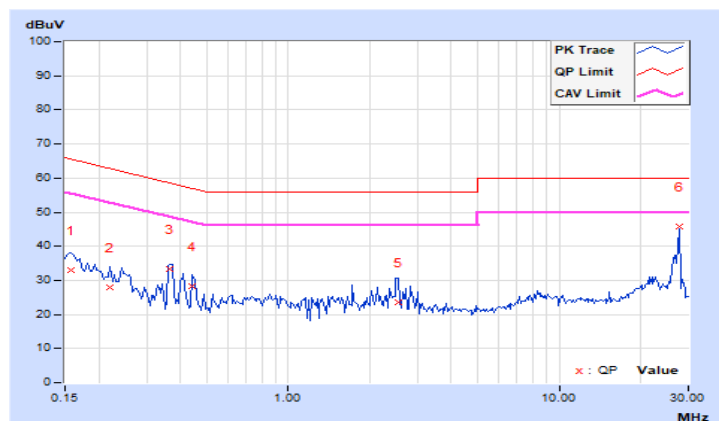
4.2.7 Test Results

RF Mode	TX 802.11a	Channel	CH 149 : 5745 MHz
Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz

Phase Of Power : Line (L)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15781	9.95	23.08	16.18	33.03	26.13	65.58	55.58	-32.55	-29.45
2	0.22031	9.97	17.87	10.55	27.84	20.52	62.81	52.81	-34.97	-32.29
3	0.36484	9.99	23.26	16.98	33.25	26.97	58.62	48.62	-25.37	-21.65
4	0.43906	9.99	18.31	0.92	28.30	10.91	57.08	47.08	-28.78	-36.17
5	2.53906	10.10	13.32	1.89	23.42	11.99	56.00	46.00	-32.58	-34.01
6	27.64844	11.27	34.50	33.58	45.77	44.85	60.00	50.00	-14.23	-5.15

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

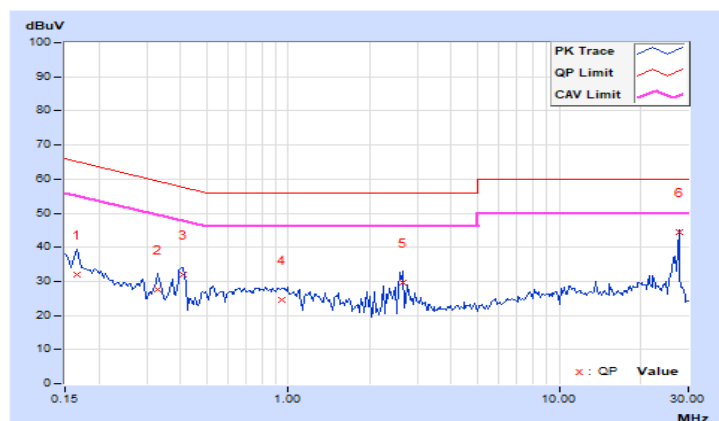


RF Mode	TX 802.11a	Channel	CH 149 : 5745 MHz
Frequency Range	150kHz ~ 30MHz	Detector Function & Resolution Bandwidth	Quasi-Peak (QP) / Average (AV), 9kHz

Phase Of Power : Neutral (N)										
No	Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)		Emission Level (dBuV)		Limit (dBuV)		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.16562	9.93	22.09	17.18	32.02	27.11	65.18	55.18	-33.16	-28.07
2	0.32969	9.96	17.77	13.58	27.73	23.54	59.46	49.46	-31.73	-25.92
3	0.40781	9.96	21.86	18.05	31.82	28.01	57.69	47.69	-25.87	-19.68
4	0.95078	10.00	14.47	4.47	24.47	14.47	56.00	46.00	-31.53	-31.53
5	2.65625	10.07	19.45	0.93	29.52	11.00	56.00	46.00	-26.48	-35.00
6	27.64844	10.91	33.64	32.84	44.55	43.75	60.00	50.00	-15.45	-6.25

Remarks:

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



4.3 Transmit Power Measurement

4.3.1 Limits of Transmit Power Measurement

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

*B is the 26 dB emission bandwidth in megahertz

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

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

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

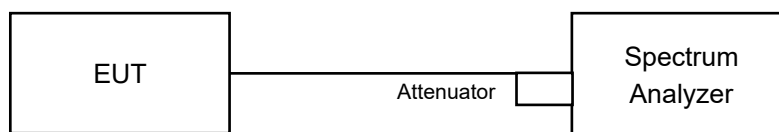
Array Gain = $5 \log(N_{ANT}/N_{SS})$ dB or 3 dB, whichever is less for 20-MHz channel widths with $N_{ANT} \geq 5$.

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

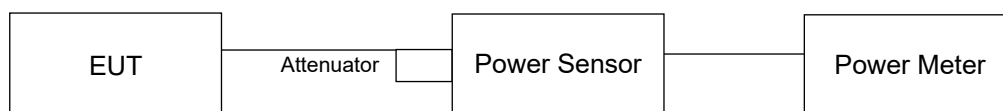
4.3.2 Test Setup

FOR POWER OUTPUT MEASUREMENT

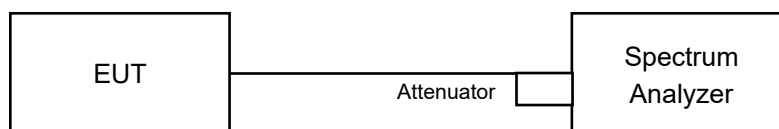
For channel straddling 5725MHz:



For other channels:



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 POWER OUTPUT MEASUREMENT

For channel straddling 5725MHz:

For 802.11a, 802.11ac (VHT20)

Follow FCC KDB 789033 UNII test procedure:

Method SA-1

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1MHz.
3. Set the VBW $\geq 3 \times$ RBW.
4. Number of points in sweep ≥ 2 Span / RBW.
5. Sweep time = auto.
6. Set trigger to free run (duty cycle ≥ 98 percent)
7. Detector = RMS.
8. Trace average at least 100 traces in power averaging mode
9. Compute power by integrating the spectrum across the 26 dB EBW of the signal.

For other modulation mode

Follow FCC KDB 789033 UNII test procedure:

Method SA-2

1. Set span to encompass the emission bandwidth (EBW) of the signal.
2. Set RBW = 1MHz.
3. Set the VBW $\geq 3 \times$ RBW.
4. Number of points in sweep ≥ 2 Span / RBW.
5. Sweep time = auto.
6. Detector = RMS.
7. Trace average at least 100 traces in power averaging mode
8. Compute power by integrating the spectrum across the 26 dB EBW of the signal.
9. Duty factor need added to measured value (duty cycle < 98 percent).

For other channels:

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. 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 Results

Power Output:

802.11a

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	13.44	13.42	44.059	16.44	22.08	Pass
40	5200	13.43	13.36	43.706	16.41	22.08	Pass
48	5240	13.57	13.00	42.704	16.30	22.08	Pass
52	5260	13.06	12.11	36.486	15.62	21.29	Pass
60	5300	12.78	12.55	36.956	15.68	21.29	Pass
64	5320	12.72	12.65	37.115	15.70	21.29	Pass
100	5500	12.94	13.04	39.816	16.00	21.3	Pass
116	5580	13.02	13.11	40.509	16.08	21.3	Pass
140	5700	12.62	13.36	39.958	16.02	21.3	Pass
*144 (U-NII-2C Band)	5720	13.77	12.60	42.02	16.23	20.38	Pass
*144 (U-NII-3 Band)	5720	7.15	6.01	9.178	9.63	28.3	Pass
149	5745	19.82	20.73	214.244	23.31	28.3	Pass
157	5785	19.34	20.36	194.544	22.89	28.3	Pass
165	5825	19.10	20.30	188.435	22.75	28.3	Pass

Note: * Test was performed in accordance with measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

1. For U-NII-1: The max. gain is 7.92 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to $24 - (7.92 - 6) = 22.08$ dBm.
2. For U-NII-2A: The max. gain is 8.71 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(8.71-6)".
3. For U-NII-2C: The max. gain is 8.7 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(8.7-6)".
4. For U-NII-3: The max. gain is 7.7 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to $30 - (7.7 - 6) = 28.3$ dBm.

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
52	5260	22.68	24.55 > 24
60	5300	22.88	24.59 > 24
64	5320	22.79	24.57 > 24
100	5500	22.93	24.6 > 24
116	5580	23.17	24.64 > 24
140	5700	23.07	24.63 > 24
144 (U-NII-2C Band)	5720	16.16	23.08 < 24

Note: For U-NII-2A U-NII-2C Band output power limitation is determined based on 26dBc bandwidth.

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
36	5180	13.84	13.56	46.909	16.71	22.08	Pass
40	5200	13.76	13.46	45.95	16.62	22.08	Pass
48	5240	13.82	13.36	45.776	16.61	22.08	Pass
52	5260	12.96	12.42	37.228	15.71	21.29	Pass
60	5300	12.97	12.54	37.763	15.77	21.29	Pass
64	5320	13.00	12.20	36.548	15.63	21.29	Pass
100	5500	12.67	12.65	36.9	15.67	21.3	Pass
116	5580	13.08	12.91	39.867	16.01	21.3	Pass
140	5700	12.77	13.33	40.451	16.07	21.3	Pass
*144 (U-NII-2C Band)	5720	12.31	13.14	37.628	15.76	20.6	Pass
*144 (U-NII-3 Band)	5720	6.52	7.36	9.932	9.97	28.3	Pass
149	5745	19.77	20.65	210.987	23.24	28.3	Pass
157	5785	19.44	20.19	192.374	22.84	28.3	Pass
165	5825	19.21	20.19	187.84	22.74	28.3	Pass

Note: * Test was performed in accordance with measurement follow FCC KDB 789033 UNII test procedure Method SA-1 and use spectrum analyzer test.

1. For U-NII-1: The max. gain is 7.92 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to $24 - (7.92 - 6) = 22.08$ dBm.
2. For U-NII-2A: The max. gain is 8.71 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(8.71-6)".
3. For U-NII-2C: The max. gain is 8.7 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(8.7-6)".
4. For U-NII-3: The max. gain is 7.7 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to $30 - (7.7 - 6) = 28.3$ dBm.

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
52	5260	23.45	24.7 > 24
60	5300	23.11	24.63 > 24
64	5320	24.71	24.92 > 24
100	5500	24.46	24.88 > 24
116	5580	24.18	24.83 > 24
140	5700	24.61	24.91 > 24
144 (U-NII-2C Band)	5720	17.01	23.3 < 24

Note: For U-NII-2A U-NII-2C Band output power limitation is determined based on 26dBc bandwidth.

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
38	5190	13.42	13.14	42.585	16.29	22.08	Pass
46	5230	15.48	15.28	69.047	18.39	22.08	Pass
54	5270	15.90	15.42	73.738	18.68	21.29	Pass
62	5310	13.91	13.44	46.684	16.69	21.29	Pass
102	5510	15.12	15.18	65.47	18.16	21.3	Pass
110	5550	15.64	15.53	72.371	18.60	21.3	Pass
134	5670	15.33	15.71	71.358	18.53	21.3	Pass
*142 (U-NII-2C Band)	5710	15.18	14.90	65.994	18.20	21.3	Pass
*142 (U-NII-3 Band)	5710	4.96	5.09	6.574	8.18	28.3	Pass
151	5755	19.64	20.67	208.726	23.20	28.3	Pass
159	5795	19.76	20.51	207.084	23.16	28.3	Pass

- Note: * Test was performed in accordance with measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test. The duty factor was included in the total power.
1. For U-NII-1: The max. gain is 7.92 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to $24 - (7.92 - 6) = 22.08$ dBm.
 2. For U-NII-2A: The max. gain is 8.71 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(8.71-6)".
 3. For U-NII-2C: The max. gain is 8.7 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(8.7-6)".
 4. For U-NII-3: The max. gain is 7.7 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to $30 - (7.7 - 6) = 28.3$ dBm.

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
54	5270	42.2	27.25 > 24
62	5310	42.49	27.28 > 24
102	5510	42.43	27.27 > 24
110	5550	42.1	27.24 > 24
134	5670	42.35	27.26 > 24
142 (U-NII-2C Band)	5710	36.12	26.57 > 24

Note: For U-NII-2A U-NII-2C Band output power limitation is determined based on 26dBc bandwidth.

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	Average Power (dBm)		Total Power (mW)	Total Power (dBm)	Limit (dBm)	Pass / Fail
		Chain 0	Chain 1				
42	5210	12.16	12.07	32.55	15.13	22.08	Pass
58	5290	12.18	11.55	30.809	14.89	21.29	Pass
106	5530	14.27	14.34	53.894	17.32	21.3	Pass
122	5610	15.93	16.34	82.227	19.15	21.3	Pass
*138 (U-NII-2C Band)	5690	14.63	15.85	71.697	18.56	21.3	Pass
*138 (U-NII-3 Band)	5690	1.40	2.54	3.373	5.28	28.3	Pass
155	5775	19.29	20.38	194.062	22.88	28.3	Pass

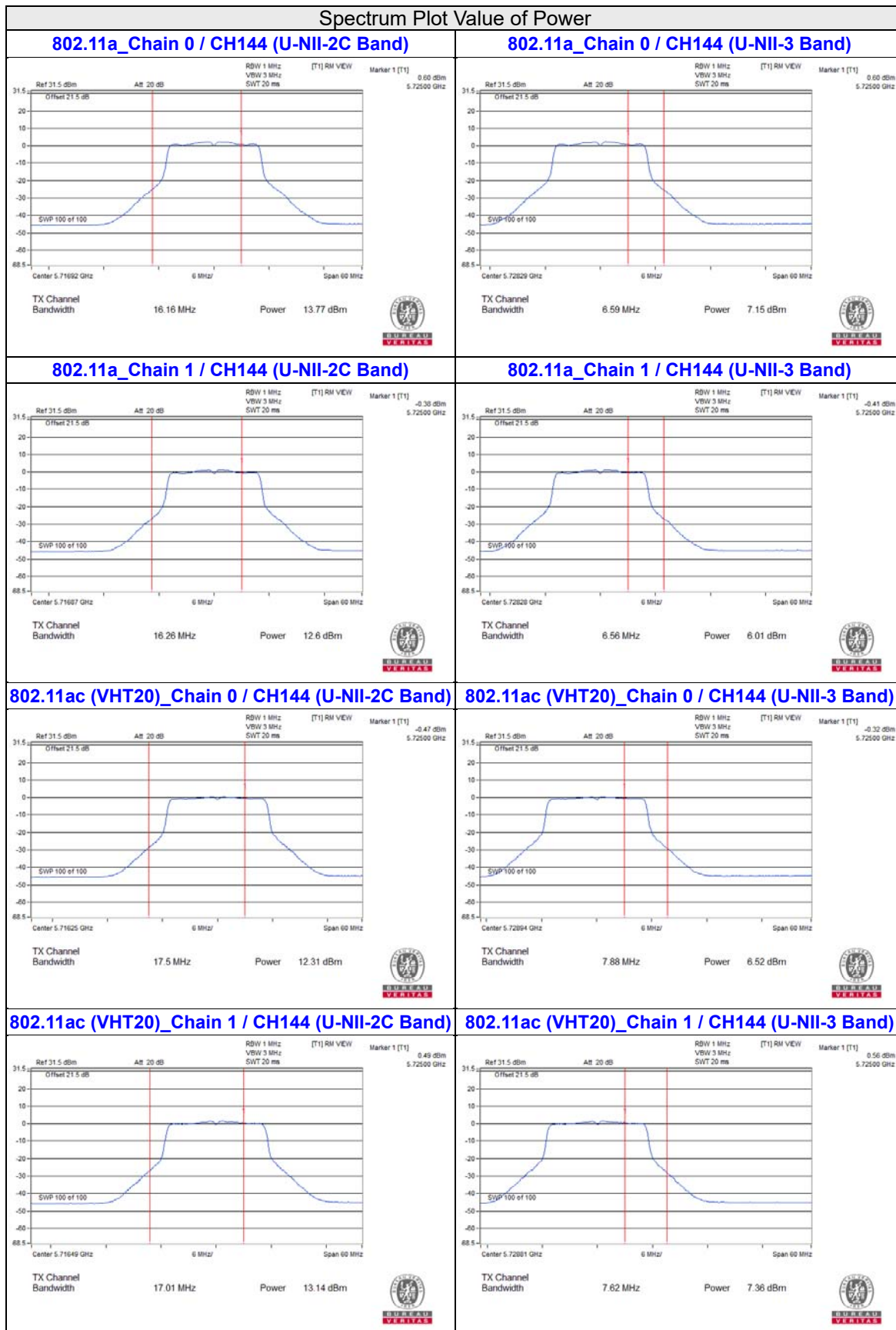
Note: * Test was performed in accordance with measurement follow FCC KDB 789033 UNII test procedure Method SA-2 and use spectrum analyzer test. The duty factor was included in the total power.

1. For U-NII-1: The max. gain is 7.92 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to $24 - (7.92 - 6) = 22.08$ dBm.
2. For U-NII-2A: The max. gain is 8.71 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(8.71-6)".
3. For U-NII-2C: The max. gain is 8.7 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to "Determined Conducted Limit-(8.7-6)".
4. For U-NII-3: The max. gain is 7.7 dBi > 6 dBi, therefore the limit needs to reduce, so the power limit shall be reduced to $30 - (7.7 - 6) = 28.3$ dBm.

Determined Power Limit			
Channel Number	Freq.(MHz)	Min. B(MHz)	Determined Conducted Power Limit (dBm)
58	5290	84.42	30.26 > 24
106	5530	83.99	30.24 > 24
122	5610	83.77	30.23 > 24
138 (U-NII-2C Band)	5690	76.79	29.85 > 24

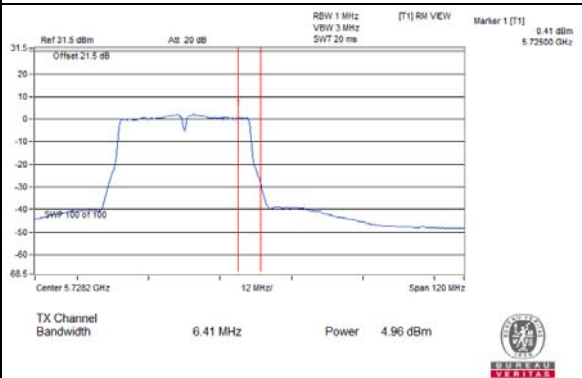
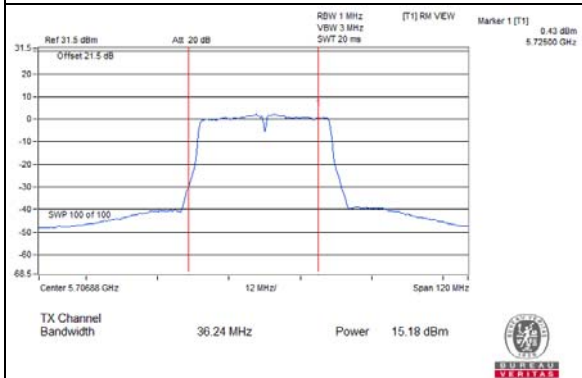
Note: For U-NII-2A U-NII-2C Band output power limitation is determined based on 26dBc bandwidth.

For channel straddling 5725MHz of Power

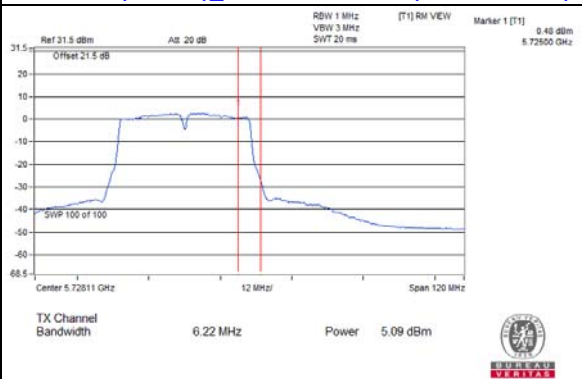
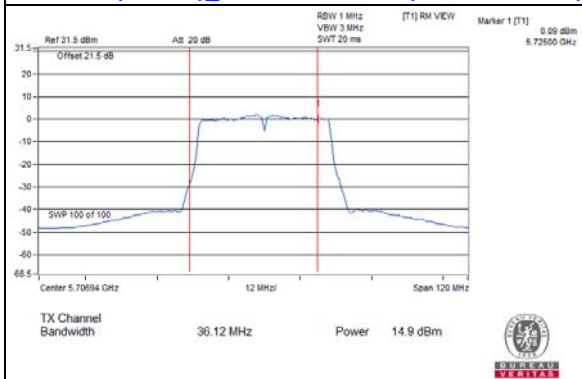


Spectrum Plot Value of Power

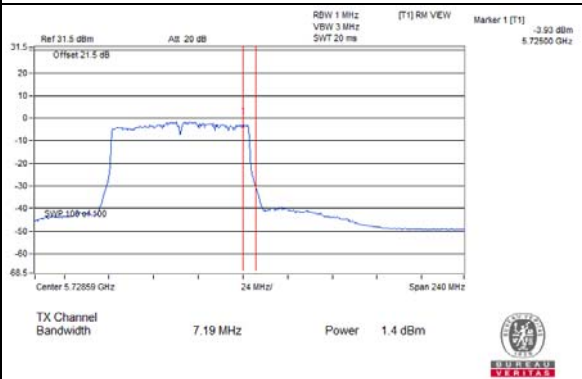
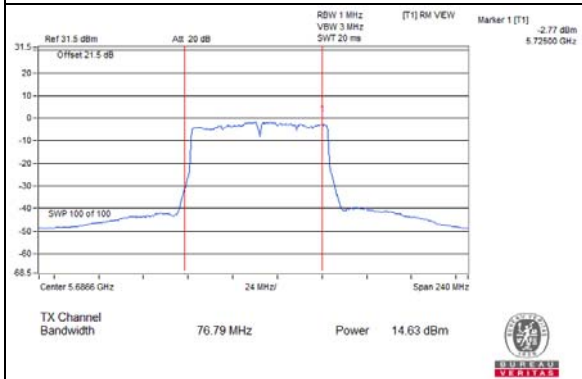
802.11ac (VHT40)_Chain 0 / CH142 (U-NII-2C Band) 802.11ac (VHT40)_Chain 0 / CH142 (U-NII-3 Band)



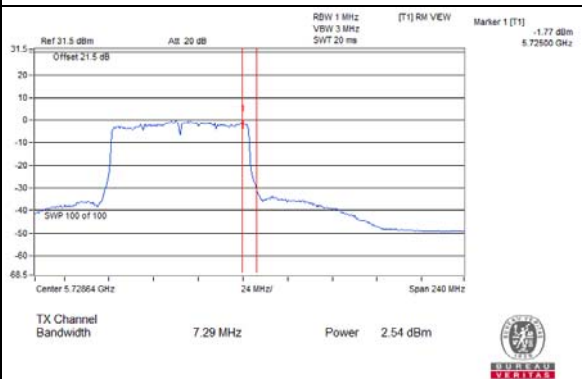
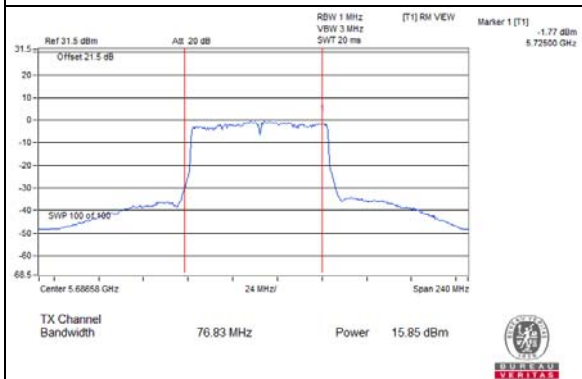
802.11ac (VHT40)_Chain 1 / CH142 (U-NII-2C Band) 802.11ac (VHT40)_Chain 1 / CH142 (U-NII-3 Band)



802.11ac (VHT80)_Chain 0 / CH138 (U-NII-2C Band) 802.11ac (VHT80)_Chain 0 / CH138 (U-NII-3 Band)



802.11ac (VHT80)_Chain 1 / CH138 (U-NII-2C Band) 802.11ac (VHT80)_Chain 1 / CH138 (U-NII-3 Band)



26dB Bandwidth:
802.11a

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	23.13	22.68
60	5300	23.13	22.88
64	5320	22.79	22.92
100	5500	23.18	22.93
116	5580	23.17	23.32
140	5700	23.4	23.07
144 (U-NII-2C Band)	5720	16.16	16.26

802.11ac (VHT20)

Channel	Frequency (MHz)	26dB Bandwidth (MHz)	
		Chain 0	Chain 1
52	5260	23.45	24.11
60	5300	23.11	24.54
64	5320	24.71	25.12
100	5500	24.46	24.5
116	5580	24.34	24.18
140	5700	24.61	24.68
144 (U-NII-2C Band)	5720	17.5	17.01

802.11ac (VHT40)

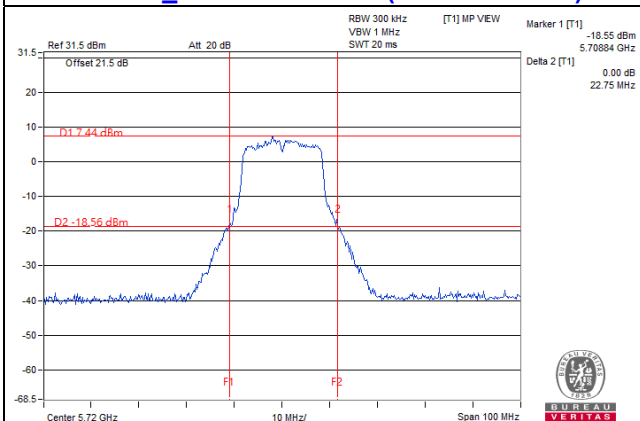
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	
		Chain 0	Chain 1
54	5270	42.2	42.5
62	5310	42.49	42.58
102	5510	42.43	42.58
110	5550	42.45	42.1
134	5670	42.35	42.41
142 (U-NII-2C Band)	5710	36.24	36.12

802.11ac (VHT80)

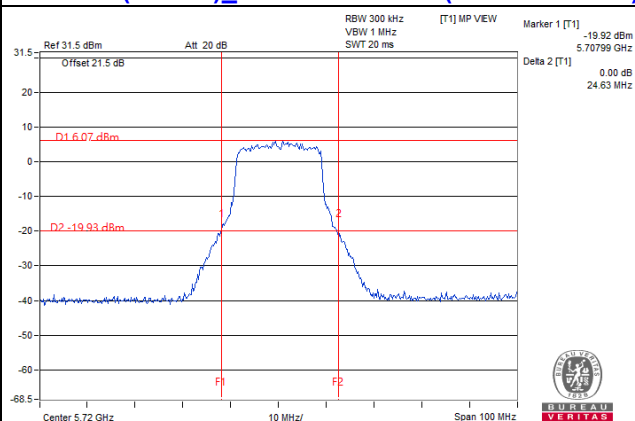
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	
		Chain 0	Chain 1
58	5290	84.98	84.42
106	5530	84.3	83.99
122	5610	84.77	83.77
138 (U-NII-2C Band)	5690	76.79	76.83

Spectrum Plot of Worst Value

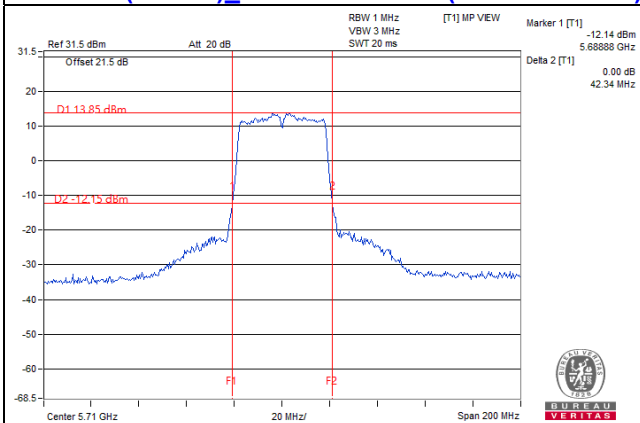
802.11a_Chain 0 / CH144 (U-NII-2C Band)



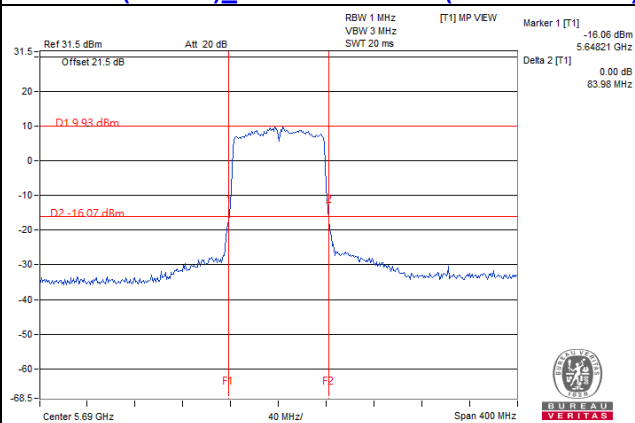
802.11ac (VHT20)_Chain 1 / CH144 (U-NII-2C Band)



802.11ac (VHT40)_Chain 1 / CH142 (U-NII-2C Band)



802.11ac (VHT80)_Chain 0 / CH138 (U-NII-2C Band)

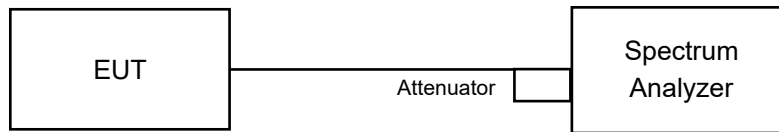


Note:

- For CH144 (U-NII-2C) = 5725MHz - Marker 1
- For CH142 (U-NII-2C) = 5725MHz - Marker 1
- For CH138 (U-NII-2C) = 5725MHz - Marker 1

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	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	16.68	16.8
40	5200	16.68	16.68
48	5240	16.8	16.68
52	5260	16.8	16.68
60	5300	16.68	16.68
64	5320	16.8	16.68
100	5500	16.8	16.68
116	5580	16.8	16.68
140	5700	16.8	16.68
144 (U-NII-2C Band)	5720	13.4	13.28
144 (U-NII-3 Band)	5720	3.4	3.4
149	5745	16.92	17.28
157	5785	16.92	16.92
165	5825	16.8	16.92

802.11ac (VHT20)

Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
36	5180	17.88	17.88
40	5200	17.88	17.88
48	5240	17.88	17.88
52	5260	17.88	17.88
60	5300	17.88	17.88
64	5320	18	17.88
100	5500	17.88	17.88
116	5580	17.76	17.88
140	5700	18	17.88
144 (U-NII-2C Band)	5720	14	13.88
144 (U-NII-3 Band)	5720	4	4
149	5745	18.12	18.12
157	5785	18	18.12
165	5825	17.88	18.12

802.11ac (VHT40)

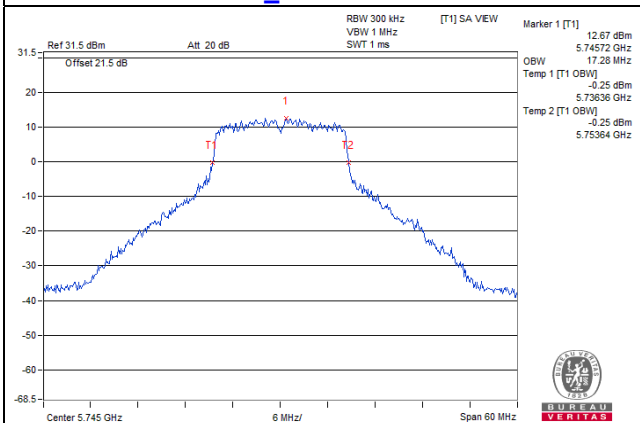
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
38	5190	36.72	36.48
46	5230	36.72	36.48
54	5270	36.48	36.48
62	5310	36.72	36.48
102	5510	36.72	36.48
110	5550	36.72	36.48
134	5670	36.48	36.48
142 (U-NII-2C Band)	5710	33.24	33.24
142 (U-NII-3 Band)	5710	3.24	3.24
151	5755	36.72	36.96
159	5795	36.48	36.72

802.11ac (VHT80)

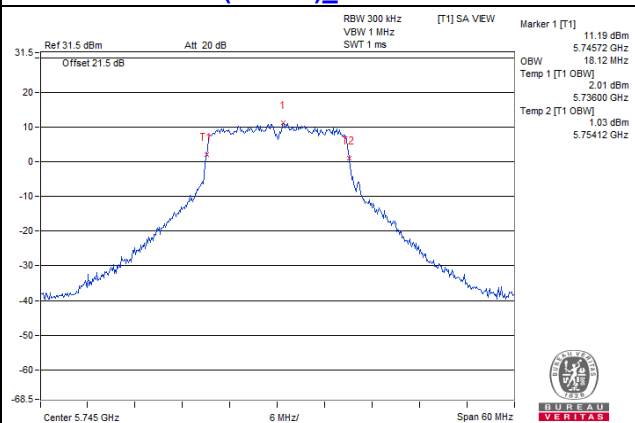
Channel	Frequency (MHz)	Occupied Bandwidth (MHz)	
		Chain 0	Chain 1
42	5210	75.84	75.84
58	5290	75.84	75.84
106	5530	75.84	75.84
122	5610	75.84	75.84
138 (U-NII-2C Band)	5690	72.92	72.92
138 (U-NII-3 Band)	5690	2.92	2.92
155	5775	75.84	76.32

Spectrum Plot of Max. Value

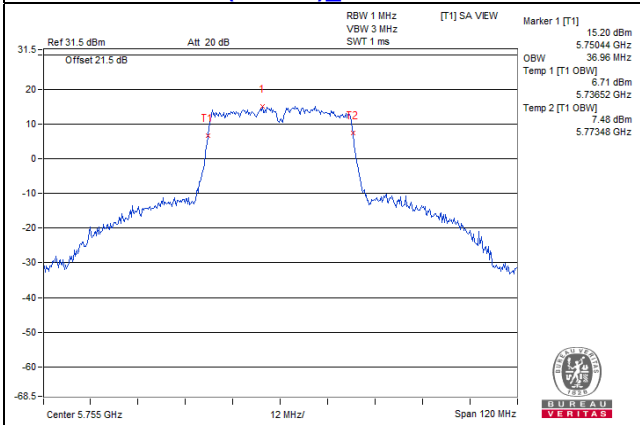
802.11a_Chain 1 / CH149



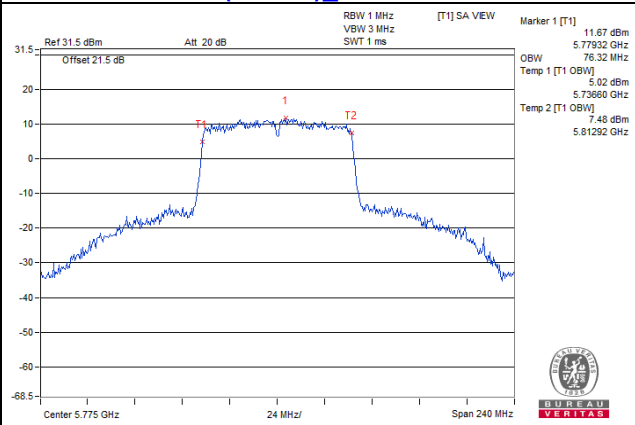
802.11ac (VHT20)_Chain 0 / CH149



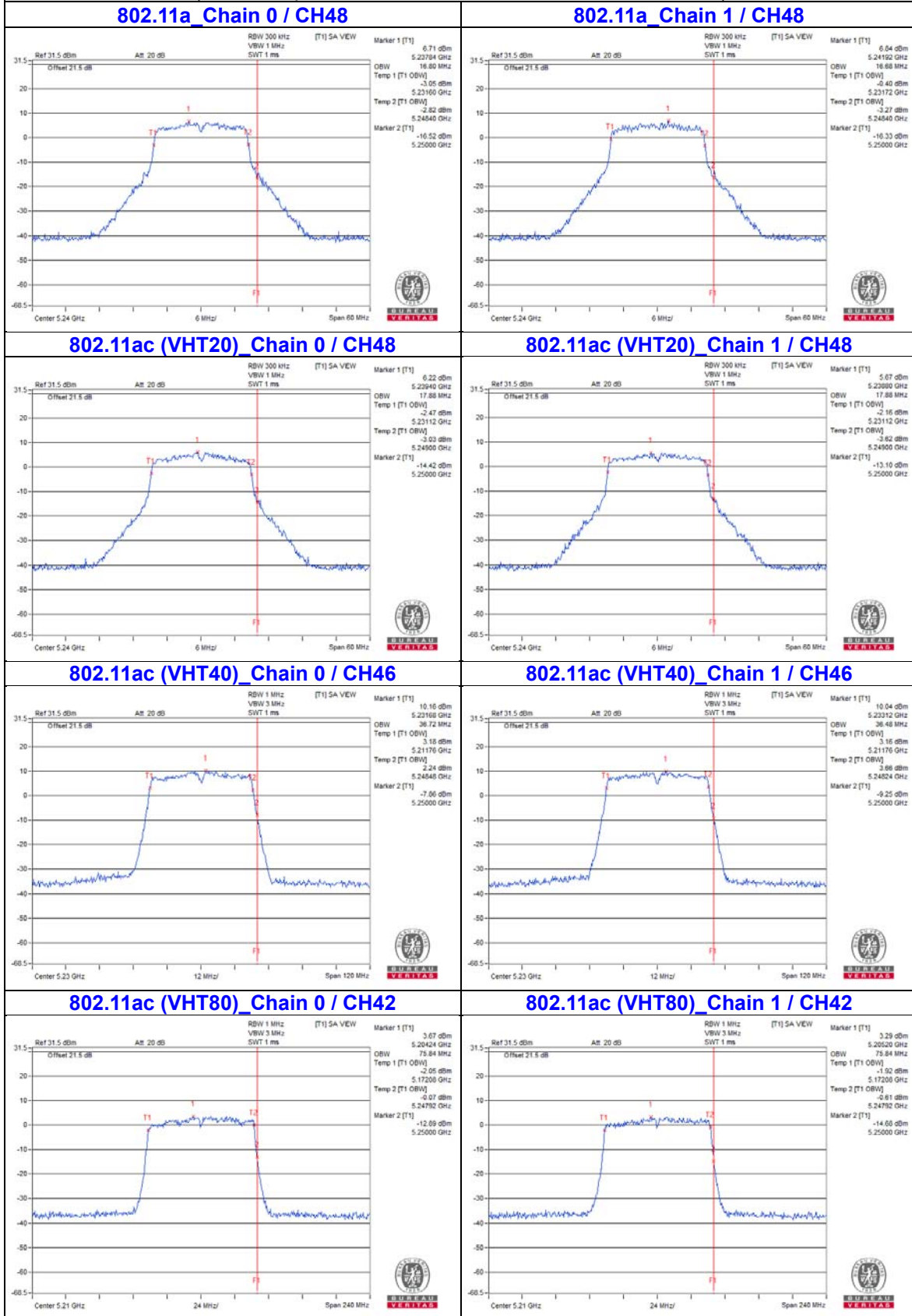
802.11ac (VHT40)_Chain 1 / CH151



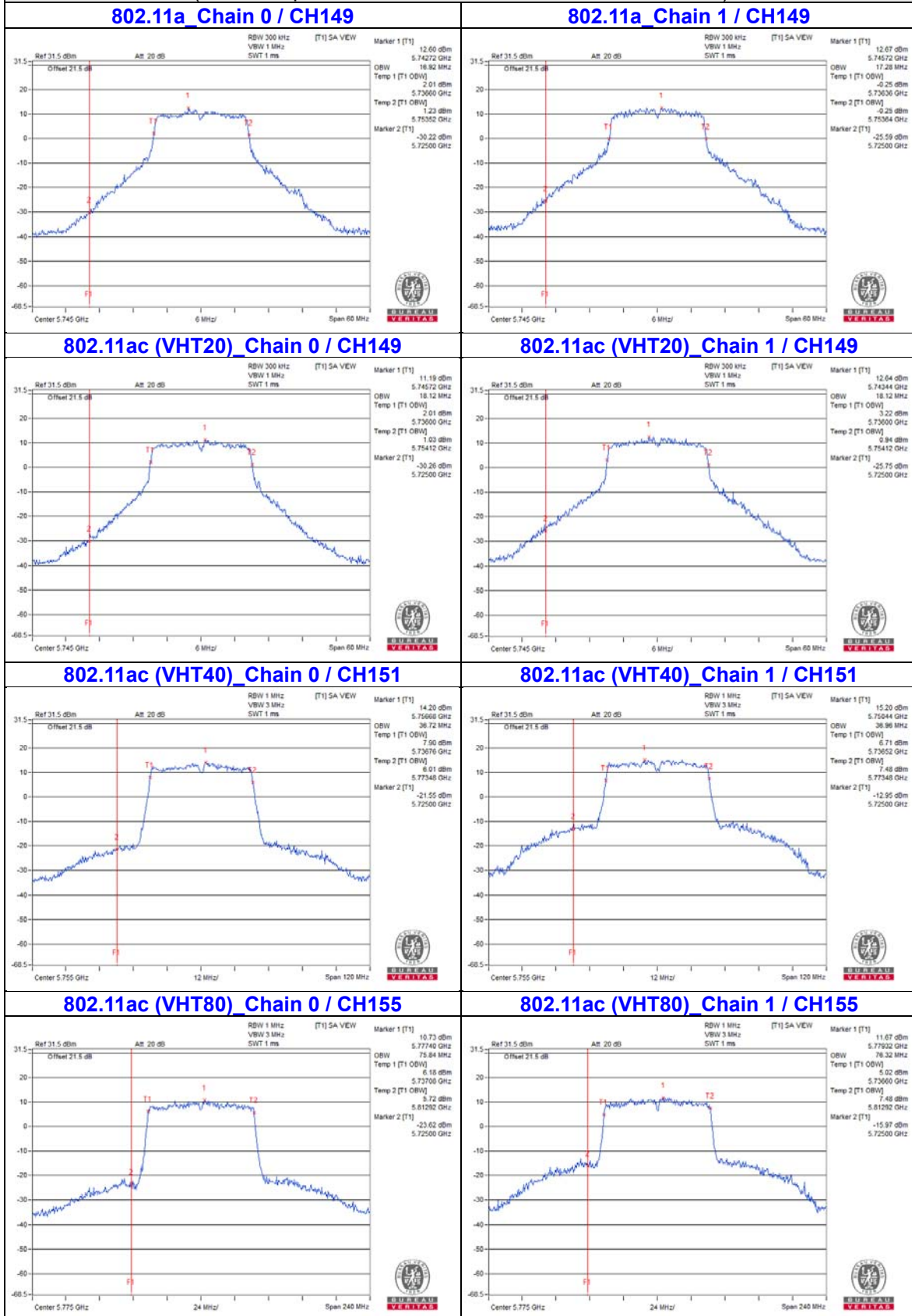
802.11ac (VHT80)_Chain 1 / CH155



**Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2A band)**



**Spectrum Plot for near by DFS band
(DFS is required, if 99% OCP straddle into U-NII-2C band)**

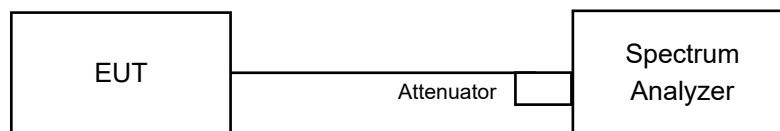


4.5 Peak Power Spectral Density Measurement

4.5.1 Limits of Peak Power Spectral Density Measurement

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

4.5.2 Test Setup



4.5.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.5.4 Test Procedure

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

For 802.11a, 802.11ac (VHT20)

Using method SA-1

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

For other modulation mode

Using method SA-2

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

For U-NII-3 band:

For 802.11a, 802.11ac (VHT20)

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 300 kHz, Set VBW \geq 1 MHz, Detector = RMS
3. Use the peak marker function to determine the maximum power level in any 300 kHz band segment within the fundamental EBW.
4. Scale the observed power level to an equivalent value in 500 kHz by adjusting (increasing) the measured power by a bandwidth correction factor (BWCF) where $BWCF = 10\log(500\text{kHz}/300\text{kHz})$
5. Sweep time = auto, trigger set to "free run".
6. Trace average at least 100 traces in power averaging mode.
7. Record the max value

For other modulation mode

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 300 kHz, Set VBW \geq 1 MHz, Detector = RMS
3. Use the peak marker function to determine the maximum power level in any 300 kHz band segment within the fundamental EBW.
4. Scale the observed power level to an equivalent value in 500 kHz by adjusting (increasing) the measured power by a bandwidth correction factor (BWCF) where $BWCF = 10\log(500\text{kHz}/300\text{kHz})$
5. Sweep time = auto, trigger set to "free run".
6. Trace average at least 100 traces in power averaging mode.
7. Record the max value and add $10 \log (1/\text{duty cycle})$

4.5.5 Deviation from Test Standard

No deviation.

4.5.6 EUT Operating Condition

Same as Item 4.3.6.

4.5.7 Test Results

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

802.11a

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)		Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1			
36	5180	1.31	1.15	4.24	6.46	Pass
40	5200	1.32	1.13	4.24	6.46	Pass
48	5240	1.69	0.80	4.28	6.46	Pass
52	5260	0.43	0.66	3.56	5.86	Pass
60	5300	0.92	0.14	3.56	5.86	Pass
64	5320	0.75	0.27	3.53	5.86	Pass
100	5500	1.16	0.48	3.84	6.09	Pass
116	5580	0.95	0.77	3.87	6.09	Pass
140	5700	0.76	1.11	3.95	6.09	Pass
144 (U-NII-2C Band)	5720	1.16	0.66	3.93	6.09	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-1: The directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2]$ = 10.54 dBi > 6 dBi, therefore the limit needs to reduce, so the power density limit shall be reduced to $11 - (10.54 - 6) = 6.46$ dBm.
3. For U-NII-2A: The directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2]$ = 11.14 dBi > 6 dBi, therefore the limit needs to reduce, so the power density limit shall be reduced to $11 - (11.14 - 6) = 5.86$ dBm.
4. For U-NII-2C: The directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2]$ = 10.91 dBi > 6 dBi, therefore the limit needs to reduce, so the power density limit shall be reduced to $11 - (10.91 - 6) = 6.09$ dBm.

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/MHz)		Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1			
36	5180	1.48	1.11	4.31	6.46	Pass
40	5200	1.14	1.34	4.25	6.46	Pass
48	5240	1.17	1.04	4.12	6.46	Pass
52	5260	0.89	-0.27	3.36	5.86	Pass
60	5300	0.64	-0.05	3.32	5.86	Pass
64	5320	0.40	0.32	3.37	5.86	Pass
100	5500	1.08	0.62	3.87	6.09	Pass
116	5580	0.36	0.75	3.57	6.09	Pass
140	5700	0.39	0.72	3.57	6.09	Pass
144 (U-NII-2C Band)	5720	-0.40	1.30	3.54	6.09	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-1: The directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2]$ = 10.54 dBi > 6 dBi, therefore the limit needs to reduce, so the power density limit shall be reduced to $11 - (10.54 - 6) = 6.46$ dBm.
 3. For U-NII-2A: The directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2]$ = 11.14 dBi > 6 dBi, therefore the limit needs to reduce, so the power density limit shall be reduced to $11 - (11.14 - 6) = 5.86$ dBm.
 4. For U-NII-2C: The directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2]$ = 10.91 dBi > 6 dBi, therefore the limit needs to reduce, so the power density limit shall be reduced to $11 - (10.91 - 6) = 6.09$ dBm.

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
38	5190	-1.88	-2.86	0.14	0.81	6.46	Pass
46	5230	0.07	-0.11	0.14	3.13	6.46	Pass
54	5270	0.63	0.15	0.14	3.55	5.86	Pass
62	5310	-1.16	-2.23	0.14	1.49	5.86	Pass
102	5510	-0.10	-0.63	0.14	2.80	6.09	Pass
110	5550	-0.29	-0.17	0.14	2.92	6.09	Pass
134	5670	-0.73	0.25	0.14	2.94	6.09	Pass
142 (U-NII-2C Band)	5710	0.25	0.71	0.14	3.64	6.09	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-1: The directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 10.54 \text{ dBi} > 6 \text{ dBi}$, therefore the limit needs to reduce, so the power density limit shall be reduced to $11 - (10.54 - 6) = 6.46 \text{ dBm}$.
3. For U-NII-2A: The directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 11.14 \text{ dBi} > 6 \text{ dBi}$, therefore the limit needs to reduce, so the power density limit shall be reduced to $11 - (11.14 - 6) = 5.86 \text{ dBm}$.
4. For U-NII-2C: The directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 10.91 \text{ dBi} > 6 \text{ dBi}$, therefore the limit needs to reduce, so the power density limit shall be reduced to $11 - (10.91 - 6) = 6.09 \text{ dBm}$.
5. Refer to section 3.3 for duty cycle spectrum plot.

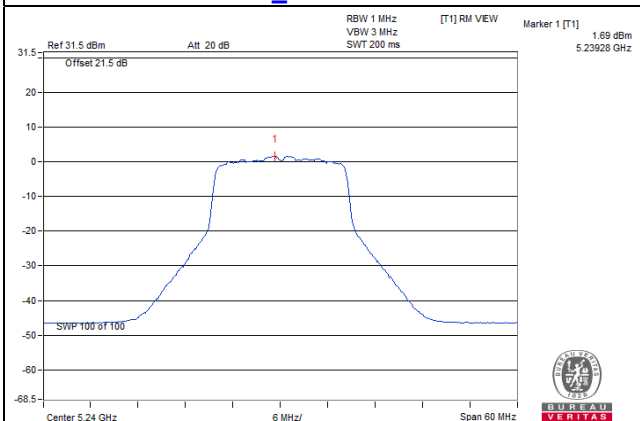
802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/MHz)		Duty Factor (dB)	Total PSD (dBm/MHz)	Max. PSD Limit (dBm/MHz)	Pass / Fail
		Chain 0	Chain 1				
42	5210	-6.52	-6.57	0.26	-3.27	6.46	Pass
58	5290	-6.19	-7.45	0.26	-3.50	5.86	Pass
106	5530	-3.82	-4.12	0.26	-0.70	6.09	Pass
122	5610	-0.70	-0.73	0.26	2.56	6.09	Pass
138 (U-NII-2C Band)	5690	-1.32	0.11	0.26	2.73	6.09	Pass

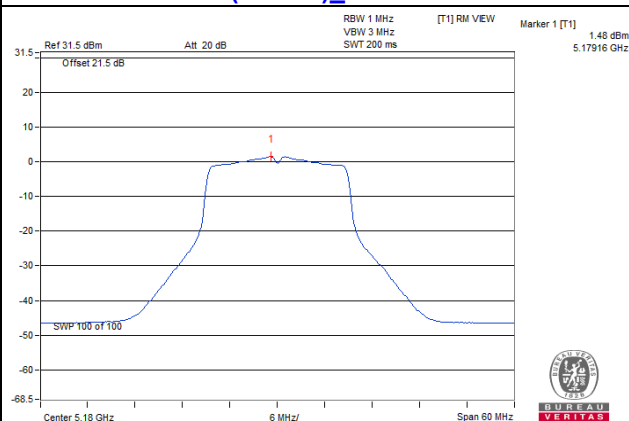
- Note: 1. Method a) of power density measurement of KDB 662911 is using for calculating total power density. Total power density is summing entire spectra across corresponding frequency bins on the various outputs by computer.
2. For U-NII-1: The directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 10.54 \text{ dBi} > 6 \text{ dBi}$, therefore the limit needs to reduce, so the power density limit shall be reduced to $11 - (10.54 - 6) = 6.46 \text{ dBm}$.
3. For U-NII-2A: The directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 11.14 \text{ dBi} > 6 \text{ dBi}$, therefore the limit needs to reduce, so the power density limit shall be reduced to $11 - (11.14 - 6) = 5.86 \text{ dBm}$.
4. For U-NII-2C: The directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 10.91 \text{ dBi} > 6 \text{ dBi}$, therefore the limit needs to reduce, so the power density limit shall be reduced to $11 - (10.91 - 6) = 6.09 \text{ dBm}$.
5. Refer to section 3.3 for duty cycle spectrum plot.

Spectrum Plot of Worst Value

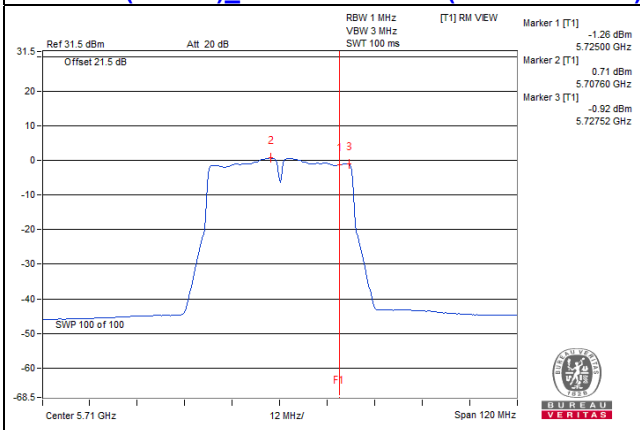
802.11a_Chain 0 / CH48



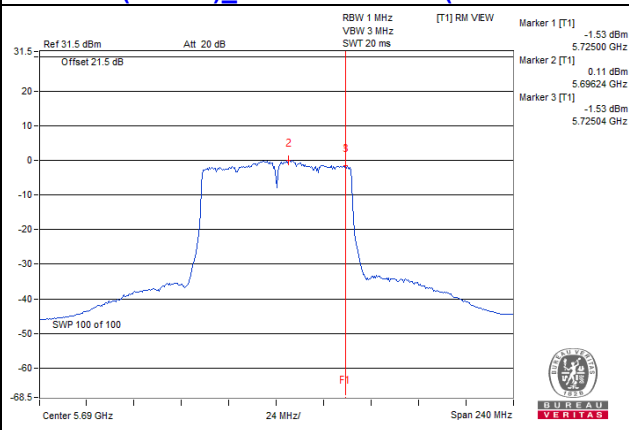
802.11ac (VHT20)_Chain 0 / CH36



802.11ac (VHT40)_Chain 1 / CH142 (U-NII-2C Band)



802.11ac (VHT80)_Chain 1 / CH138 (U-NII-2C Band)



For U-NII-3 band:

802.11a

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)		Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Pass / Fail
		Chain 0	Chain 1				
144 (U-NII-3 Band)	5720	-8.57	-9.24	-5.88	-3.66	26.02	Pass
149	5745	-1.11	0.11	2.55	4.77	26.02	Pass
157	5785	-1.09	-0.17	2.40	4.62	26.02	Pass
165	5825	-0.98	-0.46	2.30	4.52	26.02	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.

2. The directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2]$ = 9.98 dBi > 6 dBi, therefore the limit needs to reduce, so the power density limit shall be reduced to $30-(9.98-6) = 26.02$ dBm.

802.11ac (VHT20)

Chan.	Chan. Freq. (MHz)	PSD (dBm/300kHz)		Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Pass / Fail
		Chain 0	Chain 1				
144 (U-NII-3 Band)	5720	-9.65	-9.07	-6.34	-4.12	26.02	Pass
149	5745	-1.76	-0.51	1.92	4.14	26.02	Pass
157	5785	-0.96	-1.06	2.00	4.22	26.02	Pass
165	5825	-1.63	-1.20	1.60	3.82	26.02	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.

2. The directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2]$ = 9.98 dBi > 6 dBi, therefore the limit needs to reduce, so the power density limit shall be reduced to $30-(9.98-6) = 26.02$ dBm.

802.11ac (VHT40)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)		Duty Factor (dB)	Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Pass / Fail
		Chain 0	Chain 1					
142 (U-NII-3 Band)	5710	-10.17	-9.86	0.14	-6.86	-4.64	26.02	Pass
151	5755	-5.07	-4.05	0.14	-1.38	0.84	26.02	Pass
159	5795	-4.94	-4.08	0.14	-1.34	0.88	26.02	Pass

Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.

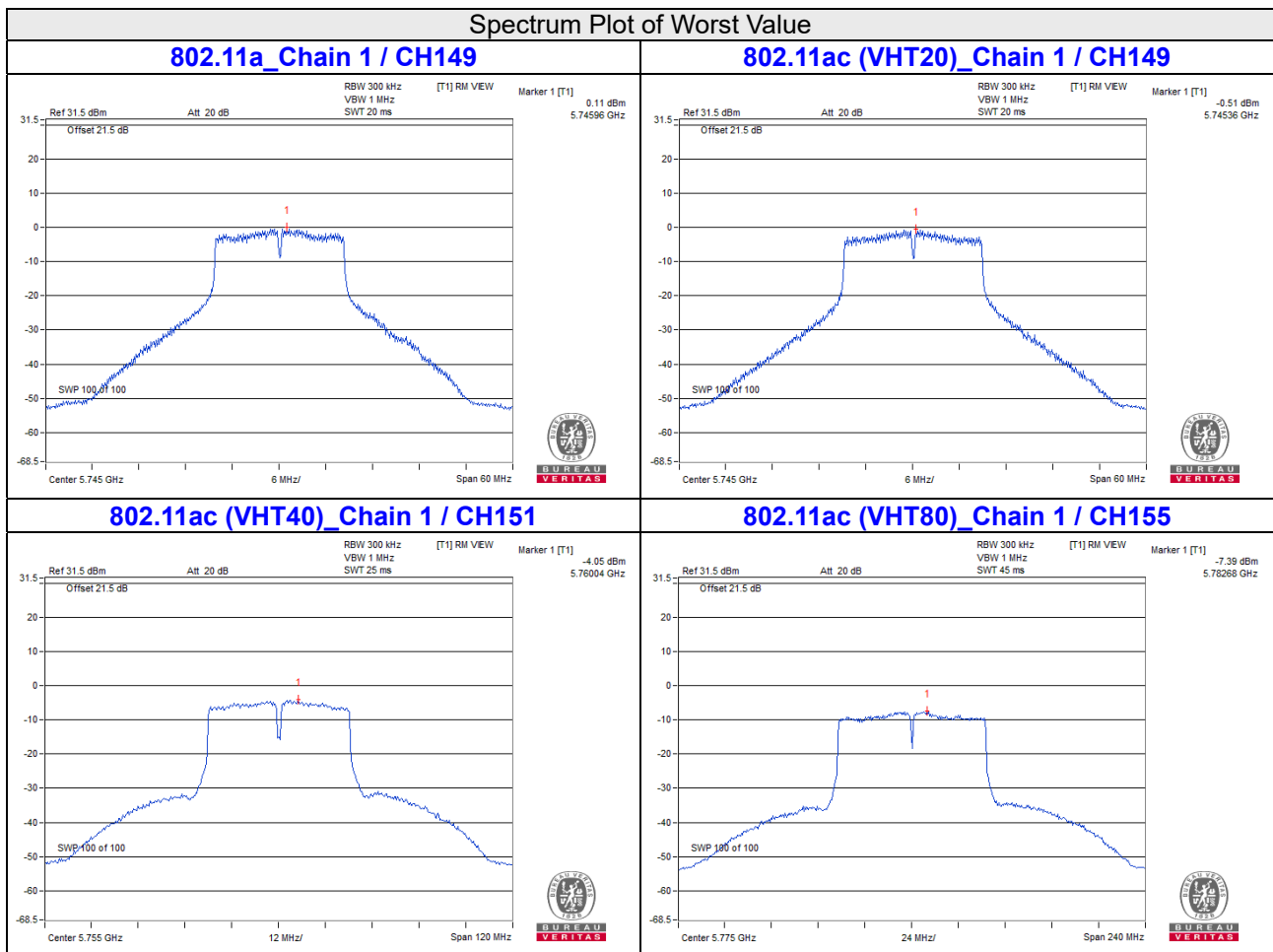
2. The directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2]$ = 9.98 dBi > 6 dBi, therefore the limit needs to reduce, so the power density limit shall be reduced to $30-(9.98-6) = 26.02$ dBm.

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

802.11ac (VHT80)

Chan.	Chan. Freq. (MHz)	PSD w/o Duty Factor (dBm/300kHz)		Duty Factor (dB)	Total PSD (dBm/300kHz)	Total PSD (dBm/500kHz)	PSD Limit (dBm/500kHz)	Pass / Fail
		Chain 0	Chain 1					
138 (U-NII-3 Band)	5690	-11.87	-10.92	0.26	-8.10	-5.88	26.02	Pass
155	5775	-8.77	-7.39	0.26	-4.75	-2.53	26.02	Pass

- Note: 1. Method b) Measure and sum spectral maxima across the outputs of KDB 662911 is using for calculating total power density.
2. The directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 9.98 \text{ dBi} > 6 \text{ dBi}$, therefore the limit needs to reduce, so the power density limit shall be reduced to $30 - (9.98 - 6) = 26.02 \text{ dBm}$.
3. Refer to section 3.3 for duty cycle spectrum plot.

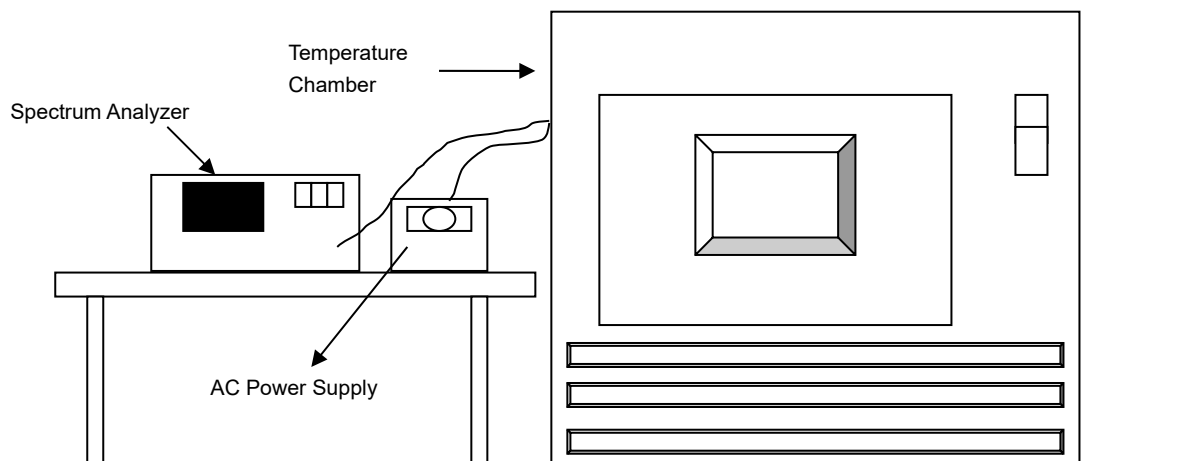


4.6 Frequency Stability Measurement

4.6.1 Limits of Frequency Stability Measurement

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

4.6.2 Test Setup



4.6.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.6.4 Test Procedure

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

4.6.5 Deviation from Test Standard

No deviation.

4.6.6 EUT Operating Condition

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

4.6.7 Test Results

Frequency Stability Versus Temp.									
Operating Frequency: 5180 MHz									
TEMP. (°C)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
40	120	5180.0162	Pass	5180.0129	Pass	5180.0142	Pass	5180.0138	Pass
30	120	5180.0115	Pass	5180.0145	Pass	5180.0148	Pass	5180.0117	Pass
20	120	5180.0036	Pass	5180.0057	Pass	5180.0033	Pass	5180.0045	Pass
10	120	5180.0152	Pass	5180.0167	Pass	5180.017	Pass	5180.014	Pass
0	120	5180.0208	Pass	5180.0201	Pass	5180.0218	Pass	5180.0217	Pass

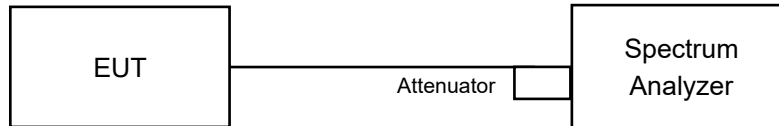
Frequency Stability Versus Voltage									
Operating Frequency: 5180 MHz									
TEMP. (°C)	Power Supply (Vac)	0 Minute		2 Minutes		5 Minutes		10 Minutes	
		Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail	Measured Frequency (MHz)	Pass/Fail
20	138	5180.0153	Pass	5180.0158	Pass	5180.0178	Pass	5180.015	Pass
	120	5180.0152	Pass	5180.0167	Pass	5180.017	Pass	5180.014	Pass
	102	5180.016	Pass	5180.0168	Pass	5180.018	Pass	5180.0142	Pass

4.7 6dB Bandwidth Measurement

4.7.1 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is 0.5MHz.

4.7.2 Test Setup



4.7.3 Test Instruments

Refer to section 4.1.2 to get information of above instrument.

4.7.4 Test Procedure

MEASUREMENT PROCEDURE REF

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

4.7.5 Deviation from Test Standard

No deviation.

4.7.6 EUT Operating Condition

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

4.7.7 Test Results

802.11a

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
144 (U-NII-3 Band)	5720	3.15	2.95	0.5	Pass
149	5745	15.98	16.27	0.5	Pass
157	5785	15.18	15.77	0.5	Pass
165	5825	15.52	16.08	0.5	Pass

802.11ac (VHT20)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
144 (U-NII-3 Band)	5720	3.15	3.8	0.5	Pass
149	5745	16.87	16.82	0.5	Pass
157	5785	15.78	16.81	0.5	Pass
165	5825	15.18	17.16	0.5	Pass

802.11ac (VHT40)

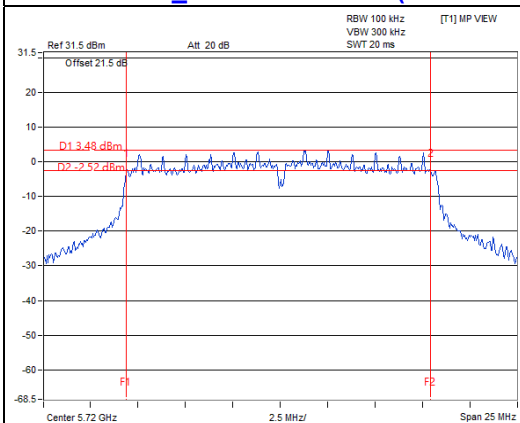
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
142 (U-NII-3 Band)	5710	2.68	2.67	0.5	Pass
151	5755	36.31	36.11	0.5	Pass
159	5795	35.28	35.25	0.5	Pass

802.11ac (VHT80)

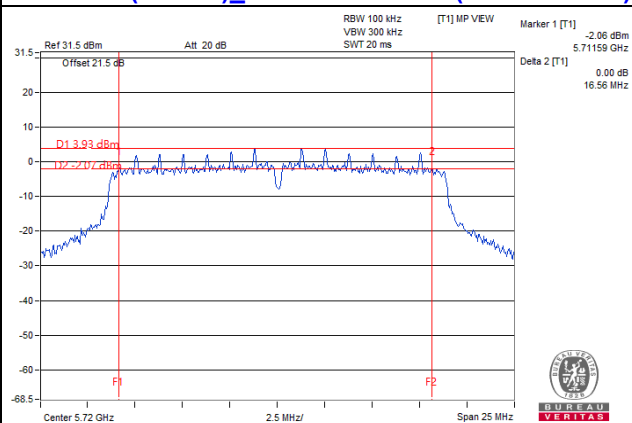
Channel	Frequency (MHz)	6dB Bandwidth (MHz)		Minimum Limit (MHz)	Pass / Fail
		Chain 0	Chain 1		
138 (U-NII-3 Band)	5690	2.73	2.72	0.5	Pass
155	5775	75.43	75.4	0.5	Pass

Spectrum Plot of Worst Value

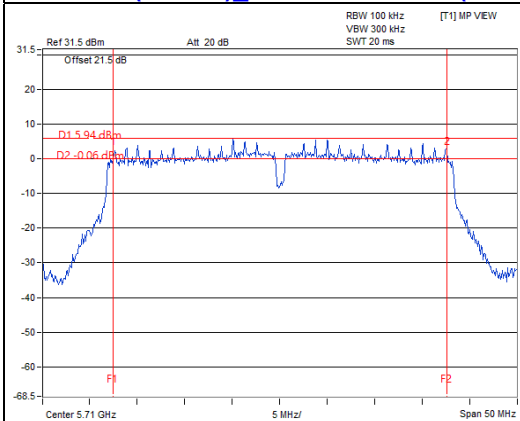
802.11a_Chain 1 / CH144 (U-NII-3 Band)



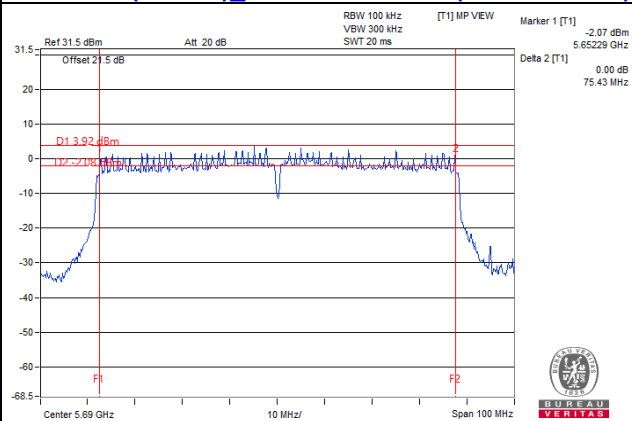
802.11ac (VHT20)_Chain 0 / CH144 (U-NII-3 Band)



802.11ac (VHT40)_Chain 1 / CH142 (U-NII-3 Band)



802.11ac (VHT80)_Chain 1 / CH138 (U-NII-3 Band)



Note: The 6dB bandwidth above 5725MHz = Marker 1 + Delta 2 - 5725MHz

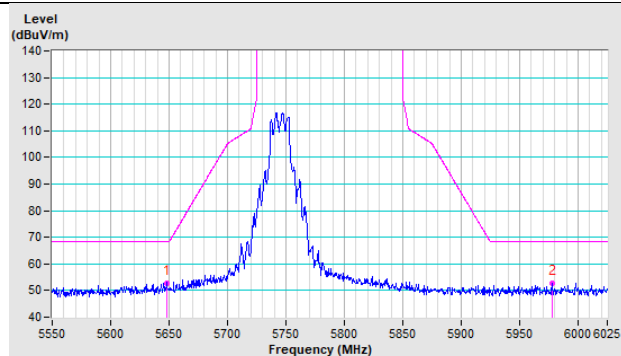
5 Pictures of Test Arrangements

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

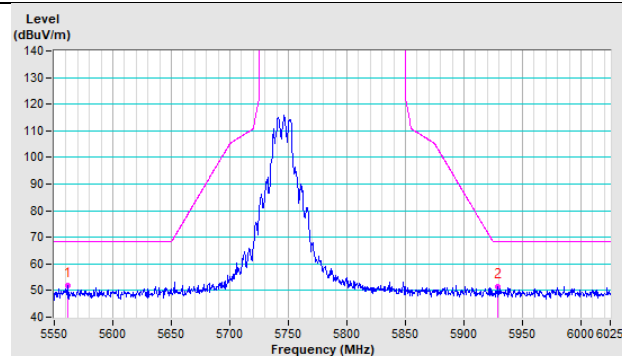
Annex A - Radiated Out of Band Emission (OOBE) Measurement (For U-NII-3 band)

802.11a CH 149 : 5745 MHz

Horizontal

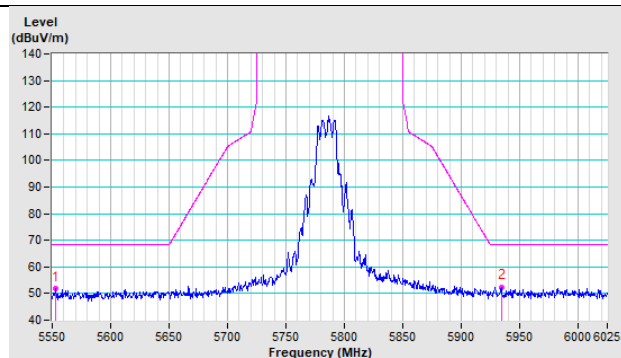


Vertical

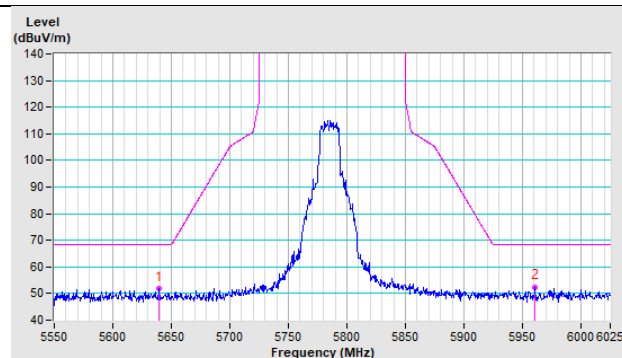


802.11a CH 157 : 5785 MHz

Horizontal

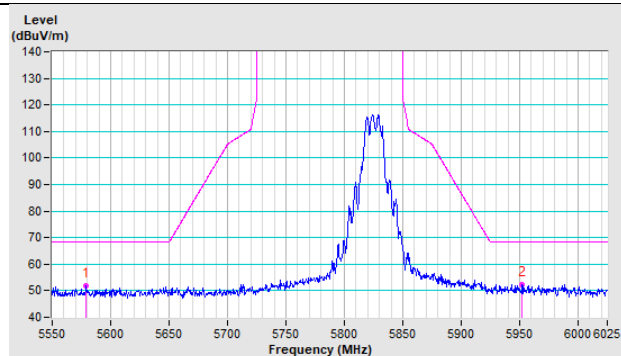


Vertical

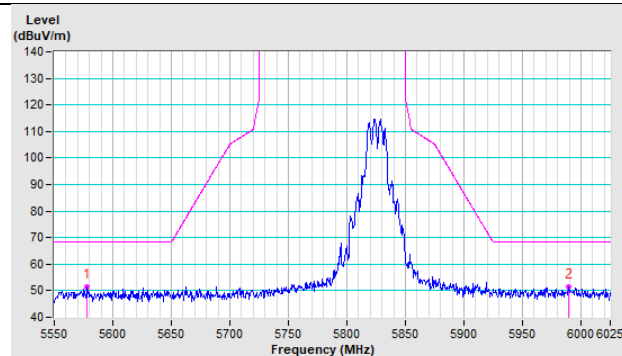


802.11a CH 165 : 5825 MHz

Horizontal

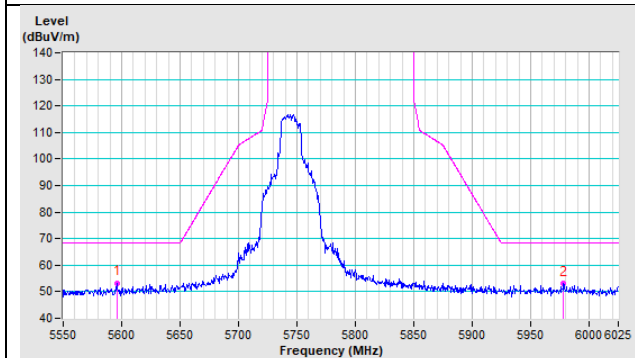


Vertical

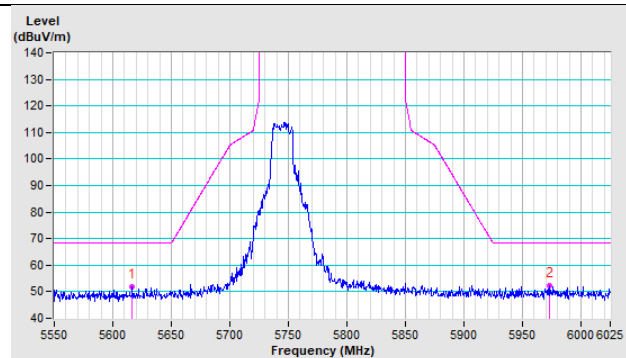


802.11ac (VHT20) CH 149 : 5745 MHz

Horizontal

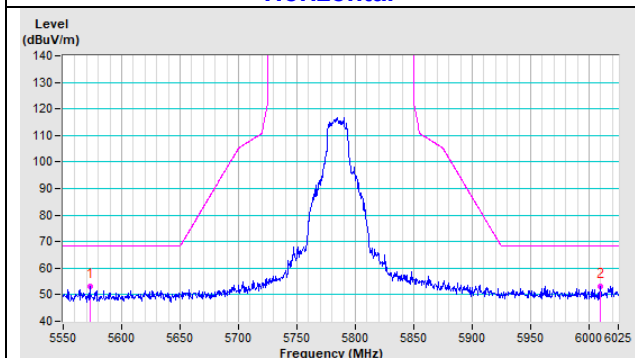


Vertical

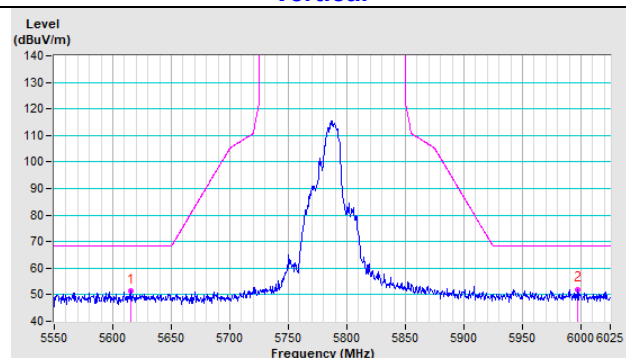


802.11ac (VHT20) CH 157 : 5785 MHz

Horizontal

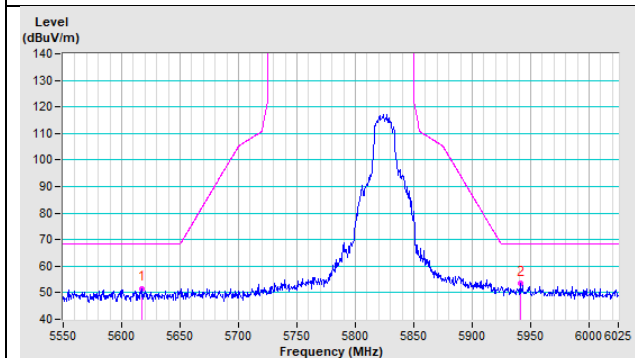


Vertical

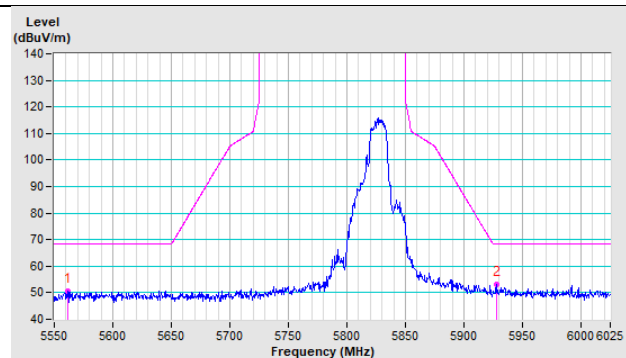


802.11ac (VHT20) CH 165 : 5825 MHz

Horizontal

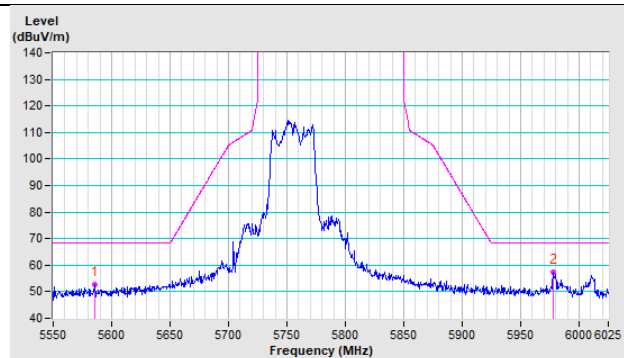


Vertical

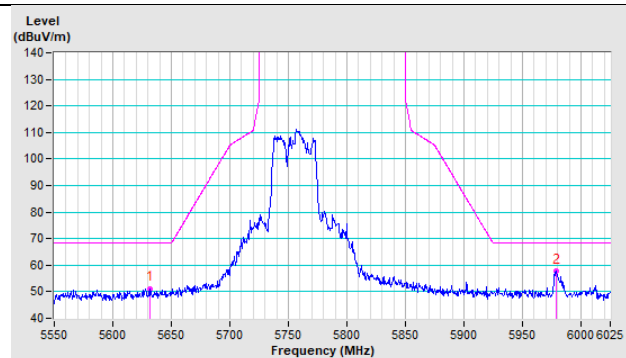


802.11ac (VHT40) CH 151 : 5755 MHz

Horizontal

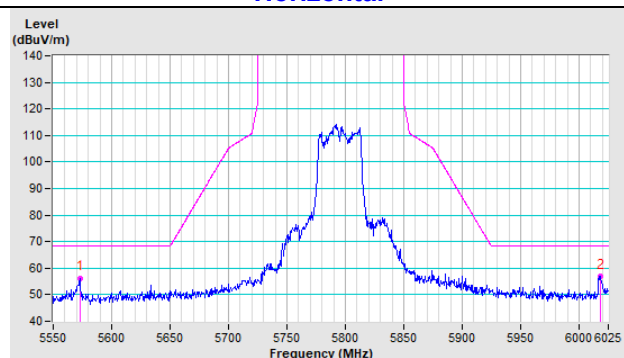


Vertical

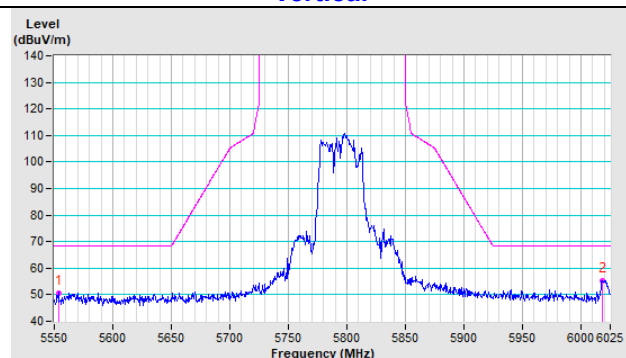


802.11ac (VHT40) CH 159 : 5795 MHz

Horizontal

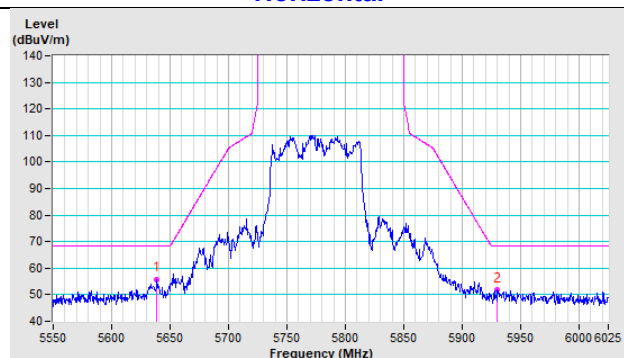


Vertical

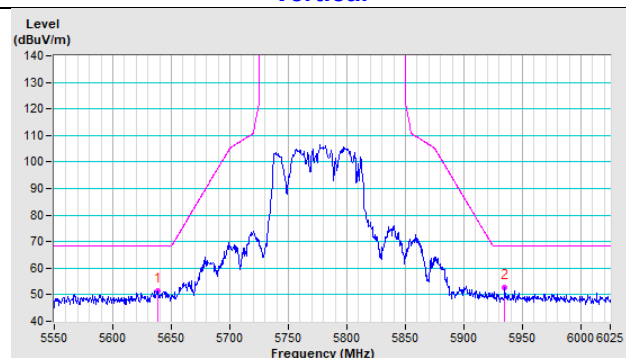


802.11ac (VHT80) CH 155 : 5775 MHz

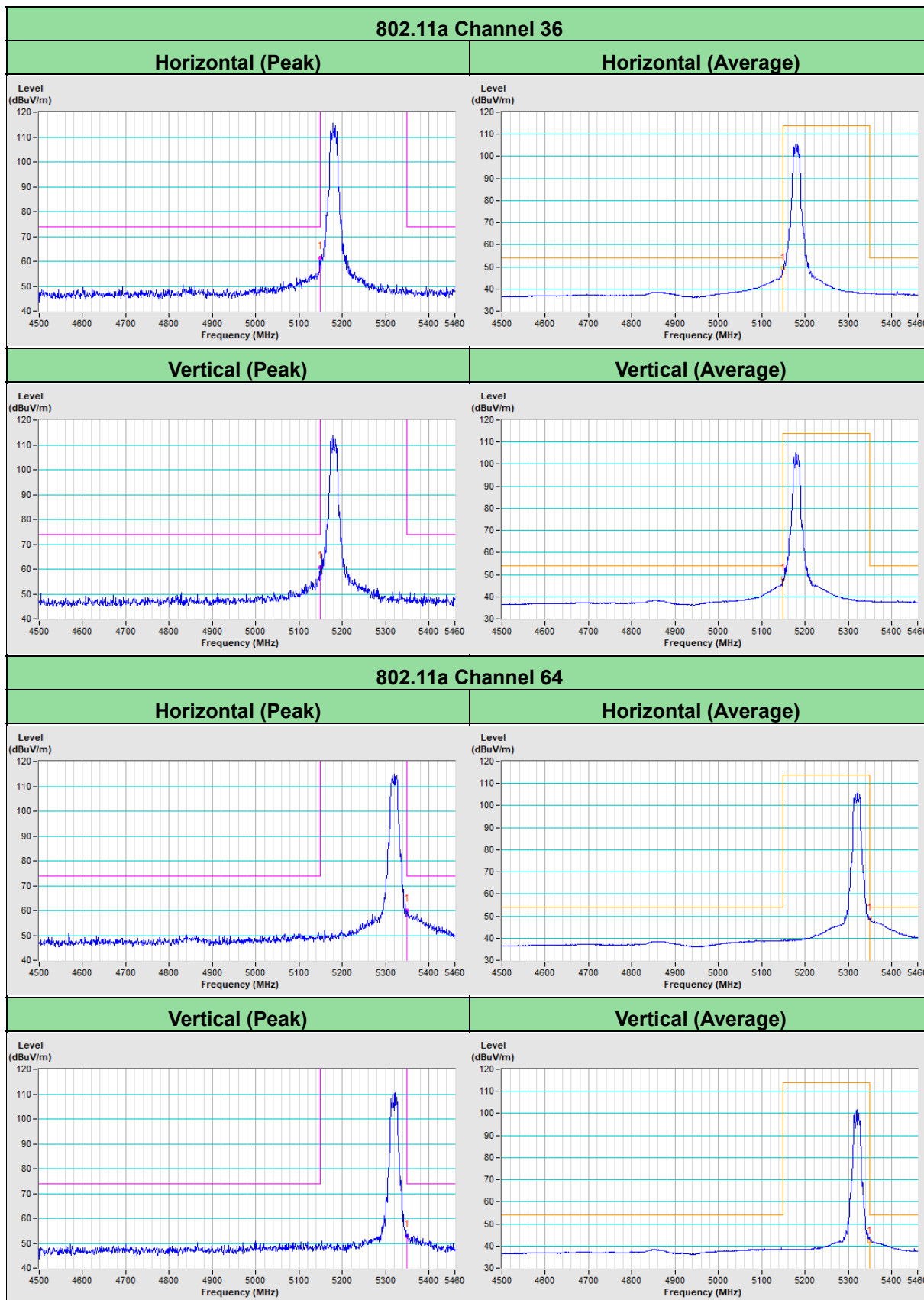
Horizontal



Vertical

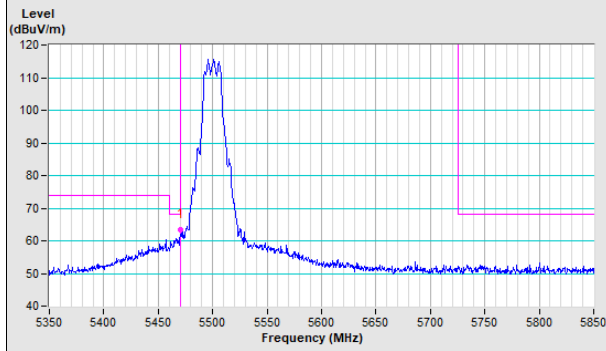


Annex B - Band-Edge Measurement (For U-NII-1, U-NII-2A, U-NII-2C band)

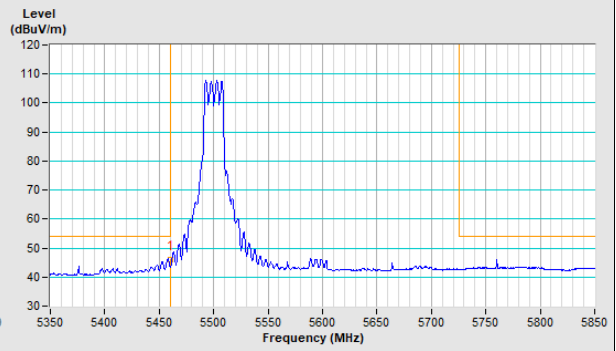


802.11a Channel 100

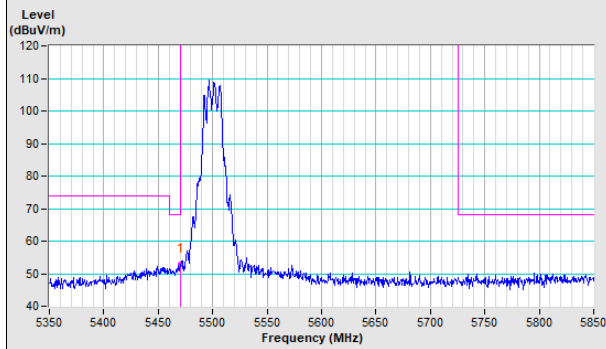
Horizontal (Peak)



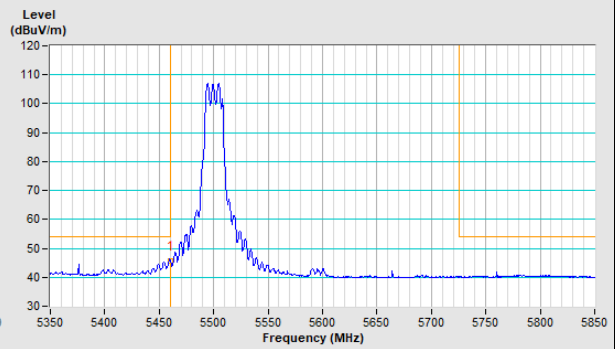
Horizontal (Average)



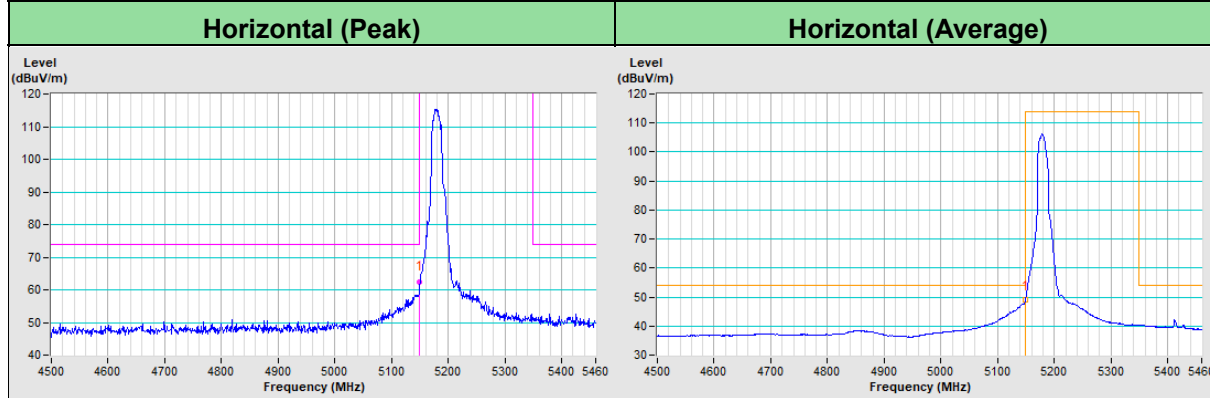
Vertical (Peak)



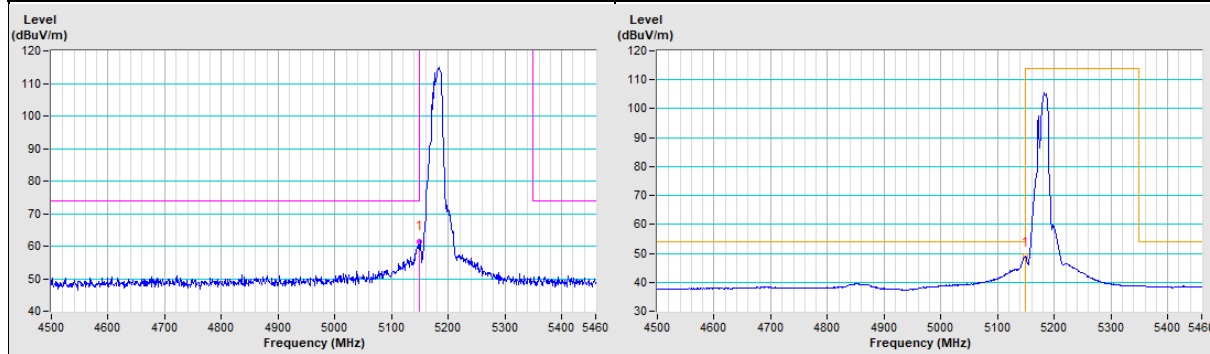
Vertical (Average)



802.11ax (HE20) Channel 36

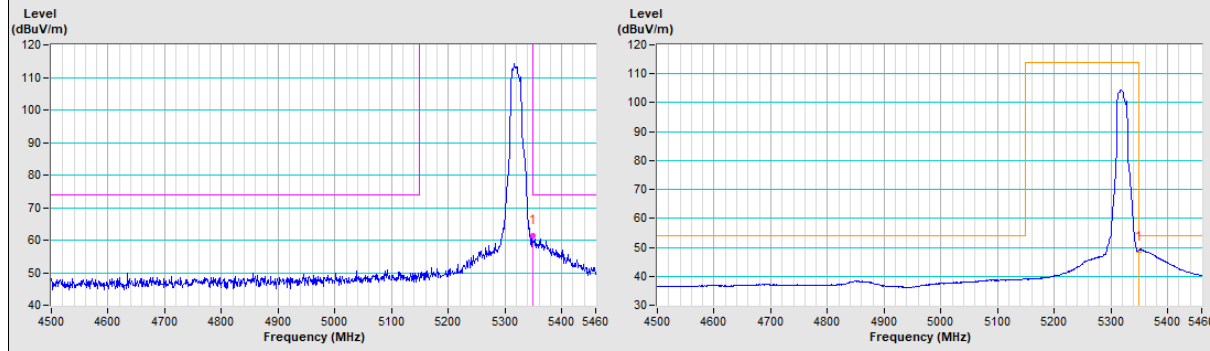


Vertical (Peak)	Vertical (Average)
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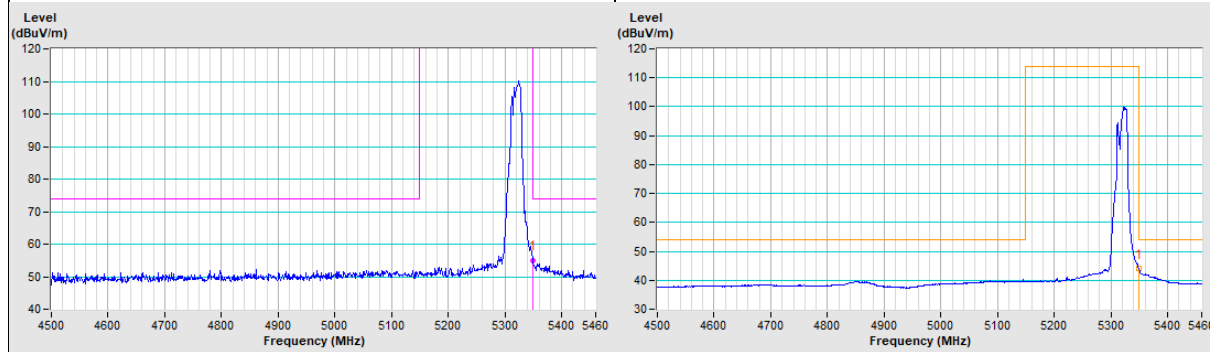


802.11ax (HE20) Channel 64

Horizontal (Peak)	Horizontal (Average)
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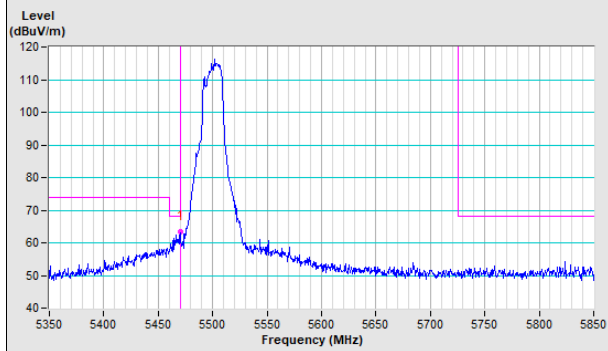


Vertical (Peak)	Vertical (Average)
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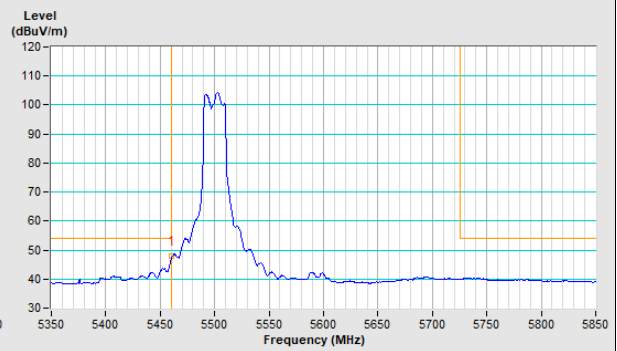


802.11ax (HE20) Channel 100

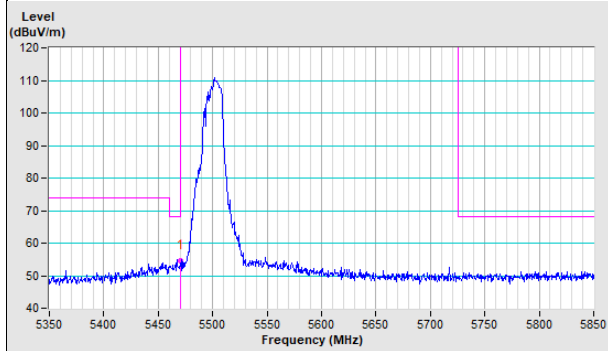
Horizontal (Peak)



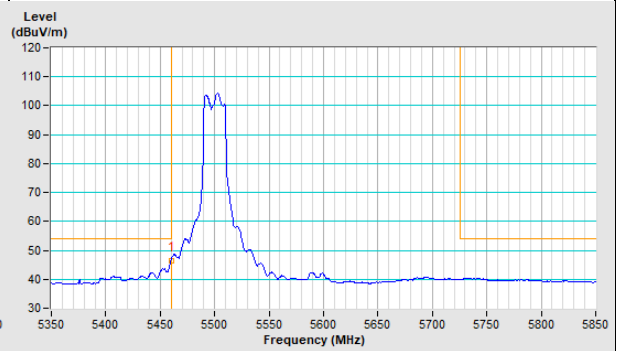
Horizontal (Average)



Vertical (Peak)

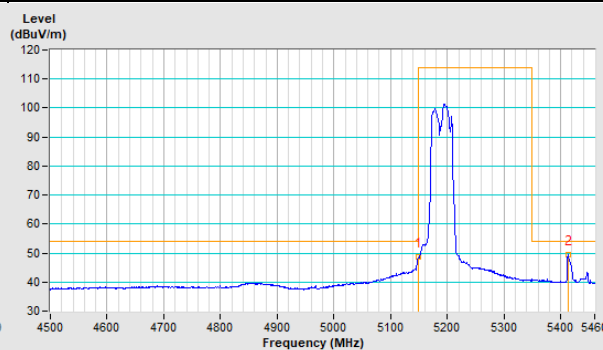
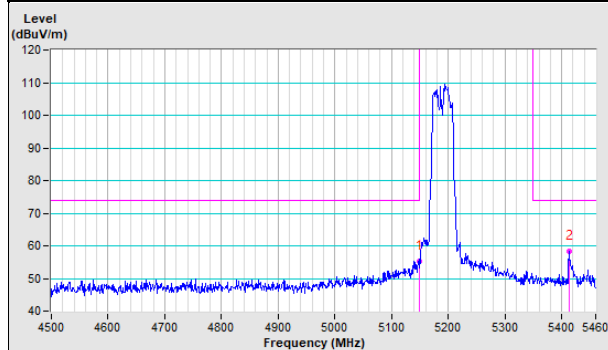


Vertical (Average)

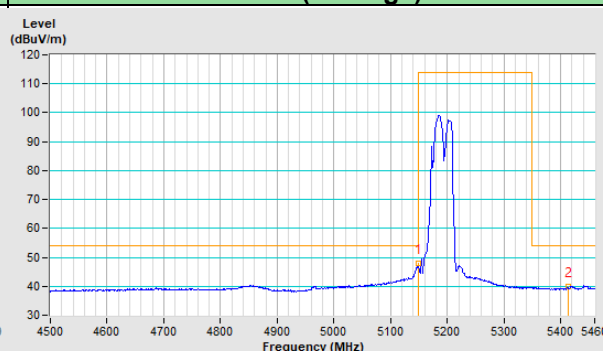
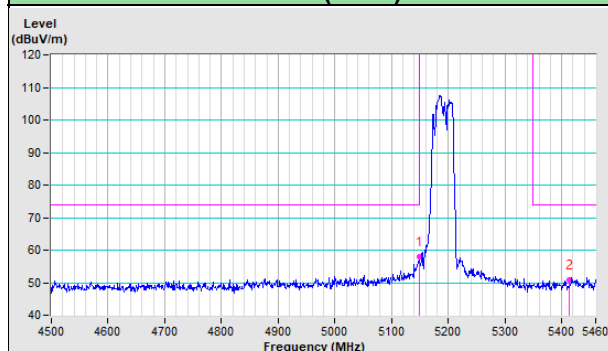


802.11ax (HE40) Channel 38

Horizontal (Peak)	Horizontal (Average)
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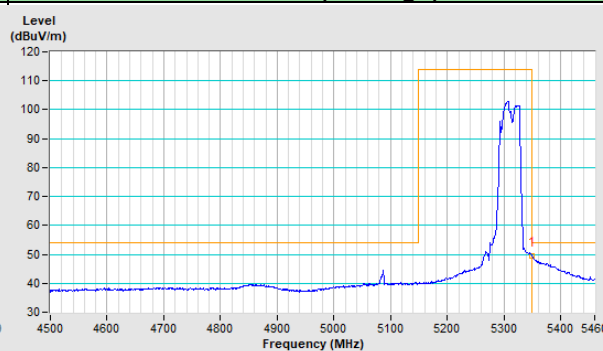
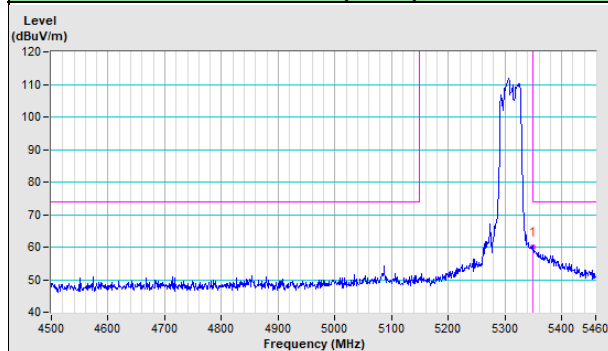


Vertical (Peak)	Vertical (Average)
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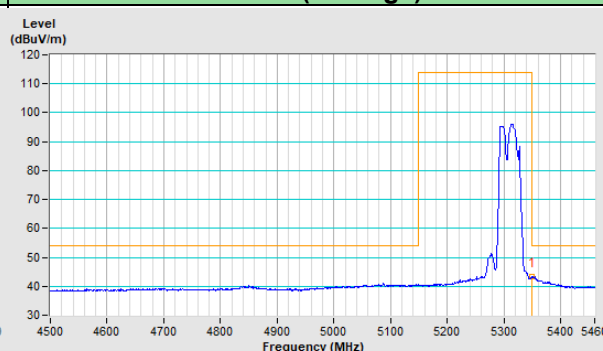
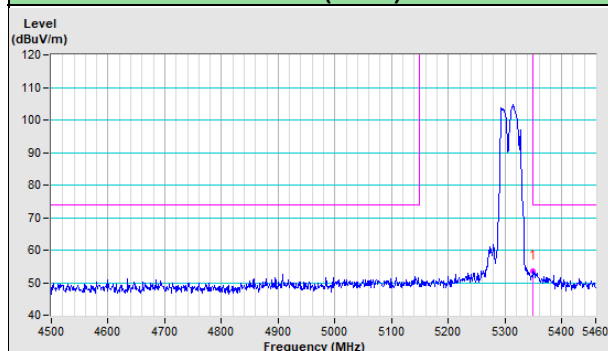


802.11ax (HE40) Channel 62

Horizontal (Peak)	Horizontal (Average)
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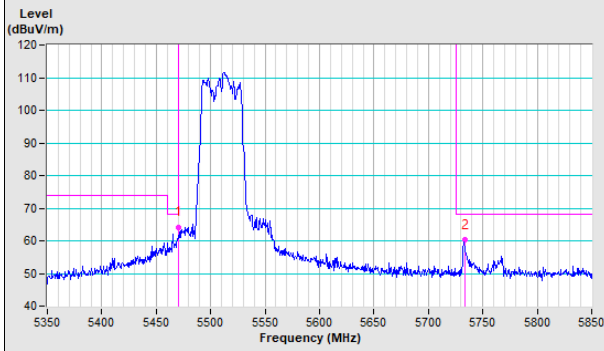


Vertical (Peak)	Vertical (Average)
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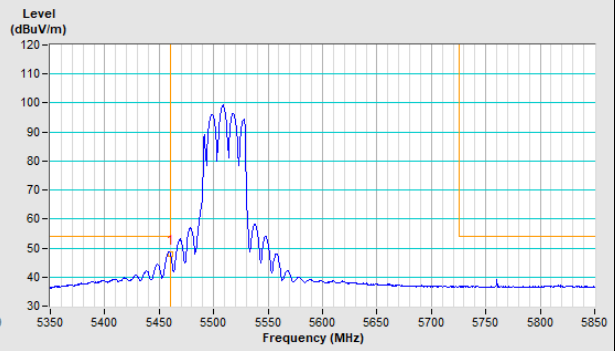


802.11ax (HE40) Channel 102

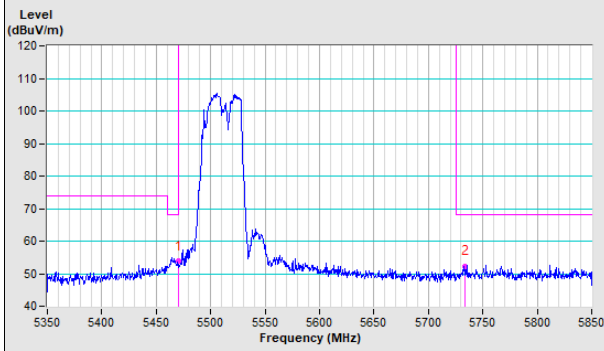
Horizontal (Peak)



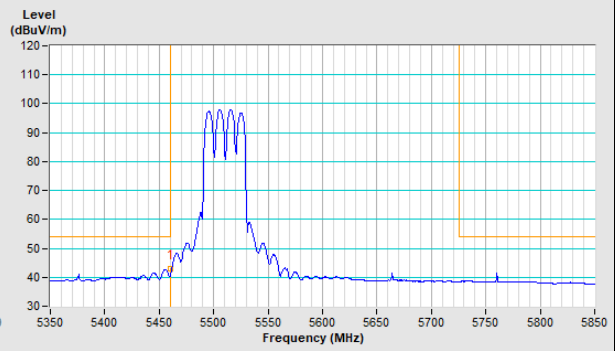
Horizontal (Average)



Vertical (Peak)

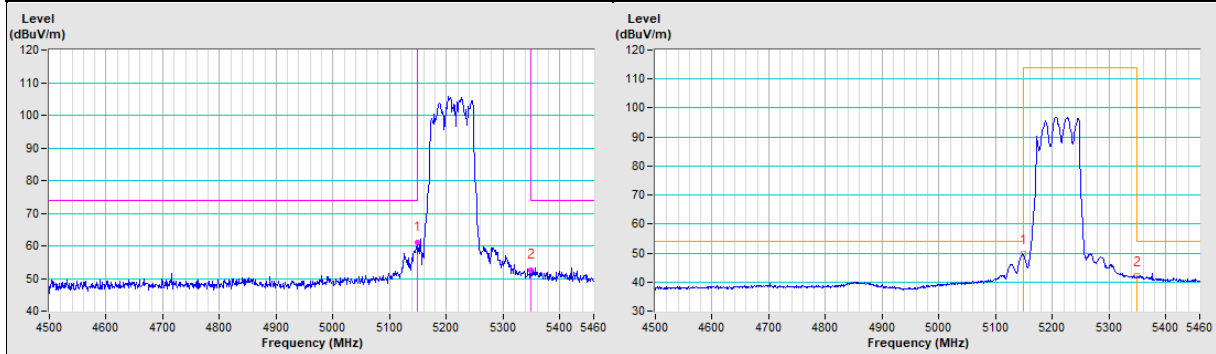


Vertical (Average)

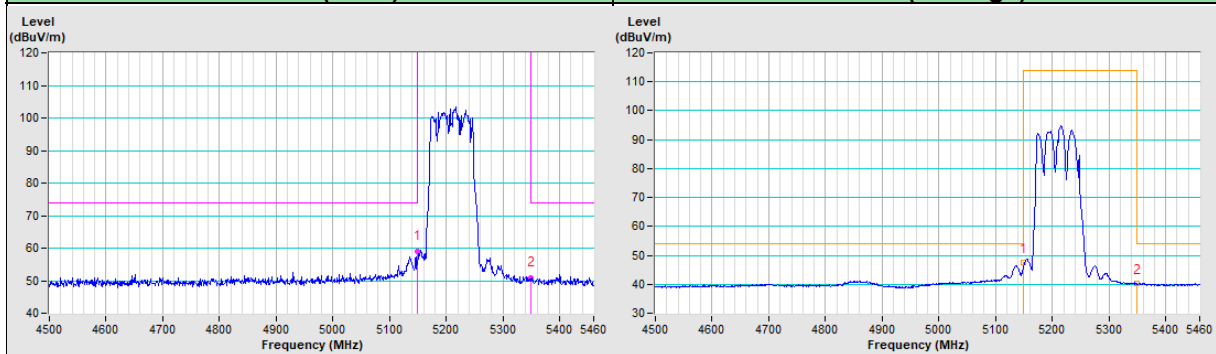


802.11ax (HE80) Channel 42

Horizontal (Peak)	Horizontal (Average)
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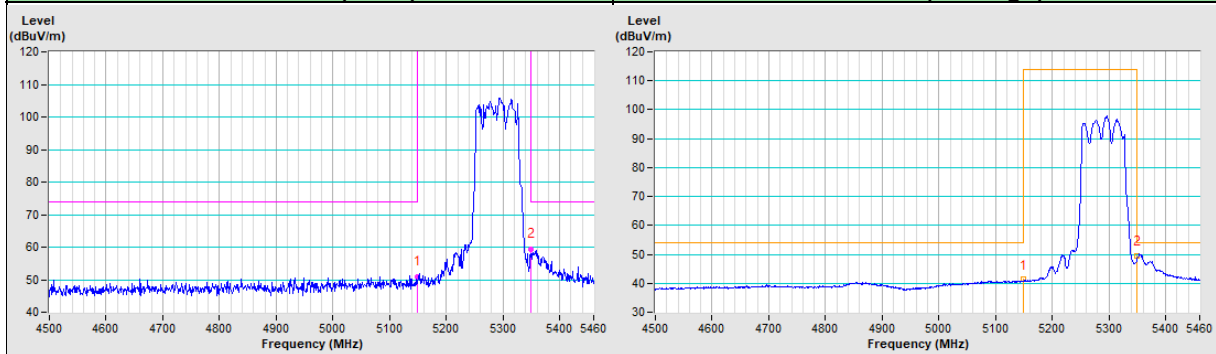


Vertical (Peak)	Vertical (Average)
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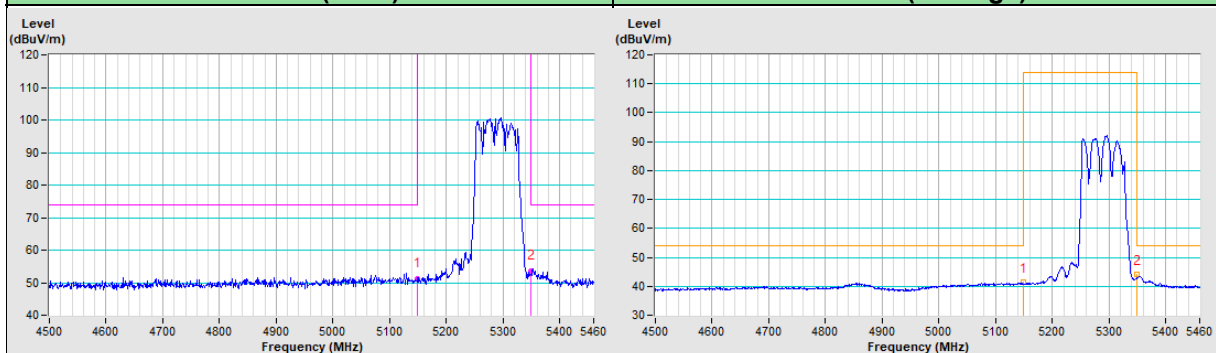


802.11ax (HE80) Channel 58

Horizontal (Peak)	Horizontal (Average)
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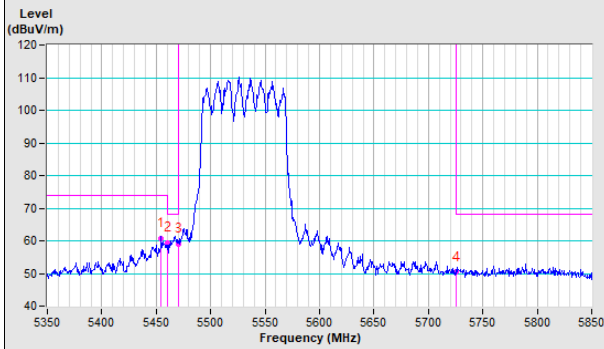


Vertical (Peak)	Vertical (Average)
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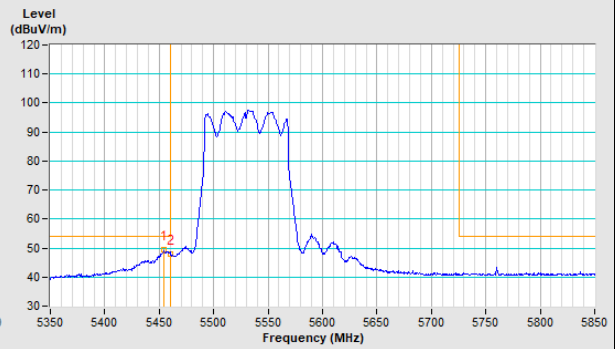


802.11ax (HE80) Channel 106

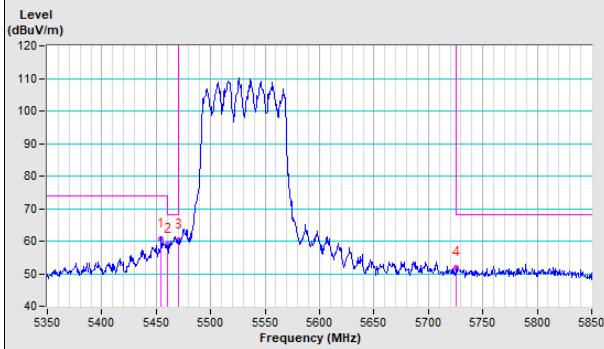
Horizontal (Peak)



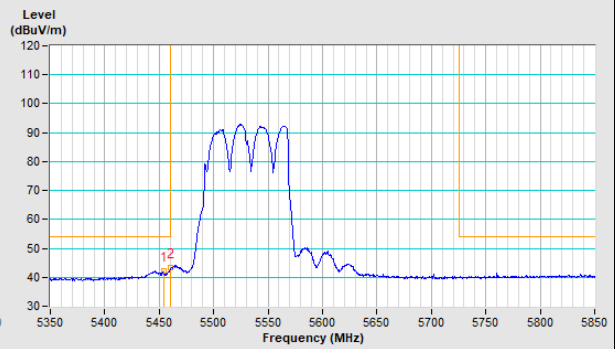
Horizontal (Average)



Vertical (Peak)



Vertical (Average)



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.

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

Lin Kou EMC/RF Lab

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Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab

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Fax: 886-3-6668323

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Tel: 886-3-3183232

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Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

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

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